

KTE3000 / KTU3000 Series

OEM pressure transmitters for industrial media

FEATURES

- 250 mbar to 50 bar, 5 to 750 psi gage¹ or absolute¹¹ pressure
- For many industrial gases and liquids
- 0...10 V, 0.5...4.5 V, 0...5 V, 1...6 V or 4...20 mA output
- Field interchangeable
- EMC according to EN 61326-1⁸

MEDIA COMPATIBILITY

Wetted materials:

PPS, ceramic Al₂O₃ and NBR (FKM)

Housing:

Stainless steel 1.4404 (316L), protection class IP 65 (according to DIN EN 60529, NEMA 4X)¹



SPECIFICATIONS^{9,10}

Maximum ratings

Supply voltage (reverse polarity protection)

KT...0...	13...32 V
KT...1...	9...32 V
KT...6..., ...7...	8...32 V
KT...4... ²	7...32 V

Maximum load current (source)

KT...0..., ...1..., ...6..., ...7...	1 mA
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Proof pressure³

2 x rated pressure

Environmental

Temperature limits

Storage	-40...85 °C
Operating (media)	-25...85 °C
Electronic (ambient)	-25...85 °C
Compensated	0...70 °C

Vibration (5 to 500 Hz)

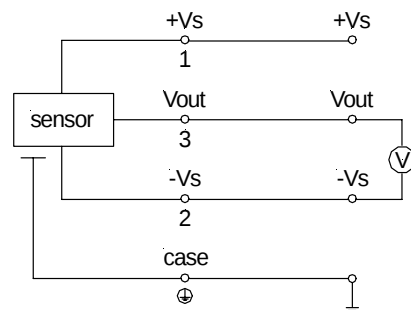
10 g_{RMS}

Mechanical shock

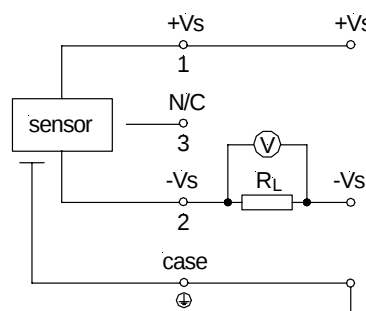
50 g

ELECTRICAL CONNECTION

Voltage output device



Current output device



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COMMON PERFORMANCE CHARACTERISTICS

($V_S=15\text{ V} \pm 0.1\text{ V}$, $T_A=25\text{ °C}$, RH=50 %)

Characteristics			Min.	Typ.	Max.	Unit
Thermal effects (0...70 °C) ⁴	Offset	devices up to 1 bar/15 psi		±0.03	±0.06	%FSO/ °C
		all others		±0.02	±0.04	
	Span		±0.02	±0.04		
Thermal effects (-25...0 °C, 70...85 °C) ⁴	Offset		±0.03		%FSO/ °C	
	Span		±0.03			
Non-linearity (BSL), hysteresis and repeatability ⁵	KT...3N...			±0.2	±0.5	%FSO
	all others			±0.1	±0.3	
Long term stability ⁶				±0.1	±0.3	
Output noise (0< f <1 kHz)				±0.1		
Response time (10 to 90 %)	devices up to 350 mbar/5 psi			35		ms
	all others			5		
D/A resolution					11	bit
Power supply rejection	Offset			±0.01		%FSO/V
	Span			±0.02		

INDIVIDUAL PERFORMANCE CHARACTERISTICS

($V_S=15\text{ V} \pm 0.1\text{ V}$, $T_A=25\text{ °C}$, RH=50 %)

0...10 V output ($R_L > 100\text{ k}\Omega$)

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	KT...3N...		5		V
	all others		0	0.1	
Full scale span ⁷		9.9	10	10.1	
Output impedance				25	Ω
Current consumption (no load)			4		mA

0.5...4.5 V output ($R_L > 100\text{ k}\Omega$)

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	KT...3N...		2.5		V
	all others	0.45	0.5	0.55	
Full scale span ⁷		3.95	4	4.05	
Output impedance				25	Ω
Current consumption (no load)			4		mA

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INDIVIDUAL PERFORMANCE CHARACTERISTICS (cont.)

($T_A = 25\text{ °C}$, $RH = 50\%$, $V_S = 15\text{ V} \pm 0.1\text{ V}$)

0...5 V output ($R_L > 100\text{ k}\Omega$)

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	KT...3N...		2.50		V
	all others		0	0.05	
Full scale span ⁷		4.95	5.00	5.05	
Output impedance				25	Ω
Current consumption (no load)			4		mA

1...6 V output ($R_L > 100\text{ k}\Omega$)

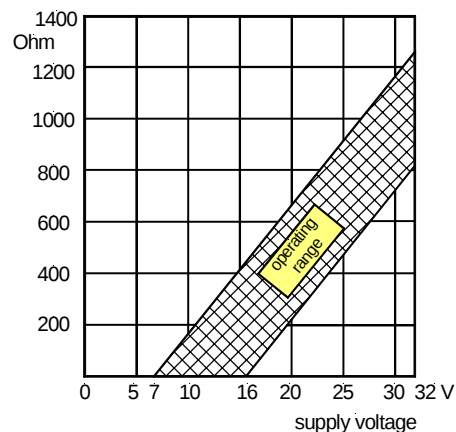
Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	KT...3N...		3.50		V
	all others	0.95	1.00	1.05	
Full scale span ⁷		4.95	5.00	5.05	
Output impedance				25	Ω
Current consumption (no load)			4		mA

4...20 mA output ($R_L = 100\text{ }\Omega$)

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	KT...3N...		12.0		mA
	all others	3.9	4.0	4.1	
Full scale span ⁷		15.9	16.0	16.1	
Power consumption ($I_L = 20\text{ mA}$)			250		mW

LOAD LIMITATION

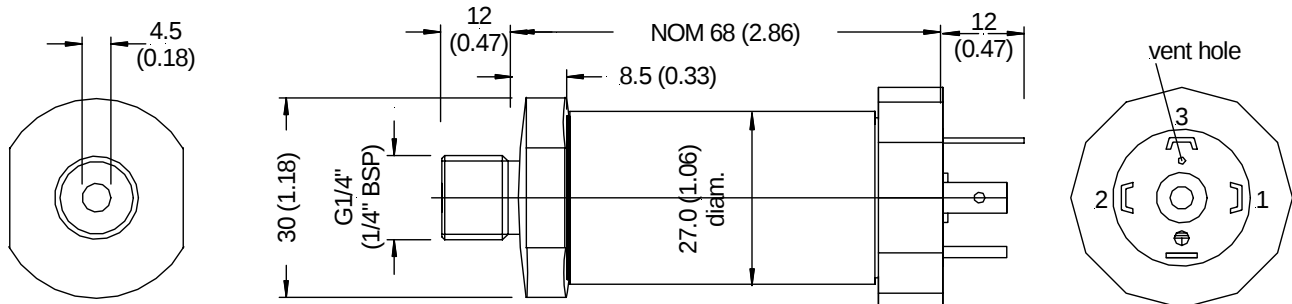
4...20 mA output version



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OUTLINE DRAWING



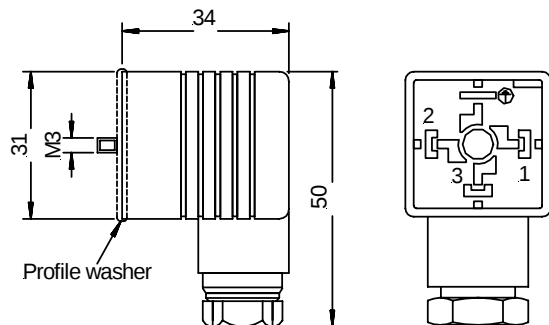
mass: approx. 200 g

dimensions in mm (inches)

Pin	Output	
	Voltage	Current
1	+Vs	+Vs
2	-Vs	-Vs
3	Vout	N/C
⊕	Case	Case

RECOMMENDED ACCESSORY

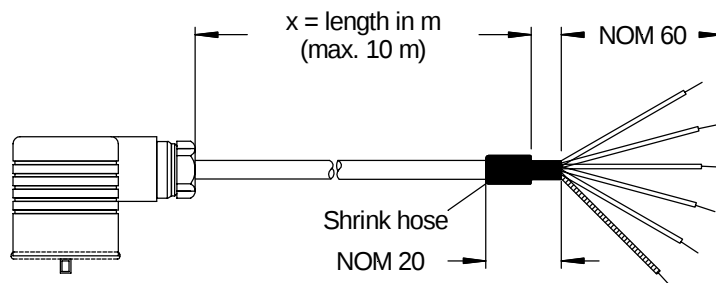
Plug **DIN EN 175301-803 A** and profile washer included in delivery.



Note:

For proper function of all gage devices the gage port must be vented to the atmosphere through the connector/cable assembly.

For a complete **connector/cable assembly** use order no. **ZK000110-x** (x=cable lengths in m, max. 10 m).



PIN CONNECTION	
Pin	Flying lead end
1	Brown
2	Yellow
3	Green
⊕	White and bare

dimensions in mm

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Specification notes:

1. IP 65 protection is given when the connector is locked with a rubber washer. For proper function the gage port is vented to the atmosphere through the connector/cable assembly. Thus the cable end must have access to the ambient pressure.
2. The minimum supply voltage is directly proportional to the load resistance seen by the transmitter (see load limitation diagram).
3. Proof pressure is the maximum pressure which may be applied without causing damage to the sensing element.
4. Thermal effects are relative to 25 °C. Signal is clamped at 0 V.
5. Non-linearity refers to **Best Straight Line** fit. Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.
6. Long term stability is the change in output after one year.
7. Full scale span is the algebraic difference between the output signal for the highest and lowest specified pressure.
8. Surge immunity according to EN 61000-4-5 on request for current output devices.
9. CE-labelling is in accordance with 2004/108/EC.
10. The pressure transmitters must not be used as safety accessories according to article 1, 2.1.3 of the directive 97/23/EC.
11. Available for pressure ranges from 1 bar (15 psi) absolute upwards only.

ORDERING INFORMATION

		KTx	M	3xxx	x	x	x	x	
Calibration									Sealing material
E: bar calibration									V: Viton (FKM)
U: psi calibration									N: NBR
For mbar ranges only									<i>Note: Older part no. do not contain this digit. Without this digit NBR will be used.</i>
Pressure range									Output signal
<u>KTE3000 series</u>									0: 0...10 V
<u>KTU3000 series</u>									1: 1...6 V
250:	0...250 mbar								4: 4...20 mA
350:	0...350 mbar								6: 0.5...4.5 V
500:	0...500 mbar								7: 0...5 V
001:	0...1 bar								
N01:	-1...+1 bar								Pressure connection
P01:	0...-1 bar								Q: G 1/4" (1/4" BSP) male
002:	0...2 bar								<i>Other connections on special request</i>
005:	0...5 bar								
010:	0...10 bar								Pressure mode
016:	0...16 bar								G: gage pressure ¹
020:	0...20 bar								A: absolute pressure
025:	0...25 bar								(from 1 bar/15 psi only)
035:	0...35 bar								
050:	0...50 bar								

Other pressure ranges and options are widely available. Please contact First Sensor.

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