Dual Output Plug-in Signal Conditioners W-UNIT

FREQUENCY TRANSMITTER

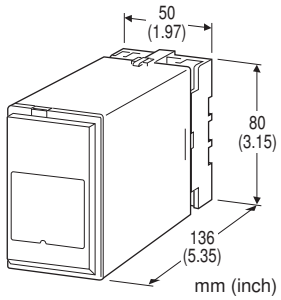
(field-programmable)

Functions & Features

• Converting the output from a pulse-type transducer into standard process signal
• Micro-processor based
• Field-programmable frequency range
• Linearization available for flow compensation
• Averaging non-uniform pulses
• Excitation
• Isolation up to 2000 V AC
• Loop testing via hand-held programmer PU-2x
• High-density mounting

Typical Applications

• Positive displacement flowmeters, turbine flowmeters and vortex flowmeters
• Proximity switches
• Oval flowmeters



MODEL: WJPA-[1][2][3]-[4][5]

ORDERING INFORMATION

• Code number: WJPA-[1][2][3]-[4][5]
Specify a code from below for each [1] through [5].
(e.g. WJPA-2AA-B/Q)
•Frequency range (e.g. 0 – 152.3 Hz)
• Linearization data (max. 16 points)
• Special output ranges (For codes Z & 0)
• Default setting will be used if not otherwise specified.
Use Ordering Information Sheet (No. ESU-1673) when the I/O signals are non-linear.
• Specify the specification for option code /Q
(e.g. /C01/S01)
When the user requires a current and a voltage output, specify the current to be the Output 1 which allows a greater load.
Note: Consult factory on applications with a sensor handling periodically (& quickly) changing frequency (e.g. oval flowmeter).

[1] INPUT

1: Open collector (Excitation: 12 V @ 30 mA)
2: Voltage pulse (Excitation: 12 V @ 30 mA)
3: Mechanical contact (Excitation: 12 V @ 30 mA)

[2] OUTPUT 1

Current

A: 4 – 20 mA DC (Load resistance 600 Ω max.)
B: 2 – 10 mA DC (Load resistance 1200 Ω max.)
C: 1 – 5 mA DC (Load resistance 2400 Ω max.)
D: 0 – 20 mA DC (Load resistance 600 Ω max.)
E: 0 – 16 mA DC (Load resistance 750 Ω max.)
F: 0 – 10 mA DC (Load resistance 1200 Ω max.)
G: 0 – 1 mA DC (Load resistance 12 kΩ max.)
Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

1: 0 – 10 mV DC (Load resistance 10 kΩ min.)
2: 0 – 100 mV DC (Load resistance 100 kΩ min.)
3: 0 – 1 V DC (Load resistance 1000 Ω min.)
4: 0 – 10 V DC (Load resistance 10 kΩ min.)
5: 0 – 5 V DC (Load resistance 5000 Ω min.)
6: 1 – 5 V DC (Load resistance 5000 Ω min.)
4W: -10 – +10 V DC (Load resistance 10 kΩ min.)
5W: -5 – +5 V DC (Load resistance 5000 Ω min.)
0: Specify voltage (See OUTPUT SPECIFICATIONS)

[3] OUTPUT 2

Current

A: 4 – 20 mA DC (Load resistance 350 Ω max.)
B: 2 – 10 mA DC (Load resistance 700 Ω max.)
C: 1 – 5 mA DC (Load resistance 1400 Ω max.)
D: 0 – 20 mA DC (Load resistance 350 Ω max.)
E: 0 – 16 mA DC(Load resistance 430 Ω max.)
F: 0 – 10 mA DC (Load resistance 700 Ω max.)
G: 0 – 1 mA DC (Load resistance 7000 Ω max.)
Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

Same range availability as Output 1

[4] POWER INPUT

AC Power

B: 100 V AC
C: 110 V AC
D: 115 V AC
F: 120 V AC
G: 200 V AC
H: 220 V AC

J: 240 V AC
DC Power
S: 12 V DC
R: 24 V DC
V: 48 V DC

[5] OPTIONS

blank: none
/Q: With options (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

RELATED PRODUCTS

- JX configurator connection kit (model: JXCON)
- Programming Unit (model: PU-2x)

GENERAL SPECIFICATIONS

Construction: Plug-in
Connection: M3.5 screw terminals
Screw terminal: Chromated steel (standard) or stainless steel
Isolation: Input to output 1 to output 2 to power
Housing material: Flame-resistant resin (black)
Overrange output: -10 – +120 % at 1 – 5 V
(0 – 120 % when 0 % input equals to 0 Hz.)
Zero adjustment: -5 to +5 % (front)
Span adjustment: 95 to 105 % (front)
Linearization: 16 points max. represented as percentage of full-scale
Adjustments: Programming Unit (model: PU-2x); input range, low-end cutout, zero and span, simulating output, averaging nonuniform pulses, linearization data, etc.
(Refer to the users manual of JXCON for the adjustments configurable with JXCON.)
Low-end cutout: 0 – 100 % adjustable (factory set to 0 %); hysteresis fixed to 1 %
(% of the range from 0 Hz to 100 % frequency.)

INPUT SPECIFICATIONS

Excitation: 12 V DC @30 mA; shortcircuit protection
Pulse width (time) requirement: 10 msec. min. at < 20 Hz; duty ratio 20 – 80 % at ≥ 20 Hz
Offset: Max. 3 times span
■ **Open Collector**
Frequency range: 0 – 0.01 Hz through 25 kHz
(0 – 1 kHz will be used if not otherwise specified)
Sensing: Approx. 12 V DC @ 3 mA
ON/OFF level: ≤ 800 Ω / 2 V for ON,
≥ 1.2 kΩ / 3.6 V for OFF
■ **Mechanical Contact**
Frequency range: 0 – 0.01 Hz through 5 Hz
(0 – 5 Hz will be used if not otherwise specified)
Sensing: Approx. 12 V DC @ 3 mA
ON/OFF level: ≤ 800 Ω / 2 V for ON,
≥ 1.2 kΩ / 3.6 V for OFF
■ **Voltage Pulse**: Square or sine waveforms
Frequency range: 0 – 0.01 Hz through 25 kHz
(0 - 1 kHz will be used if not otherwise specified.)
Input amplitude: 2 – 50 Vp-p
Input impedance: 10 kΩ min.

OUTPUT SPECIFICATIONS

■ **DC Current**: 0 – 20 mA DC
Minimum span: 1 mA
Offset: Max. 1.5 times span
Load resistance: Output drive 12 V max. for Output 1; 7 V max. for Output 2
■ **DC Voltage**: -10 – +10 V DC
Minimum span: 5 mV
Offset: Max. 1.5 times span
Load resistance: Output drive 1 mA max.; at ≥ 0.5 V

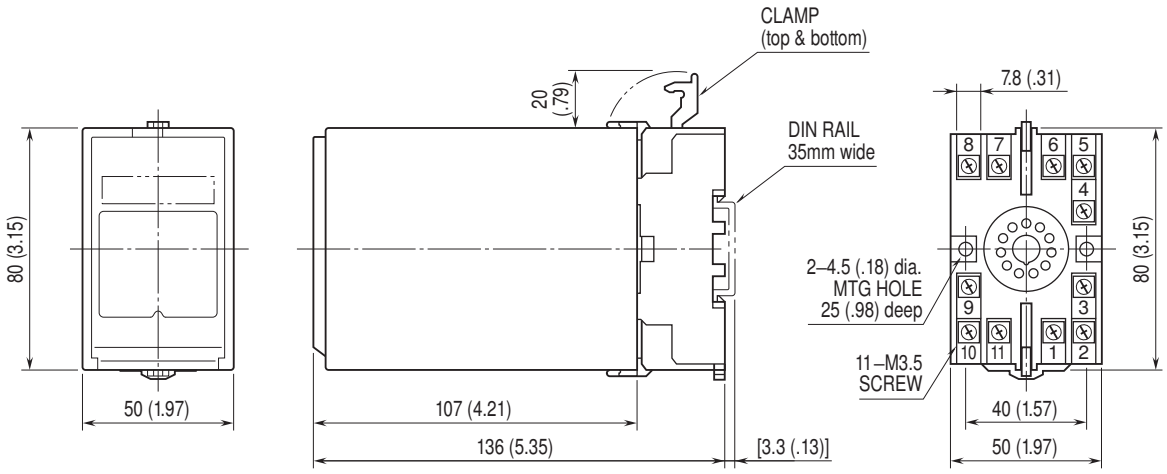
INSTALLATION

Power input
•**AC**: Operational voltage range: rating ±10 %, 50/60 ±2 Hz, approx. 3.5 VA
•**DC**: Operational voltage range: rating ±10 % ripple 10 %p-p max., approx. 2.6 W (110 mA at 24 V)
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail
Weight: 400 g (0.88 lb)

PERFORMANCE in percentage of span

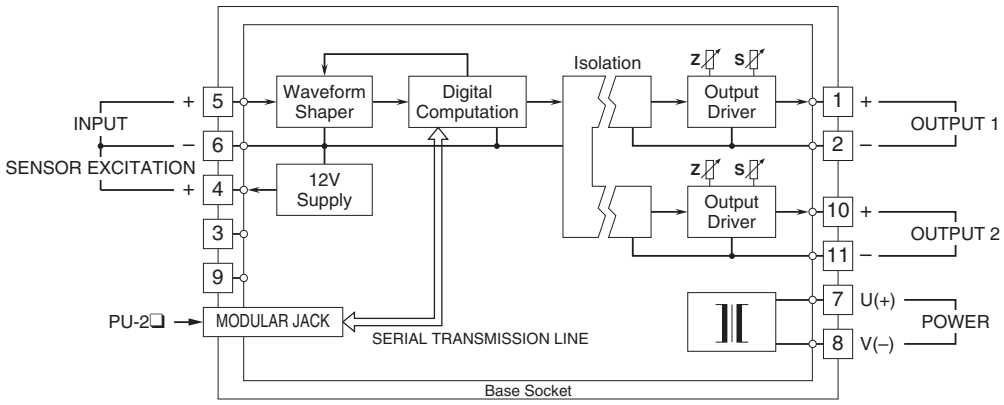
Accuracy: ±0.1 % with segment gain ≤ 1 [±0.1 % × gain] with segment gain ≥ 1
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Response time: 0.5 sec. + 1 pulse cycle (0 – 90 %)
Line voltage effect: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 2000 V AC @1 minute
(input to output to power to ground)
1000 V AC @ 1 minute (output 1 to output 2)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



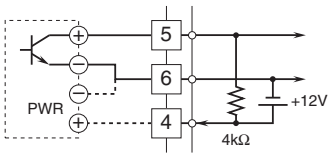
• When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

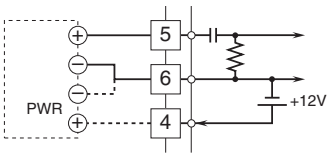


Input Connection Examples

■Open Collector or Relay Contact



■Voltage Pulse



⚠ Specifications are subject to change without notice.

幸託有限公司
XIN TOP CORPORATION
TEL：(02)2598-1199 E-mail：info@xintop.com
FAX：(02)2596-2331 Website：www.xintop.com