

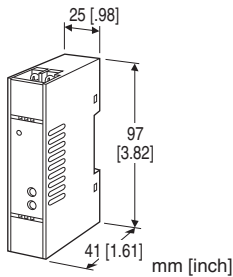
Super-mini Terminal Block Signal Conditioners M5-UNIT

(0 % input must be 0 V.)

AC TRANSMITTER

Functions & Features

- Converts an alternating current/voltage input into a standard process signal
- Isolation up to 2000 V AC
- True RMS sensing
- Power LED



MODEL: M5AC-[1][2]-[3][4]

ORDERING INFORMATION

- Code number: M5AC-[1][2]-[3][4]
Specify a code from below for each of [1] through [4].
(e.g. M5AC-A1A-R/Q)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[1] INPUT

Current

- AA:** 0 – 10 mA AC (Input resistance 100 Ω)
AB: 0 – 50 mA AC (Input resistance 20 Ω)
AC: 0 – 100 mA AC (Input resistance 10 Ω)
AD: 0 – 500 mA AC (Input resistance 1 Ω)
AZ: Specify current (See INPUT SPECIFICATIONS)
 (CE not available)
 (0 % input must be 0 mA.)

Voltage

- A1:** 0 – 100 mV AC (Input resistance 90 k Ω min.)
A2: 0 – 500 mV AC (Input resistance 90 k Ω min.)
A3: 0 – 1 V AC (Input resistance 90 k Ω min.)
A4: 0 – 5 V AC (Input resistance 90 k Ω min.)
A5: 0 – 10 V AC (Input resistance 90 k Ω min.)
A6: 0 – 120 V AC (Input resistance 90 k Ω min.)
 (CE not available)
A7: 0 – 150 V AC (Input resistance 90 k Ω min.)
 (CE not available)
A8: Specify voltage (See INPUT SPECIFICATIONS)
 (CE not available)

[2] OUTPUT

Current

- A:** 4 – 20 mA DC (Load resistance 550 Ω max.)
Z: Specify current (See OUTPUT SPECIFICATIONS)
 (CE not available)

Voltage

- 4:** 0 – 10 V DC (Load resistance 1000 Ω min.)
5: 0 – 5 V DC (Load resistance 500 Ω min.)
6: 1 – 5 V DC (Load resistance 500 Ω min.)
4W: -10 – +10 V DC (Load resistance 8000 Ω min.)
5W: -5 – +5 V DC (Load resistance 4000 Ω min.)
0: Specify voltage (See OUTPUT SPECIFICATIONS) (CE not available)

[3] POWER INPUT

AC Power

- M:** 85 – 264 V AC (Operational voltage range 85 – 264 V,
 47 – 66 Hz)
 (CE not available)

DC Power

- R:** 24 V DC
 (Operational voltage range 24 V $\pm$ 10 %, ripple 10 %p-p max.)

[4] OPTIONS

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

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to our web site.)

- /C01:** Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating

TERMINAL SCREW MATERIAL

- /S01:** Stainless steel

GENERAL SPECIFICATIONS

- Construction:** Terminal block
Connection: M3.5 screw terminals (torque 0.8 N·m)
Screw terminal: Nickel-plated steel (standard) or stainless steel
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Input waveform
RMS sensing: Up to 15 % of 3rd harmonic content
Overrange output: 0 to 110 % at 1 – 5 V
Zero adjustment: -2 to +2 % (front)
 ($\pm$ 1 % with the output suffix codes 4W and 5W selected)
Span adjustment: 98 to 102 % (front)
 (99 to 101 % with the output suffix codes 4W and 5W)

selected)

Power indicator LED: Green LED turns on when the power is supplied.

INPUT SPECIFICATIONS

Frequency: 40 Hz min., 1 kHz max.

■ **AC Current:** 0 – 1 A AC; input resistor incorporated

Minimum span: 1 mA

Input resistance

Span 1 mA: 1 kΩ

Span ≤ 2 mA: 500 Ω

Span ≤ 5 mA: 200 Ω

Span ≤ 10 mA: 100 Ω

Span ≤ 20 mA: 50 Ω

Span ≤ 50 mA: 20 Ω

Span ≤ 100 mA: 10 Ω

Span ≤ 500 mA: 1 Ω

Span ≤ 1 A: 0.5 Ω

■ **AC Voltage:** 0 – 250 V AC

Minimum span: 50 mV – 250 V

Input resistance: 90kΩ min.

Ripple: 0.5 %p-p max. (100/120 Hz)

Line voltage effect: ±0.1 % over voltage range

Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

OUTPUT SPECIFICATIONS

■ **DC Current:** 0 – 20 mA DC

Minimum span: 1 mA

Offset: Max. 1.5 times span

Load resistance: Output drive 11 V max.

■ **DC Voltage:** 1 – 10 V DC

Span: 1 - 10 V

Offset: Max. 1.5 times span

Load resistance: Output drive 10 mA max.

(when output > 1 V).

INSTALLATION

Power consumption

•AC:

Approx. 1.6 VA at 100 V

Approx. 1.8 VA at 200 V

Approx. 2 VA at 264 V

•DC: ≤ 2 W

Operating temperature: -20 to +65°C (-4 to +149°F)

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

Mounting: DIN rail

Weight: 90 g (0.2 lb)

PERFORMANCE in percentage of span

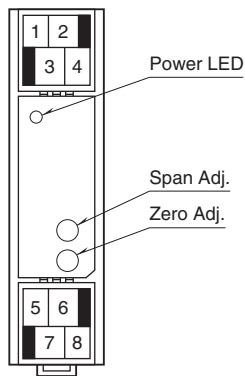
Accuracy: ±0.4 % (input 5 – 100 %)

(10 - 100 % when output code is 4W or 5W)

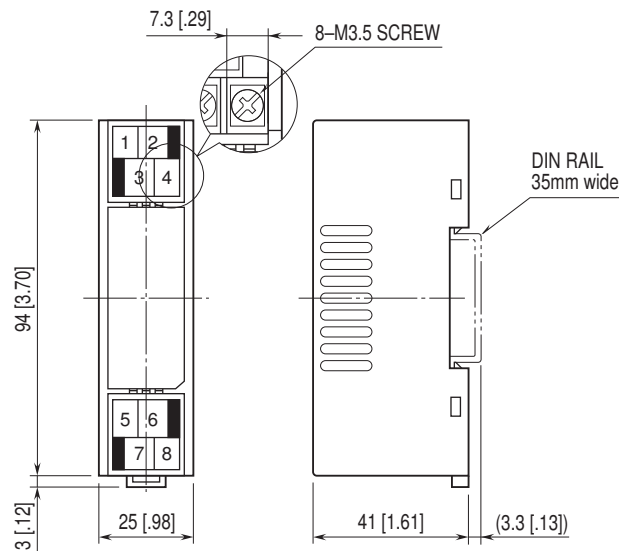
Temp. coefficient: ±0.05 %/°C (±0.03 %/°F)

Response time: ≤ 0.7 sec. (0 – 90 %)

FRONT VIEW

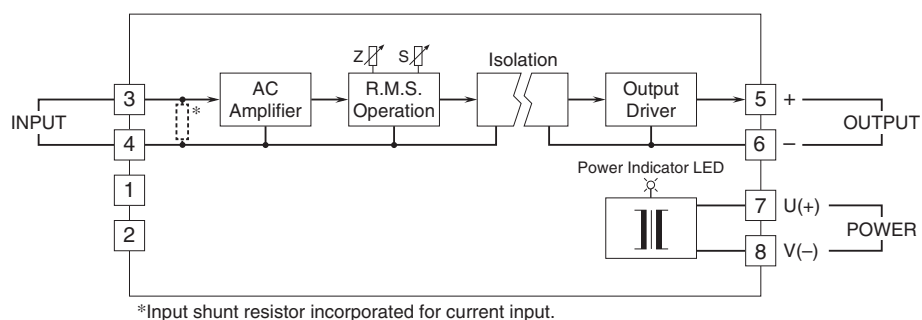


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



• When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.