

# DISTRIBUTORS

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# VALVES SUMMARY



● **MINIVALVES, SERIES VME-1 MECHANICALLY/HAND OPERATED**

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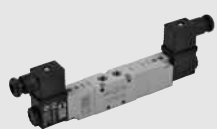
● **VALVES, SERIES PEV, PEDAL OPERATED**

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● **TWO HAND SAFETY VALVE SERIE SAFE AIR**

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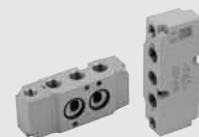
● **VALVES, SERIES 70**

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● **VALVES, SERIES 70 ON BASE**

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● **VALVES, NAMUR**

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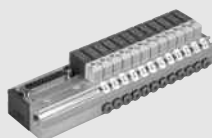
● **COILS AND CONNECTORS FOR SERIES 70 AND NAMUR VALVES**

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● **10 mm SOLENOID VALVES SERIES PLT-10**

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● **SOLENOID VALVES PIV.M 15 mm**

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● **SOLENOID VALVES PIV ON BASE**

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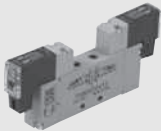
● **SOLENOID VALVES PIV IN LINE**

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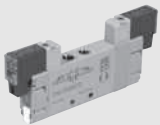
● **SOLENOID VALVE CNOMO**

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● **VALVES MINI MACH**

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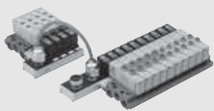
● **VALVES MACH 11**

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● **VALVES MACH 16**

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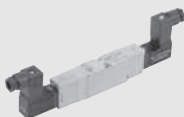
● **MULTIPLE CONNECTOR MACH 16**

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● **REDUCER WITH GAUGE, SERIES RMV**

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● **VALVES MACH 18 ISO 15407-1 VDMA 24563-02**

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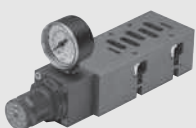
● **VALVES ISO 5599/1, SERIES IPV-ISV**

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● **VALVES ISO 5599/1 SERIE SAFE AIR**

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# MINIVALVES, MECHANICALLY AND HAND OPERATED SERIES VME

- Minivalves with 3/2 NO NC poppet,
- Installation in any position
- Push-in fittings for pipe Ø 4 mm and M5 on the valve body
- Low actuation force
- Rapid, accurate signal
- Mechanical actuation
- The 2 places adapter allows manual actuation of 1 or 2 VME valves with manual Ø 22 panel actuators. Thus it is possible to obtain 3/2, 5/2, 5/3 open centre and 5/3 pressure centre pneumatic functions.
- On request, it is possible to place a NC-NO electric switch next to VME valve for mixed solenoid/pneumatic signals.

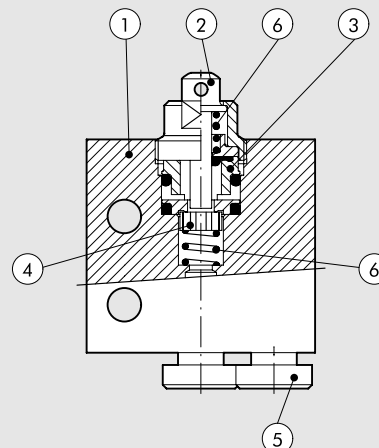


## TECHNICAL DATA

Valve fitting port		Push-in fitting for pipe diam. 4 and M5 (axial or side)
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous
Type		With poppet
Versions		Mechanical and manual
Operators:		With Plunger – Plunger for wall-mounting – Roller lever – Unidirectional roller lever
• mechanical		Depending on the type of actuation panel selected
• manual		
Operating pressure	bar	0.5 to 10
Operating temperature range	°C	-10° to +60
Nominal diameter	mm	2.5
Conductance C	Nl/min · bar	16.5
Critical ratio b	bar/bar	0.03
Flow rate at 6 Bar ΔP 0.5 Bar	Nl/min	35
Flow rate at 6 Bar ΔP 1 Bar	Nl/min	60
Actuation force – Plunger at 6 Bar	N	8
Recommended lubricant		ISO and UNI FD22
Installation		In any position
Compatibility with oils		Please refer to page 6-7 of the technical documentation

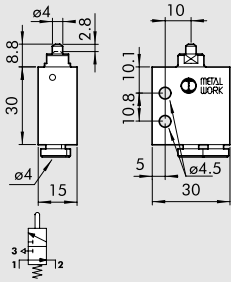
## COMPONENTS

- ① VALVE BODY: Aluminium
- ② BUTTON: chemically nickel-plated brass
- ③ DISTANCE PLATES: Brass
- ④ GASKETS: NBR
- ⑤ PUSH-IN FITTING CARTRIDGES: stainless steel, brass and plastic
- ⑥ SPRINGS: stainless steel

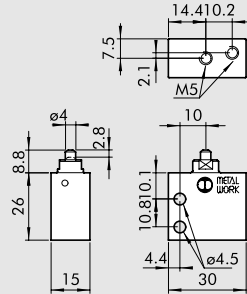


### PLUNGER 3/2 NO - AXIAL FITTINGS

Ø 4



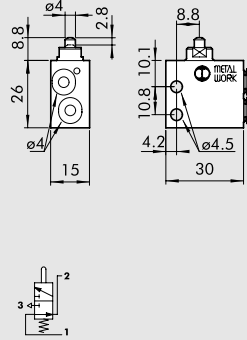
M5



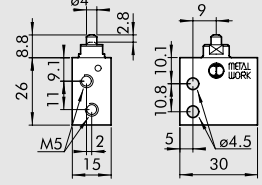
Code	Description	Weight [g]
W3501000101	VME1-10 NO Ø 4	42
W3501000110	VME1-16 NO M5	36

### PLUNGER 3/2 NO - SIDE FITTINGS

Ø 4



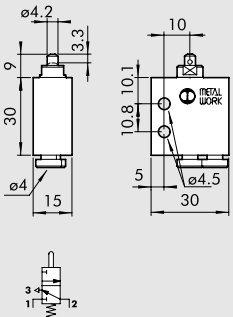
M5



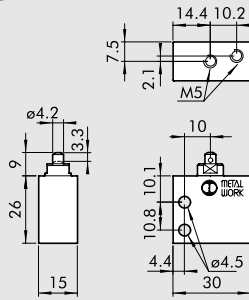
Code	Description	Weight [g]
W3501001100	VME2-00 NO Ø 4	34
W3501001110	VME2-10 NO M5	34

### PLUNGER 3/2 NC - AXIAL FITTINGS

Ø 4



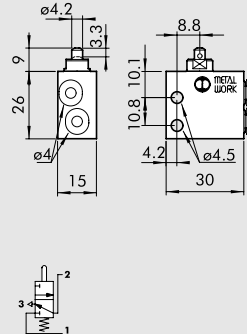
M5



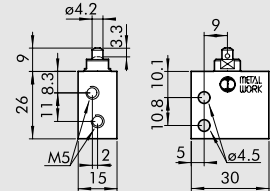
Code	Description	Weight [g]
W3501000100	VME1-01 NC Ø 4	42
W3501000111	VME1-11 NC M5	36

### PLUNGER 3/2 NC - SIDE FITTINGS

Ø 4



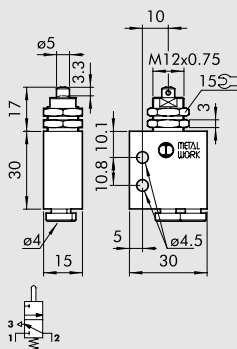
M5



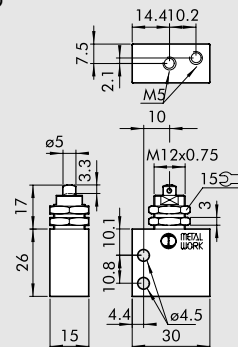
Code	Description	Weight [g]
W3501001101	VME2-01 NC Ø 4	34
W3501001111	VME2-11 NC M5	34

### PLUNGER FOR WALL MOUNTING, 3/2 NC - AXIAL FITTINGS

Ø 4



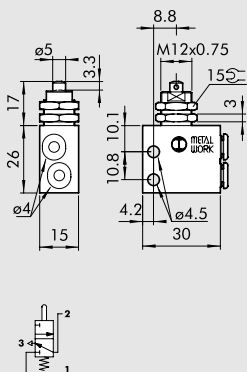
M5



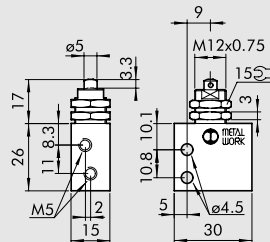
Code	Description	Weight [g]
W3501000400	VME1-04 NC Ø 4	54
W3501000411	VME1-14 NC M5	48

### PLUNGER FOR WALL MOUNTING, 3/2 NC - SIDE FITTINGS

Ø 4

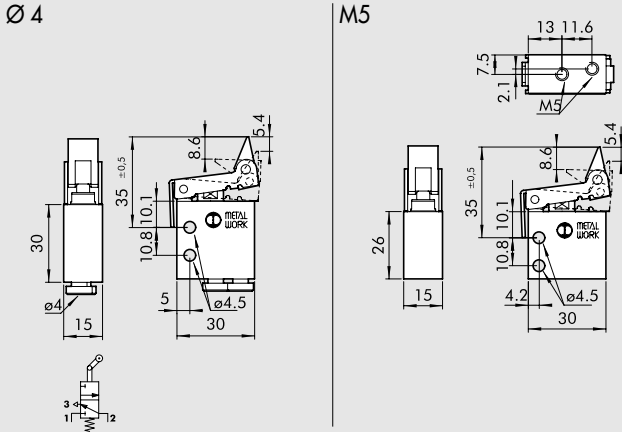


M5



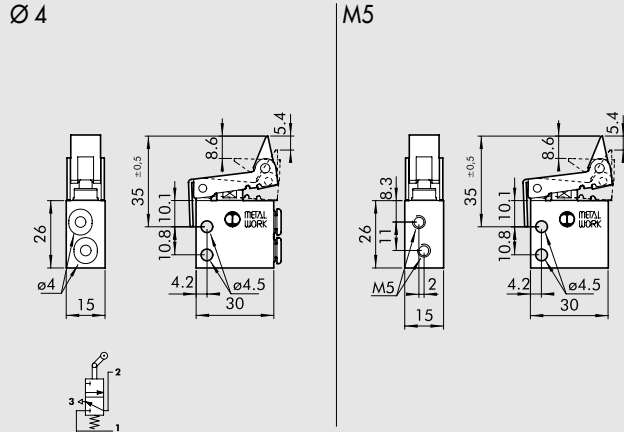
Code	Description	Weight [g]
W3501001401	VME2-04 NC Ø 4	46
W3501001411	VME2-14 NC M5	46

UNIDIRECTIONAL ROLLER LEVER, 3/2 NC - AXIAL FITTINGS



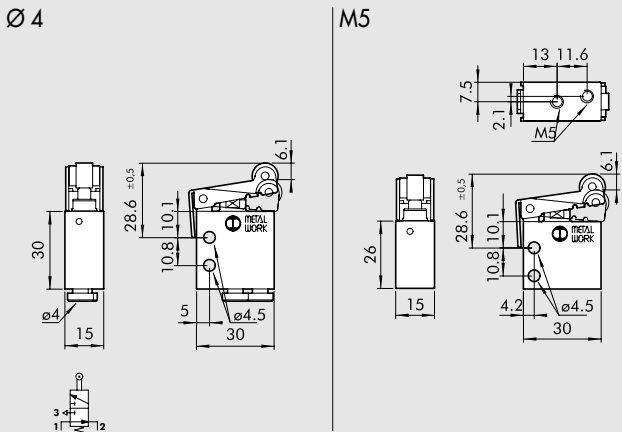
Code	Description	Weight [g]
W3501000300	VME1-03 NC Ø 4	60
W3501000311	VME1-13 NC M5	54

UNIDIRECTIONAL ROLLER LEVER, 3/2 NC - SIDE FITTINGS



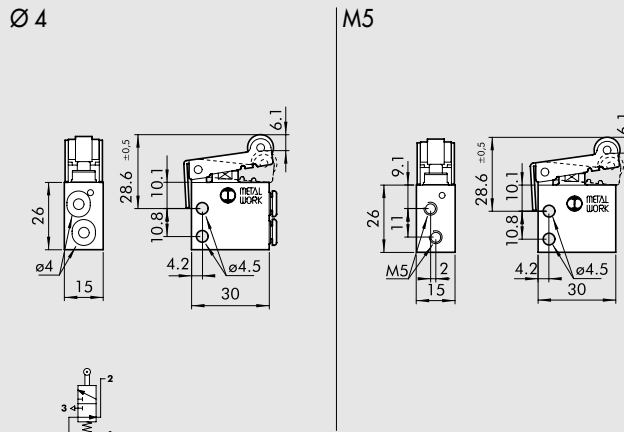
Code	Description	Weight [g]
W3501001301	VME2-03 NC Ø 4	52
W3501001311	VME2-13 NC M5	52

ROLLER LEVER, 3/2 NO - AXIAL FITTINGS



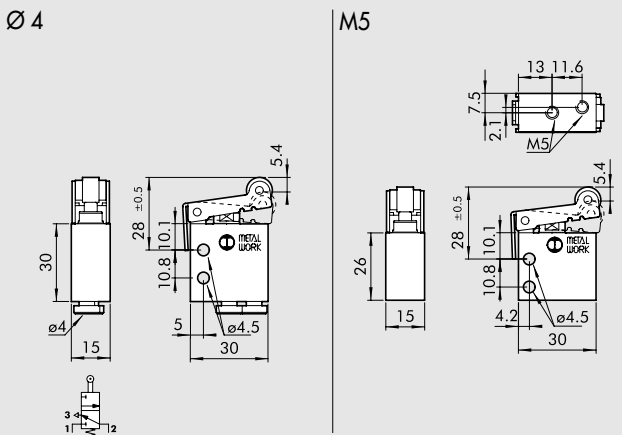
Code	Description	Weight [g]
W3501000201	VME1-05 NO Ø 4	58
W3501000210	VME1-15 NO M5	52

ROLLER LEVER, 3/2 NO - SIDE FITTINGS



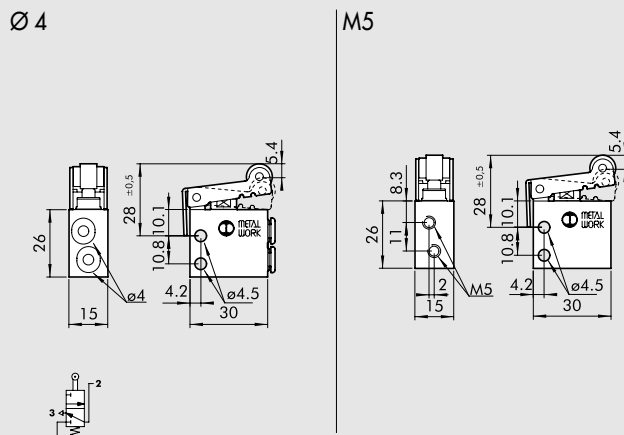
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W3501001200	VME2-05 NO Ø 4	50
W3501001210	VME2-15 NO M5	50

ROLLER LEVER, 3/2 NC - AXIAL FITTINGS



Code	Description	Weight [g]
W3501000200	VME1-02 NC Ø 4	56
W3501000211	VME1-12 NC M5	50

ROLLER LEVER, 3/2 NC - SIDE FITTINGS

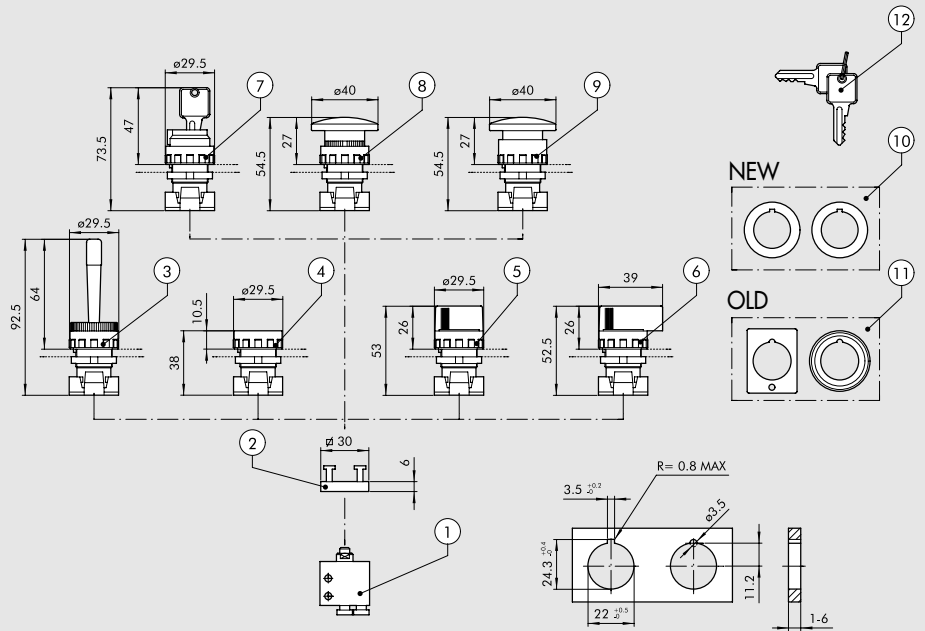


Code	Description	Weight [g]
W3501001201	VME2-02 NC Ø 4	52
W3501001211	VME2-12 NC M5	50












## MANUAL VME VALVES – ASSEMBLY DIAGRAM

### NOTES:

- For 5/2 pneumatic operation, assemble a 3/2 NC plunger valve and a 3/2 NO one on the adapter.
- For 5/3 pneumatic operation with open centres, assemble two 3/2 NC plunger valves on the adapter.
- For 5/3 pneumatic operation with pressure centres, assemble two 3/2 NO plunger valves on the adapter.



## ORDERING CODES

Symbol	Reference	Code	Description	Weight [g]
	①	W3501000100	3/2 NC Axial fittings Ø 4	42
		W3501000111	3/2 NC Axial fittings M5	36
		W3501001101	3/2 NC Side fittings Ø 4	34
		W3501001111	3/2 NC Side fittings M5	34
	①	W3501000101	3/2 NO Axial fittings Ø 4	42
		W3501000110	3/2 NO Axial fittings M5	36
		W3501001100	3/2 NO Side fittings Ø 4	34
		W3501001110	3/2 NO Side fittings M5	34
	②	0351000050	2 places adaptor thickness 6.8 mm	5
	③	W0351000015	Red handler with horizontally pivoted lever	25
	④	W0351000011	Fat push button + 2 red/black coloured disks ◆ Bistable fat push button without disk	15
	⑤	W0351000030	Black selector short lever at 2 positions with return	20
		W0351000031	Black selector short lever at 2 positions	20
	⑤	W0351000032	Black selector short lever at 3 positions with return	20
		W0351000033	Black selector short lever at 3 positions	20
	⑥	W0351000034	Black selector long lever at 2 positions with return	26
		W0351000035	Black selector long lever at 2 positions	26
	⑥	W0351000036	Black selector long lever at 3 positions with return	26
		W0351000037	Black selector long lever at 3 positions	26
	⑦	W0351000016	2 positions key selector with extractable key in 2 positions	50
		W0351000018	2 positions key selector with extractable key in 0	50
	⑧	W0351000013	Red mushroom-head push button Ø 40	27
		W0351000017	Black mushroom-head push button Ø 40	27
	⑨	W0351000014	Red mushroom-head push button with lock Ø 40	29
◆ It can't be supplied. As working replaced by selector with bistable short lever at 2 positions ⑤.	⑩	W0351000049	✦ Reducer from 30 to 22.5 mm	
✦ Usable only with technopolymer body selectors.	⑪	W0351000050	▲ Adapter for bore Ø 30 G2326	
▲ Usable only with metal body selectors.	⑫	W0351000021	✦ Key for ESC selectors	
		W0351000056	Green disk for push button ④	

# VALVES SERIES PEV PEDAL OPERATED

The valves series PEV with pedal are available in a wide range:

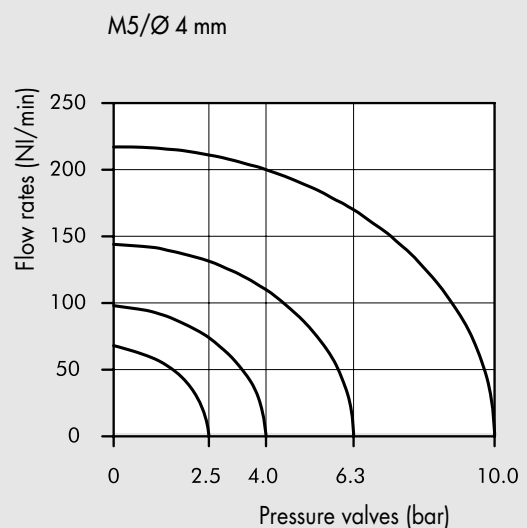
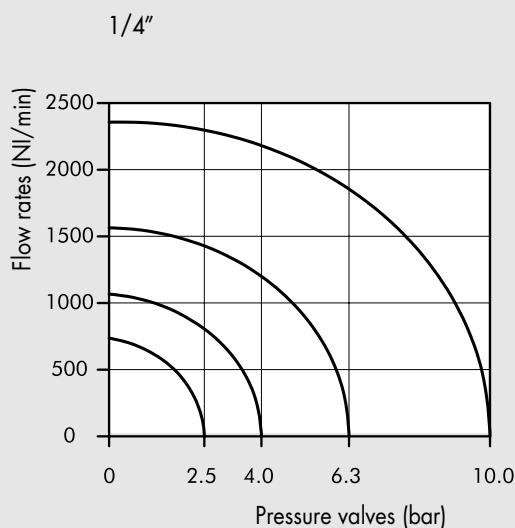
- 5/2 1/4" monostable and bistable with guarded pedal
- 3/2 M5 monostable, pedal not guarded
- 3/2 Ø 4 monostable, pedal not guarded
- 3/2 M5 in monostable and bistable configuration with guarded pedal
- 3/2 Ø 4 in monostable and bistable configuration with guarded pedal



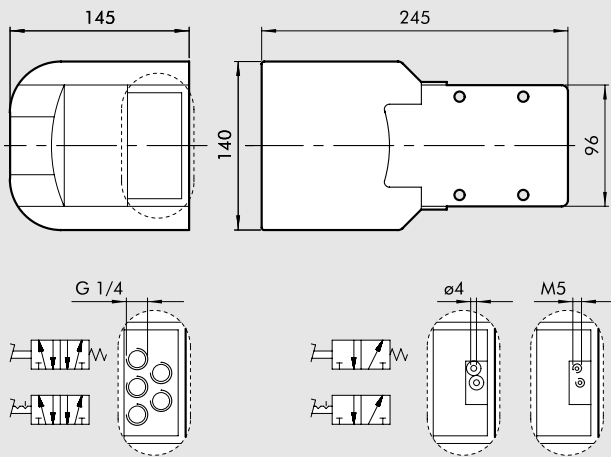
## TECHNICAL DATA

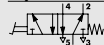
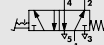
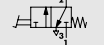
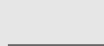
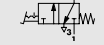

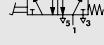
		Ø 4	M5	1/4"
Valve fitting port	Type	Mono/ bistable guarded Monostable not guarded	Monostable not guarded Mono/ bistable guarded	Mono/ bistable guarded -
Operating pressure	bar		2.5 to 10	
	Mpa		0.25 to 1	
	psi		36 to 145	
Operating temperature range	°C		-10 + 60	
Nominal diameter	mm	2.5	2.5	7.5
Conductance C	NI/min · bar	16.5	16.5	264.26
Critical ratio b	bar/bar	0.03	0.03	0.32
Flow rate at 6.3 bar ΔP 0.5 bar	NI/min	60	60	640
Flow rate at 6.3 bar ΔP 1 bar	NI/min	95	95	840
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous		
Compatibility with oils		Please refer to page 6-7 of the technical documentation		

## FLOW CHARTS



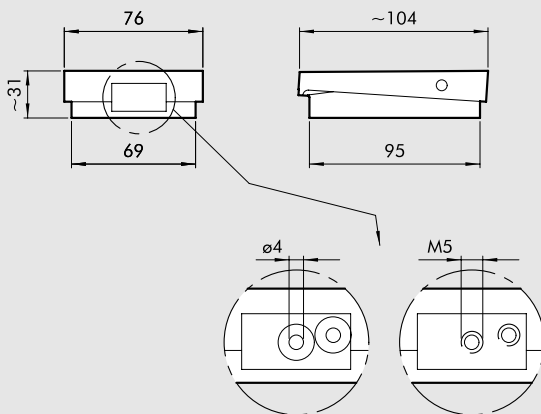
### GUARDED PEDAL WITH VALVES 5/2 1/4" - 3/2 M5 - 3/2 Ø 4

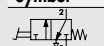
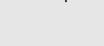


Symbol	Code	Description	Abbrev.	Weight [g]
	W312000001	5/2 - 1/4" monostable, guarded	PEV 35 PES PR	1027
	W312000011	5/2 - 1/4" bistable, guarded ●	PEV 35 PEB PR	1035
	W3120000301	3/2 M5 monostable, guarded	PEV 03 PES PR	883
	W3120000321	3/2 Ø 4 monostable, guarded	PEV F3 PES PR	887
	W3120000331	3/2 M5 bistable, guarded ●	PEV 03 PEB PR	890
	W3120000311	3/2 Ø 4 bistable, guarded ●	PEV F3 PEB PR	914
	W3120000021	5/2 - 1/4" monostable, with mechanical block and guarden ■	PEV 35 PEC PR	1014

- The pedal-down position is maintained by a lever. When the foot presses on the lever, the pedal releases and can rise.
- When the foot presses on a locking lever, the pedal can be lowered.

### NOT-GUARDED PEDAL WITH VALVES 3/2 M5 - 3/2 Ø 4



Symbol	Code	Description	Abbrev.	Weight [g]
	W3120000411	3/2 - M5 monostable, not guarded	PEV 03 PES WP	188
	W3120000401	3/2 Ø 4 monostable, not guarded	PEV F3 PES WP	192

### KEY TO CODES

PEV FAMILY	F DIMENSIONS	3 FUNCTION	PE OPERATORS 14	C RESETTING (12)	WP FURTHER DETAILS
PEV valve with pedal	3 1/4 0 M5 F Ø 4	3 3/2 5 5/2	PE pedal operated	S mechanical springs C mechanical block B bistable	WP not guarded PR guarded

# TWO HAND SAFETY VALVE SERIES SAFE AIR®

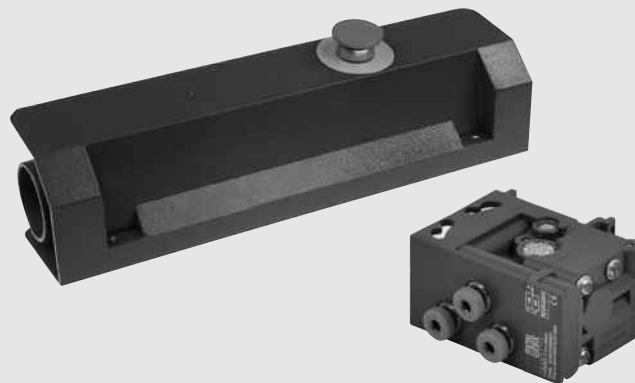


The two hand safety valve generates an output signal only if two synchronised pneumatic input signals are received.

If one input signal is interrupted, the output signal is interrupted as well.

The most common application involves connecting a manual button-controlled valve to each of the inputs and using the output signal as a start-of-cycle control for a pneumatically-operated machine.

- The two hand safety valve can be secured with through screws or a DIN bar adaptor.
- The complete pushbutton panel includes the dual manual control valve, two manual pushbuttons, and an emergency stop valve, all housed in a metal box to be mounted on a wall or stand.
- The pushbutton housing is supplied on request for anyone wishing to get a personalised pneumatic connection or drill holes to secure the unit.



DISTRIBUTORS

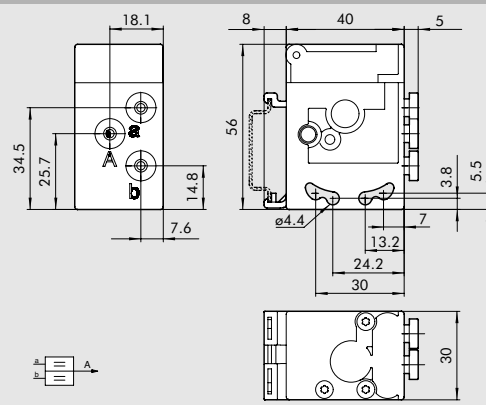
TWO HAND SAFETY VALVE SERIES SAFE AIR®

TECHNICAL DATA	
Compressed air couplings	mm
Fluid	Push-in fitting for Ø 4 pipe
Version	Filtered, unlubricated compressed air, max 50 µm
Standard	Single-control – Complete pushbutton panel
	<ul style="list-style-type: none"> <li>• EN574 type IIIA, TÜV approved according to 2006/42/EC</li> <li>• Certified TÜV-A-MHF/MG/13-05260 (code W3605000001)</li> <li>• Certified Bureau Veritas CV 003-12-2011 (code 0227700000)</li> </ul>
Synchronisation, max. time between two signals	s
De-activation time, with pipe L = max 1000 mm	s
Actuation	0.4
Reset	< 0.05
Operating pressure	pneumatic
Temperature range	spring operated
Nominal diameter	2.5 to 8
Flow rate at 6 bar (0.6 Mpa - 87 psi) ΔP 1 bar (0.1MPa - 1.45 psi)	- 10 to +60
Mounting position	2.7
Compatibility with oils	85
	In any direction
	Please refer to page 6-7 of the technical documentation

## TWO HAND SAFETY VALVE

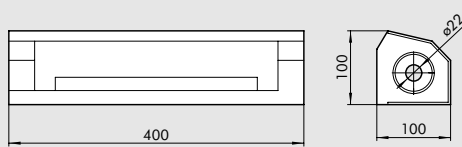
Code	Description
W3605000001	Two hand safety valve

**Materials**  
 Body: technopolymer  
 Internal parts: brass and technopolymer  
 Gaskets: NBR  
 Spring: alloy steel



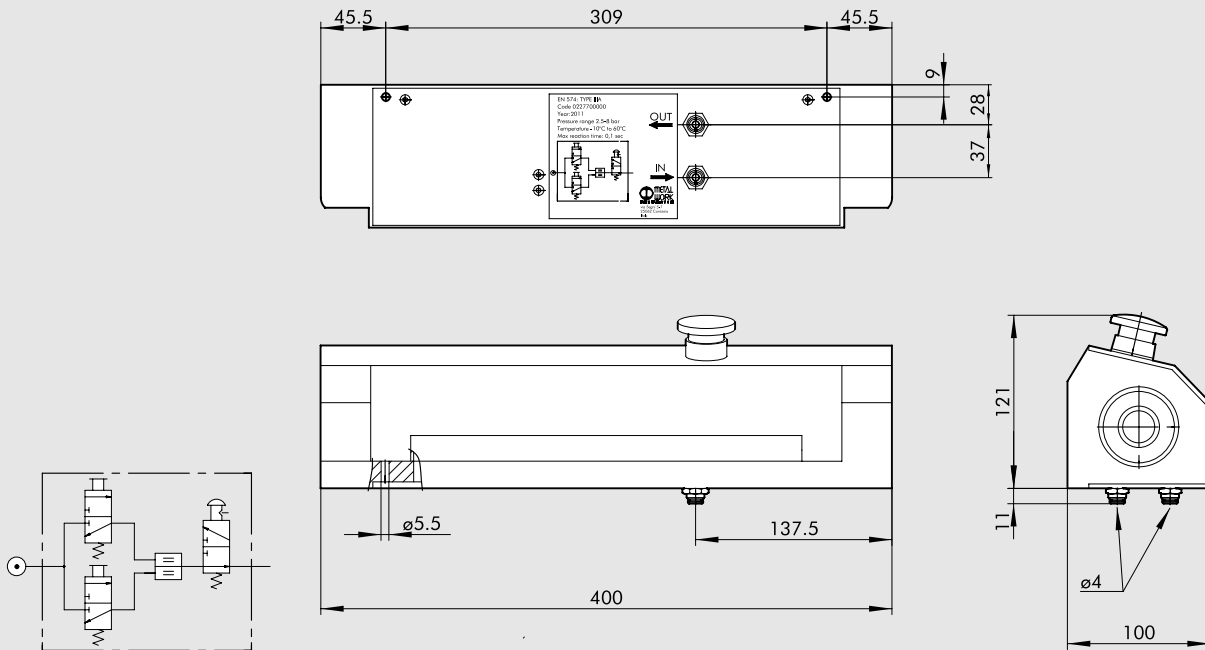
## PUSHBUTTON HOUSING

Code	Description
W3120000212	Pushbutton housing





## COMPLETE PUSHBUTTON PANEL



Code	Description
0227700000	Complete pushbutton panel

### Materials

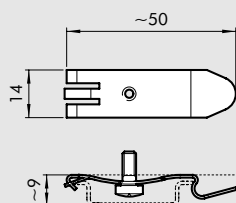
Pressure die-cast and painted aluminium alloy

### MAIN COMPONENTS

Code	Description	Quantity
W3605000001	Dual manual safety valve	1
W0351000011	Monostable protected button - black disk	2
W0351000014	Emergency stop button	1
W3501000100	VME1-01 NC Ø 4	2
W3501001100	VME2-01 NO Ø 4	1
0351000050	Valve-button connecting base	3
2L11001	RL10 Ø 4	2

## ACCESSORIES

### CONNECTION BRACKETS ON THE BAR (DIN EN50022)



Code	Description
0227300600	Connection brackets on DIN bar

Individually packed

# VALVES SERIES 70

This is Metal Work's full range. Available in three sizes: 1/8", 1/4", 1/2".  
 Three versions: 3/2; 5/2; 5/3, four different types of actuation (mechanical, manual, pneumatic and electric).  
 Series 70 valves can be used for a wide range of applications as they can be mounted in line, on the wall, on the cylinder using a special bracket, or in series on a multiple or manifold base.



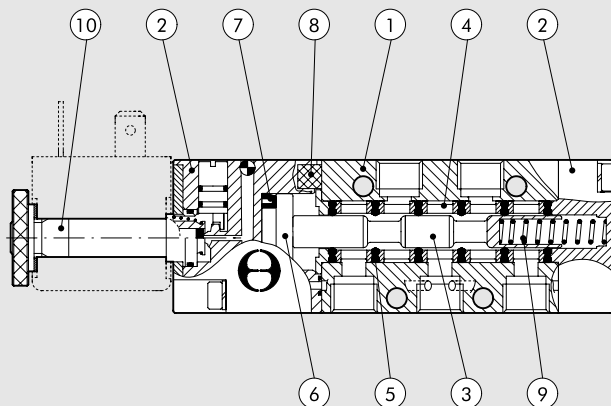
DISTRIBUTORS

VALVES SERIES 70

TECHNICAL DATA		1/8"	1/4"	1/2"
Thread on the valve ports		1/8"	1/4"	1/2"
Operating pressure:				
• monostable	bar		2.5 to 10	
• bistable	bar		1 to 10	
• asserved	bar		vacuum to 10	
Minimum pilot pressure	bar		2.5	
Operating temperature range	°C		-10 to +60	
Nominal diameter	mm	5	7.5	15
Conductance C	Nl/min · bar	121.43	264.26	971.43
Critical ratio b	bar/bar	0.32	0.27	0.43
Flow rate at 6 bar ΔP 0.5 bar	Nl/min	400	750	3200
Flow rate at 6 bar ΔP 1 bar	Nl/min	550	1100	4600
Installation		In any position (vertical assembly is not recommended for bistable valves subjected to vibration)		
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous		
Recommended lubricant		ISO e UNI FD 22		
Maximum coil nut torque	Nm	1		
Compatibility with oils		Please refer to page 6-7 of the technical documentation		

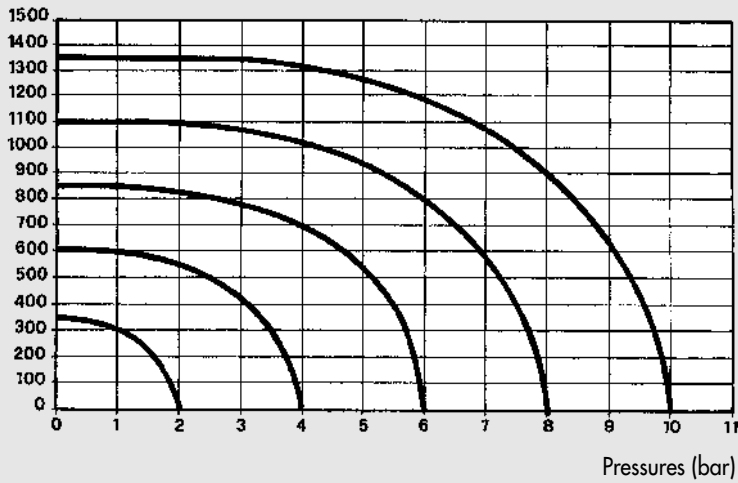
## COMPONENTS

- ① VALVE BODY: Aluminium
- ② CONTROL/END CAP: Hostaform®
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: NBR
- ⑧ FILTER: sintered bronze
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe - Stainless steel core



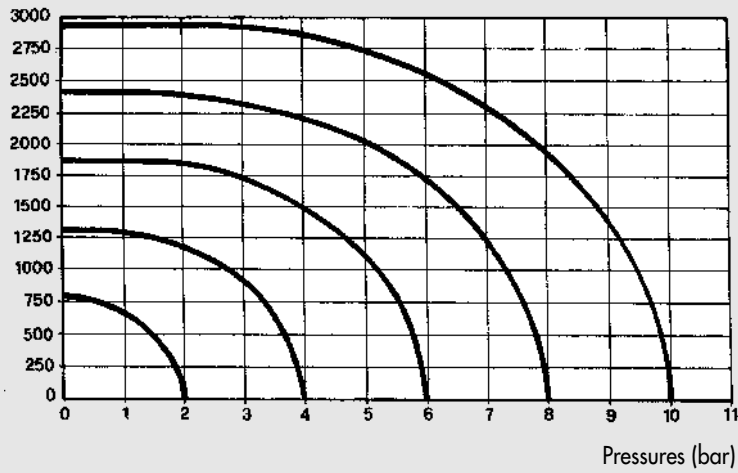
**FLOW CHARTS**

Flow rates (Nl/min)



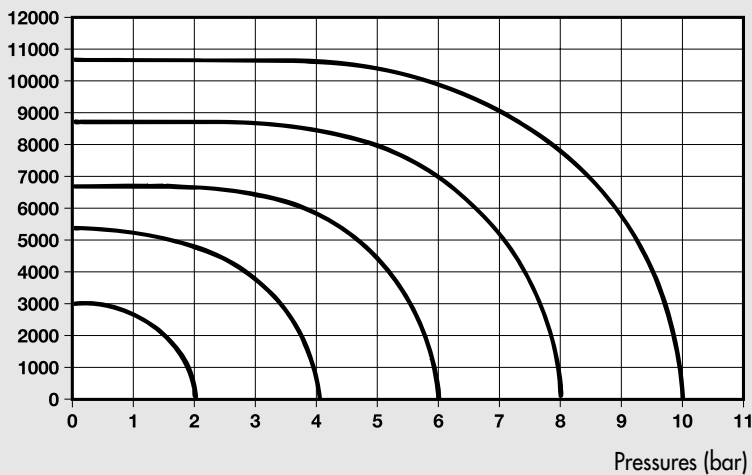
VALVES SERIES 70, 1/8"

Flow rates (Nl/min)



VALVES SERIES 70, 1/4"

Flow rates (Nl/min)



VALVES SERIES 70, 1/2"

## VALVES SERIES 70, HAND OPERATED

TECHNICAL DATA		1/8"	1/4"	1/2"
Operating pressure range:		Vacuum to 10		
• version with direct control	bar	2.5 to 10		
• pilot-assisted version	bar	-10 to +60		
Operating temperature range		°C		
Nominal diameter	mm	5	7.5	15
Conductance C	NI/min · bar	121.43	264.26	971.43
Critical ratio b	bar/bar	0.32	0.27	0.43
Flow rate at 6 bar ΔP 0.5 bar	NI/min	400	750	3200
Flow rate at 6 bar ΔP 1 bar	NI/min	550	1100	4600



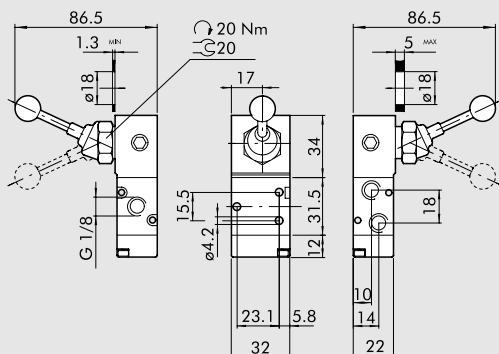
### KEY TO CODES

M A V	2	3	PP	S	N C
FAMILY	DIMENSIONS	FUNCTION	OPERATORS 14	RESETTING (12)	FURTHER DETAILS
MAV manual valves	2 1/8"	3 3/2	PP drawer	A pneumatic/ mechanical springs*	NC normally closed
	3 1/4"	5 5/2	VL axial lever	S mechanical springs	NO normally open
	4 1/2"	6 5/3	LE 90° lever	B bistable	OO no indication
		8 2 x 3/2	LE 90° lever	D differential	CC closed centres
			BRE arranged for manual panel actuators	O stable for 5/3	OC open centres
					PC pressure centres

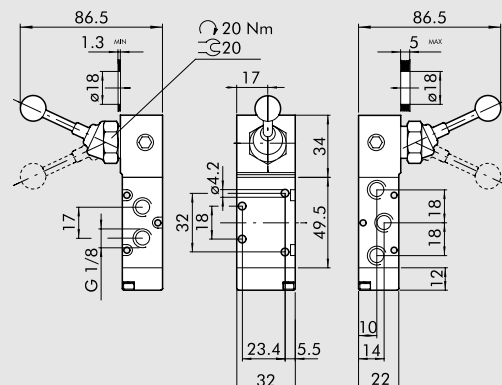
\*on demand

## VALVES SERIES 70, HAND OPERATED, 1/8"

### 90° LEVER 3/2 1/8"



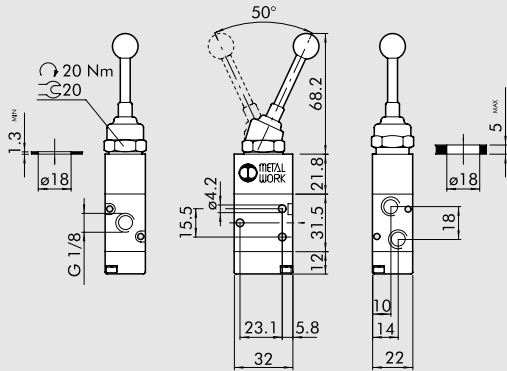
### 90° LEVER 5/2 1/8"




Symbol	Code	Abbrev.	Weight [g]
	7010000100	MAV 23 LES NC	168
	7010000200	MAV 23 LEB OO	171

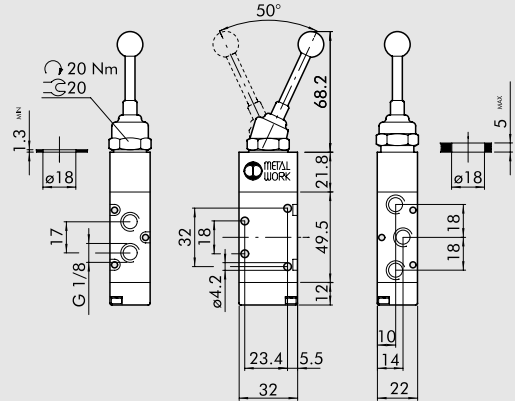
Symbol	Code	Abbrev.	Weight [g]
	7010000300	MAV 25 LES OO	194
	7010000400	MAV 25 LEB OO	197


### FRONT LEVER 3/2, 1/8"



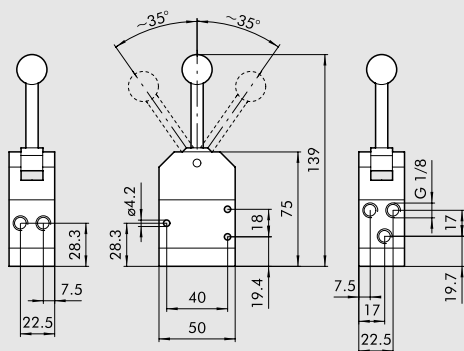
Symbol	Code	Abbrev.	Weight [g]
	7010001400	MAV 23 VLB OO	130

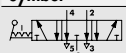

### FRONT LEVER 5/2, 1/8"



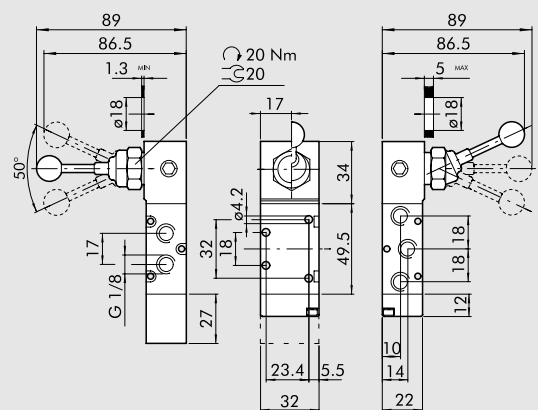
Symbol	Code	Abbrev.	Weight [g]
	7010001700	MAV 25 VLB OO	156

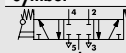
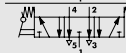
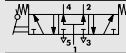
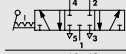
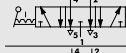
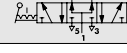
### FRONT LEVER 5/3, 1/8"



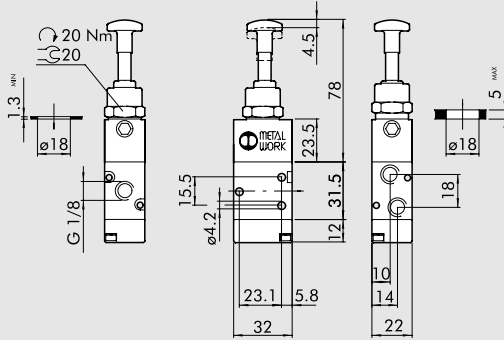
Symbol	Code	Abbrev.	Weight [g]
	7010001150	MAV 28 VLO OC	316
	7010001160	MAV 28 VLS OC	325

### ANGULAR LEVER 5/3, 1/8"



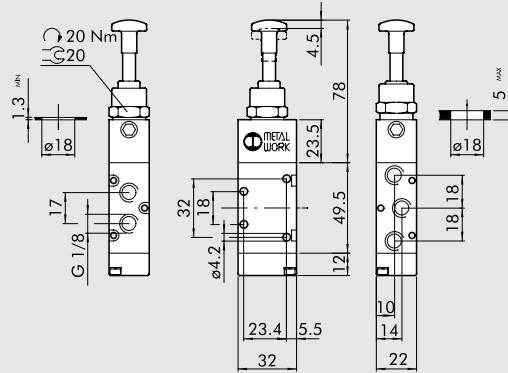
Symbol	Code	Abbrev.	Weight [g]
	7010001000	MAV 26 LES CC	242
	7010000900	MAV 26 LES OC	242
	7010001100	MAV 26 LES PC	242
	7010000500	MAV 26 LEO CC	194
	7010000600	MAV 26 LEO OC	194
	7010000700	MAV 26 LEO PC	194

**DRAWER 3/2, 1/8"**



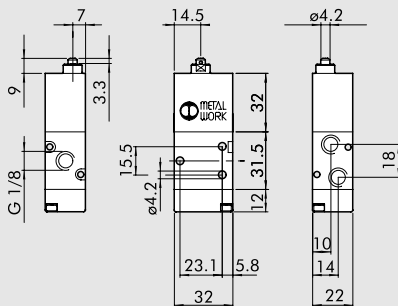
Symbol	Code	Abbrev.	Weight [g]
	7010001300	MAV 23 PPB OO	134
	7010001200	MAV 23 PPS NC	134

**DRAWER 5/2, 1/8"**



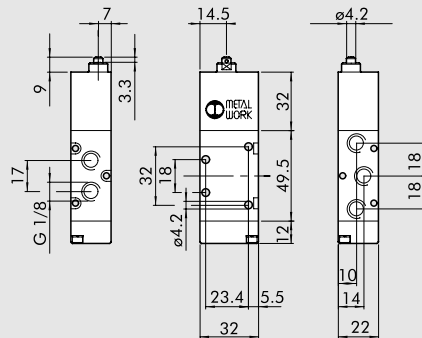
Symbol	Code	Abbrev.	Weight [g]
	7010001600	MAV 25 PPB OO	160
	7010001500	MAV 25 PPS OO	160

**PILOT-ASSISTED PLUNGER 3/2 1/8"**  
FOR PANEL ACTUATORS

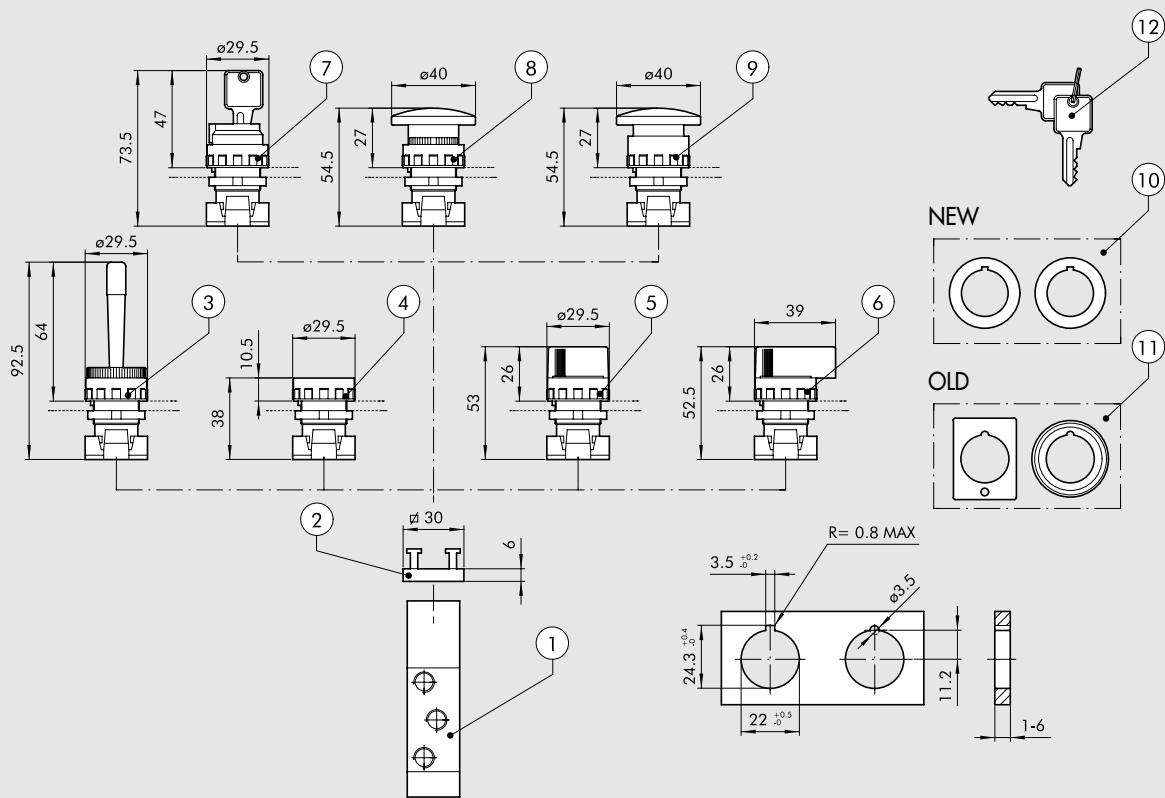













Symbol	Code	Abbrev.	Weight [g]
	7010001800	MAV 23 BRE NC	124

**PILOT-ASSISTED PLUNGER 5/2 1/8"**  
FOR PANEL ACTUATORS



Symbol	Code	Abbrev.	Weight [g]
	7010001900	MAV 25 BRE OO	150

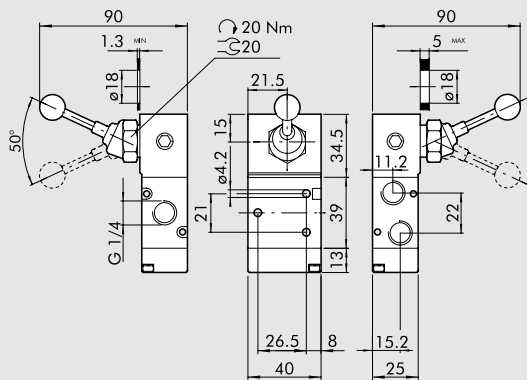
**ASSEMBLY DIAGRAM FOR PILOT-ASSISTED HAND-OPERATED VALVES SERIES 70 WITH PANEL ACTUATORS**

**ORDERING CODES**

Symbol	Reference	Code	Description	Weight [g]
	①	7010001800	Pilot-assisted plunger 3/2, 1/8"	124
	①	7010001900	Pilot-assisted plunger 5/2, 1/8"	150
	②	0351000050	2 places adaptor thickness 6.8 mm	5
	③	W0351000015	Red handler with horizontally pivoted lever	25
	④	W0351000011	Fat push button + 2 red/black coloured disks ◆ Bistable fat push button without disk	15
	⑤	W0351000030	Black selector short lever at 2 positions with return	20
		W0351000031	Black selector short lever at 2 positions	20
	⑤	W0351000032	Black selector short lever at 3 positions with return	20
		W0351000033	Black selector short lever at 3 positions	20
	⑥	W0351000034	Black selector long lever at 2 positions with return	26
		W0351000035	Black selector long lever at 2 positions	26
	⑥	W0351000036	Black selector long lever at 3 positions with return	26
		W0351000037	Black selector long lever at 3 positions	26
	⑦	W0351000016	2 positions key selector with extractable key in 2 positions	50
		W0351000018	2 positions key selector with extractable key in 0	50
	⑧	W0351000013	Red mushroom-head push button Ø 40	27
		W0351000017	Black mushroom-head push button Ø 40	27
	⑨	W0351000014	Red mushroom-head push button with lock Ø 40	29
◆ It can't be supplied. As working replaced by selector with bistable short lever at 2 positions ⑤.	⑩	W0351000049	◆ Reducer from 30 to 22.5 mm	
+ Usable only with technopolymer body selectors.	⑪	W0351000050	▲ Adapter for bore Ø 30 G2326	
▲ Usable only with metal body selectors.	⑫	W0351000021	◆ Key for ESC selectors	
		W0351000056	Green disk for push button ④	



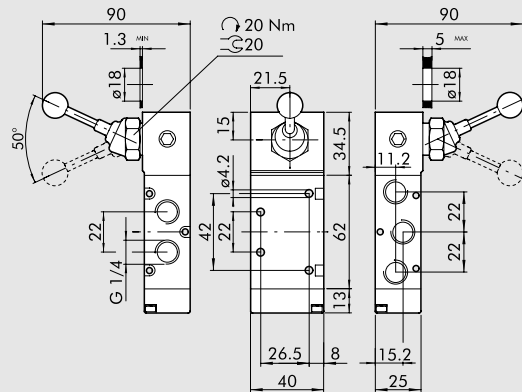
# VALVES SERIES 70, HAND-OPERATED, 1/4"

## 90° LEVER 3/2, 1/4"



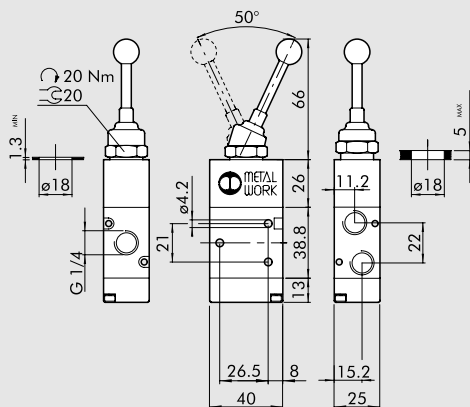
Symbol	Code	Abbrev.	Weight [g]
	7020000100	MAV 33 LES NC	244
	7020000200	MAV 33 LEB OO	244

## 90° LEVER 5/2, 1/4"



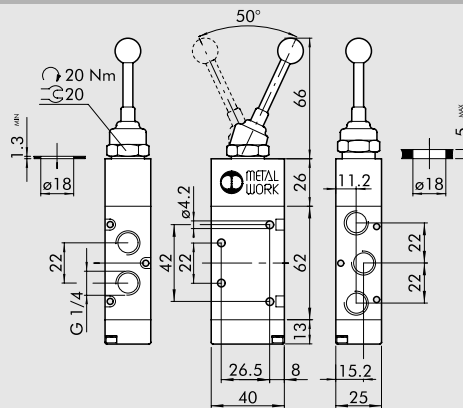
Symbol	Code	Abbrev.	Weight [g]
	7020000300	MAV 35 LES OO	290
	7020000400	MAV 35 LEB OO	290

## FRONT LEVER 3/2, 1/4"



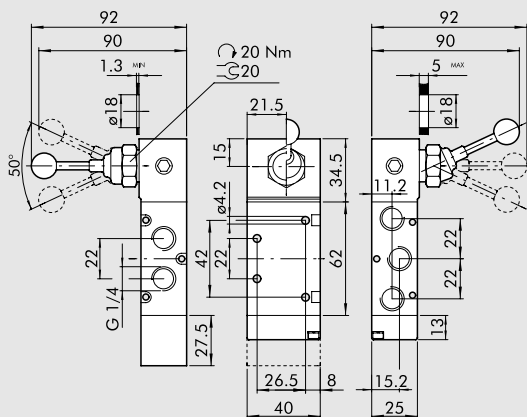
Symbol	Code	Abbrev.	Weight [g]
	7020001400	MAV 33 VLB OO	194

## FRONT LEVER 5/2, 1/4"



Symbol	Code	Abbrev.	Weight [g]
	7020001700	MAV 35 VLB OO	244

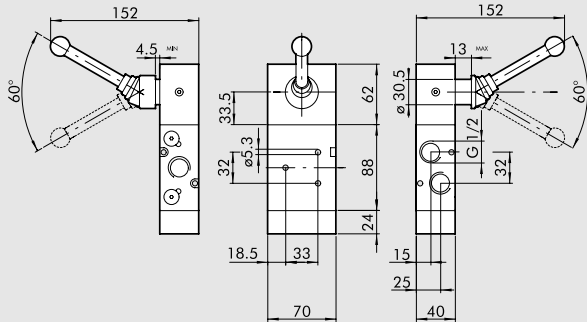
## 90° LEVER 5/3, 1/4"





Symbol	Code	Abbrev.	Weight [g]
	7020001000	MAV 36 LES CC	354
	7020000900	MAV 36 LES OC	354
	7020001100	MAV 36 LES PC	354
	7020000500	MAV 36 LEO CC	288
	7020000600	MAV 36 LEO OC	288
	7020000700	MAV 36 LEO PC	288

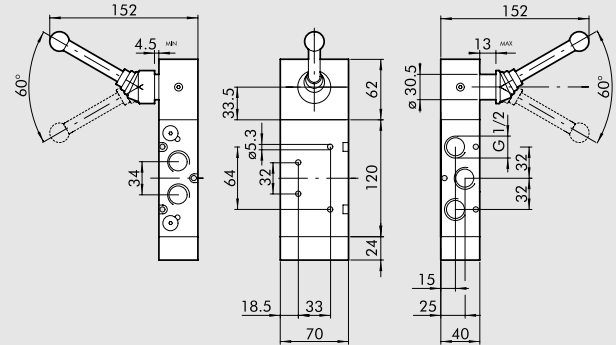
## VALVES SERIES 70, HAND OPERATED, 1/2"



### 90° LEVER 3/2, 1/2"



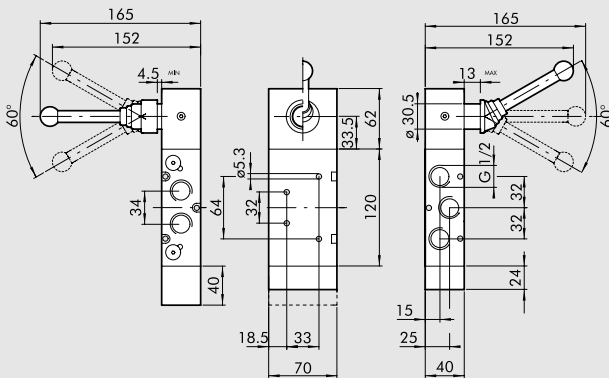
Symbol	Code	Abbrev.	Weight [g]
	7030000100	MAV 43 LES NC	1443
	7030000200	MAV 43 LEB OO	1435






### 90° LEVER 5/2, 1/2"



Symbol	Code	Abbrev.	Weight [g]
	7030000300	MAV 45 LES OO	1588
	7030000400	MAV 45 LEB OO	1630

### 90° LEVER 5/3, 1/2"



Symbol	Code	Abbrev.	Weight [g]
	7030001000	MAV 46 LES CC	1810
	7030000900	MAV 46 LES OC	1800
	7030001100	MAV 46 LES PC	1800
	7030000500	MAV 46 LEO CC	1615
	7030000600	MAV 46 LEO OC	1605
	7030000700	MAV 46 LEO PC	1605

### NOTES

# VALVES SERIES 70, MECHANICALLY OPERATED, 1/8"

## TECHNICAL DATA

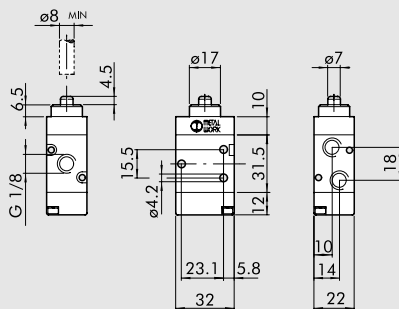
Thread at valve ports		1/8"
Operation force at 6 bar:		
• version with direct control	N	50
• pilot-assisted version	N	6
Operating pressure:		
• version with direct control	bar	Vacuum to 10
• pilot-assisted version	bar	2.5 to 10
Operating temperature range	°C	-10 to +60
Nominal diameter	mm	5
Conductance C	Nl/min · bar	121.43
Critical ratio b	bar/bar	0.32
Flow rate at 6 bar ΔP 0.5 bar	Nl/min	400
Flow rate at 6 bar ΔP 1 bar	Nl/min	550



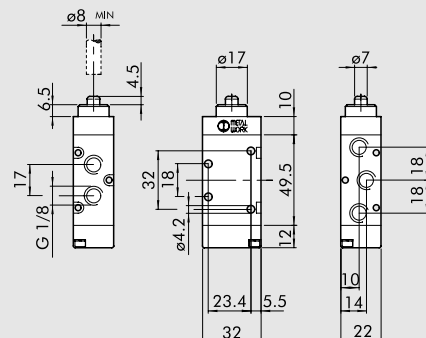
## KEY TO CODES

M E V		2		3		T A		S		N C	
FAMILY		DIMENSIONS		FUNCTION		OPERATORS 14		RESETTING (12)		FURTHER DETAILS	
MEV	mechanically-operated valves	2	1/8"	3	3/2	TA	plunger	S	mechanical springs	NC	normally closed
				5	5/2	BR	bidirectional roller	A	pneumatic/mechanical spring*	OO	5/2
						UR	unidirectional roller				
						TS	sensitive plunger				
						RS	sensitive roller				
						AS	sensitive aeral				
						LL	frontal roller lever				

### PLUNGER 3/2, 1/8"



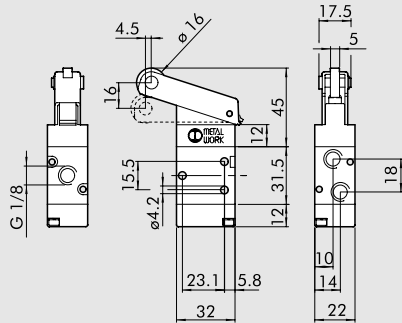
### PLUNGER 5/2, 1/8"




Symbol	Code	Abbrev.	Weight [g]
	7001000100	MEV 23 TAS NC	88

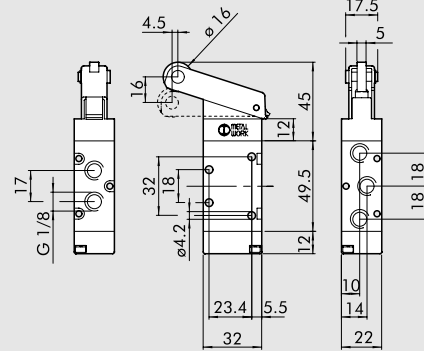
Symbol	Code	Abbrev.	Weight [g]
	7001000110	MEV 25 TAS OO	114


### ROLLER LEVER 3/2, 1/8"



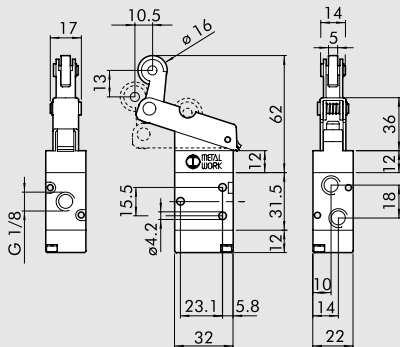
Symbol	Code	Abbrev.	Weight [g]
	7001000500	MEV 23 BRS NC	130


### ROLLER LEVER 5/2, 1/8"



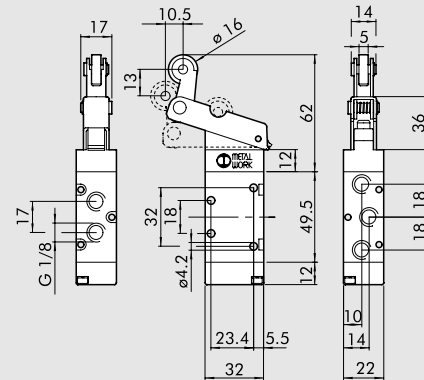
Symbol	Code	Abbrev.	Weight [g]
	7001000510	MEV 25 BRS OO	156


### UNIDIRECTIONAL ROLLER 3/2, 1/8" LEVERS



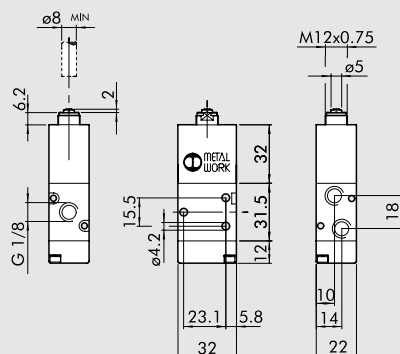
Symbol	Code	Abbrev.	Weight [g]
	7001000600	MEV 23 URS NC	136


### UNIDIRECTIONAL ROLLER 5/2, 1/8" LEVERS



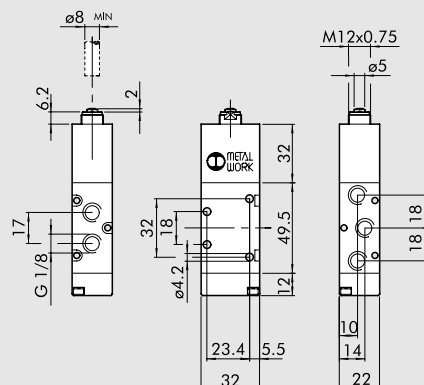
Symbol	Code	Abbrev.	Weight [g]
	7001000610	MEV 25 URS OO	162


### PILOT-ASSISTED PLUNGER 3/2 NC, 1/8"



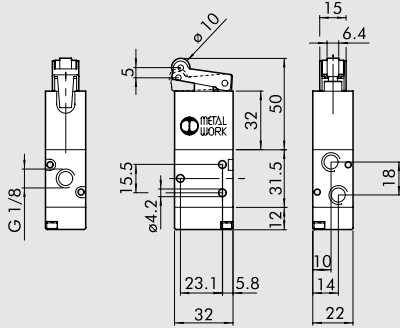
Symbol	Code	Abbrev.	Weight [g]
	7001000200	MEV 23 TSS NC	126

### PILOT-ASSISTED PLUNGER 5/2, 1/8"



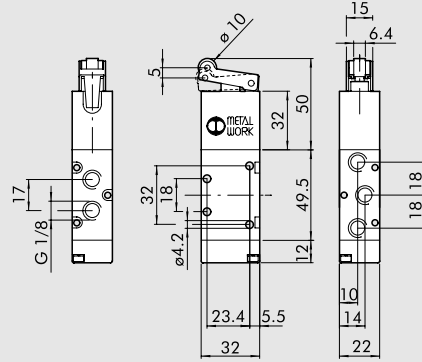
Symbol	Code	Abbrev.	Weight [g]
	7001000210	MEV 25 TSS OO	152

PILOT-ASSISTED ROLLER LEVER 3/2 NC, 1/8"



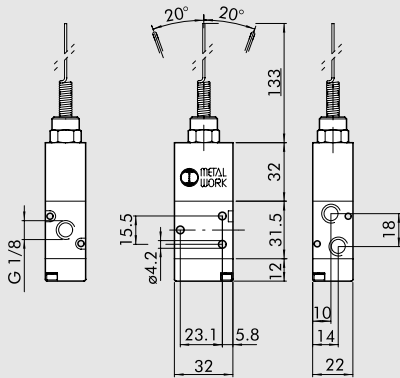
Symbol	Code	Abbrev.	Weight [g]
	7001000400	MEV 23 RSS NC	138

PILOT-ASSISTED ROLLER LEVER 5/2, 1/8"



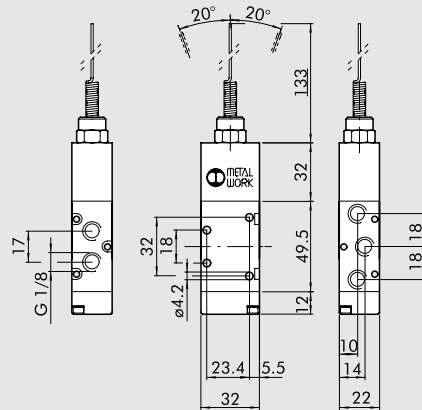
Symbol	Code	Abbrev.	Weight [g]
	7001000410	MEV 25 RSS OO	164

PILOT-ASSISTED AERIAL 3/2 NC, 1/8"



Symbol	Code	Abbrev.	Weight [g]
	7001000700	MEV 23 ASS NC	142

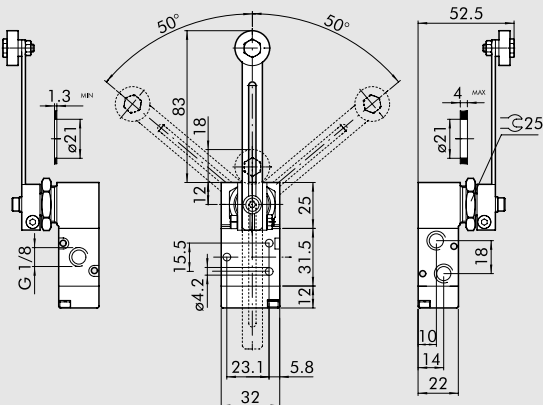
PILOT-ASSISTED AERIAL 5/2 NC, 1/8"



Symbol	Code	Abbrev.	Weight [g]
	7001000710	MEV 25 ASS OO	168

ROLLER-LEVER 3/2 1/8"

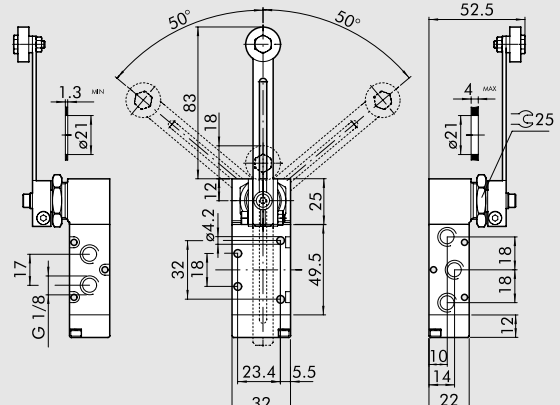
Operating torque: 0.5 Nm



Symbol	Code	Abbrev.	Weight [g]
	7001000900	MEV 23 LLS NC	189

ROLLER-LEVER 5/2 1/8"

Operating torque: 0.5 Nm



Symbol	Code	Abbrev.	Weight [g]
	7001000910	MEV 25 LLS OO	216

## VALVES SERIES 70, PNEUMATIC

TECHNICAL DATA		1/8"	1/4"	1/2"
Operating pressure	bar	Vacuum to 10		
Minimum pilot pressure				
• monostable	bar	2.5		
• bistable	bar	1		
Operating temperature range	°C	-10 to +60		
Nominal diameter	mm	5	7.5	15
Conductance C	Nl/min · bar	121.43	264.26	971.43
Critical ratio b	bar/bar	0.32	0.27	0.43
Flow rate at 6 bar ΔP 0.5 bar	Nl/min	400	750	3200
Flow rate at 6 bar ΔP 1 bar	Nl/min	550	1100	4600
TRA / TRR monostable at 6 bar	ms	6/15	7/15	16/46
TRA / TRR bistable at 6 bar	ms	7/7	7/7	16/16

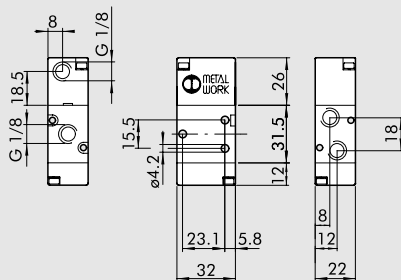


### KEY TO CODES

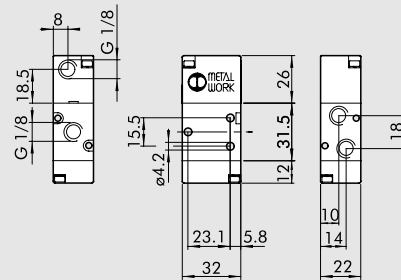
P N V	2	3	P N	S	N C
FAMILY	DIMENSIONS	FUNCTION	OPERATORS 14	RESETTING (12)	FURTHER DETAILS
PNV pneumatic valves	2 1/8"	3 3/2	PN pneumatic	S mechanical springs	OO 5/2
	3 1/4"	5 5/2		B bistable	NC normally closed
	4 1/2"	6 5/3		D differential	NO normally open
				O stable for 5/3	CC closed centres
				A pneumatic/mechanical spring*	OC open centres
				*on demand	PC pressure centres


## VALVES SERIES 70, PNEUMATIC, 1/8"


### MONOSTABLE 3/2 NO, 1/8"



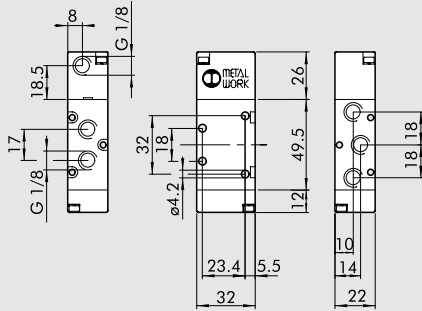
### MONOSTABLE 3/2 NC, 1/8"



Symbol	Code	Abbrev.	Weight [g]
	7010010400	PNV 23 PNS NO	82

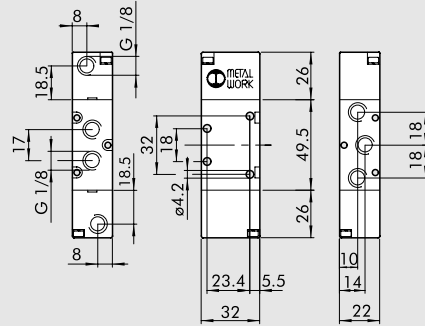
Symbol	Code	Abbrev.	Weight [g]
	7010010200	PNV 23 PNS NC	82

**MONOSTABLE 5/2, 1/8"**



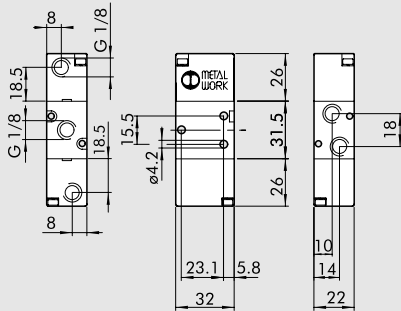
Symbol	Code	Abbrev.	Weight [g]
	7010011100	PNV 25 PNS OO	108

**BISTABLE 5/2, 1/8"**



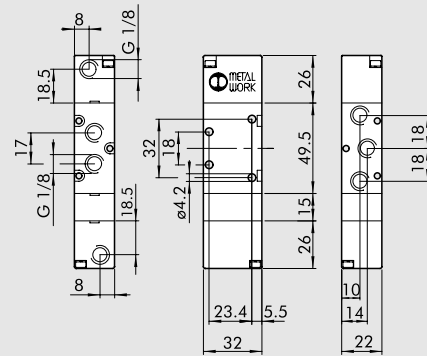
Symbol	Code	Abbrev.	Weight [g]
	7010011200	PNV 25 PNB OO	122
	7010011300	PNV 25 PND OO	128

**BISTABLE 3/2, 1/8"**



Symbol	Code	Abbrev.	Weight [g]
	7010010100	PNV 23 PNB OO	96

**MONOSTABLE 5/3, 1/8"**



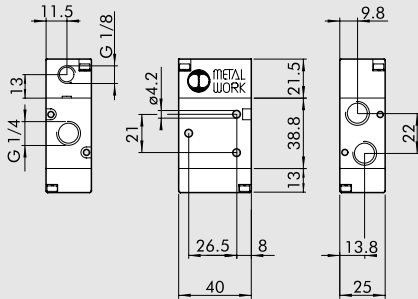
Symbol	Code	Abbrev.	Weight [g]
	7010012100	PNV 26 PNS CC	150
	7010012200	PNV 26 PNS OC	150
	7010012300	PNV 26 PNS PC	150


**NOTES**



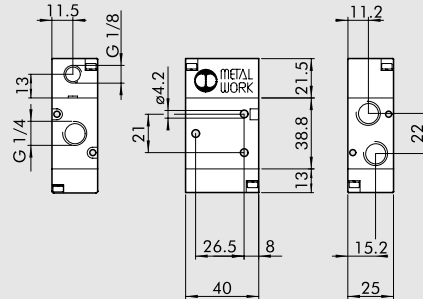
## VALVES SERIES 70, PNEUMATIC, 1/4"


### MONOSTABLE 3/2 NO, 1/4"



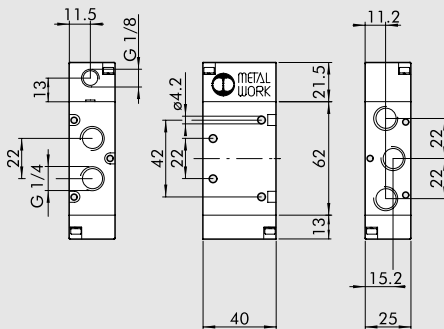
Symbol	Code	Abbrev.	Weight [g]
	7020010400	PNV 33 PNS NO	124


### MONOSTABLE 3/2 NC, 1/4"



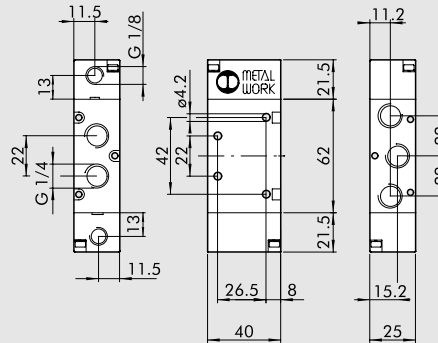
Symbol	Code	Abbrev.	Weight [g]
	7020010200	PNV 33 PNS NC	122



### MONOSTABLE 5/2, 1/4"



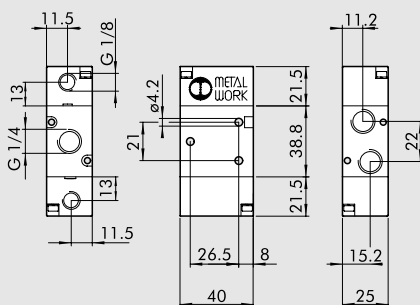
Symbol	Code	Abbrev.	Weight [g]
	7020011100	PNV 35 PNS OO	174


### BISTABLE 5/2, 1/4"



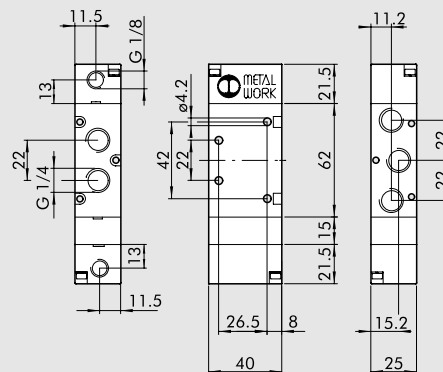
Symbol	Code	Abbrev.	Weight [g]
	7020011200	PNV 35 PNB OO	174
	7020011300	PNV 35 PND OO	198




### BISTABLE 3/2, 1/4"



Symbol	Code	Abbrev.	Weight [g]
	7020010100	PNV 33 PNB OO	134

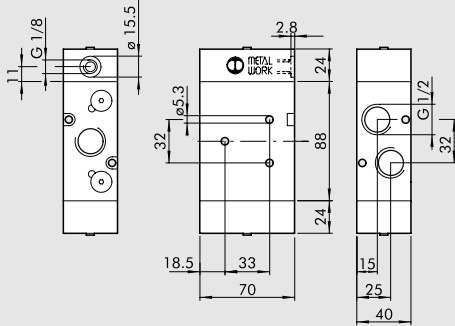
### MONOSTABLE 5/3, 1/4"



Symbol	Code	Abbrev.	Weight [g]
	7020012100	PNV 36 PNS CC	124
	7020012200	PNV 36 PNS OC	124
	7020012300	PNV 36 PNS PC	124

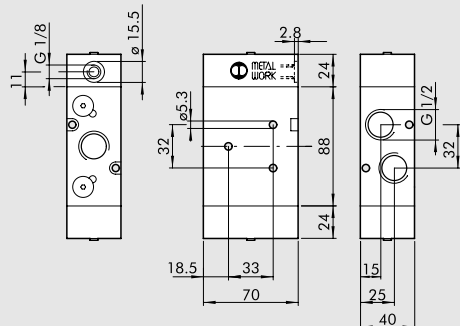
## VALVES SERIES 70, PNEUMATIC, 1/2"

### MONOSTABLE 3/2 NO, 1/2"



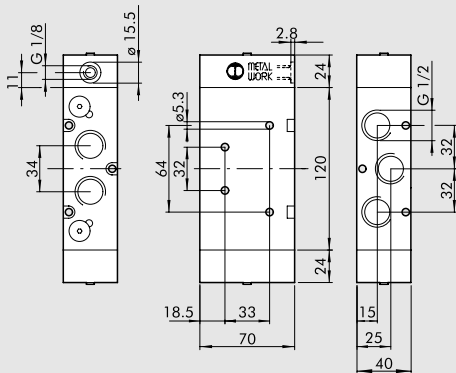
Symbol	Code	Abbrev.	Weight [g]
	7030010400	PNV 43 PNS NO	905

### MONOSTABLE 3/2 NC, 1/2"



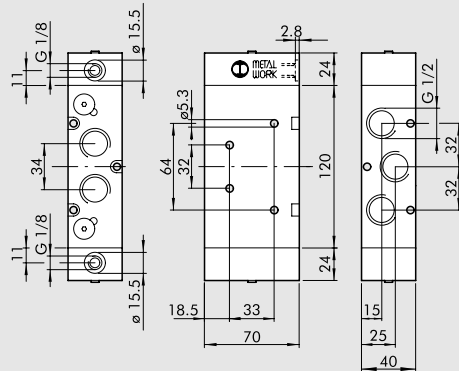
Symbol	Code	Abbrev.	Weight [g]
	7030010200	PNV 43 PNS NC	905

### MONOSTABLE 5/2, 1/2"



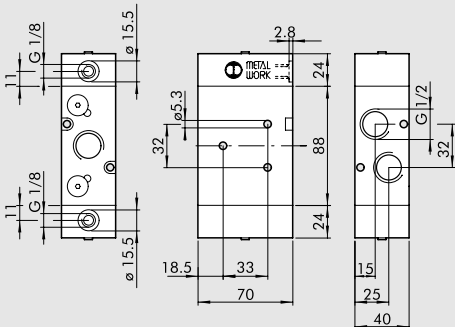
Symbol	Code	Abbrev.	Weight [g]
	7030011100	PNV 45 PNS OO	1090

### BISTABLE 5/2, 1/2"



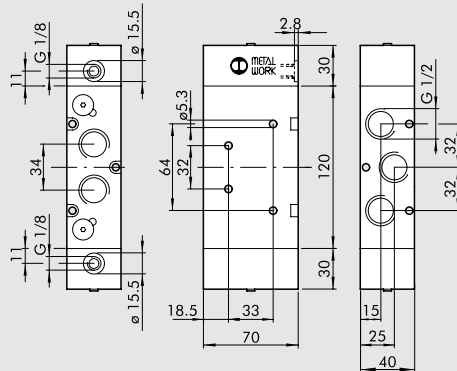
Symbol	Code	Abbrev.	Weight [g]
	7030011200	PNV 45 PNB OO	1077
	7030011300	PNV 45 PND OO	1090

### BISTABLE 3/2, 1/2"



Symbol	Code	Abbrev.	Weight [g]
	7030010100	PNV 43 PNB OO	921

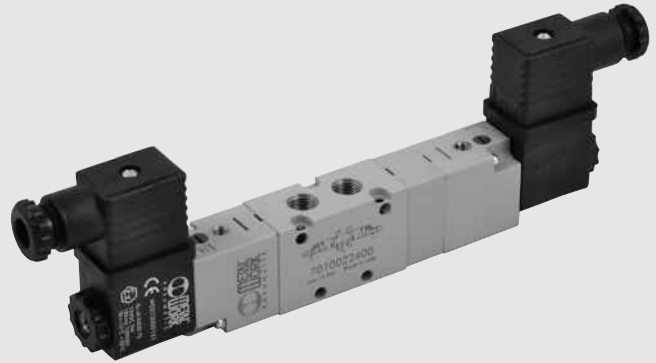
### MONOSTABLE 5/3, 1/2"



Symbol	Code	Abbrev.	Weight [g]
	7030012100	PNV 46 PNS CC	1200
	7030012200	PNV 46 PNS OC	1194
	7030012300	PNV 46 PNS PC	1196

## VALVES SERIES 70, SOLENOID/PNEUMATIC

TECHNICAL DATA		1/8"	1/4"	1/2"
Operating pressure:				
• monostable	bar	2.5 to 10		
• bistable	bar	1 to 10		
• asserved	bar	Vacuum to 10		
Minimum pilot pressure	bar	2.5		
Operating temperature range	°C	-10 to +60		
Nominal diameter	mm	5	7.5	15
Conductance C	Nl/min · bar	121.43	264.26	971.43
Critical ratio b	bar/bar	0.32	0.27	0.43
Flow rate at 6 bar ΔP 0.5 bar	Nl/min	400	750	3200
Flow rate at 6 bar ΔP 1 bar	Nl/min	550	1100	4600
TRA / TRR monostable at 6 bar	ms	15/35	19/45	36/60
TRA / TRR bistable at 6 bar	ms	20/20	21/21	30/30
Hand operation		bistable		
Coil voltage values		24VDC to 24VAC to 110VAC to 220VAC 50/60Hz		
Power		2 W (DC) 3VA (AC)		2 W (DC) 3VA (AC) 5W (DC) 5VA (AC)
Voltage tolerance	%	-10 to +15		
Insulation class		F 155		
Maximum coil nut torque	Nm	1		

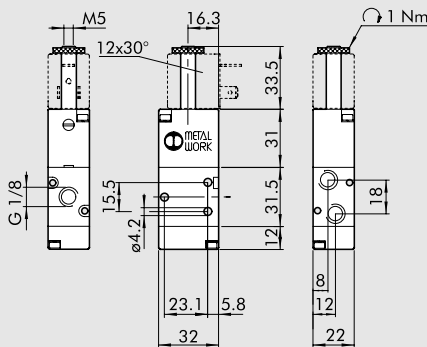


### KEY TO CODES

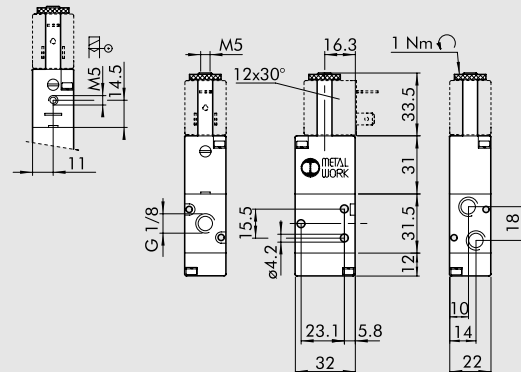
SO V		2		3		SO		S		NC	
FAMILY		DIMENSIONS		FUNCTION		OPERATORS 14		RESETTING (12)		FURTHER DETAILS	
SOV	solenoid/ pneumatic	3	1/8"	3	3/2	SO	solenoid	S	mechanical springs	NC	normally closed
		3	1/4"	5	5/2	SE	solenoid assisted	B	bistable	NO	normally open
		4	1/2"	6	5/3			D	differential	CC	closed centres
								P	pneumatic	OC	open centres
								A	pneumatic/mechanical spring*	PC	pressure centres
										OO	5/2
									*on demand		


## VALVES SERIES 70, SOLENOID/PNEUMATIC-PILOT-ASSISTED SOLENOID/PNEUMATIC, 1/8"

### MONOSTABLE 3/2 NO, 1/8"




### MONOSTABLE 3/2 NC, 1/8"

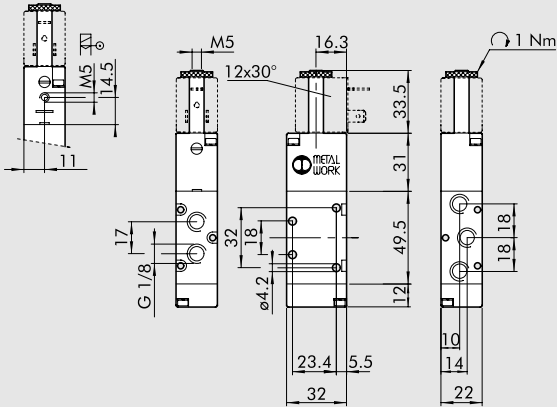


Symbol	Code	Abbrev.	Weight [g]
	7010020400	SOV 23 SOS NO	100

Symbol	Code	Abbrev.	Weight [g]
	7010020200	SOV 23 SOS NC	100

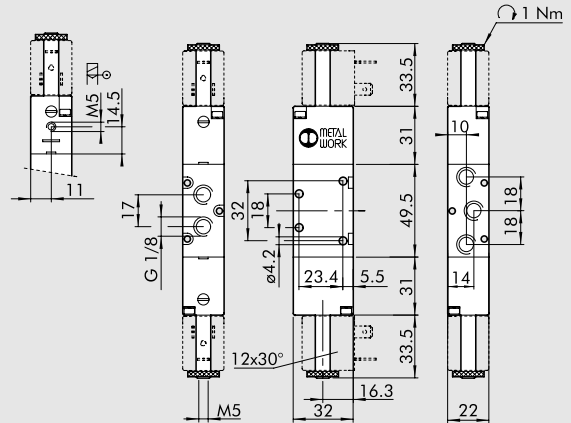
	7010020500	SOV 23 SES NC	100
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**MONOSTABLE 5/2, 1/8"**



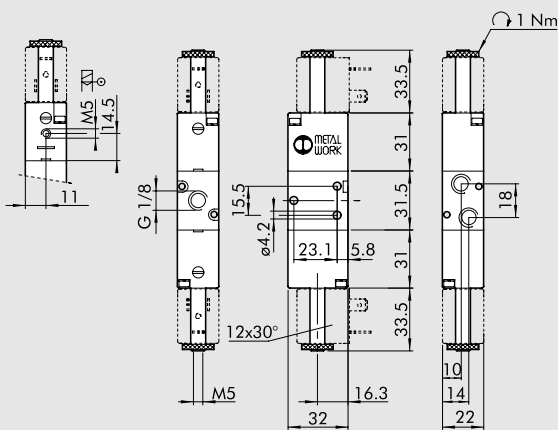
Symbol	Code	Abbrev.	Weight [g]
	7010021100	SOV 25 SOS OO	128
	7010021500	SOV 25 SES OO	129

**BISTABLE 5/2, 1/8"**



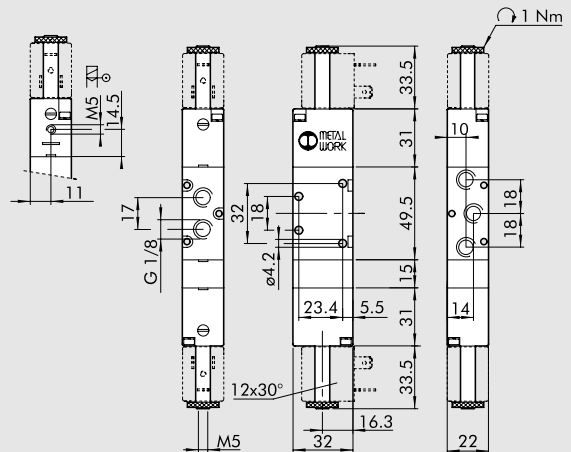
Symbol	Code	Abbrev.	Weight [g]
	7010021200	SOV 25 SOB OO	160
	7010021300	SOV 25 SOD OO	166
	7010021600	SOV 25 SEB OO	160

**BISTABLE 3/2, 1/8"**



Symbol	Code	Abbrev.	Weight [g]
	7010020100	SOV 23 SOB OO	135
	7010020300	SOV 23 SEB OO	136

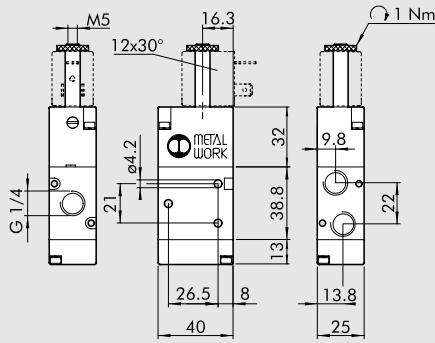
**MONOSTABLE 5/3, 1/8"**



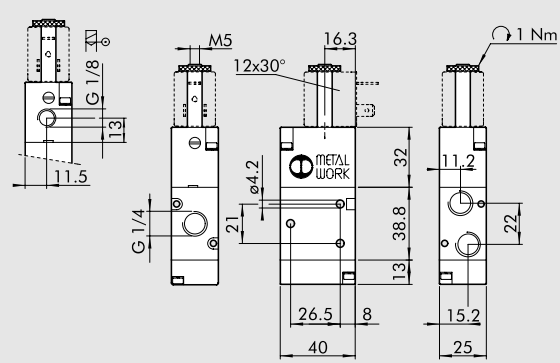
Symbol	Code	Abbrev.	Weight [g]
	7010022100	SOV 26 SOS CC	190
	7010022200	SOV 26 SOS OC	190
	7010022300	SOV 26 SOS PC	190
	7010022400	SOV 26 SES CC	188
	7010022500	SOV 26 SES OC	188
	7010022600	SOV 26 SES PC	188


# VALVES SERIES 70, SOLENOID/PNEUMATIC-PILOT-ASSISTED SOLENOID/ PNEUMATIC, 1/4"

## MONOSTABLE 3/2 NO, 1/4"



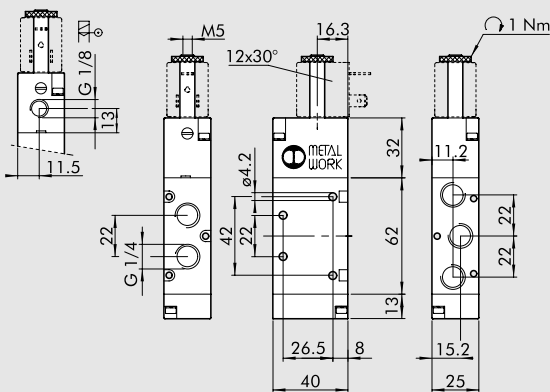
## MONOSTABLE 3/2 NC, 1/4"



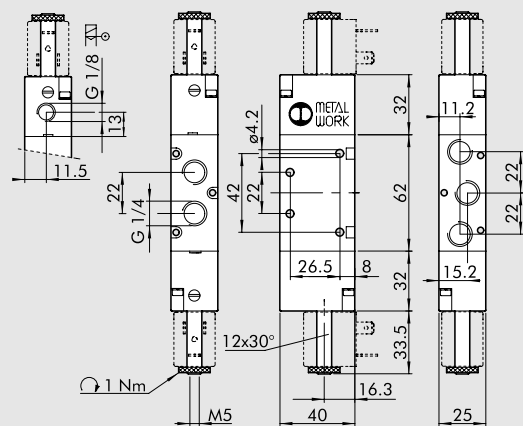
Symbol	Code	Abbrev.	Weight [g]
	7020020400	SOV 33 SOS NO	152

Symbol	Code	Abbrev.	Weight [g]
	7020020200	SOV 33 SOS NC	152
	7020020500	SOV 33 SES NC	152

## 5/2 1/4" MONOSTABLE



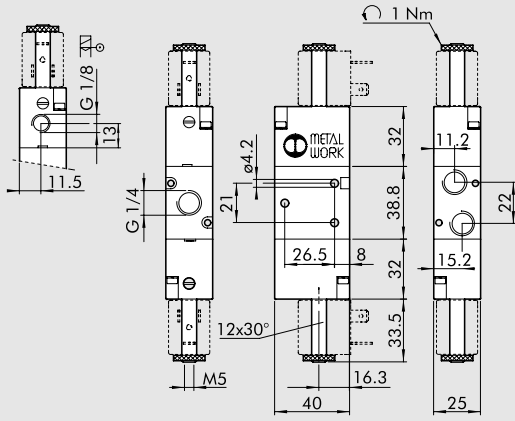
## 5/2 1/4" BISTABLE



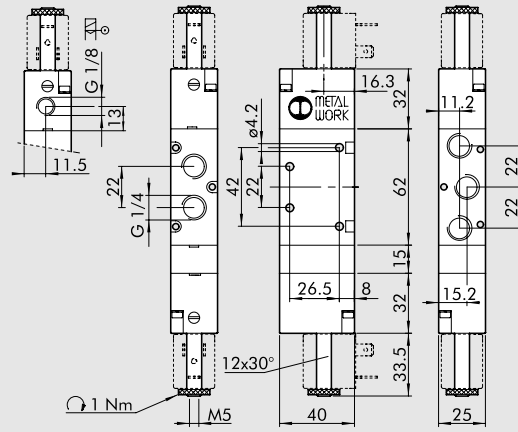
Symbol	Code	Abbrev.	Weight [g]
	7020021100	SOV 35 SOS OO	200
	7020021500	SOV 35 SES OO	200

Symbol	Code	Abbrev.	Weight [g]
	7020021200	SOV 35 SOB OO	236
	7020021300	SOV 35 SOD OO	252
	7020021600	SOV 35 SEB OO	242

**BISTABLE 3/2, 1/4"**



**MONOSTABLE 5/3, 1/4"**



Symbol	Code	Abbrev.	Weight [g]
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	<b>7020020100</b>	SOV 33 SOB OO	190
	<b>7020020300</b>	SOV 33 SEB OO	190

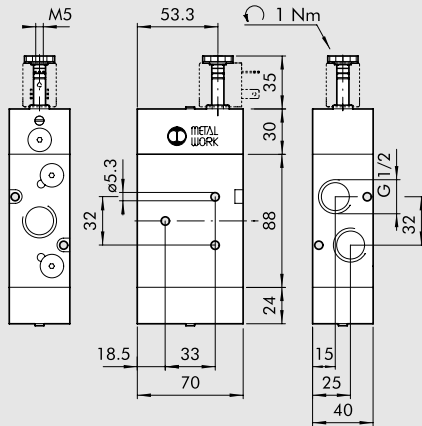
Symbol	Code	Abbrev.	Weight [g]
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	<b>7020022100</b>	SOV 36 SOS CC	274
	<b>7020022200</b>	SOV 36 SOS OC	274
	<b>7020022300</b>	SOV 36 SOS PC	274
	<b>7020022400</b>	SOV 36 SES CC	277
	<b>7020022500</b>	SOV 36 SES OC	277
	<b>7020022600</b>	SOV 36 SES PC	277

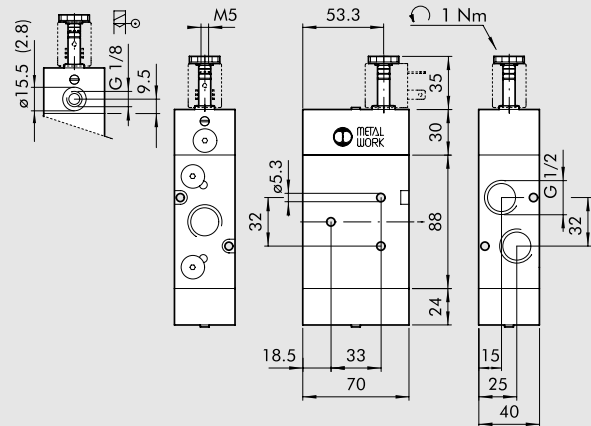
**NOTES**


# VALVES SERIES 70, SOLENOID/PNEUMATIC-PILOT-ASSISTED SOLENOID/PNEUMATIC, 1/2"



## MONOSTABLE 3/2 NO, 1/2"



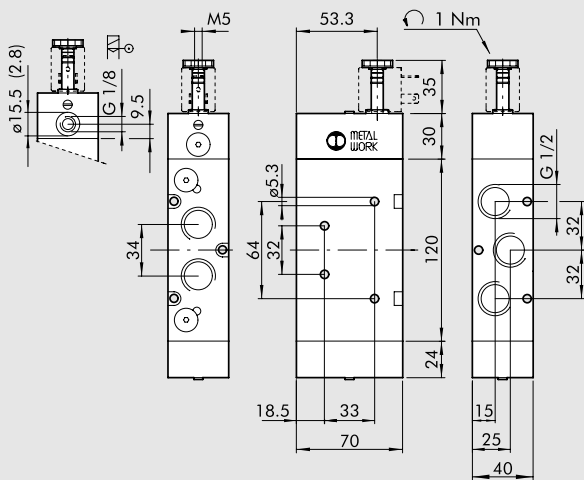
## MONOSTABLE 3/2 NC, 1/2"



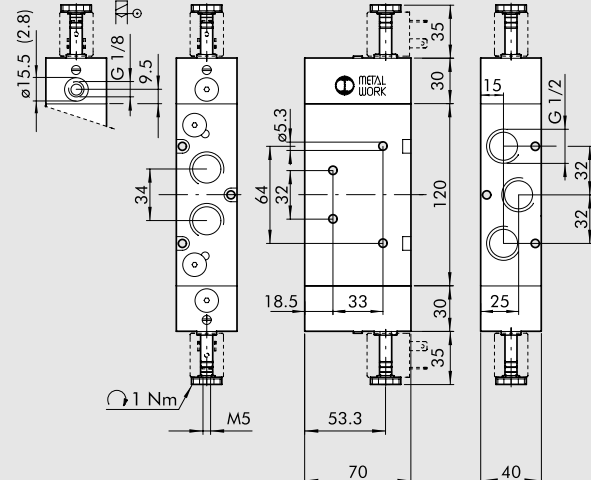
Symbol	Code	Abbrev.	Weight [g]
	7030020400	SOV 43 SOS NO	930



Symbol	Code	Abbrev.	Weight [g]
	7030020200	SOV 43 SOS NC	930
	7030020500	SOV 43 SES NC	923

## MONOSTABLE 5/2, 1/2"



## BISTABLE 5/2, 1/2"

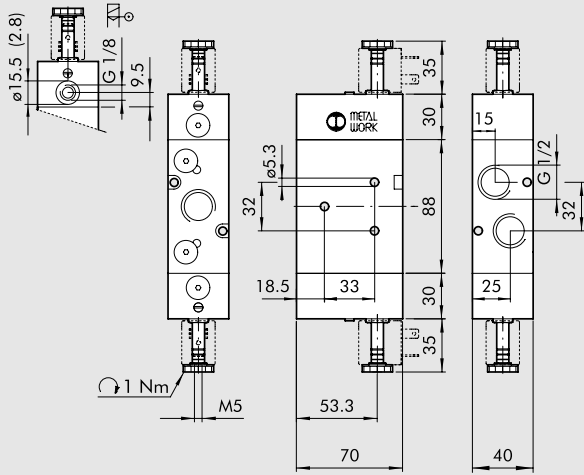


Symbol	Code	Abbrev.	Weight [g]
	7030021100	SOV 45 SOS OO	1120
	7030021500	SOV 45 SES OO	1113

Symbol	Code	Abbrev.	Weight [g]
	7030021200	SOV 45 SOB OO	1140
	7030021300	SOV 45 SOD OO	1152
	7030021600	SOV 45 SEB OO	1127

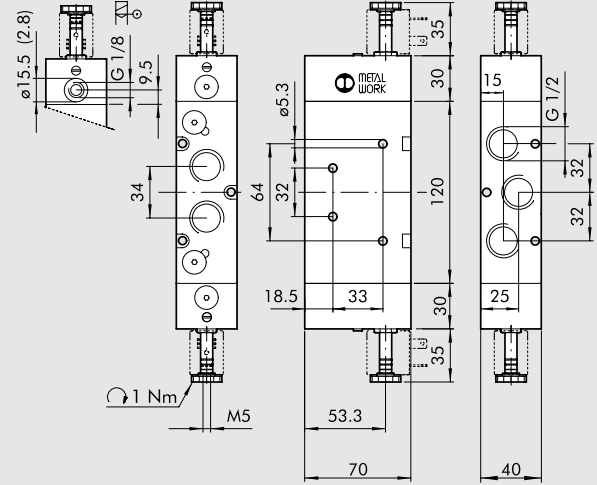


**BISTABLE 3/2, 1/2"**



Symbol	Code	Abbrev.	Weight [g]
	7030020100	SOV 43 SOB OO	955
	7030020300	SOV 43 SEB OO	942

**MONOSTABLE 5/3, 1/2"**



Symbol	Code	Abbrev.	Weight [g]
	7030022100	SOV 46 SOS CC	1265
	7030022200	SOV 46 SOS OC	1265
	7030022300	SOV 46 SOS PC	1265
	7030022400	SOV 46 SES CC	1252
	7030022500	SOV 46 SES OC	1252
	7030022600	SOV 46 SES PC	1252

**ACCESSORIES FOR SERIES 70 SOLENOID/PNEUMATIC VALVES**

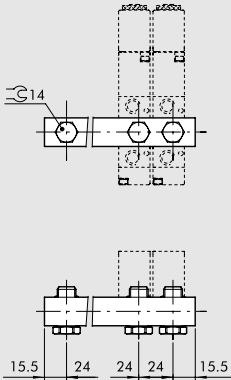
Refer to page 2-46 for coils and connectors



**NOTES**

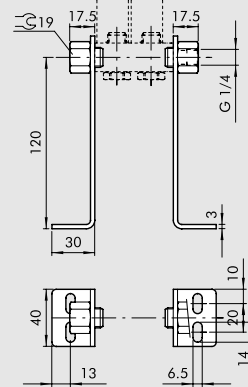
## ACCESSORIES: 1/8 MANIFOLDS FOR SERIES 70 PNV-SOV VALVES

### MANIFOLD WITH 2 TO 7 POSITIONS + FITTINGS



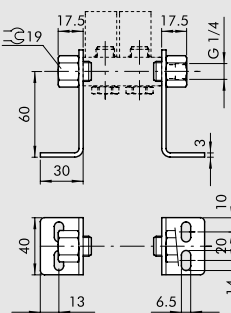
Code	Description	Weight [g]
0221000200	CSA-18-02	70
0221000300	CSA-18-03	99
0221000400	CSA-18-04	131
0221000500	CSA-18-05	162
0221000600	CSA-18-06	192
0221000700	CSA-18-07	229

### BRACKET SET H120



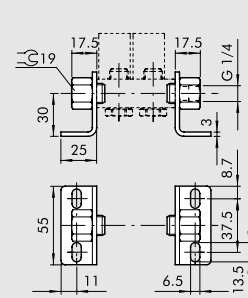
Code	Description	Weight [g]
0221000190	CSA-18-00	309

### BRACKET SET H60



Code	Description	Weight [g]
0221000191	CSA-18-0C	213

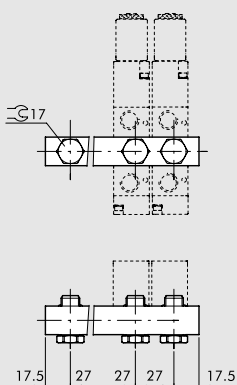
### BRACKET SET H30



Code	Description	Weight [g]
0221000192	CSA-18-0E	181

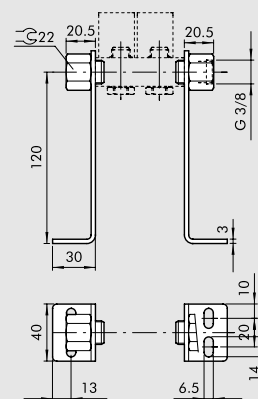
## ACCESSORIES: 1/4 MANIFOLDS FOR SERIES 70 PNV-SOV VALVES

### MANIFOLD WITH 2 TO 7 POSITIONS + FITTINGS



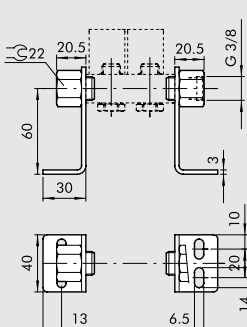
Code	Description	Weight [g]
0222000200	CSA-14-02	89
0222000300	CSA-14-03	131
0222000400	CSA-14-04	174
0222000500	CSA-14-05	213
0222000600	CSA-14-06	252
0222000700	CSA-14-07	328

### BRACKET SET H120



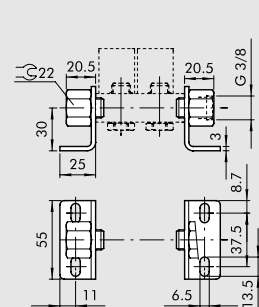
Code	Description	Weight [g]
0222000190	CSA-14-00	338

### BRACKET SET H60



Code	Description	Weight [g]
0222000191	CSA-14-0C	242

### BRACKET SET H30



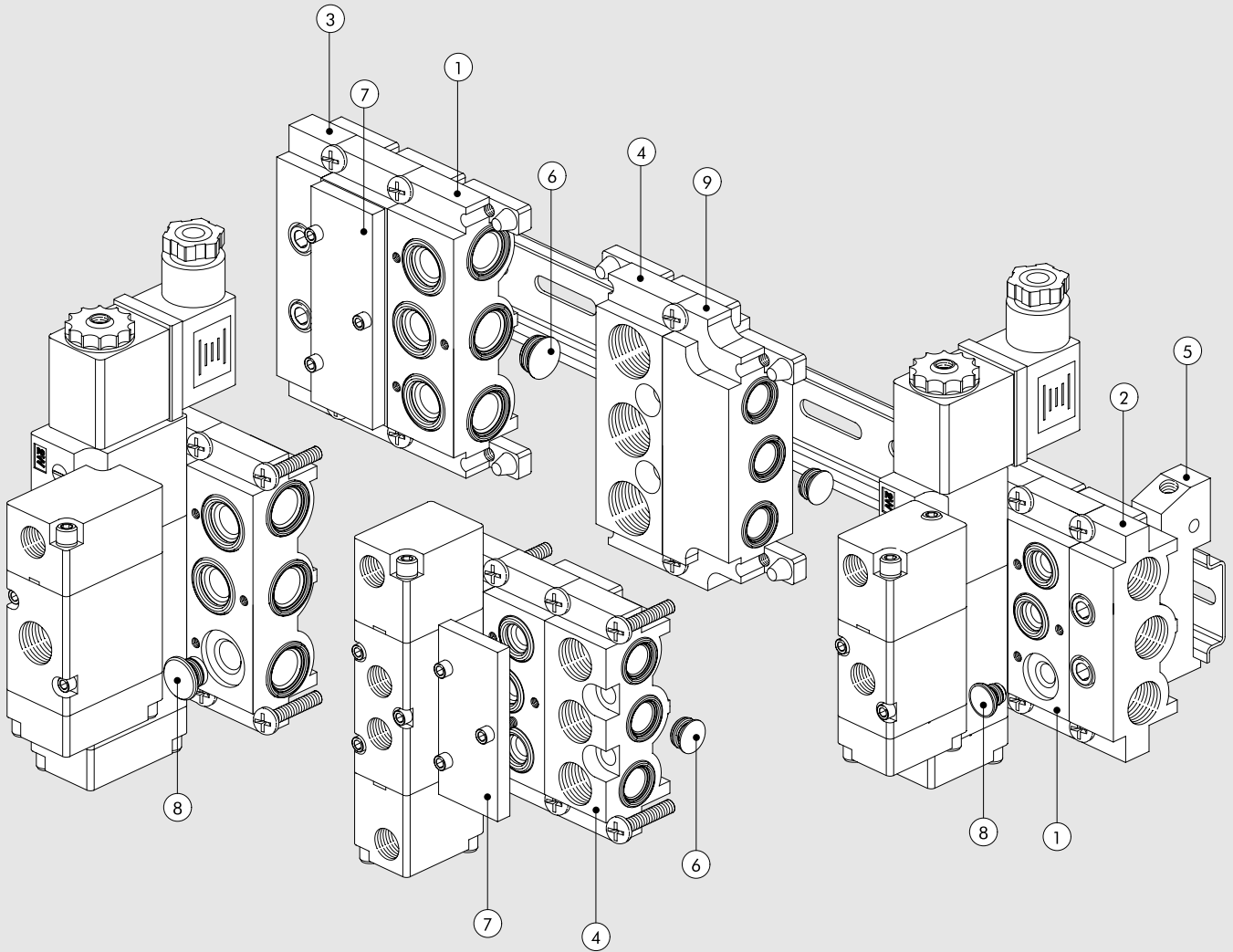
Code	Description	Weight [g]
0222000192	CSA-14-0E	209

# ACCESSORIES: MANIFOLD BASES FOR SERIES 70 PNV-SOV VALVES

## MODULAR BASES FOR SERIES 70 SOV-PNV VALVES

DISTRIBUTORS

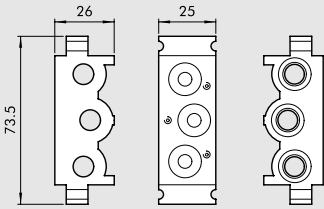
ACCESSORIES FOR VALVES SERIES 70



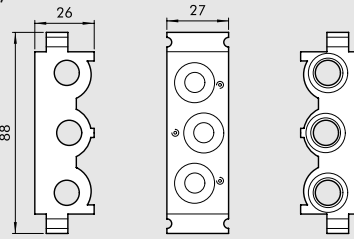
	1/8"	1/4"	
Reference	Code	Code	Description
①	0226004150	0226005150	Modular manifold base
②	0226004201	0226005201	End plate without OR
③	0226004200	0226005200	End plate with OR
④	0226004300	0226005300	Intermediate part for upper feed
⑤	0226004600	0226005600	Adapter for omega bar
⑥	0226004000	0226005000	Intermediate diaphragm
⑦	0226004500	0226005500	Blanking plate
⑧	0226004001	0226005001	3/2 cap
⑨	0226006600	-	Dimensional adapter

### ① MODULAR BASE

1/8"



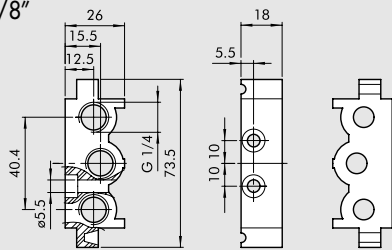
1/4"



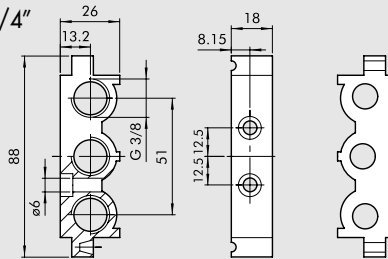
Code	Description	Weight [g]
0226004150	Comp. MANIFOLD 1/8"	110
0226005150	Comp. MANIFOLD 1/4"	131

### ② END PLATE WITHOUT OR

1/8"



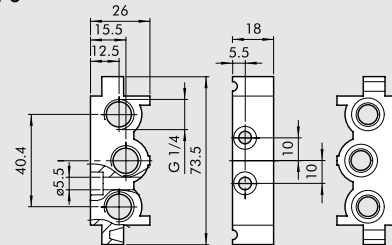
1/4"



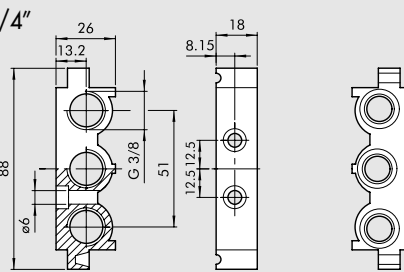
Code	Description	Weight [g]
0226004201	End plate without OR 1/8"	52
0226005201	End plate without OR 1/4"	57

### ③ END PLATE WITH OR

1/8"



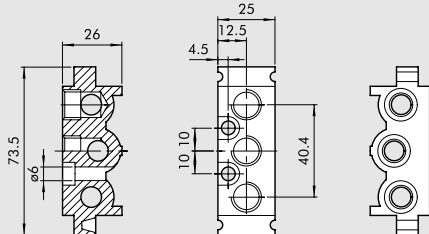
1/4"



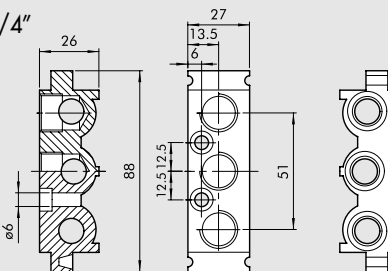
Code	Description	Weight [g]
0226004200	End plate with OR 1/8"	74
0226005200	End plate with OR 1/4"	80

### ④ INTERMEDIATE PART FOR UPPER FEED

1/8"



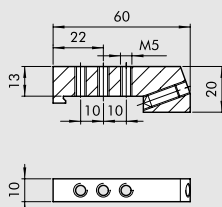
1/4"



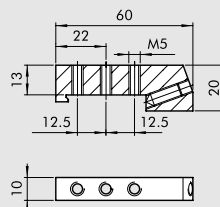
Code	Description	Weight [g]
0226004300	Intermediate part for upper feed 1/8"	93
0226005300	Intermediate part for upper feed 1/4"	109

### ⑤ ADAPTER FOR OMEGA BAR BASES (DIN EN 50022)

1/8"



1/4"

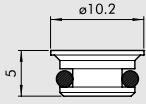


Code	Description	Weight [g]
0226004600	Adapter 1/8"	46
0226005600	Adapter 1/4"	46

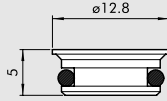
N.B.: Also for multiple bases

⑥ INTERMEDIATE DIAPHRAM

1/8"



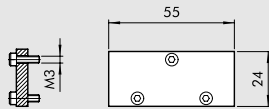
1/4"



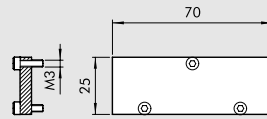
Code	Description	Weight [g]
0226004000	Intermediate diaphragm 1/8"	2
0226005000	Intermediate diaphragm 1/4"	3

⑦ BLANKING PLATE FOR UNUSED POSITIONS

1/8"



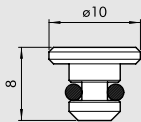
1/4"



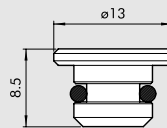
Code	Description	Weight [g]
0226004500	Comp. pcs 1/8"	23
0226005500	Comp. pcs 1/4"	29

⑧ PLUG FOR 3/2

1/8"

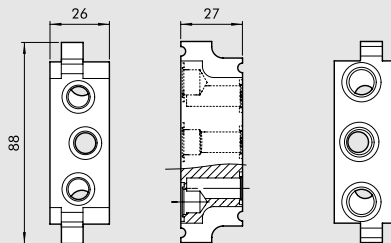


1/4"



Code	Description	Weight [g]
0226004001	Complete plug 3/2 1/8"	2
0226005001	Complete plug 3/2 1/4"	4

⑨ DIMENSIONAL ADAPTER 1/8" - 1/4"

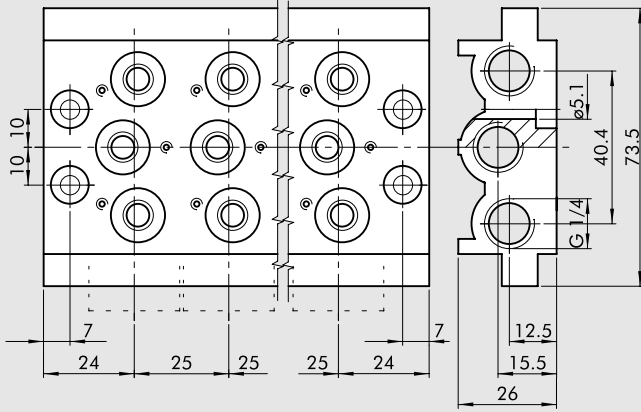


Code	Description	Weight [g]
0226006600	Comp. adapt. 1/8", 1/4"	177

NOTES

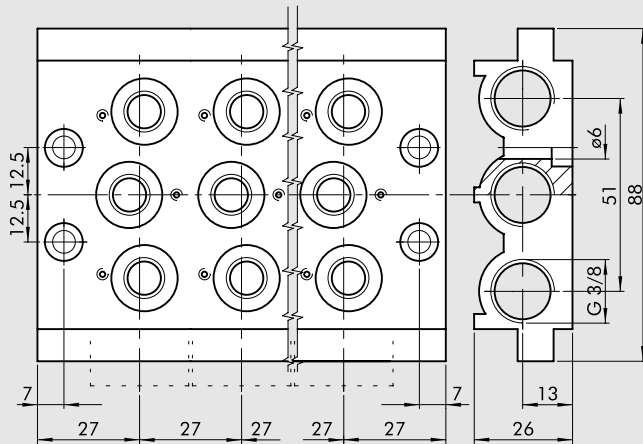
## ACCESSORIES: MULTIPLE BASES FOR SERIES 70 PNV-SOV VALVES

### MULTIPLE BASES 1/8"



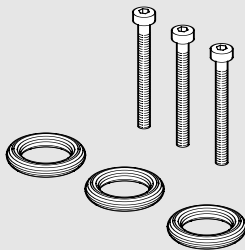
Code	Description	Abbrev.	Weight [g]
0223000201	2-position base	CVM-18-02	236
0223000301	3-position base	CVM-18-03	321
0223000401	4-position base	CVM-18-04	407
0223000501	5-position base	CVM-18-05	494
0223000601	6-position base	CVM-18-06	587
0223000701	7-position base	CVM-18-07	711
0223000801	8-position base	CVM-18-08	760
0223000901	9-position base	CVM-18-09	842
0223001001	10-position base	CVM-18-10	923

### MULTIPLE BASES 1/4"



Code	Description	Abbrev.	Weight [g]
0224000201	2-position base	CVM-14-02	296
0224000301	3-position base	CVM-14-03	406
0224000401	4-position base	CVM-14-04	515
0224000501	5-position base	CVM-14-05	624
0224000601	6-position base	CVM-14-06	733
0224000701	7-position base	CVM-14-07	845
0224000801	8-position base	CVM-14-08	956
0224000901	9-position base	CVM-14-09	1055
0224001001	10-position base	CVM-14-10	1086

### GASKET KIT



Code	Description	Weight [g]
0226004701	Gasket kit for 1/8" base	5
0226005701	Gasket kit for 1/4" base	5

# VALVES SERIES 70, ON BASE

The series 70 valves on base, available in the air- and solenoid-actuated versions, is an excellent clean solution for use when it is necessary to intervene on the valves without disconnecting the pipes. Here, the inlet, output and utility ports are in the base.

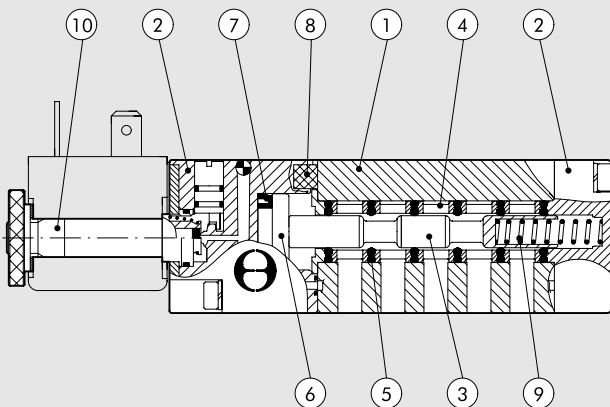


## TECHNICAL DATA

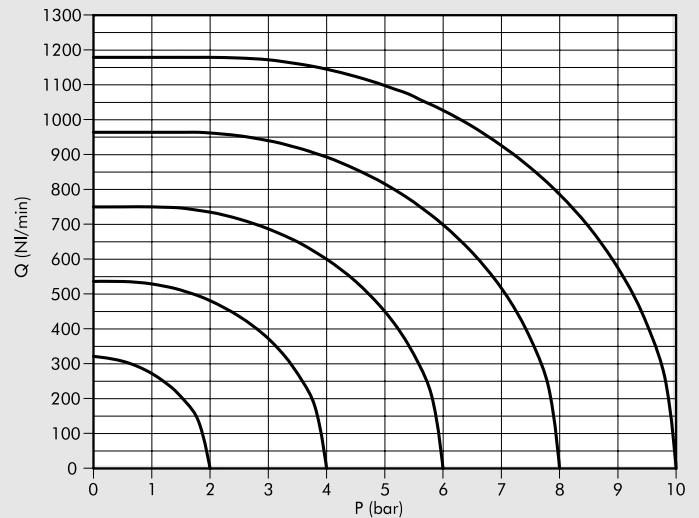
Operating pressure:		
• monostable	bar	2.5 to 10
• bistable	bar	1 to 10
• pilot-assisted	bar	Vacuum to 10
Minimum pilot pressure	bar	2.5
Operating temperature range	°C	-10 to +60
Nominal diameter	mm	5
Conductance C	NI/min · bar	107.69
Critical ratio b	bar/bar	0.29
Flow rate at 6 bar $\Delta P$ 0.5 bar	NI/min	320
Flow rate at 6 bar $\Delta P$ 1 bar	NI/min	450
Maximum torque coil nut	Nm	1

## COMPONENTS

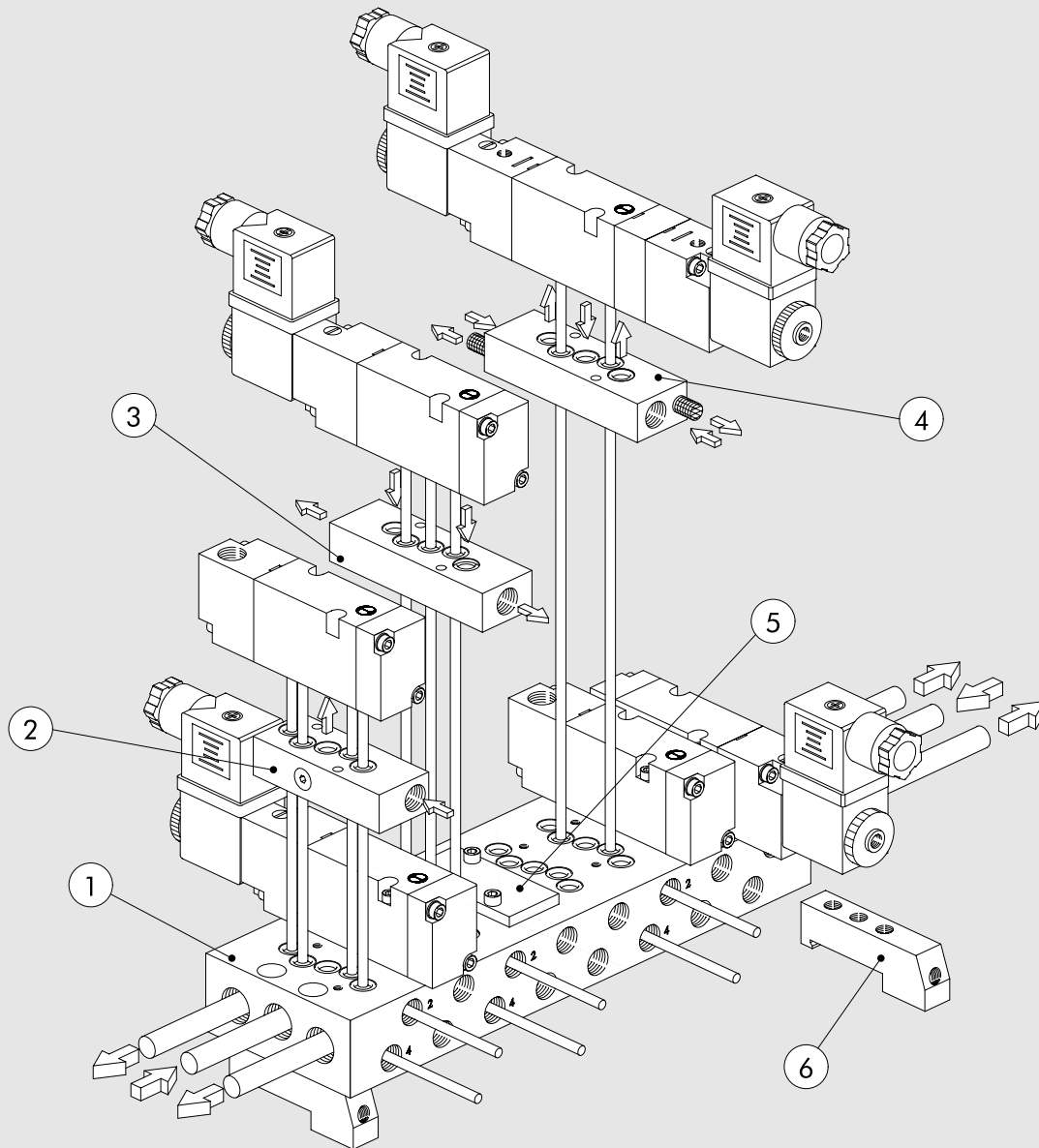
- ① VALVE BODY: Aluminium
- ② CONTROL/BASE: Hostaform®
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: NBR
- ⑧ FILTER: sintered Bronze
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe – Stainless steel core



## FLOW CHART



**MULTI-PURPOSE BASE FOR VALVES SERIES 70 ON BASE**



Reference	Code	Description
①	0223100201	2-position base 1/8 on base
	0223100401	4-position base 1/8 on base
	0223100601	6-position base 1/8 on base
	0223100801	8-position base 1/8 on base
	0223101001	10-position base 1/8 on base
②	0223106301	Separate feed kit
③	0223106303	Exhaust regulation kit
④	0223106302	Exhaust feed kit
⑤	0223106500	Blanking plate
⑥	0226004600	Adapter for omega bar

**KEY TO CODES**

P N V FAMILY	B DIMENSIONS	5 FUNCTION	P N OPERATORS 14	S RESETTING (12)	O O FURTHER DETAILS
PNV pneumatic	B 1/8" on base	5 5/2	PN pneumatic	S mechanical springs	OO 5/2
SOV electro-pneumatic		6 5/3	SO solenoid	B bistable	CC closed centres
			SE solenoid assisted	D differential	OC open centres
					PC pressure centres



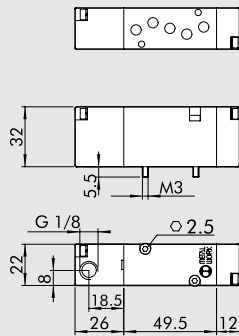
## VALVES, SERIES 70, PNEUMATIC, ON BASE

### TECHNICAL DATA

Operating pressure	bar	Vacuum to 10
Minimum actuation pressure:		
• monostable	bar	2.5
• bistable	bar	1
Operating temperature range	°C	-10 to +60
Nominal diameter	mm	5
Conductance C	Nl/min · bar	107.69
Critical ratio b	bar/bar	0.29
Flow rate at 6 bar ΔP 0.5 bar	Nl/min	320
Flow rate at 6 bar ΔP 1 bar	Nl/min	450
TRA / TRR monostable at 6 bar	ms	6/15
TRA / TRR bistable at 6 bar	ms	7/7

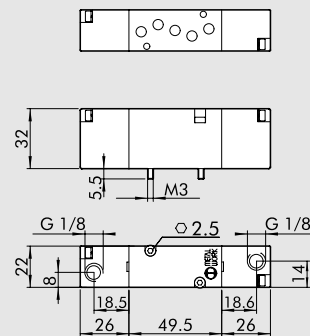


### MONOSTABLE 5/2



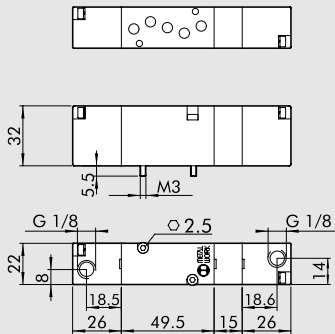
Symbol	Code	Abbrev.	Weight [g]
	7011011100	PNV B5 PNS OO	125

### BISTABLE 5/2



Symbol	Code	Abbrev.	Weight [g]
	7011011200	PNV B5 PNB OO	136
	7011011300	PNV B5 PND OO	142

### MONOSTABLE 5/3



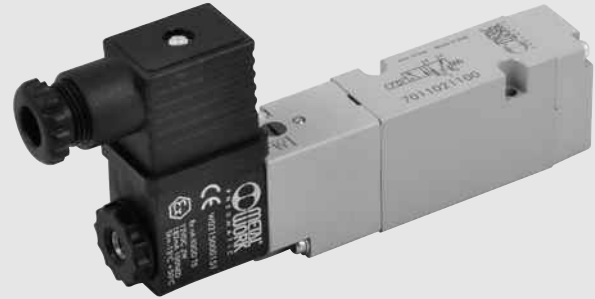
Symbol	Code	Abbrev.	Weight [g]
	7011012100	PNV B6 PNS CC	164
	7011012200	PNV B6 PNS OC	164
	7011012300	PNV B6 PNS PC	164

### NOTES

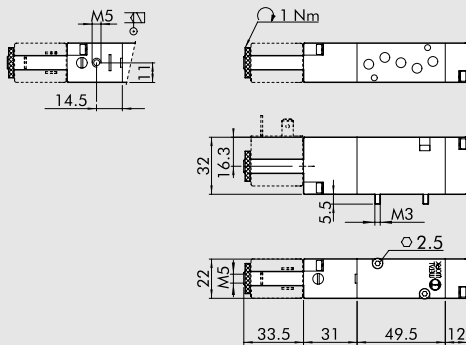
# VALVES SERIES 70, SOLENOID/PNEUMATIC ON BASE

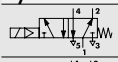
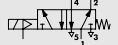
## TECHNICAL DATA

Operating pressure:			
• monostable	bar	2.5 to 10	
• bistable	bar	1 to 10	
• pilot-assisted	bar	Vacuum to 10	
Minimum pilot pressure	bar	2.5	
Operating temperature range	°C	-10 to +60	
Nominal diameter	mm	5	
Conductance C	Nl/min · bar	107.69	
Critical ratio b	bar/bar	0.29	
Flow rate at 6 bar ΔP 0.5 bar	Nl/min	320	
Flow rate at 6 bar ΔP 1 bar	Nl/min	450	
TRA / TRR monostable at 6 bar	ms	15 / 35	
TRA / TRR bistable at 6 bar	ms	20 / 20	
<b>Electrical technical data</b>			
Coil voltage values	24VDC/24VAC/110VAC/220VAC 50/60Hz		
Power	2 W (DC) 3VA (AC)		
Voltage tolerance	%	-10 to +15	
Insulation class	F 155		
Maximum coil nut torque	Nm	1	

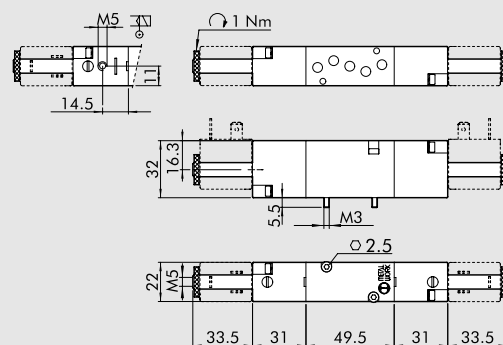


## MONOSTABLE 5/2



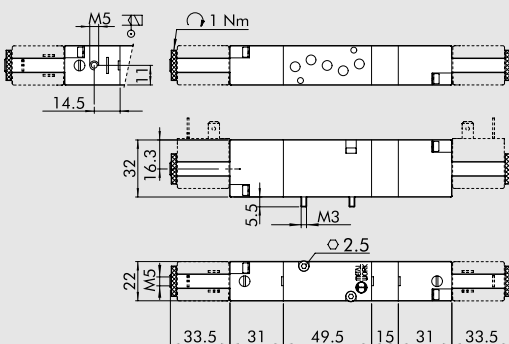
Symbol	Code	Abbrev.	Weight [g]
	7011021100	SOV B5 SOS OO	142
	7011021500	SOV B5 SES OO	143

## BISTABLE 5/2



Symbol	Code	Abbrev.	Weight [g]
	7011021200	SOV B5 SOB OO	174
	7011021300	SOV B5 SOD OO	180
	7011021600	SOV B5 SEB OO	174

## MONOSTABLE 5/3



Symbol	Code	Abbrev.	Weight [g]
	7011022100	SOV B6 SOS CC	204
	7011022200	SOV B6 SOS OC	204
	7011022300	SOV B6 SOS PC	204
	7011022400	SOV B6 SES CC	202
	7011022500	SOV B6 SES OC	202
	7011022600	SOV B6 SES PC	202

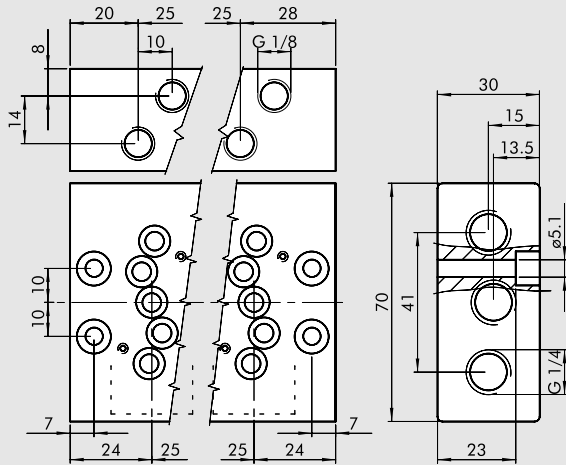
## ACCESSORIES



Refer to page 2-46 for coils and connectors

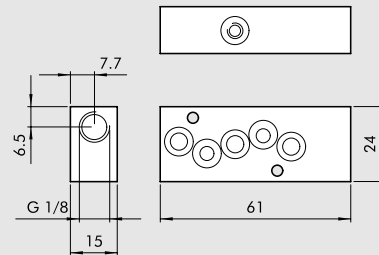
## ACCESSORIES: MULTIPLE BASES

### ① MULTIPLE BASE



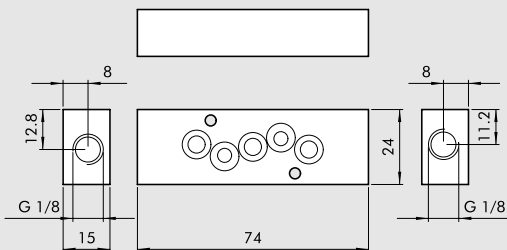
Code	Description	Weight [g]
0223100201	2-position base 1/8 on base	341
0223100401	4-position base 1/8 on base	591
0223100601	6-position base 1/8 on base	855
0223100801	8-position base 1/8 on base	1093
0223101001	10-position base 1/8 on base	1352

### ② SEPARATE FEED KIT



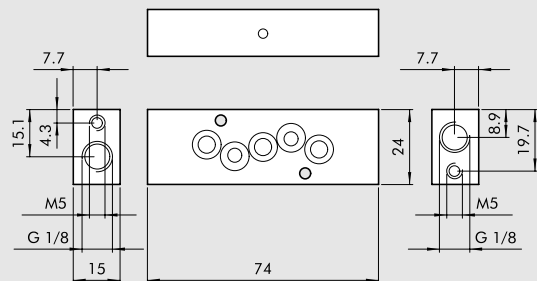
Code	Description	Weight [g]
0223106301	Separate feed kit 1/8	65

### ③ EXHAUST REGULATION KIT



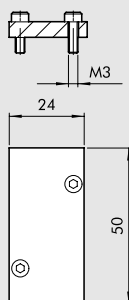
Code	Description	Weight [g]
0223106303	Exhaust regulation kit 1/8	75

### ④ EXHAUST FEED KIT



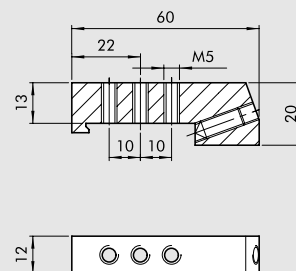
Code	Description	Weight [g]
0223106302	Exhaust feed kit 1/8	75

### ⑤ BLANKING PLATE



Code	Description	Weight [g]
0223106500	Blanking plate 1/8	15

### ⑥ ADAPTER FOR BAR OMEGA (DIN EN 50022)



Code	Description	Weight [g]
0226004600	Adapter for bar omega 1/8"	46

# NAMUR VALVES



## TECHNICAL DATA

Operating pressure:			
• monostable, electric	bar	2.5 to 10	
• bistable, electric	bar	1 to 10	
• pilot-assisted, electric	bar	Vacuum to 10	
Minimum actuation pressure:			
• monostable, pneumatic	bar	2.5	
• bistable, pneumatic	bar	1	
Operating temperature range			
	°C	-10 to +60	
Nominal diameter			
	mm	7.5	
Conductance C			
	Nl/min · bar	264.26	
Critical ratio b			
	bar/bar	0.27	
Flow rate at 6 bar ΔP 0.5 bar			
	Nl/min	750	
Flow rate at 6 bar ΔP 1 bar (0.1 Mpa - 14.5 psi)			
	Nl/min	1100	
Response time at 6 bar:			
• TRA/TRR monostable, pneumatic at 6 bar	ms	7 / 15	
• TRA/TRR bistable, pneumatic at 6 bar	ms	7 / 7	
• TRA/TRR monostable electric at 6 bar	ms	19 / 45	
• TRA/TRR bistable electric at 6 bar	ms	21 / 21	
Compatibility with oils			
		Please refer to page 6-7 of the technical documentation	

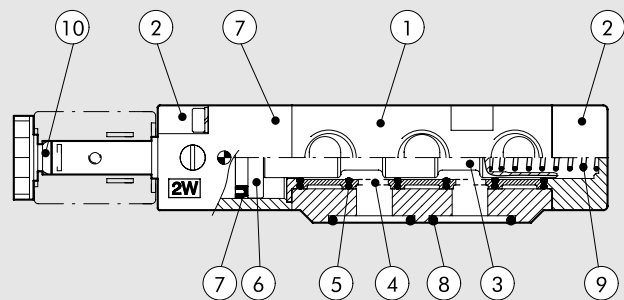


## KEY TO CODES

P N V		A	5	P N		S	O O
FAMILY		DIMENSIONS	FUNCTION		OPERATORS 14	RESETTING (12)	FURTHER DETAILS
PNV	pneumatic	A NAMUR	5	5/2	PN	pneumatic	OO 5/2
SOV	electro-pneumatic		4	4/2	SO	solenoid	NC normally closed

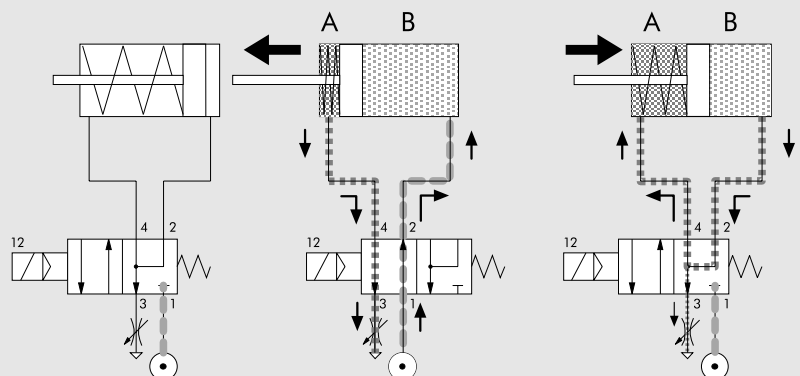
## COMPONENTS

- ① VALVE BODY: Aluminium
- ② CONTROL/BASE: Hostaform®
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR nitrile rubber
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: NBR nitrile rubber
- ⑧ INTERFACE GASKETS: NBR nitrile rubber
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe – Stainless steel core

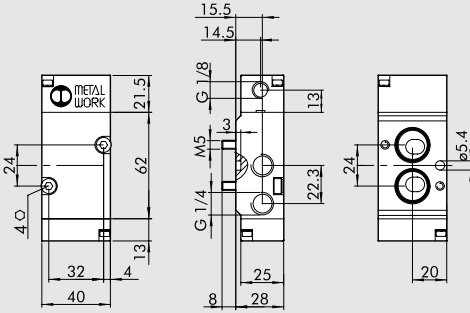


## FUNCTIONING DIAGRAM 4/2 NAMUR VALVE

During the piston retraction stage, the air for chamber A is taken from the air leaving chamber B. This prevents the dirty air from getting in from the outside environment.

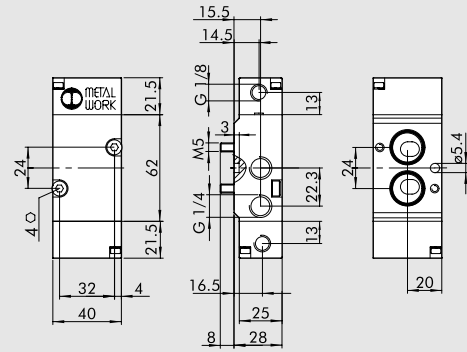


**MONOSTABLE, PNEUMATIC 4/2**



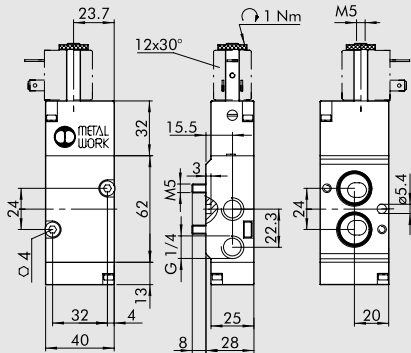
Symbol	Code	Abbrev.	Weight [g]
	7021010110	PNV A4 PNS NC	208

**BISTABLE, PNEUMATIC 4/2**



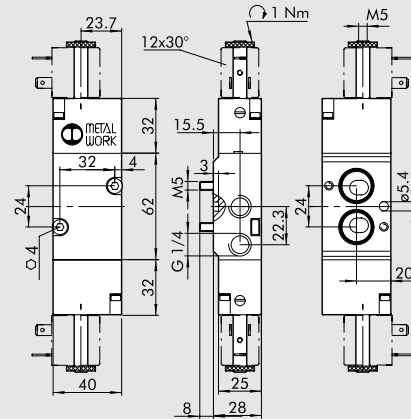
Symbol	Code	Abbrev.	Weight [g]
	7021010210	PNV A4 PNB OO	216

**MONOSTABLE, SOLENOID/PNEUMATIC 4/2**



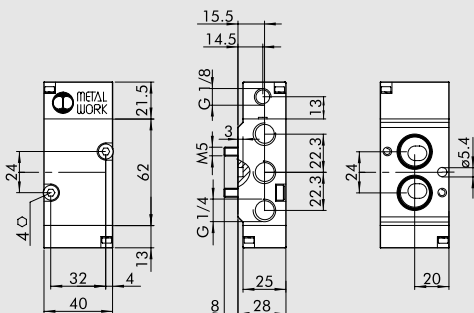
Symbol	Code	Abbrev.	Weight [g]
	7021020110	SOV A4 SOS NC	234

**BISTABLE, SOLENOID/PNEUMATIC 4/2**



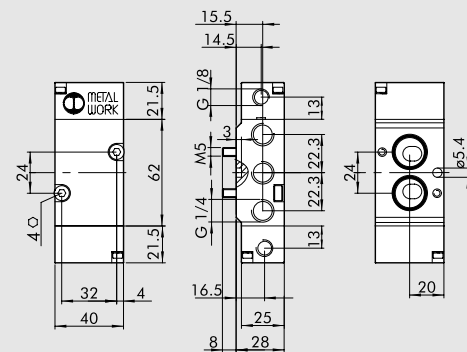
Symbol	Code	Abbrev.	Weight [g]
	7021020210	SOV A4 SOB OO	270

**MONOSTABLE, PNEUMATIC 5/2**



Symbol	Code	Abbrev.	Weight [g]
	7021010100	PNV A5 PNS OO	208

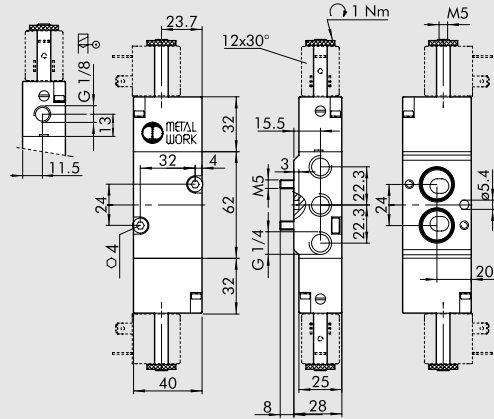
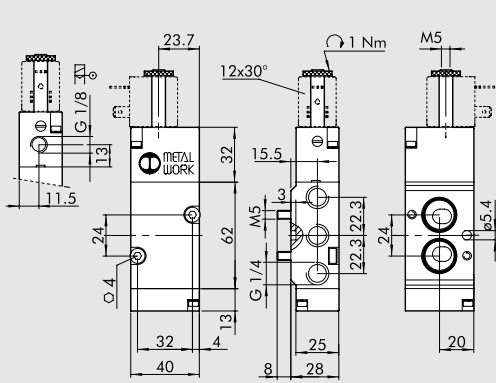
**MONOSTABLE, PNEUMATIC 5/2**



Symbol	Code	Abbrev.	Weight [g]
	7021010200	PNV A5 PNB OO	216

**MONOSTABLE, SOLENOID/PNEUMATIC 5/2**

**BISTABLE, SOLENOID/PNEUMATIC 5/2**



Symbol	Code	Abbrev.	Weight [g]
	7021020100	SOV A5 SOS OO	234

Symbol	Code	Abbrev.	Weight [g]
	7021020200	SOV A5 SOB OO	270

**ACCESSORIES FOR NAMUR VALVES SOV, SOLENOID/PNEUMATIC**

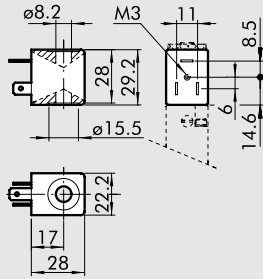
Refer to page 2-46 for coils and connectors



**NOTES**

# COILS AND CONNECTORS FOR SERIES 70 AND NAMUR VALVES

## COILS SIDE 22 mm

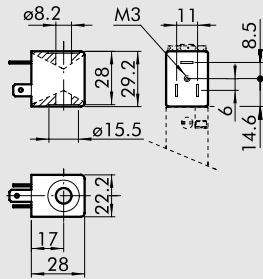


- Voltage tolerance: -10% + 15%
- Insulation class: F155
- Degree of protection: IP65 DIN 40050 with connector
- Avoid prolonged exposure to atmospheric agents

- Coil temperature 100% ED: from 70°C to 20°C – Ambient temperature
- According to Atex 94/9 CE rule, group 2, category 3 GD

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000151	Coil 22 Ø 8 BA 2W-12VDC	12Vcc	2W	2W
W0215000101	Coil 22 Ø 8 BA 2W-24VDC	24Vcc	2W	2W
W0215000111	Coil 22 Ø 8 BA 3.5VA-24VAC	24V 50/60Hz	5.3VA	3.5VA
W0215000121	Coil 22 Ø 8 BA 3.5VA-110VAC	110V 50/60Hz	5.3VA	3.5VA
W0215000131	Coil 22 Ø 8 BA 3.5VA-220VAC	220V 50/60Hz	5.3VA	3.5VA

## "UL" AND "CSA" COILS 22 mm



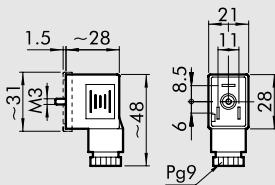
- Voltage tolerance: -10% to + 15%
- Insulation class: F155
- Degree of protection: IP65 EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents

- Coil temperature 100% ED: 70°C at 20°C – Ambient temperature
- According to Atex 94/9 CE rule, group 2, category 3 GD
- For the standards description look at page 6-29

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000251	Coil 22 Ø 8 BA 2W-12VDC UR	12Vcc	2W	2W
W0215000201	Coil 22 Ø 8 BA 2W-24VDC UR	24Vcc	2W	2W
W0215000211	Coil 22 Ø 8 BA 3.5VA-24VAC UR	24V 50/60Hz	5.3VA	3.5VA
W0215000221	Coil 22 Ø 8 BA 3.5VA-110VAC UR	110V 50/60Hz	5.3VA	3.5VA
W0215000231	Coil 22 Ø 8 BA 3.5VA-220VAC UR	220V 50/60Hz	5.3VA	3.5VA

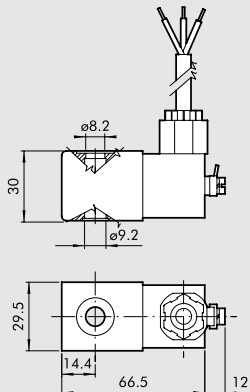


## CONNECTOR FOR COILS SIDE 22 mm



Code	Tipo	Colour	Ø Cable
W0970510011	Standard	Black	PG9
W0970510012	LED 24V	Transparent	PG9
W0970510013	LED 110V	Transparent	PG9
W0970510014	LED 220V	Transparent	PG9
W0970510015	LED + VDR 24V	Transparent	PG9
W0970510016	LED + VDR 110V	Transparent	PG9
W0970510017	LED + VDR 220V	Transparent	PG9
W0970510070	Atex II 3 GD	Black	PG9

## KIT COIL EEXM



Code	Description
0227606913	Kit for coil 30 24VDC EEXMT5 cable 3 m
0227606915	Kit for coil 30 24VDC EEXMT5 cable 5 m
0227608013	Kit for coil 30 24VAC EEXMT5 cable 3 m
0227608015	Kit for coil 30 24VAC EEXMT5 cable 5 m
0227608023	Kit for coil 30 110VAC EEXMT5 cable 3 m
0227608025	Kit for coil 30 110VAC EEXMT5 cable 5 m
0227608033	Kit for coil 30 230VAC EEXMT5 cable 3 m
0227608035	Kit for coil 30 230VAC EEXMT5 cable 5 m

According to Atex 94/9 CE rule,  
 ⓧ II 2G Ex mb IIC T4/T5 Gb  
 ⓧ II 2D Ex tb IIIC T130/T95 °C IP66 Db

## KIT COILS SIDE 22 IP65



Code	Description
0222100100	Kit for coils 22 - IP65

Improved IP65 protection, even after prolonged exposure to atmospheric agents.  
 Applicable to valves with a technopolymer control.

# 10-mm SOLENOID VALVES SERIES PLT-10



PLT-10 solenoid valves are the latest development in modern pneumatic design, where the main trends focus on miniaturisation, enhanced performance, reduced power and reliability.

Numerous versions are available, all with an ISO 15218 pneumatic interface. The power required to operate the PLT-10 has been greatly reduced, ranging from 0.3 to 0.8 Watts.

It is available with a LED indicating when it is active. Monostable manual control is also possible. None of the versions will get damaged if the polarity is accidentally inverted.

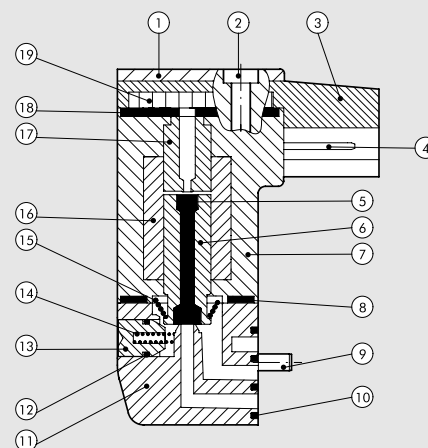


## TECHNICAL DATA

Type		3/2 NC
Operating temperature range (Te)	°C	5 to 50
Fluid temperature (Tg)	°C	5 to 50
Fluid		Filtered, lubricated or unlubricated air
Operating life		Over 50 million cycles
Weight	g	12
Voltage tolerance	ΔV	± 10 %
Max operating frequency	f	30 Hz
Switching factor	ED	100 %
Insulation class		F155
Index of protection		IP51
Power connection		PLUG IN

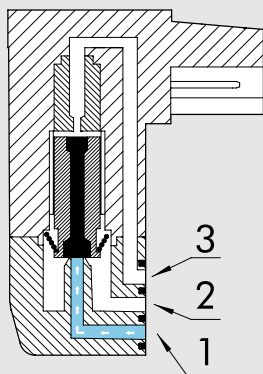
## COMPONENTS

- ① TRANSPARENT COVER: PA612-transparent
- ② ASSEMBLY SCREWS: galvanized steel
- ③ COVER: PA66
- ④ PIN
- ⑤ MOBILE CORE OVER-STAMPING: FKM/FPM
- ⑥ MOBILE CORE: AISI 403F
- ⑦ COIL OVER-STAMPING: PA66
- ⑧ BODY-COIL GASKET: NBR70
- ⑨ ASSEMBLY SCREWS: galvanized steel
- ⑩ BODY GASKET: NBR
- ⑪ BODY: PA66
- ⑫ MANUAL GASKET: NBR (only for version with manual operated)
- ⑬ MANUAL CONTROL: OT58 nickel-plated brass (only for version with manual operated)
- ⑭ MANUAL SPRING: AISI 302 (only for version with manual operated)
- ⑮ SPRING: AISI 302
- ⑯ WINDING: PPS - Copper wire
- ⑰ FIXED CORE: AISI 430F
- ⑱ COIL-COVER GASKET: NBR
- ⑲ ELECTRONIC BOARD (only for version with electronic board)

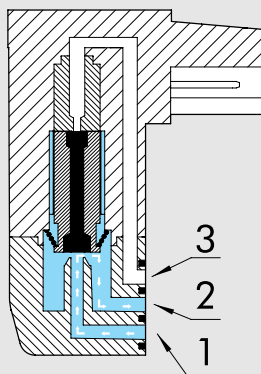


## OPERATING CHART

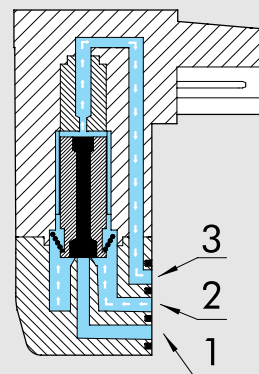
DE-ENERGIZED



ENERGIZED

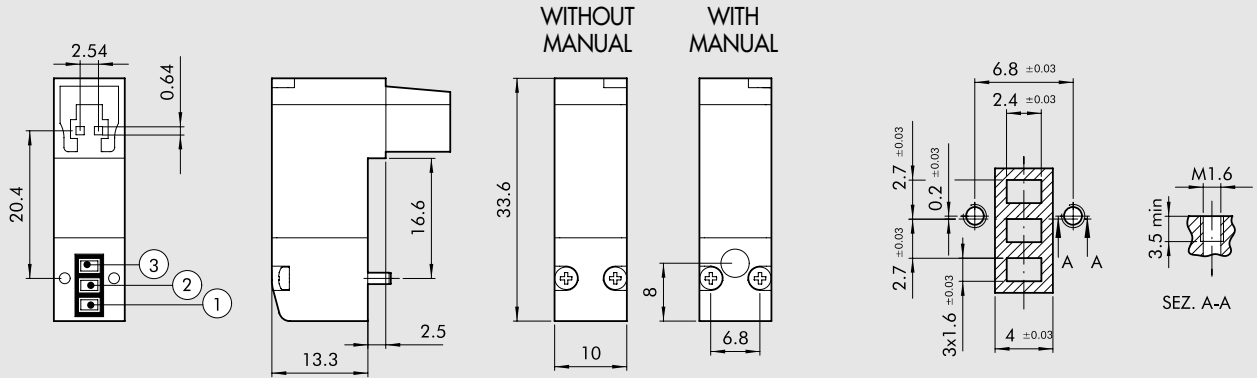


DE-ENERGIZED



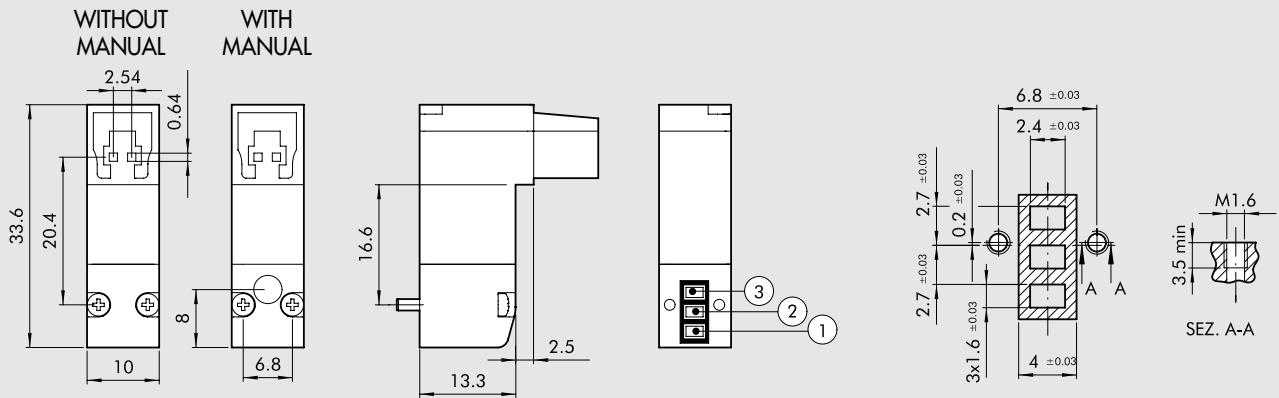


**PLT-10 WITH BASE AND CONNECTION ON THE SAME SIDE**



Version (3/2 NC)	Code	Manual	Voltage [Volt]	Power [Watt]	Through Ø [mm]	Operating press. [bar]	Flow rate at 6 ΔP=1 bar [NI/min]	Tmax coil a 24VDC Te 20°C α ED100% [°C]	Weight [g]
Without LED	722113330000	without	12 VDC	0.7	0.6	3 ÷ 7	9	93	12
	722113330100	with	12 VDC	0.7	0.6	3 ÷ 7	9	93	12
	722113340000	without	24 VDC	0.7	0.6	3 ÷ 7	9	93	12
	722113340100	with	24 VDC	0.7	0.6	3 ÷ 7	9	93	12
With LED	722113531000	without	12 VDC	0.8	0.6	3 ÷ 7	9	93	12
	722113531100	with	12 VDC	0.8	0.6	3 ÷ 7	9	93	12
	722113541000	without	24 VDC	0.8	0.6	3 ÷ 7	9	93	12
	722113541100	with	24 VDC	0.8	0.6	3 ÷ 7	9	93	12
SPEED-UP e LED	722116841000	without	24 VDC	3/0.3	1.2	2 ÷ 7	16	51	12
	722116841100	with	24 VDC	3/0.3	1.2	2 ÷ 7	16	51	12
	722116941000	without	24 VDC	4.2/0.7	1.2	2 ÷ 7	30	51	12
	722116941100	with	24 VDC	4.2/0.7	1.2	2 ÷ 7	30	51	12

**PLT-10 WITH BASE AND CONNECTION ON OPPOSITE SIDES**



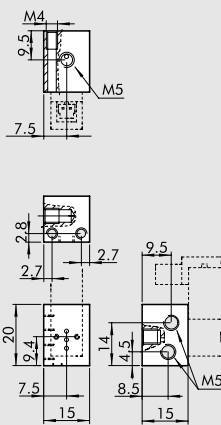
Version (3/2 NC)	Code	Manuale	Voltage [Volt]	Power [Watt]	Through Ø [mm]	Operating press. [bar]	Flow rate at 6 ΔP=1 bar [NI/min]	Tmax coil a 24VDC Te 20°C α ED100% [°C]	Weight [g]
Without LED	722213330000	without	12 VDC	0.7	0.6	3 ÷ 7	9	93	12
	722213330100	with	12 VDC	0.7	0.6	3 ÷ 7	9	93	12
	722213340000	without	24 VDC	0.7	0.6	3 ÷ 7	9	93	12
	722213340100	with	24 VDC	0.7	0.6	3 ÷ 7	9	93	12
With LED	722213531000	without	12 VDC	0.8	0.6	3 ÷ 7	9	93	12
	722213531100	with	12 VDC	0.8	0.6	3 ÷ 7	9	93	12
	722213541000	without	24 VDC	0.8	0.6	3 ÷ 7	9	93	12
	722213541100	with	24 VDC	0.8	0.6	3 ÷ 7	9	93	12
SPEED-UP e LED	722216841000	without	24 VDC	3/0.3	1.2	2 ÷ 7	16	51	12
	722216841100	with	24 VDC	3/0.3	1.2	2 ÷ 7	16	51	12
	722216941000	without	24 VDC	4.2/0.7	1.2	2 ÷ 7	30	51	12
	722216941100	with	24 VDC	4.2/0.7	1.2	2 ÷ 7	30	51	12

### KEY TO CODES

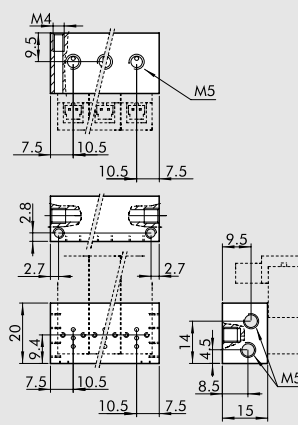
7 2 2 FAMILY	1 POSITIONING	1 POWER CONNECTION	3 Ø THROUGH	3 POWER	4 VOLTAGE	0 LED	1 MANUAL CONTROL	00 VERSION
Solenoid valves series "PLT-10"	1 Base and connection on same side 2 Base and connection opposite sides	1 Plug-in	3 0.6 mm	3 0.7 W	3 12 VDC	0 -	0 -	00 Standard
			6 1.2 mm	5 0.8 W	4 24 VDC	1 LED	1 manual monostable	
				8 3/0.3 W				
				9 4.2/0.7 W				

### DIMENSIONS OF BASES FOR PLT-10

1 POSN.



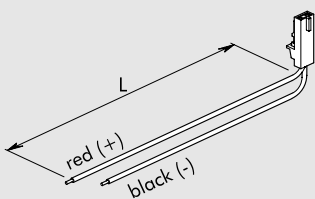
+ POSN.



Code	Description
W0400100101	Base 1 posn. for PLT-10
W0400100102	Base 2 posn. for PLT-10
W0400100103	Base 3 posn. for PLT-10
W0400100104	Base 4 posn. for PLT-10
W0400100105	Base 5 posn. for PLT-10
W0400100106	Base 6 posn. for PLT-10
W0400100107	Base 7 posn. for PLT-10
W0400100108	Base 8 posn. for PLT-10
W0400100109	Base 9 posn. for PLT-10
W0400100110	Base 10 posn. for PLT-10

### ACCESSORIES

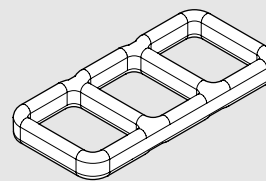
#### PLUG-IN CONNECTOR



Code	Description
W0970512000	MACH 11 PLUG-IN connector L = 300

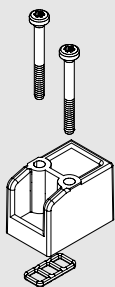
### SPARE PARTS

#### INTERFACE GASKET



Code	Description
0226009701	PLT-10 GASKET
N.B. 50 for pack	

#### CAP FOR UNUSED POSITION



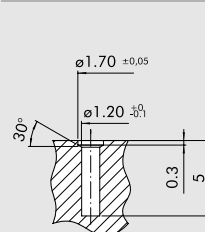
Code	Description	Weight [g]
W0400100200	Acc. cap 10 mm	6

#### STANDARD SECURING SCREW (FOR ALUMINIUM)



Code	Description
0226009702	PLT-10 screw for aluminium
N.B. 100 for pack	

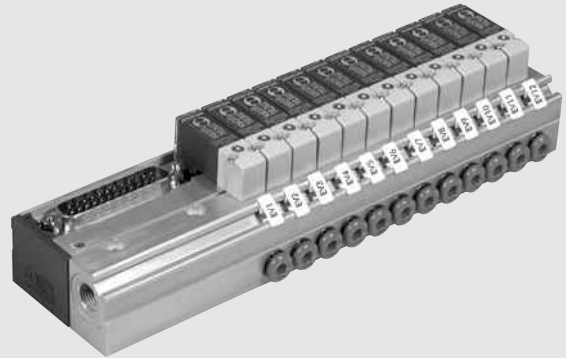
#### SECURING SCREWS FOR TECHNOPOLYMER



Code	Description
0226009703	Screw PLT-10 for technopol.
N.B. 100 for pack	
When mounting on technopolymer bodies, use these screws instead of the ones supplied with the PLT-10.	
<b>ATTENTION:</b> approximative dimensions for not added glass plastic materials It's always advisable to effect assembling tests.	

# BASES FOR PLT-10 MULTIPLE CONNECTION

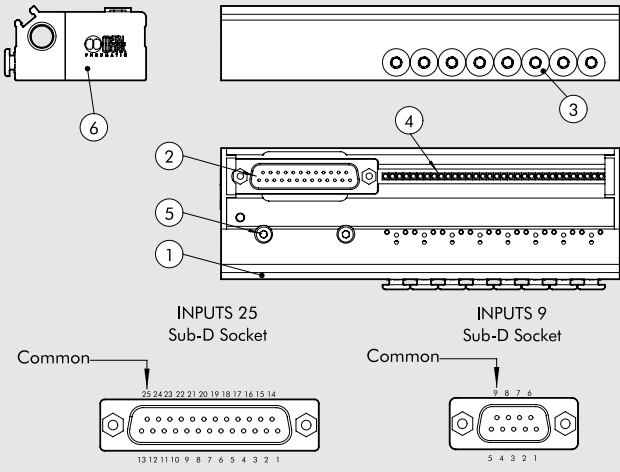
Series PLT-10 solenoid valves can be mounted on bases complete with electrical and pneumatic connections, from 4 to 24 positions. The electric contacts of each valve are linked to a single multiple connector via a printed circuit board. The connector has 9 pins or 25 pins, depending on the model and the number of valves that can be mounted. Versions with 25-pin connectors can interface with standard field buses by means of Profibus-DP, Can-Open and Device-Net modules for Multimach. (see page 2-190). The compressed-air supply is common to all the valves and can be provided on either side of the base by means of a 1/8" fitting. Connection to the utilities is via automatic integrated cartridges for Ø 4 pipe. The solenoid valve outlet is free, in a slot in the base. The bases can be secured from above using M3 screws, or on a DIN bar using a bracket (see accessories). The bases can mount various types of PLT-10 solenoid valves: 3/2 NC, 3/2 NO, with or without a manual actuator. With this modular system, you can select the desired sequence of valves (NC, NO, blind) and change it at any time.



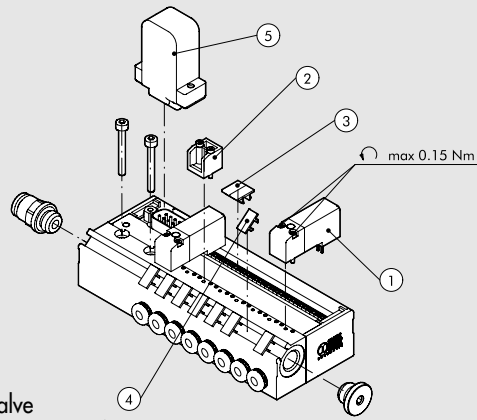
TECHNICAL DATA	
Supply voltage	12 VDC or 24 VDC
Max input	W
	0.7 per position for PLT-10 STD without LED
	0.9 per position for PLT-10 STD with LED
	3/0.3 per position for PLT-10 NC with Speed-up
	3/0.7 per position for PLT-10 NO with Speed-up
	4.2/0.7 per position for PLT-10 NC with Speed-up high flow
Valve actuation indicator	Led mounted on the PLT-10 (on versions of solenoid valve where envisaged)
Operating temperature range	5 to 50
Protection degree (with valves and connectors mounted)	IP 40
Maximum number of mountable PLT-10s	24
Number of contacts	9, of which 1 common, for versions with 4 and 8 positions
	25, of which 1 common, for versions with 4, 8, 12, 16, 20, 24 positions

COMPONENTS		CONNECTION DIAGRAM	
① Anodized aluminium base		<b>25 PIN</b>	<b>9 PIN</b>
② Multi-pin electrical connector		<b>Position of electrical contact</b>	<b>Position of electrical contact</b>
③ Automatic integrated cartridges for Ø 4 pipe		1	1
④ Electrical connectors for PLT-10 solenoid valves mounted on printed circuit board		2	2
⑤ Securing screw		3	3
⑥ Technopolymer cover		4	4
		5	5
		6	6
		7	7
		8	8
		9	9
		10	COMMON (-)
		11	PLT1
		12	PLT2
		13	PLT3
		14	PLT4
		15	PLT5
		16	PLT6
		17	PLT7
		18	PLT8
		19	PLT9
		20	PLT10
		21	PLT11
		22	PLT12
		23	PLT13
		24	PLT14
		25	PLT15
			PLT16
			PLT17
			PLT18
			PLT19
			PLT20
			PLT21
			PLT22
			PLT23
			PLT24
			COMMON (-)

Pilot numbering from left to right, starting from the position closest to the connection.

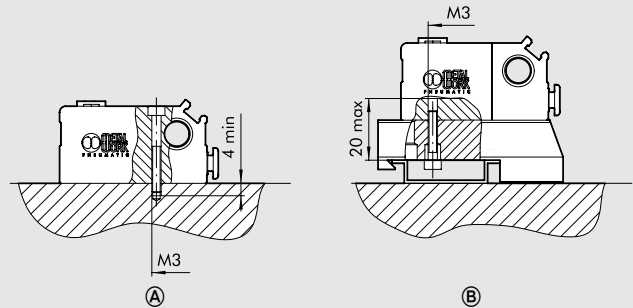


### ASSEMBLY OF SOLENOID VALVES AND ACCESSORIES



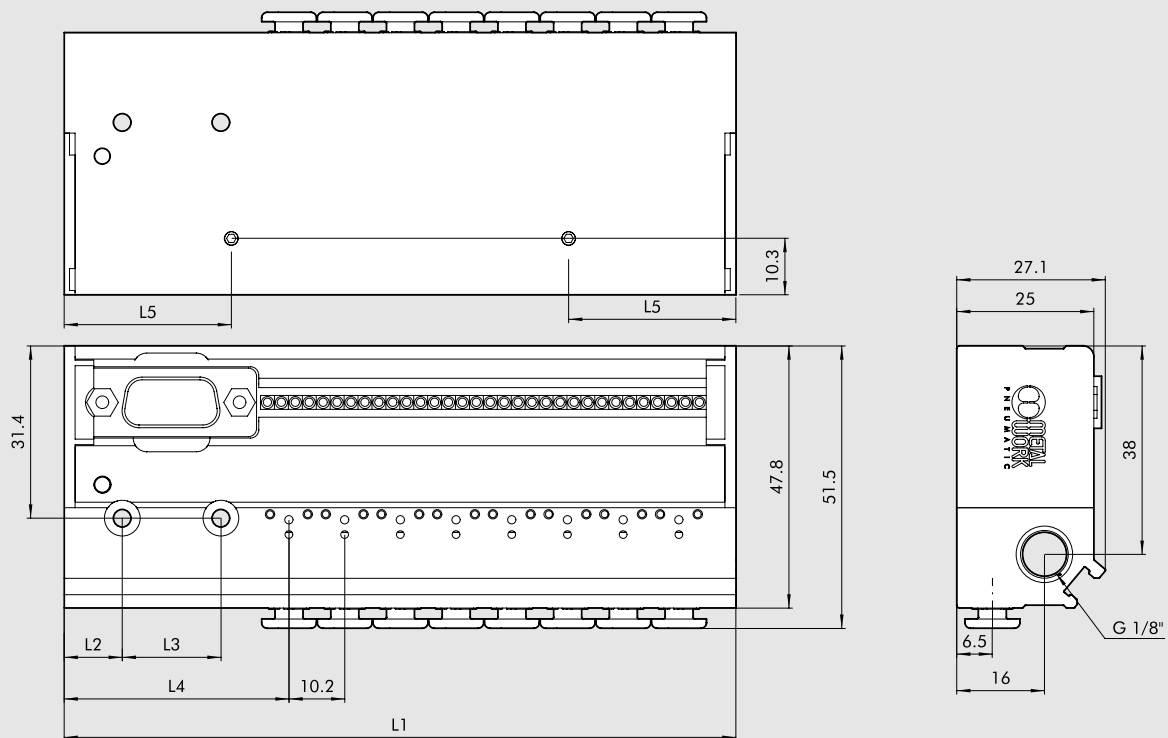
- ① Solenoid valve
- ② Pneumatic circuit cap for blind position
- ③ Electric circuit cap for blind position (use two identification labels)
- ④ Identification label
- ⑤ Electrical connector

### HOW TO SECURE THE BASE



- Ⓐ From above using M3 screws
- Ⓑ On a DIN bar, using the bracket and screws provided  
The bases come with the rear holes plugged by provided dowels.

### CODES AND DIMENSIONS FOR BASES 9 AND 25 PINS

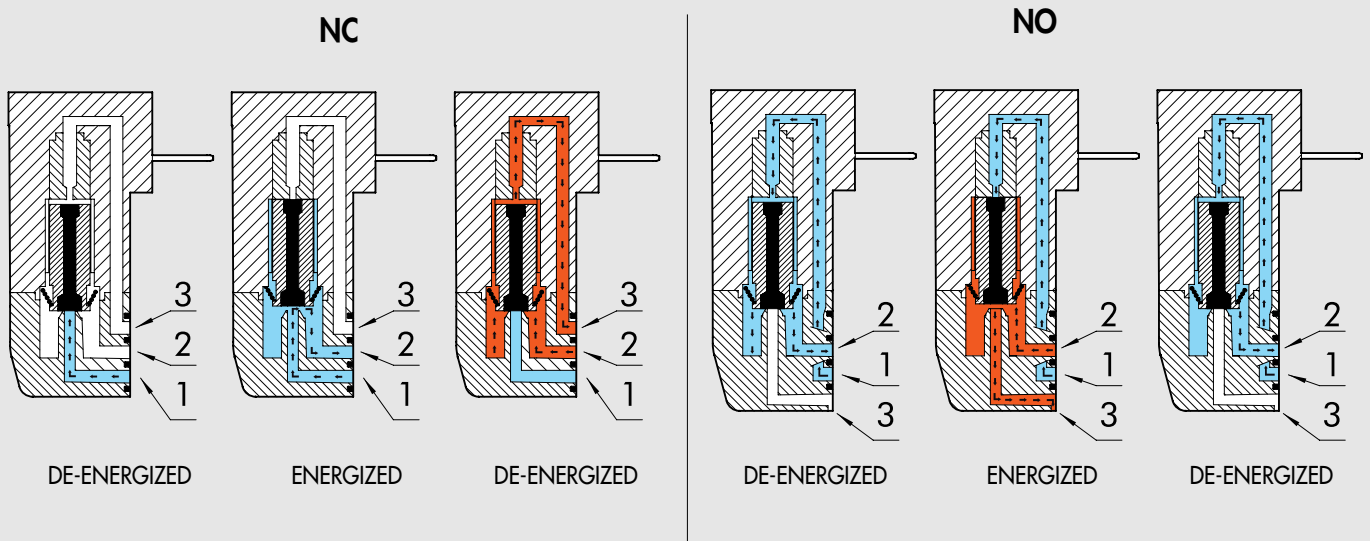


Code	Description	N° of PINS	N° of positions	L1	L2	L3	L4	L5	Weight [g]
0210040004	4-posn. base PLT 10 9-PIN mult conn.	9	4	81.9	10.6	18	41	19.6	160
0210040008	8-posn. base PLT 10 9-PIN mult conn.	9	8	122.5	10.6	18	41	19.6	235
0210240004	4-posn. base PLT 10 25-PIN mult conn.	25	4	104.8	15.5	30	63.9	30.5	210
0210240008	8-posn. base PLT 10 25-PIN mult conn.	25	8	145.4	15.5	30	63.9	30.5	280
0210240012	12-posn. base PLT 10 25-PIN mult conn.	25	12	186	15.5	30	63.9	30.5	355
0210240016	16-posn. base PLT 10 25-PIN mult conn.	25	16	226.6	15.5	30	63.9	30.5	430
0210240020	20-posn. base PLT 10 25-PIN mult conn.	25	20	267.2	15.5	30	63.9	30.5	500
0210240024	24-posn. base PLT 10 25-PIN mult conn.	25	24	307.8	15.5	30	63.9	30.5	575

## PLT-10 FOR MULTIPLE ELECTRIC CONNECTION

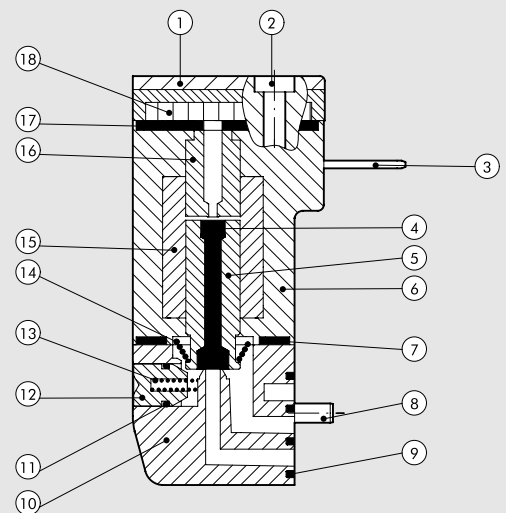
TECHNICAL DATA		NC	NO
Type		3/2 NC ed NO	
Operating temperature range (Te)	°C	5 to 50	
Fluid temperature (Tg)	°C	5 to 50	
Fluid		Filtered, lubricated or unlubricated air	
Operating life		Over 50 million cycles	
Weight	g	12	
Voltage tolerance	ΔV	± 10 %	
Max operating frequency	f	30 Hz	
Switching factor	ED	100 %	
Insulation class		F155	
Degree of protection		IP 51	IP 50

### OPERATING CHART

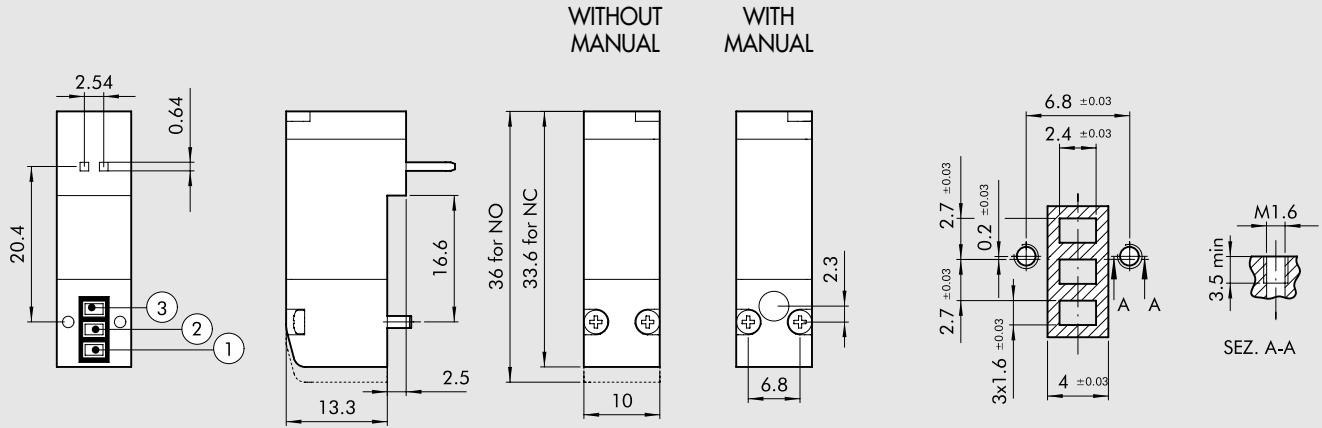


### COMPONENTS

- ① TRANSPARENT COVER: PA612-transparent
- ② ASSEMBLY SCREWS: galvanized steel
- ③ PIN
- ④ MOBILE CORE OVER-STAMPING: FKM/FPM
- ⑤ MOBILE CORE: AISI 403F
- ⑥ COIL OVER-STAMPING: PA66
- ⑦ BODY-COIL GASKET: NBR70
- ⑧ ASSEMBLY SCREWS: galvanized steel
- ⑨ BODY GASKET: NBR
- ⑩ BODY: PA66
- ⑪ MANUAL GASKET: NBR (only for version with manual operated)
- ⑫ MANUAL CONTROL: OT58 nickel-plated brass (only for version with manual operated)
- ⑬ MANUAL SPRING: AISI 302 (only for version with manual operated)
- ⑭ SPRING: AISI 302
- ⑮ WINDING: PPS - Copper wire
- ⑯ FIXED CORE: AISI 430F
- ⑰ COIL-COVER GASKET: NBR
- ⑱ ELECTRONIC BOARD (only for version with electronic board)



**PLT-10 NC-NO FOR MULTIPLE ELECTRIC CONNECTION**



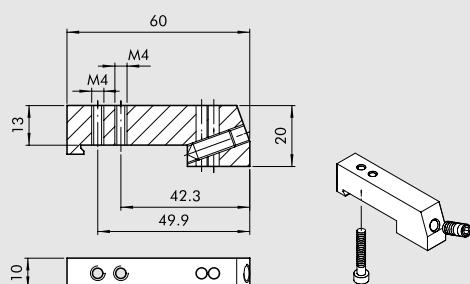
Version (3/2 NC)	Code	Manual	Voltage [Volt]	Power [Watt]	Ø Through [mm]	Operating pressure [bar]	Flow rate at 6 ΔP=1 bar [Nl/min]	T Max coil T at 24VDC Te 20°C α ED100% [°C]	Weight [g]
Without LED	722123330000	without	12 VDC	0.7	0.6	3 to 7	9	93	12
	722123330100	with	12 VDC	0.7	0.6	3 to 7	9	93	12
	722123340000	without	24 VDC	0.7	0.6	3 to 7	9	93	12
	722123340100	with	24 VDC	0.7	0.6	3 to 7	9	93	12
With LED	722123531000	without	12 VDC	0.8	0.6	3 to 7	9	93	12
	722123531100	with	12 VDC	0.8	0.6	3 to 7	9	93	12
	722123541000	without	24 VDC	0.8	0.6	3 to 7	9	93	12
	722123541100	with	24 VDC	0.8	0.6	3 to 7	9	93	12
SPEED-UP and LED	722126841000	without	24 VDC	3/0.3	1.2	2 to 7	16	51	12
	722126841100	with	24 VDC	3/0.3	1.2	2 to 7	16	51	12
	722126941000	without	24 VDC	4.2/0.7	1.2	2 to 7	30	51	12
	722126941100	with	24 VDC	4.2/0.7	1.2	2 to 7	30	51	12
<b>Version (3/2 NO)</b>									
SPEED-UP and LED	722126841010	without	24 VDC	3/0.7	1.0	2 to 7	14	51	12
	722126841110	with	24 VDC	3/0.7	1.0	2 to 7	14	51	12

**KEY TO CODES**

7 2 2	1	2	3	3	4	0	1	0	0
FAMILY	POSITIONING	POWER CONNECTION	Ø THROUGH	POWER	VOLTAGE	LED	MANUAL CONTROL	VERSION	
Solenoid valves series "PLT-10"	1 Base and connection on same side	2 for multiple base	3 0.6 mm 6 1.2 mm	3 0.7 W 5 0.8 W 8 3/0.3 W for NC 3/0.7 W for NO 9 4.2/0.7 W	3 12 VDC 4 24 VDC	0 - 1 LED	0 - 1 manual monostable	0 NC 1 NO	0 Standard

## ACCESSORIES

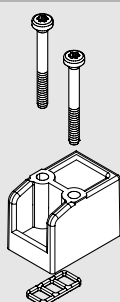
### CONNECTION BRACKETS ON BAR OMEGA (DIN EN 50022)



Code	Description	Weight [g]
0227301610	Connection brackets on din BAR for bases PLT-10	30

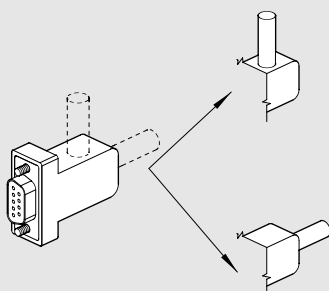
Supplied complete with one M3x20 screws and one M6 grub screw  
Individually packed

### CAP FOR UNUSED POSITION



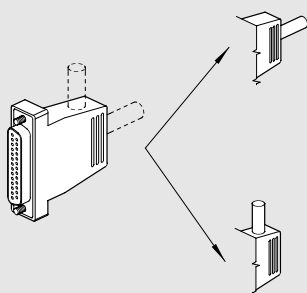
Code	Description	Weight [g]
W0400100200	Cap 10 mm	6

### STRAIGHT AND 90° CONNECTOR KIT, 9 WIRES



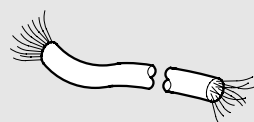
Code	Description	Weight [g]
0226180102	Straight and 90° connector kit, 9 wires	31

### STRAIGHT AND 90° CONNECTOR KIT, 25 WIRES



Code	Description	Weight [g]
0226180101	Straight and 90° connector kit, 25 wires	48

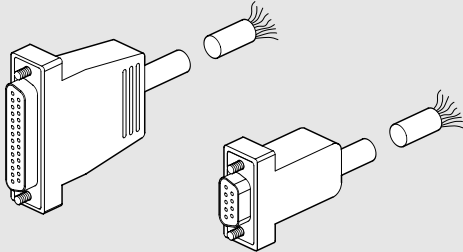
### CABLES



Code	Description	Weight [g]
0226107201	10-wire cable	86
0226107101	19-wire cable	122
0226107102	25-wire cable	130

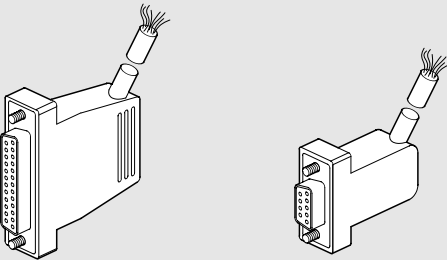
Specify the number of metres desired

### STRAIGHT PRE-WIRED CONNECTOR KIT



Code	Description	Weight [g]
0226900100	Connector + 9-wire axial cable L = 1 m	90
0226900250	Connector + 9-wire axial cable L = 2.5 m	220
0226900500	Connector + 9-wire axial cable L = 5 m	434
0226920100	Connector + 25-wire axial cable L = 1 m	132
0226920250	Connector + 25-wire axial cable L = 2.5 m	320
0226920500	Connector + 25-wire axial cable L = 5 m	636

### PRE-WIRED 90° CONNECTOR

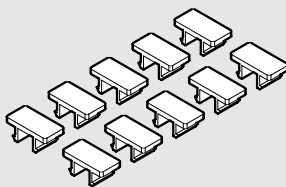


Code	Description	Weight [g]
0226910100	Connector + 9-wire 90° cable L = 1 m	90
0226910250	Connector + 9-wire 90° cable L = 2.5 m	220
0226910500	Connector + 9-wire 90° cable L = 5 m	434
0226930100	Connector + 25-wire 90° cable L = 1 m	132
0226930250	Connector + 25-wire 90° cable L = 2.5 m	320
0226930500	Connector + 25-wire 90° cable L = 5 m	636

### WIRING DIAGRAM FOR PRE-WIRED PLUG CONNECTORS

25 PIN				9 PIN			
Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire
1	blue/black	10	brown/white	19	yellow/black	1	green/black
2	red/brown	11	red/orange	20	white	2	white
3	white/black	12	light blue	21	blue/white	3	blue/black
4	red/blue	13	yellow/white	22	brown	4	blue
5	black/orange	14	yellow	23	green/white	5	yellow/black
6	yellow/red	15	red/green	24	red	6	yellow
7	black/brown	16	orange	25	green/black	7	red/black
8	white/red	17	orange/white			8	green
9	red/black	18	green			9	white/black

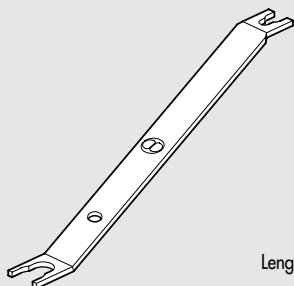
### IDENTIFICATION PLATE KIT



Code	Description	Weight [g]
0226107000	Identification plate kit	30

Comes in 10-pc. packs

### R17 - PIPE RELEASE SPANNER



Length = 140 mm

Code	Description	Ø Tube
2L17001	RL17	from Ø 3 to Ø 10



# SOLENOID VALVES PIV.M 15 mm

- 3/2 NC/NO direct control microvalves
- Possible assembly on single and multiple bases
- Monostable manual actuation as standard
- Assembly in any position
- Operation with filtered lubricated or unlubricated air
- Maximum ambient temperature: 50°C
- Low power absorption



DISTRIBUTORS

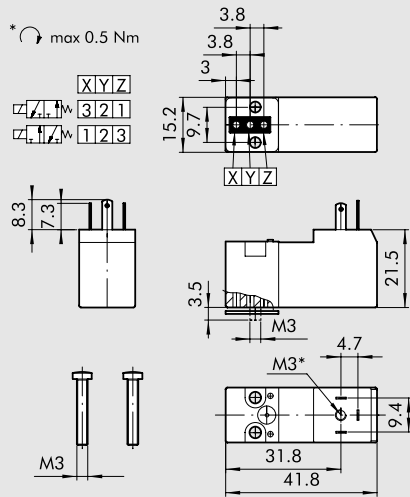
SOLENOID VALVES PIV.M 15 mm

TECHNICAL DATA		
Voltage tolerance	%	-10 to +15
Frequenza tensione alternativa (AC)	Hz	50/60
Max operating frequency	Hz	30
Solenoid rating		100% ED
Response time	ms	~ 10
Type of protection		IP 65 EN 60529
Power connection		9.4 mm micro centre distance
Insulation class		155
Ambient temperature	°C	-10 to +50
Fluid temperature	°C	-10 to +50
Fluid		Filtered lubricated or unlubricated air
Operating life		100 million cycles
Materials		Body: PPS Spring: 302 stainless steel FKM/FPM gaskets
Weight	g	30
Manual control		Monostable
Assembly position		In any position

## KEY TO CODES

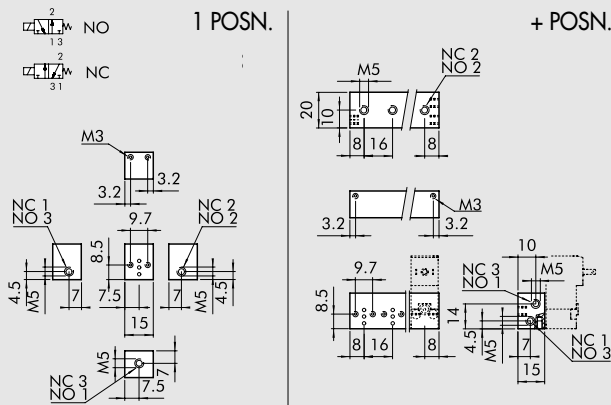
P I V FAMILY	1 AIR HOLE	3 NUMBER OF WAYS	M DIMENSIONS	0 THREAD	1 VERSION	N C FURTHER DETAILS
	1 1 mm	3 3 ways	M 15 x 15	0 on base	1 24 VDC	NC normally closed
	3 1.1 mm				3 24 VAC	NO normally open
	6 1.5 mm				5 110 VAC	
					7 220 VAC	

### PIV.M STD DIMENSIONS



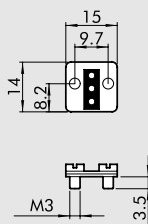
Symbol	Code	Description	Voltage [Volt]	Flow rate [Watt]	Air Ø [mm]	Factor hole	Operating press. [bar]
	W4015001000	PIV33M01 NC	24VDC	2.5W	1.1	0.42	0 to 10
	W4015001010	PIV33M03 NC	24VAC	2W - 3VA	1.1	0.42	0 to 10
	W4015001020	PIV33M05 NC	110VAC	2W - 3VA	1.1	0.42	0 to 10
	W4015001030	PIV33M07 NC	220VAC	2W - 3VA	1.1	0.42	0 to 10
	W4015001100	PIV63M01 NC	24VDC	2.5W	1.5	0.55	0 to 6
	W4015001110	PIV63M03 NC	24VAC	2W - 3VA	1.5	0.55	0 to 6
	W4015001120	PIV63M05 NC	110VAC	2W - 3VA	1.5	0.55	0 to 6
	W4015001130	PIV63M07 NC	220VAC	2W - 3VA	1.5	0.55	0 to 6
	W4015002000	PIV13M01 NO	24VDC	2.5W	1	0.33	0 to 6
	W4015002010	PIV13M03 NO	24VAC	2W - 3VA	1	0.33	0 to 6
	W4015002020	PIV13M05 NO	110VAC	2W - 3VA	1	0.33	0 to 6
	W4015002030	PIV13M07 NO	220VAC	2W - 3VA	1	0.33	0 to 6

### MULTIPLE BASE FOR PIV.M



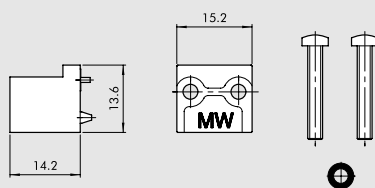
Code	Description	Abbrev.	Weight [g]
W0400101001	Single base 1 position	B5001	6
W0400101002	Multiple base 2 positions	B5002	24
W0400101003	Multiple base 3 positions	B5003	34
W0400101004	Multiple base 4 positions	B5004	46
W0400101005	Multiple base 5 positions	B5005	58
W0400101006	Multiple base 6 positions	B5006	70
W0400101007	Multiple base 7 positions	B5007	82
W0400101008	Multiple base 8 positions	B5008	98
W0400101009	Multiple base 9 positions	B5009	106
W0400101010	Multiple base 10 positions	B5010	114

### END PLUG - UNUSED POSITION



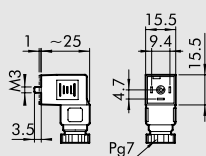
Code	Description	Weight [g]
W0400102000	End plug	6

### END PLUG - PORT 1



Code	Description	Weight [g]
W0400102002	End plug - port 1	4

### MICRO ELECTRIC CONNECTOR 15 mm



Code	Colour	Type
W0970500011	Black	Standard
W0970500012	Transparent	LED 24V
W0970500013	Transparent	LED 110V
W0970500015	Transparent	LED + VDR 24V
W0970500016	Transparent	LED + VDR 110V

# PIV VALVES ON BASE

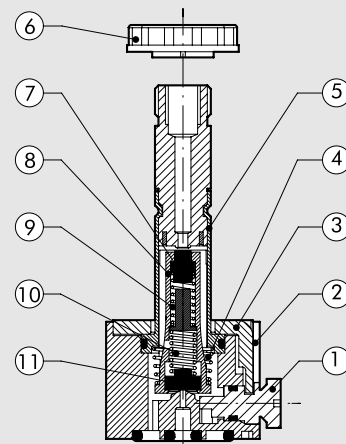
- PIV.I - PIV.T and PIV.B solenoid valves
- Assembly on base
- Bistable manual actuation
- Normally closed/normally open solenoid valves 2/2 – 3/2
- Installation in any position
- Particularly suitable for high operating frequencies and low response times



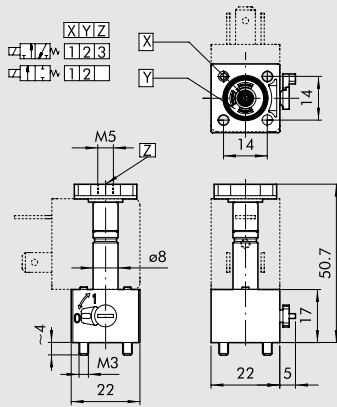
TECHNICAL DATA	PIV.I ON BASE	PIV.T ON BASE	PIV.B ON BASE
Absorption	5W - 5VA	3.8W - 6.5VA	10W - 13VA
Voltage available	12-24 VDC / 24-110-220 VAC	24VDC / 24-110-220 VAC	24VDC / 24-110-220 VAC
	50/60 Hz	50/60 Hz	50/60 Hz
Voltage tolerance	% -10 to +15	% -10 to +15	% -10 to +15
Max operating frequency	Hz 30	Hz 30	Hz 15
Solenoid rating	% 100	% 100	% 100
Response time	ms 8 to 15	ms 8 to 15	ms 10 to 15
Type of protection	IP 65	IP 65	IP 65
Type of coil	Coil side 22 Ø 8 DIN 43650	Coil side 22 Ø 9 DIN 43650	Coil side 30 DIN 43650
Insulation class	155	155	155
Ambient temperature	°C -15 to 50	°C -15 to 50	°C -15 to 50
Fluid temperature	°C -15 to 50	°C -15 to 50	°C -15 to 50
Fluid	Filtered lubricated or unlubricated air 25 million cycles	Filtered lubricated or unlubricated air 25 million cycles	Filtered lubricated or unlubricated air
Working life			-
Weight	g 80 to 120 (according to the version)	g 85	g 250
Maximum coil nut torque	Nm 1	Nm 1	Nm 1



## COMPONENTS

- ① Manual control: technopolymer
- ② Body: technopolymer
- ③ Sleeve locking plate
- ④ Spring: stainless steel
- ⑤ Sleeve: brass OT 58
- ⑥ Ring nut for coil fixing
- ⑦ Gasket: NBR
- ⑧ Mobile core
- ⑨ Spring: stainless steel
- ⑩ Spring: stainless steel
- ⑪ Gasket: NBR

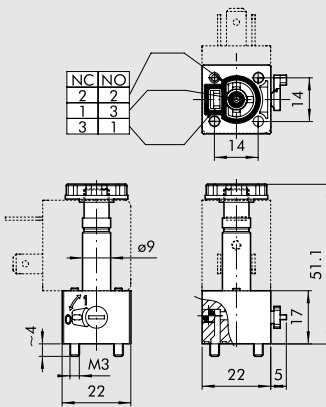




### PIV.I VALVES, OPERATOR Ø 8, ON BASE



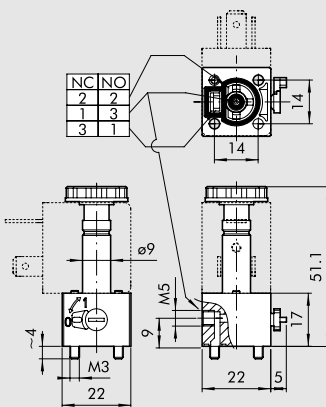
Symbol	Code	Description	Air hole Ø [mm]	Kv Factor	Max oper. pressure [bar]	
					DC	AC
	W4018000200	PIV42IOS NC	1.2	0.65	10	10
	W4018000300	PIV72IOS NC	1.6	1	8	8
	W4018001200	PIV43IOS NC	1.2	0.65	10	10
	W4018001300	PIV73IOS NC	1.6	1	8	8



### PIV.T VALVES, OPERATOR Ø 9, ON BASE



Symbol	Code	Description	Air hole Ø [mm]	Kv Factor	Pressure range [bar]	
					DC	AC
	W4025002101	PIV73TOB NO	1.6	0.75	0.5 to 7	0.5 to 7
	W4025002301	PIV83TOB NO	1.8	0.85	0.5 to 6.5	0.5 to 6.5
	W4025002100	PIV73TOB NC	1.6	0.8	0.5 to 10	0.5 to 10
	W4025002300	PIV83TOB NC	1.8	1	0.5 to 8	0.5 to 8

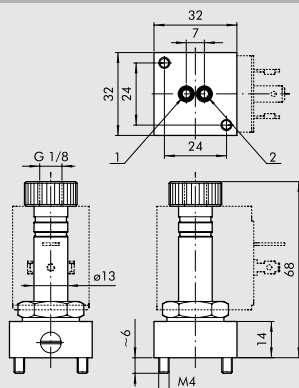
### PIV.T VALVES, OPERATOR Ø 9, ON BASE WITH CONVEYED EXHAUST




Symbol	Code	Description	Air hole Ø [mm]	Kv Factor	Pressure range [bar]	
					DC	AC
	W4025002001	PIV73T00 NO	1.6	0.75	0.5 to 7	0.5 to 7
	W4025002501	PIV83T00 NO	1.8	0.85	0 to 6	0.5 to 6.5
	W4025002000	PIV73T00 NC	1.6	0.8	0.5 to 10	0.5 to 10
	W4025002500	PIV83T00 NC	1.8	1	0.5 to 8	0.5 to 8

### PIV.T VALVES, OPERATOR Ø 13, ON BASE

NORMALLY CLOSED



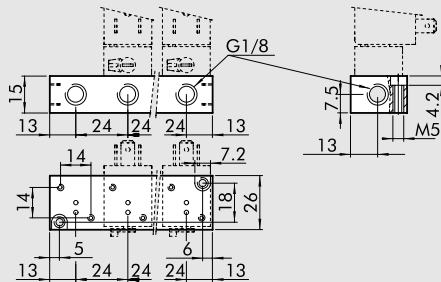
Symbol	Code	Description	Air hole Ø [mm]	Kv Factor	Max oper. pressure [bar]	
					DC	AC
	W4026003000	PIVY3B0S NC	2.4	2.2	8	10

**KEY TO CODES**

P I V FAMILY	5 AIR HOLE	3 NUMBER OF WAYS	T CONNECTION	0 THREAD	O VERSION	N C FURTHER DETAILS
	4 1.2 mm	2 2 ways	I 22x22	0 on base	O on base	NC normally closed
	7 1.6 mm	3 3 ways	operator Ø 8		with conveyed	NO normally open
	8 1.8 mm		T 22x22		exhaust	
	Y 2.4 mm		operator Ø 9		B on base	
			B 30x30		S standard	
			operator Ø 13			

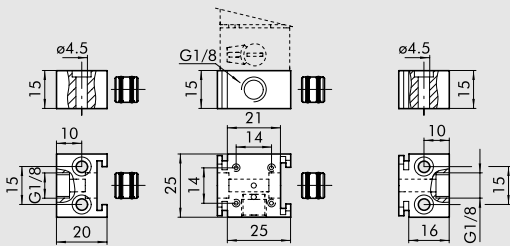
**ACCESSORIES**

**MULTIPLE BASES FOR PIV.I SOLENOID VALVES, OPERATOR Ø 8**



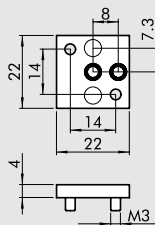
Code	Description	Abbrev.	Weight [g]
W0400111101	Base 1 position	EB 6001	22
W0400111102	Base 2 positions	EB 6002	50
W0400111103	Base 3 positions	EB 6003	76
W0400111104	Base 4 positions	EB 6004	102
W0400111105	Base 5 positions	EB 6005	128
W0400111106	Base 6 positions	EB 6006	154
W0400111107	Base 7 positions	EB 6007	180
W0400111108	Base 8 positions	EB 6008	206
W0400111109	Base 9 positions	EB 6009	232
W0400111110	Base 10 positions	EB 6010	258

**MANIFOLD BASES FOR PIV.I SOLENOID VALVES, OPERATOR Ø 8**



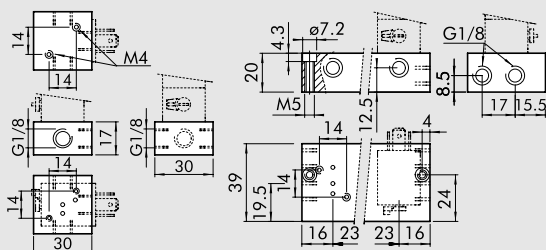
Code	Description	Abbrev.	Weight [g]
W0400111200	Manifold base	EB 8000 I	24
W0400111201	LH end plate	EB 8000 T1	17
W0400111202	RH end plate	EB 8000 T2	15

**BLANKING PLATE FOR PIV.I PIV.T VALVES, UNUSED POSITION**



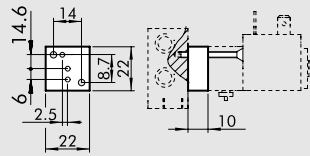
Code	Description	Abbrev.	Weight [g]
W0400112000	Unused position	B 6000	5

**MULTIPLE BASES FOR PIV.T SOLENOID VALVES, OPERATOR Ø 9**



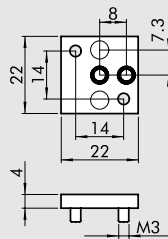
Code	Description	Abbrev.	Weight [g]
W0400101101	Base 1 position	19001	36
W0400101102	Base 2 positions	19002	104
W0400101103	Base 3 positions	19003	148
W0400101104	Base 4 positions	19004	192
W0400101105	Base 5 positions	19005	236
W0400101106	Base 6 positions	19006	280
W0400101107	Base 7 positions	19007	324
W0400101108	Base 8 positions	19008	368
W0400101109	Base 9 positions	19009	452
W0400101110	Base 10 positions	19010	456

### NC/NO ADAPTER FOR PIV.T VALVES



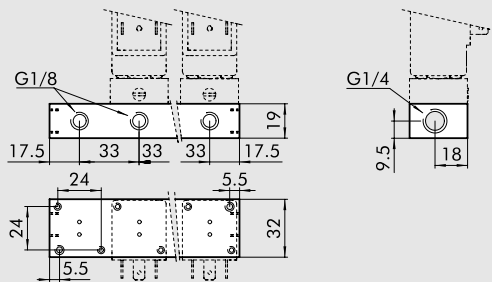
Code	Description	Abbrev.	Weight [g]
W0400101190	NC/NO adapter	I-9000	15

### BASE BLANKING PLATE FOR PIV.T VALVES, UNUSED POSITIONS



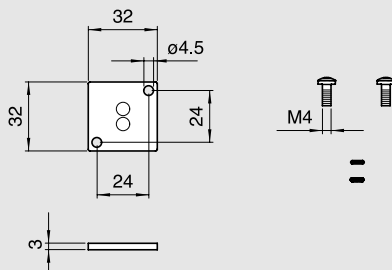
Code	Description	Abbrev.	Weight [g]
W0400112000	Blanking plate	B6000	5

### MULTIPLE BASES FOR PIV.B VALVES



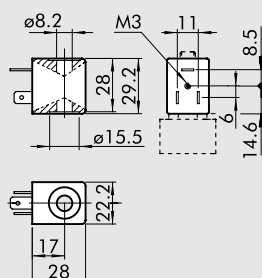
Code	Description	Abbrev.	Weight [g]
W0400101201	Base 1 position	B4001	42
W0400101202	Base 2 positions	B4002	94
W0400101203	Base 3 positions	B4003	142
W0400101204	Base 4 positions	B4004	188
W0400101205	Base 5 positions	B4005	234
W0400101206	Base 6 positions	B4006	280
W0400101207	Base 7 positions	B4007	326
W0400101208	Base 8 positions	B4008	372
W0400101209	Base 9 positions	B4009	418

### BASE BLANKING PLATE FOR PIV.B VALVES, UNUSED POSITIONS



Code	Description	Weight [g]
W0400112001	Blanking plate	14

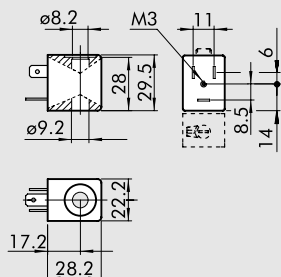
### COILS, SIDE 22 mm FOR PIV.I SOLENOID VALVES, OPERATOR Ø 8



- Voltage tolerance: -10 to +15%
- Insulation class: F155
- Degree of protection: IP65 – EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents.
- Maximum coil temperature at 100% use: 70°C at 20° ambient temperature
- According to ATEX 94/9 CE rule, group 2, category 3 GD

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000051	Coil 22 Ø 8 5W-12VDC	12Vcc	5W	5W
W0215000001	Coil 22 Ø 8 5W-24VDC	24Vcc	5W	5W
W0215000011	Coil 22 Ø 8 5VA-24VAC	24V 50/60Hz	8VA	5VA
W0215000021	Coil 22 Ø 8 5VA-110VAC	110V 50/60Hz	8VA	5VA
W0215000031	Coil 22 Ø 8 5VA-220VAC	220V 50/60Hz	8VA	5VA

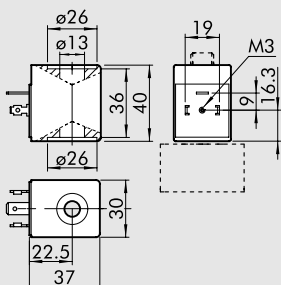
### COILS, SIDE 22 mm FOR PIV.T SOLENOID VALVES, OPERATOR Ø 9



- Voltage tolerance: -10 to +15%
- Insulation class: F155
- Degree of protection: IP65 – EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents
- Maximum coil temperature at 100% use: 70°C at 20° ambient temperature

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W021600001	Coil 22 Ø9 3.8W-24VDC	24Vcc	3.8W	3.8W
W021600011	Coil 22 Ø9 6.5VA-24VAC	24V 50/60Hz	9VA	6.5VA
W021600021	Coil 22 Ø9 6.5VA-110VAC	110V 50/60Hz	9VA	6.5VA
W021600031	Coil 22 Ø9 6.5VA-220VAC	220V 50/60Hz	9VA	6.5VA

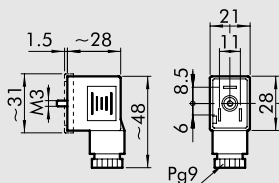
### COILS, SIDE 30 mm FOR PIV.B SOLENOID VALVES



- Voltage tolerance: -10 to +15%
- Insulation class: M180
- Degree of protection: IP65 – EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents

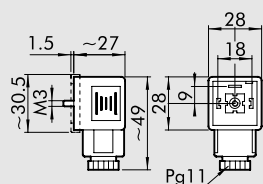
Code	Abbrev.	Nominal voltage	Power absorption (average power input)	
			Inrush	Holding
W021600101	Coil 30 Ø13 10W-24VDC	24Vcc	10W	
W021600111	Coil 30 Ø13 13VA-24VAC	24V 50/60Hz	13VA	
W021600121	Coil 30 Ø13 13VA-110VAC	110V 50/60Hz	13VA	
W021600131	Coil 30 Ø13 13VA-220VAC	220V 50/60Hz	13VA	

### CONNECTORS, SIDE 22 mm FOR PIV.I-PIV.T



Code	Type	Colour	Ø Cable
W0970510011	Standard	Black	PG9
W0970510012	LED 24V	Transparent	PG9
W0970510013	LED 110V	Transparent	PG9
W0970510014	LED 220V	Transparent	PG9
W0970510015	LED + VDR 24V	Transparent	PG9
W0970510016	LED + VDR 110V	Transparent	PG9
W0970510017	LED + VDR 220V	Transparent	PG9
W0970510070	Atex II 3 GD	Black	PG9

### CONNECTORS, SIDE 30 mm FOR PIV.B



Code	Type	Colour	Ø Cable
W0970520033	Standard	Black	PG11
W0970520034	LED 24V	Transparent	PG11
W0970520035	LED 110V	Transparent	PG11
W0970520036	LED 220V	Transparent	PG11
W0970520037	LED + VDR 24V	Transparent	PG11
W0970520038	LED + VDR 110V	Transparent	PG11
W0970520039	LED + VDR 220V	Transparent	PG11

### NOTES

# PIV VALVES IN LINE

- PIV.I – PIV.B in-line solenoid valves
- Threaded ports: M5, G1/8", G1/4"
- 2/2 – 3/2 solenoid valves - normally closed/normally open
- Installation in any position
- Particularly suitable for high operating frequencies and low response times.

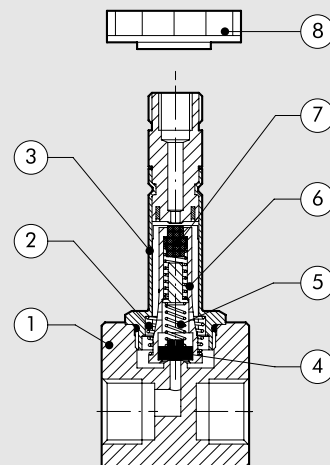


TECHNICAL DATA	PIV.I IN LINE	PIV.B IN LINE
Absorption	5W to 5VA	10W - 13VA
Voltage available	24Vdc - 24-110-220 Vac - 50/60 Hz	24Vdc - 24-110-220 Vac - 50/60 Hz
Voltage tolerance	% -10 to 15	% -10 to 15
Max operating frequency	Hz 30	Hz 15
Solenoid rating	% 100	% 100
Response time	ms 8 to 15	ms 10 to 15
Type of protection	IP 65	IP 65
Type of coil	Coil side 22 Ø 8 DIN 43650	Coil side 30 DIN 43650
Insulation class	155	155
Ambient temperature	°C -15 to 50	°C -15 to 50
Fluid temperature	°C -15 to 50	°C -15 to 50
Fluid	Filtered lubricated or unlubricated air	Filtered lubricated or unlubricated air
Working life	25 million cycles	-
Weight	35 to 40 (depending on version)	130
Maximum coil/nut torque	Nm 1	Nm 1

**Note on use:**  
The 2/2 NC and 2/2 NO valves work only with inlet pressure  $\geq$  outlet pressure.

## COMPONENTS

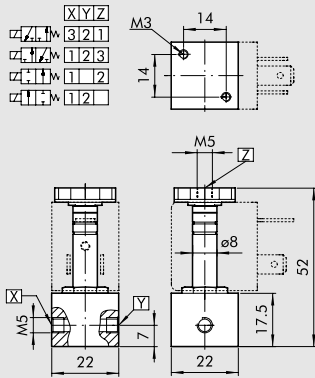
- ① Body: aluminium
- ② Springs: steel
- ③ Sleeve
- ④ Gasket: NBR
- ⑤ Springs: steel
- ⑥ Mobile core
- ⑦ Gasket: FKM/FPM
- ⑧ Coil locking ring



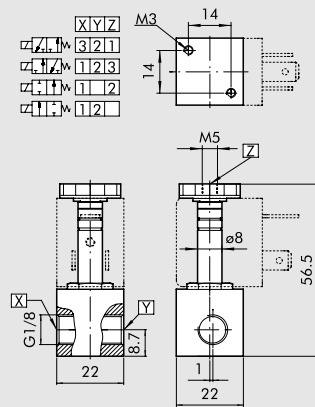


**PIV.I VALVES, OPERATOR Ø 8 mm, IN LINE – M5 – 1/8"**

M5

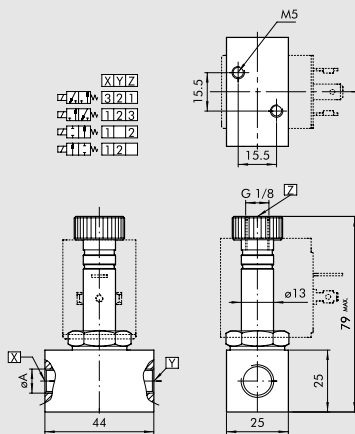


1/8"



Symbol	Code	Description	Input thread	Air hole Ø [mm]	Kv Factor	Max oper. pressure [bar]	
						DC 5W	AC 5VA
	W4017000100	PIV42I5S NC	M5	1.2	0.65	30	30
	W4017001300	PIV92I8S NC	G1/8"	2.4	2	6	7
	W4017001100	PIV42I8S NC	G1/8"	1.2	0.65	30	30
	W4017001200	PIV72I8S NC	G1/8"	1.6	1.2	15	14
	W4017000101	PIV72I5S NO	M5	1.4	0.8	10	10
	W4017003100	PIV43I5S NC	M5	1.2	0.65	10	10
	W4017004100	PIV43I8S NC	G1/8"	1.2	0.65	10	10
	W4017004200	PIV73I8S NC	G1/8"	1.6	1	6.5	6.5
	W4017004201	PIV73I8S NO	G1/8"	1.4	0.7	6	7

**PIV.B VALVES, OPERATOR Ø 13, IN LINE**



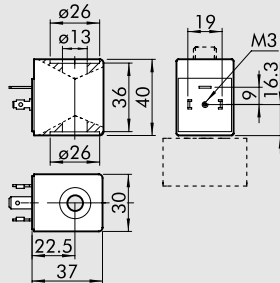
Symbol	Code	Description	Input thread	Ø Air hole [mm]	Factor kv	Max oper. pressure [bar]	
						DC 10W	AC 13VA
	W4026005001	PIV73B8S NO	G1/8"	1.6	1.2	6	12
	W4026005101	PIV73B4S NO	G1/4"	1.6	1.2	6	12
	W4026005111	PIV93B4S NO	G1/4"	2.4	2	3	4
	W4026005010	PIV93B8S NC	G1/8"	2.4	2.8	8	10
	W4026005020	PIVW3B8S NC	G1/8"	3	4	5.5	6
	W4026005000	PIV73B8S NC	G1/8"	1.6	1.4	14	17
	W4026005100	PIV73B4S NC	G1/4"	1.6	1.4	14	17
	W4026005110	PIV93B4S NC	G1/4"	2.4	2.8	8	8
	W4026005120	PIVW3B4S NC	G1/4"	3	4	5.5	6
	W4026004000	PIV92B4S NC	G1/4"	2.4	3	15	30
	W4026004010	PIVX2B4S NC	G1/4"	4	7	6	12
	W4026004020	PIVZ2B4S NC	G1/4"	6	9	1.5	5
	W4026004001	PIV92B4S NO	G1/4"	2.4	2.6	13	15

**KEY TO CODES**

PIV FAMILY	7 AIR HOLE	2 NUMBER OF WAYS	B CONNECTION	4 THREAD	5 VERSION	N C FURTHER DETAILS
	4 1.2 mm	2 2 ways	I 22 x 22	5 M5	S standard	NC normally closed
	7 1.6 mm	3 3 ways	operator Ø 8	4 G1/4"		NO normally open
	9 2.4 mm		30 x 30	8 G1/8"		
	W 3 mm		operator Ø 13			
	X 4 mm					
	Z 6 mm					

## ACCESSORIES

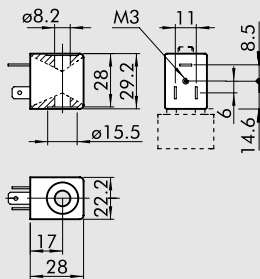
### COIL, SIDE 30 mm - FOR PIV.B SOLENOID VALVES



- Voltage tolerance: -10 to +15%
- Insulation class: M180
- Degree of protection: IP65 – EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents

Code	Abbrev.	Nominal voltage	Absorption (average)
W0216001001	Coil 30 Ø13 10W-24VDC	24Vcc	10W
W0216001011	Coil 30 Ø13 13VA-24VAC	24V 50/60Hz	13VA
W0216001021	Coil 30 Ø13 13VA-110VAC	110V 50/60Hz	13VA
W0216001031	Coil 30 Ø13 13VA-220VAC	220V 50/60Hz	13VA

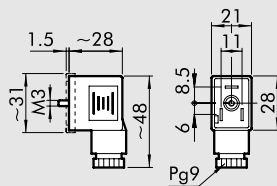
### COIL, SIDE 22 mm - FOR PIV.I SOLENOID VALVES



- Voltage tolerance: -10 to +15%
- Insulation class: F155
- Degree of protection: IP65 – EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents
- Maximum temperature of coil at 100% use: 70°C at 20° ambient temperature
- According to Atex 94/9 CE rule, group 2, category 3 GD

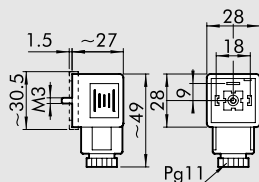
Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000051	Coil 22 Ø8 5W-12VDC	12Vcc	5W	5W
W0215000001	Coil 22 Ø8 5W-24VDC	24Vcc	5W	5W
W0215000011	Coil 22 Ø8 5VA-24VAC	24V 50/60Hz	8VA	5VA
W0215000021	Coil 22 Ø8 5VA-110VAC	110V 50/60Hz	8VA	5VA
W0215000031	Coil 22 Ø8 5VA-220VAC	220V 50/60Hz	8VA	5VA

### CONNECTOR, SIDE 22 mm



Code	Type	Colour	Ø Cable
W0970510011	Standard	Black	PG9
W0970510012	LED 24V	Transparent	PG9
W0970510013	LED 110V	Transparent	PG9
W0970510014	LED 220V	Transparent	PG9
W0970510015	LED + VDR 24V	Transparent	PG9
W0970510016	LED + VDR 110V	Transparent	PG9
W0970510017	LED + VDR 220V	Transparent	PG9
W0970510070	Atex II 3 GD	Black	PG9

### CONNECTOR, SIDE 30 mm



Code	Type	Colour	Ø Cable
W0970520033	Standard	Black	PG11
W0970520034	LED 24V	Transparent	PG11
W0970520035	LED 110V	Transparent	PG11
W0970520036	LED 220V	Transparent	PG11
W0970520037	LED + VDR 24V	Transparent	PG11
W0970520038	LED + VDR 110V	Transparent	PG11
W0970520039	LED + VDR 220V	Transparent	PG11

# CNOMO SOLENOID VALVE

Solenoid valve to CNOMO 060580.

- 3/2 version normally closed
- Bistable and monostable manual actuation
- Assembly on manifold base



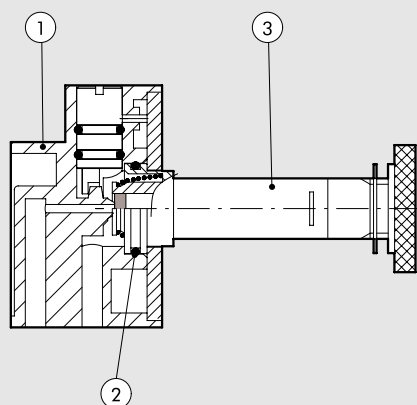
DISTRIBUTORS

CNOMO SOLENOID VALVE

## TECHNICAL DATA

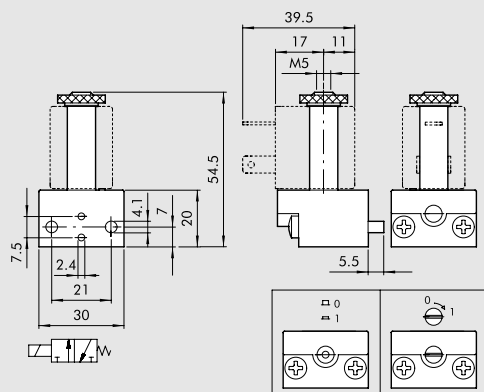
Operating pressure	bar	Max 10
Operating temperature range	°C	-10 to 60
Solenoid rating		100% ED
Fluid		Filtered lubricated or unlubricated air
System		With poppet
Nominal flow rate	l/min	40
TRA/TRR at 6 bar	ms	22/32
Maximum coil nut torque	Nm	1

## COMPONENTS



- 1 VALVE BODY: HOSTAFORM®
- 2 GASKETS: NBR
- 3 OPERATOR: Brass pipe – Stainless steel core

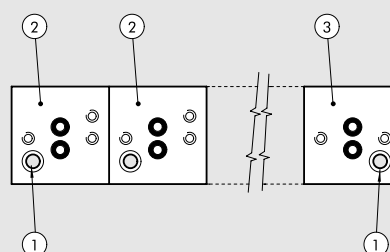
## DIMENSIONS



Code	Description
9453920	Cnomo 3/2 with monostable manual actuation
9453922	Cnomo 3/2 with bistable manual actuation

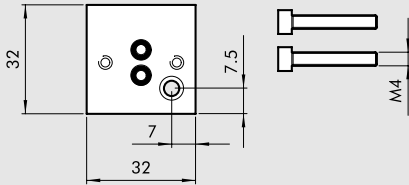
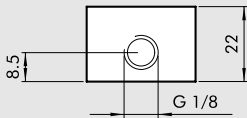
## MODULAR CONFIGURATION OF CNOMO BASES

- 1 Two fixing screws (included in input kit)
- 2 CNOMO manifold base kit
- 3 CNOMO manifold base input kit



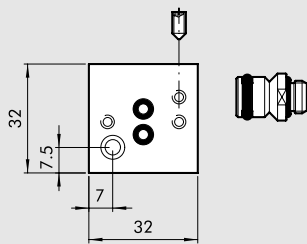
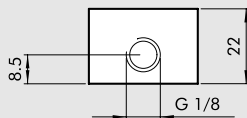
## ACCESSORIES

### CNOMO MANIFOLD BASE INPUT KIT



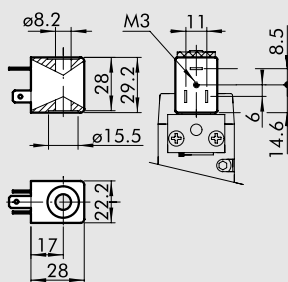
Code	Description
0227000200	Cnomo manifold base input kit

### CNOMO MANIFOLD BASE KIT



Code	Description
0227000150	Cnomo manifold base kit

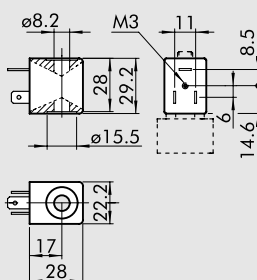
### COILS SIDE 22 mm



- Voltage tolerance: -10% to + 15%
- Insulation class: F155
- Degree of protection: IP65 EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents
- Coil temperature 100% ED: 70°C at 20°C – Ambient temperature
- According to Atex 94/9 CE rule, group 2, category 3 GD

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000151	Coil 22 Ø 8 BA 2W-12VDC	12Vcc	2W	2W
W0215000101	Coil 22 Ø 8 BA 2W-24VDC	24Vcc	2W	2W
W0215000111	Coil 22 Ø 8 BA 3.5VA-24VAC	24V 50/60Hz	5.3VA	3.5VA
W0215000121	Coil 22 Ø 8 BA 3.5VA-110VAC	110V 50/60Hz	5.3VA	3.5VA
W0215000131	Coil 22 Ø 8 BA 3.5VA-220VAC	220V 50/60Hz	5.3VA	3.5VA

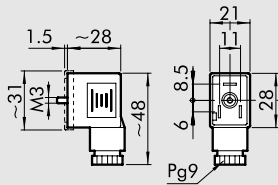
### "UL" AND "CSA" COILS 22 mm



- Voltage tolerance: -10% to + 15%
- Insulation class: F155
- Degree of protection: IP65 EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents
- Coil temperature 100% ED: 70°C at 20°C – Ambient temperature
- According to Atex 94/9 CE rule, group 2, category 3 GD
- For the standards description look at page 6-29

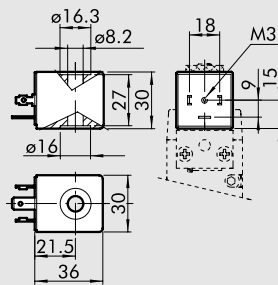
Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000251	Coil 22 Ø 8 BA 2W-12VDC UR	12Vcc	2W	2W
W0215000201	Coil 22 Ø 8 BA 2W-24VDC UR	24Vcc	2W	2W
W0215000211	Coil 22 Ø 8 BA 3.5VA-24VAC UR	24V 50/60Hz	5.3VA	3.5VA
W0215000221	Coil 22 Ø 8 BA 3.5VA-110VAC UR	110V 50/60Hz	5.3VA	3.5VA
W0215000231	Coil 22 Ø 8 BA 3.5VA-220VAC UR	220V 50/60Hz	5.3VA	3.5VA

CONNECTOR FOR COILS SIDE 22 mm



Code	Type	Colour	Ø Cable
W0970510011	Standard	Black	PG9
W0970510012	LED 24V	Transparent	PG9
W0970510013	LED 110V	Transparent	PG9
W0970510014	LED 220V	Transparent	PG9
W0970510015	LED + VDR 24V	Transparent	PG9
W0970510016	LED + VDR 110V	Transparent	PG9
W0970510017	LED + VDR 220V	Transparent	PG9
W0970510070	Atex II 3 GD	Black	PG9

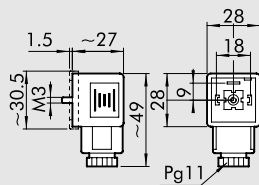
COILS, SIDE 30 mm



- Electric contact DIN 43650 Shape A - ISO 4400
- Voltage tolerance: -10% to +10%
- Insulation class: F155
- Degree of protection: IP65 EN 60529 with connector
- Solenoid rating: 100% ED
- Maximum coil temperature at 100% ED use 70°C at 20° ambient temperature

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0210010100	Coil 30 Ø8 4W-24VDC	24Vcc	5W	4W
W0210011100	Coil 30 Ø8 4VA-24VAC	24V 50/60Hz	10VA	4VA
W0210012100	Coil 30 Ø8 4VA-110VAC	110V 50/60Hz	10VA	4VA
W0210013100	Coil 30 Ø8 4VA-220VAC	220V 50/60Hz	10VA	4VA

CONNECTOR ON SIDE 30 mm



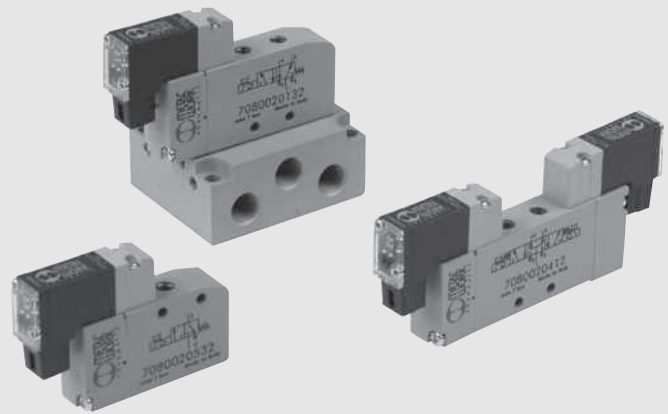
Code	Type	Colour	Ø Cable
W0970520033	Standard	Black	PG11
W0970520034	LED 24V	Transparent	PG11
W0970520035	LED 110V	Transparent	PG11
W0970520036	LED 220V	Transparent	PG11
W0970520037	LED + VDR 24V	Transparent	PG11
W0970520038	LED + VDR 110V	Transparent	PG11
W0970520039	LED + VDR 220V	Transparent	PG11

NOTES

Space-saving valve, ideal for in industrial automation applications. Made according to the well-proven design of the Mach series, the Minimach has a painted aluminium body to ensure extra sturdiness and reliable operation in even the harshest of environments. The internal seals are made of FKM/FPM and are compatible with all oils used in compressors. The pneumatic couplings are M5 threaded, allowing the user to choose the diameter, type and angle of the fitting. The valve can be mounted in line or on a panel or multiple-port base. The following versions are available:

- 3/2 normally open or normally closed
- 5/2 monostable or bistable
- 5/3 closed centres, open centres, pressure centres.

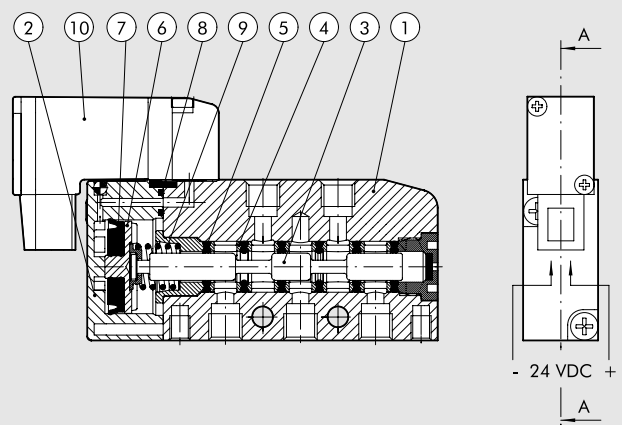
Electropneumatic actuation with a 24V DC pilot.



TECHNICAL DATA		
Valve port thread		M5
Type of actuation		electric-pneumatic
Maximum external diameter of fittings	mm	Ø 11
Operating temperature range	°C	-10 to +60
	°F	14 to +140
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous
Pressure range	MPa	0.3 to 0.7
	bar	3 to 7
	psi	44 to 102
Flow rate at 6 bar ΔP 1 3/2	NI/min	140
Flow rate at 6 bar ΔP 1 5/2	NI/min	170
Flow rate at 6 bar ΔP 1 5/3	NI/min	80
Voltage range		24 VDC ± 10%
Power	W	0.9
Solenoid rating		100% ED
Manual operator		Monostable
TRA/TRR 3/2 at 6 bar	ms	8/23
TRA/TRR 5/2 monostable at 6 bar	ms	8/30
TRA/TRR 5/2 bistable at 6 bar	ms	15/15
TRA/TRR 5/3 at 6 bar	ms	9/30
Insulation class		F155
Degree of protection		IP 51
Installation		In any position. As for the bistable ones, if subject to vibration, the vertical assembly is not advisable
Compatibility with oils		Please refer to page 6-7 of the technical documentation

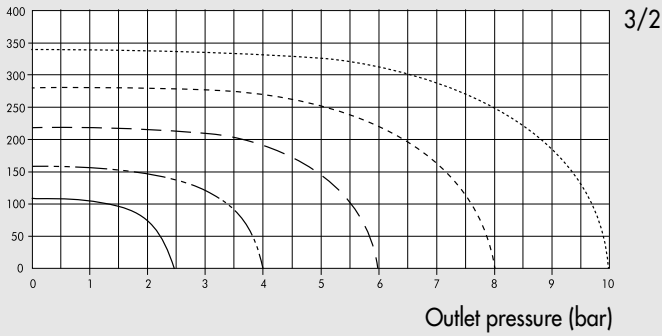
## COMPONENTS

- ① VALVE BODY: chemically nickel-plated aluminium
- ② CONTROL/END CAP: Hostaform®
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: tecnopolymer
- ⑤ GASKETS: FKM-FPM
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: Polyurethane
- ⑧ FILTER: sintered bronze
- ⑨ SPRINGS: special steel
- ⑩ PILOT: with integrated coil



**FLOW CHART**

Flow rates (Nl/min)



Flow rates (Nl/min)



Flow rates (Nl/min)



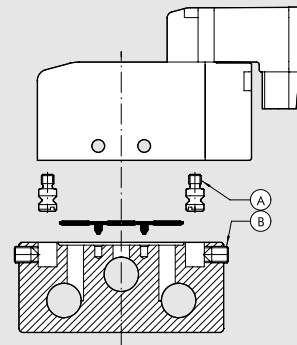
**HOW TO FIX THE VALVE TO THE BASE**

Proceed as follows:

1. screw the pins ④ onto the valve
2. secure them with the ready-mounted grub screws ⑤ on the base (0.5 Nm max)

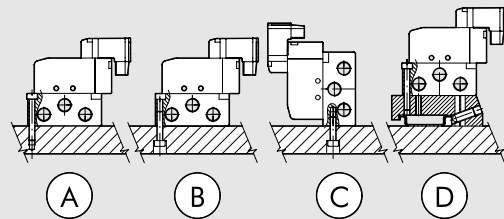
**IMPORTANT**

To secure properly, press the valve down onto the base while tightening the two grub screws.  
Do not tighten one grub screw completely before starting to tighten the other.



**HOW TO FIX THE BASE**

- ④ From the top using M4 screws
- ⑤ From below using M5 screws
- ⑥ From the side using M4 screws
- ⑦ From the top on the DIN bar via the M4 screws and bracket code 0225004600 (using 1 screw per bracket)

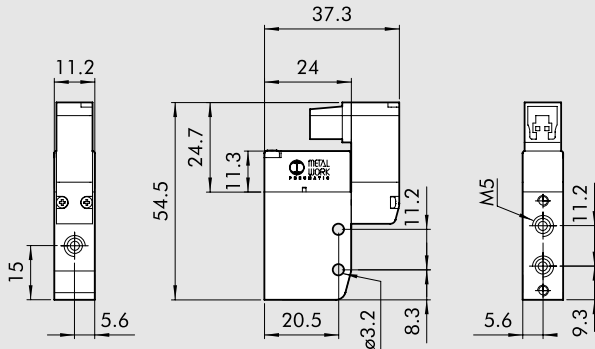


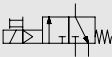
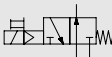
**KEY TO CODES**

M S V	0	5	S O	B	O O	2 4 V D C
FAMILY	DIMENSIONS	FUNCTION	OPERATORS 14	RESETTING (12)	FURTHER DETAILS	
MSV minivalves solenoid	0 M5	3 3/2 5 5/2 6 5/3	SO solenoid	B bistable S mechanical springs	NC normally closed NO normally open OO 5/2 standard CC closed centres OC open centres PC pressure centres	24VDC

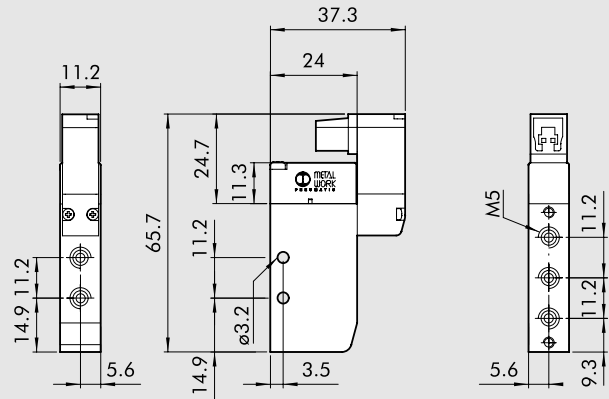
# MINIMACH VALVES SOLENOID-PNEUMATIC

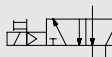
## MONOSTABLE 3/2



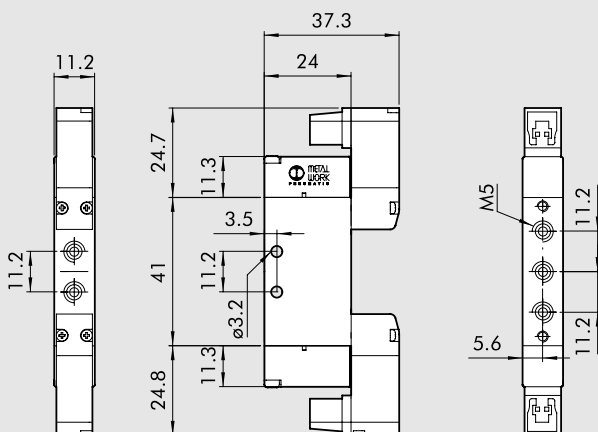
Symbol	Code	Abbrev.	Weight [g]
	7080020532	MSV 03 SOS NC 24VDC	36.2
	7080020632	MSV 03 SOS NO 24VDC	36.2

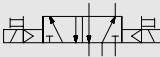
## MONOSTABLE 5/2



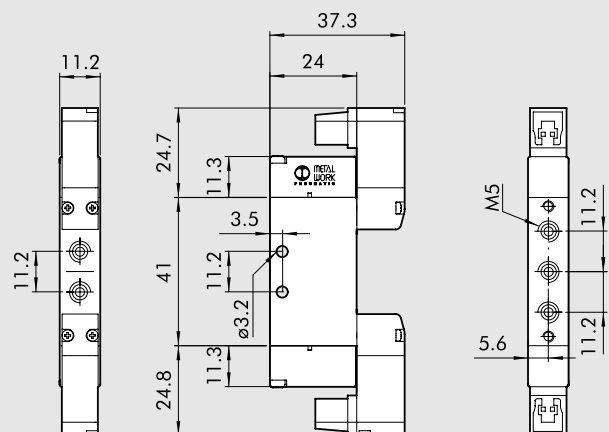
Symbol	Code	Abbrev.	Weight [g]
	7080020132	MSV 05 SOS OO 24VDC	43.3

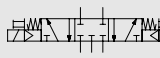
## BISTABLE 5/2



Symbol	Code	Abbrev.	Weight [g]
	7080020112	MSV 05 SOB OO 24VDC	57

## MONOSTABLE 5/3

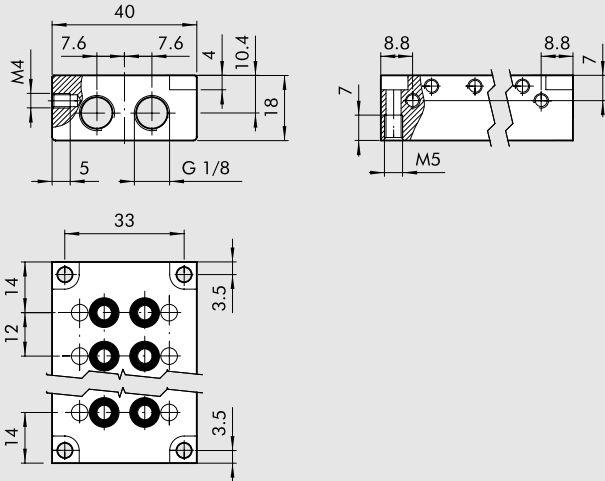


Symbol	Code	Abbrev.	Weight [g]
	7080020212	MSV 06 SOS CC 24VDC	57
	7080020312	MSV 06 SOS OC 24VDC	57
	7080020412	MSV 06 SOS PC 24VDC	57



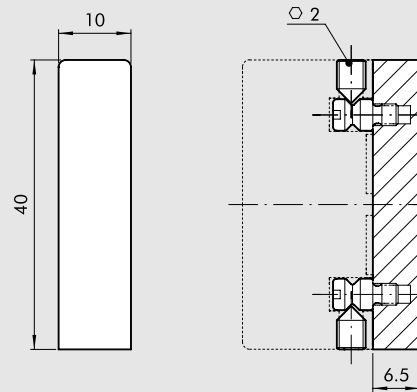
## ACCESSORIES: MULTIPLE BASE

### 3/2 MULTIPLE BASE



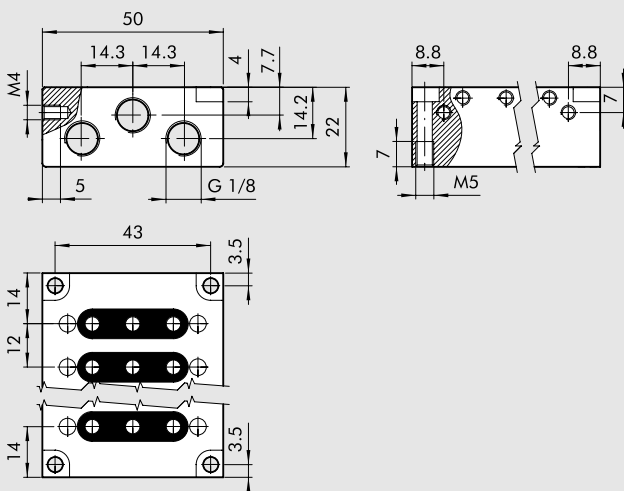
Code	Description	Position	Weight [g]
0225010201	Base 2 posn. for 3/2 valves Minimach	2	60
0225010401	Base 4 posn. for 3/2 valves Minimach	4	99
0225010601	Base 6 posn. for 3/2 valves Minimach	6	135
0225010801	Base 8 posn. for 3/2 valves Minimach	8	178

### BLANKING PLATE FOR 3/2 VALVES



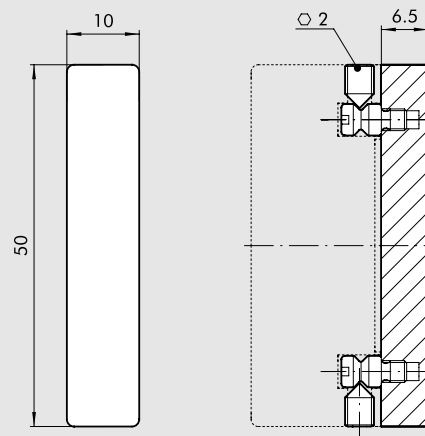
Code	Description	Weight [g]
0226009500	Blanking plate for 3/2 bases Minimach	9.5

### 5/2 - 5/3 MULTIPLE BASE



Code	Description	Position	Weight [g]
0225020201	Base 2 posn. for 5/2-5/3 valves Minimach	2	95
0225020401	Base 4 posn. for 5/2-5/3 valves Minimach	4	154
0225020601	Base 6 posn. for 5/2-5/3 valves Minimach	6	211
0225020801	Base 8 posn. for 5/2-5/3 valves Minimach	8	270

### BLANKING PLATE FOR 5/2 - 5/3 VALVES

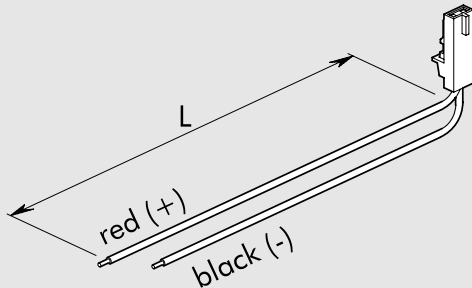


Code	Description	Weight [g]
0226009501	Blanking plate for 5/2-5/3 bases Minimach	11

## ACCESSORIES

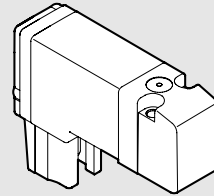
## SPARE PARTS

### PLUG-IN CONNECTOR



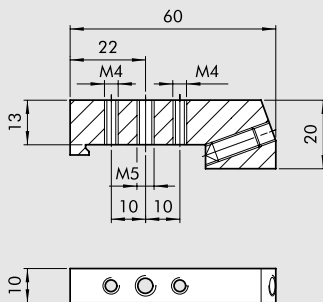
Code	Description
W0970512000	Plug-in connector for MACH 11 L = 300

### PLUG-IN PILOT



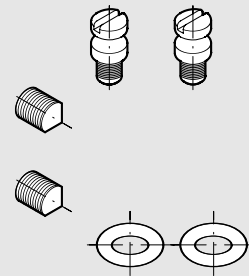
Code	Description
722113541100	PLT-10 722113541100

### ADAPTER FOR BAR OMEGA (DIN EN 50022)



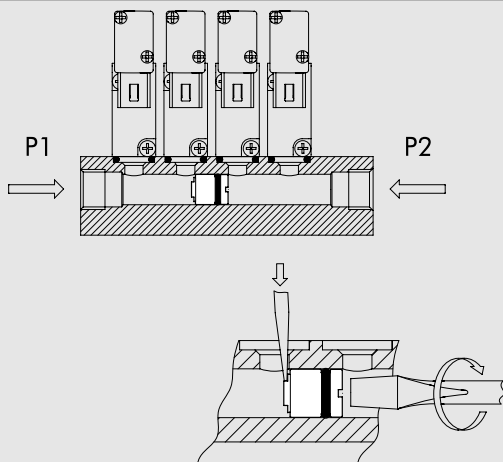
Code	Descrizione	Weight [g]
0225004600	Adapter for bar omega	46

### KIT OF SPARE GASKET BASES FOR 3/2 VALVES



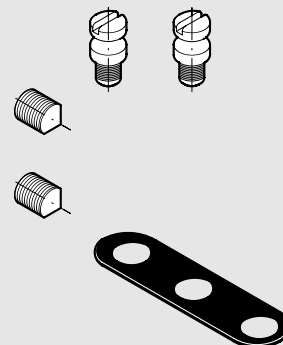
Code	Description	Weight [g]
0226009000	Kit of spare gasket bases for 3/2 valves	2.5

### INTERMEDIATE DIAPHRAGM



Code	Description	Weight [g]
0226009010	Multiple base diaphragm	3.5

### KIT OF SPARE GASKET BASES FOR 5/2 - 5/3 VALVES



Code	Description	Weight [g]
0226009001	Kit of spare gasket bases for 5/2-5/3 valves	2.5

# MACH 11 VALVES

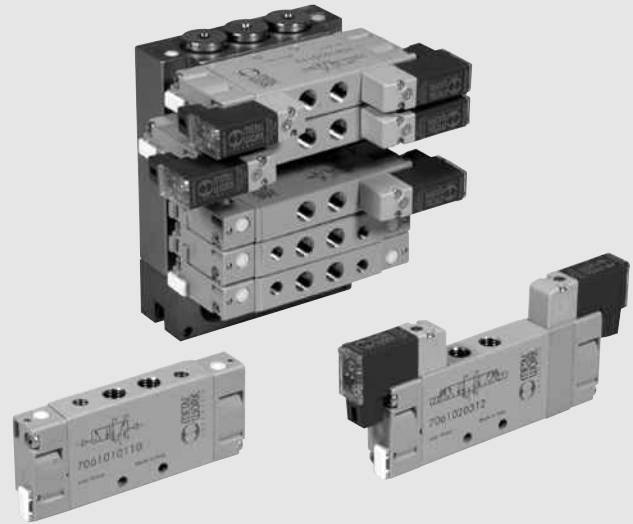
The Mach 11 in-line valves with M7 threaded connection come in the following versions:

- 5/2 monostable and bistable
- 5/3 with closed, open or pressure centres.

Control:

- pneumatic
- solenoid/pneumatic 24 V

With an exceptional compact design only 11 mm wide, and excellent high performance, these valves can be used in numerous applications in industrial automation.



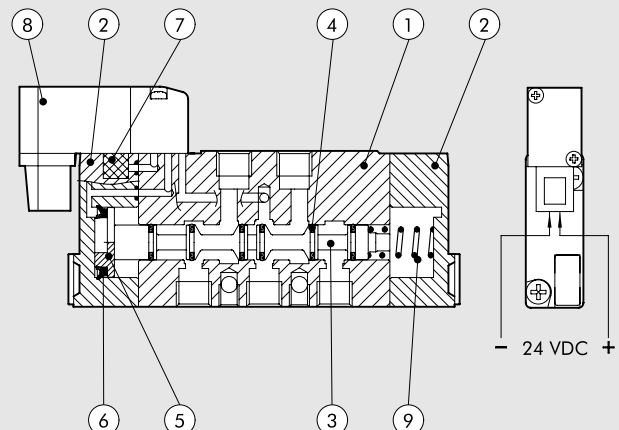
## TECHNICAL DATA

Valve port thread		M7		
Pilot thread		M5		
Maximum external diameter of fittings	mm	Pneumatic: M7 = Ø 11 - M5 = Ø 9 - Electric: M7 - M5 = Ø 11		
Operating temperature range	°C	-10 to +60		
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous		
Screw for valve wall-mounting		M3		
Flow rate at 6 bar ΔP 1 bar	NI/min	400		
Pressure range	bar	<b>Electric</b>	<b>Electric pilot-assisted</b>	<b>Pneumatic</b>
		monostable: 2 to 7	pilot pressure: 2 to 7	monostable control pres.values: 2 to 10
		bistable: 2 to 7	valve: vacuum to 10	bistable control pres. values: 1 to 10
		5/3: 2 to 7		control pressure 5/3: 2 to 10
				valve: vacuum to 10
Voltage range		24 VDC ± 10%	24 VDC ± 10%	-
Power	W	0.9	0.9	-
Insulation class		F155	F155	-
Degree of protection		IP 51	IP 51	-
Solenoid rating		100% ED	100% ED	-
TRA/TRR monostable at 6 bar	ms	10 / 45	10 / 45	4 / 9
TRA/TRR bistable at 6 bar	ms	22 / 22	22 / 22	4 / 4
TRA/TRR 5/3 monostable at 6 bar	ms	22 / 22	22 / 22	4 / 4
Compatibility with oils				

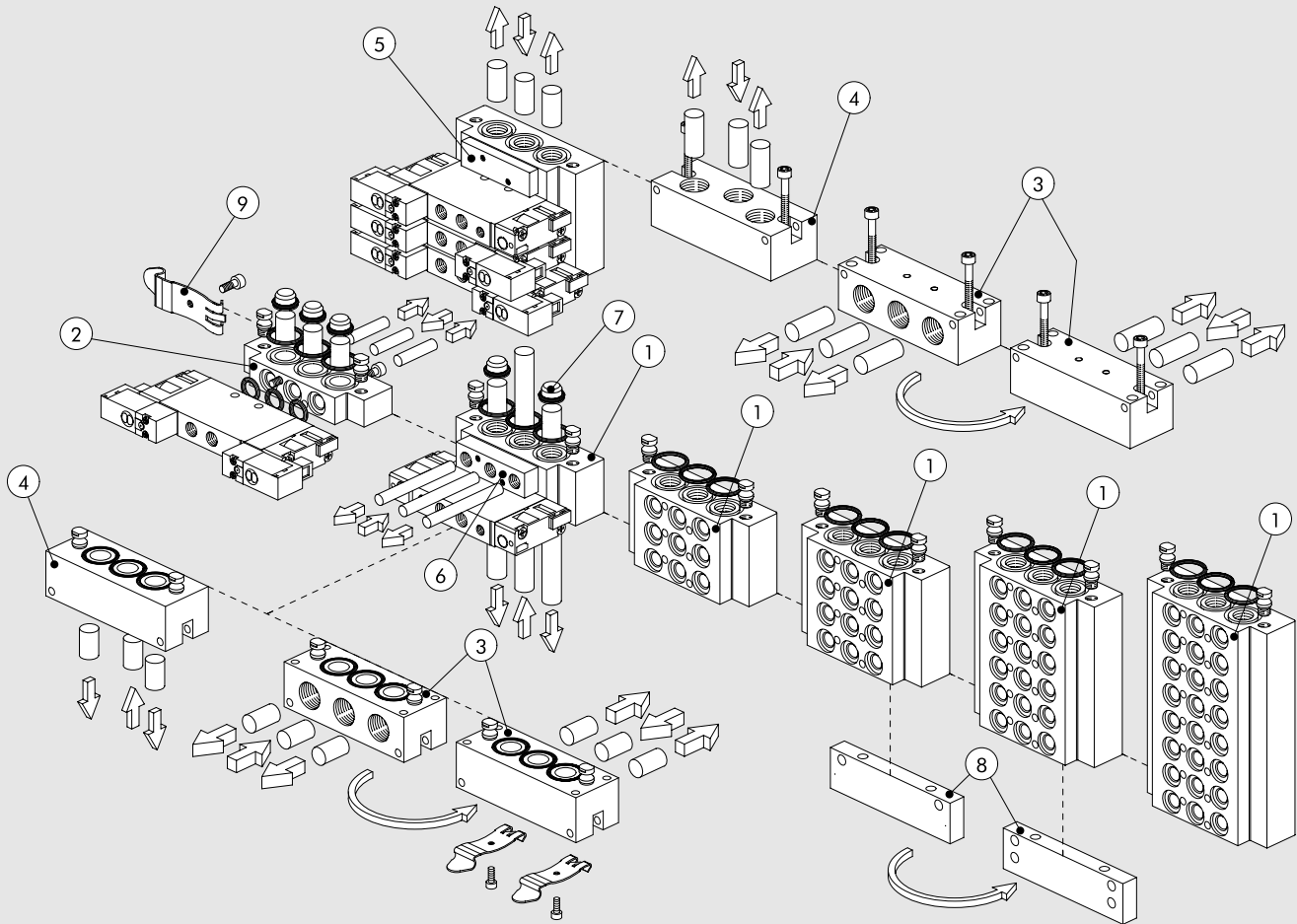
Please refer to page 6-7 of the technical documentation

## COMPONENTS

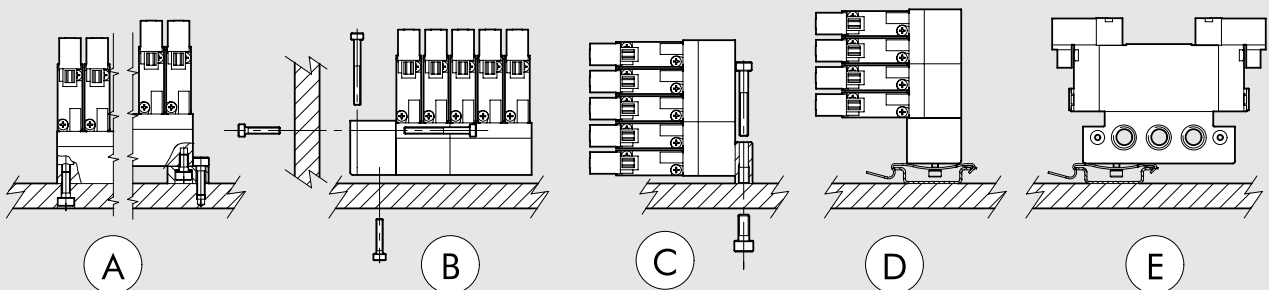
- ① VALVE BODY: Aluminium
- ② CONTROL/BASE: Hostaform®
- ③ SPOOL: Aluminium
- ④ GASKETS: Polyurethane
- ⑤ PISTONS: Hostaform®
- ⑥ PISTON GASKET: Polyurethane
- ⑦ FILTER: sintered bronze
- ⑧ PILOT: with integrated coil
- ⑨ SPRINGS: special steel
- ⑩ REMOVABLE IDENTIFICATION PLATE



## MODULARITY



## HOW TO FIX THE BASE

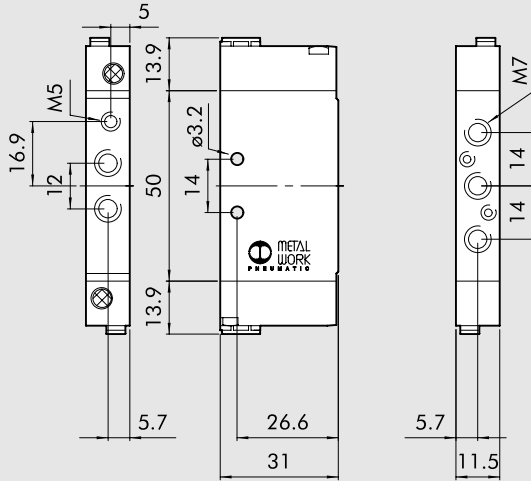


## KEY TO CODES

M S V FAMILY	1 DIMENSIONS	5 FUNCTION	S O OPERATORS 14	B RESETTING (12)	O O FURTHER DETAILS	2 4 V D C
MSV mini-solenoid valve	1 M7	5 5/2 6 5/3	SO solenoid SE solenoid assisted PN pneumatic	B bistable S mechanical springs	OO 5/2 standard CC closed centres OC open centres PC pressure centres	24VDC
MSV mini-pneumatic valve						

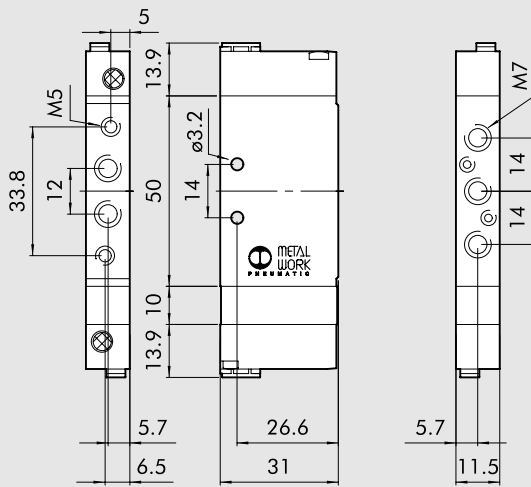
# MACH 11 VALVES, PNEUMATIC

## MONOSTABLE 5/2



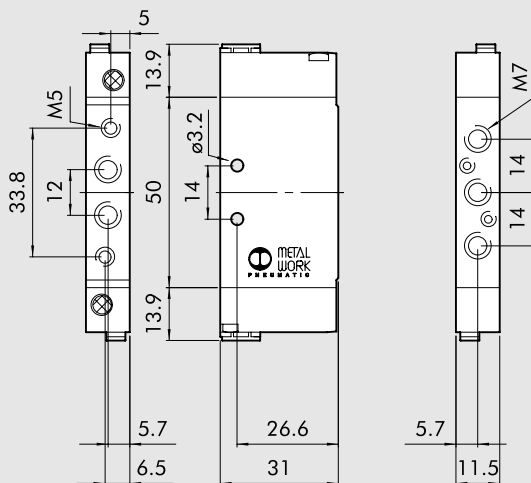
Symbol	Code	Abbrev.	Weight [g]
	7061010130	MPV 15 PNS OO	52

## MONOSTABLE 5/3



Symbol	Code	Abbrev.	Weight [g]
	7061010210	MPV 16 PNS CC	62
	7061010310	MPV 16 PNS OC	62
	7061010410	MPV 16 PNS PC	62

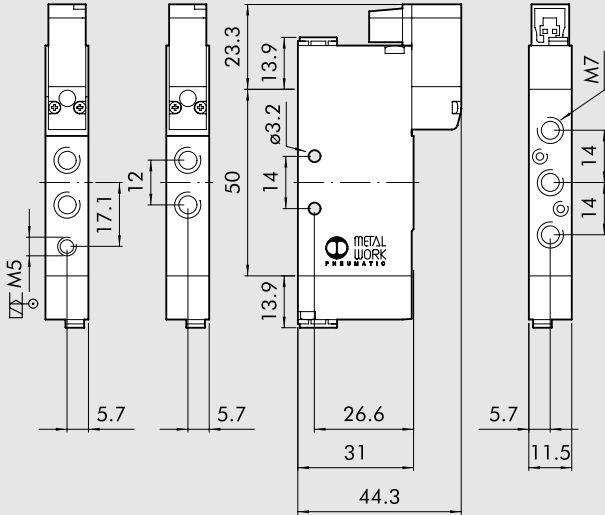
## BISTABLE 5/2

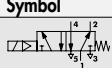
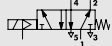


Symbol	Code	Abbrev.	Weight [g]
	7061010110	MPV 15 PNB OO	52

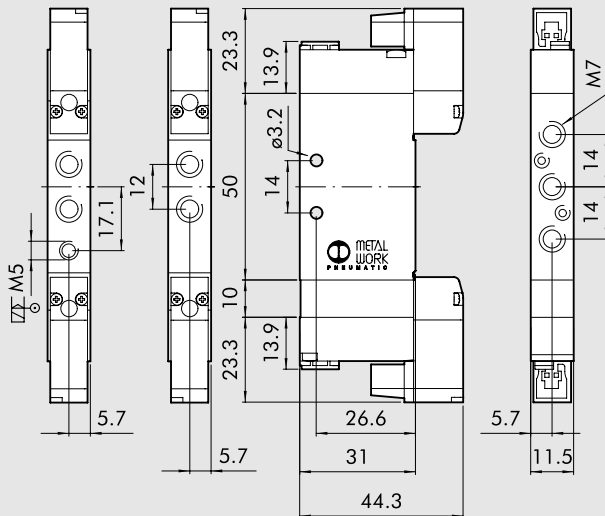
# MACH 11 VALVES, SOLENOID-PNEUMATIC

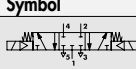

## MONOSTABLE 5/2



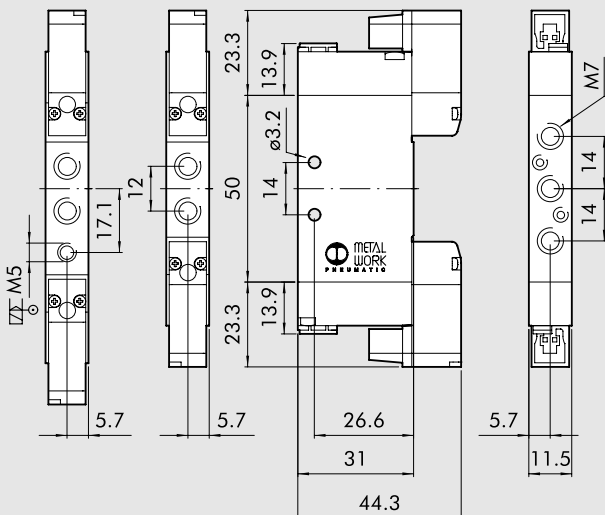
Symbol	Code	Abbrev.	Weight [g]
	7061020132	MSV 15 SOS OO 24VDC	60
	7061030132	MSV 15 SES OO 24VDC	60

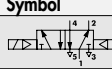
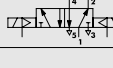
## MONOSTABLE 5/3



Symbol	Code	Abbrev.	Weight [g]
	7061020212	MSV 16 SOS CC 24VDC	82
	7061020312	MSV 16 SOS OC 24VDC	82
	7061020412	MSV 16 SOS PC 24VDC	82
	7061030212	MSV 16 SES CC 24VDC	82
	7061030312	MSV 16 SES OC 24VDC	82
	7061030412	MSV 16 SES PC 24VDC	82

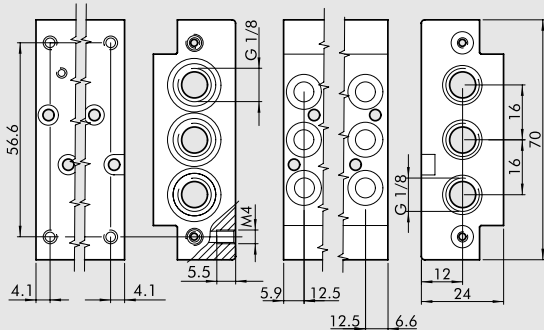
## BISTABLE 5/2



Symbol	Code	Abbrev.	Weight [g]
	7061020112	MSV 15 SOB OO 24 VDC	72
	7061030112	MSV 15 SEB OO 24 VDC	88

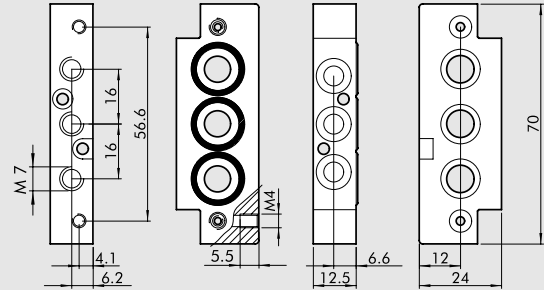
## ACCESSORIES: MANIFOLD BASES

### ① MULTIPLE MANIFOLD BASE



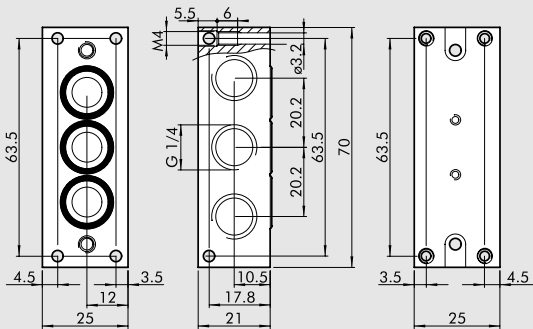
Code	Description	Weight [g]
0227400201	Base, 2 posn. for Mach 11	94
0227400301	Base, 3 posn. for Mach 11	140
0227400401	Base, 4 posn. for Mach 11	186
0227400601	Base, 6 posn. for Mach 11	282
0227400801	Base, 8 posn. for Mach 11	378

### ② SEPARATE FEED MANIFOLD BASE



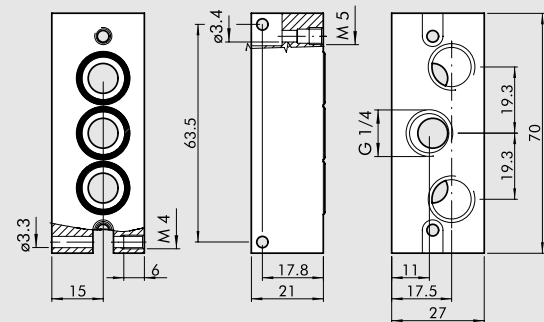
Code	Description	Weight [g]
0227400200	Separate feed manifold base for Mach 11	44

### ③ 90° END PLATE



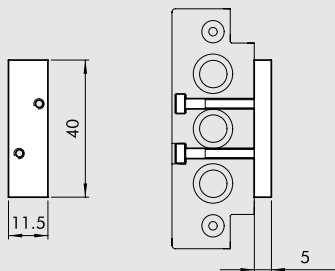
Code	Description	Weight [g]
0227400101	90° end plate 1/4 Mach 11	82

### ④ STRAIGHT END PLATE



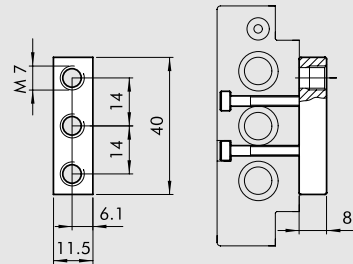
Code	Description	Weight [g]
0227400100	Straight end plate 1/4 for Mach 11	93

### ⑤ BLANKING PLATE



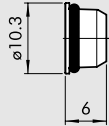
Code	Description	Weight [g]
0227400500	Blanking plate for Mach 11	13

### ⑥ FEED BLOCK



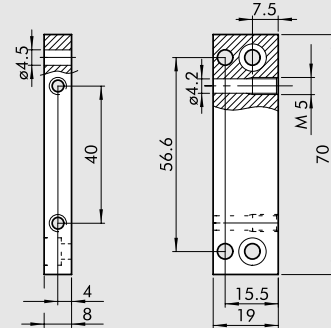
Code	Description	Weight [g]
0227400503	M7 feed block for Mach 11	11

### 7 DIAPHRAGM



Code	Description	Weight [g]
022740000	Diaphragm for Mach 11 bases	3

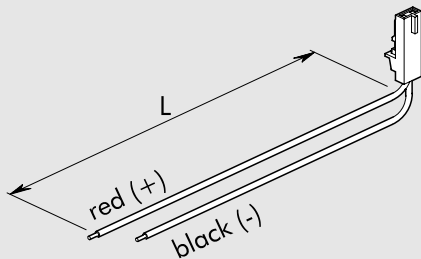
### 8 BASE FIXING PLATE



Code	Description	Weight [g]
022740054	Fixing plate for Mach 11 bases	28

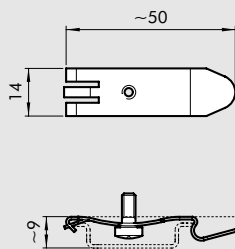
## ACCESSORIES

### PLUG-IN CONNECTOR



Code	Description
W0970512000	Plug-in connector for Mach 11 L = 300

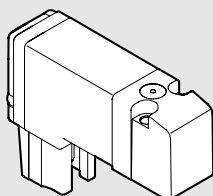
### 9 CONNECTION BRACKET ON BAR OMEGA (DIN EN 50022)



Code	Description
0227300600	Connection bracket on DIN bar

## SPARE PARTS

### PLUG-IN PILOT



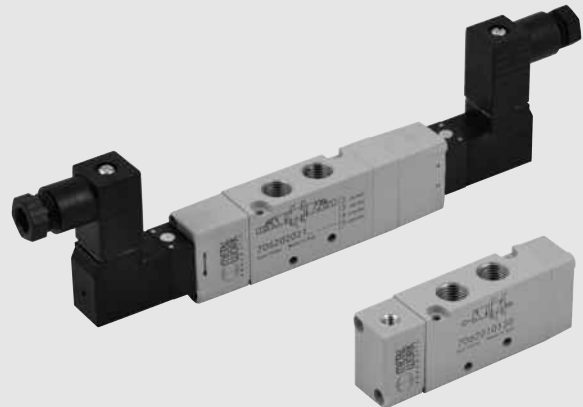
Code	Description
722113541100	PLT-10 722113541100



# MACH 16 VALVES

Available in size 1/8" only, versions 5/2 and 5/3 and with pneumatic and solenoid actuation. The Mach 16 valve is a typical small size valve, only 16 mm wide, with excellent performance 750 NL/min flow rate at 6 bar ΔP 1 bar.

The valve can be used in line, on a panel or on a base (multiple or manifold) The Mach design is the result of the miniaturisation concept with the same durability, sturdiness and reliability.

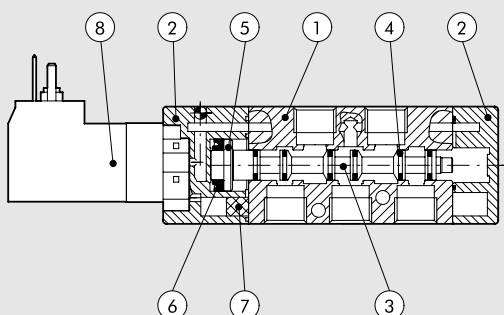


## TECHNICAL DATA

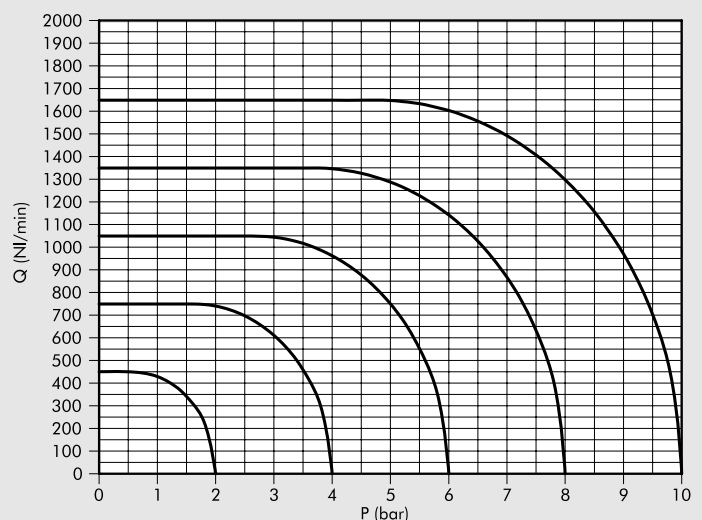
Valve port thread	1/8"
Type of control	M5 pneumatic actuation - Solenoid/pneumatic operation with integrated coil
Maximum outer diameter of gaskets for ports 1 - 3 - 5	mm 15
Maximum outer diameter for ports 2 - 4	mm 15
Operating temperature range	°C -10 to +60
Minimum pressure pilot-pneumatic controls	bar Monostable with pneumatic spring: see picture on page 2-82 1.6 bar for monostable valves – mechanical spring 1 bar for bistable valves – 1.9 bar for valves 5/3
Operating pressure	bar vacuum -10
Fluid	Filtered lubricated or unlubricated air lubrication, if used, must be continuous
Recommended lubricant	ISO e UNI FD22
Solenoid pilot	Integrated coil DIN 43650 C shape
Manual	Monostable on solenoid pilot (with bistable manual valve on request)
Number of ways in base	1-3-5 and pilot exhaust
Screws for wall-mounting single valve	2 screws M3
Screws for base-mounting valve	2 screws M2.5x30
Installation	In any position (vertical assembly is not recommended for bistable valves subjected to vibration)
Flow rate at 6 bar ΔP 0.5 bar	Nl/min 540
Flow rate at 6 bar ΔP 1 bar	Nl/min 750
Conductance C	Nl/min · bar 149.8
Critical ratio b	0.525
Compatibility with oils	Please refer to page 6-7 of the technical documentation

## COMPONENTS

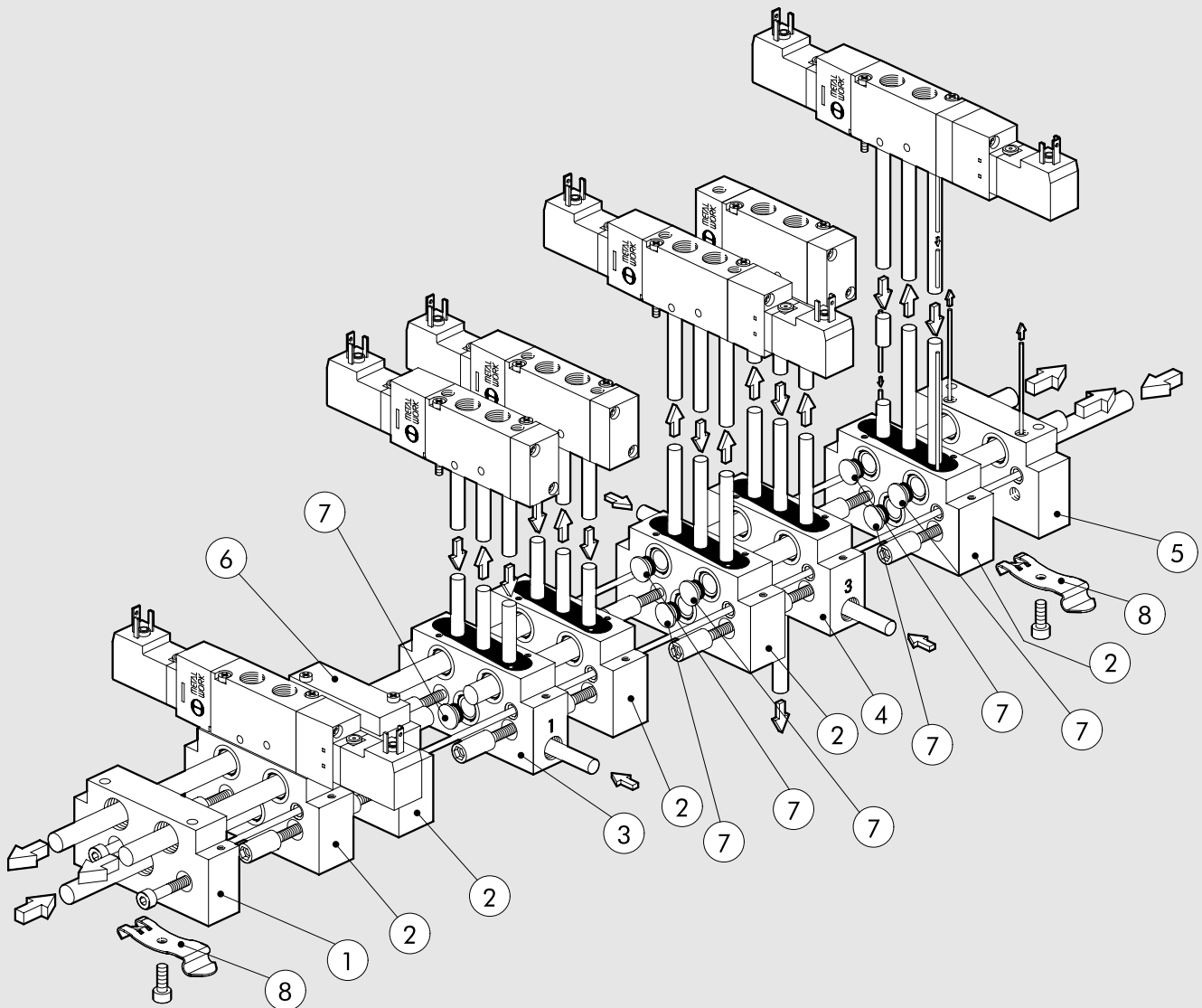
- ① VALVE BODY: Aluminium
- ② CONTROL/BASE: Hostaform®
- ③ SPOOL: Aluminium
- ④ GASKETS: Polyurethane
- ⑤ PISTONS: Hostaform®
- ⑥ PISTON GASKET: Polyurethane
- ⑦ INTERFACE GASKETS: NBR nitrile rubber
- ⑧ PILOT: with integrated coil



## FLOW CHART



## MANIFOLD BASES



Reference	Code	Description
①	0227100201	M16/VDMA Input end-plate kit
②	0227100150	M16 manifold base kit
③	0227100301	M16 separate feed manifold base kit
④	0227100302	M16 exhaust feed manifold base kit
⑤	0227100200	M16/VDMA output end-plate kit
⑥	0225004500	M16 blanking plate
⑦	0227100000	Intermediate diaphragm
⑧	0227300600	Connection bracket on DIN-bar

## KEY TO CODES

M S V FAMILY	2 DIMENSIONS	5 FUNCTION	S O OPERATORS 14	B RESETTING 12	O O FURTHER DETAILS	2 4 V D C VOLTAGE
MSV solenoid/pneumatic	2 1/8"	5 5/2	SO solenoid/pneumatic	P pneumatic spring	OO 5/2	24VDC
MPV pneumatic		6 5/3	SE solenoid pilot	S mechanical springs	CC closed centres	24VAC
			PN pneumatic	B bistable	OC open centres	110VAC
					PC pressure centres	220VAC

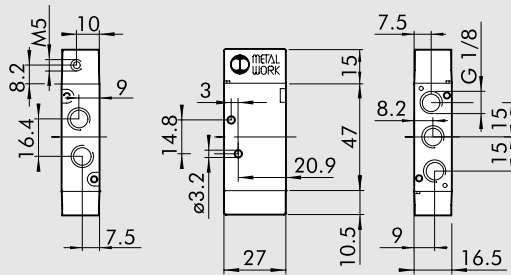
# MACH 16 VALVES MPV, PNEUMATIC

## TECHNICAL DATA

Operating pressure	bar	Vacuum to 10
Minimum operating pressure:	bar	
• monostable with pneumatic spring		see graph
• monostable with mechanical spring		1.6
• monostable 5/3		1.9
• bistable		1
Conductance C	Nl/min · bar	149.8
Critical ratio b	bar/bar	0.525
Flow rate at 6 bar ΔP 0.5 bar	Nl/min	540
Flow rate at 6 bar ΔP 1 bar	Nl/min	750
Repositioning response times at 6 bar:		
• monostable	ms	4
• bistable	ms	4
Repositioning response times at 6 bar:		
• monostable	ms	8.4
• bistable	ms	4

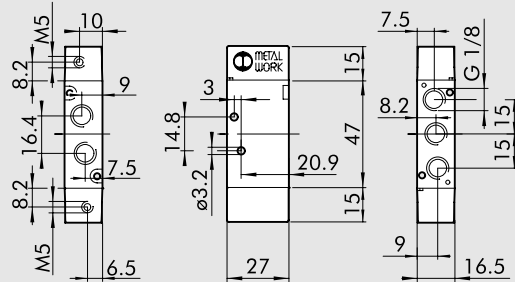


## MONOSTABLE 5/2



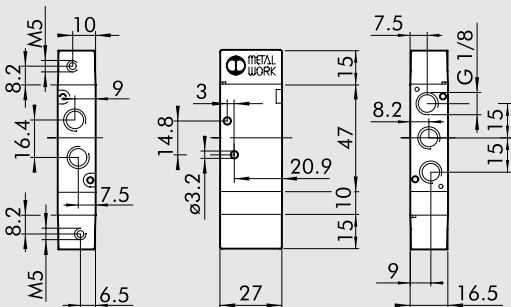
Symbol	Code	Abbrev.	Weight [g]
	7062010100	MPV 25 PNP OO	60
	7062010130	MPV 25 PNS OO	61

## BISTABLE 5/2



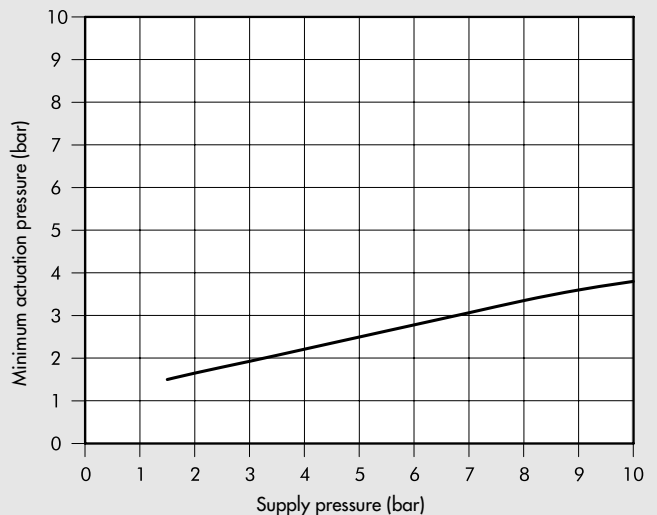
Symbol	Code	Abbrev.	Weight [g]
	7062010110	MPV 25 PNB OO	62

## MONOSTABLE 5/3



Symbol	Code	Abbrev.	Weight [g]
	7062010210	MPV 26 PNS CC	73
	7062010310	MPV 26 PNS OC	73
	7062010410	MPV 26 PNS PC	73

## OPERATING PRESSURE



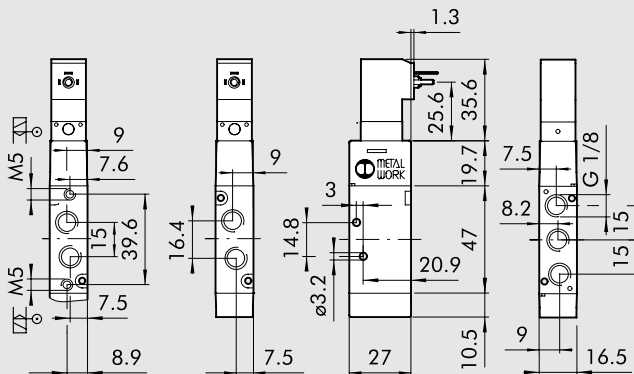
# MACH 16 VALVES MPV, SOLENOID/PNEUMATIC




## TECHNICAL DATA

Operating pressure:	bar	
• monostable		1.9 to 10
• bistable		1 to 10
• pilot-assisted		Vacuum to 10
Minimum pilot pressure	bar	2
Operating temperature range	°C	-10 to +60
Conductance C	Nl/min · bar	149.8
Critical ratio b	bar/bar	0.525
Flow rate at 6 bar ΔP 0.5 bar	Nl/min	540
Flow rate at 6 bar ΔP 1 bar	Nl/min	750
TRA / TRR monostable at 6 bar	ms	12 / 26
TRA / TRR bistable at 6 bar	ms	21 / 21
Type of operation: Manual		monostable on the solenoid pilot (also with bistable manual valve on request)
Pilot with integrated coil		24 VDC - 24 VAC - 110 VAC - 220 VAC
Power	W	1
Voltage tolerance		-10% to +15%
Insulation class		F 155
Degree of protection		IP 65 EN60529 with connector
Solenoid rating		100% ED
Electrical contacts		DIN 43650 C shape

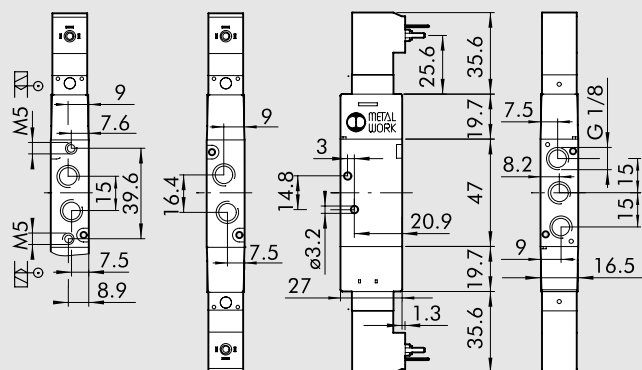




## MONOSTABLE 5/2



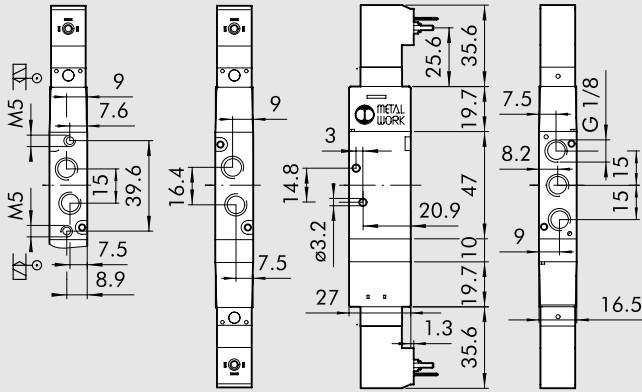
Symbol	Code	Abbrev.	Weight [g]
	7062020102	MSV 25 SOP OO 24VDC	92
	7062020103	MSV 25 SOP OO 24VAC	92
	7062020104	MSV 25 SOP OO 110VAC	92
	7062020105	MSV 25 SOP OO 220VAC	92
	7062020132	MSV 25 SOS OO 24VDC	93
	7062020133	MSV 25 SOS OO 24VAC	93
	7062020134	MSV 25 SOS OO 110VAC	93
	7062020135	MSV 25 SOS OO 220VAC	93
	7062030132	MSV 25 SES OO 24VDC	93
	7062030133	MSV 25 SES OO 24VAC	93
	7062030134	MSV 25 SES OO 110VAC	93
	7062030135	MSV 25 SES OO 220VAC	93

## BISTABLE 5/2



Symbol	Code	Abbrev.	Weight [g]
	7062020112	MSV 25 SOB OO 24VDC	124
	7062020113	MSV 25 SOB OO 24VAC	124
	7062020114	MSV 25 SOB OO 110VAC	124
	7062020115	MSV 25 SOB OO 220VAC	124
	7062030112	MSV 25 SEB OO 24VDC	125
	7062030113	MSV 25 SEB OO 24VAC	125
	7062030114	MSV 25 SEB OO 110VAC	125
	7062030115	MSV 25 SEB OO 220VAC	125

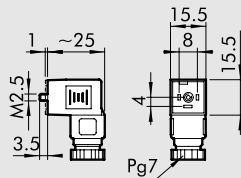
**MONOSTABLE 5/3**



Symbol	Code	Abbrev.	Weight [g]
	7062020212	MSV 26 SOS CC 24VDC	142
	7062020213	MSV 26 SOS CC 24VAC	142
	7062020214	MSV 26 SOS CC 110VAC	142
	7062020215	MSV 26 SOS CC 220VAC	142
	7062020312	MSV 26 SOS OC 24VDC	142
	7062020313	MSV 26 SOS OC 24VAC	142
	7062020314	MSV 26 SOS OC 110VAC	142
	7062020315	MSV 26 SOS OC 220VAC	142
	7062020412	MSV 26 SOS PC 24VDC	142
	7062020413	MSV 26 SOS PC 24VAC	142
	7062020414	MSV 26 SOS PC 110VAC	142
	7062020415	MSV 26 SOS PC 220VAC	142
	7062030212	MSV 26 SES CC 24VDC	143
	7062030213	MSV 26 SES CC 24VAC	143
	7062030214	MSV 26 SES CC 110VAC	143
	7062030215	MSV 26 SES CC 220VAC	143
	7062030312	MSV 26 SES OC 24VDC	143
	7062030313	MSV 26 SES OC 24VAC	143
	7062030314	MSV 26 SES OC 110VAC	143
	7062030315	MSV 26 SES OC 220VAC	143
	7062030412	MSV 26 SES PC 24VDC	143
	7062030413	MSV 26 SES PC 24VAC	143
	7062030414	MSV 26 SES PC 110VAC	143
	7062030415	MSV 26 SES PC 220VAC	143

**ACCESSORIES FOR MACH 16 VALVES MSV, SOLENOID/PNEUMATIC**

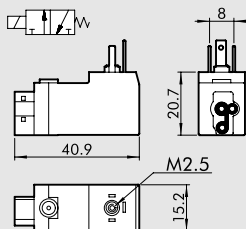
**CONNECTOR 15 mm SHAPE C TO DIN 43650**



Code	Description
W0970501021	Connector 15 mm shape C DIN 43650
W0970501022	Connector 15 mm shape C DIN 43650 LED 24V
W0970501025	Connector 15 mm shape C DIN 43650 LED+VDR 24V

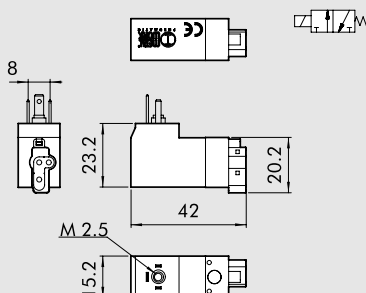
**SPARE PARTS FOR MACH 16 VALVES MSV, SOLENOID/PNEUMATIC**

**COIL MACH 16 (OLD)**



Code	Description
W4015101000	In-line pilot M16 24VDC
W4015101010	In-line pilot M16 24VAC 50/60 HZ
W4015101020	In-line pilot M16 110VAC 50/60 HZ
W4015101030	In-line pilot M16 220VAC 50/60 HZ

**COIL MACH 16 (NEW)**

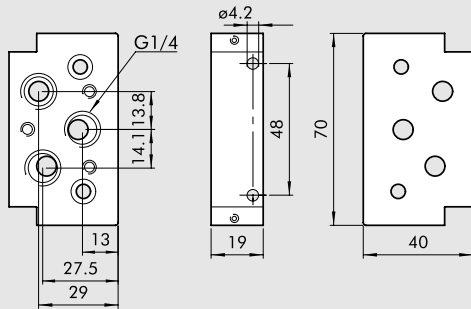


Code	Description
W4015301000	In-line pilot M16 24VDC
W4015301010	In-line pilot M16 24VAC 50/60 HZ
W4015301020	In-line pilot M16 110VAC 50/60 HZ
W4015301030	In-line pilot M16 220VAC 50/60 HZ

NB: if the pilot to be replaced bears the writing **CE**, you have to order among the NEW pilots, otherwise order among the OLD pilots

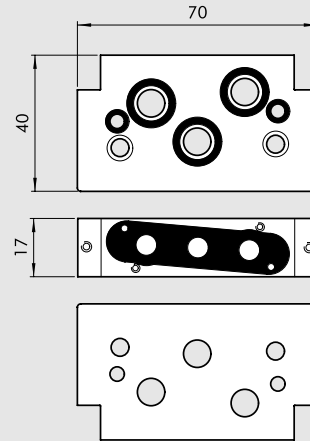
## MANIFOLD BASES FOR MACH 16 VALVES

### ① MACH 16 INPUT END-PLATE



Code	Description	Weight [g]
0227100201	Input end-plate kit M16/VDMA	125

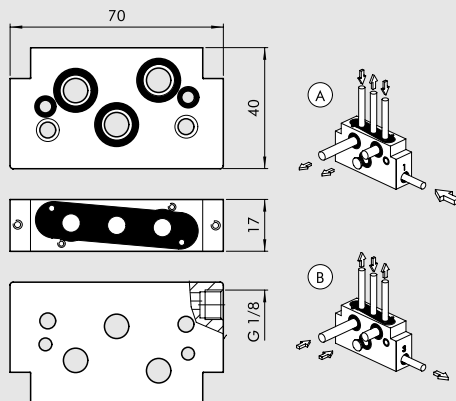
### ② MACH 16 MANIFOLD BASE



Code	Description	Weight [g]
0227100150	Manifold base kit M16	121

### ③ MACH 16 SEPARATE FEED MANIFOLD BASE

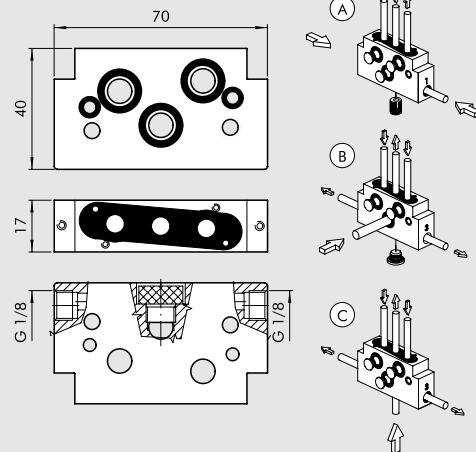
- Ⓐ Separate feed
- Ⓑ Separate exhaust



Code	Description	Weight [g]
0227100301	Manifold base kit-separate feed M16	119

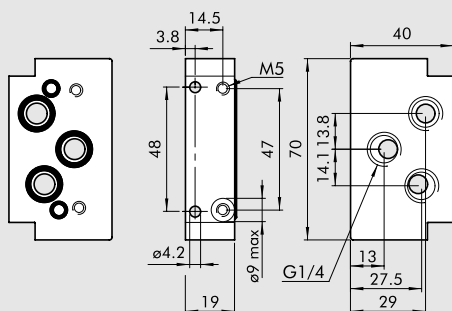
### ④ MACH 16 EXHAUST FEED MANIFOLD BASE

- Ⓐ Exhaust feed
- Ⓑ Separate exhausts
- Ⓒ Separate feed/exhausts



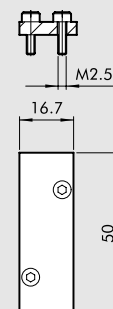
Code	Description	Weight [g]
0227100302	Manifold base kit-exhaust feed M16	113

### ⑤ MACH 16 OUTPUT END-PLATE



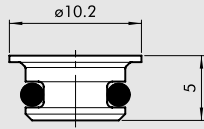
Code	Description	Weight [g]
0227100200	Output end-plate kit M16/VDMA	122

### ⑥ BLANKING PLATE – UNUSED POSITION



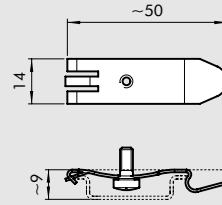
Code	Description	Weight [g]
0225004500	Accessories - blanking plate for Mach 16	18

### 7 INTERMEDIATE DIAPHRAGM



Code	Description	Weight [g]
0227100000	Intermediate diaphragm	1

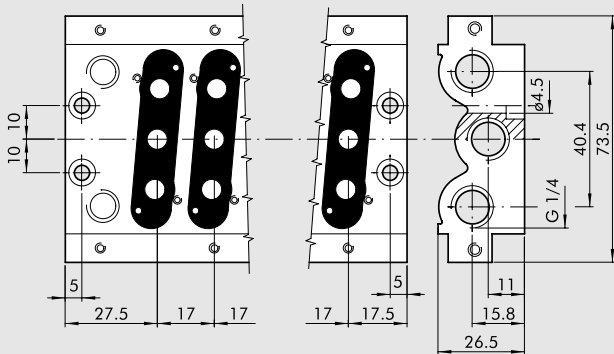
### 8 CONNECTION BRACKET ON BAR OMEGA (DIN EN 50022)



Code	Description	Weight [g]
0227300600	Connection bracket on DIN bar	7

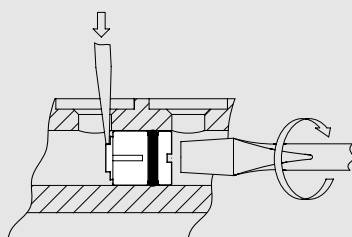
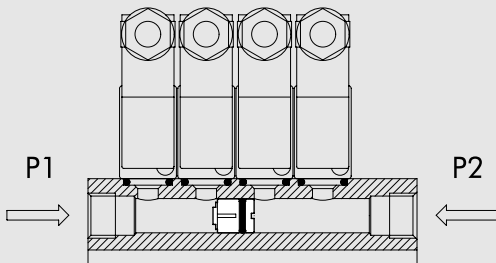
## MULTIPLE BASES FOR MACH 16 VALVES

### MULTIPLE BASE FOR MACH 16



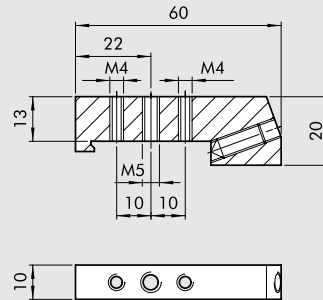
Code	Description	N° of positions	Weight [g]
0225000201	Base CVM.PN-08-02-0-000	2	180
0225000401	Base CVM.PN-08-04-0-000	4	286
0225000601	Base CVM.PN-08-06-0-000	6	390
0225000801	Base CVM.PN-08-08-0-000	8	500
0225001001	Base CVM.PN-08-10-0-000	10	613
0225001201	Base CVM.PN-08-12-0-000	12	706

### INTERMEDIATE DIAPHRAGM



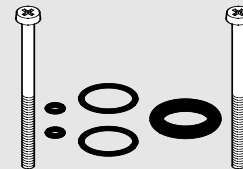
Code	Description	Weight [g]
0227100001	Acc. multiple base diaphragm	6

### ADAPTER FOR BAR OMEGA (DIN EN 50022)



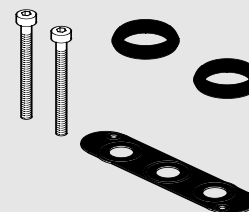
Code	Description	Weight [g]
0225004600	Omega-adapter Mach 16	46

### GASKET KIT (FOR OLD BASES)



Code	Description	Weight [g]
0226007001	M16 multiple base gasket kit	5

### KIT OF SPARE INTEGRATED GASKET



Code	Description	Weight [g]
0226007003	M16 multiple base gasket kit	5

# MULTIPLE CONNECTORS MACH 16

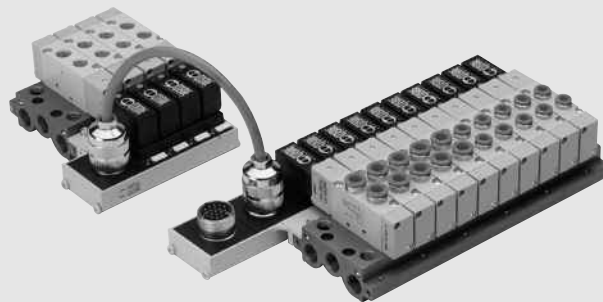
Mach 16 valves can be mounted on bases with pneumatic or electrical connection. The electric contacts of the individual valves are connected by means of a printed circuit board in a sealed conduit to a single connection point suitable for up to 16 controls. The number 16 was chosen because the number of outputs of most PLC output boards is 16 or a multiple of it.

The system has numerous alternatives and variants for a wide range of requirements:

- Base for monostable or bistable valves.
- Connection via a multiple connector or wired cable.
- Supply of individual parts or ready prepared bases or complete valve units
- The configuration can be modified at any time to convert bases for monostable valves into bases for bistable valves.
- The return cable can be used to connect two monostable valve units to a single multiple connector.

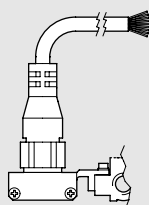
All versions are certified for electromagnetic compatibility and hence they bear the CE mark. The system is prearranged for mounting a slave for field buses, which can be added at any time. Valve units with multiple pneumatic/electrical connection are supplied complete with valves and are tested.

System modularity means that the valve sequence can be ordered to meet your own requirements (see key to codes).



TECHNICAL DATA		
Supply voltage		24VDC - 24VAC
Maximum absorption		50 mA for each position
Valve actuation indicator		Yellow LED
Protection		Fuse
Operating temperature range	°C	-10 to +60
Degree of protection with valves mounted		IP65
Insulation class		In compliance with IEC 664-1 and VDE 0110 Group C
Electromagnetic compatibility		In compliance with EEC 366/89
Maximum number of solenoid valves which can be applied		16
n° of contacts		19, 16 of which for solenoid valves, 2 common and 1 earth
<b>Pre-wired version</b>		
Cable length	m	5
n° of wires		19, 16 of which for solenoid valves, 2 common and 1 earth
Wire section	mm <sup>2</sup>	0.22
Shielding		Tin plated – covering 80 to 90%
Cable		Outer oil-proof and flame-proof PVC sheath
Cable outside diameter	mm	8.5

## WIRING DIAGRAM FOR VERSION WITH CONNECTOR

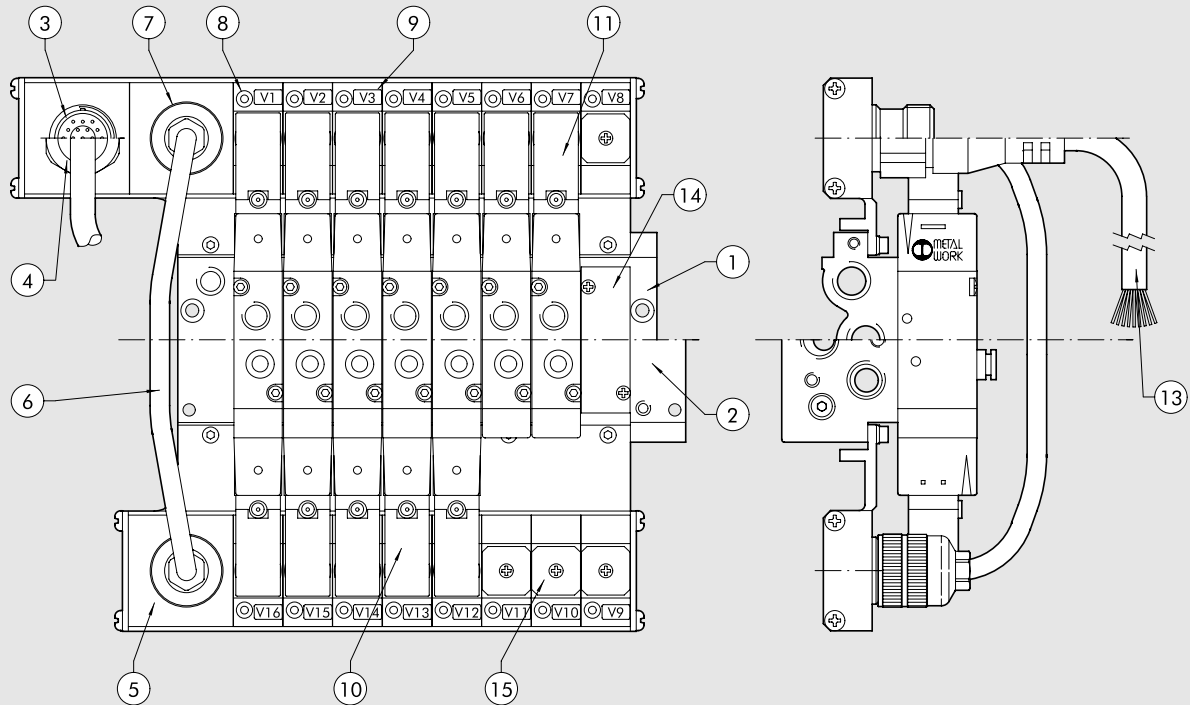


Position of electrical contact	Colour of the corresponding wire
V1	Green /black
V2	Yellow
V3	White/black
V4	Blue
V5	Red
V6	Yellow/black
V7	White
V8	Brown/red
V9	Red/white
V10	Red/black
V11	Green/red
V12	Blue/red
V13	Brown
V14	Orange/black
V15	Orange
V16	Blue/black
GROUND	Yellow/red
- COM	Brown/black
- COM	Green

## NOTES



**COMPONENTS**



- ① Multiple base: extruded anodised aluminium
- ② Modular base: anodised aluminium
- ③ Main assembly, version with connector
- ④ Main assembly, pre-wired version
- ⑤ Secondary unit/additional secondary unit
- ⑥ 10-wire return cable
- ⑦ Socket for 10-wire return cable
- ⑧ LED (LED on = Solenoid valve energised)
- ⑨ Identification label (for writing on)
- ⑩ Bistable solenoid valve MACH 16
- ⑪ Monostable solenoid valve MACH 16
- ⑬ 19-wire cable for pre-wired version
- ⑭ Blanking plate - pneumatic position: anodised aluminium
- ⑮ Small blanking plate - electric connector: painted aluminium

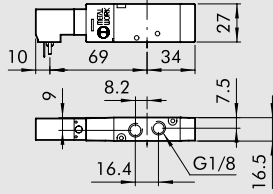
**KEY TO CODES**



A FAMILY		0 8 NO. OF POSITIONS	B	W C 5	0 8 SIZE	M M 6 V L	2 4 V D C VOLTAGE
A	multiple base for solenoid/pneumatic connection Mach 16	04 4 posn. 06 6 posn. 08 8 posn. 10 10 posn.	M electrical connection only for monostable valves	MCN electrical connection WC5 pre-wired cable 5 m	08 G 1/8"	M MSV 25 SMS OO M6 MSV G5 SMS OO M8 MSV H5 SMS OO V MSV 25 SCS OO L MSV 25 SMP OO L6 MSV G5 SMP OO L8 MSV H5 SMP OO J MSV 25 SMB OO J6 MSV G5 SMB OO J8 MSV H5 SMB OO K MSV 25 SCB OO G MSV 26 SMS CC G6 MSV G6 SMS CC G8 MSV H6 SMS CC O MSV 26 SCS CC E MSV 26 SMS OC E6 MSV G6 SMS OC E8 MSV H6 SMS OC F MSV 26 SCS OC B MSV 26 SMS PC B6 MSV G6 SMS PC B8 MSV H6 SMS PC C MSV 26 SCS PC A blanking plate D intermediate diaphragm	24VDC 24VAC
B	manifold base for Mach 16 solenoid/pneumatic connection	12 12 posn.	B electrical connection for bistable valves	ACM additional connection for monostable battery			

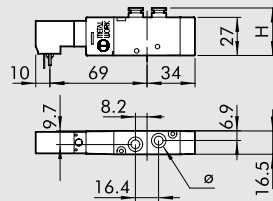
**N.B.:** The valve insertion order inside the descriptive key is the following, starting from the connector, from the left towards the right: the first left square corresponds to the first valve close to the connector on the base. There are 12 squares available for the description: if you order a base with less than 12 positions, complete by placing a 0 in the remaining boxes.





# MACH 16 VALVES FOR MULTIPLE CONNECTOR

## M MONOSTABLE 5/2, SOLENOID/PNEUMATIC - MECHANICAL SPRING

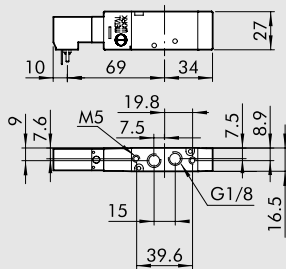




Symbol	Code	Description	Weight [g]
	7062040132	MSV 25 SMS OO 24VDC	92
	7062040133	MSV 25 SMS OO 24VAC	92



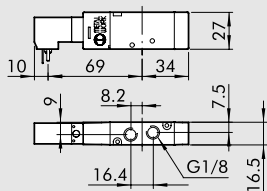
Symbol	Code	Description	Ø	H	Weight [g]
	7066040132	MSV G5 SMS OO 24VDC	6	32.7	96
	7067040132	MSV H5 SMS OO 24VDC	8	34	98
	7066040133	MSV G5 SMS OO 24VAC	6	32.7	96
	7067040133	MSV H5 SMS OO 24VAC	8	34	98



## V MONOSTABLE 5/2, SOLENOID/PNEUMATIC, PILOT-ASSISTED - MECHANICAL SPRING

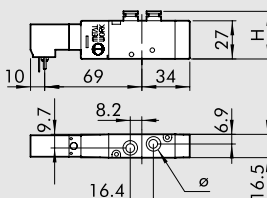






Symbol	Code	Description	Weight [g]
	7062060132	MSV 25 SCS OO 24VDC	93
	7062060133	MSV 25 SCS OO 24VAC	93

## L MONOSTABLE 5/2, SOLENOID/PNEUMATIC - PNEUMATIC SPRING

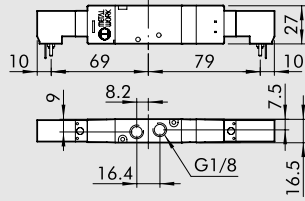


Symbol	Code	Description	Weight [g]
	7062040102	MSV 25 SMP OO 24VDC	93
	7062040103	MSV 25 SMP OO 24VAC	93

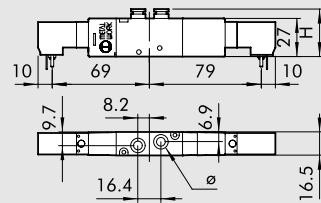


Symbol	Code	Description	Ø	H	Weight [g]
	7066040102	MSV G5 SMP OO 24VDC	6	32.7	96
	7067040102	MSV H5 SMP OO 24VDC	8	34	98
	7066040103	MSV G5 SMP OO 24VAC	6	32.7	96
	7067040103	MSV H5 SMP OO 24VAC	8	34	98

**J BISTABLE 5/2, SOLENOID/PNEUMATIC**

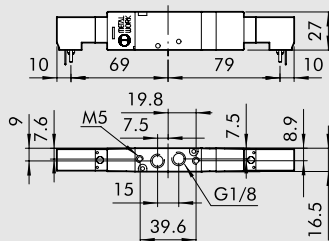


Symbol	Code	Description	Weight [g]
	7062040112	MSV 25 SMB OO 24VDC	139
	7062040113	MSV 25 SMB OO 24VAC	139



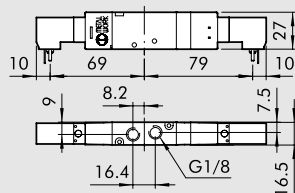
Symbol	Code	Description	Ø	H	Weight [g]
	7066040112	MSV G5 SMB OO 24VDC	6	32.7	143
	7067040112	MSV H5 SMB OO 24VDC	8	34	146
	7066040113	MSV G5 SMB OO 24VAC	6	32.7	143
	7067040113	MSV H5 SMB OO 24VAC	8	34	146

**K BISTABLE 5/2, SOLENOID/PNEUMATIC, PILOT-ASSISTED**

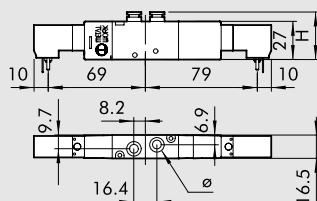


Symbol	Code	Description	Weight [g]
	7062060112	MSV 25 SCB OO 24VDC	140
	7062060113	MSV 25 SCB OO 24VAC	140

**G MONOSTABLE 5/3, SOLENOID/PNEUMATIC - CLOSED CENTRES**

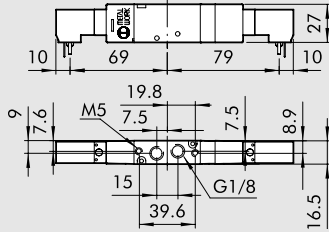



Symbol	Code	Description	Weight [g]
	7062040212	MSV 26 SMS CC 24VDC	142
	7062040213	MSV 26 SMS CC 24VAC	142



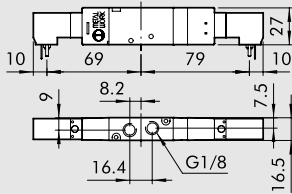
Symbol	Code	Description	Ø	H	Weight [g]
	7066040212	MSV G6 SMS CC 24VDC	6	32.7	146
	7067040212	MSV H6 SMS CC 24VDC	8	34	146
	7066040213	MSV G6 SMS CC 24VAC	6	32.7	146
	7067040213	MSV H6 SMS CC 24VAC	8	34	146


**© MONOSTABLE 5/3, SOLENOID/PNEUMATIC, PILOT-ASSISTED - CLOSED CENTRES**

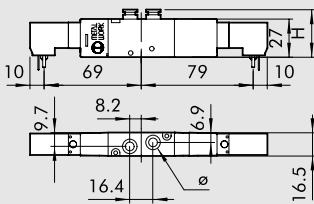



Symbol	Code	Description	Weight [g]
	7062060212	MSV 26 SCS CC 24VDC	143
	7062060213	MSV 26 SCS CC 24VAC	143

**© MONOSTABLE 5/3 SOLENOID/PNEUMATIC - OPEN CENTRES**

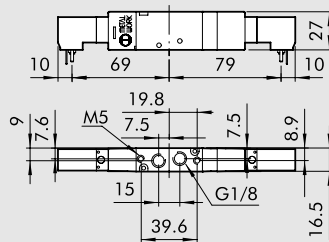


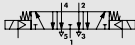
Symbol	Code	Description	Weight [g]
	7062040312	MSV 26 SMS OC 24VDC	142
	7062040313	MSV 26 SMS OC 24VAC	142



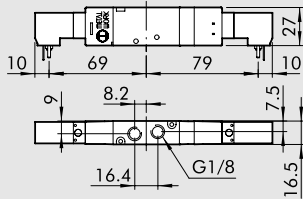
Symbol	Code	Description	Ø	H	Weight [g]
	7066040312	MSV G6 SMS OC 24VDC	6	32.7	146
	7067040312	MSV H6 SMS OC 24VDC	8	34	146
	7066040313	MSV G6 SMS OC 24VAC	6	32.7	146
	7067040313	MSV H6 SMS OC 24VAC	8	34	146

**© MONOSTABLE 5/3 SOLENOID/PNEUMATIC, PILOT-ASSISTED - OPEN CENTRES**

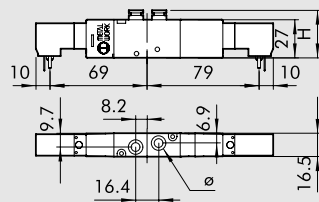


Symbol	Code	Description	Weight [g]
	7062060312	MSV 26 SCS OO 24VDC	143
	7062060313	MSV 26 SCS OO 24VAC	143

**B) MONOSTABLE 5/3, SOLENOID/PNEUMATIC - PRESSURE CENTRES**

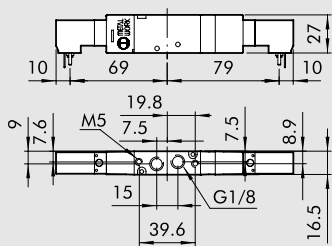


Symbol	Code	Description	Weight [g]
	7062040412	MSV 26 SMS PC 24VDC	142
	7062040413	MSV 26 SMS PC 24VAC	142



Symbol	Code	Description	Ø	H	Weight [g]
	7066040412	MSV G6 SMS PC 24VDC	6	32.7	146
	7067040412	MSV H6 SMS PC 24VDC	8	34	146
	7066040413	MSV G6 SMS PC 24VAC	6	32.7	146
	7067040413	MSV H6 SMS PC 24VAC	8	34	146

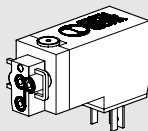
**C) MONOSTABLE 5/3, SOLENOID/PNEUMATIC, PILOT-ASSISTED - PRESSURE CENTRES**



Symbol	Code	Description	Weight [g]
	7062060412	MSV 26 SCS PC 24VDC	143
	7062060413	MSV 26 SCS PC 24VAC	143

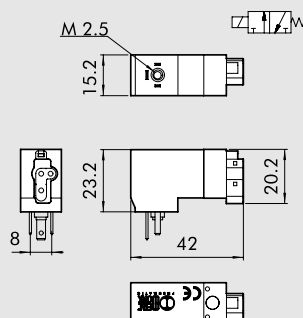
**SPARE PARTS**

**COIL MACH 16 (OLD)**



Code	Description
W4015201000	Pilot - multiple connection 24 VDC
W4015201010	Pilot - multiple connection 24 VAC

**COIL MACH 16 (NEW)**

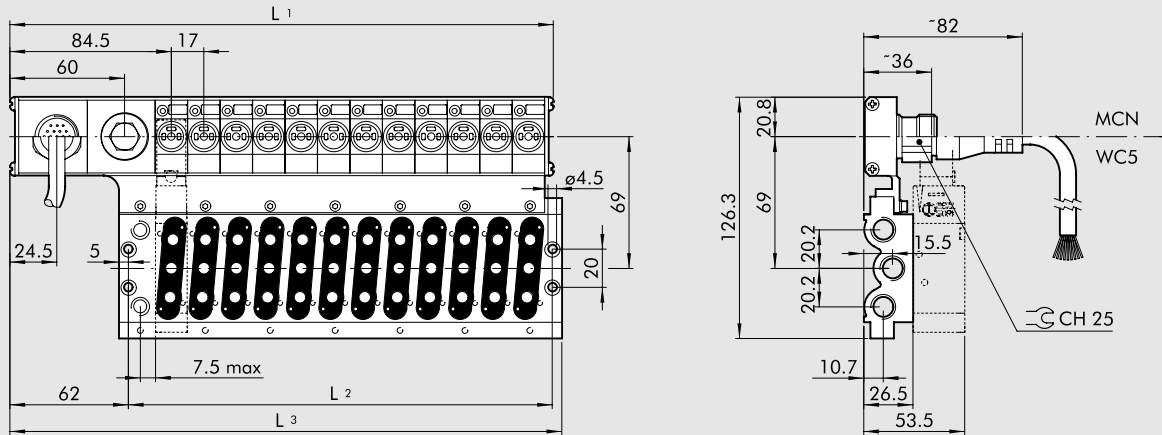


Code	Description
W4015401000	In-line pilot 24 VDC
W4015401010	In-line pilot 24 VAC 50/60 Hz

**N.B.:** if the pilot to be replaced bears the writing **CE**, you have to order among the NEW pilots, otherwise order among the OLD pilots.

## BASES WITH MULTIPLE CONNECTION

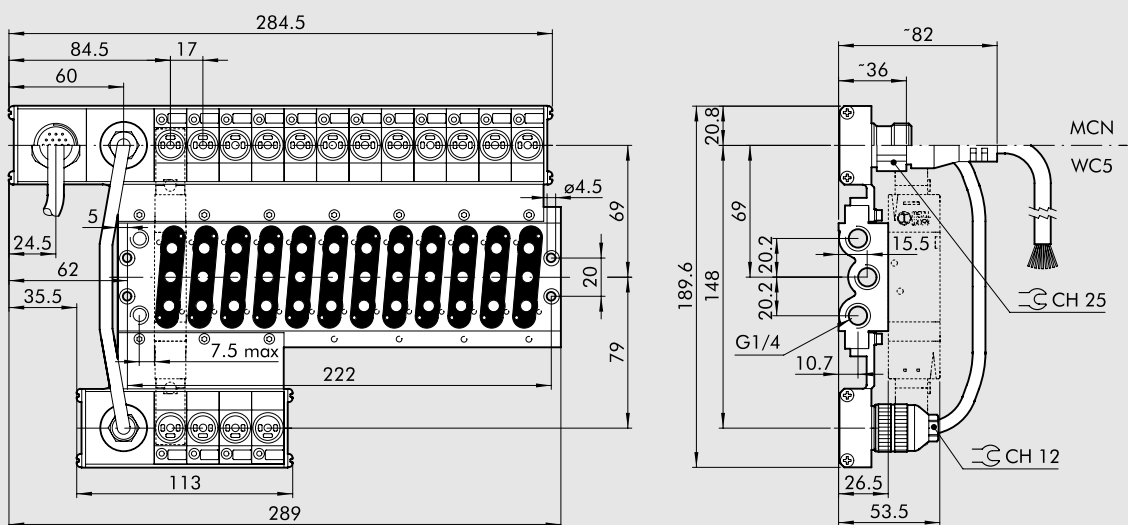
### MONOSTABLE SOLENOID/PNEUMATIC BASE WITH 4, 6, 8, 10, 12 POSITIONS



	Pos.-Nr.	L1	L2	L3	Description	Code 24VDC	Code 24VAC	Weight [g]
With multiple connector	4	148.5	86	153	CVM EP 08 04 M MCN . . . . .	0225100401	0225110401	504
	6	182.5	120	187	CVM EP 08 06 M MCN . . . . .	0225100601	0225110601	644
	8	216.5	154	221	CVM EP 08 08 M MCN . . . . .	0225100801	0225110801	784
	10	250.5	188	255	CVM EP 08 10 M MCN . . . . .	0225101001	0225111001	924
	12	284.5	222	289	CVM EP 08 12 M MCN . . . . .	0225101201	0225111201	1264
With pre-wired cable	4	148.5	86	153	CVM EP 08 04 M WC5 . . . . .	0225400401	0225410401	3642
	6	182.5	120	187	CVM EP 08 06 M WC5 . . . . .	0225400601	0225410601	3781
	8	216.5	154	221	CVM EP 08 08 M WC5 . . . . .	0225400801	0225410801	3923
	10	250.5	188	255	CVM EP 08 10 M WC5 . . . . .	0225401001	0225411001	4070
	12	284.5	222	289	CVM EP 08 12 M WC5 . . . . .	0225401201	0225411201	4195

. . . . . : • 24VDC = direct current  
 • 24VAC = alternating current

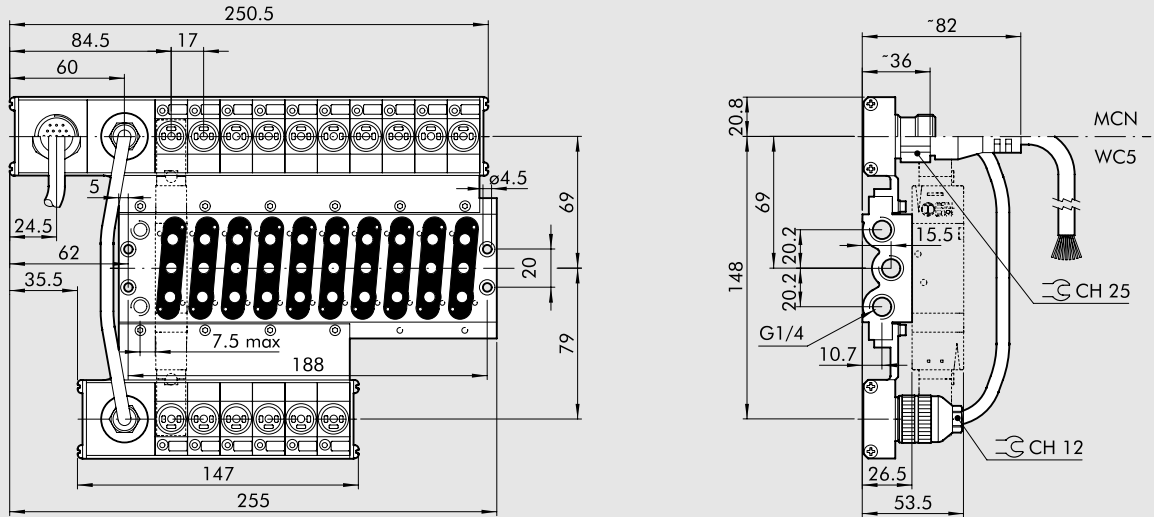
### BISTABLE SOLENOID/PNEUMATIC BASE WITH 12 POSITIONS



	Pos.-Nr.	Description	Code 24VDC	Code 24VAC	Weight [g]
With multiple connector	12	CVM EP 08 12 B MCN . . . . .	0225201201	0225211201	1315
With pre-wired cable	12	CVM EP 08 12 B WC5 . . . . .	0225501201	0225511201	4700

. . . . . : • 24VDC = direct current  
 • 24VAC = alternating current

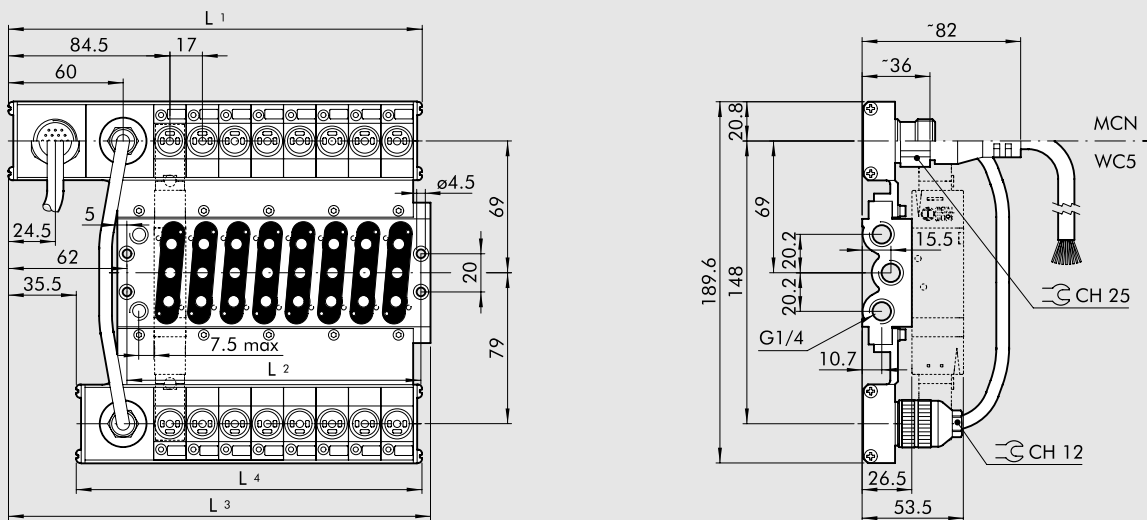
**BISTABLE SOLENOID/PNEUMATIC BASE WITH 10 POSITIONS**



	Pos.-Nr.	Description	Code 24VDC	Code 24VAC	Weight [g]
With multiple connector	10	CVM EP 08 10 B MCN . . . . .	0225201001	0225211001	1245
With pre-wired cable	10	CVM EP 08 10 B WC5 . . . . .	0225501001	0225511001	4600

- 24VDC = direct current
- 24VAC = alternating current

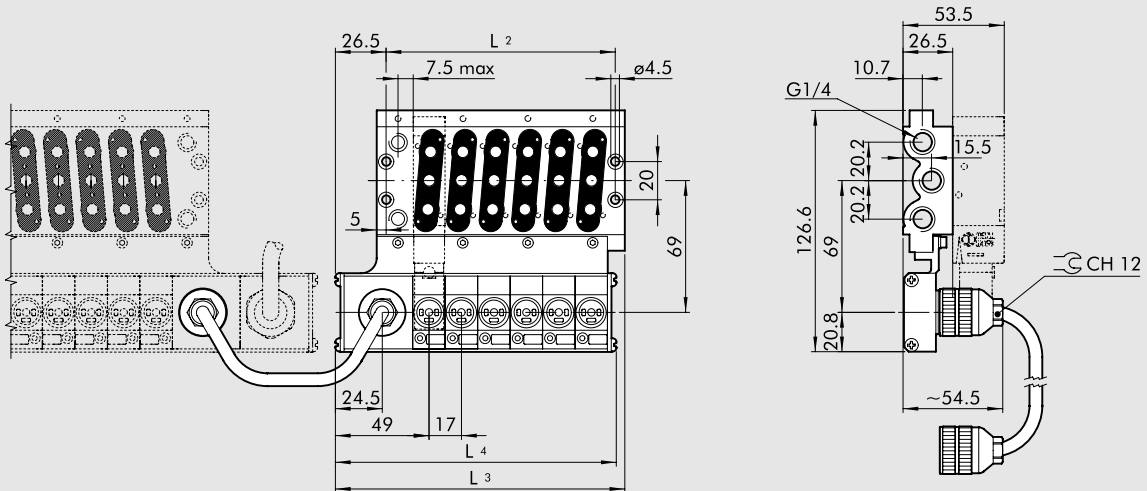
**BISTABLE SOLENOID/PNEUMATIC BASE WITH 4, 6, 8 POSITIONS**



	Pos.-Nr.	L1	L2	L3	L4	Description	Code 24VDC	Code 24VAC	Weight [g]
With multiple connector	4	148.5	86	153	113	CVM EP 08 04 B MCN . . . . .	0225200401	0225210401	770
	6	182.5	120	187	147	CVM EP 08 06 B MCN . . . . .	0225200601	0225210601	965
	8	216.5	154	221	181	CVM EP 08 08 B MCN . . . . .	0225200801	0225210801	1200
With pre-wired cable	4	148.5	86	153	113	CVM EP 08 04 B WC5 . . . . .	0225500401	0225510401	3910
	6	182.5	120	187	147	CVM EP 08 06 B WC5 . . . . .	0225500601	0225510601	4086
	8	216.5	154	221	181	CVM EP 08 08 B WC5 . . . . .	0225500801	0225510801	4264

- 24VDC = direct current
- 24VAC = alternating current

**ADDITIONAL MONOSTABLE SOLENOID/PNEUMATIC BASE WITH 4, 6, 8 POSITIONS**



Pos.-Nr.	L2	L3	L4	Description	Code 24VDC	Code 24VAC	Weight [g]
4	86	117.5	113	CVM EP 08 04 M ACM . . . . .	0225300401	0225310401	500
6	120	151.5	147	CVM EP 08 06 M ACM . . . . .	0225300601	0225310601	640
8	154	185.5	181	CVM EP 08 08 M ACM . . . . .	0225300801	0225310801	780

- ..... : • 24VDC = direct current
- ..... : • 24VAC = alternating current

**NOTES**



## MODULAR MULTIPLE CONNECTOR KIT

It is possible to buy the various assembly kits separately, to obtain a wide range of customised applications.

The main units of the version with connector ① or the pre-wired version ② can easily be assembled with the multiple base ⑫ or the modular manifold base ⑬. The manifold base allows particular circuits on the individual valves (feed from exhaust outlets, pressure differentiation, etc.)

Likewise, on the other side it is also simple to mount the secondary unit ③. This possibility is very interesting because it allows you to convert a base for monostable valves into a base for bistable valves.

If you fit an additional secondary unit ④ on a base, you obtain an additional solenoid base that can be connected by means of return cables to a main base for monostable valves. The only thing to remember is that in all cases the total number of positions (connection to solenoid valve coil) must not exceed sixteen.

The 10 pin return cable ⑥ is used when a main unit and a secondary

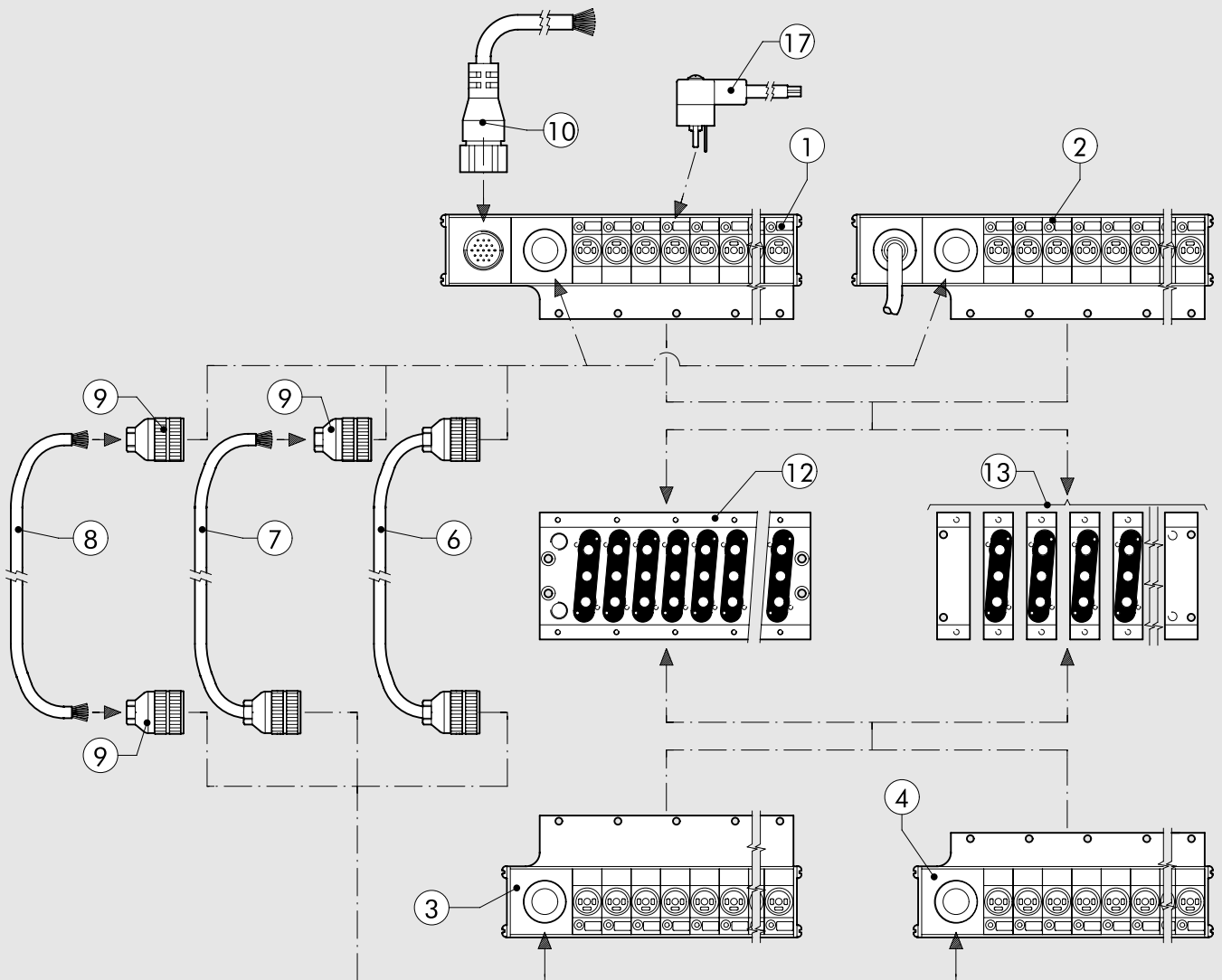
unit, or only one additional secondary unit, are mounted together on the multiple (or manifold) base. It has to be connected to the sockets shown in the diagram.

For different requirements, it is also possible to have return cables with a connector at one end only ⑦, or just the 10-wire cable ⑧.

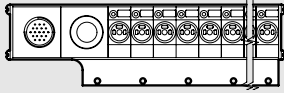
These types are available in different lengths. A 10-wire connector kit ⑨ is also available if you need to complete the wiring.

In the version with a connector, the piloting of the entire assembled base is assigned to the 19-wire connector complete with cable ⑩ which is available in various lengths.

The male connector ⑰ allows the free electrical connection of the multiple connector to be used, in order to control the valves placed in the system or to control the bistable valves by a monostable multiple electrical connection base.

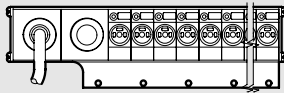


### ① MAIN KIT - VERSION WITH CONNECTOR



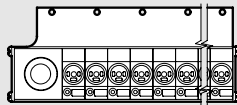
Code	Description	Weight [g]
0226500401	Main multiple connection kit, 4 positions 24VDC	245
0226510401	Main multiple connection kit, 4 positions 24VAC	245
0226500601	Main multiple connection kit, 6 positions 24VDC	280
0226510601	Main multiple connection kit, 6 positions 24VAC	280
0226500801	Main multiple connection kit, 8 positions 24VDC	308
0226510801	Main multiple connection kit, 8 positions 24VAC	308
0226501001	Main multiple connection kit, 10 positions 24VDC	344
0226511001	Main multiple connection kit, 10 positions 24VAC	344
0226501201	Main multiple connection kit, 12 positions 24VDC	396
0226511201	Main multiple connection kit, 12 positions 24VAC	396

### ② MAIN MULTIPLE PRE-WIRED CONNECTION KIT



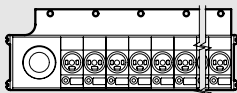
Code	Description	Weight [g]
0226400401	Pre-wired multiple main connector kit, 4 positions 24VDC	3350
0226410401	Pre-wired multiple main connector kit, 4 positions 24VAC	3350
0226400601	Pre-wired multiple main connector kit, 6 positions 24VDC	3400
0226410601	Pre-wired multiple main connector kit, 6 positions 24VAC	3400
0226400801	Pre-wired multiple main connector kit, 8 positions 24VDC	3423
0226410801	Pre-wired multiple main connector kit, 8 positions 24VAC	3423
0226401001	Pre-wired multiple main connector kit, 10 positions 24VDC	3460
0226411001	Pre-wired multiple main connector kit, 10 positions 24VAC	3460
0226401201	Pre-wired multiple main connector kit, 12 positions 24VDC	3490
0226411201	Pre-wired multiple main connector kit, 12 positions 24VAC	3490

### ③ SECONDARY KIT



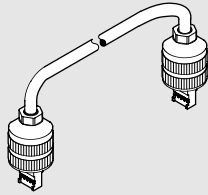
Code	Description	Weight [g]
0226200401	Multiple secondary connector kit, 4 positions 24VDC	166
0226210401	Multiple secondary connector kit, 4 positions 24VAC	166
0226200601	Multiple secondary connector kit, 6 positions 24VDC	210
0226210601	Multiple secondary connector kit, 6 positions 24VAC	210
0226200801	Multiple secondary connector kit, 8 positions 24VDC	257
0226210801	Multiple secondary connector kit, 8 positions 24VAC	257

### ④ ADDITIONAL SECONDARY KIT



Code	Description	Weight [g]
0226300401	Multiple secondary connector kit, 4 positions 24VDC	158
0226310401	Multiple secondary connector kit, 4 positions 24VAC	158
0226300601	Multiple secondary connector kit, 6 positions 24VDC	199
0226310601	Multiple secondary connector kit, 6 positions 24VAC	199
0226300801	Multiple secondary connector kit, 8 positions 24VDC	243
0226310801	Multiple secondary connector kit, 8 positions 24VAC	243

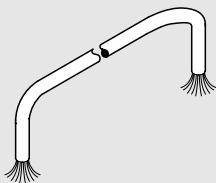
**6 10-WIRE RETURN CABLE**



Code	Description
0226150022	10-wire return cable L = 22 cm
022615....	10-wire return cable

....Length in cm  
Please contact our sales offices

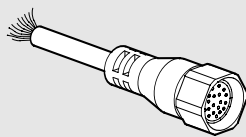
**8 CABLE WITH 10 CONNECTORS**



Code	Description
0226107201	10-wires cable

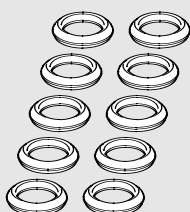
Please specify the desired length in metres

**10 19-WIRE CABLE, ONE END WITH CONNECTOR**



Code	Description
0226140250	19-wire cable, one end with connector L = 2.5 m
0226140500	19-wire cable, one end with connector L = 5 m
0226141000	19-wire cable, one end with connector L = 10 m
0226141500	19-wire cable, one end with connector L = 15 m
0226142000	19-wire cable, one end with connector L = 20 m
0226143000	19-wire cable, one end with connector L = 30 m

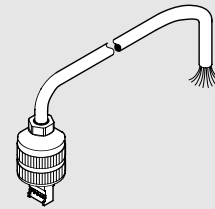
**13 ELECTRIC CONTACT GASKETS**



Code	Description
0226107001	Set of electric contact gaskets

Package: 10 pieces

**7 10-WIRE RETURN CABLE - ONE END WITH CONNECTOR**



Code	Description
022613....	10-wire return cable - one end with connector

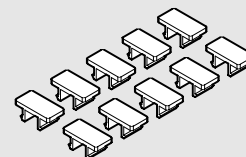
....Length in cm  
Please contact our sales offices

**9 10-WIRE CONNECTOR KIT**



Code	Description
0226170002	10-wire connector kit

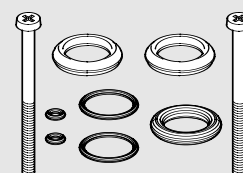
**12 SET OF IDENTIFICATION PLATES**



Code	Description
0226107000	Set of identification plates

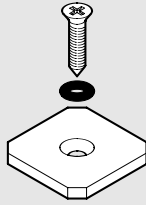
Package: 10 pieces

**14 SET OF MULTIPLE BASE GASKETS**



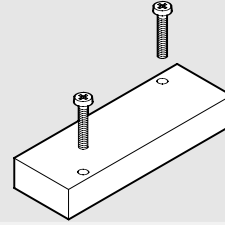
Code	Description
0226007001	Set of M16 multiple base gaskets

**15 ELECTRIC CONNECTION BLANKING PLATE**



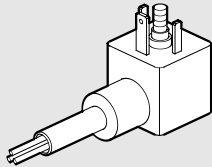
Code	Description
0225004502	Mach 16 electric connection blanking plate

**16 BASE BLANKING PLATE**



Code	Description
0225004500	Mach 16 base blanking plate

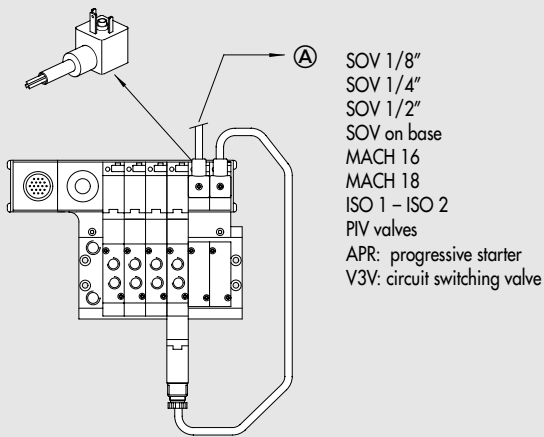
**17 MALE CONNECTOR**



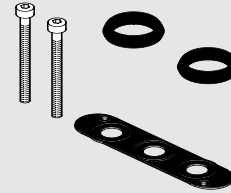
Code	Description
W0970504021	Male connector 2 mm

Max power for each position = 5W  
Max total power of multiple connector = 36W

Example of a male connector



**18 KIT OF MULTIPLE BASE GASKETS**



Code	Description
0226007003	Kit of M16 multiple base integrate gaskets

**NOTES**

# REDUCER WITH GAUGE FOR VALVES, SERIES RMV

The RMV-series miniature pressure regulator with pressure gauge for valves is specifically conceived for mounting on the outlets of valves with a 1/8" port. With limited cross dimension, it can be fitted to a series of small valves. The body is 16.5 mm wide and fits exactly on the valves of the Mach 16 series for multiple electrical connection.

Using the RMV, it is possible to differentiate the pressure of each single output of the valves. For example, if you mount it on port 2 and not on port 4, the pressure can be reduced on port 2 only. If you mount one for each port, the pressure on port 2 will differ from that on port 4, which in turn is less than the feed pressure (outlet 1).

There are three 1/8" threaded RMV ports that are pneumatically connected in parallel. A small pressure gauge is mounted in one port; another port is plugged by an A7-type fitting and a third can take a fitting.

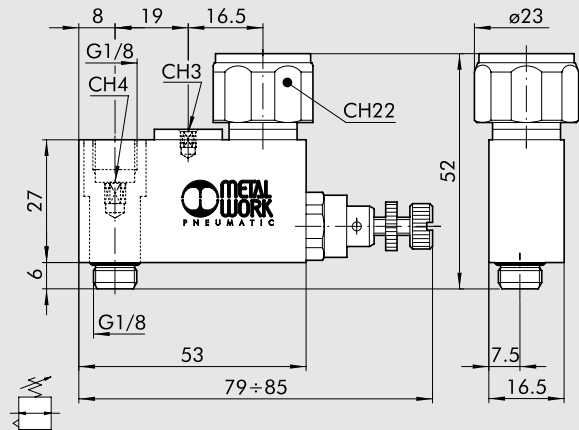
The user, however, can decide whether the layout of components is to be modified or not. He might, for example, decide to mount three fittings to create a three-port reduced-pressure distributor.



## TECHNICAL DATA

Threaded input connection		1/8" male
Threaded output connection		1/8" female
Regulation range	bar	1 to 8
	MPa	0.1 to 0.8
	psi	14.5 to 116
Input pressure	bar	2 to 10
	MPa	0.2 to 1
	psi	29 to 145
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar	Nl/min	140
Flow rate at free exhaust at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	360
Fluid		Filtered lubricated or unlubricated air
Maximum temperature at 10 bar (1 MPa - 145 psi)	°C	-10 to +60
	°F	+14 to +140
Assembly position		On valves
Use instructions		The pressure must always be regulated in increasing values

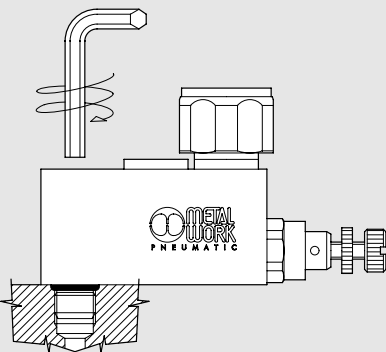
## DIMENSIONES



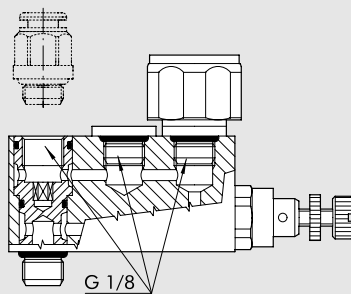
Code	Description
9061601	RMV 1/8"

## APPLICATIONS - ASSEMBLY

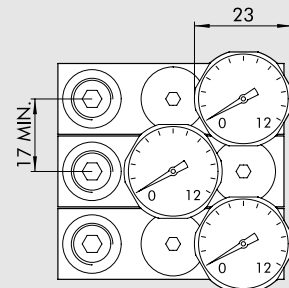
Fixing the reducer onto the valve



3 outputs with G1/8" thread



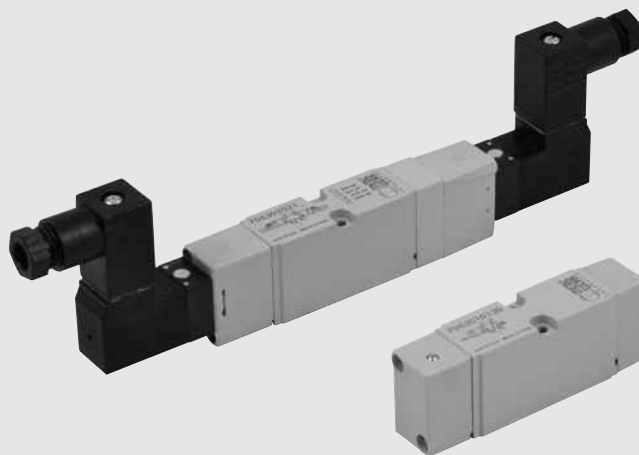
When mounting on valve units, with a pitch of less than 23 mm, alternate the gauge positions



# VALVES TO ISO 15407-1/ VDMA 24563-02 SERIES MACH 18



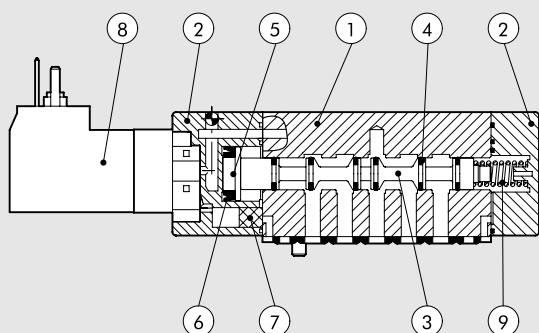
Mach 18 valve is manufactured according to the ISO 1507-1 standard, which in turn absorbs the VDMA 24563-02 rule. It comes in 5-way versions with 2 and 3 positions with solenoid or pneumatic actuation.



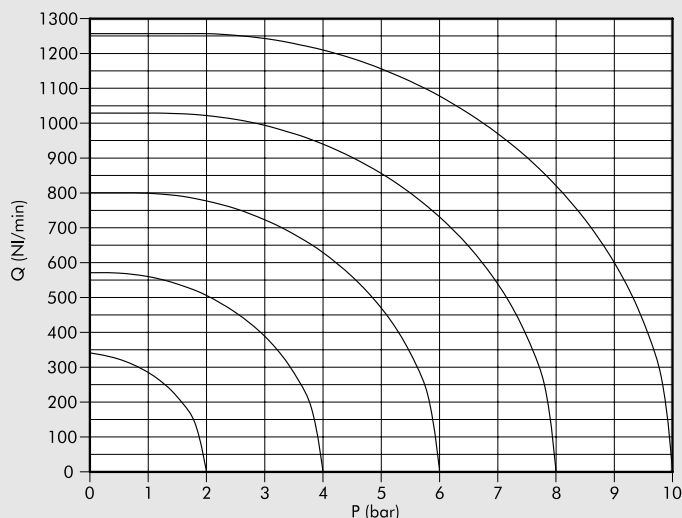
TECHNICAL DATA	
Fluid	Filtered air without lubrication; lubrication, if used, must be continuous
Operating pressure: bar	1.5 to 10
<ul style="list-style-type: none"> <li>• monostable</li> <li>• monostable 5/3</li> <li>• bistable</li> <li>• pilot-assisted</li> </ul>	Vacuum to 10 pneumatic/1.9 to 10 solenoid/pneumatic Vacuum to 10 pneumatic/1 to 10 solenoid/pneumatic Vacuum to 10
Minimum pilot pressure bar	2 to 10
Operating temperature range °C	-10 to +60
Conductance C NI/min · bar	114.86
Critical ratio b bar/bar	0.25
Flow rate at 6 bar ΔP 0.5 bar NI/min	340
Flow rate at 6 bar ΔP 1 bar NI/min	470
Installation	In any position (vertical assembly is not recommended for bistable valves subjected to vibration)
Assembly	On manifold bases
Recommended lubricant	ISO and UNI FD 22
Solenoid pilot	Integrated coil to DIN 43650 C-shape
Manual	Monostable on solenoid pilot (with manual monostable on request)
Compatibility with oils	Please refer to page 6-7 of the technical documentation

## COMPONENTS

- ① VALVE BODY: Aluminium
- ② CONTROL/END CAP: Hostaform®
- ③ SPOOL: Aluminium
- ④ GASKETS: Polyurethane
- ⑤ PISTONS: Hostaform®
- ⑥ PISTON GASKET: Polyurethane
- ⑦ FILTER: sintered bronze
- ⑧ PILOT: with integrated coil
- ⑨ SPRINGS: special steel



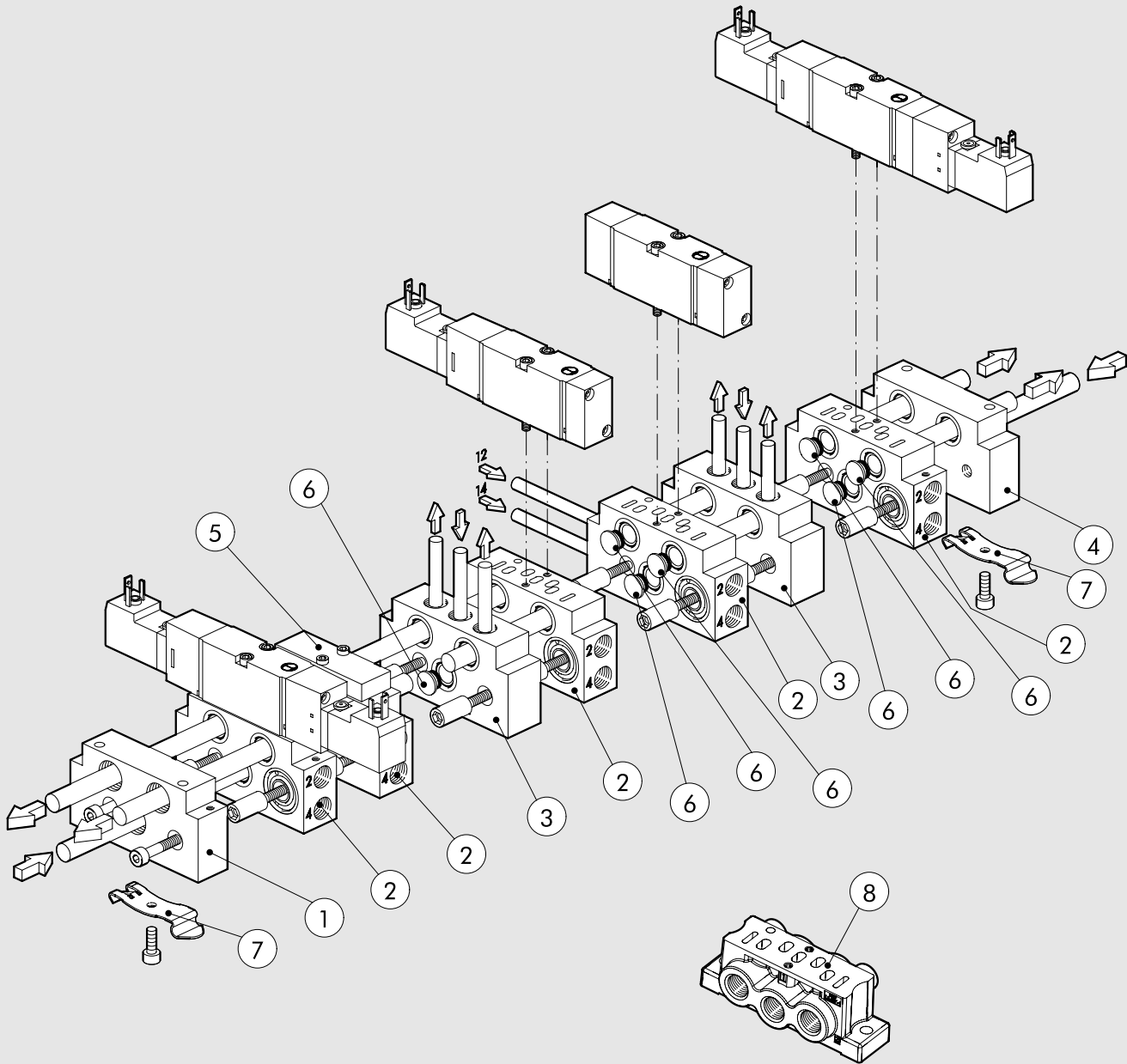
## FLOW CHART



DISTRIBUTORS

VALVES TO ISO 15407-1/VDMA 24563-02 SERIES MACH 18

MODULARITY



Reference	Code	Description
①	0227100201	ISO 15407-1 input end plate kit
②	0227200150	ISO 15407-1 manifold side base kit
③	0227200300	ISO 15407-1 intermediate bases
④	0227100200	ISO 15407-1 output end plate kit
⑤	0227200500	ISO 15407-1 blanking plate
⑥	0227100000	Intermediate diaphragm
⑦	0227300600	Connection bracket on DIN bar
⑧	0227200800	ISO 15407-1 individual base kit

KEY TO CODES

M S V FAMILY	D DIMENSIONS	5 FUNCTION	S O OPERATORS 14	S RESETTING (12)	O O FURTHER DETAILS	2 4 V D C VOLTAGE
MSV solenoid/pneumatic MPV pneumatic	D ISO 15407-1/ VDMA 24563-02	5 5/2 6 5/3	SO solenoid/pneumatic SE solenoid-pilot-assisted PN pneumatic	S mechanical springs B bistable	OO 5/2 CC closed centres OC open centres PC pressure centres	24VDC 24VAC 110VAC 220VAC

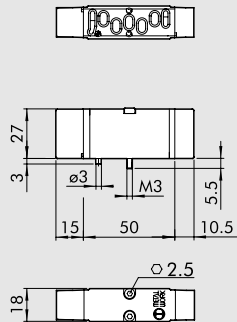
# MACH 18 ISO 15407-1/VDMA 24563-02 MPV PNEUMATIC

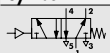
## TECHNICAL DATA

Operating pressure:	bar	Vacuum to 10
Minimum operating pressure:	bar	
• monostable		1.5
• monostable 5/3		1.9
• bistable		1
Conductance C	Nl/min · bar	114.86
Critical ratio b	bar/bar	0.25
Flow rate at 6 bar ΔP 0.5 bar	Nl/min	340
Flow rate at 6 bar ΔP 1 bar	Nl/min	470
Actuation response times at 6 bar:	ms	
• monostable		4
• bistable		4
Repositioning response times at 6 bar	ms	
• monostable		8.4
• bistable		4
Operating temperature range	°C	-10 + 60

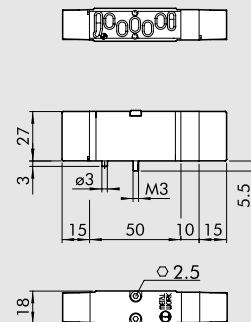


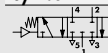
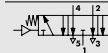
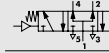
## MONOSTABLE 5/2



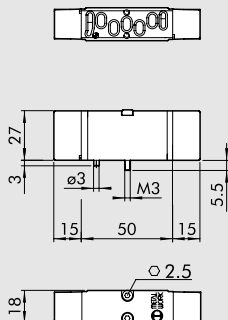
Symbol	Code	Abbrev.	Weight [g]
	7063010130	MPV D5 PNS OO	80

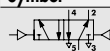
## MONOSTABLE 5/3



Symbol	Code	Abbrev.	Weight [g]
	7063010210	MPV D6 PNS CC	93
	7063010310	MPV D6 PNS OC	93
	7063010410	MPV D6 PNS PC	93

## BISTABLE 5/2



Symbol	Code	Abbrev.	Weight [g]
	7063010110	MPV D5 PNB OO	78

## NOTES

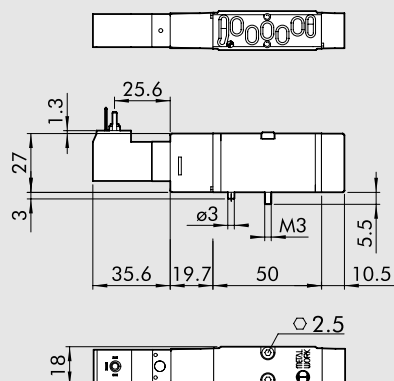


# MACH 18 ISO 15407-1/VDMA 24563-02 SOLENOID/PNEUMATIC MSV

TECHNICAL DATA	
Operating pressure:	bar
• monostable	1.5 to 10
• monostable 5/3	1.9 to 10
• bistable	1 to 10
• pilot-assisted	Vacuum to 10
Minimum pilot pressure	bar
	2
Operating temperature range	°C
	-10 to +60
Conductance C	Nl/min · bar
	114.86
Critical ratio b	bar/bar
	0.25
Flow rate at 6 bar ΔP 0.5 bar	Nl/min
	340
Flow rate at 6 bar ΔP 1 bar	Nl/min
	470
TRA / TRR monostable at 6 bar	ms
	12 / 26
TRA / TRR bistable at 6 bar	ms
	21 / 21
Type of manual actuation	Monostable on solenoid pilot (with bistable manual valve on request)
Pilot with integrated coil	24 VDC - 24 VAC - 110 VAC - 220 VAC
Power	W
	1
Voltage tolerance	-10% to -15%
Insulation class	F 155
Degree of protection	IP 65 EN60529 with connector
Solenoid rating	100% ED
Electrical contacts	DIN 43650 C Shape

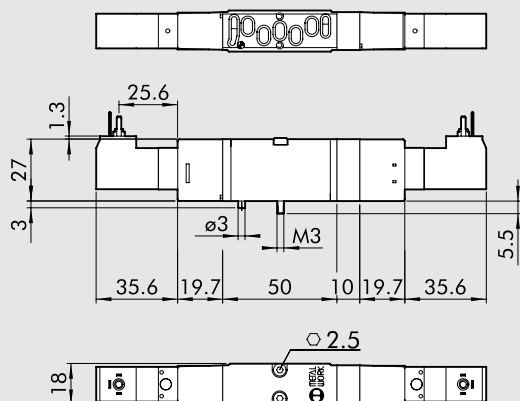


## MONOSTABLE 5/2



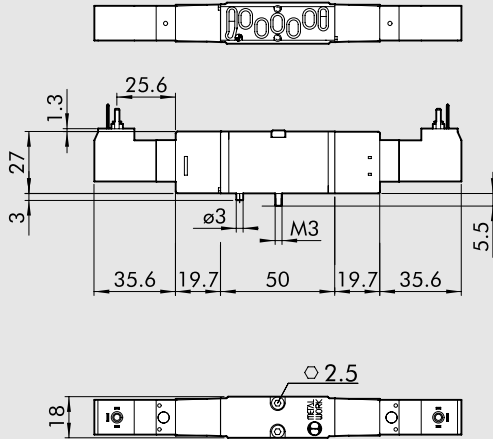
Symbol	Code	Abbrev.	Weight [g]
	7063020132	MSV D5 SOS OO 24VDC	110
	7063020133	MSV D5 SOS OO 24VAC	110
	7063020134	MSV D5 SOS OO 110VAC	110
	7063020135	MSV D5 SOS OO 220VAC	110
		7063030132	MSV D5 SES OO 24VDC
7063030133		MSV D5 SES OO 24VAC	110
7063030134		MSV D5 SES OO 110VAC	110
7063030135		MSV D5 SES OO 220VAC	110

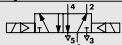
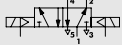
## MONOSTABLE 5/3



Symbol	Code	Abbrev.	Weight [g]
	7063020212	MSV D6 SOS CC 24VDC	156
	7063020213	MSV D6 SOS CC 24VAC	156
	7063020214	MSV D6 SOS CC 110VAC	156
	7063020215	MSV D6 SOS CC 220VAC	156
		7063020312	MSV D6 SOS OC 24VDC
7063020313		MSV D6 SOS OC 24VAC	156
7063020314		MSV D6 SOS OC 110VAC	156
7063020315		MSV D6 SOS OC 220VAC	156
		7063020412	MSV D6 SOS PC 24VDC
	7063020413	MSV D6 SOS PC 24VAC	156
	7063020414	MSV D6 SOS PC 110VAC	156
	7063020415	MSV D6 SOS PC 220VAC	156
		7063030212	MSV D6 SES CC 24VDC
7063030213		MSV D6 SES CC 24VAC	156
7063030214		MSV D6 SES CC 110VAC	156
7063030215		MSV D6 SES CC 220VAC	156
		7063030312	MSV D6 SES OC 24VDC
	7063030313	MSV D6 SES OC 24VAC	156
	7063030314	MSV D6 SES OC 110VAC	156
	7063030315	MSV D6 SES OC 220VAC	156
		7063030412	MSV D6 SES PC 24VDC
7063030413		MSV D6 SES PC 24VAC	156
7063030414		MSV D6 SES PC 110VAC	156
7063030415		MSV D6 SES PC 220VAC	156

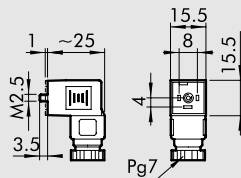
## BISTABLE 5/2



Symbol	Code	Abbrev.	Weight [g]
	7063020112	MSV D5 SOB OO 24VDC	143
	7063020113	MSV D5 SOB OO 24VAC	143
	7063020114	MSV D5 SOB OO 110VAC	143
	7063020115	MSV D5 SOB OO 220VAC	143
		7063030112	MSV D5 SEB OO 24VDC
7063030113		MSV D5 SEB OO 24VAC	143
7063030114		MSV D5 SEB OO 110VAC	143
7063030115		MSV D5 SEB OO 220VAC	143

## ACCESSORIES

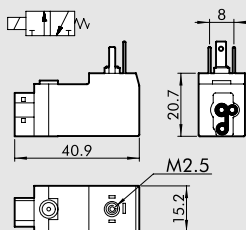
### CONNECTOR 15 mm DIN 43650 SHAPE C



Code	Description
W0970501021	Connector 15 mm C shape DIN 43650
W0970501022	Connector 15 mm C shape DIN 43650 LED 24V
W0970501025	Connector 15 mm C shape DIN 43650 LED+VDR 24V

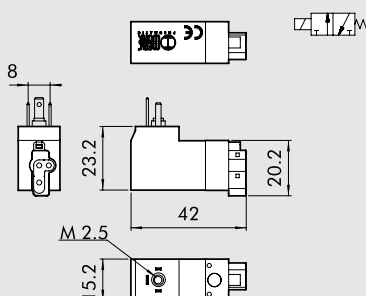
## SPARE PARTS

### PILOT MACH 18 (OLD)



Code	Description
W4015101000	In-line pilot 24VDC
W4015101010	In-line pilot 24VAC 50/60 Hz
W4015101020	In-line pilot 110VAC 50/60 Hz
W4015101030	In-line pilot 220VAC 50/60 Hz

### PILOT MACH 18 (NEW)

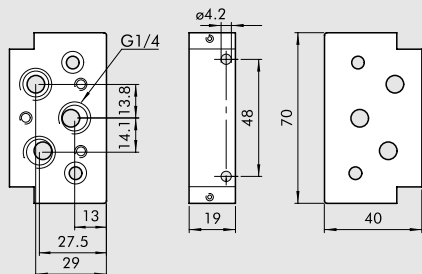


Code	Description
W4015301000	In-line pilot 24VDC
W4015301010	In-line pilot 24VAC 50/60 Hz
W4015301020	In-line pilot 110VAC 50/60 Hz
W4015301030	In-line pilot 220VAC 50/60 Hz

**N.B.:** if the pilot to be replaced bears the writing **CE**, you have to order among the NEW pilots, otherwise order among the OLD pilots.

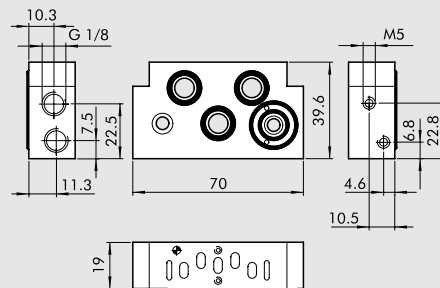
# BASES TO ISO 15407-1/VDMA 24563-02 FOR MACH 18 VALVES

## ① INPUT END PLATE



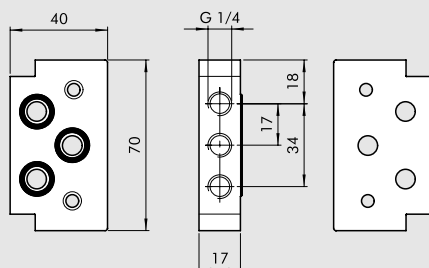
Code	Description	Weight [g]
0227100201	ISO 15407-1 input end plate kit	125

## ② MANIFOLD BASE, SIDE PORTS



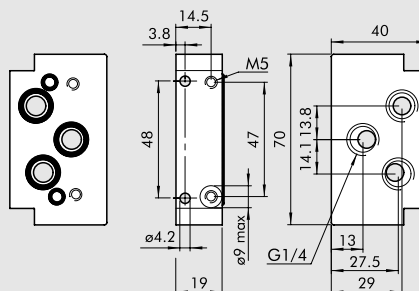
Code	Description	Weight [g]
0227200150	ISO 15407-1 manifold base, side ports kit	125

## ③ INTERMEDIATE UPPER PORTS



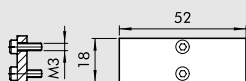
Code	Description	Weight [g]
0227200300	ISO 15407-1 intermediate upper ports kit	118

## ④ OUTPUT END PLATE



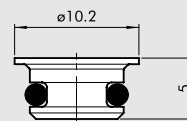
Code	Description	Weight [g]
0227100200	ISO 15407-1 output end-plate kit	122

## ⑤ BLANKING PLATE - UNUSED POSITION



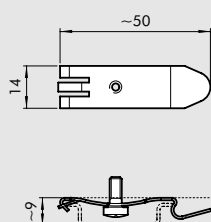
Code	Description	Weight [g]
0227200500	ISO 15407-1 blanking plate	24

## ⑥ INTERMEDIATE DIAPHRAGM



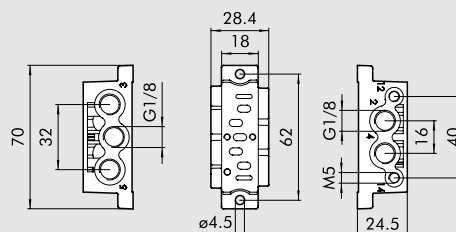
Code	Description	Weight [g]
0227100000	Intermediate diaphragm	2

## ⑦ CONNECTION BRACKETS ON THE BAR OMEGA (DIN EN 50022)



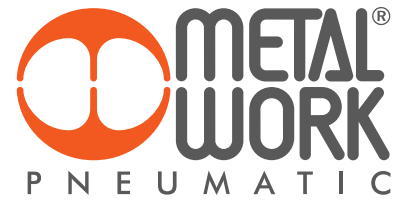
Code	Description	Weight [g]
0227300600	Connection brackets on DIN bar	7

## ⑧ INDIVIDUAL BASE

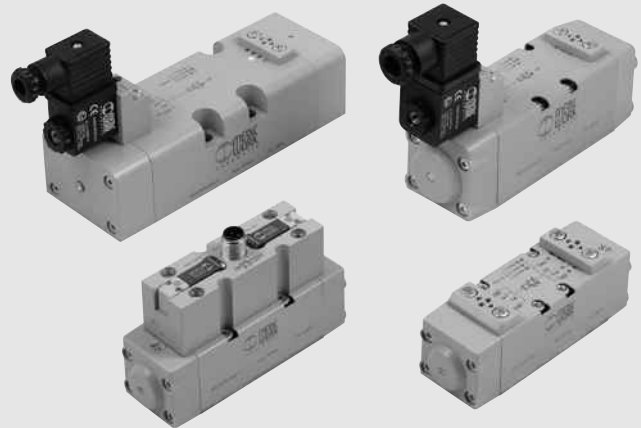


Code	Description	Weight [g]
0227200800	ISO 15407-1 individual base kit	51

# VALVES ISO 5599/1, SERIES IPV-ISV



The assembly surface dimensions of ISO1, ISO2 and ISO3 valves are to ISO5599-1. They are available in the 5-way versions with 2 and 3 positions and with pneumatic or solenoid actuation.



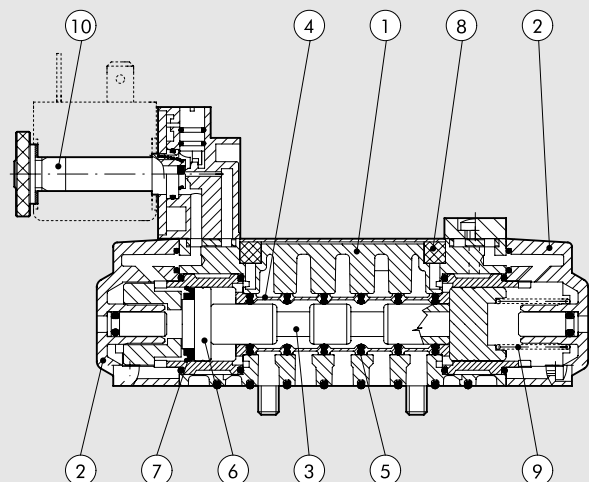
DISTRIBUTORS

VALVES ISO 5599/1, SERIES IPV-ISV

TECHNICAL DATA	ISO 1	ISO 2	ISO 3
Fluid	Filtered air without lubrication; lubrication, if used, must be continuous		
Operating pressure:	bar		
• monostable	Vacuum to 10 pneumatic / 2.5 to 10 solenoid/pneumatic		
• bistable	Vacuum to 10 pneumatic / 1 to 10 solenoid/pneumatic		
• pilot-assisted	Vacuum to 10		
Minimum pilot pressure	bar		
Operating temperature range	°C		
Nominal diameter	mm		
Conductance C	Nl/min · bar		
Critical ratio b	bar/bar		
Flow rate at 6 bar ΔP 0.5 bar	Nl/min		
Flow rate at 6 bar ΔP 1 bar	Nl/min		
Installation	In any position (vertical assembly is not recommended for bistable valves subjected to vibration)		
Assembly	On single and manifold bases according to ISO 5599/1		
Recommended lubricant	ISO and UNI FD 22		
Solenoid pilot	to CNOMO/in-line pilot / M12   to CNOMO		
Manual	Bistable on solenoid pilot Monostable on valve body		
Maximum coil nut torque	Nm		
Compatibility with oils	Please refer to page 6-7 of the technical documentation		

## COMPONENTS

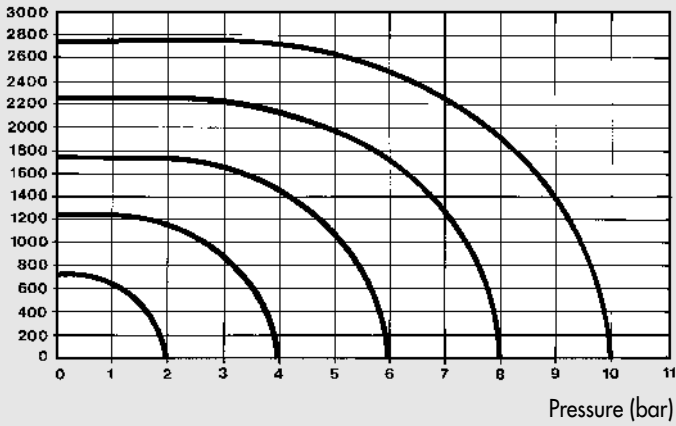
- ① VALVE BODY: Aluminium
- ② END CAP: HOSTAFORM®
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR
- ⑥ PISTONS: HOSTAFORM®
- ⑦ PISTON GASKET: NBR
- ⑧ FILTER: sintered bronze
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe – Stainless steel core



**FLOW CHART**

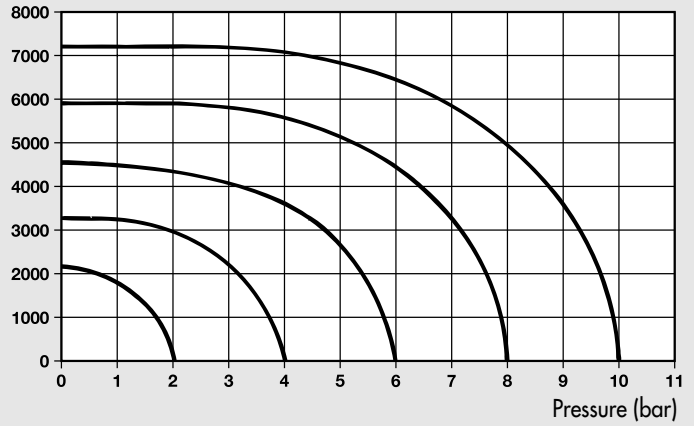
**ISO 1**

Flow rates (Nl/min)



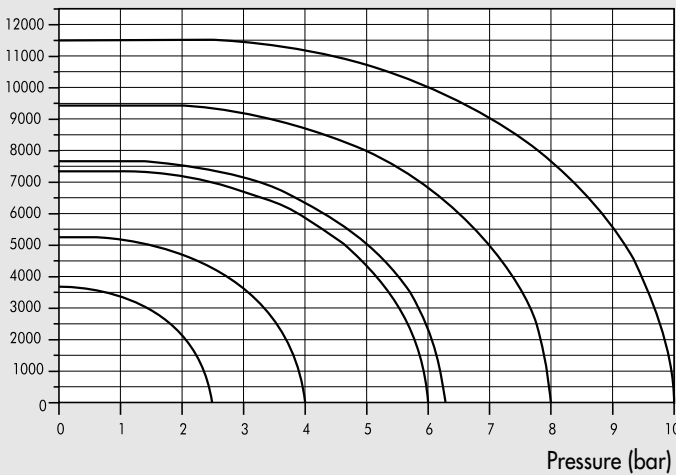
**ISO 2**

Flow rates (Nl/min)



**ISO 3**

Flow rates (Nl/min)



**KEY TO CODES**

I P V FAMILY		5 DIMENSIONS	5 FUNCTION	P N OPERATORS 14	S RESETTING (12)	O O FURTHER DETAILS
IPV	ISO pneumatic	5	5	PN	S	OO
ISV	ISO solenoid/pneumatic	6	6	SO	B	CC
		7		SE	D	OC
				* DO		PC
				* DE		
				● CO		
				● CE		

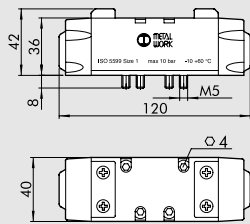
\* Only for ISO 1  
● Only for ISO 1 and ISO 2







# VALVES ISO 5599/1, PNEUMATIC SERIES IPV

TECHNICAL DATA		ISO 1	ISO 2	ISO 3
Operating pressure	bar	Vacuum to 10		
Minimum operation pressure:				
• monostable	bar	2.5		
• bistable	bar	1		
Operating temperature range	°C	-10° to +60		
Nominal diameter	mm	7.5	12	15
Conductance C	NI/min · bar	250	657.14	971.43
Critical ratio b	bar/bar	0.36	0.25	0.43
Flow rate at 6 bar ΔP 0.5 bar	NI/min	700	1800	3200
Flow rate at 6 bar ΔP 1 bar	NI/min	1100	2700	4600
Response times at 6 Bar:				
• monostable	ms	12	24	35
• bistable	ms	20	30	45
Repositioning response times at 6 Bar:				
• monostable	ms	30	43	55
• bistable	ms	20	30	45
Manual		monostable on valve body		

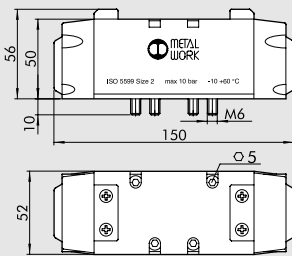








## PNEUMATIC ACTUATION ISO 1



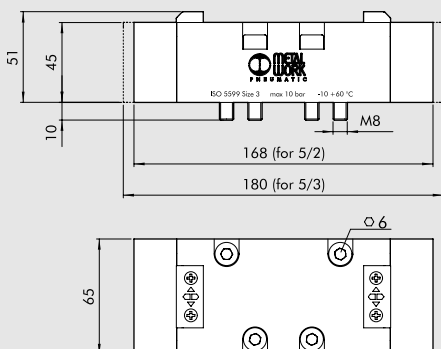
Symbol	Code	Abbrev.	Weight [g]
	7051011100	IPV 55 PNS OO	310
	7051011200	IPV 55 PNB OO	310
	7051011300	IPV 55 PND OO	310
	7051012100	IPV 55 PNS CC	310
	7051012200	IPV 55 PNS OC	310
	7051012300	IPV 55 PNS PC	310







## PNEUMATIC ACTUATION ISO 2



Symbol	Code	Abbrev.	Weight [g]
	7052011100	IPV 65 PNS OO	705
	7052011200	IPV 65 PNB OO	705
	7052011300	IPV 65 PND OO	705
	7052012100	IPV 65 PNS CC	705
	7052012200	IPV 65 PNS OC	705
	7052012300	IPV 65 PNS PC	705

## PNEUMATIC ACTUATION ISO 3



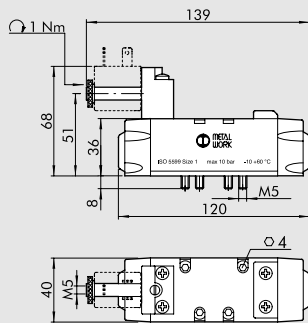
Symbol	Code	Abbrev.	Weight [g]
	7056011100	IPV 75 PNS OO	1175
	7056011200	IPV 75 PNB OO	1175
	7056011300	IPV 75 PND OO	1175
	7056012100	IPV 75 PNS CC	1290
	7056012200	IPV 75 PNS OC	1290
	7056012300	IPV 75 PNS PC	1290

# VALVES ISO 5599/1, SOLENOID/PNEUMATIC, SERIES ISV

TECHNICAL DATA		ISO 1	ISO 2	ISO 3
Operating pressure:	bar			
• monostable			2.5 to 10	
• bistable			1 to 10	
• pilot-assisted			Vacuum to 10	
Minimum pilot pressure	bar		2.5	
Operating temperature range	°C		-10 to +60	
Nominal diameter	mm	7.5	12	15
Conductance C	NI/min · bar	250	657.14	971.43
Critical ratio b	bar/bar	0.36	0.25	0.43
Flow rate at 6 bar ΔP 0.5 bar	NI/min	700	1800	3200
Flow rate at 6 bar ΔP 1 bar	NI/min	1100	2700	4600
TRA / TRR monostable at 6 bar	ms	24 / 50	39 / 60	50 / 120
TRA / TRR bistable at 6 bar	ms	20 / 20	25 / 25	35 / 35
Solenoid pilot		Standards CNOMO		
Manual		Bistable on solenoid pilot Monostable on valve body		
Coils		30 mm side DIN 43650 Form A – ISO 22 mm side		
Maximum coil nut torque	Nm		1	

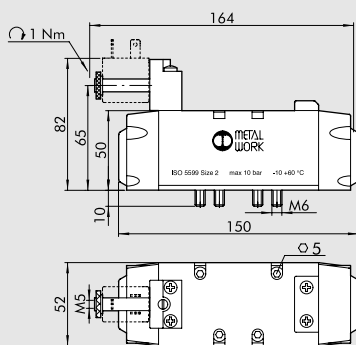


## MONOSTABLE 5/2 ISO 1



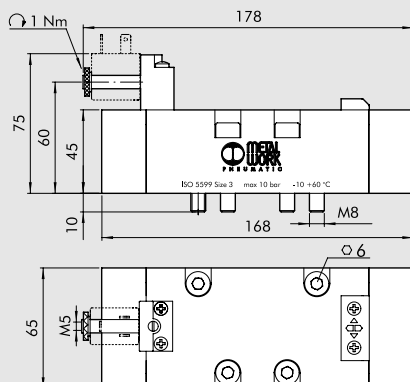
Symbol	Code	Abbrev.	Weight [g]
	7051021100	ISV 55 SOS OO	344
	7051021400	ISV 55 SES OO	344

## MONOSTABLE 5/2 ISO 2



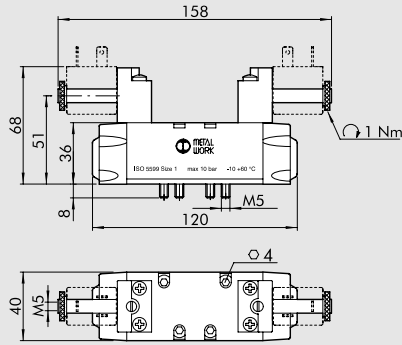
Symbol	Code	Abbrev.	Weight [g]
	7052021100	ISV 65 SOS OO	715
	7052021400	ISV 65 SES OO	715

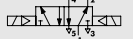
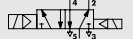
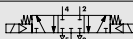

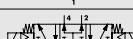
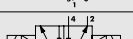
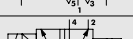
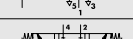
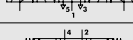
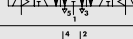
## MONOSTABLE 5/2 ISO 3



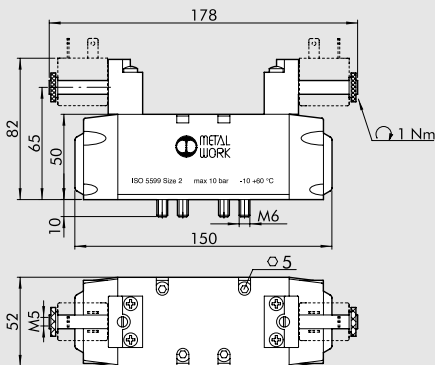
Symbol	Code	Abbrev.	Weight [g]
	7056021100	ISV 75 SOS OO	1207
	7056021400	ISV 75 SES OO	1207

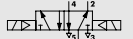



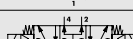
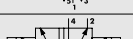
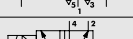
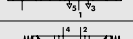
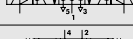
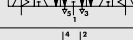
### BISTABLE 5/2 ISO 1 - MONOSTABLE 5/3 ISO 1



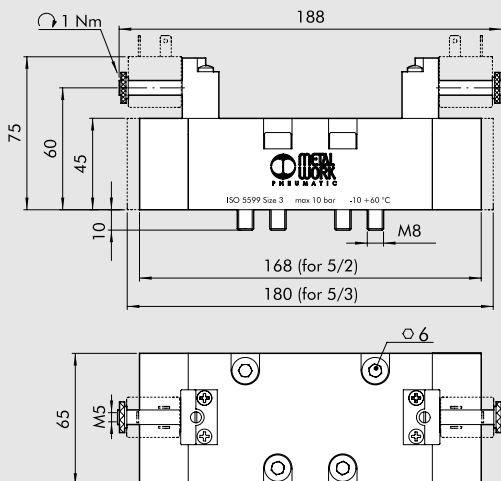
Symbol	Code	Abbrev.	Weight [g]
	7051021200	ISV 55 SOB OO	388
	7051021300	ISV 55 SOD OO	375
	7051022100	ISV 56 SOS CC	372
	7051022200	ISV 56 SOS OC	372
	7051022300	ISV 56 SOS PC	372
	7051021500	ISV 55 SEB OO	388
	7051021600	ISV 55 SED OO	375
	7051022400	ISV 56 SES CC	372
	7051022500	ISV 56 SES OC	372
	7051022600	ISV 56 SES PC	372

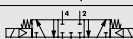

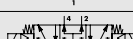
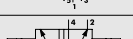
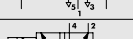
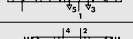
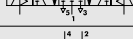
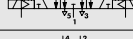
### BISTABLE 5/2 ISO 2 - MONOSTABLE 5/3 ISO 2



Symbol	Code	Abbrev.	Weight [g]
	7052021200	ISV 65 SOB OO	740
	7052021300	ISV 65 SOD OO	710
	7052022100	ISV 66 SOS CC	720
	7052022200	ISV 66 SOS OC	720
	7052022300	ISV 66 SOS PC	720
	7052021500	ISV 65 SEB OO	740
	7052021600	ISV 65 SED OO	710
	7052022400	ISV 66 SES CC	720
	7052022500	ISV 66 SES OC	720
	7052022600	ISV 66 SES PC	720

### BISTABLE 5/2 ISO 3 - MONOSTABLE 5/3 ISO 3



Symbol	Code	Abbrev.	Weight [g]
	7056021200	ISV 75 SOB OO	1230
	7056021300	ISV 75 SOD OO	1230
	7056022100	ISV 76 SOS CC	1355
	7056022200	ISV 76 SOS OC	1355
	7056022300	ISV 76 SOS PC	1355
	7056021500	ISV 75 SEB OO	1230
	7056021600	ISV 75 SED OO	1230
	7056022400	ISV 76 SES CC	1355
	7056022500	ISV 76 SES OC	1355
	7056022600	ISV 76 SES PC	1355



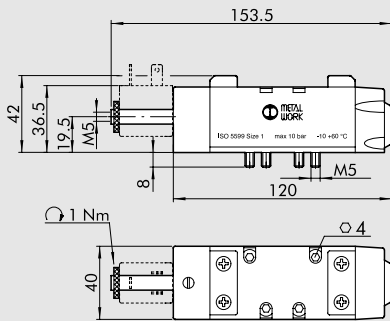
# VALVES ISO 5599/1, PNEUMATIC, SERIES ISV WITH IN-LINE SOLENOID PILOT

## TECHNICAL DATA

		ISO 1
Operating pressure:	bar	
• monostable		2.5 to 10
• bistable		1 to 10
• pilot-assisted		Vacuum to 10
Minimum pilot pressure	bar	2.5
Operating temperature range	°C	-10 to +60
Nominal diameter	mm	7.5
Conductance C	NI/min · bar	250
Critical ratio b	bar/bar	0.36
Flow rate at 6 bar ΔP 0.5 bar	NI/min	700
Flow rate at 6 bar ΔP 1 bar	NI/min	1100
TRA / TRR monostable at 6 bar	ms	24 / 50
TRA / TRR bistable at 6 bar	ms	20 / 20
Solenoid pilot		In line pilot
Manual		Bistable on solenoid pilot
Coils		30 mm side DIN 43650
		Form A – ISO
		22 mm side
Maximum coil nut torque	Nm	1

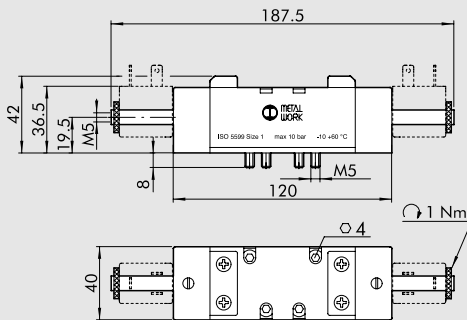


## MONOSTABLE 5/2 ISO 1



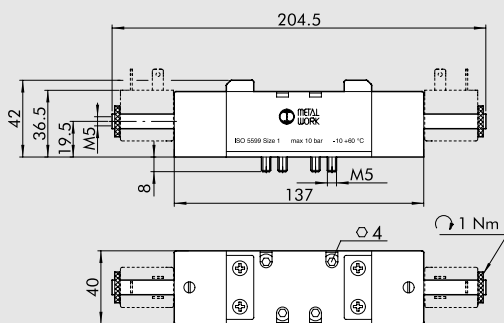
Symbol	Code	Abbrev.	Weight [g]
	7053021100	ISV 55 DOS OO	396
	7053021400	ISV 55 DES OO	396

## BISTABLE 5/2 ISO 1



Symbol	Code	Abbrev.	Weight [g]
	7053021200	ISV 55 DOB OO	450
	7053021500	ISV 55 DEB OO	450

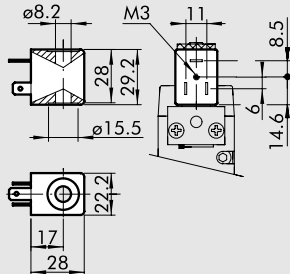
## MONOSTABLE 5/3 ISO 1



Symbol	Code	Abbrev.	Weight [g]
	7053022100	ISV 56 DOS CC	517
	7053022200	ISV 56 DOS OC	516
	7053022300	ISV 56 DOS PC	516
	7053022400	ISV 56 DES CC	517
	7053022500	ISV 56 DES OC	516
	7053022600	ISV 56 DES PC	515

## COILS AND CONNECTORS FOR ISO 5599/1 SOLENOID VALVES SERIES ISV

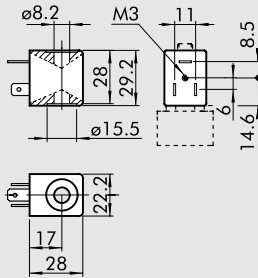
### COILS SIDE 22 mm



- Voltage tolerance: -10% to + 15%
- Insulation class: F155
- Degree of protection: IP65 EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents
- Coil temperature 100% ED: 70°C at 20°C – Ambient temperature
- According to Atex 94/9 CE rule, group 2, category 3 GD

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000151	Coil 22 Ø 8 BA 2W-12VDC	12Vcc	2W	2W
W0215000101	Coil 22 Ø 8 BA 2W-24VDC	24Vcc	2W	2W
W0215000111	Coil 22 Ø 8 BA 3.5VA-24VAC	24V 50/60Hz	5.3VA	3.5VA
W0215000121	Coil 22 Ø 8 BA 3.5VA-110VAC	110V 50/60Hz	5.3VA	3.5VA
W0215000131	Coil 22 Ø 8 BA 3.5VA-220VAC	220V 50/60Hz	5.3VA	3.5VA

### "UL" AND "CSA" COILS 22 mm

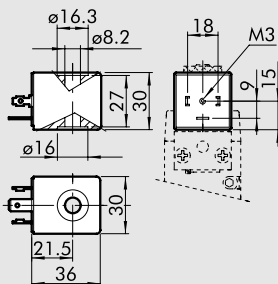


- Voltage tolerance: -10% to + 15%
- Insulation class: F155
- Degree of protection: IP65 EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents
- Coil temperature 100% ED: 70°C at 20°C – Ambient temperature
- According to Atex 94/9 CE rule, group 2, category 3 GD
- For the standards description look at page 6-29

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000251	Coil 22 Ø 8 BA 2W-12VDC UR	12Vcc	2W	2W
W0215000201	Coil 22 Ø 8 BA 2W-24VDC UR	24Vcc	2W	2W
W0215000211	Coil 22 Ø 8 BA 3.5VA-24VAC UR	24V 50/60Hz	5.3VA	3.5VA
W0215000221	Coil 22 Ø 8 BA 3.5VA-110VAC UR	110V 50/60Hz	5.3VA	3.5VA
W0215000231	Coil 22 Ø 8 BA 3.5VA-220VAC UR	220V 50/60Hz	5.3VA	3.5VA



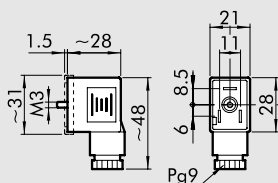
### COILS SIDE 30 mm



- Electric contact DIN43650 shape A – ISO 4400
- Voltage tolerance: -10% + 10%
- Insulation class: F155
- Degree of protection: IP65 EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents
- According to Atex 94/9 CE rule, group 2, category 3 GD

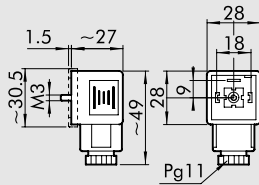
Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0210010100	Bobina 30 Ø 8 4W-24VDC	24Vcc	5W	4W
W0210011100	Bobina 30 Ø 8 4VA-24VAC	24V 50/60Hz	10VA	4VA
W0210012100	Bobina 30 Ø 8 4VA-110VAC	110V 50/60Hz	10VA	4VA
W0210013100	Bobina 30 Ø 8 4VA-220VAC	220V 50/60Hz	10VA	4VA

### CONNECTOR FOR COILS SIDE 22 mm



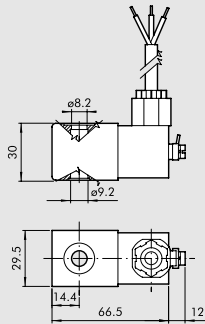
Code	Type	Colour	Ø Cable
W0970510011	Standard	Black	PG9
W0970510012	LED 24V	Transparent	PG9
W0970510013	LED 110V	Transparent	PG9
W0970510014	LED 220V	Transparent	PG9
W0970510015	LED + VDR 24V	Transparent	PG9
W0970510016	LED + VDR 110V	Transparent	PG9
W0970510017	LED + VDR 220V	Transparent	PG9
W0970510070	Atex II 3 GD	Black	PG9

## CONNECTOR FOR COILS SIDE 30 mm



Code	Type	Colour	Ø Cable
W0970520033	Standard	Black	PG11
W0970520034	LED 24V	Transparent	PG11
W0970520035	LED 110V	Transparent	PG11
W0970520036	LED 220V	Transparent	PG11
W0970520037	LED + VDR 24V	Transparent	PG11
W0970520038	LED + VDR 110V	Transparent	PG11
W0970520039	LED + VDR 220V	Transparent	PG11

## KIT COIL EEXM



Code	Description
0227606913	Kit for coil 30 24 VDC EEXMT5 cable 3 m
0227606915	Kit for coil 30 24 VDC EEXMT5 cable 5 m
0227608013	Kit for coil 30 24 VAC EEXMT5 cable 3 m
0227608015	Kit for coil 30 24 VAC EEXMT5 cable 5 m
0227608023	Kit for coil 30 110 VAC EEXMT5 cable 3 m
0227608025	Kit for coil 30 110 VAC EEXMT5 cable 5 m
0227608033	Kit for coil 30 230 VAC EEXMT5 cable 3 m
0227608035	Kit for coil 30 230 VAC EEXMT5 cable 5 m

According to Atex 94/9 CE rule,

⊕ II 2G Ex mb IIC T4/T5 Gb

⊕ II 2D Ex tb IIIC T130/T95 °C IP66 Db

## KIT COILS SIDE 22 IP65

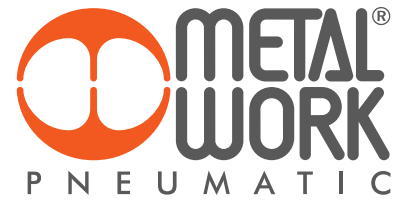


Code	Description
0222100100	Kit for coil 22 - IP65

Improved IP65 protection, even after prolonged exposure to atmospheric agents.  
Applicable to valves with a technopolymer control.

## NOTES

# VALVES ISO 5599/1, SOLENOID/PNEUMATIC, SERIES ISV WITH M12 CONNECTOR

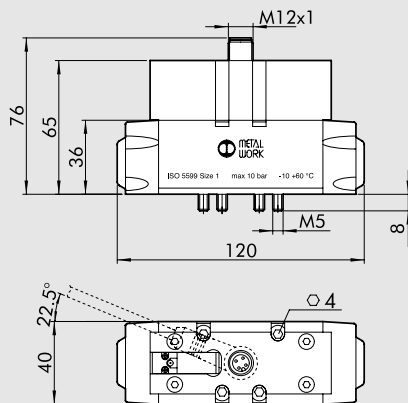


TECHNICAL DATA		ISO 1	ISO 2
Operating pressure:	bar		
• monostable		2.5 to 10	
• bistable		1 to 10	
• pilot-assisted		Vacuum to 10	
Minimum pilot pressure	bar	2.5	
Operating temperature range	°C	-10 to +60	
Nominal diameter	mm	7.5	12
Conductance C	NI/min · bar	250	657.14
Critical ratio b	bar/bar	0.36	0.25
Flow rate at 6 bar ΔP 0.5 bar	NI/min	700	1800
Flow rate at 6 bar ΔP 1 bar	NI/min	1100	2700
TRA / TRR monostable at 6 bar	ms	22 / 60	78 / 180
Solenoid pilot		With built-in coil	
Manual		Monostable on solenoid pilot Monostable on valve body	
Coil power	W	1.2	
Voltage		24 VDC ±10%	
Electrical connection		M12	
Degree of protection		IP65 EN60529	
Electrical protection		Transil	



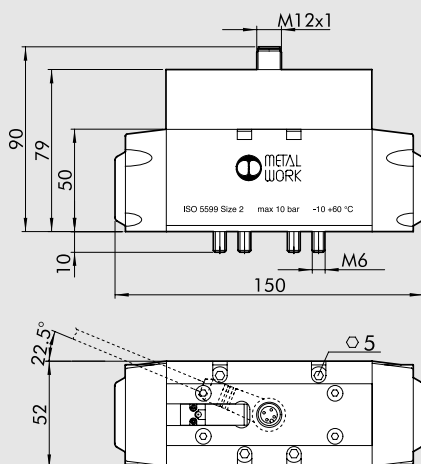
DISTRIBUTORS

## MONOSTABLE 5/2 ISO 1



Symbol	Code	Abbrev.	Weight [g]
	7054021100	ISV 55 COS OO	508
	7054021400	ISV 55 CES OO	508

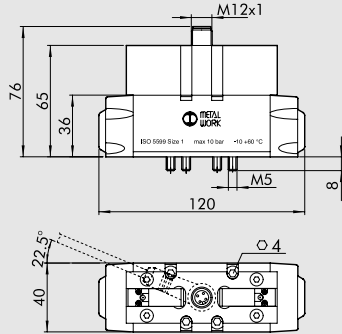
## MONOSTABLE 5/2 ISO 2



Symbol	Code	Abbrev.	Weight [g]
	7055021100	ISV 65 COS OO	901
	7055021400	ISV 65 CES OO	901

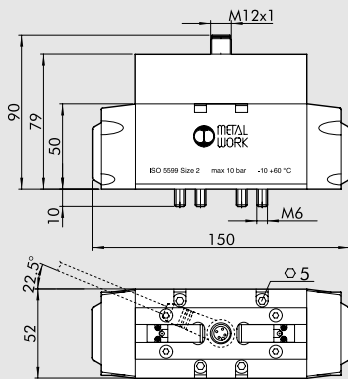
VALVES ISO 5599/1, SOLENOID/PNEUMATIC, SERIES ISV WITH M12 CONNECTOR

**BISTABLE 5/2 ISO 1 - MONOSTABLE 5/3 ISO 1**



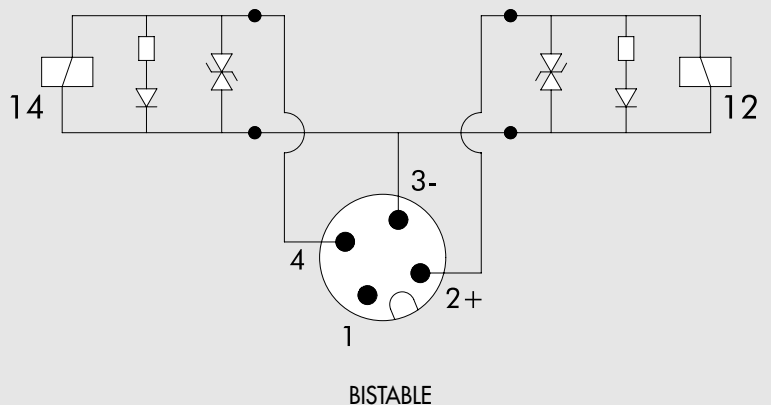
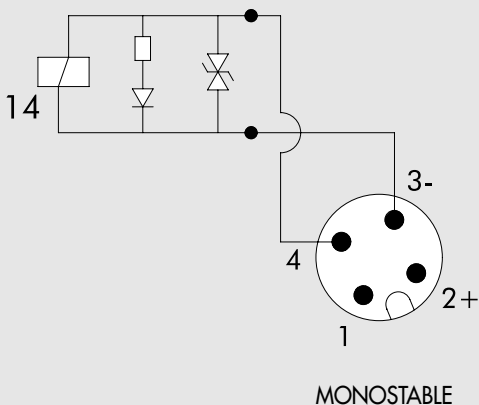
Symbol	Code	Abbrev.	Weight [g]
	7054021200	ISV 55 COB OO	512
	7054021300	ISV 55 COD OO	490
	7054022100	ISV 56 COS CC	496
	7054022200	ISV 56 COS OC	496
	7054022300	ISV 56 COS PC	496
	7054021500	ISV 55 CEB OO	512
	7054021600	ISV 55 CED OO	490
	7054022400	ISV 56 CES CC	496
	7054022500	ISV 56 CES OC	496
	7054022600	ISV 56 CES PC	496

**BISTABLE 5/2 ISO 2 - MONOSTABLE 5/3 ISO 2**



Symbol	Code	Abbrev.	Weight [g]
	7055021200	ISV 65 COB OO	860
	7055021300	ISV 65 COD OO	860
	7055022100	ISV 66 COS CC	868
	7055022200	ISV 66 COS OC	868
	7055022300	ISV 66 COS PC	868
	7055021500	ISV 65 CEB OO	860
	7055021600	ISV 65 CED OO	860
	7055022400	ISV 66 CES CC	868
	7055022500	ISV 66 CES OC	868
	7055022600	ISV 66 CES PC	868

**WIRING DIAGRAM**

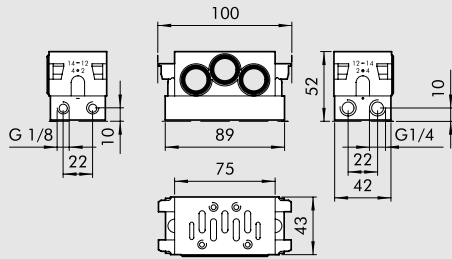


## BASES ISO 5599/1 FOR VALVES SERIES IPV-ISV SIZE 1 AND 2

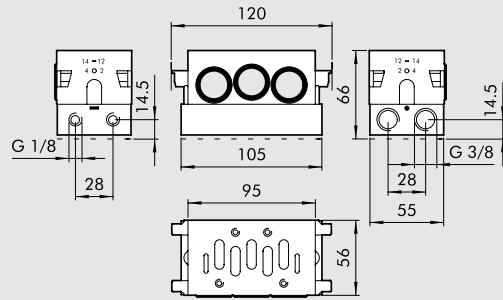
Reference	Code ISO 1	Code ISO 2	Description
①	0228000150	0228001150	Manifold base - side ports
②	0228000155	0228001155	Manifold base with bottom ports
③	0228000200	0228001200	Input end plate
④	0228000201	0228001201	Additional input end plate
⑤	0228000210	0228001210	Blind end plate
⑥	0228000300	0228001300	Intermediate - top ports
⑦	0228000301	0228001301	Intermediate - back ports
⑧	0228000500	0228001500	Blanking plate
⑨	0228000400	0228001400	Intermediate diaphragm
⑩	0228000600	-	ISO 1/ISO 2 port adapter
⑪	0228000100	0228001100	Individual base - side ports
⑫	0228000110	0228001110	Base - bottom ports
⑬	0228000700	0228001700	Assembly kit

### ① MANIFOLD BASE, SIDE PORTS

ISO 1



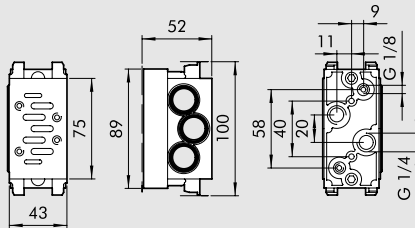
ISO 2



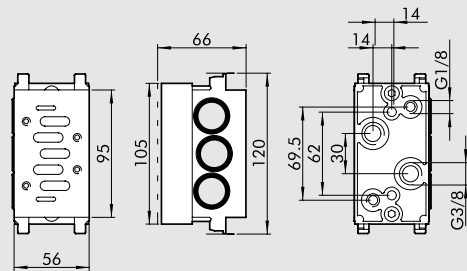
Code	Description	Weight [g]
0228000150	Manifold base, side ports, ISO 1	314
0228001150	Manifold base, side ports, ISO 2	131

### ② MANIFOLD BASE, BOTTOM PORTS

ISO 1



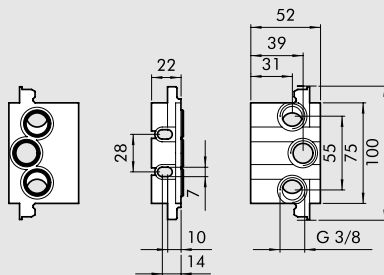
ISO 2



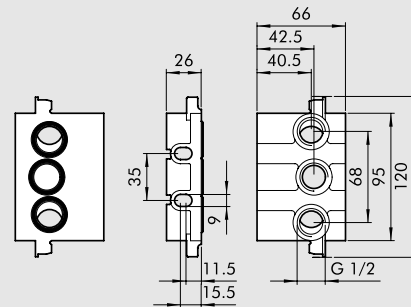
Code	Description	Weight [g]
0228000155	Manifold base, bottom ports, ISO 1	314
0228001155	Manifold base, bottom ports, ISO 2	505

### ③ INPUT END PLATE

ISO 1



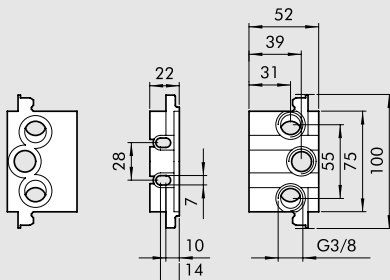
ISO 2



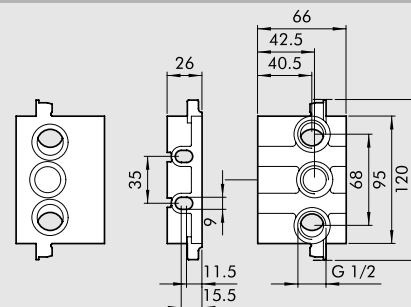
Code	Description	Weight [g]
0228000200	Input end plate ISO 1	129
0228001200	Input end plate ISO 2	206

### ④ ADDITIONAL INPUT END PLATE

ISO 1



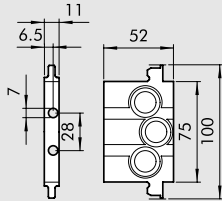
ISO 2



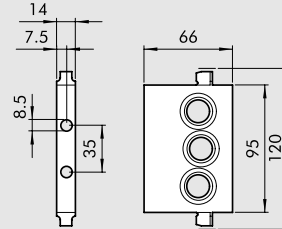
Code	Description	Weight [g]
0228000201	Additional input end plate, ISO 1	84
0228001201	Additional input end plate, ISO 2	162

### 5 BLIND END PLATE

ISO 1



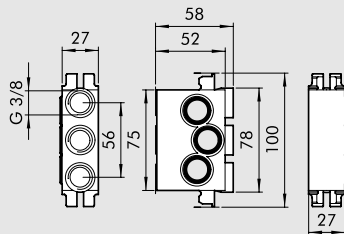
ISO 2



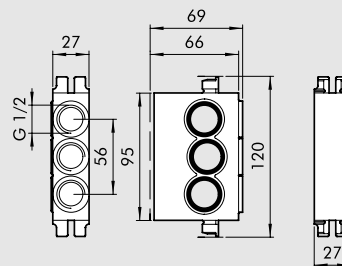
Code	Description	Weight [g]
0228000210	Blind end plate, ISO 1	79
0228001210	Blind end plate, ISO 2	130

### 6 INTERMEDIATE TOP PORTS

ISO 1



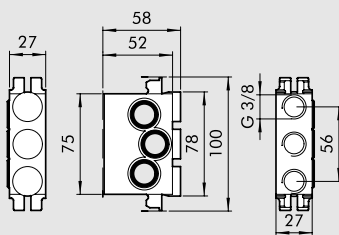
ISO 2



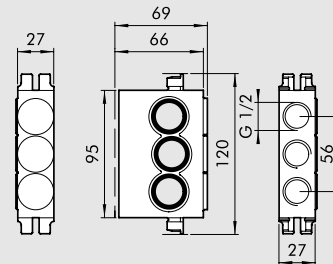
Code	Description	Weight [g]
0228000300	Intermediate top ports, ISO 1	235
0228001300	Intermediate top ports, ISO 2	299

### 7 INTERMEDIATE REAR PORTS

ISO 1



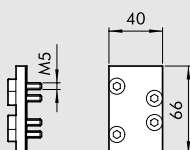
ISO 2



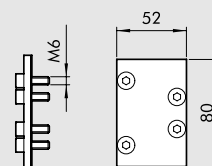
Code	Description	Weight [g]
0228000301	Intermediate rear ports, ISO 1	237
0228001301	Intermediate rear ports, ISO 2	299

### 8 BLANKING PLATE

ISO 1



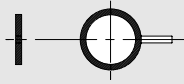
ISO 2



Code	Description	Weight [g]
0228000500	Blanking plate, ISO 1	47
0228001500	Blanking plate, ISO 2	96

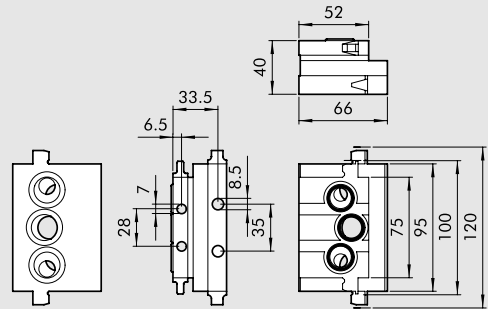


**9 INTERMEDIATE DIAPHRAGM**



Code	Description	Weight [g]
0228000400	Intermediate diaphragm, ISO 1	4
0228001400	Intermediate diaphragm, ISO 2	7

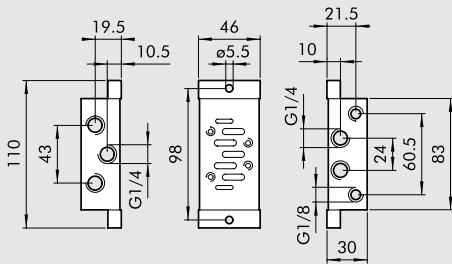
**10 DIMENSION ADAPTER**



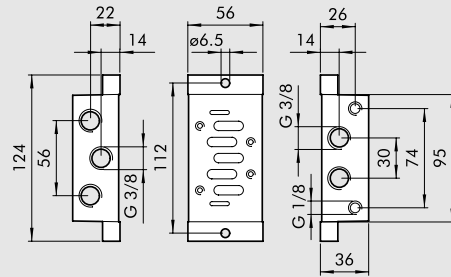
Code	Description	Weight [g]
0228000600	Dimension adapter ISO 1-2	454

**11 INDIVIDUAL BASE SIDE PORTS**

ISO 1



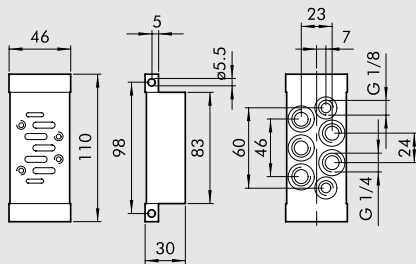
ISO 2



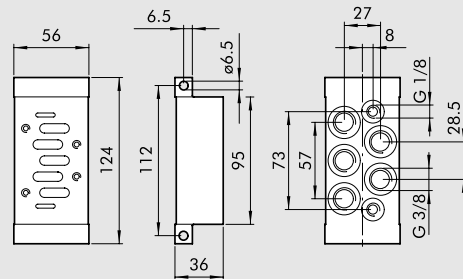
Code	Description	Weight [g]
0228000100	Individual base side ports, ISO 1	165
0228001100	Individual base side ports, ISO 2	257

**12 INDIVIDUAL BASE BOTTOM PORTS**

ISO 1



ISO 2



Code	Description	Weight [g]
0228000110	Individual base bottom ports, ISO 1	197
0228001110	Individual base bottom ports, ISO 2	304

**13 ASSEMBLY KIT**

ISO 1

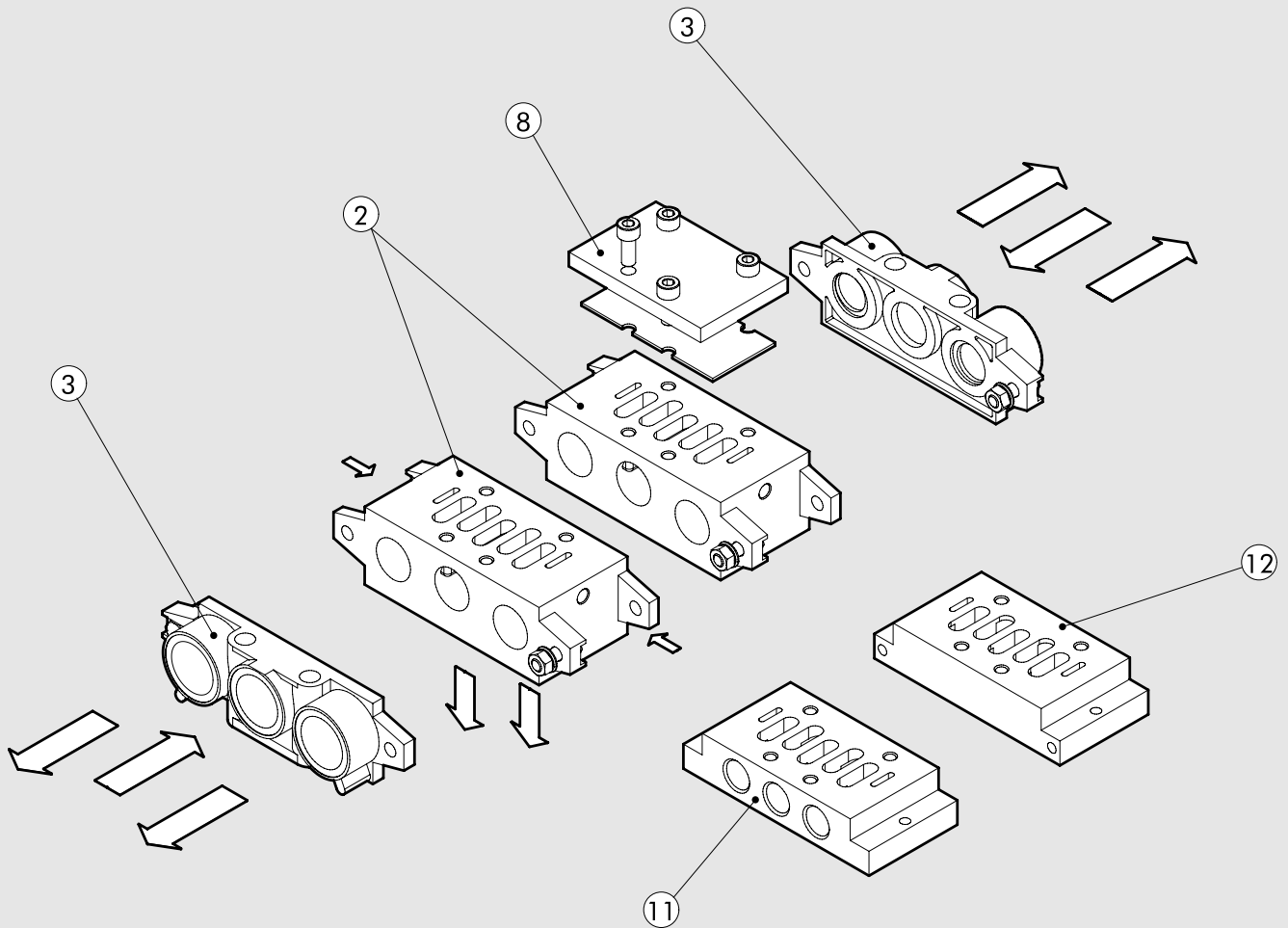


ISO 2



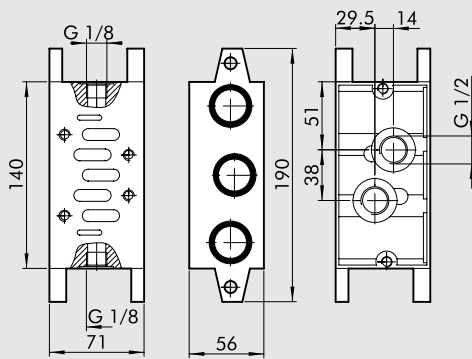
Code	Description	Weight [g]
0228000700	Assembly kit, ISO 1	47
0228001700	Assembly kit, ISO 2	47

**BASES ISO 5599/1  
FOR VALVES SERIES IPV-ISV SIZE ISO 3**



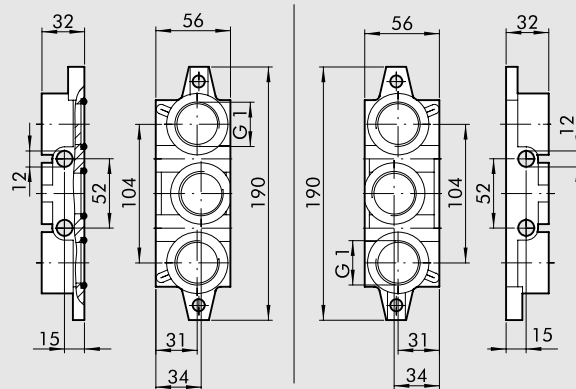
Reference	Code ISO 3	Description
②	0228002155	Manifold base with bottom ports
③	0228002200	Input end plate
⑧	0228002500	Blanking plate
⑪	0228002100	Individual base - side ports
⑫	0228002110	Base - bottom ports

② MANIFOLD BASE, BOTTOM PORTS



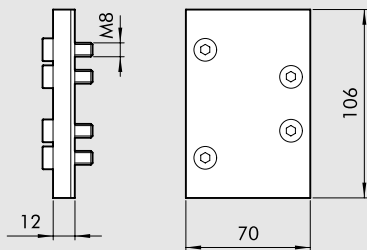
Code	Description	Weight [g]
0228002155	Manifold base, bottom ports, ISO 3	720

③ INPUT END PLATE



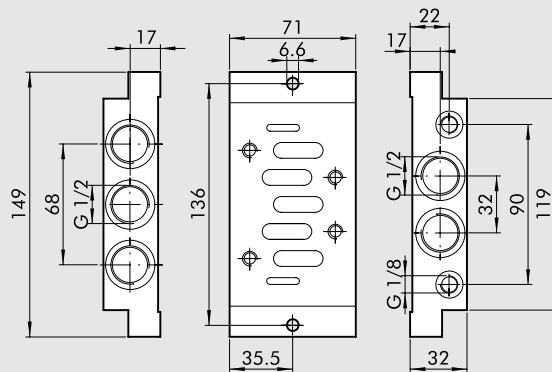
Code	Description	Weight [g]
0228002200	Input end plate, ISO 3	670

⑧ BLANKING PLATE



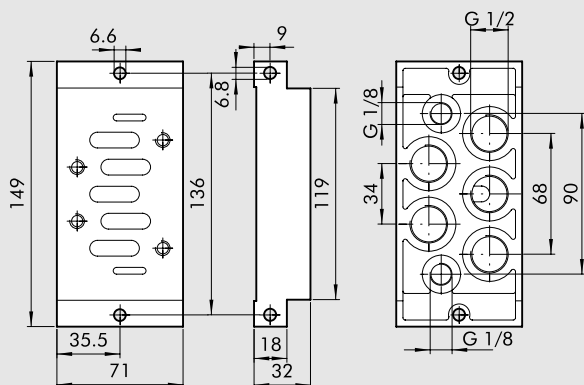
Code	Description	Weight [g]
0228002500	Blanking plate, ISO 3	265

⑪ INDIVIDUAL BASE SIDE PORTS



Code	Description	Weight [g]
0228002100	Individual base side ports, ISO 3	360

⑫ INDIVIDUAL BASE BOTTOM PORTS



Code	Description	Weight [g]
0228002110	Individual base bottom ports, ISO 3	420

NOTES

# SANDWICH REGULATORS FOR ISO 5599/1 BASES ISO1-2

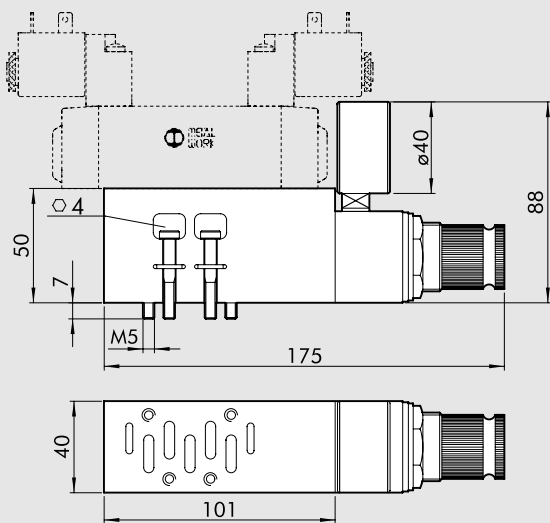


TECHNICAL DATA		ISO 1	ISO 2
Max upstream pressure	bar	13	
Pressure range	bar	0 to 12	
Pressure gauge range	bar	0 to 12	
Flow rate at 6 bar $\Delta P$ 1 bar	NI/min	400	550
Operating temperature range	$^{\circ}C$	-10 to +60	
Fixing screw on ISO 5599/1 base		M5 ant-extraction	M6 anti-extraction
Installation		In any position	
Instructions for use		Downstream pressure must always be set to increasing values	



DISTRIBUTORS

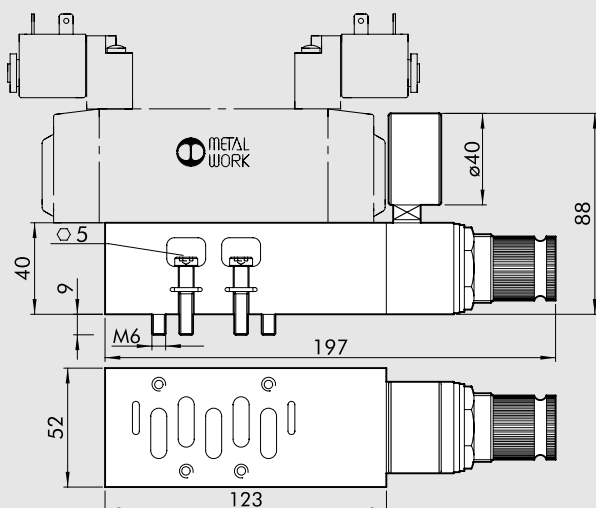
## SANDWICH REGULATOR FOR ISO 1 VALVES



Symbol	Code	Description	Weight [g]
	0228000804	Sandwich regulator 1 0 to 12 bar ISO 1	760
	0228000814*	Sandwich regulator 3 0 to 12 bar ISO 1	760

\* A pilot-assisted valve needs to be used since port 1 relieves pressure, it is not under pressure

## SANDWICH REGULATOR FOR ISO 2 VALVES



Symbol	Code	Description	Weight [g]
	0228001804	Sandwich regulator 1 0 to 12 bar ISO 2	900
	0228001814*	Sandwich regulator 3 0 to 12 bar ISO 2	900

\* A pilot-assisted valve needs to be used since port 1 relieves pressure, it is not under pressure

SANDWICH REGULATORS FOR ISO 5599/1 BASES ISO1-2

NOTES

DISTRIBUTORS

NOTES

DISTRIBUTORS

# VALVES ISO 5599/1 SERIES SAFE AIR®



Starting from a series of sturdy, reliable valves, such as those to ISO 5599/1, some special features have been added, such as the presence of a valve status diagnostic system and the creation of a double channel guaranteeing architecture redundancy.

The simplest version features one electropneumatically-operated 5/2 monostable valve. It is common knowledge that when this type of valve is in the idle state (coil not energized), port 1 is connected to port 2, and port 4 relieves. When the valve is operated (coil energized), port 1 is connected to port 4, and port 2 relieves. When the coil is de-energized again, the valve is returned to the idle state (so port 4 relieves) by means of a spring that returns the spool to the home position. In the event of a failure, the spool may remain in the actuating position, even with coil de-energized, leaving port 4 pressurized.

To offset this problem, we have added a Hall-effect sensor that reads the spool position. This means that when the valve is deactivated, the sensor is on, and when the valve is activated, the sensor is off. A status in which the sensor is off and the coil de-energized indicates a problem.

To reduce the probability of risk during plant maintenance, the manual actuator mounted on the Cnomo electric control is the monostable type. The sensor inside the valve is available in the standard version with a 2.5m three-wire cable (standard or ATEX certified) or with an M8 connector and a 300 mm cable.

This valve, which is available in 3 sizes for the ISO 5599/1 series, is a category 2 component according to ISO EN 13849 and is suitable for use in safety circuits up to PL=c.

For those requiring higher PLs, we have also developed a double-channel version (redundant) that requires the use of ISO 5599/1 valves with a monitored coil arranged so that ports 2 are in parallel and ports 4 are in series. If just one of the valves de-energizes, port 4 relieves, so, even if one of the two coils remains blocked, the other guarantees relief of the compressed-air circuit. In this case, too, the presence of spool position sensors can be used to monitor the status.

The double valve is also available in 3 sizes for the ISO 5599/1 series. It is a category 4 component according to ISO EN 13849 and is suitable for use in safety circuits up to PL=e.

Both the single- and the double-channel valve come with:

- a Type-Approval n° P13104/11/MC/nb issued by Bureau Veritas in accordance with EN ISO 13849
- a certificate of compliance examination to the Machinery Directive 2006/42/EC CV \*\*No. CV 002-10-2011 released by Bureau Veritas.



## SINGLE VALVE ISO 5599/1 SERIES SAFE AIR®

TECHNICAL DATA	ISO 1	ISO 2	ISO 3
Fluid	Filtered unlubricated air (50µm); lubrication, if used, must be continuous		
Operation	5/2 monostable		
Operating pressure: bar	from 2.5 to 10		
• non-assisted	from vacuum to 10		
• pilot-assisted	2.5		
Minimum pilot pressure bar	from -10 to +60 (from -10 to +45 for Atex version)		
Operating temperature range °C			
Nominal diameter mm	7.5	12	15
Conductance C NI/min · bar	250	657	971
Critical ratio b bar/bar	0.36	0.43	0.43
Flow rate at 6.3 bar Δp 0.5 bar NI/min	700	1800	3200
Flow rate at 6.3 bar Δp 1 bar NI/min	1100	2700	4600
TRA/TRR at 6.3 bar ms/ms	12 / 30	24 / 43	50 / 120
Conductance C on relief NI/min · bar	267	817	1095
Critical ratio b on relief bar/bar	0.34	0.24	0.56
Flow rate on free exhaust at 6.3 bar NI/min	1850	5900	6500
Installation	any position		
Assembly	On single or manifold bases to ISO 5599/1 (*) to CNOMO		
Solenoid pilot	Monostable on solenoid pilot and valve body		
Manual actuator	ISO and UNI FD 22		
Recommended lubricant	Please refer to page 6-7 of the technical documentation		
Compatibility with oils	30 mm side, ø 8 hole – EN175301-803 connection, type A		
Coils	22 mm side, ø 8 hole – EN175301-803 connection, type B		
	Certified EN 60204.1 and VDE 0580		
	Refer to the Accessories section for the electrical features page 2-113 (*)		
Class of protection	IP65 with coil and connector mounted		
Noise level	Max. 78 dBA with silenced relief		
Max coil ring nut torque Nm	1		
CE marking	In accordance with Machinery Directive, Annexe V (**)		
ATEX category (only for versions with an ATEX sensor)	Ⓢ II 3G Ex nA c IIC T4 Gc x -10°C<Ta<45°C Ⓢ II 3D Ex tc IIIC T1 35°C IP65 Dc		
Safety function	Cuts off the power supply and relieves the air circuit connected to port 4		
Type of sensor used	Hall effect (refer to page 2-135 for sensor details)		
B10d	40 x 10 <sup>6</sup> cycles		
Category - ISO EN 13849	2		
DC	Low (80 %)		
PL - ISO EN 13849	Suitable for use in safety circuits up to PL=c		

\* To avoid malfunctions, we recommend using Metal Work accessories

\*\* The declaration can be downloaded from [www.metalwork.it](http://www.metalwork.it)

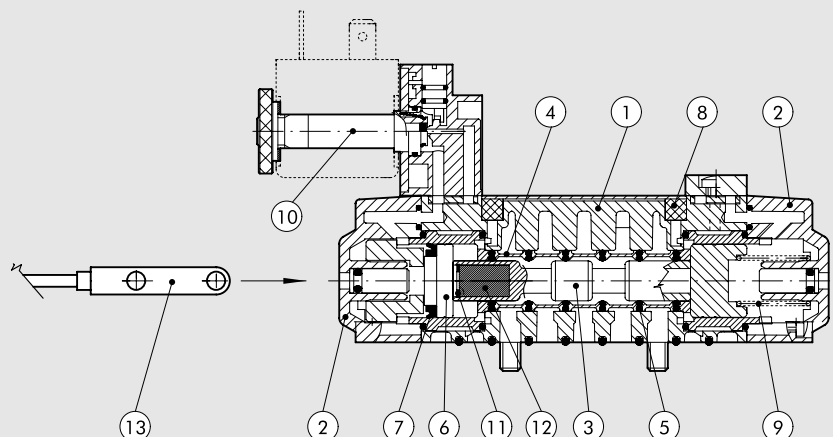
**IMPORTANT:** Do not mount 2 or more SAFE AIR® valves in adjacent positions.

Any ferromagnetic masses must be at least 30mm from the sensor.

Prevent magnetic fields from creating disturbance in the sensor area.

### COMPONENTS

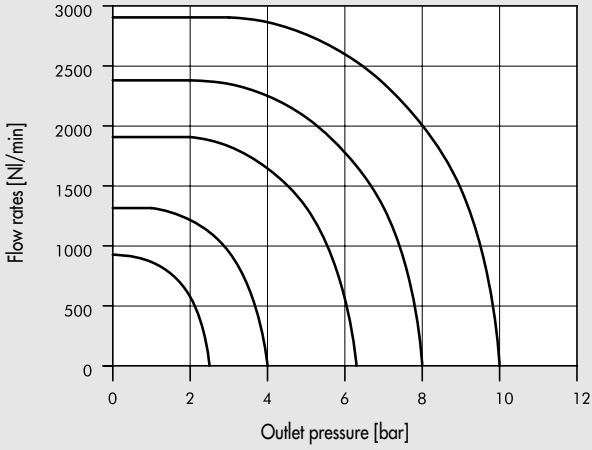
- ① VALVE BODY: Aluminium
- ② END CAP: Hostaform®
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: NBR
- ⑧ FILTER: sintered bronze
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe – Stainless steel core
- ⑪ LOCKING RING: special steel
- ⑫ MAGNET: Neodymium
- ⑬ SENSOR: Hall effect



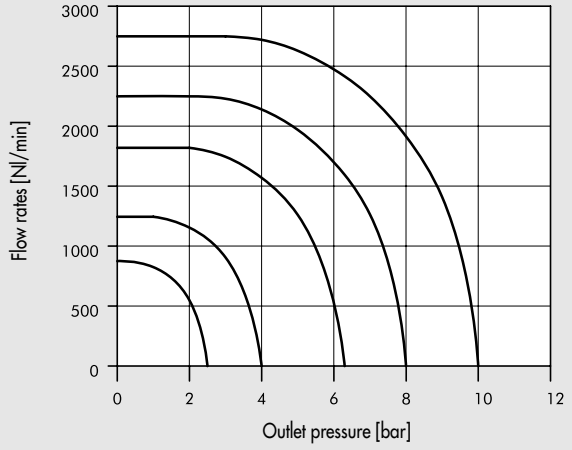


**FLOW CHARTS - SINGLE VALVE**

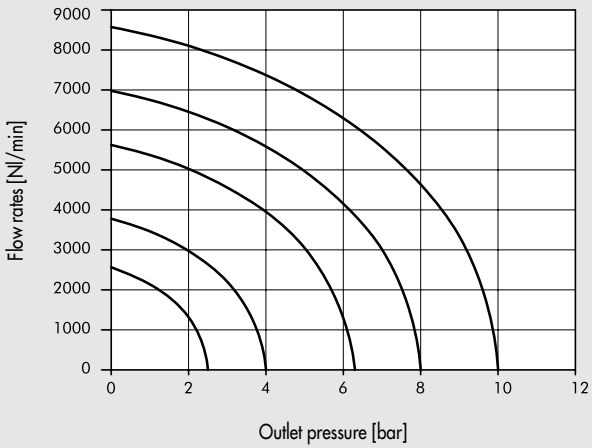
ISO 1 - ON DELIVERY



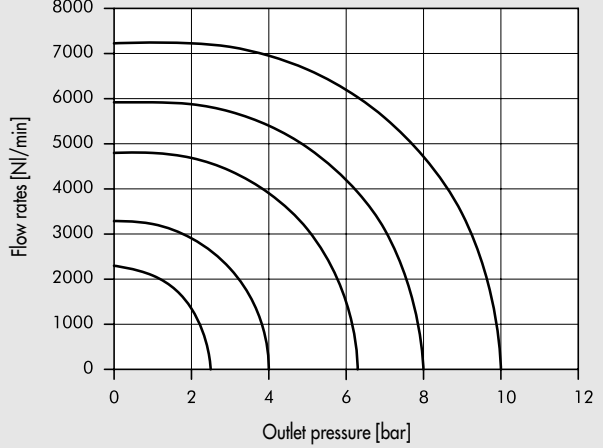
ISO 1 - ON RELIEF



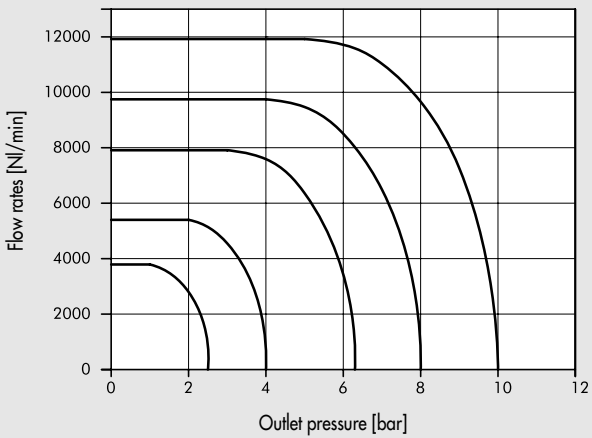
ISO 2 - ON DELIVERY



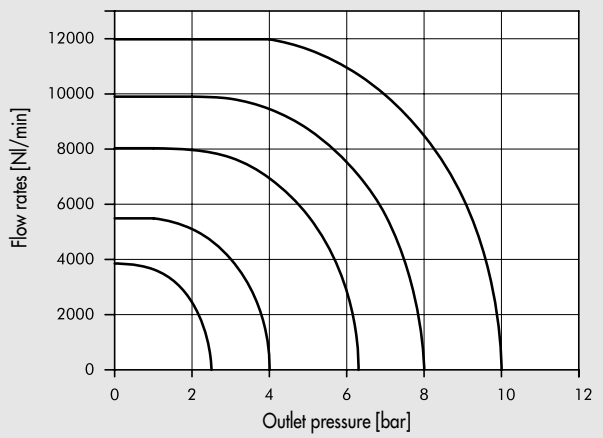
ISO 2 - ON RELIEF



ISO 3 - ON DELIVERY



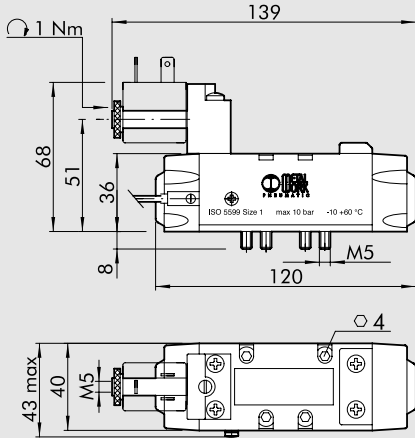
ISO 3 - ON RELIEF





**KEY TO CODES**

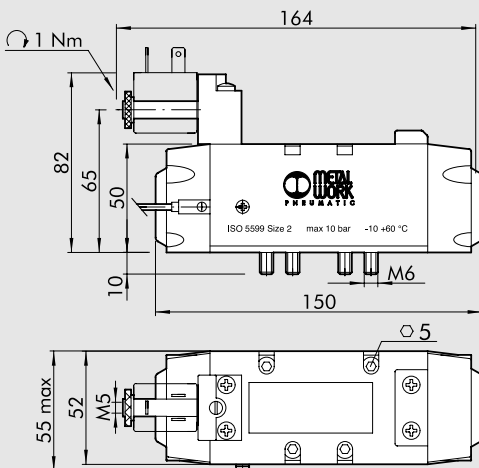
ISV FAMILY	5 DIMENSIONS	5 FUNCTION	SO OPERATORS 14	S RESETTING 12	OO FURTHER DETAILS	3F SENSOR
ISV ISO solenoid/ pneumatic	5 ISO1 6 ISO2 7 ISO3	5 5/2	SO solenoid/ pneumatic SE electric pilot-assisted	S mechanical springs	OO 5/2	3F 2.5 m 3 wires M8 0.3 m M8 AT 2 m ATEX



### 5/2 MONOSTABLE - ISO 1



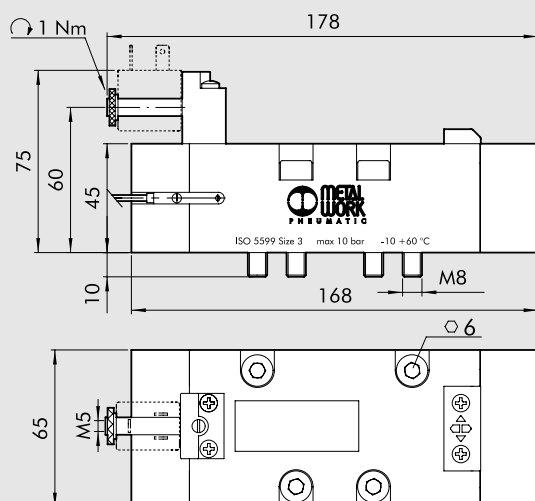
Symbol	Code	Abbrev.	Sensor	Weight [g]
	7057021100	ISV 55 SOS OO 3F	2.5 m 3 wires	380
	7057121100	ISV 55 SOS OO M8	0.3 m M8	350
	7057221100	ISV 55 SOS OO AT	2 m ATEX	370
	7057021400	ISV 55 SES OO 3F	2.5 m 3 wires	380
	7057121400	ISV 55 SES OO M8	0.3 m M8	350
	7057221400	ISV 55 SES OO AT	2 m ATEX	370



### 5/2 MONOSTABLE - ISO 2



Symbol	Code	Abbrev.	Sensor	Weight [g]
	7058021100	ISV 65 SOS OO 3F	2.5 m 3 wires	750
	7058121100	ISV 65 SOS OO M8	0.3 m M8	720
	7058221100	ISV 65 SOS OO AT	2 m ATEX	740
	7058021400	ISV 65 SES OO 3F	2.5 m 3 wires	750
	7058121400	ISV 65 SES OO M8	0.3 m M8	720
	7058221400	ISV 65 SES OO AT	2 m ATEX	740

### 5/2 MONOSTABLE - ISO 3



Symbol	Code	Abbrev.	Sensor	Weight [g]
	7059021100	ISV 75 SOS OO 3F	2.5 m 3 wires	1240
	7059121100	ISV 75 SOS OO M8	0.3 m M8	1210
	7059221100	ISV 75 SOS OO AT	2 m ATEX	1230
	7059021400	ISV 75 SES OO 3F	2.5 m 3 wires	1240
	7059121400	ISV 75 SES OO M8	0.3 m M8	1210
	7059221400	ISV 75 SES OO AT	2 m ATEX	1230

## EXAMPLE OF A SAFETY CIRCUIT WITH A SINGLE VALVE

Below is an example of a wiring diagram for controlling Metal Work SAFE AIR® single valves using Pilz® components.

Circuit components:

- a Pilz® safety module PNOZ® s3 for controlling the emergency stop button; terminal Y32 indicates the status of the module, which can be relayed to the machine control logic
- an emergency stop button S1 (Pilz® - PIT® es Set) linked to terminals S11-S12-S22-S23 of the PNOZ® s3
- a Metal Work SAFE AIR® solenoid valve, the 24 VDC coil of which is fed by terminal 14 of the PNOZ® s3 (the other terminal of the coil is 0 V); the valve's Hall-effect sensor is 24 VDC
- a start/reset button S2
- a relay K1, controlled by the valve sensor; an NO contact of the relay is in series with button S2 of the PNOZ® s3.

Expected behaviour with the system operating correctly:

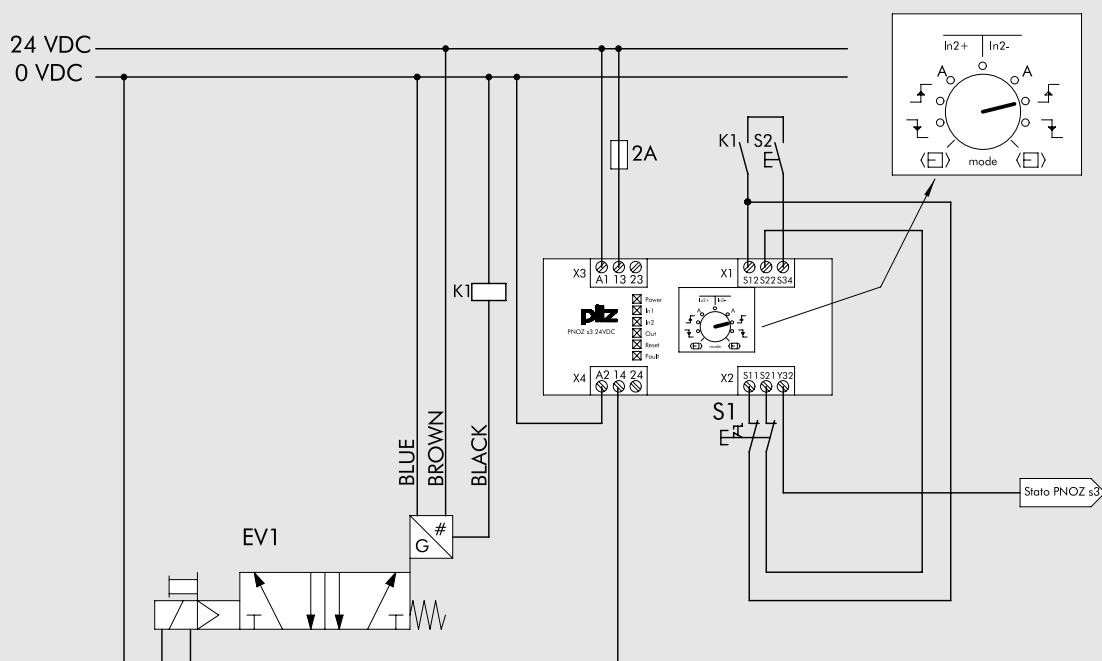
- system deactivated:
  - contact 14 is OFF
  - the coil is de-energized
  - the sensor is ON
  - relay K1 is energized
  - contact K1 is closed
  - contact Y32 is OFF
- with the system activated via the start/reset button:
  - contact 14 is ON
  - the coil is energized
  - the sensor is OFF
  - relay K1 is de-energized
  - contact K1 is open
  - contact Y32 is ON

In the event of a malfunction (e.g. spool jam), the coil is de-energized but the sensor remains OFF, relay K1 remains de-energized, contact K1 remains open (preventing subsequent restarts) and contact Y32 is OFF.

In the event of a valve fault, the circuit in the diagram below does not allow relief of the compressed air system. Sensor status must be monitored to assess valve operation. Contact Y32 indicates the status of the PNOZ® s3, not the status of the sensor.

All the electrical connections between the various components must comply with the applicable safety regulations.

If the emergency stop button is operated at a frequency of 1 actuation per hour, the circuit activates a safety function with  $PL = c$  (calculations made with the PASCAL programme by Pilz®). Responsibility for final checking that  $PL$  lies with the person assembling the circuit.



## DOUBLE VALVE ISO 5599/1 SERIES SAFE AIR®

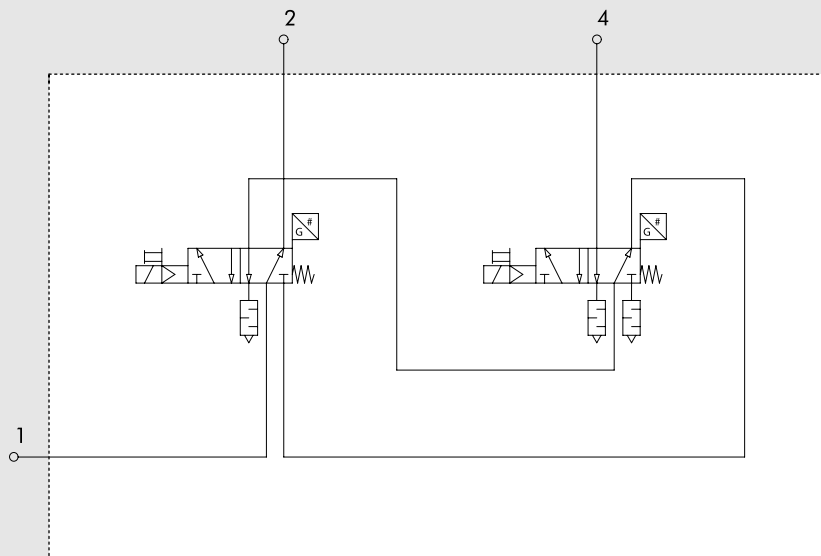
TECHNICAL DATA	ISO 1	ISO 2	ISO 3
Fluid	Filtered unlubricated air (50µm); lubrication, if used, must be continuous		
Operation	double 5/2 monostable		
Operating pressure: bar	from 2.5 to 10		
• non-assisted	from vacuum to 10		
• pilot-assisted	2.5		
Minimum pilot pressure bar	from -10 to +60 (from -10 to +45 for Atex version)		
Operating temperature range °C			
Conductance C NI/min · bar	228	498	720
Critical ratio b bar/bar	0.40	0.24	0.44
Flow rate at 6.3 bar Δp 0.5 bar NI/min	770	1250	2500
Flow rate at 6.3 bar Δp 1 bar NI/min	1050	1750	3400
Conductance C on relief NI/min · bar	222	554	724
Critical ratio b on relief bar/bar	0.30	0.02	0.41
Flow rate on free exhaust at 6.3 bar NI/min	1600	4000	5300
TRA/TRR at 6.3 bar ms/ms	12 / 30	24 / 43	50 / 120
Installation	any position		
Solenoid pilot	to CNOMO		
Manual actuator	monostable on solenoid pilot and valve body		
Recommended lubricant	ISO and UNI FD 22		
Compatibility with oils	Please refer to page 6-7 of the technical documentation		
Coils	30 mm side, ø 8 hole – EN175301-803 connection, form A 22 mm side, ø 8 hole – EN175301-803 connection, form B Certified EN 60204.1 and VDE 0580		
Class of protection	Refer to the Accessories section for electrical features page 2-113 (*) IP65 with coil and connector mounted		
Noise level	Max. 78 dBA with silenced relief		
CE marking	in accordance with Machinery Directive, Annexe V (**)		
ATEX category (only for versions with an ATEX sensor)	Ⓜ II 3G Ex nA c IIC T4 Gc x -10°C<Ta<45°C Ⓜ II 3D Ex tc IIIC T1 35°C IP65 Dc		
Max coil ring nut torque Nm	1		
Safety function	cuts off the power supply and relieves the air circuit connected to port 4		
Type of sensor used	Hall effect (refer to page 2-135 for sensor details)		
B10d	40x10 <sup>6</sup> cycles		
Category - ISO EN 13849	4		
DC	High (≥ 99 %)		
CCF	80		
PL - ISO EN 13849	Suitable for use in safety circuits up to PL=e		

\* To avoid malfunctions, we recommend using Metal Work accessories

\*\* The declaration can be downloaded from [www.metalwork.it](http://www.metalwork.it)

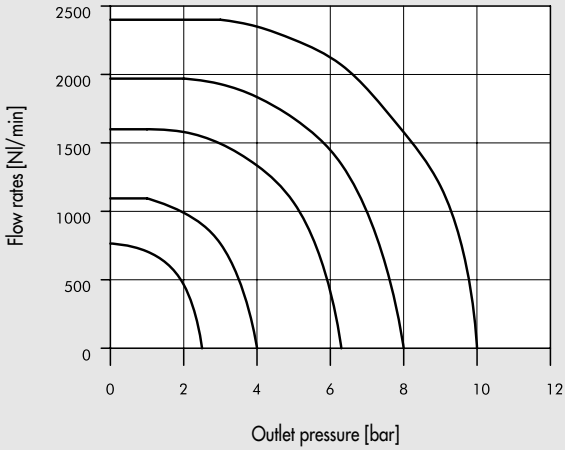
**IMPORTANT:** Any ferromagnetic masses must be at least 30mm from the sensor.  
Prevent magnetic fields from creating disturbance in the sensor area.

### WIRING DIAGRAM

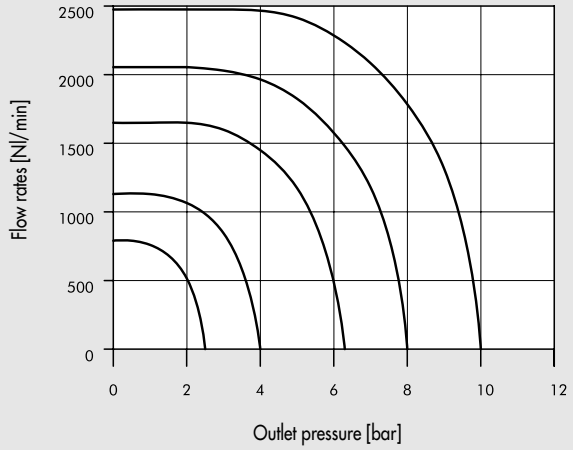


**FLOW CHARTS - DOUBLE VALVE**

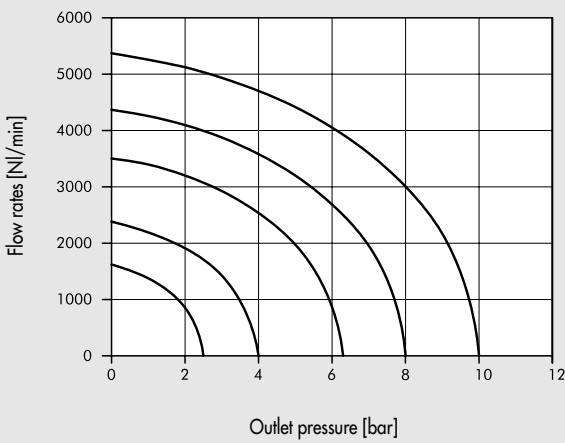
ISO 1 - ON DELIVERY



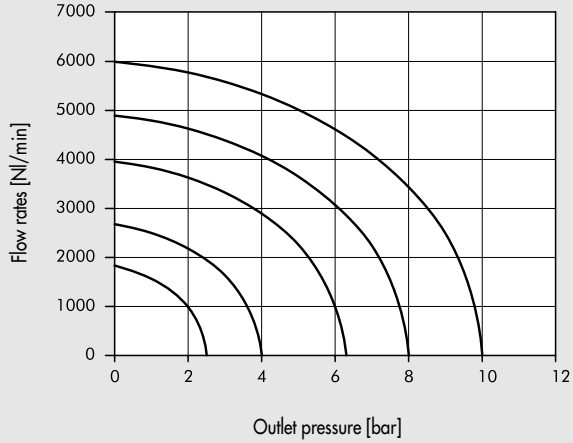
ISO 1 - ON RELIEF



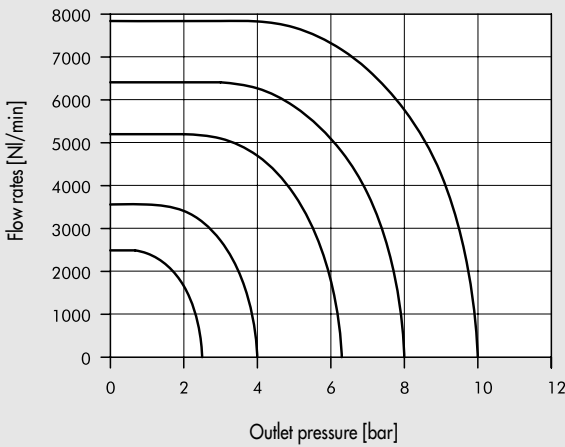
ISO 2 - ON DELIVERY



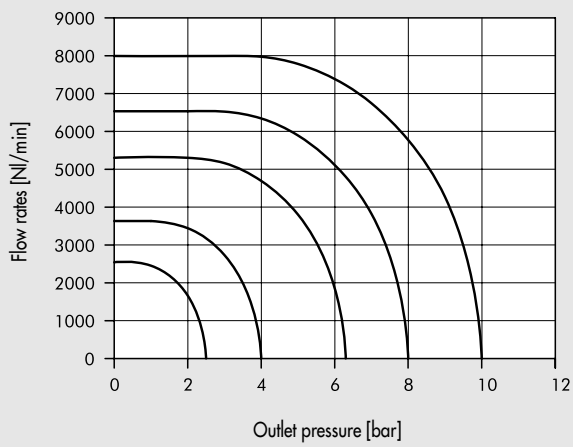
ISO 2 - ON RELIEF



ISO 3 - ON DELIVERY



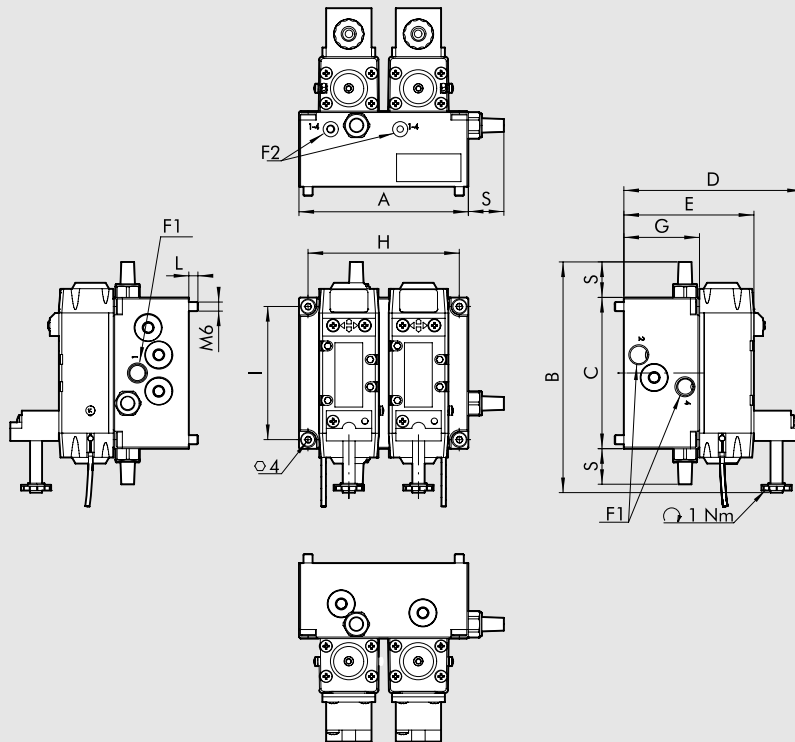
ISO 3 - ON RELIEF



**KEY TO CODES**

ISV FAMILY	5 DIMENSIONS	5 FUNCTION	SO OPERATORS 14	S RESETTING 12	DD FURTHER DETAILS	3 F SENSOR
ISV ISO solenoid/ pneumatic	5 ISO1 6 ISO2 7 ISO3	5 5/2	SO solenoid/ pneumatic SE electric pilot-assisted	S mechanical springs	DD double 5/2	3F 2.5 m 3 wires M8 0.3 m M8 AT 2 m ATEX

**DOUBLE 5/2 MONOSTABLE**



Code	Size	Abbrev.	A	B	C	D	E	F1	F2	G	H	I	L	S	Sensor	Weight [g]
7057021110	ISO 1	ISV 55 SOS DD 3F	112	152.5	100	118	86	G 1/4"	M5	50	100	88	6	23.5	2.5 m 3 wires	2100
7057121110	ISO 1	ISV 55 SOS DD M8	112	152.5	100	118	86	G 1/4"	M5	50	100	88	6	23.5	0.3 m M8	2100
7057221110	ISO 1	ISV 55 SOS DD AT	112	152.5	100	118	86	G 1/4"	M5	50	100	88	6	23.5	2 m ATEX	2100
7057021410	ISO 1	ISV 55 SES DD 3F	112	152.5	100	118	86	G 1/4"	M5	50	100	88	6	23.5	2.5 m 3 wires	2100
7057121410	ISO 1	ISV 55 SES DD M8	112	152.5	100	118	86	G 1/4"	M5	50	100	88	6	23.5	0.3 m M8	2100
7057221410	ISO 1	ISV 55 SES DD AT	112	152.5	100	118	86	G 1/4"	M5	50	100	88	6	23.5	2 m ATEX	2100
7058021110	ISO 2	ISV 65 SOS DD 3F	146	176	116	145	113	G 3/8"	G 1/8"	63	134	104	13	29	2.5 m 3 wires	4000
7058121110	ISO 2	ISV 65 SOS DD M8	146	176	116	145	113	G 3/8"	G 1/8"	63	134	104	13	29	0.3 m M8	4000
7058221110	ISO 2	ISV 65 SOS DD AT	146	176	116	145	113	G 3/8"	G 1/8"	63	134	104	13	29	2 m ATEX	4000
7058021410	ISO 2	ISV 65 SES DD 3F	146	176	116	145	113	G 3/8"	G 1/8"	63	134	104	13	29	2.5 m 3 wires	4000
7058121410	ISO 2	ISV 65 SES DD M8	146	176	116	145	113	G 3/8"	G 1/8"	63	134	104	13	29	0.3 m M8	4000
7058221410	ISO 2	ISV 65 SES DD AT	146	176	116	145	113	G 3/8"	G 1/8"	63	134	104	13	29	2 m ATEX	4000
7059021110	ISO 3	ISV 75 SOS DD 3F	186	188	116	155	123	G 1/2"	G 1/8"	78	174	104	9	31.5	2.5 m 3 wires	5300
7059121110	ISO 3	ISV 75 SOS DD M8	186	188	116	155	123	G 1/2"	G 1/8"	78	174	104	9	31.5	0.3 m M8	5300
7059221110	ISO 3	ISV 75 SOS DD AT	186	188	116	155	123	G 1/2"	G 1/8"	78	174	104	9	31.5	2 m ATEX	5300
7059021410	ISO 3	ISV 75 SES DD 3F	186	188	116	155	123	G 1/2"	G 1/8"	78	174	104	9	31.5	2.5 m 3 wires	5300
7059121410	ISO 3	ISV 75 SES DD M8	186	188	116	155	123	G 1/2"	G 1/8"	78	174	104	9	31.5	0.3 m M8	5300
7059221410	ISO 3	ISV 75 SES DD AT	186	188	116	155	123	G 1/2"	G 1/8"	78	174	104	9	31.5	2 m ATEX	5300

**NOTES**

## EXAMPLE OF A SAFETY CIRCUIT WITH A DOUBLE VALVE

Below is an example of a wiring diagram for controlling double valves SAFE AIR® a Metal Work using Pilz® components.

Circuit components:

- a Pilz® PNOZ® mm 0.1p modular safety system
- an emergency stop button S1 (Pilz® - PIT® es Set) linked to terminals T0-T1-I8-I9 of the PNOZ® mm 0.1p
- a Metal Work double solenoid valve SAFE AIR®, the 24 VDC coils of which are fed by terminals O0 (SV1) and O1 (SV2) of the PNOZ® mm 0.1p (the other terminals of the coils are OV); the valves' Hall-effect sensors are 24 VDC
- the sensor signals are relayed to terminals 16 (SV1) and 17 (SV2) of the PNOZ® mm 0.1p
- a start/reset button S2

Expected behaviour with the system operating correctly:

- system deactivated:
  - contacts O0 and O1 are OFF
  - the coils are de-energized
  - the sensors are ON (and hence signals to terminals 16 and 17)
  - if one of the sensors is OFF, the Pilz® module does not allow subsequent start/reset
- with the system activated via the start/reset button:
  - contacts O0 and O1 are ON
  - the coils are energized
  - the sensors are OFF (and hence signals to terminals 16 and 17)

The PNOZ® mm0.1p module is programmed so that:

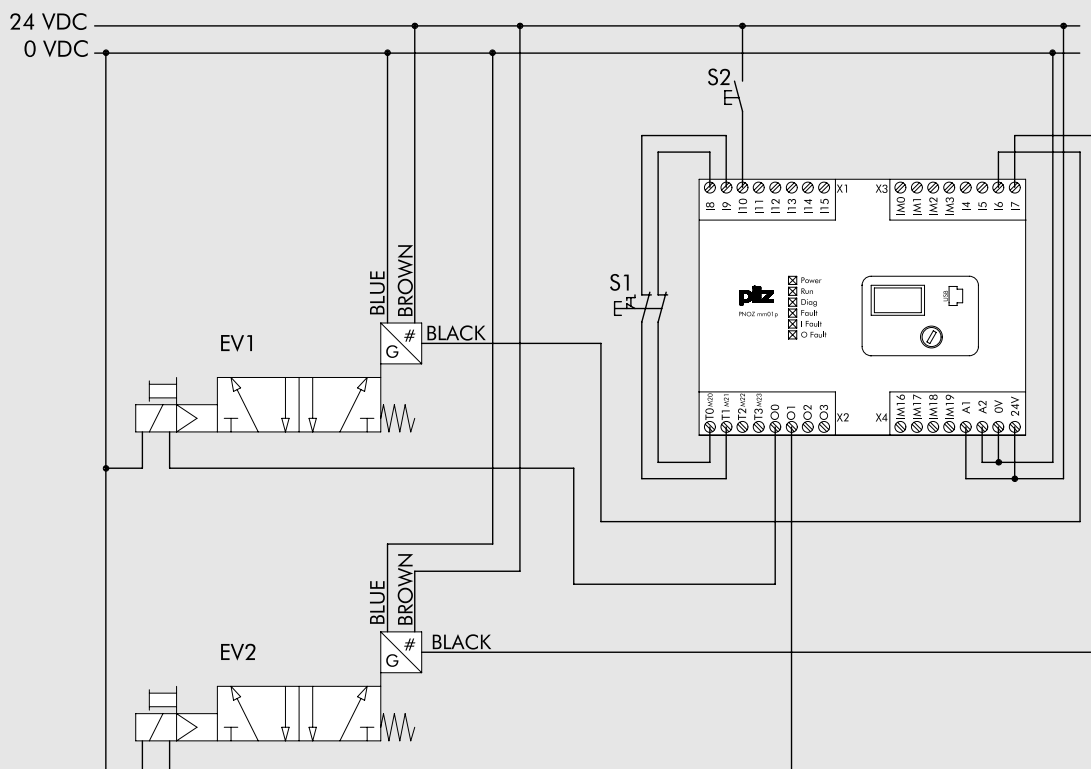
- when either sensor is OFF, and the coils are de-energized, the module does not allow subsequent restarts.
- when the valves are energized, the 2 sensors must go off within the valve actuation time (12 ms for ISO1s, 24 ms for ISO2s and 50 ms for ISO3s), otherwise the 2 valves are switched off again.

The programme can be downloaded from [www.metalwork.it](http://www.metalwork.it) (the licence for programming Pilz® modules is not included).

All the electrical connections between the various components must comply with the applicable safety regulations.

If the emergency button is operated at a frequency of 1 actuation per hour, the circuit activates a safety function with PL = e (calculations made with the PAScal programme by Pilz®).

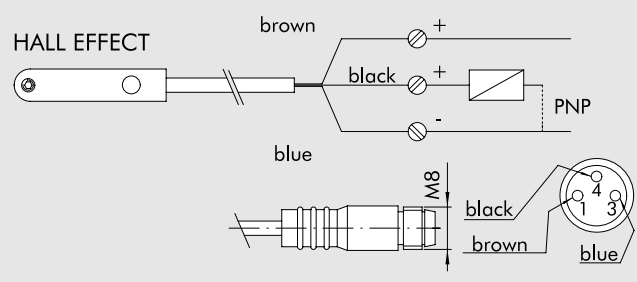
Responsibility for final checking that PL lies with the person assembling the circuit.



TECHNICAL DATA SENSOR		ATEX	
Type of contact		EFFETTO HALL	EFFETTO HALL
Switch		N.O.	N.O.
Supply voltage (U <sub>b</sub> )	V	PNP	PNP
Power	W	from 10 to 30 DC	from 18 to 30 DC
Voltage variation		3	≤ 1.7
Voltage drop	V	≤ 10% of U <sub>b</sub>	≤ 10% of U <sub>b</sub>
Input current	mA	≤ 2	≤ 2.2
Output current	mA	≤ 10	≤ 10
Switching frequency	Hz	≤ 100	≤ 70
Short-circuit protection		≤ 5000	1000
Over-voltage suppression		Yes	Yes
Polarity inversion protection		Yes	Yes
EMC		Yes	Yes
LED display		EN 60 947-5-2	EN 60 947-5-2
Magnetic sensitivity		Yellow	Yellow
Repeatability		2.8 mT ± 25%	2.6 mT
Degree of protection (EN 60529)		≤ 0.1 mT	≤ 0.1 mT (U <sub>b</sub> and ta fixed)
Vibration and shock resistance		IP 67	IP 68, IP 69K
Operating life		30 g, 11 ms, from 10 to 55 Hz, 1 mm	30 g, 11 ms, from 10 to 55 Hz, 1 mm
Temperature range	°C	10 <sup>9</sup> impulses	10 <sup>9</sup> impulses
Sensor capsule material		from -25 to +75	from -20 to +45
2.5 m/2 m connecting cable		PA66 + PA6I/6T	PA
Connecting cable with M8x1		PVC; 3 x 0.14 mm <sup>2</sup>	PVC; 3 x 0.12 mm <sup>2</sup>
Wire NO.		Polyurethane; 3 x 0.14 mm <sup>2</sup>	-
Category ATEX		3	3
Certifications		-	II 3G Ex nA op is IIC T4 Gc X II 3D Ex tc IIIC T135°C Dc IP67 X

DISTRIBUTORS  
VALVES ISO 5599/1 SERIES SAFE AIR®

### WIRING DIAGRAM SENSOR



### ACCESSORIES



Refer to page 2-113 for coils and connectors

### NOTES



NOTES

DISTRIBUTORS

NOTES

NOTES

DISTRIBUTORS

# SUMMARY OF VALVE ISLANDS

	● <b>HDM + MULTI-POLE CONNECTION</b>		PAGE 2-140
	● <b>HDM + AS-Interface</b>		PAGE 2-144
	● <b>HDM + PROFIBUS-DP</b>		PAGE 2-149
	● <b>HDM + CANopen</b>		PAGE 2-153
	● <b>HDM + B&amp;R</b>		PAGE 2-159
	● <b>HDM - VALVES, INTERMEDIATES ELEMENTS AND ACCESSORIES</b>		PAGE 2-162
	● <b>MULTIMACH</b>		PAGE 2-166
	● <b>MULTIMACH + PROFIBUS</b>	SEE	PAGE 2-190
	● <b>MULTIMACH + CANopen</b>	SEE	PAGE 2-190
	● <b>MULTIMACH + DEVICE-NET</b>	SEE	PAGE 2-190
	● <b>MULTIMACH + B&amp;R</b>		PAGE 2-174
	● <b>CM CLEVER MULTIMACH</b>		PAGE 2-175

# HDM + MULTI-POLE CONNECTION

HDMs are the ideal solution for those requiring the unbeatable performance, flexibility and modularity of Multimach valves combined with sturdy mechanics and a high degree of protection against external agents. Each valve is enclosed in a reinforced technopolymer protective shell that acts as a shock-absorber and prevents the infiltration of dirt. The class of protection is IP65.

The smooth, rounded design makes HDMs ideal for applications requiring frequent washing without the deposit of residues. All the pneumatic connections are on one side, with built-in push-in fittings. The user interface is on another side so that the fitter and the service engineer have everything at hand.

Flexibility is total: there are 1-16 valves, input and output terminals for pipes of different sizes and intermediate modules for separate inputs and outputs.

One very important new feature is that valves of different capacities can be mounted as required. Three different valve sizes can be combined at will.

This means a valve can be replaced at any time by another one offering a different performance. It only takes a few seconds to replace or add a valve.

To do this, merely loosen the two grub screws fixing the valve to the adjacent ones. Since the electrical signal is relayed from one valve to the next by means of gold-plated contacts connected to an electronic board, the electrical connections are entirely automatic.

The ratio of the HDM's flow rate to its dimensions is unrivalled – miniaturisation and efficiency have reached a peak.

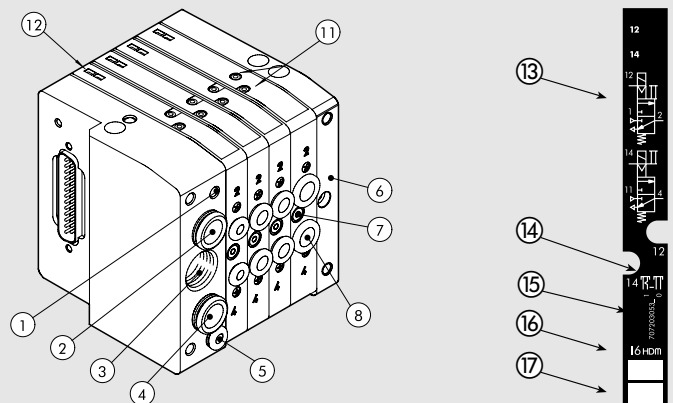


## TECHNICAL DATA

Valve port connections	Ø 4,6,8,10 mm automatic fitting for ports 2 and 4 / power supply port for Ø10 or Ø 12 mm automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port					
Connection on the end-plate for the supply of pilots	Automatic fitting Ø 4 mm					
Maximum number of pilots	16					
Maximum number of valves	16 ( same as the max. no. of pilots )					
Operating temperature range	°C -10 to +60					
Fluid	Filtered air without lubrication; lubrication, if used, must be continuous					
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	11.5 mm Ø 4	11.5 mm Ø 6	14 mm Ø 8	23 mm Ø 8	23 mm Ø 10
version 5/2 and 3/2		200	500	650	1000	1200
version 5/3		200	300	300	500	500
Pressure range	bar	X (pilot supply)		1-11 (valve supply)		
Terminal 1-1		3 to 7		vacuum at 10		
Terminal 1				3 to 7		
Voltage range		24 VDC ± 10%				
Power	W	0.9				
Control		PNP o NPN				
Insulation class		F155				
Degree of protection		IP65 (with conveyed exhaust)				
Solenoid rating		100% ED				
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45				
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33				
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20				
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20				
Note on use		Insert the pipes in the fittings, before passing air through the valves, otherwise the basket may be pulled out of its seat by the flow of air. Please refer to page 6-7 of the technical documentation				
Compatibility with oils						

## COMPONENTS

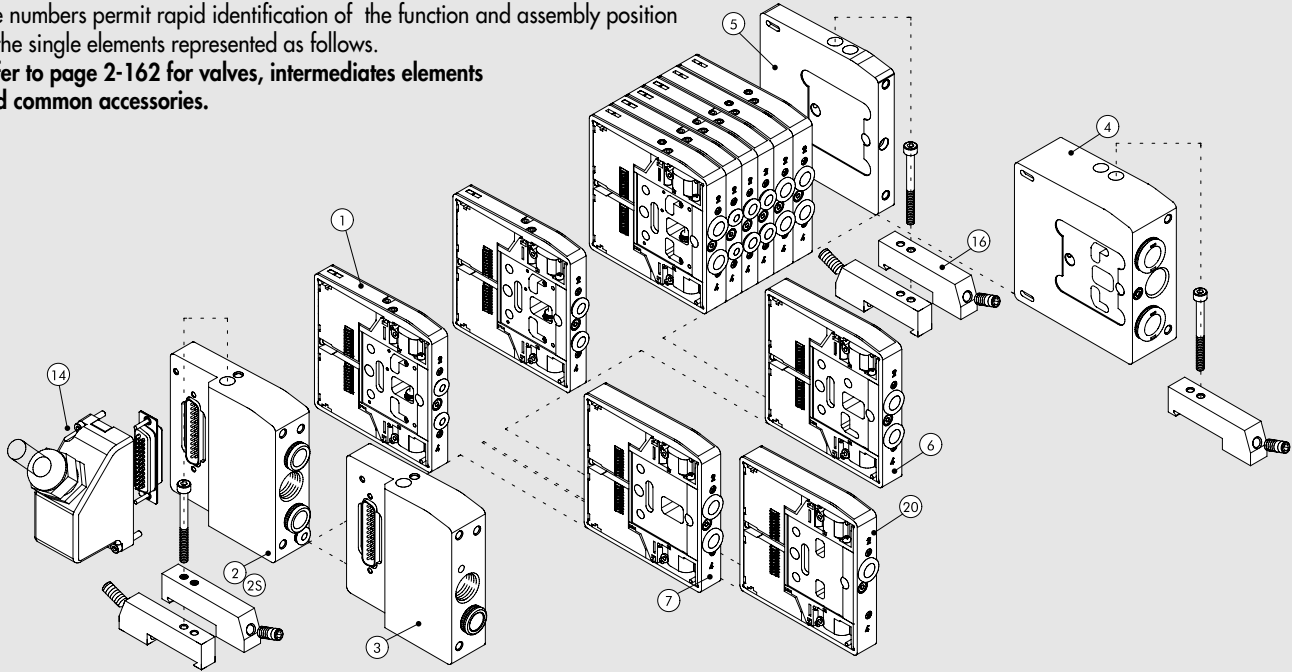
- ① Exhaust - Solenoid pilot 82/84
- ② Valve supply - port 1
- ③ Threaded connection of exhausts 3/5
- ④ Valve supply - port 11
- ⑤ Electrical control supply X
- ⑥ Blind end-plate or right end-plate 1-11
- ⑦ Screw for valve wall-mounting
- ⑧ Utility port for pipe Ø 4, 6, 8 or 10 mm
- ⑩ Manual control
- ⑫ LED (LED on, solenoid valve energised)
- ⑬ Pneumatic symbol
- ⑭ Identification of the monostable or bistable manual control
- ⑮ Valve ordering code
- ⑯ Valve identification code
- ⑰ Blank space for valve number



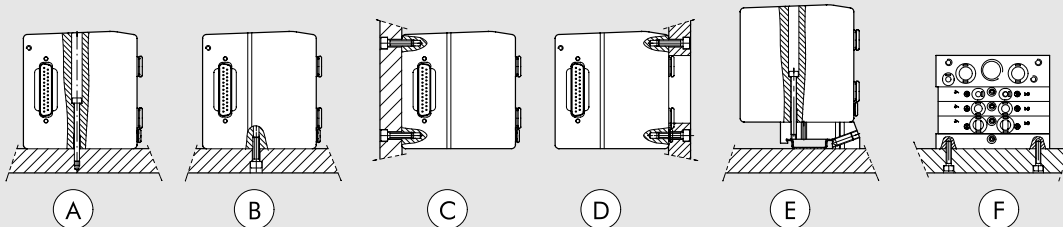
## THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.

Refer to page 2-162 for valves, intermediates elements and common accessories.



## FIXING THE BASE



- Ⓐ Fixing from above using the 1 or 1-11 input terminal and the blind terminal.
- Ⓑ Ⓒ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the bottom and the rear of the terminals.
- Ⓓ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the front of the terminals.

An opening for the pipes is made in the plate.

- Ⓔ Fixing on the DIN bar with end-plate 1 or 1-11 and blind and plate, using the push-in bracket code 0227301600.
- Ⓕ Lateral fixing using the blind terminal, and its the M4 threads on the side lateral.

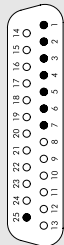
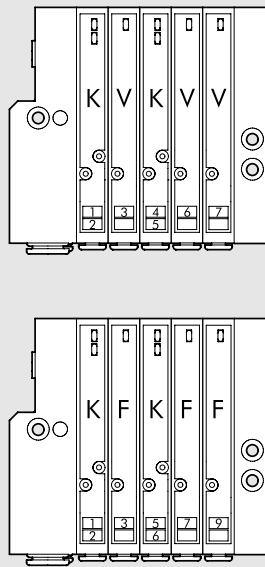
**Note: The sole fixing admitted is the one showed.**

## KEY TO CODES

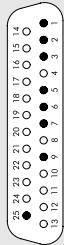
H D M VALVE	2 INPUT END-PLATE	8 ELECTRICAL BASE	M MANUAL TYPE	16 - W 8 - W 6 - O 4 - L 8 - 5 TYPE OF VALVE	1 4 - 1 6 FURTHER DETAILS
Heavy duty Multimach IP65	2 End-plate 1-11 pipe Ø 10 3 End-plate 1 pipe Ø 10 2S End-plate 1-11 pipe Ø 12	8 D-Sub 25 wire	M Monostable manual control B Bistable manual control	1 n° 2 3/2 NC W n° 2 3/2 NO L 3/2 NO + 3/2 NC V 5/2 monostable K 5/2 bistable O 5/3 monostable *F 5/2 monostable 4 right-end-plate 1-11 pipe Ø12 5 blind end-plate 6 Passing-intermede 7 Blind intermediate 20 Exhaust section 4 Cartridge 4 6 Cartridge 6 8 Cartridge 8 - 14 mm 8S Cartridge 8 - 23 mm 10 Cartridge 10	14 IP65 25-wire shell 16 n° 2 brackets for DIN bar

\* Uses a single PIN (like the V) and occupies 2 signals.

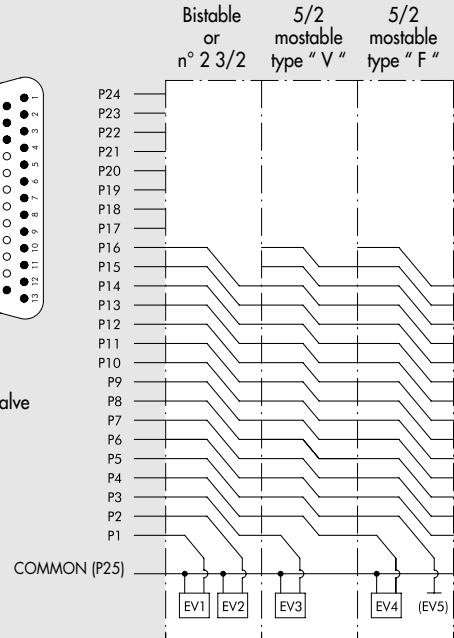
WIRING DIAGRAM



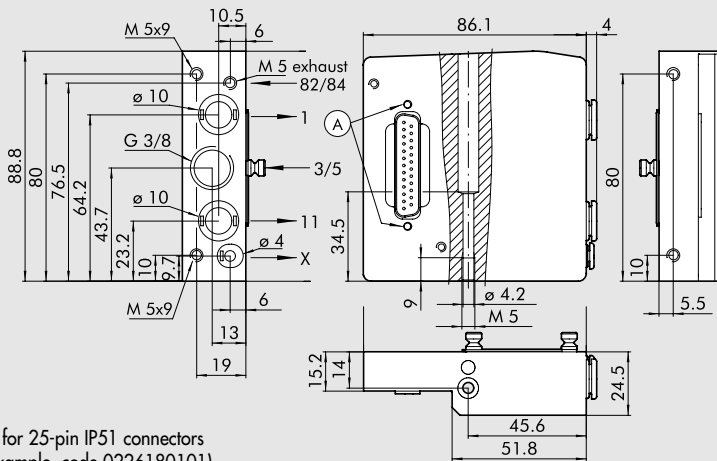
PNP - Com (-)  
NPN - Com (+)



NOTE: The type F monostable valve uses one PIN only (like the V) but occupies 2 signals.



② END-PLATE 1-11-25D - PIPE Ø10



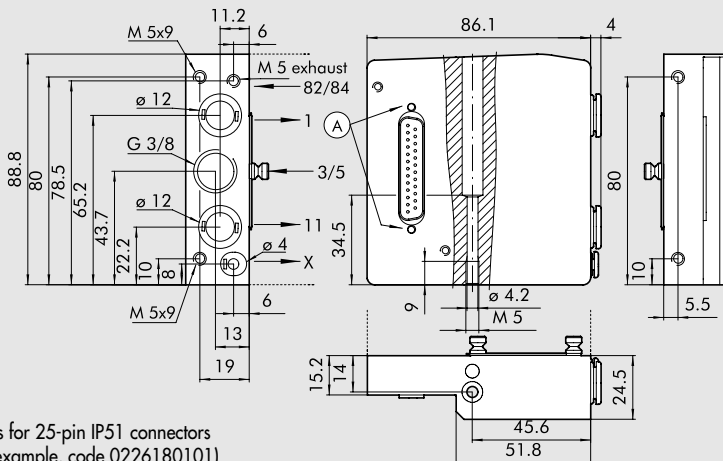
Ⓐ = Holes for 25-pin IP51 connectors (for example, code 0226180101)

Code	Description	Weight [g]
0227301200	End-plate HDM 1-11-25D Ø10	370

This end-plate allows for supplies to be differentiated

- Port 2
- Port 4
- Pilot supply

②S END-PLATE 1-11-25D - PIPE Ø12



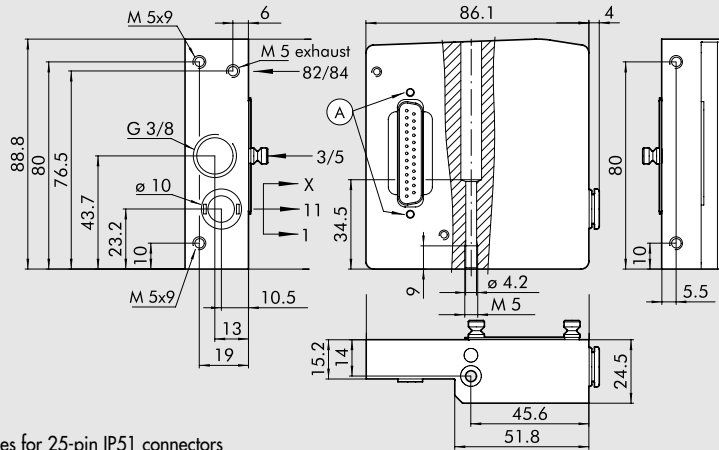
Ⓐ = Holes for 25-pin IP51 connectors (for example, code 0226180101)

Code	Description	Weight [g]
0227301220	End-plate HDM 1-11-25D Ø12	370

This end-plate allows for supplies to be differentiated

- Port 2
- Port 4
- Pilot supply

### ③ END-PLATE 1-25D - PIPE Ø10

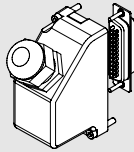


Ⓐ = Holes for 25-pin IP51 connectors  
(for example, code 0226180101)

Code	Description	Weight [g]
0227301201	End-plate HDM 1-25D Ø10	370

## ACCESSORIES

### ⑭ 45° CONNECTOR KIT, 25 WIRES IP65



Code	Description	Weight [g]
0226180107	45° connector kit, 25 wires IP 65	65

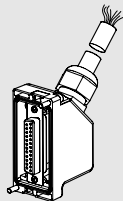
### CABLES



Code	Description	Weight [g]
0226107201	10-wire cable	86
0226107101	19-wire cable	122
0226107102	25-wire cable	130

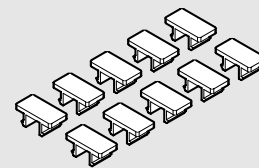
Specify the number of metres desired.

### PRE-WIRED 45° CONNECTOR KIT, 25 WIRES IP65



Code	Description	Weight [g]
0226960100	Connector IP 65 + 25-wire 45° cable L = 1 m	190
0226960250	Connector IP 65 + 25-wire 45° cable L = 2.5 m	390
0226960500	Connector IP 65 + 25-wire 45° cable L = 5 m	740

### IDENTIFICATION PLATE KIT



Code	Description
0226107000	Identification plate kit

Comes in 10-pc. packs

### WIRING DIAGRAM FOR PRE-WIRED PLUG CONNECTOR

#### 25 PIN

Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire
1	blue/black	9	red/black	17	orange/white	25	green/black
2	red/brown	10	brown/white	18	green		
3	white/black	11	red/orange	19	yellow/black		
4	red/blue	12	light blue	20	white		
5	black/orange	13	yellow/white	21	blue/white		
6	yellow/red	14	yellow	22	brown		
7	black/brown	15	red/green	23	green/white		
8	white/red	16	orange	24	red		



# HDM + AS-Interface

The HDM+AS-Interface system has been designed in such a way that the pneumatic input terminal contains all the electronics, signals and AS-I connectors. It is a very compact and sturdy system where everything is housed in a thick casing aluminium to protect the delicate components against impact. The valves and accessories are HDM standard, which means that you only need to replace the input terminal to convert the valve island with multiple connector into an AS-I island. All the advantages of the HDM system can be exploited: the possibility of mounting valves of different size, with fittings for pipes 4, 6 or 8; the insertion of intermediate modules with separate power supply or outlets; aluminium valves with chemical nickel plating enclosed in a protective casing in reinforced technopolymer, with an index of protection IP65. The arrangement of the functions continues the traditional optimisation of the HDMs: the user interface of the valves and bus all on one side, so that the fitter and service engineer have everything within easy reach: all compressed air connections on the other side; the connectors for AS-I cables on the opposite side longitudinally, so that several valve islands can be arranged in line, fixed on a DIN bar.

There are many AS-I terminal variants to meet all possible requirements:

- with 1 node, for controlling up to 4 valve solenoid pilots;
- with 2 nodes, for controlling up to 8 solenoid pilots;
- with 1 node for output and input for controlling up to 4 solenoid pilots and receiving up to 4 input signals. The input connectors are M8 or M12;
- with 2 nodes for output and input for controlling up to 8 solenoid pilots and receiving up to 8 input signals with M8 connectors;
- power supply with the AS-I yellow cable only;
- power supply with two cables: the yellow AS-I cable and the black power supply cable.
- traditional V.2.1 addressing or extended AB V.3.0 address for an increase in the node numbers which can be connected up to 62 and for a better diagnostics

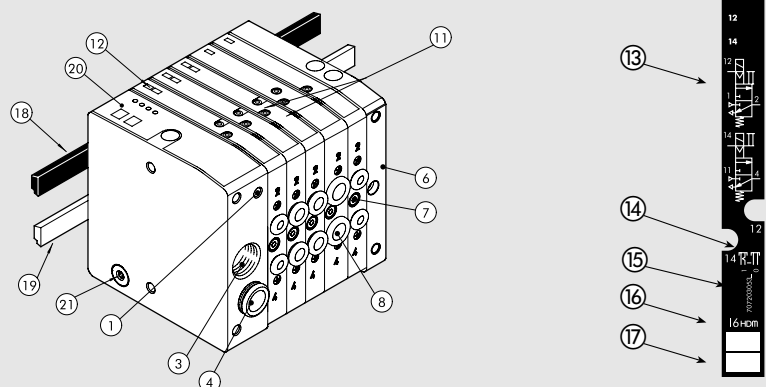
**Note: if you use valves 8S type or 10 exploiting their flow capacity it is necessary that the feeding pressure is at least 6 bar (to avoid the pressure to decrease too much on the pilots).**



TECHNICAL DATA						
Valve port connections		Ø 4,6,8,10 mm automatic fitting for ports 2 and 4 / power supply port for Ø10 or 12* automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port				
Maximum number of pilots		Terminal with 1 node = 4 / terminal with 2 node = 8				
Maximum number of valves		Terminal with 1 node = 4 ( same as the max. no. of pilots ) / terminal with 2 node = 8 ( same as the max. no. of pilots )				
Operating temperature range	°C	-10 to +60				
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous				
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	11.5 mm Ø 4	11.5 mm Ø 6	14 mm Ø 8	23 mm Ø 8	23 mm Ø 10
	version 5/2 and 3/2	200	500	650	1000	1200
	version 5/3	200	300	300	500	500
Pressure range		X (pilot supply)			1-11 (valve supply)	
	Terminal 1-11	3 to 7 bar			vacuum at 10 bar	
	Terminal 1	3 to 7 bar				
Voltage range		24 VDC ±10%				
Power for each pilot	W	0.9				
Solenoid Pilot Insulation class		F155				
Degree of protection		IP 65 (with conveyed exhaust, and unused INPUTS sealed with caps/plugs)				
Solenoid rating		100% ED				
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45				
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33				
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20				
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20				
Note on use		Insert the pipes in the fittings, before passing air through the valves, otherwise the basket may be pulled out of its seat by the flow of air. *with right-end-plate 1-11				
Compatibility with oils		Please refer to page 6-7 of the technical documentation				

## COMPONENTS

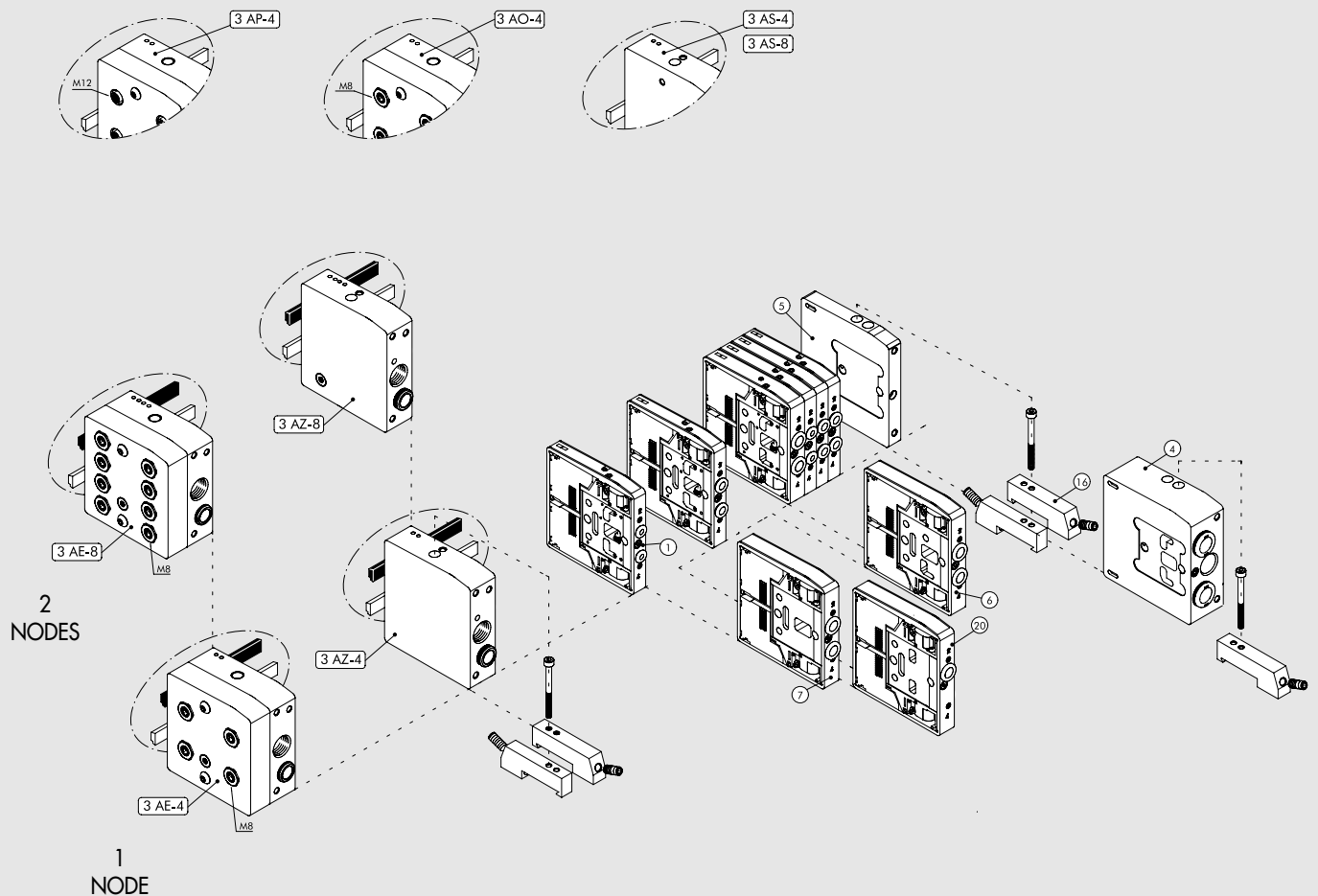
- Exhaust - Solenoid pilot 82/84
- Threaded connection of exhausts 3/5
- Valve supply - port 1-11-X
- Blind end-plate or right-end-plate 1-11
- Screw for valve wall-mounting
- Utility port for pipe Ø 4, 6, 8, 10 mm
- Manual control
- LED (LED on, solenoid valve energised)
- Pneumatic symbol
- Identification of the monostable or bistable manual control
- Valve ordering code
- Valve identification code
- Blank space for valve number
- Black cable for 24V (if present)
- AS-INTERFACE yellow cable
- AS-INTERFACE led



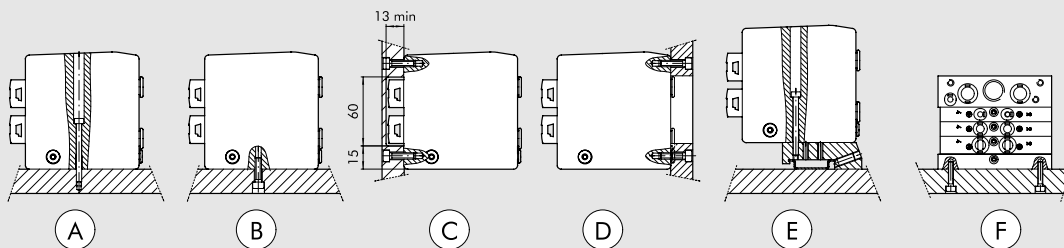
## THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.

Refer to page 2-162 for valves, intermediates elements and common accessories.



## FIXING THE BASE



- Ⓐ Fixing from above using the 1 or 1-11 input terminal and the blind terminal.
- Ⓑ Ⓒ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the bottom and the rear of the terminals.
- Ⓓ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the front of the terminals.  
An opening for the pipes is made in the plate.
- Ⓔ Fixing on the DIN bar with end-plate 1 or 1-11 and blind and plate, using the push-in bracket code 0227301600.
- Ⓕ Lateral fixing using the blind terminal, and its M4 threads on the side lateral.

**Note: The sole fixing admitted is the one showed.**

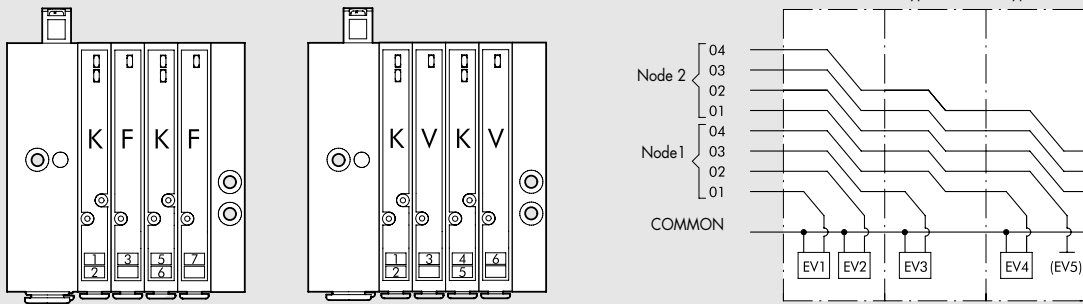
**KEY TO CODES**

H D M VALVE	3 INPUT END-PLATE	A S - 4 ELECTRICAL BASE	M MANUAL TYPE	16 - W 8 - W 6 - O 4 - L 8 - 5 TYPE OF VALVE	1 6 FURTHER DETAILS
Heavy duty Multimach IP65	3 End-plate 1	Version with standard address <b>AS-4</b> 1 node, 4 out, yellow cable <b>AS-8</b> 2 nodes, 8 out, yellow cable <b>AO-4</b> 1 node, 4 out e 4 in M8, yellow cable <b>AP-4</b> 1 node, 4 out e 4 in M12, yellow cable <b>AZ-4</b> 1 node, 4 out, yellow cable and black cable <b>AZ-8</b> 2 nodes, 8 out, yellow cable and black cable <b>AE-4</b> 1 node, 4 out e 4 in M8, yellow cable and black cable <b>AE-8</b> 2 nodes, 8 out e 8 in M8, yellow cable and black cable	<b>M</b> Monostable manual control <b>B</b> Bistable manual control	<b>I</b> n° 2 3/2 NC <b>W</b> n° 2 3/2 NO <b>L</b> 3/2 NO + 3/2 NC <b>V</b> 5/2 monostable <b>K</b> 5/2 bistable <b>O</b> 5/3 monostable <b>*F</b> 5/2 monostable <b>4</b> right-end-plate 1-11 pipe Ø12 <b>5</b> blind end-plate <b>6</b> Passing-intermede <b>7</b> Blind intermediate <b>20</b> Exhaust section <b>4</b> Cartridge 4 <b>6</b> Cartridge 6 <b>8</b> Cartridge 8 - 14 mm <b>8S</b> Cartridge 8 - 23 mm <b>10</b> Cartridge 10	<b>16</b> n° 2 brackets for DIN bar

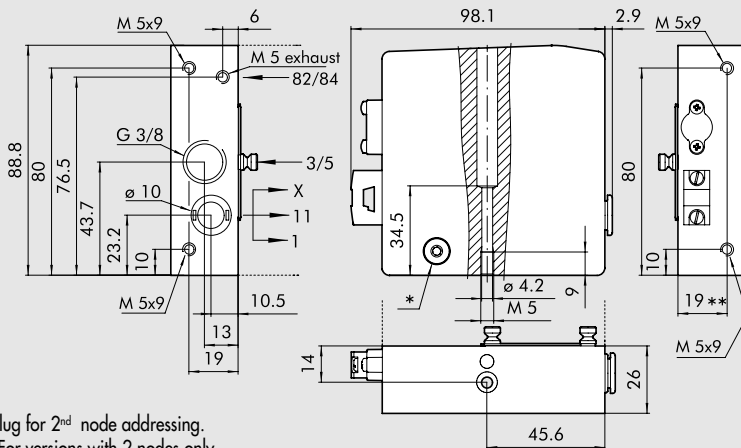
\* Uses a single PIN (like the V) and occupies 2 signals

**WIRING DIAGRAM**

**NOTE:** The type f monostable valve uses one PIN only (like the V) but occupies 2 signals.



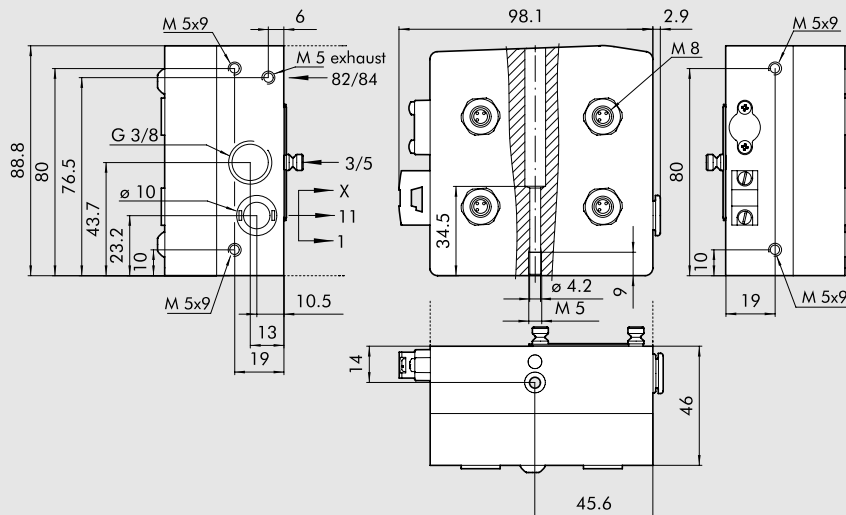
**③ END-PLATE 1 AS-4, AS-8**



\* M7 plug for 2<sup>nd</sup> node addressing.  
N.B. For versions with 2 nodes only  
\*\* 21 for AS-8

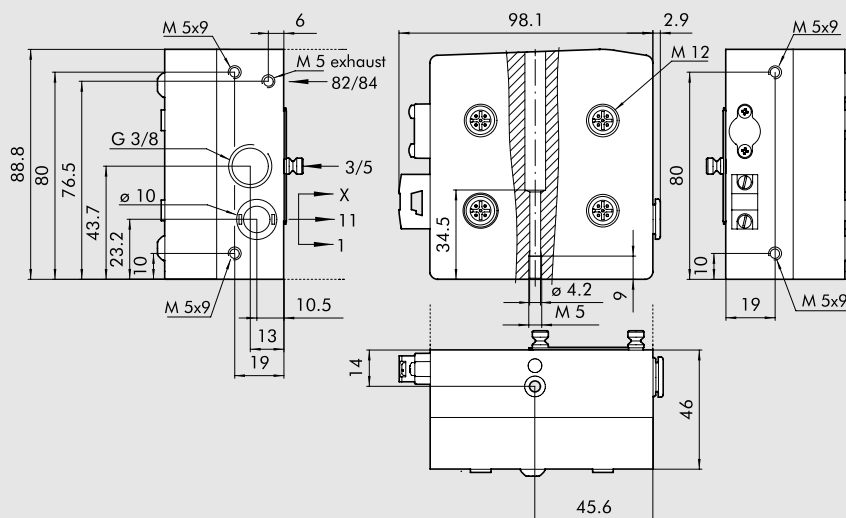
Code	Description	Weight [g]
<b>0227301202</b>	End-plate HDM 1 AS-4 1 node, 4 Out, yellow cable	465
<b>0227301208</b>	End-plate HDM 1 AS-8 2 nodes, 8 Out, yellow cable	454

### ③ END-PLATE 1 AO-4, M8



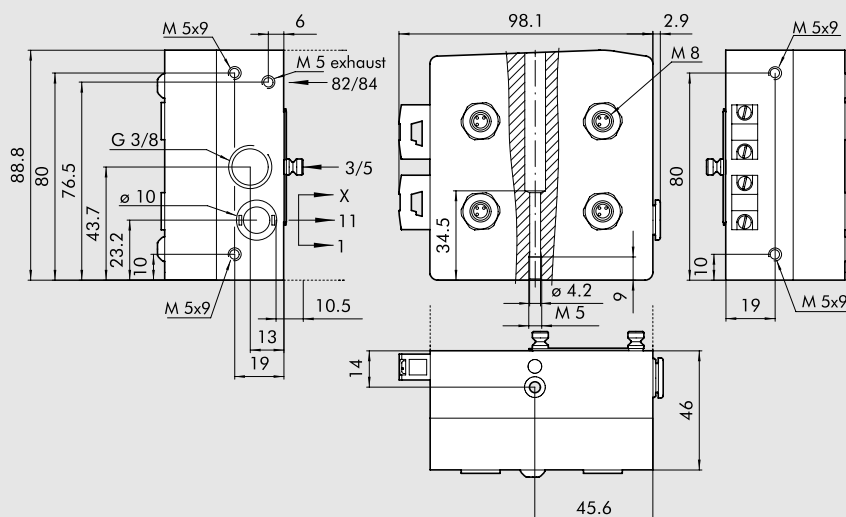
Code	Description	Weight [g]
0227301218	End-plate HDM 1 AO-4 1 node, 4 Out and 4 In M8, yellow cable	759

### ③ END-PLATE 1 AP-4, M12



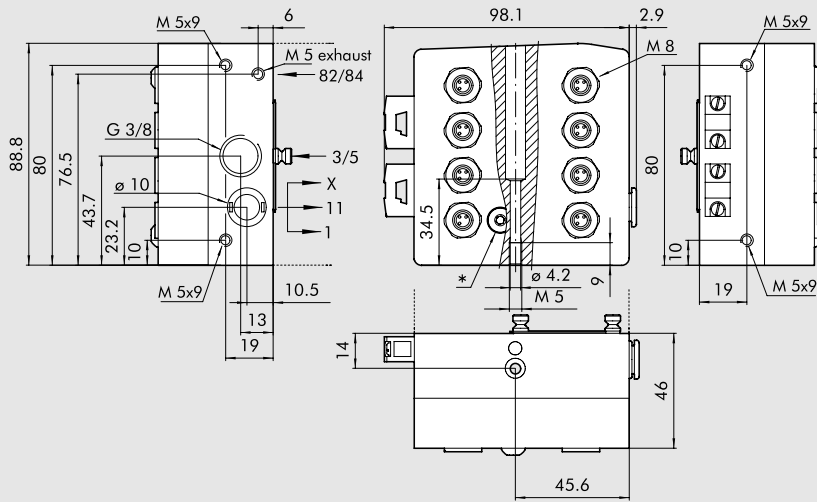
Code	Description	Weight [g]
0227301212	End-plate HDM 1 AP-4 1 node, 4 Out and 4 In M12, yellow cable	756

### ③ END-PLATE 1 AE-4, M8



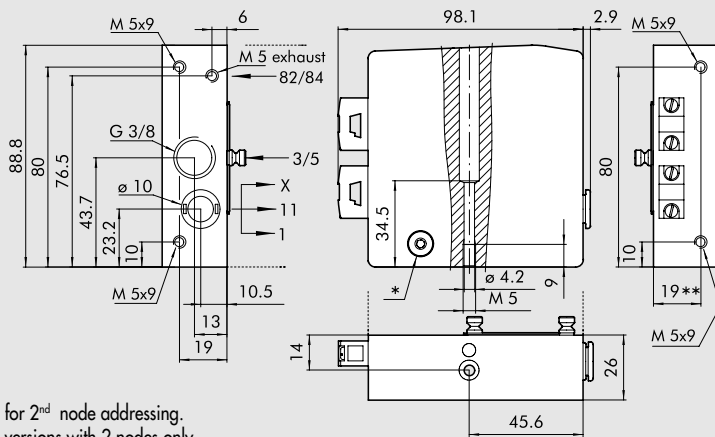
Code	Description	Weight [g]
0227301214	End-plate HDM 1 AE-4 1 node, 4 Out and 4 In M8, yellow cable and black cable	761

③ END-PLATE 1 AE-8, M8



Code	Description	Weight [g]
0227301216	End-plate HDM 1 AE-8 2 nodes, 8 Out and 8 In M8, yellow cable and black cable	773

③ END-PLATE 1 AZ-4, AZ-8

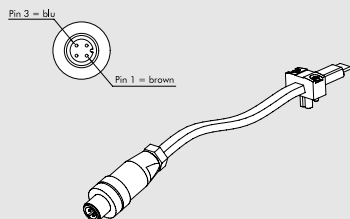


Code	Description	Weight [g]
0227301204	End-plate HDM 1 AZ-4 1 node, 4 Out, yellow cable and black cable	467
0227301210	End-plate HDM 1 AZ-8 2 nodes, 8 Out, yellow cable and black cable	456

\* M7 plug for 2<sup>nd</sup> node addressing.  
N.B. For versions with 2 nodes only  
\*\* 21 for AZ-8

ACCESSORIES

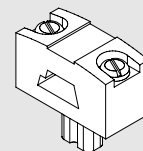
AS-interface ADDRESS CONNECTOR KIT



Code	Description
0226950150	AS-interface address connector cable L = 1 m

SPARES

AS-interface CONNECTOR KIT



Code	Description
0226950151	AS-interface connector kit

M8 - M12 PLUG



Code	Description
0240009039	PLUG M8
0240009040	PLUG M12

The HDM+PROFIBUS system has been designed in such a way that the pneumatic input terminal contains all the electronics, signals and connectors. It is a very compact and sturdy system where everything is housed in a thick casing aluminium to protect the delicate components against impact. The valves and accessories are HDM standard, which means that you only need to replace the input terminal to convert the valve island with multiple connector into an PROFIBUS island. All the advantages of the HDM system can be exploited: the possibility of mounting valves of different size, with fittings for pipes 4, 6 or 8; the insertion of intermediate modules with separate power supply or outlets; aluminium valves with chemical nickel plating enclosed in a protective casing in reinforced technopolymer, with an index of protection IP65.

The arrangement of the functions continues the traditional optimisation of the HDM: the user interface of the valves and bus all on one side, so that the fitter and service engineer have everything within easy reach: all compressed air connections are on the other side, and the electrical connectors and selectors are at the end of the island.

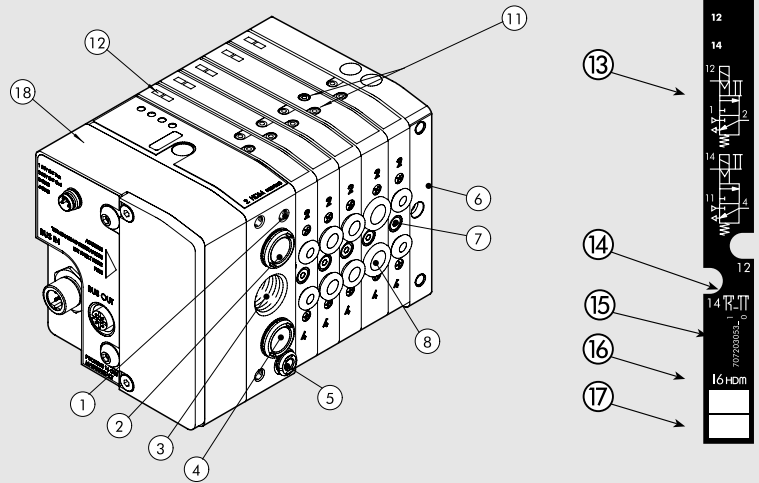
**It is advisable to earth the system to prevent electrical or electrostatic discharge from damaging the electronic circuit.**



TECHNICAL DATA						
Valve port connections		Ø 4,6,8,10 mm automatic fitting for ports 2 and 4 / power supply port for Ø10 or 12* automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port				
Connection on the end-plate 1-11 for the supply of pilots		Automatic fitting Ø 4 mm				
Maximum number of pilots		16				
Maximum number of valves		16 (same as the max. no. of pilots)				
Operating temperature range	°C	-10 to +60				
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous				
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	11.5 mm Ø 4	11.5 mm Ø 6	14 mm Ø 8	23 mm Ø 8	23 mm Ø 10
	version 5/2 and 3/2	200	500	650	1000	1200
	version 5/3	200	300	300	500	500
Pressure range		X (pilot supply)			1-11 (valve supply)	
	Terminal 1-11	3 to 7 bar			vacuum at 10 bar	
	Terminal 1	3 to 7 bar				
Voltage range		24 VDC ±10%				
		(slave protected against overload and reverse polarity)				
Power for each pilot	W	0.9				
Solenoid Pilot Insulation class		F155				
Degree of protection		IP65 (with conveyed exhaust, and that - in case of no use - the BUS OUT connector gets plugged)				
Solenoid rating		100% ED				
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45				
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33				
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20				
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20				
Note on use		Insert the pipes in the fittings, before passing air through the valves, otherwise the gasket may be pulled out of its seat by the flow of air. *with right-end-plate 1-11				
Compatibility with oils		Please refer to page 6-7 of the technical documentation				
<b>Profibus DP module for HDM valves</b>						
Protection		Outputs protected against overloads and shortcircuits				
Max input power (all valves ON)		~500 mA				
Addressing		By rotary selectors				
Highest settable address number		99				
Default address		3				
Peripheral defect diagnosis		Local LED indicator and relay to Master				
Defects reported		Output shortcircuit or overload. Auxiliary power supply failure. Profibus communication active.				
Module status in the event of peripheral defect		The "peripheral defect" bit is active and accessible at the master station.				
Data bit value		0 = not enabled 1 = enabled				
Output status in the absence of communication		Disabled				

## COMPONENTS

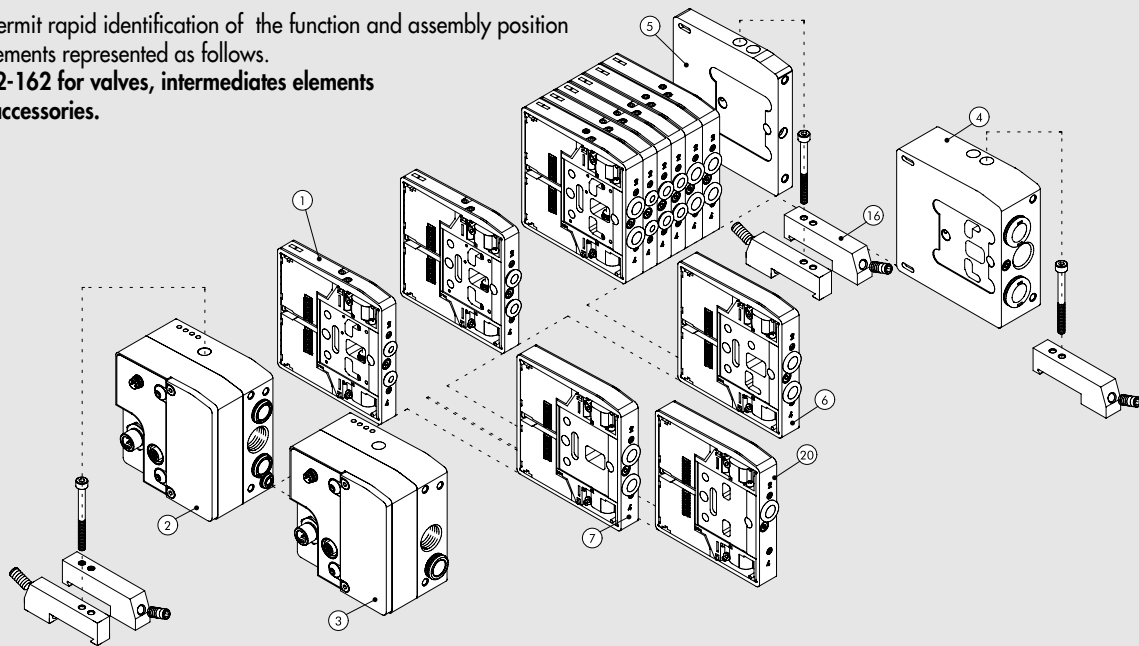
- ① Exhaust - Solenoid pilot 82/84
- ② Valve supply - port 1
- ③ Threaded connection of exhausts 3/5
- ④ Valve supply - port 11
- ⑤ Electrical control supply X
- ⑥ Blind end-plate or right-end-plate-1-11
- ⑦ Screw for valve wall-mounting
- ⑧ Utility port for pipe Ø 4, 6, 8 or 10 mm
- ⑪ Manual control
- ⑫ LED (LED on, solenoid valve energised)
- ⑬ Pneumatic symbol
- ⑭ Identification of the monostable or bistable manual control
- ⑮ Valve ordering code
- ⑯ Valve identification code
- ⑰ Blank space for valve number
- ⑱ Profibus terminal



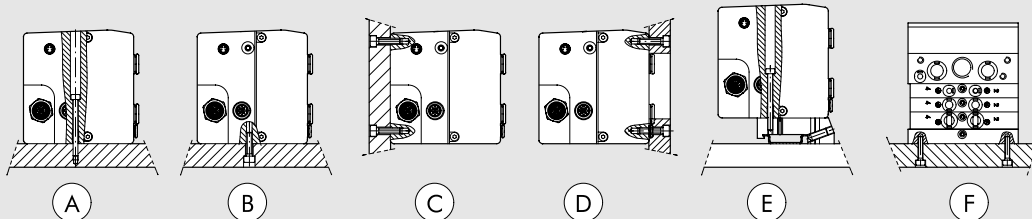
## THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.

**Refer to page 2-162 for valves, intermediates elements and common accessories.**



## FIXING THE BASE



- Ⓐ Fixing from above using the 1 or 1-11 input terminal and the blind terminal.
- Ⓑ Ⓒ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the bottom and the rear of the terminals.
- Ⓓ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the front of the terminals.  
An opening for the pipes is made in the plate.
- Ⓔ Fixing on the DIN bar with end-plate 1 or 1-11 and blind and plate, using the push-in bracket code 0227301600.
- Ⓕ Lateral fixing using the blind terminal, and its M4 threads on the side lateral.

**Note: The sole fixing admitted is the one showed.**

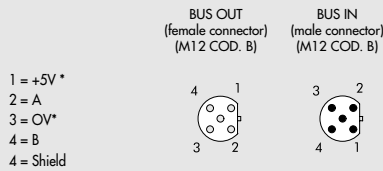
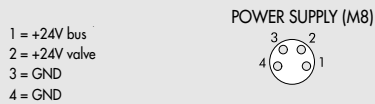


### KEY TO CODES

H D M VALVE	2 INPUT END-PLATE	P ELECTRICAL BASE	M MANUAL TYPE	I6 - W8 - W6 - O4 - L8 - 5 TYPE OF VALVE	16 FURTHER DETAILS
Heavy duty Multimach IP65	2 End-plate 1-11 3 End-plate 1	P profibus-DP	M Monostable manual control B Bistable manual control	I n° 2 3/2 NC W n° 2 3/2 NO L 3/2 NO + 3/2 NC V 5/2 monostable K 5/2 bistable O 5/3 monostable *F 5/2 monostable 4 right-end-plate 1-11 pipe Ø12 5 blind end-plate 6 Passing-intermediate 7 Blind intermediate 20 Exhaust section 4 Cartridge 4 6 Cartridge 6 8 Cartridge 8 - 14 mm 8S Cartridge 8 - 23 mm 10 Cartridge 10	16 n° 2 brackets for DIN bar

\* Uses a single PIN (like the V) and occupies 2 signals.

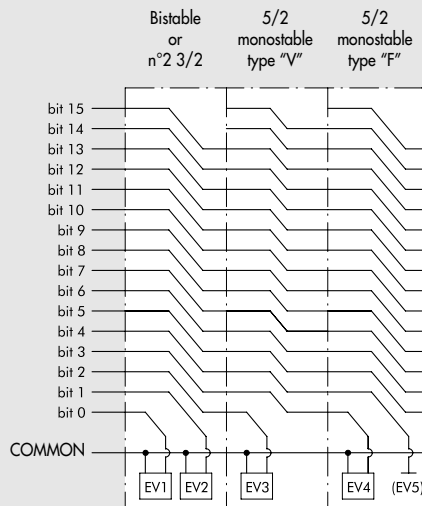
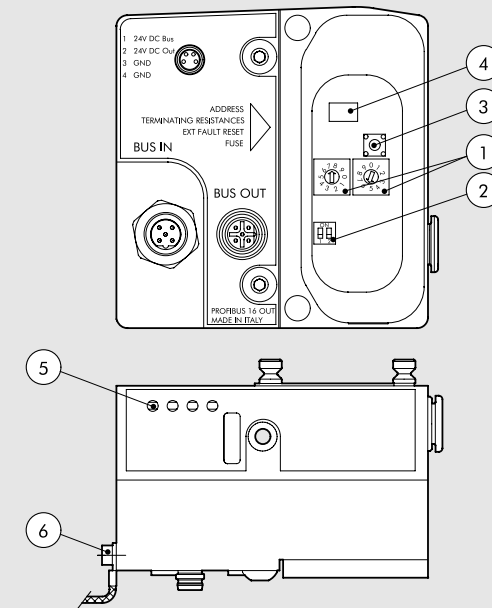
### WIRING DIAGRAM



- \* DO NOT CONNECT PIN 1 and PIN 3: to be used only for feeding of the external terminating resistors.
- For correct communication, use Profibus cables at least 1 metre long.
- The shield should be evenly distributed around the thread. Should this not be possible, the shield can be connected to prin 5. Both of these methods can also be used in combination.

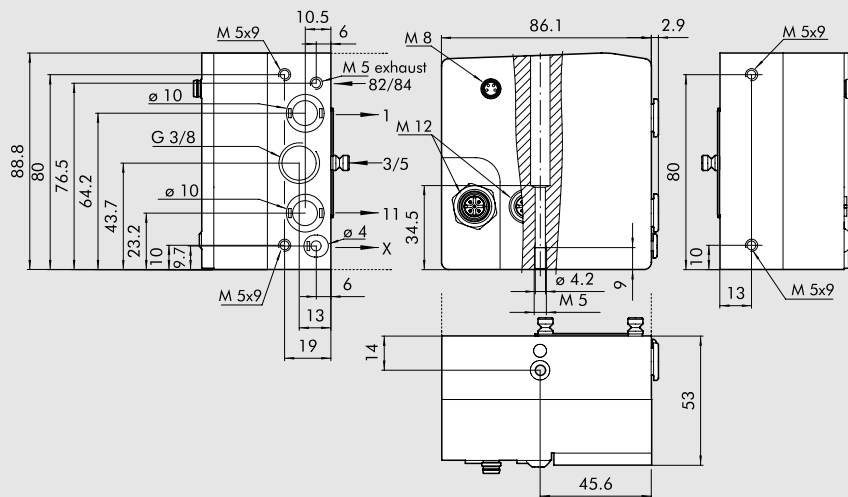
- 1 Addressing
- 2 Terminal resistances
- 3 Reset button faulty
- 4 Resettable fuse
- 5 Indicator Led
- 6 Grounding

NOTE: The type F monostable valve uses one PIN only (like the V) but occupies 2 signals.



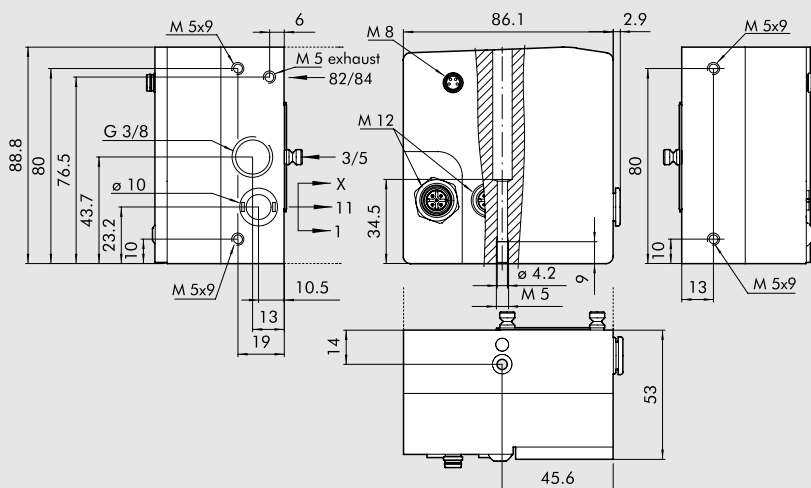


### ② END-PLATE 1-11 PROFIBUS-DP



Code	Description	Weight [g]
0227301231	End-plate HDM 1-11 PROFIBUS	730

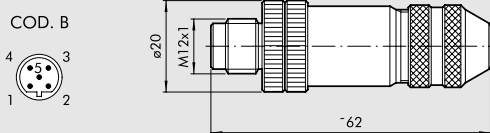
### ③ END-PLATE 1 PROFIBUS-DP



Code	Description	Weight [g]
0227301230	End-plate HDM 1 PROFIBUS	730

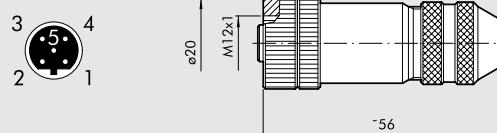
## ACCESSORIES

#### M12 MALE CONNECTOR OUT-BUS



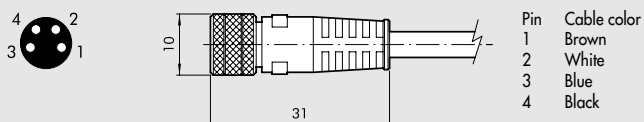
Code	Description
0240009035	M12 male connector B coding

#### M12 FEMALE CONNECTOR IN-BUS



Code	Description
0240009036	M12 female connector B coding

#### M8 CONNECTOR FOR POWER SUPPLY



Code	Description
0240009037	M8 connector for power supply wire 5 m

#### M8 - M12 PLUG



Code	Description
0240009039	Plug M8
0240009040	Plug M12

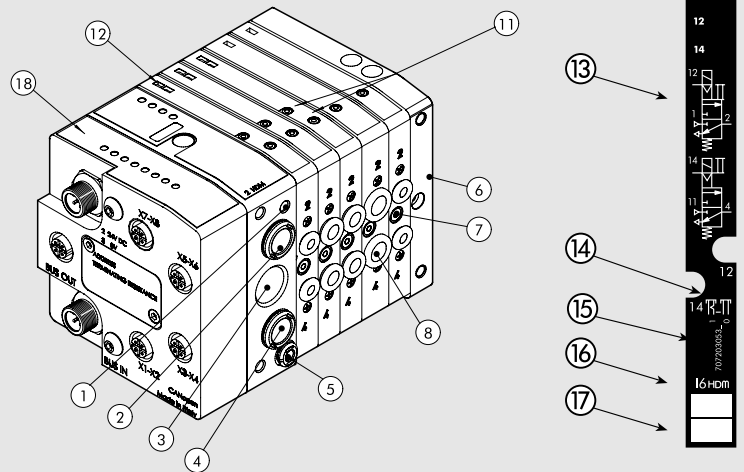
The HDM+CANopen system has been designed in such a way that the pneumatic input terminal contains all the electronics, signals and connectors. It is a very compact and sturdy system where everything is housed in a thick casing aluminium to protect the delicate components against impact. Two versions of end-plate are available: one can handle up to 16 controls (16 Out) and one up to 16 controls and 8 inputs (16 Out + 8 In). The input connectors are M12. Two inputs can be connected to each connector. The functions are arranged to ensure the same optimisation as the HDMs. The user interface is all on one side to facilitate the work of the fitter and service engineer. All pneumatic connections are on one side; the electrical connectors and selectors are on top of the island.



TECHNICAL DATA						
Valve port connections		Ø 4,6,8,10 mm automatic fitting for ports 2 and 4 / power supply port for Ø10 or 12* automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port				
Connection on the end-plate 1-11 for the supply of pilots		Automatic fitting Ø 4 mm				
Maximum number of pilots		16				
Maximum number of valves		16 (same as the max. no. of pilots)				
Operating temperature range	°C	-10 to +60				
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous				
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	11.5 mm Ø 4	11.5 mm Ø 6	14 mm Ø 8	23 mm Ø 8	23 mm Ø 10
	version 5/2 and 3/2	200	500	650	1000	1200
	version 5/3	200	300	300	500	500
Pressure range		X (pilot supply) 3 to 7 bar			1-11 (valve supply) vacuum at 10 bar	
	Terminal 1-11					
	Terminal 1					
Voltage range		3 to 7 bar 24 VDC ±10% (slave protected against overload and reverse polarity)				
Power for each pilot	W	0.9				
Solenoid Pilot Insulation class		F155				
Degree of protection		IP65 (with conveyed exhausts and with not used connectors plugged)				
Solenoid rating		100% ED				
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45				
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33				
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20				
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20				
Note on use		Insert the pipes in the fittings, before passing air through the valves, otherwise the gasket may be pulled out of its seat by the flow of air. * with right-end-plate 1-11 Please refer to page 6-7 of the technical documentation				
Compatibility with oils						
<b>CANopen module for HDM valves</b>						
Protection		Outputs protected against overloads and shortcircuits				
Max input power (all valves ON)		~800 mA				
Addressing		By DIP SWITCH				
Highest settable address number		127				
Default address		1				
Peripheral defect diagnosis		Local LED indicator and relay to Master				
Defects reported		Output shortcircuit or overload. Auxiliary power supply failure. CANopen communication active.				
Module status in the event of peripheral defect		The "peripheral defect" bit is active and accessible at the master station.				
Data bit value		0 = not enabled 1 = enabled				
Output status in the absence of communication		Disabled				
<b>INPUT module for HDM valves</b>						
Sensor supply voltage		24 VDC ±10% (depending on the supply of the CANopen module)				
Max sensor power (distributed over eight connectors)	mA	40				
Type of input		PNP for sensor 2-3 wires according to EN 60947-5-2				
Protection		Protected inputs against overload and short-circuit				
Active INPUT signalling		One LED for each INPUT				

## COMPONENTS

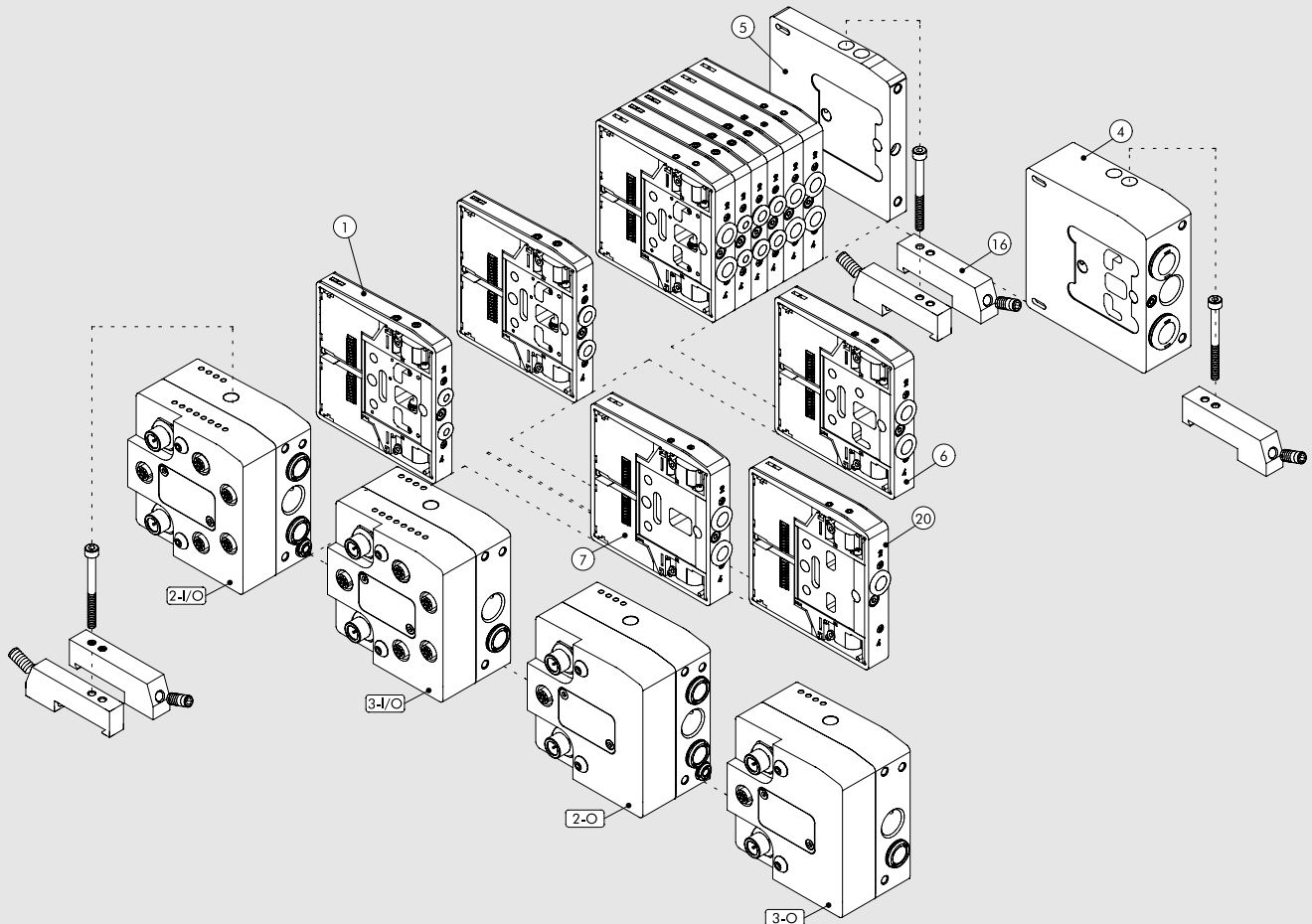
- ① Exhaust - Solenoid pilot 82/84
- ② Valve supply - port 1
- ③ Threaded connection of exhausts 3/5
- ④ Valve supply - port 11
- ⑤ Electrical control supply X
- ⑥ Blind end-plate or right-end-plate 1-11
- ⑦ Screw for valve wall-mounting
- ⑧ Utility port for pipe  $\varnothing$  4, 6, 8 or 10 mm
- ⑪ Manual control
- ⑫ LED (LED on, solenoid valve energised)
- ⑬ Pneumatic symbol
- ⑭ Identification of the monostable or bistable manual control
- ⑮ Valve ordering code
- ⑯ Valve identification code
- ⑰ Blank space for valve number
- ⑱ CANopen terminal



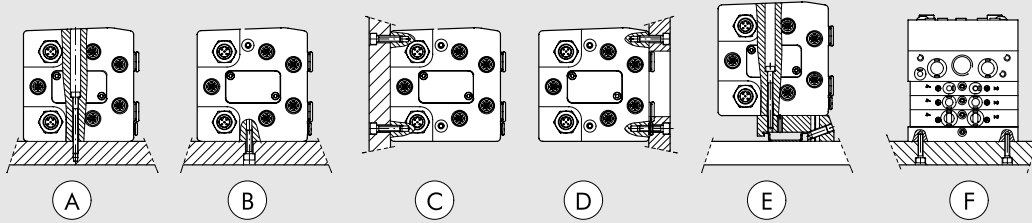
## THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.

**Refer to page 2-162 for valves, intermediates elements and common accessories.**



## FIXING THE BASE



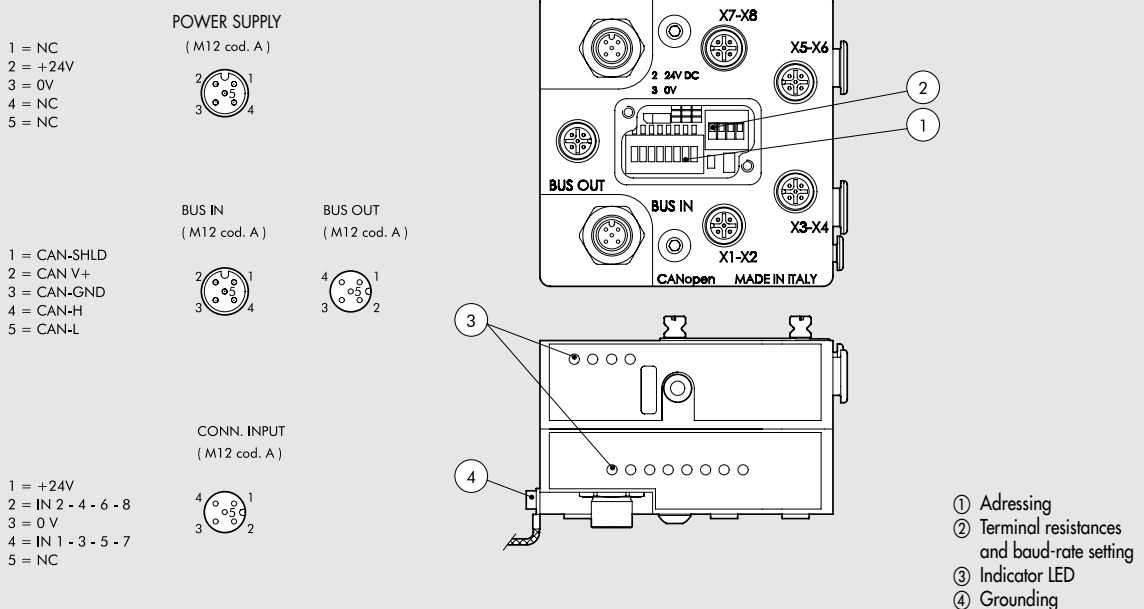
- (A) Fixing from above using the 1 or 1-11 input terminal and the blind terminal.
  - (B) Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the bottom and the rear of the terminals.
  - (C) Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the front of the terminals. An opening for the pipes is made in the plate.
  - (D) Fixing on the DIN bar with end-plate 1 or 1-11 and blind and plate, using the push-in bracket code 0227301600.
  - (E) Lateral fixing using the blind terminal, and its the M4 threads on the side lateral.
- Note: The sole fixing admitted is the one showed.**

## KEY TO CODES

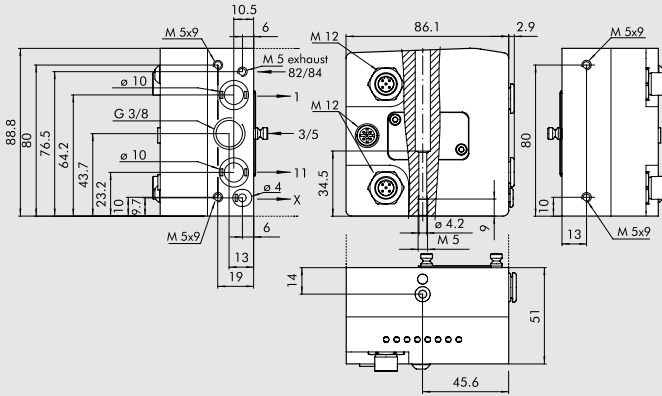
H D M VALVE	2 INPUT END-PLATE	CAN O ELECTRICAL BASE	M MANUAL TYPE	16 - W 8 - W 6 - O 4 - L 8 - 5 TYPE OF VALVE	1 6 FURTHER DETAILS
Heavy duty Multimach IP65	2 End-plate 1-11 3 End-plate 1	<b>CAN O</b> CANopen 16 OUTPUT <b>CAN I/O</b> CANopen 8 INPUT e 16 OUTPUT	<b>M</b> Monostable manual control <b>B</b> Bistable manual control	<b>I</b> n° 2 3/2 NC <b>W</b> n° 2 3/2 NO <b>L</b> 3/2 NO + 3/2 NC <b>V</b> 5/2 monostable <b>K</b> 5/2 bistable <b>O</b> 5/3 monostable <b>*F</b> 5/2 monostable <b>4</b> right-end-plate 1-11 pipe Ø12 <b>5</b> blind end-plate <b>6</b> Passing-intermede <b>7</b> Blind intermediate <b>20</b> Exhaust section <b>4</b> Cartridge 4 <b>6</b> Cartridge 6 <b>8</b> Cartridge 8 - 14 mm <b>8S</b> Cartridge 8 - 23 mm <b>10</b> Cartridge 10	<b>16</b> n° 2 brackets for DIN bar

\* Uses a single PIN (like the V) and occupies 2 signals.

## WIRING DIAGRAM



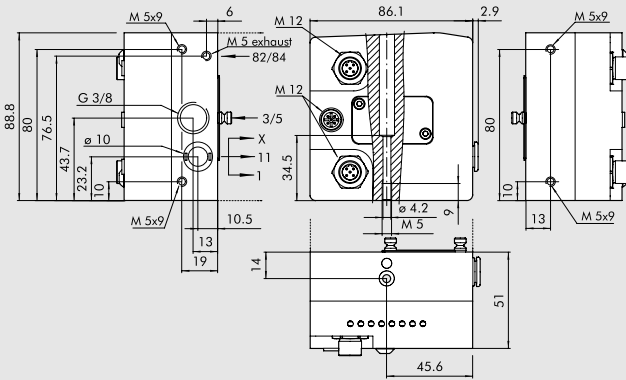
**2 - O** END-PLATE 1-11 CANopen O



Code	Description	Weight [g]
0227301251	End-plate 1-11 HDM CANopen OUTPUT	745

Handles 16 OUTPUTS (solenoid pilots)

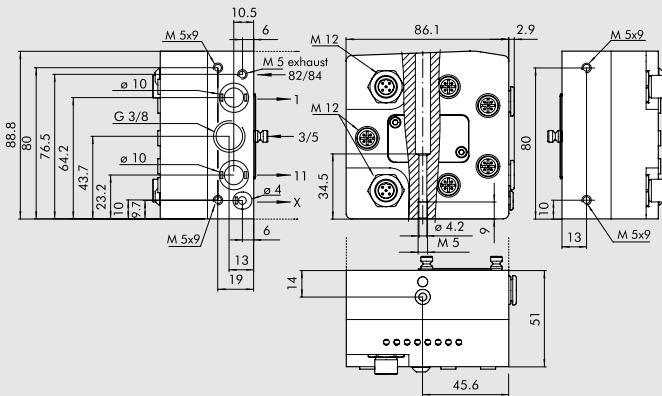
**3 - O** END-PLATE 1 CANopen O



Code	Description	Weight [g]
0227301253	End-plate 1 HDM CANopen OUTPUT	746

Handles 16 OUTPUTS (solenoid pilots)

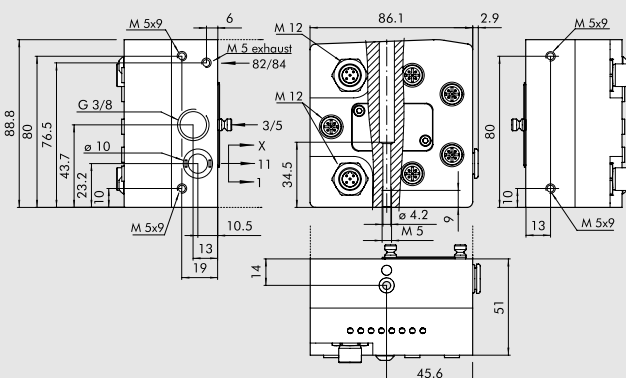
**2 - I/O** END-PLATE 1-11 CANopen I/O



Code	Description	Weight [g]
0227301250	End-plate 1-11 HDM CANopen IN-OUT	734

Handles 16 OUTPUTS (solenoid pilots)

**3 - I/O** END-PLATE 1 CANopen I/O



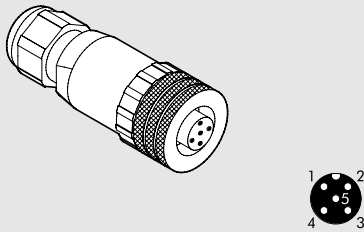
Code	Description	Weight [g]
0227301252	End-plate 1 HDM CANopen IN-OUT	735

Handles 16 OUTPUTS (solenoid pilots)

## ACCESSORIES

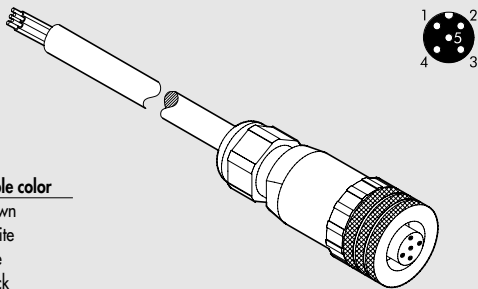
### STRAIGHT CONNECTOR FOR CANopen POWER SUPPLY

Code	Description
W0970513001	5-pin M12x1 straight connector



### STRAIGHT CONNECTOR WITH CANopen POWER CABLE

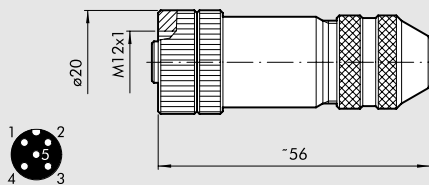
Code	Description
W0970513002	5-pin M12x1 straight connector with wire L = 5 m



Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Grey

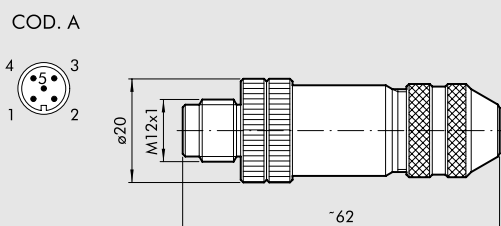
### FEMALE CONNECTOR FOR CANopen BUS-IN

Code	Description
0240009055	M12 female connector, A coding

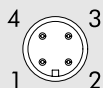
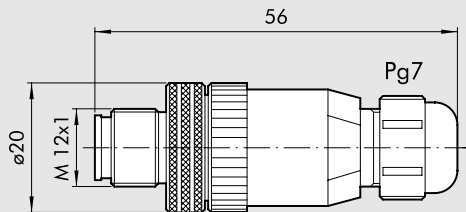


### MALE CONNECTOR FOR CANopen BUS-OUT

Code	Description
0240009038	Male connector Bus A coding

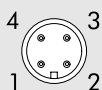
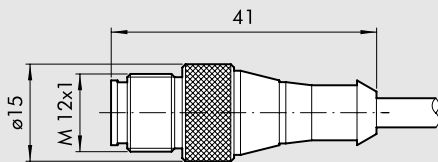


**STRAIGHT CONNECTOR WITHOUT CABLE FOR CANopen INPUT**



Code	Description
0240009021	Straight fitting without cable

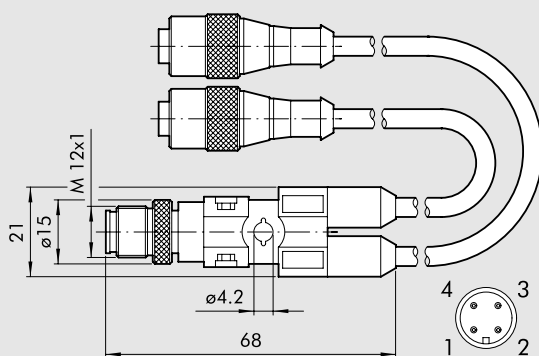
**STRAIGHT CONNECTOR WITH CABLE FOR CANopen INPUT**



Code	Description
0240009002	Straight, with 1.5 m cable
0240009003	Straight, with 5 m cable

Pin	Cable colour
1	Brown
2	White
3	Blue
4	Black

**Y-DISTRIBUTOR WITH CABLE AND M12 STRAIGHT CONNECTORS FOR CANopen INPUT**



Code	Description
0240009031	Y-Distributor cable 0.6 m
0240009032	Y-Distributor cable 1.5 m

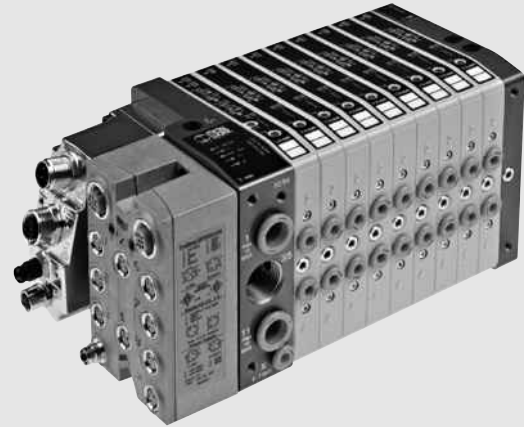
**M12 PLUG FOR BUS OUT E INPUT CANopen**



Code	Description
0240009040	Plug M12

An advanced field bus system interfacing with the Multimach world. B&R has developed a new standard for automation, called FORMULA X. For further details about features, functions and qualities of this system, reference must be made to the B&R documentation, also available on the web site [www.br-automation.com](http://www.br-automation.com). An overview is given below.

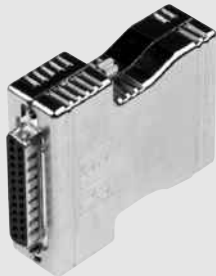
The X-system is a system handling analogue and digital inputs and outputs for local or remote use, which B&R defines as decentralised backplane. Different types of modules are available. We present those designed for connection with Multimach and HDM valve islands. We only indicate the B&R's code root, since each type of module comes in different variants, that differ by number of signals handled, that can be 8, 16 or 24, and by type of signal, that can be input, output or input/output indifferently. Common to all the modules is the presence of 4 connections: a signal input, a signal output for the following modules, a power input (24V DC), a power output for the following modules.



## B&R CONNECTORS AND MODULES

### IP20 7XV---50-11 SMART CONNECTOR

It is a plug connector with IP20 protection that contains the X system electronics. It can be connected with HDM islands, using the special input end-plate, type 1, code 0227301207 or the special input end-plate type 1-11, code 0227301206.



### IP67 7XV---50-51 SMART CONNECTOR

It is a plug connector with IP67 protection, that contains the X system electronics. It can be connected with HDM islands, using the special input end-plate type 1, code 0227301207, or the special input end-plate, type 1-11 code 0227301206.

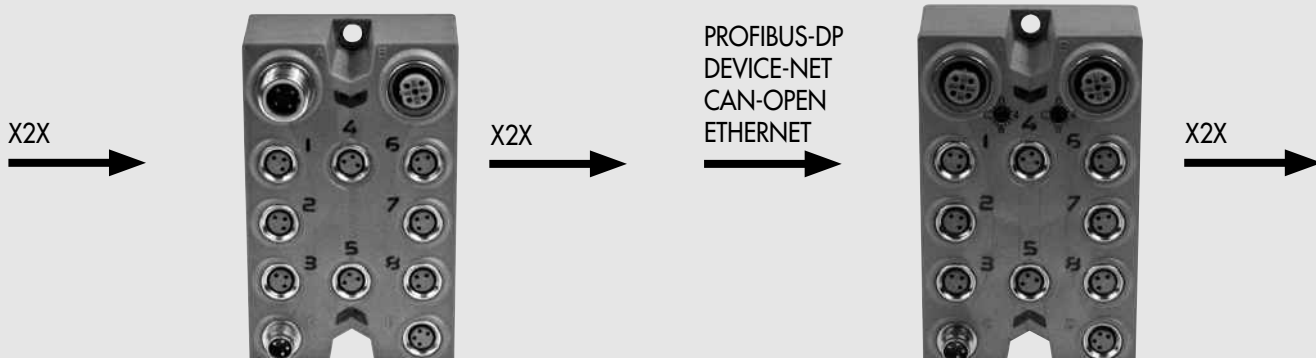


### X67 I/O SYSTEM MODULES

These are modules with IP67 protection, connected to the X system, for handling inputs and outputs. It is interesting to note that their size is such that they can be fixed directly to the HDM input end-plate type 1-11, code 0227301206  
**(N.B. NOT to be fixed to the HDM end-plate type 1, code 0227301207).**

### X67 BUS CONTROLLER MODULES

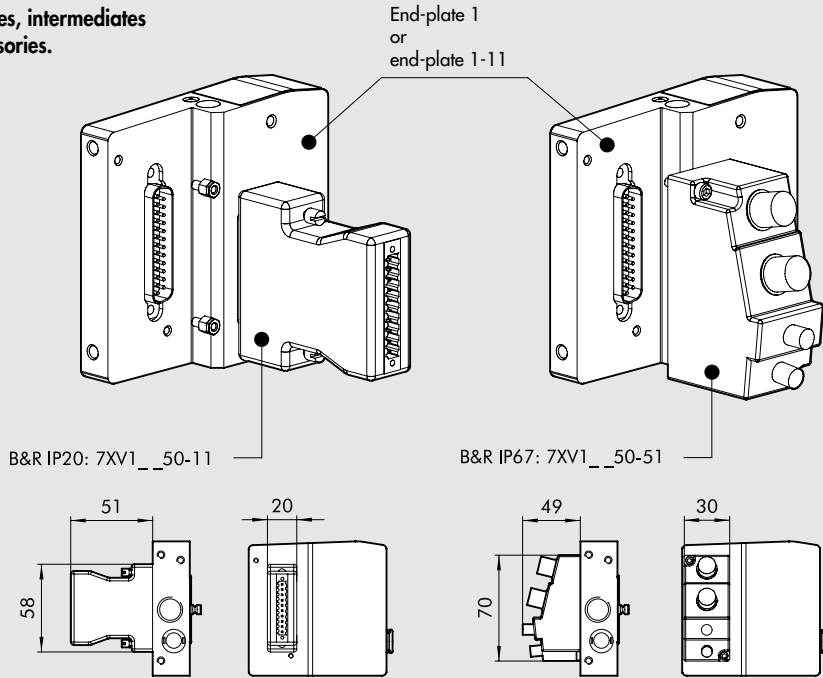
These are modules with protection IP67, receiving a signal according to one of the DP Profibus, CAN open, Device Net, Ethernet Powerlink protocols (the module code differs obviously according to the protocol being controlled). The output signal is according to the X-system. These are gateways converting the signals of a field bus into an X-system. These modules control the inputs and/or outputs via the M8 connectors provided. They can be fixed directly to the HDM input end-plate type 1-11, code 0227301206  
**(N.B. NOT to be fixed to the HDM end-plate, type 1, code 0227301207).**



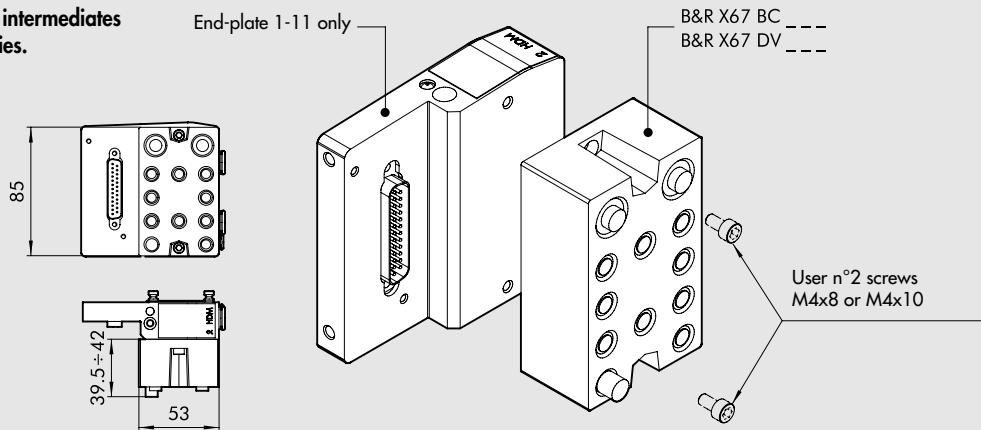


APPLICATIONS OF B&R MODULES TO HDM END-PLATES

Refer to page 2-162 for valves, intermediates elements and common accessories.



Refer to page 2-162 for valves, intermediates elements and common accessories.

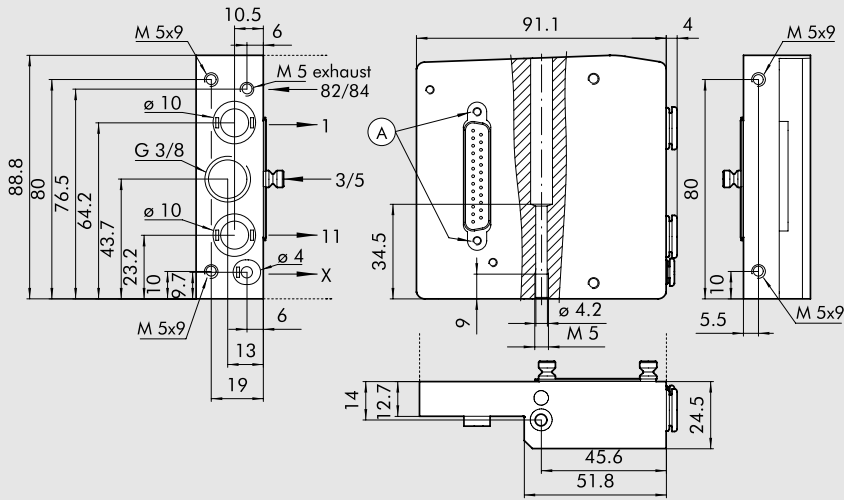


KEY TO CODES

H D M VALVE	2 INPUT END-PLATE	B & R ELECTRICAL BASE	M MANUAL TYPE	16 - W 8 - W 6 - O 4 - L 8 - 5 TYPE OF VALVE	1 6 FURTHER DETAILS
Heavy duty Multimach IP65	2 End-plate 1-11 3 End-plate 1	B&R Fit for B&R	M Monostable manual control B Bistable manual control	I n° 2 3/2 NC W n° 2 3/2 NO L 3/2 NO + 3/2 NC V 5/2 monostable K 5/2 bistable O 5/3 monostable *F 5/2 monostable 4 Right-end-plate 1-11 pipe Ø12 5 Blind end-plate 6 Passing-intermediate 7 Blind intermediate 20 Exhaust section 4 Cartridge 4 6 Cartridge 6 8 Cartridge 8 - 14 mm 85 Cartridge 8 - 23 mm 10 Cartridge 10	16 n° 2 brackets for DIN bar

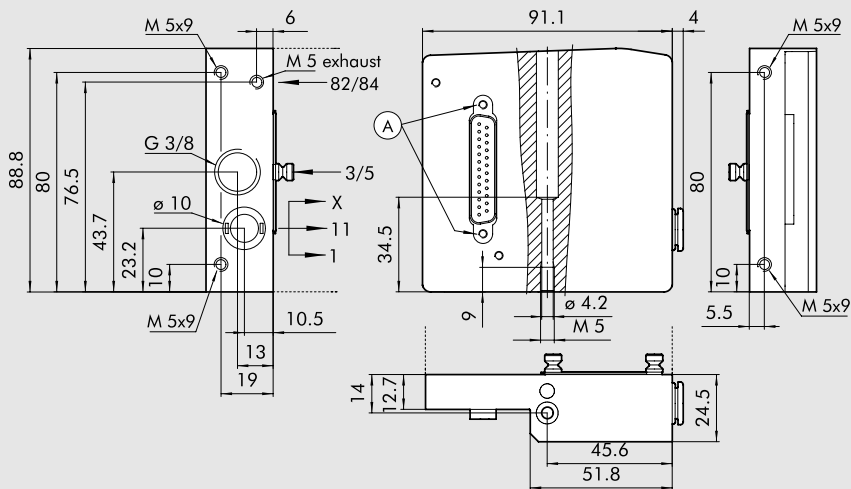
\* Uses a single PIN (like the V) and occupies 2 signals.

### HDM 1-11 END-PLATE FOR B&R



Code	Description	Weight [g]
0227301206	HDM 1-11 end-plate kit for B&R	340

### HDM 1 END-PLATE FOR B&R



Code	Description	Weight [g]
0227301207	HDM 1 end-plate kit for B&R	380

### NOTES

# HDM - VALVES, INTERMEDIATES ELEMENTS AND ACCESSORIES

HDM valve can be included in islands with any available input terminal. So the same valve can be connected to the multiple connection terminal, the AS-Interface terminal, the Profi bus-DP, terminal or the CAN-Open terminal.

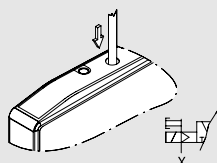
**Note:** if you use valves 8S type or 10 exploiting their flow capacity, it is appropriate to choose the inlet end plate 1-11 type by feeding the pilots separately (to avoid the pressure to decrease too much on the pilots). If you use simultaneously more than one valve 8S or 10 it is necessary to potentiate the pneumatic feeding by inserting end plates having 12 mm pipe and/or through intermediate modules



DISTRIBUTORS

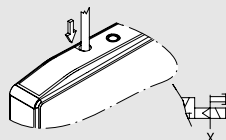
HDM - VALVES, INTERMEDIATES ELEMENTS AND ACCESSORIES

## MANUAL CONTROLS



MONOSTABLE OVERRIDE PORT 2  
servo-assisted

- Press and hold the manual control in position (not necessary for bistable type K valve)
- Release the manual control:
  - The manual control returns to the home position.
  - Valves type I, W, L, V, F, and O reposition.
  - The type K valve remains switched



MONOSTABLE OVERRIDE PORT 4  
servo-assisted

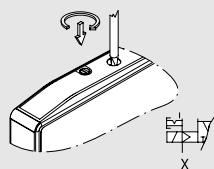
- Press and hold the manual control in position (not necessary for bistable type K valve)
- Release the manual control:
  - The manual control returns to the home position.
  - Valves type I, W, L, V and F reposition.
  - The type K valve remains switched

With type F and V valves, this manual control is not present.

N.B.: The pilot power supply X must be present.

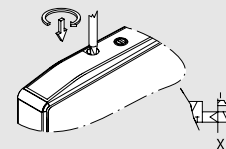
N.B.: The pilot power supply X must be present.

- The reference code for the monostable control ends in 0 (2 for type F).



BISTABLE OVERRIDE PORT 2  
servo-assisted

- Press the manual control right in then turn it clockwise 90 degrees and Leave it in position.
- Rotate the manual control 90 degrees anticlockwise, and then release it.
  - The manual control returns to the home position.
  - Valves type I, W, L, V, F, and O reposition.
  - The type K valve remains switched



BISTABLE OVERRIDE PORT 4  
servo-assisted

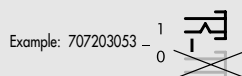
- Press the manual control right in then turn it 90 degrees clockwise and Leave it in position.
- Rotate the manual control 90 degrees anticlockwise, and then release it.
  - The manual control returns to the home position.
  - Valves type I, W, L and O reposition.
  - The type K valve remains switched

With type F and V valves, this manual control is not present.

N.B.: The pilot power supply X must be present.

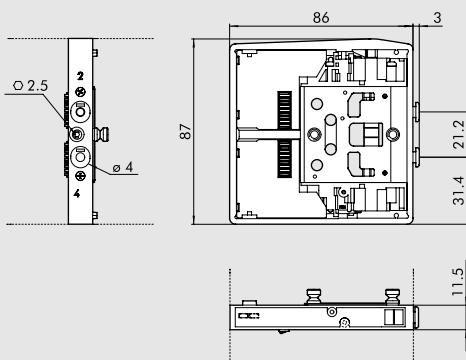
N.B.: The pilot power supply X must be present.

- The reference code for the monostable control ends in 1 (3 for type F).



## ① VALVE DIMENSIONS HDM Ø 4

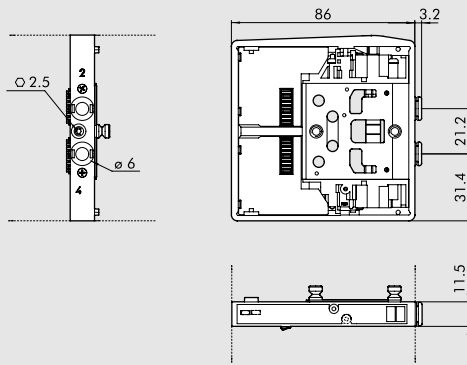
\*uses a single PIN (like the V) and occupies 2 signals

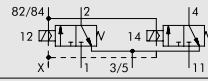
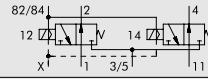
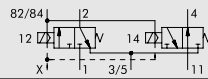
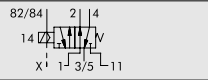
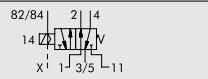
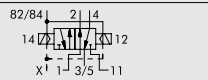
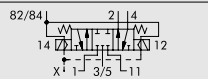


Symbol	Code	Manual control	Weight [g]
HDM I4	82/84 1 2   4 12 14 X 1 3/5 - 11	7071030530 monostable	130
	7071030531 bistable		
HDM W4	82/84 1 2   4 12 14 X 1 3/5 - 11	7071030630 monostable	130
	7071030631 bistable		
HDM L4	82/84 1 2   4 12 14 X 1 3/5 - 11	7071030730 monostable	130
	7071030731 bistable		
HDM V4	82/84 1 2   4 14 12 X 1 3/5 - 11	7071030130 monostable	115
	7071030131 bistable		
HDM *F4	82/84 1 2   4 14 12 X 1 3/5 - 11	7071030132 monostable	115
	7071030133 bistable		
HDM K4	82/84 1 2   4 14 12 X 1 3/5 - 11	7071030110 monostable	130
	7071030111 bistable		
HDM O4	82/84 1 2   4 14 12 X 1 3/5 - 11	7071030210 monostable	130
	7071030211 bistable		

### 1 VALVE DIMENSIONS HDM Ø 6

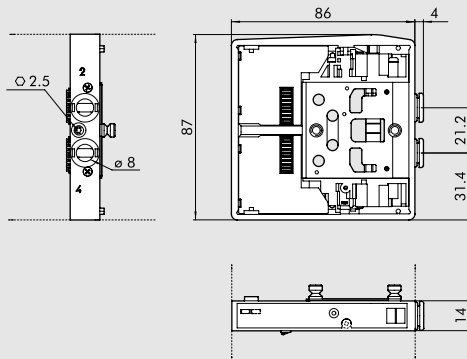
\*uses a single PIN (like the V) and occupies 2 signals

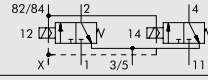
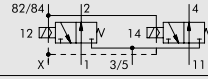
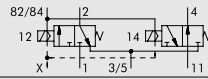
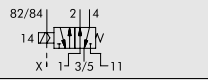

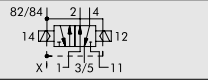
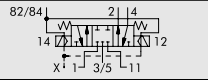


Symbol		Code	Manual control	Weight [g]
HDM I6		7072030530	monostable	130
		7072030531	bistable	
HDM W6		7072030630	monostable	130
		7072030631	bistable	
HDM L6		7072030730	monostable	130
		7072030731	bistable	
HDM V6		7072030130	monostable	115
		7072030131	bistable	
HDM *F6		7072030132	monostable	115
		7072030133	bistable	
HDM K6		7072030110	monostable	130
		7072030111	bistable	
HDM O6		7072030210	monostable	130
		7072030211	bistable	

### 1 VALVE DIMENSIONS HDM Ø 8

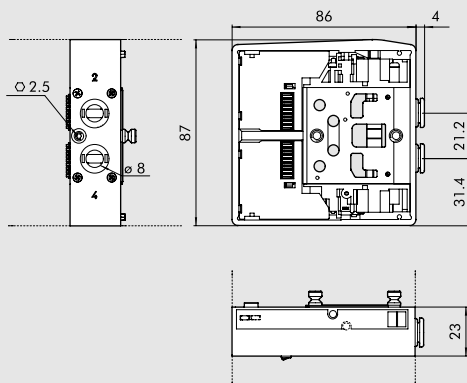
\*uses a single PIN (like the V) and occupies 2 signals

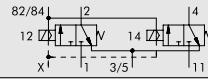
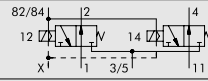
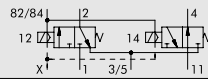
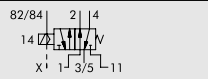
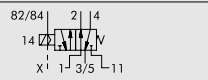
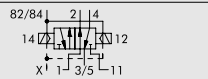
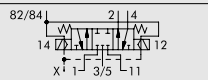


Symbol		Code	Manual control	Weight [g]
HDM I8		7073030530	monostable	140
		7073030531	bistable	
HDM W8		7073030630	monostable	140
		7073030631	bistable	
HDM L8		7073030730	monostable	140
		7073030731	bistable	
HDM V8		7073030130	monostable	130
		7073030131	bistable	
HDM *F8		7073030132	monostable	130
		7073030133	bistable	
HDM K8		7073030110	monostable	140
		7073030111	bistable	
HDM O8		7073030210	monostable	140
		7073030211	bistable	

### 1 VALVE DIMENSIONS HDM Ø 8S

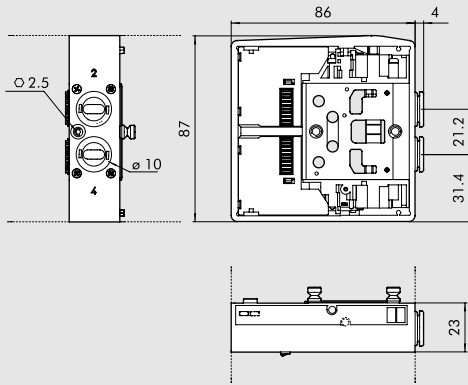
\*uses a single PIN (like the V) and occupies 2 signals



Symbol		Code	Manual control	Weight [g]
HDM I8S		7077030530	monostable	260
		7077030531	bistable	
HDM W8S		7077030630	monostable	260
		7077030631	bistable	
HDM L8S		7077030730	monostable	260
		7077030731	bistable	
HDM V8S		7077030130	monostable	241
		7077030131	bistable	
HDM *F8S		7077030132	monostable	241
		7077030133	bistable	
HDM K8S		7077030110	monostable	253
		7077030111	bistable	
HDM O8S		7077030210	monostable	262
		7077030211	bistable	

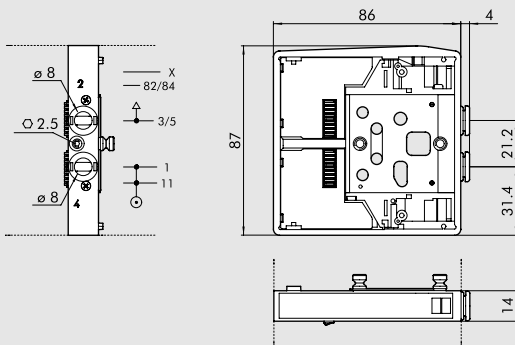
### ① VALVE DIMENSIONS HDM Ø 10

\*uses a single PIN (like the V) and occupies 2 signals



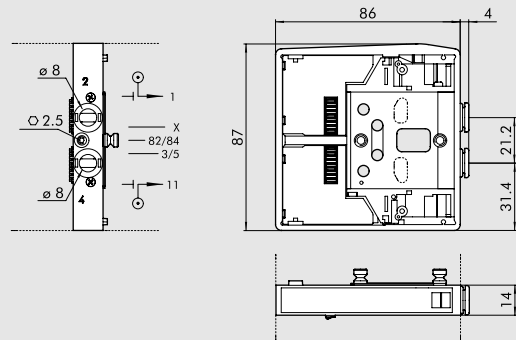
Symbol	Code	Manual control	Weight [g]
HDM I10	7078030530 7078030531	monostable bistable	250
HDM W10	7078030630 7078030631	monostable bistable	250
HDM L10	7078030730 7078030731	monostable bistable	250
HDM V10	7078030130 7078030131	monostable bistable	231
HDM *F10	7078030132 7078030133	monostable bistable	231
HDM K10	7078030110 7078030111	monostable bistable	243
HDM O10	7078030210 7078030211	monostable bistable	252

### ⑥ INTERMEDIATE THROUGH



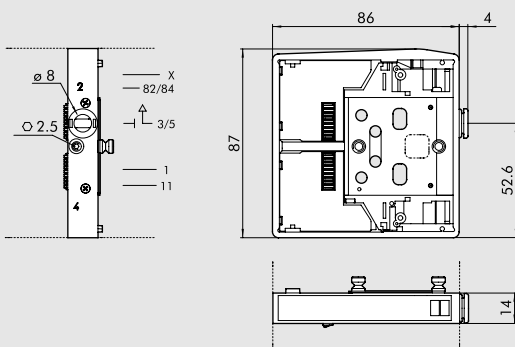
Code	Description	Weight [g]
0227301301	Intermediate through HDM	120

### ⑦ INTERMEDIATE BLIND



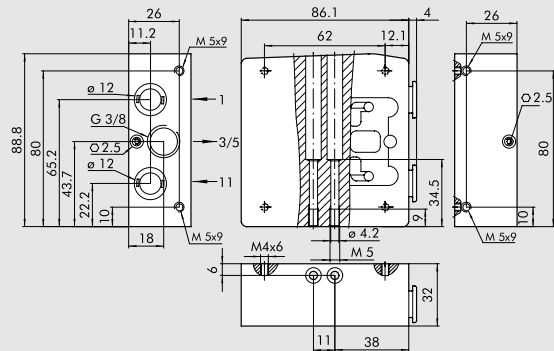
Code	Description	Weight [g]
0227301302	Intermediate blind HDM	117

### ⑳ INTERMEDIATE EXHAUST SWITCH



Code	Description	Weight [g]
0227301303	Intermediate exhaust switch HDM	125

### ④ RIGHT-END-PLATE 1-11 PIPE Ø 12

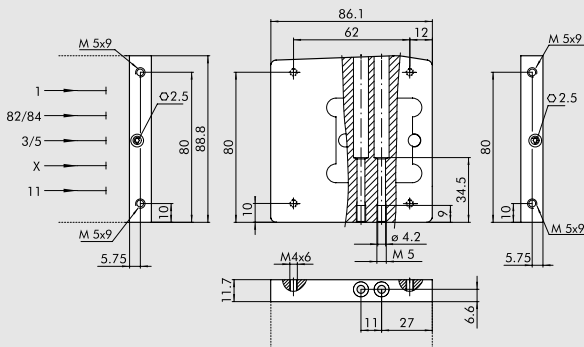


Code	Description	Weight [g]
0227301221	Right-end-plate HDM 1-11 Ø 12	630

This end-plate allows for supplies to be differentiated:

- Port 2
- Port 4

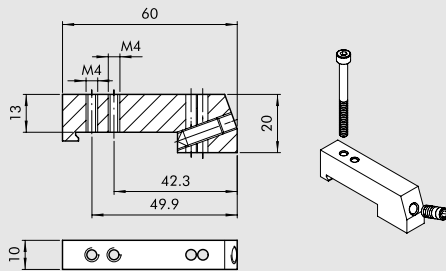
### 5 BLIND END-PLATE



Code	Description	Weight [g]
0227301500	Blind end-plate HDM	230

## ACCESSORIES

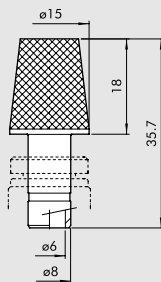
### 16 CONNECTION BRACKETS ON DIN BAR



Code	Description	Weight [g]
0227301600	Connection brackets on din bar HDM/CM	30

Supplied complete with one M4x45 screws and one M6 grub screw  
Individually packed

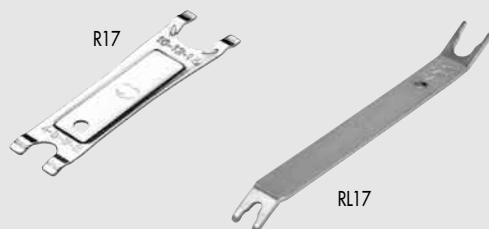
### SILENCER FOR FITTING, $\varnothing 8$



Code	Description	Weight [g]
W0970530084	Silencer for fitting, $\varnothing 8$	15

At the 3/5-exhaust port of the intermediate throughreference 6 and of the exhaust switch reference 20

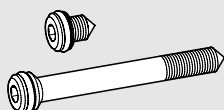
### R17 - PIPE RELEASE SPANNER



Code	Rif.	Length [mm]	$\varnothing$ Tube
2L17001	RL17	140	from 3 to 10
2017001	R17	95	from 4 to 14

## SPARES

### GRUB SCREW KIT



Code	Description
0227301800	Grub screw for Multimach HDM/CM

Comes in 1 + 1 pc. packs

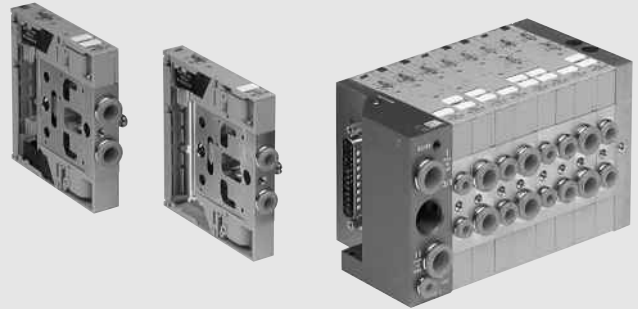
# MULTIMACH

Multimach is not a mere valve, it is an electropneumatic distribution "island" - a single block ready for connection to power and air delivery pipes and a multi-pin cable.

All the pneumatic connections are situated on one side with built-in push-in fittings. The user interface is on the other side so that the fitter or serviceman has everything within an easy reach: manual controls, active valve signalling lights, compressed air system diagram, valve identification plates.

The user can count on four different orientations for the electric connector. Multimach provides full flexibility in the application of valves: 1 to 24 valves, power plates and drain for pipes of various sizes, electric 9- or 25-pin plug connector. But the real novelty, is the possibility of mounting valves of different flow rates: three different valves can be mounted at a time and a valve can be replaced with another of a different flow rate. This revolutionary concept enables the user to optimise space and costs and adapt the unit to different performance requirements.

The ratio between the flow rate of the Multimach system and sizes is incomparable: the top in terms of miniaturisation and efficiency.

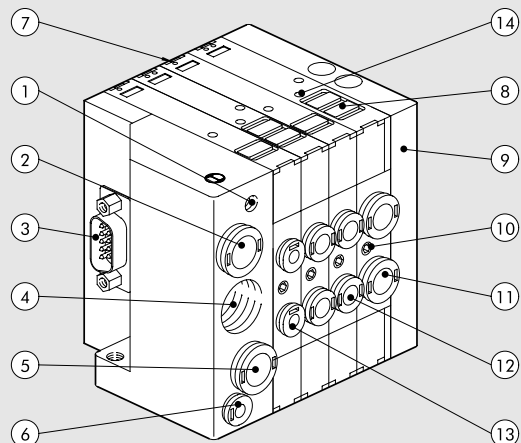


## TECHNICAL DATA

Valve port connections	Ø 4,6,8 mm automatic fitting for ports 2 and 4 / power supply port for Ø8 or Ø10 automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port		
Connection on the end-plate for the supply of pilots	Automatic fitting Ø 4		
Operating temperature range	°C -10 to +60		
Fluid	Filtered air without lubrication; lubrication, if used, must be continuous		
Screw for valve - wall-mounting	According to the end-plate used: see page 2-155		
Flow rate at 6 bar ΔP 1bar	Nl/min	11 mm Ø 4: 200	11 mm Ø 6: 500 14 mm Ø 8: 700
Voltage range		24 VDC ±10%	
Power	W	1.2	
Insulation class		F155	
Degree of protection		IP51	
Solenoid rating		100% ED	
Pressure range		X (pilot supply) 3 to 7 max	1-11 (valve supply) vacuum at 10 bar
	Terminal 1-11	bar	
	Terminal 1	bar	3 to 7
	Terminal 1 reduced	bar	3 to 7
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45	
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33	
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20	
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20	
Note on use	Insert the pipes in the fittings, before passing air through the valves, otherwise the basket may be pulled out of its seat by the flow of air. Please refer to page 6-7 of the technical documentation		
Compatibility with oils			

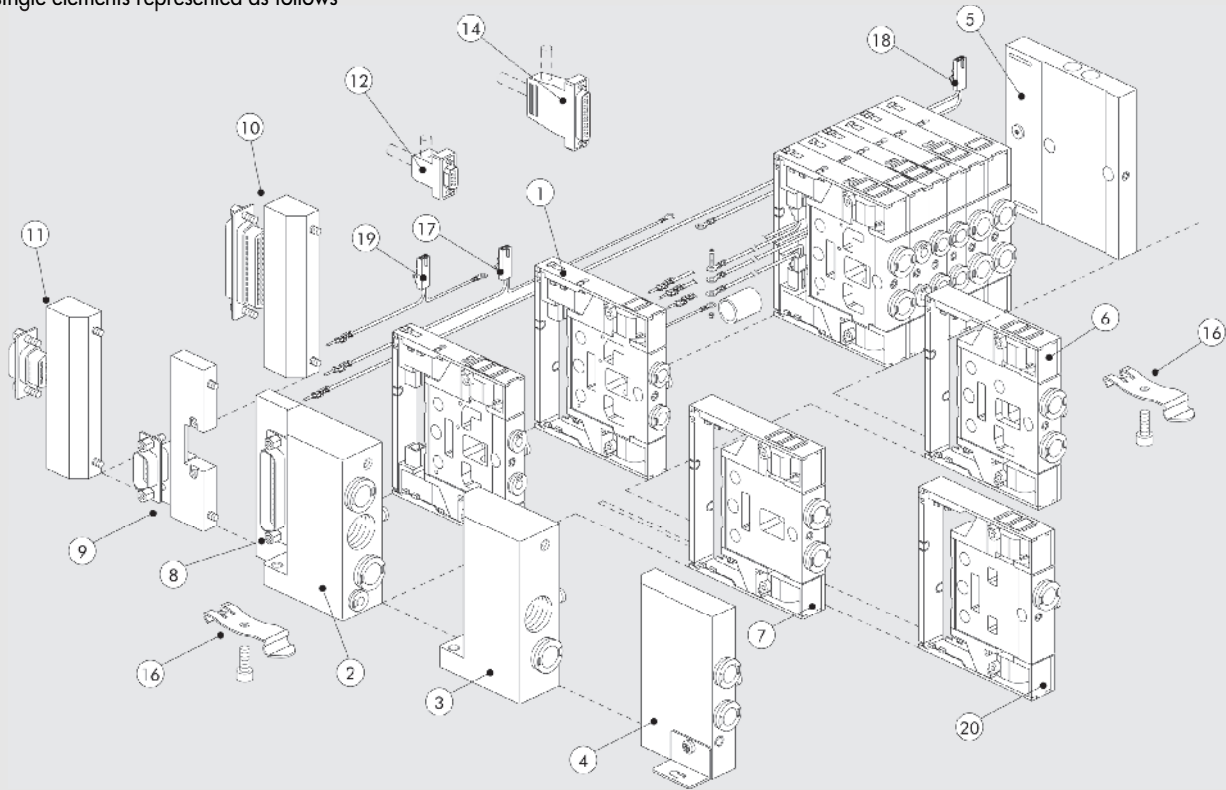
## COMPONENTS

- ① Exhaust – Solenoid pilot
- ② Valve supply - port 1
- ③ Electrical multiple connection with 9 or 25 pins
- ④ Threaded connection of exhausts 3/5
- ⑤ Valve supply
- ⑥ Electrical control supply
- ⑦ LED (LED on, solenoid valve energised)
- ⑧ Removable identification labels
- ⑨ Blind end-plate
- ⑩ Screw for valve wall-mounting
- ⑪ Utility port for pipe Ø 8 mm
- ⑫ Utility port for pipe Ø 6 mm
- ⑬ Utility port for pipe Ø 4 mm
- ⑭ Manual control

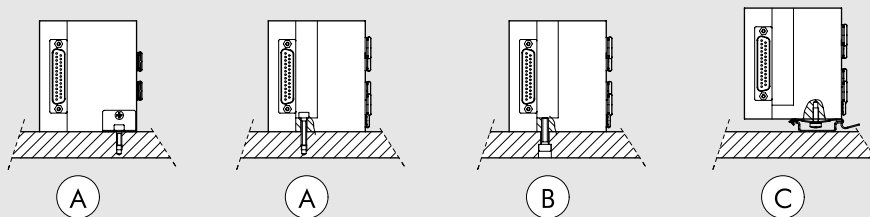


## THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows



## FIXING THE BASE



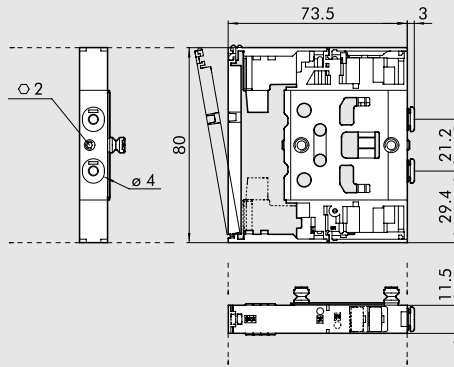
- Ⓐ Fixing with reduced end-plate 1, CODE 0227300300, supplied complete with bracket
  - Ⓑ Fixing with end-plate 1-11 CODE 0227300200 or with end-plate CODE 0227300201
  - Ⓒ Fixing with end-plate 1-11 CODE 0227300200 or with end-plate 1 CODE 0227300201 using the M4-thread found on the M5 end-plate
  - Ⓓ Fixing on the DIN bar with end-plate 1-11 CODE 0227300 using the reduced end-plate 1 CODE 0227300300 or end-plate CODE 0227300201 using the push-in bracket CODE 0227300600.
- If you have to remove the base from the bar, this is rapid and can be performed without using any tools.

## KEY TO CODES

M 5 1 VALVE	2 INPUT END-PLATE	8 ELECTRICAL BASE	16 - W 8 - W 6 - O 4 - L 8 - 5 TYPE OF VALVE	1 2 - 1 4 FURTHER DETAILS
Multimach IP51	<ul style="list-style-type: none"> <li>2 End-plate 1-11</li> <li>3 End-plate 1</li> <li>4 Reduced End-plate 1</li> </ul>	<ul style="list-style-type: none"> <li>8 Axial 25-wire connector base</li> <li>9 Axial 9-wire connector base</li> <li>10 25-wire rear connector base</li> <li>11 9-wire rear connector base</li> </ul>	<ul style="list-style-type: none"> <li>I n° 2 3/2 NC</li> <li>W n° 2 3/2 NO</li> <li>L 3/2 NO + 3/2 NC</li> <li>V 5/2 monostable</li> <li>K 5/2 bistable</li> <li>O 5/3 monostable</li> <li>5 Blind end-plate</li> <li>6 Passing-intermediate</li> <li>7 Blind intermediate</li> <li>20 Exhaust section</li> <li>4 Cartridge 4</li> <li>6 Cartridge 6</li> <li>8 Cartridge 8</li> </ul>	<ul style="list-style-type: none"> <li>12 9-wire connector</li> <li>14 25-wire connector</li> <li>16 Brackets for DIN bar</li> </ul>

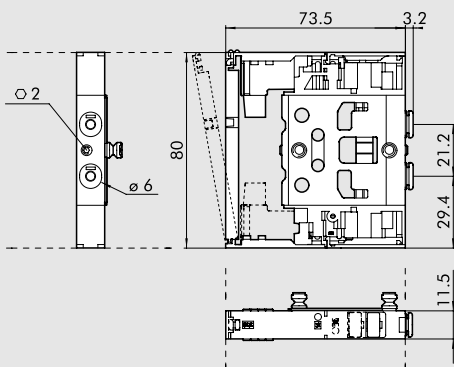


**1 VALVE DIMENSIONS Ø 4**



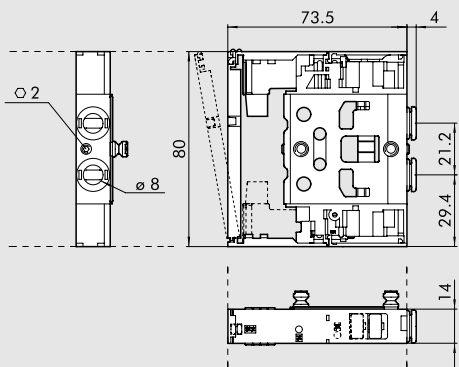
Symbol	Code	Manual control	Weight [g]
<b>I4</b>	7068030532	monostable	118
<b>W4</b>	7068030632	monostable	118
<b>L4</b>	7068030732	monostable	118
<b>V4</b>	7068030132	monostable	100
<b>K4</b>	7068030112	monostable	114
<b>O4</b>	7068030212	monostable	115

**1 VALVE DIMENSIONS Ø 6**



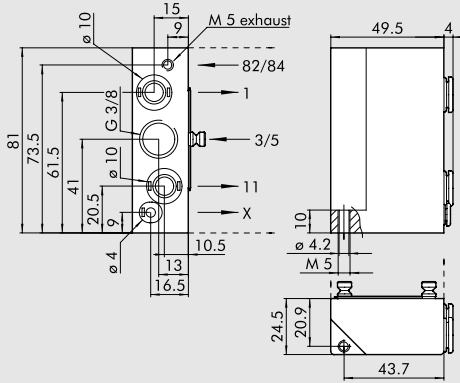
Symbol	Code	Manual control	Weight [g]
<b>I6</b>	7069030532	monostable	110
<b>W6</b>	7069030632	monostable	110
<b>L6</b>	7069030732	monostable	110
<b>V6</b>	7069030132	monostable	90
<b>K6</b>	7069030112	monostable	107
<b>O6</b>	7069030212	monostable	108

**1 VALVE DIMENSIONS Ø 8**



Symbol	Code	Manual control	Weight [g]
<b>I8</b>	7070030532	monostable	124
<b>W8</b>	7070030632	monostable	124
<b>L8</b>	7070030732	monostable	124
<b>V8</b>	7070030132	monostable	105
<b>K8</b>	7070030112	monostable	120
<b>O8</b>	7070030212	monostable	121

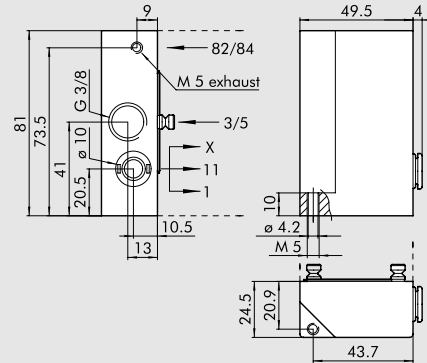
## ② END-PLATE 1-11



Code	Description	Weight [g]
0227300200	End-plate kit 1-11	223

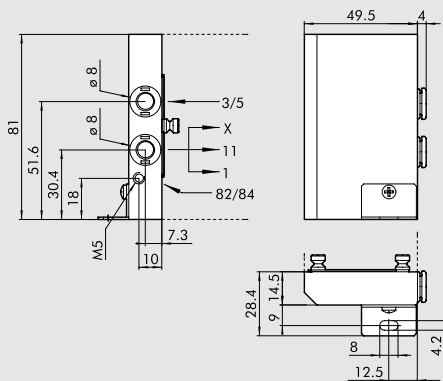
This end-plate allows for supplies to be differentiated:  
port 2, port 4 and pilot supply

## ③ END-PLATE 1



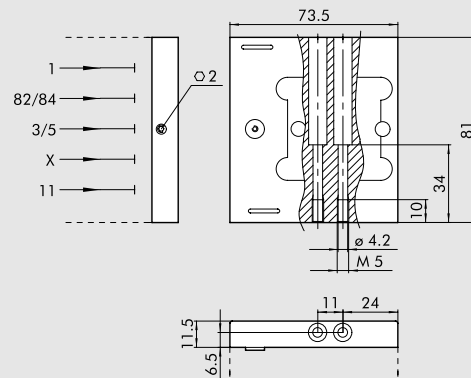
Code	Description	Weight [g]
0227300201	End-plate kit 1	224

## ④ REDUCED END-PLATE 1



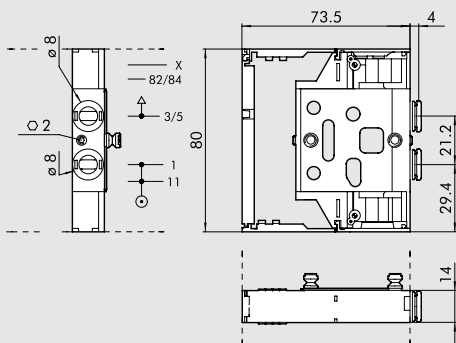
Code	Description	Weight [g]
0227300300	Reduced end-plate kit 1	148

## ⑤ BLIND END-PLATE



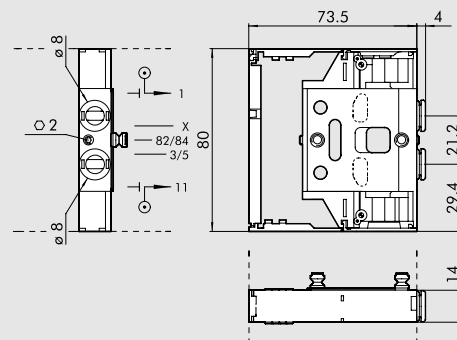
Code	Description	Weight [g]
0227300500	Blind end-plate	168

## ⑥ INTERMEDIATE THROUGH



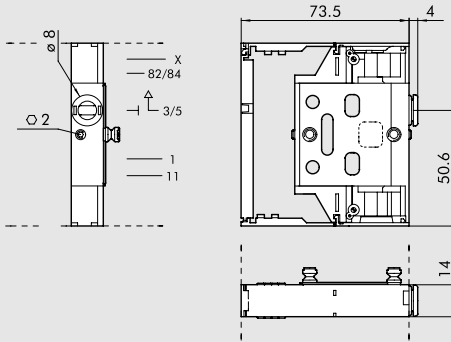
Code	Description	Weight [g]
0227300301	Intermediate through	92

## ⑦ INTERMEDIATE BLIND



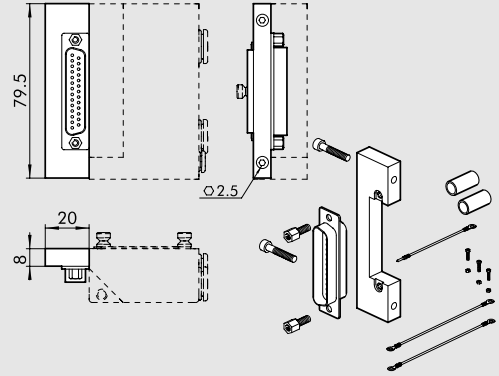
Code	Description	Weight [g]
0227300302	Intermediate blind	89

**20 INTERMEDIATE EXHAUST SWITCH**



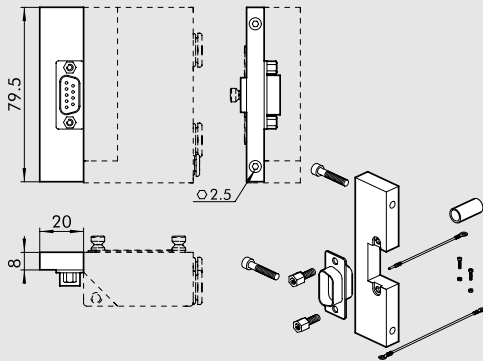
Code	Description	Weight [g]
0227300303	Intermediate exhaust switch	95

**8 AXIAL CONNECTOR BASE, 25 WIRES**



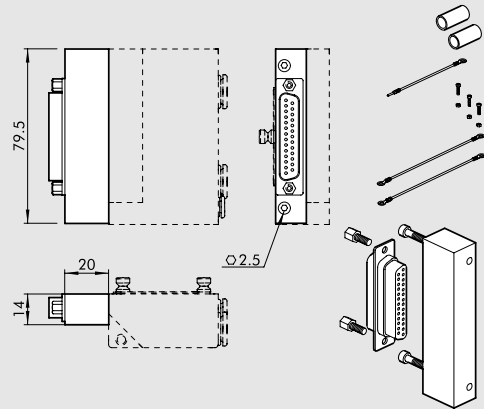
Code	Description	Weight [g]
0226180001	Axial connector base kit, 25 wires	54

**9 AXIAL CONNECTOR BASE, 9 WIRES**



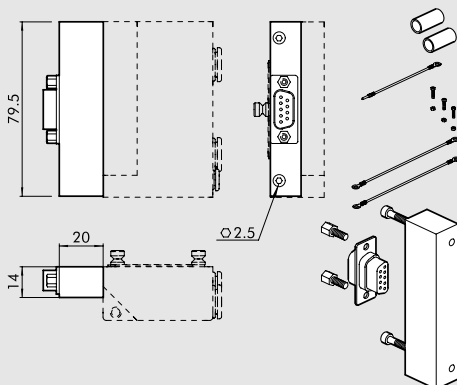
Code	Description	Weight [g]
0226180002	Axial connector base kit, 9 wires	51

**10 REAR CONNECTOR BASE, 25 WIRES**



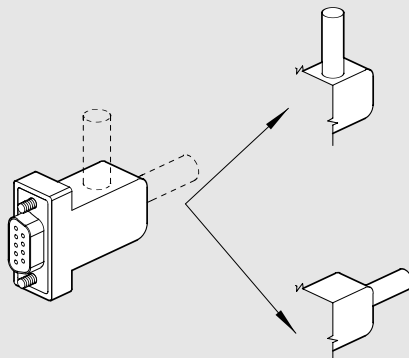
Code	Description	Weight [g]
0226180003	Rear connector base kit, 25 wires	73

**11 REAR CONNECTOR BASE, 9 WIRES**



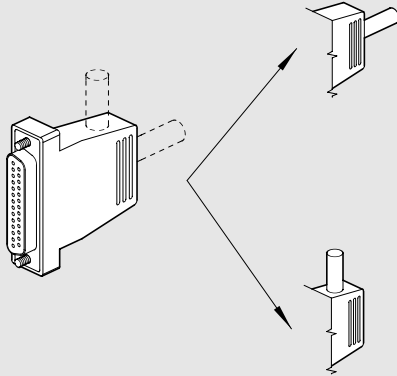
Code	Description	Weight [g]
0226180004	REAR CONNECTOR BASE KIT, 9 WIRES	77

**12 STRAIGHT AND 90° CONNECTOR KIT, 9 WIRES**



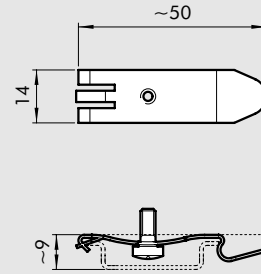
Code	Description	Weight [g]
0226180102	Straight and 90° connector kit, 9 wires	31

**14 STRAIGHT AND 90° CONNECTOR KIT, 25 WIRES**



Code	Description	Weight [g]
0226180101	Straight and 90° connector kit, 25 wires	48

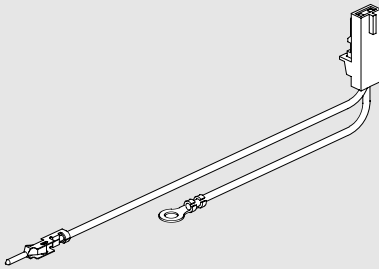
**16 CONNECTION BRACKETS ON THE BAR OMEGA (DIN EN 50022)**



Code	Description	Weight [g]
0227300600	Connection brackets on din bar	8

Individually packed

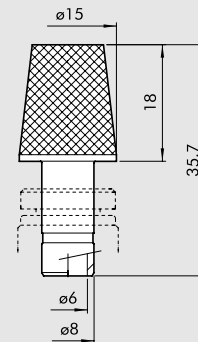
**17 18 19 CONNECTOR KIT + WIRE**



Code	Description	Weight [g]
0226180399	Connector kit + wire 1-6*	3
0226180400	Connector kit + wire 7-12**	4
0226180401	Connector kit + wire 13-30***	5

- \* For valve connection from 1st to 6th position counting from the connector
- \*\* For valve connection from 7th to 12th position, counting from the connector
- \*\*\* For valve connection from 13th to 30th position, counting from the connector

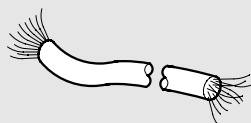
**SILENCER FOR FITTING, Ø 8**



Code	Description	Weight [g]
W0970530084	Silencer for fitting, Ø 8	15

At the 3/5-exhaust port of the reduced end-plate 1 ref. 4 and of the intermediate through of the exhaust switch ref. 20

**CABLES**

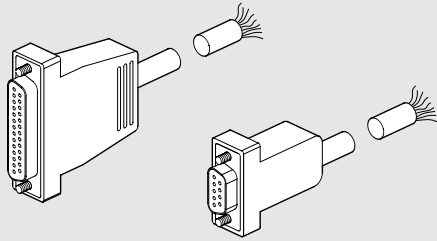


Cod.	Description	Weight [g]
0226107201	10-wire cable	86
0226107101	19-wire cable	122
0226107102	25-wire cable	130

Specify the number of metres desired

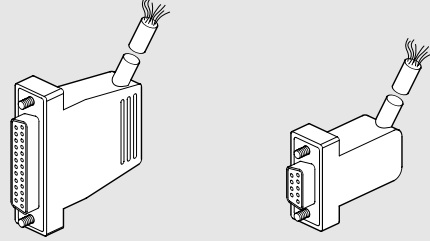
**NOTES**

**STRAIGHT PRE-WIRED CONNECTOR KIT**



Code	Description	Weight [g]
0226900100	Connector + 9-wire axial cable L = 1 m	90
0226900250	Connector + 9-wire axial cable L = 2.5 m	220
0226900500	Connector + 9-wire axial cable L = 5 m	434
0226920100	Connector + 25-wire axial cable L = 1 m	132
0226920250	Connector + 25-wire axial cable L = 2.5 m	320
0226920500	Connector + 25-wire axial cable L = 5 m	636

**PRE-WIRED 90° CONNECTOR**

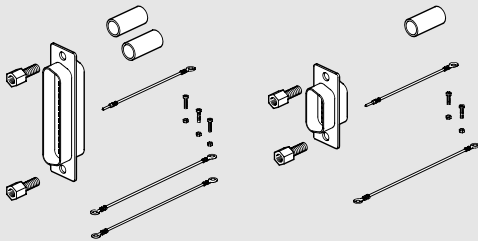


Code	Description	Weight [g]
0226910100	Connector + 9-wire 90° cable L = 1 m	90
0226910250	Connector + 9-wire 90° cable L = 2.5 m	220
0226910500	Connector + 9-wire 90° cable L = 5 m	434
0226930100	Connector + 25-wire 90° cable L = 1 m	132
0226930250	Connector + 25-wire 90° cable L = 2.5 m	320
0226930500	Connector + 25-wire 90° cable L = 5 m	636

**WIRING DIAGRAM FOR PRE-WIRED PLUG CONNECTORS**

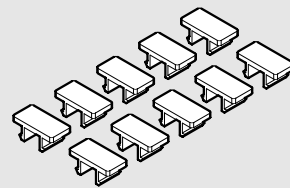
25 PIN				9 PIN			
Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire
1	blue/black	10	brown/white	19	yellow/black	1	green/black
2	red/brown	11	red/orange	20	white	2	white
3	white/black	12	light blue	21	blue/white	3	blue/black
4	red/blue	13	yellow/white	22	brown	4	blue
5	black/orange	14	yellow	23	green/white	5	yellow/black
6	yellow/red	15	red/green	24	red	6	yellow
7	black/brown	16	orange	25	green/black	7	red/black
8	white/red	17	orange/white			8	green
9	red/black	18	green			9	white/black

**MALE CONNECTOR KIT + CONTACTS + COMMON TERMINAL**



Code	Description
0226180201	Male connector kit - 25 pins
0226180202	Male connector kit - 9 pins

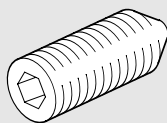
**IDENTIFICATION PLATE KIT**



Code	Description
0226107000	Identification plate kit

Comes in 10-pc. packs

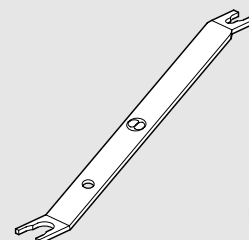
**GRUB SCREW**



Code	Description
0227300800	Grub screw for Multimach

Comes in 10-pc. pack

**R17 - PIPE RELEASE SPANNER**

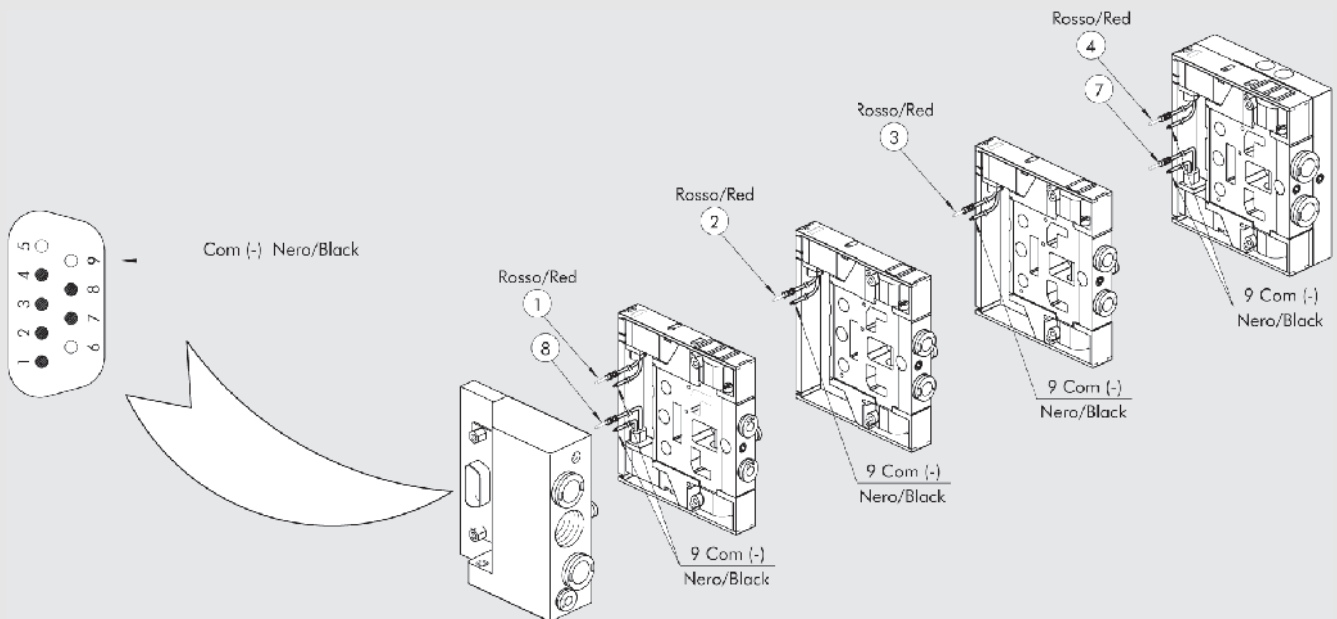


Lenght = 140 mm

Code	Description	Ø Tube
2L17001	RL17	from Ø 3 to Ø 10

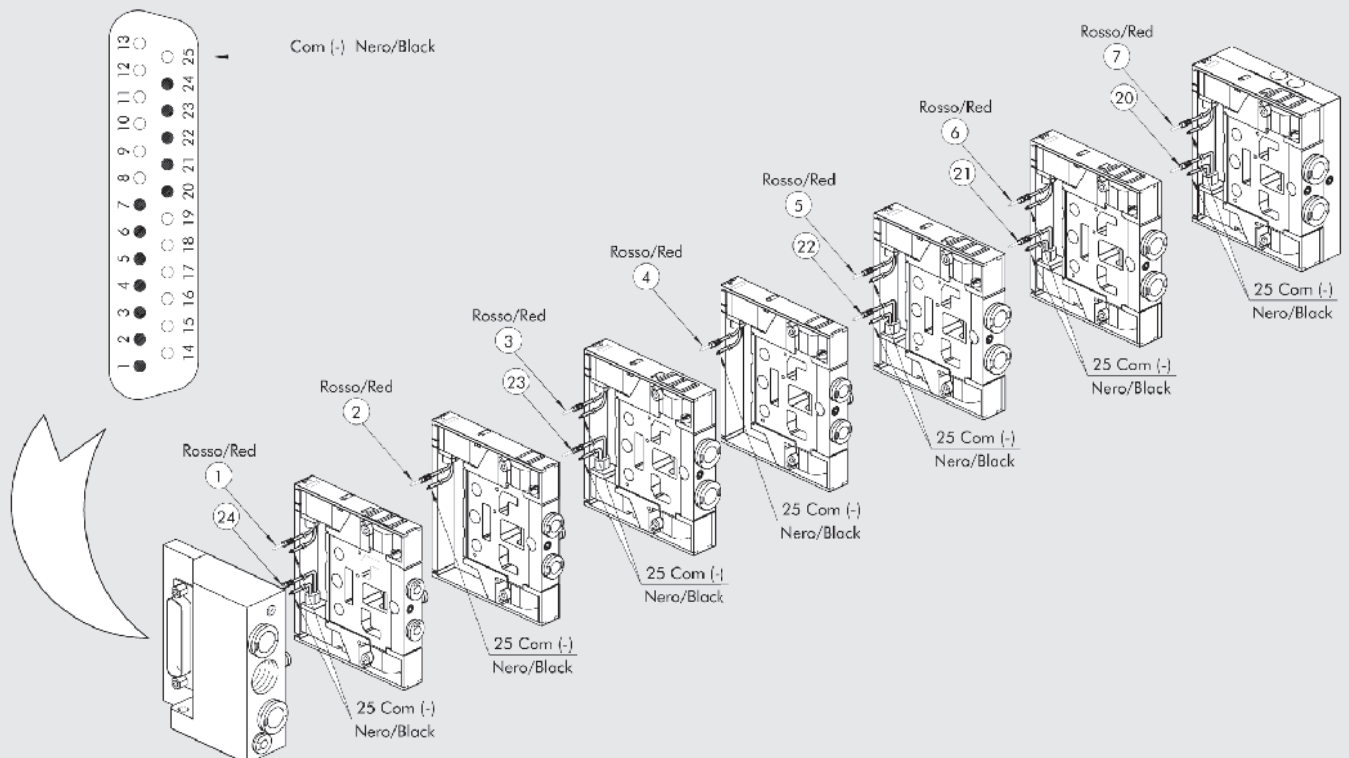
### WIRING DIAGRAM OF THE 9-PIN CONNECTOR

Note: available with positive common wire on request.



### WIRING DIAGRAM OF THE 25-PIN CONNECTOR

Note: available with positive common wire on request.



# MULTIMACH + B&R

An advanced field bus system interfacing with the Multimach world. B&R has developed a new standard for automation, called FORMULA X. For further details about features, functions and qualities of this system, reference must be made to the B&R documentation, also available on the web site [www.br-automation.com](http://www.br-automation.com). Refer to page 2-159 for details of IP20 and IP67 intelligent connectors and X67 modules. B&R smart connectors can be connected to Multimach islands using the Multimach connector support for B&R presented below.



DISTRIBUTORS

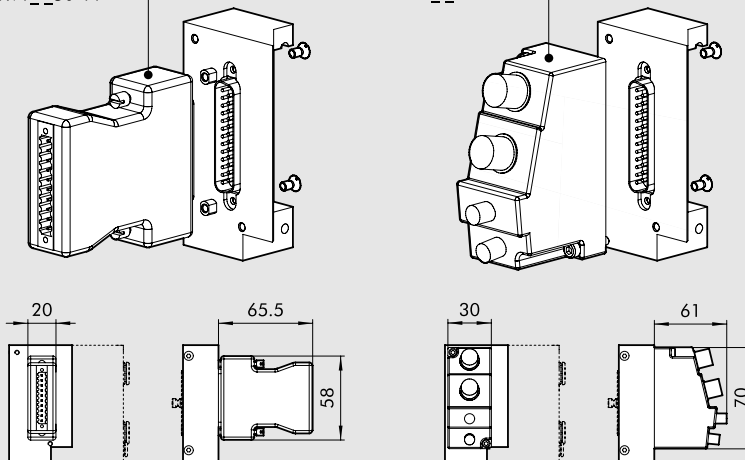
MULTIMACH + B&R

## APPLICATIONS OF B&R MODULES TO THE MULTIMACH CONNECTOR SUPPORT

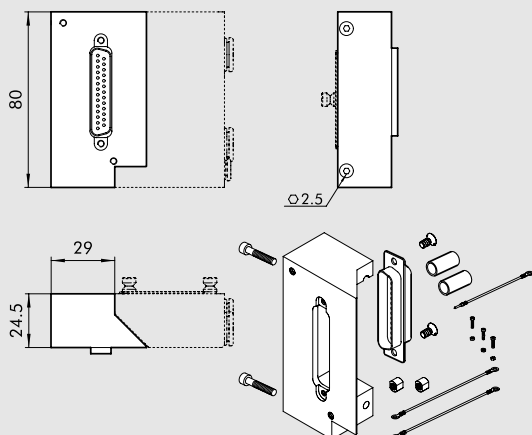
Refer to page 2-156 for valves, intermediates elements and common accessories.

B&R IP20: 7XV1\_ \_50-11

B&R IP67: 7XV1\_ \_50-51



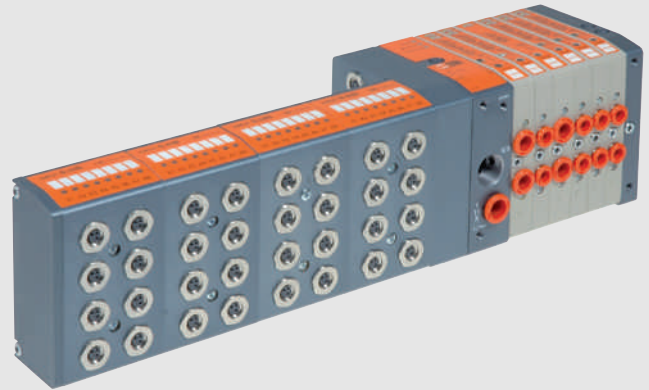
## MULTIMACH CONNECTOR SUPPORT FOR B&R



Code	Description	Weight [g]
0226180005	25-pin connector support kit for B&R	140

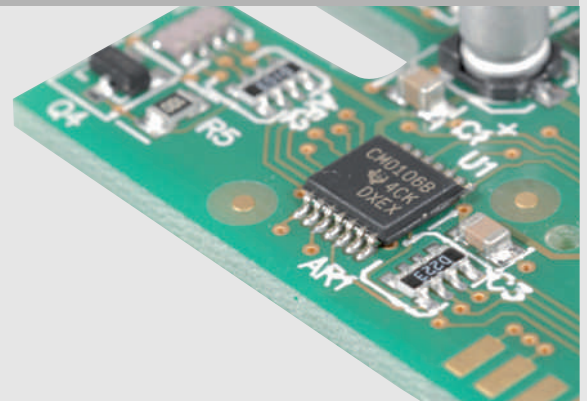
**THE VALVE IN DETAIL**

Clever Multimach valves can be used to form autonomous and intelligent valve island subsystems. Each valve has a microchip that performs a series of functions connected with operation and dialogue with the valves before and after it. Valves communicate via serial transmission. CM refers to the communication protocol patented by Metal Work. It is a field-bus in its own right, designed specifically for very easy control of islands of pneumatic solenoid valves. CM valves have a diagnosis system that detects electrical faults. It can also be used to verify during installation that all connections are correct. CMs communicate with the PC/PLC via multi-core cables, which means applications with CMs do not require the use of other field-buses or master and slaves. Addressing of single outputs is not required as the connection number of each solenoid pilot is assigned automatically based on the position occupied by the valve.



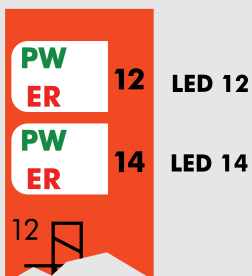
**SMART VALVE**

Each valve comes with a microchip that controls operation and dialogue with the other valves.



**LOCAL DIAGNOSTICS**

Each Clever Multimach valve has a LED diagnostic system that identifies immediately whether a pilot is energized, the contact is interrupted or there is a short-circuit.



LED 14	LED 12	DESCRIPTION OF THE FAULT
OFF ○	OFF ○	No fault, EV1 -EV2=OFF
ON (green) ●	OFF ○	No fault, EV1=ON - EV2=OFF
ON (green) ●	ON (green) ●	No fault, EV1 -EV2=ON
OFF ○	ON (green) ●	No fault, EV1=OFF - EV2=ON
RED (flashing) ☀	OFF ○	Solenoid pilot EV1 interrupted or disconnected
OFF ○	RED (flashing) ☀	Solenoid pilot EV2 interrupted or disconnected
ON (red) ●	OFF ○	Solenoid pilot EV1 short circuit
OFF ○	ON (red) ●	Solenoid pilot EV2 short circuit
GREEN (flashing) ☀	OFF ○	Data update time out, communication faulty

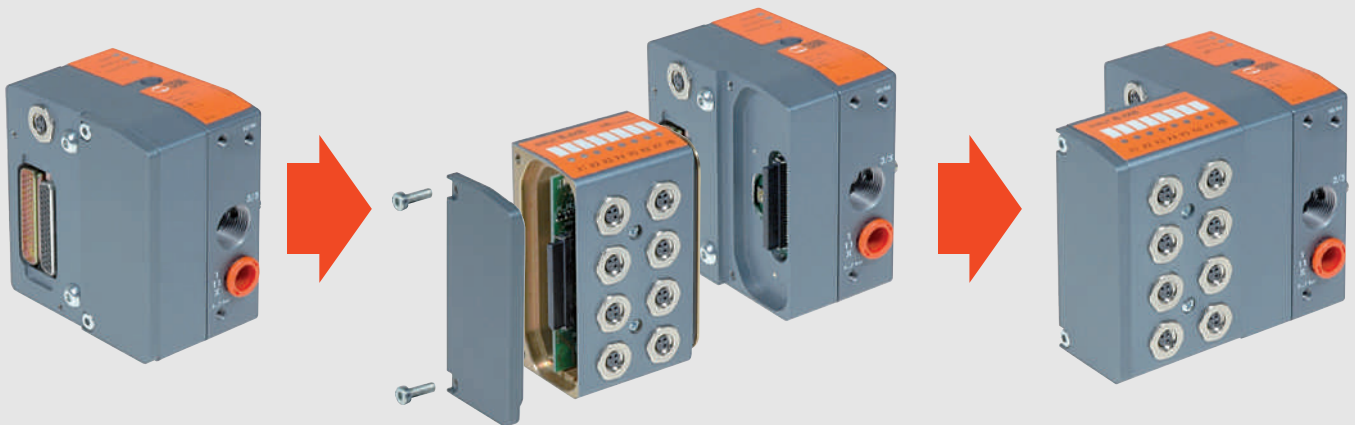


## INPUT MODULES

By choosing the specially designed Clever Center you can add INPUT/OUTPUT signal management modules, which can be used for:

- DIGITAL INPUTS, as cylinder sensors for example
- DIGITAL OUTPUTS
- ANALOGUE INPUTS (but the LEDs do not light up)
- ANALOGUE OUTPUTS (but the LEDs do not light up)

They can be combined, even on the same module. You can choose between PNP or NPN connections via a dip switch-type selector. All the INPUTS/OUTPUTS must be the same type, i.e. all PNP or NPN.

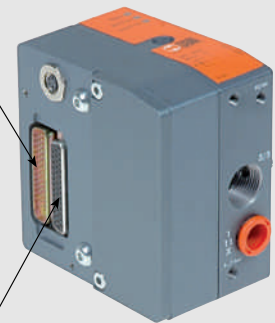


## CLEVER CENTER

The Clever Center input terminal converts signals in parallel from the connector pins into a serial transmission to the valves. It interprets the return signals from the valve, relays signals to any slave islands and sends diagnosis messages back to the PC/PLC.

44-pin connector  
for valves

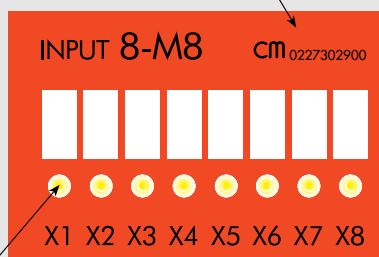
44-pin connector  
for inputs



## MAXIMUM EXPANSION

Up to 4 modules can be connected, giving a total of 32 input signals.

Ordering code

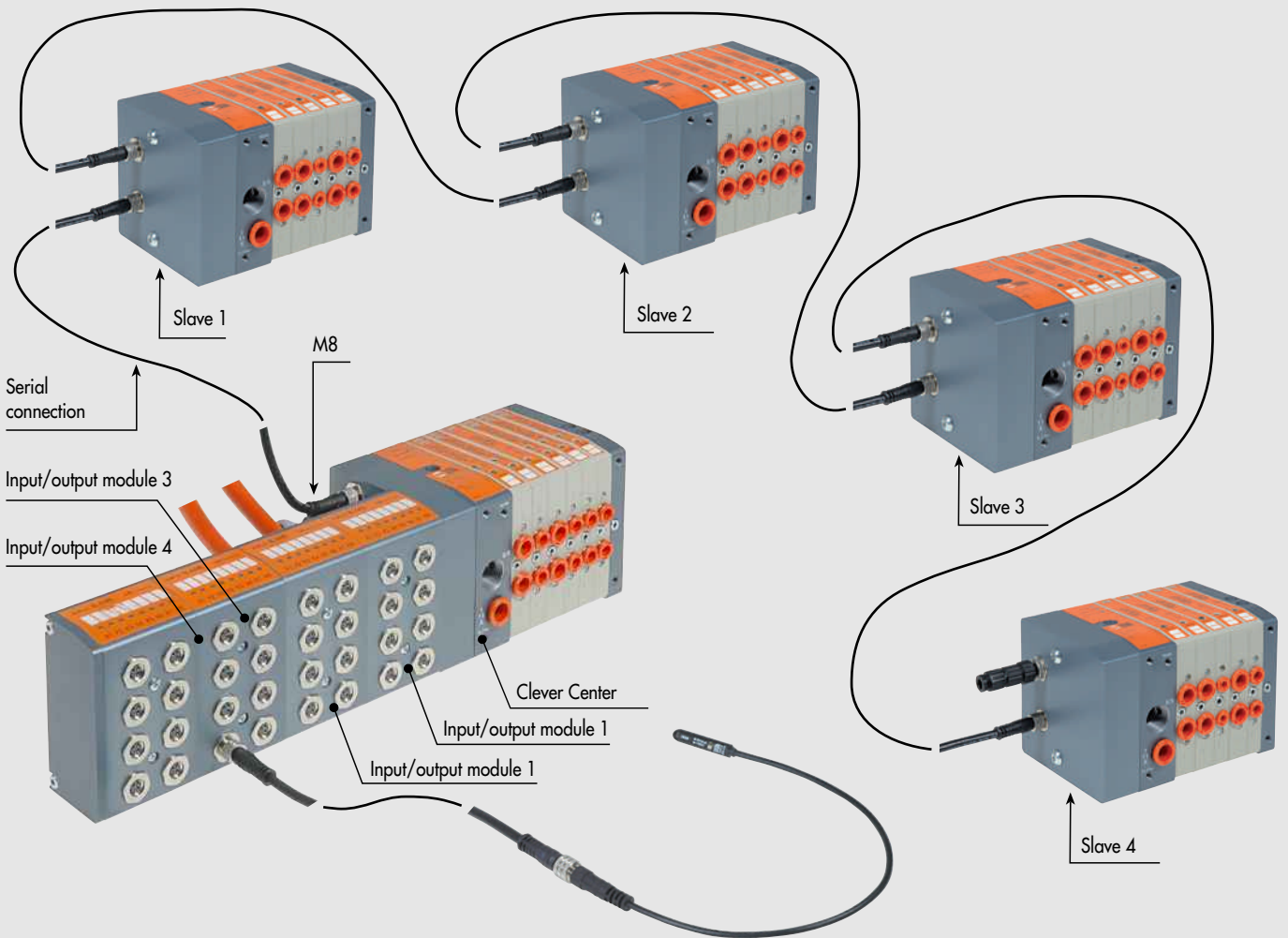


A yellow LED for each input/output  
(visible for digital types)



### EXAMPLE OF A CM LAYOUT

The Clever Center can relay command signals to other islands of "slaves". Transmission, in serial mode, is via a cable with M8 connectors. Commands can be sent from the first slave island to other slave islands in cascade, again via cables with M8 connectors. Addresses are assigned automatically, based on intuitive sequential logic. This means that other slaves can be added downstream at any time, until all 32 available outputs are in use.



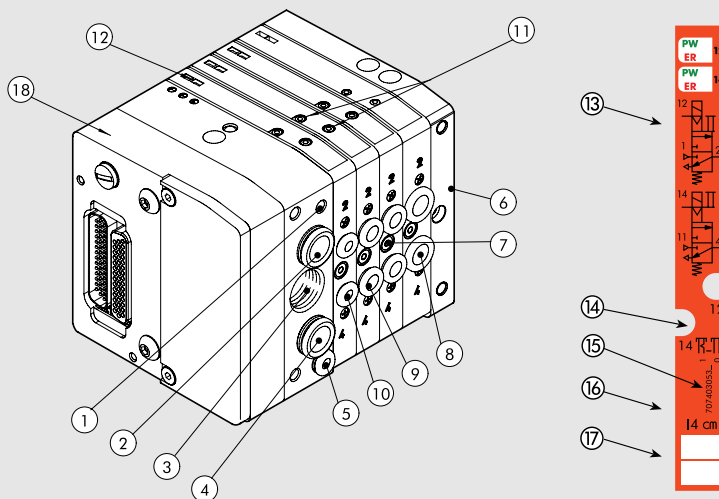
### NOTES

**TECHNICAL DATA**

Valve port connections	Ø 4,6,8 mm automatic fitting for ports 2 and 4 / power supply port for Ø10 automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port		
Connection on the end-plate 1-11 for the supply of pilots	Automatic fitting Ø 4 mm		
Maximum number of pilots	32		
Maximum number of valves	32 (same as the max. no. of pilots)		
Operating temperature range	°C -10 to +60		
Fluid	Filtered air without lubrication; lubrication, if used, must be continuous		
Flow rate at 6 bar ΔP 1bar	Nl/min	11 mm Ø 4 = 200	11 mm Ø 6 = 500      14 mm Ø 8 = 800
Pressure range		X (pilot supply)	1-11 (valve supply)
	Terminal 1-11	3 to 7 bar	vacuum at 10 bar
	Terminal 1	3 to 7 bar	24 VDC ±10%
Voltage range	(slave protected against overload and reverse polarity)		
Power for each pilot	W	0.9	
Solenoid Pilot Insulation class	F155		
Degree of protection	IP65 (with conveyed exhaust, and that - in case of no use)		
DC input current without valve modules	Nominal Icc 30 mA - Instantaneous Icc (+ ≤ 25 ms) 650 mA		
Max input current with all valves ON	A	1.5	
Diagnosis	Local through LED and OUT fault reporting. For defects signalled look at the manual. Outlets protected against overload and short-circuit		
Solenoid rating	100% ED		
Maximum latency time of the serial transmission	ms	<10	
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45	
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33	
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20	
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20	
Note on use	Insert the pipes in the fittings, before passing air through the valves, otherwise the gasket may be pulled out of its seat by the flow of air. Please refer to page 6-7 of the technical documentation		
Compatibility with oils			
<b>INPUT module for CM islands</b>			
Sensor supply voltage	24 VDC ±10%		
Maximum current for each single connector	mA	200	
Maximum current for each module	mA	400	
Maximum total current of all the modules	mA	1000	
Input impedance	KΩ	3.9	
Max input voltage	Vcc	-5 to +30	
Type of input	PNP/NPN configurable via dip switch		
Protection	Protected inputs against overload and short-circuit		
Active input signalling	One LED for each INPUT		

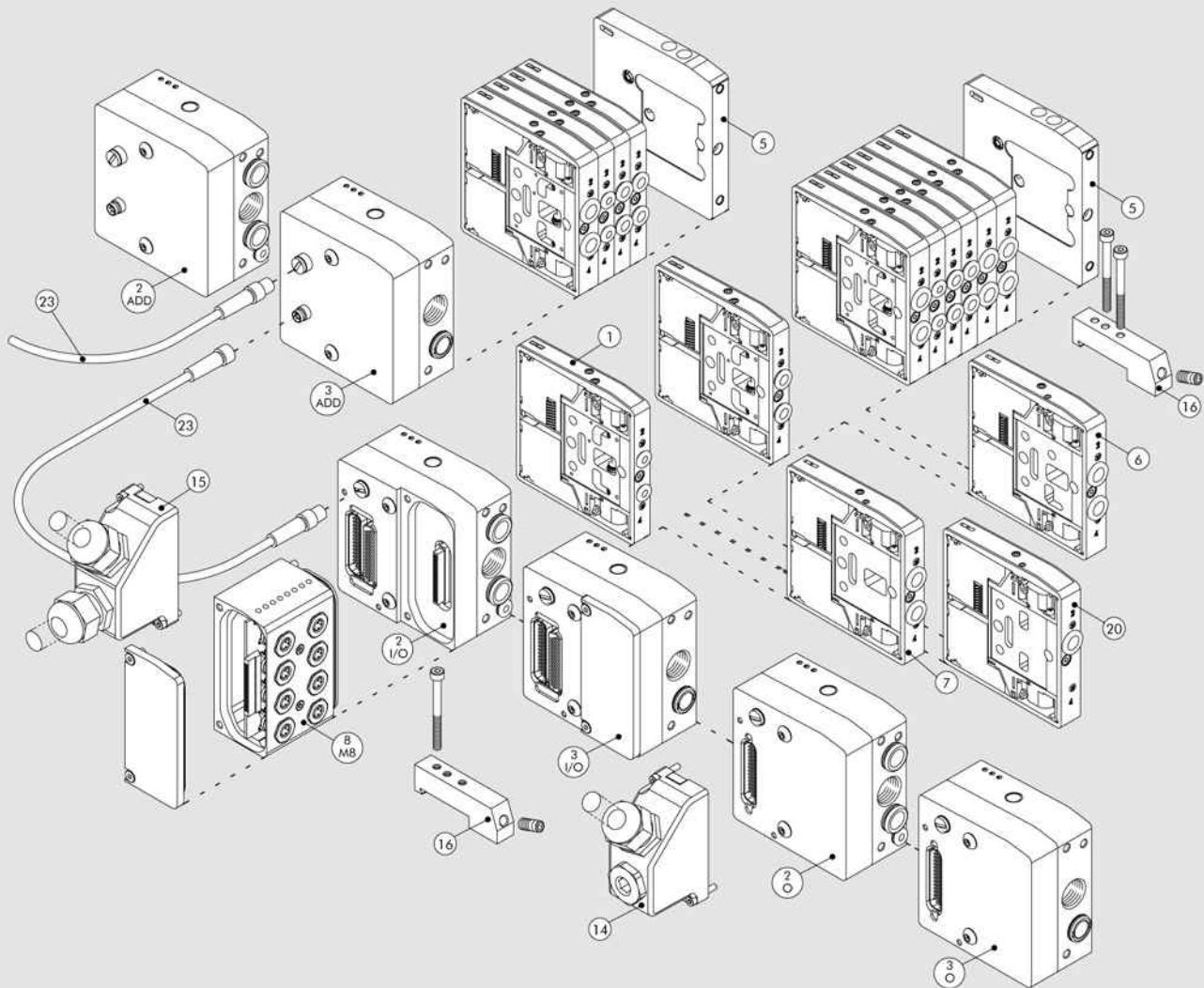
**COMPONENTS**

- ① Exhaust - Solenoid pilot 82/84
- ② Valve supply - port 1
- ③ Threaded connection of exhausts 3/5
- ④ Valve supply - port 11
- ⑤ Electrical control supply X
- ⑥ Blind end-plate
- ⑦ Screw for valve wall-mounting
- ⑧ Utility port for pipe Ø 8 mm
- ⑨ Utility port for pipe Ø 6 mm
- ⑩ Utility port for pipe Ø 4 mm
- ⑪ Manual control
- ⑫ LED (LED on, solenoid valve energised)
- ⑬ Pneumatic symbol
- ⑭ Identification of the monostable or bistable manual control
- ⑮ Valve ordering code
- ⑯ Valve identification code
- ⑰ Blank space for valve number
- ⑱ Clever Center terminal

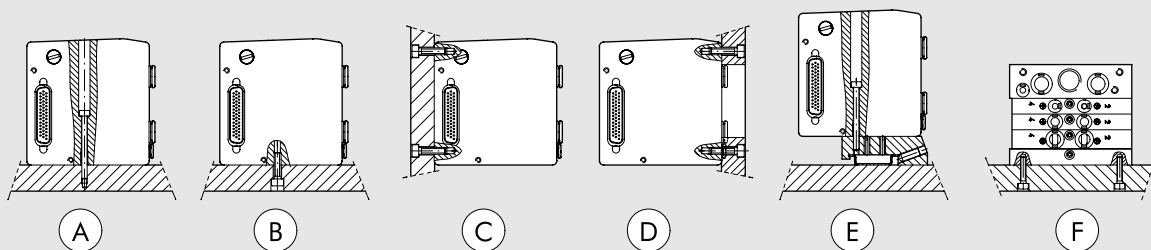


## THE CLEVER MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.



## FIXING THE BASE



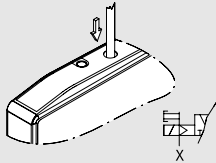
- Ⓐ Fixing from above using the 1 or 1-1 input terminal and the blind terminal.
- Ⓑ Ⓒ Fixing from above using the 1 or 1-1 input terminal and the blind terminal, using the M5 threads on the bottom and the rear of the terminals.
- Ⓓ Fixing from above using the 1 or 1-1 input terminal and the blind terminal, using the M5 threads on the front of the terminals.  
An opening for the pipes is made in the plate.
- Ⓔ Fixing on the DIN bar with end-plate 1 or 1-11 and blind and plate, using the push-in bracket code 0227301600.
- Ⓕ Lateral fixing using the blind terminal, and its M4 threads on the side lateral.

**Note: The sole fixing admitted is the one showed.**

## KEY TO CODES – CLEVER MULTIMACH **cm**

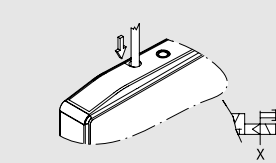
C M VALVE	2 INPUT END-PLATE	I / O FUNCTION	M MANUAL TYPE	16 - W8 - W6 - O4 - L8 - 5 TYPE OF VALVE	M8 - M8 - 15 - 16 FURTHER DETAILS
Clever Multimach	2 End-plate 1-11 3 End-plate 1	<b>O</b> Only valves <b>I/O</b> Input/Output and valves <b>ADD</b> Additional (slave)	<b>M</b> Monostable manual control <b>B</b> Bistable manual control	<b>I</b> n° 2 3/2 NC <b>W</b> n° 2 3/2 NO <b>L</b> 3/2 NO + 3/2 NC <b>V</b> 5/2 monostable <b>K</b> 5/2 bistable <b>O</b> 5/3 monostable <b>5</b> blind end-plate <b>6</b> Passing-intermede <b>7</b> Blind intermediate <b>20</b> Exhaust section <b>4</b> Cartridge 4 <b>6</b> Cartridge 6 <b>8</b> Cartridge 8	<b>M8</b> Module 8 input M8 <b>14</b> Shell 44 pin <b>15</b> Shell 44 + 44 pin <b>16</b> n° 2 brackets for DIN bar

## MANUAL CONTROLS



MONOSTABLE OVERRIDE PORT 2  
servo-assisted

- Press and hold the manual control in position (not necessary for bistable type K valve)
- Release the manual control:
  - The manual control returns to the home position.
  - Valves type I, W, L, V and O reposition.
  - The type K valve remains switched



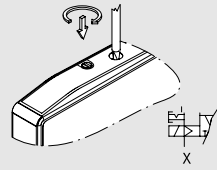
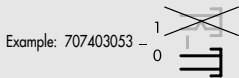
MONOSTABLE OVERRIDE PORT 4  
servo-assisted

- Press and hold the manual control in position (not necessary for bistable type K valve)
- Release the manual control:
  - The manual control returns to the home position.
  - Valves type I, W, L, V and O reposition.
  - The type K valve remains switched

With type V valves, this manual control is not present.

N.B.: The pilot power supply X must be present.

- The reference code for the monostable control ends in 0.

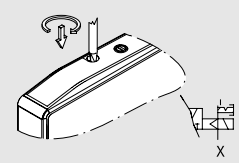
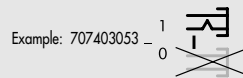


BISTABLE OVERRIDE PORT 2  
servo-assisted

- Press the manual control right in then turn it clockwise 90 degrees and Leave it in position.
- Rotate the manual control 90 degrees anticlockwise, and then release it.
  - The manual control returns to the home position.
  - Valves type I, W, L, V and O reposition.
  - The type K valve remains switched

N.B.: The pilot power supply X must be present.

- Il codice di riferimento per il comando bistabile è quello con finale "1"



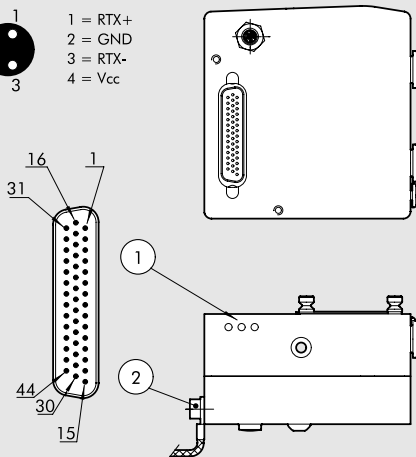
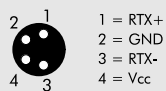
BISTABLE OVERRIDE PORT 4  
servo-assisted

- Press the manual control right in then turn it 90 degrees clockwise and Leave it in position.
- Rotate the manual control 90 degrees anticlockwise, and then release it:
  - The manual control returns to the home position.
  - Valves type I, W, L, V and O reposition.
  - The type K valve remains switched

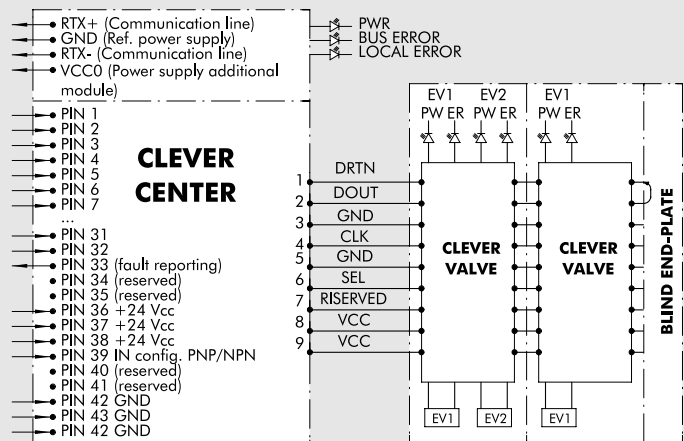
With type V valves, this manual control is not present.

N.B.: The pilot power supply X must be present.

## WIRING DIAGRAM FOR THE CLEVER CENTER TERMINAL - OUTPUTS ONLY

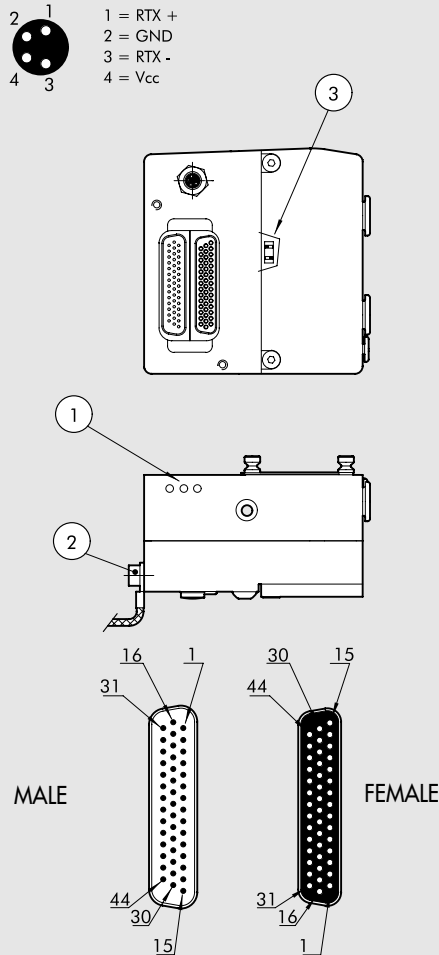


- ① Indicator LED
- ② Grounding



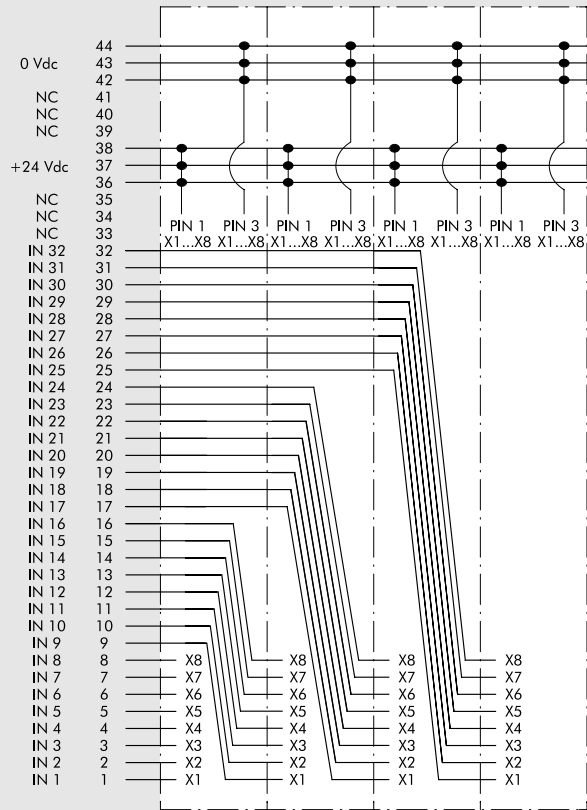


### WIRING DIAGRAM FOR THE CLEVER CENTER TERMINAL - INPUTS AND OUTPUTS

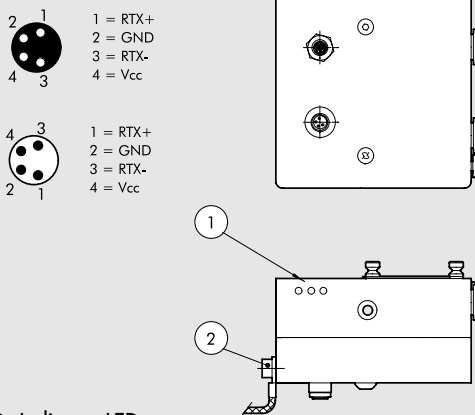


- ① Indicator LED
- ② Grounding
- ③ Input selector type PNP/NPN

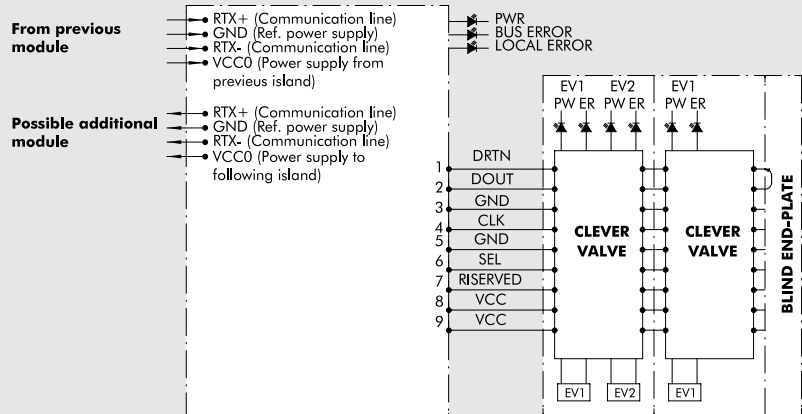
### INPUT CONNECTION DIAGRAM



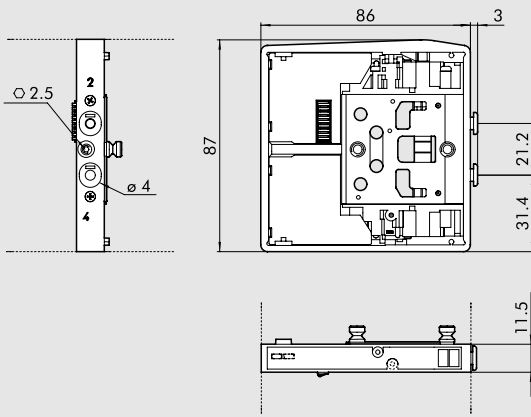
### WIRING DIAGRAM FOR THE ADDITIONAL TERMINAL



- ① Indicator LED
- ② Grounding

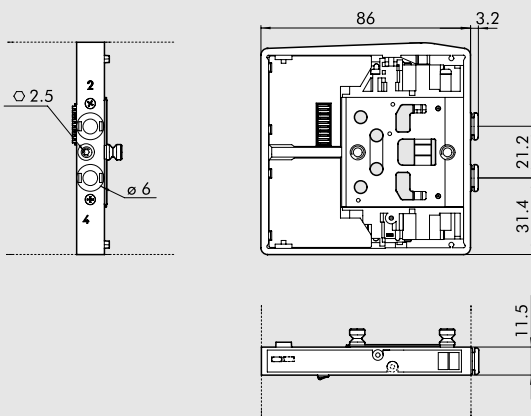


① VALVE DIMENSIONS **CM** Ø 4



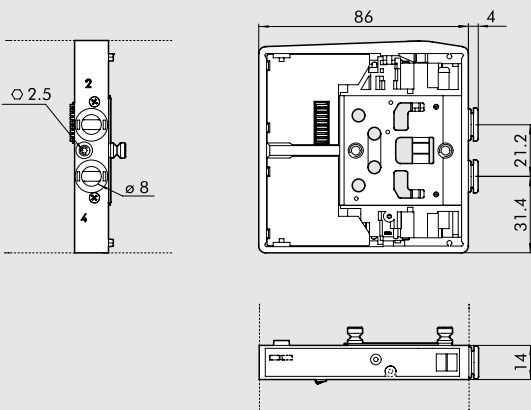
Symbol		Code	Manual control	Weight [g]
<b>CM</b>		<b>7074030530</b>	monostable	130
<b>I4</b>		<b>7074030531</b>	bistable	
<b>CM</b>		<b>7074030630</b>	monostable	130
<b>W4</b>		<b>7074030631</b>	bistable	
<b>CM</b>		<b>7074030730</b>	monostable	130
<b>L4</b>		<b>7074030731</b>	bistable	
<b>CM</b>		<b>7074030130</b>	monostable	115
<b>V4</b>		<b>7074030131</b>	bistable	
<b>CM</b>		<b>7074030110</b>	monostable	130
<b>K4</b>		<b>7074030111</b>	bistable	
<b>CM</b>		<b>7074030210</b>	monostable	130
<b>O4</b>		<b>7074030211</b>	bistable	

① VALVE DIMENSIONS **CM** Ø 6



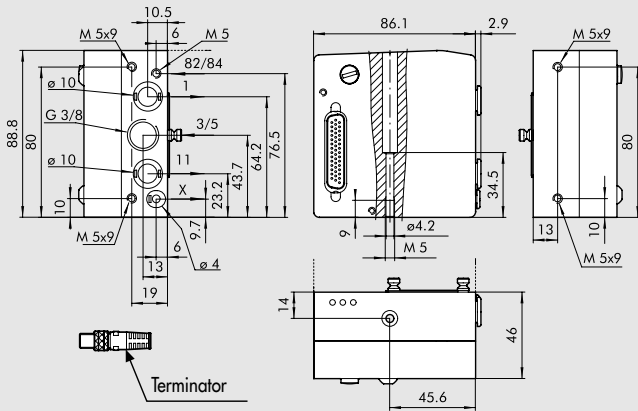
Symbol		Code	Manual control	Weight [g]
<b>CM</b>		<b>7075030530</b>	monostable	130
<b>I6</b>		<b>7075030531</b>	bistable	
<b>CM</b>		<b>7075030630</b>	monostable	130
<b>W6</b>		<b>7075030631</b>	bistable	
<b>CM</b>		<b>7075030730</b>	monostable	130
<b>L6</b>		<b>7075030731</b>	bistable	
<b>CM</b>		<b>7075030130</b>	monostable	115
<b>V6</b>		<b>7075030131</b>	bistable	
<b>CM</b>		<b>7075030110</b>	monostable	130
<b>K6</b>		<b>7075030111</b>	bistable	
<b>CM</b>		<b>7075030210</b>	monostable	130
<b>O6</b>		<b>7075030211</b>	bistable	

① VALVE DIMENSIONS **CM** Ø 8



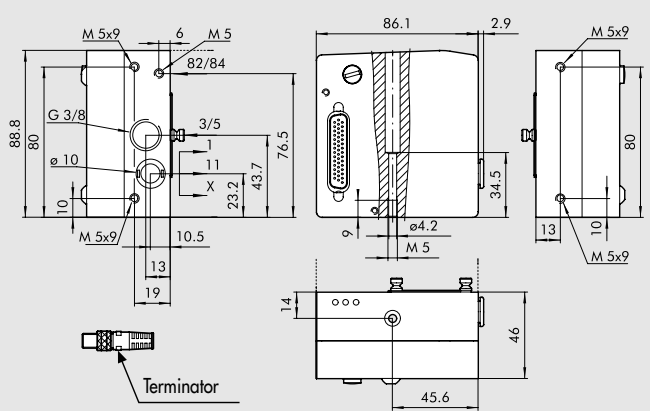
Symbol		Code	Manual control	Weight [g]
<b>CM</b>		<b>7076030530</b>	monostable	140
<b>I8</b>		<b>7076030531</b>	bistable	
<b>CM</b>		<b>7076030630</b>	monostable	140
<b>W8</b>		<b>7076030631</b>	bistable	
<b>CM</b>		<b>7076030730</b>	monostable	140
<b>L8</b>		<b>7076030731</b>	bistable	
<b>CM</b>		<b>7076030130</b>	monostable	130
<b>V8</b>		<b>7076030131</b>	bistable	
<b>CM</b>		<b>7076030110</b>	monostable	140
<b>K8</b>		<b>7076030111</b>	bistable	
<b>CM</b>		<b>7076030210</b>	monostable	140
<b>O8</b>		<b>7076030211</b>	bistable	

### 2 - O OUTPUT END-PLATE 1-11



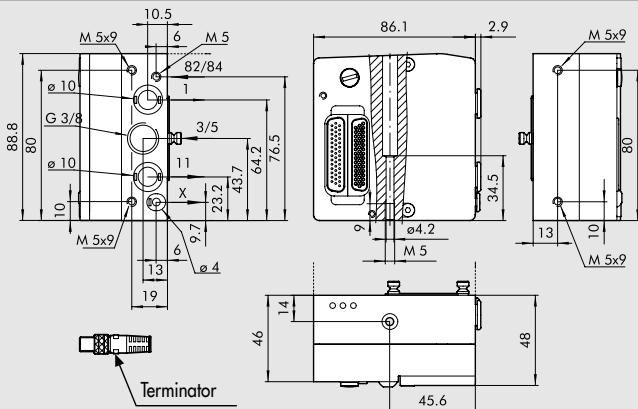
Code	Description	Weight [g]
0227302200	End-plate CM kit 1-11 OUT	722
This end-plate allows for supplies to be differentiated: port 2, port 4 and pilot supply		
Note: terminator included		

### 3 - O OUTPUT END-PLATE 1



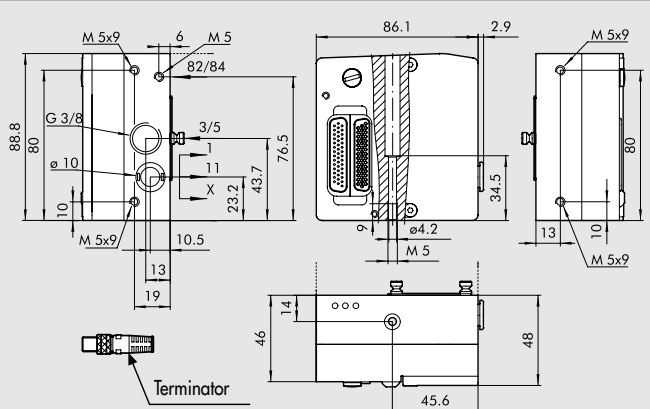
Code	Description	Weight [g]
0227302201	End-plate CM kit 1 OUT	722
Note: terminator included		

### 2 - I/O INPUT END-PLATE 1-11



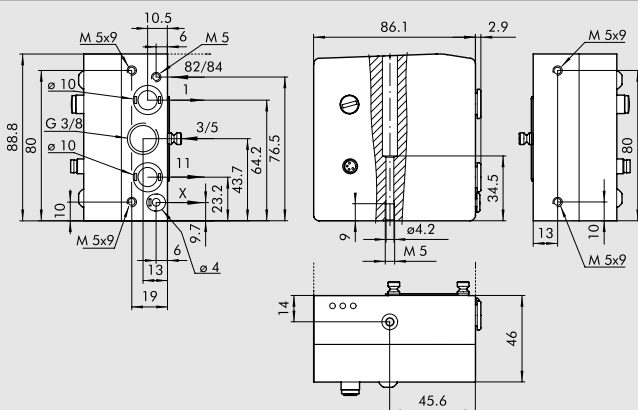
Code	Description	Weight [g]
0227302223	End-plate CM kit 1-11 IN	722
This end-plate allows for supplies to be differentiated: port 2, port 4 and pilot supply		
Note: terminator included		

### 3 - I/O INPUT END-PLATE 1



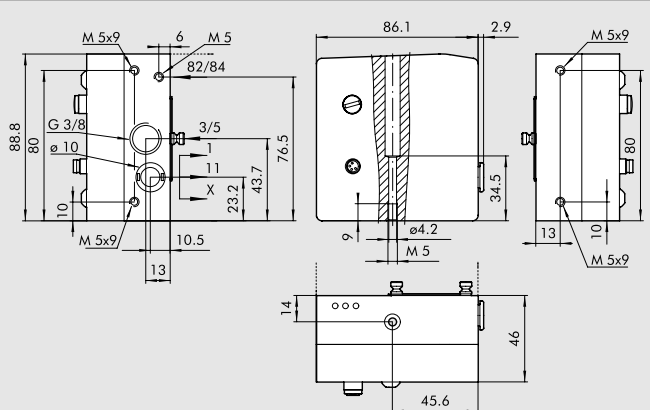
Code	Description	Weight [g]
0227302225	End-plate CM kit 1 IN	722
Note: terminator included		

### 2 - ADD ADDITIONAL END-PLATE 1-11



Code	Description	Weight [g]
0227302224	End-plate CM kit 1-11 ADD	770
This end-plate allows for supplies to be differentiated: port 2, port 4 and pilot supply		

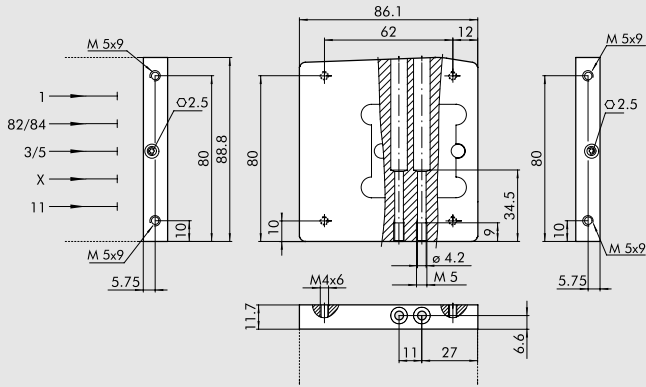
### 3 - ADD ADDITIONAL END-PLATE 1



Code	Description	Weight [g]
0227302226	End-plate CM kit 1 ADD	770

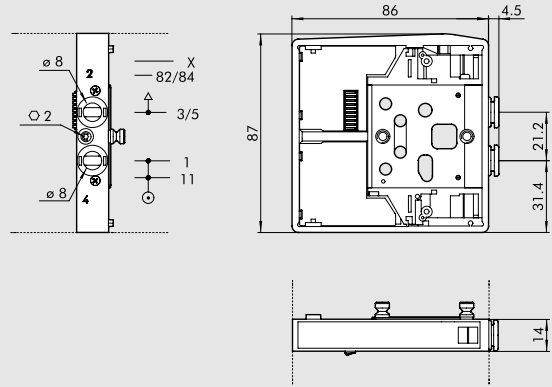


5 BLIND EN-PLATE



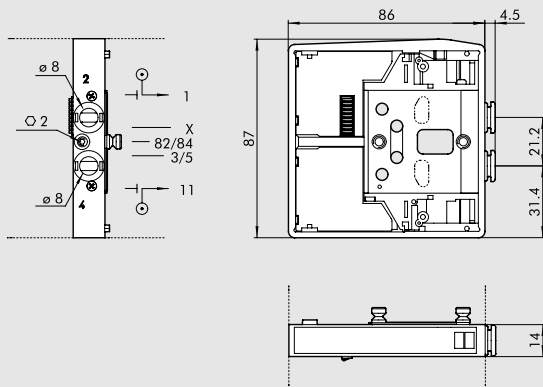
Code	Description	Weight [g]
0227302500	Blind en-plate CM	230

6 INTERMEDIATE THROUGH



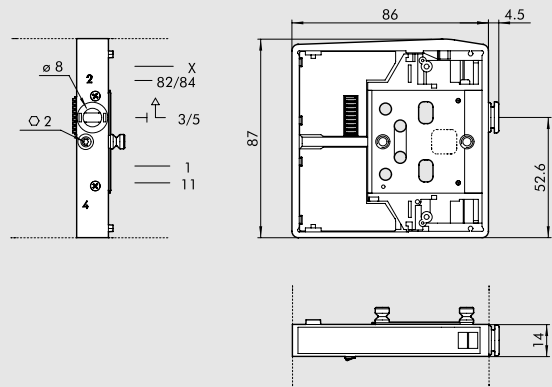
Code	Description	Weight [g]
0227302301	Intermediate through CM	120

7 INTERMEDIATE BLIND



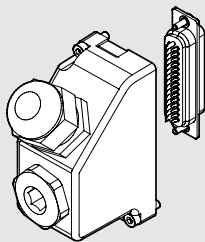
Code	Description	Weight [g]
0227302302	Intermediate blind CM	117

20 INTERMEDIATE EXHAUST SWITCH



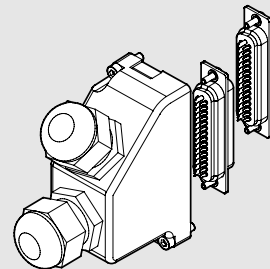
Code	Description	Weight [g]
0227302303	Intermediate exhaust switch CM	125

14 44-PIN CUP CONNECTOR KIT IP 65



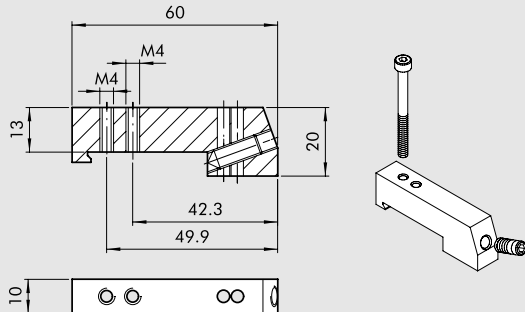
Code	Description	Weight [g]
0226180108	44-pin cup connector kit ip 65	60

15 44+44 PIN CUP CONNECTOR KIT IP 65 FOR I/O



Code	Description	Weight [g]
0226180109	44+44 pin cup connector kit ip 65 for I/O	80

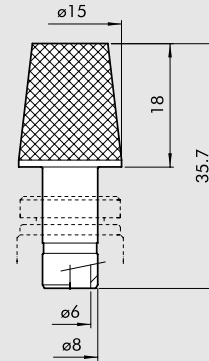
### 16 CONNECTION BRACKETS ON DIN BAR



Code	Description	Weight [g]
0227301600	Connection brackets on din bar HDM/CM	30

Supplied complete with one M4x45 screws and one grub screw  
Individually packed

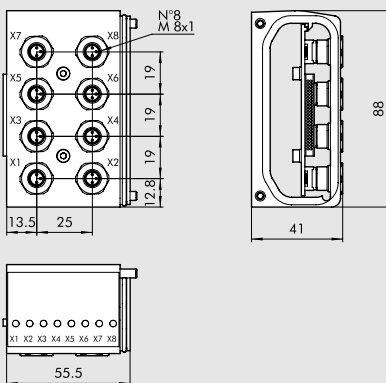
### SILENCER FOR FITTING, Ø 8



Code	Description	Weight [g]
W0970530084	Silencer for fitting, Ø 8	15

At the 3/5-exhaust port of the intermediate through reference 6  
and the exhaust switch reference 20

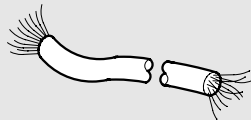
### 8 - M8 M8 8-INPUT/OUTPUT MODULE



Code	Description	Weight [g]
0227302900	M8 8-input module CM	273

<b>INPUT PNP</b> 1 = + 24 VDC 3 = OVDC 4 = INPUT		<b>INPUT NPN</b> 1 = + 24 VDC 3 = OVDC 4 = INPUT	
<b>OUTPUT PNP</b> 1 = + 24 VDC 3 = OVDC 4 = INPUT		<b>OUTPUT NPN</b> 1 = + 24 VDC 3 = OVDC 4 = INPUT	
<b>DIP SWITCH</b>		<b>DIP SWITCH</b>	
<b>OUTPUT ANALOGIC</b>		<b>INPUT ANALOGIC</b>	

### CABLES



Code	Description	Weight [g/m]
0226107201	10-wire cable	86
0226107101	19-wire cable	122
0226107102	25-wire cable	130
0226107103	44-wire cable	160

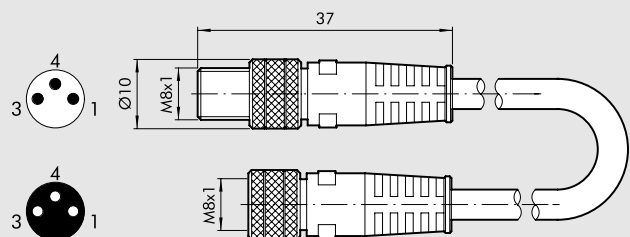
Specify the number of metres desired

### M8 PLUG



Code	Description
0240009039	Plug M8

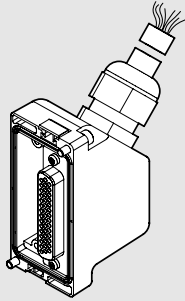
### M8 INPUT CONNECTOR



Code	Description
0240009009	M8-M8 straight connector with 3 m cable

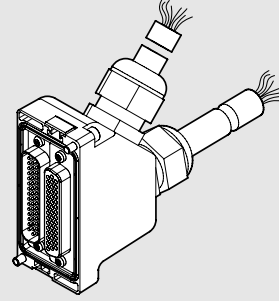
Pin	Cable colour
1	Brown
3	Blue
4	Black

### 44-PIN PRE-WIRED CUP CONNECTOR



Code	Description	Weight [g]
0226950500	Connet. IP 65 + cable 44-wire L = 5 m	740

### 44+44-PIN PRE-WIRED CUP CONNECTOR



Code	Description	Weight [g]
0226980500	Connet. IP 65 + cable 44 + 44-wire L = 5 m	1550

### WIRING DIAGRAM FOR THE 44-PIN CUP CONNECTOR KIT

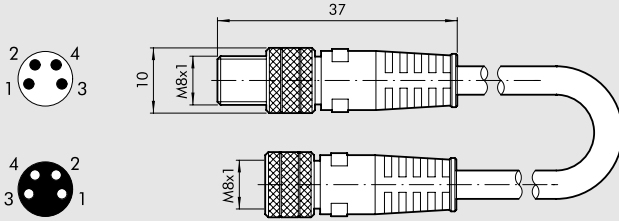
#### 44 PIN FEMALE PRE-WIRED FOR VALVE

Position of electrical contact	Corresponding wire colour	Function
1	white	Out 1
2	brown	Out 2
3	green	Out 3
4	yellow	Out 4
5	gray	Out 5
6	pink	Out 6
7	blue	Out 7
8	violet	Out 8
9	gray/pink	Out 9
10	red/blue	Out 10
11	white/green	Out 11
12	brown/green	Out 12
13	white/yellow	Out 13
14	yellow/brown	Out 14
15	white/gray	Out 15
16	gray/brown	Out 16
17	white/pink	Out 17
18	pink/brown	Out 18
19	white/blue	Out 19
20	brown/blue	Out 20
21	white/red	Out 21
22	brown/red	Out 22
23	white/black	Out 23
24	brown/black	Out 24
25	gray/green	Out 25
26	yellow/gray	Out 26
27	pink/green	Out 27
28	yellow/pink	Out 28
29	green/blue	Out 29
30	yellow/blue	Out 30
31	green/red	Out 31
32	yellow/red	Out 32
33	green/black	Fault reporting
34	gray/blue	NC
35	gray/red	NC
36	red	+24Vdc
37	red	+24Vdc
38	red	+24Vdc
39	yellow/black	Config. PNP/NPN
40	pink/red	NC
41	pink/blue	NC
42	black	0 Vdc
43	black	0 Vdc
44	black	0 Vdc

#### 44 PIN MALE PRE-WIRED FOR INPUT/OUTPUT

Position of electrical contact	Corresponding wire colour	Function
1	white	In 1
2	brown	In 2
3	green	In 3
4	yellow	In 4
5	gray	In 5
6	pink	In 6
7	blue	In 7
8	violet	In 8
9	gray/pink	In 9
10	red/blue	In 10
11	white/green	In 11
12	brown/green	In 12
13	white/yellow	In 13
14	yellow/brown	In 14
15	white/gray	In 15
16	gray/brown	In 16
17	white/pink	In 17
18	pink/brown	In 18
19	white/blue	In 19
20	brown/blue	In 20
21	white/red	In 21
22	brown/red	In 22
23	white/black	In 23
24	brown/black	In 24
25	gray/green	In 25
26	yellow/gray	In 26
27	pink/green	In 27
28	yellow/pink	In 28
29	green/blue	In 29
30	yellow/blue	In 30
31	green/red	In 31
32	yellow/red	In 32
33	green/black	NC
34	gray/blue	NC
35	gray/red	NC
36	red	+24Vdc
37	red	+24Vdc
38	red	+24Vdc
39	yellow/black	NC
40	pink/red	NC
41	pink/blue	NC
42	black	0 Vdc
43	black	0 Vdc
44	black	0 Vdc

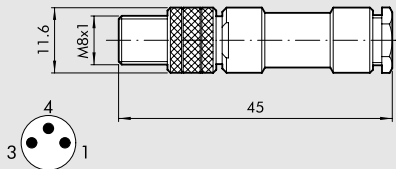
### 23 M8 PREWIRED CONNECTOR FOR VALVE ISLANDS CONNECTIONS



Code	Description
0240005003	M8 prewired connector for valve islands conn. CM L = 5 m
0240005005	M8 prewired connector for valve islands conn. CM L = 1 m
0240005006	M8 prewired connector for valve islands conn. CM L = 3 m
0240005008	M8 prewired connector for valve islands conn. CM L = 10 m

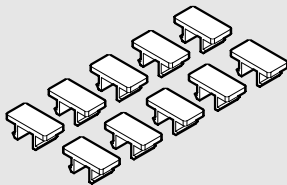
Pin	Cable colour
1	Brown
2	White
3	Blue
4	Black

### M8 INPUT CONNECTOR



Code	Description
0240009010	M8 3-pin straight connector

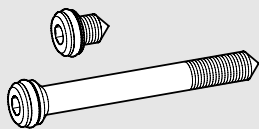
### IDENTIFICATION PLATE KIT



Code	Description
0226107000	Identification plate kit

Comes in 10-pc. packs

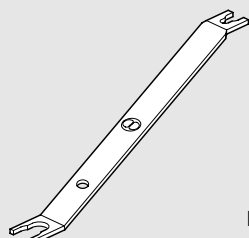
### GRUB SCREW KIT



Code	Description
0227301800	Grub screw for Multimach HDM/CM

Comes 1 + 1 packs

### R17 - DISASSEMBLY KEY



Length = 140 mm

Code	Description	Ø Tube
2L17001	RL17	from Ø 3 to Ø 10

NOTES

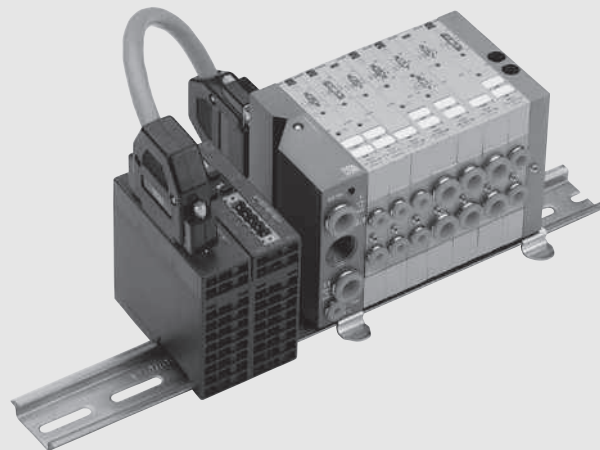
DISTRIBUTORS

	● <b>HDM + AS-Interface</b>	SEE	PAGE 2-144
	● <b>HDM + PROFIBUS-DP</b>	SEE	PAGE 2-149
	● <b>HDM + CANopen</b>	SEE	PAGE 2-153
	● <b>HDM + B&amp;R</b>	SEE	PAGE 2-159
	● <b>PROFIBUS-DP/CANopen/DEVICE NET FOR MULTIMACH AND BASES FOR PLT-10 MULTIPLE CONNECTION</b>		PAGE 2-190
	● <b>MULTIMACH + B&amp;R</b>	SEE	PAGE 2-174
	● <b>INPUT/OUTPUT PROFIBUS-DP IP67 M12</b>		PAGE 2-195
	● <b>INPUT PROFIBUS-DP IP67 M8</b>		PAGE 2-199

# PROFIBUS-DP/CANopen/DEVICE-NET FOR MULTIMACH AND BASES FOR PLT-10 MULTIPLE CONNECTION

The expandable modular slaves for Multimach and bases for PLT-10 multiple connection follow the same application philosophy of total modularity common to the Multimach system. With full freedom, the slave can be configured by fitting the various modules offered:

- Slaves are available for 3 alternate bus systems: PROFIBUS-DP, CAN-OPEN, DEVICE NET. Each of these can manage 24 outputs.
- The slaves are mounted on a 35 mm DIN bar, next to the Multimach unit.
- The electric connection between the slave and the unit is simply obtained with a kit comprised of pre-wired, 25-pin Sub-D connectors with a 25-core cable.
- Other modules – up to a maximum of 15 (31 for DeviceNet) can be fitted alongside the slaves to manage other inputs and outputs. These modules are electrically connected together, using a small plate-connector (housed under the modules, inside the DIN bar).
- There are 4 other types of modules available: for 8 digital inputs; for 8 digital outputs; for 4 analogue inputs and for 4 analogue outputs.
- With this system, a maximum of 144 Inputs/Outputs can be managed with just one slave!



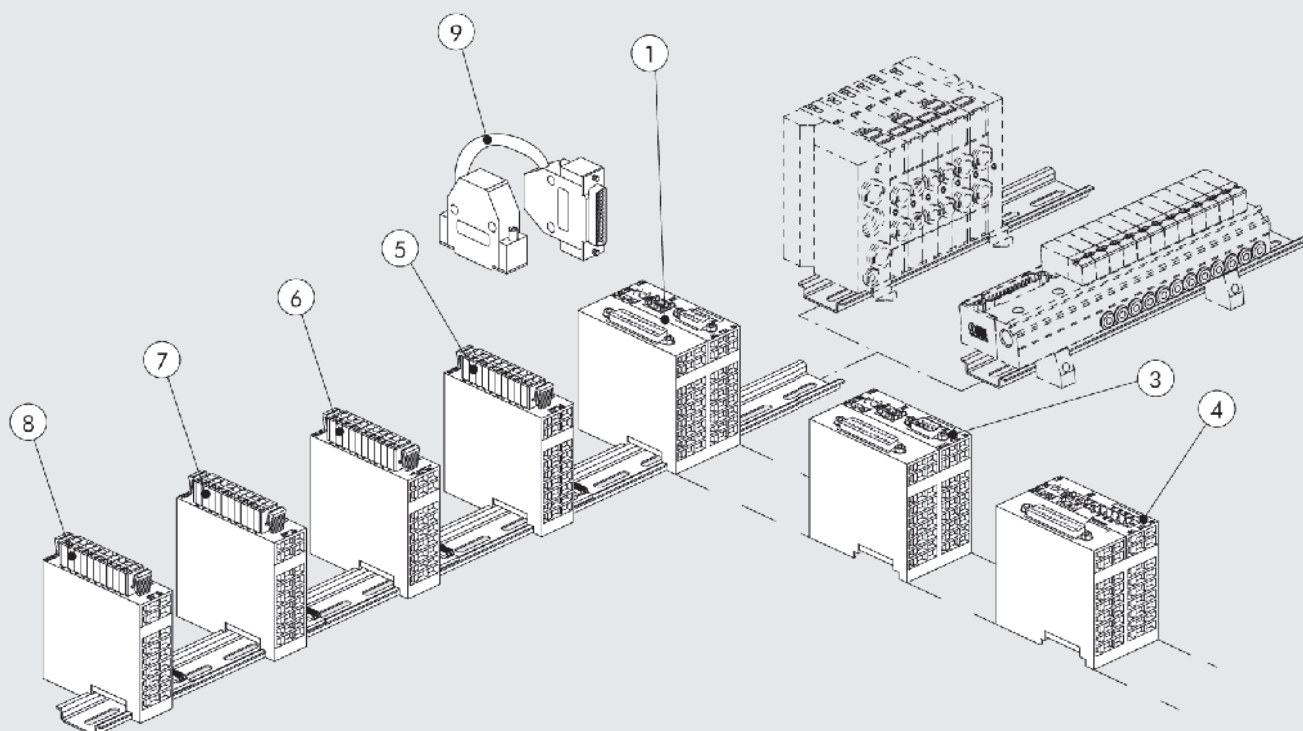
DISTRIBUTORS

PROFIBUS-DP/CANopen/DEVICE-NET FOR MULTIMACH AND BASES FOR PLT-10 MULTIPLE CONNECTION

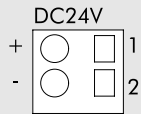
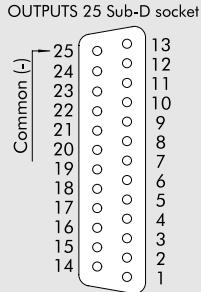
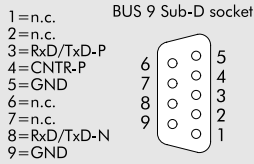
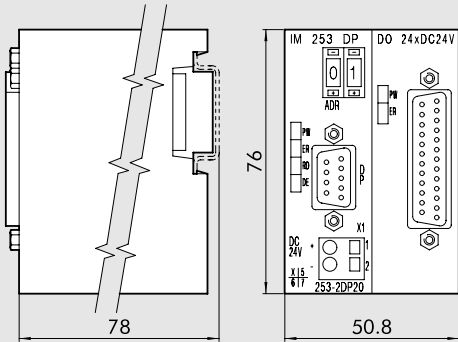
## TECHNICAL DATA

Supply voltage	24 VDC + 20% - 15%
EMC and ESD test	in compliance with IEC 801-2/IEC 801/4 (up to level 3: 8kV/2kV)
Resistance to vibration and impacts test	according to IEC68-2-6/IEC 68-2-27 (1g/12g)
Operating temperature range	0 to 60 °C
Storage temperature	- 40 to + 85 °C
Admitted relative humidity	95%
Assembly	35 mm DIN bar

## THE MULTIMACH WORLD: SLAVES, INPUTS AND OUTPUTS



### ① SLAVE PROFIBUS-DP 24 OUTPUT



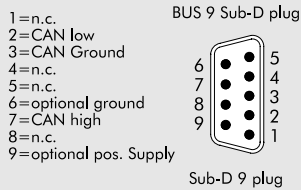
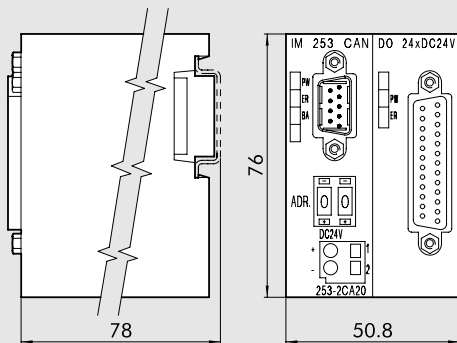
**Code**  
0240004002

**Slave kit**  
SLAVE PROFIBUS+DO24xDC24V

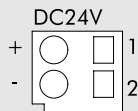
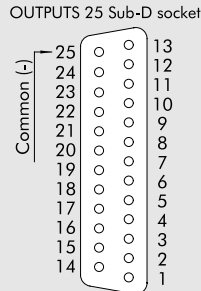
**Technical data**

PROFIBUS-Interface	RS485: 9 pins SubD
Transmission speed	9.6 kBaud up to 12 Mbaud
Max number of modules which can be connected	31 (depending on the maximum current)
Output interface	25 pins SubD
Number of outputs	24
Output data	4 Byte (3used +1)
Nominal supply voltage	24 VDC
Maximum current for each output	1A, max total 4A
Absorption 24V (out excluded)	800 mA

### ③ CAN-OPEN SLAVE, 24 OUTPUTS



Sub-D 9 plug



**Code**  
0240004022

**Slave kit**  
SLAVE CAN-OPEN+DO24xDC24V

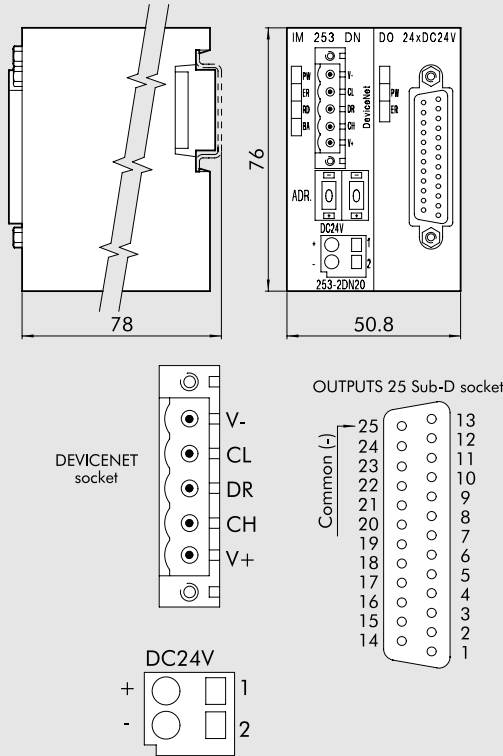
**Technical data**

CANopen-Interface	9 pins SubD
Transmission speed	10 k Baud up to 1 Mbaud
Max number of modules which can be connected	31 (depending on the maximum current)
Output interface	25 pins SubD
Number of outputs	24
Nominal supply voltage	24 VDC
Maximum current for each output	1A, max total 4A
Absorption 24 V (out excluded)	800 mA





④ DEVICE NET SLAVE, 24 OUTPUTS



**Code**  
0240004032

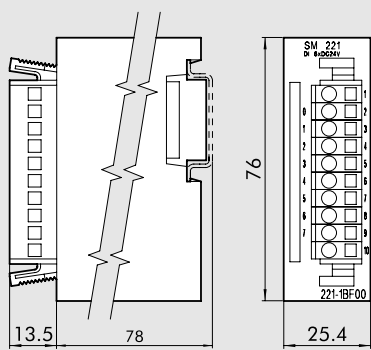
**Slave kit**  
SLAVE DEVICE-NET+DO24xDC24V

**Technical data**

DEVICE-NET-Interface	DeviceNet Open Style
Transmission speed	125, 250, 500 k Baud
Max number of modules which can be connected	31 (depending on the maximum current)
Output interface	25 pins SubD
Number of outputs	24
Nominal supply voltage	24 VDC
Maximum current for each output	1A, max total 4A
Absorption 24 V (out excluded)	800 mA

DeviceNet.

⑤ 8-DIGITAL INPUT MODULE



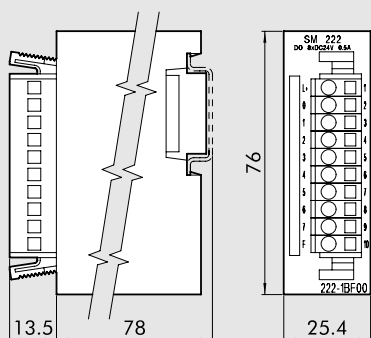
**Code**  
0240004053

**Description**  
DI 8XDC24V unit

**Technical data**

Nominal input voltage	24 VDC
Number of inputs	8
Input data	1 Byte
Input voltage at "1"	15...28.8V
Output voltage at "0"	0...5V
Response time	3 ms
Internal Bus voltage	5V
Absorption 5V BUS	20 mA

⑥ 8-DIGITAL OUTPUT MODULE



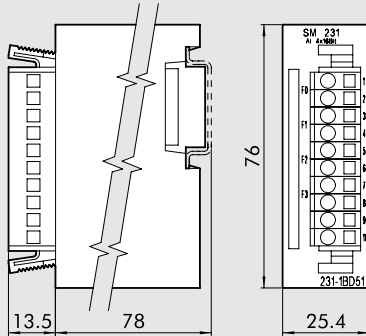
**Code**  
0240004051

**Description**  
DO 8XDC24V 0.5A unit

**Technical data**

Nominal voltage	24 VDC
Number of outputs	8
Output data	1 Byte
Absorption for each channel	1A (max 8A)
Internal Bus voltage	5V
Absorption 5V BUS	70 mA

### 7 4-ANALOG INPUT MODULE



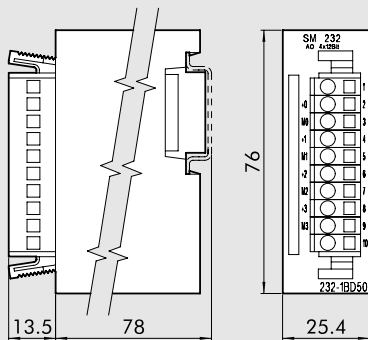
**Code**  
0240004054

**Description**  
AL 4X16 BIT unit

**Technical data**

Number of Inputs 4  
 Input data 8 Byte  
 Input range Voltage 0 to 50 mV, 0...10V,  $\pm 4$  mV,  $\pm 4$ V,  $\pm 10$ V,  
 Current 0/4...20 mA, +/-20 mA  
 Temperature Pt100, Pt1000, Ni100, Ni1000  
 Resistance 60  $\Omega$ , 600  $\Omega$ , 3000  $\Omega$ , 16000  $\Omega$   
 Thermoelements J, K, N, R, T, S  
 Resolution 12/16 Bit  
 Input resistance 20M  $\Omega$  voltage, 85  $\Omega$  current  
 Time 5...70 ms  
 Internal Bus voltage 5 V  
 Absorption 5V BUS 280 mA

### 8 4-ANALOG OUTPUT MODULE



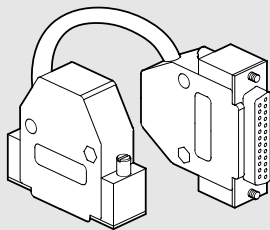
**Code**  
0240004055

**Description**  
AO 4X12 BIT unit

**Technical data**

Number of outputs 4  
 Output data 8 Byte  
 Output range Voltage 0...10V,  $\pm 10$ V, 1...5V  
 Current 0...20 mA, 4...20 mA,  $\pm 20$  mA  
 Resolution 12 BIT  
 Output resistance Minimum voltage 1 k $\Omega$ , Maximum current 500  $\Omega$   
 Conversion time 0.45 ms  
 Internal Bus voltage 5 V  
 Absorption 5V BUS 75 mA

### 9 SLAVE/MULTIMACH CONNECTION KIT

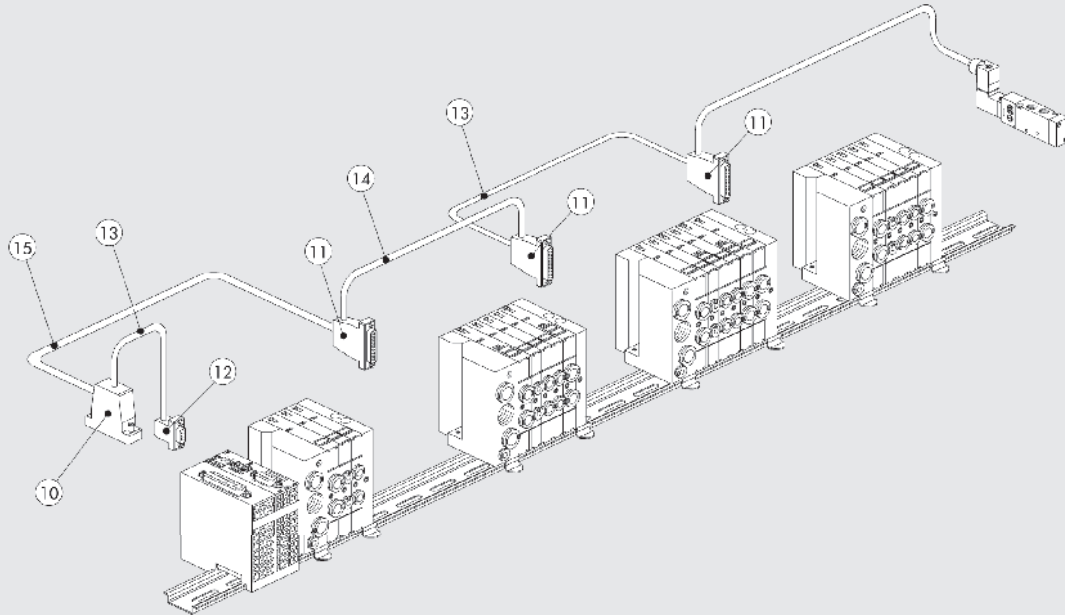


**Code**  
0226940000

**Description**  
Slave/Multimach connection kit

#### NOTES

CONNECTING ONE SLAVE WITH SEVERAL VALVE UNITS

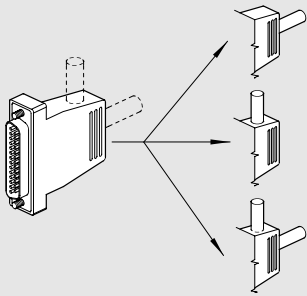


In order to make the best use of the available slave outputs, they can be distributed over several valve units using double-output connectors. The above drawing refers to one possible configuration, but the user can combine cables and connectors as required.

The connector ⑩ mounted on the slave is used to distribute the outputs on two cables.

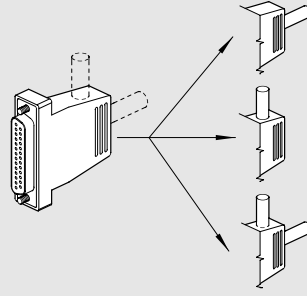
A cable for a certain number of outputs goes to connectors ⑪ and ⑫. Some wires are soldered to the connector pins and the unused ones can be soldered to the wires of another cable from the second output carrying signals to the next unit.

⑩ 25-PIN PLUG CONNECTOR KIT, DOUBLE OUTPUT FOR SLAVE



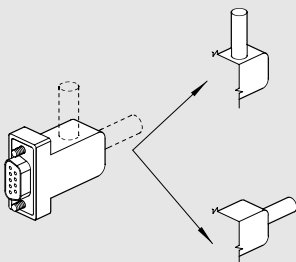
Code	Description
0226180105	25-pin plug connector for slave
Complete with 2 cable clamps for wiring 2 cables	

⑪ 25-PIN PLUG CONNECTOR KIT, DOUBLE OUTPUT FOR MULTIMACH AND PLT-10



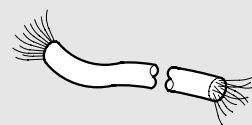
Code	Description
0226180106	25-wire connector – double output kit
Complete with 2 cable clamps for wiring 2 cables	

⑫ 9-PIN PLUG CONNECTOR, STRAIGHT OR 90° OUTPUT FOR MULTIMACH



Code	Description
0226180102	9-pin plug connector

⑬ ⑭ ⑮ CABLES



Code	Description
0226107201	10-wire cable
0226107101	19-wire cable
0226107102	25-wire cable
Indicate the desired length in metres	

# INPUT/OUTPUT PROFIBUS-DP IP 67 M12



The Profibus DP IP 67 is a robust metallic slave that can be connected flexibly using M12 connectors to outputs and solenoid valves and/or inputs.

Each connector can be used freely for:

- 1 Output + 1 diagnostic Input
- 2 Outputs
- 1 Output + 1 Input
- 2 Inputs
- 1 Input + 1 diagnostic Input

Each slave can handle a total of 16 signals, each according to one of the above combinations.

Diagnostics provides information on the type and location of the error of each channel with:

- de-activation of the coupling point "involved" and not the complete module;
- signal to the controller;
- display with local LEDs.

One single slave or an island of solenoid valves complete with slave and connectors can be ordered. The catalogue shows the 1/8" and 1/4" valve islands in the 70 series and the ISO5599 valve islands, size 1 and size 2.



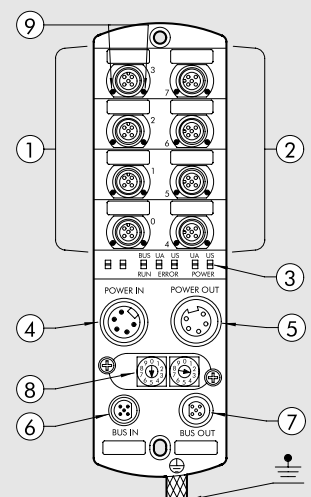
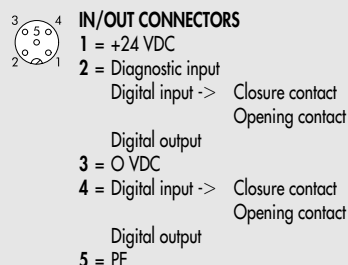
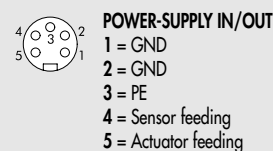
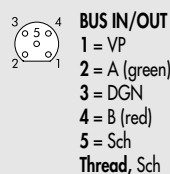
DISTRIBUTORS

INPUT/OUTPUT PROFIBUS-DP IP 67 M12

TECHNICAL DATA	
Application	8 inputs or outputs + 8 inputs or outputs or diagnostic
Supply voltage	24 VDC (18V.....30,2V), according to EN 61131-2
Degree of protection	IP67
Temperature	0 to 55°C (32 to 131° F)
<b>Field Bus Data</b>	Transmission protocol Profibus-DP EN 50170
	Transmission mode synchronous or Freeze-Mode
	Transmission speed 12MBit/s
	Addresses rotating switches BCD, 0.....99
<b>Inputs Output Technical Data</b>	Type pnp proximity sensors or EN 61131-2 compatible mechanical limit switch
	Supply 24 VDC (18-30.2V) to EN 61131-2; ≥ 200 mA for M12 coupling point.
	Indicator One LED for each
<b>Output Technical Data</b>	Voltage 24 VDC (18-30.2V) output, to EN 61131-2; cumulative I ≥ 9A
	Maximum current for each actuator 1.6 A, system protected by fuse in case of short-circuit
	Maximum current contemporary 10W
	Maximum signal exchange frequency 20 Hz Ohm, 20 Hz induction
	Indicator LED One LED for each output
<b>Autotest</b>	Field bus RUN-LED
	Insufficient voltage signal LED + alarm signal to master
	Short-circuit sensor INPUT or OUTPUTS Red LED for channel on M12 coupling point
<b>Autotest</b>	Desina® (pin 2) PIN 2 diagnostic with red LED for M12 coupling point and signal to master
<b>N.B.:</b> for the disposition of the contact, please look at the connectors at the following pages	

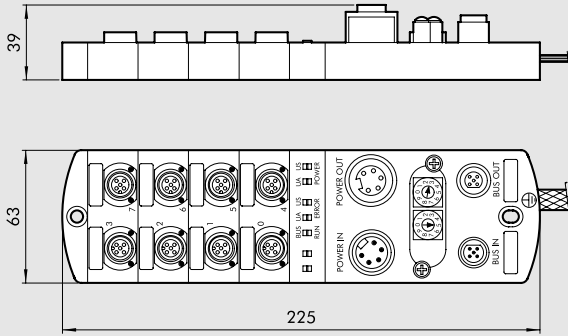
## COMPONENTS

- ① ② IN-OUT diagnostic connectors
- ③ Led Power, Error, Run
- ④ IN feeding connector
- ⑤ OUT feeding connector
- ⑥ IN BUS connector
- ⑦ OUT BUS connector
- ⑧ Rotating switches for addressing
- ⑨ Diagnostic LED for single channel

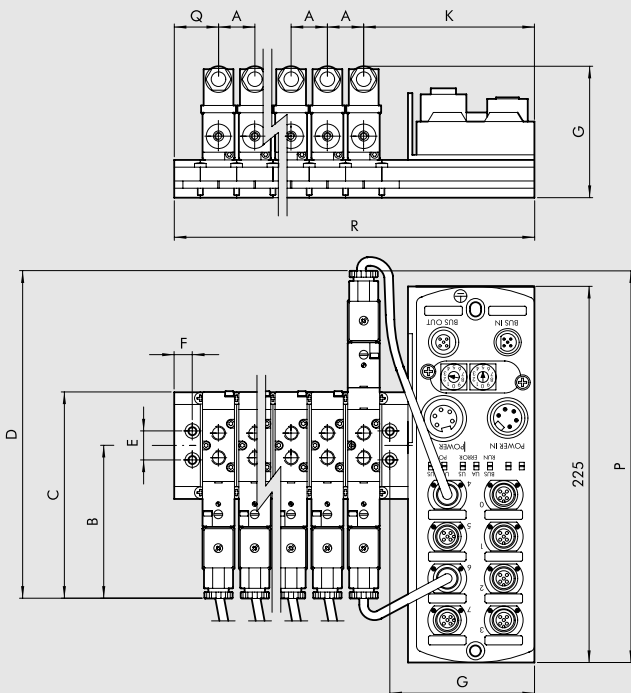


**SLAVE IP67**

**Code** 0240008001 **Description** 8 I/O + 8 I/O/autotest Profibus



**IP67 SLAVE, COMPLETE WITH SERIES 70 VALVES**



A	B	C	D	E	F	G	K	P	Q	R
<b>1/8" Manifold</b>										
25	105	142	225	20	12.5	85.8	103.5	230	305	Q + K + (A x *n <sup>2</sup> -1)
<b>1/8" Multiple</b>										
25	105	142	225	20	7	98	115	230	24	Q + K + (A x *n <sup>2</sup> -1)
<b>1/4" Manifold</b>										
27	112	156	239	25	10	85.5	104.5	237	31.5	Q + K + (A x *n <sup>2</sup> -1)
<b>1/4" Multiple</b>										
27	112	156	239	25	7	98	118	237	27	Q + K + (A x *n <sup>2</sup> -1)

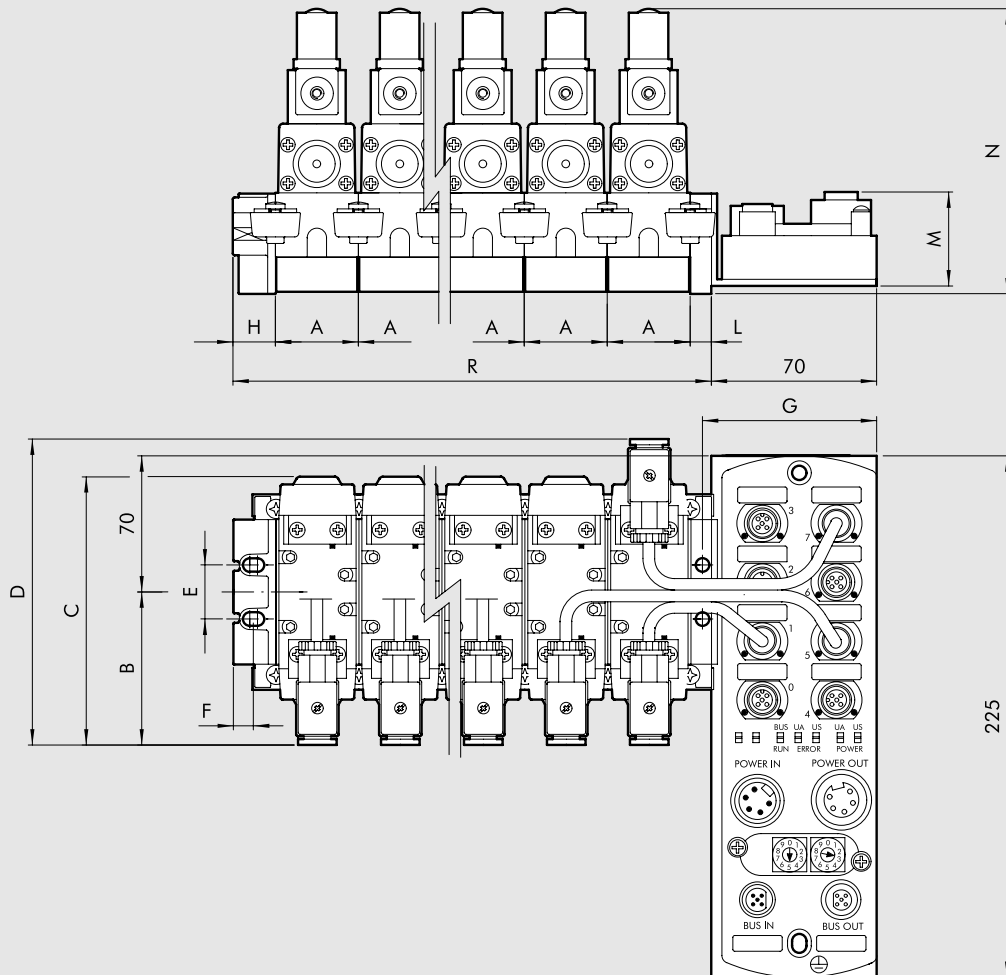
\*n = number of mounted valves

N.B.: the unit is supplied complete with cables for valves

**KEY TO CODES**

B U S	P	V	B	O	0 2	D D
	P Profibus	V IP67	B 70 1/8" C 70 1/4"	O Multiple base	02 2 positions 04 4 positions 06 6 positions 08 8 positions 10 10 positions 12 12 positions 14 14 positions 16 16 positions	D SOV 23 SOS NO - SOV 33 SOS NO H SOV 23 SOS NC - SOV 33 SOS NC Z SOV 23 SOB 00 - SOV 33 SOB 00 M SOV 25 SOS 0 - SOV 35 SOS 00 J SOV 25 SOB 00 - SOV 35 SOB 00 G SOV 26 SOS CC - SOV 36 SOS CC E SOV 26 SOS OC - SOV 36 SOS OC B SOV 26 SOS PC - SOV 36 SOS PC A Blanking plate

**IP67 SLAVE, COMPLETE WITH ISO VALVES**



	A	B	C	D	E	F	G	H	L	M	N	P	R
ISO1	43	80	140	158	28	10.5	76.4	22	11	47	150	230	H + L + (A x *n°)
ISO2	56	90	165	180	35	12.5	77.5	26	14	61	178	240	H + L + (A x *n°)

\*n = number of mounted valves

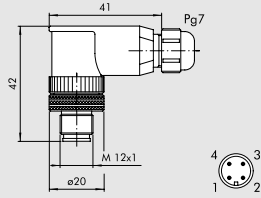
N.B.: the unit is supplied complete with cables for valves

**KEY TO CODES**

B U S	P	V	D	I	0 2	M M
	P Profibus	V IP67	D ISO1 E ISO2	I Manifold base side	02 2 positions 04 4 positions 06 6 positions 08 8 positions 10 10 positions 12 12 positions 14 14 positions 16 16 positions	M ISV 55 SOS 00 - ISV 65 SOS 00 J ISV 55 SOB 00 - ISV 65 SOB 00 G ISV 56 SOS CC - ISV 66 SOS CC E ISV 56 SOS OC - ISV 66 SOS OC B ISV 56 SOS PC - ISV 66 SOS PC A Blanking plate

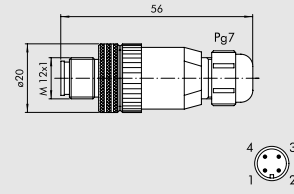
# ACCESSORIES

## 90° ELBOW WITHOUT CABLE



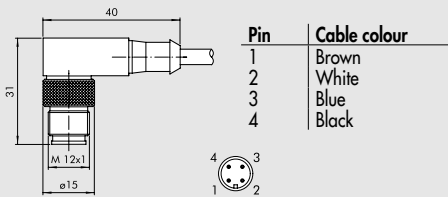
Code	Description
0240009001	90° Elbow without cable

## STRAIGHT FITTING WITHOUT CABLE



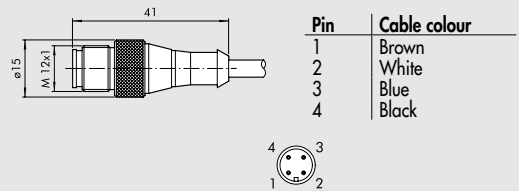
Code	Description
0240009021	Straight fitting without cable

## 90° ELBOW WITH CABLE



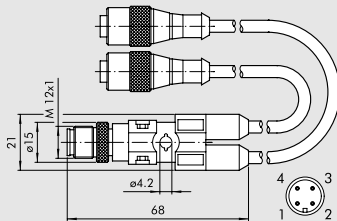
Code	Description
0240009022	90° curve with cable 1.5 m
0240009023	90° curve with cable 5 m

## STRAIGHT FITTING WITH CABLE



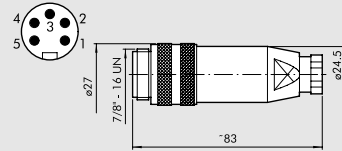
Code	Description
0240009002	Straight, with 1.5 m cable
0240009003	Straight, with 5 m cable

## Y-DISTRIBUTOR WITH CABLE AND M12 STRAIGHT CONNECTORS



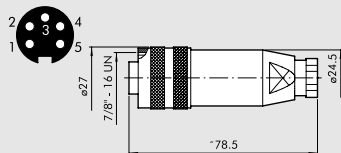
Code	Description
0240009031	Y-Distributor cable 0.6 m
0240009032	Y-Distributor cable 1.5 m

## MALE CONNECTOR FOR FEEDING "IN"



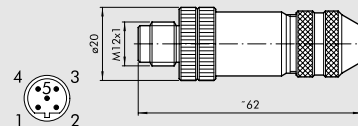
Code	Description
0240009033	Male connector "IN" feeding

## FEMALE CONNECTOR FOR FEEDING "OUT"



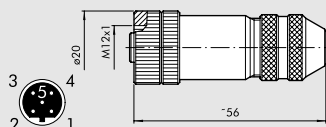
Code	Description
0240009034	Female connector "OUT" feeding

## M12 MALE CONNECTOR OUT-BUS



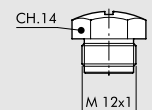
Code	Description
0240009035	M12 male connector B coding

## M12 FEMALE CONNECTOR IN-BUS



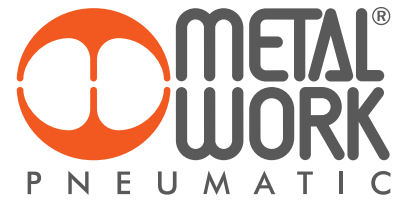
Code	Description
0240009036	M12 female connector B coding

## PLUG M12



Code	Description
0240009040	M12 plug

# INPUT PROFIBUS-DP IP67 M8



The Profibus DP "COMPACT" input module is a sturdy and compact IP67 slave that can be used for connecting up to 8 inputs. A series of diagnostic functions provides information on the state of operation through lights and signals to the controller.



DISTRIBUTORS

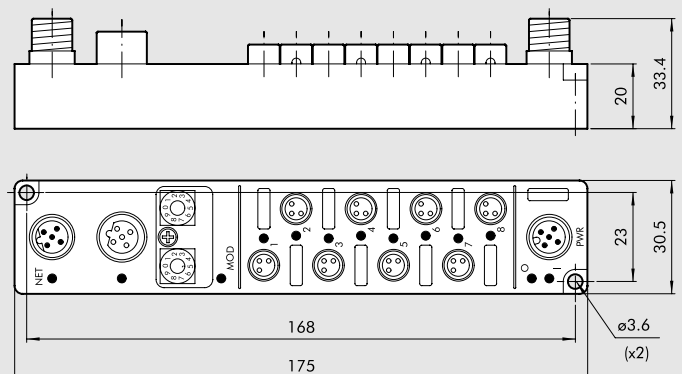
INPUT PROFIBUS-DP IP67 M8

## TECHNICAL DATA

Application	8 PNP inputs
Power supply	24 VDC (13-28 V)
Index of protection	IP67
Temperature range	-20 to +70°C RH 5-95% - no condensate
<b>Field Bus technical data</b>	Transmission protocol
	Transmission mode
	Transfer rate
	Addresses
<b>Input technical data</b>	Type
	Power supply
	Signal
	Input 0 signal voltage
	Input 1 signal voltage
<b>Diagnosis</b>	Field bus
	INPUT short-circuit sensor
	DP-VO Profibus to EN 50170
	Synchronous or Freeze-Mode
	Up to 12 MBit/s
	Rotary switches, 1...99
	PNP proximity sensors or IEE 1131-2 compact mechanical stop
	24 VDC (18 to 28 V)
	One green LED for each input
	2...5 V
	10...30 V
	"NET" LED+alarm signal to master
	Red LED for each channel at M8 connection point M8 (600 mA)

## SLAVE IP67

Code	Description
0240008002	IP67 M8 PROFIBUS INPUT





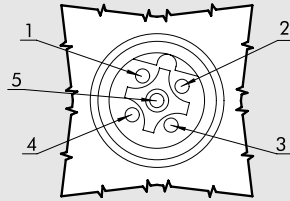
**PIN ASSIGNMENT**

**PROFIBUS CONNECTORS**

**BUS OUT**

M12 female connector  
B coding for profibus

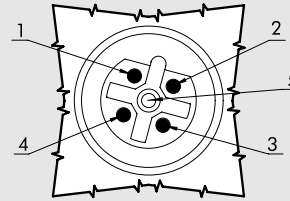
- 1 - 5 VDC power
- 2 - Bus A
- 3 - GND
- 4 - Bus B
- 5 - Screen



**BUS IN**

M12 male connector  
B coding for profibus

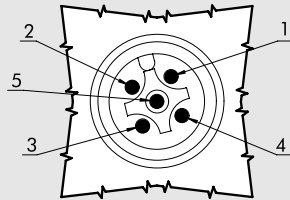
- 1 - 5 VDC power
- 2 - Bus A
- 3 - GND
- 4 - Bus B
- 5 - Screen



**POWER CONNECTOR**

M12 male connector  
A coding

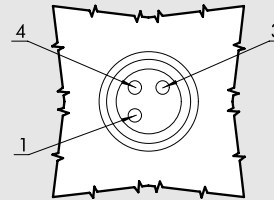
- 1 - Power supply module and input
- 2 - NC
- 3 - GND
- 4 - GND
- 5 - INPUT



**INPUT CONNECTORS**

M8 three-pole female connector  
A coding

- 1 - 24VDC
- 3 - GND
- 4 - INPUT



**LED ASSIGNMENT**

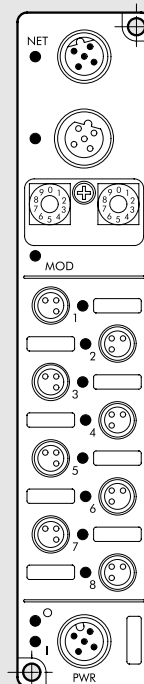
**NETWORK**  
 ● (red): slave not configured or not communicating with master  
 ● (green): slave configured and communicating with master

**MODULE FAILURE**  
 ● (red): check signal LEDs

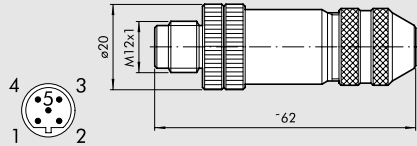
**Channel LEDs (inputs)**  
 ● (green): input enabled  
 ● (red): sensor faulty, +24V power supply short-circuit

**NOT USED**

**INPUT MODULE POWER SUPPLY**  
 ● (green): on

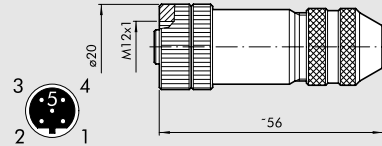


### M12 BUS-OUT MALE CONNECTOR



Code	Description
0240009035	M12 male connector, B coding

### M12 BUS-IN FEMALE CONNECTOR



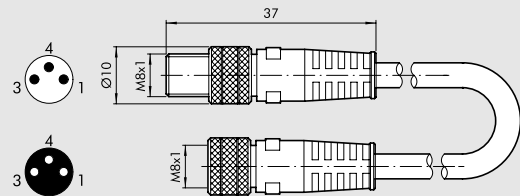
Code	Description
0240009036	M12 female connector, B coding

### M8-M12 PLUG



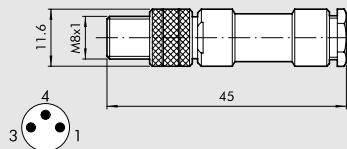
Code	Description
0240009039	M8 plug
0240009040	M12 plug

### M8 INPUT CONNECTOR WITH CABLE



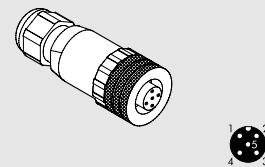
Code	Description
0240009009	M8-M8 straight connector with 3 m cable

### M8 INPUT CONNECTOR



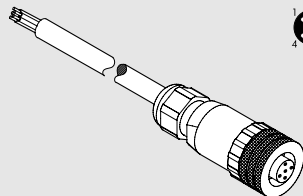
Code	Description
0240009010	M8 3-pin straight connector

### M12 STRAIGHT SUPPLY CONNECTOR



Code	Description
W0970513001	5-pin M12x1 straight connector

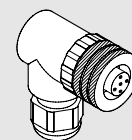
### M12 STRAIGHT SUPPLY CONNECTOR WITH CABLE



Pin	Cable colour
1	Brown
2	White
3	Blue
4	Black
5	Grey

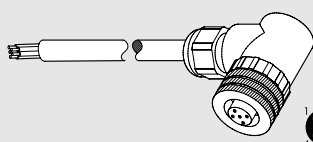
Code	Description
W0970513002	5-pin M12x1 straight connector with 5 m cable

### M12 90° SUPPLY CONNECTOR



Code	Description
W0970513003	M12x1 5-pin 90° connector

### M12 90° SUPPLY CONNECTOR WITH CABLE



Pin	Cable colour
1	Brown
2	White
3	Blue
4	Black
5	Grey

Code	Description
W0970513004	M12x1 5-pin 90° connector with 5m cable

### NOTE