


Technical Features

- › Suitable for indoor and outdoor applications, thanks to anticorrosive treatment
- › Digital display indicating actual system pressure
- › Rotatable 320° display
- › Rotatable 320° steel body with connection
- › Two adjustable pressure switch points
- › Analogue output signal 4 - 20 mA
- › High accuracy ceramic sensor
- › Rugged design, vibration-and shock proof
- › High immunity to electromagnetic radiation
- › 12 bit self-monitoring microprocessor with error code display

Functional Description

The pressure switch is intended for indication reaching the set pressure in the hydraulic circuit. The digital display allows visual pressure monitoring. Electronic pressure switch TSE2-D with a digital display is fully programmable using three integrated buttons, also out of hydraulic circuit. Twelve bit processor provides contact switching with the frequency up to 100 Hz and a time shifted switching. The analogue output signal can be set from 25 to 100 %.

The pressure switch is produced in three basic versions:

- single pressure switch with an analogue output 4... 20 mA
- dual pressure switch
- dual pressure switch with an analogue output 4... 20 mA

Technical Data

Sensor element		Ceramic sensor	
Materials	Electronics housing	Stainless steel, mat. no. V2A, PA	
	Wetted parts	Stainless steel, mat. no. 1.4301	
	Seals	FKM	
Process connection (external)		G1/4	
Measuring ranges		bar (PSI)	0... 100 (0... 1500) 0... 400 (0... 6000)
Proof pressure		bar (PSI)	150 (2200) 600 (8700)
Operating elements		3 easy-response pushbuttons	
System of protection EN 60529		IP65	
Protection class		III	
Electrical connection		Plug M12x1 (4-pin / 5-pin see el. connection)	
Mass		kg (lbs)	0.3 (0.66)
Electrical data			
A/D converter		12 bit	
Resolution		4096 steps per measuring span	
Scanning rate		1000/s	
Linearity error		< ± 0.5 % v. f. s. at 25 °C (77 °F)	
Temperature influence		< ± 0.2 % v.f.s. / 10K	
Compensation range		°C (°F)	-10... +70 (+14... +158)
Repeatability		± 0.1 % v. f. s.	
Temperature range:			
Medium		°C (°F)	-25... +100 (-13... +212)
Electronics			-10... +70 (+14... +158)
Storage			-30... +80 (-22... +176)
Power supply		V DC	15... 32, reversed polarity protected (SELV, PELV)
Digital display		4-digit 14-segment LED display, red, digit height 9 mm	
Error display		LED red and alphanumeric display	
Power consumption		mA	approx. 50 (without load)
Analog output		4... 20 mA	
Scanning rate		2 ms	
Adjustment range		25... 100 % f.s.	
Transistor switching outputs PNP			
Switching function		normally open / normally closed, standard / window mode and diagnosis function adjustable	
Adjustment range for switching point and hysteresis		0... 125 % f. s.	
Max. switching frequency		Hz	100
Load		max. 500 mA, short-circuit proof	
Delay		0... 50 s adjustable	

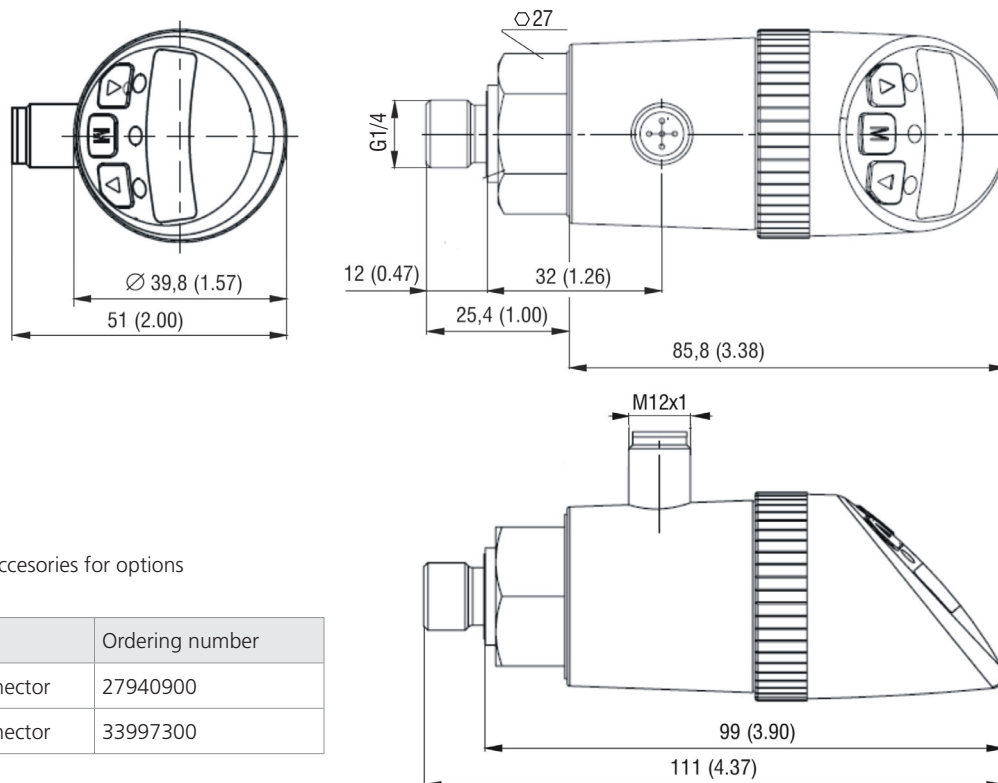
Approvals

EMV	
EN 61000-4-2 ESD	4 kV DC/8 kW AD
EN 61000-4-3 HF radiated	10 V/m
EN 61000-4-4 Burst	2 kV
EN 61000-4-5 Surge	0.5/1 kV
EN 61000-4-6 HF conducted	10 V
Mechanical shock and vibration	
DIN EN 60028-2-27 shock resistance	50 g (11 ms)
DIN EN 60028-2-26 vibrations resistance	20 g (10... 2000 Hz)
certification cULus	E42816

In the pressure inlet a damping screw made of brass is mounted. This screw can be removed, if required, e.g. in the case of soiled medium or material incompatibility, using a slotted screw driver [max. width 3 mm (0.12 in)]. The pressure switch is less resistant to pressure peaks when the damping screw has been removed.

Dimensions in millimeters (inches)

TSE2-D

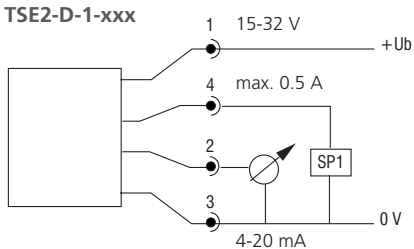


Mating connector not included, see accessories for options

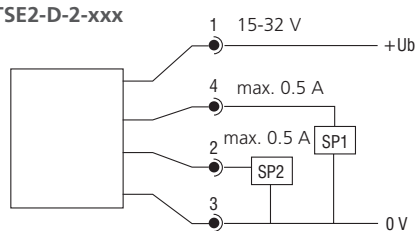
Accessories	Ordering number
4 pin M12x1 female right angle connector	27940900
5 pin M12x1 female right angle connector	33997300

Electrical Connection Schematic

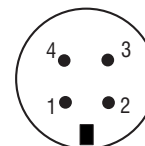
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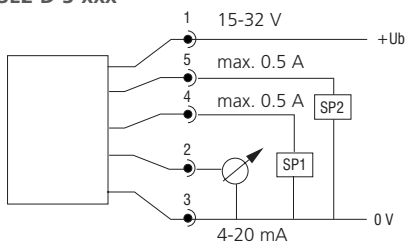
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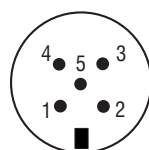
4-pin connector M12x1



TSE2-D-3-xxx



5-pin connector M12x1



- 1 - brown
- 2 - white
- 3 - blue
- 4 - black
- 5 - gray

Ordering Code

TSE2-D- -

Electronic pressure switches with display

Switching output

- Single pressure switch with an analogue output 4... 20 mA **1**
- Dual pressure switch (no analogue output) **2**
- Dual pressure switch with an analogue output 4... 20 mA **3**

- 100**
- 400**

Pressure range

- 0 ... 100 bar (1500 PSI)
- 0 ... 400 bar (6000 PSI)