Space-saving Plug-in Signal Conditioners F-UNIT

FREQUENCY TRANSMITTER

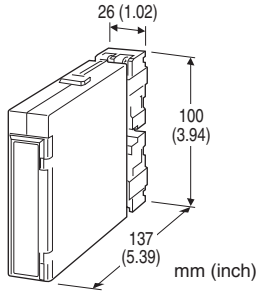
(field-programmable)

Functions & Features

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

Typical Applications

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



MODEL: FJPA-[1][2]-[3]

ORDERING INFORMATION

• Code number: FJPA-[1][2]-[3]
Specify a code from below for each [1] through [3]
(e.g. FJPA-3A-L)
•Frequency range (e.g. 0 – 152.3 Hz)
•Linearization data (max. 16 points)
Use Ordering Information Sheet (No. ESU-1673) when the I/O signals are non-linear.
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

Current
A: 4 – 20 mA DC (Load resistance 600 Ω max.)
Voltage
6: 1 – 5 V DC (Load resistance 500 Ω min.)

[3] POWER INPUT

AC Power
K: 85 – 132 V AC
(Operational voltage range 85 – 132 V, 47 – 66 Hz)
L: 170 – 264 V AC
(Operational voltage range 170 – 264 V, 47 – 66 Hz)
DC Power
R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)
P: 110 V DC
(Operational voltage range 85 – 150 V, ripple 10 %p-p max.)

RELATED PRODUCTS

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

GENERAL SPECIFICATIONS

Construction: Plug-in
Connection: M3.5 screw terminals (torque 0.8 N·m)
Screw terminal: Nickel-plated steel
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Overrange output: 0 to 120 % at 1 – 5 V
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 %

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

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

■ **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.
If not specified, the input range is 0 – 1 kHz.

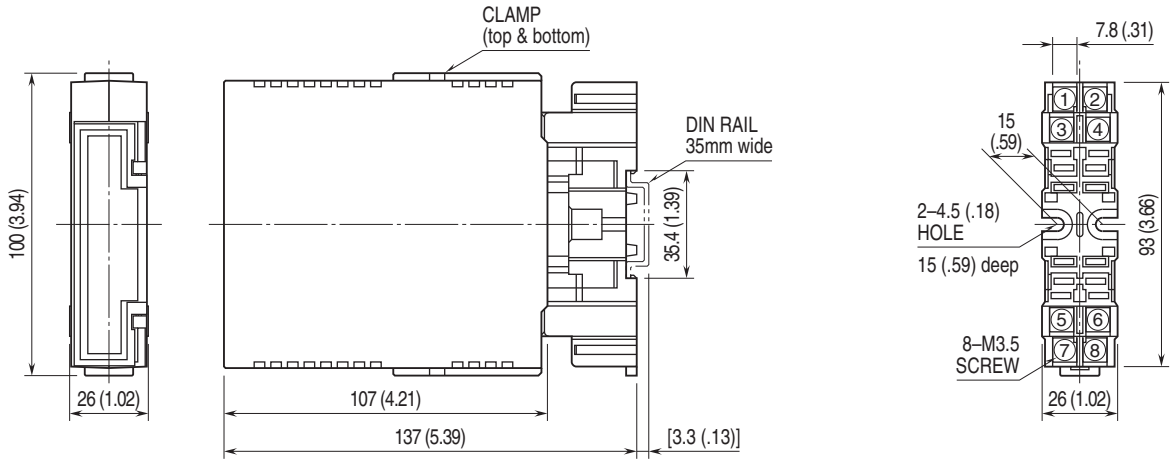
INSTALLATION

Power input
•**AC**: Approx. 4.5 VA
•**DC**: 24 V approx. 70 mA
110 V approx. 20 mA
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail; Standard Rack Mounting
Frame BX-16H available
Weight: 200 g (0.44 lbs)

PERFORMANCE in percentage of span

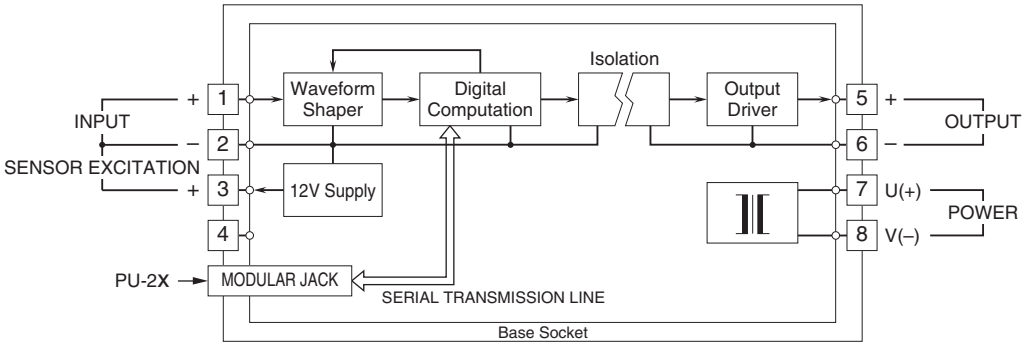
Accuracy: ±0.1 % with segment gain ≤ 1 [±0.1 % × gain]
with segment gain ≥ 1
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Response time: 0.5 sec. + 1 pulse cycle (0 – 90 %)
Line voltage effect: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength
Power input code R:
1000 V AC @ 1 minute (input to output)
2000 V AC @ 1 minute (input or output or power to ground)
500 V AC @ 1 minute (I/O to power)
Power input code K, L, P:
1000 V AC @ 1 minute (input to output)
2000 V AC @ 1 minute (input or output or power to ground)
1500 V AC @ 1 minute (I/O to power)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



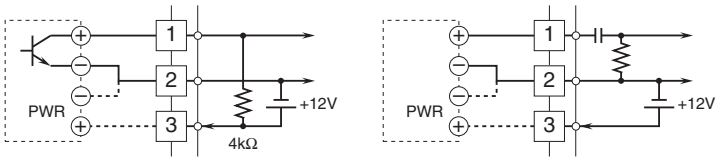
•When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Input Connection Examples

■ Open Collector or Mechanical 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