

High-density Signal Conditioners 10-RACK

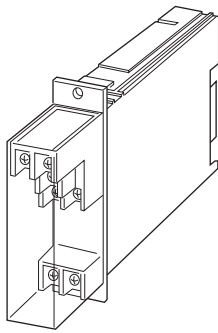
PULSE ISOLATOR

Functions & Features

- Galvanically isolating pulse rate signals
- Input frequency = output frequency
- Various outputs (relay, open collector and voltage pulses)
- Optional second channel output available at the front terminals and at the Standard Rack connector

Typical Applications

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



MODEL: 10PP-[1][2][3]-R[4]

ORDERING INFORMATION

- Code number: 10PP-[1][2][3]-R[4]
- Specify a code from below for each [1] through [4]. (e.g. 10PP-332-R/Q)
- Frequency range (e.g. 0 - 1000 Hz)
- Specify the specification for option code /Q (e.g. /C01)

[1] INPUT

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

[2] OUTPUT 1

- 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)
- 6: Mercury relay contact (max. 30 Hz)

[3] OUTPUT 2

- 0: None
- 2: Open collector (max. 10 kHz)

POWER INPUT

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

[4] OPTIONS

- blank: none
- /Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to M-System's web site.)

- /C01: Silicone coating
- /C02: Polyurethane coating
- /C03: Rubber coating

GENERAL SPECIFICATIONS

Construction: Rack-mounted; terminal access via screw terminals at the front and via card-edge connector at the rear; terminal cover provided

Connection: M3.5 screw terminals (torque 0.8 N·m) and card-edge connector

Power input: Supplied from card-edge connector

Screw terminal: Nickel-plated steel

Housing material: Flame-resistant resin (black)

Isolation: Input to output 1 to output 2 to power

Frequency range: Input and output are the same.

Chattering protection: Filter provided for mechanical contact input

INPUT SPECIFICATIONS

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

■ Open Collector

Maximum frequency: 10 kHz

Pulse width time requirement: 10 μ sec. min. for ON and OFF

Sensing: Approx. 12 V DC @ 3 mA

ON/OFF level: \leq 200 Ω / 3.5 V for ON, \geq 100 k Ω / 7 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: \leq 200 Ω / 3.5 V for ON, \geq 100 k Ω / 7 V for OFF

■ Voltage Pulse

Maximum frequency: 10 kHz

Pulse width time requirement: 10 μ sec. min. for high and low levels



Waveforms: Square or sine
Hi/Lo level: 2 - 50 V for high level; ≤ 1 V for low level
Input impedance: 10 k Ω min.

(input to output 1 to output 2 to power)
1500 V AC @ 1 minute (input or output or power to ground)

OUTPUT SPECIFICATIONS

•Low Frequency Open Collector (for output 1):

50 V DC @ 100 mA (resistive load)

Maximum frequency: 30 Hz

Timer: Limits ON time within 75 \pm 25 msec.

for wider than 75 msec. pulses

Saturation voltage: 0.5 V DC

•Open Collector (for output 1): 50 V DC @ 100 mA (resistive load)

Maximum frequency: 10 kHz

Saturation voltage: 0.5 V DC

•Open Collector (for output 2): 40 V DC @ 100 mA

Maximum frequency: 10 kHz

Timer: Limits ON time within 75 \pm 25 msec.

for wider than 75 msec. pulses

(Timer is provided when output 1 is low frequency open collector or mercury relay contact.)

Saturation voltage: 0.5 V DC

■ Voltage Pulse

Maximum frequency: 10 kHz

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

Low level: ≤ 0.5 V

Load resistance:

$\geq 250 \Omega$ for 5 V

$\geq 600 \Omega$ for 12 V

$\geq 1200 \Omega$ for 24 V

■ Mercury Relay Contact: 132 V AC @ 200 mA ($\cos \phi = 1$)

264 V AC @ 100 mA ($\cos \phi = 1$)

30 V DC @ 200 mA (resistive load)

100 V DC @ 60 mA (resistive load)

Maximum frequency: 30 Hz

Timer: Limits ON time within 75 \pm 25 msec.

for wider than 75 msec. pulses

Relay life: $\geq 5 \times 10^8$ cycles (mechanical)

$\geq 5 \times 10^7$ cycles (electrical)

INSTALLATION

Power consumption

•DC: Approx. 80 mA

Operating temperature: -5 to +55°C (23 to 131°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Mounting: Standard Rack 10BXx

Weight: 200 g (0.44 lb)

PERFORMANCE










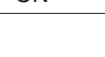


Insulation resistance: ≥ 100 M Ω with 500 V DC

Dielectric strength: 500 V AC @ 1 minute

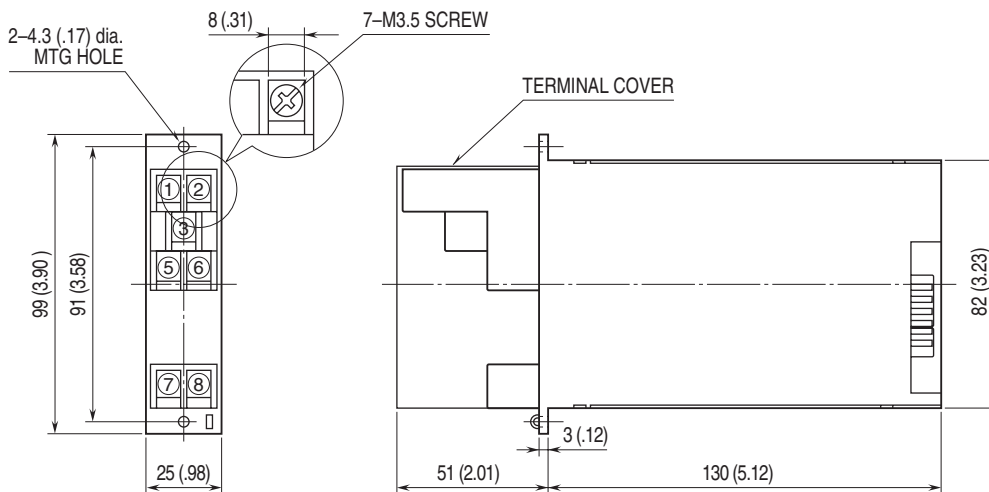


OUTPUT LOGIC

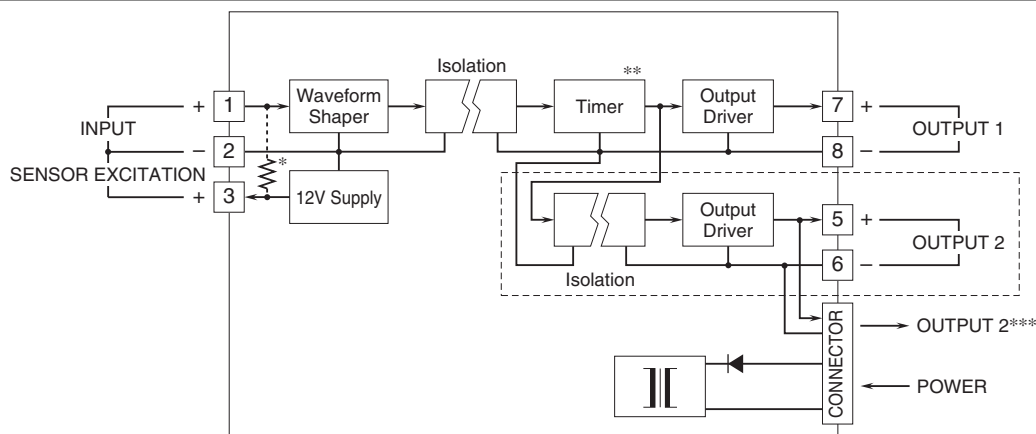
Applicable for both Output 1 and 2.

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

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



* 4kΩ attached for mechanical contact and open collector input only.

** Timer is provided for low frequency open collector or mercury relay contact output.

*** 1 output type has the output 1 connected to the card-edge connector in parallel.

Remark 1) The section enclosed by broken line is only for 2nd output channel.



Specifications are subject to change without notice.



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