

Welcome!

We greatly appreciate your purchase of the AC301-102/106 Power Sensor/Controller. We are sure you will find it reliable and simple to use. Superior performance for the right price, backed by solid technical and customer support is what ALTINEX has to offer.

We are committed to providing our customers with Signal Management Solutions® to the most demanding audiovisual installations at competitive pricing and we welcome you to join the ranks of our many satisfied customers throughout the world.

1. Precautions and Safety Warnings

Please read this manual carefully before using your AC301-102/106 Power Sensor/Controller and keep it handy for future reference. These safety instructions are to ensure the long life of your AC301-102/106 and to prevent fire and shock hazards. Please read them carefully and heed all warnings.

1.1 General

- There are no user serviceable parts inside. Qualified ALTINEX service personnel must perform all service on the AC301-102/106.

1.2 Handling

- For best results, place the AC301-102/106 on a flat, leveled surface in a dry area away from dust and moisture.
- To prevent fire or shock, do not expose this unit to water or moisture. Do not place the AC301-102/106 in direct sunlight, near heaters, or heat-radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.
- Handle the unit carefully. Dropping or jarring can cause damage.
- Do not pull any cables that are attached to the AC301-102/106.
- Do not place heavy objects on top of the AC301-102/106.

2. Installation Procedures

Special Considerations:

- The AC301-102/106 should be located as close as feasible to the AC outlet and the AC outlet should be easily accessible.
- The AC301-102/106 must lay flat to minimize mechanical stress on the AC cord.
- The total AC cord length from the outlet to the monitor (including the AC301-102/106) must be at least 1.5 m (4.92 ft) and less than 4.5 m (14.76 ft).

Step 1. Make a cable to connect the Neutron Controller to the AC301-102/106 using the terminal block connectors provided with each unit. Use 24 AWG multi-conductor cable for best results and make sure the cable is long enough to route neatly between the AC301-102/106 and the Neutron. The following are the minimum connection requirements (see the wiring diagram above):

AC301 : 12 Volts Relay Control Signal Ground
 Neutron : 12 V Relay Pole Relay Throw & Gnd

Note: The AC301's sensor output pin can be connected to a sensor input on the Neutron in order to monitor the load on the output of the AC301.

- Step 2. Insert the AC301-102/106 between the AC outlet and external device as shown to the right.
- Step 3. Connect the AC301-102/106 control input to the Neutron Controller using the cable from Step 1.
- Step 4. Lay the AC301-102/106 flat on its operating surface; it must NOT hang from either of the AC cables.
- Step 5. The AC301-102/106 Power Sensor/Controller is now operational. The AC Output indicator LED next to the output AC cord is ON when the AC output is on. The AC output is ON when there is +12V applied and the Relay Control input is connected to GND.

3. Limited Warranty/Return Policies

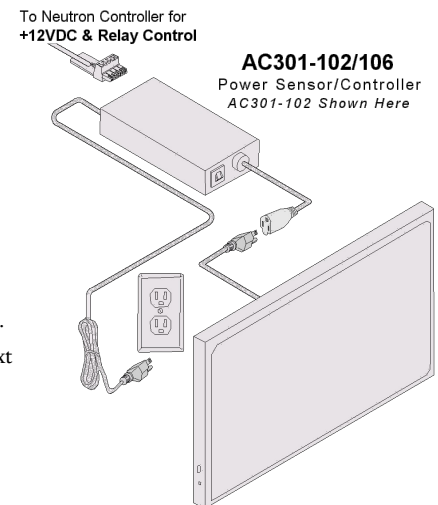
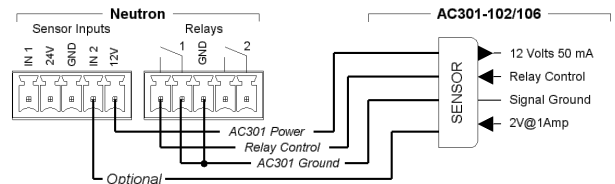
Please see the ALTINEX website at www.altinex.com for details on warranty and return policies.

1.3 Cleaning

- Unplug the AC301-102/106 before cleaning.
- Clean only with a dry cloth. Never use strong detergents or solvents such as alcohol or thinner. Do not use a wet cloth or water to clean the unit. Do not open the unit to clean.

1.4 FCC Notice

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with instructions found herein, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.



4. Technical Specifications

Specifications are subject to change. See www.altinex.com for up-to-date information.

Features/Description	AC301-102/106
Inputs	
AC (pass-through) AC301-102	NEMA 5-15P (1)
AC (pass-through) AC301-106	IEC M – C14 (1)
Control/Power	4-pin Terminal Block (1)
Output	
AC (pass-through) AC301-102	NEMA 5-15R (1)
AC (pass-through) AC301-106	IEC F – C13 (1)
Compatibility	
AC Devices	Audiovisual Devices (monitors, projectors, etc.)
Accessories Included	
Control Input Mating Connector	4-pin Terminal Block (1)

Table 1. AC301-102/106 General

Mechanical	AC301-102/106
Material	Steel
Color	Black
Height	0.9 in (23 mm)
Width	6.0 in (152 mm)
Depth	2.6 in (66 mm)
Weight	0.5 lb (0.2 kg)
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs (min.)

Table 2. AC301-102/106 Mechanical

Electrical	AC301-102/106
AC Pass-Through	
AC minimum	120/240 V 50/60 Hz 50 mA
AC maximum	120/240 V 50/60 Hz 5 A
Power Consumption	(from controller)
+12V	40 mA (0.5 W)

Table 3. AC301-102/106 Electrical

5. About Your AC301-102/106

- Large Load Capacity, 50 mA to 5 A AC at 120 or 240 VAC
- Remote on/off of live AC line
- Current sensor output voltage
- Live line circuit breaker

The AC301-102/106 Power Sensor/Controller allows the ALTINEX Neutron controllers to remotely control the AC power applied to a single audiovisual device as well as monitor the power consumption of the device. The AC301-102 has a NEMA male connector on the supply side with a NEMA female connector on the output; the AC301-106 has an IEC male connector on the supply side and an IEC female connector on the output.

The earth and neutral lines are straight pass-through lines, always connected to the AC output for the external device. The Power Sensor/Controller turns on and off power by switching the live line through an internal relay.

The AC301-102/106 sensor outputs approximately 2V per amp of AC load with a maximum of 10V at 5A. The sensor inputs on the Neutron Controllers can be used to monitor the sensor output voltage level of the AC301-102/106. The sensor voltage relates directly to the load on the output of the AC301-102/106 and can be used to determine the approximate load or simply an on or off condition of the AC device.

In addition to sturdy construction and safety rated components, additional safety is provided in the form of a built-in circuit breaker. The circuit breaker is a push-to-reset model designed to protect the branch circuit from overload conditions.

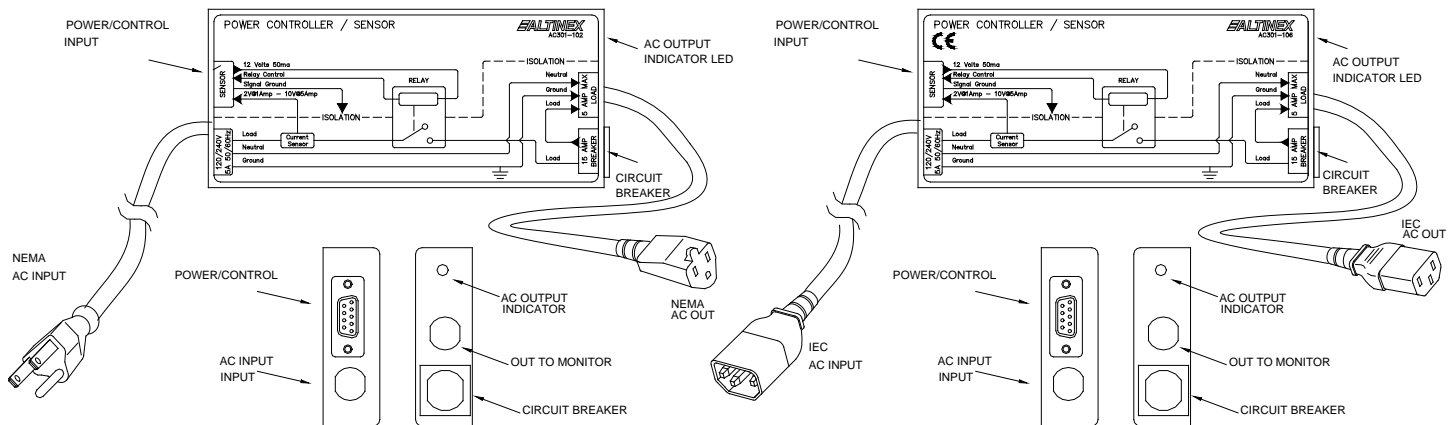
AC301-102

AC301-106



AC301-102 - NEMA

AC301-106 - IEC



6. Application Diagrams

Diagram 1: Typical Setup

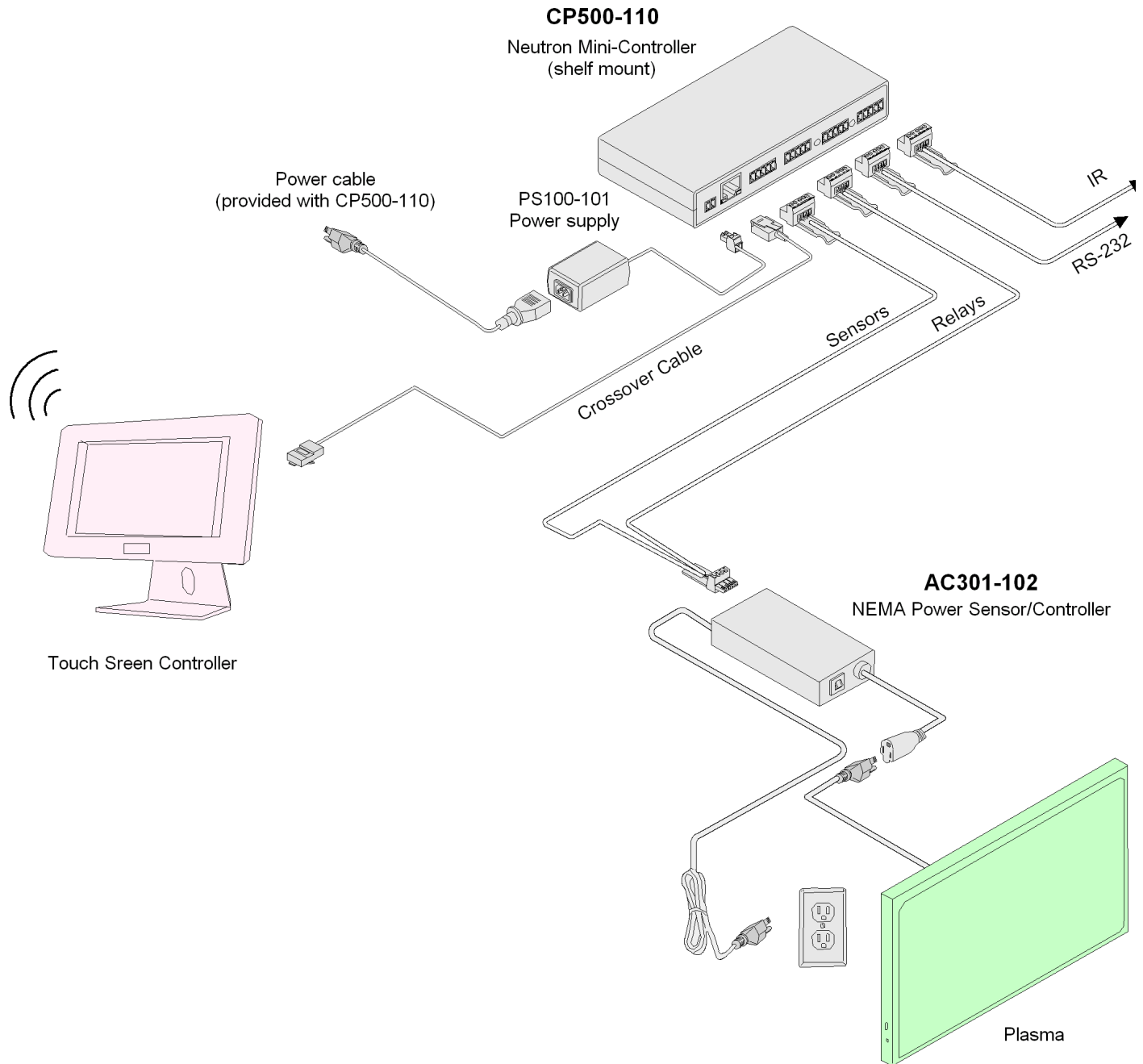


Diagram 2: Internal View AC301-102

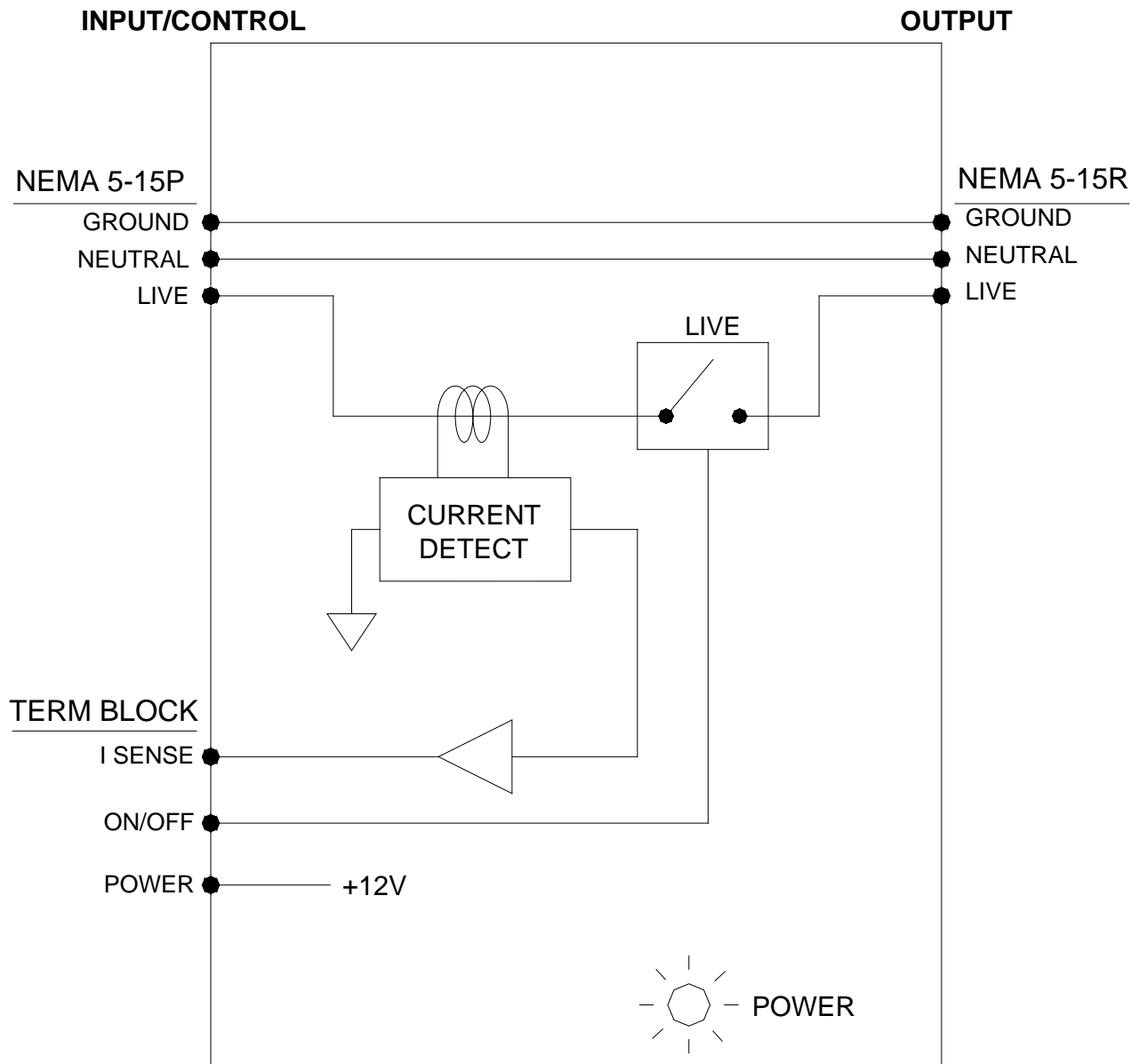
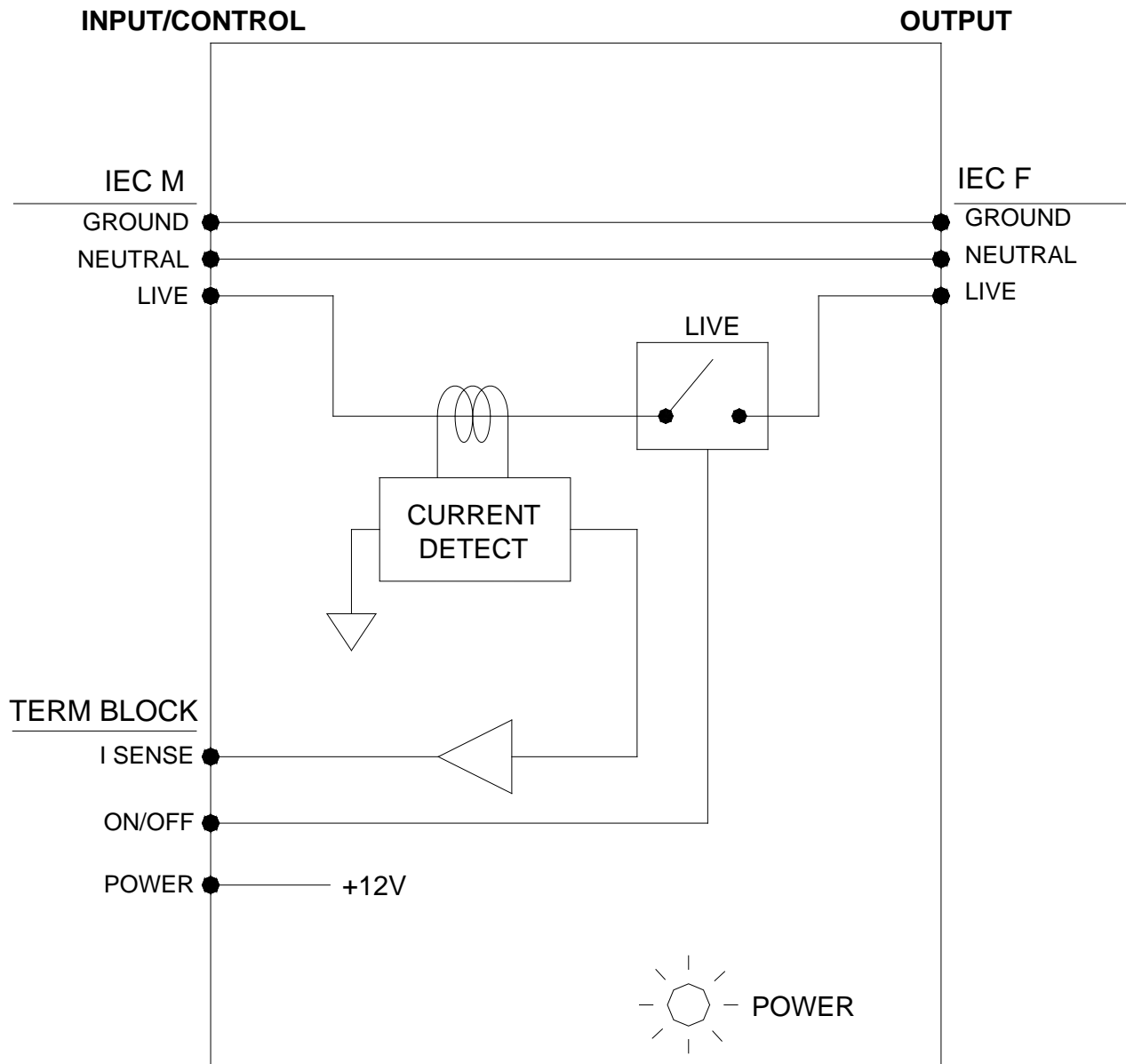


Diagram 3: Internal View AC301-106



7. Operation

The AC301-102/106 requires no adjustments for optimum performance. Once set-up, the AC301-102/106 will work trouble-free without user intervention.

Remember: the AC device should draw at least 50 mA of AC current and not more than 5A AC.

7.1 Device Control

The AC301-102/106 automatically enables power to the device while the Relay Control input line is connected to ground.

7.2 Current Sense

The AC301-102/106 sensor output voltage reads approximately 2V per AMP up to a maximum of 10VDC at 5A.

Connect this output to a sensor input on the Neutron Controller in order to monitor load levels on the AC line of the AC301-102/106.

7.3 Circuit Breaker Reset

The circuit breaker is a push-to-reset 15A circuit breaker. The circuit breaker is accessible from the output-side of the unit. In the event the circuit breaker is tripped, do the following:

- ▶ Turn off the AC device's power switch or disconnect the device from the AC301-102/106
- ▶ Push the circuit breaker reset button back in
- ▶ Turn on power or reconnect the AC device

Warning!

If the circuit breaker trips again, the device is drawing excessive current and should be checked immediately. If necessary, the device may need to be replaced.

Check the rating of the device connected to the AC301-102/106 Power Sensor/Controller; if it requires a significant amount of power, it should be plugged into its own supply circuit.

8. Troubleshooting Guide

We have carefully tested and have found no problems in the supplied AC301-102/106. However, we would like to offer suggestions for the following:

Symptom	Resolution
Output LED is OFF	<p>The Output LED only turns on when the AC301-102/106 Power Sensor/Controller is passing AC power through to the external device. This only occurs when the Neutron Controller is pulling the Relay Control input of the AC301-102/106 to ground and +12 VDC is available on the input of the AC301-102/106.</p> <ol style="list-style-type: none"> 1. Check the wiring between the AC301-102/106 and the Neutron Controller. The AC301-102/106 requires the following from the Neutron Controller: <ol style="list-style-type: none"> a. +12VDC to Ground b. Relay contact connections between the Relay Control input and Ground 2. Make sure there is +12V present on the AC301-102/106 input terminal block connector. If there is +12V, short the Relay Control input to ground and verify the relay closes and the AC Output LED turns on.
External Device Does Not Turn On	<ol style="list-style-type: none"> 1. Make sure the Power Sensor/Controller has +12VDC power applied to the terminal block connector. 2. Make sure the Relay Control input line is connected to ground through a relay on the Neutron Controller. If the Relay Control input cannot be verified, short the Relay Control input on the AC301-102/106 terminal block connector to the Ground pin on the same connector. The internal relay "clicks" on and provides power to the external device. 3. Verify the AC301-102/106 input is connected to a working AC outlet and that the outlet is powered.