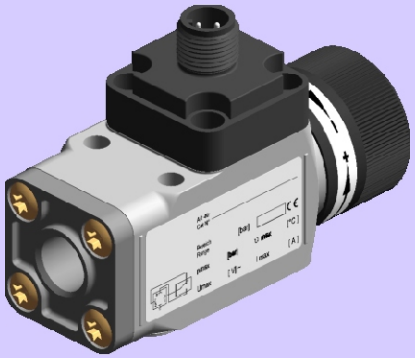
MDS Mechanical Pressure Switch

Mechanical Pressure Switches with adjustable switching output for monitoring pneumatic or hydraulic pressure



- Robust and compact unit
- Adjustable switching point
- High precision
- Up to 350 bar max. working pressure (more upon request)
- Electromechanical signal transducer
- M12 and M3 plug connection per DIN EN 175301-803
- Changeover contact function
- Long life

Bühler Technologies GmbH
D - 40880 Ratingen, Harkortstr. 29
Tel.: + 49 (0) 2102 / 4989-0 Fax: + 49 (0) 2102 / 4989-20
Internet: www.buehler-technologies.com
e-mail: fluidcontrol@buehler-technologies.com

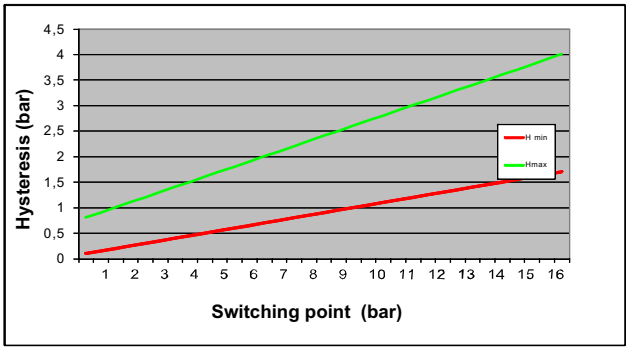
Technical Specifications MDS Series

Mediums	self-lubricating fluids like hydraulic oils and lubricants, compressed air	
Process connection	G1/8”	G1/4”
Gasket seal	according to DIN3852-E	
Fastening torque	20 Nm	25 Nm
Measuring principle	Membrane spring-loaded ≤16 bar,	Plunger spring-loaded ≥ 16 bar
Max. operating pressure	60 bar	350 bar
Materials	Membrane: NBR	Plunger: steel
Gasket	---	PTFE, NBR
Housing	Steel, galvanised	steel, galvanised
Switching output	Changer	
Number	1	
Switching element	micro switch with silver plated contacts	
Max. switching frequency	100/min	
Switching power with plug	**M3**	**M12**
DC to 28 V	2 A	2 A
AC to 250 V	4 A	---

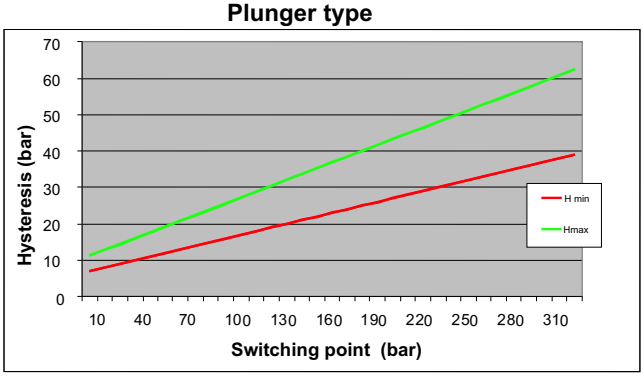
Mounting position	any
Response	min. velocity of pressure rise 0.01 bar/s
Switching point	
Accuracy	± 2% of range value at room temperature
Reproducibility	same as accuracy
Ambient conditions	
Temperature range	
Environment / operation	-20... +80°C
Vibration resistance	A-10G / 10-500 Hz
Shock resistance	I-100G/6 ms
Weight	0,15 kg

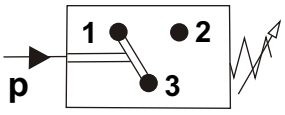
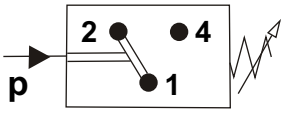
Switch-back difference

Membrane Type



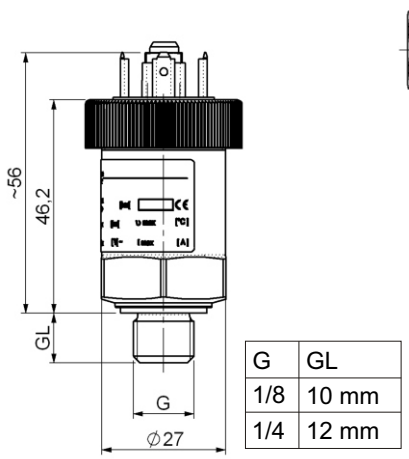
Plunger type



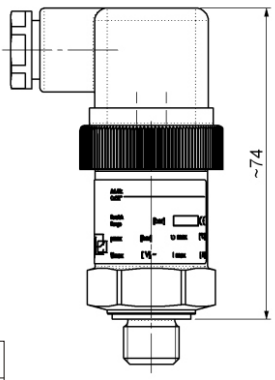
Plug connection Max. voltage Protection class Cable fitting	**M3** (DIN EN 175301-803) 3 pol. + PE 250V IP65 PG9	**M12** (socket) 4 pol. 28V IP67** **when connected
Pin assignment		

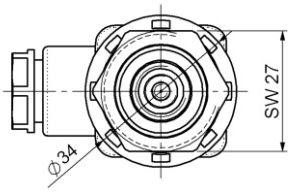
Dimensions

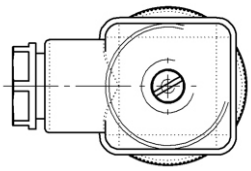
Version M3



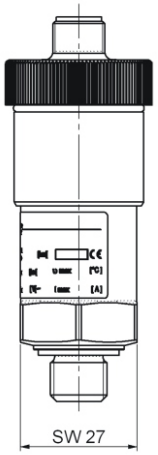
G	GL
1/8	10 mm
1/4	12 mm

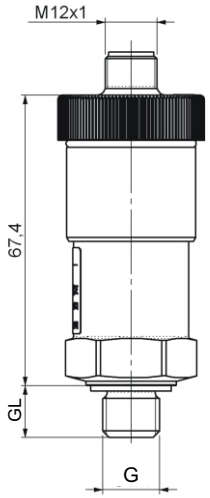


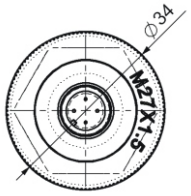




Version M12







Accessories: Part no.: 9144050047 Connecting cable M12x1, 4-pin, L = 5m
Part no.: 9146100159 Contact box M12x1, 90° angle

Product code for MDS

MDS - □ - □ - □ - □

Model

Connector
M3 or M12

Fluid Port
G1/8" or G1/4"

Pressure ranges
Setting of switching point [1] (optional)

Pressure ranges

8:	0,5...8 bar	Membrane pressure switch
16:	1...16 bar	Membrane pressure switch
120:	10...120 bar	Piston pressure switch
250:	20...250 bar	Piston pressure switch
320:	30...320 bar	Piston pressure switch

[1] If required, the switching point setting can be executed by the factory. The switching point must be set for rising or falling pressure, i.e. switching point monitoring of 0 bar to switching point (rising) or from max. operating pressure decreasing to switching point (falling). Refer to the following example for the circuitry:

MDS-M3-G1/4-120-80R (switching point 80 bar rising)
PIN3-2 closed when switching point is reached

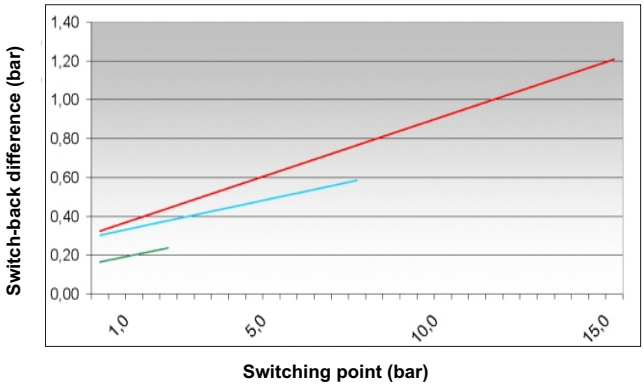
MDS-M3-G1/4-120-80F (switching point 80 bar falling)
PIN3-1 closed when switching point is reached

Technical Specifications MDSM & MDSK Series

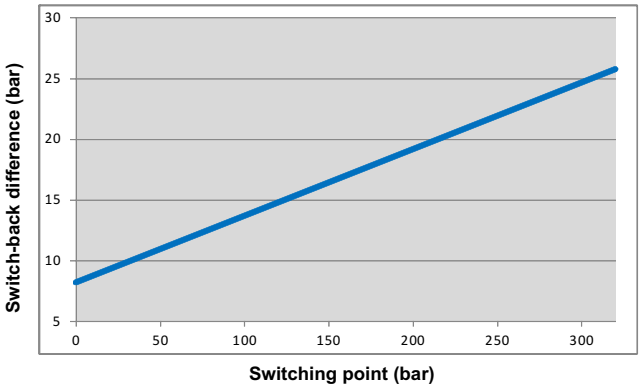
	MDSM	MDSK
Mediums	Neutral fluids, compressed air	self-lubricating fluids such as hydraulic oils and lubricants
Process connection	G1/4” inside	G 1/4” rotary, vertical flange DIN ISO 16873 Fastening torque: 25 Nm
Mounting position	any	any
Measuring principle	Spring-loaded membrane	Spring-loaded piston
Max. operating pressure	60 bar	350 bar
Min. velocity of pressure rise	0,01 bar/s	0,01 bar/s
Switching point		
Accuracy/reproduciblity	± 2% of range value at room temperature	± 2% of range value at room temperature
Materials		
Measuring element	membrane: NBR	piston: stainless steel 1.4305
Pressure connection	zinc die cast (G1/4” inside)	galvanised steel (G1/4” rotary), zinc die cast (vertical flange)
Housing	zinc die cast	zinc die cast
Switching output	Changer	Changer
Number	1, adjustable with lock	1, adjustable with lock
Switching element	micro switch with silver plated contacts	micro switch with silver plated contacts
Max. switching frequency	200 / min.	200 / min.
Max. switching power		
with plug	**M3** **M12**	**M3** **M12**
DC to 28V	3 A 3 A	3 A 3 A
AC to 250V	6 A ---	6 A ---
Ambient conditions		
Temperature range		
Environment/operation	-10 °C...+80 °C	-10 °C...+80 °C
Vibration resistance	A-10G/10-500 Hz	A-10G/10-500 Hz
Shock resistance	I-100G/6 ms	I-100G/6 ms
Weight	0,3 kg	0,33 kg

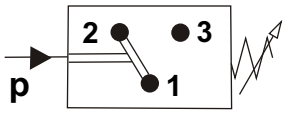
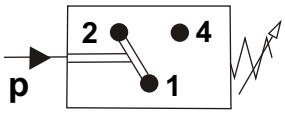
Switch-back difference:

MDSM



MDSK



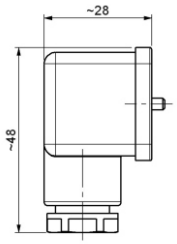
Plug connection	**M3** (DIN EN 175301-803)	**M12** (Socket)
	3 pol. + PE	4 pol.
Max. voltage	250V	28V
Protection class	IP65	IP67**
Cable fitting	PG9	
		**when connected
Pin assignment		

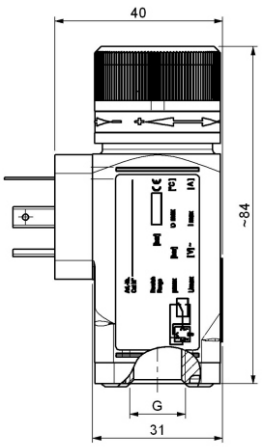
Dimensions

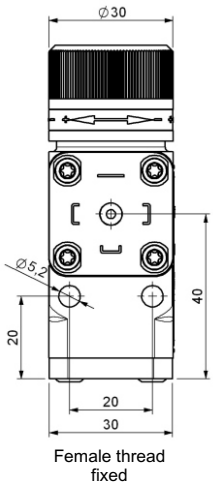
MDSM

Version M3

Contact box included

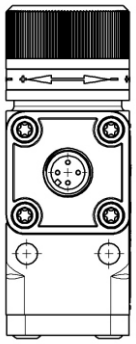




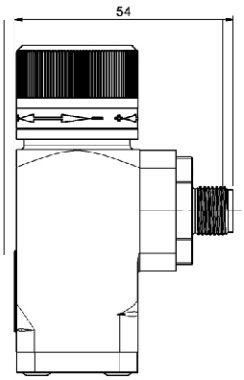


Female thread fixed

Version M12



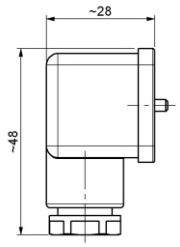
Female thread fixed

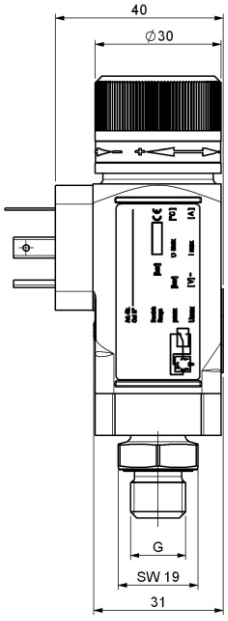


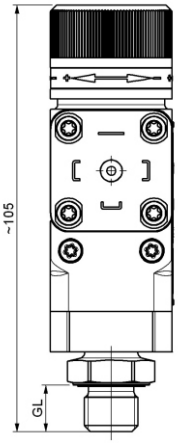
MDSK

Version M3

Contact box included

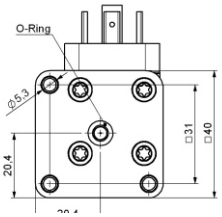


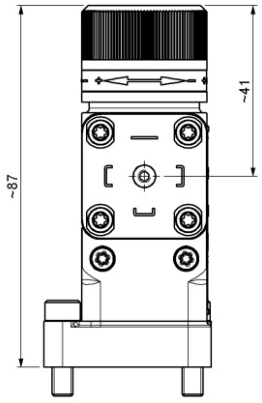




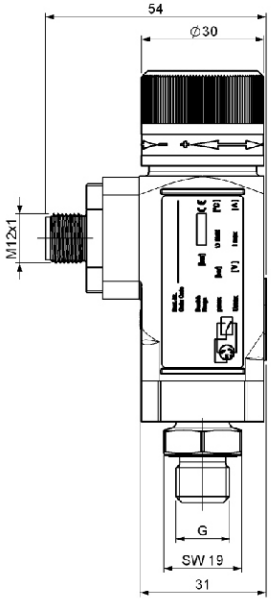
Male thread twistable

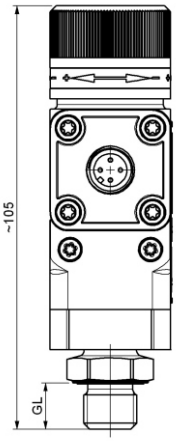
G	GL
1/4	12 mm





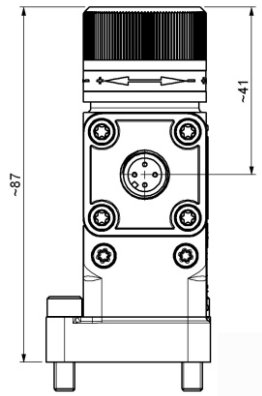
Version M12





Male thread twistable

Vertical flange DIN ISO 16873



Accessories:

Art-Nr.: 9144050047 Connecting cable M1 2x1, 4-pin plug, L = 5m
Art-Nr.: 9146100159 Contact box M1 2x1, 90° angle
Art-Nr.: 9008429 Double nipple G1/4, stainless steel

Product code

MDS □ - □ - □ - □ - □

Model
M MDSM
K MDSK

Plug connection
M3 or M12

G1/4i G1/4" inside (MDSM only)
G1/4d G1/4" twistable (MDSK only)
VF Vertical flange per ISO 16873 (MDSK only)

Pressure ranges
Setting of switching point [1)]

Pressure ranges

8 :	0,5...8 bar	MDSM
16:	1...16 bar	MDSM
120:	10...120 bar	MDSK
250:	20...250 bar	MDSK
320:	30...320 bar	MDSK

[1)] If required, the switching point setting can be executed by the factory. The switching point must be set for rising or falling pressure, i.e. switching point monitoring of 0 bar to switching point (rising) or from max. operating pressure decreasing to switching point (falling). Refer to the following example for the circuitry:

MDSK-M3-G1/4-120-80R (switching point 80 bar rising)
PIN1-3 closed when switching point is reached

MDSK-M3-G1/4-120-80F (switching point 80 bar falling)
PIN1-2 closed when switching point is reached