

Electrically operated valves

Series M-22, 3/2-, 5/2- and 5/3-way

G1/2 • 3300 NI/min (3.354 Cv)



Order code

M-22-310-HN-412

Coil options

Series and function

Standard coils¹⁾
411 = 12 V DC, 4,2 W
412 = 24 V DC, 4,2 W
422 = 24 V AC, 7/4 VA
426 = 115 V AC, 7/4 VA
427 = 230 V AC, 7/4 VA
431 = 12 V DC, 2,2 W²⁾
432 = 24 V DC, 2,2 W²⁾

Without coil and plug socket
500 = Power consumption 4,2 W, 7/4 VA
530 = Power consumption 2,2 W²⁾

Coil with M12 connector and LED
O12 = 24 V DC, 4,8 W
O32 = 24 V DC, 2,5 W²⁾

¹⁾ Plug socket(s) not included in scope of delivery (see page 4.153).

Design, function and technical data

Spool valve actuated by an electrical signal. Please specify required control voltage when ordering.

Valves of this series are available in explosion proof design in accordance with 2014/34/EU (ATEX). For further details see chapter 13 of this catalogue.

3/2-way valve



Order number Please complete according to order code.	M-22-310-HN	MO-22-310-HN	M-22-311-HN	MO-22-311-HN	M-22-320-HN	ME-22-311-HN	ME-22-320-HN
Function	normally closed air spring return	normally open air spring return	normally closed spring return	normally open spring return	double solenoid	ext. pilot supply spring return	double solenoid ext. pilot supply
Connection	G1/2						
Nominal size	14 mm						
Flow rate	3300 NI/min (3.354 Cv)						
Pressure range	1 ... 10 bar ²⁾ (14 ... 145 psi)		2 ... 10 bar ²⁾ (29 ... 145 psi)		1 ... 10 bar ²⁾	0 ... 10 bar ²⁾ (0 ... 145 psi)	
Control pressure	Control pressure is identical to main pressure range					2 ... 10 bar ²⁾ (29 ... 145 psi)	1 ... 10 bar ²⁾ (14 ... 145 psi)
Response time at 6 bar	on 30 ms off 58 ms		on 28 ms off 68 ms		20 ms	on 28 ms off 68 ms	20 ms
Temperature range	- 10 °C ... + 70 °C (+ 14 °F ... + 158 °F)						
Materials	Body: Al (anodized), Seals: NBR and POM, Inner parts: Al, stainless steel, brass						
Medium	Compressed air in accordance with ISO 8573-1:2010, Class 7:2:4 – and free of aggressive additives.						
Degree of protection	IP 65 according to EN 60529						
Weight	0,910 kg (2.002 lbs.)		0,965 kg (2.123 lbs.)		0,984 kg (2.165 lbs.)	0,965 kg (2.123 lbs.)	0,984 kg (2.165 lbs.)

²⁾ max. 8 bar (max. 116 psi) at 2.2 W and 2.5 W.

5/2- and 5/3-way valve



Order number Please complete acc. to order code.	M-22-510-HN	M-22-511-HN	M-22-520-HN	M-22-530-HN	M-22-533-HN	ME-22-511-HN	ME-22-520-HN
Function	5/2-way single solenoid air spring return	5/2-way single solenoid spring return	5/2-way double solenoid	5/3-way center position closed	5/3-way center position exhausted	5/2-way single solenoid ext. pilot supply	5/2-way double solenoid ext. pilot supply
Connection	G1/2						
Nominal size	14 mm						
Flow rate	3300 NI/min (3.354 Cv)						
Pressure range	1 ... 10 bar ²⁾ (14 ... 145 psi)	2 ... 10 bar ²⁾ (29 ... 145 psi)	1 ... 10 bar ²⁾ (14 ... 145 psi)	3 ... 10 bar ²⁾ (43 ... 145 psi)	0 ... 10 bar ²⁾ (0 ... 145 psi)		
Control pressure	Control pressure is identical to main pressure range					2 ... 10 bar ²⁾ (29 ... 145 psi)	1 ... 10 bar ²⁾ (14 ... 145 psi)
Response time at 6 bar	on 30 ms off 59 ms	on 20 ms off 80 ms	22 ms	on 30 ms off 50 ms	on 20 ms off 80 ms		22 ms
Temperature range	- 10 °C ... + 70 °C (+ 14 °F ... + 158 °F)						
Materials	Body: Al (anodized), Seals: NBR and POM, Inner parts: Al, stainless steel, brass						
Medium	Compressed air in accordance with ISO 8573-1:2010, Class 7:2:4 – and free of aggressive additives.						
Degree of protection	IP 65 according to EN 60529						
Weight	1.150 kg (2.530 lbs.)	1.180 kg (2.596 lbs.)	1.260 kg (2.772 lbs.)	1.250 kg (2.750 lbs.)	1.160 kg (2.552 lbs.)		1.260 kg (2.772 lbs.)

²⁾ max. 8 bar (max. 116 psi) at 2.2 W and 2.5 W.

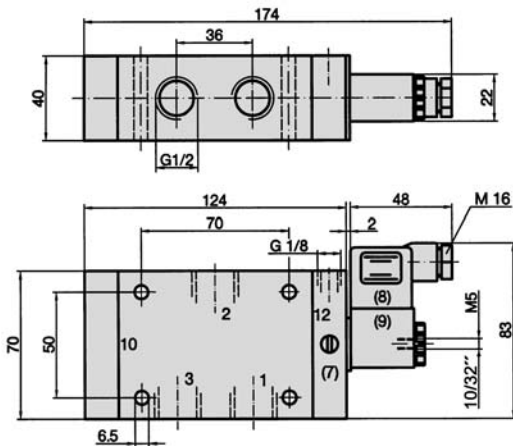
Electrically operated valves

Series M-22, 3/2-, 5/2- and 5/3-way

G1/2 • 3300 NI/min (3.354 Cv)



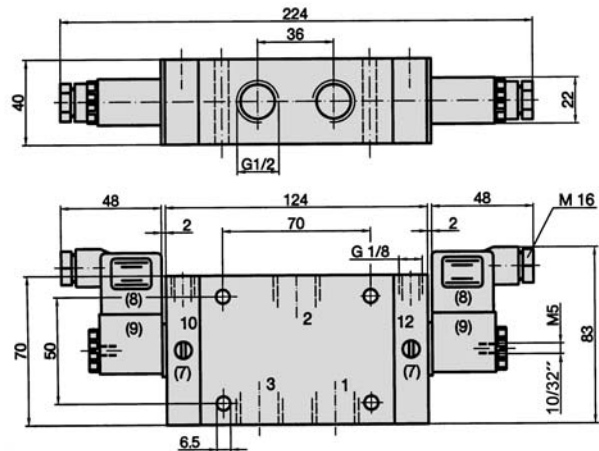
M-22-310-HN, M-22-311-HN, MO-22-310-HN, MO-22-311-HN, ME-22-311-HN



- 1 = pressure inlet
 - 2 = outlets
 - 3 = exhausts
 - (7) = manual override (detent) can be repositioned by 180°
 - (8) = plug socket can be repositioned by 180°
 - (9) = solenoid coil can be repositioned by 4 x 90°
- Valves MO-22-310-HN and MO-22-311-HN carry the solenoid on the opposite side (at pilot 10).
Only valve ME-22-311-HN includes G1/8 at port 12 for external pilot supply.

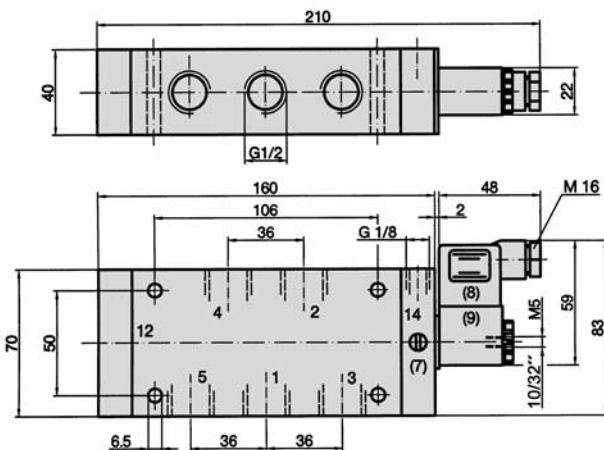
Note: Plug socket(s) not included in scope of delivery.

M-22-320-HN, ME-22-320-HN



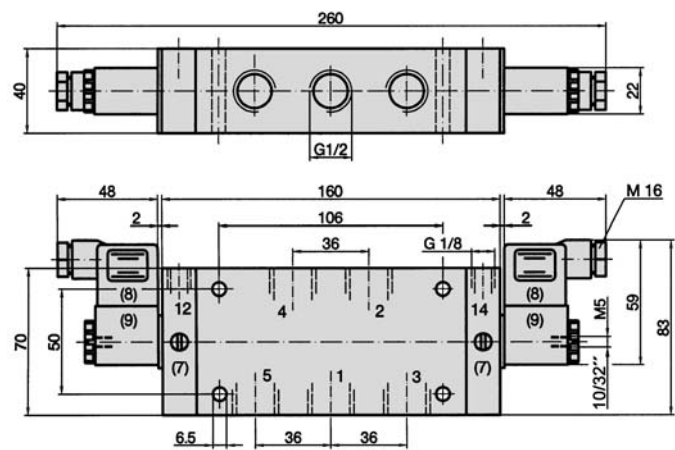
- 1 = pressure inlet
 - 2 = outlets
 - 3 = exhausts
 - (7) = manual override (detent) can be repositioned by 180°
 - (8) = plug socket can be repositioned by 180°
 - (9) = solenoid coil can be repositioned by 4 x 90°
- Only valve ME-22-320-HN includes G1/8 at ports 10 and 12 for external pilot supply.

M-22-510-HN, M-22-511-HN, ME-22-511-HN



- 1 = pressure inlet
 - 2, 4 = outlets
 - 3, 5 = exhausts
 - (7) = manual override (detent) can be repositioned by 180°
 - (8) = plug socket can be repositioned by 180°
 - (9) = solenoid coil can be repositioned by 4 x 90°
- Only valve ME-22-511-HN includes G1/8 at port 14 for external pilot supply.

M-22-520-HN, M-22-530-HN, M-22-533-HN, ME-22-520-HN



- 1 = pressure inlet
 - 2, 4 = outlets
 - 3, 5 = exhausts
 - (7) = manual override (detent) can be repositioned by 180°
 - (8) = plug socket can be repositioned by 180°
 - (9) = solenoid coil can be repositioned by 4 x 90°
- Only valve ME-22-520-HN includes G1/8 at port 14 for external pilot supply.


Accessories for series M-22

Solenoid coils, Actuators, Plug sockets, see page 4.153.

Accessories for electrically operated valves

Manifolds for series M-07 and P-07

Solenoid coils, actuators

Solenoid coils	23-SP-011-...	Standard coil	page 4.280
	23-SP-012-...	Coil with 2,2 W power consumption	page 4.280
	23-SP-011-5-O12	Coil with M12 plug connection, 4,8 W, LED and circuit protection	page 4.282
	23-SP-012-5-O32	Coil with M12 plug connection, 2,5 W, LED and circuit protection	page 4.282
	 Explosion proof	Valves with explosion proof actuator see chapter 13	
Actuators	23-R-011	Standard actuator	
	23-R-012	Low power actuator	
Plug sockets	28-ST-01	Standard plug socket	page 4.283
	28-ST-04-...	Plug socket with LED	page 4.283
	28-ST-06-...	Plug socket with LED and circuit protection	page 4.283
	28-ST-06-K3-...	Plug socket with LED, circuit protection and cable	page 4.283

User information

Low power consumption coils (2.2 W or 2.5 W) are for pressures up to 8 bar (116 psi) only. Valve actuator 23-R-012 is required. The actuator 23-R-012 is nickel plated. Make sure that the coils with the right power consumption are used.

For outdoor applications or in areas with high humidity use coil 23-SP-011-1-... or 23-SP-012-1-... (see page 4.280).

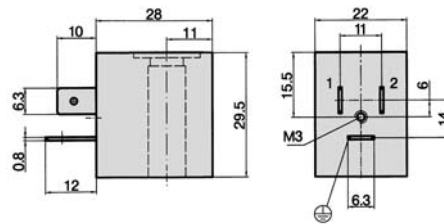
The following types are available on request

Coils and sockets with contacts according to DIN EN 175301-803 type B (U-form).

Plug sockets with molded cable.

Accessories for electrically operated valves

Solenoid coils



Solenoid coils with connection pattern pursuant to DIN EN 175301-803 Shape B

Order number	23-SP-011-411	23-SP-011-412	23-SP-011-422	23-SP-011-426	23-SP-011-427	23-SP-012-431	23-SP-012-432
Standard voltage	12 V DC	24 V DC	24 V AC	115 V AC	230 V AC	12 V DC	24 V DC
Power consumption DC	4.2 W	4.2 W				2.2 W	2.2 W
Power consumption 50 Hz			4 VA	4 VA	4 VA		
Degree of protection	IP 65 according to EN 60529 with connected plug socket						
Duty cycle	100 %						
Temperature range	- 20 °C ... + 50 °C (- 4 °F ... + 122 °F)						
Voltage tolerance	± 10 %						
Standard for series	MS-18, M-04, M-05, M-07, M-22, KM-09, KM-10, MF-05, MF-07, MN-06, KN-05, MI-01, MI-02, MI-03						

Other voltages on request.

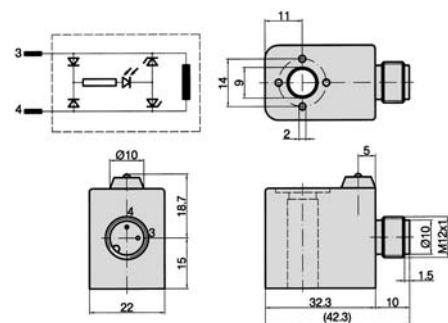
Solenoid coils with connection pattern pursuant to DIN EN 175301-803 Shape B

(with enhanced humidity resistance)

Order number	23-SP-011-1-711	23-SP-011-1-712	23-SP-011-1-712	23-SP-011-1-722	23-SP-011-1-725	23-SP-011-1-727	23-SP-012-1-732
Standard voltage	12 V DC/24 V AC	24 V DC	48 V AC	12 V DC/24 V AC	110 V AC	230 V AC	24 V DC
Power consumption DC	4.6 W	4.8 W	-	5.5 W	-	-	2.5 W
Power consumption 50 Hz	7.1 VA	-	7.7 VA	8.9 VA	8.5 VA	7.9 VA	
Degree of protection	IP 65 according to EN 60529 with connected plug socket *1						
Duty cycle	100 %						
Temperature range	- 20 °C ... + 50 °C (- 4 °F ... + 122 °F)						
Voltage tolerance	± 10 %						
Standard for series	KMX-09, KMX-10, ICK-09, ICK-10, KN-55, KNX-55, ICKN-55						

*1: IP67 pursuant to EN 60529 with plug socket and sealing set 20-SP-011/012-02

Solenoid coils with M12 connection, with LED and protective circuit.



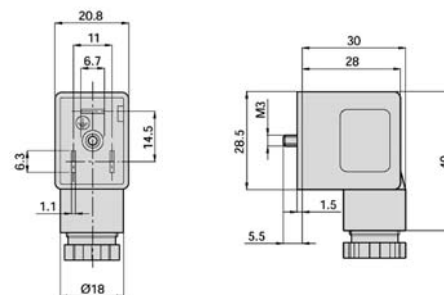
Order number	23-SP-011-5-O12	23-SP-012-5-O32
Standard voltage	24 V DC	24 V DC
Power consumption	4.8 W	2.5 W
Degree of protection	IP 65 according to EN 60529 with connected cable	
Duty cycle	100 %	
Temperature range	- 20 °C ... + 50 °C	
Voltage tolerance	± 10 %	

Accessories for electrically operated valves

Plug sockets for coil



Plug sockets pursuant to DIN EN 175301-803 Shape B
(2pol. + PE, 21 x 28 mm, Contact distance 11 mm)



Order number	28-ST-01	28-ST-04-112	28-ST-04-127	28-ST-06-112	28-ST-06-127	28-ST-06-K3-112	28-ST-06-K3-127
Standard voltage	all	24 V DC	230 V AC	24 V DC	230 V AC	24 V DC	230 V AC
Protective circuit	no	no	no	yes	yes	yes	yes
Status indicator	without	yes	yes	yes	yes	yes	yes
Degree of protection	IP 65 pursuant to EN 60529 requires a flat gasket						
Connecting cable	without					3 m	3m
Ø Connecting cable	6 – 8 mm					–	–
Max. wire cross section	1,5 mm ²					–	–
for coil	23-SP-011, 23-SP-011-1						

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