

## Space-saving Plug-in Signal Conditioners F-UNIT

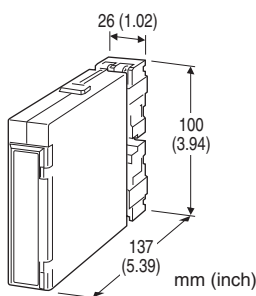
### DC ALARM

#### Functions & Features

- Providing relay contact closures at preset DC input levels
- Single or dual (Hi/Lo) trip
- Multi-turn screwdriver setpoint adjustments
- Enclosed relays
- Relays can be powered 110 V DC
- High-density mounting

#### Typical Applications

- Annunciator
- Various alarm applications



## MODEL: FAS-[1][2]-[3][4]

### ORDERING INFORMATION

- Code number: FAS-[1][2]-[3][4]
- Specify a code from below for each of [1] through [4].  
(e.g. FAS-62-L/Q)
- Special input range (For code 0)
- Use Ordering Information Sheet (No. ESU-1033) to specify output code 0 specifications.
- Specify the specification for option code /Q  
(e.g. /C01/S01)

### [1] INPUT

#### Current

- A:** 4 - 20 mA DC (Input resistance 250 Ω)
- D:** 0 - 20 mA DC (Input resistance 50 Ω)
- G:** 0 - 1 mA DC (Input resistance 1000 Ω)
- H:** 10 - 50 mA DC (Input resistance 100 Ω)

#### Voltage

- 3:** 0 - 1 V DC (Input resistance 1 MΩ min.)
- 4:** 0 - 10 V DC (Input resistance 1 MΩ min.)
- 5:** 0 - 5 V DC (Input resistance 1 MΩ min.)
- 6:** 1 - 5 V DC (Input resistance 1 MΩ min.)
- 0:** Specify voltage (See INPUT SPECIFICATIONS)

### [2] OUTPUT

- 1:** Single (SPDT); Hi in power failure
- 2:** Single (SPDT); Lo in power failure
- 5:** Hi/Lo (N.O.); OFF in power failure
- 6:** Hi/Lo (N.C.); OFF in power failure
- 0:** Specify

### [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.)

### [4] 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

### GENERAL SPECIFICATIONS

**Construction:** Plug-in

**Connection:** M3.5 screw terminals (torque 0.8 N·m)

**Screw terminal:** Nickel-plated steel (standard) or stainless steel

**Housing material:** Flame-resistant resin (black)

**Isolation:** Input to output to power

**Setpoint adjustments:** Multi-turn screwdriver adjustments (front); -5 - +105 % independently

**Hysteresis (deadband):** Approx. 1 %

**Front LEDs:** Red LED turns on when the coil is energized.

**Power ON timer:** Relays de-energized for approx. 2 seconds after power is turned on.

### INPUT SPECIFICATIONS

#### ■ DC Current:

Shunt resistor attached to the input terminals (0.5 W)

#### ■ DC Voltage: 0 - 300 V DC

Minimum span: 1 V

Offset: Max. 1.5 times span

Input resistance:  $\geq 1 \text{ M}\Omega$

## OUTPUT SPECIFICATIONS

■ **Relay Contact:** 100 V AC @ 1 A ( $\cos \phi = 1$ )

120 V AC @ 1 A ( $\cos \phi = 1$ )

240 V AC @ 0.5 A ( $\cos \phi = 1$ )

30 V DC @ 1 A (resistive load)

**Maximum switching voltage:** 380 V AC or 125 V DC

**Maximum switching power:** 120 VA or 30 W

**Minimum load:** 5 V DC @ 10 mA

**Mechanical life:**  $5 \times 10^7$  cycles

For maximum relay life with inductive loads, external protection is recommended.

## PERFORMANCE in percentage of span

**Trip point repeatability:**  $\pm 0.1 \%$

**Temp. coefficient:**  $\pm 0.015 \%/^{\circ}\text{C}$  ( $\pm 0.008 \%/^{\circ}\text{F}$ )

**Response time:**  $\leq 0.5 \text{ sec.}$  (0 - 100 % at 90 % setpoint)

**Line voltage effect:**  $\pm 0.1 \%$  over voltage range

**Insulation resistance:**  $\geq 100 \text{ M}\Omega$  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:**

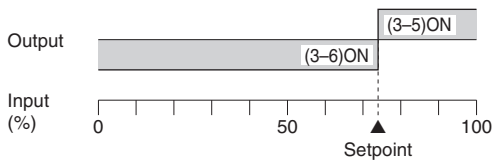
1000 V AC @ 1 minute (input to output)

2000 V AC @ 1 minute (input or output or power to ground)

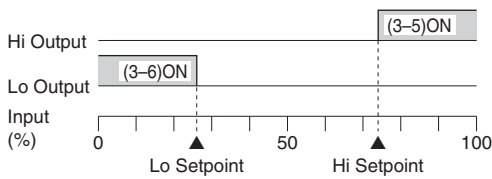
1500 V AC @ 1 minute (I/O to power)

### Alarm Trip Operation Terminal No. in parentheses

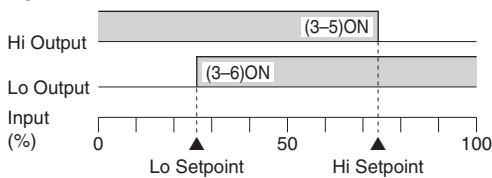
• **Output Code : 1, 2**



• **Output Code : 5**



• **Output Code : 6**



### Trip Operation in Power Failure

- **Output Code 1:** Terminals 3 – 5 turn ON
- **Output Code 2:** Terminals 3 – 6 turn ON
- **Output Code 5, 6:** both relays turn OFF

## 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)

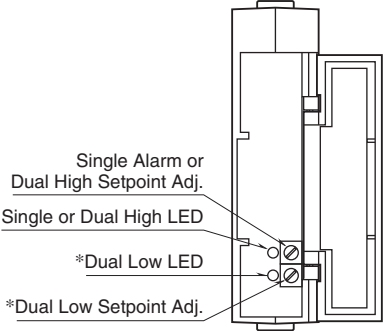
**Operating humidity:** 30 to 90 %RH (non-condensing)

**Mounting:** Surface or DIN rail; Standard Rack Mounting

Frame BX-16H available

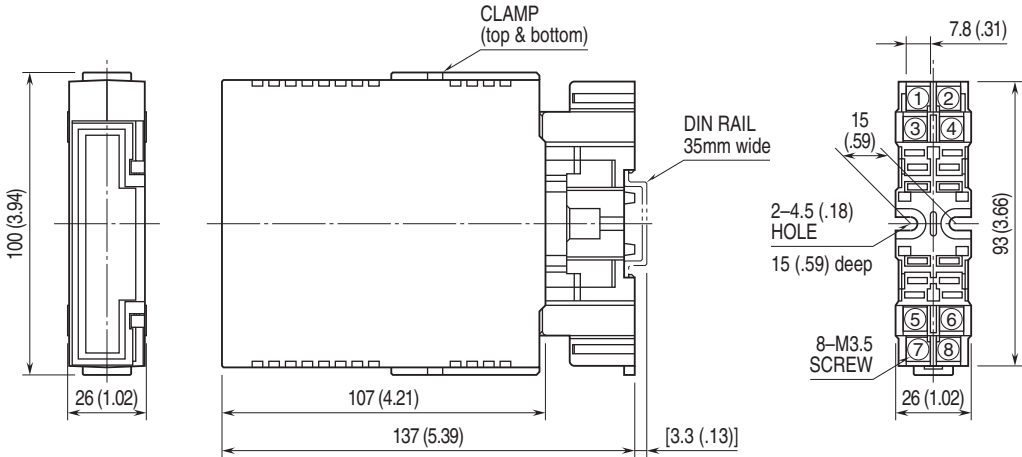
**Weight:** 180 g (0.40 lb)

**EXTERNAL VIEW**



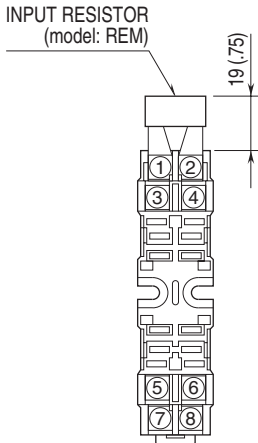
\*Not provided for Single Alarm.

**EXTERNAL DIMENSIONS unit: mm (inch)**



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

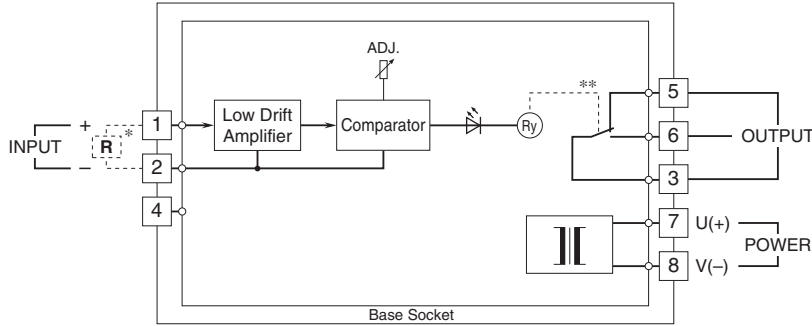
**TERMINAL ASSIGNMENTS unit: mm (inch)**



Input shunt resistor attached for current input.

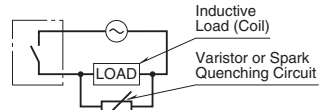
**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**

■ SINGLE ALARM

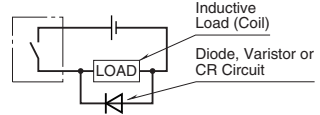


\* Input shunt resistor attached for current input.  
 \*\*Relay status is determined by output codes.

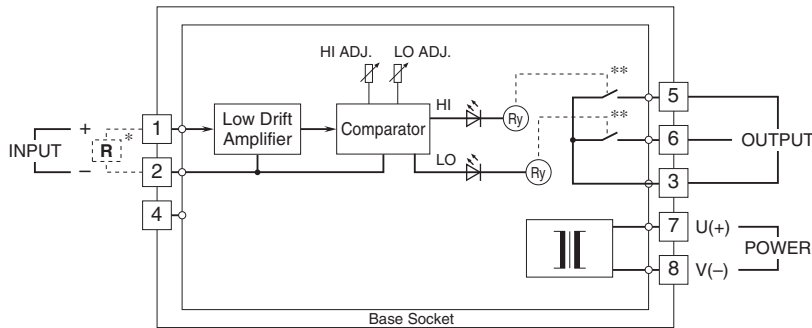
■Relay Protection  
 •AC Powered



•DC Powered



■ DUAL ALARM



\* Input shunt resistor attached for current input.  
 \*\*Relay status is determined by output codes.



Specifications are subject to change without notice.