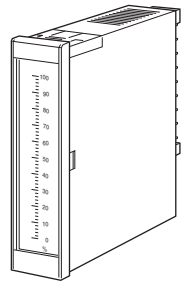
Bargraph Indicators 48 Series

BARGRAPH INDICATOR

Functions & Features

• Displaying a process variable in graphic bargraph of 101 LED segments
• Clear LED
• High-density mounting



MODEL: 48V-[1][2][3][4]-[5]

ORDERING INFORMATION

• Code number: 48V-[1][2][3][4]-[5]
Specify a code from below for each [1] through [5].
(e.g. 48V-2RRVA-R)
•Special input range (For codes Z & 0)
•Scale (e.g. 0 – 100 %)

[1]BARGRAPHS

1: Single
2: Dual

[2] LED COLOR

R: Red
Y: Amber
G: Green
Dual (left/right)
RR: Red / Red
YY: Amber / Amber
GG: Green / Green
RY: Red / Amber
RG: Red / Green
YR: Amber / Red
YG: Amber / Green
GR: Green / Red
GY: Green / Amber

[3] MOUNTING DIRECTION

V: Vertical
H: Horizontal

[4] INPUT

Current
A: 4 – 20 mA DC (Input resistance 10 Ω)
B: 2 – 10 mA DC (Input resistance 20 Ω)
C: 1 – 5 mA DC (Input resistance 39 Ω)
D: 0 – 20 mA DC (Input resistance 10 Ω)
E: 0 – 16 mA DC (Input resistance 12 Ω)
F: 0 – 10 mA DC (Input resistance 20 Ω)
G: 0 – 1 mA DC (Input resistance 200 Ω)
H: 10 – 50 mA DC (Input resistance 3.9 Ω)
Z: Specify current (See INPUT SPECIFICATIONS)
Voltage
3: 0 – 1 V DC (Input resistance 100 kΩ)
4: 0 – 10 V DC (Input resistance 330 kΩ)
5: 0 – 5 V DC (Input resistance 250 kΩ)
6: 1 – 5 V DC (Input resistance 250 kΩ)
0: Specify voltage (See INPUT SPECIFICATIONS)

[5] POWER INPUT

AC Power
K: 85 – 132 V AC
(Operational voltage range 85 – 132 V, 47 – 63 Hz)
L: 170 – 264 V AC
(Operational voltage range 170 – 264 V, 47 – 63 Hz)
DC Power
R: 24 V DC
(Operational voltage range 24 V ±15 %, ripple 10 %p-p max.)

GENERAL SPECIFICATIONS

Construction: Panel flush mounting
Connection: M3 screw terminals (torque 0.6 N·m)
Screw terminal: Chromated brass
Housing material: ABS resin
Isolation: Input 1 to input 2 to power
Scale plate: Aluminium (white scale & characters on black base)
Scale
•Characters including decimal points:
Max. 6 charac. (48V-1, vertical mount.)
Max. 4 charac. (48V-2, vertical mount.)
Max. 4 charac. (48V-1, horizontal mount.)
Max. 4 charac. (48V-2, horizontal mount.)
•Divisions: 22 – 54.9
•Engineering unit:
Max. 8 charac. (48V-1, vertical mount.)
Max. 5 charac. (48V-2, vertical mount.)
Max. 8 charac. (48V-1, horizontal mount.)

Max. 3 charac. (48V-2, horizontal mount.)
If there is only one engineering unit with dual bargraph type, the position and maximum number of characters for single type are applied.

Bargraph: 101-segment LED, 100 mm (3.96”) long, 1.5 mm (.06”) wide

INPUT SPECIFICATIONS

■ **DC Current**: 0 – 50 mA DC; input resistor incorporated
Minimum span: 1 mA
0 % input: 0 mA DC
■ **DC Voltage**: 0 – 10 V DC
Minimum span: 1 V
0 % input: 0 V DC

INSTALLATION

Power consumption
•**AC**: Approx. 3.5 VA (single) or 5.5 VA (dual)
•**DC**: Approx. 2 W (single) or 4 W (dual)
Operating temperature: 0 to 50°C (32 to 122°F)
Operating humidity: 40 to 80 % RH (non-condensing)
Mounting: Panel flush mounting
Weight:
290 g (0.64 lbs) for 48V-1, DC powered
320 g (0.71 lbs) for 48V-1, AC powered
340 g (0.75 lbs) for 48V-2, DC powered
370 g (0.82 lbs) for 48V-2, AC powered

PERFORMANCE in percentage of span

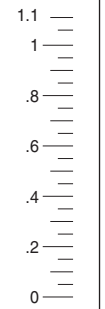
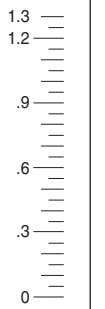
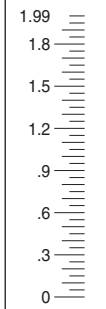
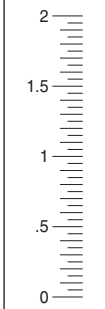
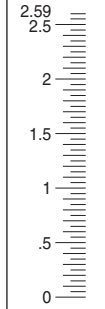
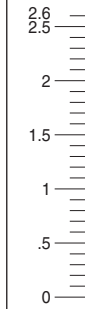
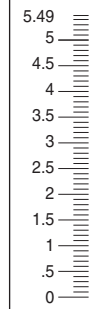
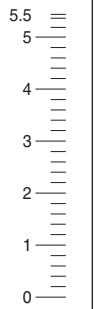
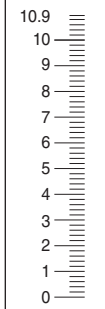
Accuracy: ±1 % ±1 digit
Response time: 0.5 sec.
Insulation resistance: ≥ 50 MΩ with 500 V DC (input or power to ground)
Dielectric strength:
2000 V AC @1 minute (input or power to ground)
1500 V AC @ 1 minute (input to AC power)
500 V AC @ 1 minute (input to DC power)
500 V AC @ 1 minute (input 1 to input 2)

STANDARD SCALE & UNIT EXAMPLES

■ DIVISIONS

Number of divisions depends upon the scale range.

■ STANDARD SCALES & DIVISIONS (example)

	Pattern 1		Pattern 2		Pattern 3		Pattern 4		Pattern 5	
Span of Scale Range	1.1 ≤ SPAN < 1.3		1.3 ≤ SPAN < 2.0		2.0 ≤ SPAN < 2.6		2.6 ≤ SPAN < 5.5		5.5 ≤ SPAN < 11.0	
Standard Divisions	22 through 25.9		26 through 39.9		40 through 51.9		26 through 54.9		27.5 through 54.9	
Ratio	20		20		20		10		5	
Standard Scales										
	22 div.	25.9 div.	26 div.	39.9 div.	40 div.	51.9 div.	26 div.	54.9 div.	27.5 div.	54.9 div.

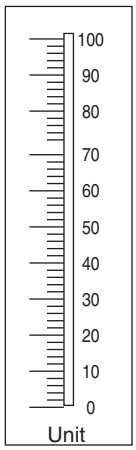
Enginnering unit: %, °C, Nm^3/h, m^3/h, t/h, km^3/h, kg/h, l/h, Pa, kPa, abs, ppm, pH, psi, kg/cm^2G, N/m^2, N/cm^2, lb/h, J, kJ, Nl, m^3, lbs, Ω, μΩ, 1°

Span of Scale Range = (Full Scale – Zero Scale) × 10^n
where n = integer (Determine 'n' so that the span of scale range is 1.1 or greater than 1.1, and smaller than 11.0.)

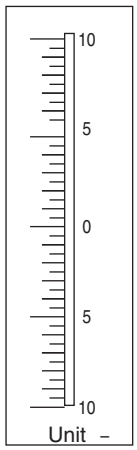
[Example 1] Scale range 0 to 100
Span of Scale Range = (100 – 0) × 10^{-1} = 10
Span of 10 falls into Pattern 5 according to the above table. Number of divisions is calculated from the Span of Scale Range multiplied by the ratio (10 × 5).
The scale range 0 to 100 is provided with 50 divisions.

[Example 2] Scale range -10 to +10
Span of Scale Range = (10 – (-10)) × 10^{-1} = 2
Span of 2 falls into Pattern 3 according to the above table. Number of divisions is calculated from the Span of Scale Range multiplied by the ratio (2 × 20).
The scale range -10 to +10 is provided with 40 divisions.

Example 1



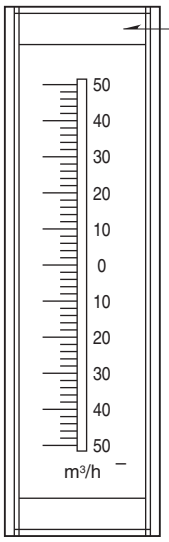
Example 2



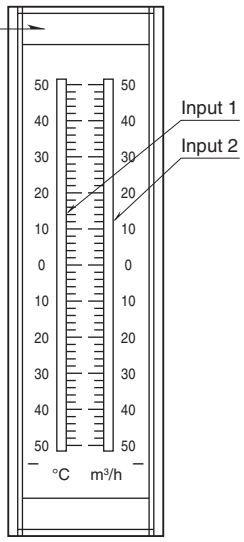
EXTERNAL VIEW

■VERTICAL MOUNTING

• Single

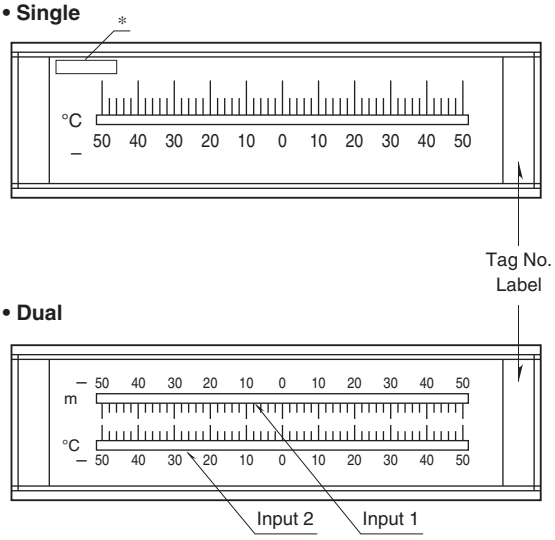


• Dual



■HORIZONTAL MOUNTING

• Single



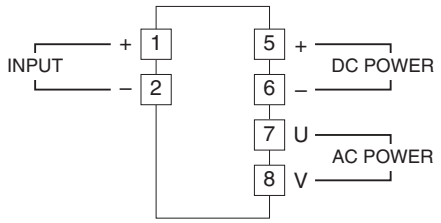
• Dual

*Engineering units longer than 3 characters are indicated here.

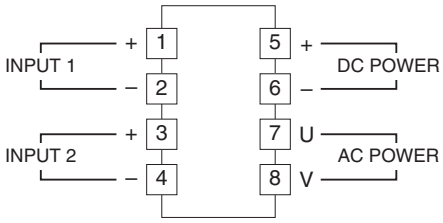
Remark: If there is only one engineering unit with dual bargraph type, the position and maximum number of characters for single bargraph type are applied.

CONNECTION DIAGRAM

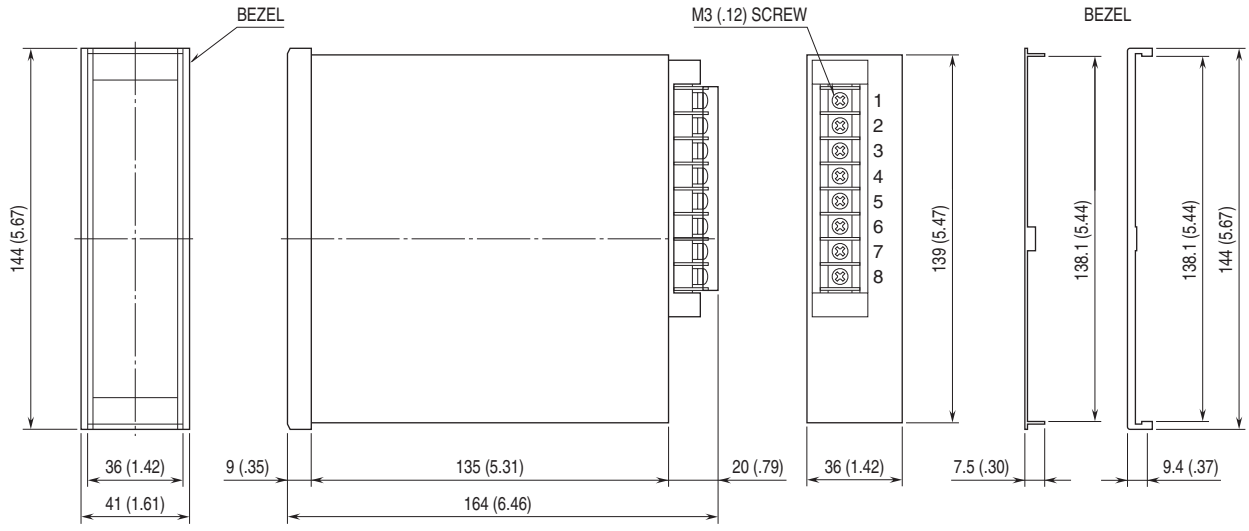
■48V-1



■48V-2

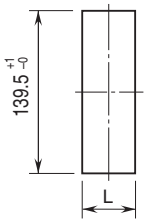


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



PANEL CUTOUT unit: mm

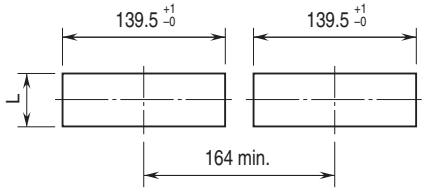
■ **VERTICAL MOUNTING** Panel thickness: 1.6 – 5.5 mm



$L = (38 \times n)^{+1}_{-0}$
(n: number of units)

Note 1. A bezel is required between units for high-density mounting.
Note 2. Observe at the minimum of 5 cm above and below the units for heat dissipation.

■ **HORIZONTAL MOUNTING** Panel thickness: 1.6 – 5.5 mm



$L = 38 \times (n-1) + 36.5^{+1}_{-0}$
(n: number of units)

Note 1. A bezel is required between units for high-density mounting.

⚠ Specifications are subject to change without notice.