

**Dual Output Plug-in Signal Conditioners W-UNIT**

**SELF-SYNCH TRANSMITTER**

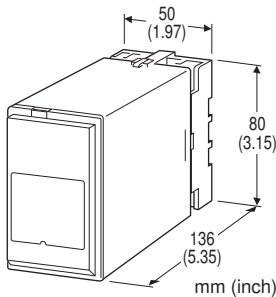
(field-programmable)

**Functions & Features**

- Converting position signal from a self-synchronizing motor into 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: WJS-1[1][2]-[3][4]**

**ORDERING INFORMATION**

- Code number: WJS-1[1][2]-[3][4]
  - Specify a code from below for each [1] through [4]. (e.g. WJS-1AA-B/Q)
  - Input range (e.g. 270°)
  - Special output ranges (For codes Z & 0)
- Default setting will be used if not otherwise specified.  
Use Ordering Information Sheet (No. ESU-1669) to specify linearization data when the I/O signals are nonlinear.
- Specify the specification for option code /Q (e.g. /C01/S01)
- When the user requires a current and a voltage output, specify the current to be the Output 1 which allows a greater load.

**INPUT**

1: Self-synch signal

**[1] OUTPUT 1**

**Current**

- A: 4 - 20 mA DC (Load resistance 600 Ω max.)
- B: 2 - 10 mA DC (Load resistance 1200 Ω max.)
- C: 1 - 5 mA DC (Load resistance 2400 Ω max.)
- D: 0 - 20 mA DC (Load resistance 600 Ω max.)
- E: 0 - 16 mA DC (Load resistance 750 Ω max.)
- F: 0 - 10 mA DC (Load resistance 1200 Ω max.)
- G: 0 - 1 mA DC (Load resistance 12 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] OUTPUT 2**

**Current**

- A: 4 - 20 mA DC (Load resistance 350 Ω max.)
- B: 2 - 10 mA DC (Load resistance 700 Ω max.)
- C: 1 - 5 mA DC (Load resistance 1400 Ω max.)
- D: 0 - 20 mA DC (Load resistance 350 Ω max.)
- E: 0 - 16 mA DC (Load resistance 430 Ω max.)
- F: 0 - 10 mA DC (Load resistance 700 Ω max.)
- G: 0 - 1 mA DC (Load resistance 7000 Ω max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

**Voltage**

Same range availability as Output 1

**[3] 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

**[4] 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

## RELATED PRODUCTS

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

## GENERAL SPECIFICATIONS

**Construction:** Plug-in

**Connection:** M3.5 screw terminals

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

**Isolation:** Input to output 1 to output 2 to power

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

**Offset adjustment:** 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.

(Refer to the users manual of JXCON for the adjustments configurable with JXCON.)

## INPUT SPECIFICATIONS

**Input:** Self-synch signal

**Range:** 0 - 360°

**Minimum span:** 60°

(Default input range is 270° if not otherwise specified)

**Input resistance:** 1 MΩ minimum

**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 12 V max. for Output 1;  
7 V max. for Output 2

■ **DC Voltage:** -10 - +10 V DC

**Minimum span:** 5 mV

**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. 3.5 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:** 400 g (0.88 lb)

## 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

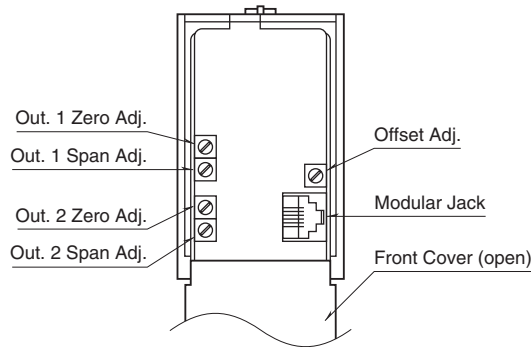
**Dielectric strength:** 2000 V AC @1 minute

(input to output to power to ground)

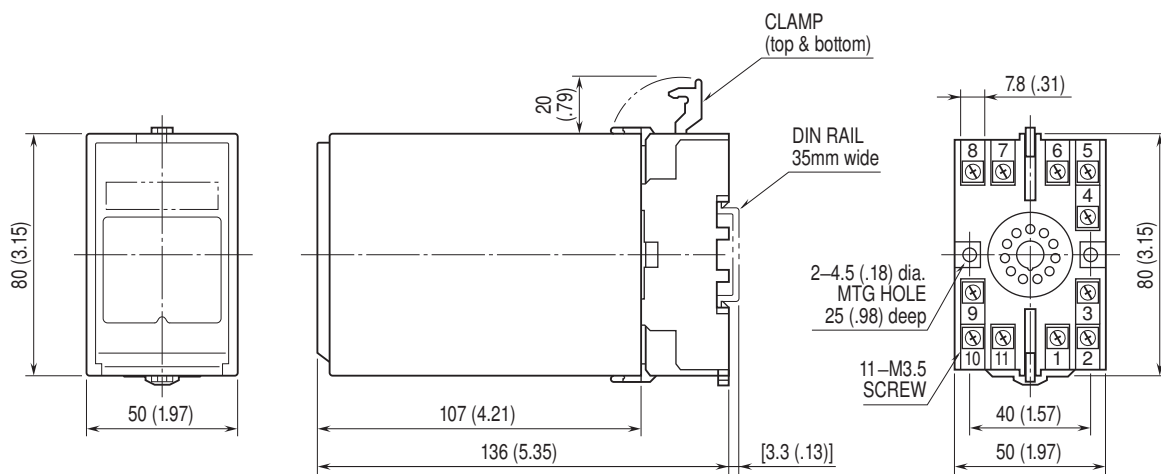
1000 V AC @ 1 minute (output 1 to output 2)



## EXTERNAL VIEW

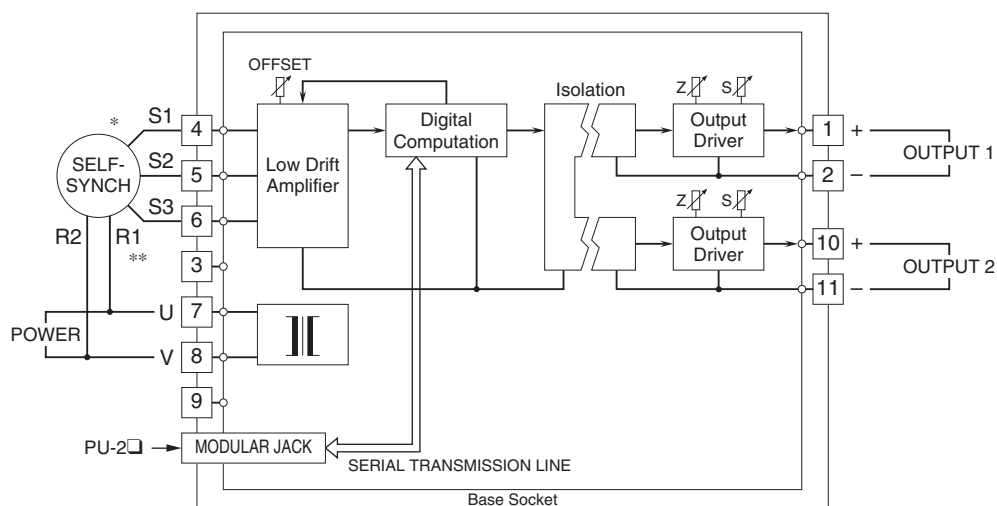


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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



Specifications are subject to change without notice.

