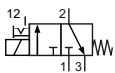


**Technical details**

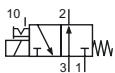
<b>Connection</b>	M5
<b>Nominal size</b>	1.2 mm
<b>Temperature range</b>	-10°C ... +70°C
<b>Medium</b>	Filtered, oil-free and dried compressed air according to ISO 8573-1:2010, Class 7:2:4, instrument air, free of aggressive additives. Differing the pressure dew point must be at least 10°C below lowest occurring ambient temperature.
<b>Materials</b>	Body: Al (anodized), seals: NBR, inner parts: Al, steel and plastic
<b>Protection</b>	IP 65 according to EN 60529



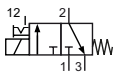
Electrically operated poppet valve. The manual override is detent and is operated by screw driver.

**3/2-way-valves**


MS-20-310-HN-xxx  
3/2-way, single solenoid, mechanical spring return, NC



MSO-20-310-HN-xxx  
3/2-way, single solenoid, mechanical spring return, NO



MS-20-310/n-HN-xxx  
3/2-way, single solenoid, mechanical spring return, NC

Please complete: xxx = electrical option  
n = number of stations ( 2 to 6 )

**Electrical options**

Nominal voltage	Power consumption	Specifics	Plug connection* <sup>1</sup>	-xxx
12 V DC	2 W		Form C industrial norm	-411
24 V DC	2 W		Form C industrial norm	-412

\*<sup>1</sup> Plug socket not included, suitable plug sockets see page 03.

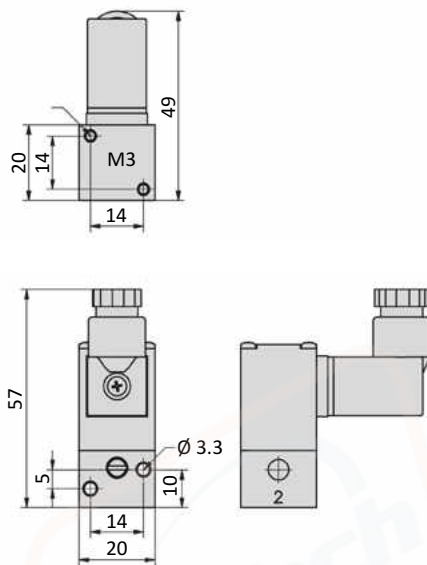
## Series MS-20

### Technical data

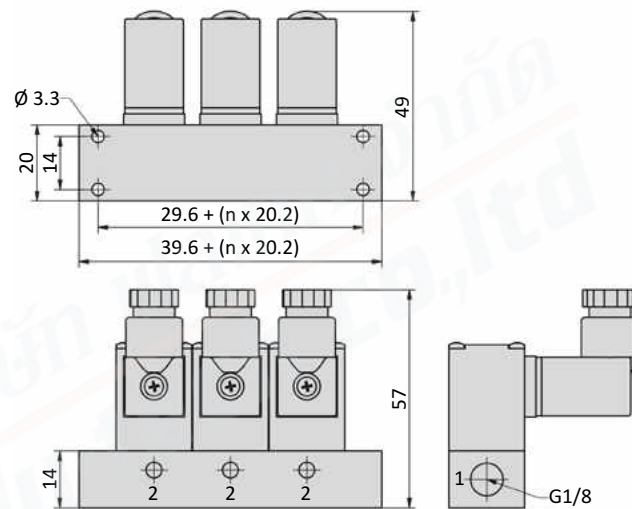
Model-no.:	MS-20-310	MSO-20-310	MS-20-310/n
Pressure range (bar)	-0.95 ... 8	-0.95 ... 8	-0.95 ... 8
Pilot pressure (bar)	-	-	-
Flow rate (NI/min)	38	38	38
Response time (ms) at 6 bar	on: 8 off: 8	on: 8 off: 8	on: 8 off: 8
Weight (kg)	0.064	0.064	0.01 + 0.066 x n

### Dimensions

#### MS-20-310-HN, MSO-20-310-HN



#### MS-20-310/n-HN



n = number of stations ( 2 to 6 )

- 1 = pressure inlet ( outlet by MSO )
- 2 = outlet
- 3 = exhaust ( pressure inlet by MSO )

Plug socket (not included in scope of delivery) can be repositioned by 180°.  
Solenoid coil can be repositioned by 4 x 90°.

**Form C Industriennorm**

<b>Baubreite</b>	15 mm
<b>Kontaktabstand</b>	9,4 mm
<b>Kontakte</b>	2P + E
<b>Schutzart</b>	IP 65 nach EN 60529 in Verbindung mit Flachdichtung
<b>Einsatz für Baureihe</b>	M-20, MC-20, MD-20, MS-20

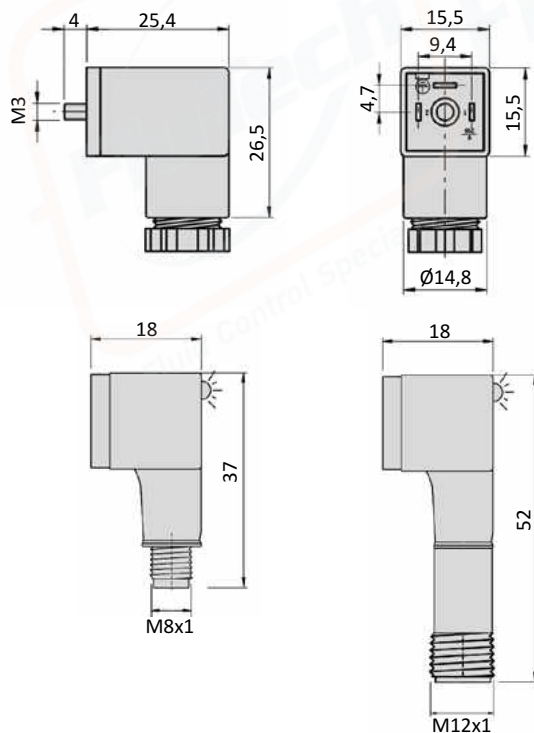


Model-no.:	28-ST-02-01	28-ST-09-112	28-ST-09-127	28-ST-10-112	28-ST-10-127	28-ST-10-K3-112 *
<b>Voltage (AC/DC)</b>	0 - 250 V	10 - 50 V	70 - 250 V	24 V	230 V	24 V
<b>Status indicator</b>	no	yes	yes	yes	yes	yes
<b>Protective circuit</b>	no	no	no	yes (varistor)	yes (varistor)	yes (varistor)
<b>Connecting cable</b>	without	without	without	without	without	3 m
<b>Wire cross section</b>	max. 0.75 mm <sup>2</sup>	max. 0.75 mm <sup>2</sup>	max. 0.75 mm <sup>2</sup>	max. 0.75 mm <sup>2</sup>	max. 0.75 mm <sup>2</sup>	3 x 0.5 mm <sup>2</sup>
<b>Ø Connecting cable</b>	4 - 6 mm	4 - 6 mm	4 - 6 mm	4 - 6 mm	4 - 6 mm	

Model-no.:	28-ST-02-2-05	28-ST-02-2-07
<b>Voltage (AC/DC)</b>	24 V	24 V
<b>Status indicator</b>	yes	yes
<b>Protective circuit</b>	yes (varistor)	yes (varistor)
<b>Connection</b>	M8	M12



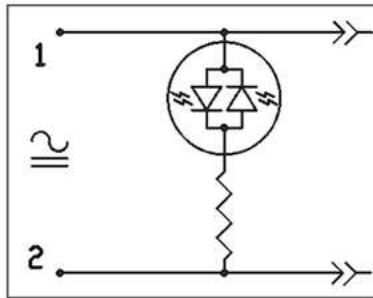
\* These plug sockets are fitted with integrated flat gaskets.

**Abmessungen**
**Form C Industriennorm**


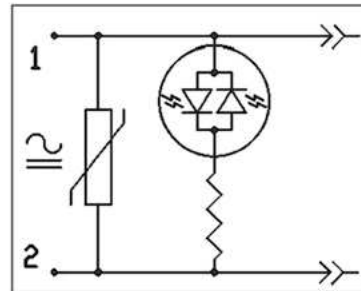
## Plug sockets

### Electrically circuits

#### Status indicator (LED)

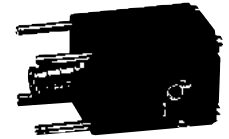


#### Status indicator (LED) and protective circuit (varistor)



## Form C industrial norm

Overall width	20 mm
Contact distance	9,4 mm
Contacts	2P + E
Protection	IP 65 according to EN 60529 with connected plug socket
Duty cycle	100 %
Temperature range*	-20°C...+50°C
Voltage tolerance	± 10 %
For use with series	M-20, MS-20, MSO-20, MC-20, MD-20

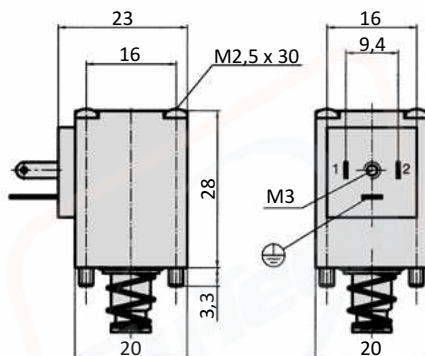


\* The max. applicable operating temperature, depends on the temperature specification of the used valve.

Model-no.:	23-M-20-411	23-M-20-412	23-M-20-411-MSO	23-M-20-412-MSO
Voltage	12 V DC	24 V DC	12 V DC	24 V DC
Power consumption DC	2 W	2 W	2 W	2 W
Power consumption AC	-	-	-	-

## Dimensions

### Form C industrial norm



## Voltage code

- HN * - * * *				
Manual override	Coil and plug options	Coil type	Manual override position on side of	Voltage
HN detent	0 ATEX 2GD, encapsulated with casting compound width 30 mm	23-SP-037	0 without indication ports 1/3/(5)	0 without indication
HNR detent	1 with coil and plug	according to valve	1 DC ports 1/3/(5)	1 12 V
HNT non-detent	2		2 AC ports 1/3/(5)	2 24 V
	3 with coil, power consumption different from standard, without plug	shape according valve series	3 DC, low power consumption ports 1/3/(5)	3 42 V
	4 with coil, without plug	according to valve	4 DC ports 2/(4)	4 48 V
	5 without coil	no	5 AC ports 2/(4)	5 110 V
	6 without pilot valve	no	6 DC, low power consumption ports 2/(4)	6 115 V
	7 with coil, with enhanced humidity resistance, without plug	according to valve	7 without indication ports 2/(4)	7 230 V
	8 with coil, with enhanced humidity resistance, with plug	according to valve		8 240 V
	9 ATEX 2GD, intrinsically safe, with plug width 30 mm	23-SP-038		9
	A ATEX 3GD, without plug, width 30 mm	23-SP-040		A 4 V
	B ATEX 3GD, with plug, width 30 mm	23-SP-040		B 6 V
	C ATEX 3GD, without plug, width 22 mm	23-SP-041		C 8 V
	D			D 61 V
	E			E 36 V
	F with coil, with enhanced humidity resistance, without plug, low temperature version	23-SP-011-1-711 23-SP-011-1-712		F 9 V
	G			
	H with coil shape B according to DIN EN 175301-803, with plug	23-SP-011-G		
	I with coil shape B according to DIN EN 175301-803, without plug	23-SP-011-G		
	J with coil shape A according to DIN EN 175301-803, without plug (if not standard)	23-SP-016		
	K with coil shape A according to DIN EN 175301-803, with plug (if not standard)	23-SP-016		
	L with coil, with plug with LED and protective circuit	according to valve		
	M with coil, with plug with LED, without protective circuit	according to valve		
	N with coil with M12 connection	according to valve		
	O with coil with M12 connection with LED and protective circuit	according to valve		
	P without connector bridge, without plug			
	Q with coil with with cable	according to valve		
	R with cable up to 1 m length	according to valve		
	S with connector bridge, without plug			
	T			
	U ATEX 2GD, without coil (for coil 23-SP-036)	no		
	V ATEX 2GD, Flame proof enclosures and encapsulated with casting compound	23-SP-045		
	W ATEX 2GD / 3GD, without coil (for coil 23-SP-041 and 23-SP-045)	no		
	X ATEX 3GD, without coil (for coil 23-SP-040 in 230V AC and 115V AC)	no		
	Y ATEX 2GD, without coil (for coil 23-SP-038)	no		
	Z ATEX 2GD / 3GD, without coil (for coil 23-SP-040 in 24V DC and 23-SP-037)	no		

Not all options are suitable for all valve series