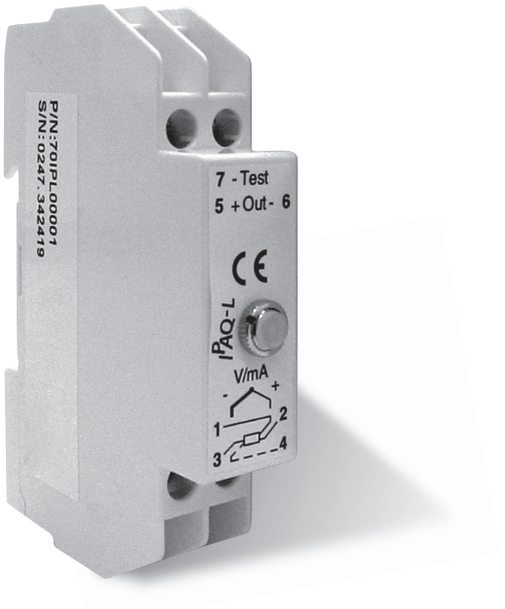
User Manual

ZTT40

2-WIRE
DIN RAIL TRANSMITTERS



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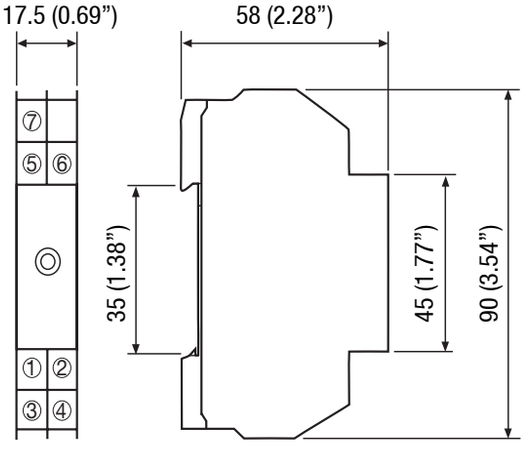
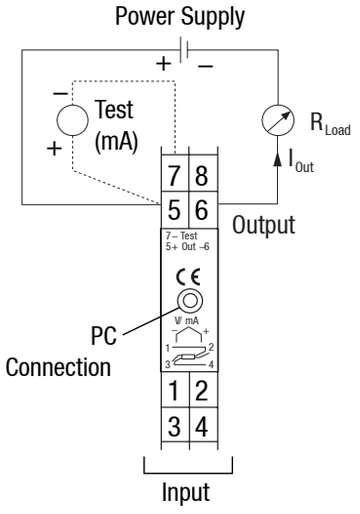
1. OUTLINE DIMENSIONS (mm)



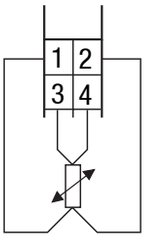
2. CONNECTION DIAGRAM

2.1 POWER SUPPLY AND OUTPUT

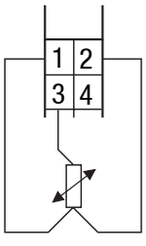


2.2 INPUT

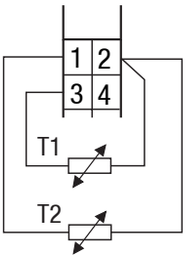
Pt100, Pt1000,
Ni100, Ni1000,
4 wire connection



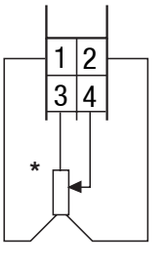
Pt100, Pt1000,
Ni100, Ni1000,
3 wire connection



Pt100
ΔT
T2 > T1

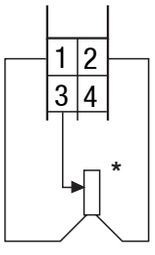


Potentiometer
4 wire sensor



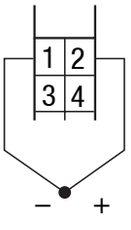
* Max. Input

Potentiometer
3 wire sensor

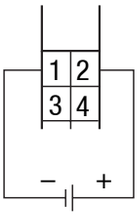


* Max. Input

T/C Input



mV



3. SPECIFICATIONS

Input		
RTD's and Resistance		
Pt100 (IEC751, α = 0.00385)	3-, 4-wire connection	-200... +1000°C/-328... +1832°F
Pt1000 (IEC751, α = 0.00385)	3-, 4-wire connection	-200... +200°C/ -328... +392°F
Ni100 (DIN 43760)	3-, 4-wire connection	-60... +250°C/-76... +482°F
Ni1000 (DIN 43760)	3-, 4-wire connection	-60... +150°C/-76... +302°F
Potentiometer/resistance	3-, 4-wire connection	0... 2000 Ω
Maximum sensor wire resistance		25 Ω/wire
Thermocouples, Voltage		
T/C	Type: AE, B, E, J, K, L, N, R, S, T, U	Ranges according to users manual
Voltage		-10... +500 mV
Input Impedance	T/C, Voltage	> 10 MΩ
Maximum sensor wire resistance	T/C, Voltage	500 Ω (total loop)
Monitoring		
Sensor break monitoring	User definable output	3.5... 21.6 mA
Adjustments		
Zero adjustment	All inputs	Any value within range limits
Minimum spans	Pt100, Pt1000, Ni100, Ni1000	10°C/18°F
	Potentiometer	10 Ω
	T/C, Voltage	2 mV
Output		
Straight, reversed or any intermediate value		4... 20/20... 4 mA
Resolution		5 µA
Minimum output signal	Measurement/Failure	3.8 mA/3.5 mA
Maximum output signal	Measurement/Failure	20.5 mA/21.6 mA
Permissible load (see fig. 4)		750 Ω @ 24 VDC, 22 mA
Ambient Temperature		
Storage		-20... +70°C/-4... +158°F
Operation		-20... +70°C/-4... +158°F
General data		
Selectable dampening time		~2 s
Update time		~1.5 s
Isolation In - Out	Isolated versions	1500 VAC, 1 min
Humidity (non-condensing)		0... 95% RH
Power supply, polarity protected		
Supply voltage		7.5... 36 VDC 2-wire
Permissible ripple		4 Vp-p @ 50/60 Hz
Accuracy		
Linearity	RTD Potentiometer, mV	±0.1% (note 1)
	T/C	±0.2% (note 1)
Calibration	RTD	Max. of ±0.2°C/±0.4°F or ±0.1% (note 1)
	Potentiometer	Max. of ±0.1 Ω or ±0.1% (note 1)
	mV, T/C	Max. of ±20 µV or ±0.1% (note 1)
Cold Junction Compensation (CJC)	T/C	±0.5°C/±0.9°F
Temperature influence (note 4)	All inputs	Max. of ±0.25°C/25°C or ±0.25%/25°C (note 1 and 3)
		Max. of ±0.5 °F/50 °F or ±0.28%/50 °F (note 1 and 3)
Temperature influence CJC (note 4)	T/C	±0.5°C/25°C/±1.0°F/50°F
Instrument calibration output	4... 20 mA	±8 µA
Sensor wire resistance influence	RTD, Potentiometer, 3-wire	Negligible (note 2)
	RTD, Potentiometer, 4-wire	Negligible
	mV, T/C	Negligible
Load influence		Negligible
Power supply influence		Negligible
RFI influence, 0.15... 1000 MHz, 10 V or V/m		±0.2% (typical) (note 1)
Long-term stability		±0.1%/year (note 1)
Housing		
Material/Flammability (UL)		PC + Glass fibre/V0
Mounting		Rail according to DIN EN 50022, 35 mm
Connection	Single/stranded wires	≤1.5 mm², AWG 16
Weight		70 g
Protection, housing/terminals		IP 20/IP20

Notes: **1.** Of input span;

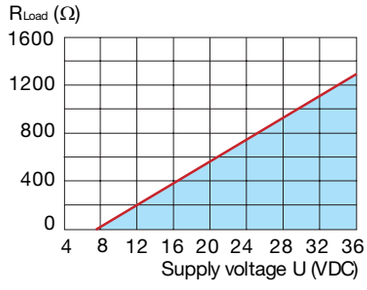
2. With equal wire resistance;

3. If zero-deflection > 100% of input span: add 0.125% of input span/25°C or 0.14% of input span/50°F per 100% zero-deflection;

4. Reference temperature 23°C/73°F.

3.2.1 Output Load Diagram

Fig. 4 - Permissible R_{Load} at 22 mA output



$R_{Load} = (U - 7.5) / 0.022$