

Digital Panel Meters 47NL Series

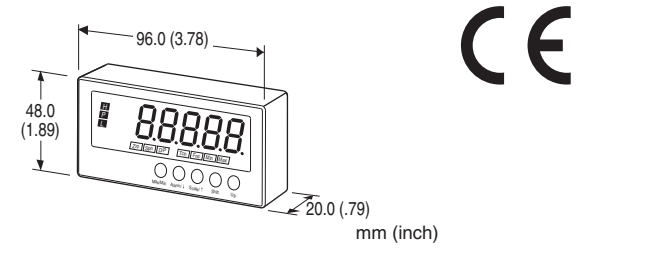
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

DC INPUT DIGITAL PANEL METER

(4 1/2 digit, LED display type)

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



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

ORDERING INFORMATION

- Code number: 47NLV-[1][2]-R[3]
- Specify a code from below for each of [1] through [3].
(e.g. 47NLV-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

[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-9561)

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. Only screw mounting conforms.

Connection: Screwless spring terminal

Applicable wire size: 0.2 to 0.5 mm², stripped length 6 mm

Housing material: Flame-resistant resin (gray)

Isolation: Input to alarm output to power

Setting: (Front button)

- Scaled range
- Moving average
- Others

(Refer to the instruction manual for details)

Averaging: None or moving average

Lockout setting: Prohibiting certain operations; protecting settings

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.

STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

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: Magnet or screw mounting

Weight: 85 g (3.0 oz)

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.

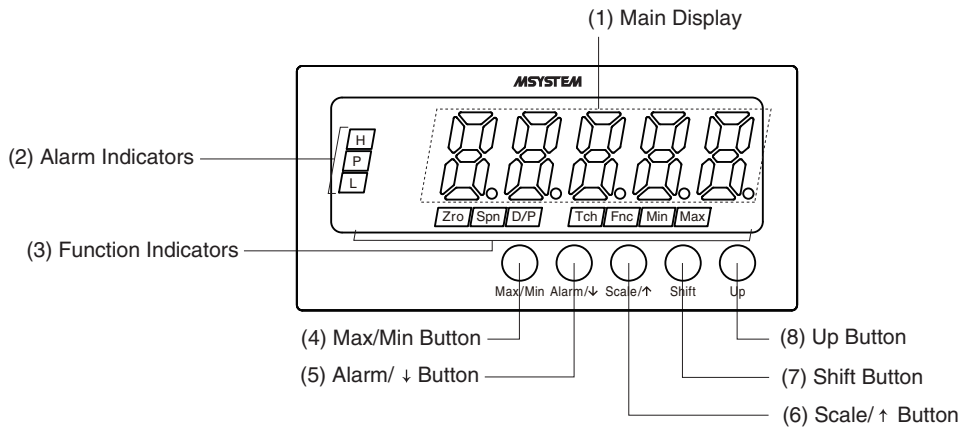
(alarm output: 0 - 100 % at 90 % setpoint)

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)

EXTERNAL VIEW



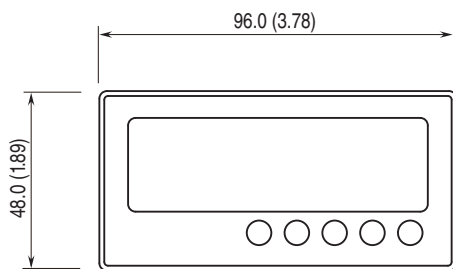
COMPONENT IDENTIFICATION

| 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.

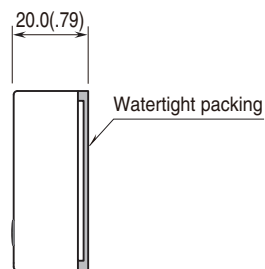
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

FRONT VIEW

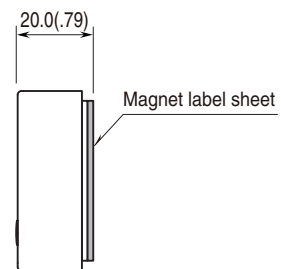


SIDE VIEW

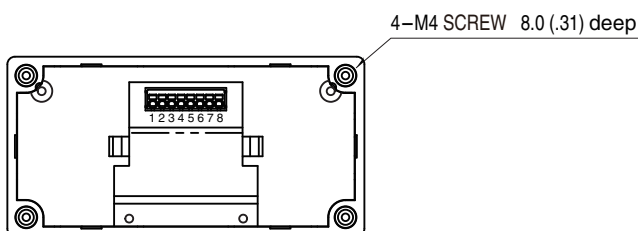
• SCREW MOUNTING



• MAGNET MOUNTING



REAR VIEW



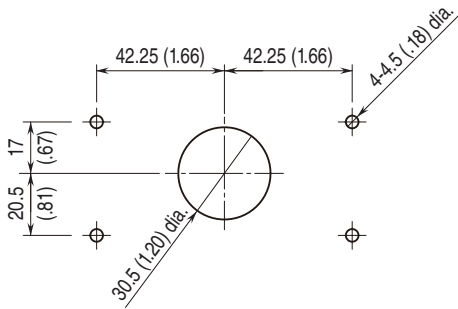
MOUNTING REQUIREMENTS unit: mm (inch)

■ PANEL MOUNTING

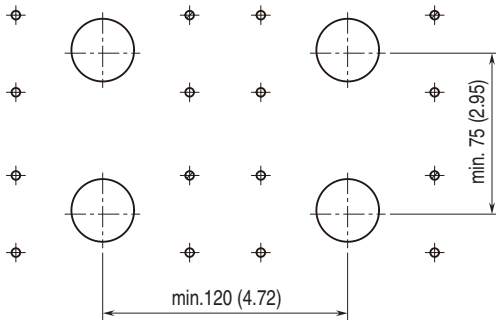
(Conform to degree of protection IP66)

Panel cutout must be such as M-System specified. Use watertight packing and unit fixing screws included in the product package.

• Single Mounting unit: mm (inch)



• Clustered Mounting unit: mm (inch)



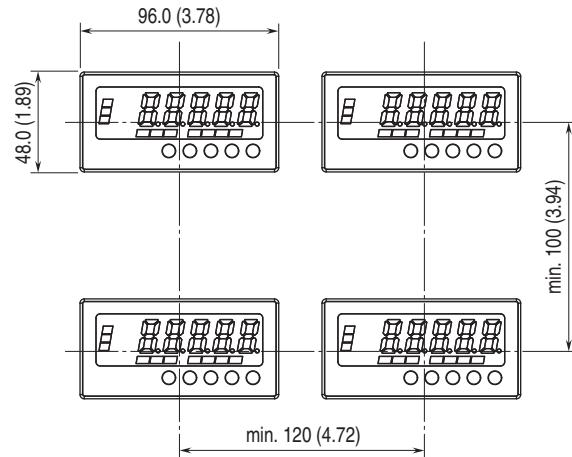
Panel thickness: 1.0 to 3.2 mm

■ MAGNET MOUNTING

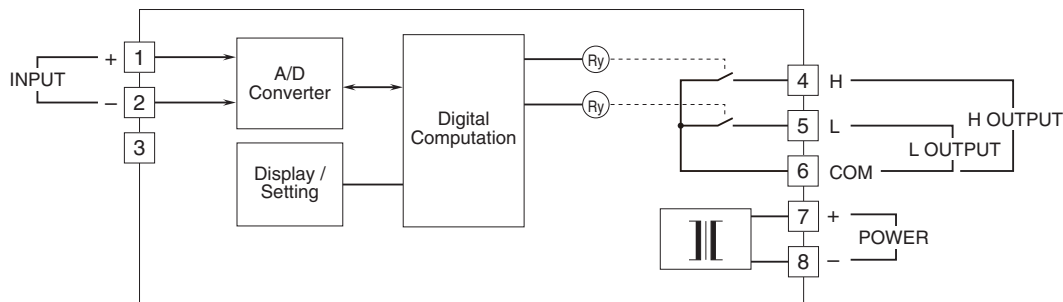
(Not conform to degree of protection IP66)

Panel cutout is not required. Use magnet sheet and stopper included in the product package.

• Clustered Mounting unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.