

Plug-in Signal Conditioners K-UNIT

DC ALARM

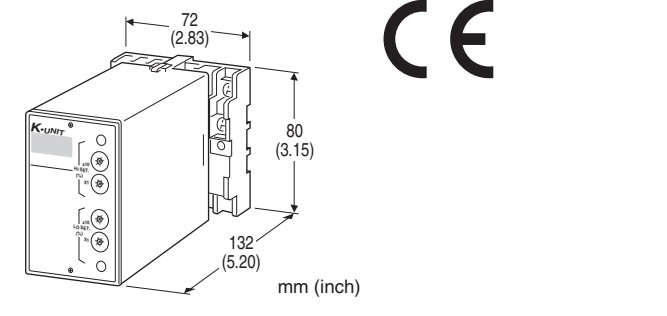
(CE, rotary switch adjustments)

Functions & Features

- Providing relay contact closures at preset DC input levels
- Dual (Hi/Lo) trip
- Rotary switch setpoint adjustments
- Enclosed relays
- Relays can be powered 110 V DC
- High-density mounting

Typical Applications

- Annunciator
- Various alarm applications



MODEL: KSL2-[1]5-[2][3]

ORDERING INFORMATION

- Code number: KSL2-[1]5-[2][3]
- Specify a code from below for each of [1] through [3].
(e.g. KSL2-65-H/Q)
- Special input range (For codes Z & 0)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[1] INPUT

Current

- A:** 4 - 20 mA DC (Input resistance 250 Ω)
- A1:** 4 - 20 mA DC (Input resistance 50 Ω)
- B:** 2 - 10 mA DC (Input resistance 500 Ω)
- C:** 1 - 5 mA DC (Input resistance 1000 Ω)
- D:** 0 - 20 mA DC (Input resistance 50 Ω)
- E:** 0 - 16 mA DC (Input resistance 62.5 Ω)
- F:** 0 - 10 mA DC (Input resistance 100 Ω)
- G:** 0 - 1 mA DC (Input resistance 1000 Ω)
- H:** 10 - 50 mA DC (Input resistance 100 Ω)
- J:** 0 - 10 μA DC (Input resistance 1000 Ω)
- K:** 0 - 100 μA DC (Input resistance 1000 Ω)
- GW:** -1 - +1 mA DC (Input resistance 1000 Ω)
- FW:** -10 - +10 mA DC (Input resistance 100 Ω)

Z: Specify current (See INPUT SPECIFICATIONS)
Voltage

- 1:** 0 - 10 mV DC (Input resistance 10 kΩ min.)
- 15:** 0 - 50 mV DC (Input resistance 10 kΩ min.)
- 16:** 0 - 60 mV DC (Input resistance 10 kΩ min.)
- 2:** 0 - 100 mV DC (Input resistance 100 kΩ min.)
- 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.)
- 4W:** -10 - +10 V DC (Input resistance 1 MΩ min.)
- 5W:** -5 - +5 V DC (Input resistance 1 MΩ min.)
- 0:** Specify voltage (See INPUT SPECIFICATIONS)

OUTPUT

5: Relay; SPDT or transfer contact

[2] POWER INPUT

AC Power

- G:** 200 V AC
 - H:** 220 V AC
 - J:** 240 V AC
- DC Power
- S:** 12 V DC
 - R:** 24 V DC

[3] OPTIONS

blank: none

/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to our 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
Screw terminal: Chromated steel (standard) or stainless steel
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Setpoint adjustments: 10-position rotary switches (front); 0 - 99 % independently; 1 % increments
Hysteresis (deadband): 1 - 2.5 %
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.

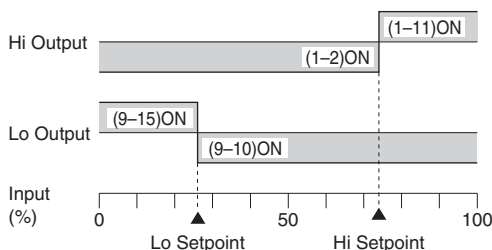
INPUT SPECIFICATIONS

■ **DC Current:**
 Shunt resistor attached to the input terminals (0.5 W)
 Specify input resistance value for code Z.
 ■ **DC Voltage:** -30 - +30 V DC
Span: Min. 10 mV, max. 30 V
Offset: Max. 1.5 times span
 • **Input resistance**
 Span 10 - 100 mV : $\geq 10 \text{ k}\Omega$
 Span 0.1 - 1 V : $\geq 100 \text{ k}\Omega$
 Span $\geq 1 \text{ V}$: $\geq 1 \text{ M}\Omega$

OUTPUT SPECIFICATIONS

■ **Relay Contact:**
 120 V AC @ 0.5 A ($\cos \phi = 1$)
 240 V AC @ 0.5 A ($\cos \phi = 1$)
 30 V DC @ 0.5 A (resistive load)
Maximum switching voltage: 380 V AC or 125 V DC
Maximum switching power: 120 VA or 30 W ($\leq 0.5 \text{ A}$)
Minimum load: 5 V DC @ 10 mA
Mechanical life: 5×10^7 cycles
 For maximum relay life with inductive loads, external protection is recommended.

Alarm Trip Operation Terminal No. in parentheses



Trip Operation in Power Failure

: Terminals 1 - 2, 9 - 10 turn ON.

INSTALLATION

Power input
 • **AC:** Operational voltage range: rating $\pm 10 \%$, 50/60 ± 2 Hz, approx. 2 VA
 • **DC:** Operational voltage range: rating $\pm 10 \%$, ripple 10 %p-p max., approx. 2 W (80 mA at 24 V)
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail
Weight: 400 g (0.88 lb)

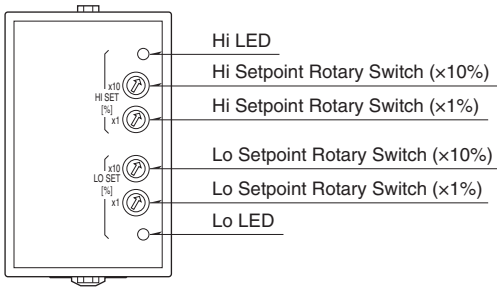
PERFORMANCE in percentage of span

Setpoint accuracy: $\pm 0.5 \%$
Trip point repeatability: $\pm 0.05 \%$
Temp. coefficient: $\pm 0.02 \text{ }^\circ\text{C}$ ($\pm 0.01 \text{ }^\circ\text{F}$)
Response time: 0.5 ± 0.2 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: 2300 V AC @1 minute (input to output to power to ground)

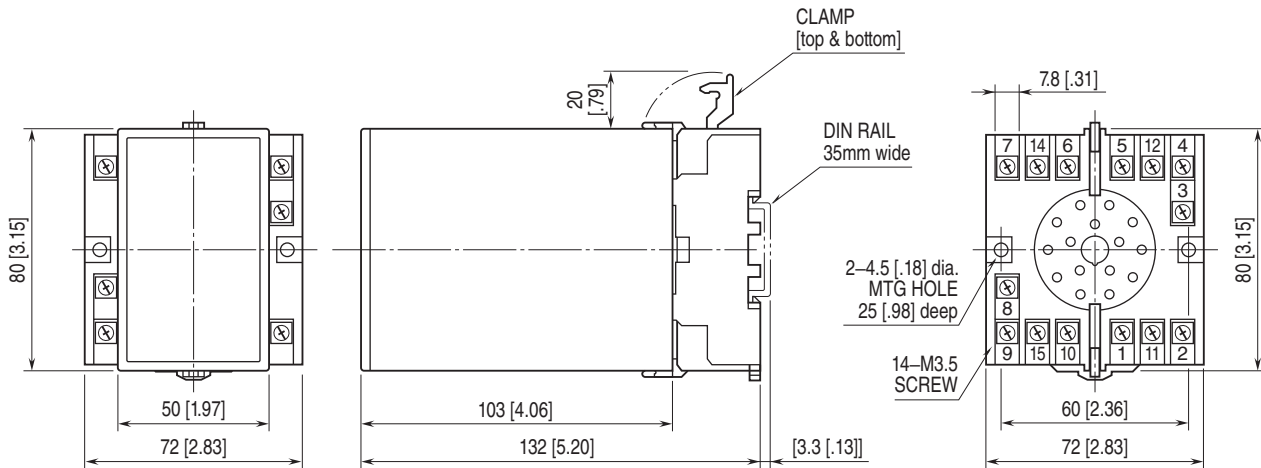
STANDARDS & APPROVALS

EU conformity:
 EMC Directive
 EMI EN 61000-6-4
 EMS EN 61000-6-2
 Low Voltage Directive
 EN 61010-1
 Measurement Category II (output)
 Installation Category II (power)
 Pollution Degree 2
 Input or output to power: Reinforced insulation (300 V)
 Input to output: Basic insulation (300 V)
 (When 150 V AC max. load voltage or measurement category I, applicable as reinforced insulation)
 RoHS Directive

EXTERNAL VIEW

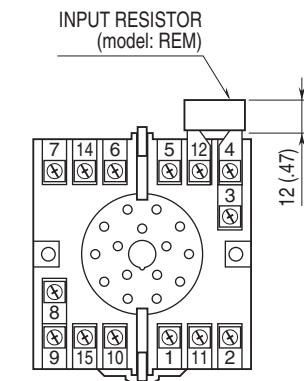


EXTERNAL DIMENSIONS unit: mm [inch]



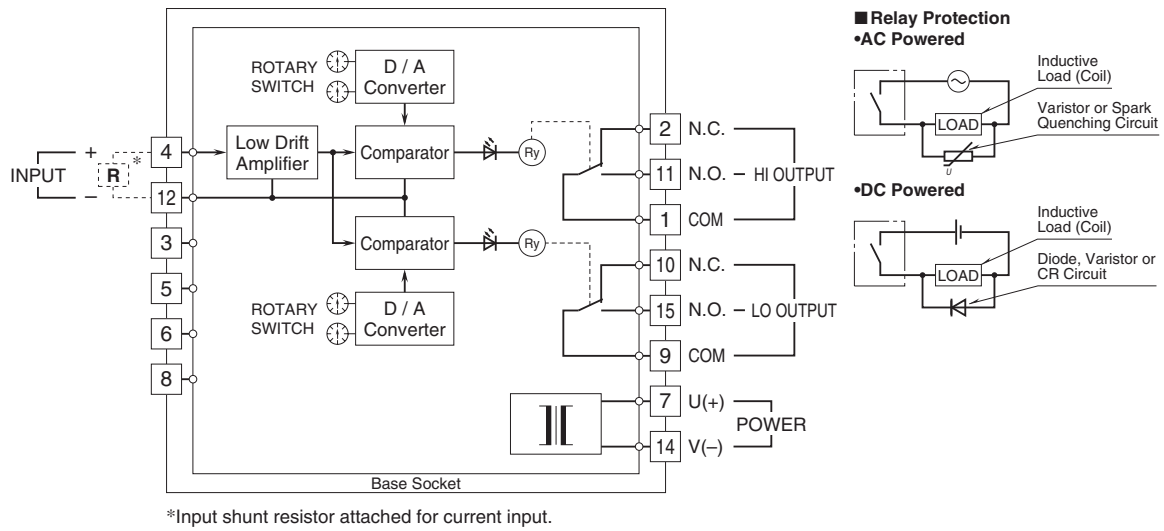
• When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm [inch]



Input shunt resistor attached for current input.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.