**Space-saving Plug-in Signal Conditioners H-UNIT**

## FREQUENCY TRANSMITTER

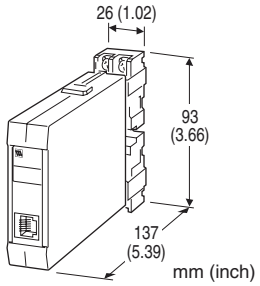
(field-programmable)

**Functions & Features**

• Converting the output from a pulse-type transducer into a standard process signal • Micro-processor based
• Field-programmable frequency range
• Linearization available for flow compensation
• Averaging non-uniform pulses
• Excitation
• Loop testing via hand-held programmer PU-2x
• Highdensity mounting

**Typical Applications**

• Positive displacement flowmeters, turbine flowmeters and vortex flowmeters
• Proximity switches
• Oval flowmeters




## MODEL: HJPA-[1][2]-R[3]

## ORDERING INFORMATION

• Code number: HJPA-[1][2]-R[3]
Specify a code from below for each [1] through [3].
(e.g. HJPA-3A-R/Q)
• Specify the specification for option code /Q
(e.g. /C01/S01)
Default setting will be used if not otherwise specified.
Use Ordering Information Sheet (No. ESU-1673) when the I/O signals are non-linear.
•Frequency range (e.g. 0 – 152.3 Hz)
•Linearization data (max. 16 points)
Note: Consult factory on applications with a sensor handling periodically (& quickly) changing frequency (e.g. oval flowmeter).

## [1] INPUT

**1**: Open collector (Excitation: 12 V @ 30 mA)
**2**: Voltage pulse (Excitation: 12 V @ 30 mA)
**3**: Mechanical contact (Excitation: 12 V @ 30 mA)

## [2] OUTPUT

**Current**
**A**: 4 – 20 mA DC (Load resistance 600 Ω max.)
**Voltage**
**6**: 1 – 5 V DC (Load resistance 500 Ω min.)

## POWER INPUT

**DC Power**
**R**: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

## [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

## RELATED PRODUCTS

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

## GENERAL SPECIFICATIONS

**Construction**: Plug-in
**Connection**: M3.5 screw terminals (torque 0.8 N·m)
**Screw terminal**: Nickel-plated steel
**Housing material**: Flame-resistant resin (black)
**Isolation**: Input to output to power
**Overrange output**: 0 to 120 % at 1 – 5 V
**Linearization**: 16 points max. represented as percentage of full-scale
**Adjustments**: Programming Unit (model: PU-2x); input range, low-end cutout, zero and span, simulating output, averaging nonuniform pulses, linearization data, etc.
(Refer to the users manual of JXCON for the adjustments configurable with JXCON.)
**Low-end cutout**: 0 – 100 % adjustable (factory set to 0 %); hysteresis fixed to 1 %

## INPUT SPECIFICATIONS

**Excitation**: 12 V DC @30 mA; shortcircuit protection
**Pulse width (time) requirement:** 10 msec. min. at < 20 Hz; duty ratio 20 – 80 % at ≥ 20 Hz
**Offset**: Max. 3 times span

■ **Open Collector**
**Frequency range**: 0 – 0.01 Hz through 25 kHz
(0 – 1 kHz will be used if not otherwise specified)
**Sensing**: Approx. 12 V DC @ 3 mA
**ON/OFF level**: ≤ 800 Ω / 2 V for ON,
≥ 1.2 kΩ / 3.6 V for OFF
■ **Mechanical Contact**
**Frequency range**: 0 – 0.01 Hz through 5 Hz
(0 – 5 Hz will be used if not otherwise specified)
**Sensing**: Approx. 12 V DC @ 3 mA
**ON/OFF level**: ≤ 800 Ω / 2 V for ON,
≥ 1.2 kΩ / 3.6 V for OFF
■ **Voltage Pulse**: Square or sine waveforms
**Frequency range**: 0 – 0.01 Hz through 25 kHz
(0 - 1 kHz will be used if not otherwise specified.)
**Input amplitude**: 2 – 50 Vp-p
**Input impedance**: 10 kΩ min.

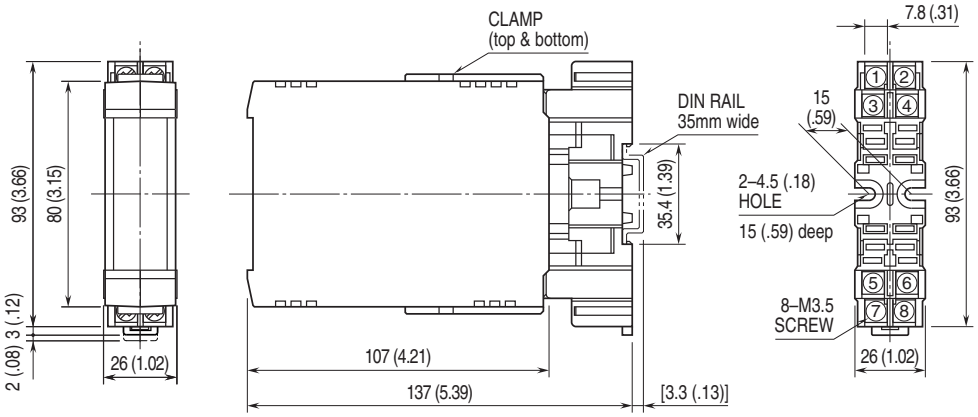
## INSTALLATION

**Current consumption**: Approx. 90 mA
**Operating temperature**: -5 to +55°C (23 to 131°F)
**Operating humidity**: 30 to 90 %RH (non-condensing)
**Mounting**: Surface or DIN rail; Standard Rack Mounting
Frame BX-16H available
**Weight**: 220 g (0.49 lbs)

## 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. + 1 pulse cycle (0 – 90 %)
**Line voltage effect**: ±0.1 % over voltage range
**Insulation resistance**: ≥ 100 MΩ with 500 V DC
**Dielectric strength**: 500 V AC @ 1 minute
(input to output to power)
1500 V AC @ 1 minute (input or output or power to ground)

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




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

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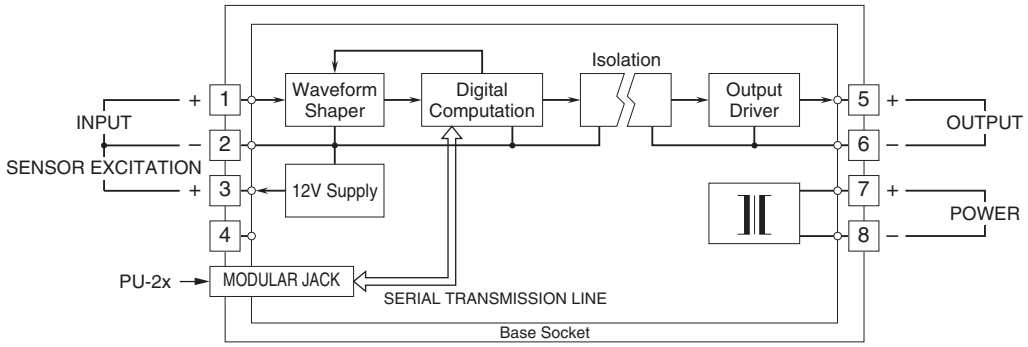
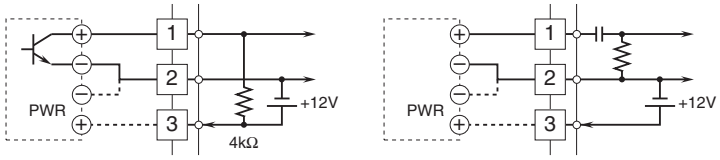
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM




**Input Connection Examples**

■ **Open Collector or Mechanical Contact** ■ **Voltage Pulse**




⚠ Specifications are subject to change without notice.

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