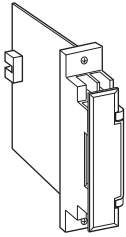


## Rack-mounted DCS Signal Conditioners 18K-RACK

### PULSE ISOLATOR

#### Functions & Features

- output frequency = input frequency
- Built-in sensor power supply type
- Module can be retracted without removing wiring for an insulation test
- Optional power switch



### MODEL: 18KPP-[1]22-R[2]

#### ORDERING INFORMATION

- Code number: 18KPP-[1]22-R[2]

Specify a code from below for each of [1] and [2].  
(e.g. 18KPP-322-R/S)

#### [1] INPUT

- 1: Mechanical contact (max. 5 Hz)
- 2: Open collector (max. 10 kHz)
- 3: Voltage pulse (max. 10 kHz)
- 4: Two-wire current pulse, receiving resistor 200  $\Omega$  (max. 10 kHz)
- 5: Two-wire current pulse, receiving resistor 510  $\Omega$  (max. 10 kHz)
- 6: Two-wire current pulse, receiving resistor 1 k $\Omega$  (max. 10 kHz)

#### OUTPUT 1

- 2: Open collector (max. 10 kHz)

#### OUTPUT 2

- 2: Open collector (max. 10 kHz)  
(Output 1 and 2 frequency is equal)

#### POWER INPUT

DC Power

R: 24 V DC

(Operational voltage range 24 V  $\pm$ 10 %, ripple 10 %p-p max.)

#### [2] OPTIONS

Power Switch

blank: None

/S: With power switch

#### GENERAL SPECIFICATIONS

**Construction:** Rack-mounted; terminal access via screw terminals on the front and connector on the rear; terminal cover provided

#### Connection

**Input:** M3.5 screw terminals (torque 0.8 N·m) and connector

**Output 1:** Connector

**Output 2:** M3.5 screw terminals (torque 0.8 N·m) and connector

**Power input:** Supplied from connector

**Screw terminal:** Nickel-plated steel

**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:** 12 V DC  $\pm$ 10 % @ 40 mA; shortcircuit protection

##### ■ Open Collector

**Input pulse sensing:** DC coupled

**Pulse width time requirement:**  $\geq$  20  $\mu$ sec. for ON and OFF

**Sensing:** Approx. 12 V DC @ 3 mA

**ON/OFF level:**  $\leq$  200  $\Omega$  / 5 V for ON,  $\geq$  100 k $\Omega$  / 7 V for OFF

##### ■ Mechanical Contact

**Input pulse sensing:** DC coupled

**Pulse width time requirement:**  $\geq$  20 msec. for ON and OFF

**Sensing:** Approx. 12 V DC @ 3 mA

**ON/OFF level:**  $\leq$  200  $\Omega$  / 5 V for ON,  $\geq$  100 k $\Omega$  / 7 V for OFF

**Time constant:** 10 msec. (able to cancel it by changing jumper, J6)

##### ■ Voltage Pulse: Square or sine waveform

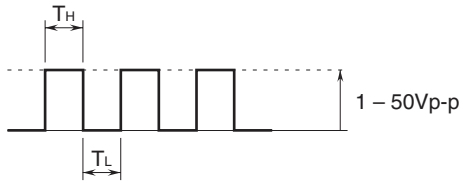
**Input pulse sensing:** AC coupled

**Input impedance:**  $\geq$  10 k $\Omega$

(Refer the graph and tables below for waveform, detection level range, the minimum amplitude, pulse width (duty ratio) and frequency requirements)

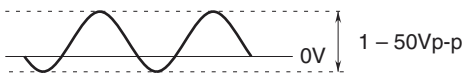
## Square Waveform

Pulse width is the smaller of  $T_H$  or  $T_L$ .  
 Duty ratio = frequency  $\times T_H \times 100$  (%)



## Sine or similar waveform

The input frequency range is 10 Hz to 10 kHz.



**Detection level range:** -50 to +50 V; max. 50 Vp-p

## Waveform requirements

### Square Waveform

FREQUENCY RANGE	AMPLITUDE	PULSE WIDTH & DUTY RATIO
0 to 10 kHz	1 to 3Vp-p	Duty 50 $\pm$ 10%
0 to 10 kHz	Min. 3Vp-p	Min. 60 $\mu$ sec.*

\*When the frequency is 6 kHz or more, the pulse width is 30  $\mu$ sec. or more.

### Sine or similar waveform

FREQUENCY RANGE	AMPLITUDE	PULSE WIDTH & DUTY RATIO
50 Hz to 10 kHz	1 to 3Vp-p	-
10 Hz to 10 kHz	Min. 3Vp-p	-

## ■ Two-wire Current Pulse

**Input pulse sensing:** AC coupled

Refer to the table above for the minimum amplitude, pulse width (duty ratio) and frequency requirements.

Convert the current to the voltage for the amplitude.

## OUTPUT SPECIFICATIONS

**Open collector**

**Rating:** 30 V DC @ 100 mA (resistive load)

**Maximum frequency:** 10 kHz

**Saturation voltage:** 0.5 V DC

## 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:** Standard Rack 18KBXx

**Weight:** 150 g (0.33 lb)

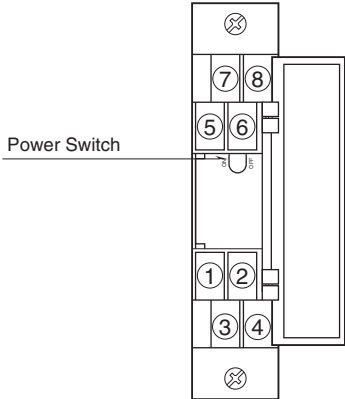
## PERFORMANCE

**Insulation resistance:**  $\geq$  100 M $\Omega$  with 500 V DC

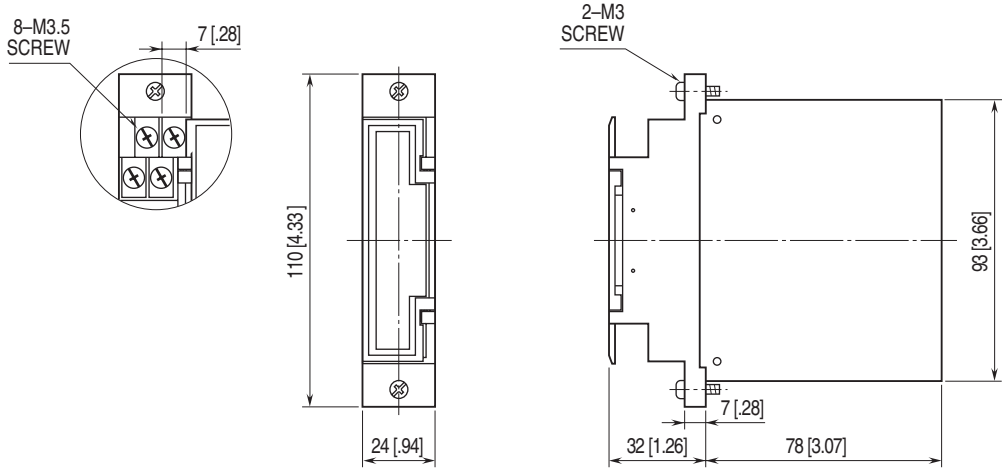
**Dielectric strength:** 500 V AC @ 1 minute (input to output 1 to output 2 to power to ground)

**EXTERNAL VIEW**

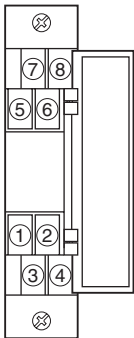
■ WITH POWER SWITCH



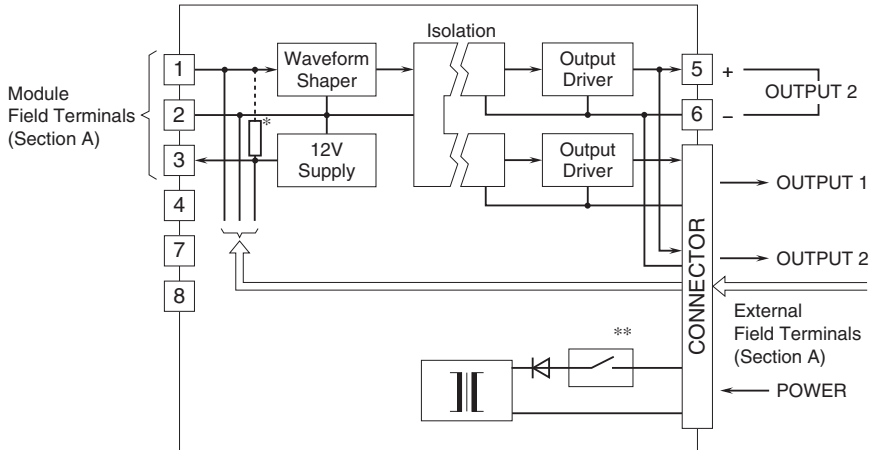
**EXTERNAL DIMENSIONS unit: mm [inch]**



**TERMINAL ASSIGNMENTS**

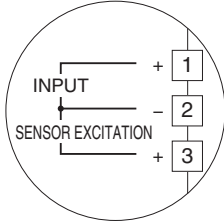


**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



\* 4kΩ is connected with mechanical contact and open collector input.  
 200Ω, 510Ω or 1kΩ are connected with two-wire current pulse input (Changeable with jumper).  
 \*\* With power switch only  
 Use either of module or external field terminals.

Section A. Field Terminals



Specifications are subject to change without notice.