

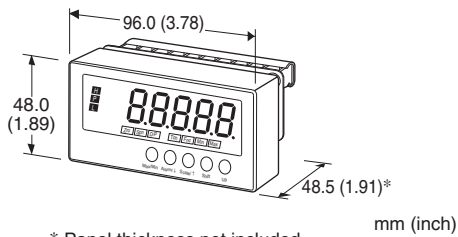
Digital Panel Meters 47NL Series

DC INPUT DIGITAL PANEL METER

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

Functions & Features

- 4 ½ digit DC input digital panel meter
- Moving average function to suppress the display flickering
- Scaling, forced zero, low-end cutout
- Max. and Min. value display
- Photo MOSFET relay alarm output
- Dedicated terminal block for I/O



* Panel thickness not included.

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

ORDERING INFORMATION

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

[1] INPUT

Current

A: 4 - 20 mA DC (Input resistance 10 Ω)

D: 0 - 20 mA DC (Input resistance 10 Ω)

Voltage

4: 0 - 10 V DC (Input resistance 1 MΩ min.)

5: 0 - 5 V DC (Input resistance 1 MΩ min.)

6: 1 - 5 V DC (Input resistance 1 MΩ min.)

4W: -10 - +10 V DC (Input resistance 1 MΩ min.)

5W: -5 - +5 V DC (Input resistance 1 MΩ min.)

[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-9562)

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

Setting: (Front button)

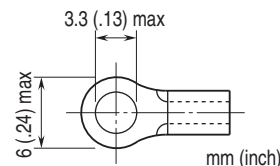
- Scaled range
- Alarm setpoint
- Hysteresis (deadband)
- Moving average
- Others

(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 ½ digits, 7-segment LED

Display range: -19999 to 19999

Decimal point position: 10⁻¹, 10⁻², 10⁻³, 10⁻⁴ or none

Zero indication: Higher-digit zeros are suppressed.

Over-range indication: '19999' or '19999' blinking for display values out of the display range.
 'S.ERR' and 'Min' or 'Max' blinking when the input signal is out of the usable range.

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

- A:** Conformance range 4.00 - 20.00 mA DC
(Usable Range: 2.40 - 21.60 mA DC)
- D:** Conformance range 0.00 - 20.00 mA DC
(Usable Range: -2.00 - +22.00 mA DC)
- 4:** Conformance range 0.000 - 10.000 V DC
(Usable Range: -1.000 - +11.000 V DC)
- 5:** Conformance range 0.000 - 5.000 V DC
(Usable Range: -0.500 - +5.500 V DC)
- 6:** Conformance range 1.000 - 5.000 V DC
(Usable Range: 0.600 - 5.400 V DC)
- 4W:** Conformance range -10.000 - +10.000 V DC
(Usable Range: -12.000 - +12.000 V DC)
- 5W:** Conformance range -5.000 - +5.000 V DC
(Usable Range: -6.000 - +6.000 V DC)

OUTPUT SPECIFICATIONS

■ **Alarm Output:** Photo MOSFET Relay
 Rating: 26.4 V DC @ 100 mA (resistive load)
 ON resistance: $\leq 5 \Omega$

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: $\pm 0.1 \% \pm 1$ digit
Temp. coefficient: $\pm 0.015 \% / ^\circ\text{C}$ ($\pm 0.008 \% / ^\circ\text{F}$)
Response time: ≤ 0.5 sec.

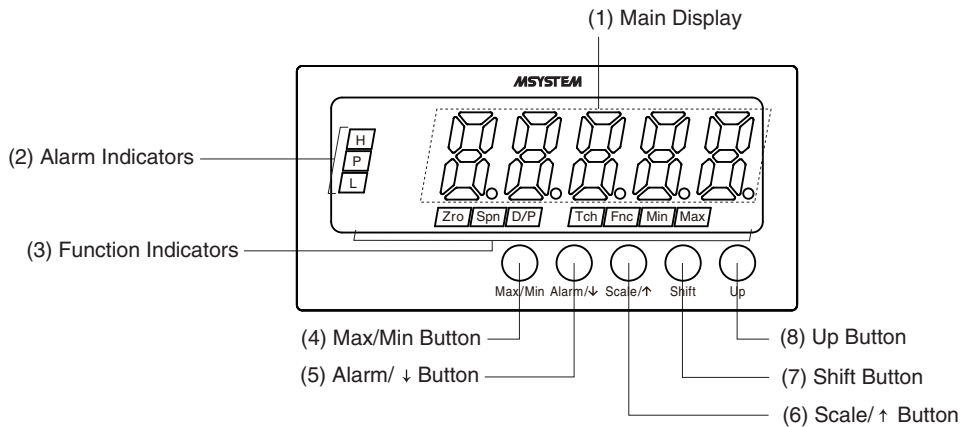
(alarm output: 0 - 100 % at 90 % setpoint)
Line voltage effect: $\pm 0.1 \%$ over voltage range
Insulation resistance: $\geq 100 \text{ M}\Omega$ with 500 V DC
Dielectric strength: 1500 V AC @ 1 minute (input to alarm output to power to ground)

STANDARDS & APPROVALS

EU conformity:

EMC Directive
 EMI EN 61000-6-4
 EMS EN 61000-6-2
 RoHS Directive
 EN 50581

EXTERNAL VIEW



COMPONENT IDENTIFICATION

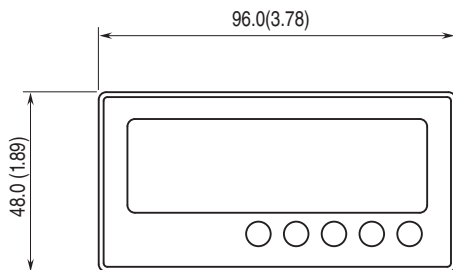
No.	COMPONENT	FUNCTION
(1)	Main display	Indicates present values, setting values and status of the unit.
(2)	Alarm indicators	Indicates the comparison result between alarm setting values and present values.
(3)	Function indicators	Indicates the status in each setting mode.
(4)	Max/Min button	Used to 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 scaling 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, to execute/cancel Forced Zero or to select setting values.

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

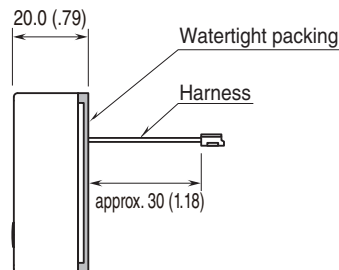
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

BODY

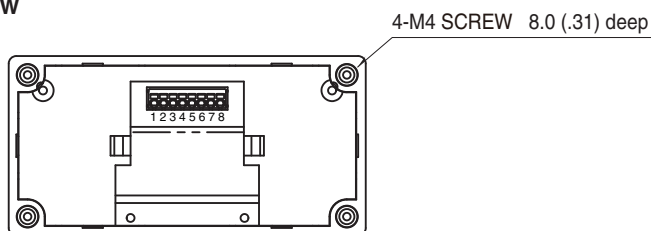
FRONT VIEW



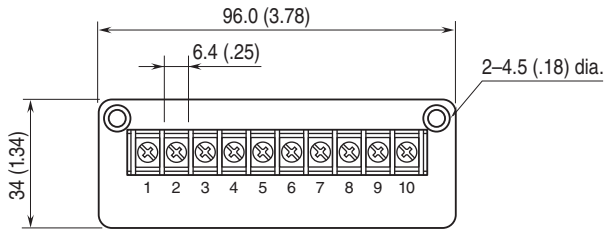
SIDE VIEW



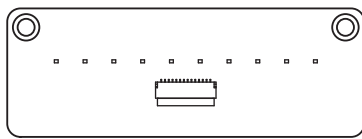
REAR VIEW



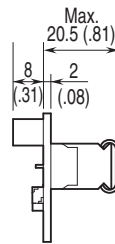
■ **TERMINAL BLOCK**
• **FRONT VIEW**



• **REAR VIEW**

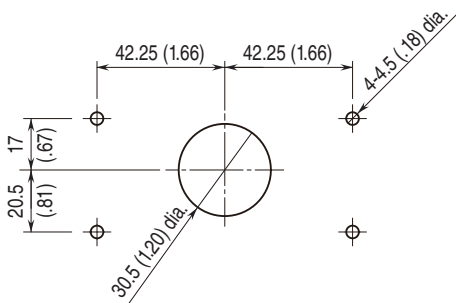


• **SIDE VIEW**



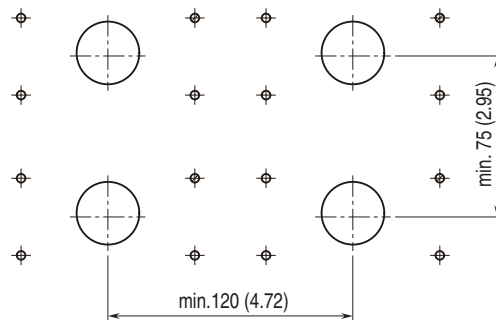
MOUNTING REQUIREMENTS unit: mm (inch)

• **Single Mounting**



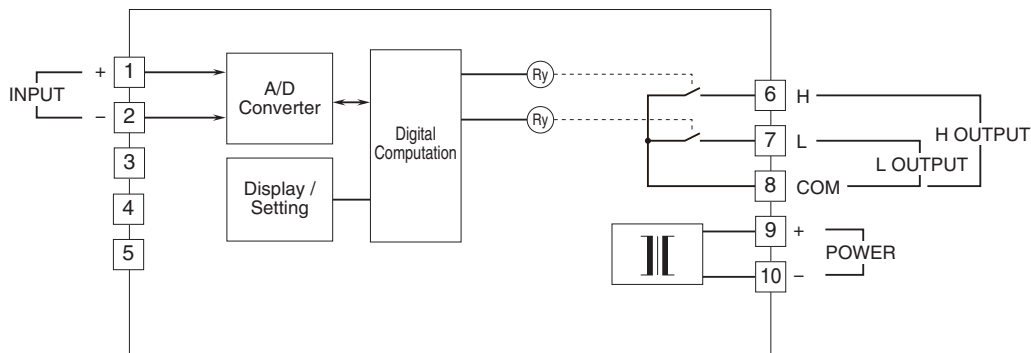
Panel thickness: 1.0 to 3.2 mm

• **Clustered Mounting**



Panel thickness: 1.0 to 3.2 mm

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM





Specifications are subject to change without notice.