

## Plug-in Signal Conditioners MX-UNIT

### SELF-SYNCH TRANSMITTER

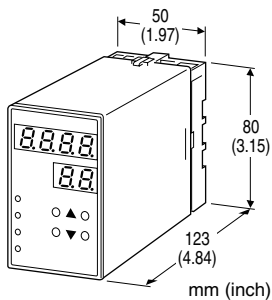
(front configurable)

#### Functions & Features

- Converts position signals from a self-synchronizing motor into a DC signal proportional to the rotating shaft position
- Linearization
- 0 % and 100 % input range can be easily selected with the front keys
- Field selectable output range
- Loop test output
- Isolation up to 2000 V AC
- High-density mounting

#### Typical Applications

- Position indicator using self-synch
- Tank gauge
- Sounding level meter



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

#### ORDERING INFORMATION

- Code number: MXS-1[1]-[2][3]

Specify a code from below for each of [1] through [3].

- (e.g. MXS-1V1-K/Q)
- Specify the specification for option code /Q (e.g. /C01/S01/SET)

#### INPUT

1: Self-synch signal

#### [1] OUTPUT

##### Current

Z1: Range 0 - 20 mA DC (Load resistance 600Ω max.)

##### Voltage

V1: Range -1 - +1 V DC (Load resistance 1000Ω min.)

V2: Range -10 - +10 V DC (Load resistance 10kΩ min.)

#### [2] POWER INPUT

##### AC Power

K: 85 - 132 V AC

(Operational voltage range 85 - 132 V, 47 - 66 Hz)

L: 170 - 264 V AC

(Operational voltage range 170 - 264 V, 47 - 66 Hz)

#### [3] OPTIONS

blank: none

/Q: With options (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

##### TERMINAL SCREW MATERIAL

/S01: Stainless steel

##### EX-FACTORY SETTING

/SET: Preset according to the Ordering Information Sheet

(No. ESU-1739)

#### GENERAL SPECIFICATIONS

**Construction:** Plug-in

**Connection:** M3.5 screw terminals

**Screw terminal:** Chromated steel (standard) or stainless steel

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

**Isolation:** Input to output to power

**Linearization:** Max. 32 points

**Programming:** Via front keys

- Angle offset

- Linearization

- Zero/span adjustments

- Moving average

- etc...

(Refer to the instruction manual for detailed information)

##### ■ DISPLAY

**LED:** 8 mm (.31") 7 segment, red

**Number of display digits:** 4 digits for DATA display; 2 digits for ITEM display

**PV indication:** Input signal in engineering unit

**Overrange indication:** LEDs blinking

**Power saving mode:** Displays turn off if the keys are untouched for a preset time period

**LEDs:** Red; the PL1 turns on with negative polarity and the PL2 with programming error.

**INPUT SPECIFICATIONS**

Measurement range: 0 - 360°  
Minimum span: 60°  
Input setting min. step: 0.1°  
Input resistance: 1 MΩ min.  
Rated input voltage: 90 V AC  
Default setting: 270°

**OUTPUT SPECIFICATIONS**

■ DC Current: 0.0 - 20.0 mA DC  
Operational range: 0.0 - 24.0 mA DC  
Minimum increment: 0.1 mA  
Default setting: 4.0 - 20.0 mA DC  
■ DC Voltage  
Code V1: -1.00 - +1.00 V DC  
Operational range: -1.15 - +1.15 V DC  
Minimum increment: 10 mV  
Code V2: -10.0 - +10.0 V DC  
Operational range: -11.5 - +11.5 V DC  
Minimum increment: 100 mV

Note: Set to the 100 % output with a larger value than the 0 % output value.

Default setting:

Code V1: -1.00 - +1.00 V DC  
Code V2: -10.0 - +10.0 V DC

**INSTALLATION**

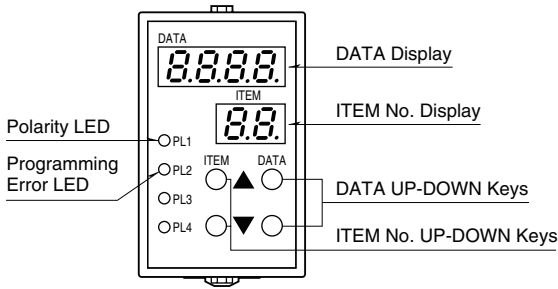
Power consumption

•AC: Approx. 6 VA  
Operating temperature: -5 to +55°C (23 to 131°F)  
Operating humidity: 30 to 90 %RH (non-condensing)  
Mounting: Surface or DIN rail  
Weight: 450 g (0.99 lb)

**PERFORMANCE in percentage of span**

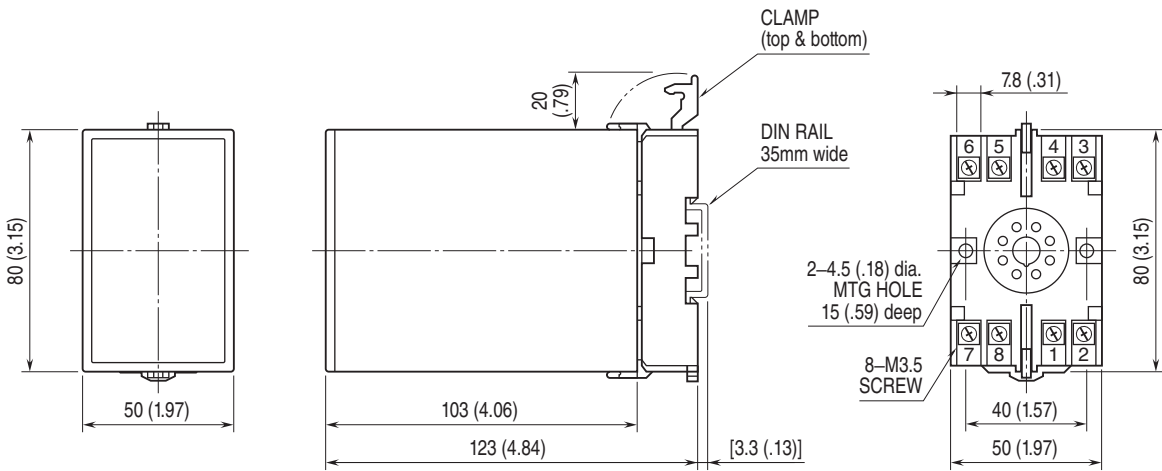
Accuracy:  $\pm 0.1\%$  or  $\pm 0.3\%$ , whichever is greater.  
Required conditions to ensure the accuracy: Input span angle  $\geq 60^\circ$ ; Output  $\geq 20\%$  of selectable range  
Display accuracy: Accuracy  $\pm 1$  digit  
Temp. coefficient:  $\pm 0.015\%/^\circ\text{C}$  ( $\pm 0.008\%/^\circ\text{F}$ ) of max. span  
Response time:  $\leq 1$  sec. (0 - 90 %) with no moving average setting  
Line voltage effect:  $\pm 0.1\%$  over voltage range  
Insulation resistance:  $\geq 100\text{ M}\Omega$  with 500 V DC  
Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

**EXTERNAL VIEW**



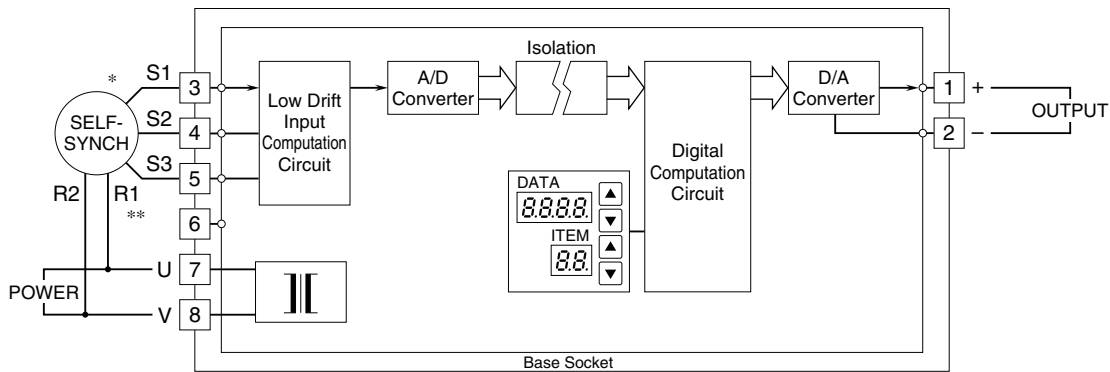
Refer to the instruction manual for detailed procedures.

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



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

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



\* The output increases when the self-synch rotates clockwise. For changing the operation to counterclockwise, replace the connection of the S2 and S3.  
 \*\*Be sure that the polarity of the power input to the signal conditioner matches to the self-synch input polarity. When the connection is reversed, the signal conditioner output will be shifted by 180°.



Specifications are subject to change without notice.