# KTE3000 / KTU3000 Series

## OEM pressure transmitters for industrial media

### FEATURES

- **0...-1 to 0...50 bar, 0...-15 to 0...750 psi gage[1] or absolute**
- **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**
- **For industrial use**

### MEDIA COMPATIBILITY

Wetted materials:
PPS, ceramic $Al_2O_3$ and NBR[8]

Housing:
stainless steel 1.4404 (316L), protection class IP 65 (according to DIN EN 60529) respectively NEMA 4X[1]

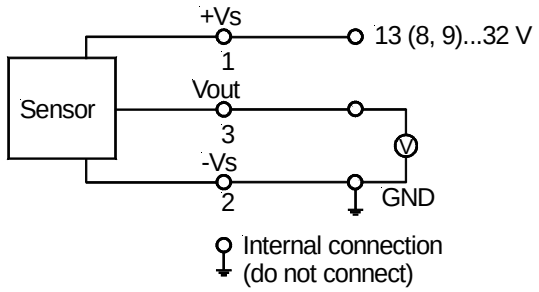
### SPECIFICATIONS[10,11]

**Maximum ratings**

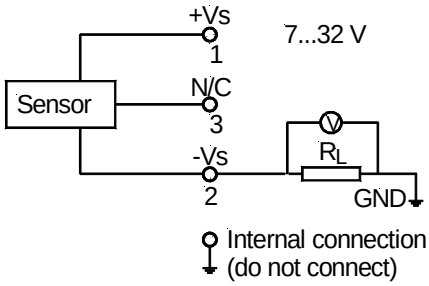
| | |
|---|---|
| Supply voltage (reverse polarity protection) | |
| KTx3...0 | 13...32 V |
| KTx3...6 | 9...32 V |
| KTx3...1, ...7 | 8...32 V |
| KTx3...4[2] | 7...32 V |
| Maximum load current | |
| Source/Sink | 1 mA |
| Temperature limits | |
| Storage | -40...100°C |
| Operating | -25...85°C |
| Compensated | 0...70°C |
| Humidity limits | 0 - 95 %RH |
| Vibration (5 to 500 Hz) | 10 $g_{RMS}$ |
| Mechanical shock | 50 g |
| Proof pressure[3] | 2 x rated pressure |

### ELECTRICAL CONNECTION

**0...10 V, 0.5...4.5 V, 0...5 V, 1...6 V output**




**4... 20 mA output**



## COMMON PERFORMANCE CHARACTERISTICS

**($V_S$ = 15 V, $R_L$ > 100 kΩ, $t_{amb}$ = 25°C)**

| Characteristics | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Operating pressure | KTE3001... | 0 | | 1 | bar |
| | KTE3N01G... | -1 | | 1 | |
| | KTE3P01G... | -1 | | 0 | |
| | KTE3002... | 0 | | 2 | |
| | KTE3005... | 0 | | 5 | |
| | KTE3010... | 0 | | 10 | |
| | KTE3016... | 0 | | 16 | |
| | KTE3020... | 0 | | 20 | |
| | KTE3025... | 0 | | 25 | |
| | KTE3035... | 0 | | 35 | |
| | KTE3050... | 0 | | 50 | |
| | KTU3015... | 0 | | 15 | psi |
| | KTU3N15G... | -15 | | 15 | |
| | KTU3P15G... | -15 | | 0 | |
| | KTU3030... | 0 | | 30 | |
| | KTU3050... | 0 | | 50 | |
| | KTU3100... | 0 | | 100 | |
| | KTU3200... | 0 | | 200 | |
| | KTU3300... | 0 | | 300 | |
| | KTU3500... | 0 | | 500 | |
| | KTU3750... | 0 | | 750 | |
| Thermal effects (0...70°C)[4] | Offset | | 0.02 | 0.05 | %FSO/°C |
| | Span | | 0.02 | 0.05 | |
| Thermal effects (-25...0°C, 70...85°C) | Offset | | 0.03 | | |
| | Span | | 0.03 | | |
| Non-linearity, hysteresis (BSL) and repeatability[5] | | | ±0.1 | ±0.3 | %FSO |
| Long term stability[6] | | | ±0.3 | | |
| Output noise (0 < f < 1 kHz) | | | ±0.04 | | |
| Response time (10 to 90 %) | | | 1 | 5 | ms |
| Power supply rejection | | | 0.005 | | %FSO/V |

**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. For more details see the load limitation diagram.
3. Proof pressure is the maximum pressure which may be applied without causing damage to the sensing element.
4. Thermal effects tested and guaranteed from 0 to 70°C relative to 25°C. All specifications shown are relative to 25°C.
5. Non-linearity refers to the **B**est **S**traight **L**ine fit measured for offset, full scale span and 1/2 full scale span.
6. Long term stability is the change in output after one year or 1 million pressure cycles.
7. Span is the arithmetic difference in transmitter output signal measured at zero pressure and the maximum operating pressure.
8. Other sealing materials are available on request.
9. Test are in accordance with EN61000-6-2, April 1999.
10. CE-labelling is in accordance with 89/336/EEC.
11. The pressure transmitters must not be used as safety accessories according to article 1, 2.1.3 of the directive 97/23/EC.

## INDIVIDUAL PERFORMANCE CHARACTERISTICS

**0...10 V output** ($V_S$ = 15 V, $R_L$ > 100 kΩ, $t_{amb}$ = 25°C)

| Characteristics | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Zero pressure offset | KT...3N... | 4.9 | 5 | 5.1 | V |
| | all others | | 0.03 | 0.1 | |
| Full scale span[7] | KT...3N... | 4.9 | 5 | 5.1 | |
| | all others | 9.9 | 10 | 10.1 | |
| Output impedance | | | | 25 | Ω |
| Current consumption (no load) | | | 3 | 5 | mA |

**0.5...4.5 V output** ($V_S$ = 15 V, $R_L$ > 100 kΩ, $t_{amb}$ = 25°C)

| Characteristics | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Zero pressure offset | KT...3N... | 2.45 | 2.5 | 2.55 | V |
| | all others | 0.45 | 0.5 | 0.55 | |
| Full scale span[7] | KT...3N... | 1.95 | 2 | 2.05 | |
| | all others | 3.95 | 4 | 4.05 | |
| Output impedance | | | | 25 | Ω |
| Current consumption (no load) | | | 3 | 5 | mA |

**0...5 V output** ($V_S$ = 15 V, $R_L$ > 100 kΩ, $t_{amb}$ = 25°C)

| Characteristics | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Zero pressure offset | KT...3N... | 2.45 | 2.5 | 2.55 | V |
| | all others | | 0.03 | 0.08 | |
| Full scale span[7] | KT...3N... | 2.45 | 2.5 | 2.55 | |
| | all others | 4.95 | 5.0 | 5.05 | |
| Output impedance | | | | 25 | Ω |
| Current consumption (no load) | | | 3 | 5 | mA |

**1...6 V output** ($V_S$ = 15 V, $R_L$ > 100 kΩ, $t_{amb}$ = 25°C)

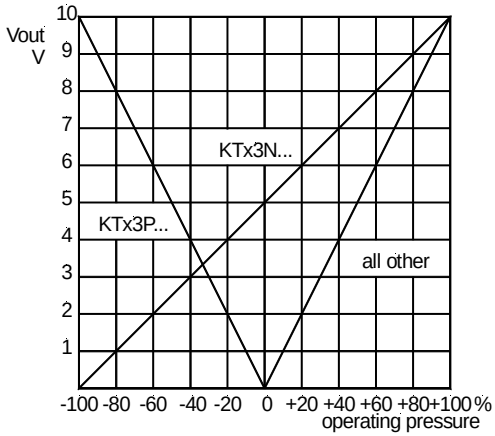
| Characteristics | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Zero pressure offset | KT...3N... | 3.45 | 3.5 | 3.55 | V |
| | all others | 0.95 | 1 | 1.05 | |
| Full scale span[7] | KT...3N... | 2.45 | 2.5 | 2.55 | |
| | all others | 4.95 | 5.0 | 5.05 | |
| Output impedance | | | | 25 | Ω |
| Current consumption (no load) | | | 3 | 5 | mA |

**4...20 mA output** ($V_S$ = 15 V, $R_L$ = 100 Ω, $t_{amb}$ = 25°C)

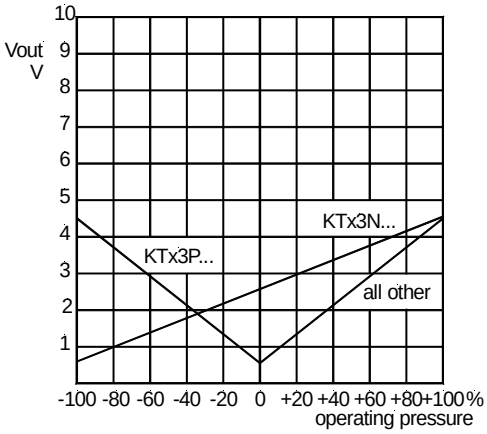
| Characteristics | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Zero pressure offset | KT...3N... | 11.9 | 12.0 | 12.1 | mA |
| | all others | 3.9 | 4.0 | 4.1 | |
| Full scale span[7] | KT...3N... | 7.9 | 8.0 | 8.1 | |
| | all others | 15.9 | 16.0 | 16.1 | |
| Power consumption ($I_L$ = 20 mA) | | | 250 | | mW |

## OUTPUT CHARACTERISTICS

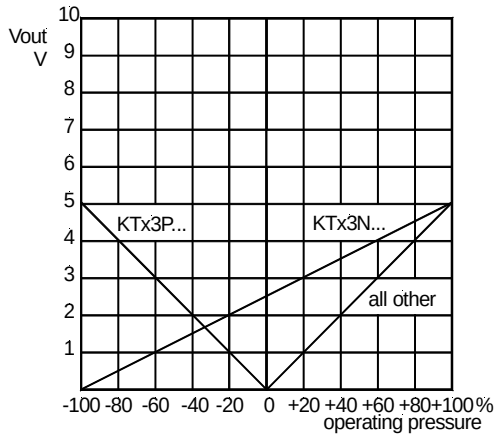
### 0...10 V output version



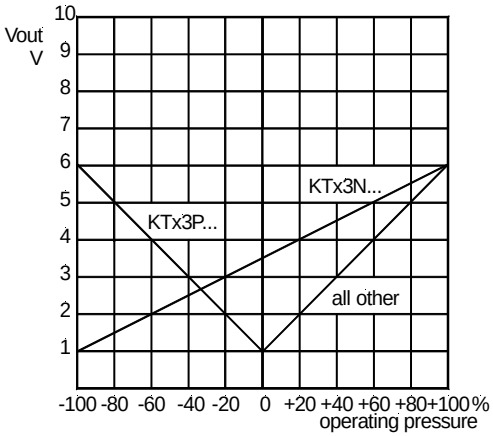

### 0.5...4.5 V output version



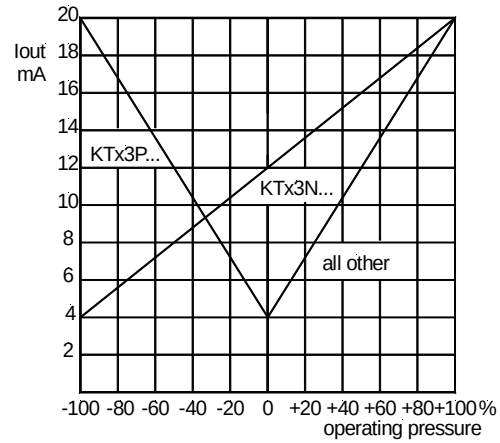

### 0...5 V output version



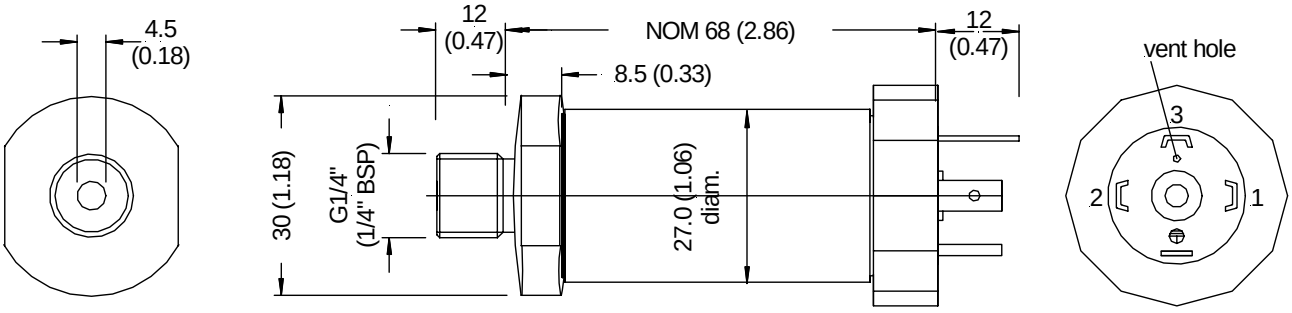

### 1...6 V output version




### 4...20 mA output version



## OUTLINE DRAWING

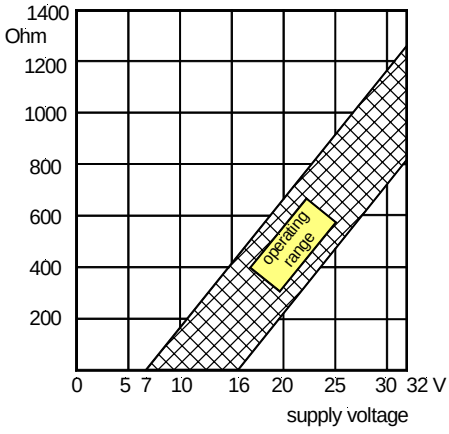



**mass:** 210 g

dimensions in mm (inches)

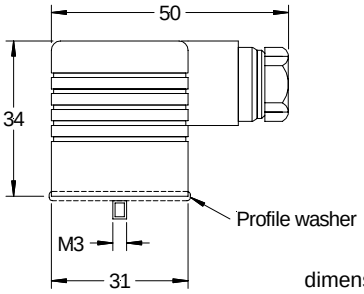
## LOAD LIMITATION

**4...20 mA output version**




## RECOMMENDED ACCESSORY

Plug **DIN EN 175301-803 A** and profile washer included in delivery. For a complete connector/cable assembly use order no. **ZK000110-x** (x=cable lenghts in m).




dimensions in mm

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

## ELECTROMAGNETIC CAPABILITY[9]

| | Test conditions | Criterion | Interference |
|---|---|---|---|
| Radiated, radio frequency electromagnetic field immunity (RFI) | EN61000-4-3: Grade 3, 10 V/m, 80 to 1000 MHz 80 % AMC (1 kHz) | A | <1 %FSO |
| Electrical fast transient / burst immunity (EFT) | EN61000-4-4: Grade 3, ±2 kV | B | <1 %FSO |
| Electrostatic discharge immunity test (ESD) | EN61000-4-2: Grade 4, ±8 kV, contact discharge | B | <1 %FSO |
| Immunity to conducted disturbances induced by radio-frequency fields | EN61000-4-6: Grade 3, 0.15 to 80 MHz 10 V, 80 % AMC (1 kHz) | A | <1 %FSO |

## ORDERING INFORMATION

**KTx3 xxx x x x**

**E: bar calibration**
**U: psi calibration**

**KTE3000 series**
**001: 0 to 1 bar**
**N01: -1 to +1 bar**
**P01: -1 to 0 bar**
**002: 0 to 2 bar**
**005: 0 to 5 bar**
**010: 0 to 10 bar**
**016: 0 to 16 bar**
**020: 0 to 20 bar**
**025: 0 to 25 bar**
**035: 0 to 35 bar**
**050: 0 to 50 bar**

**KTU3000 series**
**015: 0 to 15 psi**
**N15: -15 to +15 psi**
**P15: -15 to 0 psi**
**030: 0 to 30 psi**
**050: 0 to 50 psi**
**100: 0 to 100 psi**
**200: 0 to 200 psi**
**300: 0 to 300 psi**
**500: 0 to 500 psi**
**750: 0 to 750 psi**

**Output signal**
**0: 0...10 V**
**1: 1...6 V**
**4: 4...20 mA**
**6: 0.5...4.5 V**
**7: 0...5 V**

**Fitting size**
**Q: G 1/4" (1/4" BSP) male**
***Other fittings on special request***

**Pressure mode**
**G: gage pressure[1]**
**A: absolute pressure**

**Note: Other pressure ranges and options are widely available.**
**Please contact your nearest Sensortechnics sales representative.**