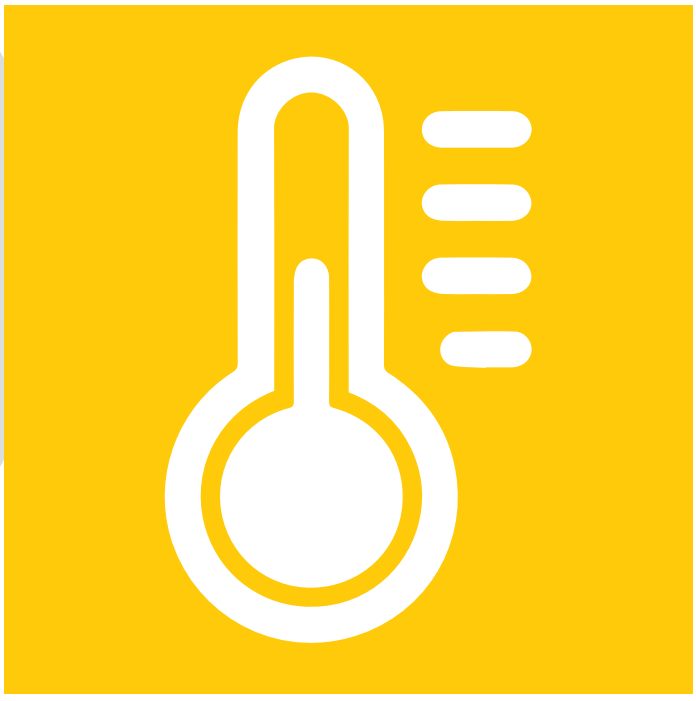
100% Made & Designed in Italy

T120 / T121

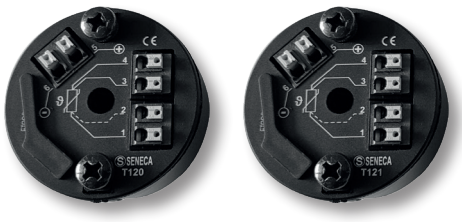
TEMPERATURE TRANSMITTERS



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T120 / T121

High precision temperature transmitters for head mounting, T120 and T121, are designed for universal use on machines, industrial plants, installations and in the process industry. They convert the input signals and transmit them back into a normalised current signal via a 4-20 milliAmpere loop. The input signals can come from 2, 3, 4-wire RTD sensors such as Pt100 (EN 60751) and Ni100 (DIN 43760). T121 model also acquires Cu50, Cu100, Ni121 and Ni1000 thermoresistances and signals from thermocouples type J, K, R, S, T, B, E, N, L (EN 60584), voltage and resistance. T120 and T121 are featured by reduced overall dimensions and connections via spring terminals. All available operating parameters can be configured using specific EASY SETUP / EASY LP software.Translated with www.DeepL.com/Translator (free version)

HIGHLIGHTS

OPERATING TEMPERATURE
-40..+85°C

RESOLUTION
UP TO 16 BIT

ACCURACY CLASS
0,1%

SPRING CLAMPS CONNECTION

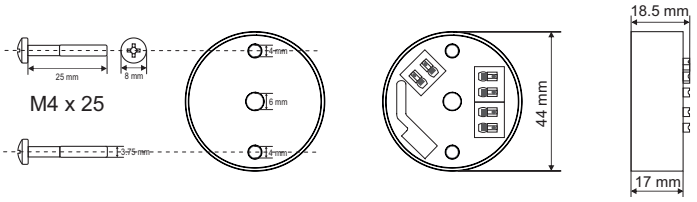
UNIVERSAL INPUT
RTD, TC, mV, Ω

OUTPUT CURRENT LOOP / POWER SUPPLY
4..20 mA / 20..4 mA (2 wires); 5/7..30 Vdc

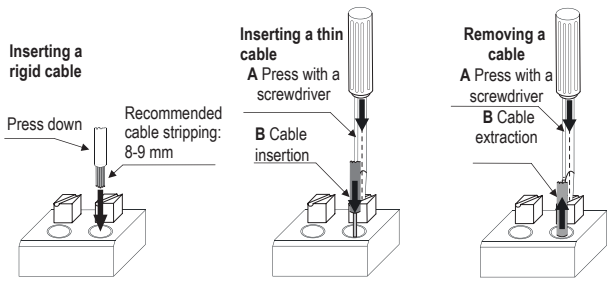
CALIBRATED VERSIONS

ATEX PROTECTION ZONE 2 (T121)

DIMENSION



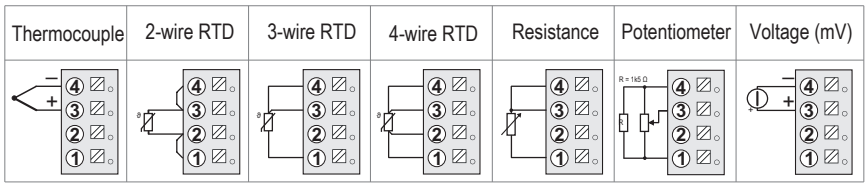
PUSH-WIRE CLAMPS CONNECTION



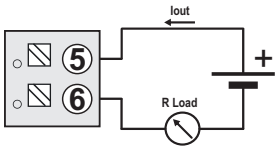


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2 / 3 / 4 WIRES CONNECTION



OUTPUT / CURRENT LOOP



PROGRAMMING



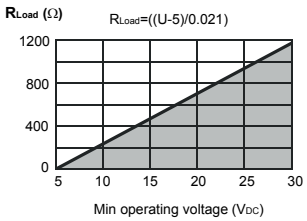
The configuration of T120 and T121 transmitters can be done through EASY USB device, which converts the USB serial signal from the PC into a serial UART TTL signal and vice versa, and EASY LP software. The transmitters can be configured even if not powered by 4..20 mA loop, taking power supply from the programming connector.

T120 and T121 transmitters can be configured via S11P1, USB - RS232 / TTL converter and EASY LP software. The transmitters can be configured even if not powered by 4..20 mA loop, taking power supply fron the programming connector.

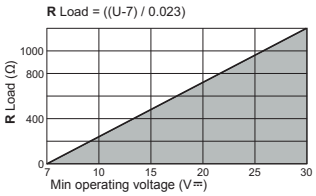
EASY SETUP / EASY LP software allows to configure T121 transmitter to linearise custom sensors within a certain working range. The curves of all the sensors managed are included in the software. There is also a tool to correctly configure the S311A indicator connected to the T121 transmitter.

LOAD DIAGRAMS

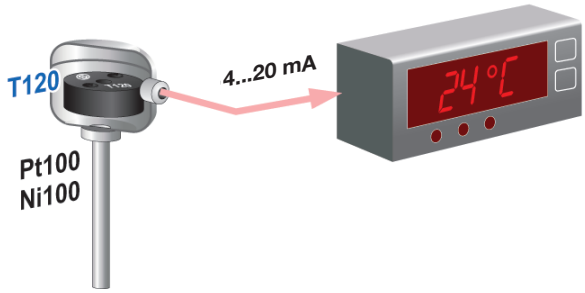
T120

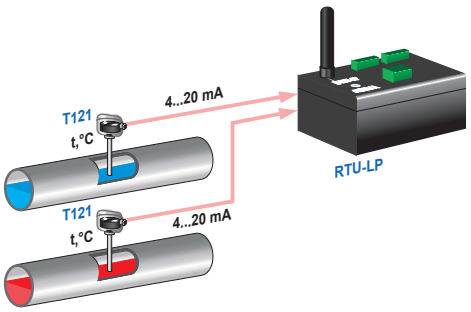


T121



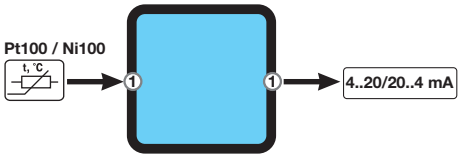
APPLICATION EXAMPLES



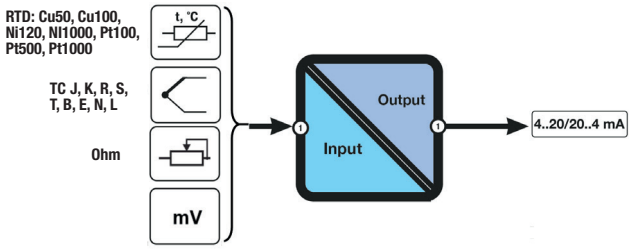


ISOLATION / SIGNALS DIAGRAMS

T120



T121



Temperature Transmitters

	T120	T121
		
	2 wire loop powered transmitter for Pt100 and Ni100 probes	**Isolated loop powered temperature transmitter**
GENERAL DATA		
Power supply	5..30 Vdc (loop powered)	7..30 Vdc (loop powered)
Isolation	-	1,5 kVac
Protection degree	IP20	IP20
Sampling period	100 ms (300 ms con reiezione 50/60 Hz)	300 ms
Frequency rejection	50 / 60 Hz (selectable)	>60 dB a 50 e 60 Hz
Response time	<220 ms (<620 ms with 50-60 Hz rejection)	< 620 ms
Accuracy class	0,1%	0,1% (min 0,1°C per RTD e 1°C per TC)
Thermal drift	< 100 ppm (30 ppm typical)	< 100 ppm (30 ppm typical)
Measurement conversion	16 bit	16 bit
Transmission error	Max between 0,1% full scale or 0,1°C	Max between 0,1% full scale or 0,1°C
EMI error	<0,5%	<0,5%
Operating temperaure	-40..+85°C	-40..+85°C
Connection	6 spring terminals for 0.2 to 2.5 mm2 conductor section, suggested wire stripping 8 mm, 1 serial programming connector TTL with 4 pin.	6 spring terminals for 0.2 to 2.5 mm2 conductor section, suggested wire stripping 8 mm, 1 serial programming connector TTL with 4 pin.
Case	PA6 reinforced with glass-fibre, black color	PA6 reinforced with glass-fibre, black color
Dimension	Ø 43,7 x 20 mm	Ø 43,7 x 20 mm
Weight	35 g	35 g
INPUT DATA		
Number of channels	1	1
Type	• Pt100 Standard: EN 60751/A2 (ITS-90) Measurement range: -200..+650°C Minimum span: 20°C Connection: 2,3,4 wires • Ni100 Measurement range: -60..+650°C Minimum span: 20°C Connection: 2,3,4 fili	• Cu50 (-180..+200°C, min span 20°C) • Cu100 (-180..+200°C, min span 20°C) • Ni100 (-60..+250°C, min span 20°C) • Ni120 (-80..+260°C, min span 20°C) • Pt100 (EN 60751/A2, -200..+650°C, min span 20°C) • Pt500 2,3,4 fili (-200..650°C, min span 20°C) • Pt1000 2,3,4 fili (-200..+200°C, min span 20°C) • TC J , K, R, S, T, B, E, N, L; input impedance 10 MΩ • Voltage: -150..+150 mV; input impedance 10 MΩ • Potentiometer: 500 Ω..100 kΩ • Resistance 0..+400 (1.760) Ω
Resolution	Approx 6 mΩ	Approx 6 mΩ
OUTPUT DATA		
Number of channels	1	1
Type	Current (mA) 4..20, 20..4 mA (2wires)	Current (mA) 4..20, 20..4 mA (2 fili)
Resolution	1µA (>14bit)	2µA (>13bit)
Current output protection	Approx 30 mA	Approx 30 mA
PROGRAMMING		
EASY SETUP / EASY LP - PC software	Configuring start / full measurement scale, RTD connection and type, rejection, measurement filter, cable resistance, fault output / over-range	Configuring start / full measurement scale, RTD connection and type, rejection, measurement filter, cable resistance, fault output / over-range
STANDARD		
Approvals	CE	CE, II 3G Ex nA IIC T4 Gc X, II 3D Ex tc IIIC T135°C Dc X
Norms	EN 61000-6-4, EN 61000-6-2	EN 61000-6-4, EN 61000-6-2, EN 61010-1

ORDER CODES	
Code	**Description**
T120	2 wire loop powered transmitter for Pt100 and Ni100 probes
T120-C	2 wire loop powered transmitter for Pt100 and Ni100 probes, calibrated version
T121	Isolated loop powered temperature transmitter
T121-C	Isolated loop powered temperature transmitter, calibrated version
SOFTWARE	
EASY LP	Plug&Play software suite for loop powered devices (K120RTD, K121, T120, T121)
ACCESSORIES	
FLEX-DIN	DIN rail adapter for T120 and T121
EASY-USB	USB - UART TTL converter
S117P1	RS232/USB, TTL/USB, RS485/USB asynchronous serial converter
PT100	
POZZ-100	Weld-in thermowell, lenght 100 mm
POZZ-150	Weld-in thermowell, lenght 150 mm
POZZ-200	Weld-in thermowell, lenght 200 mm
POZZ-250	Weld-in thermowell, lenght 100 mm
POZZ-300	Weld-in thermowell, lenght 100 mm
POZZ-50	Weld-in thermowell, lenght 100 mm

ORDER CODES	
Code	**Description**
PT100	
PT-150-3-M12	PT100 class B, d=3 mm, L= 150 mm, M12 connector
PT-250-2-M12	PT100 classe B, d=2 mm, L= 250 mm, M12 connector
PT-150-3R-M12	PT100 classe B, d=3 mm, L= 150 mm, tapered terminal, M12 connector
PT100-100	Pt100 std length 100 mm
PT100-100-MA	Pt100 std length 100 mm, 4-20 mA output
PT100-150	Pt100 std length 150 mm
PT100-150-MA	Pt100 std length 150 mm, 4-20 mA output
PT100-200	Pt100 std length 200 mm
PT100-200-MA	Pt100 std length 200 mm, 4-20 mA output
PT100-250	Pt100 std length 250 mm
PT100-250-MA	Pt100 std length 250 mm, 4-20 mA output
PT100-300	Pt100 std length 300 mm
PT100-300-MA	Pt100 std length 300 mm, 4-20 mA output
PT100-50	Pt100 std length 50 mm
PT100-50-MA	Pt100 std length 50 mm, 4-20 mA output
PT100-A	Atmosphere PT100
PT100-A-MA	Atmosphere PT100, 4-20 mA output
PT100-SOLAR	Single element 3 wires Pt100 for photovoltaic modules
PT100-SOLAR-MA	Single element 3 wires Pt100 for photovoltaic modules, 4-20 mA output

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