

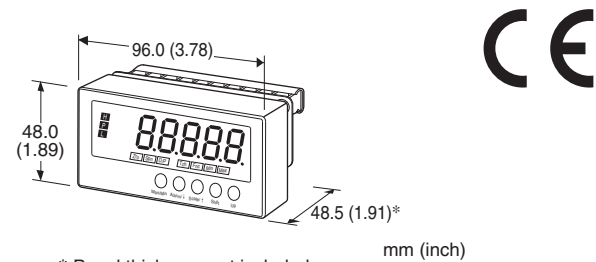
Digital Panel Meters 47NL Series

RTD INPUT DIGITAL PANEL METER

(4 digit, LED display type, with terminal block)

Functions & Features

- 4 digit RTD input digital panel meter
- Moving average function to suppress the display flickering
- Max. and Min. value display
- Photo MOSFET relay alarm output
- Dedicated terminal block for I/O



MODEL: 47NLRT-[1][2]-R[3]

ORDERING INFORMATION

- Code number: 47NLRT-[1][2]-R[3]
- Specify a code from below for each [1] through [3].
(e.g. 47NLRT-4R-R/Q)
- Specify the specification for option code /Q
(e.g. /SET)

[1] INPUT

- 1: JPt 100 (JIS'89)
- 3: Pt 100 (JIS'89)
- 4: Pt 100 (JIS'97, IEC)
- 5: Pt 50 Ω (JIS'81)
- 7: Pt 1000

[2] DISPLAY COLOR

- R: Red
YR: Orange
G: Green
B: Blue
W: White

POWER INPUT

DC Power

- R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

[3] OPTIONS

- blank: none
/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q

EX-FACTORY SETTING

/SET: Preset according to the Ordering Information Sheet
(No. ESU-9566)

GENERAL SPECIFICATIONS

Construction: Panel mount type

Degree of protection: IP66; Applicable to the front of the panel meter mounted according to the specified panel cutout.

Connection: M3 screw terminals (torque 0.6 N·m)

Solderless terminal: Refer to the drawing at the end of the section.

Recommended manufacturer: Japan Solderless Terminal MFG.Co.Ltd, Nichifu Co.,Ltd

Applicable wire size: 0.25 to 1.65 mm² (AWG 22 to 16)

Screw terminal: Nickel-plated steel

Housing material: Flame-resistant resin (gray)

Isolation: Input to alarm output to power

Burnout: Upscale standard; downscale optional by programming

Setting: (Front button)

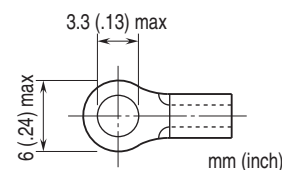
- Alarm setpoint
- Deadband (hysteresis)
- Moving average
- Others

(Refer to the operating manual for details)

Averaging: None or moving average

Lockout setting: Prohibiting certain operations; protecting settings

Recommended solderless terminal



DISPLAY

Display: 16 mm (.63) high, 4 digits, 7-segment LED

Display range: -9999 to 9999

Minimum display/setting scale: 0.1°C or 1°F

Decimal point position: 10⁻¹ or none

Zero indication: Higher-digit zeros are suppressed.

Over-range indication: 'S.ERR' and 'Min' or 'Max' blinking when the input signal is out of the usable range.

Burnout indication: 'B.ERR' and function status 'Min' or 'Max'

are displayed and blinking.

Alarm status indication

L indicator: Green turns on when the L alarm is tripped.

H indicator: Red turns on when the H alarm is tripped.

P indicator: Amber turns on when none of the other alarms is tripped.

Only 'P' turns on when no-alarm is selected with alarm setpoint.

Function indicators:

Zro, Spn, D/P, Tch, Fnc, Min, Max

Display mode status and operation status, amber ON or blink

Engineering unit indication: Sticker label attached

DC, AC, mV, V, kV, μ A, mA, A, kA, mW, W,

kW, var, kvar, Mvar, VA, Hz, Ω , k Ω , M Ω ,

cm, mm, m, m/sec, mm/min, cm/min, m/min,

m/h, m/s², inch, l, l/s, l/min, l/h, m³, m³/sec,

m³/min, m³/h, Nm³/h, N·m, N/m², g, kg, kg/h,

N, kN, Pa, kPa, MPa, t, t/h, °C, °F, %RH, J,

kJ, MJ, rpm, sec, min, pH, %, ppm, etc.

INPUT SPECIFICATIONS

■ **RTD:** 3-wire RTDs

Maximum leadwire resistance: 60 Ω per wire

Sensing current:

JPt 100 (JIS '89): 0.5mA

Pt 100 (JIS '89): 0.5mA

Pt 100 (JIS '97, IEC): 0.5mA

Pt 50 Ω (JIS '81): 0.5mA

Pt 1000: 0.05mA

Temperature Range

RTD		CONFORMANCE RANGE	USABLE RANGE
JPt 100 (JIS '89)	°C	-200 to +500	-230 to +530
	°F	-328 to +932	-382 to +986
Pt 100 (JIS '89)	°C	-200 to +650	-230 to +680
	°F	-328 to +1202	-382 to +1256
Pt 100 (JIS '97, IEC)	°C	-200 to +850	-230 to +880
	°F	-328 to +1562	-382 to +1616
Pt 50 Ω (JIS '81)	°C	-200 to +649	-230 to +679
	°F	-328 to +1202	-382 to +1256
Pt 1000	°C	-200 to +850	-230 to +880
	°F	-328 to +1562	-382 to +1616

OUTPUT SPECIFICATIONS

■ **Alarm Output:** Photo MOSFET Relay

Rating: 26.4 V DC @ 100 mA (resistive load)

ON resistance: \leq 5 Ω

INSTALLATION

Power consumption

• DC: 0.7 W max.

Operating temperature: -10 to +55°C (14 to 131°F)

Operating humidity: 10 to 90 %RH (non-condensing)

Mounting: Screw mounting

Weight: 120 g (0.26 lb)

PERFORMANCE

Accuracy

Display: $\pm 1^\circ\text{C} \pm 1$ digit ($\pm 2^\circ\text{F} \pm 1$ digit)

Temp. coefficient: ± 0.015 %/ $^\circ\text{C}$ (± 0.008 %/ $^\circ\text{F}$)

Response time: \leq 0.5 sec.

(alarm output: 0 - 100 % at 90 % setpoint)

Burnout response: \leq 10 sec.

Line voltage effect: ± 0.1 % over voltage range

Insulation resistance: \geq 100 M Ω with 500 V DC

Dielectric strength: 1500 V AC @ 1 minute (input to alarm output to power to ground)

STANDARDS & APPROVALS

EU conformity:

EMC Directive

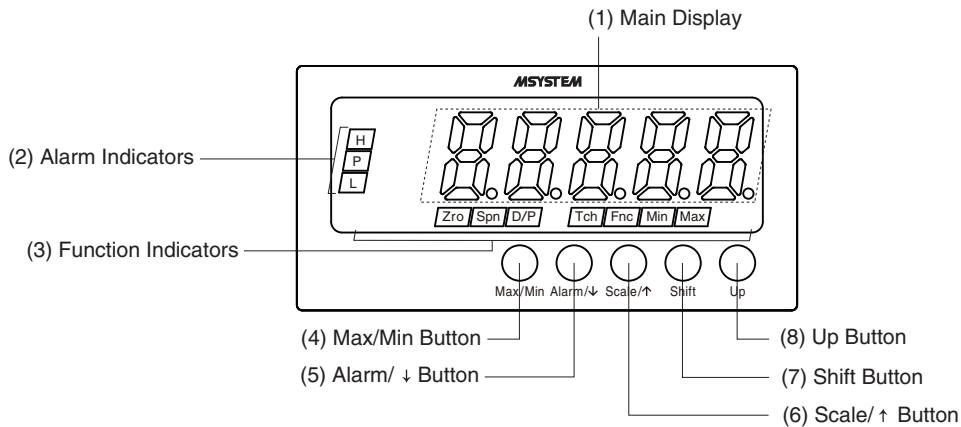
EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

EN 50581

EXTERNAL VIEW



COMPONENT IDENTIFICATION

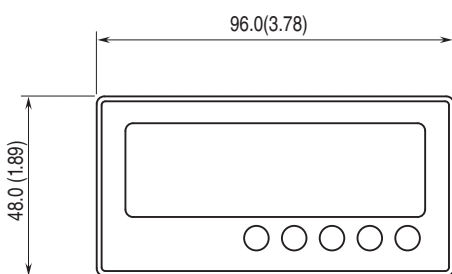
No.	COMPONENT	FUNCTION
(1)	Main display	Indicates present values, setting values and status of the unit.
(2)	Alarm indicators	Indicates the comparison result between alarm setting values and present values.
(3)	Function indicators	Indicates the status in each setting mode.
(4)	Max/Min button	Used to switch the main display to show the present values, maximum values or minimum values.
(5)	Alarm/ ↓ button	Used to check the alarm setpoints, to move on to the alarm and other setting modes; or to shift through setting items in each setting mode.
(6)	Scale/ ↑ button	Used to move on to the initial and other setting modes; or to shift through setting items in each setting mode.
(7)	Shift button	Used to move on to the setting standby status of each setting mode or to shift through display digits in each setting item.
(8)	Up button	Used to change setting values or to select setting values.

Note: Refer to the operating manual for details on each function.

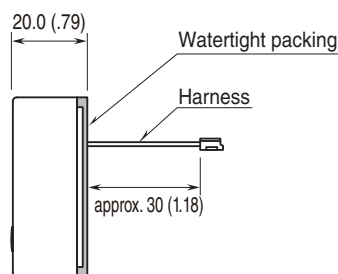
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

BODY

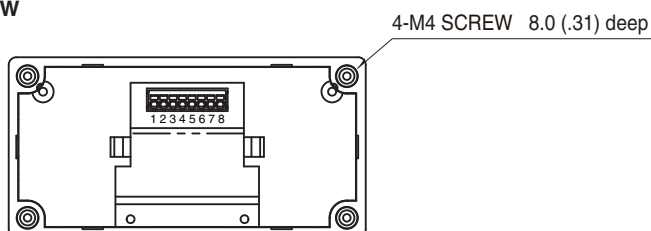
FRONT VIEW



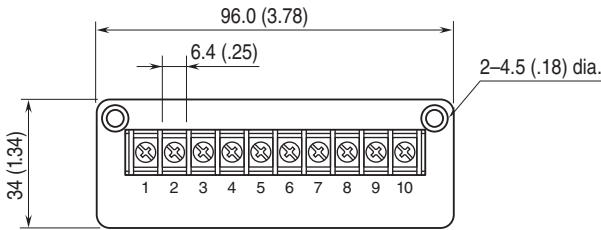
SIDE VIEW



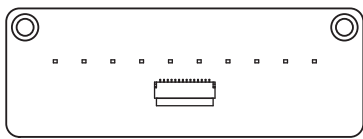
REAR VIEW



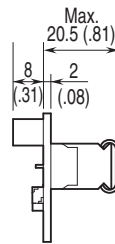
■ **TERMINAL BLOCK**
• **FRONT VIEW**



• **REAR VIEW**

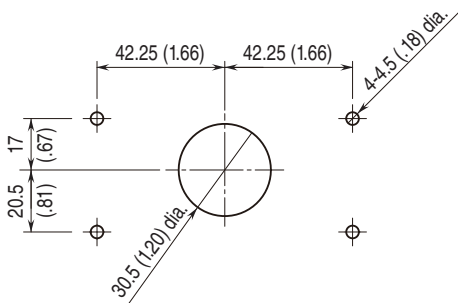


• **SIDE VIEW**



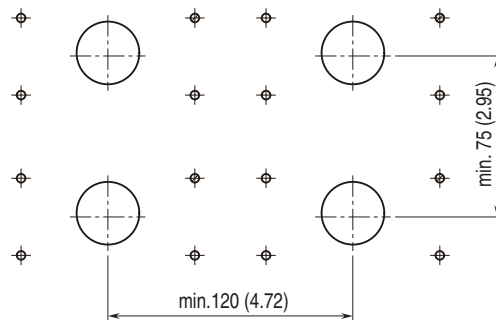
MOUNTING REQUIREMENTS unit: mm (inch)

• **Single Mounting**



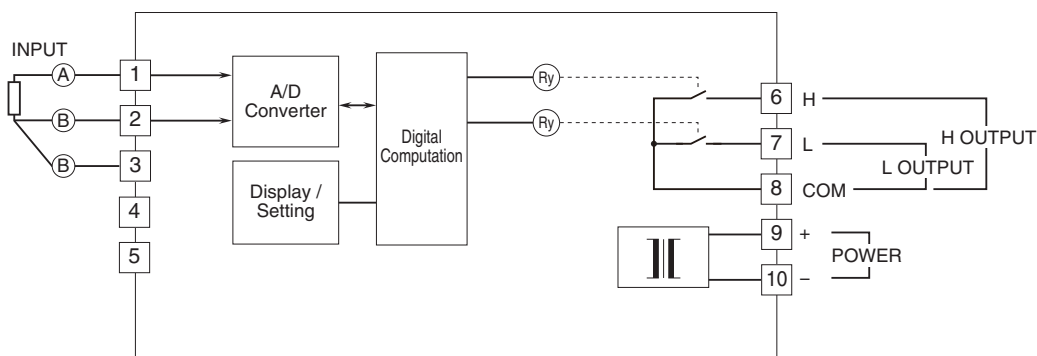
Panel thickness: 1.0 to 3.2 mm

• **Clustered Mounting**



Panel thickness: 1.0 to 3.2 mm

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM





Specifications are subject to change without notice.