Plug-in Signal Conditioners M-UNIT

SELF-SYNCH TRANSMITTER

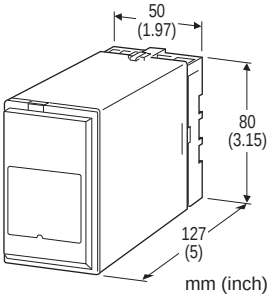
(field-programmable)

Functions & Features

• Converting position signal from a self-synchronizing motor into a DC signal proportional to the rotating shaft position
• Micro-processor based
• Linearization
• Loop testing via hand-held programmer PU-2x
• Offset adjustable via front multi-turn screwdriver adjustment
• High-density mounting

Typical Applications

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



MODEL: JS-1[1]-[2]

ORDERING INFORMATION

• Code number: JS-1[1]-[2]
Specify a code from below for each [1] and [2].
(e.g. JS-1A-B)
• Input range (e.g. 270°)
• Special output range (For codes Z & 0)
• Use Ordering Information Sheet (No. ESU-1669) to specify linearization data when the I/O signals are nonlinear.

INPUT

1: Self-synch signal

[1] OUTPUT

Current

A: 4 – 20 mA DC (Load resistance 750 Ω max.)
B: 2 – 10 mA DC (Load resistance 1500 Ω max.)
C: 1 – 5 mA DC (Load resistance 3000 Ω max.)
D: 0 – 20 mA DC (Load resistance 750 Ω max.)
E: 0 – 16 mA DC (Load resistance 900 Ω max.)
F: 0 – 10 mA DC (Load resistance 1500 Ω max.)
G: 0 – 1 mA DC (Load resistance 15 kΩ max.)
Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

1: 0 – 10 mV DC (Load resistance 10 kΩ min.)
2: 0 – 100 mV DC (Load resistance 100 kΩ min.)
3: 0 – 1 V DC (Load resistance 1000 Ω min.)
4: 0 – 10 V DC (Load resistance 10 kΩ min.)
5: 0 – 5 V DC (Load resistance 5000 Ω min.)
6: 1 – 5 V DC (Load resistance 5000 Ω min.)
4W: -10 – +10 V DC (Load resistance 10 kΩ min.)
5W: -5 – +5 V DC (Load resistance 5000 Ω min.)
0: Specify voltage (See OUTPUT SPECIFICATIONS)

[2] POWER INPUT

AC Power

B: 100 V AC
C: 110 V AC
D: 115 V AC
F: 120 V AC
G: 200 V AC
H: 220 V AC
J: 240 V AC

RELATED PRODUCTS

• JX configurator connection kit (model: JXCON)
• Programming Unit (model: PU-2x)

GENERAL SPECIFICATIONS

Construction: Plug-in
Connection: M3.5 screw terminals
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Offset adjustments: 0 to 360°(front)
Zero adjustment: -5 to +5 % (front)
Span adjustment: 95 to 105 % (front)
Linearization: 16 points max. within the range of -15.00 – +115.00 % input or output; represented as percentage of full-scale
Adjustments: Programming Unit (model: PU-2x); input range, offset, linearization data, zero and span, input angle & coordinates, etc.

INPUT SPECIFICATIONS

Input: Self-synch signal
Measurement range: 0 – 360°
Input range: 60 – 360° (270° for default)
Input resistance: 1 MΩ min.
Rated input voltage: 90 V AC

OUTPUT SPECIFICATIONS

• **DC Current**: 0 – 20 mA DC
Minimum span: 1 mA
Offset: Max. 1.5 times span
Load resistance: Output drive 15 V max.
• **DC Voltage**: -10 – +20 V DC
Span: Min. 5 mV, max. 20 V
Offset: Max. 1.5 times span
Load resistance: Output drive 1 mA max.; at ≥ 0.5 V

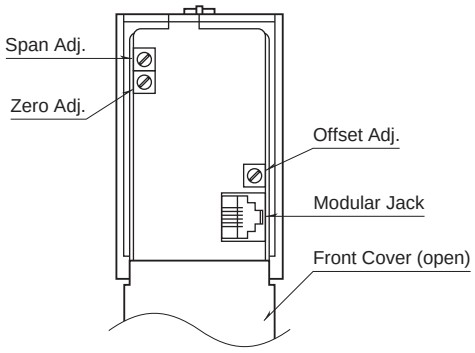
INSTALLATION

Power input
•**AC**: Operational voltage range: rating ±10 %,
50/60 ±2 Hz, approx. 3 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: 350 g (0.77 lbs)

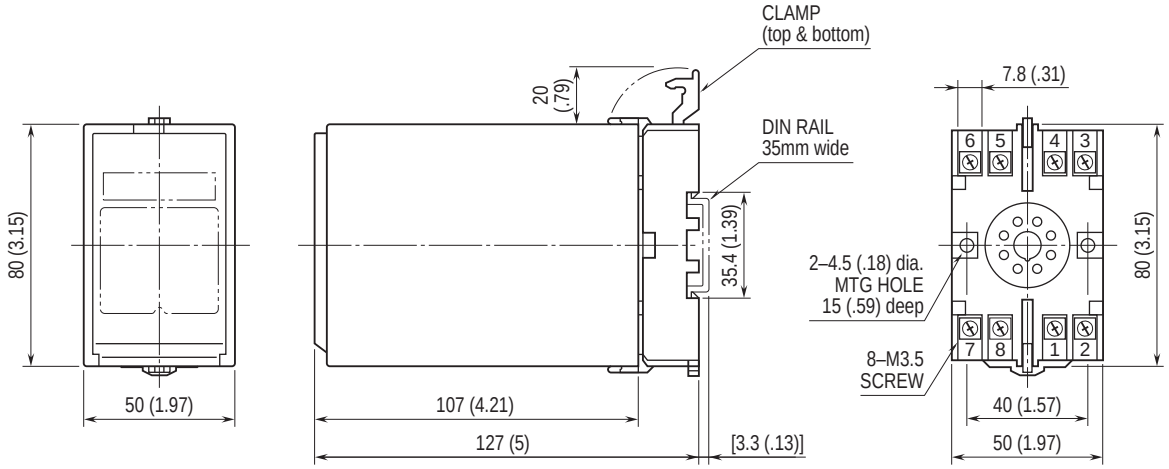
PERFORMANCE in percentage of span

Accuracy: ±0.2 % or ±0.5°, whichever is greater (gain ≤ 1)
accuracy = [±0.2 %(±0.5°) × gain] with the gain ≥ 1
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Response time: Approx. 2 sec. (0 – 90 %)
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)

EXTERNAL VIEW

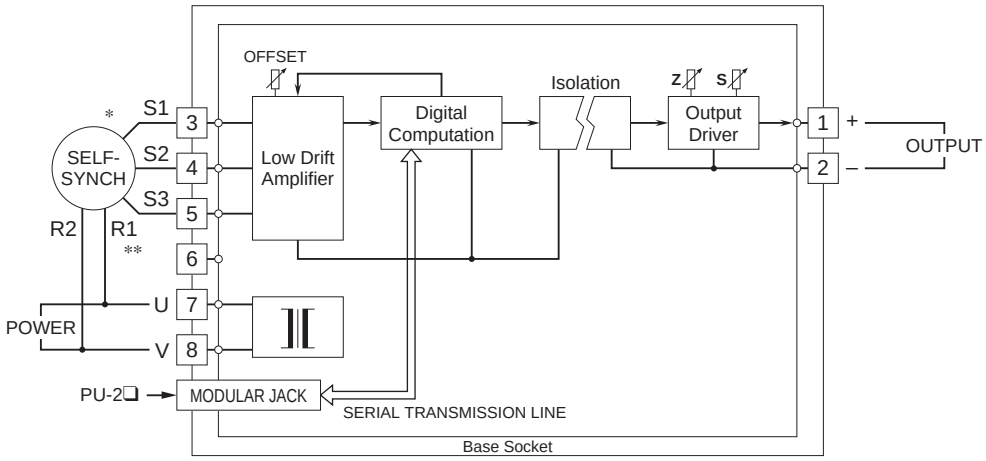


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



• 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 JS matches to the self-synch input polarity. When the connetion is reversed, the JS output will be shifted by 180°.

⚠ Specifications are subject to change without notice.