

TED

Pressure switch

TED-#.#.#.###.#

Overview

- -1 ... 0 bar up to 0 ... 400 bar
- Robust stainless steel housing for severe industrial environments
- Abrasive and chemical resistant
- Two threshold outputs (PNP transistors or galvanic isolation)



Technical data

Performance characteristics

Pressure type	Absolute Relative (gauged)
Long term stability	≤ 0.2 % FSR/a
Max. measuring error	≤ 0.5 % FSR Including zero-point and span error, non-linearity (by terminal base line), hysteresis and non-repeatability (EN 61298-2)
Max. measuring span	401 bar
Measuring range	-1 ... 400 bar
Standard error of measurement (BFSL)	± 0.3 % FSR Including non-linearity, hysteresis and non-repeatability according BFSL
Threshold setting range	2 ... 98 % FSR
Min. measuring span	1 bar
Rise time (10 ... 90 %)	≤ 20 ms
Temperature coefficient	≤ 0.15 % FSR/10 K

Process conditions

Process temperature	-25 ... 100 °C
Process pressure	Refer to section "Process conditions"

Process connection

Connection variants	Refer to section "Dimensional drawings"
Wetted parts material, process connection	AISI 316L (1.4404)
Wetted parts material, membrane	Ceramic, 96% AL2O3
Wetted parts material, gasket	NBR, optional EPDM, optional EPDM O-rings are conform to 3-A Sanitary Standard 18-03 Class II, EPDM gaskets are conform to 3-A Sanitary Standard 18-03 Class I (8% milk fat max.) FKM, optional, gaskets require a minimum ambient temperature of -20 °C and a minimum medium temperature of -25 °C FFKM

Ambient conditions

Operating temperature range	-25 ... 85 °C
Storage temperature range	-40 ... 85 °C
Degree of protection (EN 60529)	IP 67 0
Shock (EN 60068-2-27)	25 falls from 1 m onto concrete floor
Vibration (sinusoidal) (EN 60068-2-6)	1.5 mm p-p (10 ... 58 Hz), 20 g (58 Hz ... 2 kHz)

Output signal

Current output	4 ... 20 mA , 2-wire 4 ... 20 mA , 3-wire
Output signal	Modbus RS485 2 galvanic separated switching points 2 switching points
Load resistance	$R_s \leq (V_s - 10 \text{ V})/0.02 \text{ A}$, with 2-wire $R_s \leq 400 \Omega$, with 3-wire > 5 kΩ, with voltage output
Insulation resistance	> 100 MΩ , 500 V DC

Housing

Style	Compact transmitter
Overall size	Refer to section "Dimensional drawings"
Material	AISI 304 (1.4301)

Electrical connection

Connector	M12-A, 5-pin M12-A, 8-pin, stainless steel
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Power supply

Voltage supply range	10 ... 32 V DC , 2-wire 18 ... 32 V DC , 3-wire
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Compliance and approvals

EMC	EN 61000-6-2 EN 61000-6-3 EN 61326-1
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Pressure switch

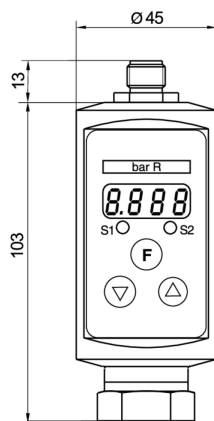
TED-#.#.#.###.#

Operating conditions

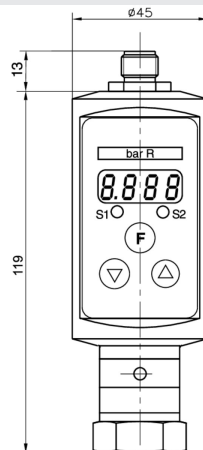
Measuring range (bar)		Proof pressure (bar)	Burst Pressure (bar)
-1 ... 0	-1 ... 0,6	3	6
	0 ... 1	3	7
	0 ... 1,6	4	7
	-1 ... 1,5	8	12
	0 ... 2,5	12	18
	-1 ... 3	20	30
	0 ... 4	32	48
	-1 ... 5	50	75
	0 ... 6	80	120
	-1 ... 9	120	180
	0 ... 10	200	300
	-1 ... 15	320	480
	0 ... 16	500	600
	-1 ... 24	600	800
	0 ... 25	600	800
	-1 ... 39		
	0 ... 40		
	0 ... 60		
	0 ... 100		
	0 ... 160		
	0 ... 250		
	0 ... 315		
	0 ... 400		

Dimensional drawings (mm)

Housing

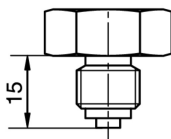


Housing standard

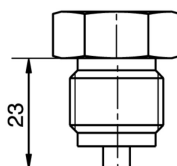


Housing with 300° turnable display

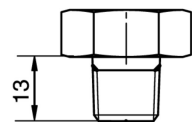
Process connection



G 1/4 B EN 837-1 (BCID: G30)



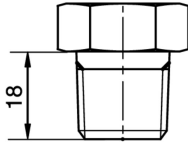
G 1/2 B EN 837-1 (BCID: G31)



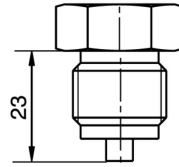
1/4-18 NPT (BCID: N01)

Dimensional drawings (mm)

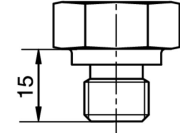
Process connection



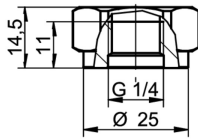
1/2-14 NPT (BCID: N02)



M20 × 1.5 ISO 261 / ISO 965 (M08)



G 1/4 A DIN 3852-E (BCID: G50)



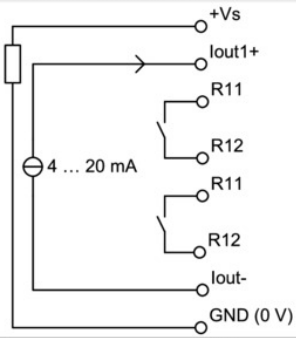
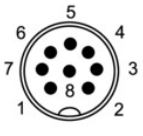
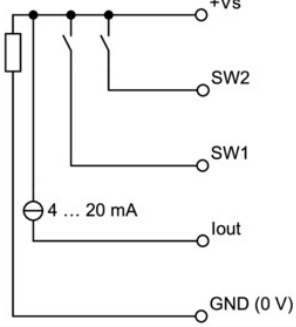
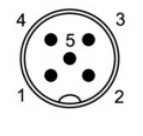
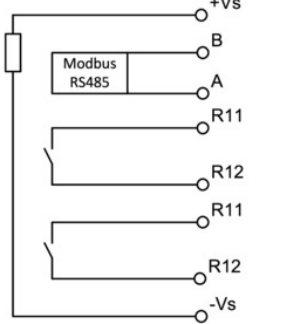
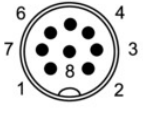
G 1/4 A ISO 228-1 female thread (BCID: G21)

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Electrical connection

Version	Equivalent circuit	Electrical connection	Function	Pin assignment												
TED-5.##.###.#			<table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>lout+</td><td>7</td></tr> <tr><td>lout-</td><td>2</td></tr> <tr><td>R1</td><td>3, 4</td></tr> <tr><td>R2</td><td>5, 6</td></tr> <tr><td>GND (0 V)</td><td>8</td></tr> </table>	+Vs	1	lout+	7	lout-	2	R1	3, 4	R2	5, 6	GND (0 V)	8	
+Vs	1															
lout+	7															
lout-	2															
R1	3, 4															
R2	5, 6															
GND (0 V)	8															
TED-6.##.###.#			<table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>lout</td><td>3</td></tr> <tr><td>SW1</td><td>4</td></tr> <tr><td>SW2</td><td>2</td></tr> <tr><td>GND (0 V)</td><td>5</td></tr> </table>	+Vs	1	lout	3	SW1	4	SW2	2	GND (0 V)	5			
+Vs	1															
lout	3															
SW1	4															
SW2	2															
GND (0 V)	5															
TED-M.##.###.#			<table border="1"> <tr><td>+Vs</td><td>7</td></tr> <tr><td>R1</td><td>3, 4</td></tr> <tr><td>R2</td><td>5, 6</td></tr> <tr><td>A</td><td>1</td></tr> <tr><td>B</td><td>2</td></tr> <tr><td>-Vs</td><td>8</td></tr> </table>	+Vs	7	R1	3, 4	R2	5, 6	A	1	B	2	-Vs	8	
+Vs	7															
R1	3, 4															
R2	5, 6															
A	1															
B	2															
-Vs	8															

Ordering information

Ordering key - Configuration possibilities see website

Product	TED	-	#	.	#	.	#	.	###	.	#	####	0619	2037
Type	TED													
2 galvanic separated switching points, 4...20mA (3-wire)														
2 switching points, 4...20mA (2-wire)														
2 switching points, Modbus RS485														
Process connection														
G 1/4 A DIN 3852-E (G50)														B
G 1/4 A ISO 228-1 female thread (G21)														H
G 1/4 B EN 837-1 (G30)														2
G 1/2 B EN 837-1 (G31)														3
1/4-18 NPT (N01)														5
1/2-14 NPT (N02)														6
M20 × 1.5 ISO 261 / ISO 965 (M08)														9

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Pressure switch

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Ordering information

Ordering key - Configuration possibilities see website

	TED	-	#	.	#	.	#	.	###	.	#	####	0619	2037
Sealing														
NBR														
									3					
EPDM									5					
FFKM									7					
FKM									9					
Measuring range														
0...1 bar (EN)														B15
0...1,6 bar (EN)														B16
0 ... 2.5 bar (EN)														B18
0 ... 4 bar (EN)														B19
-1...39 bar (EN)														B1L
0 ... 6 bar (EN)														B20
0 ... 10 bar (EN)														B22
0 ... 16 bar (EN)														B24
0...25 bar (EN)														B26
0 ... 40 bar (EN)														B27
0 ... 60 bar (EN)														B29
0 ... 100 bar (EN)														B31
0 ... 160 bar (EN)														B33
0 ... 250 bar (EN)														B35
0...315 bar (EN)														B36
0 ... 400 bar (EN)														B38
-1...0 bar (EN)														B59
-1...0,6 bar (EN)														B72
-1 ... 1,5 bar (EN)														B74
-1...3 bar (EN)														B76
-1...5 bar (EN)														B77
-1...9 bar (EN)														B79
-1...15 bar (EN)														B81
-1...24 bar (EN)														B82
0...100 kPa (EN)														D15
0...160 kPa (EN)														D16
0...250 kPa (EN)														D18
0...400 kPa (EN)														D19
-100...3900 kPa (EN)														D1L
0...600 kPa (EN)														D20
0...1000 kPa (EN)														D22
0...1600 kPa (EN)														D24
0...2500 kPa (EN)														D26
0...4000 kPa (EN)														D27
0...6000 kPa (EN)														D29
0...10000 kPa (EN)														D31
0...16000 kPa (EN)														D33
0...25000 kPa (EN)														D35
0...40000 kPa (EN)														D38
-100...0 kPa (EN)														D59
-100...60 kPa (EN)														D72
-100...150 kPa (EN)														D74
-100...300 kPa (EN)														D76
-100...500 kPa (EN)														D77
-100...900 kPa (EN)														D79

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Ordering information

Ordering key - Configuration possibilities see website

	TED	-	#	.	#	.	#	.	###	.	#	####	0619	2037
-100...1500 kPa (EN)									D81					
-100...2400 kPa (EN)									D82					
0...1 kg/cm2 (EN)									F15					
0...1,6 kg/cm2 (EN)									F16					
0...2,5 kg/cm2 (EN)									F18					
0...4 kg/cm2 (EN)									F19					
-1...39 kg/cm2									F1L					
0...6 kg/cm2 (EN)									F20					
0...10 kg/cm2 (EN)									F22					
0...16 kg/cm2 (EN)									F24					
0...25 kg/cm2 (EN)									F26					
0...40 kg/cm2 (EN)									F27					
0...60 kg/cm2 (EN)									F29					
0...100 kg/cm2 (EN)									F31					
0...160 kg/cm2 (EN)									F33					
0...250 kg/cm2 (EN)									F35					
0...400 kg/cm2 (EN)									F38					
-1...0 kg/cm2 (EN)									F59					
-1...0,6 kg/cm2 (EN)									F72					
-1...1,5 kg/cm2 (EN)									F74					
-1...3 kg/cm2 (EN)									F76					
-1...5 kg/cm2 (EN)									F77					
-1...9 kg/cm2 (EN)									F79					
-1...15 kg/cm2 (EN)									F81					
-1...24 kg/cm2 (EN)									F82					
0...15 psi (ANSI)									H15					
0...30 psi (ANSI)									H17					
0...60 psi (ANSI)									H19					
0...20 psi (ANSI)									H1C					
-30Hg...600 psi (ANSI)									H1L					
0...100 psi (ANSI)									H21					
0...160 psi (ANSI)									H22					
0...200 psi (ANSI)									H23					
0...300 psi (ANSI)									H25					
0...400 psi (ANSI)									H26					
0...600 psi (ANSI)									H27					
-30HG...60 psi (ANSI)									H2C					
0...1000 psi (ANSI)									H30					
0...1500 psi (ANSI)									H31					
0...3000 psi (ANSI)									H34					
0...6000 psi (ANSI)									H38					
-30HG...0 (ANSI)									H59					
-30HG...15 psi (ANSI)									H73					
-30HG...30 psi (ANSI)									H75					
-30HG...100 psi (ANSI)									H78					
-30HG...150 psi (ANSI)									H79					
-30HG...220 psi (ANSI)									H81					
-30HG...300 psi (ANSI)									H82					
Kind of pressure														
Relative (gauged)												R		
Absolute												A		

TED

Pressure switch

TED-#.#.#.###.#

Ordering information

Ordering key - Configuration possibilities see website

	TED	-	#	.	#	.	#	.	###	.	#	####	0619	2037
Electrical Connection														
M12-A, 5-pin with shielded cable, length: 2 m													0604	
M12-A, 5-pin with shielded cable, length: 5 m													0605	
M12-A, 5-pin with shielded cable, length: 10 m													0606	
M12-A, 8-pin with shielded cable, length: 2 m													0607	
M12-A, 8-pin with shielded cable, length: 5 m													0608	
M12-A, 8-pin with shielded cable, length: 10 m													0609	
M12 mobil plug + cable 2 m length													2267	
M12 mobil plug + cable 5 m length													2269	
Cleanliness														
Drinking water application													0619	
Display orientation														
300° directional display														2037