

Tension-Clamp Ultra-Slim Signal Conditioners M6S Series

HOLD FUNCTION MODULE

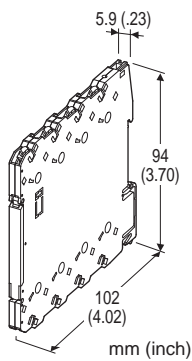
(PC programmable)

Functions & Features

- Maintenance-free tension clamp connection
- Track/Hold or Peak hold function's selection available
- 5.9-mm wide ultra-slim design with DC current signal input
- Low profile allows the M6S module to be mounted in a 120-mm deep panel
- PC programmable
- High-density mounting available
- Power and status indicator LEDs
- CE approval

Typical Applications

- Monitoring peak power consumption
- Monitoring the highest or lowest temperature
- Capturing signals from a composite analyzer performing on each sample in turn



MODEL: M6SXF3-[1][2]-R

ORDERING INFORMATION

- Code number: M6SXF3-[1][2]-R
Specify a code from below for each [1] and [2].
(e.g. M6SXF3-Z1Z1-R)
- Input range (e.g. 4 - 20 mA DC)
- Output range (e.g. 4 - 20 mA DC)

[1] INPUT

Current

Z1: Range 0 - 50 mA DC (Input resistance 24.9 Ω)

Voltage

S1: Range -1000 - +1000 mV DC (Input resistance 1 MΩ min.)

S2: Range -10 - +10 V DC (Input resistance 1 MΩ min.)

(Configurator software is used to change input over the

described range of the selected suffix code.

For changing between suffix codes, set the Input Range Selector on the side of unit before software adjustment.)

[2] OUTPUT

Current

Z1: Range 0 - 20 mA DC

Voltage

V2: Range -10 - +10 V DC

V3: Range -5 - +5 V DC

(Configurator software is used to change output over the described range of the selected suffix code.

For changing between suffix codes, set the Output Range Selector on the side of unit before software adjustment.)

POWER INPUT

DC Power

R: 24 V DC

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

FUNCTIONS

PC Configurator Software is used to change function type.

- Track/Hold
- Peak hold
- Peak hold
- Valley hold
- Peak-to-peak hold (Peak hold-Valley hold)

Factory default setting

Control/Hold: Track/Hold

Control/Control Logic: Hold at open

RELATED PRODUCTS

- PC configurator software (model: M6CFG)
Downloadable at M-System's web site.
A dedicated cable is required to connect the module to the PC. Please refer to the internet software download site or the users manual for the PC configurator for applicable cable types.

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 mm², stripped length 8 mm

Housing material: Flame-resistant resin (black)

Isolation: Input to output to power

Overrange output: -2 - +102 %
(Negative current output is not available.)

Zero adjustment: -2 to +2% (PC programming)

Span adjustment: 98 to 102% (PC programming)
Power LED: Green light turns on when the power is supplied.
Status indicator LED: Orange LED; Flashing patterns indicate different operating status of the transmitter.
Programming: Downloaded from PC; input type and range, output type and range, zero and span, function type, control input logic, user's linearization table (max. 101 points, specified within -2 to +102% for both input and output), etc. For detailed information, refer to the users manual for the PC configurator.
Configurator connection: 2.5 dia. miniature jack; RS-232C level

INPUT SPECIFICATIONS

- **DC Current:** Input resistor incorporated (If not specified, the input range is 4 - 20 mA DC.)
Input range: 0 - 50 mA DC
Minimum span: 2 mA
Offset: Lower range can be any specific value within the input range provided that the minimum span is maintained.
- **DC Voltage**
Code S1 (narrow spans)
Input range: -1000 - +1000 mV DC
Minimum span: 100 mV
Code S2 (wide spans)
Input range: -10 - +10 V DC
Minimum span: 1 V
Offset: Lower range can be any specific value within the input range provided that the minimum span is maintained. If not specified, the input range is shown below.
S1: 0 - 100 mV DC
S2: 1 - 5 V DC
- **CONTROL**
Contact rating: 3 V @1 mA
Detection levels:
 $\leq 0.6 \text{ k}\Omega / 0.5 \text{ V}$ at close
 $\geq 15 \text{ k}\Omega / 2.5 \text{ V}$ at open

OUTPUT SPECIFICATIONS

- **DC CURRENT**
Output range: 0 - 20 mA DC
Conformance range: 0 - 20.4 mA DC
Minimum span: 1 mA
Offset: Lower range can be any specific value within the output range provided that the minimum span is maintained.
Load resistance: Output drive 11 V max. (e.g. 4 - 20 mA: 550Ω [11 V/20 mA])
If not specified, the output range is 4 - 20 mA DC.
- **DC VOLTAGE**
Code V2 (wide spans)

- Output range:** -10 - +10 V DC
Conformance range: -10.4 - +10.4 V DC
Minimum span: 1 V
- Code V3 (narrow spans)**
Output range: -5 - +5 V DC
Conformance range: -5.2 - +5.2 V DC
Minimum span: 0.5 V
Offset: Lower range can be any specific value within the output range provided that the minimum span is maintained.
Load resistance: Output drive 1 mA max. (e.g. 1 - 5 V: 5000Ω [5 V/1 mA])
If not specified, the output range is shown below.
V2: 0 - 10 V DC
V3: 1 - 5 V DC

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: 65 g (2.3 oz)

PERFORMANCE in percentage of span

Overall accuracy: Input accuracy + output accuracy
Inversely proportional to the span.
See CALCULATION EXAMPLES OF OVERALL ACURACY.

- **Input accuracy:** (% of max. input range)
-1000 - +1000 mV : $\pm 0.01 \%$
-10 - +10 V : $\pm 0.01 \%$
0 - 50 mA : $\pm 0.02 \%$
- **Output accuracy:** $\pm 0.04 \%$ of max. output range
- Temp. coefficient:** $\pm 0.01 \%/^{\circ}\text{C}$ ($\pm 0.006 \%/^{\circ}\text{F}$) of max. span
- Response time:** $\leq 0.5 \text{ sec.}$ (0 - 90 %)
- Line voltage effect:** $\pm 0.1 \%$ over voltage range
- Insulation resistance:** $\geq 100 \text{ M}\Omega$ with 500 V DC
- Dielectric strength:** 2000 V AC @1 minute (input to output to power to ground)

CALCULATION EXAMPLES OF OVERALL ACCURACY

[Example] Input Type -10 - +10 V, Input Range 1 - 5 V, Output Type -5 - +5 V, Output Range 1 - 5 V

- Input accuracy = Max. Input Range (20 V) / Span (4 V) $\times 0.01 \%$ = 0.05 %
- Output accuracy = Max. Output Range (10 V) / Span (4 V) $\times 0.04 \%$ = 0.1 %

Accuracy = $\pm 0.15 \%$

STANDARDS & APPROVALS

CE conformity:

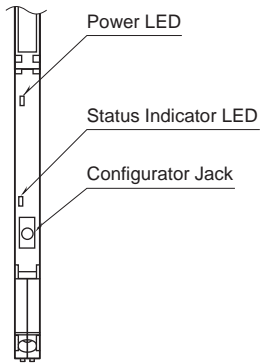
EMC Directive (2004/108/EC)

EN 61000-6-4 (EMI)

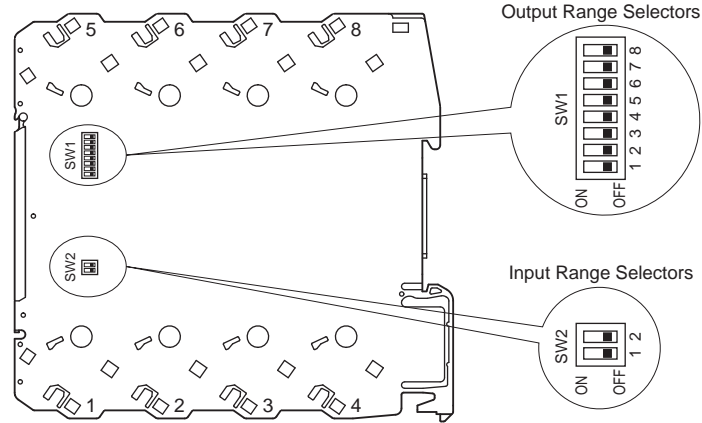
EN 61000-6-2 (EMS)

EXTERNAL VIEW

FRONT VIEW (with the cover open)



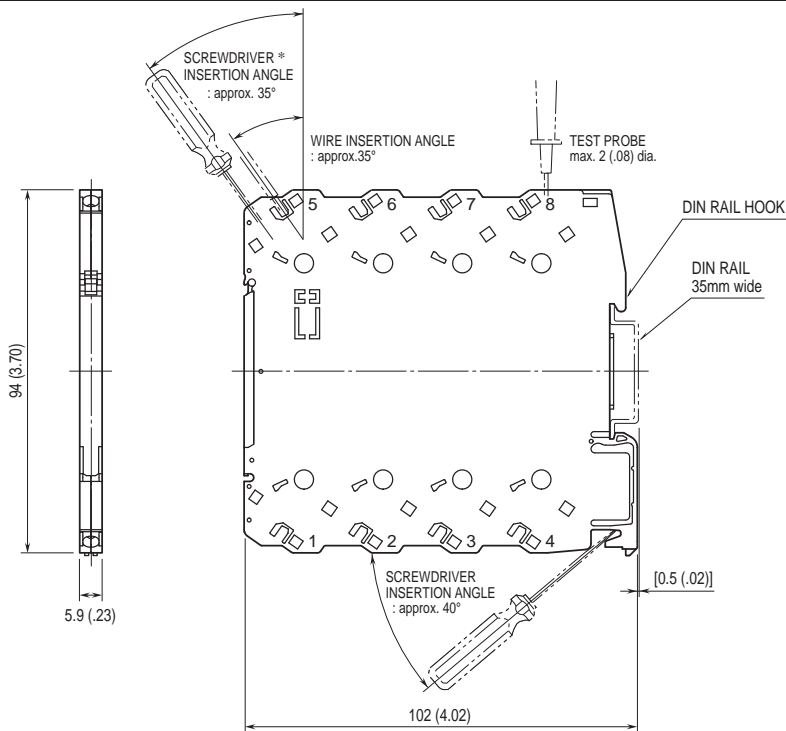
SIDE VIEW



The DIP switch setting is required to select input and output types before setting a precise range using PC Configurator Software (model: M6CFG).

Refer to the instruction manual for detailed procedures.

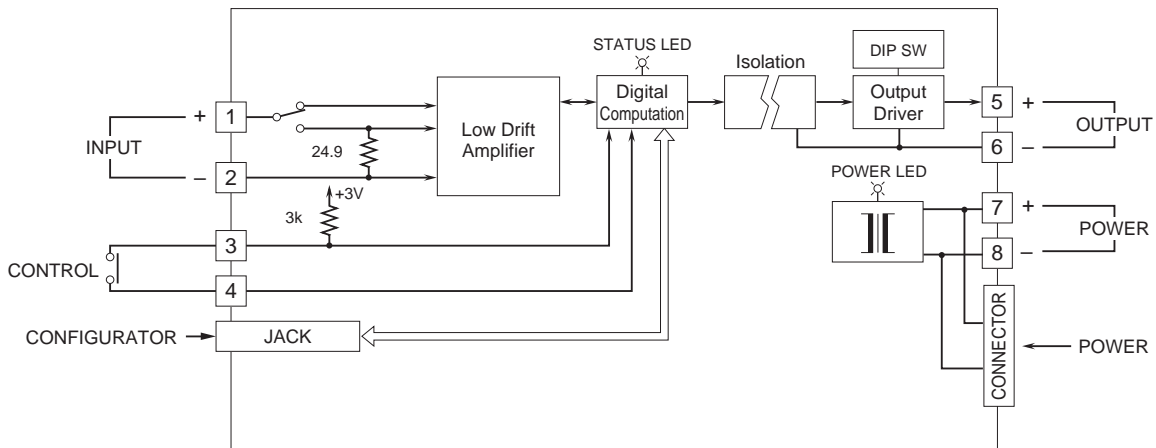
DIMENSIONS unit: mm (inch)



• 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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.