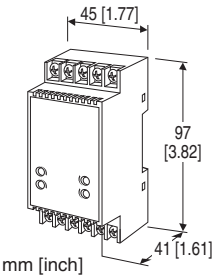
Terminal Block Dual Output Signal Conditioners W5-UNIT

RTD TRANSMITTER

Functions & Features
- Accepts direct input from a RTD
- Two independent output ranges
- Four-way isolation (input to output 1 to output 2 to power)
- Linearization and burnout
- Fast response type available
- High-density mounting



MODEL: W5RS-[1][2][3]-[4][5]

ORDERING INFORMATION

- Code number: W5RS-[1][2][3]-[4][5]

Specify a code from below for each of [1] through [5].
(e.g. W5RS-4A6-R/K/BL/Q)
- Temperature range (e.g. 0 – 500°C)
- Special output ranges (For codes Z & 0)
- Specify the specification for option code /Q
(e.g. /C01/V01/S01)

[1] INPUT RTD (2- or 3-wire)

1: JPt 100 (JIS'89)
(Usable range: -200 to +500°C, -328 to +932°F; min.span: 50°C, 90°F)
3: Pt 100 (JIS'89)
(Usable range: -200 to +650°C, -328 to +1202°F; min.span: 50°C, 90°F)
4: Pt 100 (JIS'97, IEC)
(Usable range: -200 to +850°C, -328 to +1562°F; min.span: 50°C, 90°F)
5: Pt 50 Ω (JIS'81)
(Usable range: -200 to +500°C, -328 to +932°F; min.span: 100°C, 180°F)
6: Ni 508.4 Ω
(Usable range: -50 to +200°C, -58 to +392°F; min.span: 30°C, 54°F)
0: Specify
Note: Consult us for 2-wire RTD

[2] OUTPUT 1

Current
A: 4 – 20 mA DC (Load resistance 550 Ω max.)
B: 2 – 10 mA DC (Load resistance 1100 Ω max.)
C: 1 – 5 mA DC (Load resistance 2200 Ω max.)
D: 0 – 20 mA DC (Load resistance 550 Ω max.)
E: 0 – 16 mA DC (Load resistance 685 Ω max.)
F: 0 – 10 mA DC (Load resistance 1100 Ω max.)
G: 0 – 1 mA DC (Load resistance 11 kΩ max.)
Z: Specify current (See OUTPUT SPECIFICATIONS)
Voltage
1: 0 – 10 mV DC (Load resistance 10 kΩ min.)
2: 0 – 100 mV DC (Load resistance 100 kΩ min.)
3: 0 – 1 V DC (Load resistance 100 Ω min.)
4: 0 – 10 V DC (Load resistance 1000 Ω min.)
5: 0 – 5 V DC (Load resistance 500 Ω min.)
6: 1 – 5 V DC (Load resistance 500 Ω min.)
4W: -10 – +10 V DC (Load resistance 2000 Ω min.)
5W: -5 – +5 V DC (Load resistance 1000 Ω min.)
0: Specify voltage (See OUTPUT SPECIFICATIONS)

[3] OUTPUT 2

Same range availability as Output 1
Y: None

[4] POWER INPUT

AC Power
M: 85 – 264 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)
(CE not available)
DC Power
R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)
R2: 11 – 27 V DC
(Operational voltage range 11 – 27 V, ripple 10 %p-p max.)
(CE not available)
P: 110 V DC
(Operational voltage range 85 – 150 V, ripple 10 %p-p max.)
(CE not available)

[5] OPTIONS (multiple selections)

Response Time (0 – 90 %)
blank: Standard (≤ 0.5 sec.)
/K: Fast Response (Approx. 25 msec.)
Burnout
blank: Upscale burnout
/BL: Downscale burnout
Other Options
blank: none
/Q: Option other than the above (specify the specification)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to our web site.)
/C01: Silicone coating
/C02: Polyurethane coating

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/C03: Rubber coating

ADJUSTMENT

/V01: Multi-turn fine adjustment

/VN: Sealed adjustment holes

TERMINAL SCREW MATERIAL

/S01: Stainless steel

GENERAL SPECIFICATIONS

Construction: Terminal block

Connection

Input: M3.5 screw terminals (torque 0.8 N·m)

Output & power: M3 screw terminals (torque 0.8 N·m)

Screw terminal: Nickel-plated steel (standard) or stainless steel

Housing material: Flame-resistant resin (black)

Isolation: Input to output 1 to output 2 to power

Overrange output: Approx. -10 to +120 % at 1 – 5 V

Zero adjustment: -2 to +2 % (front)

Span adjustment: 98 to 102 % (front)

At burnout: Downscale ≤ -10 %, Upscale ≥ 110 %,
For output code 4W, Downscale ≤ -3 %, Upscale ≥ 103 %

Linearization: Standard

INPUT SPECIFICATIONS

Maximum leadwire resistance: 200 Ω per wire (3-wire)

Sensing current: 2 mA (Pt); 1 mA (Ni 508.4 Ω)

OUTPUT SPECIFICATIONS

■ **DC Current**: 0 – 20 mA DC

Minimum span: 1 mA

Offset: Max. 1.5 times span

Load resistance: Output drive 11 V max.

■ **DC Voltage**: -10 – +12 V DC

Spans: Min. 5 mV, max. 20 V

Offset: Max. 1.5 times span

Load resistance: Output drive 10 mA max.; 5 mA for negative voltage output; at ≥ 0.5 V

INSTALLATION

Power Consumption

•**AC**:
Approx. 4 VA at 100 V
Approx. 5 VA at 200 V
Approx. 6 VA at 264 V

•**DC**: Approx. 3 W

Operating temperature: -5 to +55°C (23 to 131°F)

Operating humidity: 0 to 90 %RH (non-condensing)

Mounting: DIN rail

Weight: 130 g (0.29 lb)

PERFORMANCE in percentage of span

Accuracy: ±0.2 %

Temp. coefficient:
±0.015 %/°C or ±0.008 %/°F
(at 200°C or 360°F or greater spans)
±0.02 %/°C or ±0.01 %/°F
(at narrower than 200°C or 360°F spans)

Burnout response: ≤ 10 sec.

Line voltage effect: ±0.1 % over voltage range

Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength:
2000 V AC @ 1 minute (input to output 1 or output 2 to power to ground)
1000 V AC @ 1 minute (output 1 to output 2)

STANDARDS & APPROVALS

EU conformity:
EMC Directive
EMI EN 61000-6-4
EMS EN 61000-6-2
RoHS Directive

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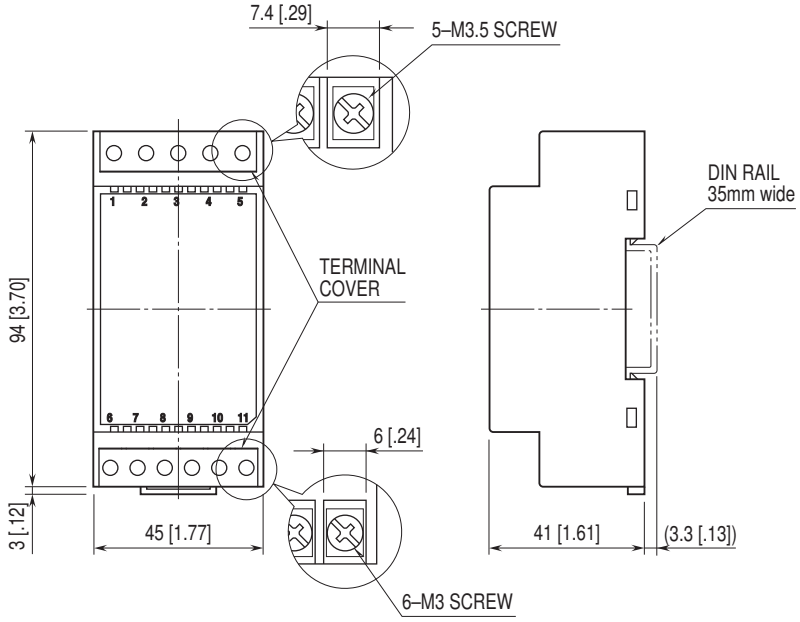
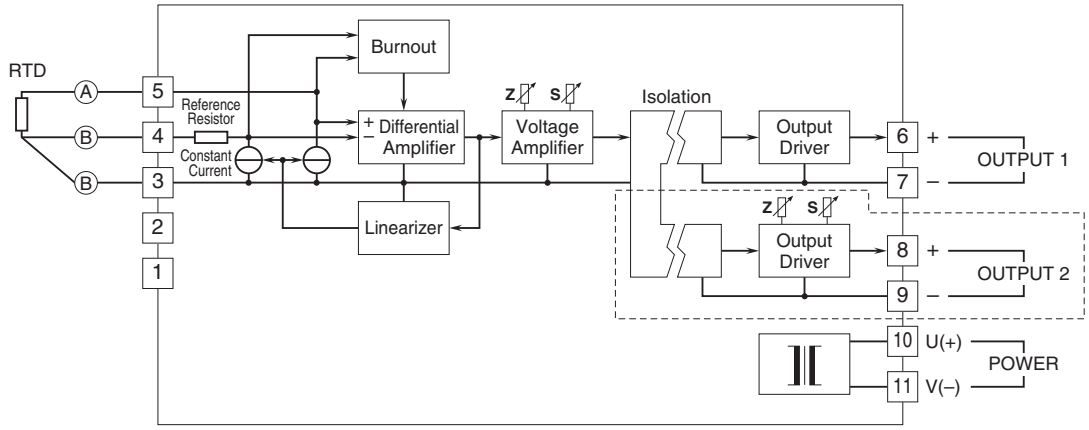
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



• When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Note 1: The section enclosed by broken line is only with 2nd output option.
Note 2: DO NOT connect to the terminals 1 – 2.

⚠ Specifications are subject to change without notice.

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