

## Plug-in Signal Conditioners M-UNIT

### LINEARIZER

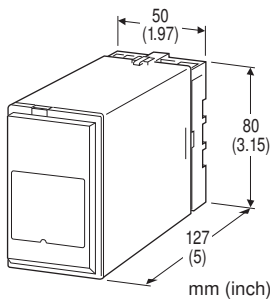
(field-programmable)

#### Functions & Features

- Accepting non-linear input and providing linearized output, proportional to the process variables
- Micro-processor based
- On-site calibration up to 16 points using a hand-held programmer PU-2x
- Field-programmable input range
- Isolation up to 2000 V AC
- High-density mounting

#### Typical Applications

- V-notch weir
- Gas analyzer
- Irregular-shaped tank level input for volume calculation
- Square root extracting for DP transmitter



## MODEL: JFX-[1][2]-[3][4]

### ORDERING INFORMATION

- Code number: JFX-[1][2]-[3][4]
- Specify a code from below for each of [1] through [4].  
(e.g. JFX-6A-B/Q)
- Special input and output ranges (For codes U1, U2, U3, Z & 0)
  - Linearization data (max. 16 points)
- 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)

### [1] INPUT

#### Current

- A: 4 - 20 mA DC (Input resistance 250  $\Omega$ )
- H: 10 - 50 mA DC (Input resistance 100  $\Omega$ )

#### Voltage

- 6: 1 - 5 V DC (Input resistance 1 M $\Omega$  min.)

- U1: Range  $\pm 100$  mV;  
(Minimum span 3 mV, Input resistance 20 k $\Omega$  min.)
- U2: Range  $\pm 1000$  mV;  
(Minimum span 30 mV, Input resistance 20 k $\Omega$  min.)
- U3: Range  $\pm 10$  V;  
(Minimum span 0.3 V, Input resistance 1 M $\Omega$  min.)

### [2] OUTPUT

#### Current

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

#### Voltage

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

### [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

#### DC Power

- S: 12 V DC
- R: 24 V DC
- V: 48 V DC

### [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

- Programming Unit (model: PU-2x)
- PC configurator software (model: JXCON)

Downloadable at M-System's web site.

A dedicated cable is required to connect the module to the PC. Please refer to the internet software download site or the users manual for the PC configurator for applicable cable types.

### 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

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

- Linearization data
- Input range
- Zero and span
- Simulating output
- Others

Input range can be changed with Codes U1, U2 or U3 and limited within ranges of each code type.

### INPUT SPECIFICATIONS

■ **DC Current:**

Shunt resistor attached to the input terminals (0.5 W)

■ **DC Voltage:** -10 – +10 V DC

**Minimum span:** 3 mV

**Offset:** Max. 3 times span

**Input resistance** (Input Range: Input Resistance)

**U1:** ±100 mV

**U2:** ±1000 mV

**U3:** ±10 V

Default setting will be used if not otherwise specified.

**U1:** 0 – 100 mV DC

**U2:** 0 – 1 V DC

**U3:** 0 – 10 V DC

### 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

• **DC:** Operational voltage range: rating ±10 %, ripple 10 %p-p max., approx. 2 W (90 mA at 24 V)

**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 lb)

### PERFORMANCE in percentage of span

**Accuracy:** ±0.1 % with segment gain ≤ 1 [±0.1 % × gain]  
with segment gain > 1

**Temp. coefficient:** ±0.015 %/°C (±0.008 %/°F)

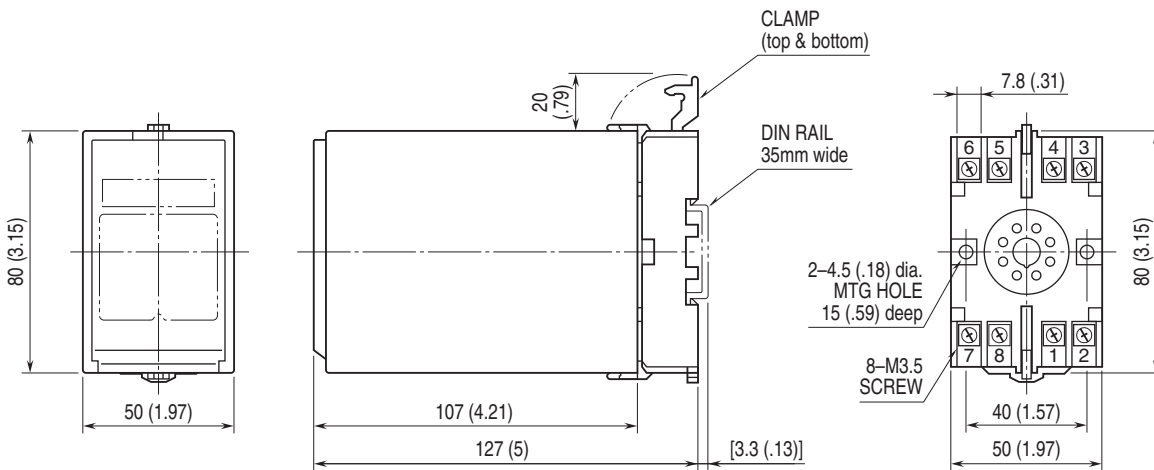
**Response time:** ≤ 0.5 sec. (0 – 90 %)

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

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

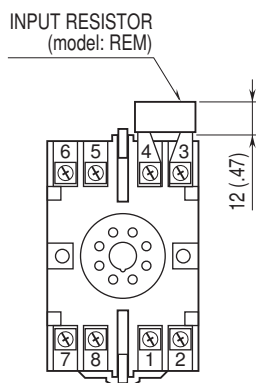
**Dielectric strength:** 2000 V AC @1 minute (input to output to power to ground)

## EXTERNAL DIMENSIONS unit: mm (inch)



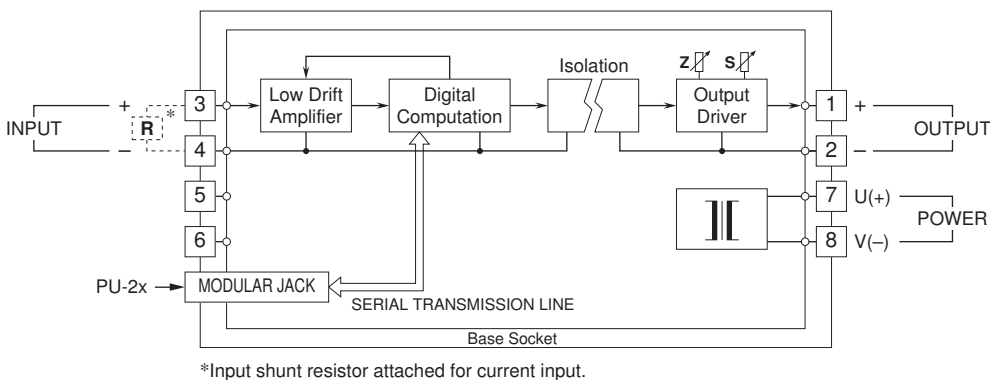
• When mounting, no extra space is needed between units.

## TERMINAL ASSIGNMENTS unit: mm (inch)



Input shunt resistor attached for current input.

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM





Specifications are subject to change without notice.