

## High-density Signal Conditioners 10-RACK

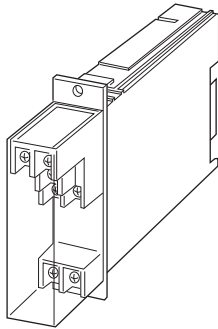
### DC ALARM

#### Functions & Features

- Providing relay contact closures at preset DC input levels
- Single or dual (Hi/Lo) trip
- Multi-turn screwdriver setpoint adjustments

#### Typical Applications

- Annunciator
- Various alarm applications



### MODEL: 10AS-[1][2]-R[3]

### ORDERING INFORMATION

- Code number: 10AS-[1][2]-R[3]
- Specify a code from below for each [1] through [3].  
(e.g. 10AS-62-R/Q)
- Use Ordering Information Sheet (No. ESU-1033) to specify output code 0 specifications.
- Special input range (For code 0)
  - Specify the specification for option code /Q  
(e.g. /C01)

### [1] INPUT

#### Current

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

#### Voltage

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

### [2] ALARM OUTPUT

- 1:** Single (SPDT); Hi in power failure  
**2:** Single (SPDT); Lo in power failure  
**3:** Dual (2 points SPDT); Hi in power failure  
**4:** Dual (2 points SPDT); Lo in power failure  
**5:** Hi/Lo (2 points SPDT); ON at alarm; OFF in power failure  
**7:** Hi/Lo (2 points SPDT); ON at alarm and in power failure  
**8:** Hi/Lo (2 points SPDT); OFF at alarm and in power failure  
**0:** Specify

### POWER INPUT

#### DC Power

- R:** 24 V DC  
 (Operational voltage range 24 V  $\pm$ 10 %, ripple 10 %p-p max.)

### [3] OPTIONS

- blank:** none  
**/Q:** With options (specify the specification)

### SPECIFICATIONS OF OPTION: Q

#### COATING (For the detail, refer to M-System's web site.)

- /C01:** Silicone coating  
**/C02:** Polyurethane coating  
**/C03:** Rubber coating

### GENERAL SPECIFICATIONS

**Construction:** Rack-mounted; terminal access via screw terminals at the front and via card-edge connector at the rear; terminal cover provided

#### Connection

- Input:** M3.5 screw terminals (torque 0.8 N·m)  
**Output:** M3.5 screw terminals (torque 0.8 N·m)  
**Power input:** Supplied from card-edge connector

**Screw terminal:** Nickel-plated 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 light 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:** Input resistor incorporated
  - **DC Voltage:** 0 - 300 V DC
- Minimum span:** 1 V  
**Offset:** Max. 1.5 times span  
**Input resistance:**  $\geq$  1 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.

## INSTALLATION

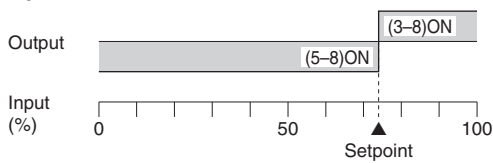
- Current consumption:** Approx. 80 mA with dual alarm
- Operating temperature:** -5 to +55°C (23 to 131°F)
- Operating humidity:** 30 to 90 %RH (non-condensing)
- Mounting:** Standard Rack 10BXx
- Weight:** 200 g (0.44 lb)

## PERFORMANCE in percentage of span

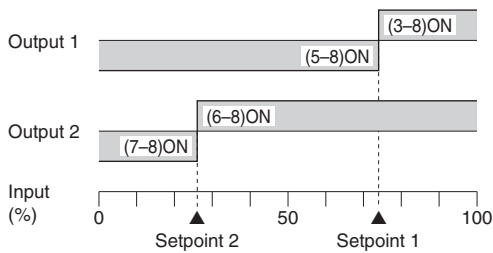
- Trip point repeatability:**  $\pm 0.1\%$
- Temp. coefficient:**  $\pm 0.015\%/^{\circ}\text{C}$  ( $\pm 0.008\%/^{\circ}\text{F}$ )
- Response time:** Approx. 0.5 sec. (0 - 100 % at 90 % setpoint)
- Line voltage effect:**  $\pm 0.1\%$  over voltage range
- Insulation resistance:**  $\geq 100\ \text{M}\Omega$  with 500 V DC
- Dielectric strength:** 500 V AC @ 1 minute (input to output to power)
- 1500 V AC @ 1 minute (input or output or power to ground)

### Alarm Trip Operation Terminal No. in parentheses

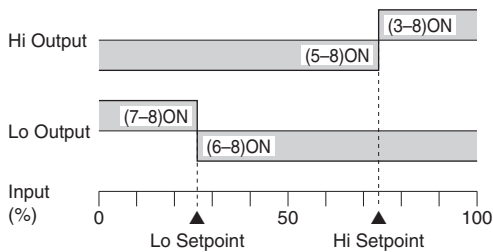
#### •Output Code : 1, 2



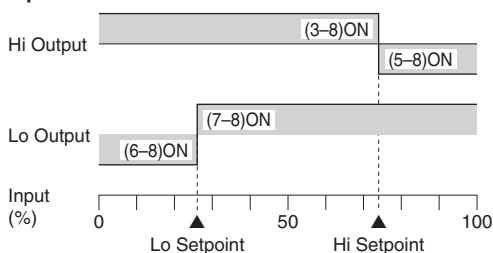
#### •Output Code : 3, 4



#### •Output Code : 5, 7



#### •Output Code : 8

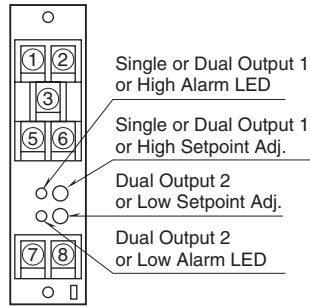


### Trip Operation in Power Failure

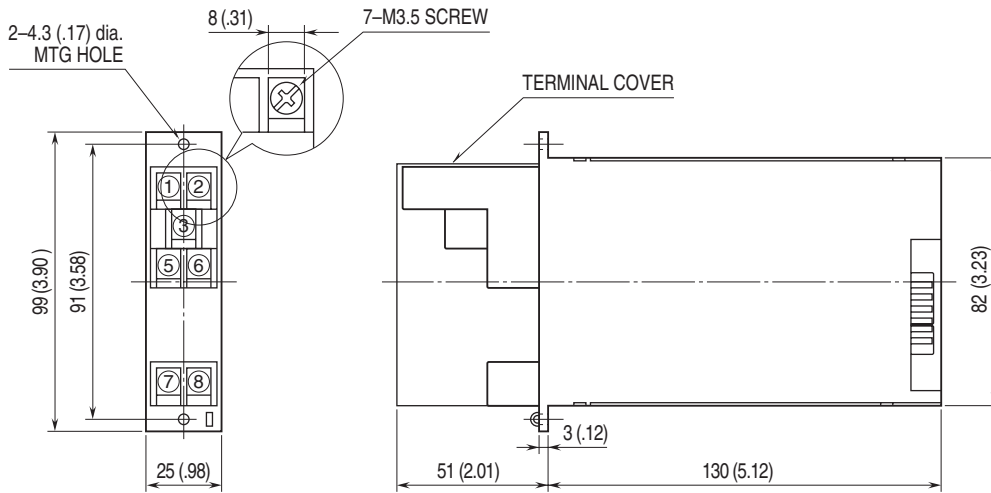
- **Output code 1:** Terminals 3 - 8 turn ON
- **Output code 2:** Terminals 5 - 8 turn ON
- **Output code 3:** Terminals 3 - 8, 6 - 8 turn ON
- **Output code 4:** Terminals 5 - 8, 7 - 8 turn ON
- **Output code 5, 8:** Terminals 3 - 8, 7 - 8 turn OFF
- **Output code 7:** Terminals 3 - 8, 7 - 8 turn ON



**EXTERNAL VIEW**

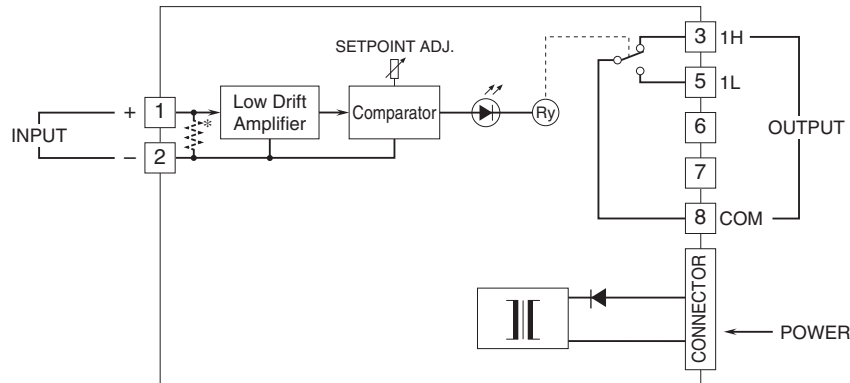


**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)**



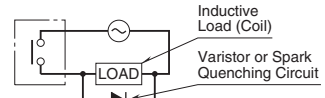
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

### ■ SINGLE ALARM

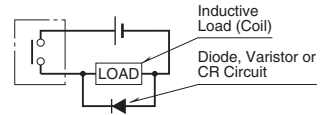


### ■ Relay Protection

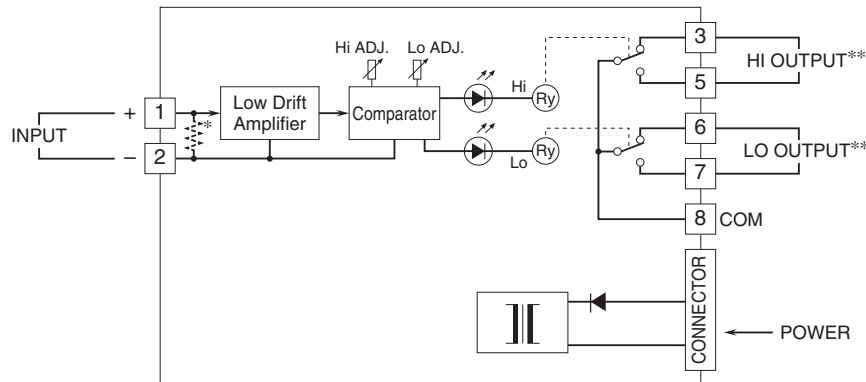
#### •AC Powered



#### •DC Powered



### ■ DUAL ALARM



Relay actions are determined by output codes.

\* Input shunt resistor incorporated for current input.

\*\*With code 3, 4 (dual alarm), Output 1 is assigned to Hi, while Output 2 is assigned to Lo terminals.

The diagram illustrates relay actions for the output code 5 or 8.



Specifications are subject to change without notice.