

RTD, TC, Ohm & mV, 2 Wire Isolating Transmitter**With Integral Display****USD-2**

Iss 1

Nov 09

Function: The USD-2 is a computerized, PC programmable, galvanically isolated, 2 wire transmitter with a 3½ digit LED display. It is housed in a polycarbonate enclosure suitable for DIN rail mounting. RTD, TC, & mV inputs can be configured as single input or dual at differential mode. The device contains a 24 bit A/D converter and 2 microprocessors. The output current is temperature linearised and can be set to 4-20mA / 20-4mA or any range within these limits. The output is sampled and updated every 2 to 3 seconds, depending on the sensor type.

SPECIFICATIONS**INPUTS:****Thermocouples**

Type B, E, J, K, N, R, S & T

Temperature covered:

Type	Range	Min Span
B	400 to 1820°C	200°C
C	0 to 2320°C	25°C
D	0 to 2220°C	25°C
E	-200 to 1000°C	50°C
G	1000 to 2160°C	25°C
J	-200 to 1200°C	50°C
K	-200 to 1370°C	100°C
L	-190 to 890°C	25°C
N	-2000 to 1300°C	25°C
R	0 to 1760°C	200°C
S	0 to 1760°C	200°C
T	-200 to 400°C	50°C
U	-190 to 590°C	25°C

Automatic cold junction

compensation

Open circuit thermocouple
monitoring upscale or downscale
drive**INPUTS (continued):****Resistance Temperature Detectors (RTDs,)**

Type	$\alpha=0.00385 \Omega/\Omega/^{\circ}\text{C}$	ITS-90 Range	Min Span
Pt-50		-200 to 850°C	10°C
Pt-100		-200 to 850°C	10°C
Pt-500		-200 to 690°C	10°C
Pt-1000		-200 to 690°C	10°C

Type	$\alpha=0.00392 \Omega/\Omega/^{\circ}\text{C}$	ITS-90 Range	Min Span
Pt-50		-100 to 455°C	10°C
Pt-100		-100 to 455°C	10°C
Pt-500		-100 to 455°C	10°C
Pt-1000		-100 to 455°C	10°C

Type	Range	Min Span
Ni-Fe	-200 to 260°C	10°C
Ni-120	-80 to 200°C	10°C
Ni-1000	-50 to 160°C	10°C
Cu-10	-120 to 150°C	20°C

Resistance

Range	Min Span
0 to 2 K Ω	4 Ω

Potentiometer(2,3,or 4 wire)

Range	Min Span
0 to 30 K Ω	$\pm 1\%$ of span

OUTPUTS:

4-20mA

20-4mA

(User configurable)

Sampling Time

2 to 3 seconds

(sensor dependent)

Isolation

>1500V between input & output

Max Loop Resistance $R_{\text{max}} (\Omega) = (V_{\text{supply}} - 13) / 0.02$ **Calibration Accuracy**At 24V Supply, room
temperature. 0.05% of span**Display**

3½ digit red LED, 0.32" high

POWER SUPPLY:

13 to 30 Volt DC

GENERAL:**Temperature Stability**< $\pm 0.004\%/^{\circ}\text{C}$ of span**Operating / Storage****Temperature Range**

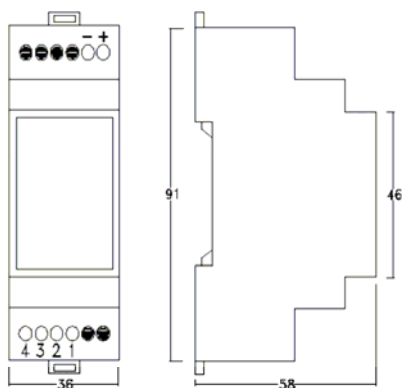
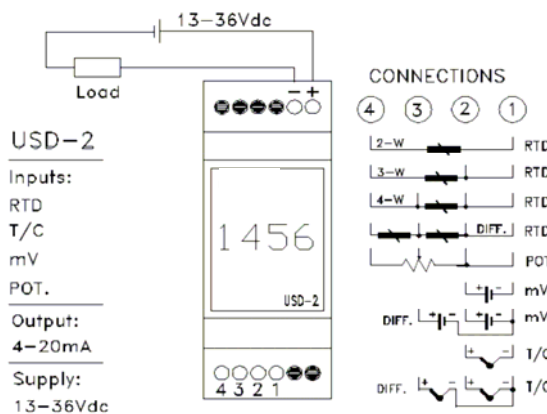
-40 to +80°C / -50 to +90°C

Operating / Storage**Humidity Range**10 to 90% RH non-
condensing**Weight**

75 gms

PC RequirementsWindows 98®, XP®, NT®,
Vista®.

Free Disc Space: 15MB

MECHANICAL DETAILS**TERMINATION DETAILS****ORDERING DETAILS**

a) Give identification code, i.e. USD-2



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