

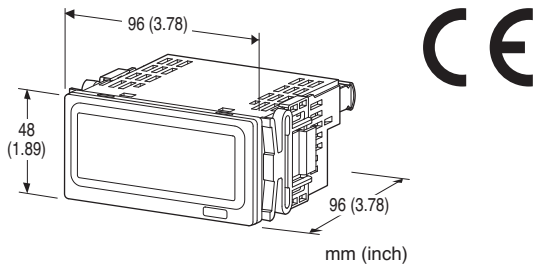
## Digital Panel Meters 40 Series

### DC INPUT DIGITAL PANEL METER

(3½ digit, without scaling)

#### Functions & Features

- High visible 0.8" (20.3 mm) LED
- Easy to use



### MODEL: 40LV-[1]-R[2]

#### ORDERING INFORMATION

- Code number: 40LV-[1]-R[2]

Specify a code from below for each of [1] and [2].

- (e.g. 40LV-V1-R/Q)
- Specify the specification for option code /Q (e.g. /C01)

#### [1] INPUT

##### Current

- A1:** ±199.9 µA DC (Input resistance 1 kΩ)
- A2:** ±1.999 mA DC (Input resistance 100 Ω)
- A3:** ±19.99 mA DC (Input resistance 10 Ω)
- A4:** ±199.9 mA DC (Input resistance 1 Ω)
- A5:** ±1.999 A DC (Input resistance 0.1 Ω)

##### Voltage

- V1:** ±199.9 mV DC (Input resistance 100 MΩ)
  - V2:** ±1.999 V DC (Input resistance 100 MΩ)
  - V3:** ±19.99 V DC (Input resistance 10 MΩ)
  - V4:** ±199.9 V DC (Input resistance 10 MΩ)
- (CE not available)

#### POWER INPUT

##### DC Power

- R:** 24 V DC
- (Operational voltage range 24 V ±20 %, ripple 10 %p-p max.)

#### [2] OPTIONS

blank: none

/Q: With options (specify the specification)

#### SPECIFICATIONS OF OPTION: Q

**COATING (For the detail, refer to M-System's web site.)**

Moving parts and indicators are not coated.

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

#### GENERAL SPECIFICATIONS

**Construction:** Panel flush mounting

**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 mm<sup>2</sup> (AWG 22 to 16)

**Screw terminal:** Nickel-plated steel

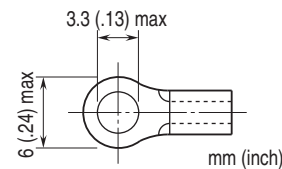
**Housing material:** Flame-resistant resin (gray)

**Isolation:** Input to power

**A/D conversion:** Dual-slope integration

**Sampling rate:** 2.5 times/sec. (400 msec.)

■ **Recommended solderless terminal**



#### DISPLAY

**Display:** 3 ½ digits of 20.3 mm height, red LED

**Display range:** -1999 to 1999

**Decimal point position:** 10<sup>-1</sup>, 10<sup>-2</sup>, 10<sup>-3</sup> or none

(3 positions selectable by short circuit between terminals 5, 6 or 7 to 3)

**Polarity:** Minus (-) sign added automatically according to the input signal.

**Over-range indication:** 1 for positive; -1 for negative

**Engineering unit indication:** Sticker label attached

DC, AC, mV, V, kV, µA, mA, A, kA, mW, W, kW, var, kvar, Mvar, VA, Hz, Ω, kΩ, MΩ, cm, mm, m, m/sec, mm/min, cm/min, m/min, m/h, m/s<sup>2</sup>, inch, l, l/s, l/min, l/h, m<sup>3</sup>, m<sup>3</sup>/sec, m<sup>3</sup>/min, m<sup>3</sup>/h, Nm<sup>3</sup>/h, N·m, N/m<sup>2</sup>, 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

■ **Hold Input:** Dry contact input

**Detecting level:** ≤ 4.3 V

**Sensing:** Approx. 5V, 0.7 mA DC

## INSTALLATION

### Power consumption

•DC: Approx. 0.5 W

**Operating temperature:** 0 to 55°C (32 to 131°F)

**Operating humidity:** 30 to 90 %RH (non-condensing)

**Mounting:** Panel flush mounting

**Weight:** 150 g (0.33 lb)

## PERFORMANCE in percentage of reading

**Accuracy:** See the table next.

**Temp. coefficient:**  $\pm (0.01 \% \text{ of } |\text{rdg}| + 0.1 \text{ digits}) / ^\circ\text{C}$

**Line voltage effect:**  $\pm 1$  digit over voltage range

**Insulation resistance:**  $\geq 100 \text{ M}\Omega$  with 500 V DC

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

### Accuracy

INPUT CODE	MEASURING RANGE	MEASUREMENT ACCURACY	MAX. INPUT	MAX. RESOLUTION
A1	$\pm 199.9 \mu\text{A}$	$\pm 0.1\% \text{ rdg} \pm 1 \text{ digit}$	$\pm 10 \text{ mA}$	100 nA
A2	$\pm 1.999 \text{ mA}$		$\pm 50 \text{ mA}$	1 $\mu\text{A}$
A3	$\pm 19.99 \text{ mA}$		$\pm 150 \text{ mA}$	10 $\mu\text{A}$
A4	$\pm 199.9 \text{ mA}$		$\pm 500 \text{ mA}$	100 $\mu\text{A}$
A5	$\pm 1.999 \text{ A}$	$\pm 0.3\% \text{ rdg} \pm 1 \text{ digit}$	$\pm 3 \text{ A}$	1 mA
V1	$\pm 199.9 \text{ mV}$	$\pm 0.1\% \text{ rdg} \pm 1 \text{ digit}$	$\pm 250 \text{ V}$	100 $\mu\text{V}$
V2	$\pm 1.999 \text{ V}$		$\pm 250 \text{ V}$	1 mV
V3	$\pm 19.99 \text{ V}$		$\pm 250 \text{ V}$	10 mV
V4	$\pm 199.9 \text{ V}$		$\pm 350 \text{ V}$	100 mV

## STANDARDS & APPROVALS

### EU conformity:

EMC Directive

EMI EN 61000-6-4

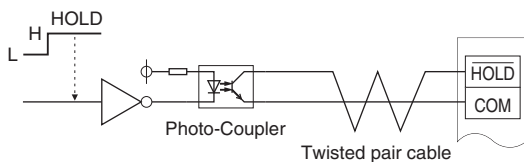
EMS EN 61000-6-2

RoHS Directive

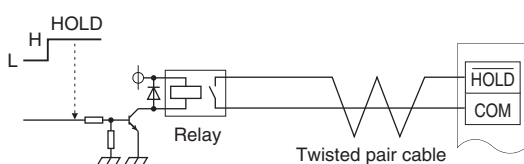
## DISPLAY HOLD COMMAND

To hold the display, close between HOLD and COM as shown below.

(a) Photo-Coupler

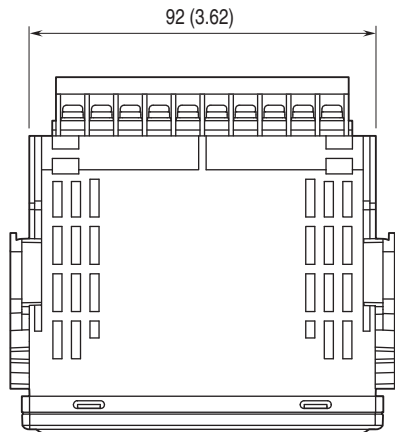


(b) Relay

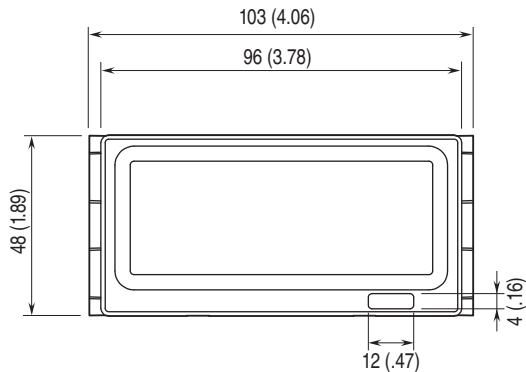


**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)**

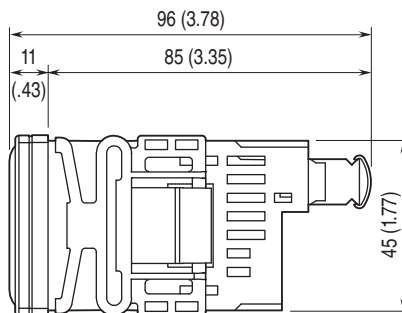
■ TOP VIEW



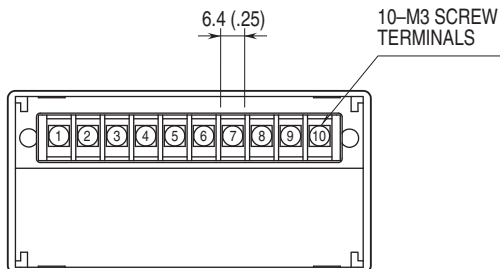
■ FRONT VIEW



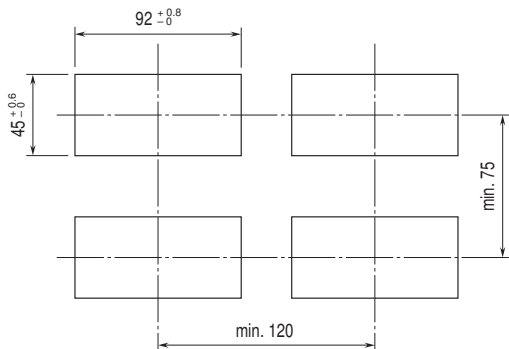
■ SIDE VIEW



■ REAR VIEW

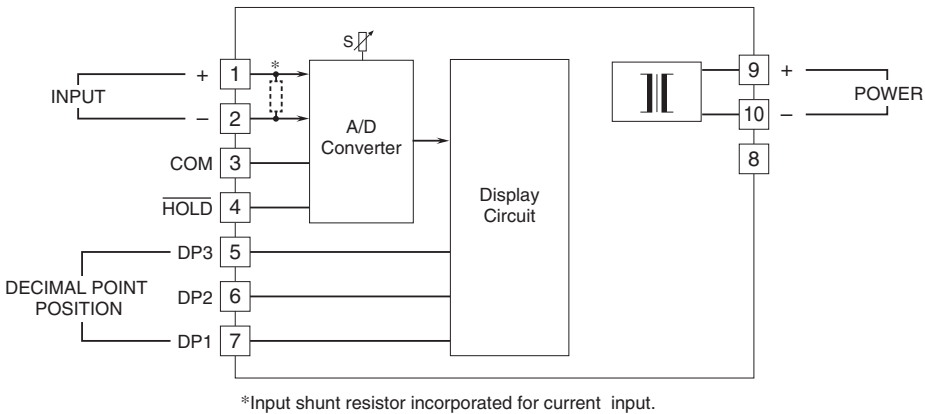


**MOUNTING REQUIREMENTS unit: mm**



Panel thickness: 1.6 to 8.0 mm

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



Specifications are subject to change without notice.