

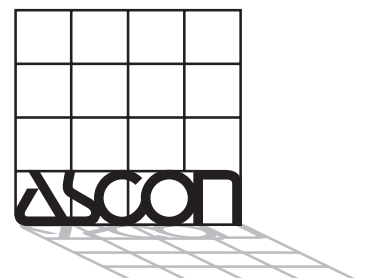
Temperature Transmitter ZTT series

The ZTT series transmitter accepts the most commonly used temperature sensors (RTD, T/C) as well as mV and slide wire signals. All the models adopt a 2 wire 4...20mA output signal and can be supplied for head connection or top hat DIN rail mounting. The complete range provides from the analogue type with adjustable range to the SMART type with Quick selection via deep switches or PC programmable with a simple Software running on Windows 95. Several types can be provided with galvanic isolation and EEx for hazardous area. The small dimensions grant a better use of the space in the cabinet.



E

ISO 9001 Certified

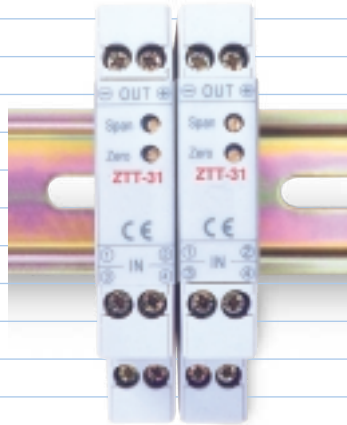


Temperature Transmitters ZTT series



ZTT-10

- 2 or 3 wire Input Pt 100
- T/C J, K, T Input
- User re-rangeable via links
- 4...20mA output
- Low cost
- Head mounting



ZTT-31

- 2 or 3 wire Input Pt 100
- User selectable ranges
- 4 ...20mA output
- High performances
- Small size
- Top Hat DIN rail mounting



ZTT-12

- SMART Transmitter
- 2 or 3 wire Input Pt 100
- High accuracy & thermal stability
- 4...20mA output
- Quick programmable
- Low cost
- Head mounting



ZTT-32

- Galvanically isolated
- TC J, K, N, R, S, T Input
- User selectable ranges
- 4...20mA output
- High performances
- Small size
- Top Hat DIN rail mounting

ZTT-14 e ZTT-15

- SMART Transmitter
- Galvanically isolated
- Universal input (Pt100, TC, mV)
- High accuracy & thermal stability
- 4...20mA output
- Quickly PC programmable
- Custom linearisation
- EEx version (ZTT-15)
- Head mounting



ZTT-33

- SMART Transmitter
- Galvanically isolated
- Universal input (Pt100, TC, mV)
- High performances
- 4...20mA output
- Quickly switch & PC programmable
- Custom linearisation
- EEx version
- Small size
- Top Hat DIN rail mounting



Characteristics

| | | ZTT-10 Series | ZTT-31 Series | ZTT-32 Series | |
|-------------------------|------------------------|---|---|---|--|
| | | Temperature Transmitter | Temperature Transmitter | Temperature Transmitter | |
| Characteristics | Description | Spec.s @ 20°C | Spec.s @ 20°C | Spec.s @ 20°C | |
| | | See Table 1 | See Table 1 | See Table 1 | |
| | RTD | Linearisation | EN60751, DIN43760 Custom [X] | EN60751, DIN43760 Custom [X] | — |
| | | Accuracy | ±0.2°C ±0.2% of reading value | ±0.15°C ±% of reading value see table 2 | — |
| | | Burn-out | — | Standard high range | — |
| | | Excitation current | — | 2 mA max | — |
| | | Offset adjustment | Range dependant | — | — |
| | | Gain adjustment | 25°C /500°C | — | — |
| | | | ZTT 10 K, T, J | — | ZTT 32 J, K, N, R, S, T |
| | Input | MiliVolt | — | — | -50-50 mV |
| Isolation | | — | — | Input/Output | |
| Linearisation | | Linear with signal (mV) | — | Linear with signal (mV) | |
| Accuracy | | ±0.1% FS plus cold junction error non-linearised | — | — | |
| Offset adjustment | | ±100°C, solder link & potentiometer | — | — | |
| TC | | Span adjustment | da 100 a 1000°C | — | — |
| | | Impedance | > 1 MΩ | — | >1 MΩ |
| | | Burn-out | High range standard- Low range by link | High range standard (Low range on request) | — |
| | | Cold junction | Automatic 0-70°C | — | Automatic for T/C and fixed zero compensation for mV or differential T/C measurement |
| Accuracy | | 0.2°C @20°C | — | ±0.2°C@ 20°C ±0.05°C/°C typical | |
| Total Accuracy | — | — | 0.1% of output span | | |
| Output | 4..20mA passive 2 wire | max 30 mA | max 30 mA | max 30 mA | |
| | Protection | Reverse connection protected | Reverse connection and over voltage protected | Reverse connection and over voltage protected | |
| Approvals | EMC | BS EN 50081 Emissions BS EN 50082 Immunity | BS EN 50081 Emissions BS EN 50082 Immunity | BS EN 50081 Emissions BS EN 50082 Immunity | |
| | | | | | |
| General Characteristics | Power Supply | 10-30 Vcc | 10-30 Vcc | 10-30 Vcc | |
| | Loop resistance | 700Ω @ 24Vcc | 700Ω @ 24Vcc | 700Ω @ 24Vcc | |
| | Stability | — | 100 ppm/°C | 2μVcc/°C | |
| | Loop volts sensitivity | 10μA/V | (ripple) <40μA/V (1V ripple 50 Hz) | (ripple) <40μA/V (1V ripple 50 Hz) | |
| | Temperature stability | ZERO drift typ. 0.02%/°C SPAN drift typ. 0.005%/°C | — | — | |
| | Response time | — | 100 ms at 70% of final value | 200 ms at 70% of final value | |
| | Env.temperature | 0-70 °C | 0-50 °C | 0-50 °C | |
| | Env. humidity | 0-95% UR non condensing | 10-95% UR non condensing | 10-95% UR non condensing | |
| | Mounting | Head connection | Rail DIN EN 50022-35 | Rail DIN EN 50022-35 | |
| | Protection | — | IP20 | IP20 | |
| | Dimensions | ø 42 mm x 23 mm | 12.5 x 75 x 67.5 mm | 12.5 x 60 x 67.5 mm | |

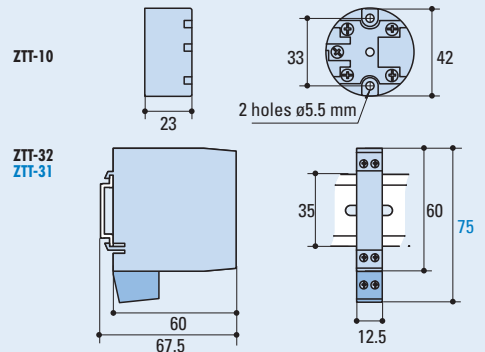
Table 1 Standard ranges

| Range °C | Used sensor | | |
|-----------|------------------|--------|---------------|
| | ZTT 10 | ZTT 31 | ZTT 32 |
| -30 ÷ +35 | RTD | RTD | |
| -25 ÷ +75 | RTD | RTD | |
| 0 ÷ +50 | RTD | RTD | |
| 0 ÷ +100 | RTD - TC K, T, J | RTD | TC N, K, T, J |
| 0 ÷ +200 | RTD - TC K, T, J | RTD | TC N, K, T, J |
| 0 ÷ +400 | RTD-TC K, T, J | RTD | TC N, K, T, J |
| 0 ÷ +600 | TC K | | TC N, K, J |
| 0 ÷ +800 | TC K | | TC N, K, J |
| 0 ÷ +1000 | TC K | | TC N, K, R, S |
| 0 ÷ +1200 | | | TC N, K, R, S |
| 0 ÷ +1600 | | | TC R, S |
| 0 ÷ 50mV | | | • |

Table 2 ZTT-31

| % Reading | 0.4 | 0.2 | 0.1 | 0.2 | 0.4 | |
|-----------|------|------|-----|-----|-----|-----|
| Temp. °C | -180 | -100 | 0 | 200 | 500 | 600 |

Overall Dimensions



Order Code

| ZTT-10 | / | RD | / | Sensor | / | Lo Range | - | Hi Range |
|-----------|---|----------|---|-------------------------|---|----------|---|----------|
| | | | | | | @ 4mA | | @ 20mA |
| RD | | P | | RTD (Pt100) | | | | |
| CD | | K | | Cromel/Alumel T/C | | | | |
| CD | | T | | Copper/Constantan T/C | | | | |
| CD | | J | | Iron/Constantan T/C IEC | | | | |
| CD | | L | | Iron/Constantan T/C DIN | | | | |

Example:
ZTT-10 / RD / P / O...100

| ZTT-31 | / | GD | / | P | / | Lo Range | - | Hi Range |
|--------|---|----|---|---|---|----------|---|----------|
| | | | | | | @ 4mA | | @ 20mA |

Example:
ZTT-31 / GD / P / O...200

| ZTT-32 | / | GD | / | Sensor | / | Lo Range | - | Hi Range |
|--------|---|----|---|----------|---|----------|---|----------|
| | | | | | | @ 4mA | | @ 20mA |
| | | | | K | | | | |
| | | | | T | | | | |
| | | | | J | | | | |
| | | | | L | | | | |
| | | | | N | | | | |
| | | | | R | | | | |
| | | | | S | | | | |

Example:
ZTT-32 / GD / K / O...1200

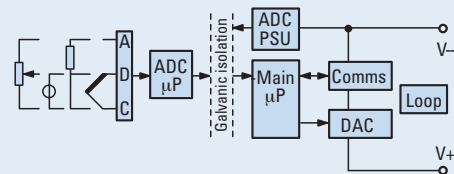
Characteristics

| Characteristics | Description | Serie ZTT-12 | Serie ZTT-14 & ZTT-15 | |
|----------------------------|------------------------------------|-----------------------------------|---|---|
| | | SMART Transmitter for RTD | SMART Transmitter with galvanic isolation | |
| Input and ranges | RTD (Pt-100) | Spec.s @ 20°C @ 24Vdc | Spec.s @ 20°C | |
| | | Pt100 Ω a 0 °C | EN60751 2 or 3 wire | EN60751 2 or wire |
| | | Range | -200~850 °C (18~390 Ω), minimum span 25 °C | -200~850 °C (18~390 Ω), minimum span 25 °C |
| | | Linearisation | EN60751, DIN43760 Custom [X] | EN60751, DIN43760 Custom [X] |
| | | Accuracy | ±0.01% span ±0.05% of reading value | ±0.01% span ±0.05% of reading value |
| | | Thermal Drift | zero 0.08°C/10°C, span 100 ppm/°C | zero 0.08°C/10°C, span 100 ppm/°C |
| | | Excitation current | 1 mA max. | 300µA~550µA |
| | Max lead resistance | 50 Ω per leg drift 0.02°C/10ΩR | 50 Ω per leg drift 0.02°C/10ΩR | |
| | TC | type K, J, T, R, S, E, F, N, [X] | — | IEC 584-3 |
| | | Range | — | see table |
| Linearisation | | — | IEC 584-3 | |
| Accuracy | | — | ±0.04% full range input ±0.05% of reading value or 0.5°C (max) (including effects of calibration, linearisation and repeatability) | |
| Cold junction compensation | | — | internal, error ±0.5°C, drift 0.5°C/10°C -40..+85°C | |
| Thermal Drift | | — | zero 0.1µV/°C span 100ppm/°C | |
| Range | | — | -10~75 mV, min. 5 mV | |
| mV | Characterisation | — | Linear or custom | |
| | Accuracy | — | ±10µV±0.07% of reading value | |
| | Input Impedance | — | 10 MΩ | |
| | Thermal Drift | — | zero 1µV/10°C span 100ppm/°C | |
| | Range | — | 10~390 Ω, minimum span 5% | |
| Potenziometro | Characterisation | — | Linear or custom | |
| | Accuracy | — | 0.1% of full range input | |
| | Thermal Drift | — | 100ppm/°C | |
| | Accuracy | ±5µA | ±5µA | |
| Output | 4...20mA, 23 mA max a 2 fili | Power supply influence | 2 µA/10V | 2 µA/10V |
| | | Thermal Drift | 10µA/10°C | 10µA/10°C |
| | | Power supply | 10~35 Vcc | 10~35 Vcc |
| | | Maximum load | 700Ω a 24Vcc | 700Ω a 24Vcc |
| | | Intrinsic safety | ZTT-15 | — |
| General characteristics | Non Incendive | — | ExNII | |
| | Input/Output isolation | — | 500 Vac 1 min | |
| | Update tim | 1 s at final value | — | 250ms max. |
| | Sampling time | — | — | <1s |
| | Warm-up time | — | — | 2 min at the spec.s values |
| | Stability | — | — | 0.1% full range input or 0.1°C/year |
| | Filter factor | — | — | Off, 2s, 10s, Adaptive |
| | Operating range | — | -40~85 °C | -40~85 °C |
| | Storage temperature | — | -50~100 C | -50~100 C |
| | EMC | — | EN 50081 Emissions EN 50082 Immunity | EN 50081 Emissions EN 50082 Immunity |
| Comm.s | Humidity range | — | 10~90% UR non condensing | |
| | Dimensions | — | 10~90% UR non condensing | |
| | PC interface | — | — | RS 232 by means adaptor |
| | Serial comm.s protocol | — | — | ANSI X3.28 1976 |
| | Baudrate | — | — | 1200 baud |
| Max cable length | — | — | 1000 m | |
| Minimum load of the line | — | — | 100 Ω | |

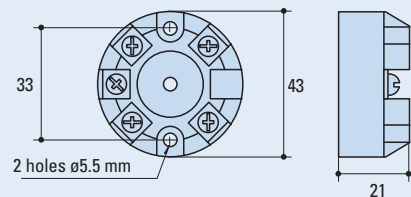
ZTT-14 & ZTT-15 - Standard ranges

| Sensor | Range °C | Minimum span °C |
|-------------|-------------|-----------------|
| RTD (Pt100) | -200...850 | 25 |
| K | -200...1370 | 50 |
| J | -200...1200 | 50 |
| T | -210...400 | 25 |
| R | -10...1760 | 100 |
| S | -10...1760 | 100 |
| E | -200...1000 | 50 |
| L | -100...600 | 25 |
| N | -180...1300 | 50 |
| [X] | ±9999 | Custom |

ZTT-14 & ZTT-15 - Block diagram



Dimensions



Order code

ZTT-12 / RD / P / Lo Range - Hi Range

standard model @ 4mA @ 20mA

ZTT-14 - RD / P / Lo Range - Hi Range

Programming Kit for ZTT12 including software interface, power supply unit and case @ 4mA @ 20mA

ZTT-14 - CD / K / Lo Range - Hi Range

RTD standard model @ 4mA @ 20mA

ZTT-15

EEx ia IIC T5 version

AZTT-RCPW -KIT-EUR

Programming Kit for ZTT14 and ZTT15 including software interface, power supply unit and case

Characteristics

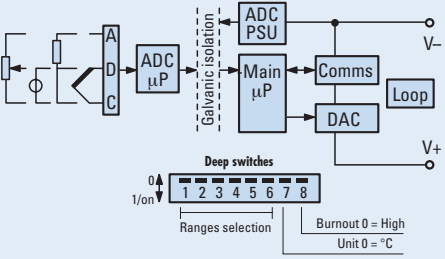
ZTT-33 Series SMART Transmitter with galvanic isolation

| Characteristics | Description | Spec.s @ 20°C @ 24Vcc | |
|-----------------|-----------------------------------|--|---|
| Input & ranges | RTD (Pt-100) | Pt100 Ω a 0 °C EN60751 2 or 3 wire | |
| | | Range | -200~850 °C (18~390Ω), minimum span 25 °C |
| | | Linearisation | EN60751, DIN43760, CUSTOM [X] |
| | | Accuracy | ±0.01% span ±0.05% of reading value |
| | | Thermal drift | zero 0.08°C/10°C, span 100 ppm/°C |
| | | Excitation current | 300µA-550µA |
| | | Maximum lead resistanc | 50Ω per leg, draft 0.02°C/10Ω R line |
| | TC | K,J,T,R,S,E,F,N,[X] types | IEC 584-3 |
| | | Range | see table |
| | | Linearisation | IEC 584-3 |
| | | Accuracy | ±0.04% full range input, ±0.05% of reading value or 0.5°C (max) (including the effects of calibration, linearisation and repeatability) |
| | | Cold junction compensation | internal, error±0.5°C, drift 0.5°C/10°C -40..+70°C |
| | mV | Range | zero 1µV/10°C span 100ppm/°C |
| | | Characterisation | Linear or custom (5th order polynomial) |
| | | Accuracy | ±10µV±0.07% of reading value |
| Input impedance | | 10 MΩ | |
| Thermal drift | | zero 1µV/10°C span 100ppm/°C | |
| Potentiometer | Range | 10~390Ω, min. span 5% | |
| | Characterisation | Linear or custom (5th order polynomial) | |
| | Accuracy | 0.1% of span | |
| | Thermal drift | 100ppm/°C | |
| Output | 4~20 mA (>3.8~<20.2mA) 23 mA max. | Protection | Reverse connection and over voltage protected |
| | | Accuracy | ±5µA |
| | | Power supply influence | 2 µA/10V |
| | | Thermal drift | 10µA/10°C |
| | | Power supply | 10~35 Vcc |
| | | Maximum load | 700Ω a 24Vcc |
| Approvals | Intrinsic safety | EEx ia IIC T4, T5, T6 | |
| | Input/Output isolation | 500 Vac 1 min | |
| | Updatetime | 250ms max. | |
| | Samplingtime | <1s (63 % of final value) | |
| | Warm-up time | 2 min at the spec.s values | |
| | Stability | 0.1% input range or 0.1°C/year | |
| | Filter factor | Off, 2s, 10s, Adaptive | |
| | Operating range | -10~70 °C | |
| | Storage time | -40~70 °C | |
| | EMC | EN 50081-1 Emissions EN 50082-2 Immunity | |
| Comm.s | Humidity range | 10~90% UR non condensing | |
| | PC interface | RS 232 via interface adapter | |
| | Serial comm.s protocol | ANSI X3.28 1976 | |
| | Baudrate | 1200 baud | |
| | Max cable lenght | 1000 m | |
| | Minimum load of the line | 100~300Ω | |
| | Conf. parameters | Sensor, Burn-out, °C/°F, Output, Filter, Tag, Offset | |

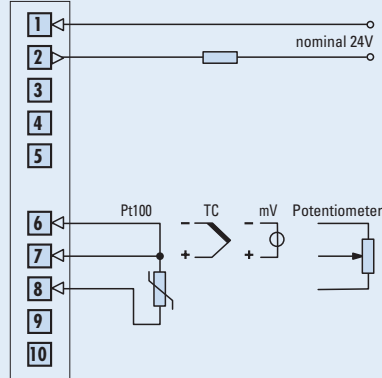
| Sensor | Range °C | Minimum span °C |
|-------------|-------------|-----------------|
| RTD (Pt100) | -200...850 | 25 |
| K | -200...1370 | 50 |
| J | -200...1200 | 50 |
| T | -210...400 | 25 |
| R | -10...1760 | 100 |
| S | -10...1760 | 100 |
| E | -200...1000 | 50 |
| L | -100...600 | 25 |
| N | -180...1300 | 50 |
| [X] | ±9999 | Custom |

Note: Quick standard ranges (57) selection my means 6 deep switches

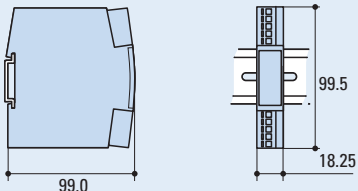
ZTT-33 - Block diagram



ZTT-33 - Wiring



ZTT-33 - Dimensions



Order Code

ZTT-33 /GD
standard model

ZTT-33X/GD
EEx ia IIC T5 version

AZTT-RCPW -KIT-EUR
Programming Kit for ZTT33 including software interface, power supply unit and case



S E R I E S

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