



Read the user manual carefully before using the device! Responsibility for any damage, loss or accidents to persons arising from failure to comply with the warnings in the user manual belongs to the user. In case of malfunctions in this case, the device will be out of warranty.

ECTC-P

Temperature Converter

- Selectable E, J, K, L, N, R, S, T, U thermocouple input,
- Current output: 0...20mA, 20...0mA, 4...20mA, 20...4mA,
- Voltage output: 0...5V, 5...0V, 0...10V, 10...0V, -5...+5V,
- 3-way isolation: input, output, power supply,
- Thermocouple and output type set via potentiometers,
- Rail-mountable enclosure,
- CE certified according to EN standards.



Order Code

ECTC-P

Technical Specifications

Electrical Specifications

Supply Voltage	24VDC (±5%)
Power Consumption	Maximum 6W
Isolation	1.5 kVrms between input, output and power supply
Wiring	1.5mm ² terminal
Line Resistance	Max 100Ω for thermocouple
Data Retention	FLASH memory (min 20 years)
EMC	EN 61326-1: 2021 (Performance criterion B for EN 61000-4-3 standard is met)
Safety Requirements	EN 61010-1: 2010 (Pollution degree 2, overvoltage category II)

Environmental Specifications

Ambient/Storage Temperature	0 ...+50°C/-25 ...+70°C (without icing)
Relative Humidity	Up to 31°C 80%, then linearly decreasing to 50% at 40°C
Protection Rating	IP20 according to EN 60529
Operational Height	Max 2000m



KEEP AWAY device from exposed to corrosive, volatile and flammable gasses or liquids

Inputs

Input Type		Scale Range		Accuracy
E (NiCr-CuNi) Thermocouple	EN 60584	0 ...1000°C	32 ...1832°F	± 0.5% (full scale)
J (Fe-CuNi) Thermocouple	EN 60584	0.0 ...600.0°C	32.0 ...999.0°F	± 0.5% (full scale)
K (NiCr-Ni) Thermocouple	EN 60584	0.0 ...999.9°C	32.0 ...999.9°F	± 0.5% (full scale)
L (Fe-CuNi) Thermocouple	DIN 43710	0.0 ...600.0°C	32.0 ...999.9°F	± 0.5% (full scale)
N (NiCrSi-NiSi) Thermocouple	EN 60584	0 ...1300°C	32 ...2372°F	± 0.5% (full scale)
R (Pt10Rh-Pt) Thermocouple	EN 60584	0 ...1700°C	32 ...3092°F	± 0.5% (full scale)
S (Pt10Rh-Pt) Thermocouple	EN 60584	0 ...1700°C	32 ...3092°F	± 0.5% (full scale)
T (Cu-CuNi) Thermocouple	EN 60584	0.0 ...400.0°C	32.0 ...752.0°F	± 0.5% (full scale)
U (Cu-CuNi) Thermocouple	DIN 43710	0 ...600°C	32 ...1112°F	± 0.5% (full scale)

Outputs

Analog Output(mA)	0 ...20mA / 20 ...0mA / 4 ...20mA / 20 ...4mA DC ± 0.2% (full scale), load resistance max 300ohm
Analog Output(V)	0 ...5V / 5 ...0V / 0 ...10V / 10 ...0V / -5 ...+5V ± 0.2% (full scale), max 10mA (short-circuit protection)

Housing

Mounting Style	Mountable on rail (according to DIN 43 700)
Dimensions	W18.5xH90xD66mm
Weight	Approx. 120g (with packaging)
Housing Material	Self-extinguishing plastics used

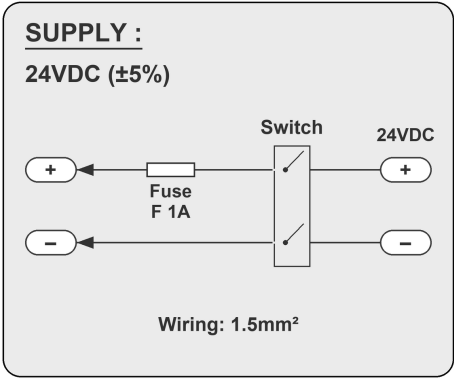
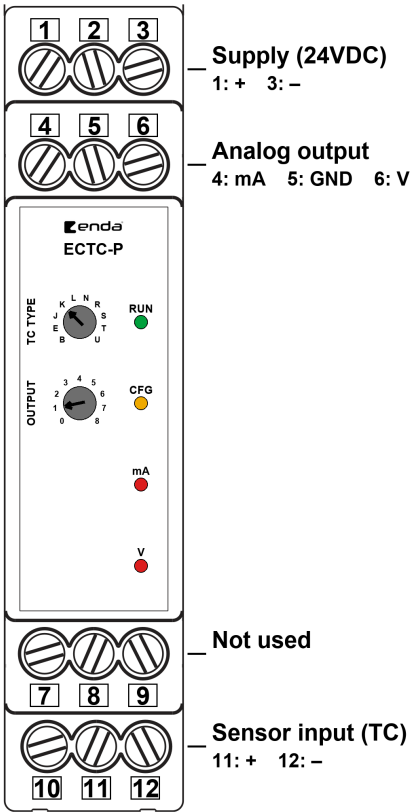


The device should not be cleaned with solvent-containing or abrasive cleaning agents (thinner, gasoline, acid, etc.).

Connection Diagram

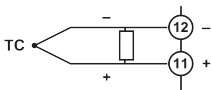


ENDA ECTC-P is a rail-mountable device. The device must be used in accordance with the instructions. Installation and electrical connections must be carried out by technical personnel in accordance with the instructions in the user manual. Care should be taken to ensure that there is no electricity during installation. The device must be protected from moisture, vibration, and pollution. Attention should be paid to the operating temperature. Installation cables should not pass near high power lines and other devices.



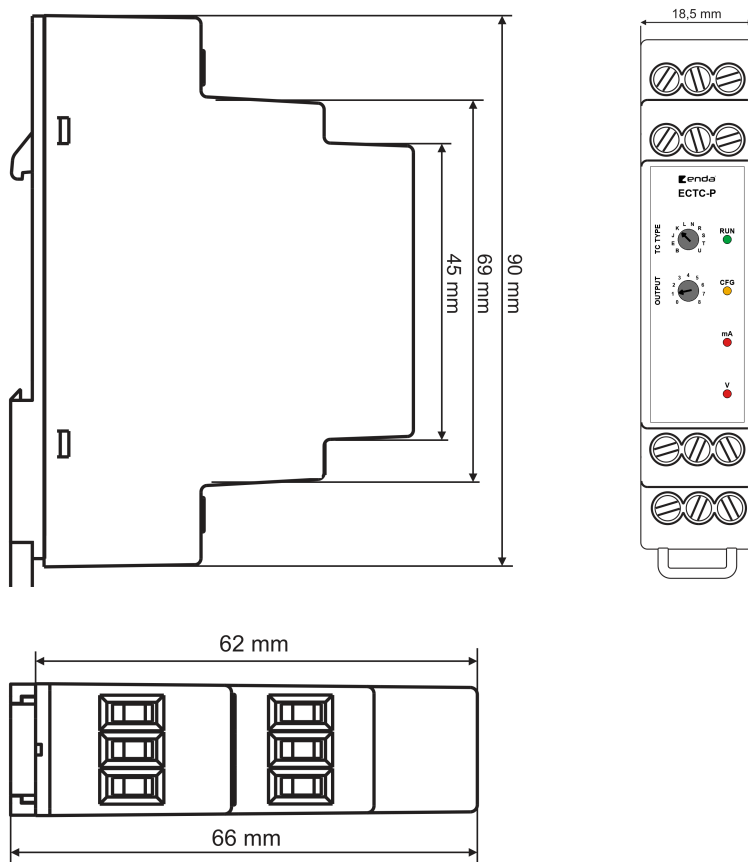
Screw torque 0.4 Nm

Sensor Inputs

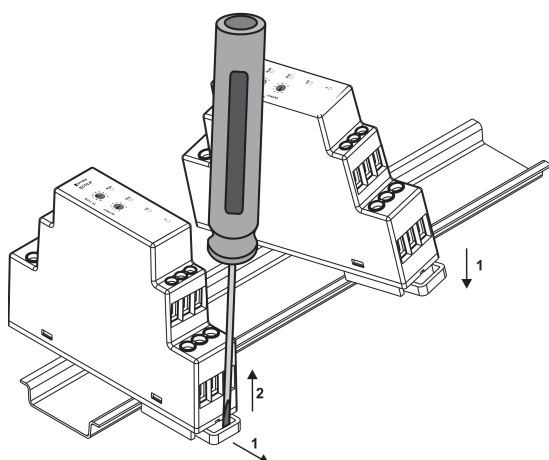


• **E, J, K, L, N, R, S, T, U type thermocouple**
For E, J, K, L, N, R, S, T, U type thermocouples: Use the correct compensation cable. Do not splice. Connect the thermocouple cables to terminals 11 (+) and 12 (-), paying attention to the + and - signs.

Dimensions and Montage



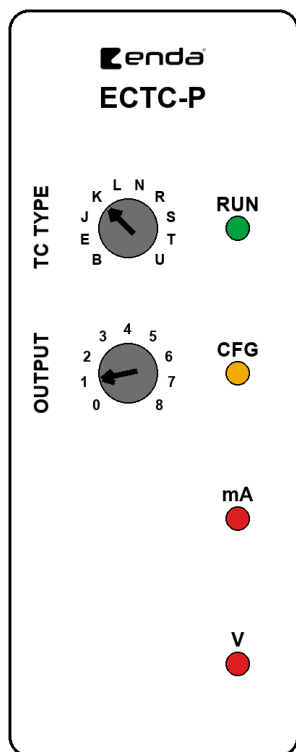
The dimensions are in millimeters.



Mounting: push the device onto the rail in direction 1 so that the rail latch grips the rail.

Removal: push the rail latch with a screwdriver in direction 1 and pull the device in direction 2.

Potentiometer and LED Definitions



The device is configured with the two front-panel potentiometers: **TC TYPE** selects the thermocouple type, **OUTPUT** the output type. Turn the arrow to the position mark on the dial; a new position is accepted after 0.5 s and the CFG LED flashes once.

TC TYPE potentiometer		OUTPUT potentiometer	
Position	Thermocouple type	Position	Output type
0	B type thermocouple	0	0 ...20mA
1	E type thermocouple	1	20 ...0mA
2	J type thermocouple	2	4 ...20mA
3	K type thermocouple	3	20 ...4mA
4	L type thermocouple	4	0 ...5V
5	N type thermocouple	5	5 ...0V
6	R type thermocouple	6	0 ...10V
7	S type thermocouple	7	10 ...0V
8	T type thermocouple	8	-5 ...+5V
9	U type thermocouple		

LEDs	
RUN	Steady on while the device is running. Flashes an error code during error conditions (see the Error LED Definitions table).
CFG	Flashes once when a new potentiometer position is accepted. Stays on while the selected position is reserved; the output is then 0%.
mA	Lights up when a current output (0 ...20mA, 20 ...0mA, 4 ...20mA, 20 ...4mA) is selected.
V	Lights up when a voltage output (0 ...5V, 5 ...0V, 0 ...10V, 10 ...0V, -5 ...+5V) is selected.

Error Leds Definitions

RUN LED	Calibration error
RUN LED	Sensor disconnected / measurement circuit error



NOTE: When an error occurs, the RUN LED flashes periodically. For example, in the case of a calibration error, the LED in the first graph lights up for 960 ms, turns off for 960 ms, and the cycle repeats with a period of 1920 ms. When the error is resolved the LED returns to steady on.