

Industrial Sensors



Level & Flow
Pressure

MEYLE

... three companies, one service ...

IHM

INGENIEURBÜRO
HERBERT MEYER

Systems for the Automation Industry

System Integrator and Engineering
company for applications and systems

MEYLE

MEYER INDUSTRIE-
ELECTRONIC GMBH

Components for the Automation Industry

Distribution of a wide range of components
for the automation-, process-, machine
building- and manufacturing industries

ISR

INGENIEURGESELLSCHAFT
SACHVERSTÄNDIGER
REVISIONSINGENIEURE MBH

Inspection Company for Quality
Assurance

Certified test laboratory for medical
equipment and commercial building
safety and quality tests

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2200 Series / 2600 Series- General Purpose Industrial Pressure Transducers

- ▶ Gauge, Absolute, Vacuum and Compound Pressure Models Available
- ▶ Submersible, General Purpose and Wash down Enclosures
- ▶ High Stability Achieved by CVD Sensing Element
- ▶ Millivolt, Voltage and Current Output Models

The 2200 series features stability and accuracy in a variety of enclosure options. The 2600 series extends the packaging options via an all welded stainless steel back end for demanding submersible and industrial applications. The 2200 and the 2600 feature proven CVD sensing technology, an ASIC (amplified units), and modular packaging to provide a sensor line that can easily accommodate specials while not sacrificing high performance.

Specifications

Input	
Pressure Range	Vacuum to 400 bar (6000 psi)
Proof Pressure	2 x Full Scale (FS) (1.5 x Fs for 400 bar, >= 5000 psi)
Burst Pressure	>35 x FS <= 6 bar (100 psi); >20 x FS >=60 bar (1000 psi); >5 x FS <= 400 bar (6000 psi)
Fatigue Life	Designed for more than 100 million FS cycles
Performance	
Long Term Drift	0.2% FS/year (non-cumulative)
Accuracy	0.25 % FS typical (optional 0.15% FS)
Thermal Error	1.5% FS typical (optional 1% FS)
Compensated Temperatures	-20° to 80° C (-5° to 180° F)
Operating Temperatures	-40° to 125° C (-22° to 260° F) for elec. codes A, B, C, 1 -20° to 80° C (-5° to 180° F) for elec. codes 2, D, G, 3 -20° to 50° C (-5° to 125° F) for elec. codes F,M, P Amplified units >100°C maximum 24 Vdc supply
Zero Tolerance	1% of span
Span Tolerance	1% of span
Mechanical Configuration	
Pressure Port	see ordering chart
Wetted Parts	17-4 PH Stainless Steel
Electrical Connection	see ordering chart
Enclosure	316 ss, 17-4 PH ss IP65 for elec. codes A, B, C, D, G, 1, 2, 3 IP67 for elec. code "F" IP68 for elec. codes M, P IP30 for elec. code "3" with flying leads
Vibration	35g peak sinusoidal, 5 to 2000 Hz
Acceleration	100g steady acceleration in any direction 0.032% FS/g for 1 bar (15 psi) range decreasing logarithmically to 0.0007% FS/g for 400 bar (6000 psi) range.
Shock	Withstands free fall to IEC 68-2-32 procedure 1
Approvals	CE
Weight	approx. 100 grams (additional cable; 75 g/m)

Individual Specifications

Millivolt Output units	
Output	100 mV +/-1 mV
Supply Voltage (Vs)	10 Vdc (15 Vdc max.) Regulated
Bridge resistance	2600-6000 ohms
Voltage Output units	
Output	see ordering chart
Supply Voltage (Vs)	1.5 Vdc above span to 35 Vdc @ 6 mA
Supply Voltage Sensitivity	0.01% FS/Volt
Min. Load Resistance	(FS output / 2) Kohms
Current Consumption	approx 6 mA at 7.5V output
Current Output units	
Output	4-20 mA (2 wire)
Supply Voltage (Vs)	24 Vdc, (7-35 Vdc)
Supply Voltage Sensitivity	0.01% FS/Volt
Max. Loop Resistance	(Vs-7) x 50 ohms



Connection Code		mV Units				Current units (4-20mA)				Voltage units			
		IN+	OUT+	OUT-	IN-	(+)	(-)	EARTH	IN+	COM	OUT+	EARTH	
A, B, G	"DIN"	PIN	1	2	3	E	1	2	4	1	2	3	4
C	"10-6 Bayonet"	PIN	A	B	C	D	A	B	E	A	C	B	E
D	"cable"		R	Y	BL	G	R	BK	DRAIN	R	BK	W	DRAIN
F	"IP 67 cable"		R	Y	BL	G	R	BL	DRAIN	R	W	Y	DRAIN
M, P	"Immersible"		R	Y	BL	W	R	BL	DRAIN	R	W	Y	DRAIN
1	"8-4 Bayonet"	PIN	A	B	C	D	A	B	D	A	C	B	D
2	"cable"		R	W	G	BK	R	BK	DRAIN	R	BK	W	DRAIN
3	"conduit & cable"		R	W	G	BK	R	BK	DRAIN	R	BK	W	DRAIN

Cable Legend:
 R = Red
 BL = Blue
 BK = Black
 W = White
 G = Green
 Y = Yellow

How to Order

Use the **bold** characters from the chart below to construct a product code

2200 B G A60 01 A 3 U A

Series **2200** **2600**

Output
A - 100 mV **C** - 1-6V **J** - 0.5-5.5V
B - 4-20mA **D** - 1-11V **R** - 0-5V
H - 1-5V **S** - 0-10V

Pressure Datum
A* - Absolute **G** - Gauge
 *Max absolute range is 25 bar.

Pressure Range - bar
A10 - 0-1 **B25** - 0-25 **Vac** = -1 bar
A16 - 0-1.6 **B40** - 0-40 **1A0** - Vac-0
A25 - 0-2.5 **B60** - 0-60 **1A6** - Vac-0.6
A40 - 0-4 **C10** - 0-100 **2A5** - Vac-1.5
A60 - 0-6 **C16** - 0-160 **4A0** - Vac-3
B10 - 0-10 **C25** - 0-250 **6A0** - Vac-5
B16 - 0-16 **C40** - 0-400 **1B0** - Vac-9
1B6 - Vac-15
2B5 - Vac-24
4B0 - Vac-39

Pressure Range - psi
F15 - 0-15 **G60** - 0-600 **Vac** = -15 psi
F30 - 0-30 **H10** - 0-1,000 **1F5** - Vac-0
F60 - 0-60 **H15** - 0-1,500 **3F0** - Vac-15
G10 - 0-100 **H20** - 0-2,000 **6F0** - Vac-45
G15 - 0-150 **H30** - 0-3,000 **1G0** - Vac-85
G20 - 0-200 **H40** - 0-4,000 **1G5** - Vac-135
G30 - 0-300 **H50** - 0-5,000 **2G0** - Vac-185
G50 - 0-500 **H60** - 0-6,000 **3G0** - Vac-285

Pressure Port
01 - G1/4 External **08** - 1/8-27 NPT External
02 - 1/4-18 NPT External **09** - G1/8 Internal
03 - G1/2 Manometer **00** - G1/4 Internal
04 - 7/16-20UNF to SAE J514 **0A** - R1/4 External
05 - G1/4 Ext. Soft Seal **19** - Nose Cone (2600 Only)

Electrical Connection
2200 Series
A - 4 PIN DIN (Micro) Mating Connector Supplied
B - 4 PIN DIN (Micro) Mating Connector Not Supplied
2 - Cable Nema 4 USA
D - Cable Weatherproof IP65 Europe
F - Cable Gland Metal IP67

2600 Series
C - Fixed Plug Size 10-6 Mating Plug Not Supplied
G - Fixed Plug To DIN 43650 Mating Plug Supplied
M - Moulded Cable Immersible Max. (See Note 1)
P - Moulded Detachable Immersible Cable (See note 1/2)
1 - Fixed Plug Size 8-4 Mating Plug Not Supplied
3 - Conduit Connector 1/2NPT Ext. 1M Cable (See Note 2)

Performance Code
 Accuracy/Thermal
A - .25%/1.5%
B - .15%/1.0%

Cable Length
U - No Cable Fitted (See Notes 1 and 2)
D - 1 Metre (3 feet)
E - 3 Metres (9 feet)
F - 5 Metres (16 feet)
G - 10 Metres (32 feet)

Apparatus Protection
2 - mV Only Transient Protection CE Mark
3 - Amplified Only RFI Protected CE Mark

Notes:

- Where electrical connection -**M** is specified, customer must select cable length from Table 1.
- Where electrical connection -**3** or **P** and cable length -**U** occur in part number, the unit will be supplied with flying leads (IP30).
- Additional Pressure Ranges are available. Please consult factory.


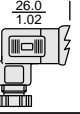
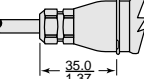
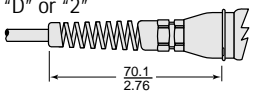
Table 1 - Cable Units

(2600 Series) (2200 Series select "U" through "G")



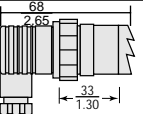
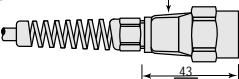
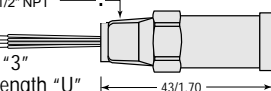
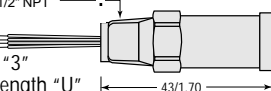
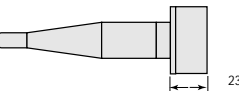
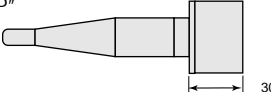
Code	Length (M)	Code	Length (M)	Code	Length (M)	Code	Length (M)
U	No Cable Fitted	F	5	K	25	P	75
		G	10	L	30	O	100
D	1	H	15	M	40	R	125
E	3	J	20	N	50	S	150

Dimensions

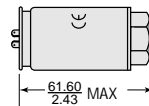
2200 Series

Mini 4 Pin - No Connector
Code "B" 
Mini 4 Pin - With Connector
Code "A"  26.0 / 1.02
IP67 Cable (Waterproof)
Code "F"  35.0 / 1.37
IP65 or NEMA4 Cable
Code "D" or "2"  70.1 / 2.76

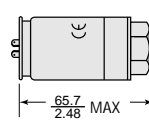
2600 Series

10-6 or 8-4 Mil-C Connector
10-6 Code "C" 
8-4 Code "1"  22 / 0.87
Large DIN 43650 Plug
Code "G"  68 / 2.65, 33 / 1.30
Conduit Connector with Cable
Code "3" 1/2" NPT  43 / 1.70
Conduit Connector with Flying Leads
1/2" NPT  43 / 1.70
Code "3" with length "U" 
Moulded, Immersible Cable
Code "M"  23
Detachable Moulded, Immersible Cable
Code "P"  30

mV Gauge/Absolute Amplified Gauge



Amplified Absolute

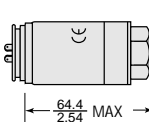


Maximum diameter 27.3 mm (1.07")

mV Gauge/Absolute Amplified Gauge

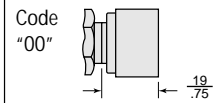


Amplified Absolute

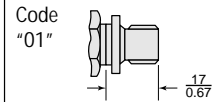


Maximum diameter 27.3 mm (1.07")

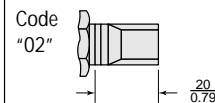
G 1/4 Internal



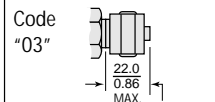
G 1/4 External



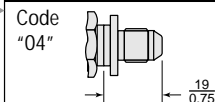
1/4 - 1/8 NPT



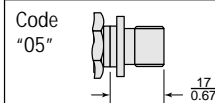
G 1/2 Manometer



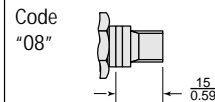
7/16-20 UNF-2A



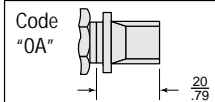
G 1/4 Soft Seal



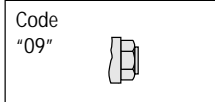
1/8-27 NPT



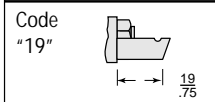
R 1/4



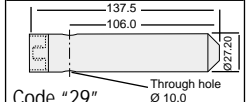
G 1/8 Internal



Nose Cone - Black Acetal



Nose Cone Sink Weight



Code "29"

1200 Series / 1600 Series- *psibar* an OEM Transducer Featuring Exceptional Proof Pressure and Stability Specifications

- ▶ Gauge, Vacuum, and Compound Pressure Models
- ▶ General Purpose and Wash down Enclosures
- ▶ High Proof Pressure Achieved by Thicker Diaphragm Construction
- ▶ Voltage and Current Output Models

The *psibar* features stability and toughness via its CVD and ASIC design coupled with a thicker diaphragm. The thicker diaphragm enables *psibar* to survive most pressure spikes caused by pump ripple, solenoid valves, etc. The 1600 series extends the packaging options by providing an all welded stainless steel back end for demanding industrial applications. The *psibar*'s modular design enables special ordering of fittings, electrical cables, etc. for OEM applications. The ASIC and CVD technology enables us to offer almost any output over any pressure range.

Specifications

Input	
Pressure Range	Vacuum to 400 bar (6000 psi)
Proof Pressure	4 x Full Scale (FS) (<1% FS Zero Shift)
Burst Pressure	>35 x FS <= 4 bar (60 psi); >20 x FS <=40 bar (600 psi); >5 x FS <= 400 bar (6000 psi)
Fatigue Life	Designed for more than 100 million FS cycles
Performance	
Supply Voltage Sensitivity	0.01% FS/Volt
Long Term Drift	0.2% FS/year (non-cumulative)
Accuracy	0.5 % FS typical (optional 0.15% FS)
Thermal Error	2.0% FS typical
Compensated Temperatures	-20° to 80° C (-5° to 180° F)
Operating Temperatures	-40° to 125° C (-22° to 260° F) for elec. codes A, B, C, 1 -20° to 80° C (-5° to 180° F) for elec. codes 2, D, G, 3 -20° to 50° C (-5° to 125° F) for elec. code F temperatures >100°C supply is limited to 24 Vdc
Zero Tolerance	1% of span
Span Tolerance	1% of span
Mechanical Configuration	
Pressure Port	see ordering chart
Wetted Parts	17-4 PH Stainless Steel
Electrical Connection	see ordering chart
Enclosure	316 SS, 17-4 PH ss IP65 for elec. codes A,B,C,D,G,1,2,3 IP67 for elec. codes F IP30 for elec. code "3" with flying leads
Vibration	35g peak sinusoidal, 5 to 2000 Hz
Acceleration	100g steady acceleration in any direction 0.032% FS/g for 1 bar (15 psi) range decreasing logarithmically to 0.0007% FS/g for 400 bar (6000 psi) range.
Shock	Withstands free fall to IEC 68-2-32 procedure 1
Approvals	CE
Weight	approx. 100 grams (additional; cable 75 g/m)

Individual Specifications

Voltage Output units	
Output	see ordering chart
Supply Voltage (Vs)	1.5 Vdc above span to 35 Vdc
Min. Load Resistance	(FS output / 2) Kohms
Current Output units	
Output	4-20 mA (2 wire)
Supply Voltage (Vs)	24 Vdc, (7-35 Vdc)
Max. Loop Resistance	(Vs-7) x 50 ohms



Wire Code	Current Units (4-20mA)			
		(+)	(-)	EARTH
A, B, G "DIN"	PIN	1	2	4
C "10-6 Bayonet"	PIN	A	B	E
D cable		R	BK	DRAIN
F IP 67cable		R	BL	DRAIN
1 "8-4-Bayonet"	PIN	A	B	D
2 "cable"		R	BK	DRAIN
3 "conduit & cable"		R	BK	DRAIN

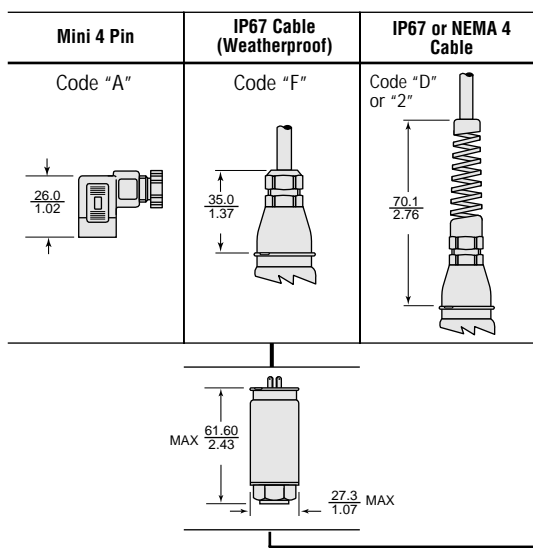
Wire Code	Voltage Units				
		IN+	COM	OUT+	EARTH
A, B, G "DIN"	PIN	1	2	3	4
C "10-6 Bayonet"	PIN	A	C	B	E
D cable		R	BK	W	DRAIN
F IP 67cable		R	W	Y	DRAIN
1 "8-4-Bayonet"	PIN	A	C	B	D
2 "cable"		R	BK	W	DRAIN
3 "conduit & cable"		R	BK	W	DRAIN

Cable Legend:

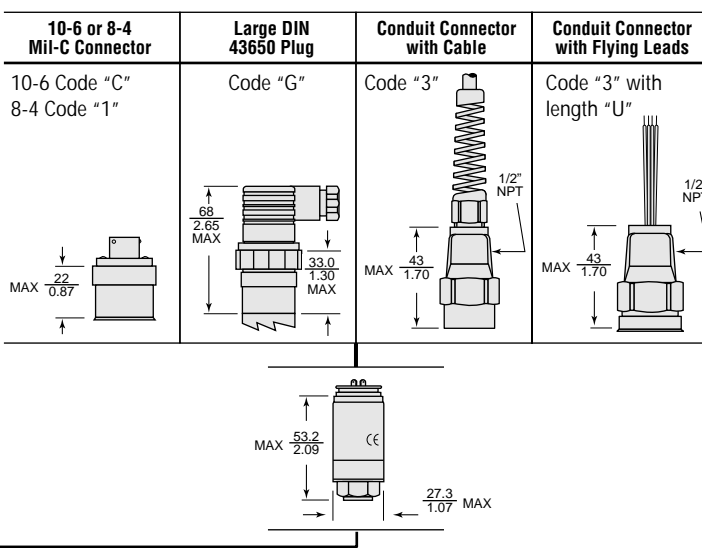
- R = Red
- BL = Blue
- BK = Black
- W = White
- Y = Yellow

Dimensions

psibar 1200 Series



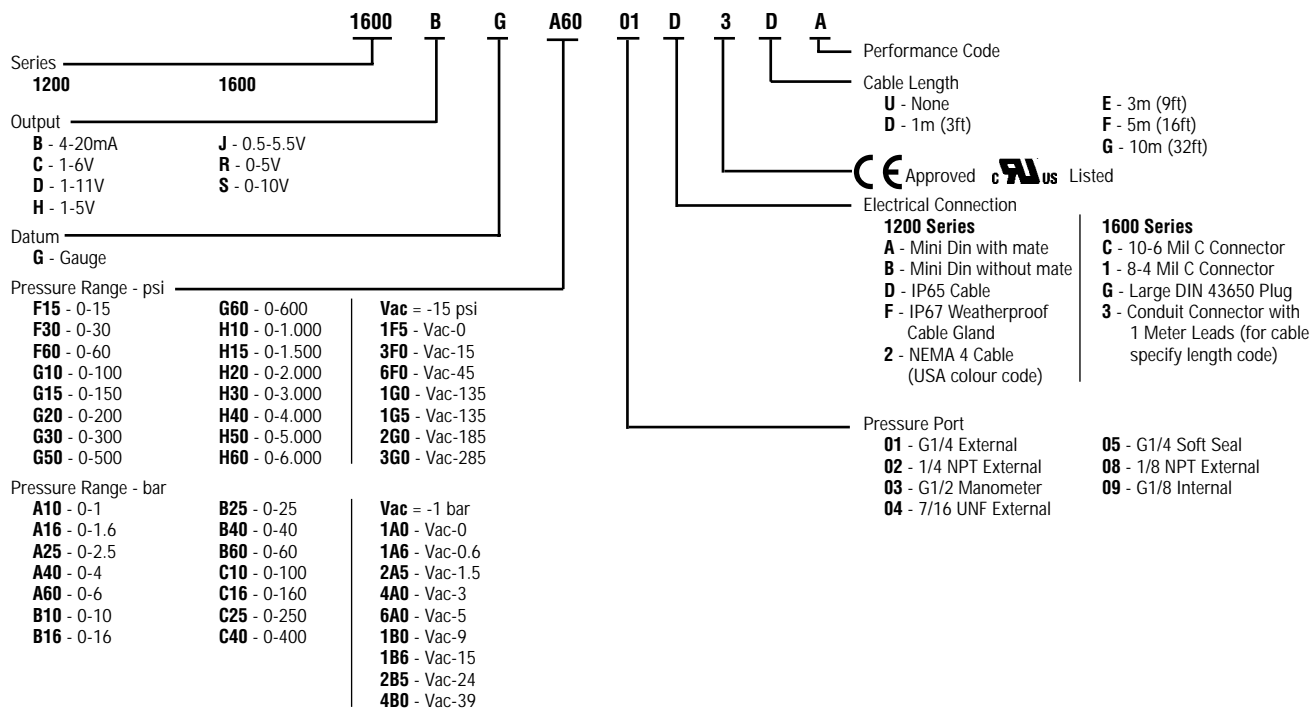
psibar 1600 Series



G1/4 Internal	G1/4 External	1/4 - 18 NPT	G1/2 Manometer	7/16 - 20 UNF-2A (SAE J514)	G1/4 Soft Seal	1/8 NPT	R 1/4	G 1/8
19 0.75	MAX 17 0.67	MAX 20 0.79	MAX 22.0 0.86	MAX 19 0.75	MAX 17 0.67	MAX 15 0.59	20 0.79	
Code "00"	Code "01"	Code "02"	Code "03"	Code "04"	Code "05"	Code "08"	Code "0A"	Code "09"

How to Order

Use the bold characters from the chart below to construct a product code



2800 Series High Performance Industrial Pressure Transmitters

- ▶ 1% Error Band over -30° to 100°C
- ▶ Customised Options
- ▶ Ranges from 0.5 to 400 bar
- ▶ Choice of Outputs

The 2800 series features stability and enhanced accuracy in a variety of enclosure options for demanding submersible and industrial applications. The 2800 features proven CVD sensing technology, an ASIC and modular packaging to provide a sensor with high performance over a wide temperature range. Modular construction allows customised options to be easily accommodated

Specifications

Input	
Pressure Range	Vacuum to 400 bar (6000 psi)
Proof Pressure	2 x Full Scale (FS) (1.5 x Fs for 400 bar, >= 5000 psi)
Burst Pressure	>35 x FS <= 6 bar (100 psi); >20 x FS >=60 bar (1000 psi); >5 x FS <= 400 bar (6000 psi)
Fatigue Life	Designed for more than 100 million FS cycles
Performance	
Long Term Drift	0.2% FS/year (non-cumulative)
Accuracy	0.10% FS max.
Thermal Error	1% FS max.
Compensated Temperatures	-30° to +100°C (-20° to +212° F)
Operating Temperatures	-40° to 125° C (-40° to 260° F) for elec. codes C and D -20° to 50° C (-5° to 125° F) for elec. code M Amplified units >100°C maximum 24 Vdc supply
Zero Tolerance	1% of span
Span Tolerance	1% of span
Mechanical Configuration	
Pressure Port	see ordering chart
Wetted Parts	17-4 PH Stainless Steel
Electrical Connection	see ordering chart
Enclosure	316 ss, 17-4 PH ss IP40 for elec. code C Gauge Datum IP65 for elec. code C Absolute Datum IP66 for elec. code D IP68 for elec. code M
Vibration	35g peak sinusoidal, 5 to 2000 Hz
Acceleration	100g steady acceleration in any direction 0.032% FS/g for 1 bar (15 psi) range decreasing logarithmically to 0.0007% FS/g for 400 bar (6000 psi) range.
Shock	Withstands free fall to IEC 68-2-32 procedure 1
Approvals	CE
Weight	approx. 100 grams (additional cable; 75 g/m)

Individual Specifications

Voltage Output units	
Output	see ordering chart
Supply Voltage (Vs)	1.5 Vdc above span to 35 Vdc @ 6 mA
Supply Voltage Sensitivity	0.01% FS/Volt
Min. Load Resistance	(FS output / 2) Kohms
Current Consumption	approx 6 mA at 7.5V output
Current Output units	
Output	4-20 mA (2 wire)
Supply Voltage (Vs)	24 Vdc, (7-35 Vdc)
Supply Voltage Sensitivity	0.01% FS/Volt
Max. Loop Resistance	(Vs-7) x 50 ohms

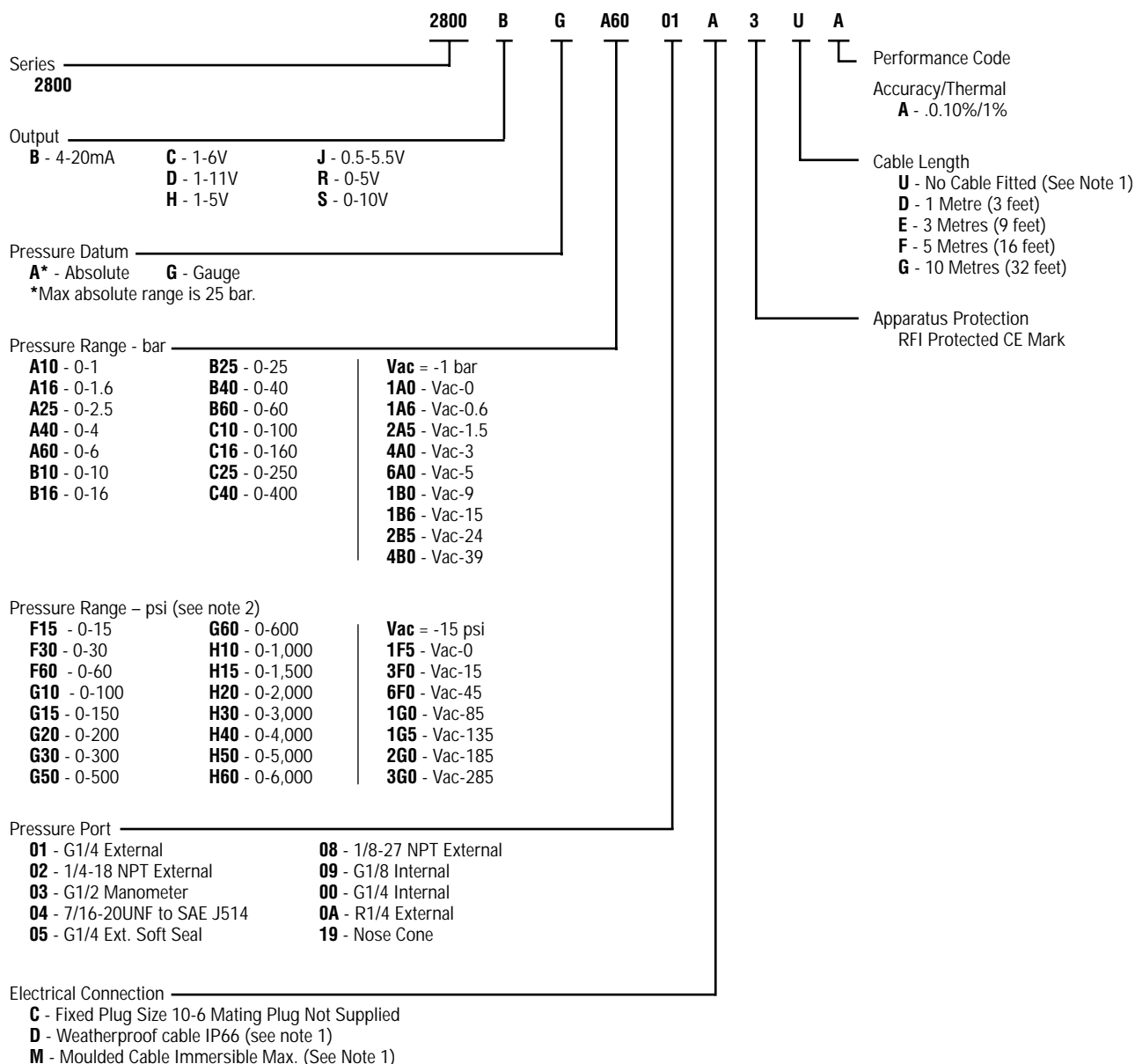


Connection Code		Current units (4-20mA)			Voltage units				
		(+)	(-)	EARTH	IN+	COM	OUT+	EARTH	
C	"10-6 Bayonet"	PIN	A	B	E	A	C	B	E
D	"cable"		R	BK	DRAIN	R	BK	W	DRAIN
M	"Immersible"		R	BL	DRAIN	R	W	Y	DRAIN

Cable Legend: R = Red
 BL = Blue
 BK = Black
 W = White
 Y = Yellow

How to Order

Use the **bold** characters from the chart below to construct a product code



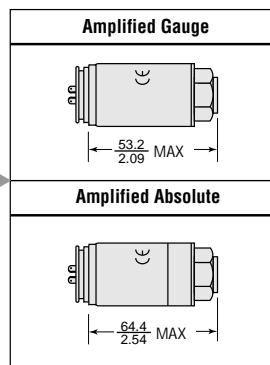
- Notes:
- Where electrical connections **D** or **M** are specified, customer must select cable length from Table 1.
 - Additional Pressure Ranges are available. Please consult factory.

Table 1 - Cable Units

Code	Length (M)	Code	Length (M)	Code	Length (M)	Code	Length (M)
U	No Cable Fitted	F	5	K	25	P	75
		G	10	L	30	O	100
D	1	H	15	M	40	R	125
E	3	J	20	N	50	S	150

Dimensions
2800 Series

10-6 or 8-4 Mil-C Connector	
10-6 Code "C"	
8-4 Code "1"	
IP66 Cable	
Code "D"	
Moulded, Immersible Cable	
Code "M"	



Maximum diameter 27.3 mm (1.07")

G 1/4 Internal	Code "00"
G 1/4 External	Code "01"
1/4 - 1/8 NPT	Code "02"
G 1/2 Manometer	Code "03"
7/16-20 UNF-2A	Code "04"
G 1/4 Soft Seal	Code "05"
1/8-27 NPT	Code "08"
R 1/4	Code "0A"
G 1/8 Internal	Code "09"
Nose Cone - Black Acetal	Code "19"
Nose Cone Sink Weight	Code "29"

Code "M"

Immersible

6600 Series-Stable Industrial Transmitters with Turndown Capabilities

- ▶ Gauge and Absolute Pressure Models
- ▶ Submersible, General Purpose and Wash down Enclosures
- ▶ High Stability Achieved by Sputtered Sensing Element

The 6600 series features customer accessible 5:1 turndown via a switch and potentiometer. Down ranging whether factory or user adjusted is ideal for applications requiring high overpressure. The 6600 are housed in a rugged enclosure for harsh conditions and features superb stability by incorporating CVD sensing element.

Specifications

Input

Pressure Range	6600, 0.5 to 400 bar; 6610 7.5 to 6,000 psi
Proof Pressure	2 x Full Scale (FS) (1.5 x FS for 400 bar, >= 5000 psi)
Burst Pressure	>35 x FS <= 6 bar (100 psi); >20 x FS >=60 bar (1000 psi); >5 x FS <= 400 bar (6000 psi)
Fatigue Life	Designed for more than 100 million FS cycles

Performance

Output	4-20 mA (2 wire)
Supply Voltage (Vs)	8 to 40 Vdc
Supply Voltage Sensitivity	0.005% of max span/Volt
Long Term Drift	0.15% of max span/year (non-cumulative)
Accuracy	0.15 % FS typical
Thermal Error Typical	-10° to 50° C (15° to 120° F) 0.5% of max span -20° to 80° C (-4° to 176° F) 1% of max span
Operating Temperatures	-20° to 85° C (-4° to 185° F) elec. conn. code C & G -20° to 50° C (-4° to 122° F) elec conn code F -30° to 100° C (-22° to 212° F) process/media
Zero Tolerance	0.1 % span, typical
Span Tolerance	0.1% span, typical
Zero Adjustment	+/- 10% (100% at factory) by potentiometer
Span Adjustment	17% to 100 % of span by potentiometer/switches
Max. Loop Resistance	(Vs-8) x 50 ohms

Mechanical Configuration

Pressure Port	see ordering chart
Wetted Parts	17-4 PH Stainless Steel
Electrical Connection	see ordering chart
Enclosure	321 ss, 17-4 PH ss and glass filled polyester IP40 for gauge datum elec code C IP65 for absolute datum elec code C IP65 for elec. code G IP68 for elec. code F
Vibration	35g peak sinusoidal, 5 to 2000 Hz
Acceleration	100g steady acceleration in any direction 0.036% FS/g for 0.75 bar (10 psi) range decreasing logarithmically to 0.0007% FS/g for 400 bar (6000 psi) range.
Shock	Withstands free fall to IEC 68-2-32 procedure 1
Approvals	CE, optional Intrinsically Safe EEx ia IIC T4 per CENELEC (Quality Assurance Certificate Supplied)
Weight	approx. 250 grams (additional: cable 75 g/m)

Electrical connection	Wiring	Wiring		
		(+)	(-)	EARTH
G	"DIN"	1	2	4
C	"10-6 Bayonet"	A	B	E
F	IP 67 cable	R	BL	DRAIN

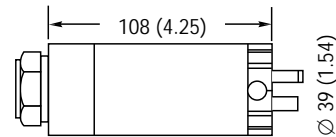
Cable Legend:

- R = Red
- B = Black

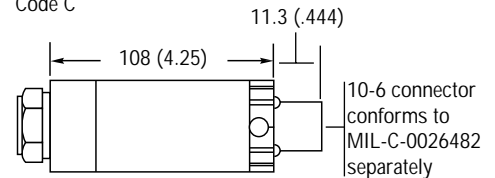


Dimensions mm (in.)

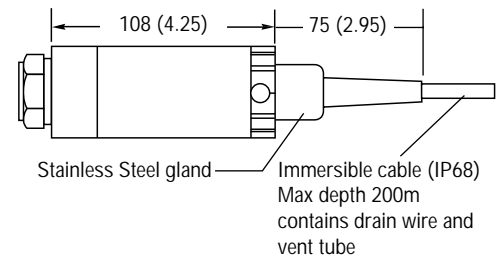
Code G



Code C



Code F



Diameter 39 mm (1.54")

How to Order

Use the **bold** characters from the chart below to construct a product code

SELECT:

1. **6600** series for bar ranges, **6610** series for psi ranges
2. Output Response: **B** 4-20 mA Undamped; **2** 4-20 mA damped 3 second response
3. Pressure Datum: **G** gauge and compound; **A** absolute
4. Insert pressure range code from table below
5. Pressure Port see chart
6. Electrical Connection
C Fixed plug size 10-6, mate sold separately part # 499532-0006
F submersible cable, to 200 meters; **G** Fixed plug to DIN 43650, mate supplied
7. Approvals/Protection
3 CE; **B** CENELEC approved intrinsically safe EExia IIC T4, zener, gauge datum only
G CENELEC approved intrinsically safe EExia IIC T4, galvanic isolation gauge and absolute
8. Cable Length in meters (requires electrical connection code F)
U no cable **D** 1 **F** 5 **H** 15 **K** 25 **M** 40 **P** 75 **R** 125
E 3 **G** 10 **J** 20 **L** 30 **N** 50 **Q** 100 **S** 150
9. Static/Thermal performance
B 0.25%/2%
- Note:** For 500mb range code A 0.25%/3%

6600 Model Bar Ranges	Range Code	Gauge (G) Absolute (A)
0 to 500mb	N50	G, A
0 to 1	A10	G, A
0 to 1.6	A16	G, A
0 to 2.5	A25	G, A
0 to 4	A40	G, A
0 to 6	A60	G, A
0 to 10	B10	G, A
0 to 16	B16	G, A
0 to 25	B25	G, A
0 to 40	B40	G
0 to 60	B60	G
0 to 100	C10	G
0 to 160	C16	G
0 to 250	C25	G
0 to 400	C40	G

6610 Model PSI Ranges	Range Code	Gauge (G) Absolute (A)
0 to 15	F15	G, A
0 to 30	F30	G, A
0 to 60	F60	G, A
0 to 100	G10	G, A
0 to 150	G15	G, A
0 to 200	G20	G, A
0 to 300	G30	G, A
0 to 500	G50	G
0 to 600	G60	G
0 to 1000	H10	G
0 to 1500	H15	G
0 to 3000	H30	G
0 to 5000	H50	G
0 to 6000	H60	G

Pressure Ports for the 6600 series

Code	Description of Stainless Steel Fittings
OO	G 1/4 internal
AO	G 1/4 external
KO	7/16-20 UNF-3A external
MO	M14 x 1.5 external
PO	G 1/2 manometer
BO	1/4-18 npt external
GO	1/2-14 npt external
SO	7/16-20 UNJF-3A, MS 33656E4
Immersible Sensors	
10	Plastic Nose cone
20	Nose cone with restrictor
30	Nose cone w/ s steel sink weight



For Pressure Port dimensions see page 39

4000 Series-High Performance, Long Term Stability Pressure Transducers

- ▶ Gauge, Sealed, Absolute, and Differential Pressure Models
- ▶ Submersible, General Purpose and Weather Proof Enclosures
- ▶ High Stability Achieved by Sputtered Sensing Element

The 4000 series provides exceptional levels of stability and other performance specifications in a wide variety of enclosures from submersible to differential styles. By using a sputtered sensing element, which achieves a molecular fusion of a strain gauge material, an insulating material, and the 17-4 PH ss sensing element, the 4000 series provides the most stable sensor construction possible. These sputtered sensors are packaged for harsh applications requiring long term service where precise laboratory type measurements are required.

Also in the 4000 series is a range of high performance amplified sensors with voltage and current outputs. These laboratory specification sensors utilise the same thin film sensor as 4000. For more information contact your nearest sales office, a list of offices can be found at the back of this catalogue.

Specifications

Input	
Pressure Range	4000 series: 1 to 690 bar, 4010 series: 15 to 10,000 psi
Proof Pressure	2 x Full Scale (FS) (1.5 x FS for Inconel ports)
Burst Pressure	>35 x FS <= 10 bar (150 psi) ranges >15 x FS <= 100 bar (1500 psi) ranges >8 FS <= 690 bar (10,000 psi) ranges
Fatigue Life	3 million FS cycles
Common Line Pressure	max. 60 bar absolute (850 psia) differential units only
Performance	
Output*	30mV +/- 1% (certificate supplied) (4010, 25 to 33 mV)
Supply Voltage (Vs)	10 Vdc Regulated (15 Vdc max)
Long Term Drift	0.06% per year non cumulative
Performance Code	Accuracy Thermal Error
	typical typical
J	0.1 % span 1.2 % span
K	0.1 % span 0.6 % span
L	0.08 % span 0.6 % span
M	0.08 % span 0.3 % span
Compensated Temperatures	-54° to 120 °C (-65° to 250° F)
Operating Temperatures	-54° to 135° C (-65° to 275° F) for twist lock conn. "C" -54° to 120° C (-65° to 250° F) for cable units "D" -20° to 50° C (-4° to 122° F) for submersible unit "M"
Zero Tolerance	0 mV +/- 1 mV for performance codes J & K 0 mV +/- 0.6 mV for performance codes L & M
Bridge Resistance	2200 to 5250 ohms
Mechanical Configuration	
Pressure Port	see ordering chart
Wetted Parts	17-4 PH ss (optional Inconel) [17-4 PH and 15-7 Mo Stainless Steel <= 1.6 bar (30 Psi)] Differential: dry non corrosive gas only on reference port
Electrical Connection	see ordering chart
Enclosure	321 ss case IP40 for elec. Code "C" gauge datum IP65 for elec. Code "C" Absolute or Sealed Datum IP66 (weatherproof) for elec. code "D" IP68 (submersible) for elec. code "M"
Vibration	35g peak sinusoidal, 5 to 2000 Hz
Shock	Withstands free fall to EIC 68-2-32 proc 1
Approvals	CE
Weight	150 grams max (excluding cable)

Note: * Inconel 2.5bar (30 psi) range output is 25 mV +/- 1%

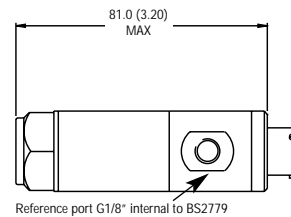
Electrical connection	Voltage units				
	IN+	OUT+	OUT-	IN-	Case Earth
C "10-6 Bayonet"	A	B	C/F	D/E	
D Weatherproof cable	Red	Yellow	Blue	White	Screen
M IP 68 cable	Red	Yellow	Blue	White	Screen



Dimensions mm (in.)

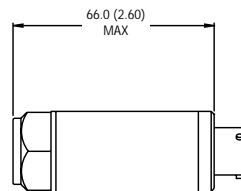
Differential

Code C



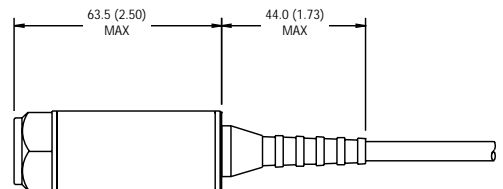
Absolute and Gauge

Code C



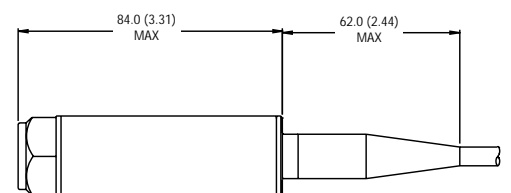
Absolute and Gauge

Code D



Absolute and Gauge

Code M



Maximum diameter 25.7 mm (1")

Meyer Industrie-Electronic GmbH - MEYLE

Carl-Bosch-Straße 8
49525 Lengerich/Germany
Internet: www.meyle.de

Tel.: (+49) 0 54 81/93 85-0
Fax: (+49) 0 54 81/93 85-12
E-Mail: sales@meyle.de

How to Order

Use the **bold** characters from the chart below to construct a product code

SELECT:

1. **4000** series for bar ranges, **4010** series for psi ranges
2. Bridge Resistance: **K** is 3500 ohms
3. Pressure Datum: **G** gauge; **A** absolute; **S** sealed; **U** uni-directional differential *
4. Insert pressure range code from table below
5. Pressure Port see chart
6. Electrical Connection **C** Fixed plug size 10-6, mate sold separately part # 499532-0006
D Weatherproof Cable IP 66
M Immersible Moulded Cable IP68
7. Approvals/Protection **2** CE; **N** Hardened lighting protection, requires cable versions for electrical connector
8. Cable Length in meters (requires electrical connection to be cable codes D or M)
U no cable **E** 3 **G** 10 **J** 20 **L** 30 **N** 50 **Q** 100 **S** 150
D 1 **F** 5 **H** 15 **K** 25 **M** 40 **P** 75 **R** 125
9. Static/Thermal Performance **J** 0.1%/1.2%; **K** 0.1%/0.6%; **L** 0.08%/0.6%; **M** 0.08%/0.3%

4000 K G B10 00 D 2 D J

*Differential datum units are available in electrical code "C" only and performance codes either "L" or "M" only.

4000 Model Bar Ranges	Range Code	Gauge (G) Absolute (A) Sealed (S) Differential (U)
0 to 1	A10	G, A, U
0 to 1.6	A16	G, A, U
0 to 2.5	A25	G, A, U
0 to 4	A40	G, A, U
0 to 6	A60	G, A, U
0 to 10	B10	G, A, U, S
0 to 16	B16	G, A, S
0 to 25	B25	G, A, S
0 to 40	B40	G, A, S
0 to 60	B60	G, A, S
0 to 100	C10	G, A, S
0 to 160	C16	G, A, S
0 to 250	C25	G, A, S
0 to 400	C40	G, A, S
0 to 600	C60	G, A, S*
0 to 690	C69	G, A, S*

4010 Model PSI Ranges	Range Code	Gauge (G) Absolute (A) Sealed (S) Differential (U)
0 to 15	F15	G, A, U
0 to 30	F30	G, A, U
0 to 60	F60	G, A, U
0 to 100	G10	G, A, U
0 to 150	G15	G, A, U
0 to 300	G30	G, A, S, U
0 to 500	G50	G, A, S
0 to 1000	H10	G, A, S
0 to 1500	H15	G, A, S
0 to 3000	H30	G, A, S
0 to 6000	H60	G, A, S
0 to 10000	J10	G, A, S*

* Diaphragm and internal port Inconel, external adaptors are available in stainless steel

Pressure Ports

Codes		Description
SS	Inconel	
OO	OK	G 1/4 internal
AO	AK	G 1/4 AT external
KO	KK	7/16-20 UNF-3A external
MO	MK	M14 x 1.5 external
PO	PK	G1/2 AT external
BO	BK	1/4-18 NPT external
GO	GK	1/2-14 NPT external
SO	SK	7/16-20 UNJF-3A, MS 33656F4
10	10	Plastic nosecone
20	20	Plastic nosecone with restrictor
30	30	Sink weight nose cone

Differential Units

OD	G1/4 internal ss, G1/8 internal ss
OL	G1/4 internal Inconel, G1/8 internal ss

For Pressure Port dimensions see page 39

4000 Series-High Temperature, High Performance, Long Term Stability Pressure Transducers

- ▶ Sealed and Absolute Models
- ▶ Suitable in Temperatures up to 230°C (450°F)
- ▶ High Stability Achieved by Sputtered Sensing Element

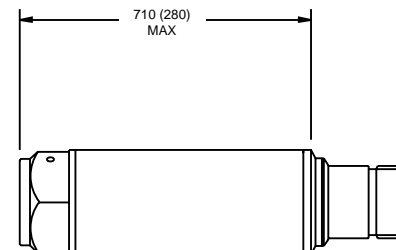
The high temp 4000 series provides exceptional levels of stability and other performance specifications while under excessive temperatures in harsh environments. Using a sputtered sensing element, which achieves a molecular fusion of a strain gauge material, an insulating material, and the 17-4 PH ss sensing element, generates the most stable sensor construction possible. These sputtered sensors are packaged for harsh applications requiring long term service where precise laboratory type measurements are required.



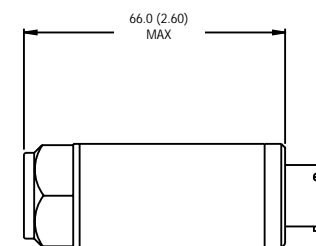
Specifications

Input	
Pressure Range	4000 series; 1 to 400 bar
Proof Pressure	2 x Full Scale (FS)
Burst Pressure	>35 x FS <= 10 bar ranges >15 x FS <= 100 bar ranges >8 FS <= 690 bar ranges
Fatigue Life	3 million FS cycles
Performance	
Output	25 to 38mV (certificate supplied)
Supply Voltage (Vs)	10 Vdc Regulated (15 Vdc max)
Long Term Drift	0.06% per year non-cumulative
Accuracy	0.1 % FS typical
Thermal Zero Error	.01 %FS/C (.005%/F) typical
Thermal Span Error	.01 %FS/C (.005%/F) typical
Compensated Temperatures	-54° to 200° C (-65° to 390° F)
Operating Temperatures	-54° to 230° C (-65° to 450° F) Conn. Code N -54° to 195° C (-65° to 385° F) Conn. Code C
Zero Tolerance	0 mV +/- 10% FS
Bridge Resistance	590-1510 ohms
Mechanical Configuration	
Pressure Port	see ordering chart
Wetted Parts	17-4 PH ss [17-4 PH and 15-7 Mo Stainless Steel <= 1.6 bar]
Electrical Connection	Code "N" 5 pins size 10 conn., Code "C" 6 pins size 10 conn.
Enclosure	321 ss, IP65
Vibration	35g peak sinusoidal, 5 to 2000 Hz
Shock	Withstands free fall to EIC 68-2-32 proc. 1
Weight	130 grams max

Dimensions mm (in.)



Code N



Code C

Electrical connection	Voltage units	Voltage units				
		IN+	OUT+	OUT-	IN-	Case Earth
C "10-6 Bayonet"	A	B	C	D	F	
N Screw "10-6 Bayonet"	1	2	3	4	5	

Maximum diameter 25.7 mm (1")

How to Order

Use the **bold** characters from the chart below to construct a product code

SELECT:

- 4000 L S B10 00 N O U1**
1. **4000** series
 2. Bridge Resistance: **L** is 1000 ohms
 3. Pressure Datum: **S** sealed gauge; **A** absolute
 4. Insert pressure range code from table below
 5. Pressure Port see chart
 6. Electrical Connection (mating connector sold separately)
 - N** Mil C-83723 size 10-5, screw lock connector; (Mating connector part # 499855-0001 and clamp # 499855-0011)
 - C** Mil C-26482 size 10-6, bayonet lock connector (Mating connector part # 166267-0006)

4000 Model Bar Ranges	Range Code	Absolute (A) Sealed (S)
0 to 1	A10	A
0 to 1.6	A16	A
0 to 2.5	A25	A
0 to 4	A40	A
0 to 6	A60	A
0 to 10	B10	S, A
0 to 16	B16	S, A
0 to 25	B25	S, A
0 to 40	B40	S, A
0 to 60	B60	S, A
0 to 100	C10	S, A
0 to 160	C16	S, A
0 to 250	C25	S, A
0 to 400	C40	S, A

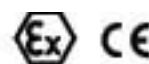
Pressure Ports	Description
Code	
OO	G 1/4 internal
AO	G 1/4 AT external
KO	7/16-20 UNF-3A external
MO	M14 x 1.5 external
PO	G1/2 AT external
BO	1/4-18 NPT external
GO	1/2-14 NPT external
SO	7/16-20 UNJF-3A, MS 33656E4

*For Pressure Port dimensions see page 39

4600 Series-High Performance, High Stability, with 5:1 Turndown Capability Industrial Transmitters

- ▶ Gauge, Sealed and Absolute Models
- ▶ Submersible, General Purpose and Wash down Enclosures
- ▶ IS Models

The 4600 series provides precise laboratory type measurements in a rugged industrial package complete with turndown capabilities. Exceptional levels of stability and other performance specifications are achieved by using a sputtered sensing element, which achieves a molecular fusion of a strain gauge material, an insulating material, and the 17-4 PH ss sensing element. Sputtered or thin film technology provides years of worry free measurements under demanding real world conditions.

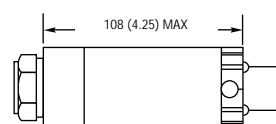


Specifications

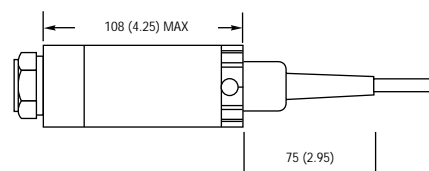
Input	
Pressure Range	4600, 1 bar to 690 bar; 4610 10 to 10,000 psi
Proof Pressure	2 x Full Scale (FS) for Stainless Steel Units 1.5 x FS for Inconel Units
Burst Pressure	>35 x FS <= 10 bar ranges >15 x FS <= 100 bar ranges >8 FS <= 690 bar ranges
Fatigue Life	3 million FS cycles
Performance	
Output	4-20 mA (2 wire)
Supply Voltage (Vs)	8 to 40 Vdc
Supply Voltage Sensitivity	0.005% of max. span/Volt
Long Term Drift	0.1% of max span per year non-cumulative
Accuracy	0.1 % FS typical
Thermal Error (typical)	0.8% of max span for performance code E 0.5% of max span for performance code F
Compensated Temperatures	-25° to 75° C (-13° to 167° F)
Operating Temperatures	-25° to 85° C (-13° to 185° F) elec. conn. code C & G -20° to 50° C (-4° to 122° F) elec. conn. code F -30° to 100° C (-22° to 212° F) process/media
Zero Tolerance	0.1% FS, typical
Span Tolerance	0.1% FS, typical
Zero Adjustment	+/- 10% (100% at factory) by potentiometer
Span Adjustment	25% to 125 % of span by potentiometer
Max. Loop Resistance	(Vs-8) x 50 ohms
Mechanical Configuration	
Pressure Port	see ordering chart
Wetted Parts	17-4 PH ss (optional Inconel) [17-4 PH and 15-7 Mo Stainless Steel <= 1.6 bar (30 Psi)]
Electrical Connection	see ordering chart
Enclosure	321 ss, 17-4 PH ss and glass filled polyester IP40 for gauge datum & electrical conn. code C IP65 for absolute and sealed datum & elec. conn. code C IP65 for electrical connection code G IP68 for electrical connection code F
Vibration	35g peak sinusoidal, 5 to 2000 Hz
Acceleration	100g steady acceleration in any direction 0.05% FS/g for 1 bar (15 psi) range decreasing logarithmically to 0.0001% FS/g for 690 bar (10000 psi) range.
Shock	Withstands free fall to IEC 68-2-32 procedure 1
Approvals	CE, optional Intrinsically Safe EEx ia IIC T4 per CENELEC, (Quality Assurance Certificate Supplied)
Weight	approx. 305 g (additional; cable 75 grams/m)

Dimensions mm (in.)

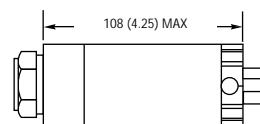
Code C



Code F



Code G



Diameter 39 (1.54)

Electrical connection	Wiring		
	(+)	(-)	EARTH
G "DIN"	1	2	4
C "10-6 Bayonet"	A	B	E
F IP 68 cable	R	BL	DRAIN

R = Red BL = Blue

How to Order

Use the **bold** characters from the chart below to construct a product code

SELECT:

- 4600 **B** **G** **B10** **00** **G** **3** **U** **E**
1. **4600** series for bar ranges; **4610** for psi ranges
 2. Output Response: **2** 4-20 mA Undamped; **3** 4-20 mA damped, 3 second response
B 4-20 mA Undamped; **2** 4-20 mA damped, 3 second response
 3. Pressure Datum: **G** gauge; **S** sealed; **A** absolute
(For differential models and compound ranges consult sales)
 4. Insert pressure range code from table below
 5. Pressure Port see chart
 6. Electrical Connection
C Fixed plug size 10-6, mate sold separately part # 499532-0006
F Submersible cable, to 200 meters
G Fixed plug to DIN 43650 mating plug supplied
 7. Approvals/Protection (For flame proof units see next page)
3 CE; **G** CENELEC approved intrinsically safe EEIa IIC T4, Galvanic, isolators
 8. Cable Length in meters (requires electrical connection code F)
U no cable **D** 1 **F** 5 **H** 15 **K** 25 **M** 40 **P** 75 **R** 125
E 3 **G** 10 **J** 20 **L** 30 **N** 50 **Q** 100 **S** 150
 9. Static/Thermal Performance
E 0.1%/0.08%; **F** 0.1%/0.5%. 500mbar range performance code **E** only

4600 Model Bar Ranges	Range Code	Gauge (G)* Absolute (A) Sealed (S)
0 to 500mb	N50	G, A
0 to 1	A10	G, A
0 to 1.6	A16	G, A
0 to 2.5	A25	G, A
0 to 4	A40	G, A
0 to 6	A60	G, A
0 to 10	B10	G, A, S
0 to 16	B16	G, A, S
0 to 25	B25	G, A, S
0 to 40	B40	G, A, S
0 to 60	B60	G, A, S
0 to 100	C10	G, A, S
0 to 160	C16	G, A, S
0 to 250	C25	G, A, S
0 to 400	C40	G, A, S
0 to 600	C60	G, A, S**
0 to 690	C69	G, A, S**

4610 Model PSI Ranges	Range Code	Gauge (G)* Absolute (A) Sealed (S)
0 to 10	F10	G
0 to 15	F15	G, A
0 to 30	F30	G, A
0 to 60	F40	G, A
0 to 100	G10	G, A
0 to 150	G15	G, A
0 to 200	G20	G, A
0 to 300	G30	G, A, S
0 to 500	G50	G, A, S
0 to 1000	H10	G, A, S
0 to 1500	H15	G, A, S
0 to 3000	H30	G, A, S
0 to 5000	H50	G, A, S
0 to 6000	H60	G, A, S
0 to 10000	J10	G, A, S**

* For compound ranges consult sales

** Internal Inconel fitting required external fitting can be SS.

Pressure Ports

Codes		Description
SS	Inconel	
OO	OK	G 1/4 internal
AO	AK	G 1/4 AT external
KO	KK	7/16-20 UNF 3A external
MO	MK	M14 x 1.5 external
PO	PK	G1/2 AT external
BO	BK	1/4-18 NPT external
GO	GK	1/2-14 NPT external
SO	SK	7/16-20 UNJF external, MS 3365E4

Immersible

10	Plastic nose cone
20	Nose cone with restrictor
30	Nose cone w/ss Sink Weight



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4264 Series-High Performance, High Stability, with 5:1 factory Turndown Capability Flameproof Transmitters

- ▶ Gauge, Sealed and Absolute Models
- ▶ Flameproof Enclosure
- ▶ CE approved

The 4264 series provides precise repeatable measurements in a flameproof housing complete with turndown capabilities. Exceptional levels of stability and other performance specifications are achieved by using a sputtered sensing element, which achieves a molecular fusion of a strain gauge material, an insulating material, and the 17-4 PH ss sensing element.

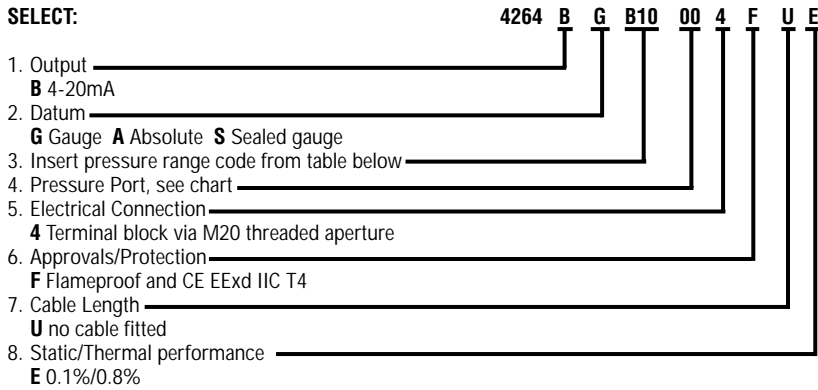
Specifications

Input	
Pressure Range	4 bar to 690 bar
Proof Pressure	2 x Full Scale (FS) for Stainless Steel Units 1.5 x FS for Inconel Units
Burst Pressure	>35 x FS <= 10 bar ranges >15 x FS <= 100 bar ranges >8 FS <= 690 bar ranges
Fatigue Life	3 million FS cycles
Performance	
Output	4-20 mA (2 wire)
Supply Voltage (Vs)	8 to 40 Vdc
Supply Voltage Sensitivity	0.005% of max. span/Volt
Long Term Drift	0.1% of max span per year non-cumulative
Accuracy	0.1 % FS typical
Thermal Error (typical)	0.8% of max span for performance code E
Compensated Temperatures	-25° to 75° C (-13° to 167° F)
Operating Temperatures	-25° to 85° C (-13° to 185° F)
Zero Tolerance	0.1% FS, typical
Span Tolerance	0.1% FS, typical
Zero Adjustment	+/- 10% (100% at factory) by potentiometer
Span Adjustment	25% to 125 % of span by potentiometer
Max. Loop Resistance	(Vs-8) x 50 ohms
Mechanical Configuration	
Pressure Port	see ordering chart
Wetted Parts	17-4 PH ss (optional Inconel) [17-4 PH and 15-7 Mo Stainless Steel <= 1.6 bar (30 Psi)]
Electrical Connection	M20 thread giving access to terminal blocks, optional flameproof cable assembly
Enclosure	321 ss, 17-4 PH ss IP50 when used with approved cable assembly
Vibration	35g peak sinusoidal, 5 to 2000 Hz
Acceleration	100g steady acceleration in any direction 0.05% FS/g for 1 bar (15 psi) range decreasing logarithmically to 0.0001% FS/g for 690 bar (10000 psi) range.
Shock	Withstands free fall to IEC 68-2-32 procedure 1
Approvals	CE, Flameproof EEx d IIC T4 per CENELEC
Weight	approx. 1.5Kg



How to Order

Use the **bold** characters from the chart below to construct a product code

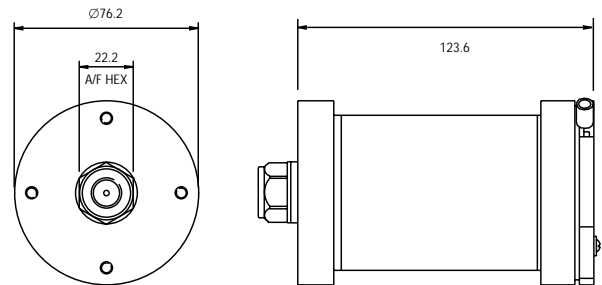


4264 Model Bar Ranges	Range Code	Gauge (G) Absolute (A) Sealed (S)
0 to 6	A60	G, A
0 to 10	B10	G, A, S
0 to 16	B16	G, A, S
0 to 25	B25	G, A, S
0 to 40	B40	G, A, S
0 to 60	B60	G, A, S
0 to 100	C10	G, A, S
0 to 160	C16	G, A, S
0 to 250	C25	G, A, S
0 to 400	C40	G, A, S
0 to 600	C60	G, A, S**
0 to 690	C69	G, A, S**

* For compound ranges, consult sales

** Internal Inconel fitting required external fitting can be SS

Dimensions mm (in.)



Pressure Ports for the 4264 series

Code		
SS	Inconel	Description
OO	OK	G 1/4 internal
AO	AK	G 1/4 AT external
KO	KK	7/16-20 UNF-3A external
MO	MK	M14 x 1.5 external
PO	PK	G 1/2 AT external
BO	BK	1/4-18 npt external
GO	GK	1/2-14 npt external
SO	SK	7/16-20 UNJF-3A, MS 33656E4

Maximum diameter 76.2 mm (3")

GDN Series-Flush Mount Pressure Transmitter

- ▶ Ranges from 40 mbar to 40 bar
- ▶ All Stainless Steel Construction
- ▶ 4:1 Span Turndown Capability

The GDN series utilizes LVDT technology in a flush mount package for slurries, suspended solids in liquids, and other dirty applications where recessed fitting could not be used. These transmitters feature all welded stainless steel construction with a G1 thread for easy installation and cleaning. Zero and Span field adjustments are standard, but hidden to prevent unauthorized tampering.

Specifications

Input

Pressure Range	40 mbar to 40 bar (0.6- 580 psi)
Proof Pressure*	10 x Full Scale (FS) < 2.4 bar range 4 x FS <= 16 bar range; 2 x FS <= 40 bar range
Maximum Vacuum	50% of max span
Burst Pressure	10 x FS

Performance

Output	4-20 mA (2 wire)
Supply Voltage (Vs)	8 to 30 Vdc
Supply Voltage Sensitivity	0.01% of max span/Volt
Zero Stability	0.4% of max span per year non cumulative
Accuracy	0.25 % of max span (typical)
Thermal Error	2.5% of max span (typical)
Compensated Temperatures	0-50 C (32-120 F)
Operating Temperatures	-20° to 85° C (-4° to 185° F) process -10° to 70° C (14° to 158° F) ambient
Response Time	0.1 seconds
Zero Adjustment	+/- 10% of max span
Span Adjustment	25% to 100 % of max span
Max. Loop Resistance	(Vs-8) x 50

Mechanical Configuration

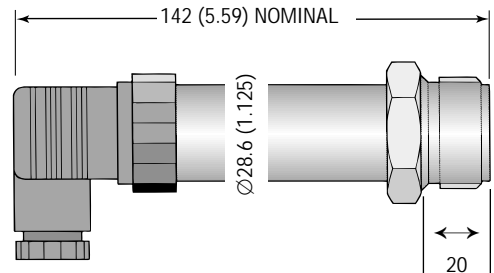
Pressure Port	
G1 external or G1/4 internal	
Wetted Parts	17-7 PH ss (optional 316ss or Hastelloy C)
Electrical Connection	DIN 43650, (pin 1 +, pin 2 -)
Enclosure	IP 65 (Nema 4), 316ss
Approvals	CE
Weight	500 grams

*These pressures do not cause a zero shift greater than 5% of the max span.

Electrical connection	Wiring		
	(+)	(-)	EARTH
DIN PLUG	1	2	4



Dimensions mm (in.)



How to Order

Use the **bold** characters from the chart below to construct a product code

SELECT: GDN **D** **3** **G** **881**

1. Pressure Connection *
 - 3** G1 external (flush diaphragm)
 - 1** G1/4 internal (recessed diaphragm)

2. Pressure Range
 - 851** 0-160 mbar (0-2.3 psi)*
 - 860** 0-400 mbar (0-5.8 psi)
 - 870** 0-1 bar (0-14.5 psi)
 - 872** 0-2 bar (0-29 psi)
 - 881** 0-6 bar (0-87 psi)
 - 891** 0-16 bar (0-232 psi)
 - 900** 0-40 bar (0-580 psi)

* The 851 range is only available with the G1/4 internal, recessed diaphragm, fitting. All other ranges are available in either recessed or flush mount construction.

GBD Series – Heavy Duty Differential Industrial Pressure Transmitter

- ▶ Suitable for Liquid, Gas and Vapour Media
- ▶ High Static Line Pressure
- ▶ 4:1 Span Turndown Capability

The GBD series incorporates an LVDT sensor in a robust differential pressure enclosure, which is ideal for industrial process applications. An isolated stainless steel diaphragm uses one of two fluid fills available to transfer its movement to the LVDT sensor. A choice of silicone or fluorolube fluid fills are available. These transmitters' turndown capabilities coupled with their rugged design make them very well suited for harsh and demanding applications.

Specifications

Input

Pressure Range	40 mbar to 6 bar (0.6-87psi)
Proof Pressure*	35 bar for 40mbar range 50 bar for 160 mbar range 100 bar all other ranges

Static Pressure	100 bar (1500 psi)
------------------------	--------------------

Performance

Output	4-20-mA (2 wire)
Supply Voltage (Vs)	8 to 30 Vdc (8-38 Vdc for IS units)
Supply Voltage Sensitivity	0.01% of max span/Volt
Zero Stability	0.2% of max span per year non cumulative
Accuracy	0.2% of max span (typical)
Thermal Error	1.5% of max span (typical)
Compensated Temperatures	-20° to 100° C (-4° to 212° F) process
Operating Temperatures	-20° to 100° C (14° to 158° F) ambient -10° to 70° C (14° to 158° F) ambient

Response Time	0.1 seconds
Span Adjustment	25% to 100% of max span
Max Loop Resistance	(Vs-8) to 50 ohms

Mechanical Configuration

Pressure Port	two G1/4 internal
Wetted Parts	Diaphragm 17-7PH SS (optional 316 ss) Flanges carbon steel or 316SS O-ring Nitrile or Viton

Electrical Connection	M20 x 1.5mm, screw terminals
Enclosure	IP 65 (Nema 4) Aluminium alloy with anodized finish or stainless steel, rotates 360°

Approvals	CE, Intrinsic Safety EExia II T6 (optional)
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Weight	4kg
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* These pressures do not cause a zero shift greater than 5% of the max span.

How to Order

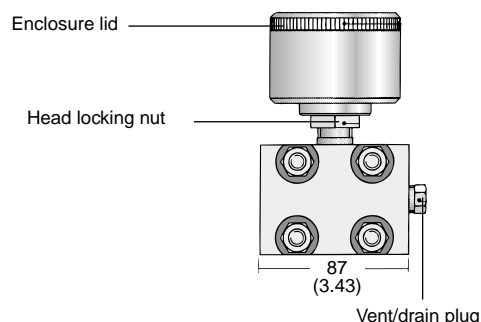
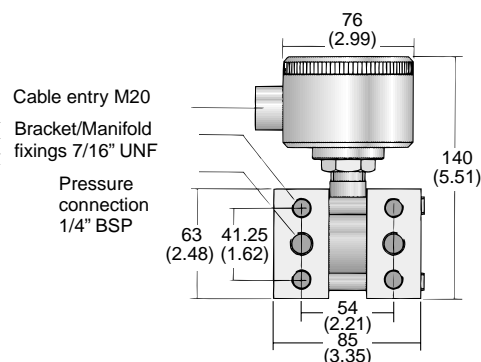
Use the **bold** characters from the chart below to construct a product code

SELECT: GBD **D** **O** **T** **HS** **860** **A** **E** **N** /options

- Agency Approvals: **D** Non certified, supply 8-30 Vdc; **S** IS certified IIC T6, supply 8-28 Vdc
- Transmitter Head: **T** Aluminium alloy head; **H** Stainless Steel head
- Oil Fill: **HS** Silicone Oil; **HF** Fluorolube Oil
- Pressure Range: **840** 0-40 mbar (0-16"wg); **870** 0-1 bar (0-14,5 psi); **851** 0-160 mbar (0-2.3 psi); **872** 0-2.4 bar (0-35 psi); **860** 0-400 mbar (0-5.8 psi); **881** 0-6 bar (0-87 psi)
- Flange Material: **A** Carbon Steel; **B** 316SS
- Diaphragm Material: **E** Heat treated 15-7 Mo or 17-7PH ss; **B** 316ss (optional)
- O-Ring Material: **N** Nitrile; **V** Viton
- Options: **/WDP** Fixed wall bracket; **/PDP** 2" pipe clamp



Dimensions mm (in.)



GAL Series-Slim Submersible Transmitters with Remote Electronics

- ▶ Low ranges from 400 mm wg to 160 m wg
- ▶ Turndown Capabilities with Remote Electronic
- ▶ All Welded Sensor

The GAL series packages LVDT sensor technology in three different sensors each with a remote electronic package that allows for zero and span calibration. The LG sensor has an exposed diaphragm and is suitable for use on clean liquids, liquids with suspended solids, highly viscous liquids, and slurries. The LT sensor has a recessed diaphragm protected by a plastic nose and is suitable for use on low viscosity liquids with less than 5 % suspended solids. The LM sensor has a recessed diaphragm and a protective nose cap in only a 17.6 mm diameter enclosure, which is designed for use in boreholes and other tight spaces. The LM is suitable for use on low viscosity liquids with less than 5 % suspended solids.

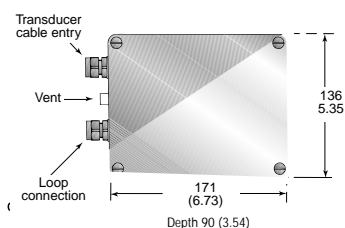
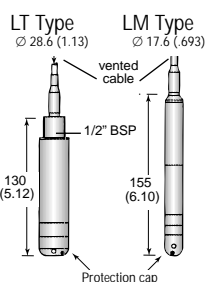
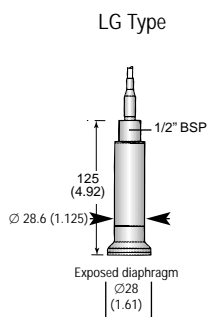


Specifications

Input	
Pressure Range	400 mm wg to 160 m wg (1.6 in wg to 227 psi)
Proof Pressure*	10 x Full Scale (FS) for ranges < 6 bar 2 x FS for ranges over 16 bar
Maximum Vacuum	Full vacuum (50%FS <= 1 bar range)
Burst Pressure	10 x FS
Performance	
Output	4-20 mA (2 wire)
Supply Voltage (Vs)	10 to 60 Vdc
Supply Voltage Sensitivity	0.005% of max span/Volt
Zero Stability	0.2% per year non cumulative
Linearity & Hysteresis	0.15 % of max span (typical)
Repeatability	0.05% of max span
Thermal Error	0.5% of max span (typical)
Compensated Temperatures	0-50 C (32 to 120 F)
Operating Temperatures	-20° to 85° C (-4° to 158° F) Sensor
Remote Electronics Temp	-10° to 70° C (15° to 158° F)
Response Time	Adjustable 1 to 12 seconds
Zero Adjustment	+/- 100%
Span Adjustment	10% to 100 % of span
Max. Loop Resistance	(Vs-10) x 50 ohms
Mechanical Configuration	
Pressure Port	see diagram
Wetted Parts	Diaphragm 17-7 PH ss or 15-7 MO ss (optional 316 SS) plus enclosure and cable
Electrical Connection	Polyurethane sheathed cable with 1.5 mm dia. vent, 4 conductors, and 1 drain,
Enclosure	316 SS sensor (Remote Electronics IP65, ABS plastic case)
Approvals	CE
Weight	230 grams (Additional: cable 75 grams/m, enclosure 1.5 kg)

*These pressures do not cause a zero shift greater than 3% FS.

Dimensions mm (in.)



How To Order

Use the **bold** characters from the chart below to construct a product code

SELECT:	GAL	COP	LG	860	B	E	X/U	(10)
1. Sensor Type			LG					
			40mm dia. with exposed diaphragm					
			LT					
			28.6mm dia. with nose cone					
			LM					
			17mm dia. with nose cone					
2. Pressure Range								
			840	400mm wg (15"wg)	Type	LG		
			851	1600mm wg (63"wg)	Type	LG		
			860	4m wg (13ft wg)	Type	LG, LT		
			870	10m wg (33ft wg)	Type	LG, LT, LM		
			872	24m wg (78ft wg)	Type	LT, LM		
			881	60m wg (196ft wg)	Type	LT, LM		
			891	160m wg (525ft wg)	Type	LT, LM		
3. Diaphragm Material								
			E	15/7 Mo and 17-4 PH ss;	B	Optional 316ss		
4. Submersible cable length in meters								

GCL Series-Submersible Level Transmitter

- ▶ Ranges from 150 mm wg to 160 m wg
- ▶ Seawater model with Duplex/Hastelloy Construction
- ▶ All Welded Sensor

The GCL series are submersible transmitters with on board signal conditioning for the LVDT sensor. The 1F transmitter has a recessed diaphragm protected by a plastic nose and features all stainless steel construction. The 2F transmitter has an exposed diaphragm and is suitable for use on clean liquids, sewage sludge, highly viscous liquids, and slurries. The 3F transmitter has a recessed diaphragm protected by a plastic nose and features Duplex/Hastelloy construction for sea water applications



Specifications

Input	
Pressure Range	150 mm wg to 160 m wg (6 in wg to 227 psi)
Proof Pressure*	4 x max span
Maximum Vacuum	50% of max span
Burst Pressure	10 x FS
Performance	
Output	4-20 mA (2 wire)
Supply Voltage (Vs)	8 to 30 Vdc
Supply Voltage Sensitivity	0.01% of max span/Volt
Zero Stability	0.4% of max span per year non cumulative
Accuracy	0.25 % of max span (typical)
Thermal Error	2.5 % of max span (typical)
Compensated Temperatures	0° to 50° C (32° to 120° F)
Operating Temperatures	0° to 70° C (32° to 158° F) Sensor
Response Time	0.1 second
Zero Tolerance	1% of span
Span Tolerance	1% of span
Zero Adjustment	+/- 10% of max span factory adjusted
Span Adjustment	25% to 100 % of max span factory adjusted
Max. Loop Resistance	(Vs-8) x 50
Mechanical Configuration	
Pressure Port	see diagram
Wetted Parts	Diaphragm 17-7 PH ss, body 316 ss models 1F & 2F Diaphragm Hastelloy, body Duplex model 3F
Electrical Connection	Polyurethane sheathed cable with 1.5 mm dia. vent, 4 conductors, and 1 drain, temp limits -40 to 85 C
Enclosure	IP 68
Approvals	CE
Weight	230 grams (cable 75 grams/m)

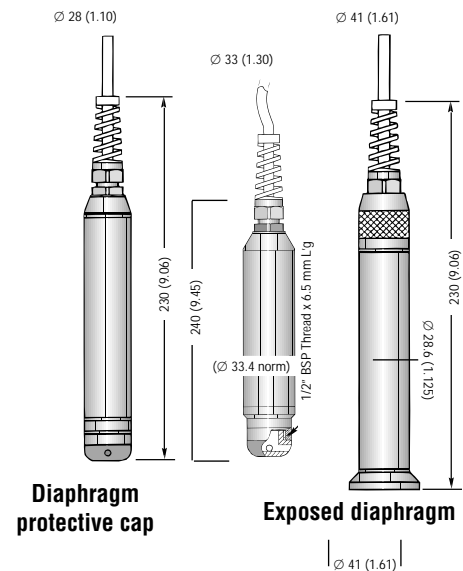
*These pressures do not cause a zero shift greater than 5% of the max span.

How to Order

Use the **bold** characters from the chart below to construct a product code

SELECT:	GCL	D	3F	860	/U(10)
1. Sensor Type	_____				
1F 28 mm dia. 17-7PH ss diaphragm w/nose cone					
2F 40 mm dia. 17-7PH ss exposed diaphragm					
3F 33 mm dia. Hasteloy C diaphragm					
2. Pressure Range	_____				
841 600 mm wg (24" wg) type 2F					
851 1600 mm wg (63" wg) type 2F					
860 4 m wg (13ft wg) type 1F, 2F, 3F					
870 10 m wg (33ft wg) type 1F, 2F, 3F					
872 24 m wg (79ft wg) type 1F 3F					
881 60 m wg (197 ft wg) type 1F 3F					
891 160m wg (525 ft wg) type 1F					
3. Submersible cable length in meters	_____				

Dimensions mm (in.)



SUBMERSIBLE TRANSDUCERS

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Cross Reference Chart

PDI Series	Original Part No.	New Part No.	Comments
PMLF	PS-JL	PS 31/2	Low Pressure - Factory Set
PMLA	PS-JL	PS 31/2	Low Pressure - Field Adjustable
PDA	PS-E	PS 41	Low Pressure - Field Adjustable
PDF	PS-E	PS 41	Low Pressure - Factory Set
PNAP		PS 97	Low Pressure - Manifold
PIAP		PS 96	Low Pressure - Inline
PDPA		PS 11	Low Pressure - Adjustable
PDN		PS 41	Low Pressure - Field Adjustable
PDPF		PS 11	Low Pressure - Factory Set
PMMA		PS 51/2	Low Pressure - Field Adjustable
PMMF		PS 51/2	Low Pressure - Field Adjustable
PMHF	PS-J	PS 61	High Pressure - Factory Set
PMHA	PS-J	PS 61	High Pressure - Field Adjustable
PDAH	PS-EH	PS 71	High Pressure - Field Adjustable
PDFH	PS-EH	PS 71	High Pressure - Factory Set
PDCA	PS-FA	PS 75	High Pressure - Single set point
PFCA	PS-FB	PS 75	High Pressure - Factory Set
PACA	PS-FB	PS 75	High Pressure - Adjustable
CFIS	PS-K	PS 77	High Pressure
PDCM		PS 75	High Pressure - Manifold Mount
PHDA		PS 71	High Pressure - Field Adjustable
PFCM		PS 75	High Pressure - Manifold Mount
PFNM		PS 75	High Pressure - Manifold Mount
PDNM		PS 75	High Pressure - Manifold Mount
VDMF	PS-EV	PS 82	Vacuum - Factory Set
VDMA	PS-EV	PS 82	Vacuum - Field Adjustable
PDVF		PS 81	New name given to redesigned PVPF
PDVA		PS 81	New name given to redesigned PVPA
PMVF		PS 83	Vacuum - Factory Set
PMVA		PS 83	Vacuum - Field Adjustable
PJDA	PS-D	PS 93	Differential - Field Adjustable
PJDF	PS-D	PS 93	Differential - Factory Set
PDAM		PS 91	Differential - Manifold, Field Adjustable
PDDA		PS 91	Differential - Field Adjustable
		PS-98	Solid State Pressure Switch
	PS-B	PS-B	Industrial Switch
	PS-C	PS-C	Industrial Switch

The above table shows the old PDI part numbers converted to the new part numbering scheme. If there are any conversion queries, refer to www.meyle.de or email sales@meyle.de

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From 2 to 6000 PSI, Pressure Switches Cover A Wide Range of Applications

- ▶ General, vacuum, differential, specialty
- ▶ Field-adjustable or factory set switches
- ▶ High proof pressure
- ▶ Rugged and dependable

MEYLE offers a choice of pressure switches, from compact cylindrical models for OEM use, to larger, enclosed units for rugged process applications. These switches are ideal for the filtering process of coolants in the machine tool industry, use in transmissions of off-highway vehicles and as redundant systems with existing monitors such as transducers.

Unique Piston/Diaphragm Design

A piston/diaphragm design, incorporating the high proof pressure of piston technology allows these switches to operate with the sensitivity and accuracy of a diaphragm design. Repeatability ranges from 2 percent to 5 percent of the highest set point.

Many Materials To Choose From

Enclosures include aluminum, stainless steel, brass, reinforced plastic and zinc-plated steel. Most models are NEMA 4 or NEMA 4X certified. Wetted parts include a diaphragm available in buna-n, Teflon® coated Kapton®, stainless steel, PTFE, EPDM or Viton® and a pressure port available in stainless steel, brass, zinc or aluminum.



PRESSURE SWITCHES



Pressure Switch Option Descriptions

- G:** Gold contacts are usually required for low DC current loads (<12 VDC @ 12 mA) associated with TTL input devices. They provide decreased contact resistance, which results in more reliable switching especially in the presence of an oxidizing atmosphere.
- OXY:** Wetted Materials are ultrasonically cleaned per the Compressed Gas Association's Method G-4.1.
- 10A:** 10A option is provided by a microswitch rated 10 Amperes at 250 VAC. This microswitch has a wide movement differential, which results in a larger deadband than listed in the standard catalogue pages.
- IP:** Ingress Protection is provided by either an epoxy sealed cap (IP66) or silicon wire seals (IP67). On some models, this option is only available with FS option.

- RB:** Rubber Boot is designed to be cut out for the proper wire or cable size by the customer and sealed with an appropriate sealant in the field.
- WF:** Weatherpack female termination consists of the following Delphi P/N's: (12045793 Conn "C" Circuit), 12089188 Female Pins and 12015323 Wire Seals.
- WM:** Weatherpack male termination consists of the following Delphi P/N's: 12010973 Connector, (12010717 Conn "C" Circuit), 12089040 Male Pins and 12015323 Wire Seals.
- DE:** Deutsch male termination consists of the following Deutsch P/N's: DT04-2P Connector, (DT04-3P "C" Circuit) 1060-16-0122 Male Pins and W(2 or 3)P Wedgelok.

- FS:** MEYLE will preset switches to the indicated setpoint within repeatability limits listed on the specific product catalogue page.
- R:** The restrictor option is recommended for hydraulic systems that need a small reduction in pressure pulsations to increase pressure switch life. It is a pressed in part that has an orifice size of 0.045"
- SR:** The spiral restrictor option heavily dampens pressure pulsations in any hydraulic system, which prevents false signaling and premature wear. It is not recommended for pressure settings below 1500 psig because it slows the response time of the pressure switch.

Selection Guide

Pressure Switches

	Pressure Range	Proof Pressure	Switch	Repeatability	Notes	Series	Page
Pressure Switches	40 to 800 mbar (0.55 to 12 psi)	10 bar (150 psi)	SPST, SPDT DPST, DPDT	±2%	-	PS11	7
	0.14 to 10 bar (2 to 150 psi)	35 bar (500 psi)	SPST	±5%	Kapton® Diaphragm	PS31	8
					Elastomer Diaphragm	PS32	9
	0.2 to 7 bar (3 to 100 psi)	25 bar (350 psi)	SPST, SPDT	±2%	-	PS41	10
	1 to 20 bar (15 to 300 psi)	35 bar (500 psi)	SPST	±5%	Kapton® Diaphragm	PS51	11
					Elastomer Diaphragm	PS52	12
	0.35 to 207 bar (5 to 3000 psi)	600 bar (9000 psi)	SPST	±3%	-	PS61	13
0.7 to 344 bar (10 to 5000 psi)	600 bar (9000 psi)	SPST, SPDT	±2%	-	PS71	14	
0.35 to 414 bar (5 to 6000 psi)	600 bar (9000 psi)	SPST, SPDT DPST, DPDT	±2%	-	PS75	16	
				20 Amp Switching	PS77	18	
Vacuum Switches	25 to 508 mbar (0.75" to 15" Hg)	10 bar (150 psi)	SPST, SPDT DPST, DPDT	±2%	-	PS81	20
	169 to 1016 mbar (5" to 30" Hg)	35 bar (500 psi)	SPST, SPDT	±2%	-	PS82	21
	169 to 1016 mbar (5" to 30" Hg)	10 bar (150 psi)	SPST	±3%	-	PS83	22
Differential Switches	0.3 to 1.7 bar (5 to 25 psi)	100 bar (1500 psi)	SPDT	±2%	-	PS91	23
	0.7 to 3 bar (10 to 45 psi)	35 bar (500 psi)	SPDT	±2%	-	PS93	24
Speciality Switches	2 to 10 bar (30 to 150 psi)	100 bar (1500 psi)		±2%	-	PS96	25
	0 to 400 bar (0 to 6000 psi)	See Specs	Relay or Transistor	.25%	Solid State	PS97	See website
Industrial Switches	-1 to 540 bar (30" Hg to 7500 psi)	600 bar	SPDT	±0.5%	-	PS-B	27
	-1 to 540 bar (30" Hg to 7500 psi)	See Specs	SPDT	±0.2%	-	PS-C	28

Plastic Diaphragms

Option K or Standard Teflon® Coated Kapton® (Polyimide) Diaphragm

Teflon® is compatible with almost every liquid and gaseous media. Kapton® has very stable

physical properties over a wide temperature range -73°C to 200°C (-100°F to 400°F). This results in pressure switches that exhibit very little setpoint shift due

to temperature extremes. Kapton possesses exceptional fatigue strength but is very stiff which results in wider but more stable deadbands than most elastomers.

Elastomer Diaphragms

Elastomers offer incredible sensitivity coupled with extremely long life. This results in stable setpoints over the life of the pressure switch as well as tight deadbands. Their biggest weakness is the increase in modulus (stiffening) that occurs at lower temperatures. This results in pressure switch setpoints to shift higher and deadbands to increase with decreasing temperature. They also exhibit more hysteresis than Kapton diaphragms.

Standard: Nitrile (Buna-N). Typically specified on water and petroleum based hydraulic oils. Temperature range: 0°C to 121°C (32°F to 250°F)

Option V: Viton® (Fluorinated Hydrocarbon) Diaphragm. Typically used with alcohols, diesters, solvents, acids and synthetic oils. Also used for high vacuum service. Temperature range: 0°C to 200°C (32°F to 400°F)

Option E: EPDM (Ethylene Propylene) Diaphragm. Typically used with phosphate ester based hydraulic fluids, brake fluids, ketones, steam and hot water. Temperature range: -53°C to 100°C (-65°F to 212°F)

Option N: Neoprene (Chloroprene) Diaphragm. Typically specified for refrigerant systems. Temperature range: -53°C to 135°C (-65°F to 275°F)

Option H: ECOH (Epichlorohydrin) Diaphragm. Typically specified for petroleum based fuels and lubricants. Temperature range: -40°C to 121°C (-40°F to 250°F)

PS11 – Ultra-Long Life OEM Pressure Switches

- ▶ 40 to 800 mbar (0.55 to 12 psi)
- ▶ 1,000,000 cycle life
- ▶ Factory fixed or adjustable set points

For low pressure applications, the longevity of our PS11 Series is hard to beat. A life expectancy of 1 million cycles means long-term reliability. Their snap-action microswitch resets automatically and meets or exceeds industry standards. The brass housing offers chemical resistance at an affordable price.

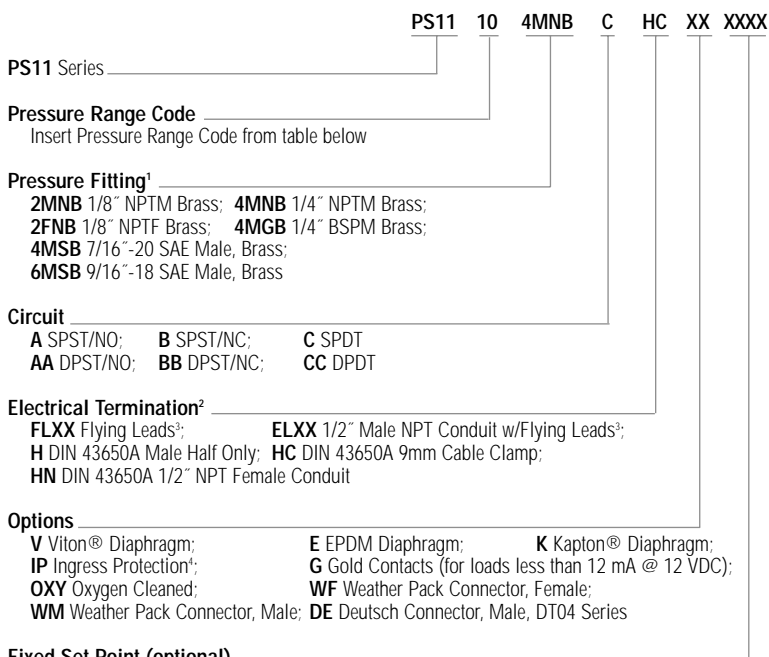
Specifications

Operating Temperature	-40°C to +80°C (-40°F to +180°F)
Switch*	5 Amp at 24 VDC and 250 VAC; 0.5 Amp @ 24 VDC (-G option)
Repeatability	±2% of Full Set Point Range at 20°C (70°F) ambient temp.
Wetted Parts	
Diaphragm	Nitrile (optional Viton®, EPDM or Kapton®)
Fitting	Brass
Housing	Brass
Electrical Termination	DIN 43650A IP65; Terminals IP00; Flying Leads IP65
Proof Pressure	10 bar (150 psi)
Approvals	CE, UL Approved units available
Weight, Approximate	0.14 kg (0.31 lbs.)

*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.

How to Order

Use the **bold** characters from the chart below to construct a product code.



Fixed Set Point (optional)

- A. Specify set point **FS** (in PSI or mBAR, see example)⁵
 - B. Set Point Actuation
 - R on Rising Pressure; F on Falling Pressure
- Example: **FS200MBARF** for 200 mBAR Falling or **FS3PSIR** for 3 PSI Rising

Notes:

- Other connectors available. Consult factory.
- DIN units are available with **C** SPDT circuit only.
- 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **EL30**.
- Ingress Protection requires Fixed Set Point **FS**.
- Set Point must be within Pressure Range selected in Step 1 above.

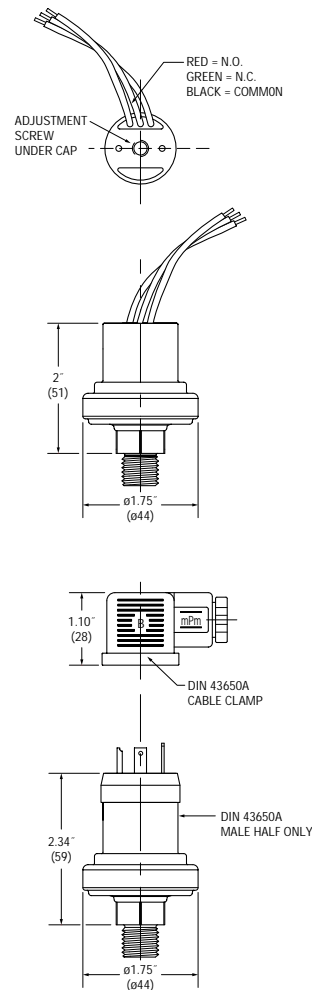
Pressure Range Table

Pressure Range Code	Pressure Range	Average Dead Band
10	37.9-241.3 mbar (0.55-3.5 psi)	5-15 mbar (.07-02 psi)
20	206.8-827.4 mbar (3-12 psi)	20-45 mbar (.3-.6 psi)



PRESSURE SWITCHES

Dimensions



PS31 – Kapton® Diaphragm OEM Subminiature Pressure Switch

PRESSURE SWITCHES

- ▶ .14 to 10 bar (2 to 150 psi) *formerly PS-JL series*
- ▶ Ideal for pneumatic and low pressure hydraulic applications
- ▶ Adjustable or factory set

These compact pressure switches are designed for OEM applications. Made economical with metal blade contacts in lieu of microswitches, the PS31 series features Kapton® diaphragms. Kapton® polyimide maintains excellent physical properties over a wide temperature range. It also offers superb chemical resistance with no known organic solvents.



Specifications

Operating Temperature	-40°C to +93°C (-40°F to +200°F)
Switch*	100 VA Max.
Repeatability	±5% of Full Set Point Range @ 20°C (70°F)
Wetted Parts	
Diaphragm	Teflon® Coated Kapton®
Fitting	Brass (optional 316 Stainless Steel)
Electrical Termination	Exposed Terminals IP00; IP option IP66
Deadband	<5% of Set Point
Proof Pressure	35 bar (500 psi)
Approvals	CE (limits switch voltage to 42 VDC)
Weight, Approximate	Brass: 0.06 kg (0.14 lbs.)

*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.
Kapton® is a registered trademark of Dupont.

How to Order

Use the **bold** characters from the chart below to construct a product code.

	PS31	10	4MNB	A	SP	XX	XXXX
PS31 Series							
Pressure Range Code							
Insert Pressure Range Code from table below							
Pressure Fitting ¹							
<i>Brass</i>	<i>316 Stainless Steel</i>						
2MNB 1/8" NPTM	2MNS 1/8" NPTM						
4MNB 1/4" NPTM	4MNS 1/4" NPTM						
2MGB 1/8" BSPM	2MGS 1/8" BSPM						
4MGB 1/4" BSPM	4MGS 1/4" BSPM						
8MGB 1/2" BSPM	4MSS 7/16"-20 SAE Male						
M10B M10 x 1.0, Straight	6MSS 9/16"-18 SAE Male						
M12B M12 x 1.5, Straight							
4MSB 7/16"-20 SAE Male							
6MSB 9/16"-18 SAE Male							
Circuit							
A SPST/NO; B SPST/NC							
Electrical Termination							
SP Spade Terminals (standard); TS Terminal Screws; FLXX Flying Leads ² ; FLSXX Flying Leads w/PVC Shrink Tubing ² ; CABXX 18 AWG PVC Cable ³							
Options							
G Gold Contacts (for loads less than 12 mA @ 12 VDC); IP Ingress Protection ⁴ ; OXY Oxygen Cleaned; RB Rubber Boot (shipped loose); WF Weather Pack Connector, Female; WM Weather Pack Connector, Male; DE Deutsch Connector, Male, DT04 Series							
Fixed Set Point (optional)							
A. Specify set point FS (in BAR or PSI, see example) ⁵ B. Set Point Actuation R on Rising Pressure; F on Falling Pressure Example: FS0.3BARF for 0.3 BAR Falling or FS3PSIR for 3 PSI Rising							

Notes:

- Other connectors available. Consult factory.
- 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **FLS30**.
- 36" is minimum. Specify cable length in inches. e.g. **CAB36** or **CAB120**.
- Ingress Protection is available only with **FL**, **FLS** or **CAB** Electrical Termination choices.
- Set Point must be within Pressure Range selected in Step 1 above.

Pressure Range Table

Pressure Range Code	Pressure Range
10 ¹	0.14-0.7 bar (2-10 psi)
20	0.5-1.7 bar (7-25 psi)
30	1.4-4.1 bar (20-60 psi)
40	3.4-10.3 bar (50-150 psi)

1. Pressure Range 10 in this model adds wetted materials Brass Spacer, 12L14 Steel Spring Guide and 302 SS Spring to the unit

PS32 – Elastomer Diaphragm OEM Subminiature Pressure Switch

- ▶ .14 to 10 bar (2 to 150 psi) *formerly PS-JL series*
- ▶ Ideal for pneumatic and low pressure hydraulic applications
- ▶ Adjustable or factory set

These compact pressure switches are designed for OEM applications. Made economical by using metal blade contacts in lieu of microswitches, the series features long-lasting Elastomer diaphragms in three materials. Elastomer diaphragms offer increased sensitivity and life for applications without temperature extremes.

Specifications

Operating Temperature	-40°C to +93°C (-40°F to +200°F)
Switch*	100 VA Max.
Repeatability	±5% of Full Set Point Range @ 20°C (70°F)
Wetted Parts	
Diaphragm	Elastomer (Nitrile standard) (Viton, EPDM optional)
Fitting	Brass standard (optional 316 SS)
Electrical Termination	Exposed Terminals IP00; IP option IP66
Deadband	<5% of Set Point
Proof Pressure	35 bar (500 psi)
Approvals	CE (limits switch voltage to 42 VDC)
Weight, Approximate	Brass: 0.06 kg (0.14 lbs.)

*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.

How to Order

Use the **bold** characters from the chart below to construct a product code.

PS32 10 4MNB A SP XX XXXX

PS32 Series _____

Pressure Range Code _____
Insert Pressure Range Code from table below

Pressure Fitting¹ _____

Brass	316 Stainless Steel
2MNB 1/8" NPTM	2MNS 1/8" NPTM
4MNB 1/4" NPTM	4MNS 1/4" NPTM
2MGB 1/8" BSPM	2MGS 1/8" BSPM
4MGB 1/4" BSPM	4MGS 1/4" BSPM
4MSB 7/16"-20 SAE Male	4MSS 7/16"-20 SAE Male

Circuit _____

A SPST/NO; B SPST/NC

Electrical Termination _____

SP Spade Terminals (standard); TS Terminal Screws; **FLXX** Flying Leads²;
FLSXX Flying Leads w/PVC Shrink Tubing²; **CABXX** 18 AWG PVC Cable³

Options _____

V Viton® Diaphragm; E EPDM Diaphragm; H ECOH Diaphragm;
G Gold Contacts (for loads less than 12 mA @ 12 VDC); IP Ingress Protection⁴;
OXY Oxygen Cleaned; RB Rubber Boot (shipped loose);
WF Weather Pack Connector, Female; WM Weather Pack Connector, Male;
DE Deutsch Connector, Male, DT04 Series

Fixed Set Point (optional) _____

A. Specify set point **FS** (in PSI or BAR, see example)⁵
B. Set Point Actuation _____

R on Rising Pressure; F on Falling Pressure
Example: **FS0.3BARF** for 0.3 BAR Falling or **FS3PSIR** for 3 PSI Rising

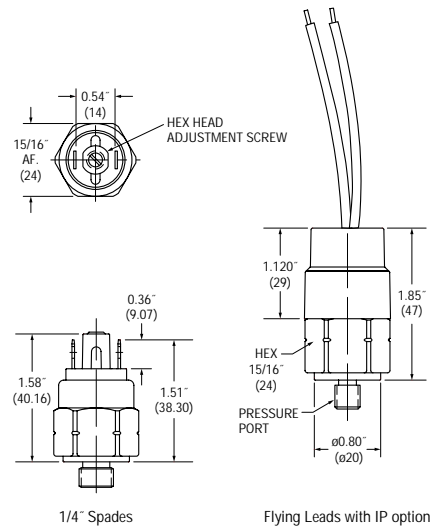
Notes:

- Other connectors available. Consult factory.
- 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **FLS30**.
- 36" is minimum. Specify cable length in inches. e.g. **CAB36** or **CAB120**.
- Ingress Protection is available only with **FL**, **FLS** or **CAB** Electrical Termination choices.
- Set Point must be within Pressure Range selected in Step 1 above.



PRESSURE SWITCHES

Dimensions



Pressure Range Table

Pressure Range Code	Pressure Range
10 ¹	0.14-0.7 bar (2-10 psi)
20	0.5-1.7 bar (7-25 psi)
30	1.4-4.1 bar (20-60 psi)
40	3.4-10.3 bar (50-150 psi)

- Pressure Range 10 in this model adds wetted materials Brass Spacer, 12L14 Steel Spring Guide and 302 SS Spring to the unit

PS41 – Economical Miniature Pressure Switches

PRESSURE SWITCHES

► 0.2 to 7 bar (3 to 100 psi) – formerly PS-E series

These miniature pressure switches are designed for demanding applications where space and/or price are strong concerns. The switches utilize a piston/diaphragm design, which incorporates the high proof pressure of piston technology with the sensitivity of diaphragm designs. Switches are field adjustable via an Allen head screw that is hidden to protect against unauthorized tampering.

Specifications

Operating Temperature	-40°C to +80°C (-40°F to +180°F)
Switch*	5 Amp at 12/24 VDC and 125/250 VAC (optional 10 Amp or 1 Amp Gold Contacts)
Repeatability	±2% of Full Set Point Range @ 20°C (70°F)
Wetted Parts	
Diaphragm Material	Nitrile (optional EPDM and Viton®)
Fitting	Brass (optional 316 Stainless Steel)
Electrical Termination	DIN 43650A IP65; Terminals IP00; Flying Leads IP65; Option 20/20A IP67
Proof Pressure	25 bar (350 psi)
Approvals	CE, UL Approved units available
Weight, Approximate	0.14 kg (0.3 lbs.)

*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.
Viton® is a registered trademark of Dupont.

How to Order

Use the **bold** characters from the chart below to construct a product code.

PS41 10 4MNB C H XX XXXX

PS41 Series _____

Pressure Range Code _____
Insert Pressure Range Code from table below

Pressure Fitting¹ _____

Brass	316 Stainless Steel
2MNB 1/8" NPTM	2MNS 1/8" NPTM
4MNB 1/4" NPTM	4MNS 1/4" NPTM
2MGB 1/8" BSPM	4MGS 1/4" BSPM
4MGB 1/4" BSPM	
4MSB 7/16"-20 SAE Male	
6MSB 9/16"-18 SAE Male	

Circuit _____
A SPST/NO2; **B** SPST/NC2; **C** SPDT

Electrical Termination _____

SP Spade Terminals³; **FLXX** Flying Leads⁴;
FLSXX Flying Leads w/PVC Shrink Tubing⁴;
ELXX 1/2" NPT Male Conduit w/Flying Leads⁵; **CABXX** 18 AWG PVC Cable⁶;
H DIN 43650A Male Half Only; **HR** Right Angle DIN 43650A Male Half Only;
HC DIN 43650A 9mm Cable Clamp;
HCR Right Angle DIN 43650A 9mm Cable Clamp;
HN DIN 43650A with 1/2" Female NPT Conduit;
HNR Right Angle DIN 43650A with 1/2" Female NPT Conduit;
HM Micro (9.4mm Spacing) DIN Style Male Half Only

Options⁷ _____

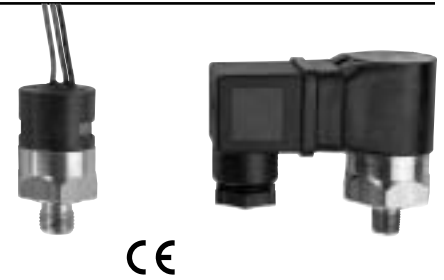
V Viton Diaphragm; **N** Neoprene Diaphragm; **E** EPDM Diaphragm;
10A 10A @ 125/250 VAC Max. Rating;
G Gold Contacts (for loads less than 12 mA @ 12 VDC);
RD Reduced Differential (50% reduction typical); **IP** Ingress Protection²;
OXY Oxygen Cleaned; **WF** Weather Pack Connector, Female;
WM Weather Pack Connector, Male; **DE** Deutsch Connector, Male, DT04 Series

Fixed Set Point (optional) _____

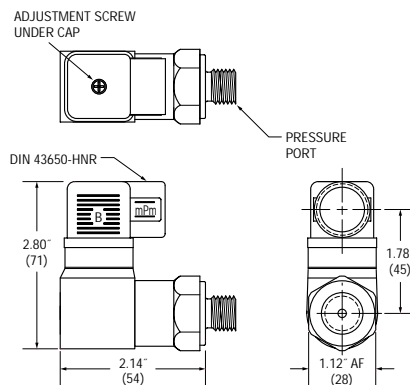
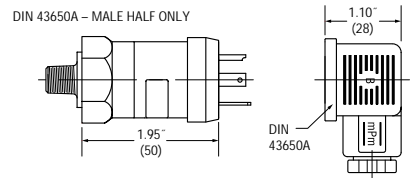
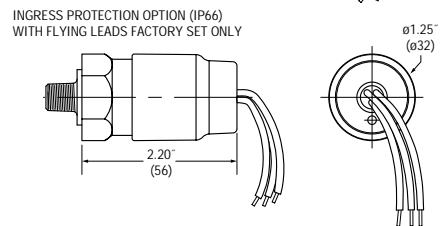
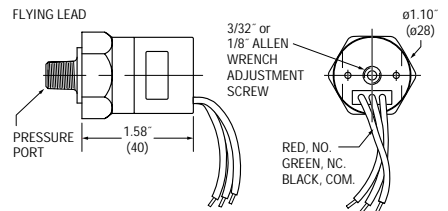
A. Specify set point **FS** (in BAR or PSI, see example)⁸
B. Set Point Actuation
R on Rising Pressure; **F** on Falling Pressure
 Example: **FS0.5BARF** for 0.5 BAR Falling or **FS5PSIR** for 5 PSI Rising

Notes:

- Other connectors available. Consult factory.
- Requires **FL**, **FLS** or **CAB** electrical termination. Ingress Protection requires Fixed Set Point **FS**.
- Requires **10A** or **G** option.
- 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **FLS30**.
- 18" is standard. Specify cable length in inches (max. 48"). e.g. **EL18** or **EL30**.
- 36" is minimum. Specify cable length in inches. e.g. **CAB36** or **CAB120**.
- Options **10A**, **G** and **RD** cannot be combined.
- Set Point must be within Pressure Range selected in Step 1 above.



Dimensions



Pressure Range Table

Pressure Range Code	Pressure Range	Average Dead Band
10	0.2-0.5 bar (0.3-7 psi)	0.07-0.14 bar (1-2 psi)
20	0.35-2.1 bar (5-30 psi)	0.14-0.28 bar (2-4 psi)
30	1.7-6.9 bar (25-100 psi)	0.21-0.85 bar (3-12 psi)

PS51 – Kapton® Diaphragm OEM Subminiature Pressure Switch

- ▶ 1 to 20 bar (15 to 300 psi)
- ▶ Adjustable or factory set

These compact pressure switches are designed for OEM applications. This economical design uses metal blade contacts in lieu of microswitches and features Kapton® diaphragms. Kapton® polyimide maintains excellent physical properties over a wide temperature range. It also offers superb chemical resistance with no known organic solvents.

Specifications

Operating Temperature	-40°C to +93°C (-40°F to +200°F)
Switch*	100 VA Max.
Repeatability	±5% of Full Set Point Range @ 20°C (70°F)
Wetted Parts	
Diaphragm	Teflon® Coated Kapton®
Fitting	Brass standard (optional 316 SS)
Electrical Termination	Exposed Terminals IP00; IP option IP66
Deadband	<5% of Set Point
Proof Pressure	35 bar (500 psi)
Approvals	CE (limits switch voltage to 42 VDC)
Weight, Approximate	Brass: 0.06 kg (0.14 lbs.)



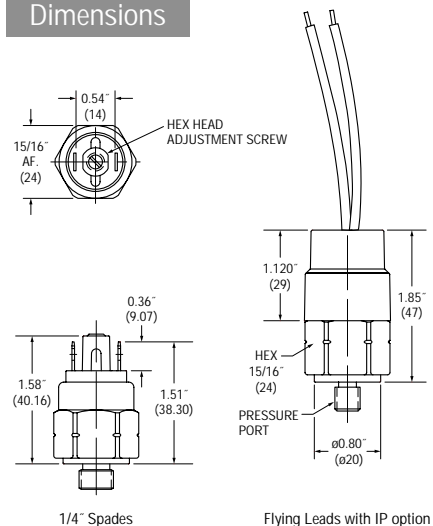
*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.
Kapton® is a registered trademark of Dupont.

How to Order

Use the **bold** characters from the chart below to construct a product code.

	PS51	10	4MNB	A	SP	XX	XXXX
PS51 Series _____							
Pressure Range Code _____							
Insert Pressure Range Code from table below							
Pressure Fitting¹ _____							
Brass			316 Stainless Steel				
2MNB 1/8" NPTM			2MNS 1/8" NPTM				
4MNB 1/4" NPTM			4MNS 1/4" NPTM				
2MGB 1/8" BSPM			2MGS 1/8" BSPM				
4MGB 1/4" BSPM			4MGS 1/4" BSPM				
8MGB 1/2" BSPM			4MSS 7/16"-20 SAE Male				
M10B M10 x 1.0, Straight			6MSS 9/16"-18 SAE Male				
M12B M12 x 1.5, Straight							
4MSB 7/16"-20 SAE Male							
6MSB 9/16"-18 SAE Male							
Circuit _____							
A SPST/NO; B SPST/NC							
Electrical Termination _____							
SP Spade Terminals (standard); TS Terminal Screws; FLXX Flying Leads ² ;							
FLSXX Flying Leads w/PVC Shrink Tubing ² ; -CABXX 18 AWG PVC Cable ³							
Options _____							
G Gold Contacts (for loads less than 12 mA @ 12 VDC); IP Ingress Protection ⁴ ;							
OXY Oxygen Cleaned; -RB Rubber Boot (shipped loose);							
WF Weather Pack Connector, Female; WM Weather Pack Connector, Male;							
DE Deutsch Connector, Male, DT04 Series							
Fixed Set Point (optional) _____							
A. Specify set point FS (in BAR or PSI, see example) ⁵ _____							
B. Set Point Actuation _____							
R on Rising Pressure; F on Falling Pressure							
Example: FS5BARF for 5 BAR Falling or FS20PSIR for 20 PSI Rising							

Dimensions



Pressure Range Table

Pressure Range Code	Pressure Range
15	3.45-10.3 bar (15-150 psi)
20	10.3-20.7 bar (150-300 psi)

Notes:

- Other connectors available. Consult factory.
- 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **FLS30**.
- 36" is minimum. Specify cable length in inches. e.g. **CAB36** or **CAB120**.
- Ingress Protection is available only with **FL**, **FLS** or **CAB** Electrical Termination choices.
- Set Point must be within Pressure Range selected in Step 1 above.

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PS52 – Elastomer Diaphragm OEM Subminiature Pressure Switch

- ▶ 1 to 20 bar (15 to 300 psi)
- ▶ Adjustable or factory set

These compact pressure switches are designed for OEM applications. Designed to be economical by using metal blade contacts in lieu of microswitches they feature long-lasting Elastomer diaphragms. Elastomer diaphragms offer increased sensitivity and life for applications without temperature extremes.

Specifications

Operating Temperature	-40°C to +93°C (-40°F to +200°F)
Switch*	100 VA Max.
Repeatability	±5% of Full Set Point Range @ 20°C (70°F)
Wetted Parts	
Diaphragm	Nitrile (optional EPDM and Viton®)
Fitting	Brass (optional 316 Stainless Steel)
Electrical Termination	Exposed Terminals IP00; IP option IP66
Deadband	<5% of Set Point
Proof Pressure	35 bar (500 psi)
Approvals	CE (limits switch voltage to 42 VDC)
Weight, Approximate	Brass: 0.06 kg (0.14 lbs.)

*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.
Kapton® is a registered trademark of Dupont.

How to Order

PS52 10 4MNB A SP XX XXXX

Pressure Range Code _____
Insert Pressure Range Code from table below right

Pressure Fitting¹ _____

<i>Brass</i>	<i>316 Stainless Steel</i>
2MNB 1/8" NPTM	2MNS 1/8" NPTM
4MNB 1/4" NPTM	4MNS 1/4" NPTM
2MGB 1/8" BSPM	2MGS 1/8" BSPM
4MGB 1/4" BSPM	4MGS 1/4" BSPM
4MSB 7/16"-20 SAE Male	4MSS 7/16"-20 SAE Male

Circuit _____
A SPST/NO; **B** SPST/NC

Electrical Termination _____
SP Spade Terminals (standard); **TS** Terminal Screws; **FLXX** Flying Leads²;
FLSXX Flying Leads w/PVC Shrink Tubing²; **CABXX** 18 AWG PVC Cable³

Options _____
V Viton® Diaphragm; **E** EPDM Diaphragm; **H** ECOH Diaphragm;
G Gold Contacts (for loads less than 12 mA @ 12 VDC); **IP** Ingress Protection⁴;
OXY Oxygen Cleaned; **RB** Rubber Boot (shipped loose);
WF Weather Pack Connector, Female; **WM** Weather Pack Connector, Male;
DE Deutsch Connector, Male, DT04 Series

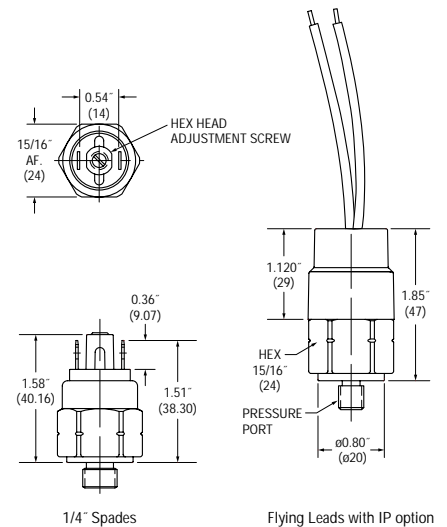
Fixed Set Point (optional)
A. Specify set point **FS** (in BAR or PSI, see example)⁵ _____
B. Set Point Actuation _____
R on Rising Pressure; **F** on Falling Pressure
Example: **FS5BARF** for 5 BAR Falling or **FS20PSIR** for 20 PSI Rising

Notes:

- Other connectors available. Consult factory.
- 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **FLS30**.
- 36" is minimum. Specify cable length in inches. e.g. **CAB36** or **CAB120**.
- Ingress Protection is available only with **FL**, **FLS** or **CAB** Electrical Termination choices.
- Set Point must be within Pressure Range selected in Step 1 above.



Dimensions



Pressure Range Table

Pressure Range Code	Pressure Range
10	1.0-10.3 bar (15-150 psi)
20	10.3-20.7 bar (150-300 psi)

PS61 – OEM Subminiature Pressure Switch

- ▶ .35 to 207 bar (5 to 3000 psi) *formerly PS-J series*
- ▶ Exceptional size-to-pressure-range ratio
- ▶ Adjustable or factory set

These compact pressure switches are designed for OEM applications. They are equipped with high proof pressure capabilities for demanding hydraulic applications such as forklifts, scissor lifts, and off road equipment.

Specifications

Operating Temperature	-40°C to +93°C (-40°F to +200°F)
Switch*	100 VA Max.
Repeatability	±3% of Full Set Point Range @ 20°C (70°F)
Wetted Parts	
Diaphragm	Nitrile (optional Neoprene, EPDM or Viton®)
Fitting	Zinc Plated Steel (optional 316 Stainless Steel)
Electrical Termination	Exposed Terminals IP00; IP option IP66
Deadband	<5% of Set Point
Proof Pressure	600 bar (9000 psi)
Approvals	CE (limits switch voltage to 42 VDC)
Weight, Approximate	Brass: 0.06 kg (0.14 lbs.)

*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.
Kapton® and Viton® are registered trademarks of Dupont.

How to Order

PS61 10 4MNZ A SP XX XXX

Pressure Range Code _____
Insert Pressure Range Code from table below right

Pressure Fitting¹ _____

<i>12L14 Zinc Plated Steel</i>	<i>316 Stainless Steel</i>
2MNZ 1/8" NPTM 12L14	2MNS 1/8" NPTM
4MNZ 1/4" NPTM 12L14	4MNS 1/4" NPTM
2MGZ 1/8" BSPM 12L14	2MGS 1/8" BSPM
4MGZ 1/4" BSPM 12L14	4MGS 1/4" BSPM
4MSZ 7/16"-20 SAE Male	4MSS 7/16"-20 SAE Male
6MSZ 9/16"-18 SAE Male	6MSS 9/16"-18 SAE Male
8MSZ 3/4"-16 SAE Male	
M10Z M10 x 1.0, Straight	
M12Z M12 x 1.5, Straight	

Circuit _____
A SPST/NO; B SPST/NC

Electrical Termination _____
SP Spade Terminals (standard); **TS** Terminal Screws; **FLXX** Flying Leads²;
FLSXX Flying Leads w/PVC Shrink Tubing²; **CABXX** 18 AWG PVC Cable³

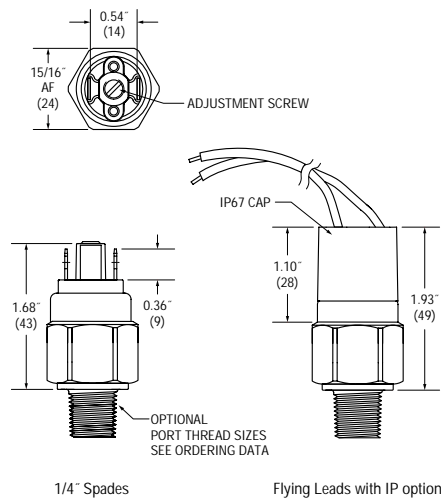
Options _____
V Viton® Diaphragm; **E** EPDM Diaphragm; **N** Neoprene Diaphragm;
H ECOH Diaphragm; **G** Gold Contacts (for loads less than 12 mA @ 12 VDC);
IP Ingress Protection⁴; **R** Restrictor (low damping coefficient) Brass;
SR Spiral Restrictor (high damping coefficient) 12L14 Steel w/Black Oxide Finish;
OXY Oxygen Cleaned; **RB** Rubber Boot (shipped loose);
WF Weather Pack Connector, Female; **WM** Weather Pack Connector, Male;
DE Deutsch Connector, Male, DT04 Series

Fixed Set Point (optional) _____
 A. Specify set point **FS** (in BAR or PSI, see example)⁵ _____
 B. Set Point Actuation _____
R on Rising Pressure; **F** on Falling Pressure
 Example: **FS3BARF** for 3 BAR Falling or **FS60PSIR** for 60 PSI Rising



PRESSURE SWITCHES

Dimensions



Pressure Range Table

Pressure Range Code	Adjustment Ranges
10 ¹	0.35-5.9 bar (5-85 psi)
20	6.39-34.5 bar (92-500 psi)
30	20.7-50.0 bar (300-725 psi)
40	34.5-86.2 bar (500-1250 psi)
50	69.0-206.8 bar (1000-3000 psi)

Notes:

- Other connectors available. Consult factory.
- 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **FLS30**.
- 36" is minimum. Specify cable length in inches. e.g. **CAB36** or **CAB120**.
- Ingress Protection is available only with **FL**, **FLS** or **CAB** Electrical Termination choices and requires Fixed Set Point (**FS**).
- Set Point must be within Pressure Range selected in Step 1 above.

PS71 – General Purpose Mini Pressure Switches

▶ .7 to 344 bar (10 to 5000 psi) *formerly PS-EH series*

These versatile general purpose switches with snap action microswitches can be used in a wide range of hydraulic and pneumatic applications. Their proven piston/diaphragm design offers outstanding accuracy over a very wide pressure range with an outstanding 9000 psi proof pressure. Their modular construction allows MEYLE to offer a large number of standard pressure fittings in two materials as well as numerous electrical ratings and terminations. Users can easily configure this model to meet their needs.

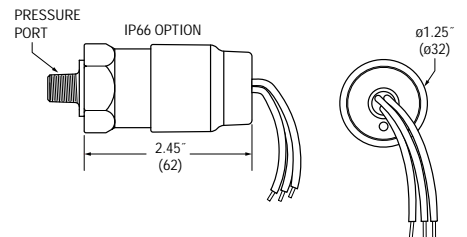
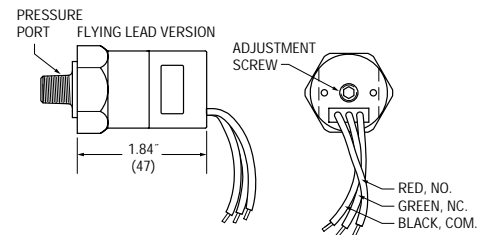
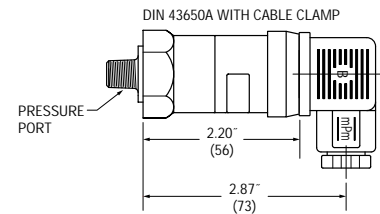
Specifications

Operating Temperature	-40°C to +80°C (-40°F to +180°F)
Switch*	5 Amp at 12/24 VDC and 125/250 VAC (Optional 10 Amp or 1 Amp with Gold contacts)
Repeatability	±2% of Full Set Point Range @ 20°C (70°F)
Wetted Parts	
Diaphragm	Nitrile (optional EPDM, Viton® or Neoprene)
Fitting	Zinc Plated Steel (Optional 316 SS)
Electrical Termination	DIN 43650A IP65: Spade Terminals IP00; Flying Leads IP65; Conduit with Flying Leads IP00; IP option IP66
Proof Pressure	600 bar (9000 psi)
Approvals	CE, UL Approved units available
Weight, Approximate	0.15 kg (0.4 lbs.)

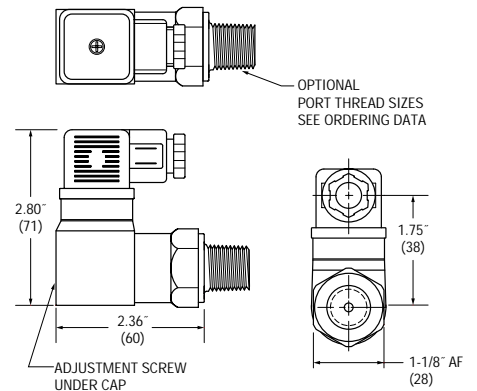
*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.
Viton® is a registered trademark of Dupont.



Dimensions



RIGHT ANGLE DIN 43650A WITH CABLE CLAMP



How to Order

Use the **Bold** characters from the chart below to construct a product code.

	PS71	10	4MNZ	C	H	XX	XXXX
Pressure Range Code	_____						
Insert Pressure Range Code from table below							
Pressure Fitting¹	_____						
<i>12L14 Zinc Plated Steel</i>	<i>316 Stainless Steel</i>						
2MNZ 1/8" NPTM	2MGS 1/8" BSPM						
4MNZ 1/4" NPTM	4MNS 1/4" NPTM						
2MGZ 1/8" BSPM	4MGS 1/4" BSPM						
4MGZ 1/4" BSPM							
4MSZ 7/16"-20 SAE Male							
6MSZ 9/16"-18 SAE Male							
Circuit	_____						
A SPST/NO; B SPST/NC; C SPDT							
Electrical Termination	_____						
SP Spade Terminals ² ; FLXX Flying Leads ³ ;							
FLSXX Flying Leads w/PVC Shrink Tubing ³ ;							
ELXX 1/2" NPT Male Conduit w/Flying Leads ⁴ ; CABXX 18 AWG PVC Cable ⁵ ;							
H DIN 43650A Male Half Only ⁶ ; HR Right Angle DIN 43650A Male Half Only ⁶ ;							
HC DIN 43650A 9mm Cable Clamp ⁶ ;							
HCR Right Angle DIN 43650A 9mm Cable Clamp ⁶ ;							
HN DIN 43650A with 1/2" Female NPT Conduit ⁶ ;							
HNR Right Angle DIN 43650A with 1/2" Female NPT Conduit ⁶ ;							
HM Micro (9.4mm Spacing) DIN Style Male Half Only ⁶							
Options⁷	_____						
V Viton® Diaphragm; E EPDM Diaphragm; N Neoprene Diaphragm;							
10A 10A @ 125/250 VAC Max. Rating;							
G Gold Contacts (for loads less than 12 mA @ 12 VDC);							
RD Reduced Differential (50% reduction typical); IP Ingress Protection ⁸ ;							
OXY Oxygen Cleaned ⁹ ; R Restrictor (low damping coefficient) Brass;							
SR Spiral Restrictor (high damping coefficient) 12L14 Steel w/Black Oxide Finish;							
WF Weather Pack Connector, Female; WM Weather Pack Connector, Male;							
DE Deutsch Connector, Male, DT04 Series							
Fixed Set Point (optional)	_____						
A. Specify set point FS (in BAR or PSI, see example) ¹⁰							
B. Set Point Actuation							
R on Rising Pressure; F on Falling Pressure							
Example: FS2BARF for 2 BAR Falling or FS20PSIR for 20 PSI Rising							

Notes:

- Other connectors available. Consult factory.
- Requires **10A** or **G** option.
- 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **FLS30**.
- 18" is standard. Specify cable length in inches (max. 48"). e.g. **EL18** or **EL30**.
- 36" is minimum. Specify cable length in inches. e.g. **CAB36** or **CAB120**.
- DIN connectors require **C** SPDT circuit.
- Options **10A**, **G** or **RD** cannot be combined.
- Ingress Protection is available only with **FL**, **FLS** or **CAB** Electrical Termination choices. Ingress Protection requires Fixed Set Point **FS**.
- Requires stainless steel housing.
- Set Point must be within Pressure Range selected in Step 1 above.

Pressure Range Table

Pressure Range Code	Adjustment Ranges	Average Dead Band
10	0.7-2.1 bar (10-30 psi)	0.25-0.40 bar (4-6 psi)
20	1.7-5.2 bar (25-75 psi)	0.35-0.65 bar (5-10 psi)
30	4.5-20.7 bar (65-300 psi)	1.3-2.6 bar (20-40 psi)
40	17.2-69 bar (250-1000 psi)	2.6-5.7 bar (40-85 psi)
50	69-206.8 bar (1000-3000 psi)	8-15 bar (120-220 psi)
60	172.4-344.7 bar (2500-5000 psi)	21-35 bar (300-500 psi)

PS75 – Rugged Cylindrical Pressure Switch

PRESSURE SWITCHES

- ▶ Side mounted DIN connection *formerly PS-FA series*
- ▶ Top mounted electrical connection formerly PS-FB series
- ▶ 0.35 to 414 bar (5 to 6000 psi)
- ▶ Wear disc design for longer life
- ▶ DPDT models available

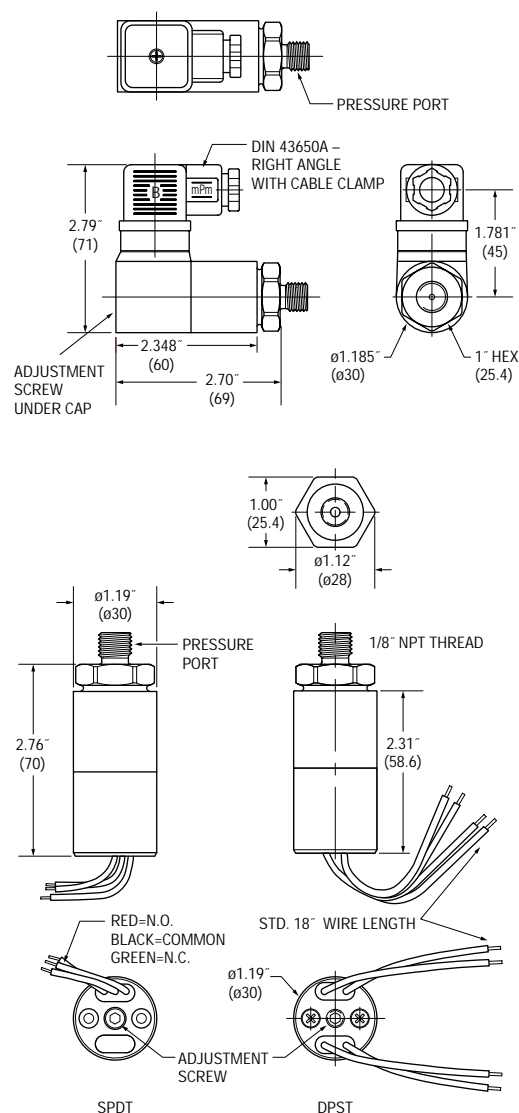
PS75 Series have all metal surfaces for overload stops and deliver reliable operation under extremely high pressure surges. They are designed with a wear disc and cushioning ring for increased life. The switches use a piston/diaphragm design, which combine the high proof pressure of piston technology with the sensitivity of a diaphragm design. They can be field or factory adjusted.

Specifications

Operating Temperature	-40°C to +82°C (-40°F to +180°F)
Switch	5 Amp SPDT @ 120/240 VAC and 12/24 VDC; 1 Amp with Gold Contacts (-G option)
Repeatability	2% of full set point @ 20°C (70°F)
Wetted Parts	
Diaphragm	Nitrile (optional Viton®, Neoprene or EPDM)
Fitting	Zinc-Plated Steel (optional 316 Stainless Steel)
Housing	Zinc-Plated Steel (optional 316 Stainless Steel)
Electrical Termination	DIN 43650A IP65: Conduit with Flying Leads IP00: Flying Leads IP65
Proof Pressure	600 bar (9000 psi)
Approvals	CE, UL Approved units available
Weight, Approximate	0.23 kg (0.5 lbs.)



Dimensions



How to Order

Use the **Bold** characters from the chart below to construct a product code.

	PS75	10	4MNZ	C	H	XX	XXXX
Pressure Range Code	_____						
Insert Pressure Range Code from table below							
Pressure Fitting¹	_____						
<i>12L14 Zinc Plated Steel</i>	<i>316 Stainless Steel</i>						
2MNZ 1/8" NPTM	4MNS 1/4" NPTM						
4MNZ 1/4" NPTM	4MGS 1/4" BSPM						
4FNZ 1/4" NPTF	4FGS 1/4" BSPF						
4MGZ 1/4" BSPM	6MSS 9/16"-18 SAE Male						
4FGZ 1/4" BSPF							
4MSZ 7/16"-20 SAE Male							
6MSZ 9/16"-18 SAE Male							
4SSZ 7/16"-20 SAE Male Swivel							
Circuit	_____						
A SPST/NO; B SPST/NC; C SPDT;							
AA DPST/NO2; BB DPST/NC2; CC DPDT ²							
Electrical Termination	_____						
FLXX Flying Leads ³ ; ELXX 1/2" NPT Male Conduit w/Flying Leads ⁴ ;							
H DIN 43650A Male Half Only ⁵ ; HR Right Angle DIN 43650A Male Half Only ⁵ ;							
HC DIN 43650A 9mm Cable Clamp ⁵ ;							
HCR Right Angle DIN 43650A 9mm Cable Clamp ⁵ ;							
HN DIN 43650A with 1/2" Female NPT Conduit ⁵ ;							
HNR Right Angle DIN 43650A with 1/2" Female NPT Conduit ⁵ ;							
Options	_____						
V Viton® Diaphragm; N Neoprene Diaphragm; E EPDM Diaphragm;							
G Gold Contacts (for loads less than 12 mA @ 12 VDC);							
RD Reduced Differential (50% reduction typical); OXY Oxygen Cleaned ⁶ ;							
R Restrictor (low damping coefficient) Brass;							
SR Spiral Restrictor (high damping coefficient) 12L14 Steel w/Black Oxide Finish;							
WF Weather Pack Connector, Female; WM Weather Pack Connector, Male;							
DE Deutsch Connector, Male, DT04 Series							
Fixed Set Point (optional)	_____						
A. Specify set point FS (in BAR or PSI, see example) ⁷							
B. Set Point Actuation							
R on Rising Pressure; F on Falling Pressure							
Example: FS1BARF for 1 BAR Falling or FS20PSIR for 20 PSI Rising							

Notes:

1. Manifold mounts available. Consult factory.
2. Requires **FL** or **EL** electrical termination.
3. 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **FL30**.
4. 18" is standard. Specify cable length in inches (max. 48"). e.g. **EL18** or **EL30**.
5. DIN connectors require **C** SPDT circuit.
6. Requires stainless steel pressure fitting.
7. Set Point must be within Pressure Range selected in Step 1 above.

Pressure Range Table

Pressure Range Code	Pressure Range	Average Dead Band	Proof Pressure
10	0.35-1.7 bar (5-25 psi)	0.25-0.40 bar (2-4 psi)	35 bar (500 psi)
20	1.0-5.2 bar (15-75 psi)	0.35-0.65 bar (5-10 psi)	600 bar (9000 psi)
30	3.5-10.3 bar (50-150 psi)	1.3-2.6 bar (20-40 psi)	600 bar (9000 psi)
40	10.3-44.8 bar (150-650 psi)	2.6-5.7 bar (40-85 psi)	600 bar (9000 psi)
50	34.5-120.7 bar (500-1750 psi)	8-15 bar (120-220 psi)	600 bar (9000 psi)
60	69.0-241.3 bar (1000-3500 psi)	21-35 bar (300-500 psi)	600 bar (9000 psi)
70	172.4-413.7 bar (2500-6000 psi)	21-35 bar (300-500 psi)	600 bar (9000 psi)

PS77 – Economical Industrial Pressure Switch

PRESSURE SWITCHES

- ▶ 0.35 to 413 bar (5 to 6000 psi) *formerly PS-K series*
- ▶ Up to 20 amp switching capabilities
- ▶ Wear disc design for longer life
- ▶ Adjustable deadband on 20 amp mo

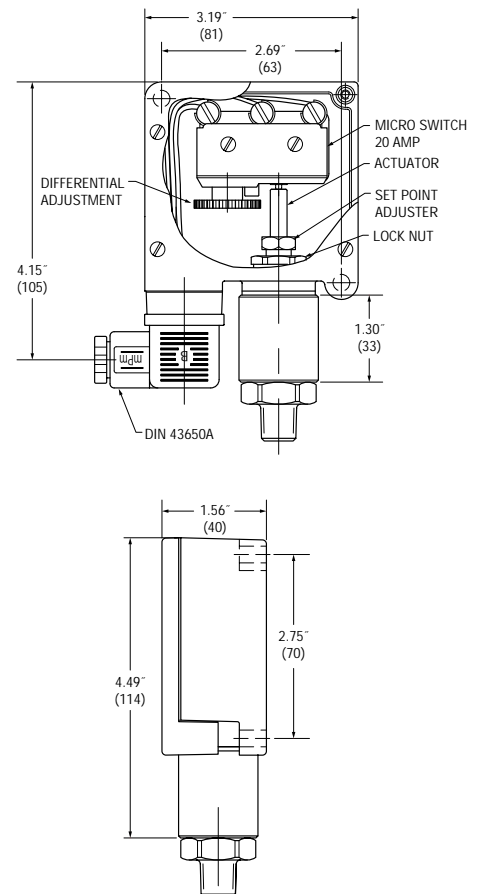
PS77 Series pressure switches incorporate a wear disc and cushioning ring that provide resistance to pressure surges. The industrial enclosure houses either an SPDT 20 Amp switch featuring a dead band adjustment or a DPDT 10 amp switch. The switches use a piston/diaphragm design, which combines the high proof pressure of piston technology with the sensitivity of diaphragm designs. The switches can be field or factory adjusted.

Specifications

Operating Temperature	-40°C to +80°C (-40°F to +180°F)
Switch	20 Amp @ 240 VAC (-C circuit) 10 Amp @ 250 VAC (-CC, -Z, -ZZ circuits)
Repeatability	2% of Highest Set Point @ 20°C (70°F)
Wetted Parts	
Diaphragm	Nitrile (Optional Viton®, Neoprene or EPDM)
Fitting	Zinc Plated Steel (Optional 316 SS)
Electrical Termination	DIN 43650A or 1/2" NPTF Conduit; Plastic Case IP65
Proof Pressure	600 bar (9000 psi)
Approvals	CE
Weight, Approximate	0.45 kg (1.0 lbs.)



Dimensions



Wiring

	DIN
Common	#1
N.C.	#2
N.O.	#3

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E-Mail: sales@meyle.de

How to Order

Use the **Bold** characters from the chart below to construct a product code.

	PS75	10	4MNZ	C	H	XX	XXXX
Pressure Range Code	_____						
Insert Pressure Range Code from table below							
Pressure Fitting	_____						
<i>12L14 Zinc Plated Steel</i>	<i>316 Stainless Steel</i>						
2MNZ 1/8" NPTM	4MNS 1/4" NPTM						
4MNZ 1/4" NPTM	4MGS 1/4" BSPM						
4FNZ 1/4" NPTF	4FGS 1/4" BSPF						
4MGZ 1/4" BSPM	6MSS 9/16"-18 SAE Male						
4FGZ 1/4" BSPF							
4MSZ 7/16"-20 SAE Male							
6MSZ 9/16"-18 SAE Male							
4SSZ 7/16"-20 SAE Male Swivel							
Circuit	_____						
C SPDT; CC DPDT; Z SPDT-DB; ZZ DPDT-DB							
Electrical Termination	_____						
ELXX 1/2" NPT Male Conduit w/Flying Leads ¹ ;							
H DIN 43650A Male Half Only ² ; HC DIN 43650A 9mm Cable Clamp ² ;							
HN DIN 43650A with 1/2" Female NPT Conduit ² ;							
Options	_____						
V Viton® Diaphragm; N Neoprene Diaphragm; E EPDM Diaphragm;							
G Gold Contacts (for loads less than 12 mA @ 12 VDC); OXY Oxygen Cleaned ³ ;							
R Restrictor (low damping coefficient) Brass;							
SR Spiral Restrictor (high damping coefficient) 12L14 Steel w/Black Oxide Finish							
Fixed Set Point (optional)	_____						
A. Specify set point FS (in BAR or PSI, see example) ⁴							
B. Set Point Actuation _____							
R on Rising Pressure; F on Falling Pressure							
Example: FS1BARF for 1 BAR Falling or FS20PSIR for 20 PSI Rising							

Notes:

1. 18" is standard. Specify lead length in inches (max. 48"). e.g. **EL18** or **EL30**.
2. DIN connectors require **C** SPDT circuit.
3. Requires stainless steel pressure fitting.
4. Set Point must be within Pressure Range selected in Step 1 above.

Pressure Range Table

Pressure Range Code	Pressure Range	Average Dead Band	Proof Pressure
10	0.35-1.7 bar (5-25 psi)	0.25-0.40 bar (2-4 psi)	35 bar (500 psi)
20	1.0-5.2 bar (15-75 psi)	0.35-0.65 bar (5-10 psi)	600 bar (9000 psi)
30	3.5-10.3 bar (50-150 psi)	1.3-2.6 bar (20-40 psi)	600 bar (9000 psi)
40	10.3-44.8 bar (150-650 psi)	2.6-5.7 bar (40-85 psi)	600 bar (9000 psi)
50	34.5-120.7 bar (500-1750 psi)	8-15 bar (120-220 psi)	600 bar (9000 psi)
60	69.0-241.3 bar (1000-3500 psi)	21-35 bar (300-500 psi)	600 bar (9000 psi)
70	172.4-413.7 bar (2500-6000 psi)	21-35 bar (300-500 psi)	600 bar (9000 psi)

PS81 – Ultra-Long Life Vacuum Switches

PRESSURE SWITCHES

- ▶ 25 to 508 mbar (0.75" to 15" Hg)
- ▶ Sensitive diaphragm for lower set points
- ▶ Factory fixed or adjustable set points
- ▶ DPDT versions available

For low vacuum applications, the longevity of our PS81 Series is hard to beat. A life expectancy of 1 million cycles means long-term reliability. Their brass housing and choice of four diaphragm materials ensures chemical compatibility with your system. PS81 series switches have a field adjustable set point or can be factory set.

Specifications

Operating Temperature	-40°C to +80°C (-40°F to +180°F)
Switch*	5 Amp @ 24 VDC and 250 VAC 1 Amp @ 24 VDC (-G option)
Repeatability	±2% of Full Set Point Range at 20°C (70°F)
Wetted Parts	
Diaphragm	Nitrile standard (optional EPDM, Viton® or Kapton®)
Fitting	Brass
Housing	Brass
Spring	Stainless Steel
Spring Guide	Dolrin
Electrical Termination	DIN 43650A IP65; Terminals IP00; Flying Leads IP65; IP option IP66
Proof Pressure	10 bar (150 psi)
Approvals	CE, UL Approved units available
Weight, Approximate	0.14 kg (0.31 lbs.)

*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.

How to Order

Use the **Bold** characters from the chart below right to construct a product code.

PS81 10 4MNB C H XX XXXX

Pressure Range Code _____
Insert Pressure Range Code from table below

Pressure Fitting _____
2MNB 1/8" NPTM Brass; **4MNB** 1/4" NPTM Brass;
2FNB 1/8" NPTF Brass; **4MGB** 1/4" BSPM Brass;
4MSB 7/16"-20 SAE Male, Brass;
6MSB 9/16"-18 SAE Male, Brass

Circuit _____
A SPST/NO; **B** SPST/NC; **C** SPDT;
AA DPST/NO; **BB** DPST/NC; **CC** DPDT

Electrical Termination _____
FLXX Flying Leads¹; **ELXX** 1/2" NPT Male Conduit w/Flying Leads²;
H DIN 43650A Male Half Only³; **HC** DIN 43650A 9mm Cable Clamp³;
HN DIN 43650A with 1/2" Female NPT Conduit³

Options _____
V Viton® Diaphragm; **E** EPDM Diaphragm; **K** Kapton® Diaphragm;
G Gold Contacts (for loads less than 12 mA @ 12 VDC); **OXY** Oxygen Cleaned;
IP Ingress Protection⁴

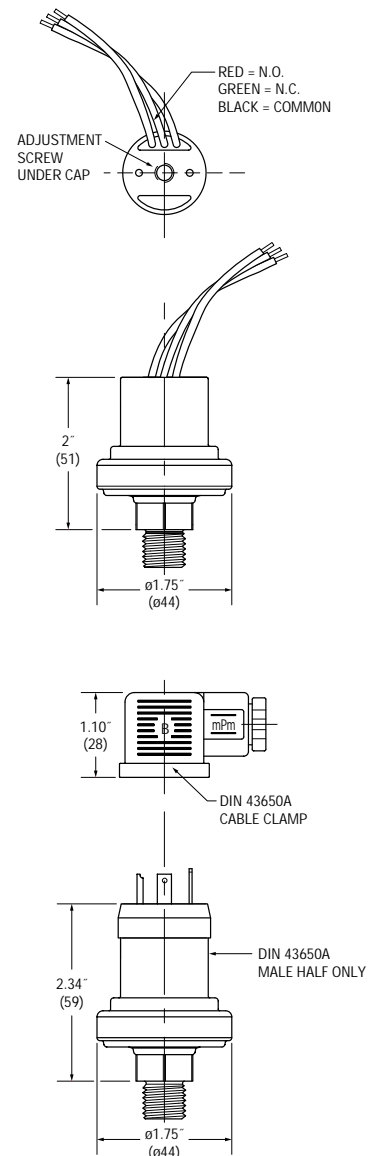
Fixed Set Point (optional) _____
A. Specify set point **FS** (in Inches Hg or mBAR, see example)⁵
B. Set Point Actuation _____
R on Rising Pressure; **F** on Falling Pressure
 Example: **FS100MBARF** for 100 mBAR Falling or **FS2INHGR** for 2" Hg Rising

Notes:

1. 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **FL30**.
2. 18" is standard. Specify cable length in inches (max. 48"). e.g. **EL18** or **EL30**.
3. DIN connectors require **C** SPDT circuit.
4. Ingress Protection is available only with **FL** Electrical Termination and requires Fixed Set Point **FS**.
5. Set Point must be within Pressure Range selected in Step 1 above.



Dimensions



Pressure Range Table

Pressure Range Code	Pressure Range	Average Dead Band
10	37.9 - 241.3 mbar (0.55 - 3.5 psi)	5 - 15 mbar (07 - 02 psi)
20	206.8 - 827.4 mbar (3 - 12 psi)	20 - 45 mbar (3 - 6 psi)

PS82 – Economical Miniature Vacuum Switches

▶ 169 to 1016 mbar (5" to 30" Hg) formerly PS-EV series

These miniature vacuum switches, based on our proven PS71 series, are designed for demanding applications where space and/or price are strong concerns.

Specifications

Operating Temperature	-40°C to +80°C (-40°F to +180°F)
Switch*	5 Amp at 12/24 VDC and 125/250 VAC; 1 Amp with gold contacts (option G)
Repeatability	±2% of Full Set Point Range @ 20°C (70°F)
Wetted Parts	
Diaphragm Material	Nitrile standard (optional EPDM, Viton® and Neoprene)
Fitting	Brass (optional 316 Stainless Steel)
Spring	316 Stainless Steel
Electrical Termination	DIN 43650A IP65; Male Conduit with Flying Leads IP00; Flying Leads IP65; IP option IP66
Proof Pressure	35 bar (500 psi)
Approvals	CE
Weight, Approximate	0.25 kg (0.5 lbs.)

*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.

Viton® is a registered trademark of Dupont.

How to Order

Use the **Bold** characters from the chart below to construct a product code.

PS82 10 -4MNB -C -H -XX -XXXX

Pressure Range Code _____
Insert Pressure Range Code from table below right

Pressure Fitting¹ _____
Brass *316 Stainless Steel*
2MNB 1/8" NPTM **2MNS** 1/8" NPTM
4MNB 1/4" NPTM **4MNS** 1/4" NPTM
2MGB 1/8" BSPM **4MGS** 1/4" BSPM
4MGB 1/4" BSPM
4MSB 7/16"-20 SAE Male
6MSB 9/16"-18 SAE Male

Circuit _____
A SPST/NO; **B** SPST/NC; **C** SPDT;

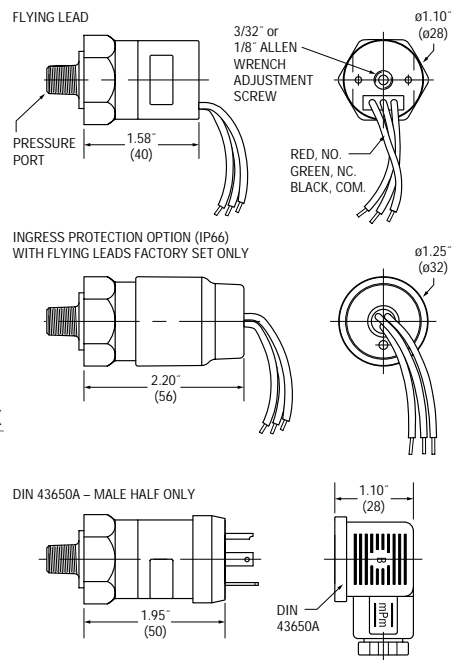
Electrical Termination _____
FLXX Flying Leads²; **FLSXX** Flying Leads w/PVC Shrink Tubing³;
ELXX 1/2" NPT Male Conduit w/Flying Leads³; **CABXX** 18 AWG PVC Cable⁴;
H DIN 43650A Male Half Only⁵; **HR** Right Angle DIN 43650A Male Half Only⁵;
HC DIN 43650A 9mm Cable Clamp⁵;
HCR Right Angle DIN 43650A 9mm Cable Clamp⁵;
HN DIN 43650A with 1/2" Female NPT Conduit⁵;
HNR Right Angle DIN 43650A with 1/2" Female NPT Conduit⁵;
HM Micro (9.4mm Spacing) DIN Style Male Half Only⁵

Options _____
V Viton® Diaphragm; **N** Neoprene Diaphragm; **E** EPDM Diaphragm;
G Gold Contacts (for loads less than 12 mA @ 12 VDC)
RD Reduced Differential (50% reduction typical); **IP** Ingress Protection⁶;
OXY Oxygen Cleaned; **WF** Weather Pack Connector, Female;
WM Weather Pack Connector, Male; **DE** Deutsch Connector, Male, DT04 Series

Fixed Set Point (optional) _____
A. Specify set point **FS** (in mBAR or Inches Hg, see example)⁷
B. Set Point Actuation _____
R on Rising Pressure; **F** on Falling Pressure
 Example: **FS300MBAF** for 300 mBAR Falling or **FS10INHGR** for 10" Hg Rising



Dimensions



Pressure Range Table

Pressure Range Code	Pressure Range	Average Dead Band
10	169.3 - 508.0 mbar (5 - 15" Hg)	100 - 150 mbar (3 - 5" Hg)
20	406.4 - 1016.0 mbar (12 - 30" Hg)	100 - 270 mbar (3 - 9" Hg)

Notes:

- Other connectors available. Consult factory.
- 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **FLS30**.
- 18" is standard. Specify cable length in inches (max. 48"). e.g. **EL18** or **EL30**.
- 36" is minimum. Specify cable length in inches. e.g. **CAB36** or **CAB120**.
- DIN connectors require **C** SPDT circuit.
- Ingress Protection is available only with **FL**, **FLS** or **CAB** Electrical Termination choices. Ingress Protection requires Fixed Set Point **FS**.
- Set Point must be within Pressure Range selected in Step 1 above.

PS83 – OEM Subminiature Vacuum Switch

PRESSURE SWITCHES

▶ 169 to 1016 mbar (5" to 30" Hg) *formerly PS-J series*

This compact vacuum switch is designed for OEM applications. Metal blade contacts in lieu of microswitches make this a very economical switch. The PS83 series features Teflon®-coated Kapton® diaphragms. Kapton® polyimide maintains excellent physical properties over a wide temperature range, while the Teflon® coating offers superb chemical resistance.

Specifications

Operating Temperature	-40°C to +93°C (-40°F to +200°F)
Switch*	100 VA Max.; 42 V Maximum Voltage
Repeatability	±5% of Full Set Point Range @ 20°C (70°F) ambient temp.
Wetted Parts	
Diaphragm	Teflon®-coated Kapton®
Housing	Brass (optional 316 SS)
Electrical Termination	Exposed Terminals IP00; Flying Leads IP00; IP option IP65
Proof Pressure	10 bar (150 psi)
Approvals	CE (UL Approved units available)
Weight, Approximate	0.06 kg (0.14 lbs.)

*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.
Teflon® and Kapton® are registered trademarks of Dupont.

How to Order

Use the **Bold** characters from the chart below to construct a product code.

PS83 10 4MNB A SP XX XXXX

Pressure Range Code _____
Insert Pressure Range Code from table below

Pressure Fitting¹ _____

<i>Brass</i>	<i>316 Stainless Steel</i>
2MNB 1/8" NPTM	2MNS 1/8" NPTM
4MNB 1/4" NPTM	4MNS 1/4" NPTM
2MGB 1/8" BSPM	2MGS 1/8" BSPM
4MGB 1/4" BSPM	4MGS 1/4" BSPM
8MGB 1/2" BSPM	4MSS 7/16"-20 SAE Male
M10B M10 x 1.0 Straight	6MSS 9/16"-18 SAE Male
M12B M12 x 1.5 Straight	
4MSB 7/16"-20 SAE Male	
6MSB 9/16"-18 SAE Male	

Circuit _____
A SPST/NO; **B** SPST/NC

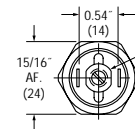
Electrical Termination _____
SP Spade Terminals (standard); **TS** Terminal Screws;
FLXX Flying Leads²; **FLSXX** Flying Leads w/PVC Shrink Tubing²

Options _____
G Gold Contacts (for loads less than 12 mA @ 12 VDC); **IP** Ingress Protection³;
OXY Oxygen Cleaned; **RB** Rubber Boot (shipped loose);
WF Weather Pack Connector, Female; **WM** Weather Pack Connector, Male;
DE Deutsch Connector, Male, DT04 Series

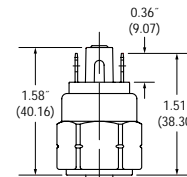
Fixed Set Point (optional) _____
A. Specify set point **FS** (in mBAR or Inches Hg, see example)⁴ _____
B. Set Point Actuation _____
R on Rising Pressure; **F** on Falling Pressure
Example: **FS300MBARF** for 300 mBAR Falling or **FS10INHGR** for 10" Hg Rising



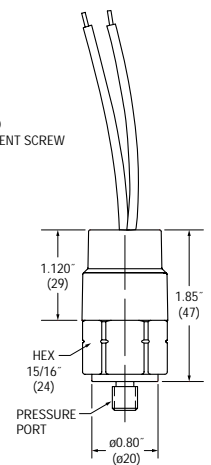
Dimensions



HEX HEAD ADJUSTMENT SCREW



1/4" Spades



Flying Leads with IP option

Pressure Range Table

Pressure Range Code	Pressure Range	Average Dead Band
10	169.3-508.0 mbar (5 - 15" Hg)	Less than 10% of full set point range
20	406.4-1016.0 mbar (12 - 30" Hg)	

Notes:

- Other connectors available. Consult factory.
- 18" is standard. Specify lead length in inches (max. 48"). e.g. **FL18** or **FLS30**.
- Ingress Protection is available only with **FL** or **FLS** Electrical Termination.
- Set Point must be within Pressure Range selected in Step 1 above.

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PS91 – Compact Differential Switch

- ▶ .3 to 1.7 bar (5 to 25 psi)
- ▶ Unaffected by static pressure
- ▶ Robust packaging for harsh applications

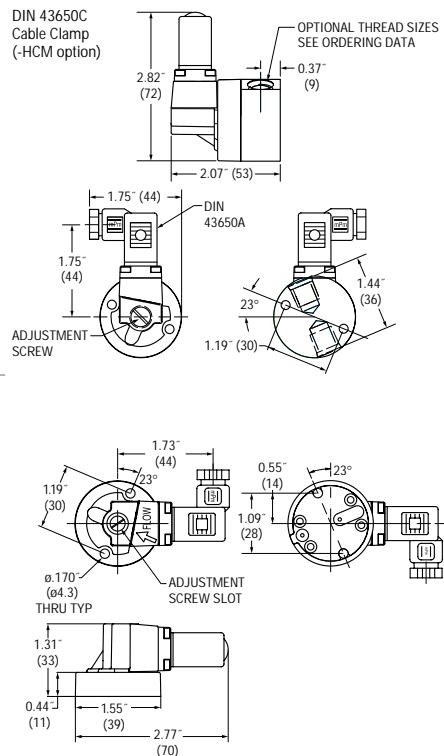
The PS91 is a differential pressure switch that is not affected by changes in static pressure (common line pressure). The PS91 is designed for a unique manifold, or supplied with two 1/8" NPT female ports for more general purpose applications. The switch can be adjusted via a central screw on top of the unit. The unit is supplied with a mini-DIN connector in keeping with the compact packaging.

Specifications

Operating Temperature	-40°C to +80°C (-40°F to +180°F)
Switch*	5 Amp @ 24 VDC and 250 VAC; 0.5 Amp @ 24 VDC
Repeatability	±2% of Full Set Point Range @ 20°C (70°F)
Wetted Parts	
Diaphragm	Nitrile standard (optional EPDM and Viton®)
Fitting	Black Anodized Aluminum
Housing	30% Glass Filled Nylon; Buna-N O-rings
Electrical Termination	DIN 43650C IP65; Terminals IP00
Proof Pressure	100 bar (1500 psi)
Approvals	CE
Weight, Approximate	0.045 kg (0.10 lbs.)



Dimensions



*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.

How to Order

Use the **Bold** characters from the chart below to construct a product code.

PS91 **10** **4FSA** **C** **HM** **XX** **XXXX**

Pressure Range Code _____
Insert Pressure Range Code from table below

Pressure Fitting _____
2FNA 1/8" NPTF Aluminum;
4FSA 7/16"-20 SAE Female, Aluminum;
30MA Manifold Mount, (2) 4.3 mm Dia. Holes, 30.2 mm Dia. B.C., Anodized Black Aluminum

Circuit _____
C SPDT

Electrical Termination _____
HM DIN 43650C Male Half Only (standard);
HCM DIN 43650C 7 mm Cable Clamp

Options _____
V Viton® Diaphragm; **E** EPDM Diaphragm

Fixed Set Point (optional) _____
A. Specify set point **FS** (in BAR or PSI, see example)* _____
B. Set Point Actuation _____
R on Rising Pressure; **F** on Falling Pressure
Example: **FS1BARF** for 1 BAR Falling or **FS10PSIR** for 10 PSI Rising

Note:

1. Set Point must be within Pressure Range selected in Step 1 above.

Pressure Range Table

Pressure Range Code	Pressure Range	Average Dead Band
10	0.35 - 1.0 bar (5 - 15 psid)	0.15-0.3 bar (2-5 psi)
20	0.8 - 1.7 bar (12 - 25 psid)	0.25-0.5 bar (4-7 psi)

PS93 – General Purpose Differential Pressure Switch

- ▶ .7 to 3 bar (10 to 45 psi) *formerly PS-D series*
- ▶ Compact construction
- ▶ Can be mounted in tight spaces
- ▶ Rugged housing

The PS93 Series compact design enables them to be mounted in tight spaces. The switches use a piston/diaphragm design which incorporates the high proof pressure of piston technology with the sensitivity of a diaphragm design. The PS93 series switches may be field or factory adjusted via a hex screw inside the low port, protecting them against unauthorized tampering.



Specifications

Operating Temperature	
Buna-N	-20°C to +80°C (-4°F to +176°F)
EPDM1	-40°C to +80°C (-40°F to +176°F)
Viton® 1	+0°C to +80°C (+32°F to +176°F)
Switch²	5 Amp SPDT @ 240 VAC and 24 VDC; 0.5 Amp @ 24 VDC (-G option)
Repeatability	±2% of highest set point @ 20°C (68°F)
Wetted Parts	
Diaphragm	Buna-N (optional EPDM, Viton® and Neoprene)
Fitting	Zinc-plated steel (optional Brass or 316 Stainless Steel)
Electrical Termination	DIN 43650A (IP65)
Proof Pressure	35 bar (500 psi)
Approvals	CE
Weight, Approximate	0.35 kg (0.75 lbs.)

Notes:

1. Optional
2. Gold contacts (option G) may be required for less than 12 VDC and 20 mA.

How to Order

Use the **Bold** characters from the chart below to construct a product code.

PS93 **10** **4MNS/4MNS** **C** **HM** **XX** **XXXX**

Pressure Range Code _____
Insert Pressure Range Code from table below right

Pressure Fitting _____
High Port/Low Port

12L14 Zinc Plated Steel	Brass
2MNZ 1/8" NPTM;	4MNB 1/4" NPTM;
2MGZ 1/8" BSPM;	4MGB 1/4" BSPM
4MNZ 1/4" NPTM;	
4MGZ 1/4" BSPM;	
4FNZ 1/4" NPTF;	
4MSZ 7/16"-20 SAE Male	
316 Stainless Steel	316 Stainless Steel
4MNS 1/4" NPTM	4MNS 1/4" NPTM

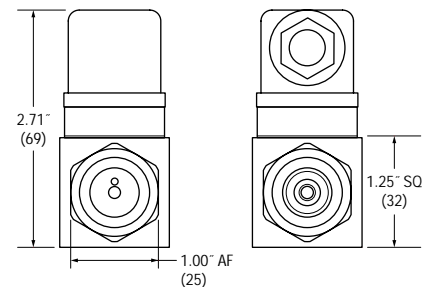
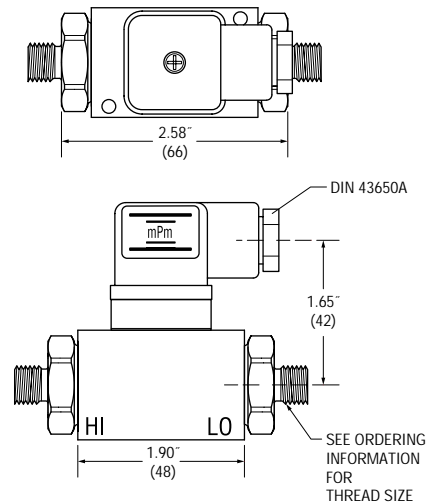
Circuit _____
C SPDT

Electrical Termination _____
H DIN 43650A Male Half Only (standard); **HC** DIN 43650A 9mm Cable Clamp;
HN DIN 43650A with 1/2" Female NPT Conduit

Options _____
V Viton® Diaphragm; **E** EPDM Diaphragm; **N** Neoprene Diaphragm;
G Gold Contacts (for loads less than 12 mA @ 12 VDC)

Fixed Set Point (optional) _____
A. Specify set point **FS** (in BAR or PSI, see example): _____
B. Set Point Actuation _____
R on Rising Pressure; **F** on Falling Pressure
Example: **FS1BARF** for 1 BAR Falling or **FS10PSIR** for 10 PSI Rising

Dimensions



Pressure Range Table

Pressure Range Code	Pressure Range	Average Dead Band
10	0.7 - 1.7 bar (10 - 25 psi)	0.2 - 0.4 bar (3 - 8 psi)
20	1.4 - 3.1 bar (20 - 45 psi)	0.35 - 1 bar (5 - 15 psi)

PS96 – Inline Pressure Switch

- ▶ 2 to 10 bar (30 to 150 psi)
- ▶ Visual adjustment
- ▶ Robust packaging for harsh applications

The PS96 is a compact switch featuring a simple field adjustment. The single turn adjustment has an indicating scale on it for quick adjustments in the field. The miniature DIN standard "C" utilizes 8 mm spacing between contact pins. Its all-metal enclosure and small size make it an ideal choice for mounting in tight areas.

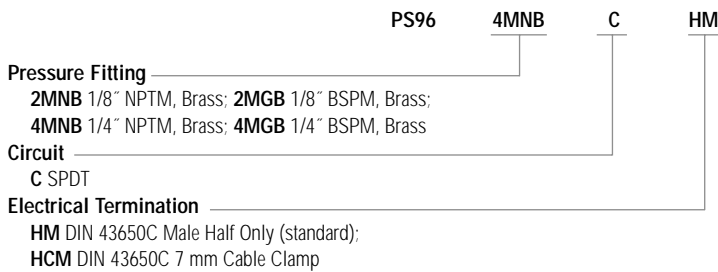
Specifications

Operating Temperature	-40°C to +80°C (-40°F to +180°F)
Switch*	5 Amp @ 24 VDC and 250 VAC; 0.5 Amp @ 24 VDC
Adjustment Range	2-10 bar (30-150 psi)
Repeatability	±2% of Full Set Point Range @ 20°C (70°F)
Wetted Parts	
Diaphragm	Nitrile
Fitting	Brass
Electrical Termination	DIN 43650C IP65
Average Deadband	.8-1.70 bar (12-25 psi)
Proof Pressure	100 bar (1500 psi)
Approvals	CE
Weight, Approximate	0.06 kg (0.13 lbs.)

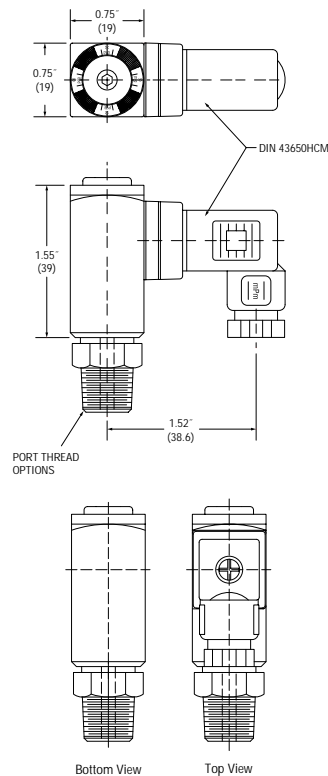
*Gold contacts (option G) may be required for less than 12 VDC and 20 mA.

How to Order

Use the **Bold** characters from the chart below to construct a product code.



Dimensions



PRESSURE SWITCHES

PS98 - Solid State Pressure Switch

- ▶ 0 to 400 bar and 0 to 6000 psi
- ▶ Highly resistant to shock and vibration
- ▶ Ideal for off-highway, mobile, demanding applications
- ▶ No moving parts
- ▶ Long cycle life

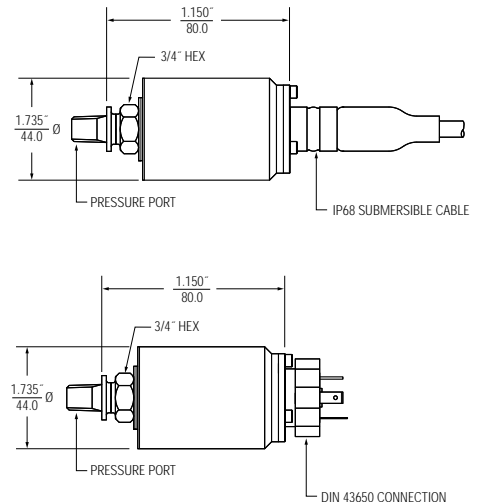
Answering the demand for solid-state switches, MEYLE proudly offers the PS98. Built from our proven CVD and ASIC design, the PS98 Solid State pressure switch offers greater accuracy in rough environments. This switch is an ideal alternative to electromechanical types when cycles exceed 50 cycles/minute and broad frequency response is needed. In addition to a modular design, a host of pressure ports and electrical connections are available. Switch and switch-back points are factory set per customer specification.

Specifications

Operating Temperature	-40°C to 125°C (-40°F to 260°F)
Switch	Relay or Transistor
Repeatability	.25% of Full Set point range @ 20°C (70°F)
Wetted Parts	
Diaphragm	17-4PH Stainless Steel
Fitting	316 Stainless Steel
Electrical Termination	
	DIN "G" IP65 10-6 MIL CONN "C" IP65 Submersible Cable "M" IP68
Supply Voltage (Vs)	12 to 32Vdc
Vibration	70g, peak to peak sinusoidal, 5 to 2000 Hz (Random Vibration: 20 to 2000 Hz @ approx. 20g Peak per MIL-STD-810E Method 514.4)
Acceleration	100g steady acceleration in any direction 0.032% FS/g for 1 bar (15 psi) range decreasing logarithmically to 0.0007% FS/g for 400 bar (6000 psi) range.
Shock	20g, 11 ms, per MIL-STD-810E
Method 516.4 Procedure 1	
Deadband	See How to Order
Proof Pressure	2X Full Scale
Approvals	CE (limits switch voltage to 42 VDC)
Weight, Approx.	0.45 kg (1.0 lbs)



Dimensions



How to Order

Use the **bold** characters from the chart below to construct a product code

PS98 R G15 02 G A 150 125

Output _____
R Relay; T Transistor

Pressure Range _____
Insert Pressure Range Code from table below right

Pressure Port _____
08 1/8-27 NPT External; **02** 1/4-18 NPT External;
0J 1/4 NPT External w/snubber; **0E** 1/4 NPT Internal;
0H 1/2-14 NPT External; **04** 7/16-20 External (SAE #4, J514);
1P 9/16-18 External (SAE #6, J1926-2);
1J 7/16-20 External (SAE #4, J1926-2);
09 G1/8 Internal; **01** G1/4 External; **0A** R1/4 External

Electrical Termination _____
G Large DIN (only with Transistor);
MXXX IP68 Cable (Specify length in meters; e.g. **M012**);
C 6-Pin Connector

Circuit _____
A N.O.; B N.C.; C SPDT (only with Relay)

Factory Set Point' _____

Re-Set Point' _____

Pressure Range Table

Pressure Range Code	Pressure Range (bar)	Pressure Range Code	Pressure Range (psi)
A10	0-1	F15	0-15
A16	0-16	F30	0-30
A25	0-2.5	F60	0-60
A40	0-4	G10	0-100
A60	0-6	G15	0-150
B10	0-10	G20	0-200
B16	0-16	G30	0-300
B25	0-25	G50	0-500
B40	0-40	G60	0-600
B60	0-60	H10	0-1000
C10	0-100	H15	0-1500
C16	0-160	H20	0-2000
C25	0-250	H30	0-3000
C40	0-400	H40	0-4000
		H50	0-5000
		H60	0-6000

Note:

1. Set Points must be within Pressure Range selected in Step 2 above.

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PS-B Series – High Performance Pressure Switch

- ▶ Vacuum and Pressure Ranges
- ▶ 0.5% Repeatability
- ▶ Compact Design

PS-B Series are economically designed pressure switches that use high-quality materials and workmanship to provide the very best service. The PS-B Series is available in a diaphragm/piston combination design or a traditional piston design. Both offer very high operating and proof pressure specifications. These high proof pressures greatly reduce the chance that pressure spikes and surges will damage the unit.

Specifications

Process/Ambient Temperature	-40°C to +80°C (-40°F to +176°F)
Switch	5 Amp SPDT@240 VAC, 5 Amp@30 VDC,
Approvals	CE, Microswitch is UL and CSA Recognised
Repeatability	0.5% of Highest Set Point @ 20°C (68°F)
Wetted Parts (other materials available)	
Diaphragm	Buna-N
O-Ring	Buna-N
Fitting	Brass or Stainless Steel
Enclosure	IP66 (Nema 4X) Anodized Aluminum
Electrical Termination	IP65, DIN 43650 Connector
Pressure Port	G1/4 Female or 1/4" NPT
Weight, Approximate	0.4 kg (1 lbs.)

How to Order

Use the **bold** characters from the chart below to construct a product code

SELECT _____ **PS** **B2** **P504H** **S1N** **B1** **BL** **G** **B**

B2 Series _____

Insert **Range Code** From Table Below _____

Pressure Port (*) _____

S1 316 ss 1/4" female; **S2** 316 ss 1/2" female; **S7** 316 ss 1/2" male;
B1 brass 1/4" female;
 Last character **N** for NPT thread or **B** for BSP thread

Diaphragm/O-Ring Material _____

B1 buna-n/buna-n; **P1** PTFE/buna-n; **P2** PTFE/VITON; **E6** EPDM/EPDM;
S2 316 ss/Viton®-A ; **V2** Viton®-A/Viton®-A

Microswitch _____

BL standard; **BG** gold-plated switch

Options _____

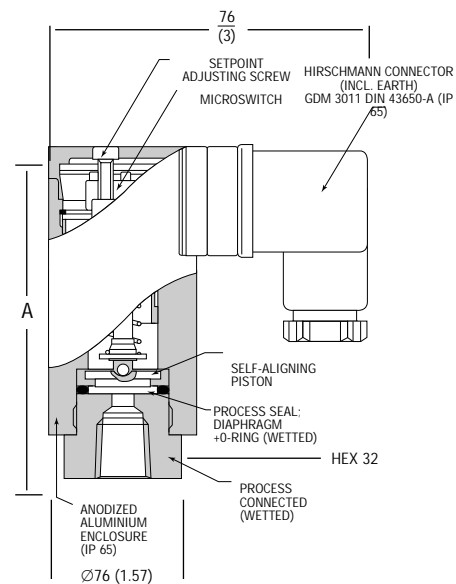
M vacuum protection plate for pressure switches; **B** oxygen cleaned

Note:

(*) Brass connections are on fluid power switches



Dimensions



Type	A
Pressure Switch	92mm (3.62")
Vacuum Switch	107mm (4.21")
Fluid Power	100mm (3.94")

Type	Pressure Port	Range Range Code	Adjustable Range	Typical Deadband Midrange	Operating Pressure Max.	Proof Pressure
Pressure	316 Stainless Steel	-P504H	0.3-4.5 bar (4-65 psi)	0.08 bar (1.2 psi)	200 bar (3000 psi)	600 bar (8500 psi)
		-P508H	1-25 bar (15-360 psi)	0.48 bar (7 psi)	200 bar (3000 psi)	600 bar (8500 psi)
		-P708H	3-85 bar (45-1230 psi)	2 bar (30 psi)	200 bar (3000 psi)	600 bar (8500 psi)
		-P808H	5-170 bar (75-2500 psi)	5 bar (75 psi)	400 bar (5800 psi)	600 bar (8500 psi)
		-P908H	10-300 bar (150-4300 psi)	15 bar (215 psi)	400 bar (5800 psi)	600 bar (8500 psi)
Fluid* Power	Brass	-P908F	20-300 bar (300-4300 psi)	15 bar (215 psi)	850 bar (9000 psi)	700 bar (10000 psi)
		-P918F	30-540 bar (450-7500 psi)	20 bar (290 psi)	650 bar (9000 psi)	700 bar (10000 psi)
Vacuum	316 Stainless Steel	-V506H	-1 to 6 bar (30"Hg-85 psi)	0.12 bar (2psi)	200 bar (3000 psi)	600 bar (8500 psi)

PS-C Series – High Performance Industrial Switch

- ▶ Vacuum, Differential & Pressure Switches
- ▶ Vacuum to 540 bar (7500 PSI) Pressure Range
- ▶ Excellent 0.2% Repeatability

The PS-C Series pressure switches have been painstakingly designed to provide a very easy end user interface and reliable service. Details like stainless steel mounting brackets for the microswitch; self-locking adjusting nut; internal stainless steel pistons and spring; and baked-on enclosure finishes highlight these design efforts. The PS-C uses either a diaphragm/piston combination design or a traditional piston design.

Specifications

Process/Ambient Temperature	-40 to 80C (-40 to +176F)
Switch	15 Amp SPDT@240 VAC, 0.5 Amp@28 VDC, (Ranges (200 mbar), use a 10 Amp@240 VAC / 0.5 Amp@28 VDC)
Approvals	CE, Microswitch is UL & CSA Recognised (Optional Intrinsic Safe Rating for EEx ia/ib IIC T6 (1))
Repeatability	0.2% of Highest Set Point @ 68°F (20°C)
Wetted Parts (other materials available)	
Diaphragm	Buna-N
O-Ring	Buna-N
Fitting	Aluminum or Stainless Steel
Enclosure	Aluminum or Stainless Steel Enclosure IP66 (Nema 4X) Aluminum With Baked-On Enamel Coating
Adjustable Dead Band Option	4 Times Listed Values
Electrical Termination	PG13.5 Cable Gland or 3/4" NPT Conduit
Process Fitting	G 1/4 or 1/4" NPT
Weight, Approximate	3.3 lbs. (1.5 kg)

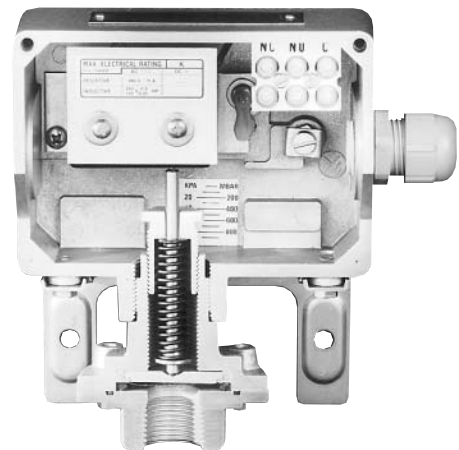
Notes:

(1) CENELEC standards EN50 014/50 018 and meets all requirements of BS 5501 / EN 50 039 (EExi) relating to insulation, clearance, creepage distance and enclosure type where peak voltage of 90 V is allowed.

How To Order

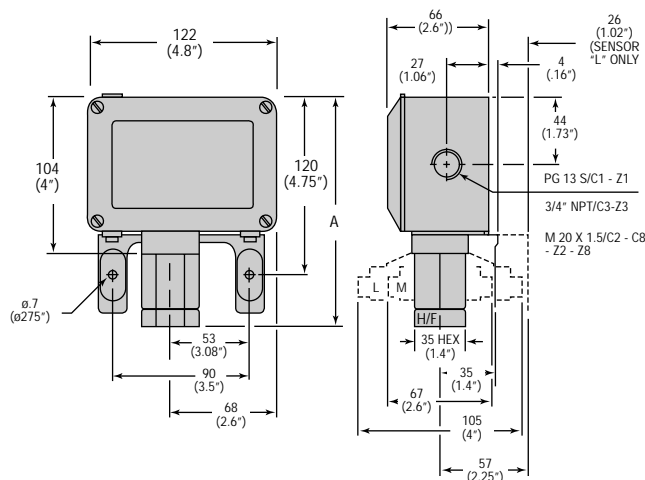
Use the **Bold** characters from the chart below to construct a product code.

SELECT	PS	-C1	-P504H	-S1N	-B1	-K1	-G	-C
1. Series/Enclosure								
-C1 PG13.5 cable gland; -C2 M20 x 1.5;								
-C3 3/4" NPTF conduit; -C8 M20 x 1.5 ss enclosure								
2. Insert Range Code From Table								
3. Pressure Port								
1st Character: -S for 316 ss; -A aluminium; -B brass; -M Monel®;								
2nd Character: -1 for 1/4" female fitting, -2 for 1/2" female fitting;								
3rd Character: -N for NPT thread; -B for bsp thread								
4. Diaphragm/O-Ring Material								
-B1 buna-n/buna-n; -P1 PTFE/buna-n; -P4 PTFE/PTFE; -E6 EPDM/EPDM;								
-S2 316 ss/Viton®-A; -V2 Viton®-A/Viton®-A								
5. Microswitch								
-K1 standard (-L1) standard on 301L ranges and 302L ranges; -G1 gold contacts								
-SL hermetically sealed; -SP narrow adjustable deadband; -SR wide adjustable deadband;								
-SE manual reset increasing; -SG manual reset decreasing								
6. Options								
-C cable gland; -B oxygen cleaned; -I IS rating; -M vacuum protection for pressure switches;								



PRESSURE SWITCHES

Dimensions mm (in.)



Type

Note: 1 bar = 14.5 psi

Type	Pressure Port	Range Code	Pressure Range	Max Deadband	Max Operating	Proof Pressure
			Bar	Bar	Bar	Bar
Pressure	Aluminium	-P301L	2-15 mbar	1.1-1.9 mbar	30	35
		-P302L	10-100 mbar	2.5-3.5 mbar	30	35
		-P304L	20-240 mbar	6-9 mbar	30	35
		-P306L	20-560 mbar	6-12 mbar	30	35
		-P308L	25-1300 mbar	7-15 mbar	30	35
		-P402M	100-400 mbar	15-20 mbar	125	140
		-P404M	100-950 mbar	15-30 mbar	125	140
	316 Stainless Steel	-P406M	120-2300 mbar	16-50 mbar	125	140
		-P408M	15-5400 mbar	16-90 mbar	125	140
		-P502H	0.3-1.6	65-95 mbar	200	600
		-P504H	0.4-3.9	65-160 mbar	200	600
		-P506H	0.5-9.0	65-330 mbar	200	600
		-P508H	0.7-21.5	70-810 mbar	200	600
		-P708H	3-76	0.3-3.75	200	600
Fluid Power*	Brass	-P808H	4-170	0.8-9.5	400	600
		-P908H	10-300	2-19.5	400	600
		-P904F	12-55	3.5-6	650	700
		-P906F	16-130	4-8.5	650	700
**Vacuum	Aluminium	-P908F	20-300	6-12	650	700
		-P918F	30-540	15-31	650	700
		-V304L	-60/+150 mbar	4/6.5 mbar	30**	35
316 S.S.	-V404M	-400/+400 mbar	16/25 mbar	125	140	
	-V506H	-1/6	80/300 mbar	200	600	

*Fluid power switches are for hydraulic use and not for use on gas systems (piston design).

**Vacuum limit is 15" Hg (-0.5 bar).

PS-C Series – Differential Pressure Switch

- ▶ Wide Pressure Range (12 mbar to 70 bar)
- ▶ High Line Pressure (up to 200 bar)
- ▶ Wide Chemical Compatibility

The PS-C Differential Series is designed so they provide ease of installation together with reliable service. Diaphragm/piston design allows for wide pressure ranges and accuracy with good chemical compatibility. Line pressure of up to 200 bar can be used and the unit is protected against a complete line collapse in either direction.

Specifications

Process/Ambient Temperature	-40°C to +80°C (-40°F to +176°F)
Switch	15 Amp SPDT@240 VAC, 0.5 Amp@28 VDC, (Ranges 75 mbar), use a 10 Amp@240 VAC / 0.5 Amp@28 VDC
Approvals	CE, Microswitch is UL & CSA Recognised (Optional Intrinsic Safe Rating for EEx ia/ib IIC T6 (1))
Repeatability	1% of Highest Set Point @ 68°F (20°C)
Wetted Parts (other materials available)	
Diaphragm	Buna-N
O-Ring	Buna-N
Fitting	Aluminum or Stainless Steel
Enclosure	Aluminum or Stainless Steel Enclosure IP66 (Nema 4X) Aluminum With Baked-On Enamel Coating
Electrical Termination	PG13.5 Cable Gland or 3/4" NPT Conduit
Process Fitting	G 1/4 or 1/4" NPT
Weight, Approximate	3.3 lbs. (1.5 kg)

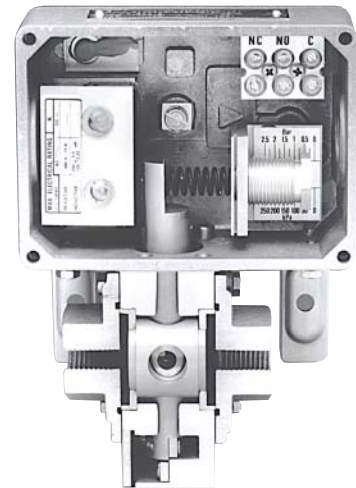
Notes:

(1) CENELEC standards EN50 014/50 018 and meets all requirements of BS 5501 / EN 50 039 (EExi) relating to insulation, clearance, creepage distance and enclosure type where peak voltage of 90 V is allowed.

How To Order

Use the **Bold** characters from the chart below to construct a product code.

SELECT	PS	-C1	D506M	-S1N	-B1	-K1	-G	-C
1. Series/Enclosure								
		-C1 PG13.5 cable gland; -C2 M20 x 1.5; -C3 3/4" NPTF conduit; -C8 M20 x 1.5 ss enclosure						
2. Insert Range Code From Table								
3. Pressure Port								
				1st Character: -S for 316 ss; -A aluminium; -B brass; -M Monel®; 2nd Character: -1 for 1/4" female fitting, -2 for 1/2" female fitting; 3rd Character: -N for NPT thread; -B for bsp thread				
4. Diaphragm/O-Ring Material								
				-B1 buna-n/buna-n; -P1 PTFE/buna-n; -P4 PTFE/PTFE; -E6 EPDM/EPDM; -S2 316 ss/Viton®-A; -V2 Viton®-A/Viton®-A				
5. Microswitch								
						-K1 standard (-L1 standard on 301L ranges and 302L ranges); -G1 gold contacts -SL hermetically sealed; -SP narrow adjustable deadband		
6. Options								
							-C cable gland; -B oxygen cleaned; -I IS rating; -M vacuum protection for pressure switches;	



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E-Mail: sales@meyle.de

FS-3 0.2 - 3.8 (l/min) pre-adjusted set points

These ultra compact switches have been specially designed for reliable operation in clean-post-filtered water. They are made primarily of Noryl®, with all other wetted materials are FDA or NSF compliant. FS-3 switches are instrument quality, yet affordably priced for pure water equipment from UV lamp switching to filter life monitoring. Also well suited to some chemical applications and a variety of cooling applications: lasers, welders, etc.

Specifications (all data related to water at +20°C)

Operating pressure	10 bar at 20°C; 3.4 bar at 100°C
Operating temperature	max. 100°C
Switch	SPST, NO, 20 VA, 120...240 V AC/DC
Inlet / outlet ports	1/4" NPT, R 1/4"
Electrical connection	AWG 22 PVC-lead wires, Length appr. 0.3m
Approvals	U.L. approved file No. E91926

*Materials of construction are either FDA or NSF compliant.

Notes:

1. NO switches in No Flow condition are standard; please contact us for NC models.
2. The device is designed to provide Flow/No Flow sensing. Tabulated set points specify maximum contact closure thresholds on increasing fluid flow. Re-establishment of a Normally Open contact occurs on decreasing fluid flow between set point and no flow.
3. Flow settings are based on a vertical position (inlet port down), using water at +20°C on increasing flow. Some variation in set point actuation will occur in other mounting orientations.
4. Use of 50 micron, or better, filtration is required.
5. Not recommended for use with oils

Order numbers

Set points (l/min)	Order numbers	
	1/4" NPT	R 1/4"
0.2	165840	166701
1.0	165841	166702
2.0	165842	166703
3.8	165843	166704

How to Order

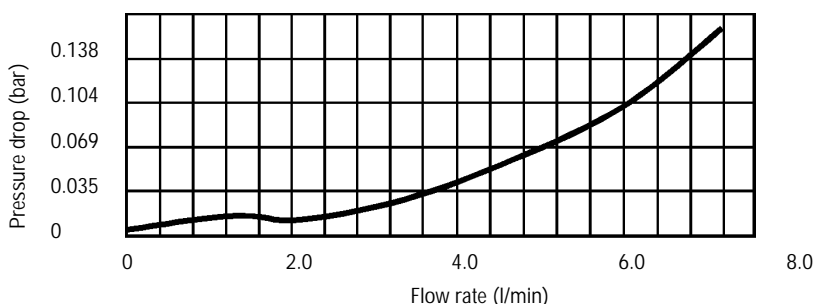
Standard models (medium: water)

Specify the FS-3 flow switch using part numbers tabulated column above.

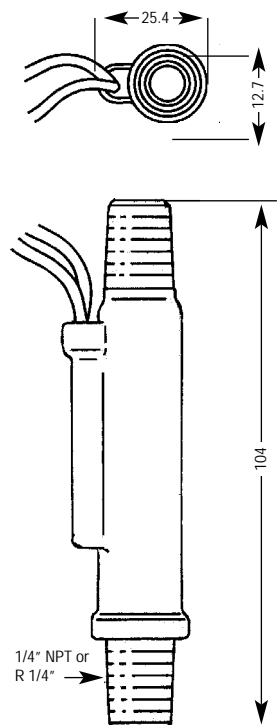
Special requirements

MEYLE caters to OEM needs with special configurations, including Gas (Air) flow and customer specified electrical terminations.

Pressure drop diagram



Dimensions (in mm)



Housing: Noryl®
 Piston: Noryl®
 Spring: Stainless Steel



FS-150 2.0 - 18.5 (l/min) with pre-adjusted set points

straight flow path with low pressure drop

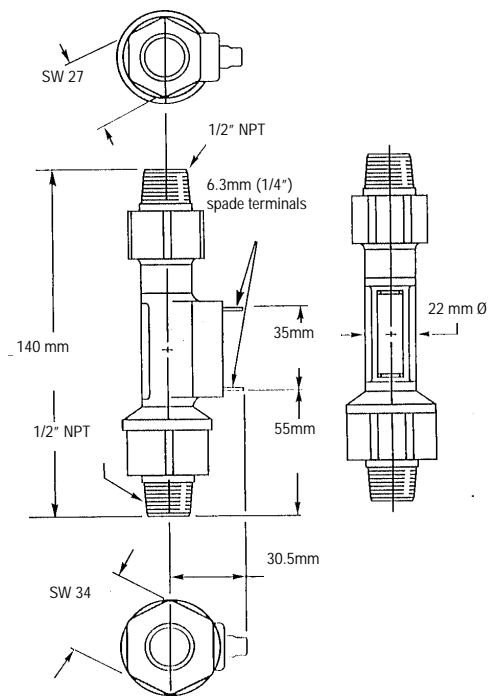
The FS-150 slim, inline switches reduce pressure drop to a minimum. They incorporate a unique, dual-diameter, internal bore and piston configuration to minimize flow constriction. Liquids are able to smoothly pass around the piston and flow through the switch with little pressure loss to the down stream line.

Specifications (All pressure data related to water at +20 °C)

Operating pressure	14 bar
Operating temperature	-17 °C . . . +100 °C
Set point accuracy	±15%
Set point differential	20% max.
Switch	SPST, 20 VA
Inlet / outlet ports	1/2" NPT male
Electrical Termination	6.3 mm (1/4") spade terminals (2)



Dimensions (in mm)



How to order

Standard models (medium: water)

Specify part number based on flow setting and switch operation (see chart next column).

For liquids other than water

Special calibration is available from MEYLE for media other than water. Please consult factory with your requirements, including flow media, operating pressure, flow set point and liquid viscosity (SSU).

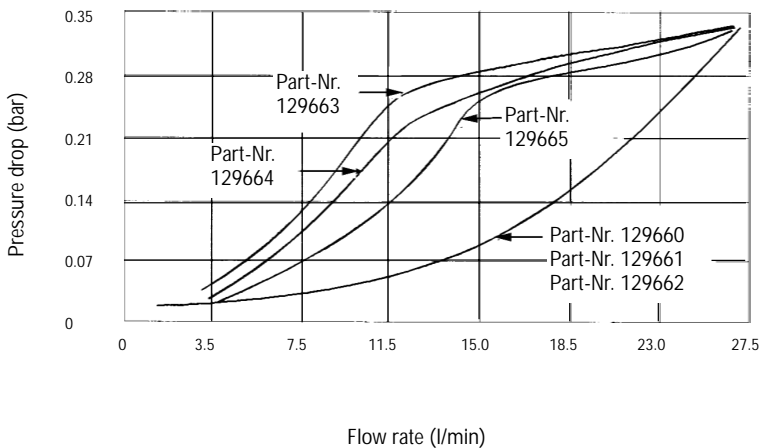
Order numbers

set points (l/min)	NO	NC
2.0	129660	129666
3.5	129661	129667
7.5	129662	129668
11.5	129663	129669
15.0	129664	129670
18.5	129665	129671

Notes:

- Flow settings are calibrated using water + 20 °C on increasing flow, with units in horizontal position (terminals upwards).
- Care should be taken to ensure fluid compatibility with the above listed wetted materials.
- Use of 150 micron filtration is recommended.

Pressure drop - typical



Housing: Polypropylene (hydrolytically stable)
 Piston: Ryton®-R4 316 Stainless Steel
 O-Ring: Viton®
 Spring: 316 Stainless Steel

Test conducted with units in a horizontal position (terminals upwards), with water a 20°C

FS-4 0.4 - 6.0 (l/min) with pre-adjusted set points

The FS-4 Series makes flow protection economical for a broad range of industrial applications such as business machines, heavy duty floor cleaners, commercial dishwashers and beverage dispensing equipment.

Specifications (All pressure data related to water at +20 °C)

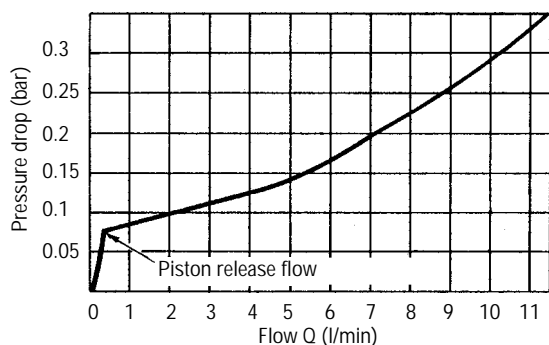
Max. flow	12 l/min
Max. operating pressure	20 bar
Proof pressure	30 bar
Max. temperature	+107 °C (Ambient +80°C for cable)
Set points	see order number
Switching function (related to increasing flow)	NC, NO, SPDT
Factory mounting position with set point adjustment	vertical, inlet port down
Repeatability	± 1%
Adjustment accuracy	±15%
Hysteresis	max. 20%
Mounting	9/16"-18 UNF-2B, with adapter: G1/4"
Electrical connections (length: approx. 1 m)	- lead wire: FEP, 0.6 mm ² - cable: PVC, 0.34 mm ²
Enclosure	IP 65
Electrical data contact rating	NC/NO: 100 VA; 3 A; 220 V- SPDT: 20 VA; 0.5 A; 220 V-
Weight	0.1 kg

Order numbers

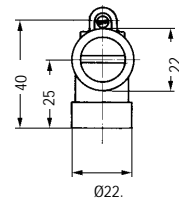
set points (l/min)	order number lead wire		
	NO	NC	SPDT
0.4	024-4714	024-4720	024-4726
1.0	024-4715	024-4721	024-4727
2.0	024-4716	024-4722	024-4728
3.0	024-4717	024-4723	024-4729
4.0	024-4718	024-4724	024-4730
6.0	024-4719	024-4725	024-4731

set points (l/min)	order number cable		
	NO	NC	SPDT
0.4	020-0242	020-0248	020-0254
1.0	020-0243	020-0249	020-0255
2.0	020-0244	020-0250	020-0256
3.0	020-0245	020-0251	020-0257
4.0	020-0246	020-0252	020-0258
6.0	020-0247	020-0253	020-0259

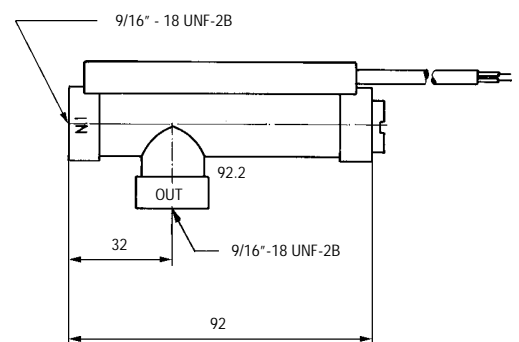
Pressure drop diagram (at min. set point adjustment)



Dimensions (in mm)



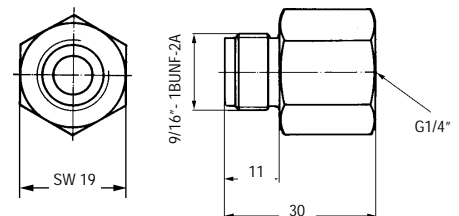
Housing: Ryton®
Piston: Ryton®
Spring: Stainless Steel
O-Ring: Viton®



Adaptors

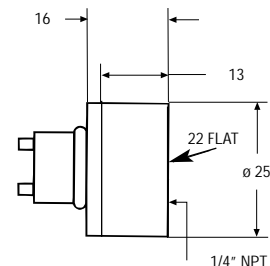
Please use adaptor only in connection with supplied Viton O-Ring.
Brass Adaptor 9/16"-18UNF-2B to G 1/4" with Viton O-Ring

912-0616

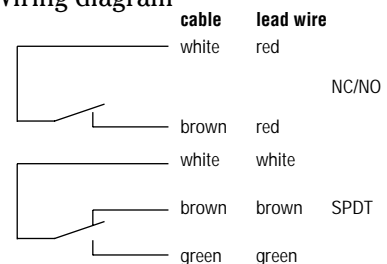


Ryton Adaptor 9/16"UNF-2B to 1/4" NPT with Viton 'O' ring

123029



Wiring diagram



FS-6 0.4 - 6.0 (l/min) with pre-adjusted set points

The FS-6 range of flow switches provides economical flow protection for a wide range of industrial applications such as photocopiers, heavy-duty floor cleaners and industrial dishwashers. The European integral G 1/4" connections obviate the need for additional adaptors and the design allows for easy mounting.

Specifications (All pressure data related to water at +20 °C)

Max. flow	12 l/min
Max. operating pressure	30 bar at +20 °C 16 bar at +50 °C 13 bar at +70 °C 5 bar at +85 °C
Proof pressure	45 bar
Max. temperature	+85 °C
Set points	see order number
Switching function (related to increasing flow)	NC, NO, SPDT
Factory mounting position with set point adjustment	vertical, inlet port down
Repeatability	±1%
Adjustment accuracy	±15%
Hysteresis	max. 20%
Mounting	G1/4"
Electrical connections	cable: PVC, 0.34 mm ² (length: approx. 1 m)
Enclosure	IP 65
Electrical data contact rating	NC/NO: 100 VA, 3 A, 220 V- SPDT: 20 VA, 0.5 A, 250 VA
Weight:	0.16 kg

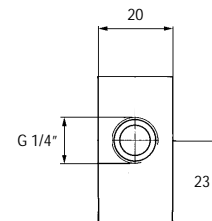
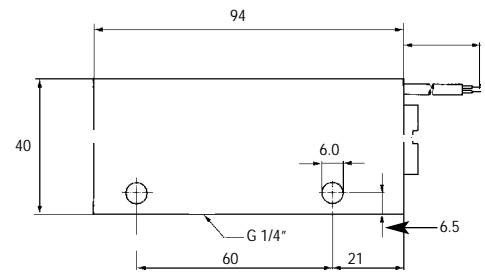
Please note: For mineral oil applications please order brass piston instead of polysulphone piston.
Add GE169 to order number e.g. 020-0290 - GE169

Order numbers

set points (l/min)	order number		
	NO	NC	SPDT
0.4	020-0290	020-0297	020-0304
1.0	020-0291	020-0298	020-0305
2.0	020-0292	020-0299	020-0306
3.0	020-0293	020-0300	020-0307
4.0	020-0294	020-0301	020-0308
6.0	020-0295	020-0302	020-0309



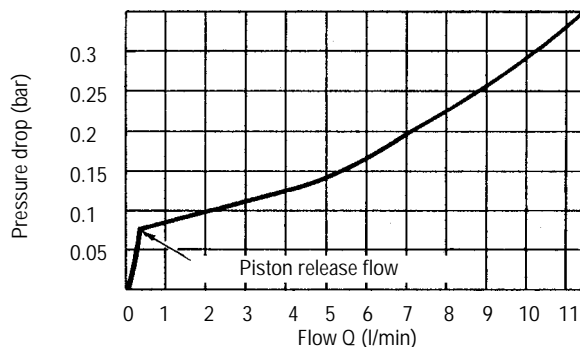
Dimensions (in mm)



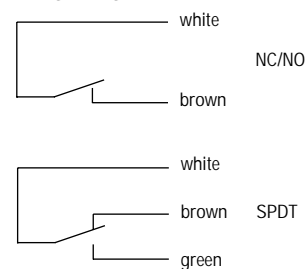
Housing: Delrin®
Piston: Polysulfone*
Spring: Stainless Steel
O-Ring: Viton®

* Option Brass

Pressure drop diagram (at min. set point adjustment)



Wiring diagram



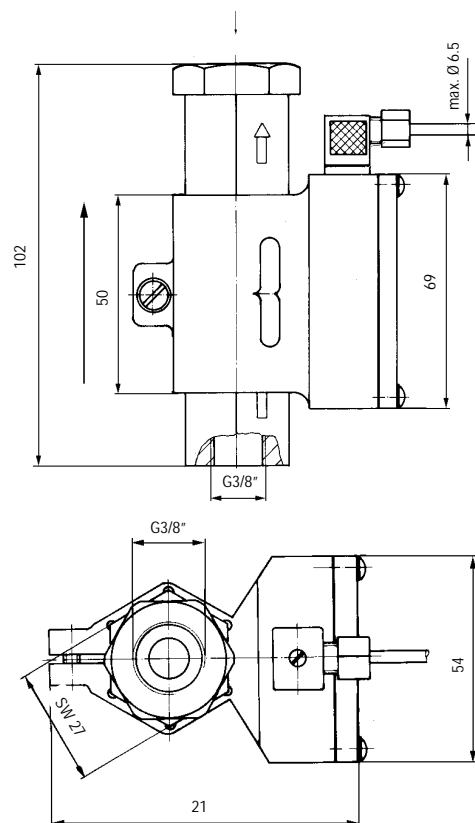
FS-100E 2.0 - 15.0 l/min with pre-adjusted set points FS-100E-A 1.0 - 16.0 l/min with adjustable set points

The FS-100E version (with pre-adjusted set points 2.0 . . . 6.0 l/min) operates in vertical mounting position only. It is equipped with a calibrated piston which is displaced by liquid flow to magnetically actuate a hermetically sealed reed switch isolated within the unit body. When flow decreases the piston returns to its prior position by its own weight and deactuates the reed switch. The FS-100E version (with pre-adjusted set points 5.0 . . . 15.0 l/min) operates with the same principle but a positive spring-return deactuates the switch when flow decreases. Mounting is possible in any position.

The FS-100E-A (adjustment range 1.0 . . . 16.0 l/min) operates according to the same principle as the FS-100E with spring. The FS-100E-A is provided with an additional scale on the brass body on which set points as well as setting functions can be adjusted in one operation. Only the mark of the junction box has to be moved over the respective scale value. Pressure drop is not influenced at all when changing set points.



Dimensions



Housing: Brass
Piston: Brass
O-Ring: Buna N
Spring: Stainless Steel
Magnet: Ferrite

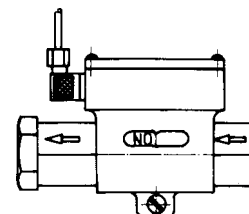
Specifications (All pressure data related to water at +20 °C)

	FS-100E	FS-100E-A
Max. flow	24 . . . 40 l/min.	55 l/min
Max. operating pressure	50 bar	50 bar
Max. pressure drop	0.3 bar	0.3 bar
Max. operating temperature	+90 °C	+90 °C
Set points	see order number	adjustable 1 ... 16 l/min
Switching function (related to increasing flow)	NO/NC; the required function may be adjusted by moving the junction box	
Mounting position	see order number	any position
Factory mounting position with set point adjustment	vertical, inlet port down	vertical, inlet port down
Repeatability	± 1%	± 1%
Adjustment accuracy	±10%	±10%
Hysteresis	max. 5%	max. 20%
Mountings	G 3/8"	G 3/8"
Electrical connections	miniature plug connector with cable gland (max. cable ø: 6.5 mm)	
Enclosure	IP 65	IP65
Electrical data contact rating	40 VA, 2 A, 220 V-	40 VA, 2 A, 220 V-
Weight	appr. 0.5 kg	appr. 0.5 kg

Order numbers

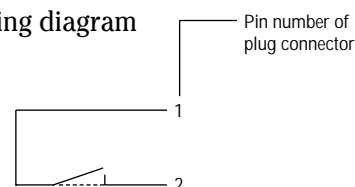
	set points (l/min)	Mounting position	order number
FS-100E	2.0	vertical	020-0402
	3.0	vertical	020-0403
	4.0	vertical	020-0404
	5.0	vertical	020-0405
	6.0	vertical	020-0406
	5.0	any position	020-0505
	6.0	any position	020-0506
	7.0	any position	020-0507
	8.0	any position	020-0508
	9.0	any position	020-0509
	10.0	any position	020-0510
	11.0	any position	020-0511
	12.0	any position	020-0512
	13.0	any position	020-0513
	14.0	any position	020-0514
15.0	any position	020-0515	
FS-100E-A		any position	020-0315

Set point adjustment/Contact configuration



Adjust the housing to setting required

Wiring diagram



FS-380 1 - 6 (l/min) pre adjusted set points

Compact Flow Switch for High Inline Pressures

These rugged inline flow switches use 150 micron filtration and are less susceptible to clogging than other high-pressure inline flow switches. The one-piece magnetic PPS composite piston makes the FS-380 ideal for high-pressure applications such as industrial cleaning equipment or high-pressure lubrication systems.

Specifications

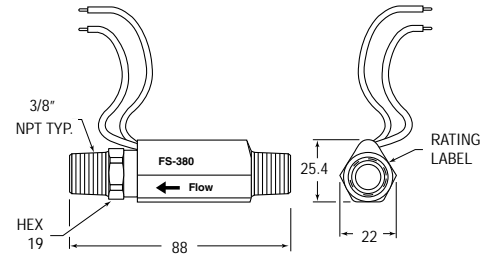
Operating Pressure, Max.	70 Bar
Operating Temperature	-28.8°C to + 135°C
Set Point Accuracy	±20% Maximum
Set Point Differential	20% Maximum
Switch	SPST, 20VA
Inlet/Outlet	3/8" NPT
Electrical Termination	22 AWG, 0.6m Polymeric leads

Order numbers - Standard models

Flow settings l/min	Part numbers	
	Brass	Stainless Steel
1.0	168432	179992
1.9	168433	179993
3.8	168434	179994
5.7	168435	179995
7.6	178353	179996

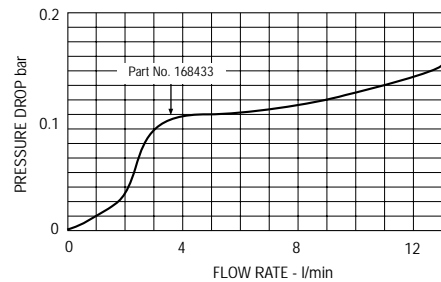


Dimensions



- Housing: Brass or Stainless Steel
- Piston: PPS Composite
- Spring: 316 Stainless Steel
- O-Ring: Fluorocarbon

Pressure Drop - Typical



Models with compression fittings are available for OEM users. Contact Sales Office for details.



FS-105E 0.05 - 150 l/min with adjustable set-points

FS-107E 0.1 - 90 l/min Viscosity Compensated with adjustable set-points

The FS-105E model operates in any mounting position. It is equipped with a calibrated piston which is displaced by flow to magnetically actuate a sealed hermetic reed switch. When flow decreases a positive spring returns the piston to its prior position and de-actuates the reed switch. The reed switch assembly is movable to allow for customer setting of flow rate within the limits of the switch selected. The adjustment does not effect the flow path, therefore pressure drop is not influenced when changing set-points. Versions are available for Liquid and Gas flow. Robust components allow a pressure of 250 bar, ideally suited for high pressure cleaning and lubrication systems.

The FS-107E model operates in any mounting position. It is equipped with a calibrated piston in a calibrated orifice for viscosity compensation over 1 to 600 cSt. The piston is displaced by flow to magnetically actuate a sealed hermetic reed switch. When flow decreases a positive spring returns the piston to its prior position and de-actuates the reed switch. The reed switch assembly is movable to allow for customer setting of flow rate within the limits of the switch selected. The adjustment does not effect the flow path, therefore pressure drop is not influenced when changing set-points. Robust components allow a pressure of 250 bar, ideally suited for High pressure lubrication systems.

Specifications	FS-105E	FS-107E
Max Flow	100% above max. set-point range	100% above max. set-point range
Max Operating Pressure	250 bar	250 bar
Pressure Drop	0.02 to 0.4 bar	0.02 to 0.4 bar
Operating Temperature	-20 to 120°C	-20 to 120°C
Adjustable Range	see order number	see order number
Switching Function	NO with no flow, SPDT available	NO with no flow, SPDT available
Mounting Position	Any position	Any position
Repeatability	1% of range	1% of range
Adjustment Scale Accuracy	+/- 10%	+/- 5%
Hysteresis	max 20%	max 20%
Mountings	G ¹ / ₄ , G ¹ / ₂ , G1	G ¹ / ₂ , G1
Electrical Connection	Din 43650, Mini for G ¹ / ₄ , G ¹ / ₂ , Std for G1	Din 43650
Enclosure	IP 65	IP 65
Electrical Contact Rating	NO - 250V, 1A, 100VA - G1 port NO - 220V, 1A, 100VA - G ¹ / ₂ port NO - 200V, 1A, 20VA - G ¹ / ₄ port SPDT - 250V, 1.5A, 50VA - G1, G ¹ / ₂ SPDT - 200V, 1A 20VA - G ¹ / ₄ port	NO - 250V, 3A, 100VA - G1 port NO - 220V, 1A, 100VA - G ¹ / ₂ port
Weight (approx)	G ¹ / ₄ - 140g, G ¹ / ₂ - 350g, G1 - 1000g	

Order numbers for FS-105E

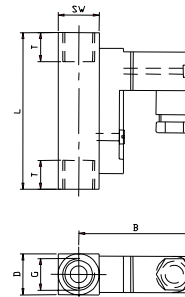
Adj Range L/min	Order 'NO'	Number 'SPDT'	Port
5-60 ml	027-0100	027-0120	G ¹ / ₄ "
20-140ml	027-0101	027-0121	G ¹ / ₄ "
0.1-0.6	027-0102	027-0122	G ¹ / ₄ "
0.2-1.2	027-0103	027-0123	G ¹ / ₄ "
0.4-2.0	027-0104	027-0124	G ¹ / ₄ "
0.5-3.0	027-0105	027-0125	G ¹ / ₄ "
1.0-5.0	027-0106	027-0126	G ¹ / ₄ "
0.02-0.2	027-0107	027-0127	G ¹ / ₂ "
0.1-0.6	027-0108	027-0128	G ¹ / ₂ "
0.4-1.8	027-0109	027-0129	G ¹ / ₂ "
0.8-3.2	027-0110	027-0130	G ¹ / ₂ "
2-7	027-0111	027-0131	G ¹ / ₂ "
3-13	027-0112	027-0132	G ¹ / ₂ "
4-20	027-0113	027-0133	G ¹ / ₂ "
8-30	027-0114	027-0134	G ¹ / ₂ "
15-45	027-0115	027-0135	G1"
30-90	027-0116	027-0136	G1"
60-150	027-0117	027-0137	G1"

Order numbers for FS-107E

Adj Range L/min	Order 'NO'	Number SPDT	Port	Order No with visual indication 'NO'	'SPDT'
0.1-0.8	027-0300	027-0320	G ¹ / ₂ "		
0.4-1.6	027-0301	027-0321	G ¹ / ₂ "		
0.8-3	027-0302	027-0322	G ¹ / ₂ "		
2-7	027-0303	027-0323	G ¹ / ₂ "		
0.1-0.8	027-0304	027-0324	G1"	027-0340	027-0360
0.5-1.5	027-0305	027-0325	G1"	027-0341	027-0361
1-4	027-0306	027-0326	G1"	027-0342	027-0362
2-8	027-0307	027-0327	G1"	027-0343	027-0363
3-10	027-0308	027-0328	G1"	027-0344	027-0364
5-15	027-0309	027-0329	G1"	027-0345	027-0365
8-24	027-0310	027-0330	G1"	027-0346	027-0366
10-30	027-0311	027-0331	G1"	027-0347	027-0367
15-45	027-0312	027-0332	G1"	027-0348	027-0368
20-60	027-0313	027-0333	G1"	027-0349	027-0369
30-90	027-0314	027-0334	G1"	027-0350	027-0370



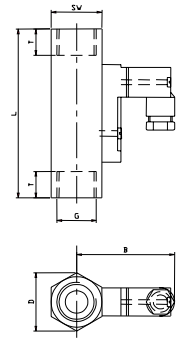
Dimensions



Dimension	SW	D	B	G	T	L
	17	17	47	1/4	10	65
	27	31	52	1/2	14	90
	41	47	72	1	17	130



Dimensions

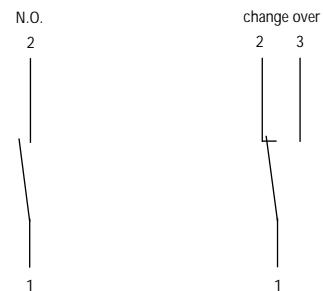


Dimension	SW	D	B	G	T	L
	27	31	52	1/2	14	90
	41	47	72	1	17	130

Meter 17mm wide

Housing Nickel plated Brass
Piston Brass
Spring Stainless Steel

Wiring Diagram



FS-200 2.0 - 190 (l/min) with pre-adjusted set points

The FS-200 range of flow switches offer accurate flow detection, with 1% repeatability, with a wide range of flow and port sizes. The durable construction delivers long life repeatability in either water or oil. The design of large flow paths keep pressure drop low, thus are ideal for detection of flow in high volume lubrication, cooling or process applications.

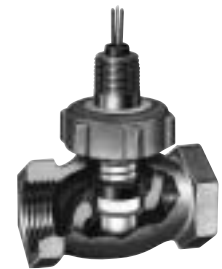
Specifications (All pressure data related to water at +20 °C)

Max. flow	see order numbers
Max. operating pressure	27 bar at +20 °C
Proof pressure	45 bar
Temperature range	- 20 °C...+150 °C
Set points	see order numbers
Switching function (related to increasing flow)	SPDT
Factory mounting position with set point adjustments	horizontal, electrical connection up
Repeatability	±1%
Adjustment accuracy	±10%
Hysteresis	max. 15%
Mounting	1" NPT...2" NPT (see "dimensions" and "order number")
Electrical connections	- lead wire: FEP, 0,6 mm ² (length: approx. 1 m)
Enclosure	- IP 44 (with lead wire) - IP 54 (with terminal box)
Electrical data contact rating	20 VA; 0,5 A; 250 V~
Weight	see "dimensions"

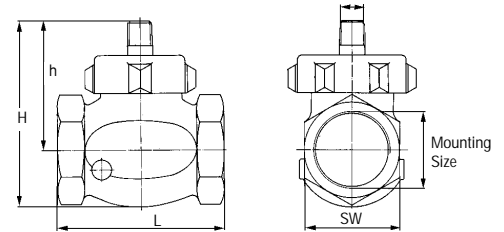
Order numbers

Set point (l/min)	Mounting	Max. flow (l/min)	Order number Housing Bronze	Order number Housing Stainless Steel
2.0 4.0	1" NPT	80	022-7051	022-7059
7.5 11.5			022-7052	022-7060
15.0 19.0			022-7053	022-7061
22.5 30.0			022-7054	022-7062
			022-7055	022-7063
			022-7056	022-7064
4.0 7.5	1 1/4" NPT	140	022-7057	022-7065
15.0 22.5			022-7058	022-7066
30.0 37.5			022-7067	022-7076
45.0 60.0 75.0			022-7068	022-7077
			022-7069	022-7078
			022-7070	022-7079
6.0 11.5	1 1/2" NPT	200	022-7071	022-7080
19.0 28.5			022-7072	022-7081
37.5 57.0			022-7073	022-7082
75.0 115.0			022-7074	022-7083
			022-7075	022-7084
			022-7085	022-7093
7.0 15.0	2" NPT	350	022-7086	022-7094
19.0 37.5			022-7087	022-7095
57.0 95.0			022-7088	022-7096
132.5 190.0			022-7089	022-7097
			022-7090	022-7098
			022-7091	022-7099
	022-7092	022-7100		
			022-7101	022-7109
			022-7102	022-7110
			022-7103	022-7111
			022-7104	022-7112
			022-7105	022-7113
			022-7106	022-7114
			022-7107	022-7115
			022-7108	022-7116

*Order numbers are valid for units with the electrical connection "lead wire". If you need a unit with the electrical connection "terminal box", please select the respective "lead wire" order number and add: "...with mounted terminal box 912-0615 or 912-0625. See drawing (page FS-200)



Dimensions (in mm)



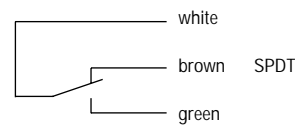
Housing: Bronze or Stainless Steel
 Disc: Stainless Steel
 Spring: Stainless Steel
 O-Ring: Viton®
 Magnet: PTFE/Ceramic

Mounting D	1" NPT	1 1/4" NPT	1 1/2" NPT	2" NPT
L	83.5	98.5	112.5	136.5
h	76.0	81.0	89.0	101.5
SW	46	55	65	80
H	104	118	132	148

Approx. weight	1.2 kg	1.8 kg	2.5 kg	4.0 kg

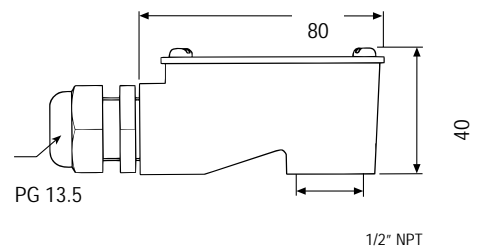
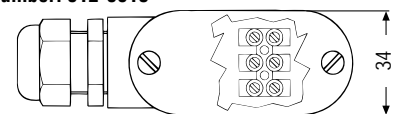
Pressure drop diagram - (see page 12)

Wiring diagram

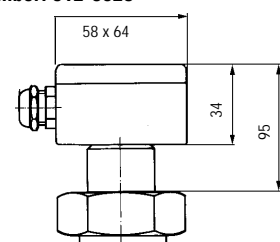


Terminal boxes

Conduit style
Order Number: 912-0615



K6 style
Order Number: 912-0625



FS-200E 2.0 - 30 (l/min) with pre-adjusted set points

FS-200E-A 3.0 - 57 (l/min) adjustable set points

The FS-200E flow switch offers accurate flow detection with 1% repeatability and European G1" port size. The durable construction delivers long life repeatability in either water or oil. The design of large flow paths keep pressure drop low, thus are ideal for detection of flow in high volume lubrication, cooling or process applications.

The FS-200E Adjustable versions offer the same accuracy with the additional feature of external adjustment.

Specifications (All pressure data related to water at +20°C)

Max. flow	85 l/min
Max. operating pressure	27 bar
Proof pressure	45 bar
Temperature range	- 20 °C...+80 °C (cable, plug connector) - 20 °C...+150 °C (terminal box)
Set points	see order number
Switching function (related to increasing flow)	SPDT
Factory mounting position with set point adjustments	horizontal, electrical connection up
Mounting position	any position
Repeatability	± 1%
Adjustment accuracy	±10%
Hysteresis	max. 15%
Mounting	G1"
Electrical connections	- cable: PVC, 3 x 0.34 mm ² (length: approx. 1 m) - plug connector per DIN 43650 - terminal box
Enclosure	- IP65
Electrical data contact rating	20 VA, 0.5 A, 250 V-
Weight	approx. 1.2 kg

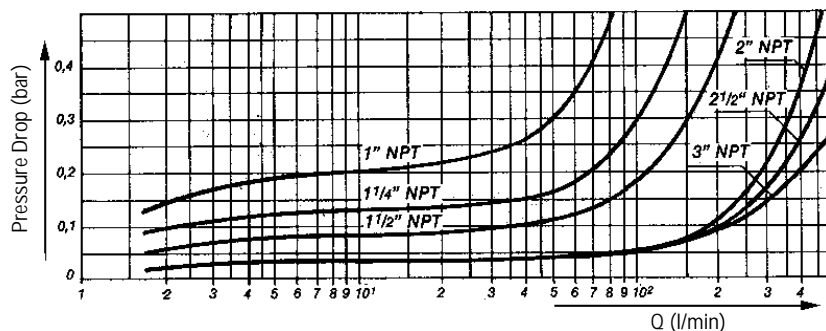
Order numbers for FS-200E

Set points (l/min)	Cable	Terminal box	Plug connector
2.0	020-2393	020-2401	020-3481
4.0	020-2394	020-2402	020-3482
7.5	020-2395	020-2403	020-3483
11.5	020-2396	020-2404	020-3484
15.0	020-2397	020-2405	020-3485
19.0	020-2398	020-2406	020-3486
22.5	020-2399	020-2407	020-3487
30.0	020-2400	020-2408	020-3488

Order numbers for FS-200E-A

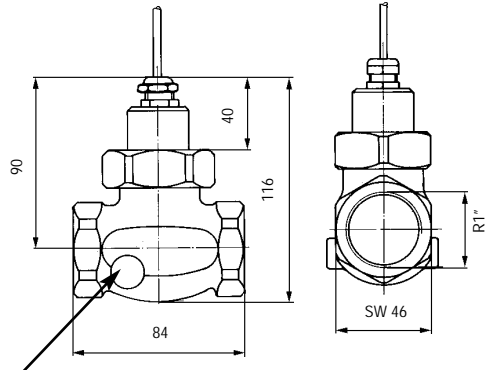
Adjustment range (l/min)	Cable	Terminal box	Plug connector
3.0 ... 22.5	020-2413	020-2416	020-3489
7.5 ... 30.0	020-2415	020-2418	020-3491
19.0 ... 57.0	020-2414	020-2417	020-3490

Pressure drop diagram (at min. set point adjustment)



Adjustment vane on FS-200E-A

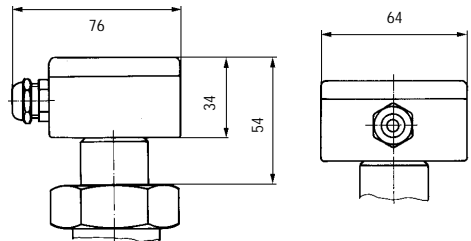
Dimensions (in mm)



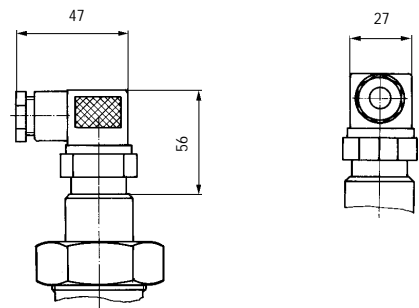
Adjustment vane on FS-200E-A

Housing:	Bronze
Disc:	Stainless Steel
Spring:	Stainless Steel
O-Ring:	Viton®
Magnet:	PTFE/Ceramic

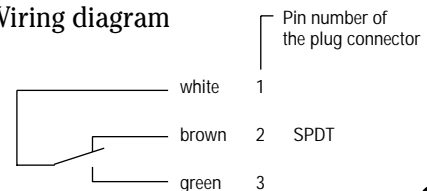
Terminal box



Plug connector



Wiring diagram



FS-400 3.0 - 37.5 (l/min) with pre-adjusted set points

FS-400A 3.0 - 53.0 (l/min) variable adjustment of set points

The FS-400 and FS-400-Adjustable switches provide 1% repeatability. The unit may be fitted instead of a pipe elbow where space is at a premium.

Specifications (All pressure data related to water at +20°C)

Max. flow	55 l/min
Max. operating pressure	27 bar
Proof pressure	45 bar
Temperature range	- 20 °C...+150 °C
Set points	see order numbers
Switching function (related to increasing flow)	SPDT
Mounting position	any position
Factory mounting position with set point adjustment	vertical, inlet port down, electrical connection up
Repeatability	± 1%
Adjustment accuracy	± 5%
Hysteresis	max. 15%
Mounting	3/4" NPT
Electrical connection	- lead wire: FEP, 3 x 0.6 mm ² (length: approx. 1 m) - terminal box option see page FS-200
Enclosure	- IP 44 (with lead wire) - IP 54 (with terminal box)
Electrical data contact rating	SPDT max. 20 VA, 0.5 A, 250 V-
Weight	0.8 kg

Order numbers for FS-400

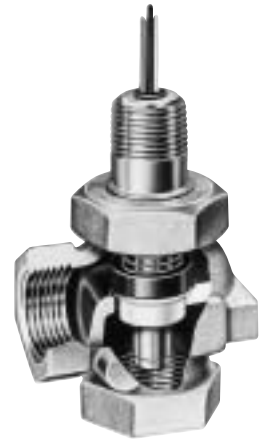
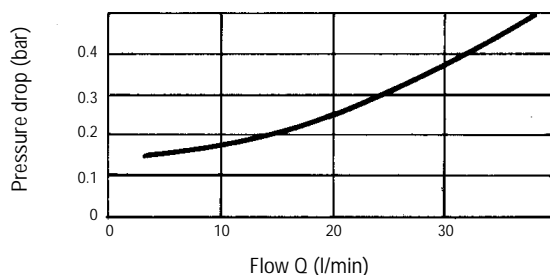
Set points (l/min)	Order number
3.0	022-6440
6.0	022-6441
7.0	022-6442
9.5	022-6443
19.5	022-6444
28.5	022-6445
37.5	022-6446

Order numbers for FS-400A

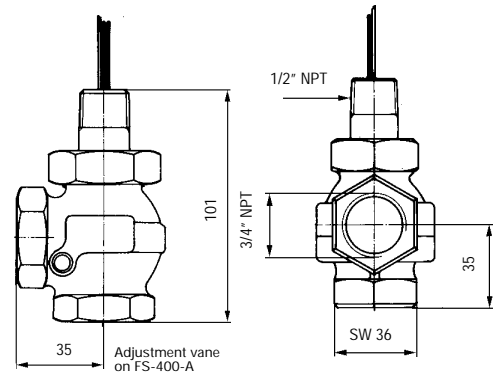
Adjustment range (l/min)	Order number
3.0 ... 15.0	022-6600
7.5 ... 30.0	022-6601
26.5 ... 53.0	022-6602

*Order numbers are valid for units with the electrical connection "lead wire". If you need a unit with the electrical connection "terminal box", please select the respective "lead wire" order number and add: "...with mounted terminal box 912-0615 or 912-0625". See drawing (page FS-200)

Pressure drop diagram (at min. set point adjustment)

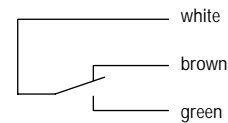


Dimensions (in mm)



- Housing: Bronze
- Disc: Stainless Steel
- O-Ring: Viton®
- Spring: Stainless Steel
- Magnet: PTFE/Ceramic

Wiring diagram



FS-500 1 - 18.5 (l/min) with pre-adjusted set points

The FS-500 offers economical flow monitoring, with a variety of switch actuation points and low pressure drop. The FS-500 is designed for ease of maintenance, as the bonnet and shuttle can be removed, leaving the housing and pipework connections intact. All wetted parts are manufactured from polypropylene or stainless steel, making the FS-500 ideal for a wide range of chemical and temperature applications.

Specifications

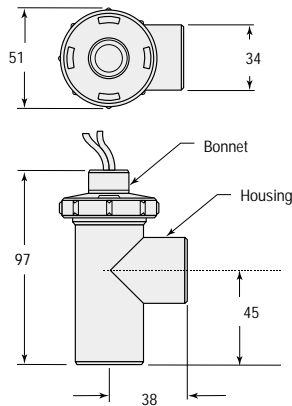
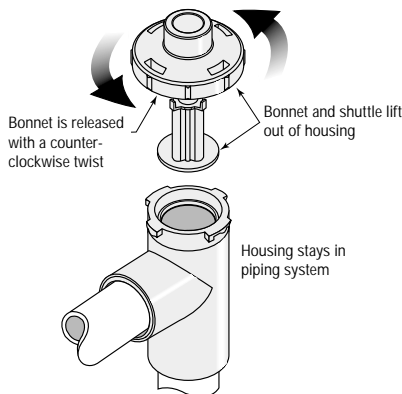
Operating pressure	7 bar at 20°C, 3.5 bar at 80°C
Temperature	+100°C
Set point differential	± 20% maximum
Set point accuracy	± 20%
Switch	SPST 20VA, N.O., 120-240VAC or VDC
Inlet/Outlet ports	3/4" NPT, R3/4"
Electrical termination	0.6m lead wire

Order numbers

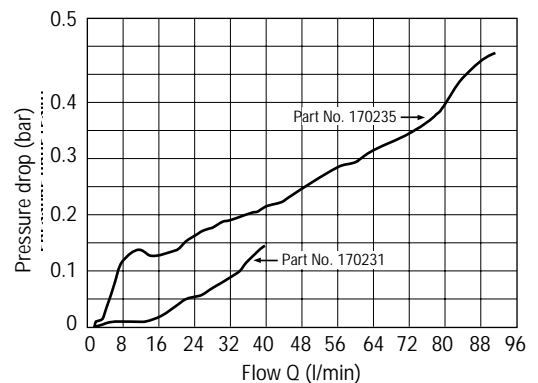
Flow rate	R3/4" parallel	3/4" NPT
1 l/min	175171	170231
2 l/min	175172	170232
3.5 l/min	175173	170233
10 l/min	175174	170234
18.5 l/min	175175	170235



Housing: Polypropylene
 O-Ring: Viton®
 Spring: Stainless Steel



Pressure Drop Diagram

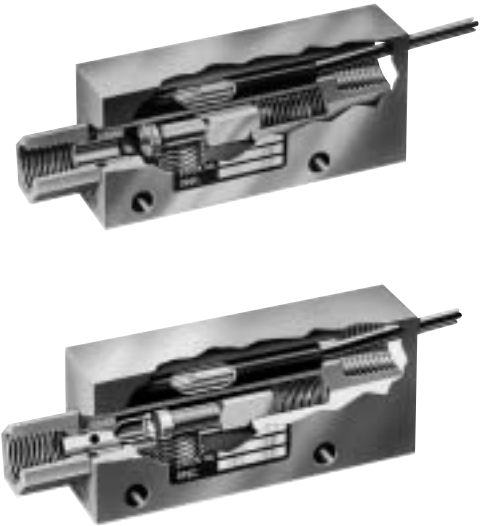


FS-925E 0.4 - 6.0 (l/min) with pre-adjusted set points
FS-926E 0.05 - 0.3 (l/min) with pre-adjusted set points

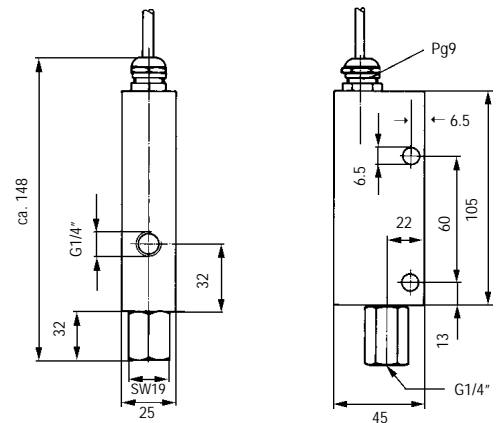
These two series of precision-calibrated switches provides reliable and consistent performance; repeatability is within 1%. FS-925E and FS-926E units are factory preset for actuation at specified flow rates.

These switches provide accurate detection of excessive or insufficient flow rates in such applications as: protecting against loss of fluid flow in hydraulic systems, assuring proper coolant flow in semiconductor processing equipment, monitoring high pressure lubrication systems, and ensuring proper air flow in water/waste systems.

	FS-925E	FS-926E
Specifications (All pressure data related to water at +20°C)		
Max. flow	12 l/min	3 l/min
Max. operating pressure	68 bar	68 bar
Proof pressure	100 bar	100 bar
Temperature range	- with Polysulfone piston (standard), with cable, with plug connector: -20 °C...+80 °C - with metal piston and terminal box: -20 °C...+150 °C	
Set points (l/min)	0.4; 1.0; 2.0; 3.0; 4.0; 6.0	0.05, 0.1, 0.15; 0.1; 0.25; 0.3
Switching function (related to increasing flow)	NC, NO, SPDT	NC, NO, SPDT
Mounting position	any position	any position
Factory mounting position with set point adjustment	vertical, inlet port down, electrical connection up	
Repeatability	± 1%	± 1%
Adjustment accuracy	±10%	±10%
Hysteresis	max. 15%	max. 20%
Mounting	G 1/4"	G 1/4"
Electrical connections	- cable: PVC, 2 or 3 x 0.34 mm ² (length: approx. 1 m) - plug connector per DIN 43650 - terminal box	
Enclosure	- IP 65	IP 65
Electrical data contact rating	- SPST (NC/NO): max. 100 VA, 3 A, 220 V- - SPDT: max. 20 VA, 0.5 A, 250 V-	
Weight	0.5 kg	0.5 kg



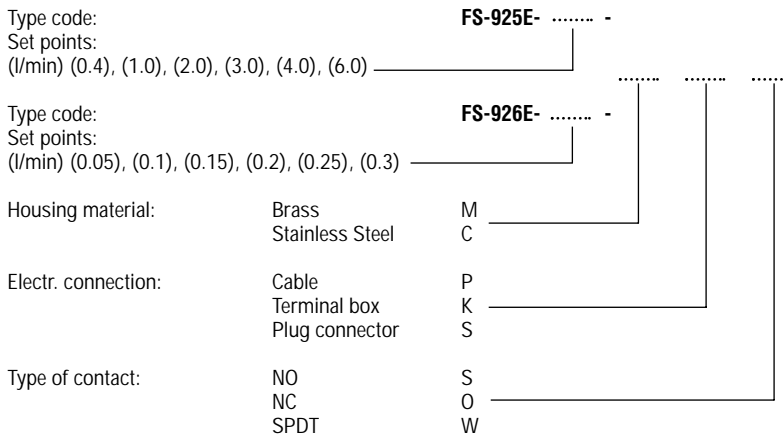
Dimensions (in mm)



Housing: Brass or Stainless Steel
 Piston: Polysulfone* or Stainless Steel
 Spring: Stainless Steel
 O-Ring: Viton®

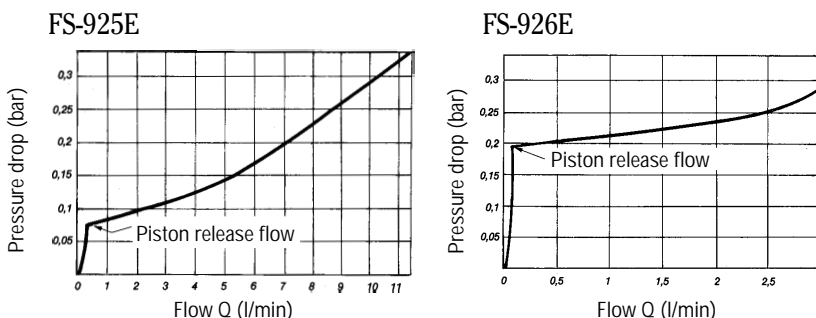
* option Brass

Order numbers for FS-925E/FS-926E

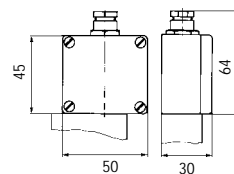


Note: For mineral oil applications please order brass piston instead of polysulfone piston, add -GE169 to the number e.g. FS-925E-0.4-M-P-W-GE169

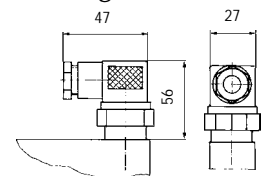
Pressure drop diagram (at min. set point adjustment)



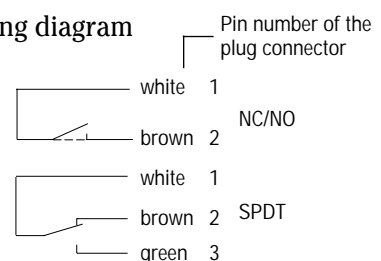
Terminal box



Plug connector



Wiring diagram



FS-10798E 2.0 - 75 (l/min) variable adjustment of set points

These externally adjustable switches are ideal for protecting machine tools from coolant flow failure, for protecting bearings from loss of lubricant or to assure proper air flow. They offer an infinite number of flow settings at pressures up to 68 bar, with low pressure drop and precise repeatability.

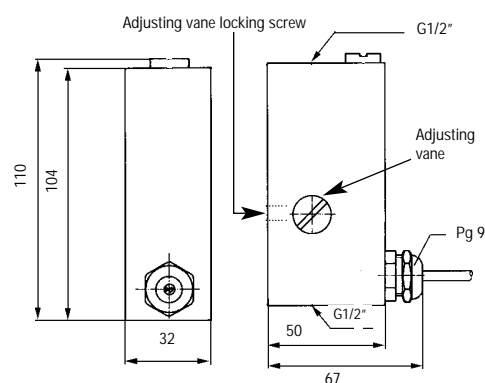
The adjusting vane is easily field adjustable using an ordinary flat-bladed screwdriver. The adjustment is set-screw-locked for tamper-free operation after field calibration.

Specifications (All pressure data related to water at +20°C)

Max. flow	85 l/min
Max. operating pressure	68 bar
Proof pressure	100 bar
Temperature range	- with Polysulfone piston (standard), with cable, with plug connector: -20 °C...+80 °C - with metal piston and terminal box: -20 °C...+150 °C
Adjustment range	2...75 (l/min)
Switching function (related to increasing flow)	-NC, NO, SPDT
Mounting position	any position
Factory mounting position with set point adjustment	horizontal, electrical connection up
Repeatability	± 1%
Adjustment accuracy	±10%
Hysteresis	max. 15%
Mounting	G 1/2"
Electrical connections	- cable: PVC, 2 or 3 x 0.34 mm ² (length: approx. 1 m) - plug connector per DIN 43650 - terminal box
Enclosure	- IP 65
Electrical data contact rating	- SPST (NC/NO): 100 VA, 3 A, 220 V- - SPDT 20 VA, 0.5 A, 250 V-
Weight	1.2 kg



Dimensions (in mm)



Housing: Brass or Stainless Steel
 Piston: Polysulfone* or Stainless Steel
 Spring: Stainless Steel
 O-Ring: Viton®

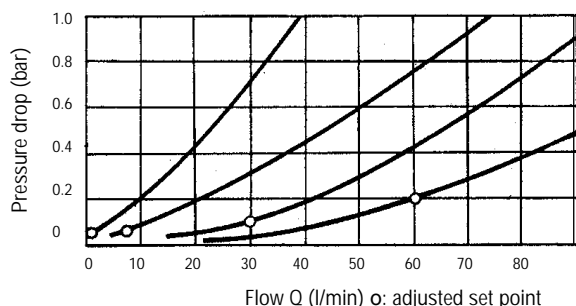
* option Brass

Order numbers

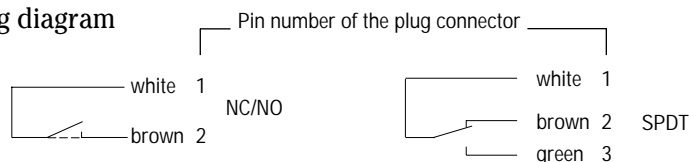
Type code:	FS-10798E-		
Housing material:	Brass	M	_____
	Stainless Steel	C	
Electr. connection:	Cable	P	_____
	Terminal box	K	
	Plug connector	S	
Type of contact:	NO	S	_____
	NC	O	
	SPDT	W	

Note: For mineral oil applications please order brass piston instead of polysulfone piston, add -GE169 to type number e.g. FS-10798E-M-P-W-GE169

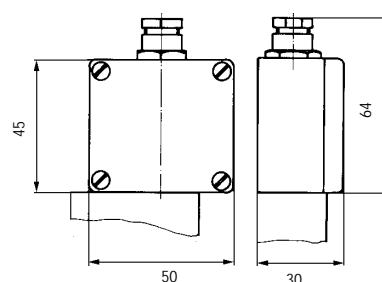
Pressure drop diagram (at min. set point adjustment)



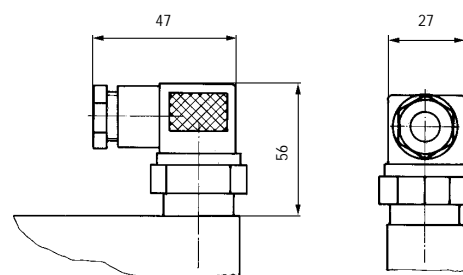
Wiring diagram



Terminal box



Plug connector



FS-550E 15.0 - 125.0 (l/min) with pre-adjusted set points

Standard FS-550E switches sense liquid flow in either direction to monitor flow/no-flow conditions. The paddle is trimmed during installation to permit switch actuation at the desired flow rate. As flow increases in a pipe, the paddle of the switch pivots to move out of the liquid path, producing less than 200mb of pressure drop regardless of pipe size.



Specifications (All pressure data related to water at +20°C)

Max. flow	determined by the pipe's inside diameter
Max. operating pressure	55 bar
Proof pressure	82 bar
Max. pressure drop	0.2 bar
Temperature range	cable: -20 °C...+80 °C terminal box: -20 °C...+150 °C
Set points	see set point adjustment guideline
Switching function (related to increasing flow)	-SPDT
Mounting position	vertical, electrical connection up
Repeatability	±5%
Adjustment accuracy	±25%
Hysteresis	max. 50%
Mounting	R1"
Electrical connections	- cable: PVC, 3 x 0.34 mm ² (length: approx. 1 m) - terminal box
Enclosure	- IP 65
Electrical data contact rating	- SPDT max. 20 VA, 0.5 A, 250 V~
Weight	0.6 kg

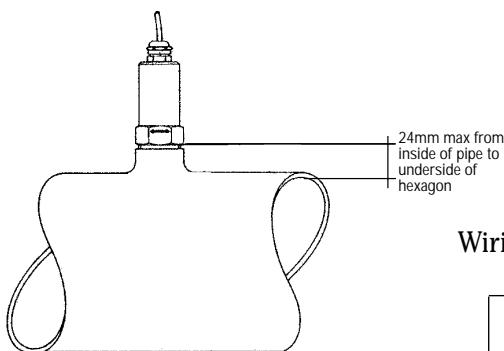
Order numbers

Electrical Connection	Brass	Stainless Steel
Cable	020-3493	020-3495
Terminal box	020-3497	020-3499

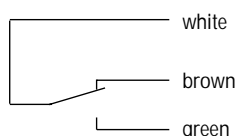
Set point adjustment (approximate)

Cut-off size	Pipeline sizes							
	1 1/2"		2"		2 1/2"		3"	
	Set points (l/min) with increasing and decreasing flow							
	incr.	decr.	incr.	decr.	incr.	decr.	incr.	decr.
1 1/2"	57	42	106	80	144	114		
2"			84	57	103	76	182	144
2 1/2"					80	53	152	99
3"							118	76

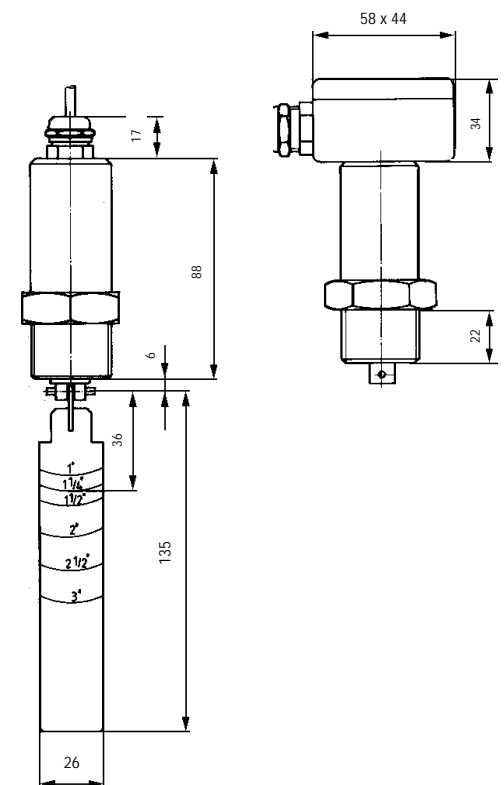
Mounting method



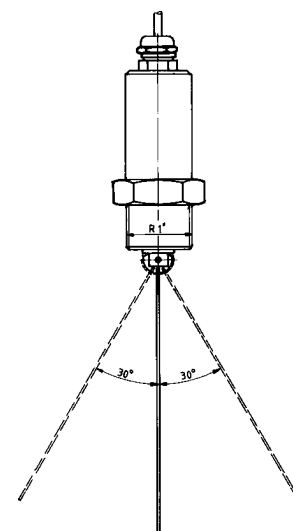
Wiring diagram



Dimensions (in mm)



Housing: Brass or Stainless Steel
Paddle: Stainless
Spring: Stainless
Magnet: PTFE



RotorFlow Sensors Provide Visual Indication, Continuous Sensing and Accurate Switching

MEYLE generation of RotorFlow sensors, the RF-2500 Series, have been totally re-engineered with a one piece composite rotor, stronger uni-body construction, ceramic shafts and better sealing. The results are greater durability with broader chemical, temperature and pressure capabilities.

Today's RotorFlow Series are state of the art and offer you more options, better performance and durability than ever before...all at an affordable price geared for high volume, OEM applications. Select the RotorFlow sensor that is right for your application by choosing one of our three distinct configurations.

Select the RotorFlow sensor that is right for your application by choosing one of our three distinct configurations.

RFI - RotorFlow Indicator Types: For those who want simple visual confirmation of flow, RotorFlow RFI indicators provide the durable, low-cost answer. A bright, orange spinning rotor provides visual flow confirmation at a glance.

RFO - RotorFlow Output Types: For flow rate monitoring or metering applications. RotorFlow RFO Type sensors provide a pulsed or analog DC voltage output that is proportional to the rate of flow. The operating range of 4.5 to 24 VDC pulsed output is easily integrated into all digital logic families.

RFS - RotorFlow Switch Types: For specific flow setpoint switching, RotorFlow RFS type switches are one of the most reliable flow switches available. Setpoints are fully adjustable over the specified flow range. The dynamic operation of the rotor guards against jamming and false actuation.



- ▶ Flow range from 0.4 to 225 l/min
- ▶ Bright, visual indication
- ▶ Choice of pulsed analogue DC output or adjustable 1 amp switched output
- ▶ Available in high performance plastic, brass or Stainless Steel housing

FLOW SWITCHES

Installation and Maintenance

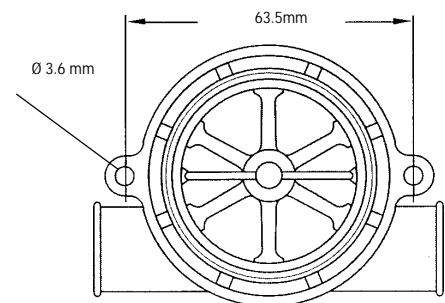
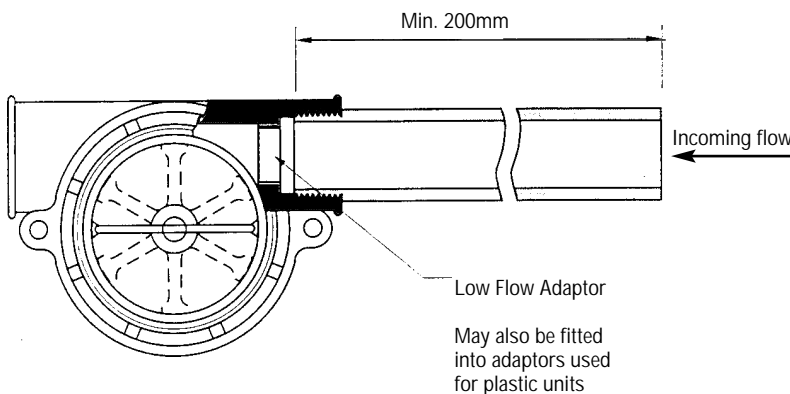
A proper installation will enhance RotorFlow sensor performance. Install using standard pipe fitting tools; horizontal fluid lines are recommended. For further installation and maintenance recommendations, refer to one of the following instruction bulletins: RFO Types - Part Number 157258; RFI Types - Part Number 157259; RFS Types - Part Number 157261. Since their function is to monitor dynamic fluid flow, naturally the rotor will react to turbulence, pulsation, entrained air, and other flow anomalies induced in the flow stream by other process hardware. For optimum performance, install RotorFlow units where nominal flow conditions exist with ports located at the top. Incoming flow may be placed to either port; a minimum of 20 cm of straight pipe on the inlet side is required. When operating in the low flow range, the supplied Low Flow Adapter must be installed in the incoming port.

Panel Mounting

Any RotorFlow sensors may be panel mounted using holes integrated into the bodies.

Two (2) mounting ears are provided at the body centre line to receive 3.5mm \varnothing self tapping screws (e.g. DIN 7971-B 3, 5 x 19) to accommodate panel mounting of the plastic RotorFlow units. See recommended panel preparation diagram (Fig. 2).

Note: ANSI T type 23 self-tapping screw are recommended. They may be replaced with standard machine screws if reinstallation should be required.



RotorFlow sensors connect to piping via NPT mating thread forms. The use of an appropriate thread sealant is necessary to assure a leak-tight connection. Permatex "No More Leaks" or 2 wraps of Teflon tape are the only sealants recommended for MEYLE flow sensors. 150 micron filtration is recommended. However, should foreign particles enter RotorFlow sensor, accumulation is easily cleared by removing the lens from the body. The lens is removed by turning its centre rib 45° counter-clockwise, and then pulling it out. To reinstall the lens, simply reverse the process.

Important: In either case, pressure must be relieved from the system prior to sensor clean-out.

Low Flow Applications

A low flow adaptor is supplied with all Rotorflow units. It is used to produce accurate response at low flow rates. Install the adapter, as shown above, in the port selected for incoming flow.



RotorFlow - RFI-Types, Visual Indicators

This is RotorFlow in its most basic form – a bright orange rotor turning with fluid flow. Simple, direct and reliable.
Flow rate is estimated, or simply confirmed, by viewing the speed of the turning rotor. Either port may be used for incoming flow, and new bayonet mounting lens is easily removed for quick cleanout. RFI Type RotorFlow sensors are easy to see, easy to install and easy to afford.

Operating Principle

- As liquid passes through the RotorFlow body the rotor spins at a rate proportional to flow.
- RotorFlow Indicators may be mounted with flow entering either port. At low flow rates, performance is optimized by positioning ports at the top of the unit, in a horizontal plane.

Specifications

Wetted Materials	
Body	Polypropylene (Hydrolytically Stable, Glass Reinforced), SS or Brass
Rotor Pin	Ceramic
Rotor	Moulded Nylon, Colour: High Visibility Orange
Lens	Polysulfone
O-Ring	Buna N
Adaptor	Acetal
Max. Operating Pressure	Polypropylene Body: 7 bar Metal Body: 14 bar
Max. Operating Temperature	Polypropylene Body: 80 °C Metal Body: 100 °C
Typical Pressure Drop	See Graph (Page RFS)

Order Numbers

Body Material	Port Size	Flow Ranges (l/min)		Order Number	
		Low Range*	Standard Range	BSP	NPT
Polypropylene	1/4"	0.4 to 4.0	2.0 to 20.0	155420BSPP	155420
	1/2"	6.0 to 45.0	15.0 to 75.0	155480BSPP	155480
Brass	1/4"	0.4 to 4.0	2.0 to 20.0	142541BSPP	142541
	1/2"	6.0 to 45.0	15.0 to 75.0	142542BSPP	142542
	3/4"	---	7.5 to 112.5	180392BSPP	180392
	1"	---	15 to 225	181681BSPP	181681
Stainless Steel	9/16 x 18 UNF	0.4 to 4.0	2.0 to 20.0	N/A	174596
	1/2"	6 to 45	15.0 to 75.0	173138BSPP	173138
	3/4"	---	7.5 to 112.5	181682BSPP	181682
	1"	---	15 to 225	181683BSPP	181683

* With use of low flow adaptor supplied, see page 22

Notes:

- Adaptors are supplied fitted to plastic units, sealed using Teflon (PTFE) tape.
- If NPT thread is required for plastic units discard adaptor.
- For pressure drop curves see RFS page.

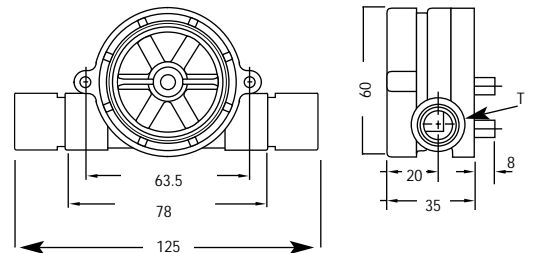
Panel Meter for use with Rotorflow and FT-110



Typical Applications

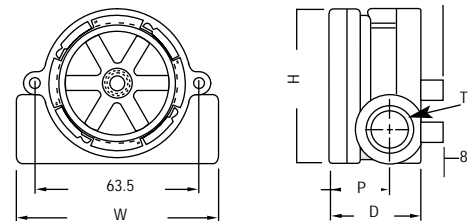
- ▶ Visual flow confirmation on heat exchangers
- ▶ Plastic injection moulding equipment

Polypropylene Bodies



Adaptors, See Note 1

Metal Bodies



T	W	H	D	P
1/4	77	60	35	20
1/2	77	60	35	22
3/4	100	66	51	27
1	100	66	51	27

RotorFlow - RFO and RFA Types

4.5 - 24 VDC Pulsed Output

0 - 10 V, 4 to 20mA Linear Output

MEYLE sensors popularized the Rotor-Flow's paddlewheel design by combining high visibility rotors with solid-state electronics that are packaged into compact, panel mounting housings. They provide accurate flow rate output with integral visual confirmation ... all with an unprecedented price/performance ratio.

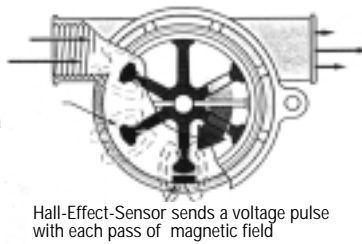
Typical Applications

Ensure proper processing, blending and dispensing operations on:

- ▶ Water Purification/Dispensing Systems
- ▶ Chemical Metering Equipment
- ▶ Water Sampling
- ▶ Ice Making Machinery
- ▶ Water Injection Systems
- ▶ Proof of Delivery Systems

Operating Principle:

- As liquid passes through the RotorFlow body the magnetic rotor spins at a rate proportional to flow. This causes a series of magnetic fields (the rotor vanes) to excite the Hall Effect sensor, producing a series of voltage pulses.
- The output pulses are at the same voltage level as the input (4.5 – 24 Vd.c.) with a frequency proportional to the flow rate. The output signal can be utilized by digital rate meters (see opposite page) totalizers or other electronic controllers.
- RotorFlow Indicators may be mounted with flow entering either port. Performance is optimized by positioning ports at the top of the unit, in a horizontal plane.



Hall-Effect-Sensor sends a voltage pulse with each pass of magnetic field

Specifications

Wetted Materials	
Body	Polypropylene (Hydrolytically Stable, Glass Reinforced), Stainless Steel or Brass
Rotor Pin	Ceramic
Rotor	Ryton Composite, Colour: Black
Lens	Polysulfone
O-Ring	Buna N
Max. Operating Pressure	Polypropylene Body: 7 bar Metal Body: 14 bar
Max. Operating Temperature	Polypropylene Body: 80 °C Metal: 100 °C
Electronics (Both Bodies)	65 °C Ambient
Max. Viscosity	45 cSt
Input Power	4.5 to 24 Vd.c.
Output Signal	4.5 to 24 Vd.c. Pulse, Pulse Rate dependent on Flow Rate, Port Size and Range 0 to 10 V, 4 to 20mA available (RFA model), consult Sales Office
Max. Current Source Output	70 mA
Frequency Output Range	25 Hz (Low Flow) to 225 Hz (High Flow)
Electrical Termination	AWG 22 PVC-Jacketed Cable, Length 60 cm Colour Code: Red = + Vd.c., Black = Ground, White = Signal output
Typical Pressure Drop	See Graphs (Page RFS)

Order Numbers

Body Material	Port Size	Flow Ranges (l/min)		Output (Hz) Approximate	RFO	
		Low Range*	Standard Range		BSP	NPT
Polypropylene	1/4"	0.4 to 4.0 (±7%)	2.0 to 20.0 (±7%)	15-180	155421BSPP	155421
	1/2"	6.0 to 45.0 (±7%)	15.0 to 75.0 (±15%)	20-190	155481BSPP	155481
Brass	1/4"	0.4 to 4.0 (±7%)	2.0 to 20.0 (±7%)	15-180	156261BSPP	156261
	1/2"	6.0 to 45.0 (±7%)	15.0 to 75.0 (±15%)	20-190	156262BSPP	156262
	3/4"	---	7.5 to 112.5 (±15%)	15-130	180393BSPP	180393
	1"	---	15 to 225 (±15%)	15-130	181684BSPP	181684
Stainless Steel	9/16 - 18 UNF	0.4 to 4 (±7%)	2 to 20.0 (±7%)	15-180	N/A	165071
	1/2"	6 to 45 (±7%)	15.0 to 75.0 (±15%)	20-190	165075BSPP	165075
	3/4"	---	7.5 to 112.5 (±15%)	15-130	181686BSPP	181686
	1"	---	15 to 225 (±15%)	15-130	181687BSPP	181687

* With use of Low-Flow-Adaptor supplied, see page 22

High Resolution Black Rotor

Ryton composite. Each of the six rotor arm is magnetized

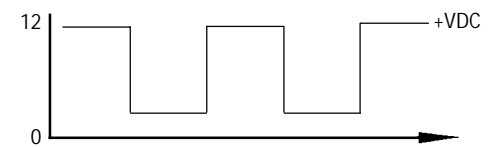


Signal Output

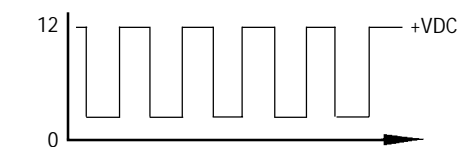
Output signal for RFO Types is an on/off pulse of the DC voltage supplied to the unit, it is compatible with all digital logic families. Input voltage range is 4.5 to 24 Vd.c.

Frequency of the output pulse is proportional to the flow rate and ranges from approximately 25 Hz at low flow to 225 Hz at high flow. See order number for more information.

Low Flow



HighFlow



* With use of Low-Flow-Adaptor supplied. See page 52 for more information.

Our Sensors caters to OEM needs with special configurations for potable water and enhanced chemical capabilities. Please consult factory for further details.

For dimensions see page RFS
Please consult factory for detailed flow rate / frequency curves.

RotorFlow - RFS Types Flow Setpoint Switching

RotorFlow Switches build an extra level of reliability and protection into your equipment. By principle of operation, the rotor cannot be deceived into indicating a positive flow situation when no flow actually exists. Once set to a desired actuation point, RotorFlow will switch to a 'no-flow' condition should the rotor stop for any reason.

Typical Applications

Protect expensive electronic equipment from coolant flow failure on:

- ▶ Lasers
- ▶ Medical Equipment
- ▶ X-Ray Tubes
- ▶ Computers
- ▶ Robotic Welding Equipment

Operating Principle

1. As liquid passes through the RotorFlow body the magnetic rotor spins at a rate proportional to flow. This causes a series of magnetic fields (the rotor vanes) to excite the Hall Effect Sensor, producing a series of voltage pulses.
2. RFS Type switches incorporate state-of-the-art circuitry to compare the frequency of incoming pulses to an adjustable, preset frequency. When the pulse rate meets or exceeds the preset value, the SPDT relay closes. When the pulse rate falls below the preset value, the output relay opens. This unique design eliminates the possibility of a RotorFlow switch from remaining in a 'switch actuated' mode, if the rotor jams accidentally.
3. RotorFlow Indicators may be mounted with flow entering either port. Performance is optimized by positioning ports at the top of the unit, in a horizontal plane.

Specifications

Wetted Materials	
Body	Polypropylene, Brass, S Steel (Hydrolytically Stable, Glass Reinforced)
Rotor Pin	Ceramic
Rotor	Ryton Composite, Colour: Black
Lens	Polysulfone
O-Ring	Buna N
Max. Operating Pressure	Polypropylene Body: 7 bar Metal Body: 14 bar
Max. Operating Temperature	Polypropylene Body: 80 °C Metal Body: 100 °C
Electronics	65°C Ambient
Max. Viscosity	45 cst
Input Power	12 Vd.c., 24 Vd.c. or 110 Va.c. (230 V a.c. on request)
Relay Contact Ratings (SPDT)	1A, 24 Vd.c. Resistive 0,5 A, 110 Va.c. (230 V a.c. on request)
Repeatability	2% max. Deviation
Set Point Accuracy (Factory Set)	± 5%
Hysteresis	max. 15%
Electrical Termination	22 AWG PVC-Jacketed Cable, Length 60 cm, Colour Code: Red = +Va.c./Vd.c., Black = Ground, White = N.O., Brown = N.C., Green = Common
Typical Pressure Drop:	See Graphs

Order Numbers

Body Material	Port Size	Flow Ranges (l/min)		Input Power	Order Number	
		Low Range*	Standard Range		BSP	NPT
Polypropylene	1/4"	0.4 to 4.0	2.0 to 20.0	12 VDC 24 VDC 110 VAC	155424BSPP 155425BSPP 155876BSPP	155424 155425 155876
	1/2"	6.0 to 45.0	15.0 to 75.0	12 VDC 24 VDC 110 VAC	155484BSPP 155485BSPP 155886BSPP	155484 155485 155886
Brass	1/4"	0.4 to 4.0	2.0 to 20.0	12 VDC 24 VDC 110 VAC	156264BSPP 156265BSPP 156266BSPP	156264 156265 156266
	1/2"	6.0 to 45.0	15.0 to 75.0	12 VDC 24 VDC 110 VAC	156267BSPP 156268BSPP 156269BSPP	156267 156268 156269
	3/4"	---	7.5 to 112.5	12 VDC 24 VDC 110 VAC	180394BSPP 180395BSPP 180396BSPP	180394 180395 180396
	1"	---	15 to 225	24 VDC 110 VAC	181688BSPP 181689BSPP	181688 181689
Stainless Steel	9/16" - 18UNF	0.4 to 4	2.0 to 20.0	24 VDC 110 VAC	N/A N/A	165073 165074
	1/2"	6 to 45	15.0 to 75.0	24 VDC 110VAC	165077BSPP 165078BSPP	165077 165078
	3/4"	---	7.5 to 112.5	24 VDC 110 VAC	181691BSPP 181692BSPP	181691 181692
	1"	---	15 to 225	24 VDC 110 VAC	181693BSPP 181694BSPP	181693 181694

* With use of Low-Flow-Adapter supplied, see page 22.

Meyer Industrie-Electronic GmbH - MEYLE

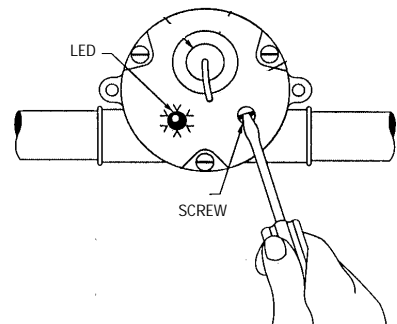
Carl-Bosch-Straße 8
49525 Lengerich/Germany
Internet: www.meyle.de

Tel.: (+49) 0 54 81/93 85-0
Fax: (+49) 0 54 81/93 85-12
E-Mail: sales@meyle.de

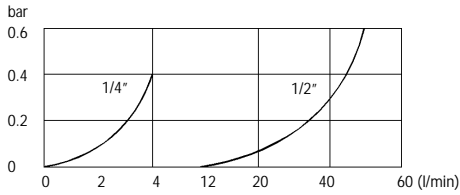
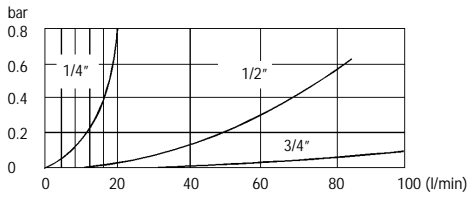
Switch Set Point Calibration With LED Signal (RFS Type)

With the unit installed in the line and power supplied, complete the following steps to calibrate switch actuation point with proper flow rate. A small flat-blade screwdriver is the only tool required.

1. Adjust liquid flow in the line to the rate at which switch actuation is desired.
2. Insert screwdriver into opening on backside of housing and fit blade into the potentiometer adjustment screw inside.
3. If LED is not illuminated, slowly turn screwdriver counterclockwise and stop as soon as LED illuminates.
4. If LED is illuminated, turn screwdriver clockwise until LED light goes out. Then, slowly turn screwdriver counterclockwise and stop as soon as LED illuminates.

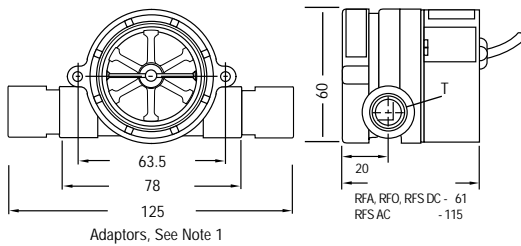


Pressure Drop Typical RFO and RFS Types

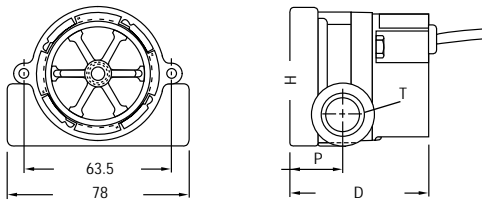


Dimensions - RFA, RFO, RFS

Polypropylene Bodies



Metal Bodies



T	W	H	D		P
			DC models	AC models	
1/4	77	60	61	114	20
1/2	77	60	61	114	22
3/4	100	66	75	121	27
1	100	66	75	121	27

Notes:

1. Adaptors are supplied fitted to plastic units, sealed using Teflon (PTFE) tape.
2. If NPT thread is required for plastic units discard adaptor.

FT-110 Series - TurboFlow™

Economical Flow-Rate Sensors

- ▶ Low Cost Plus High Accuracy ±3% of Reading
- ▶ Measures Low Liquid Flow Rates of 0.4 to 30 l/min
- ▶ FDA Approved Materials
- ▶ Lightweight Plastic design enables mounting in any position

MEYLE hall effect turbine flow rate sensor is ideal for OEM applications involving low flow liquid monitoring. The low cost coupled with 1/2% repeatability makes it an ideal candidate for replacing dispensing timer systems. Unlike existing timing systems, turbine technology is not influenced by changes in system pressure caused by ageing filters. The sensor's standard power and output specifications make it easy to retrofit to existing controllers.

Specifications

Wetted Materials	
Body	Nylon 12
Turbine	Nylon 12 Composite
Bearings	PTFE/15% Graphite
Operating Pressure	14bar max
Burst Pressure	170bar
Operating Temperature	-20°C to 100°C (Ambient +80°C for cable)
Viscosity	32 to 81 SSU (.8 to 16 Centistokes)
Filter	<50 Microns
Input Power	5 to 24 VDC @ 8mA
Output	NPN Sinking Open Collector @ 50mA Maximum (1 to 2.2K Ohm Pull-Up Resistor Required) (Hz Output)
Accuracy	±3% of Reading
Repeatability	0.5% of Full Scale
Electrical Connection	Spade Terminals 2.8/6.3 x .8mm : 1m cable
Inlet/Outlet Ports	3/8" NPT Male : G 3/8" Male

Order numbers - Standard models

Specify Part Number based on desired body material and port size

Flow Range Litres/m	Pulses per Litre	Frequency Output	Part Number				Pressure Drop Code
			Terminals		Cable		
			3/8" NPT	G 3/8"	3/8" NPT	G 3/8"	
.5-5	6900	58-575 Hz	173931	173936	173931-C	173936-C	A
1-10	3300	55-550 Hz	173932	173937	173932-C	173937-C	
1-15	4600	76-1150 Hz	173933	173938	173933-C	173938-C	B
1-15	2200	37-550 Hz	173934	173939	173934-C	173939-C	
2-30	1000	33-500 Hz	173935	173940	173935-C	173940-C	

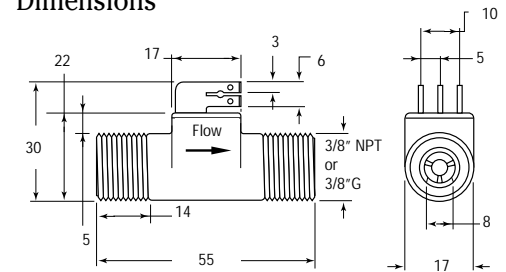
FT-110 Accessories

Specify Part Number based on desired body material and port size

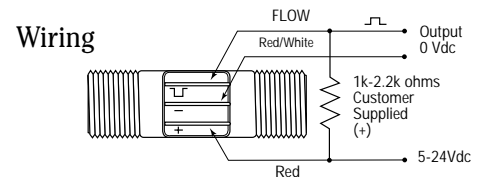
Description	Part Number
Mating connector w/1m, 3 conductor, PVC pigtail leads	173941
Mating connector w/3m, 3 conductor, PVC pigtail leads	173942



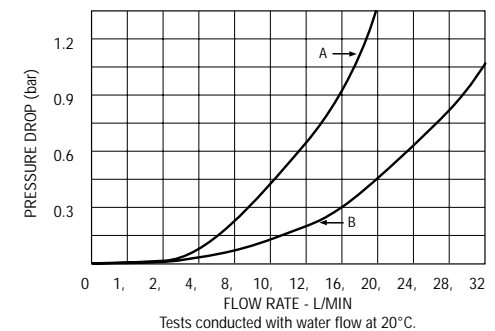
Dimensions



Wiring



Pressure Drop - Typical



Single level switch LS-3



Ideal for shallow tanks or restricted spaces, or for any low-cost, high volume use. LS-3 Series are available in FDA approved materials, consult MEYLE for details.

Polysulfone Float



For water based liquids, with limited use in oils and chemicals

Buna N Float



Ideal for oils and fuels

Polypropylene Float (Solid)

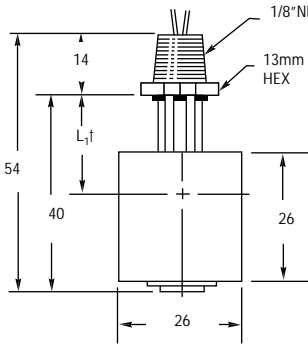


With Polypropylene stem and float, switch offers broad chemical compatibility

Polypropylene Float (Hollow)



Features a low specific gravity float offering broad chemical compatibility to satisfy a wide variety of applications



L_1 Switch actuation level, nominal (based on a liquid specific gravity of 1.0).
 Polysulfone Float: 3/4" (19.0mm)
 Polypropylene Float (Hollow): 13/16" (20.6 mm)
 Polypropylene Float (Solid): 9/16" (14.3 mm)
 Buna N Float: 13/16" (20.6mm)

Alternate Mountings

3/8"-16 Straight Thread	G1/8" 1/8"-28 BSP	M12x1.75 Straight Thread
Supplied with mating nut		

LEVEL SWITCHES

Specifications

	Polysulfone	Nylon/Buna N	Polypropylene	Polypropyl. (hollow)
Material stem:	Polysulfone	Nylon*	Polypropylene**	Polypropylene**
Material float:	Polysulfone	Buna N	Polypropylene	Polypropylene (hollow)
Operating pressure:	3 bar	10 bar	10 bar	3 bar
Temperature: Cable	-40°C...+80°C	-20°C...+80°C	-40°C...+65°C	-40 °C...+80°C
Leads	-40°C...+107°C	-20°C...+121°C	-40°C...+65°C	-40°C...+107°C
Depth of immersion at a density of 1:	~15 mm	~9 mm	~19 mm	-13 mm
Min. specific gravity of the liquid:	0.75	0.45	0.90	0.60
Type of reed switch:	SPST 50 VA cable SPST 20 VA leads	SPST 50 VA (cable) SPST 20 VA (leads)	SPST 50 VA (cable) SPST 20 VA (leads)	SPST 50 VA (cable) SPST 20 VA (leads)
Electrical connection: (Length: appr. 0.6 m)	Cable: 0.34 mm ² PVC Fly lead: AWG 22 PVC	Cable: 0.34 mm ² PVC Fly lead: AWG 22 PVC	Cable: 0.34 mm ² PVC Fly lead: AWG 22 PVC	Cable: 0.34 mm ² PVC Fly lead: AWG 22 PVC
Mounting thread:	1/8" NPT	← 1/8" NPT, G1/8", M12x1.75, 3/8x16 →		
Protection rating :	IP64	IP64	IP64	IP64
Weight: approx	20 g	20 g	20 g	20 g

Order data

	Order No.	Mounting	Order No.	Mounting	Order No.	Mounting	Order No.	Mounting
		Polysulfone		Nylon/Buna N		Polypropylene		Polypropylene (Hollow)
Cable	010-2919	1/8 NPT	171512	G1/8	171515	G1/8	171518	G1/8
			189786	M12 + nut	189787	M12 + nut	189739	M12 + nut
Leads	42295	1/8 NPT	162745	1/8NPT	116826	1/8NPT	142505	1/8NPT
			171511	3/8UNC	171514	3/8UNC	171517	3/8UNC

* Not suitable for long term use in water. ** Not suitable for Hydrocarbons.

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LS-3 Specials

Unique features make these LS-3 Models special. These small switches feature unique configurations for special applications.



LS-3 Tripod

This switch was originally designed for an ice maker. Since only the float comes in contact with the media, there is no lime build-up on the switch or stem. This sensor is meant for high level alarm usage only.



LS-3 Slosh Shield

Compact, all-polypropylene switch with slosh shield is ideal for use with turbulent liquids in small tanks. FDA approved materials.



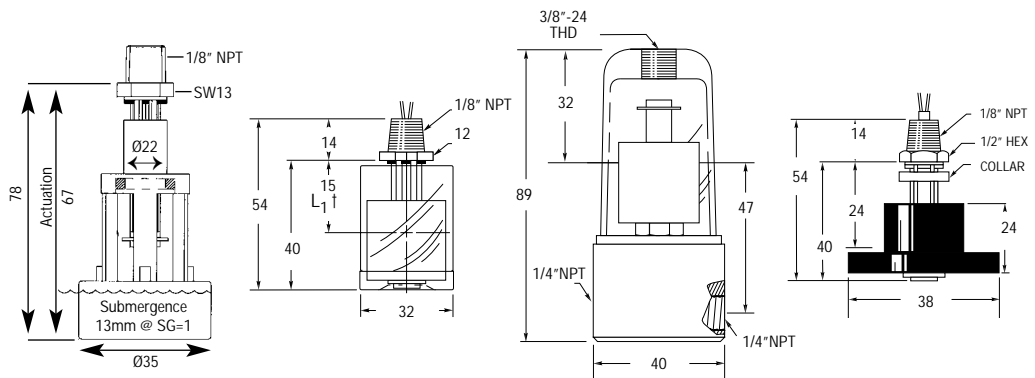
LS-3 Bottle Level

For external mounting on tanks too small to accommodate internally mounted switches. (See note below)



LS-3 Low Level

For detecting levels as low as 16mm from tank bottom. Use in water, gasoline, some oils and chemicals.



Specifications

	LS-3 Tripod	LS-3 Slosh Shield	LS-3 Bottle Level	LS-3 Low Level
Materials				
Stem and Mounting	Polypropylene	Polypropylene ††	Polysulfone	Polysulfone
Float	-	Polypropylene	Polysulfone	Buna N
Other Wetted	-	-	Brass, Aluminium, Polycarbonate, Viton A	Epoxy
Min. Liquid Sp.Gr.	.90	.90	.75	-
Operating Temperature	-40°C to 82°C	-40°C to +65.6°C	-40°C to +48.9°C	-40°C to +82.2°C
Pressure, bar, Max. ***	10	10	3	3
Switch, SPST	20 VA Resistance, N.O., Dry	20 VA, N.C./N.O. Dry**	20 VA, N.C. Dry	20 VA, N.C. Dry
Material Compliance	FDA			
Electrical Termination	No. 22 AWG, 0.6m L., PVC Lead Wires	No. 22 AWG, 0.6m L., PVC Lead Wires	No. 22 AWG, 1.8m L., Polymeric Lead Wires	No. 22 AWG, 1.8m L., PVC Lead Wires
Mounting	1/8" NPT	1/8" NPT	3/8 UNF/1/4NPT	1/8" NPT
Protection Rating	IP64	IP64	IP64	IP64
Weight approx.	100g	80g	170g	60g

** Switch operation is selectable, N.O. or N.C.. by inverting the float on the unit stem.

*** Maximum pressure at 70°F (30°C).

† L₁= Switch actuation level, nominal (based on a specific gravity of 1.0).

†† Consult factory for other available materials.

Note: LS-3 Series Bottle Level Switch is also available with any of the float materials shown on LS-3 page. Contact MEYLE for correct part number.

Order data

	LS-3 Tripod	LS-3 Slosh Shield	LS-3 Bottle Level	LS-3 Low Level
	166880	142545	46999	76707

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Single level switches LS-77700, LS-1700, LS-1750E, LS-1800



LS-77700 - Bent Stem

These units perform in liquids with specific gravities as low as .45; switches protrude into tank less than 75mm.



LS-1700

Offer broad chemical compatibility for general purpose use. Also ideal for oils and water.



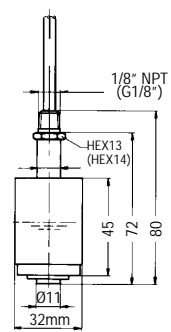
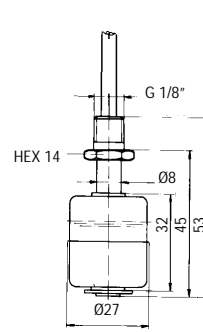
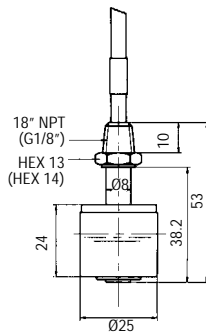
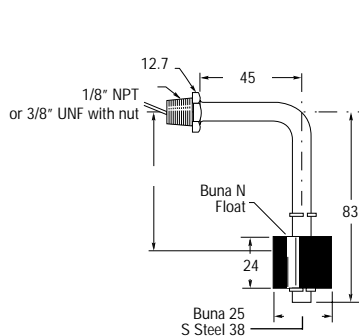
LS-1750E

Rugged construction suitable for most corrosive liquids, and for high temperatures and pressures.



LS-1800

Intermediate in size, LS-1800 switches provide long life and dependability to meet a broad range of requirements.



Specifications

	LS-77700	LS-1700	LS-1750E	LS-1800
Materials				
Stem and Mounting Float	Brass or S Steel S Steel or Buna N	Brass or S Steel Buna N or PTFE	S Steel S Steel	Brass or S Steel Buna N
Operating Pressure	10bar 7 bar S Steel Float	10 Bar 70 bar PTFE Float	20 bar	10 bar
Temperature -40°C to (Note: PVC Cable Limited to +80°C Ambient)	+80°C Water +110°C Oil +150°C S Steel Float	+80°C Water +110°C Oil +100°C PTFE	+150°C	+80°C Water +110°C Oil
Depth of immersion at a density of 1	Buna N: ~9mm S Steel: ~15mm	Buna N: ~9mm PTFE: ~13mm	~21mm	~24mm
Minimum specific gravity of the liquid	Buna N: 0.45 S Steel: 0.7	Buna N: 0.45 PTFE: 0.85	0.85	0.7
Type of reed switch	SPST 20 VA	SPST 50 VA	SPST 50 VA	SPST 100 VA SPDT 20 VA
Electrical connection (Length approx. 1m)	22 AWG 0.6m L., Teflon® Lead wires	Fly lead: AWG 20 FEP Cable: 0.34 mm² PVC	Fly lead: AWG 20 FEP Cable: 0.34 mm² PVC	Fly Lead: AWG 20 FEP Cable: 0.34 mm² PVC
Mounting thread	1/8" NPT 3/8" UNF with nut	1/8" NPT G 1/8	G 1/8	1/8" NPT G 1/8
Protection rating	IP64	IP64	IP64	IP64
Weight approx	150g	30g	50g	80g

Order data

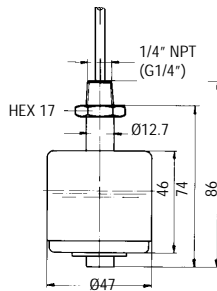
Stem, Float, Mounting Electrical Connection	LS-77700	LS-1700	LS-1750E	LS-1800
Brass/Buna, NPT, cable		010-2921 NO/NC		010-2930 NO/NC 010-3011 SPDT
Brass/Buna, NPT, leads	118125	010-1701 NO/NC		013-5651 NO/NC 013-0272 SPDT
Brass/Buna, G, cable		011-1700 NO/NC		011-1800 NO/NC
S.Steel/Buna,NPT, cable		010-2922 NO/NC		010-2931 NO/NC 010-3013 SPDT
S Steel/Buna, NPT, leads		010-1702 NO/NC		013-5657 NO/NC 012-4367 SPDT
S Steel/PTFE, NPT, leads		012-6791 NO 012-7980 NC		
S Steel/PTFE, NPT, cable		010-2924 NO 010-2923 NC		
Brass/Buna,3/8"UNF, leads	118127			
S Steel/S Steel, 3/8"UNF, leads	117716			
S Steel/S Steel, G, cable PVC			011-1750 NO/NC	
S Steel/S Steel, G, leads			010-0340 NO/NC	
S Steel/S Steel, G, cable Silicon			010-0554 NO/NC	

Single level switches LS-1900, LS-1900T, LS-1950E, LS-74780



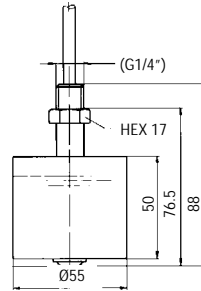
LS-1900

With large float displacement, switch withstands rough service; is suitable for high viscosity liquids.



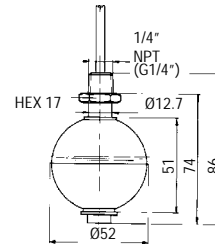
LS-1900T

Resists build-up of foreign material or sticky media. Float travel remains uninhibited in viscous or corrosive liquids.



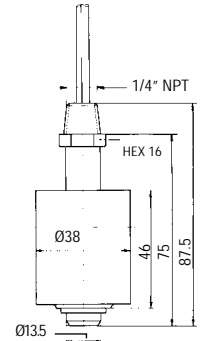
LS-1950E

Exceptionally accurate and rugged for higher temperatures and in pressurized or corrosive liquids. For oils, water and chemicals.



LS-74780

Particularly well suited for rough service. Ideal for use in chemical and plating applications.



Specifications

	LS-1900	LS-1900T	LS-1950	LS-74780
Materials				
Stem	Brass or S Steel	PTFE	S Steel	CPVC
Float	Buna N	PTFE	S Steel	CPVC
Operating pressure	10 bar	3 bar	30 bar	1 bar
Temperature: -40°C to	+80 °C Water	+150°C	+150°C	+80°C
NOTE: PVC cable limited to +80°C Ambient	+110°C Oil		Hi-temp. version - Fly lead: +200°C	
Depth of immersion at a density of 1	~19 mm	~34 mm	~30 mm	~28 mm
Min. specific gravity of the liquid	0.55 g/cm ³	0.80 g/cm ³	0.75 g/cm ³	0.85 g/cm ³
Type of reed switch	SPST 100 VA; SPDT 20 VA	SPST 100 VA; SPDT 20 VA	SPST 100 VA; SPDT 20 VA	SPST 20 VA
Electrical connection (Length approx. 1m)	Fly lead: AWG 20 FEP Cable: 0.34mm ² PVC	Fly lead: AWG 20 FEP Cable: 0.5mm ² silicone	Fly lead: AWG 20 FEP Cable: 0.5mm ² silicone* Cable: 0.34mm ² PVC Hi-temp. version - AWG 18 PTFE	Fly lead: AWG 18 PVC (Length appr. 0.6m)
Mounting thread	1/4" NPT*; -G 1/4	G 1/4	G 1/4	1/4" NPT
Protection rating	IP64	IP64	IP64 Hi-temp IP60	IP64
Weight approx.	110 g	120g	125g	65g

Order data

Stem, Float, Mounting Electrical Connection	LS-1900	LS-1900T	LS-1950E	LS-74780
Brass/Buna, NPT, cable	010-2934 NO/NC 010-2936 SPDT			
Brass/Buna, NPT, leads	013-5676 NO/NC 010-2575 SPDT			
Brass/Buna, G, cable	011-1900 NO/NC			
S Steel/Buna, NPT, cable	010-2935 NO/NC 010-2937 SPDT			
S Steel/Buna, NPT, leads	013-5682 NO/NC 010-2576 SPDT			
S Steel/S Steel, G, cable PVC			011-1950 NO/NC	
S Steel/S Steel, G, leads			014-1254 NO/NC 010-3109 SPDT	
S Steel/S Steel, G, cable Silicon			010-3457 NO/NC 010-3089 SPDT	
S Steel/S Steel, NPT, leads, Hi-Temp			013-6186 NO/NC	
S Steel/S Steel, G, leads, Hi-Temp			010-0391 NO/NC	
S Steel/S Steel, NPT, cable Silicon			010-2942 NO/NC 010-2943 SPDT	
S Steel/S Steel/NPT, leads			012-6717 NO/NC 012-3498 SPDT	
PTFE/PTFE, G, cable		010-2697 NO 010-2866 NC		
PTFE/PTFE, G, leads		010-3451 NO 010-3450 NC		
PTFE/PTFE, G, cable		010-3054 SPDT		
PTFE/PTFE, G, leads		010-3452 SPDT		
CPVC/CPVC, NPT, leads				74780 NO/NC

Large Size - Alloys

When a Switch won't fit in the tank, use a non-intrusive Bottle Type

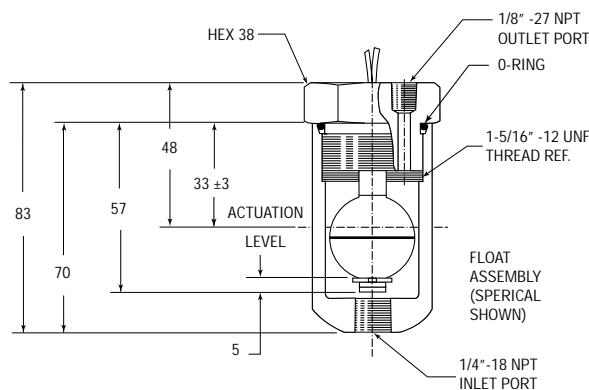
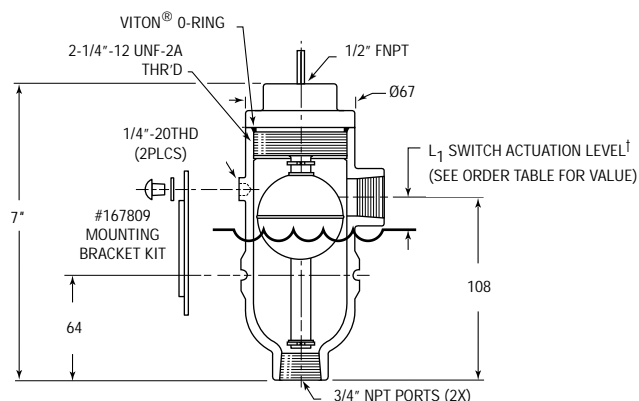
Bottle type level switches are ideal for large or small tanks or where access to the inside is impractical or impossible. These units mount completely outside of the tank, at the level actuation point.



LS-800-5



LS-159000



Specifications

	LS-800-5		LS-159000	
Materials, Housing	Brass	S Steel	Aluminum	Aluminum
Stem	Brass	S Steel	Brass	Brass
Float	S Steel	S Steel	S Steel	Buna N
Operating pressure	35 bar	50 bar	27 bar	17 bar
Temperature	-40 °C to +150 °C	-40 °C to +150 °C	-40 °C to +150 °C	-40 °C to 120 °C Oil -40 °C to 80 °C Water
Actuation Level at a density of 1	L ₁ =19mm (mid port)	L ₁ =11mm (mid port)	48mm from top of unit	48mm from top of unit
Min. specific gravity of the liquid	0.75	0.75	0.75	0.50
Type of reed switch	SPST 20 VA	SPST 20 VA	SPST 20 VA	SPST 20 VA
Electrical connection* approx 0.6m	Fly Lead: AWG 18 Polymeric	Fly Lead: AWG 18 Polymeric	Fly Lead: AWG 18 Polymeric	Fly Lead: AWG 18 Polymeric
Mounting thread	3/4" NPT	3/4" NPT	1/4" NPT and 1/8" NPT	1/4" NPT and 1/8" NPT
Protection rating	IP64	IP64	IP64	IP64
Weight approx.	1.65kg		400g	

* K6 J.box option for LS-800-5, consult Sales Office

Order data

	LS-800-5		LS-159000	
	172625 NO/NC	172635 NO/NC	144080 NO/NC	160405 NO/NC

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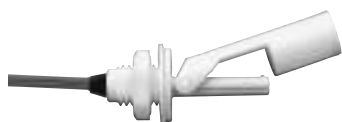
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49525 Lengerich/Germany
Internet: www.meyle.de

Tel.: (+49) 0 54 81/93 85-0
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E-Mail: sales@meyle.de

Single Point Level Switches LS-7

Small Size - Engineered Plastics, Side Mount

LS-7 Series - Compact side mounts are the solution to many small tanks. These low-cost units are ideal for high volume use in small tanks and vessels. Engineered plastics construction offers broad compatibility in water, oils and chemicals. The high temperature capability of Versaplast offers an alternative to high cost stainless steel switches.



Type 3
Internal Mounting



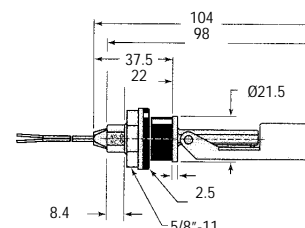
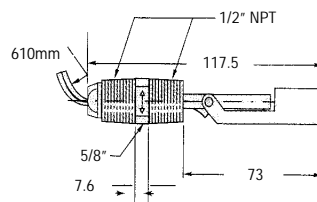
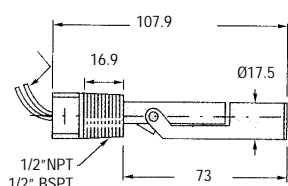
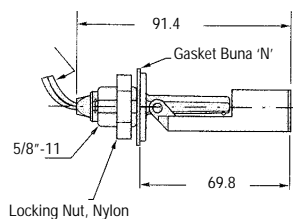
Type 5
External Mounting



Type 7
External Mounting



Type 10
External Mounting
Mounts and seals through non-threaded hole \varnothing 22 using an HNBR compression gasket. Wall thickness 0.5 to 4mm.



Specifications

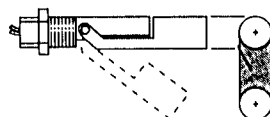
	Type 3	Type 5	Type 7	Type 10
Materials				
Stem/Mounting	Versaplast Polypropylene** Nylon*	Versaplast Polypropylene** Nylon*	Polypropylene** Nylon*	Versaplast Polypropylene** Nylon*
Lead Wire Jacket	PVC	PVC	TPE***	TPE***
Min. specific gravity of the liquid	Versaplast 0.80 PP 0.55 Nylon 0.65	0.80 0.55 0.65	0.55 0.65	0.80 0.55 0.65
Operating Temperature	Versaplast -40°C to 121°C PP -40°C to 107°C Nylon -40°C to 121°C	-40°C to 150°C -40°C to 107°C -40°C to 121°C	-40°C to 107°C -40°C to 121°C	-40°C to 121°C -40°C to 107°C -40°C to 121°C
Operating Pressure Max.	7 bar	7 bar	7 bar	3.5 bar
Switch SPST	20 VA	20 VA	20 VA	20 VA
Lead Wire Gauge (Approx 0.6m long)	22 AWG	22AWG (18AWG Nylon)	18 AWG	22 AWG
Float Arc	55mm	32mm	38mm	53mm
Protection Rating	IP64	IP64	IP65	IP65
Weight approx.	80g	60g	70g	90g

* Not suitable for long term use in water. ** Not suitable for Hydrocarbons *** Thermoplastic Elastomer Zip Cord

Versaplast (Ryton [80%] + Nylon [20%]) is suitable for both water and Hydrocarbons

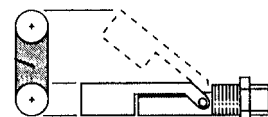
By rotating the switch 180°, the switch operation can be Normally Open or Normally Closed. Arrows on exterior of mounting indicate NO when pointing up.

Normally Open



When the switch is mounted so that the float lowers with the liquid level, the switch is NO

Normally Closed



When the switch is mounted so that the float rises with the liquid level, the switch is NC

Order data

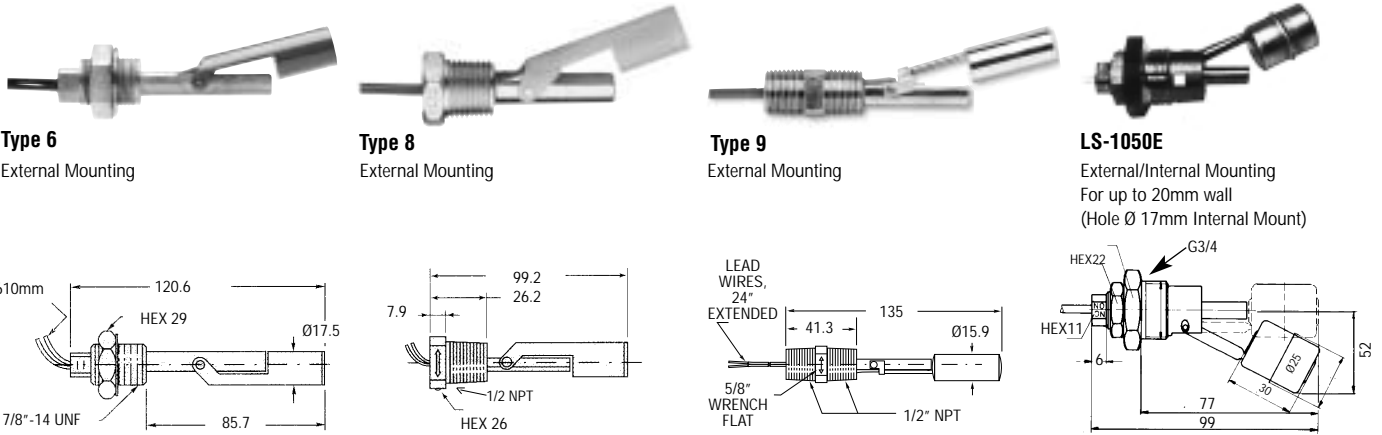
	Type 3	Type 5	Type 7	Type 10
Polypropylene	164520	NPT 131100 BSPT 189423	NPT 160450	165800
Nylon	165570	NPT 140620 BSPT 189421	NPT 160460	165900
Versaplast	182600	NPT 177100 BSPT 189422		182700



Single Point Level Switches LS-7, LS-1050E

Small Size - Compact Alloy and Alloy Plastics Side Mount

Built for durability, our LS-7 Series switches utilize stainless steel, zinc or aluminium bodies. Ideal for any small tank or vessel destined for a rugged development.



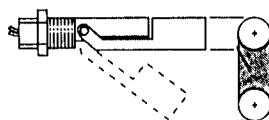
Specifications

	Type 6	Type 8	Type 9	LS-1050E
Materials				
Stem/Mounting	Aluminium	Zinc	316 S Steel	Brass
Float	Nylon*/Polysulfone	Nylon*/Polypropylene**	316 S Steel/Nylon*/Polypropylene**	S Steel
Lead Wire Jacket	PVC	TPE***	TPE***	PVC
Min. specific gravity of the liquid	0.65 Nylon 0.75 PSU	0.65 Nylon 0.55 PP	0.80 S Steel 0.65 Nylon 0.55 PP	0.7 S Steel
Operating Temperature -40°C to	121°C Nylon 107°C PSU	120°C Nylon 107°C PP	149°C S Steel 121°C Nylon 107°C PP	+100°C
Operating Pressure Max.	7 bar Nylon 10 bar PSU	7 bar Nylon 10 bar PP	20 bar S Steel 7 bar Nylon / PP	16 bar
Switch SPST	10 VA	20 VA	20 VA	50 VA
Lead Wire Gauge (Approx 0.6m long)	22 AWG	22AWG	18 AWG	Cable 0.34mm ² (approx 1m long)
Float Arc	36mm	36mm	36mm	36mm
Protection Rating	IP64	IP65	IP65	IP65
Weight approx	150g	150g	150g	300g

*** Thermoplastic Elastomer Zip Cord * Not suitable for long term use in water. ** Not suitable for Hydrocarbons

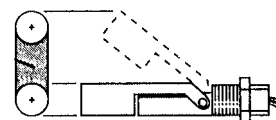
By rotating the switch 180°, the switch operation can be Normally Open or Normally Closed. Arrows on exterior of mounting indicate NO when pointing up. When the switch is mounted so that the float rises with the liquid level, the switch is NC. When the switch is mounted so that the float lowers with the liquid level, the switch is NO.

Normally Open



When the switch is mounted so that the float lowers with the liquid level, the switch is NO

Normally Closed



When the switch is mounted so that the float rises with the liquid level, the switch is NC

Order data

	Type 6	Type 8	Type 9	LS-1050E
Nylon Float	155660	160950	164850	
Polysulfone Float	155680			
Polypropylene Float		162795	164860	
S Steel Float			164870	011-1050

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Internet: www.meyle.de

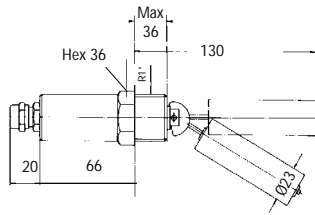
Tel.: (+49) 0 54 81/93 85-0
Fax: (+49) 0 54 81/93 85-12
E-Mail: sales@meyle.de

Single level switches, side mounted LS-2050E, LS-52100E



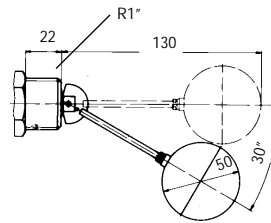
LS-2050E Brass/Buna N

General purpose materials designed to provide reliable service in oils and water.



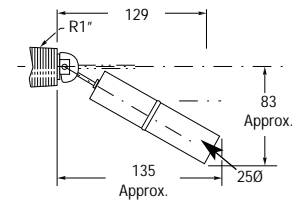
LS-2050E S Steel

Ultimate strength; for pressure to 60 bar and temperatures to 150°C.



LS-52100E

Rugged, all-stainless steel unit offers a broad chemical compatibility at temperatures to 150°C.



Specifications

	LS-2050(E) Brass/Buna N	LS-2050(E) S Steel / S Steel	LS-52100E
Materials	Brass	Stainless Steel	Stainless Steel
Stem/Mounting	Buna N	Stainless Steel	Stainless Steel
Operating pressure	10 bar	60 bar	35 bar
Temperature	80°C Water	+150°C	+ 150°C
-40°C to	110°C Oil		
Min. specific gravity of the liquid:	0.8	0.9	0.85
Type of reed switch:	SPDT 20 VA	SPDT 20 VA	SPDT 20 VA
Electrical connection:	Cable: 0.34 mm ² PVC	Cable: 0.5mm ² silicone	Cable: 0.5mm ² silicone
(Approx 1m long)	Terminal box	Terminal box	Terminal box
Mounting thread:	R1" Taper	R1" Taper	R1" Taper
Protection rating :	IP65	IP65	IP65
Weight: approx	300 g	350 g	300g

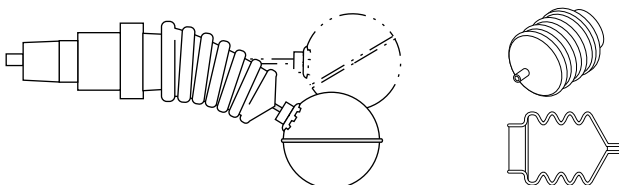
Order data

	LS-2050E Brass/Buna N	LS-2050E S Steel	LS-52100E S Steel
Cable	010 - 3465	010 - 3466	010 - 3461
Terminal Box	010 - 3463	010 - 3464	010 - 3462
Cable + Bellows		010 - 3468	
T. Box + Bellows		010 - 3469	

With Optional Bellows

Seals moving parts from debris and particulates that might impede shuttle movement. Available for all-stainless steel LS-2050E with 50mm float.

Temperature: 120°C max, Pressure: 1 bar max; Material: Buna N (Nitrile)



Switch with bellows. Bellows are not sold separately.

Bilge water level switches

The design of MEYLE bilge water level switches combines reliable switching in contaminated liquids with compact dimensions. These switches have been developed for general naval and industrial applications. They have protective housings which dampen the movements and turbulence of the medium and maintain their reliable operation even if there is solid matter in the bilge water.

Acceptance and approval

Various civil, military and naval approvals are on hand for many of these products. Please ask for further details.



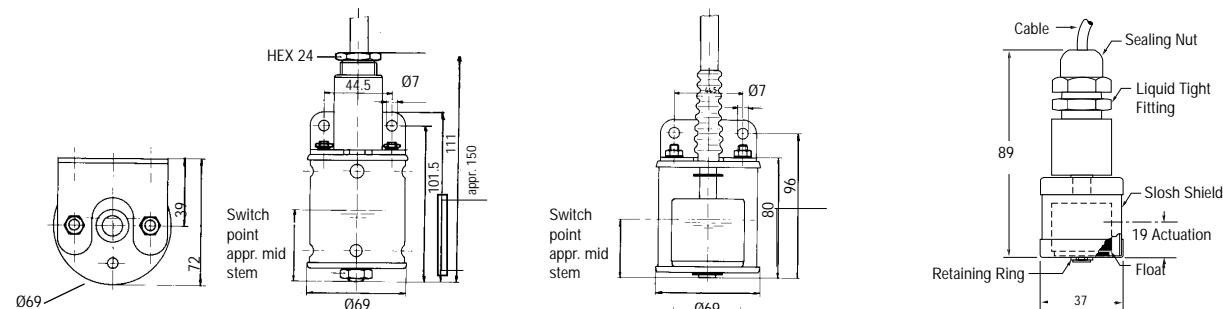
Applications

LS-240-3E: This switch has extremely robust construction. It is perfectly suitable for applications on ships and wherever heavy mechanical loads occur. The LS-240-3E has been accepted by the Germanischer Lloyd, among others, and approved for application by the German Navy.

LS-270-E: This bilge water level switch has been developed especially for low level alarms and can monitor levels as low as 35 mm. As the cable is vulcanized the switch is submersible to "IP67". The float can also be constructed as an interface level indicator.

The LS-270-E has been accepted by the Germanischer Lloyd, among others, and approved for application by the German Navy.

LS-750: With a compact-sized float, slosh shield and weighted collar, the LS-750 provides liquid level detection for a wide variety of applications. Suspend in stand pipes or sumps for leak detection duty, or drop into wells for ground-water monitoring. Supplied with 7.5m of waterproof cable.



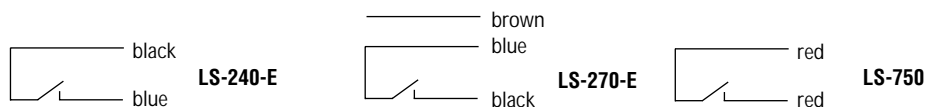
Specifications

	LS-240 3E	LS-270-E	LS-750
Material stem	S Steel	S Steel	Brass
Material float:	Buna N	Buna N	Buna N
Stilling chamber	S. Steel	Lucite	Brass
Bracket	S Steel	S Steel	
Operating pressure	10 bar	10 bar	10 bar
Temperature -40°C to	+80°C	+80°C	+80°C Water
Min. specific gravity of the liquid	0.53	Standard: 0.58 Interface level: 0.85/1	0.45
Protection rating	IP67	IP67	IP68 to 8m
Type of reed switch	SPST 100 VA	SPST 100 VA	N.C., 20VA
Electrical connection	(Length 2m) Cable: LMGSGo 2 x 1.5mm ²	(Length 2m) Cable: CR 3x1.5mm ²	(Length 7.5m) PVC Cable Jacket 22 AWG
Weight	650 g	530 g	830 g

Order data

STD Float	010-3433 NO,	010-3434 NC	010-0349 NO,	010-0350 NC	149350 NC
Interface Float Oil/Water			010-0351 NO,	010-0352 NC	

Connection diagram



Meyer Industrie-Electronic GmbH - MEYLE

Carl-Bosch-Straße 8
49525 Lengerich/Germany
Internet: www.meyle.de

Tel.: (+49) 0 54 81/93 85-0
Fax: (+49) 0 54 81/93 85-12
E-Mail: sales@meyle.de

Keep an "Eye" on Your Liquid Level

Compact, Electro-Optic Liquid Level Switches and Controllers

- ▶ Small size
- ▶ Economically priced
- ▶ Built in, solid-state electronics
- ▶ No moving parts
- ▶ Traingular prism, not susceptible to droplets
- ▶ Simple, one-unit installation

ELS Series Level Switches are low cost, compact, optical level sensors with built-in switching electronics. With no moving parts, these small units are ideal for a variety of point level sensing applications - especially where dependability and economy are a must.

The sensor offers $\pm 1\text{mm}$ repeatability and broad liquid compatibility. They are not recommended for use in any liquid that crystallizes or leaves a solid residue.

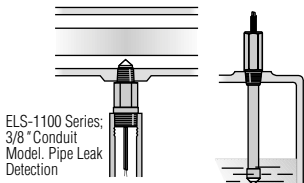
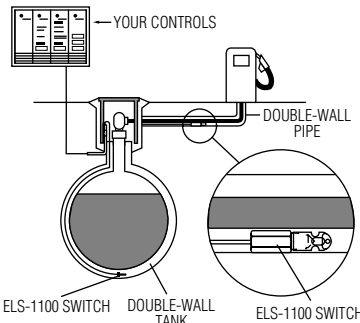
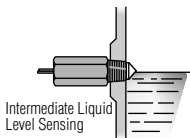
Level switches are suitable for high, low or intermediate level detection in practically any tank, large or small. Installation is simple and quick through the tank top, bottom or side. Solid state switching ensures dependability over long service life.

Typical Applications

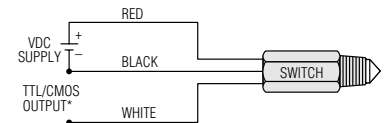
- ▶ Medical laboratory
- ▶ Food and beverage systems
- ▶ Pharmaceuticals
- ▶ Petrochemicals
- ▶ Leak detection
- ▶ Hydraulic reservoirs
- ▶ Machine tools



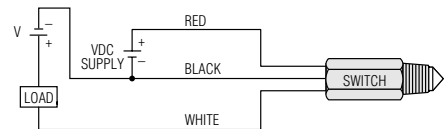
Typical Wiring Diagrams - ELS-1100 and ELS-300 Series



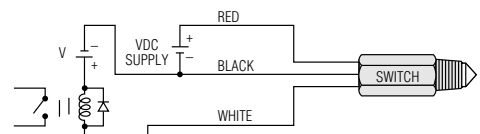
ELS-1100 Series; High Liquid Level Sensing



*For CMOS levels greater than 5 volts, a 10K pull-up resistor is required at the output.



Max. Spec. = 40mA Sink @ 30VDC

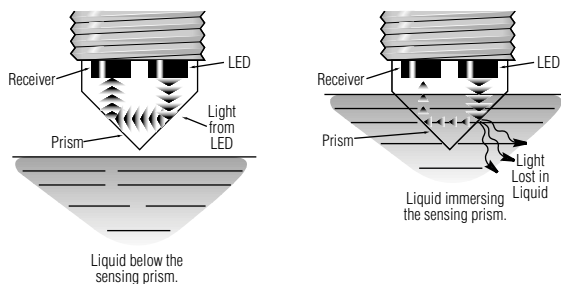


Max. Spec. = 40mA Sink @ 30VDC

Simple Operating Principle

The electro-optical sensor contains an infrared LED and a light receiver. Light from the LED is directed into a prism which forms the tip of the sensor.

With no liquid present, light from the LED is reflected within the prism to the receiver. When rising liquid immerses the prism, the light is refracted out into the liquid, leaving little or no light to reach the receiver. Sensing this change, the receiver actuates electronic switching within the unit to operate an external alarm or control circuit.



Reflective Surface

Any optical sensor may be affected by reflective surfaces. Consult us if prism is to be less than 50mm from any reflective surface.

ELS-1100 Series

ELS-1100

These Polysulfone units are both compact and economical. They feature a variety of mountings, power requirements and electrical terminations to make it easy to find a perfect match for your application.

ELS-1100HT/HTS

Slightly larger than the ELS1100, the "HT" or High Temperature version is made from high performance Isoplast® plastic. This material provides extended temperature, durability and chemical compatibility .. all at a low cost! The HT small (HTS) protrudes only 13mm when fitted.

ELS-1100TFE

When high purity or resistance to chemical attack is vital, ELS-1100TFE sensors are the ultimate solution. They feature a pure Teflon® body and prism construction. Even the Hypalon® vapor barrier and Teflon® coated lead wires give evidence to the care we've taken to make this the perfect liquid level sensor for pharmaceuticals, semiconductor manufacturing, food and beverage, chemical processing, or anywhere purity or chemical resistance is the major criteria.

ELS-1100FLG

The easy solution for thin wall tanks (≤6.5mm thick): ELS1100FLG Series. No threads needed with these flanged units. Slip through a 19mm hole and tighten the jam nut; Viton® gasket forms a tight seal. Ideal for sheet metal, moulded plastic tanks and medical applications where elimination of exposed threads removes potential bacterial breeding grounds.



ELS-300 Series

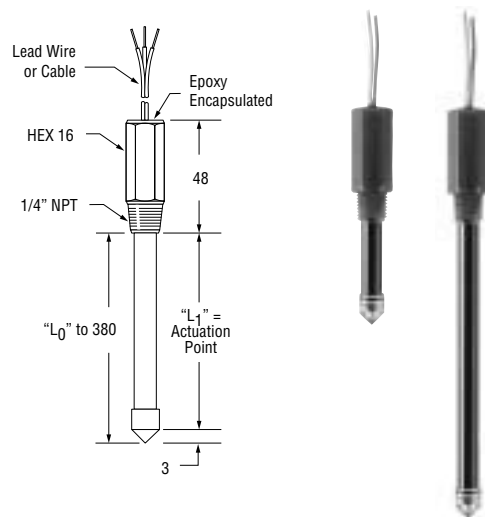
Customized lengths up to 380mm

Stretch out and take a dip with the custom length ELS-300 Series. They feature the same materials and performance of our ELS-1100 Series and are suitable for general purpose use where a top or bottom mount is required. They provide the ability to detect liquid levels within 15 inches of the top or bottom on a tank.

Specifications

Wetted Materials	Polysulfone
Operating Pressure	0 to 10 bar, Maximum
Operating Temperature*	-18 to +80°C
Input Power	5 VDC or 10-28 VDC
Output	TTL/CMOS Compatible. Open Collector Output

*These switches are not for use in freezing liquids.
Contact Sales Office for more information
Order as : ELS-300, L1= (state length required)



Opto-Pak™

Controller for Electro-Optic Switches

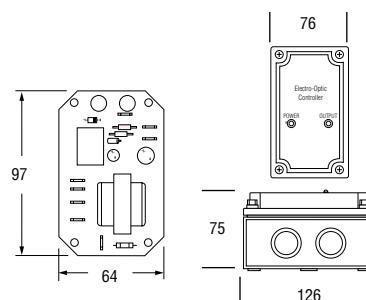
Extend power and switching capabilities of 10 to 28 VDC Electro-Optic switches

Opto-Pak Controllers convert standard 220 VAC line current to the 10-28 input power required for ELS-1100 and ELS-300 operation, and provide an SPDT, 5 Amp relay output for direct control of moderate loads.

Two models are available: an open circuit board Opto-Pak Controller for incorporation into custom enclosures, and the self-contained, IP 65 model pictured here.

- ▶ Operates with 10-28 VDC ELS-1100, ELS-1100HT*, ELS-1200* and ELS-300 Series Electro-Optic Switches.
- ▶ Converts TTL output signal to an SPDT 5 Amp relay output.
- ▶ Available as open board or mounted in IP 65 junction box.

*12 VDC versions only.



Specifications

Voltage Input	220 VAC ±10%, 50/60 Hz
Maximum Current Draw	70mA @ 220 VAC
Relay Output	SPDT; 5 Amps @ 115 VAC, 5 Amps @ 30 VDC
Operating Temperatures	-13°F to +158°F (-25°C to +70°C)
Electrical Connections	1/4" Male Spade Terminals*
Open Board	PN 162171
IP65 Enclosure	PN 190460

*Ten (10) 1/4" female spade connectors (not shown) shipped loose with each unit.

Specifications

	ELS-1100/FLG	ELS-1100HT/HTS	ELS-1100TFE
Materials	Polysulfone (PSU) or Nylon (PA)	Polysulfone or Nylon**	Teflon (PTFE)
Housing and Prism	Polysulfone (PSU) or Nylon (PA)	Polysulfone or Nylon**	Teflon (PTFE)
Operating Pressure	10 bar, Maximum	10 bar, Maximum	10 bar, Maximum
Operating Temperature*	-18°C to +80°C	-40°C to +100°C	-18°C to +80°C
Current Consumption	18 mA, approximately	45 mA, approximately	18mA, approximately
Output**	TTL/CMOS compatible. Open collector output may sink 40 mA Up to 30 VDC	TTL/CMOS compatible. Transistor output with 10Kohms pull up resistor may sink 18mA 12VDC input power units switch a maximum 5 VDC on output	TTL/CMOS compatible. Open collector output may sink 40 mA Up to 30 VDC
Repeatability	±1mm	±1mm	±1mm
EMI Susceptibility	Meets (MIL-STD-461B Part 2 Modified) Specification of 10 V/M for frequency range 30 to 1000 MHz (Except 609 MHz = 9V/M and 679 MHz = 7.5 V/M)		
Electrical Termination	Lead wire, 22 AWG PVC, 0.3m	Lead wires, 22AWG, Polymeric, 0.3m	Teflon (PTFE) Cable, 18AWG, 0.6m

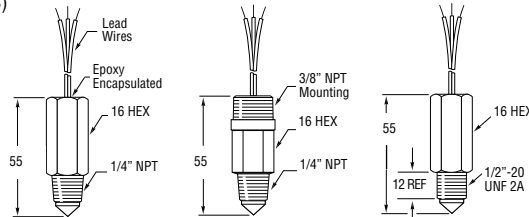
* These switches are not for use in freezing liquids.

** Not suitable for long term immersion in water.

Order data

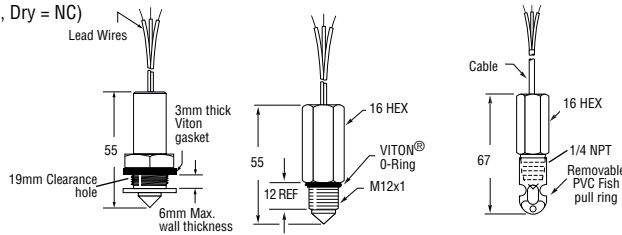
Supply	Probe Conditions at Current Sink	1/4 NPT Polysulfone	1/4 NPT + 3/8 Cond Polysulfone	Nylon	1/2" UNF Polysulfone
5V dc	Wet Dry	138167	144225	175631	144235
10-28Vdc	Wet Dry	142700 143570	143585 143590	157750 175632	143580 143575

(Wet = NO, Dry = NC)



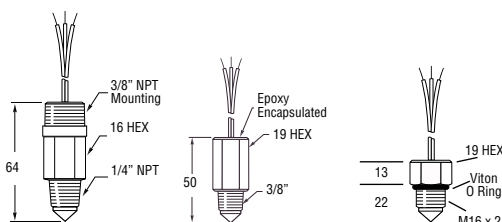
Supply	Probe Conditions at Current Sink	Flange Polysulfone	M12 x 1 Polysulfone	Nylon	Fish Pull Polysulfone
5V dc	Wet Dry	187575 187590	166541	175630	139293
10-28Vdc	Wet Dry	187585 187580	169555 143590	175620 175632	143577 148973

(Wet = NO, Dry = NC)



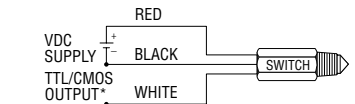
Supply	1/4 NPT ELS-1100TFE	3/8 NPT ELS-1100HT Isoplas	M16 x 2 ELS-1100HTS Isoplas
5Vdc	-	153061 153062	191341 191342
10-28Vdc	173800	153063*	-
12Vdc for ELS-1100 HT/HTS	173700	153064	-

(Wet = NO, Dry = NC)

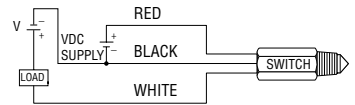


Optional Boot for ELS-1100TFE - PN 185551

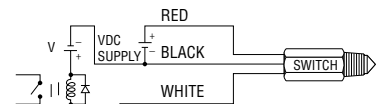
Typical Wiring Diagrams ELS1100 and ELS300 Series



*For CMOS levels greater than 5 volts, a 10K pull-up resistor is required at the output

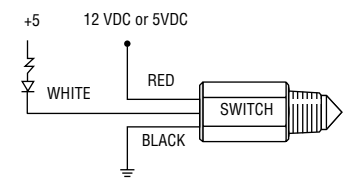


*Max. Spec. = 40mA Sink @ 30VDC

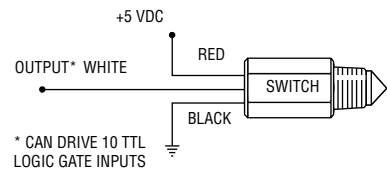


*Max. Spec. = 40mA Sink @ 30VDC

ELS-1100HT/HTS Transistor Output



TTL Compatible Output



* CAN DRIVE 10 TTL LOGIC GATE INPUTS

Intrinsically Safe Versions

ELS-1100 Switches may be rendered intrinsically-safe for Class 1, division 1, Group C & D when used with appropriate Zener Barriers.

LEVEL SWITCHES

ELS-1200 Series, Integral Electronics

High pressure liquid processes can now be monitored effectively with very little intrusion into tanks or piping. ELS-1200 switches feature fused glass prisms fused to zinc/nickel plated, carbon steel housings. You will find them to be a compact, reliable and durable solution to liquid level monitoring of refrigerant, compressor oil, hydraulic system reservoirs and machine tools.

ELS-1200 Series, Removable Electronics

These electro-optic switches feature a one piece removable electronics module with 1/2" NPT conduit connection and an internal O-ring seal to protect against external moisture intrusion. Simply unthread the 1/2" NPT conduit connection for easy replacement of the electronics module without the inconvenience of emptying or depressurizing tanks. ELS-1200 switches feature glass prisms fused to zinc/nickel plated, carbon steel housings. Select from either 1/2" NPT mounting connections, or 3/4"-16 UNJF-3A straight thread connections with an external O-ring seal. They monitor high pressure liquid processes with very little intrusion into tanks or piping.

Specifications

Mounting	1/2" NPT or 3/4"-16 UNJF-3A Thread (Viton 'O' ring)
Materials	
Housing	Zinc/Nickel Plated Carbon Steel ^①
Prism	Fused Glass
Operating Pressure	172 bar, Maximum*
Operating Temperature***	
5/12 VDC	-40°C to +100°C
24/120 VAC	-29°C to +116°C (Prism tip) -29° to 75°C (Electronics)
Current Consumption	
5/12 VDC	~45 mA
24/120 VAC	~6 mA
Output	
5/12 VDC	TL/CMOS compatible. Transistor output with 10K pull up Resistor may sink 18mA. 12 VDC Input power units switch a maximum 5 VDC on output
24/120 VAC	Normally Open: SPST (10 VA Resistive) Max. Switching Volts: V in ±10% Max. Switching current: 225 mA @ rated voltage @ 25°C
Electrical Termination**	
5/12 VDC	22 AWG, Polymeric, 0.3m extended lead wires
24/120 VAC	20 AWG, Polyester, 0.3m extended lead wires
Repeatability	±1mm

* For straight thread mounting units when installed with tube fitting per MS 33649

** Consult MEYLE for cable options

*** These switches are not for use in freezing liquids. Consult factory for higher temperature units.

① Hastelloy thread with Stainless Steel body is available for harsh environments. Contact Sales Office for details

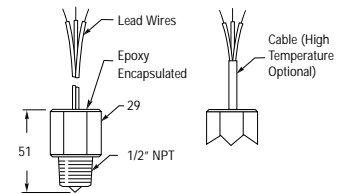
Order data

Input Power	Probe Condition at Current Sink	Electronics	Mounting Style	
			1/2" NPT	3/4"-16 UNJF
5 VDC	Wet	Integral	153842	---
	Dry	Integral	154177	---
	Wet	Removable	171574	161431
	Dry	Removable	160953	161432
12 VDC	Wet	Integral	153843	---
	Dry	Integral	154178	---
	Wet	Removable	160646	161433
	Dry	Removable	160954	161434
24 VAC	Wet	Removable	166852	168174
	Dry	Removable	166854	168422
120 VAC	Wet	Removable	164219	166848
	Dry	Removable	164222	166850

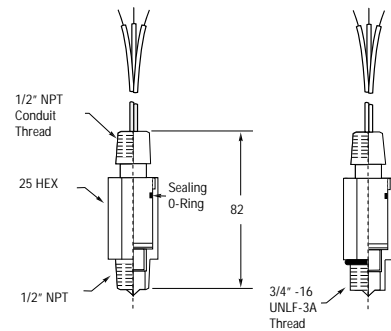


Dimensions

ELS-1200 Integral Electronics

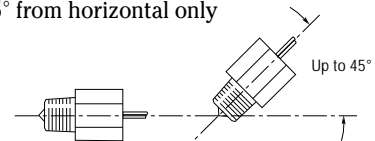


ELS-1200 Removable Electronics



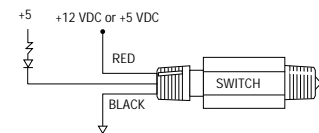
Mounting Attitude

These units must be mounted horizontally or up to 45° from horizontal only

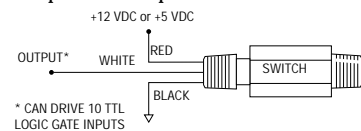


Wiring Diagrams

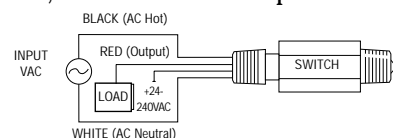
Transistor Output



TTL Compatible Output



SPST, 24 or 120 VAC Output



**Multiple level switches series,
LS-300 (1...5 switch points),
LS-400E (1...4 switch points),
LS-800E (1...7 switch points)**

MEYLE level switches LS-300, LS-400E, LS-800E, LS-800E-PVC series provide an excellent method of controlling liquid levels in tanks. The units are made to the customer's specific requirements and are well suited to most industries due to the large range of different mountings and materials of construction.

Operation

A float equipped with a permanent magnet moves up and down with the fluid level between two stop rings and its magnetic field actuates a hermetically sealed reed switch embedded in the stem.

Installation and Maintenance

The level switches of the LS-300, LS-400E, LS-800E, LS-800E-PVC are mounted through the opening (flange or threaded) in the tank top or the bottom of the tank. Although the units are designed for vertical operation, they operate without problems even when mounted at an angle of up to 30° from the vertical axis. Maintenance work is reduced to a minimum and consists of cleaning off residues from the switch stem if necessary.

Max lengths:

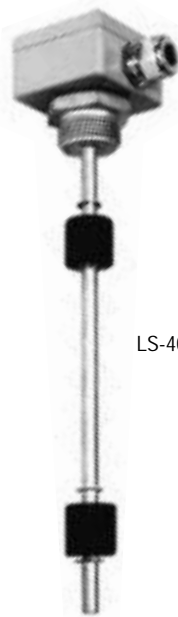
LS-300:	400mm
LS-400E:	800mm
LS-800E:	3000mm
LS-800E-PVC	2000mm



LEVEL SWITCHES



LS-300 with flange



LS-400E



LS-800E



Multiple Level Switch LS-300 (1 - 5 switch points)



- ▶ All-Plastic Wetted Parts
- ▶ Lengths to 500mm

Designed for the high quantity needs of the OEM, LS-300 Series Switches are the ideal level sensor for shallow tanks and reservoirs. Compact and versatile, these low-cost, plastic level switches offer a broad choice of mountings and float materials. The following pages illustrate the various design parameters available to configure custom LS-300 Series Switches.

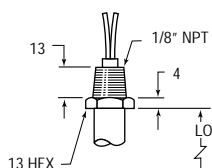
Electrical Connections

	Type 1 Leadwire	Type 2 Cable	Type 3 Liquid-Tight Cable	Type 4 Junction Box Assembly	Type 5 DIN43650 Plug	Type 6 DIN43651 Plug
Compatible Mounting Type(s)	All		42	42	42, 62	42
Protection Rating	IP64		IP67	IP65		
Extended Leads	#22 AWG PVC 610mm Min.	#22 AWG PVC Jacketed Cable, 610mm Min.		Terminal Box (7 Terminals)	3 Poles	6 Poles
Max. No. of Levels Group I			5			
Group II			3			

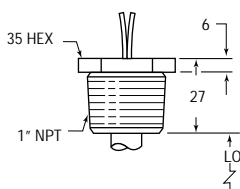
Mounting Types

NPT Threads

Type 21 1/8" NPT

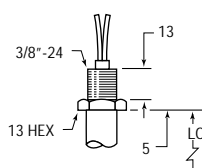


Type 22 1" NPT

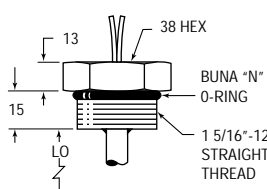


Straight Threads

Type 31 3/8" - 24

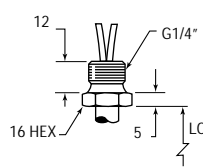


Type 32 1-5/16" - 12

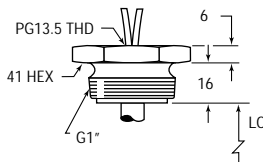


Metric Threads

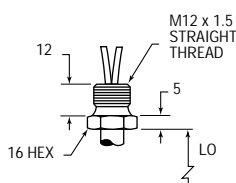
Type 41 G1/4" (1/4"-19BSP)



Type 42 G1" (1"-11BSP)



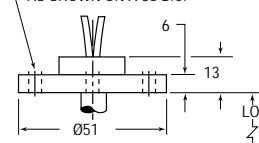
Type 51 M12x1.5 Straight Thread



Flange Mountings

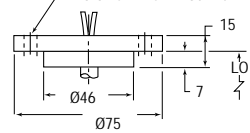
Type 61 2" O.D. Flange

4 DIA. (4) HOLES EQUALLY SPACED AS SHOWN ON A 38 B.C.

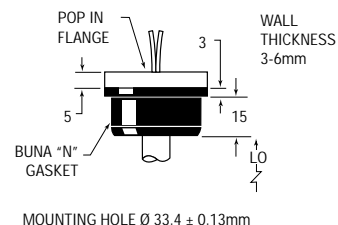


Type 62 3" O.D. Flange

4 DIA. (4) HOLES EQUALLY SPACED AS SHOWN ON A 60 B.C.

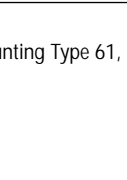
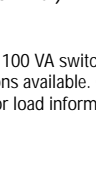
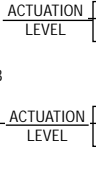
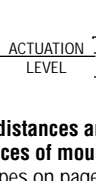


Type 63 PopFlange



Stem, Mounting and Collar Material	Polysulfone
Max Length (Lo)	400mm
Mounting Position	Vertical ± 30° Inclination

Floats

Float Material	Buna N	Polysulfone	Polypropylene	
			Solid Foamed	Hollow
Float Dimensions				
Float Material Suitable for ...	Oil, Fuels	Waterbased Liquids	Broad Chemical Use	Low Specific Gravity Liquids
Operating Temperature *	Water to 80° Oil: -40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C
Pressure, (bar), Max. **	17	3.5	17	3.5
Min. Media Specific Gravity	.45	.75	.90	.65

* Operating temperature range based on float ratings

** When used with mounting Type 21, 32 or 22 only; Mounting Type 61, 62 and 63 are not recommended for pressure applications. Pressures are derated with increasing temperature.

Electrical Specifications

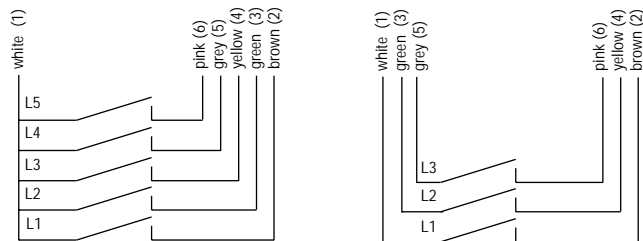
Typically, one float is required for each point at which you need a switch action to occur. The number of actuation levels available depends on the Group Type Wiring selected; see below.

- Group I Wiring: 1 to 5 Actuation Levels
- Group II Wiring: 1 to 3 Actuation Levels
- Switch (SPST, N.O. or N.C.): 10/20/50/100 VA.

Notes:

- Units with 50 and 100 VA switches are not UL Recognized or CSA Listed.
- Other wiring options available. Consult factory.
- Consult Factory for load information.

Wiring Group



* Pin correlation of plug connectors shown in parenthesis.

A = Minimum distance to highest actuation level.

B = Minimum distance between actuation levels.

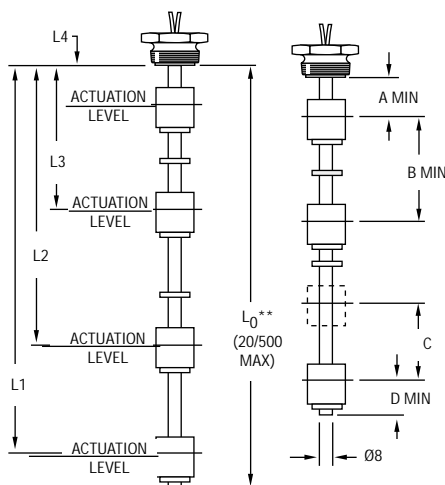
C = Minimum distance between two actuation levels with one float

(Note: One float for two levels can be used only when low level is N.C. dry and high level is N.O. Dry.

D = Minimum distance from end of unit to lowest level.

Switch actuation levels are determined following the guidelines below.

Actuation Level Dimensions



* Actuation level distances and L₀ (overall unit length) are measured from inner surfaces of mounting plug or flange.

See mounting types on page 40 for L₀ reference point.

** Length Overall (L₀) = L₁ + Dimension D. See Mounting Types for Maximum Length values.

Float Type	Dimensions			
	A	B	C	D
Buna N	25mm	45mm	3mm Minimum	18mm
Polysulfone	22mm			24mm
Solid P.P.	16mm			29mm
Hollow P.P.	22mm			22mm

Notes:

- Actuation levels are calibrated on ascending fluid level with water, specific gravity 1.0, as the calibrating fluid, unless otherwise specified.
- Tolerance on actuation levels is ± 3mm.
- Tolerance on length is ±2mm.



Multiple Level Switch LS-400E (1 - 4 switch points)

Max. contact loads of the reed switch:
 SPST 50 VA; 0.5 A; 250 VAC (NC/NO).
 SPDT 10VA; 0.3A; 100 Vdc
 (Higher voltage on request).
 The data NC/NO are defined for an empty tank.

Specifications

Materials		
Stem	Brass	Stainless Steel
Mounting element	Brass	Stainless Steel
Float	Buna N	Stainless Steel
Operating Pressure	10 bar	20 bar
Float Temperature*	-20°C ... +80°C Water -20°C ... +110°C Oil	-20°C ... +150°C
Min. specific gravity of the liquid	0.46 g/cm ³	0.85 g/cm ³
Depth of immersion at a density of 1	~9mm	~21mm
Protection rating	IP65 (IP64 for Potted Cable/Leads)	

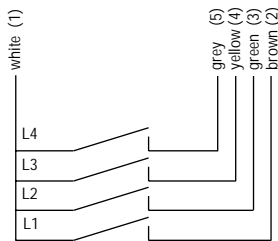
*Please see also "Electrical connection"



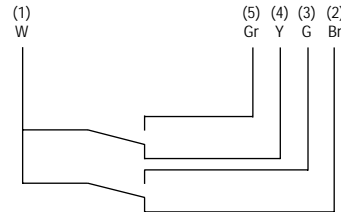
Switching groups

(Pin correlation of the plug connectors)

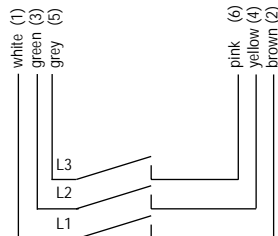
Group 1



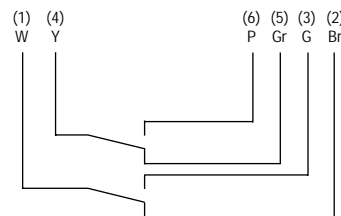
Group 3



Group 2



Group 4

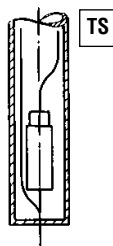


Temperature Switch

For large or OEM applications the LS-400E may be fitted with a temperature switch. It is installed at the lower end of the stem and reduces the number of switch points by one.

Maximum Rating 2A, 120Vac, 2A, 24Vdc.

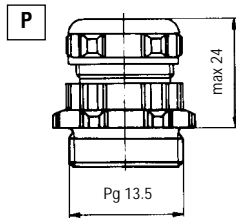
For full specification contact your sales office.



Electrical Connection

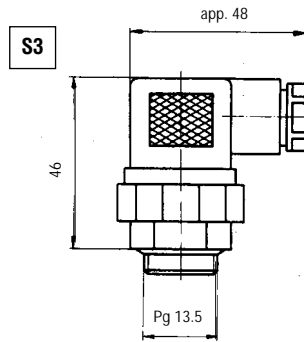
Pg 13.5 Cable gland

Cable (PVC=0.34mm² or 0.25mm²)
standard length appr. 1m;
Temperature: -20 ... +80°C



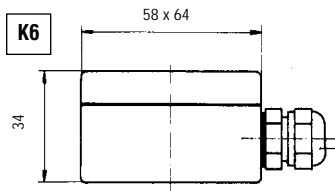
Plug connector acc. DIN 43650

3 poles + earth
Temperature: -20 ... +90°C



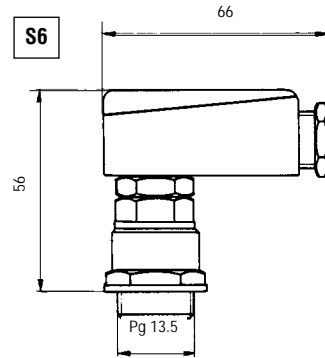
Terminal box 6-poles

Temperature: -20 ... +150°C

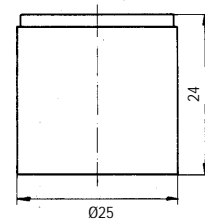


Plug connector acc. DIN 43651

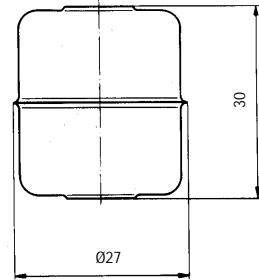
6 poles + earth
Temperature: -20 ... +90°C



Floats

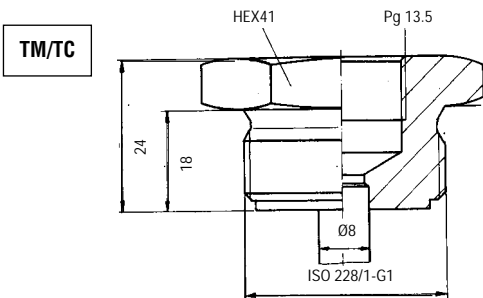


N = Buna N

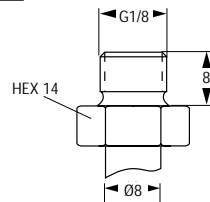


C = Stainless Steel

Mounting Element

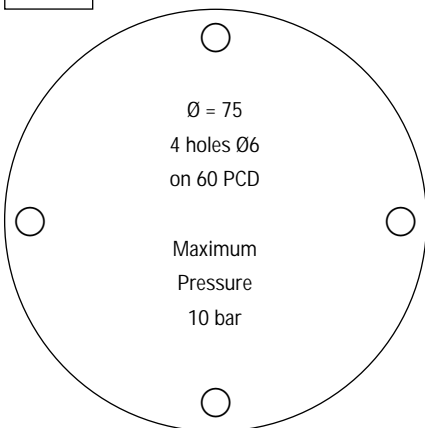


CM/CC

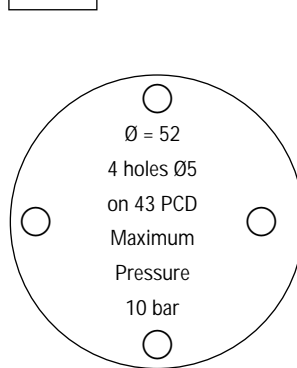


Available with potted cable/leads only.

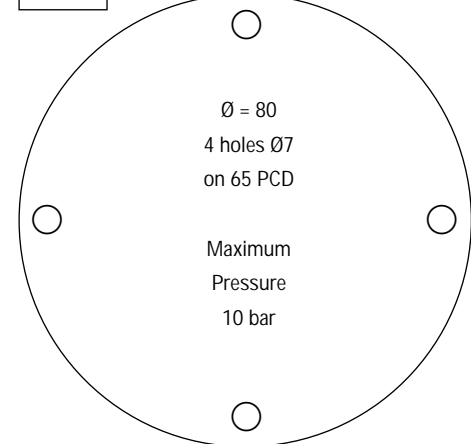
BM1



BM2



BM3



Flanges are only available with DIN 43650 Connector or Potted Cable/Leads.

Flange thickness = 8mm

Standard flanges shown

Other flanges available for OEM applications.

LS-400E Multiple Level Switch check list

(Please copy and use as order form)

Customer: _____

Order no.: _____ Quantity: _____

Application specific data:

(Please complete fully and accurately)

1. Medium _____
2. Pressure (bar): Min _____ Max _____
3. Temperature (°C): Min _____ Max _____
4. Specific gravity (g/cm3): _____ Min _____ Max _____
5. Viscosity (SSU): _____
6. Tank: Material _____ Depth _____
7. Connection periphery (eg relay, PLC,.....): _____

LS-400E - 1. 2. 3. 4. 5. 6.

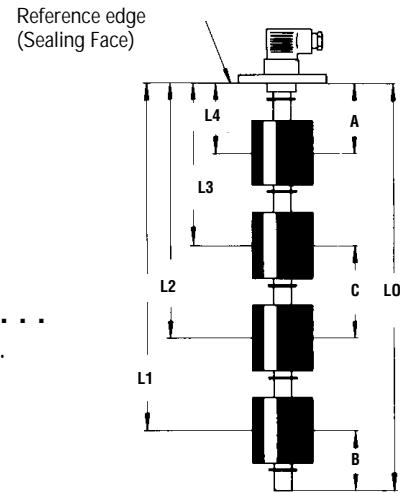
- | | |
|----------------------------------|--|
| 1. Mounting direction: | Through tank top <input type="checkbox"/> O |
| | Through tank bottom <input type="checkbox"/> U |
| 2. Mounting Tank screw: | Brass <input type="checkbox"/> TM |
| | Stainless Steel <input type="checkbox"/> TC |
| Flange ø75: | Brass <input type="checkbox"/> BM1 |
| ø52: | Brass <input type="checkbox"/> BM2 |
| ø80: | Brass <input type="checkbox"/> BM3 |
| Put in Plug G1/8: | Brass <input type="checkbox"/> CM |
| | Stainless Steel <input type="checkbox"/> CC |
| 3. Floats: | Buna N <input type="checkbox"/> N |
| | Stainless Steel <input type="checkbox"/> C |
| 4. Electrical connection: | <input type="checkbox"/> S3 |
| | Plug connector DIN 43650 |
| | max. switch points Group 1=2, Group 2=1 |
| | Plug connector DIN 43651 <input type="checkbox"/> S6 |
| | Cable and gland <input type="checkbox"/> P |
| | Potted Cable <input type="checkbox"/> VC |
| | Potted Leads <input type="checkbox"/> VL |
| | Terminal box 6-poles <input type="checkbox"/> K6 |
| 5. Switching group: | <input type="checkbox"/> 1 |
| | Group 1 |
| | Group 2 <input type="checkbox"/> 2 |
| | Group 3 (10VA, 0.3A, 100Vdc) <input type="checkbox"/> 3 |
| | Group 4 (10VA, 0.3A, 100Vdc) <input type="checkbox"/> 4 |
| 6. Options: | <input type="checkbox"/> BS |
| | Bent Stem |
| | Temperature Switch <input type="checkbox"/> TS |

Please specify each non listed part:

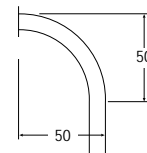
Dimensions

- L₀** = 800mm max.
- A** = min. from reference edge to highest switch point.
- B** = min. from stem end to lowest switch point.
- C** = min. between two switch points
- D** = min. dual action
(One float actuates two switch points).

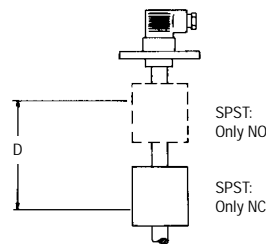
Stem	Brass	Stainless Steel
A	38mm	46mm
B	23mm	35mm
C	44mm	60mm
D	3mm	3mm



Bent Stem Option



Add 50mm to 'A' Dimension



Level dimensions (Tolerances ± 3mm) related to the mid of float.

Distance level	NO	NC	SPDT
L1 =	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L2 =	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L3 =	<input type="checkbox"/>	<input type="checkbox"/>	
L4 =	<input type="checkbox"/>	<input type="checkbox"/>	
L0 =	±2mm	max. 800 mm	

Multiple Level Switch LS-800E (1 - 7 switch points)

Max. contact loads of the reed switch: SPST 100 VA; 3.0 A; 250 VAC (NC/NO).
 SPDT 20 VA; 0.5 A; 250 VAC (Change-over contact).
 The data NC/NO are defined for: an empty tank / rising level.

Specifications

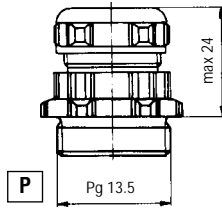
Materials			
Stem	Brass	Stainless Steel	
Mounting elements			
Tank screw	Brass	Stainless Steel	
Flange		Stainless Steel	
Bulkhead fitting	Brass	Stainless Steel	
Put in plug	Brass	Stainless Steel	

Float	Buna N	Stainless Steel	PTFE
Operating Pressure	10 bar	30 bar	3 bar
Float Temperature*	-20°C ... +80°C Water -20°C ... +110°C Oil	-20°C ... +150°C	-20°C ... +150°C
Min. specific gravity of the liquid	0.58 g/cm ³	0.80 g/cm ³	0.71 g/cm ³
Depth of immersion at a density of 1	~20mm	~30mm	~34mm
Protection rating	IP65 (IP64 for Potted Cable/Leads)		

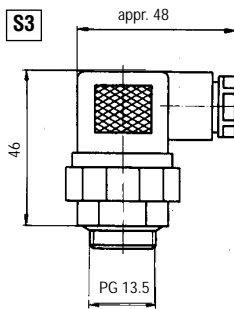
*(Please see also "Electrical connection")

Electrical connections

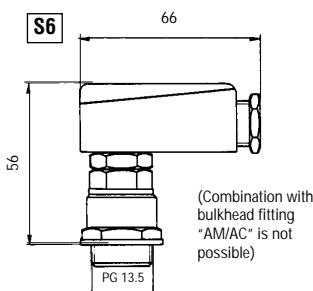
Pg 13.5 Cable and gland
 Cable standard length appr. 1m;
 Temperature: -20 ... +80°C



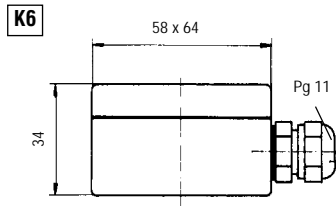
Plug connector acc. DIN43650* 3 poles + earth
 Temperature: -20 ... +90°C
 max switch points: Group 1 : 2, Group 2 : 1



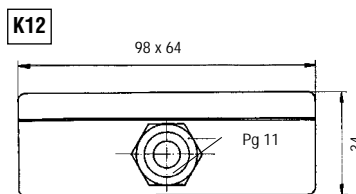
Plug connector acc. DIN43651* 6 poles + earth
 Temperature: -20 ... +90°C
 max switch points: Group 1 : 5, Group 2 : 3,
 Group 3 : 2, Group 4 : 2



Terminal box 6 poles*
 Temperature: -20 ... +150°C



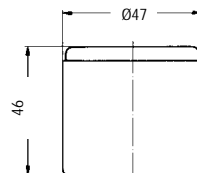
Terminal box 12 poles*
 Temperature: -20 ... +150°C



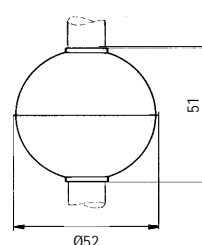
***Combination with put in plug "EM/EC" is not possible**

Floats

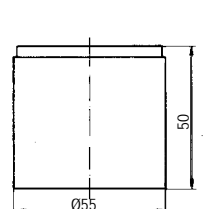
N = Buna N



C = Stainless Steel



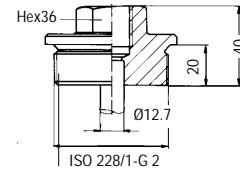
T = PTFE



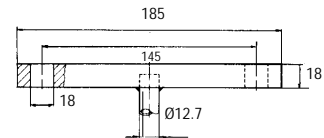
Mounting elements

(Material: Stainless Steel or brass)

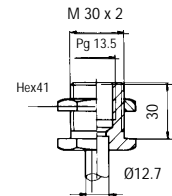
T = Tank screw DIN 910



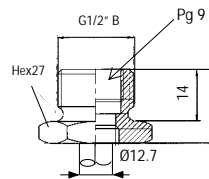
BCC = Flange DN65-PN 16



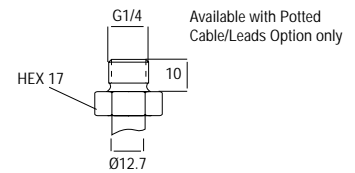
A = Bulkhead fitting



E = Put in plug G1/2



D = Put in plug G1/4



Options

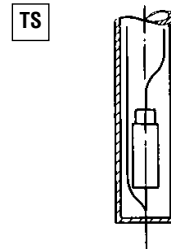


Temperature Switch

For large or OEM applications the LS-800E may be fitted with a temperature switch. It is installed at the lower end of the stem and reduces the number of switch points by one.

For full specification contact your sales office.

Temperature switch



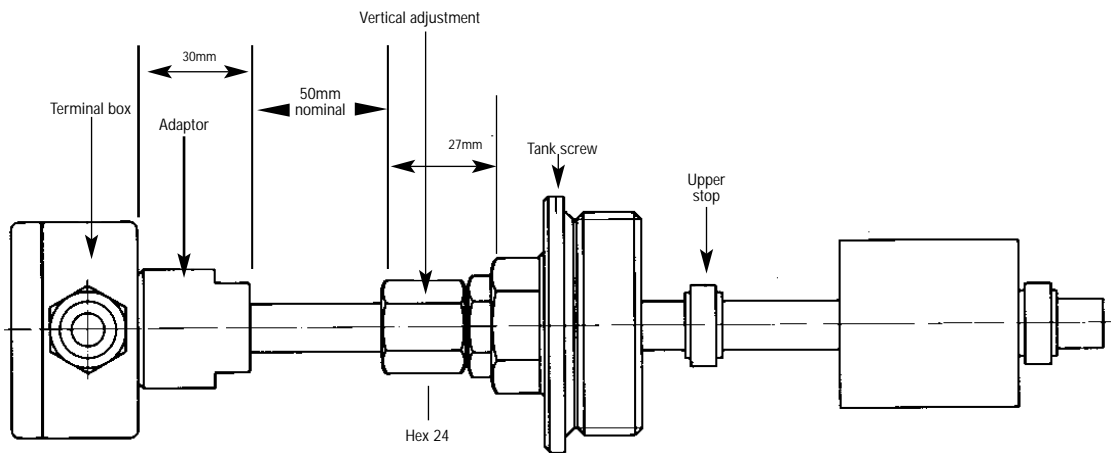
Vertical adjustment

Vertical adjustment is only available with tank screw (T). It allows the stem to be adjusted vertically, limited only by the distance from the top stop ring to the electrical connector less the thickness of the mounting.

(Combination with bulkhead fitting "AM/AC" is not possible)

Vertical adjustment

VVM = Brass
VVC = Stainless Steel
 max. pressure: 10 bar



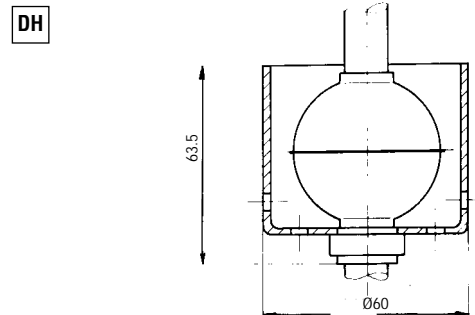
Slosh shield

Each switch point can be equipped with a slosh shield, made from Stainless Steel, to avoid unintentional repetitive opening and closing of the switch due to turbulence or ripple.

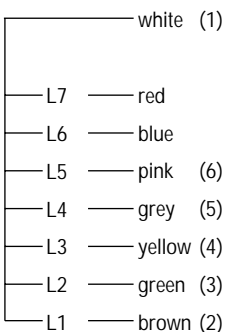
(Combination with tank screw "TM/TC" is not possible)

Slosh shield

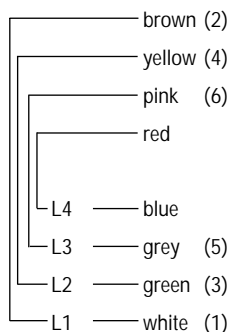
Material: Stainless Steel



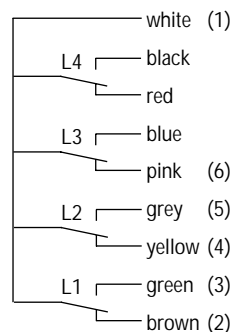
Switching groups (Pin correlation of the plug connectors)



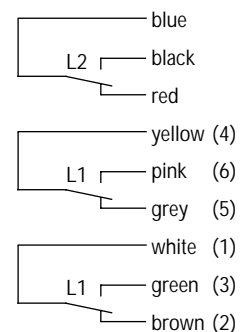
Group 1, max. 7 switch points, NC/NO



Group 2, max. 4 switch points, NC/NO



Group 3, max. 4 switch points (SPDT)



Group 4, max. 3 switch points (SPDT)

LS-800E Multiple Level Switch check list

(Please copy and use as order form)

Customer: _____

Order no.: _____ Quantity: _____

Application specific data:
(Please complete fully and accurately)

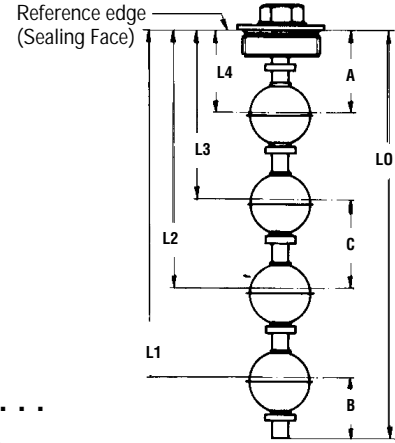
1. Medium _____
2. Pressure (bar): Min _____ Max _____
3. Temperature (°C): Min _____ Max _____
4. Specific gravity (g/cm3): _____ Min _____ Max _____
5. Viscosity (SSU): _____
6. Tank: Material _____ Depth _____
7. Connection periphery (eg relay, PLC,.....): _____

LS-800E - 1. 2. 3. 4. 5. 6.

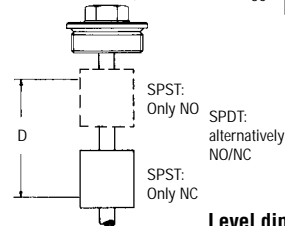
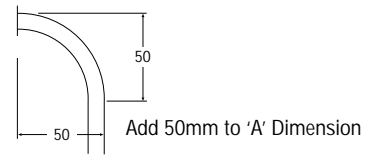
- 1. Mounting direction:**
 - Through tank top **O**
 - Through tank bottom **U**
- 2. Mounting:**
 - Tank screw G2"**
 - Brass **TM**
 - Stainless Steel **TC**
 - Bulkhead fitting**
 - Brass **AM**
 - Stainless Steel **AC**
 - Put in plug G1/2"**
 - Brass **EM**
 - Stainless Steel **EC**
 - Flange DN 65/PN16**
 - Stainless Steel **BCC**
 - Put in plug G1/4"**
 - Brass **DM**
 - Stainless Steel **DC**
- 3. Floats:**
 - Buna N **N**
 - Teflon **T**
 - Stainless Steel **C**
- 4. Electrical connection:**
 - Plug connector DIN 43650 **S3**
 - Plug connector DIN 43651 (Not with AM/AC) **S6**
 - Cable gland **P**
 - Potted Cable **VC**
 - Potted Leads **VL**
 - Terminal box 6-poles **K6**
 - Terminal box 12-poles **K12**
- 5. Switching group:**
 - Group 1 **1**
 - Group 2 **2**
 - Group 3 **3**
 - Group 4 **4**
- 6. Options:**
 - Vertical adjustment Brass **VVM**
 - Vertical adjustment Stainless Steel **VVC**
 - Slosh Shield **DH**
 - Temperature Switch **TS**
 - Bent Stem **BS**

Dimensions

- L₀** = 3000mm max.
- A** = 60mm min. distance to highest switch point.
- B** = 50mm min. distance between stem and lowest switch point.
- C** = 75mm min. between two switch points
- D** = 7mm min. dual action
(One float actuates two switch points).



Bent Stem Option



Level dimensions (Tolerances ± 3mm) related to the mid of float.

Distance level	NO group 1	NC group 1	NO group 2	NC group 2	SPDT group 3	SPDT group 4
L1 =	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L2 =	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L3 =	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L4 =	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L5 =	<input type="checkbox"/>	<input type="checkbox"/>				
L6 =	<input type="checkbox"/>	<input type="checkbox"/>				
L7 =	<input type="checkbox"/>	<input type="checkbox"/>				
L0 =	±2mm		max 3000 mm			

Please specify each non listed part:

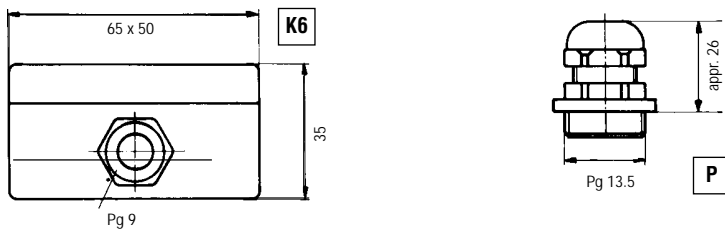
Multiple Level Switch LS-800E-PVC (1...4 switch points)

Max. contact loads of the reed switch: SPST 100 VA; 3 A; 250 VAC (NC/NO).
 SPDT 20 VA; 0.5 A; 250 VAC (Change-over contact).
 The data NC/NO are defined for: an empty tank / rising level.

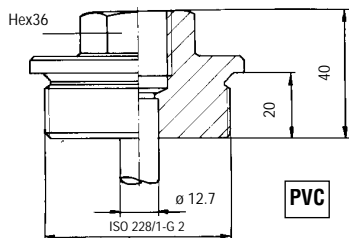
Specifications

Materials	
Stem	PVC
Mounting elements	PVC
Float	PVC
Electrical connection	
Terminal Box (ABS) 6 pole Pg 9 cable gland with 1m PVC-cable (0.34/0.25mm ²)	
Operating Pressure	1.0 bar
Temperature	-20°C ... +60°C
Min. specific gravity of the liquid	0.75 g/cm ³
Depth of immersion at a density of 1	~22mm
Protection rating	IP65

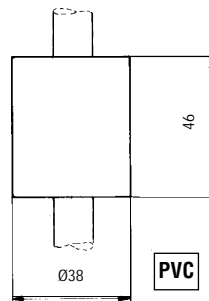
Electrical connection



Mounting elements

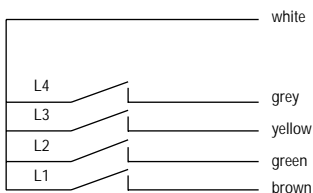


Floats

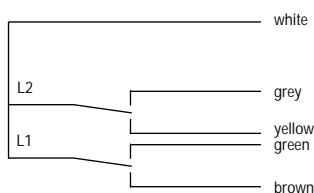


Switching groups PVC model

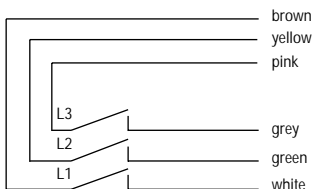
Group 1, max 4 switch points, NC/NO



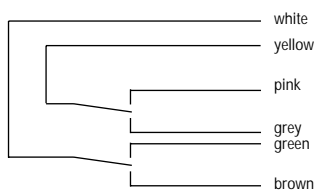
Group 3, max 2 switch points, (SPDT)



Group 2, max 3 switch points, NC/NO



Group 4, max 2 switch points, (SPDT)



LEVEL SWITCHES



LS-800E-PVC Multiple Level Switch check list Dimensions PVC model

(Please copy and use as order form)

Customer: _____

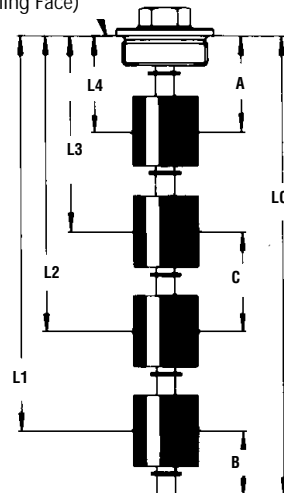
Order no.: _____ Quantity: _____

Application specific data:
(Please complete fully and accurately)

1. Medium _____
2. Pressure (bar): Min _____ Max _____
3. Temperature (°C): Min _____ Max _____
4. Specific gravity (g/cm3): _____ Min _____ Max _____
5. Viscosity (SSU): _____
6. Tank: Material _____ Depth _____
7. Connection periphery (eg relay, PLC,.....): _____

- A = 58mm min. distance to upper switch point
- B = 50mm min. distance stem end to lowest switch point
- C = 75mm min. distance between two switch points
- D = 7mm min. distance between two switch points actuated by one float

Reference edge
(Sealing Face)



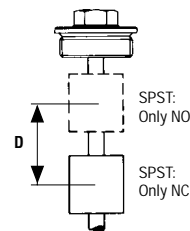
LS-800E - PVC

1. 2. 3.

Order data

1. **Mounting direction:**
 - Through tank top **0**
 - Through tank bottom **U**
2. **Electrical connection:**
 - Pg9 cable and gland (standard length: 1m) **P**
 - Terminal box 6-poles **K6**
3. **Switching:**
 - Group 1 **1**
 - Group 2 **2**
 - Group 3 **3**
 - Group 4 **4**

Dual-action:
One float actuates two
switch points
(max distance=D).



Level Dimensions (Tolerance ±3mm) related to the mid of float

Distance level	NO group 1	NC group 1	NO group 2	NC group 2	SPDT group 3	SPDT group 4
L1 =	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L2 =	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L3 =	<input type="checkbox"/>	<input type="checkbox"/>				
L4 =	<input type="checkbox"/>	<input type="checkbox"/>				
L0 =	±2mm		max 2000 mm			

Motors and Drives from 5 Watt to 1000 kW

- Servomotors
- Gears
- Geared motors
- Servo inverter
- Frequency inverter



Encoder and Length Measuring Systems

- Incremental Encoder
- Absolute Encoder
- (single-/multiturn)
- Profibus Encoder
- CAN-Bus Encoder
- Interbus Encoder
- Length Measuring Systems
- Heavy Duty Encoder
- Hollow Shaft Encoder with inside diameter 6–60 mm



Counting and Controlling

- Totalizing Counters
- Preset Counters
- Position Indicators
- Timers/Time Relays
- Tachometers
- Pneumatic Timers
- Process Controllers



Sensors for all Applications

- Opto-electronic sensors
- Contrast scanners
- Colour sensors
- Distance sensors
- Safety light curtain
- Light grid
- Laser scanner
- Safety switches
- Proximity switches





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