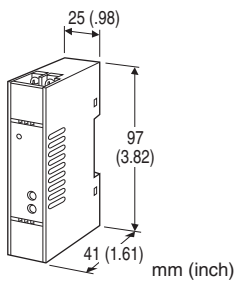


## Super-mini Terminal Block Signal Conditioners M5-UNIT

### POTENTIOMETER TRANSMITTER

#### Functions & Features

- Provides a standard DC output proportional to a potentiometer or slidewire position input
- Constant voltage excitation
- Fast response type available
- High-density mounting
- Power LED



## MODEL: M5MS-[1]-[2][3]

### ORDERING INFORMATION

- Code number: M5MS-[1]-[2][3]  
Specify a code from below for each of [1] through [3].  
(e.g. M5MS-A-R/K/Q)
- Special output range (For codes Z, 0 & 01)
- Specify the specification for option code /Q  
(e.g. /C01/V01/S01)

### INPUT

Total resistance 100  $\Omega$  - 10 k $\Omega$

### [1] OUTPUT

#### Current

**A:** 4 - 20 mA DC (Load resistance 550  $\Omega$  max.)

**D:** 0 - 20 mA DC (Load resistance 550  $\Omega$  max.)

**Z:** Specify current (See OUTPUT SPECIFICATIONS)

#### Voltage

**1:** 0 - 10 mV DC (Load resistance 100 k $\Omega$  min.)  
(CE or UKCA not available)

**2:** 0 - 100 mV DC (Load resistance 100 k $\Omega$  min.)  
(CE or UKCA not available)

**3:** 0 - 1 V DC (Load resistance 100  $\Omega$  min.)

**4:** 0 - 10 V DC (Load resistance 1000  $\Omega$  min.)

**5:** 0 - 5 V DC (Load resistance 500  $\Omega$  min.)

**6:** 1 - 5 V DC (Load resistance 500  $\Omega$  min.)

**1W:** -10 - +10 mV DC (Load resistance 100 k $\Omega$  min.)  
(CE or UKCA not available)

**2W:** -100 - +100 mV DC (Load resistance 100 k $\Omega$  min.)  
(CE or UKCA not available)

**3W:** -1 - +1 V DC (Load resistance 800  $\Omega$  min.)

**4W:** -10 - +10 V DC (Load resistance 8000  $\Omega$  min.)

**5W:** -5 - +5 V DC (Load resistance 4000  $\Omega$  min.)

**0:** Specify voltage (See OUTPUT SPECIFICATIONS)

**01:** Specify voltage (See OUTPUT SPECIFICATIONS)  
(CE or UKCA not available)

### [2] POWER INPUT

#### AC Power

**M:** 85 - 264 V AC (Operational voltage range 85 - 264 V,  
47 - 66 Hz)

(CE or UKCA not available)

#### DC Power

**R:** 24 V DC

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

### [3] OPTIONS (multiple selections)

#### Response Time (0 - 90 %)

**blank:** Standard ( $\leq$  0.5 sec.)

**/K:** Fast Response (Approx. 25 msec.)

#### Input Minimum Span

**blank:**  $\geq$  70 % of total resistance

**/A1:**  $\geq$  50 % of total resistance (CE or UKCA not available)  
(Selectable only current output A, D)

#### Other Options

**blank:** none

**/Q:** Option other than the above (specify the specification)

### SPECIFICATIONS OF OPTION: Q (multiple selections)

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

**/C01:** Silicone coating

**/C02:** Polyurethane coating

**/C03:** Rubber coating

#### ADJUSTMENT

**/V01:** Multi-turn fine adjustment

#### 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  
**Overrange output:** Approx. -10 to +110 % at 1 - 5 V  
**Zero adjustment:** 0 - 30 % of total resistance (front)  
**Span adjustment:** 70 - 100 % of total resistance (front)  
 (For '/A1', 50 - 100 % of total resistance (front))  
**Power indicator LED:** Green LED turns on when the power is supplied.

## INPUT SPECIFICATIONS

**Minimum span:** 70% of total resistance  
 (For '/A1', 50% of total resistance)  
**Excitation:** 0.5 V DC

## 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**  
 • **Output code 0 (CE)**  
**Voltage range:** -10 - +10 V DC  
**Minimum span:** 1 V  
**Offset:** Max. 1.5 times span  
**Load resistance:** Output drive 10 mA max.; at  $\geq 1$  V  
 Max. 1.25 mA output drive for negative voltage  
 • **Output code 01 (Not CE)**  
**Voltage range:** -1 - +1 V DC  
**Minimum span:** 10 mV  
**Offset:** Max. 1.5 times span  
**Load resistance:** Min. 100 k $\Omega$   
 Min. 1 M $\Omega$  for negative voltage

## INSTALLATION

**Power Consumption**  
 • **AC:**  
 Approx. 2 VA at 100 V  
 Approx. 3 VA at 200 V  
 Approx. 3 VA at 264 V  
 • **DC:** Approx. 2 W  
**Operating temperature:** -5 to +55°C (23 to 131°F)  
**Operating humidity:** 0 to 90 %RH (non-condensing)  
**Mounting:** DIN rail  
**Weight:** 80 g (2.8 oz)

## PERFORMANCE in percentage of span

**Accuracy:**  $\pm 0.1$  % (For '/A1'  $\pm 0.2$ %)  
**Temp. coefficient:**  $\pm 0.015$  %/°C ( $\pm 0.008$  %/°F) (for '/A1'  $\pm 0.04$  %/°C ( $\pm 0.02$  %/°F))  
**Line voltage effect:**  $\pm 0.1$  % over voltage range  
**Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC  
**Dielectric strength** (input to output to power to ground)  
**DC powered:** 2000 V AC @1 minute  
**AC powered:** 1500 V AC @1 minute

## STANDARDS & APPROVALS

### EU conformity:

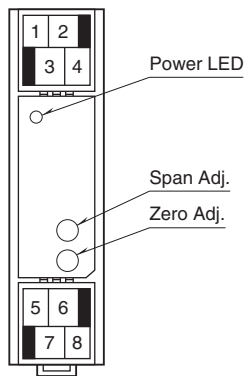
EMC Directive  
 EMI EN 61000-6-4  
 EMS EN 61000-6-2

RoHS Directive

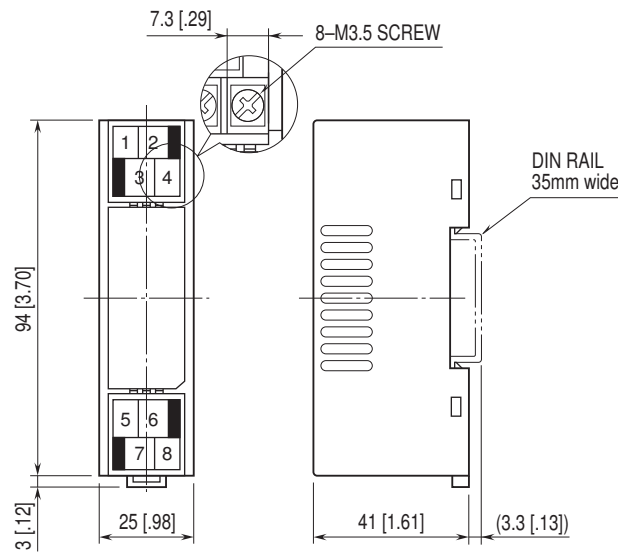
### UK conformity (UKCA):

The UK legislations and designated standards are equivalent to the applicable EU directives.  
 (Refer to M-System's website for more information about the legislations and designated standards.)

## FRONT VIEW

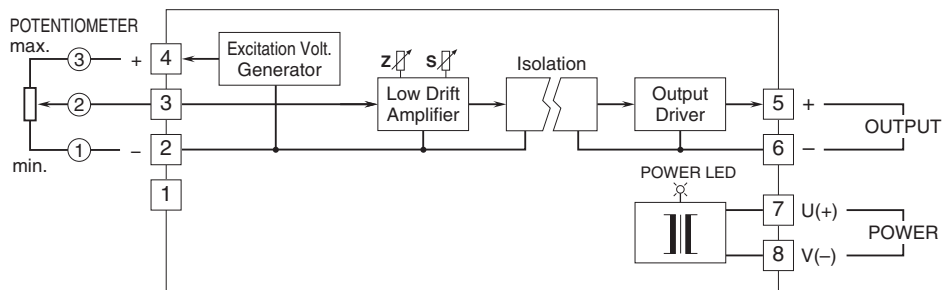


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.