

Pressure Switches, Series PM1

- Operating pressure -13.05 ... 0, -13.05 ... 43, 2.9 ... 232 psi
- Mechanical
- Spring-loaded bellow, adjustable
- Electr. connection Plug, EN 175301-803, form A
- Compressed air connection Internal thread, G 1/4, Flange with O-ring, Ø 5x1,5



Type	Mechanical
Function	change-over contact (mechanical)
Mounting orientation	Any
Working pressure min./max.	See table below
Ambient temperature min./max.	-4 ... 176 °F
Medium temperature min./max.	14 ... 176 °F
Medium	Compressed air
Measurement	Relative pressure
Switching element	microswitch (input/output)
Protection against overpressure	1160 psi
Max. switching frequency	1,5 Hz
Shock resistance max.	15 g
Vibration resistance	10 g (60 - 500 Hz)
Repeatability (% of full scale value)	± 1 %
Switching point	adjustable
Hysteresis	max. switching pressure difference
DC operating voltage,min./max.	12 ... 30 V DC
Operational voltage AC,min./max.	12 ... 250 V AC
Mounting types	via through holes
Protection class	IP65
Electr. connection	Plug, EN 175301-803, form A
Weight	0.353 lbs

Technical data

Part No.		Type	Operating pressure range	Compressed air connection
			min./max.	
R412010711		PM1-M3-G014	-13.05 ... 0 psi	Internal thread, G 1/4
R412022752		PM1-M3-G014	-13.05 ... 43 psi	Internal thread, G 1/4
R412010712		PM1-M3-G014	2.9 ... 232 psi	Internal thread, G 1/4
R412010713		PM1-M3-G014	2.9 ... 232 psi	Internal thread, G 1/4
R412010714		PM1-M3-F001	-13.05 ... 0 psi	Flange with O-ring, Ø 5x1,5
R412010715		PM1-M3-F001	2.9 ... 232 psi	Flange with O-ring, Ø 5x1,5
R412010718		PM1-M3-F001	2.9 ... 232 psi	Flange with O-ring, Ø 5x1,5

Part No.	Scope of delivery	Fig.	
R412010711	With valve plug connector	Fig. 1	-
R412022752	Without valve plug connector	Fig. 1	-
R412010712	Without valve plug connector	Fig. 1	1)
R412010713	With valve plug connector	Fig. 1	1)
R412010714	With valve plug connector	Fig. 2	-

Part No.	Scope of delivery	Fig.	
R412010715	Without valve plug connector	Fig. 2	1)
R412010718	With valve plug connector	Fig. 2	1)

1) Min. switching pressure range 0.2 bar falling/0.5 bar rising

Technical information

Switching function increasing pressure: contact switches from 1-2 to 1-3.

Switching function decreasing pressure: contact switches from 1-3 to 1-2.

Notice: Too-high currents can damage contacts. Inductive or capacitive loads must be equipped with appropriate spark-quenching!

The microswitch has silver-plated contacts.

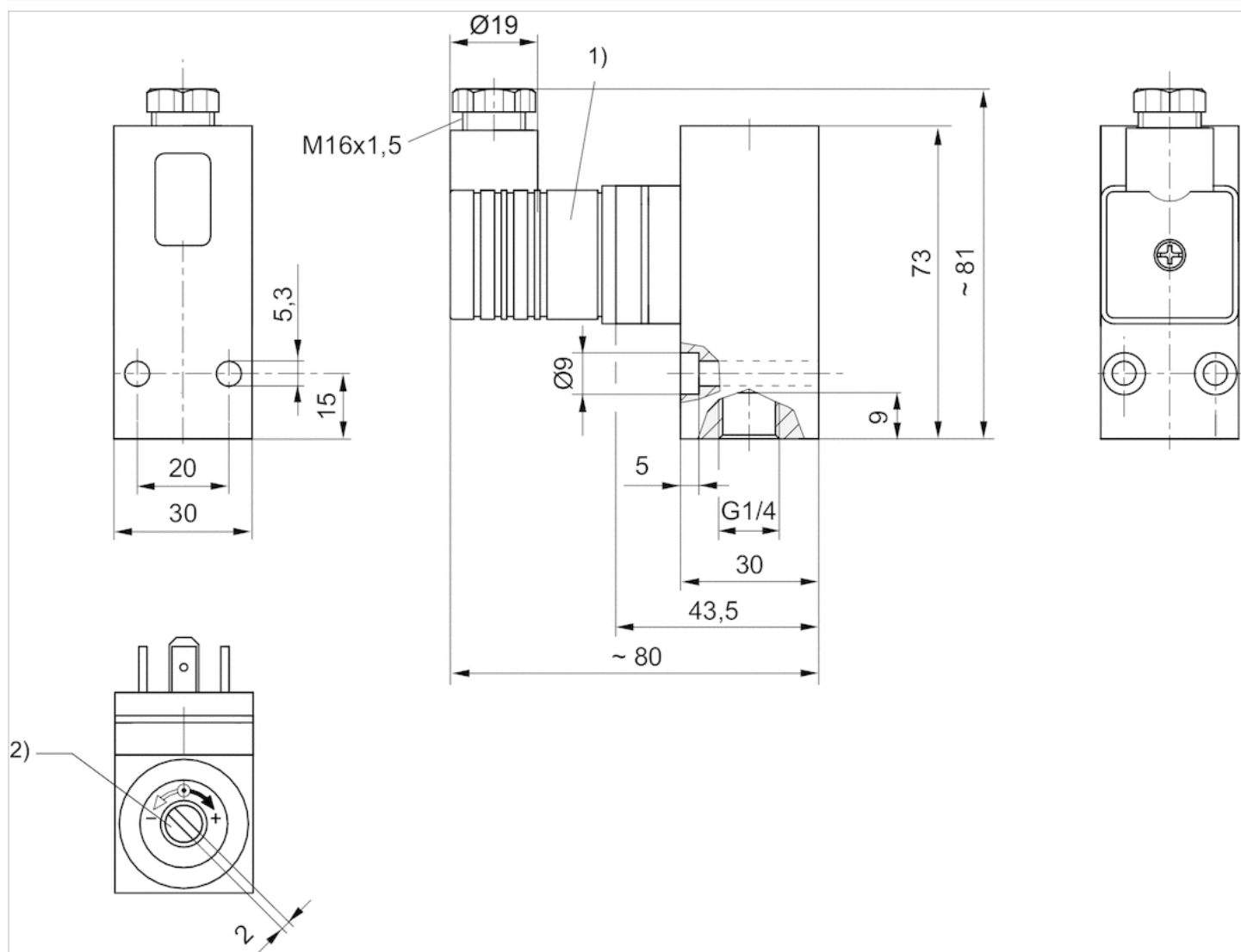
Please observe the pin assignment when selecting plug connectors.

Technical information

Material	
Housing	Aluminum
Seals	Acrylonitrile butadiene rubber
Electr. connection	Brass, nickel-plated

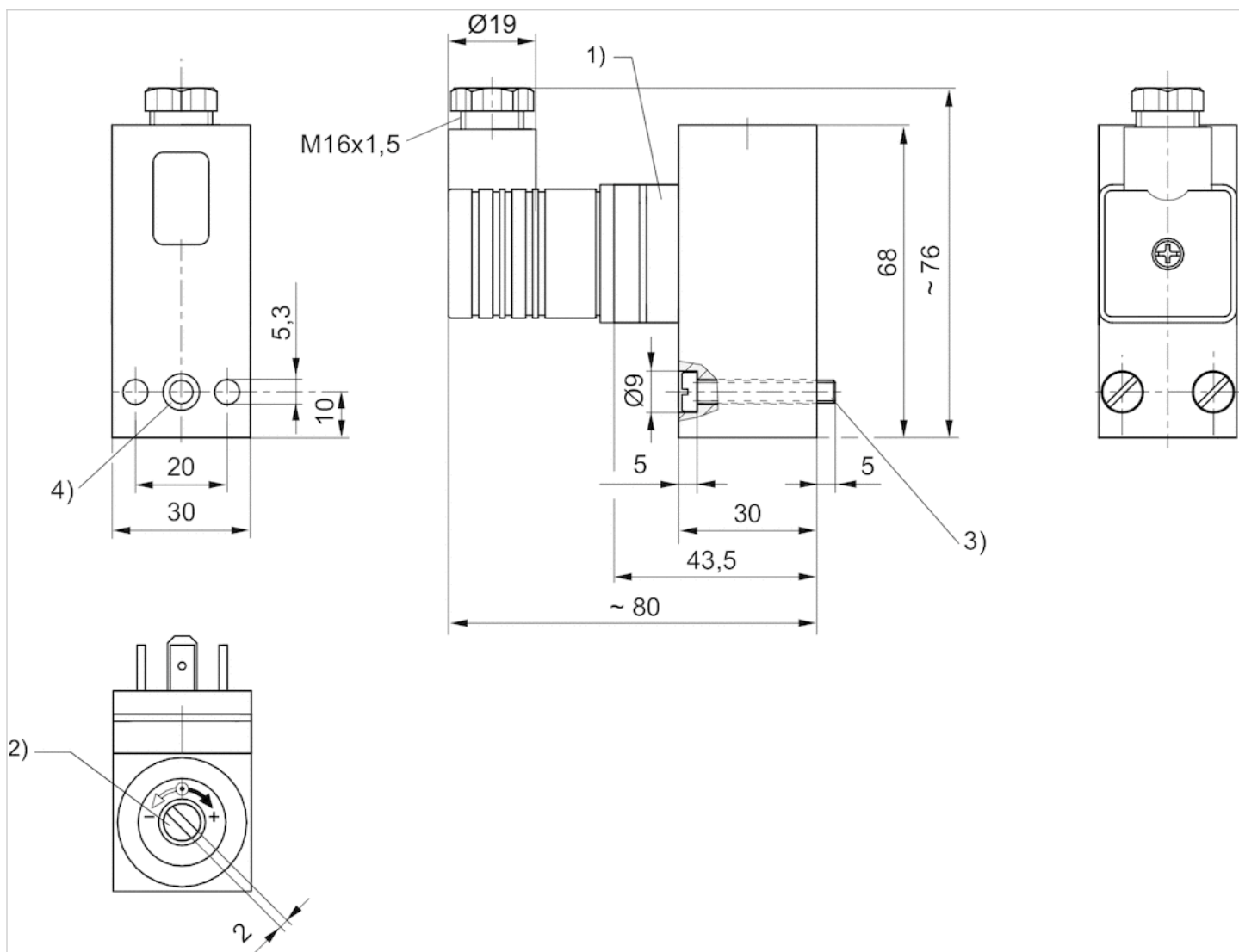
Dimensions

Fig. 1



- 1) Valve plug connector
2) Adjustment screw, self-holding

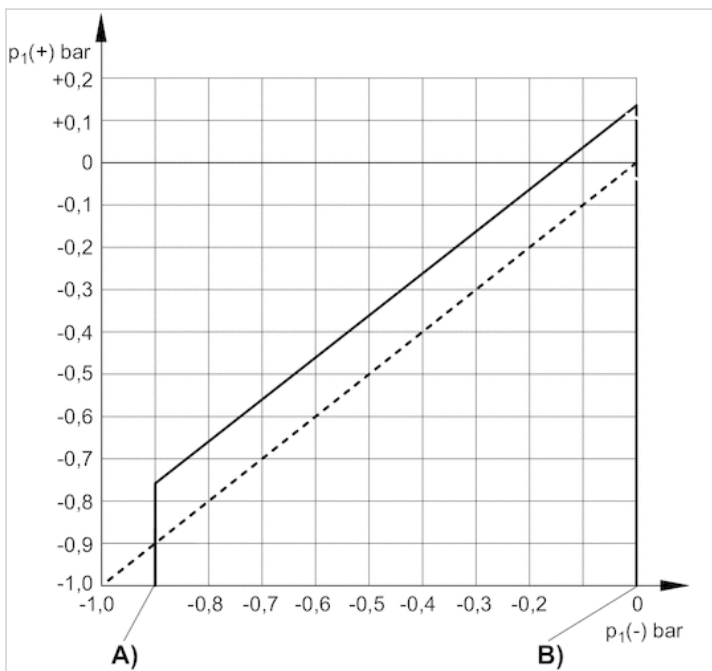
Fig. 2



- 1) Valve plug connector
- 2) Adjustment screw, self-holding
- 3) cylinder screw M5x30 (included in scope of delivery)
- 4) O-ring $\varnothing 5 \times 1,5$ (included)

Diagrams

differential switching pressure characteristic curve (-09 - 0 bar)



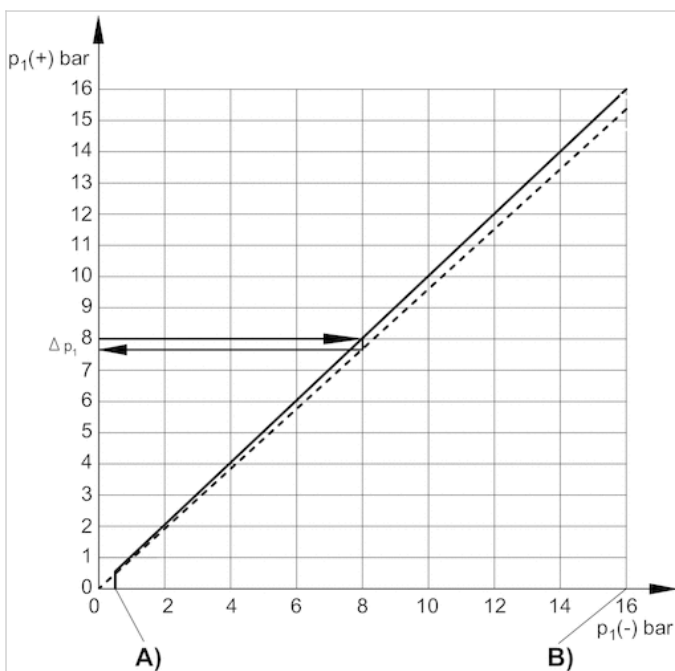
A) $p_1(-)$, min.

B) $p_1(-)$, max.

$p_1(+)$ = upper switching pressure with increasing pressure

$p_1(-)$ = lower switching pressure with decreasing pressure

differential switching pressure characteristic curve (02 - 16 bar)



A) $p_1(-)$, min.

B) $p_1(-)$, max.

$p_1(+)$ = upper switching pressure with increasing pressure

$p_1(-)$ = lower switching pressure with decreasing pressure

Δp_1 = max. operating pressure difference or hysteresis

Example:

$p1 (+) = 8 \text{ bar} > p1(-) = 7.6 \text{ bar}$
 $\Delta p1 = 0.4 \text{ bar}$

max. permissible continuous current I max. [A] with ohmic load

U [V]	I [A] 1)	I [A] 2)
30	5	3
48	5	1,2
60	5	0,8
125	5	0,4
250	5	–

reference cycle: 30/min., reference temperature: + 30 °C

- 1) AC
- 2) DC

max. permissible continuous current I max. [A] with inductive load

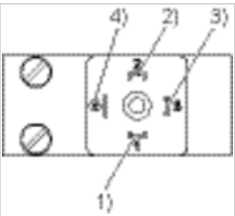
U [V]	I [A] 1) 3)	I [A] 2) 4)
30	3	2
48	3	0.55
60	3	0.4
125	3	0.15
250	3	–

reference cycle: 30/min., reference temperature: + 30 °C

- 1) AC
- 2) DC
- 3) $\cos \approx 0,7^\circ$
- 4) $L/R \approx 10 \text{ ms}$

Pin assignments

PIN assignment for valve plug connectors



Pin	1	2	3	4
Allocation	+UB	break contact	NO (make contact)	GND

Pressure Switches, Series PM1

- Operating pressure -13.05 ... 0, 2.9 ... 232 psi
- Mechanical
- Spring-loaded bellows, adjustable
- Electr. connection Plug, M12x1
- Compressed air connection Internal thread, G 1/4, Flange with O-ring, Ø 5x1,5



Type	Mechanical
Function	change-over contact (mechanical)
Mounting orientation	Any
Working pressure min./max.	See table below
Ambient temperature min./max.	-4 ... 176 °F
Medium temperature min./max.	14 ... 176 °F
Medium	Compressed air
Measurement	Relative pressure
Switching element	microswitch (input/output)
Protection against overpressure	1160 psi
Max. switching frequency	1,5 Hz
Shock resistance max.	15 g
Vibration resistance	10 g (60 - 500 Hz)
Repeatability (% of full scale value)	± 1 %
Switching point	adjustable
Hysteresis	max. switching pressure difference
DC operating voltage,min./max.	12 ... 30 V DC
Operational voltage AC,min./max.	12 ... 30 V AC
Mounting types	via through holes
Protection class	IP67
Electr. connection	Plug, M12x1
Weight	0.331 lbs

Technical data

Part No.		Type	Operating pressure range	Compressed air connection
			min./max.	
R412010716		PM1-M3-G014	-13.05 ... 0 psi	Internal thread, G 1/4
R412010717		PM1-M3-G014	2.9 ... 232 psi	Internal thread, G 1/4
R412010719		PM1-M3-F001	-13.05 ... 0 psi	Flange with O-ring, Ø 5x1,5
R412010720		PM1-M3-F001	2.9 ... 232 psi	Flange with O-ring, Ø 5x1,5

Part No.	Fig.	
R412010716	Fig. 1	-
R412010717	Fig. 1	1)
R412010719	Fig. 2	-
R412010720	Fig. 2	1)

1) Min. switching pressure range 0.2 bar falling/0.5 bar rising

Technical information

Switching function increasing pressure: contact switches from 1-2 to 1-3.

Switching function decreasing pressure: contact switches from 1-3 to 1-2.

Notice: Too-high currents can damage contacts. Inductive or capacitive loads must be equipped with appropriate spark-quenching!

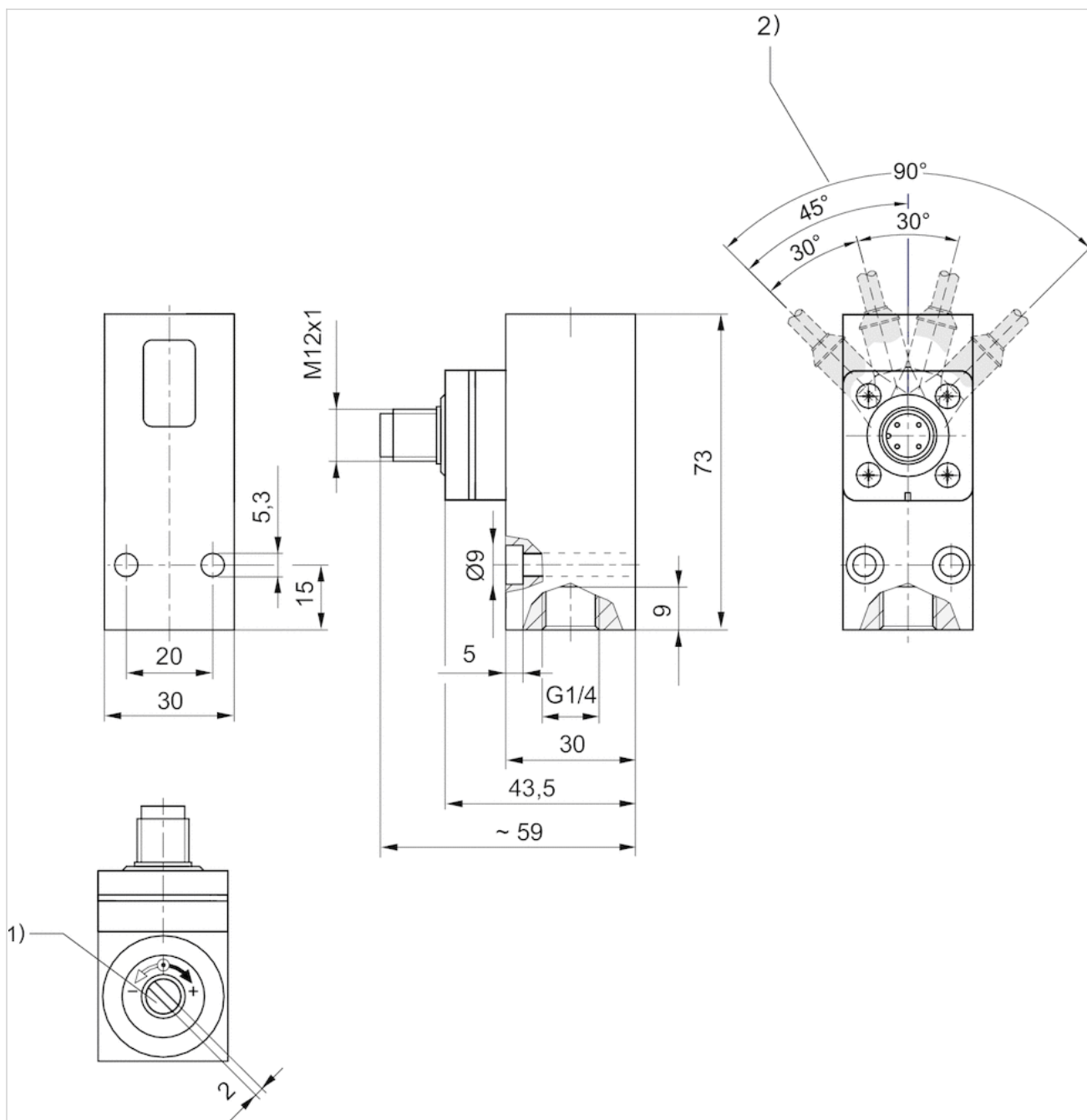
The microswitch has silver-plated contacts.

Technical information

Material	
Housing	Aluminum
Seals	Acrylonitrile butadiene rubber
Electr. connection	Brass, nickel-plated

Dimensions

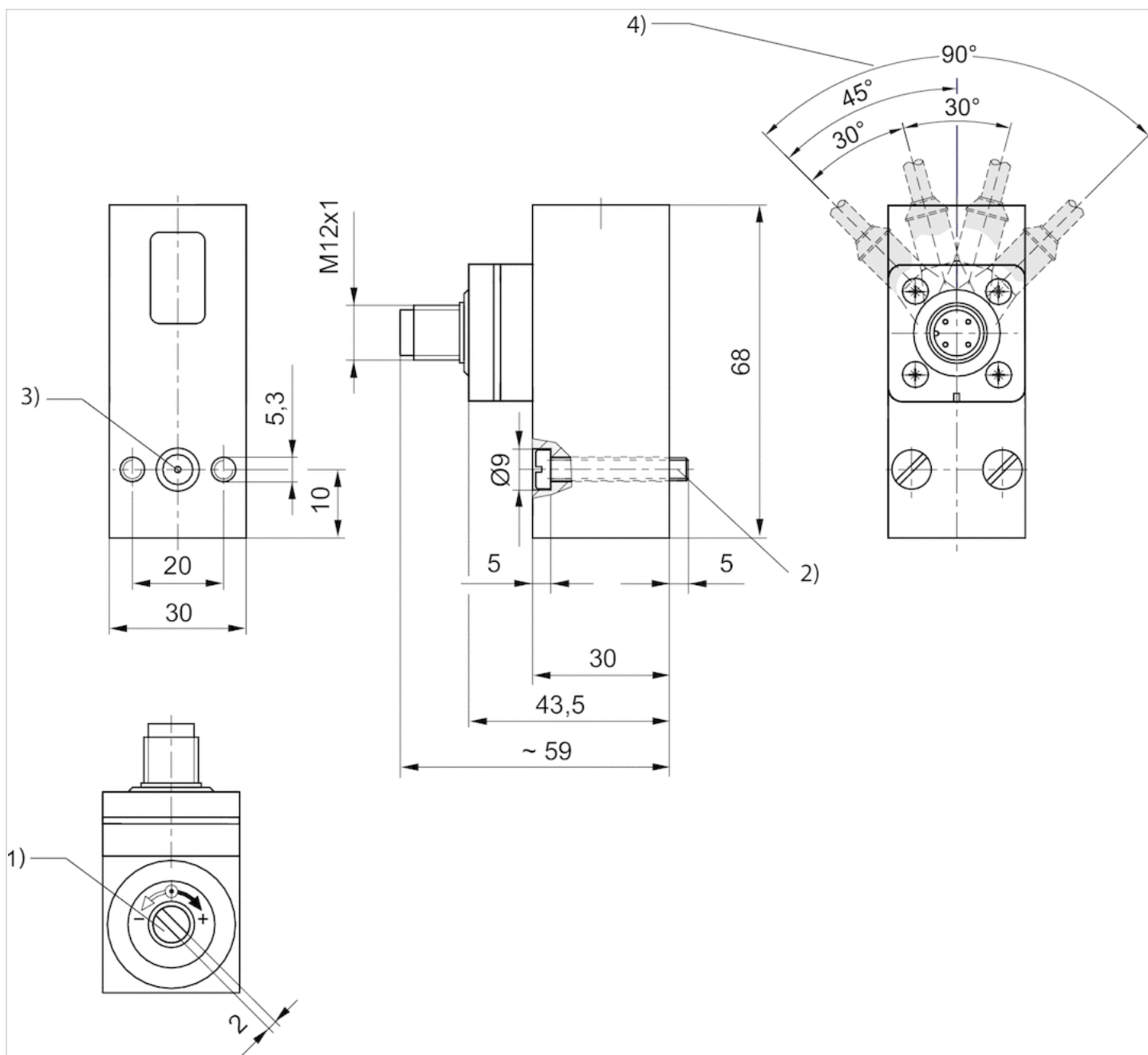
Fig. 1



1) Adjustment screw, self-holding

2) Detent position

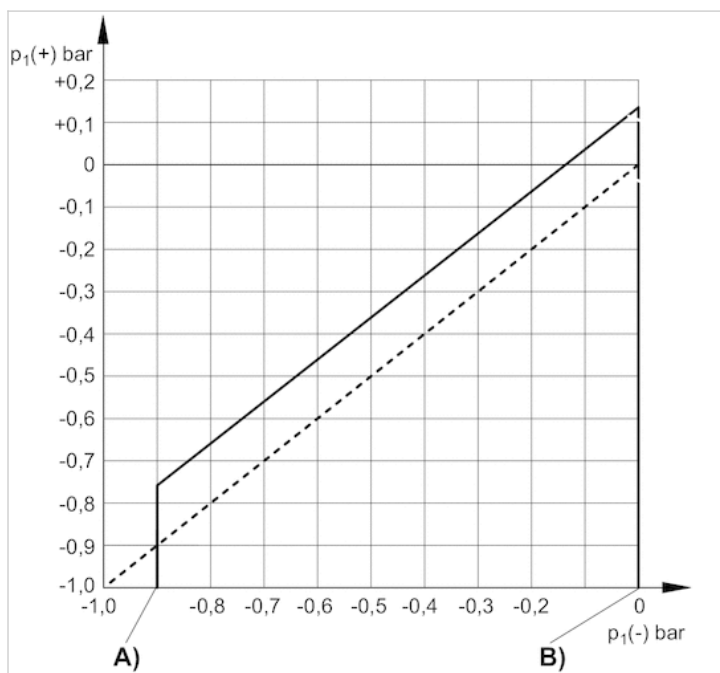
Fig. 2



- 1) Adjustment screw, self-holding
- 2) cylinder screw M5x30 (included in scope of delivery)
- 3) O-ring Ø5x1,5 (included)
- 4) Detent position

Diagrams

differential switching pressure characteristic curve (-09 - 0 bar)



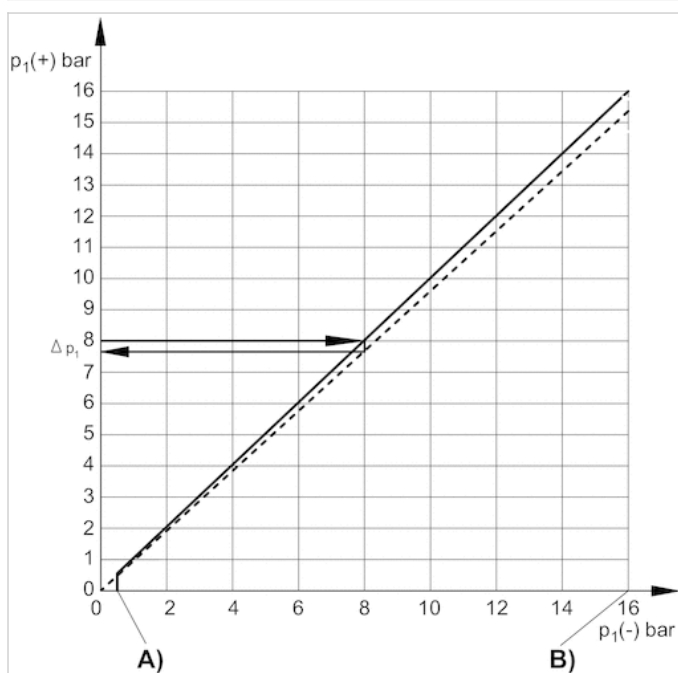
A) $p_1(-)$, min.

B) $p_1(-)$, max.

$p_1(+)$ = upper switching pressure with increasing pressure

$p_1(-)$ = lower switching pressure with decreasing pressure

differential switching pressure characteristic curve (02 - 16 bar)



A) $p_1(-)$, min.

B) $p_1(-)$, max.

$p_1(+)$ = upper switching pressure with increasing pressure

$p_1(-)$ = lower switching pressure with decreasing pressure

Δp_1 = max. operating pressure difference or hysteresis

Example:

$p1 (+) = 8 \text{ bar} > p1 (-) = 7.6 \text{ bar}$
 $\Delta p1 = 0.4 \text{ bar}$

max. permissible continuous current I max. [A] with ohmic load

U [V]	I [A] 1)	I [A] 2)
30-250	3A	
30 / 48 / 60 / 125		3 / 1,2 / 0,8 / 0,4

reference cycle: 30/min., reference temperature: + 30 °C

- 1) AC
- 2) DC

max. permissible continuous current I max. [A] with inductive load

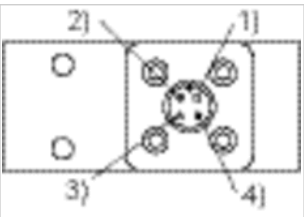
U [V]	I [A] 1) 3)	I [A] 2) 4)
30-250	3A	
30 / 48 / 60 / 125		2 / 0,55 / 0,4 / 0,2

reference cycle: 30/min., reference temperature: + 30 °C

- 1) AC
- 2) DC
- 3) $\cos \approx 0,7^{\circ}$
- 4) $L/R \approx 10 \text{ ms}$

Pin assignments

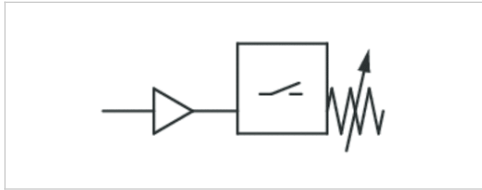
Pin assignments



Pin	1	2	3	4
Allocation	+UB	break contact	No function	NO (make contact)

Pressure Switches, Series PM1

- Operating pressure 2.9 ... 232 psi
- Mechanical
- Spring-loaded bellow, non-adjustable
- Electr. connection Plug, EN 175301-803, form A
- Compressed air connection CNOMO
- PM1-M3-F001



Type	Mechanical
Function	change-over contact (mechanical)
Mounting orientation	Any
Compressed air connection	CNOMO
Working pressure min./max.	3 ... 232 psi
Ambient temperature min./max.	-4 ... 176 °F
Medium temperature min./max.	14 ... 176 °F
Medium	Compressed air
Measurement	Relative pressure
Switching element	microswitch (input/output)
Protection against overpressure	1160 psi
Max. switching frequency	1,5 Hz
Shock resistance max.	15 g
Vibration resistance	10 g (60 - 500 Hz)
Repeatability (% of full scale value)	± 1 %
Switching point	adjustable
Hysteresis	max. switching pressure difference
DC operating voltage,min./max.	12 ... 30 V DC
Operational voltage AC,min./max.	12 ... 250 V AC
DC switching current, max.	3 A
Mounting types	via through holes
Protection class	IP65
Electr. connection	Plug, EN 175301-803, form A
Weight	0.353 lbs

Technical data

Part No.	Type	Operating pressure range	DC switching current, max.
		min./max.	
R412010721	PM1-M3-F001	2.9 ... 232 psi	3 A

Min. switching pressure range 0.2 bar falling/0.5 bar rising, Without valve plug connector

Technical information

Switching function increasing pressure: contact switches from 1-2 to 1-3.

Switching function decreasing pressure: contact switches from 1-3 to 1-2.

Set to 21.75 psi operating pressure. Adjustment screw secured and covered by an adhesive label.

Notice: Too-high currents can damage contacts. Inductive or capacitive loads must be equipped with appropriate spark-quenching!

The microswitch has silver-plated contacts.

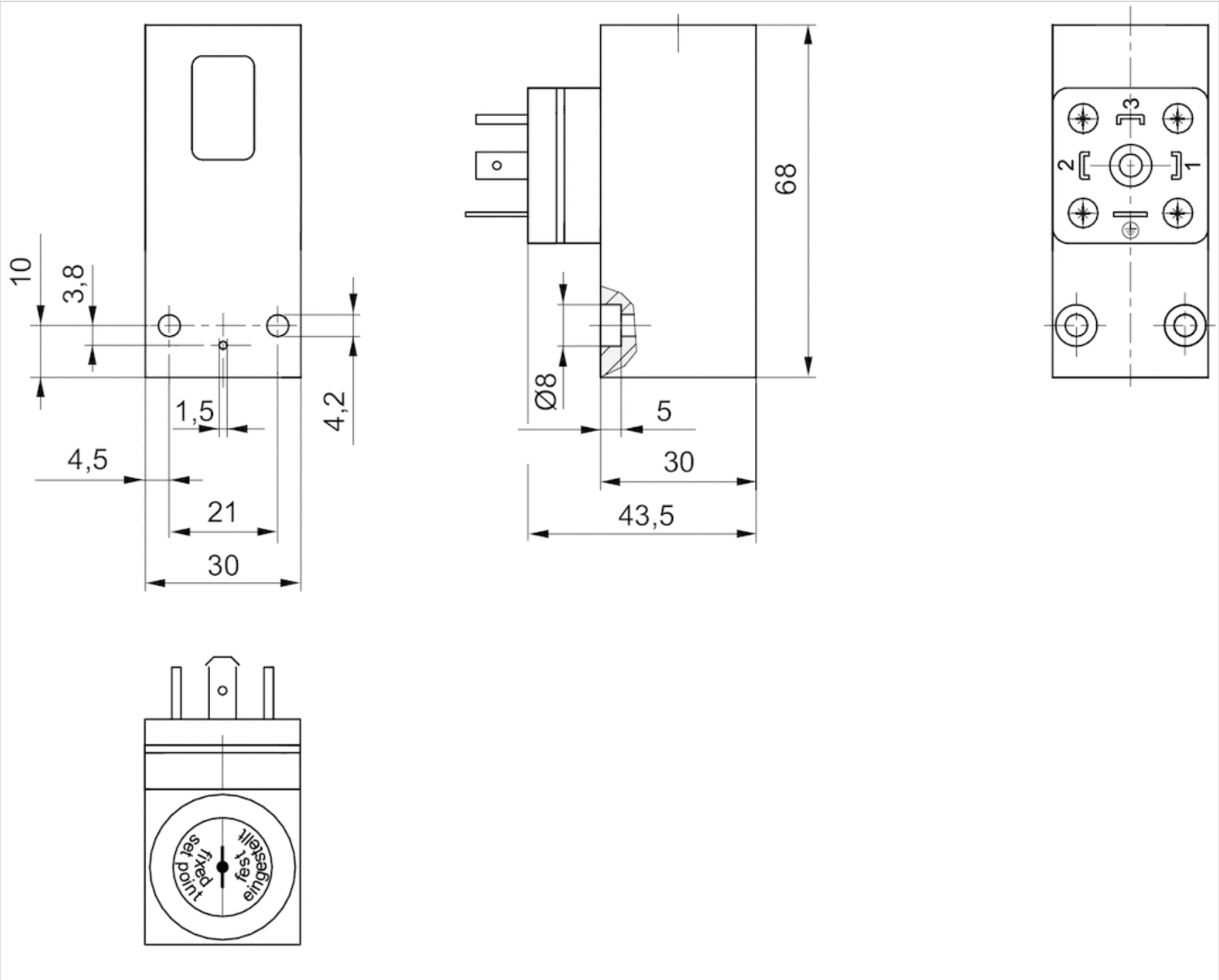
Please observe the pin assignment when selecting plug connectors.

Technical information

Material	
Housing	Aluminum
Electr. connection	Brass, nickel-plated

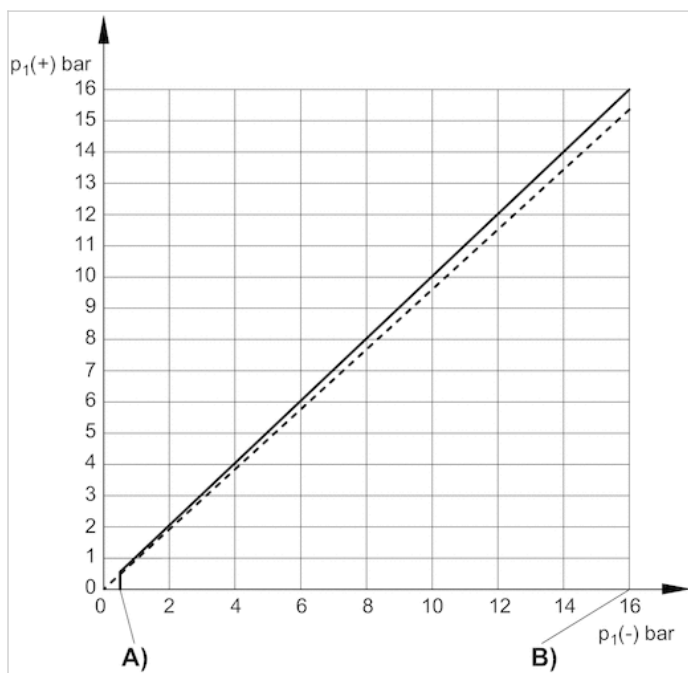
Dimensions

Dimensions



Diagrams

differential switching pressure characteristic curve (02 - 16 bar)



A) $p_1(-)$, min.

B) $p_1(-)$, max.

$p_1(+)$ = upper switching pressure with increasing pressure

$p_1(-)$ = lower switching pressure with decreasing pressure

max. permissible continuous current I_{max} [A] with ohmic load

U [V]	I [A] 1)	I [A] 2)
30	5	3
48	5	1,2
60	5	0,8
125	5	0,4
250	5	–

reference cycle: 30/min., reference temperature: + 30 °C

1) AC

2) DC

max. permissible continuous current I_{max} [A] with inductive load

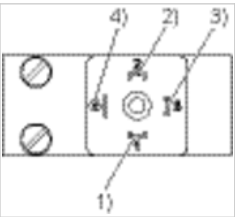
U [V]	I [A] 1) 3)	I [A] 2) 4)
30	3	2
48	3	0.55
60	3	0.4
125	3	0.15
250	3	–

reference cycle: 30/min., reference temperature: + 30 °C

- 1) AC
- 2) DC
- 3) $\cos \approx 0,7^\circ$
- 4) $L/R \approx 10\text{ ms}$

Pin assignments

PIN assignment for valve plug connectors



Pin	1	2	3	4
Allocation	+UB	break contact	NO (make contact)	GND

Double nipple, Series PE5

- External thread



Weight

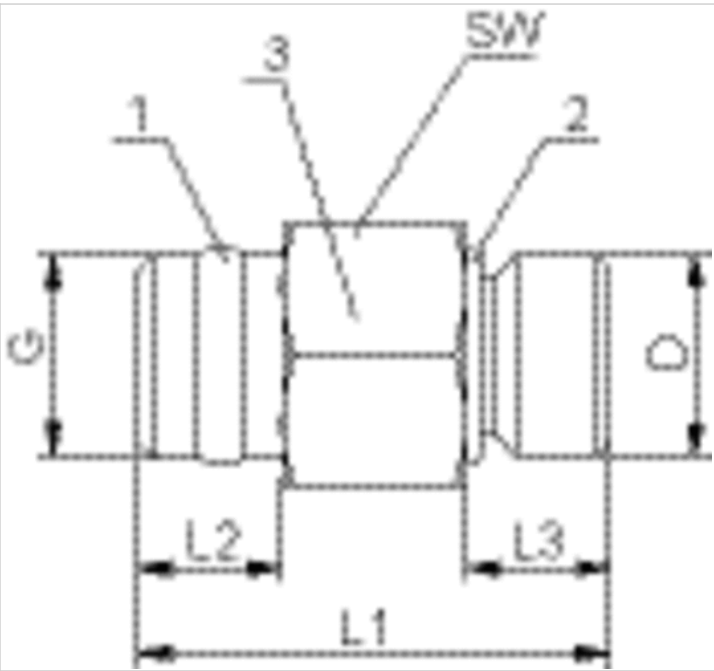
0.088 lbs

Technical data

Part No.	Port G	Port D	Delivery unit
R412010015	G 1/4	G 1/8	2 piece
R412010016	G 1/4	G 1/4	2 piece

Dimensions

Dimensions



- 1) sealing ring Polytetrafluorethylen
- 2) O-ring - acrylonitrile butadiene rubber
- 3) Housing - brass, nickel-plated

Dimensions

Part No.	Port G	Port D	L1	L2	L3	SW
R412010015	G 1/4	G 1/8	30	10	8.5	17
R412010016	G 1/4	G 1/4	30	10	8.5	17

Valve plug connector, series CON-VP

- Socket, form A, 3+E, angled, 90°
- EN 175301-803
- unshielded
- with LED green/red



Connection type	Screws
Ambient temperature min./max.	-40 ... 194 °F
Operational voltage	See table below
Protection class	IP65
Mounting screw tightening torque	0.3 ft./lbs.
Weight	0.066 lbs

Technical data

Part No.		Operational voltage	Max. current	Contact assignment	LED status display
1834484059		300 V, DC	10 A	3+E	-
8941012462		24 V, DC	8 A	3+E	green/red

Part No.	suitable cable-Ø min./max	
1834484059	0.24 / 0.31 inch	1)
8941012462	0.18 / 0.43 inch	-

1) Profile seal

Technical information

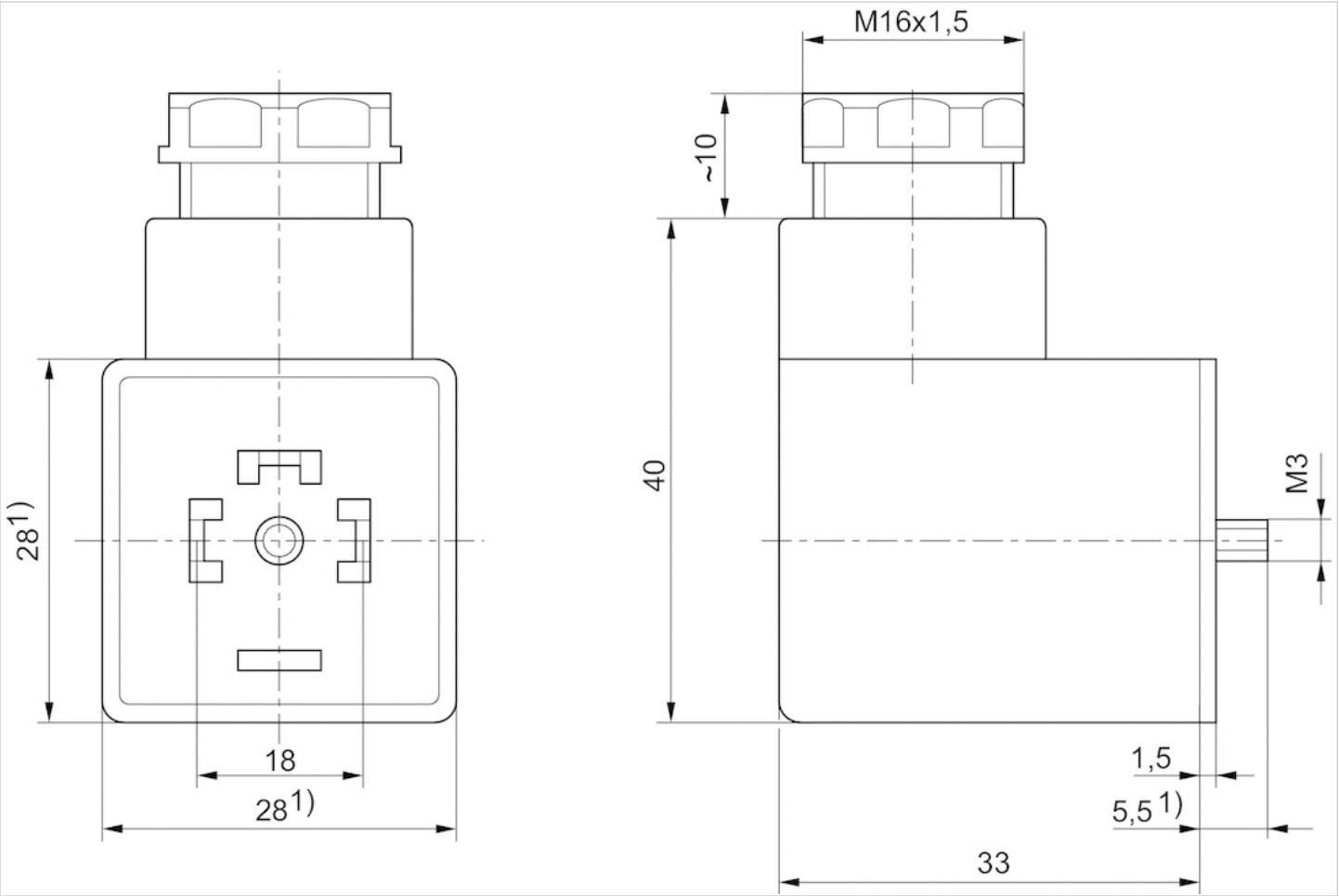
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Seals	caoutchouc/butadiene caoutchouc

Dimensions

Dimensions



1) Max.

Round plug connector, Series CON-RD

- Socket, M12x1, 5-pin, A-coded, angled, 90°
- open cable ends
- for DeviceNet
- with cable
- unshielded



Ambient temperature min./max.	-40 ... 185 °F
Operational voltage	48 V, AC/DC
Protection class	IP65
Wire cross-section	0 in²
Weight	See table below

1	BN
2	WH
3	BU
4	BK
5	

Technical data

Part No.	Max. current	Number of wires	Cable length	Weight
1834484259	4 A	4	9.84 ft.	0.286 lbs
1834484260	4 A	4	16.4 ft.	0.445 lbs
1834484261	4 A	4	32.81 ft.	0.853 lbs

Technical information

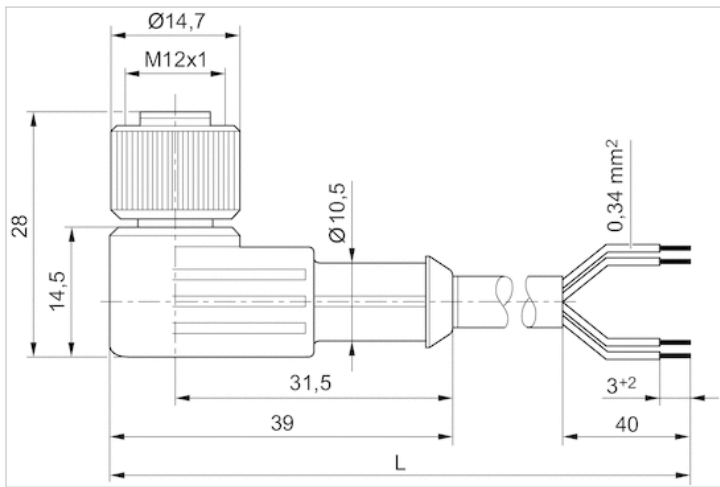
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Cable sheath	Polyurethane

Dimensions

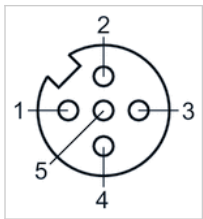
Dimensions



L = length

Pin assignments

Pin assignment socket



- (1) BN=brown
- (2) WH=white
- (3) BU=blue
- (4) BK=black
- (5) not assigned

Double nipple

- External thread
- G 1/4
- External thread
- G 1/8, G 1/4
- FPT-S-RDO



Working pressure min./max.
0 ... 232 psi

Ambient temperature min./max.
-4 ... 176 °F

Technical data

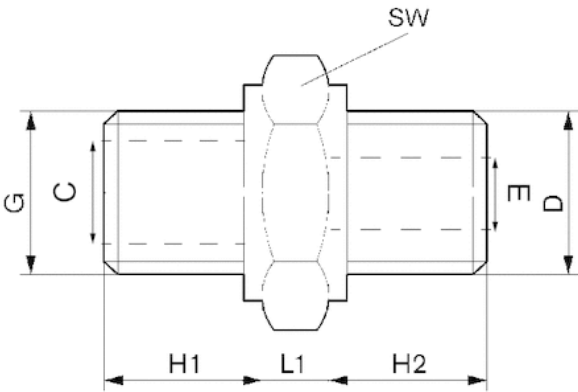
Part No.	Port G	Port D	Delivery unit
1823391016	G 1/4	G 1/8	10 piece
1823391017	G 1/4	G 1/4	10 piece

Technical information

Material	
Material	Brass, nickel-plated
Seal	Polyvinyl chloride, hard

Dimensions

Dimensions



Dimensions

Part No.	Port D	Port G	ØC	ØE	H1	H2	L1	SW
1823391016	G 1/8	G 1/4	8	5	10	7	5	17
1823391017	G 1/4	G 1/4	8	7.5	10	10	5	17