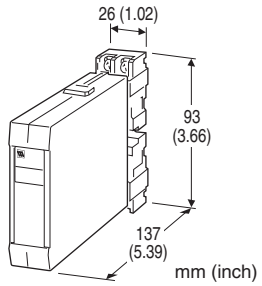
Space-saving Plug-in Signal Conditioners H-UNIT

PULSE ISOLATOR

Functions & Features
- Galvanically isolating pulse rate signals
- Input frequency = output frequency
- Various outputs (open collector, voltage pulses and photo MOSFET relay pulse)
- High-density mounting

Typical Applications
- Isolating field pulse signals in order to reduce noises
- Changing e.g. dry contact signal to e.g. 5 V signals



MODEL: HPP–[1][2]–R[3]

ORDERING INFORMATION

- Code number: HPP–[1][2]–R[3]

Specify a code from below for each of [1] through [3].
(e.g. HPP-33-R/Q)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[1] INPUT

1: Mechanical contact (max. 30 Hz)
2: Open collector (max. 10 kHz)
3: Voltage pulse (max. 10 kHz)

[2] OUTPUT

1: Low frequency open collector (max. 30 Hz)
2: High frequency open collector (max. 10 kHz)
3: 5 V pulse (max. 10 kHz)
4: 12 V pulse (max. 10 kHz)
5: 24 V pulse (max. 10 kHz)
8: Photo MOSFET relay pulse (max. 30 Hz)

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 our 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
Frequency range: Input and output are the same.
Chattering protection: Filter provided for mechanical contact input

INPUT SPECIFICATIONS

Excitation: 12V DC ±2 V @ 30 mA; shortcircuit protection

■ Open Collector
Maximum frequency: 10 kHz
Pulse width time requirement: 10 µsec. min. for ON and OFF
Sensing: Approx. 12 V DC @3 mA
ON/OFF level: ≤ 200 Ω / 0.6 V for ON, ≥ 100 kΩ / 6 V for OFF

■ Mechanical Contact
Maximum frequency: 30 Hz
Pulse width time requirement: 10 msec. min. for ON and OFF
Sensing: Approx. 12 V DC @3 mA
ON/OFF level: ≤ 200 Ω / 0.6 V for ON, ≥ 100 kΩ / 6 V for OFF

■ Voltage Pulse
Maximum frequency: 10 kHz
Pulse width time requirement: 10 µsec. min. for high and low levels
Waveforms: Square or sine
Hi/Lo level: 2 – 50 V DC for high level; ≤1 V DC for low level
Input impedance: 10 kΩ min.

OUTPUT SPECIFICATIONS

■ Low Frequency Open Collector
50 V DC @ 100 mA (resistive load)
Maximum frequency: 30 Hz
Timer: Limits ON time within 75 ±25 msec. for wider than 75 msec. pulses

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Saturation voltage: 0.5 V DC

■ **High Frequency Open Collector**

50 V DC @ 100 mA (resistive load)

Maximum frequency: 10 kHz

Saturation voltage: 0.5 V DC

■ **Voltage Pulse**

Maximum frequency: 10 kHz

High level: Rating (5, 12 or 24 V) ±10 %

Low level: ≤ 0.5V

Load resistance:

≥ 250 Ω for 5 V

≥ 600 Ω for 12 V

≥ 1200 Ω for 24 V

■ **Photo MOSFET Relay Pulse**

Maximum frequency: 30 Hz

Timer: Limits ON time within 75 ±25 msec. for wider than 75 msec. pulses

Rating: 132 V AC @ 200 mA (cos ø = 1)

30 V DC @ 200 mA (resistive load)

ON resistance: ≤ 2 Ω

INSTALLATION

Current consumption: Approx. 80 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: 180 g (0.40 lb)

PERFORMANCE

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)

OUTPUT LOGIC

INPUT TYPE	INPUT	VOLTAGE PULSE OUTPUT	OPEN COLLECTOR or PHOTO MOSFET RELAY PULSE OUTPUT
Voltage Pulse	H / L	H / L	OFF / ON
Mechanical Contact Open Collector	OFF / ON	H / L	OFF / ON

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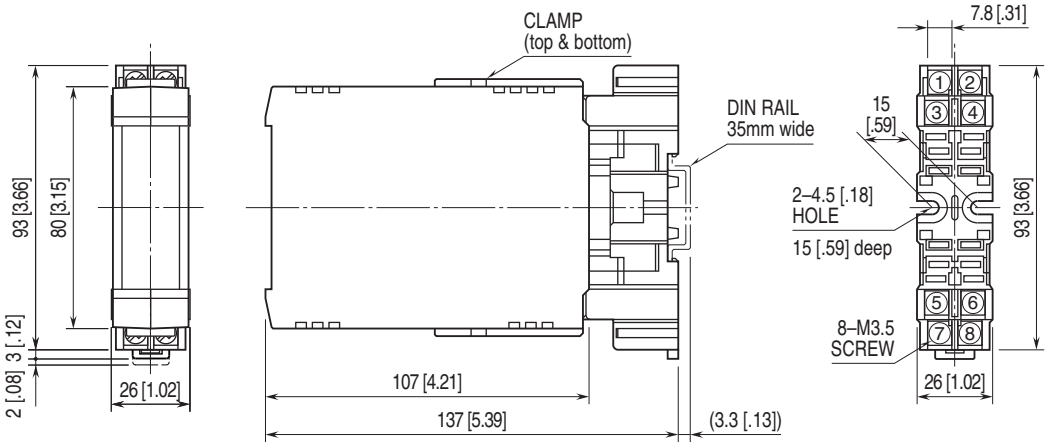
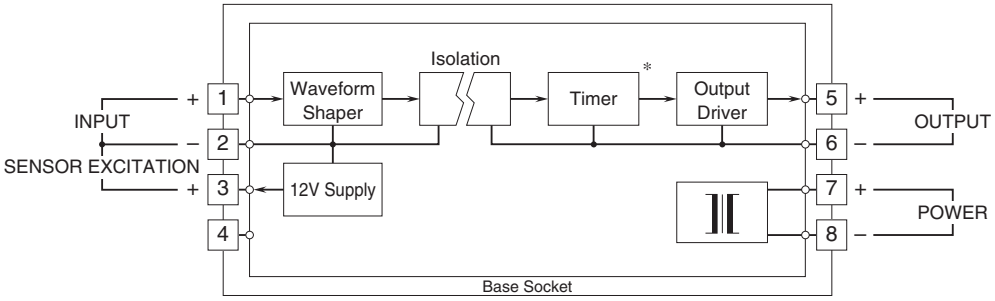
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

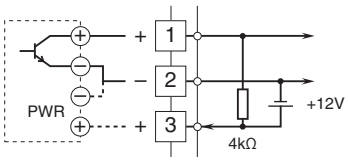
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



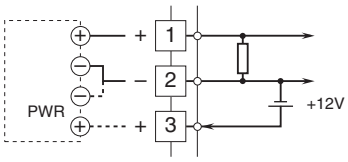
* Timer is provided for low frequency open collector or photo MOSFET relay pulse output.

Input Connection Examples

■ **Mechanical Contact or Open Collector**

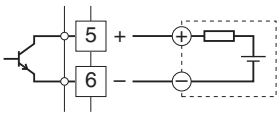


■ **Voltage Pulse**

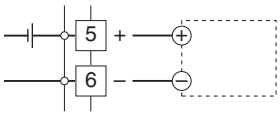


Output Connection Examples

■ **Open Collector**

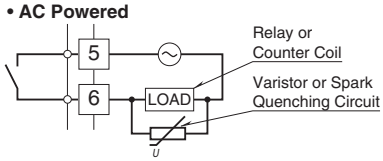


■ **Voltage Pulse**

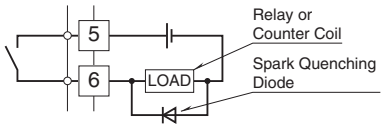


■ **Photo MOSFET Relay Pulse**

• **AC Powered**



• **DC Powered**



⚠ Specifications are subject to change without notice.

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