

Space-saving Dual Output Signal Conditioners Mini-MW Series

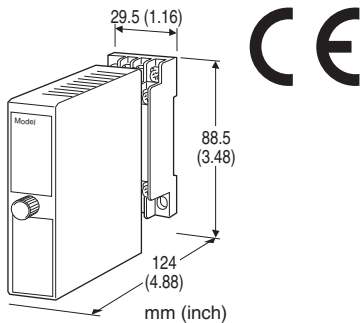
PULSE ISOLATOR

Functions & Features

- Galvanically isolates pulse rate signals
- Input frequency = output frequency
- Various outputs (open collector, voltage pulses and dry contact AC/DC switch)
- 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: W2PP-[1][2][3][4]-[5][6]

ORDERING INFORMATION

- Code number: W2PP-[1][2][3][4]-[5][6]
Specify a code from below for each [1] through [6].
(e.g. W2PP-333N-M2/CE/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

- 1: Low frequency open collector (max. 30 Hz)
- 2: High frequency open collector (max. 10 kHz)
(When the low frequency open collector or the dry contact AC/DC switch is selected as one of the outputs, the frequency of the other output is limited to max. 30 Hz.)
- 3: 5 V pulse (max. frequency 10 kHz)
(When the low frequency open collector or the dry

contact AC/DC switch is selected as one of the outputs, the frequency of the other output is limited to max. 30 Hz.)

4: 12 V pulse (max. frequency 10 kHz)

(When the low frequency open collector or the dry contact AC/DC switch is selected as one of the outputs, the frequency of the other output is limited to max. 30 Hz.)

5: 24 V pulse (max. frequency 10 kHz)

(When the low frequency open collector or the dry contact AC/DC switch is selected as one of the outputs, the frequency of the other output is limited to max. 30 Hz.)

6: Dry contact AC/DC switch (max. frequency 30 Hz)

[3] OUTPUT 2

Same range availability as Output 1

Y: None

[4] OUTPUT LOGIC

N: The same as the input

R: Inverted

[5] POWER INPUT

AC Power

M2: 100 - 240 V AC (Operational voltage range 85 - 264 V, 47 - 66 Hz)

DC Power

R: 24 V DC

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

R2: 11 - 27 V DC

(Operational voltage range 11 - 27 V, ripple 10 %p-p max.)

(Select '/N' for 'Standards & Approvals' code.)

P: 110 V DC

(Operational voltage range 85 - 150 V, ripple 10 %p-p max.)

[6] OPTIONS (multiple selections)

Standards & Approvals (must be specified)

/N: Without CE

/CE: CE marking

Other Options

blank: none

/Q: Option other than the above (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 screw terminals (torque 0.8 N·m)
Screw terminal: Chromated steel (standard) or stainless 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 pulse sensing: DC coupled

INPUT SPECIFICATIONS

Excitation: 12 V DC @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: $\leq 200 \Omega$ / 0.6 V for ON, $\geq 100 \text{ k}\Omega$ / 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: $\leq 200 \Omega$ / 0.6 V for ON, $\geq 100 \text{ k}\Omega$ / 6 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.

OUTPUT SPECIFICATIONS

■ Low Frequency Open Collector:
 50 V DC @100 mA (resistive load)
Maximum frequency: 30 Hz
Timer: Limits within 75 \pm 25 msec. for wider than 75 msec. pulses
 ON time for output logic non-inverted
 OFF time for output logic inverted
 (When the low frequency open collector or the dry contact AC/DC switch is selected as one of the outputs, the timer is applied also to the other output.)
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) $\pm 10 \%$

Low level: $\leq 0.5\text{V}$

Load resistance:

$\geq 250 \Omega$ for 5 V

$\geq 600 \Omega$ for 12 V

$\geq 1200 \Omega$ for 24 V, output 1

$\geq 2400 \Omega$ for 24 V, output 2

■ Dry Contact AC/DC Switch

132 V AC @200 mA ($\cos \phi = 1$)

30 V DC @200 mA (resistive load)

Maximum frequency: 30 Hz

Timer: Limits within 75 \pm 25 msec.

for wider than 75 msec. pulses

ON time for output logic non-inverted

OFF time for output logic inverted

(When the low frequency open collector or the dry contact AC/DC switch is selected as one of the outputs, the timer is applied also to the other output.)

Saturation voltage: 3 V DC

INSTALLATION

Power Consumption

•AC:

Approx. 4 VA at 100 V

Approx. 5 VA at 200 V

Approx. 6 VA at 240 V

•DC: Approx. 4 W

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

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

Mounting: Surface or DIN rail

Weight: 200 g (0.44 lb)

PERFORMANCE

Insulation resistance: $\geq 100 \text{ M}\Omega$ with 500 V DC

Dielectric strength: 2000 V AC @1 minute (input to output 1 to output 2 to power to ground)

STANDARDS & APPROVALS

CE conformity:

EMC Directive (2004/108/EC)

EMI EN 61000-6-4: 2007

EMS EN 61000-6-2: 2005

Low Voltage Directive (2006/95/EC)

EN 61010-1: 2001

Installation Category II

Pollution Degree 2

Input or output 1 or output 2 to power input:

Reinforced insulation (300 V)

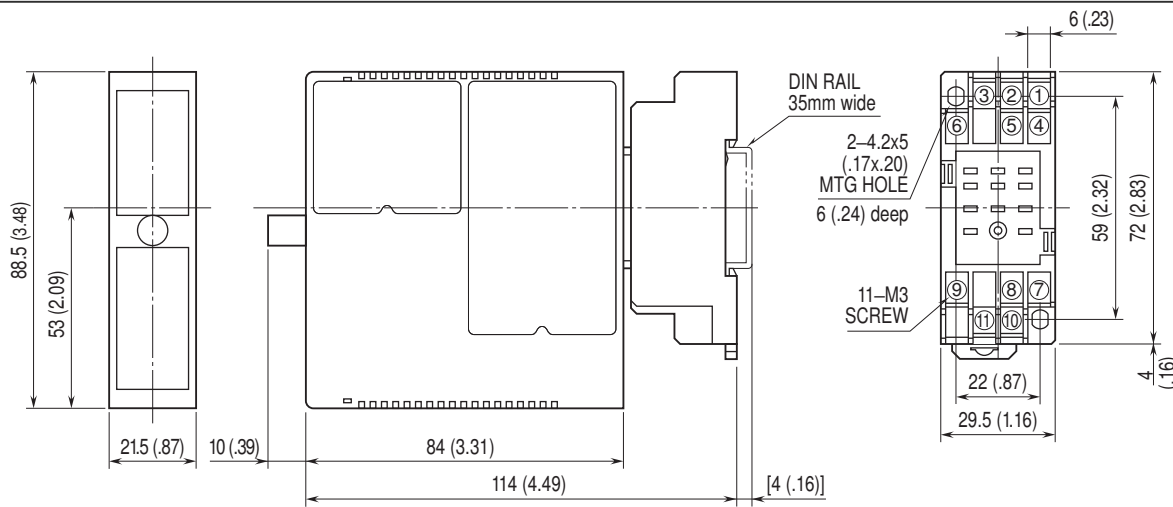
Input to output 1 to output 2: Basic insulation (300 V)



OUTPUT LOGIC

INPUT TYPE	PULSE LOGIC	INPUT PULSE	VOLTAGE PULSE OUTPUT	OPEN COLLECTOR DRY CONTACT AC/DC SW OUT
Voltage Pulse	Non Inverted	H L	H L	OFF ON
	Inverted	H L	H L	OFF ON
Mechanical Contact Open Collector	Non Inverted	OFF ON	H L	OFF ON
	Inverted	OFF ON	H L	OFF ON

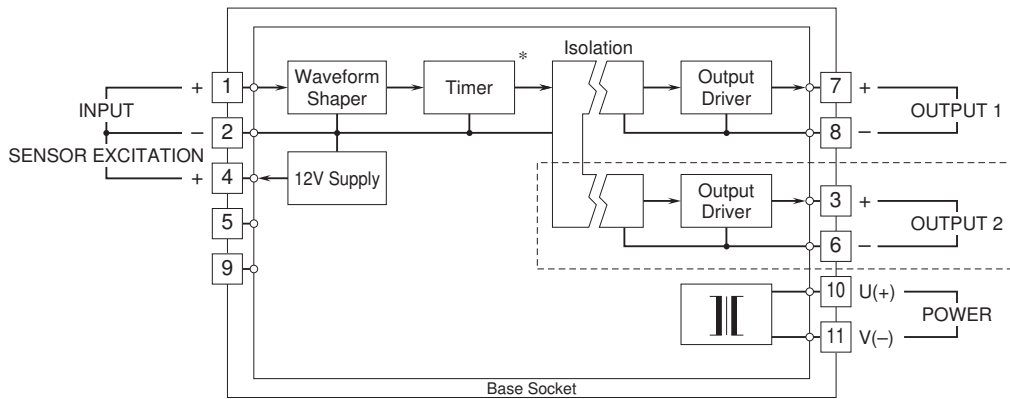
DIMENSIONS unit: mm (inch)



When mounting, no extra space is needed between units.



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

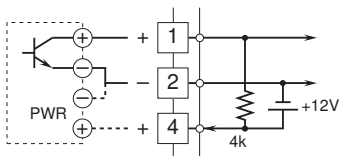


*The timer is provided when the low frequency open collector or the dry contact AC/DC switch is selected as one of the outputs.

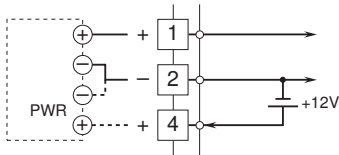
Remark: The section enclosed by broken line is only with 2nd output option.

Input Connection Examples

Mechanical Contact or Open Collector

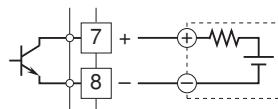


Voltage Pulse

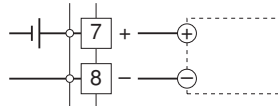


Output Connection Examples

Open Collector

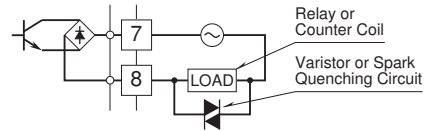


Voltage Pulse

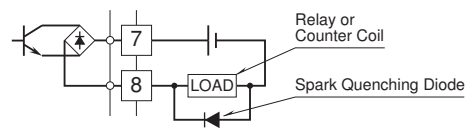


Dry Contact AC/DC Switch

• AC Powered



• DC Powered



Specifications are subject to change without notice.