ZT
S E R I E S

Temperature Transmitters
ZTT series

The ZTT Series transmitters accept the most commonly used temperature sensors (TC and RTD), as well as mV and slidewire feedback signals. All ZTT transmitters provide an adjustable 2 wire current output signal.

Available models can be supplied for head mountable or DIN rail mounted. The SMART range (ZTT-33) provides for quick configuration via DIP switches or through simple PC configuration.

For use in hazardous locations, several ZTT models can be equipped with galvanic isolation and ATEX safety compliant.

The compact size of the ZTT transmitters makes them ideal for tight spaces and small cabinets where space limitations and accuracy are the main goals.


E

ISO 9001 Certified

ascon
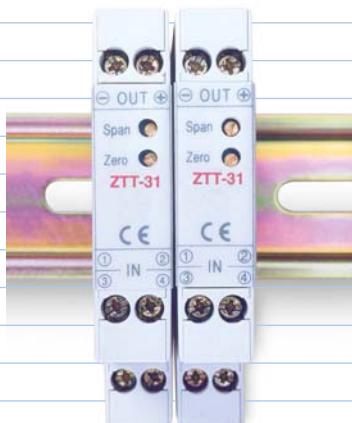
Temperature   Transmitters ZTT series

ZTT-11

- 2 or 3 wire PT100 input
- Input type: TC
- Scalable current output included
- Compact size and cost effective
- Head mountable
- Programmable with push-button
- LED indicator

ZTT-12

- SMART Transmitter Family
- 2 or 3 wire PT100 input
- High accuracy and Thermal Stability
- Scalable Current output included
- Compact size and cost effective
- Head mountable

ZTT-14 e ZTT-15

- SMART Transmitter Family
- Galvanic Isolation
- Universal input (PT100, TC, mV)
- High Accuracy and Thermal Stability
- Scalable current output
- PC configurable
- Custom input linearizations
- ATEX safety compliant (ZTT-15)
- Head mountable

ZTT-31

- 2 or 3 wire PT100 input
- Type J/K/T TC input
- User configurable
- Scalable current output included
- Compact size and cost effective
- DIN   rail   mountable

ZTT-32

- Type TC (J/K/N/R/S/T) selectable input
- Scalable current output
- Compact size and cost effective
- DIN rail mountable

ZTT-33

- SMART Transmitter Family
- Galvanic Isolation
- Universal input (PT100, TC, mV)
- Scalable current output
- DIP switch or PC configurable
- Custom input linearizations
- Compact size
- DIN rail mountable

Characteristics

Characteristics			ZTT-11 Series	ZTT-31 Series	ZTT-32 Series
	Description		Temperature Transmitter	Temperature Transmitter	Temperature Transmitter
			Spec.s @ 20°C	Spec.s @ 20°C	Spec.s @ 20°C
Standard ranges			SeeTable1	SeeTable1	SeeTable1
Input	RTD	Linearisation	BT EN 60751, BS 1904, JISC1604	EN60751, DIN43760 Custom [X]	—
		Accuracy	±0.1°C ±0.1% of reading value range -100...100	±0.15°C ±% of reading value see table 2	—
		Burn-out	—	Standard high range	—
		Excitation current	—	2 mA max.	—
		Offset adjustment	Set-up through a push button	—	—
		Gain adjustment	Set-up through a push button	—	—
	TC		ZTT 11 K, T, J	—	ZTT 32 J, K, N, R, S, T
		MilliVolt	—	—	-50...50 mV
		Isolation	Up to 50mVdc for TC models	—	Input/Output
		Linearisation	Yes	—	Linear with signal (mV)
		Accuracy	±0.1% FS plus cold junction error non-linearised	—	—
		Offset adjustment	Set-up through push button	—	—
		Span adjustment	Set-up through push button	—	—
		Impedance	> 1 MΩ	—	>1 MΩ
		Burn-out	High range standard (Low range on request)	High range standard (Low range on request)	—
		Cold junction	Automatic -20...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	Output	max. 30 mA	max. 30 mA	max. 30 mA
		Reverse polarity protection	Yes	Yes	Yes
Approvals	EMC		EN61326 Emissions and Immunity	BS EN 50081 Emissions BS EN 50082 Immunity	BS EN 50081 Emissions BS EN 50082 Immunity
General Characteristics	Power Supply		8...30Vdc	10...30Vdc	10...30Vdc
	Loop resistance		800Ω @ 24Vdc	700Ω @ 24Vdc	700Ω @ 24Vdc
	Stability		—	100 ppm/°C	2µVcc/°C
	Loop volts sensivity		0.4 µA/V	(ripple) <40µA/V (1V ripple 50 Hz)	(ripple) <40µA/V (1V ripple 50 Hz)
	Temperature stability		ZERO drift typ. 0.01°C/°C SPAN drift typ. 50PP max.	—	—
	Response time		500 ms at 70% of final value	100 ms at 70% of final value	200 ms at 70% of final value
	Env. temperature		20...70 °C	0...50 °C	0...50 °Crange
	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 43 mm x 21 mm	12.5 x 75 x 67.5 mm	12.5 x 60 x 67.5 mm
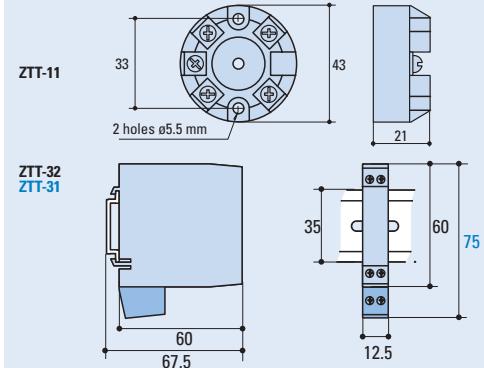
Table 1 Standard ranges

Range °C	Used sensor		
	ZTT 11	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

ZTT-11
33   43
2 holes ø5.5 mm
21

ZTT-32
ZTT-31
35   60   75
60
67.5
12.5

Order Code

ZTT-11 / 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-11 / RD / P / O…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	Nichrosil/Nisil T/C
R	Pt 13% Rh-Pt
S	Pt 10% Rh-Pt

Example:
ZTT-32 / GD / K / 0…1200

Characteristics
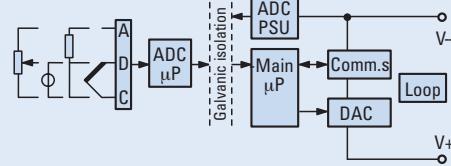
Characteristics	Description		Serie ZTT-12	Serie ZTT-14 & ZTT-15
			SMART Transmitter for RTD	SMART Transmitter with galvanic isolation
	Description		Spec.s @ 20°C @ 24Vdc	Spec.s @ 20°C
Input and ranges	RTD (Pt-100)	Pt100 Ω at 0 °C	EN60751 2 or 3 wire	EN60751 2 or wire
		Range	-200...850°C (18...390Ω), minimum span 25°C	-200...850°C (18...390Ω), 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
	Potentiometer	Range	—	10...390Ω, minimum span 5%
		Characterisation	—	Linear or custom
		Accuracy		0.1% of full range input
		Thermal Drift	—	100ppm/°C
Output	4…20mA, 23 mA max. 2 wire	Accuracy	±5µA	±5µA
		Power supply influence	2 µA/10V	2 µA/10V
		Thermal Drift	10µA/10°C	10µA/10°C
		Power supply	10...35 Vdc	10...35 Vdc
		Maximum load	700Ω at 24Vdc	700Ω at 24Vdc
Approvals	Intrinsic safety	ZTT-15	—	EEx ia IIC T5
	Non Incendiary		—	ExNII
General characteristics	Input/Output isolation		—	500 Vac 1 min
	Update time		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 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
	Baud rate		—	1200 baud
	Max. cable length		—	1000 m
	Minimum line load		—	100 Ω
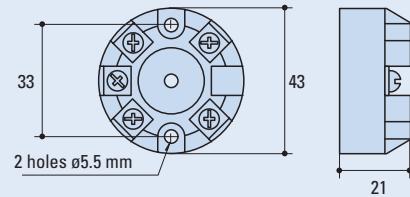
ZTT-14 & ZTT-15 - Standard ranges

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

33   43   21

2 holes ø5.5 mm

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
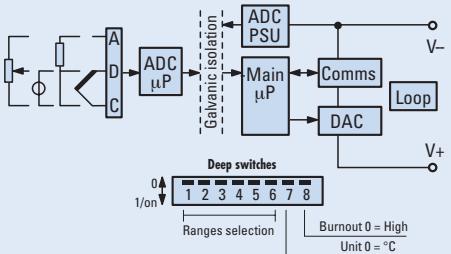
Characteristics	Description		ZTT-33 Series SMART Transmitter with galvanic isolation
	Description		Spec.s @ 20°C @ 24Vdc

Characteristics	Description		Spec.s @ 20°C @ 24Vdc
Input & ranges	RTD (Pt-100)		Pt100 Ω at 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 resistance	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 effect	2 µA/10V
		Thermal drift	10µA/10°C
		Power supply	10...35 Vdc
		Maximum load	700Ω at 24Vdc
General characteristics	Input/Output isolation		500 Vac 1 min
	Update time		250ms max.
	Sampling time		<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 time		Off, 2s, 10s, Adaptive
	Operating range		-10...70°C
	Storage temperature		-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.s protocol		ANSI X3.28 1976
	Baud rate		1200 baud
	Max. cable lenght		1000 m
	Minimum cable load		100...300Ω
	Configuration parameters		Sensor, Burn-out, °C/°F, Output, Filter, Tag, Offset
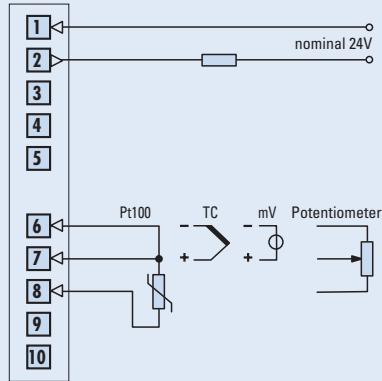
Sensor	Range °C	Minimum span °C
RTD (Pt100)	-200...850	25
K	-200...1370	50
J	-200...1200	50
T	-210...400	25
R	-10...1760	100
S	-10...1760	100
E	-200...1000	50
L	-100...600	25
N	-180...1300	50
[X]	±9999	Custom

Note: Quick standard ranges (57) selection by means of 6 deep switches
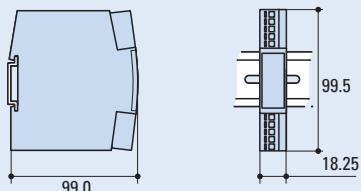
ZTT-33 - Block diagram

ZTT-33 - Wiring

ZTT-33 - Dimensions

99.5

18.25

99.0

Order Code

ZTT-33 /GD
standard model

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

ZT
S E R I E S

ASCON spa
Via Falzarego, 9/11
20021 Baranzate
(Milano) Italy
Tel. +39 02 333 371
Fax +39 02 350 4243
http://www.ascon.it
sales@ascon.it

ASCON FRANCE
2 bis, Rue Paul Henri Spaak
ST. THIBAULT DES VIGNES
F-77462 LAGNY SUR
MARNE - Cedex
Tél. +33 (0) 1 64 30 62 62
Fax +33 (0) 1 64 30 84 98
ascon.france@wanadoo.fr

AGENCE EST
Tél. +33 (3) 89 76 99 89
Fax +33 (3) 89 76 87 03

AGENCE SUD-EST
Tél. +33 (0) 4 74 27 82 81
Fax +33 (0) 4 74 27 81 71

ASCON
CORPORATION
472 Ridgelawn Trail
Batavia, Illinois 60510
Tél. +1 630 482 2950
Fax +1 630 482 2956
www.asconcorp.com
info@asconcorp.com

WORLDWIDE NETWORK OF
DIRECT SALES CENTERS,
DISTRIBUTORS AND VARs

Europe
Belgium, Croatia, Czech Rep.,
Denmark, Esthonia, Finland, France,
Germany, Great Britain, Greece,
Holland, Ireland, Norway, Poland,
Portugal, Romania, Russia, Slovakia,
Slovenia, Spain, Sweden, Switzerland,
Turkey, Ukraine

Americas
Argentina, Brazil, Canada, Chile,
Colombia, Ecuador, Mexico, Paraguay,
Peru, Urugay, Venezuela

Rest of the world
Algeria, Australia, China, Egypt,
Hong Kong, India, Indonesia, Iran,
Israel, Malaysia, Marocco, New
Zeland, Pakistan, Saudi Arabia,
Singapore, Taiwan, Thailand, Tunisia,
South Africa & South East Africa,
UAE