

Super-mini Signal Conditioners *Mini-M Series*

PULSE ISOLATOR

MODEL **M2PP**

MODEL & SUFFIX CODE SELECTION

M2PP-□□□-□□

MODEL _____

INPUT _____

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

OUTPUT _____

1 : Low frequency open collector (max. 30 Hz)
 2 : High frequency open collector (max. 10 kHz)
 3 : 5V pulse (max. frequency 10 kHz)
 4 : 12V pulse (max. frequency 10 kHz)
 5 : 24V pulse (max. frequency 10 kHz)
 6 : Mercury relay contact (max. 30 Hz) *1, *2

OUTPUT LOGIC _____

N : The same as the input
 R : Inverted

POWER INPUT _____

| | |
|---------------------|--------------------|
| AC Power | DC Power |
| M : 85 – 264V AC *1 | R : 24V DC |
| | R2: 11 – 27V DC *1 |
| | P : 110V DC *1 |

STANDARDS & APPROVALS

/N : Without CE or UL
 /CE: CE marking
 /UL : UL approval (CE marking)

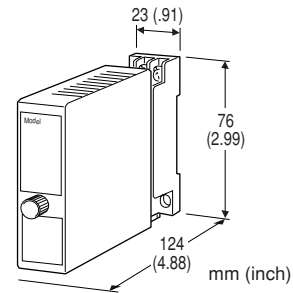
*1 : Select 'N' for 'Standards & Approvals' code.
 *2 : Not conform to RoHS Directive

ORDERING INFORMATION

Specify code number and variables.
 •Code number (e.g. M2PP-33N-R/CE)

GENERAL SPECIFICATIONS

Construction: plug-in
Connection: M3 screw terminals (torque 0.8 N·m)
Housing material: flame-resistant resin (black)
Isolation: input to output to power
Input pulse sensing: DC coupled
Frequency range: input and output are the same.
Chattering protection: filter provided for mechanical contact input



Functions & Features

• Galvanically isolating pulse rate signals • Input frequency = output frequency • Various outputs (relay, open collector and voltage pulses) • Universal power input • High-density mounting • CE marking & UL approval for 24V DC power

Typical Applications

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

INPUT & OUTPUT

INPUT

Excitation: 12V DC @30mA; shortcircuit protection

• **Mechanical Contact**

Maximum frequency: 30 Hz

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

Sensing: approx. 12V DC @3mA

ON/OFF level: ≤200Ω for ON, ≥100kΩ for OFF

• **Open Collector**

Maximum frequency: 10 kHz

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

Sensing: approx. 12V DC @3mA

ON/OFF level: ≤200Ω for ON, ≥100kΩ for OFF

• **Voltage Pulse:** square or sine waveforms

Maximum frequency: 10 kHz

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

Hi/Lo level: 2 – 50V for high level; ≤1V for low level

Input impedance: 10kΩ minimum

OUTPUT

• **Low Frequency Open Collector:** 50V DC @100mA
(resistive load)

Maximum frequency: 30 Hz

Timer: limits ON time within 75 ±25 millisecc.

Saturation voltage: 0.5V DC

• **Open Collector:** 50V DC @100mA (resistive load)

Maximum frequency: 10 kHz

Saturation voltage: 0.5V DC

• **Voltage Pulse**

Maximum frequency: 10 kHz

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

Low level: ≤0.5V

Load resistance: 250Ω minimum for 5V;

600Ω minimum for 12V;

1200Ω minimum for 24V

• **Mercury Relay Contact**

Maximum frequency: 30 Hz

Timer: limits ON time within 75 ±25 millisecc.

Rated load: 132V AC @200mA (cosφ=1)

30V DC @200mA (resistive load)

Maximum switching voltage: 350V AC or 500V DC

Maximum switching current: 200mA AC or 300mA DC

Maximum switching power: 26VA or 6W

Relay life: ≥5 × 10⁸ cycles (mechanical)

≥5 × 10⁷ cycles (electrical)

INSTALLATION**Power input**

AC: operational voltage range 85 – 264V
47 – 66 Hz; approx. 3VA at 100V
approx. 4VA at 200V
approx. 5VA at 264V

DC: operational voltage range for R: 24V
±10%, R2: 11 – 27V, or P: 85 – 150V,
ripple 10% p-p max.; approx. 3W

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

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

Mounting: surface or DIN rail

Dimensions: W23×H76×D124 mm (0.91"×2.99"×4.88")

See General Spec. Sheet Figure A-1.

Weight: 150 g (0.33 lbs)

Terminal assignment: See General Spec. Sheet Figure B-1.

PERFORMANCE

Insulation resistance: ≥100MΩ with 500V DC

Dielectric strength: 2000V AC @1 minute

(input to output to power to ground)

STANDARDS & APPROVALS

CE conformity: EMC Directive (89/336/EEC)


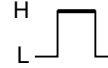


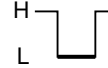


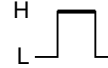


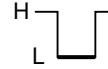

EMI EN61000-6-4

EMS EN61000-6-2

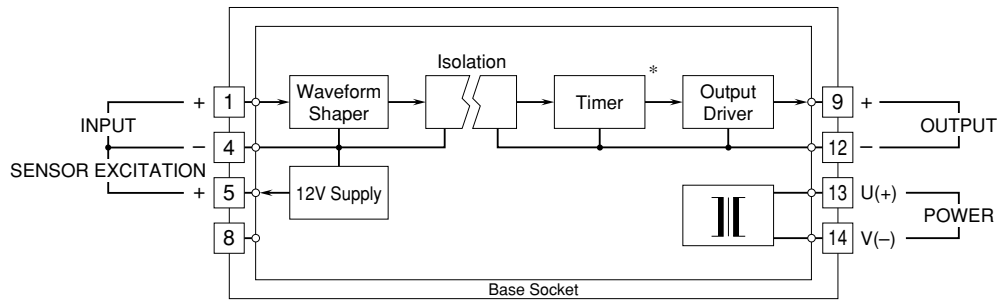
Approval: UL nonincendive, Class I, Division 2,
Groups A, B, C, and D (UL 1604)

UL general safety requirements (UL 3111-1)

OUTPUT LOGIC

| INPUT TYPE | PULSE LOGIC | INPUT | VOLTAGE PULSE OUTPUT | OPEN COLLECTOR or RELAY OUTPUT |
|-----------------------------------|--------------|---|--|---|
| Voltage Pulse Input | Non Inverted |  |  |  |
| | Inverted |  |  |  |
| Mechanical Contact Open Collector | Non Inverted |  |  |  |
| | Inverted |  |  |  |

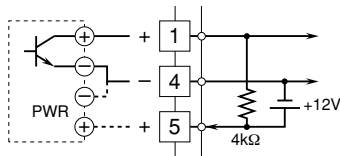
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



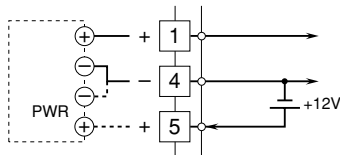
*Low freq. open collector and mercury relay output only.

Input Connection Examples

■ Mechanical Contact or Open Collector

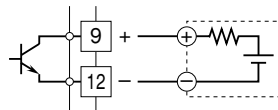


■ Voltage Pulse

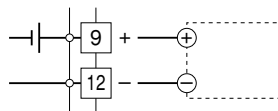


Output Connection Examples

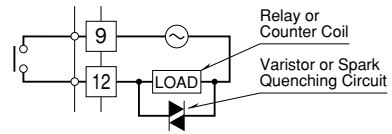
■ Open Collector



■ Voltage Pulse



■ Relay •AC Powered



•DC Powered

