Elimko

E-780 SERIES
SIGNAL CONVERTERS

■ DESCRIPTION

E-780 series devices are rail-mountable industrial devices in a plastic case designed to be used as signal converters. E-780 series converters convert resistance thermometer (RTD) and thermocouple (TC) type temperature sensors, resistance and DC mV signals to standard 4 - 20 mA output signals. The input and output signals of the E-780 series devices are galvanically isolated.

E-780 series converters can be ordered as 2-wire or 4-wire types. In 2-wire types, the operating voltage and output signal are not galvanically isolated, in 4-wire types, the operating voltage and output signal are galvanically isolated.

E-780 series converters can be configured with special PC software provided by Elimko and optionally available HART communication interface.

■ TECHNICAL SPECIFICATIONS

Electrical	
Operating Voltage	10 – 30 V DC (2 wire types) 18 – 36 V DC (4 wire types)
Voltage Drop	10 V
Isolation Voltage, Test	1 kV AC
Isolation Voltage, Operation	50 V AC
Environmental Conditions	
Operating Temperature	Between -10 °C to +70 °C
Operating Humidity	< 95 %Rh (non-condensing)
Protection Class	IP20
Calibration Temperature	25 °C ± 3 °C
Mechanical	
Dimensions	90 mm x 112 mm x 6,5 mm
Weight (approx.)	60 gr
Connection Cables	Maximum 1,5 mm² (AWG 16)

Resistance Thermometer (RTD) / Resistance Input	
Sensor Connection Type	2-wire, 3-wire, 4-wire (Configurable)
Maximum Wire Resistance	50 Ω
2-wire Compensation Resistance	Maximum 100 Ω (Configurable)
Measurement Current	< 150 µA
Error Signaling	Sensor Break, Short Circuit
Thermocouple (TC) / Millivolt Input	
Input Impedance	> 10 MW
Maximum Wire Resistance	50 Ω
Cold Junction Compensation (CJC)	Constant, Internal NTC, External Pt-100 (Configurable)
Error Signaling	Sensor Break
Output	
Output Signal	4 – 20 mA or 20 – 4 mA
Load Resistance	< ((Voperation-10) / 0,021) Ω 2-wire types Maximum 600 W (4-wire types)
Malfunction Indication	3,8 mA or 21,0 mA (Configurable)
Output Update	10 per second
Operation Influences	
Ambient Temperature	< ± 0,01 %/°C
CJC Error (For TC input)	< ±1 °C
EMC Head	< ± 0,5% Span
Other	
Warm-up Time	5 Minute
Communication Interface	HART 7
Damping Time	0 to 60 seconds (Configurable)
Memory	Maximum Write-Erase Operation: 10.000 times

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STANDARD WORKING LIMITS

Inputs	Standard	Min.	Max.	Min. S.
TC Tip B	IEC 60584	0°C	1800°C	100°C
TC Tip E	IEC 60584	-200°C	850°C	50°C
TC Tip J	IEC 60584	-200°C	1100°C	50°C
TC Tip K	IEC 60584	-200°C	1300°C	50°C
TC Tip L	DIN 43710	-200°C	900°C	50°C
TC Tip N	IEC 60584	-200°C	1200°C	50°C
TC Tip R	IEC 60584	0°C	1760°C	100°C
TC Tip S	IEC 60584	0°C	1760°C	100°C
TC Tip T	IEC 60584	-200°C	400°C	50°C
TC Tip U	DIN 43710	-200°C	600°C	50°C
Pt-100	IEC 60751	-200°C	840°C	25°C

Inputs	Standard	Min.	Max.	Min. S.
Pt-100	IEC 60751	-200°C	840°C	25°C
Pt-500	IEC 60751	-200°C	840°C	25°C
Pt-1000	IEC 60751	-200°C	840°C	25°C
Ni-50	DIN 43760	-60°C	180°C	25°C
Ni-100	DIN 43760	-60°C	180°C	25°C
Ni-120	DIN 43760	-60°C	180°C	25°C
Ni-200	DIN 43760	-60°C	180°C	25°C
Ni-500	DIN 43760	-60°C	180°C	25°C
Ni-1000	DIN 43760	-60°C	180°C	25°C
Ohm	-	0Ω	500Ω	50Ω
mV	-	-200 mV	1000 mV	25 mV

ORDERING GUIDE

E-780 Series Signal Converters   E- 780 - W - X - Y -Z

Standard Features

    User configurable.

Input Signal

    Thermocouple (TC), Resistance thermometer (RTD), mV and Resistance ·········· 1

Output Signal

    4-20 mA ·········· 1

Communication

    None ·········· 0
    HART ·········· 1

Operating Voltage

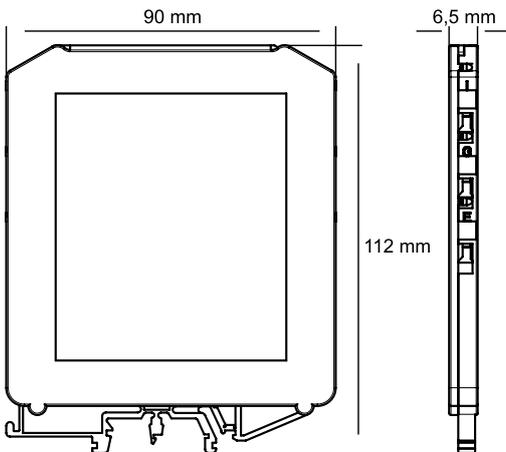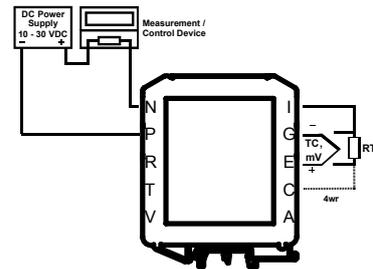   2 wire 10-30 V DC ·········· 0
    4 wire 18-36 V DC ·········· 1

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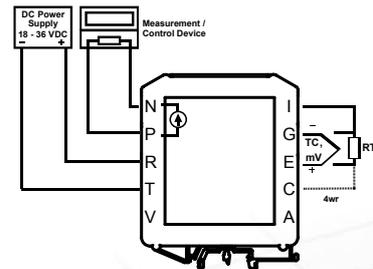
DIMENSIONS

90 mm

6,5 mm

112 mm

CONNECTION DIAGRAM

Connection Diagram
for 2 Wire Types

Connection Diagram for
4 Wire Types