

RP SERIES

Thermal Protectors

WORLD CLASS PERFORMANCE

The RP Series thermal protector is ideally suited for recessed lighting applications. The RP's compact package is designed to mount on the fixture; and with its extreme sensitivity, changes to thermal conditions – such as the introduction of insulation material – are readily detected.

With an exceptional history of more than 90 years, Sensata Technologies is a leading supplier of sensors and switches.

Features

- Wide variety of UL recognized types
- Automatic resetting device
- Device causes fixture light to blink in fault condition
- Extreme sensitivity to thermal conditions
- 50/60 Hz

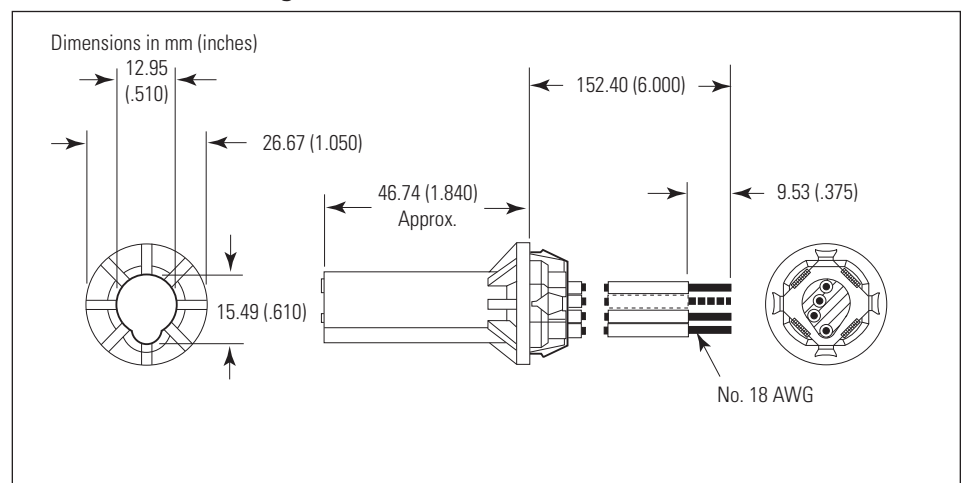
Benefits

- Capable of accommodating most recessed lighting fixtures
- Compact design allows for easy placement within the lighting fixture
- Improves overall safety of recessed lighting fixtures

Sensata Technologies' RP Series of thermal protectors are designed to meet UL, CSA and NEC requirements for the protection of non-IC recessed lighting fixtures. This patented RP thermal protector is an automatic resetting device that causes the lamp to blink during fault conditions. The RP is controlled by Sensata Technologies' SB600 Series of protectors, which are recognized by UL for tungsten and inductive loads (File E28135) and by CSA for inductive loads (File LR20529).

Sensata Technologies is an ISO and TS registered company providing world class quality products.

Dimensional Drawing



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Electrical and Physical Characteristics

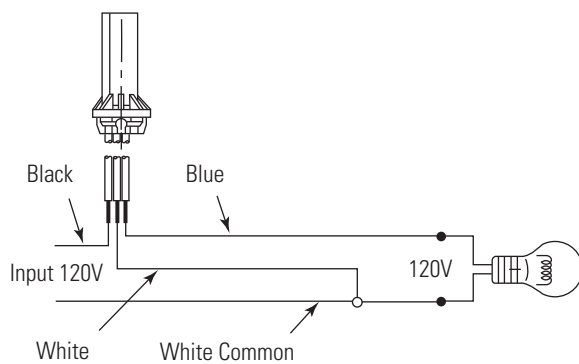
Type	Heater	No. of Leads	Lead Colors	Heater Wires	Protector Wires	Standard Pack
RP-1B	120V	3	BK, WH, Bl	Bl & Wh	Bk & Bl	500
RP-4A	277V	3	Bk, Wh, Red	Red & Wh	Bk & Red	500
RP-5A	120V	4	Bk, Wh, Bl, Red	Red & Wh	Bk & Bl	400
RP-6A	240V	3	Bk, Wh, Gray	Gray & Wh	Bk & Gray	500
RP-7A	208V	4	Bk, Wh, Bl, Yell	Yell & Wh	Bk & Bl	400
RP-8A	120V	3	Bk, Wh, Or	Or & Wh	Bk & Or	500
RP-9A	12V	3	Bk, Wh, Yell	Yell & Wh	Bk & Yell	500
RP-10A	220V	3	Bk, Wh, Viol	Viol & Wh	Bk & Viol	500
RP-11A	120V	4	Bk, Wh, Bl, Or	Or & Wh	Bk & Bl	400

Wiring of RP Thermal Protectors

The following instructions will assist in the proper installation of Sensata's RP Series of thermal protectors.

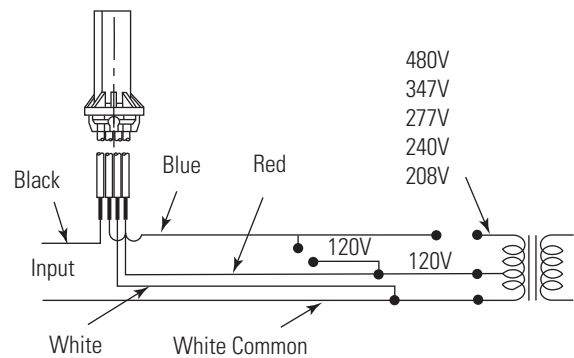
3 Wire RP for Dedicated Voltage

The black lead wire is always connected to the input live wire. The white wire is the common which is permanently connected at the factory with an extra six inch piece of wire of the same color. The third wire of the RP is permanently connected to the live side of the load.



4 Wire RP for Multi-tap Ballasts

The black lead wire is always connected to the input live wire. The white wire is the common which is permanently connected at the factory with all common wires. The red wire of the RP-5A is connected to the 120 Volt tap of the ballast. The yellow wire of the RP-7A is connected to the 208 Volt tap of the ballast. The orange lead of the RP-11A is connected to the 120 Volt tap. The blue wire is then connected to the tap of the ballast which will match the input voltage. Although the primary usage is 120/277V, the thermal protector inside of these units is rated up to 480 VAC.



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Applications of RP's to Recessed Fixtures

The following information describes the fixtures' voltage, temperature and RP placement requirements necessary to U.L. normal and abnormal tests. In addition, this information outlines requirements to be met for proper usage of Sensata's RP thermal protectors.

U.L. Normal Test Box

For proper testing of RP's the following conditions should be met:

1. The fixture should be tested at the rated wattage and specified voltage. For example, if the fixture is rated 120 VAC, then the output voltage should be set at 120 VAC. In order for the RP to operate properly, voltage requirements must be adhered to. A higher voltage can, in some instances, derate the RP and cause nuisance tripping.
2. The thru wire temperature, if any, should be adhered to.
3. Maximum temperatures allowed by the standard agencies should not be exceeded.
4. The RP is not dependent on orientation. It can be placed in a vertical position.

U.L. Abnormal Test Box

For proper testing of RP's the following conditions should be met:

1. At least 1 inch of insulation should completely surround the RP.
2. The RP should be located approximately two inches from the bottom of the fixture.
3. Only a small amount of epoxy to hold the thermal-couple should be used on the RP.

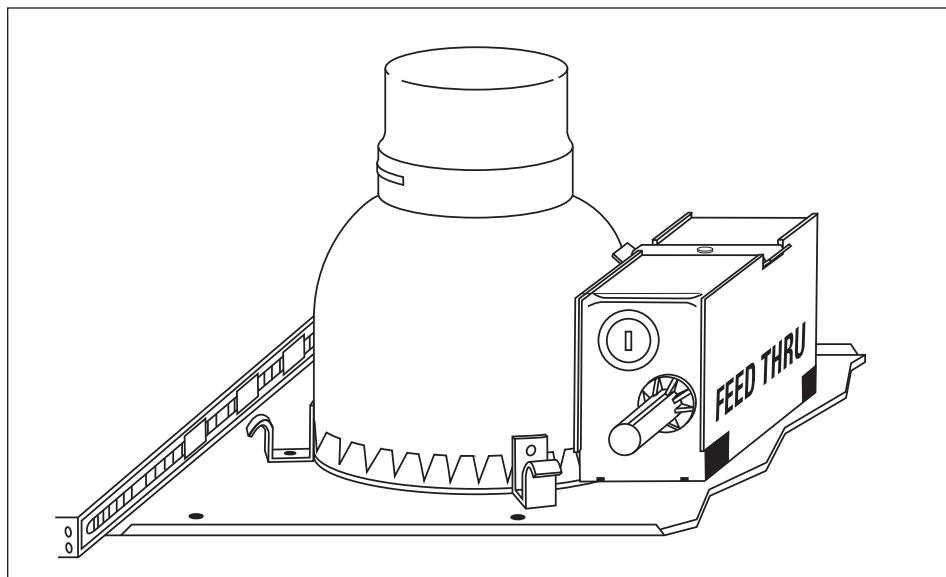
Note: If the conditions listed above are not exact in the abnormal test box, having the lamp on will allow the RP to operate more efficiently.

Proper Usage

The Unique design of the RP thermal protectors allows a specific model to protect a family of fixtures, reducing engineering and logistics complexity for luminaire manufacturers. The operation of the bimetallic device within the RP functions primarily from the biasing of its internal heater. The heater is so effective that when the RP is inserted in insulation without the lamp installed, the bimetallic protector will operate. In this manner, the RP functions as an insulation detector.

For the best performance, the RP-8A thermal protector is typically used for 300 and 500 quartz lamps and 120 Volt 400 Watt HID fixtures where 90°C thru wire is specified. As an alternative to the RP-1B, The RP 11-A is commonly used for low wattage fixtures that are listed by UL for mark spacing.

This drawing represents the typical placement of these devices for maximum performance.



Specifications

The RP and SB600 thermal protector within the RP are recognized and tested under standard UL873 for Temperature Indicating and Regulating Equipment.

The thermal protector within the RP was tested by UL for 10,000 cycles to the following values:

1. 500 Watts at 120VAC with tungsten load.
2. 400 Watts at 120VAC to 480VAC with an inductive load.
3. 75 watts at 12VAC with tungsten load.

The RP has passed tests by UL for the City of Chicago for overlamping in the normal test box and air tightness for the return plenum.

The RP clip is made of spring steel and designed for a 7/8" knockout hole to fit a wall thickness of .032-.078".

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