ZT SERIES

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

Characteristics	Description		ZTT-10 Series Temperature Transmitter	ZTT-31 Series Temperature Transmitter	ZTT-32 Series Temperature Transmitter
			Spec.s @ 20°C	Spec.s @ 20°C	Spec.s @ 20°C
Standard ranges			SeeTable1	SeeTable1	SeeTable1
Input	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	—	—
	TC		ZTT 10 K, T, J	—	ZTT 32 J, K, N, R, S, T
		MilliVolt	—	—	-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	—	—
		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 sensivity		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

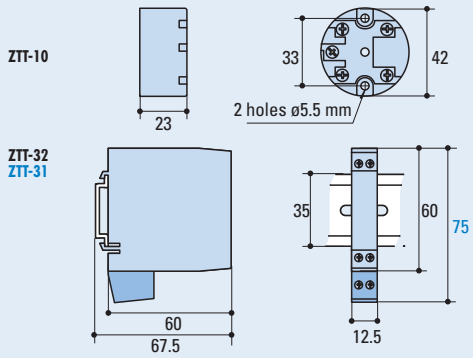
Table 1 Standard ranges

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 / 0…100

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

Example:
ZTT-31 / GD / P / 0…200

ZTT-32 / GD / Sensor / Lo Range - Hi Range (@ 4mA / @ 20mA)

K	Cromel/Alumel T/C
T	Copper/Constantan T/C
J	Iron/Constantan T/C IEC
L	Iron/Constantan T/C DIN
N	Nicrosil/Nisil T/C
R	Pt 13% Rh-Pt
S	Pt 10% Rh-Pt

Example:
ZTT-32 / GD / K / 0…1200

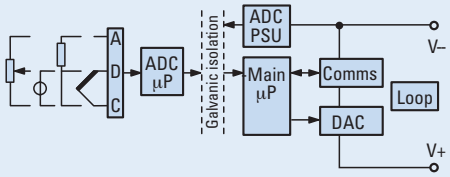
Characteristics

Characteristics	Description		Serie ZTT-12 SMART Transmitter for RTD	Serie ZTT-14 & ZTT-15 SMART Transmitter with galvanic isolation
			Spec.s @ 20°C @ 24Vdc	Spec.s @ 20°C
Input and ranges	RTD (Pt-100)	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
	mV	Range	—	-10~75 mV, min. 5 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
	Potenziometro	Range	—	10~390 Ω, minimum span 5%
		Characterisation	—	Linear or custom
		Accuracy	—	0.1% of full range input
		Thermal Drift	—	100ppm/°C
Output	4…20mA, 23 mA max a 2 fili	Accuracy	±5µA	±5µA
		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
Approvals	Intrinsic safety	ZTT-15	—	EEx ia IIC T5
	Non Incendive		—	ExNII
General characteristics	Input/Output isolation		—	500 Vac 1 min
	Update tim		1 s at final value	250ms max.
	Sampling time		—	<1s
	Warm-uptime		—	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 50081 Emissions
			EN 50082 Immunity	EN 50082 Immunity
	Humidity range		10~90% UR non condensing	10~90% UR non condensing
	Dimensions		ø43 mm x 21 mm	ø43 mm x 21 mm
Comm.s	PC interface		—	RS 232 by means adaptor
	Serial comm.s protocol		—	ANSI X3.28 1976
	Baudrate		—	1200 baud
	Max cable lenght		—	1000 m
	Minimum load of the line		—	100 Ω

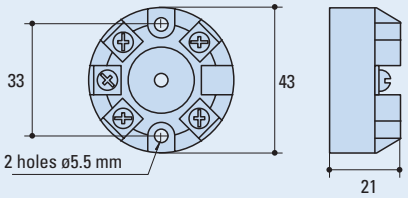
ZTT-14 & ZTT-15 - Standard ranges

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

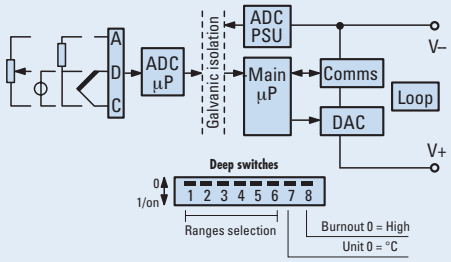
Characteristics

Characteristics	Description		ZTT-33 Series SMART Transmitter with galvanic isolation 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
		Thermal drift	zero 1µV/10°C span 100ppm/°C
	mV	Range	-10~75 mV, min. 5 mV
		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
General characteristics	Input/Output isolation		500 Vac 1 min
	Updatetime		250ms max.
	Samplingtime		<1s (63 % of final value)
	Warm-uptime		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
	Humidity range		10~90% UR non condensing
Comm.s	PC interface		RS 232 via interface adapter
	Serial comm.sprotocol		ANSI X3.28 1976
	Baudrate		1200 baud
	Max cable lenght		1000 m
	Minimum loadoftheline		100~300Ω
	Conf. parameters		Sensor, Burn-out, °C/°F, Output, Filter, Tag, Offset

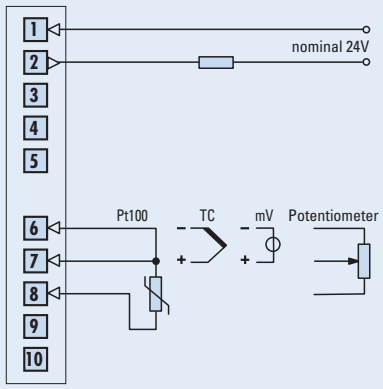
Sensor	Range °C	Minimum span °C
RTD (Pt100)	-200…850	25
K	-200…1370	50
J	-200…1200	50
T	-210…400	25
R	-10…1760	100
S	-10…1760	100
E	-200…1000	50
L	-100…600	25
N	-180…1300	50
[X]	±9999	Custom

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

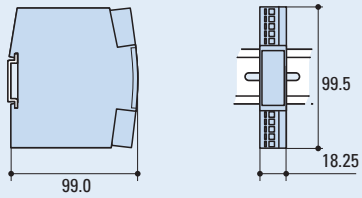
ZTT-33 - Block diagram



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

ZT
SERIES

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