

# KTE6000 / KTU6000 Series

## OEM pressure transmitters for industrial media



### FEATURES

- 250 mbar to 400 bar, 5 to 6000 psi gage<sup>1</sup> or absolute<sup>11</sup> 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 61326-1<sup>8</sup>

### MEDIA COMPATIBILITY

Wetted materials:

Stainless steel 1.4404 (316L), ceramic  $Al_2O_3$ , NBR (FKM)

Housing:

Stainless steel, protection class IP 65 (according to DIN EN 60529, NEMA 4X)<sup>1</sup>



### SPECIFICATIONS<sup>9,10</sup>

#### 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... <sup>2</sup>	7...32 V

Maximum load current (source)

KT...0..., ...1..., ...6..., ...7...	1 mA
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Proof pressure<sup>3</sup>

400 bar/6000 psi devices	1.5 x rated pressure
all others	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)

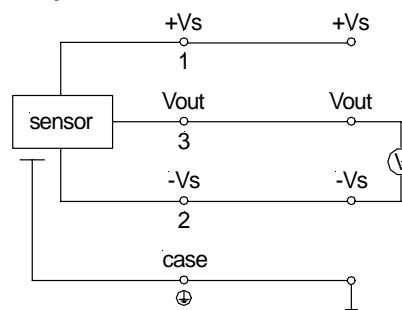
10 g<sub>RMS</sub>

Mechanical shock

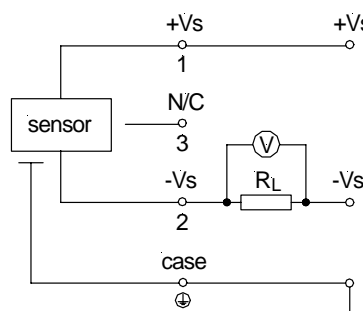
50 g

### 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) <sup>4</sup>	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) <sup>4</sup>	Offset		±0.03		%FSO
	Span		±0.03		
Non-linearity (BSL), hysteresis and repeatability <sup>5</sup>	KT...6N...		±0.2	±0.5	%FSO
	all others		±0.1	±0.3	
Long term stability <sup>6</sup>			±0.1	±0.3	ms
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...6N...		5		V
	all others		0	0.1	
Full scale span <sup>7</sup>		9.9	10	10.1	$\Omega$
Output impedance				25	
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...6N...		2.5		V
	all others	0.45	0.5	0.55	
Full scale span <sup>7</sup>		3.95	4	4.05	$\Omega$
Output impedance				25	
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...6N...		2.50		V
	all others		0	0.05	
Full scale span <sup>7</sup>		4.95	5.00	5.05	
Output impedance				25	W
Current consumption (no load)			4		mA

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

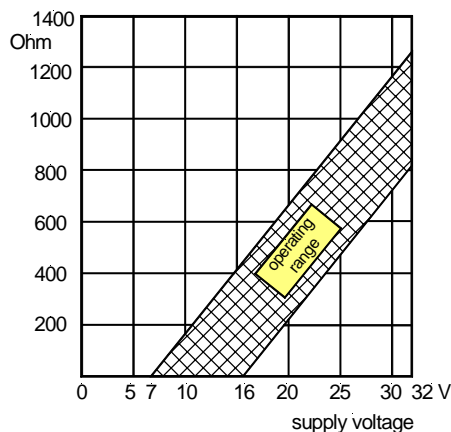
Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	KT...6N...		3.50		V
	all others	0.95	1.00	1.05	
Full scale span <sup>7</sup>		4.95	5.00	5.05	
Output impedance				25	$\Omega$
Current consumption (no load)			4		mA

#### 4...20 mA output ( $R_L = 100\ \Omega$ )

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	KT...6N...		12.0		mA
	all others	3.9	4.0	4.1	
Full scale span <sup>7</sup>		15.9	16.0	16.1	
Power consumption ( $I_L = 20\text{ mA}$ )			250		mW

### LOAD LIMITATION

#### 4...20 mA output version

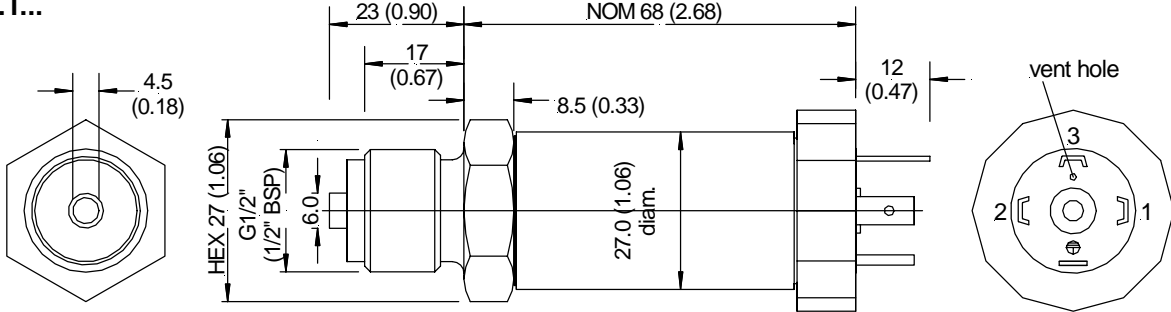


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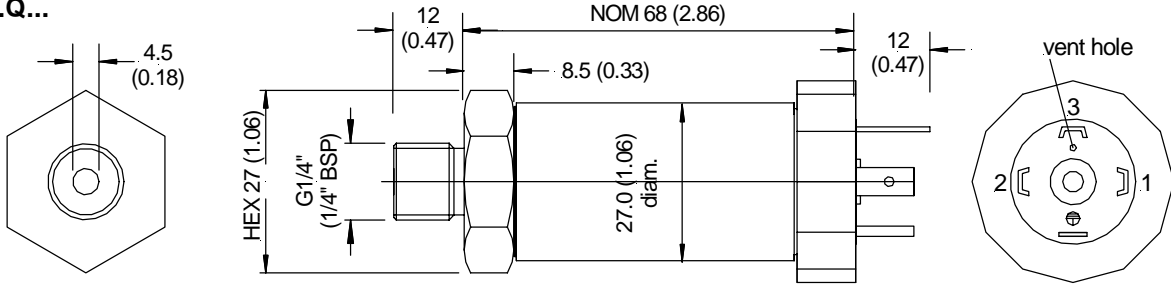
## OEM pressure transmitters for industrial media

### OUTLINE DRAWING

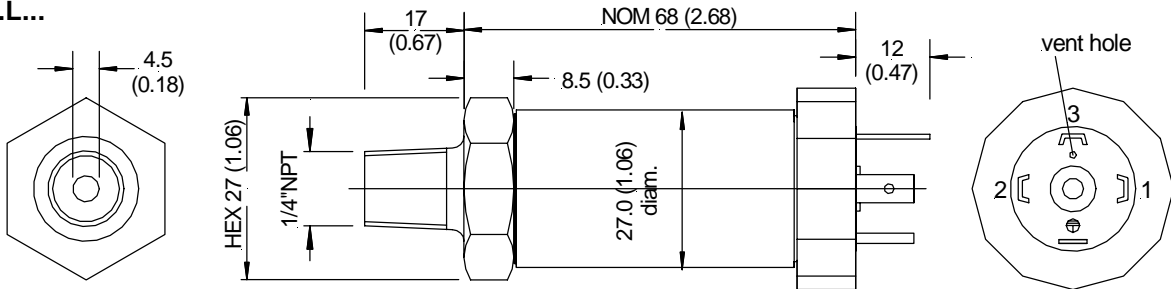
**KT...T...**



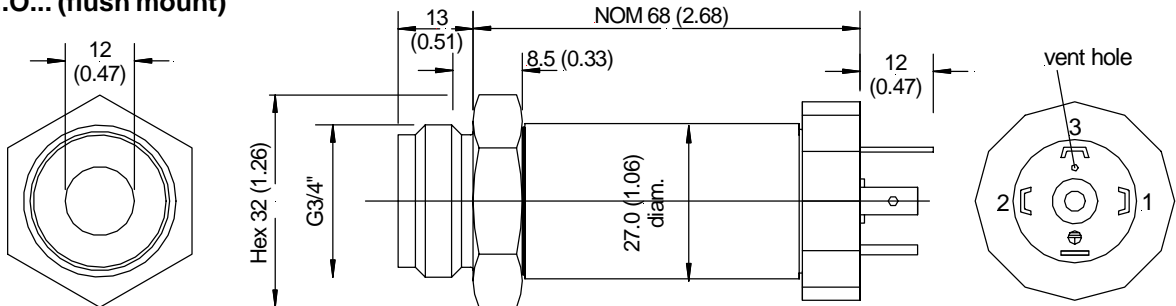
**KT...Q...**



**KT...L...**



**KT...O... (flush mount)**



mass: approx. 200 g

dimensions in mm (inches)

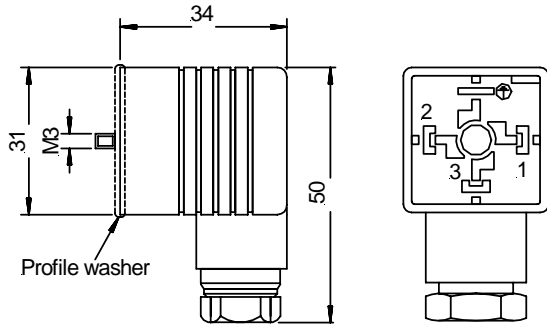
Pin	Output	
	Voltage	Current
1	+Vs	+Vs
2	-Vs	-Vs
3	Vout	N/C
⊕	Case	Case

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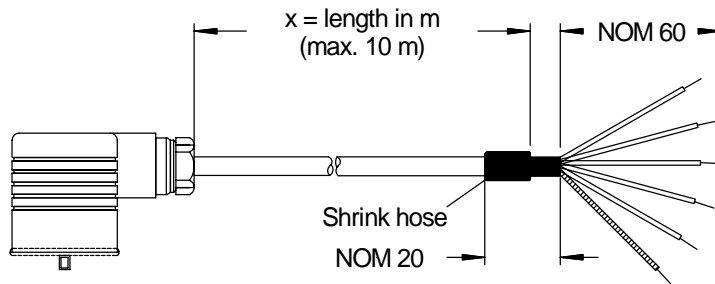
### RECOMMENDED ACCESSORY

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

#### 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.

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### ORDERING INFORMATION

	KTx	M	6xxx	x	x	x	x	
<b>Calibration</b>								<b>Sealing material</b>
E: bar calibration								V: Viton (FKM)
U: psi calibration								N: NBR
<b>For mbar ranges only</b>								<i>Note: Older part no. do not contain this digit. Without this digit NBR will be used.</i>
<b>Pressure range</b>								<b>Output signal</b>
<u>KTE6000 series</u>	<u>KTU6000 series</u>							0: 0...10 V
250: 0...250 mbar	005: 0...5 psi							1: 1...6 V
350: 0...350 mbar	010: 0...10 psi							4: 4...20 mA
500: 0...500 mbar	015: 0...15 psi							6: 0.5...4.5 V
001: 0...1 bar	N15: -15...+15 psi							7: 0...5 V
N01: -1...+1 bar	P15: 0...-15 psi							<b>Pressure connection</b>
P01: 0...-1 bar	030: 0...30 psi							L: 1/4" NPT male
002: 0...2 bar	050: 0...50 psi							O: G 3/4" (3/4" BSP)
005: 0...5 bar	100: 0...100 psi							<i>only up to 16 bar/200 psi</i>
010: 0...10 bar	200: 0...200 psi							Q: G 1/4" (1/4" BSP) male
016: 0...16 bar	300: 0...300 psi							T: G 1/2" (1/2" BSP)
020: 0...20 bar	500: 0...500 psi							<i>Other connections on special request</i>
025: 0...25 bar	1K0: 0...1000 psi							<b>Pressure mode</b>
035: 0...35 bar	1K5: 0...1500 psi							G: gage pressure <sup>1</sup>
050: 0...50 bar	2K0: 0...2000 psi							<i>(up to 50 bar/750 psi)</i>
070: 0...70 bar	3K0: 0...3000 psi							S: sealed gage
100: 0...100 bar	4K5: 0...4500 psi							<i>(above 50 bar/750 psi)</i>
150: 0...150 bar	6K0: 0...6000 psi							A: absolute pressure
200: 0...200 bar								<i>(from 1 bar/15 psi up to 50 bar/750 psi)</i>
300: 0...300 bar								
400: 0...400 bar								

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

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