

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

### PT TRANSMITTER

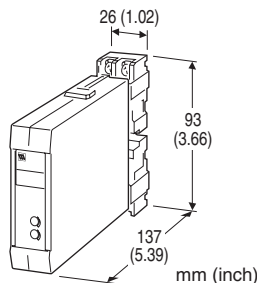
(RMS sensing)

#### Functions & Features

- Converting an alternating voltage from a potential (voltage) transformer into a standard process signal
- Minimum ripple
- RMS sensing
- High-density mounting

#### Typical Applications

- Centralized monitoring and control of power line and power supply voltage measured at switch boards
- Monitoring abnormal voltage drops for detecting overload



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

#### ORDERING INFORMATION

- Code number: HPE-[1][2]-R[3]
- Specify a code from below for each of [1] through [3]. (e.g. HPE-1A-R/Q)
- Special output range (For codes Z & 0)
- Specify the specification for option code /Q (e.g. /C01/S01)

#### [1] INPUT

##### Voltage

- 1: 0 - 110 V AC
- 5: 0 - 150 V AC

#### [2] 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.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

#### 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

#### GENERAL SPECIFICATIONS

**Construction:** Plug-in

**Connection:** M3.5 screw terminals (torque 0.8 N·m)

**Screw terminal:** Nickel-plated steel (standard) or stainless steel

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

**Isolation:** Input to output to power

**Input waveform:** Up to 15 % of 3rd harmonic content

**Overrange output:** 0 to 120 % at 1 - 5 V

**Zero adjustment:** -5 to +5 % (front)

**Span adjustment:** 95 to 105 % (front)

#### INPUT SPECIFICATIONS

**Frequency:** 50 or 60 Hz

**Input burden:** 0.5 VA max.

**Overload capacity:** 200 % of rating for 1 minute, 120 % continuous

**Operational range:** 0 - 120 % of rating

## 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:** 0 - 12 V DC
- Minimum span:** 5 mV
- Offset:** Max. 1.5 times span
- Load resistance:** Output drive 1 mA max.; at  $\geq 0.5$  V

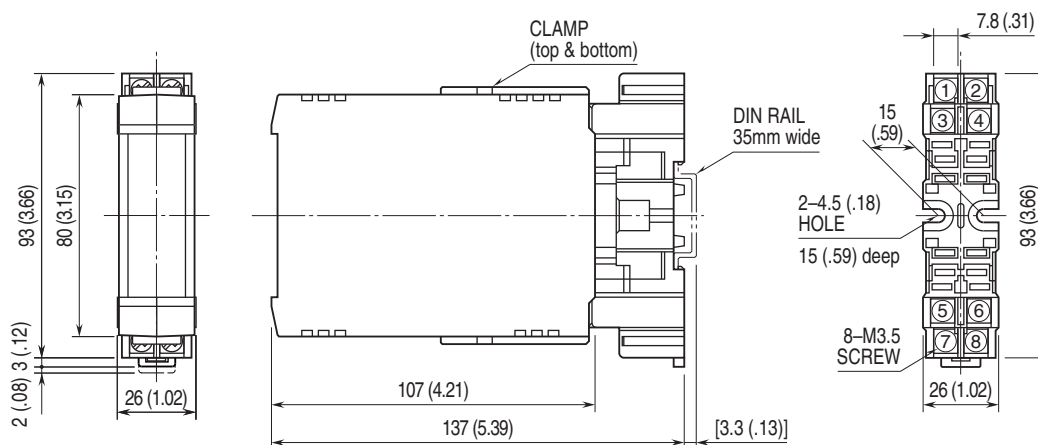
## INSTALLATION

- Current consumption:** Approx. 55 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:** 200 g (0.44 lb)

## PERFORMANCE in percentage of span

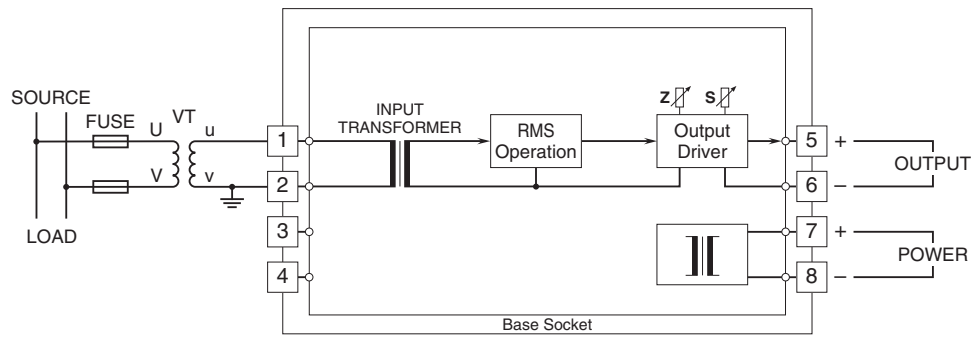
- Accuracy:**  $\pm 0.4$  %
- Temp. coefficient:**  $\pm 0.02$  %/°C ( $\pm 0.01$  %/°F)
- Response time:**  $\leq 0.5$  sec. (0 - 90 %)
- Ripple:** 0.5 %p-p max. (100/120 Hz)
- Line voltage effect:**  $\pm 0.1$  % over voltage range
- Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC
- Dielectric strength:** 2000 V AC @ 1 minute  
(input to output or power)
- 500 V AC @ 1 minute (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.

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



Specifications are subject to change without notice.