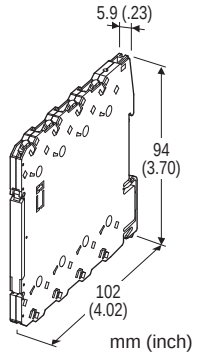
Tension-Clamp Ultra-Slim Signal Conditioners M6S Series

FREQUENCY TRANSMITTER

Functions & Features

- Maintenance-free tension clamp connection
- 5.9-mm wide ultra-slim design
- Low profile allows the M6S module mounted in a 120-mm deep panel
- Converts the output from a pulse-type transducer into a standard process signal
- High-density mounting
- Power indicator LED
- UL approval



MODEL: M6SPA-[1][2]-R[3]

ORDERING INFORMATION

- Code number: M6SPA-[1][2]-R[3]
  Specify a code from below for each [1] through [3].
  (e.g. M6SPA-CA-R/UL)
- Frequency range (e.g. 0 – 1 kHz)
- Special output range (For codes Z & 0)

[1] INPUT

A1: Open collector
A2: Mechanical contact
C: 5 V pulse (sensitivity 2 V)
D: 24 V pulse (sensitivity 10 V)

[2] OUTPUT

Current
A: 4 – 20 mA DC (Load resistance 550 Ω max.)
Z: Specify current (See OUTPUT SPECIFICATIONS)
Voltage
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 20 kΩ min.)
5W: -5 – +5 V DC (Load resistance 10 kΩ min.)
0: Specify voltage (See OUTPUT SPECIFICATIONS)

POWER INPUT

DC Power
R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

[3] OPTIONS

STANDARDS & APPROVALS
blank: CE marking
/UL: UL approval (CE marking)

GENERAL SPECIFICATIONS

Connection
Input and output: Tension clamp
Power input: Via the Installation Base (model: M6SBS) or Tension clamp
Applicable wire size: 0.2 to 2.5 mm^2, stripped length 8 mm
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Zero adjustment: -2 to +2 % (front)
(Output code 4W, 5W: Adjustable at 0V.)
Span adjustment: 98 to 102 % (front)
Chattering protection: Filter provided for mechanical contact input
Power LED: Green light turns on when the power is supplied.

INPUT SPECIFICATIONS

• Open Collector
Frequency range: 0 – 0.01 Hz through 100 kHz
Pulse width time requirement: ≥ 4 µsec. for both H and L levels
Sensing voltage/current: 2.5 V DC @1 mA (approx.)
Detecting levels: ≤ 750 Ω for ON; ≥ 3 kΩ for OFF
• Mechanical Contact
Frequency range: 0 – 0.01 Hz through 30 Hz
Pulse width time requirement: ≥ 10 msec. for both ON and OFF
Sensing voltage/current: 2.5 V DC @1 mA (approx.)
Detecting levels: ≤ 750 Ω for ON; ≥ 3 kΩ for OFF
• Voltage Pulse
Frequency range: 0 – 0.01 Hz through 100 kHz
Pulse width time requirement: ≥ 4 µsec. for both H and L levels
Waveform: Square or sine
Input impedance: ≥ 10 kΩ
Max. voltage between input terminals: ±50 V
Detecting H level

5 V pulse: ≥ 3 V
24 V pulse: ≥ 14 V
Detecting L level
5 V pulse: ≤ 1 V
24 V pulse: ≤ 6 V

OUTPUT SPECIFICATIONS

• **DC Current**: 2 – 20 mA DC (and 0 – 1 mA DC)
Minimum span: 1 mA
Offset: Max. 1.5 times span
Load resistance: Output drive 11 V max.
• **DC Voltage**: 0 – 10 V DC
Minimum span: 1 V
Offset: Max. 1.5 times span
Load resistance: Output drive 1 mA max.; at ≥ 1 V

INSTALLATION

Power consumption: Approx. 0.5 W
Operating temperature: -20 to +55°C (-4 to +131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Installation Base (model: M6SBS) or DIN rail
Weight: 60 g (2.1 oz)

PERFORMANCE in percentage of span

Accuracy: ±0.1 %
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Response time: Max. 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)

STANDARDS & APPROVALS

CE conformity:
EMC Directive (2004/108/EC)
EN 61000-6-4 (EMI)
EN 61000-6-2 (EMS)
Approval:
UL/C-UL nonincendive Class I, Division 2,
Groups A, B, C, and D hazardous locations
(ANSI/ISA-12.12.01, CAN/CSA-C22.2 No.213)
UL/C-UL general safety requirements
(UL 61010-1, CAN/CSA-C22.2 No.61010-1)

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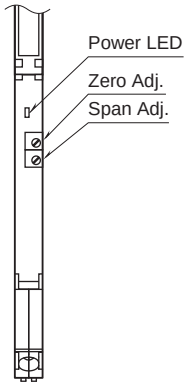
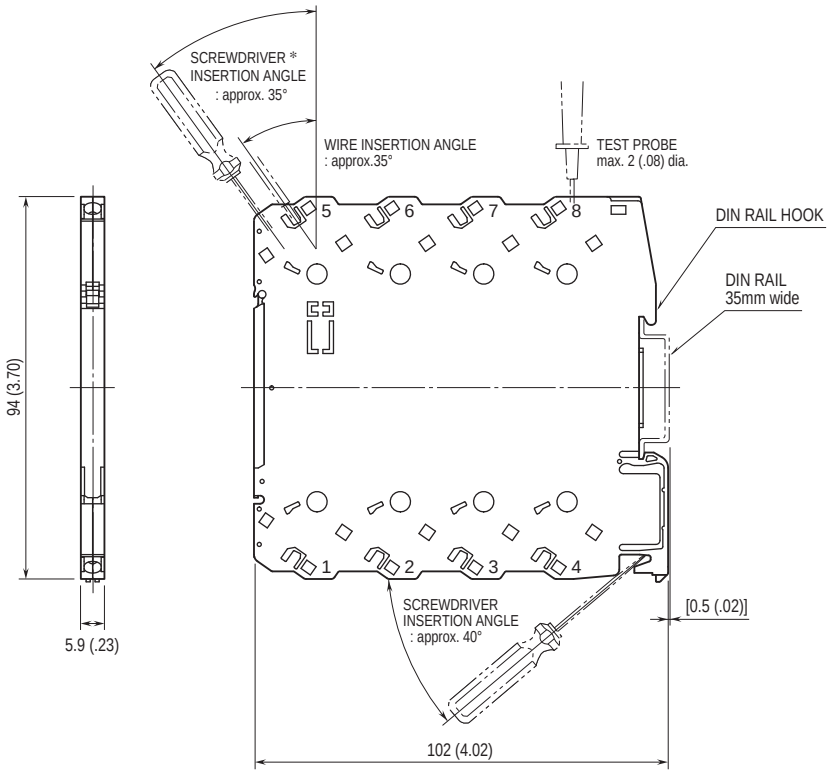
EXTERNAL VIEW

(With the cover open)



DIMENSIONS unit: mm (inch)



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

*Use a minus screwdriver: tip width 3.8 mm max., tip thickness 0.5 to 0.6 mm

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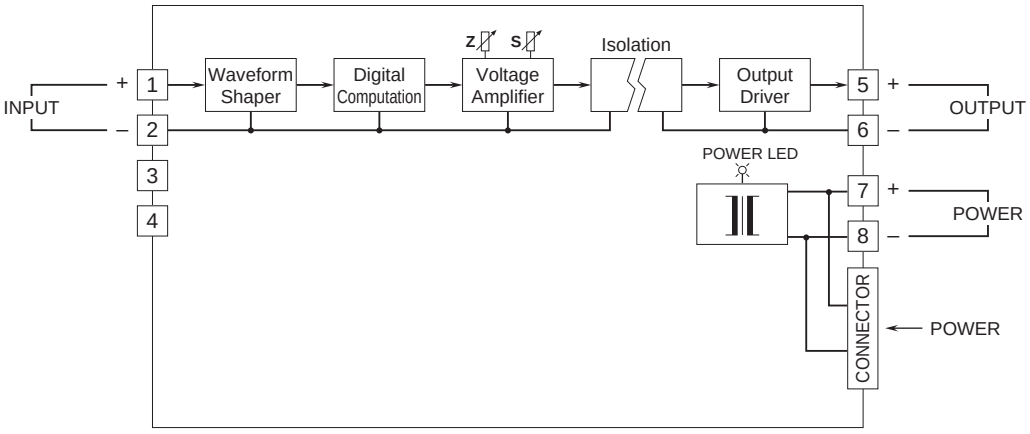
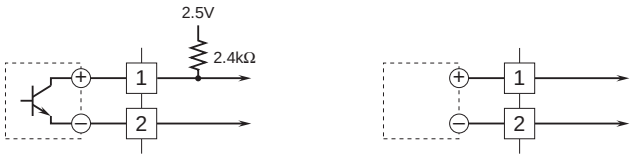
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Input Connection Examples

■ **Open Collector or Mechanical Contact** ■ **Voltage Pulse**



⚠ Specifications are subject to change without notice.

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