

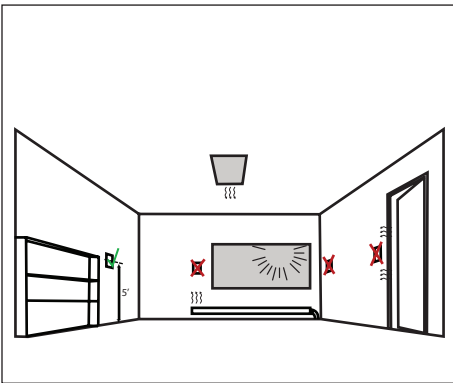
INTRODUCTION

The Room VOC Transmitter uses an advanced MOx (metal oxide semiconductor) sensor to detect poor air quality. The sensor reacts quickly to detect a broad range of VOCs such as smoke, cooking odors, bioeffluence, outdoor pollutants and from human activities. Dual linear analog output signals of 4-20mA, 0-5/0-10 Vdc signals provide indication of the TVOC level or quality levels against a VOC index and temperature levels.. An optional output of humidity is also available. Additional add-on features of feed through temperature sensor, manual override, and adjustable relay output are available.

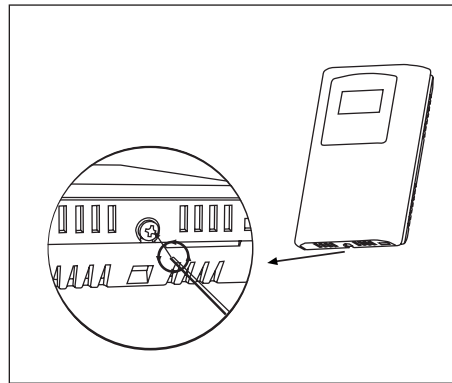
WARNING

Read these installation instructions carefully before commissioning the VOC. Failure to follow these instructions may result in product damage. Do not use in an explosive or hazardous environment, with combustible or flammable gases, as safety or emergency stop devices or in any other application where failure of the product could result in personal injury. Use electrostatic discharge precautions during installation and do not exceed the device ratings.

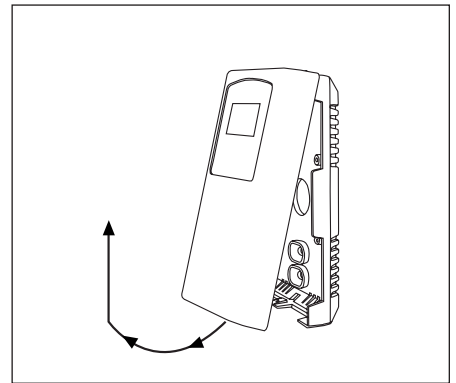
MOUNTING



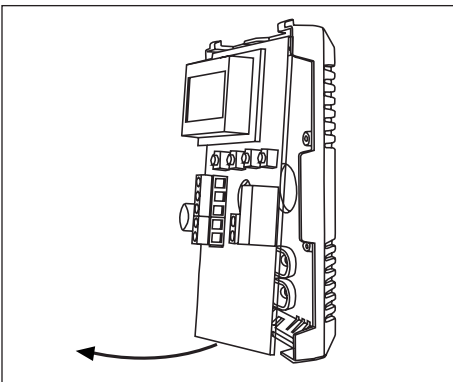
1 The sensor should be mounted 1.5 m (5') from the floor of the area to be controlled. Do not mount the sensor near doors, opening windows, supply air diffusers or other known disturbances. Avoid areas where the detector is exposed to vibrations or rapid temperature changes.



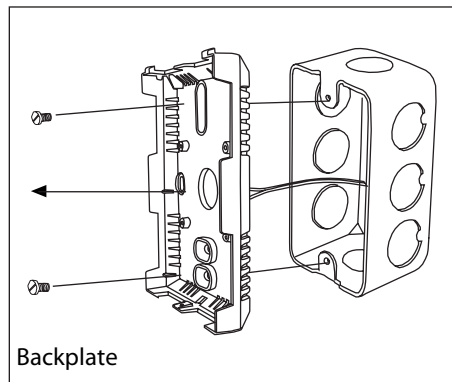
2 Loosen security screw. Complete removal is not required.



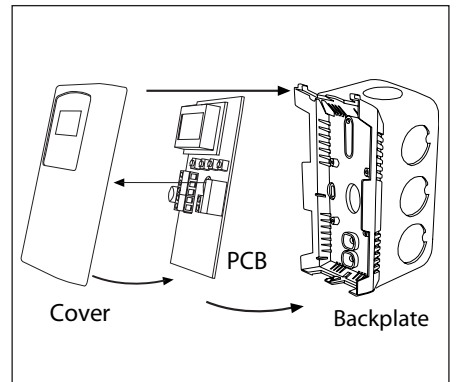
3 Remove cover by pulling outward on bottom.



4 Remove PCB by pressing the enclosure base to unsnap the latch near the bottom edge, NOTE: For anti-static protection it is recommended to place PCB in the supplied anti-static bag.



5 Mount the base to the electrical box or directly to the wall. Screws not included.

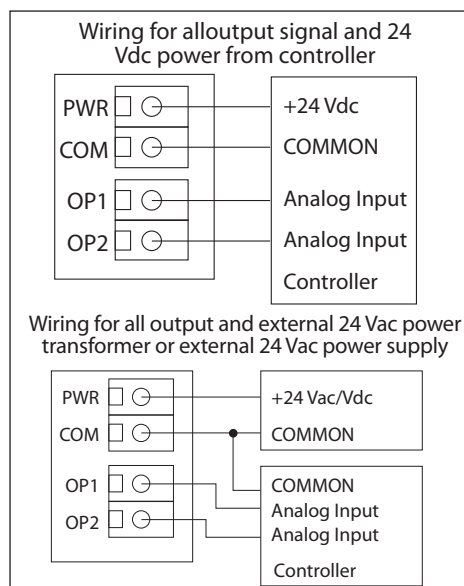
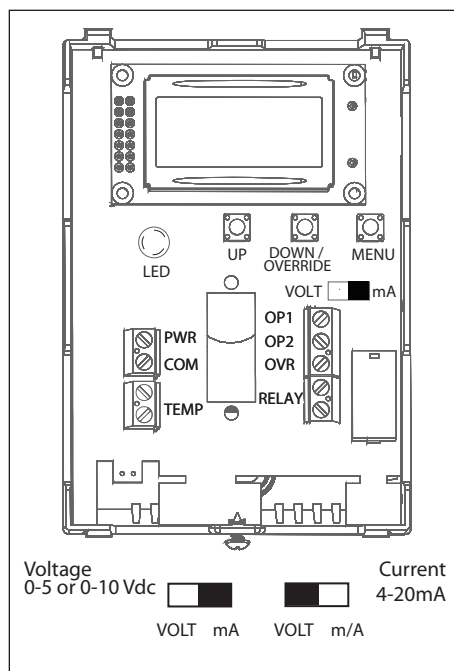


6 Replace PCB by inserting in tabs in top of backplate and complete wire terminations. Once wiring is complete, install cover by placing on tabs on top of enclosure and snap bottom into place. Tighten security screw.

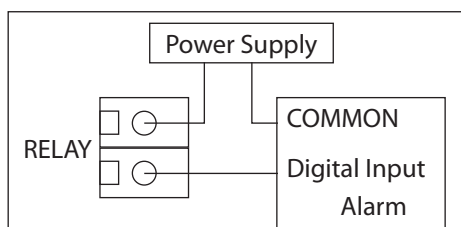
WIRING

WARNING

Deactivate the power supply until all connections are made to the device to prevent electrical shock or equipment damage. Use 16-22 AWG shielded wire for all connections (only ground the shield at the controller end) and do not locate the device wires in the same conduit with wiring used to supply inductive loads such as motors. Pull at least six inches of wire into the enclosure and complete the wiring connection according to the wiring diagram. The device is reverse voltage protected and will not operate if connected backwards. It has a half-wave power supply so the supply common is the same as the signal common. Several devices may be connected to one power supply and the output signals all share the same common. Use caution when grounding the secondary of a transformer or when wiring multiple devices to ensure the ground point is the same on all devices and the controller.

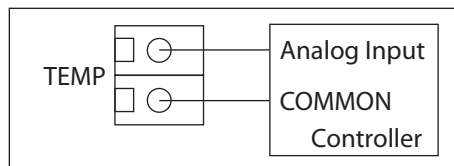


8 This is a 3-wire sourcing device. Connect the plus DC or the AC voltage hot side to the PWR terminal and the common is connected to the COM terminal. The analog outputs are available on the OP1 & OP2 terminals.

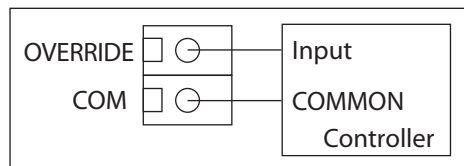


9 The optional relay output connects to the RELAY terminals. The relay output is completely isolated and has a Normally Open (NO) signal. This signal can be used to directly control an alarm or ventilation fan. See specifications for contact ratings.

7 Select output type by sliding switch.



10 The optional two-wire temperature sensor output is available with various RTDs and thermistors to suit all control applications and is available on the TEMP terminals.



11 The optional override signal is a two-wire dry contact normally open switch connected to the OVERRIDE and COM terminals.

OPERATIONS

WARNING

The VOC Sensor requires a continuous burn-time of at least 3 weeks before the sensor algorithms provide accurate measurements. During this period the product-to-product readings may show variations. The sensor will calibrate itself over this time to the environment it is installed in.

The VOC Sensor is meant to provide an accurate measurement of INDOOR air quality. Diesel exhaust is not a component of indoor air quality, and the sensor should not be used in such an application.

In normal operation, the VOC Sensor will detect a broad range of reducing gases such as CO and VOCs and translate the measurement into a VOCI (VOC Index) value representing the average TVOC reading.

This value is displayed on the LCD in either VOCI, ug/mg³, or ppb as set in the menu.

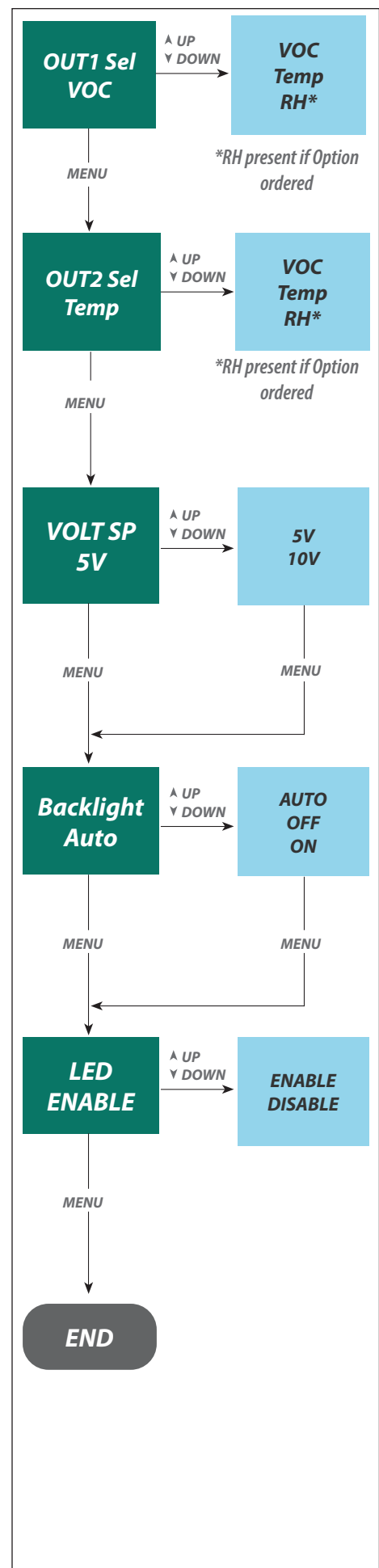
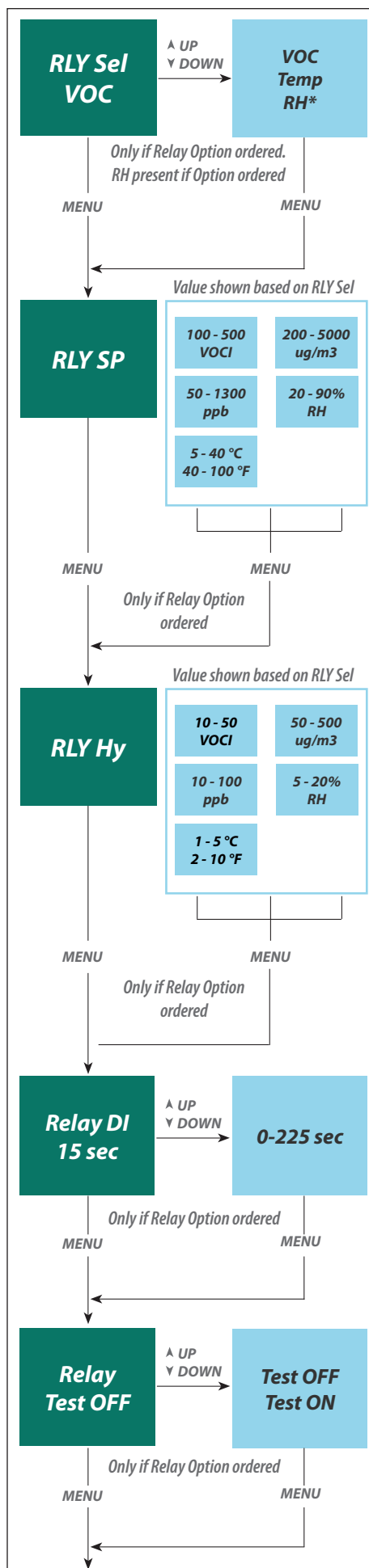
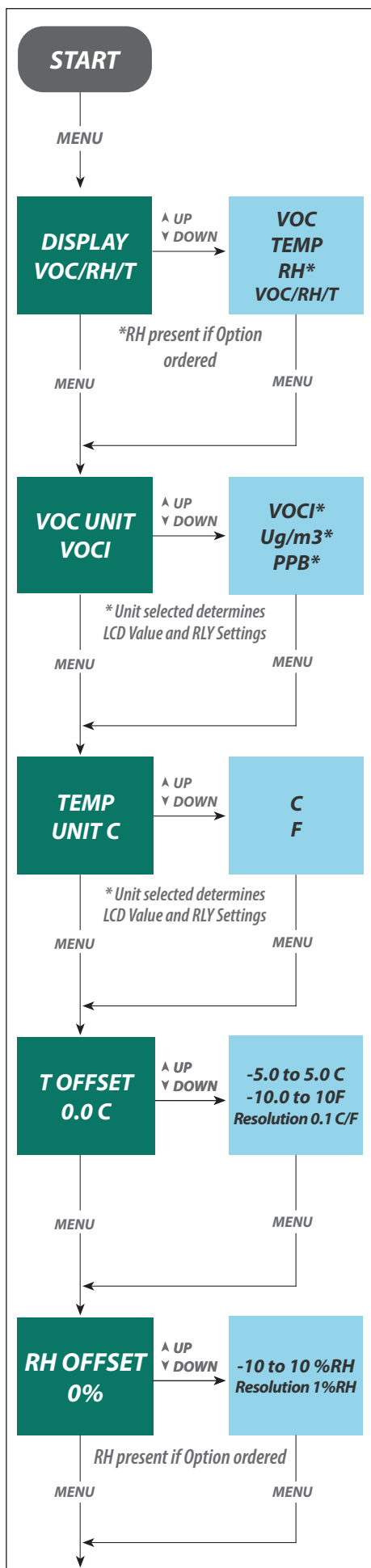
The **GOOD**, **FAIR** and **POOR** air quality levels will also be displayed on the tri-color front panel LED. The LED colors are displayed as **GOOD=green**, **FAIR=yellow** and **POOR=red**. If required, the LED operation can be disabled via the menu.

CONFIGURATION

The device has several parameters that can be configured locally via the Setup menu using the keypad and LCD. Any changes made are saved in non-volatile memory and are restored in case of a power loss. The menu can be accessed at any time after the start-up mode and if there is 5 minutes of inactivity the menu will close and normal operation will continue.

To enter the menu, press and release the <MENU> key. This will enter the Setup Menu step 1, pressing the <MENU> key a second time saves the setting and advances to step 2. Each press of the <MENU> key saves the current setting and advances the menu item.

The <UP> and <DOWN> keys are used to make changes to program variables by scrolling through the available options. The first column below shows what will be displayed on the LCD, including the default value.



SPECIFICATIONS

VOLATILE ORGANIC COMPOUNDS

Sensor Type:

MOX metal oxide semiconductor

Range:

VOC Index: 0 to 500 VOCI

TVOC: 0 to 2000 ug/m3 or 0 to 1000 PPB

Device Variation:

±15 VOC Index points, or ±15% VOC Index value (the larger value)

Repeatability:

±5 VOC Index points, or ±5% VOC Index value (the larger value)

Drift Compensation:

Automatic baseline correction

OUTPUT

Outputs: (2x)

4-20mA or 0-5 / 0-10 Vdc (selectable)

Output Selection:

TVOC/VOC Index

Temperature

Relative Humidity (optional)

User menu to select analog output configuration

ENCLOSURE

Enclosure:

White ABS, UL94-V0

Protection:

IP30 (NEMA 1)

Dimensions:

84mm W x 117mm H x 29mm D
(3.3" x 4.6" x 1.15")

TEMPERATURE

Sensor Type: Bipolar transistor sensor chip

Range: 0 to 50°C, 32 to 122°F

Accuracy: ± 0.2°C, ± 0.4°F (Typical)

Resolution: 0.1°C/°F

Calibration:

-5 to 5°C Offset, Resolution = 0.1°C ;

-10 to 10°F Offset, Resolution = 0.1°F

GENERAL

Power Supply: 24 Vac/dc ±10%

Consumption: 150 mA max

Wiring: Screw terminal block (14 to 22 AWG)

Operating Conditions:

0 to 50°C (32 to 122°F), 0 to 90 %RH

non-condensing

Storage Conditions:

-20 to 60°C (-4 to 140°F), 0 to 80 %RH

non-condensing

Response Time: <10 seconds

Warm-up Time:

1 minute for detecting VOC events,

1 hour to meet specifications

Sensor Coverage: 100 m2 (1000 ft2) typical

Certifications: CE

Country of Origin: Canada

OPTIONAL PASS-THRU TEMPERATURE SENSOR

Type: Thermistor and RTD

Accuracy:

Thermistors: ±0.2°C (±0.36°F) @ 25°C (77°F)

Platinum RTD's: ±0.3°C (±0.54°F) @ 0°C (32°F)

Nickel RTD's: ±0.4°C (±0.72°F) @ 0°C (32°F)

Output: 2-wire resistive

OPTIONAL RELAY

Contact Rating:

Form A contact 5 Amps @ 30 Vac/Vdc
non-inductive load

Relay Setpoints (Selectable):

VOC: 100 - 500 VOC Index;

200 - 5000 ug/ m3

50 - 1300 ppb;

Temperature: 5 - 40°C / 40 - 100°F

Optional Humidity: 20 - 90%;

Setpoint/Hysteresis/Delay:

Selectable based on selected assignment

Relay Configuration: Via Menu

Switching Power: 60W, 62.5VA

OPTIONAL HUMIDITY

Type: Thermoset polymer-based capacitance sensor chip

Range: 0 to 100% RH

Accuracy: ±2% RH

Resolution: 0.1% RH

Calibration:

-10 to 10%RH Offset,

Resolution = 1%RH% Offset

VISUAL INDICATION

LCD Display:

Alpha-numeric 2 line x 8 characters

LCD Dimensions: 35 x 15mm (1.4" x 0.6")

LCD Backlight:

Auto/Enable/Disable via Menu

LCD Resolution:

VOC Index value (0-500), resolution 1

TVOC value 0 to 2000 ug/m3 or 0 to 1000 PPB ,

resolution 1

Temperature, 0-50°C (32 to 122°F), resolution 1°C (F)

Optional RH, 0-100%RH, resolution 1%RH

LED Indicator:

Tricolor (Green, Yellow, Red) see table, enable or disable via menu

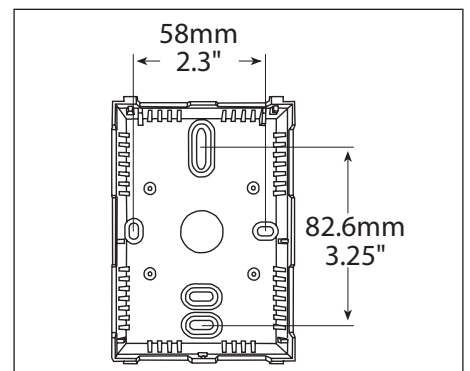
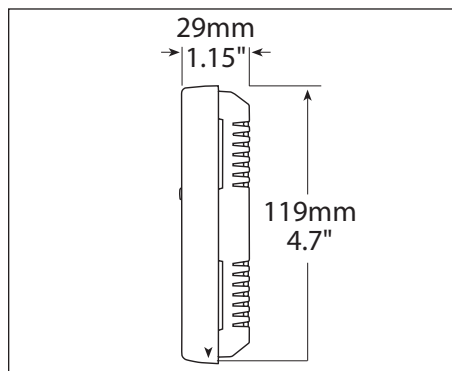
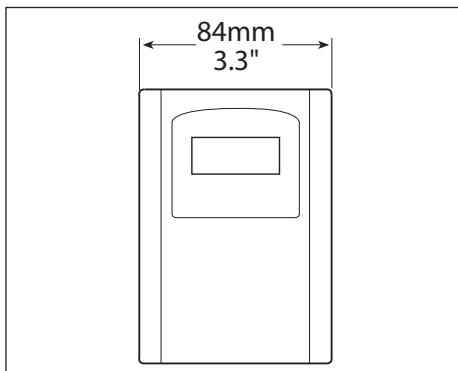
OPTIONAL MANUAL OVERRIDE

Type:

Front panel momentary switch with FET output

Ratings: 50 mA @ 30 Vdc, N.O., SPST

DIMENSIONS



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