

## Super-mini Terminal Block Signal Conditioners M5X-UNIT

### PARAMETER GENERATOR

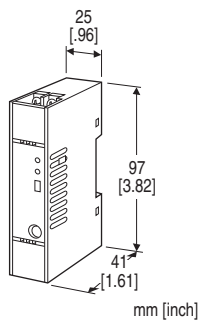
(PC programmable)

#### Functions & Features

- Provides a constant DC signal
- PC programmable
- High-density mounting
- Power LED

#### Typical Applications

- Various parameter settings for computers and DCS's



### MODEL: M5XMST-1-R[1]

### ORDERING INFORMATION

- Code number: M5XMST-1-R[1]
- Specify a code from below for [1].  
(e.g. M5XMST-1-R/Q)
- Specify the specification for option code /Q  
(e.g. /C01/S01/SET)

### EXTERNAL INTERFACE

#### ◆ OUTPUT SIGNAL

- 1: DC output (field-selectable)
- Current output: 0 - 20 mA DC
  - Voltage output: -5 - +5 V DC
  - Voltage output: -10 - +10 V DC

### POWER INPUT

DC Power

R: 24 V DC

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

### [1] OPTIONS

Other Options

blank: none

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

### SPECIFICATIONS OF OPTION: Q

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

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

TERMINAL SCREW MATERIAL

/S01: Stainless steel

EX-FACTORY SETTING

/SET: Preset according to the Ordering Information Sheet  
(No. ESU-2781)

### RELATED PRODUCTS

- PC Configurator cable (model: COP-US)
  - PC configurator software (model: M5CFG)
- Downloadable at our web site.

### 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:** Output to power

**Output manual set point:** -10.00 - +105.00%

(Factory default setting: 0.00%)

**Output manual step:** 0.01 - 5.00%

(Factory default setting: 0.10%)

**UP/DOWN control:** Double-throw, momentary SW (front)

**Monitor output:** 0 - 1 V for 0 - 100 % limit

**Mis-operation preventer:** Single-throw SW (front)

On the LOCK side, UP/DOWN control SW is disabled.

Stores current setting values to the non-volatile memory when sliding mis-operation preventer from UNLOCK to LOCK.

**Power indicator LED:** Green LED; Blinking patterns indicate different operating status of the transmitter.

**Parameters:** Stored in non-volatile memory; write/erase cycle endurance: less than 20 000

**Programming:** Downloaded from PC;

- output type
- output range
- zero and span

For detailed information, refer to the users manual for the PC configurator.

**Configurator connection:** 2.5 dia. miniature jack; RS-232-C level

### OUTPUT SPECIFICATIONS

Standard default setting: DC current output 4 - 20 mA

**Output type**

- DC current output: 0 - 20 mA DC

- DC voltage output: -10 - +10 V DC
  - DC voltage output: -5 - +5 V DC
- (3 types can be switched by DIP switch and PC)

■ **DC Current:** 0 - 20 mA DC

**Output range:** 0 - 23 mA DC

**Minimum span:** 1 mA

**Load resistance:** 550 Ω

■ **DC Voltage**

• **Output range -10 - +10 V DC**

**Voltage range:** -11.5 - +11.5 V DC

**Minimum span:** 1 V

**Load resistance:** Output drive 1 mA max.

(ex. 0 - 10 V DC: 10 V ÷ 1 mA = 10 kΩ)

• **Output range -5 - +5 V DC**

**Voltage range:** -5.75 - +5.75 V DC

**Minimum span:** 500 mV

**Load resistance:** Output drive 1 mA max.

(ex. 1 - 5 V DC: 5 V ÷ 1 mA = 5000 Ω)

span) × 0.04%

**Calculation examples**

Ex1: Output 4 - 20 mA

Output accuracy = (20 mA ÷ 16 mA) × 0.04% = 0.05%

Accuracy = setting accuracy 0.1% + output accuracy 0.05% = 0.15%

Ex2: Output 0 - 10 V

Output accuracy = (20 V ÷ 10 V) × 0.02% = 0.04%

Accuracy = setting accuracy 0.1% + output accuracy 0.04% = 0.14%

## STANDARDS & APPROVALS

**EU conformity:**

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

## INSTALLATION

**Power consumption:** ≤ 1W

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

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

**Atmosphere:** No corrosive gas or heavy dust

**Mounting:** DIN rail

**Weight:** 80 g (2.8 oz)

## PERFORMANCE in percentage of span

**Setting accuracy:** ±0.1 %

**Output accuracy (% of max. output range):** ±0.02 %

(±0.04 for current output)

**Temp. coefficient:** ±0.0075 %/°C (±0.004 %/°F) of max. span

**Line voltage effect:** ±0.1 % over voltage range

**Insulation resistance:** ≥ 100 MΩ with 500 V DC

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

## ACCURACY AND CALCULATION EXAMPLES

■ **Overall Accuracy**

The accuracy includes output accuracy, which converts the setting accuracy and digital value into an analog signal.

The accuracy of the device is the total of the input accuracy and the output accuracy

**Output accuracy**

Output accuracy for the setting value span is shown as following formula.

Output accuracy = (output range ÷ output setting value span) × 0.02%

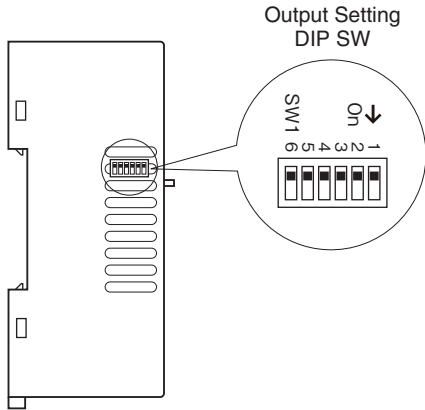
For current output,

Output accuracy = (output range ÷ output setting value

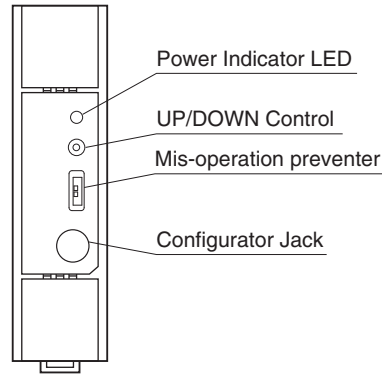
## EXTERNAL VIEW

Refer to the instruction manual for the setting procedure.

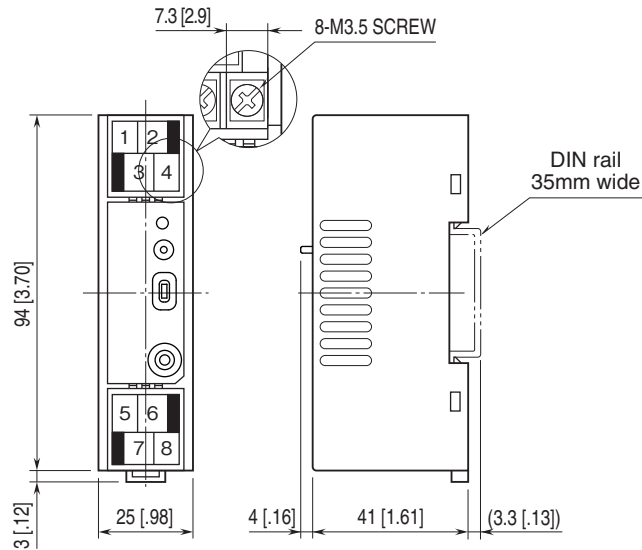
### LEFT VIEW



### FRONT VIEW

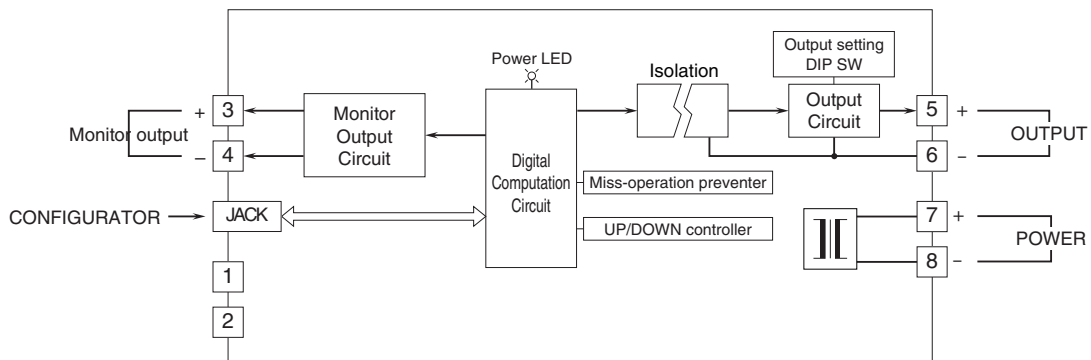


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



· When mousing, no extra space is needed between units.

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM





Specifications are subject to change without notice.