

# Electronic pressure switch

## Relative and differential pressure

### Model 711

WIKA data sheet PV 35.51

#### Applications

- Hydraulics
- Pneumatics
- Pump control
- Compressor control
- Water treatment plant
- Special purpose machines

#### Special features

- Stainless steel sensor
- Large display with backlight
- High accuracy
- Analog output
- Two and four setpoint relay output
- Multiple unit selection choice
- Fully configurable internal and external push switches

#### Description

Electronic Pressure Switch Model 711 is ideal for precise process pressure measurement. This instrument is built with high accurate piezo-resistive pressure sensor with 316SS diaphragm which is suitable for media like non-corrosive liquids and air.

A wide range of pressure readings with optimum resolution are indicated through a large LCD display with back light. Two or Four independent setpoint is provided with SPDT relay output for on-off control function.

In addition, this instrument provides 4–20 mA DC analog current output. The output current range is programmable within the instrument calibrated range.

Operational settings are done through 3 push switches accessible upon removal of cover or on the front through membrane keypad.

The entire circuitry is housed in a cast aluminium, IP65 compliant weatherproof enclosure suitable for surface / wall (or) pipe mounting.



Fig-1



Fig-2



Fig-3

- Fig-1: Model 711-R for 2 setpoint**  
(Internal terminal arrangement)
- Fig-2: Model 711-R for 4 setpoint**  
(Internal terminal arrangement)
- Fig-3: Model 711-D for 2 setpoints**  
(Internal terminal arrangement)

## Specifications

Basic information	
Model	<ul style="list-style-type: none"> <li>■ 711-R: Relative prssure</li> <li>■ 711-D: Differential pressure</li> </ul>
Case	Die cast aluminium weatherproof to IP:65, IEC 60529
Display	<ul style="list-style-type: none"> <li>■ 1 × 8 dot matrix LCD with yellow green back light</li> <li>■ 4 digit, 7 segment, red colour LED</li> </ul>
Display character height	<ul style="list-style-type: none"> <li>■ 10.7 mm for LCD</li> <li>■ 13 mm for LED</li> </ul>
Proces value	4 digits, 9999 counts maximum
Decimal point	Automatically selected based on range

Sensor element	
Type	Piezo-resistive 316 SS sensor
Media	Liquids and gases compatible to 316 SS
Wetted parts	316 SS with Viton® 'O' ring

Output signal	
Relative pressure range	<ul style="list-style-type: none"> <li>■ Standard: 0 ... 700 mbar, 0 ... 400 bar</li> <li>■ Flush mount: 0 ... 700 mbar, 0 ... 35 bar</li> <li>■ Triclover: 0 ... 700 mbar, 0 ... 10 bar</li> </ul>
Differential pressure range	0 ... 3500 mmWC standard
Maximum working pressure	→ See table "Range" For differential presure the MWP at High port <7000 mmWC & Low port <3500 mmWC
Response time	<1 second
Accuracy (inclusive of linearity, hysteresis and repeatability)	<ul style="list-style-type: none"> <li>■ ±0.3% FSR (relative pressure)</li> <li>■ ±0.5% FSR (differntial pressure)</li> </ul>
Number of setpoint	<ul style="list-style-type: none"> <li>■ 2</li> <li>■ 4 (only in relative pressure)</li> </ul>
Display unit	8 units only in LCD (cmWC, mbar, mmWC, psi, bar, Kg/cm <sup>2</sup> , KPa, MPa)
Deadband	Configuable through Relay ON and OFF setting
Analog output	Current: 4 to 20 mA
Analog output range	Any range programmable within the instrument calibrated range.
Analog output load capacity	400 Ohms
Relay status	Relay On indication by LEDs for each setpoint
Time delay	0 ... 250 seconds continuously selectable

\* Viton® is a registered trademark of DuPont Dow Elastomers

Electrical connection	
Power supply	<ul style="list-style-type: none"> <li>■ 100V to 240V AC</li> <li>■ 18V to 32V DC</li> </ul>
Electrical connection (Power, relay & analog output)	<ul style="list-style-type: none"> <li>■ Internal Terminal – 2 setpoint: 10 position screw clamp terminals through 2 × M16 PVC cable gland suitable for 4 to 8 mm OD cable</li> <li>■ Internal Terminal – 4 setpoint: 16 position screw clamp terminals through 4 × M16 PVC cable gland suitable for 4 to 8 mm OD cable</li> <li>■ External Terminal – 14 pole plug in terminal available on the top of instrument through 2 × PG11 cable gland</li> </ul>
Relay contact rating	5A at 250V AC / 28 VDC <ul style="list-style-type: none"> <li>■ Internal terminal – 2 or 4 setpoint with independent relay contacts</li> <li>■ External terminal – 4 setpoint with 4 relays, each of 2 relays grouped together with one common 'C' connection. 'NO' &amp; 'NC' connections are independent.</li> </ul>

Process connection	
Thread size	Refer ordering matrix
Material	316 SS

Environment conditions	
Ambient temperature	0 ... 60°C
Process temperature	<ul style="list-style-type: none"> <li>■ Standard process connection               <ul style="list-style-type: none"> <li>— 0°C to 85°C without Heat Sink</li> <li>— upto 125°C with Heat Sink</li> </ul> </li> <li>■ Flush mount, Triclover and differential process connection               <ul style="list-style-type: none"> <li>— 0°C to 60°C</li> </ul> </li> </ul>
Ambient relative humidity	95%
Mounting	<ul style="list-style-type: none"> <li>■ Direct on line</li> <li>■ 2" pipe</li> </ul>
Ingress protection	IP65

## Ordering matrix

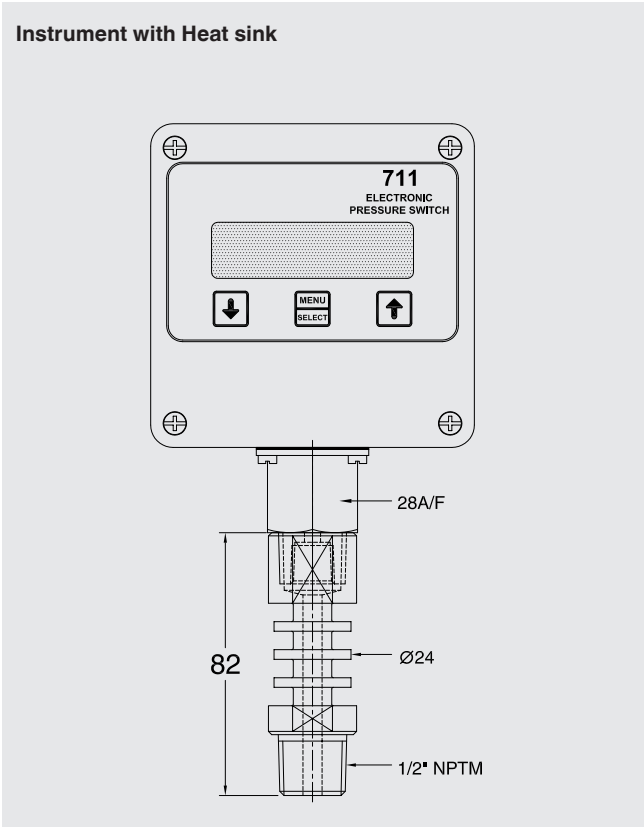
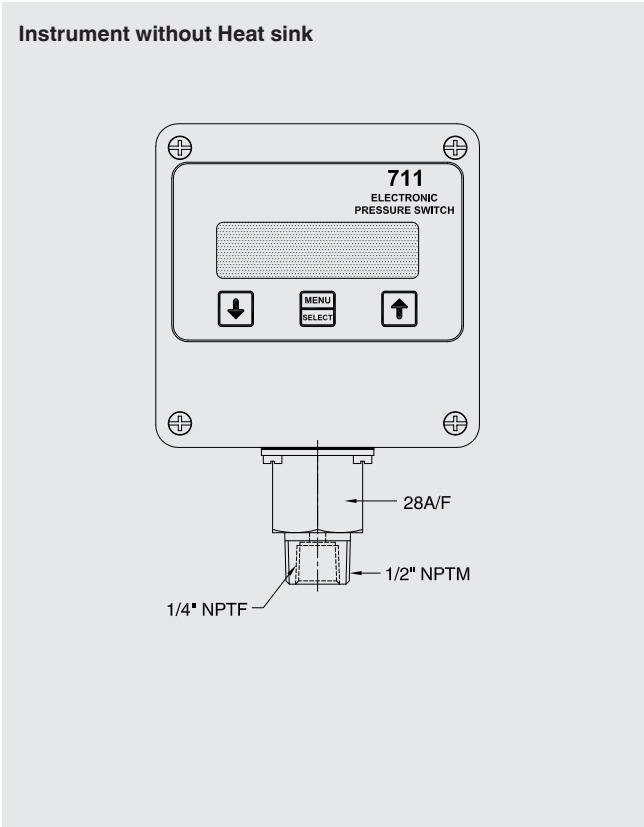
Basic model number for model, relative pressure	711-R								
Basic model number for model, differential pressure	711-D								
<b>Range</b>									
Select code from range table									
<b>Number of setpoint</b>									
Two									2
Four									4
<b>Power supply</b>									
100 to 240V AC									L
18 to 32V DC									P
<b>Process connection</b>									
<i>For 711-R (Relative pressure)</i>									
Standard: 1/2" NPTM and 1/4" NPTF									F
Flush mount: 3/4" BSPM									G
1" 316 SS Triclover clamp with fittings									L
1/2" BSPM and 1/4" BSPF									S02
<i>For 711-D (Differential pressure)</i>									
2 x 1/4" NPTF high, low									S01
<b>Process temperature</b>									
Below 60°C (only flush mount, triclover and differential process connection)									I
Below 85°C without Heat sink (only standard process connection)									N
Above 85°C below 125°C with Heat sink, 316 SS (only standard process connection)									H
<b>Mounting</b>									
On-line									Z
Wall									W
2" Pipe									2
Special mounting plate (only for external terminal type, 4 set point)									S
<b>Mounting material</b>									
Not applicable									0
Powder coated mild steel									C
316 Stainless steel									2
<b>Display</b>									
LED									B
LCD									C
<b>Electrical terminal arrangement</b>									
Internal terminal									Z
External terminal plug-in type									V

# Range table

Range Code	Range	Maximum working pressure
Relative pressure (model 711-R)		
M023	0 ... 200 mbar	400 mbar
M033	0 ... 700 mbar	1400 mbar
B004	0 ... 1 bar	2 bar
B006	0 ... 2 bar	4 bar
B008	0 ... 3.5 bar	7 bar
B011	0 ... 10 bar	20 bar
B012 ★	0 ... 20 bar	40 bar
B013 ★	0 ... 35 bar	70 bar
B016 §	0 ... 100 bar	150 bar
B017 §	0 ... 200 bar	300 bar
B018 §	0 ... 350 bar	500 bar
B019 §	0 ... 400 bar	600 bar
Dirrerential pressure (model 711-D)		
M026	0 ... 350 mbar	700 mbar

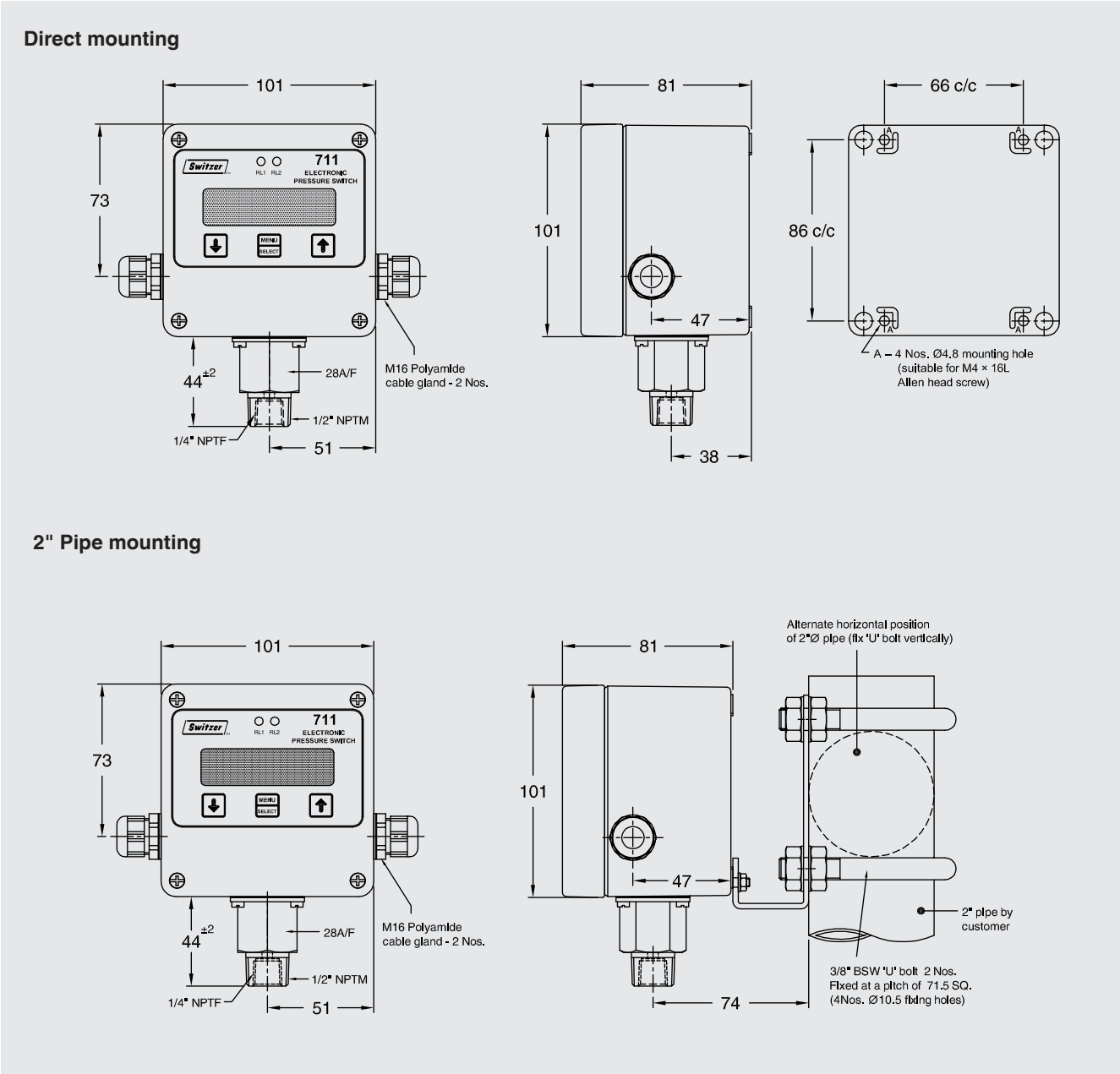
- ★ Not available in Triclover option
- § Not available in flush mount and triclover option

# Heat sink (for code ‘H’)

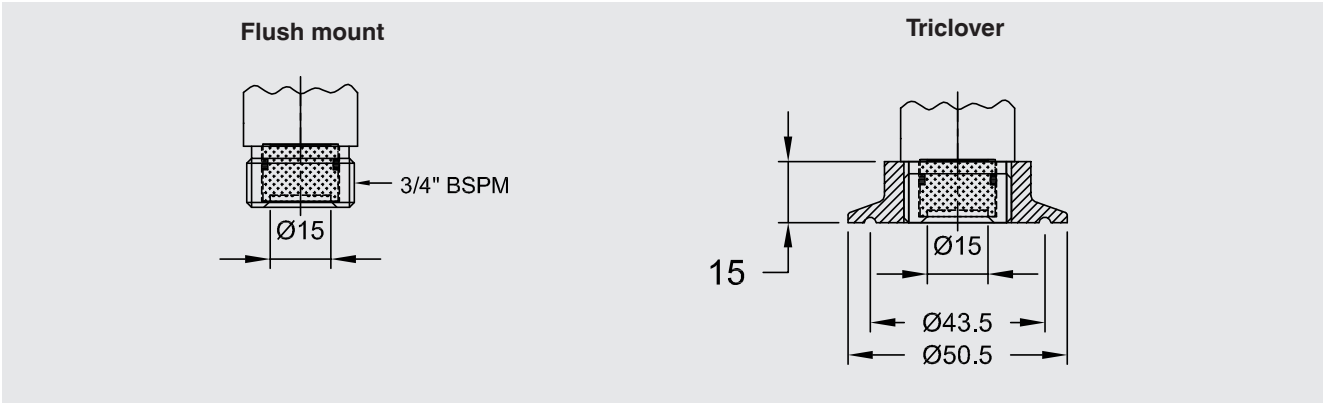


Dimensions in mm

Relative pressure two setpoint

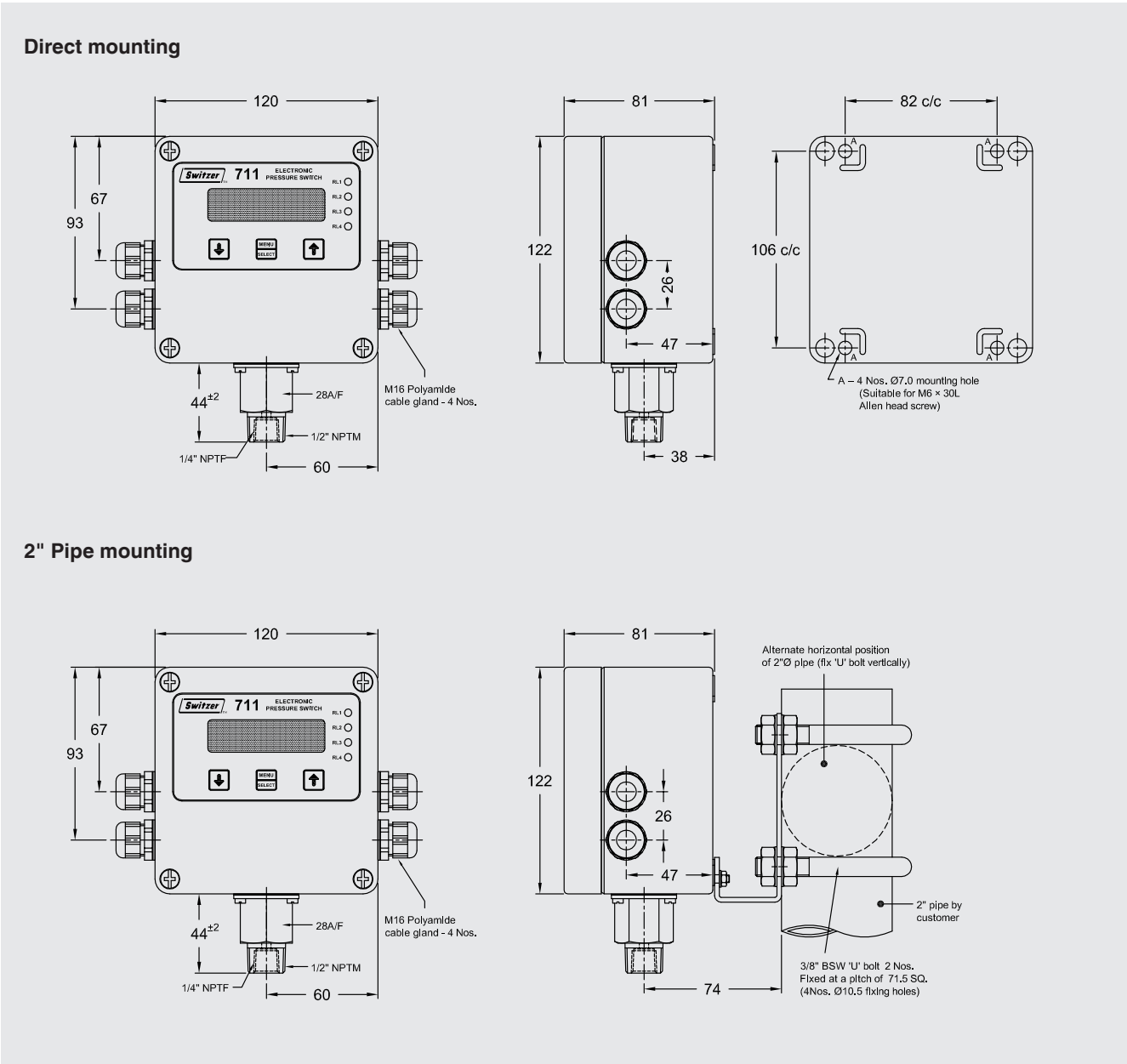


Optional Process Connection for Two and Four setpoint



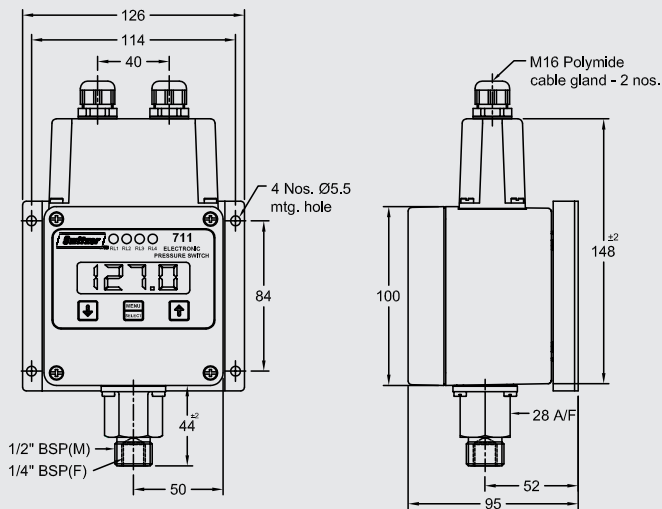
Dimensions in mm

Relative pressure four setpoint

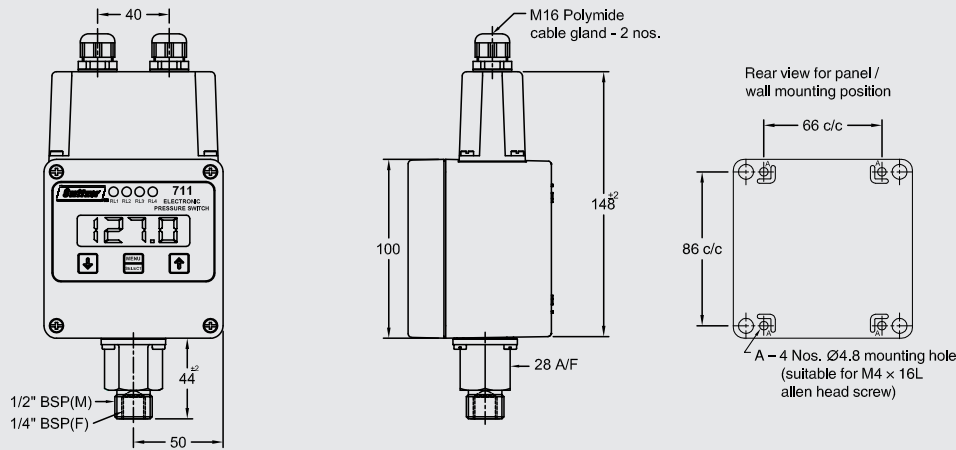


Dimensions in mm

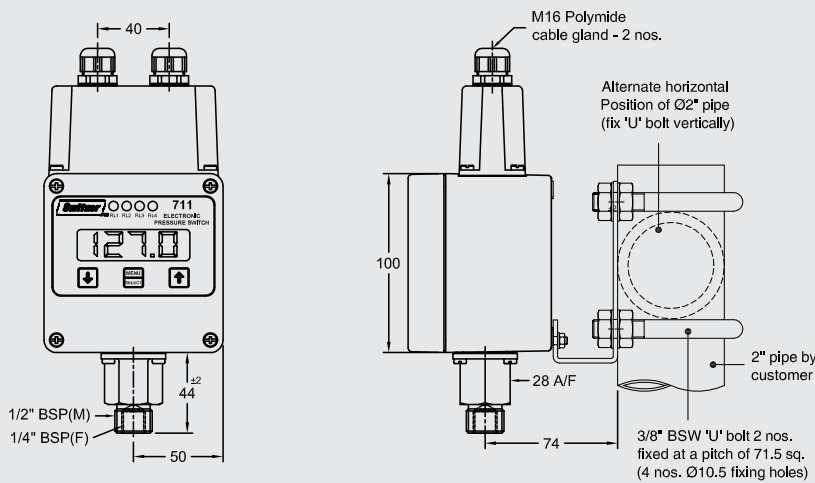
Relative pressure four setpoint – External



Direct mounting



2" Pipe mounting

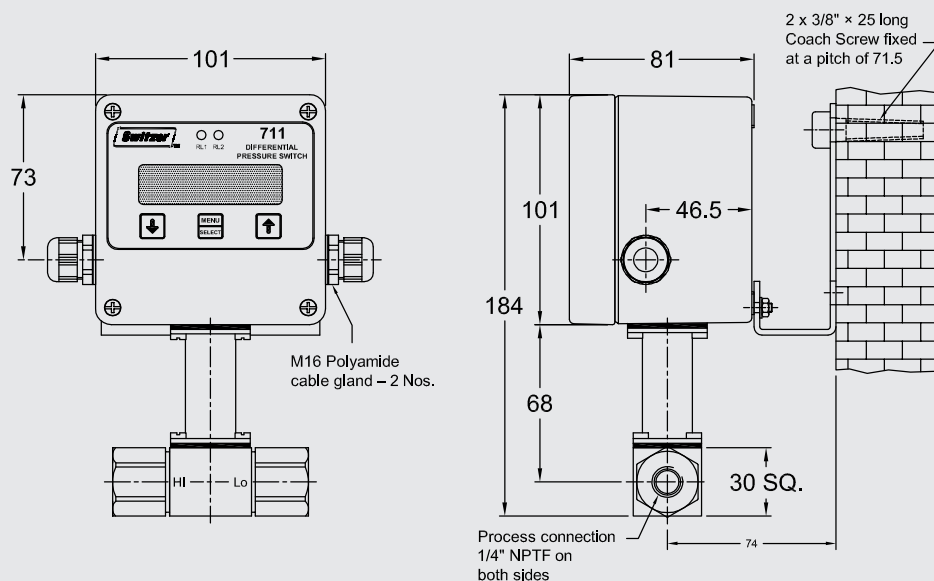




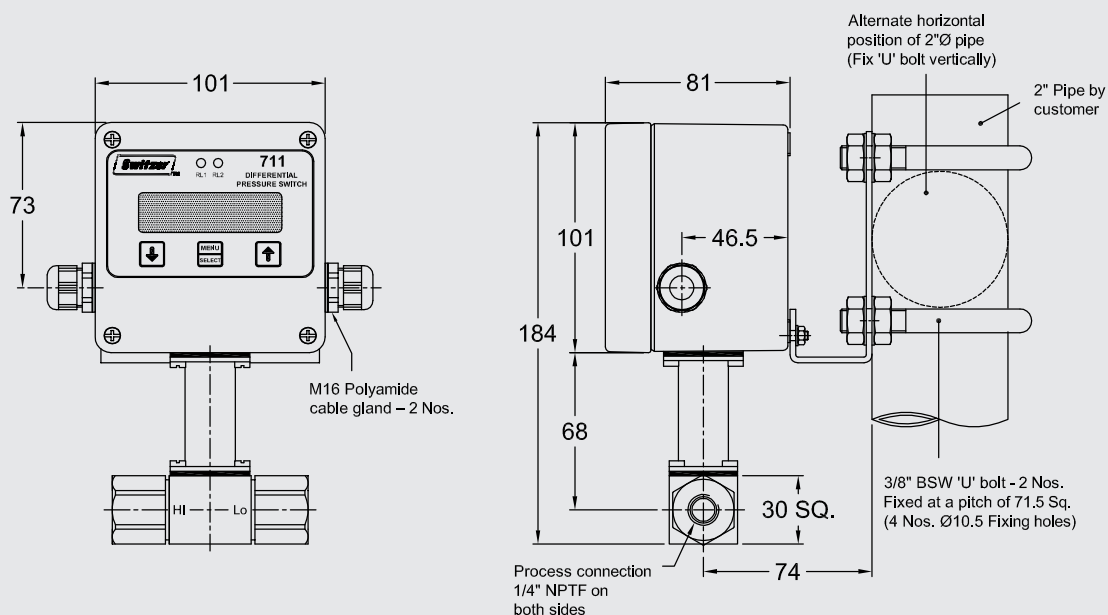
## Dimensions in mm

### Differential pressure two setpoint

#### Wall mounting



#### 2" Pipe mounting



#### Ordering information

Basic model number / Range / Number of setpoint / Power supply / Process connection / Process temperature / Mounting / Mounting material / Display / Electrical terminal arrangement

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