

Space-saving Dual Output Signal Conditioners Mini-MW Series

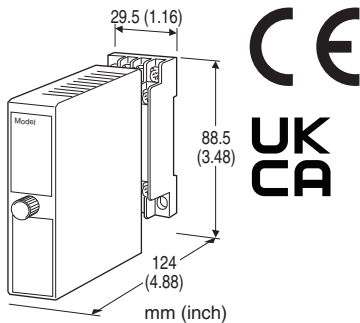
PULSE ISOLATOR

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 of [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)
- 9: Clamp-on pulse sensor CLSP

[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 or UKCA

/CE: CE marking

/UK: CE, UKCA 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 our web site.)

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

TERMINAL SCREW MATERIAL

/S01: Stainless steel

RELATED PRODUCTS

- Clamp-on pulse sensor (model: CLSP)

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 μsec. min. for ON and OFF

Sensing: Approx. 12 V DC @3 mA

ON/OFF level: ≤ 600 Ω / 1.8 V for ON, ≥ 100 kΩ / 3.5 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 / 2.5 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.

■ Clamp-on Pulse Sensor CLSP

Maximum frequency: 50 000 pulses/hour

ON/OFF level: ≤ 400 Ω / 1.3 V for ON, ≥ 200 kΩ / 12 V for OFF

OUTPUT SPECIFICATIONS

■ Low Frequency Open Collector:

50 V DC @100 mA (resistive load)

Maximum frequency: 30 Hz

Timer: Limits within 75 ±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) ±10 %

Low level: ≤ 0.5V

Load resistance:

≥ 250 Ω for 5 V

≥ 600 Ω for 12 V

≥ 1200 Ω for 24 V, output 1

≥ 2400 Ω for 24 V, output 2

■ Dry Contact AC/DC Switch

132 V AC @200 mA (cos φ = 1)

30 V DC @200 mA (resistive load)

Maximum frequency: 30 Hz

Timer: Limits within 75 ±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: ≥ 100 MΩ with 500 V DC

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

STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

Low Voltage Directive

EN 61010-1

Measurement Category II (output)

Installation Category II (power)

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)

RoHS Directive

UK conformity (UKCA):

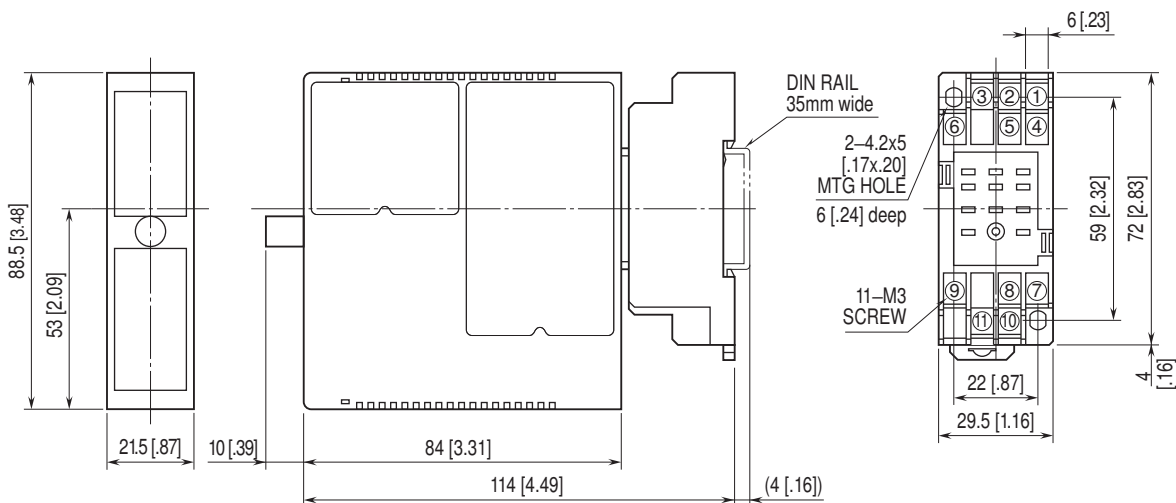
The UK legislations and designated standards are equivalent to the applicable EU directives.

(Refer to our website for more information about the legislations and designated standards.)

OUTPUT LOGIC

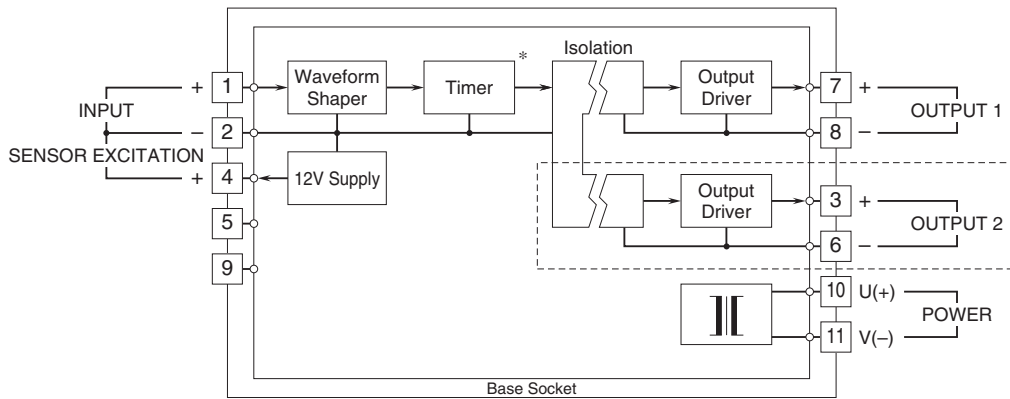
INPUT TYPE	PULSE LOGIC	INPUT PULSE	VOLTAGE PULSE OUTPUT	OPEN COLLECTOR DRY CONTACT AC/DC SW OUT
Voltage Pulse	Non Inverted	H L	H L	OFF ON
	Inverted	H L	H L	OFF ON
Mechanical Contact Open Collector Clamp-on Pulse Sensor CLSP	Non Inverted	OFF ON	H L	OFF ON
	Inverted	OFF ON	H L	OFF ON

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

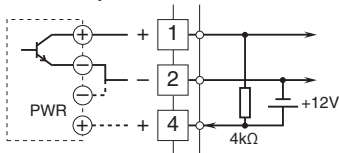


*The timer is provided when the low frequency open collector or the dry contact AC/DC switch is selected as one of the outputs.

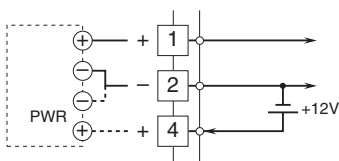
Note: The section enclosed by broken line is only with 2nd output option.

Input Connection Examples

■ Mechanical Contact, Open Collector or Clamp-on Pulse Sensor CLSP

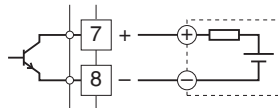


■ Voltage Pulse

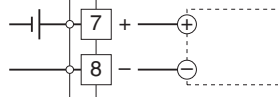


Output Connection Examples

■ Open Collector

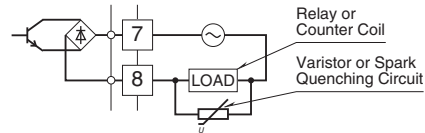


■ Voltage Pulse

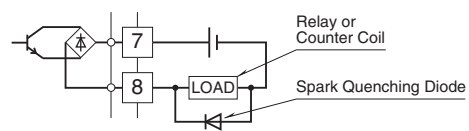


■ Dry Contact AC/DC Switch

• AC Powered



• DC Powered



Specifications are subject to change without notice.