

Dancraft Status Sensors

CS2 AC line current sensor

The **CS2 AC line current sensor** is designed to allow simple non-contact level sensing of the current being used by any Item powered by an AC source. When an adjustable level (5W to 2000W) of AC current is exceeded, the CS2 will report its "Closed" Status by either reporting back to IR Master via 3LAN (-3), or for the stand-alone versions (-1) by changing the HI output from Open Circuit to the Supplied Voltage level through a 430½ current-limiting resistor, and the LO output from Open Circuit to a logic LO capable of sinking up to 100mA.

Properly installed, it provides a double-insulated, intrinsically-safe system (the un-modified UL-approved insulated AC conductor and the insulation of the sensor keep each of the two systems isolated) thus assuring both equipment safety and absolute shock protection.

Installation of the CS2:

- 1) Mount the CS2 gray snap-in track securely using screws or double-stick tape near the target line cord path.
- 2) Snap the CS2 into position, and route the line cord over the Sensor mounted between the two adjustment knobs; Use a ty-wrap threaded through the slot in the board to securely hold the line cord over the sensor. See Figure 1.
- 3) Make sure there is slack in the line cord on both sides of CS2 to keep the line cord stable and in position over the sensor. Maximum sensitivity is obtained by placing the line cord directly over the top and center of the Sensor.
- 4a) For the (-3) 3LAN version, connect the IN RJ-11 connector (with up to 800' of cable) to the next upstream 3LAN OUT jack on the "upstream" 3LAN. Connect the next downstream 3LAN board with up to 800' of cable to the CS2's OUT jack.

NOTE: If it is the first 3LAN board in the Daisy Chain, the shrink-wrapped end of the 10' adapter cable connects to the IN RJ-11 on the Sensor and the other end connects to the 3LAN jack on the back of the IR Master.

- 4b) For the (-1) stand-alone version, connect a 9-12VDC power source between the + and G terminals at the ends of the terminal board. Connect the desired output (H or L) to your Input.

NOTE: The unlabelled terminal is a +5 VDC @ 10mA Output.

Adjustment of the CS2:

- 1) Turn the lower pot fully clockwise for maximum sensitivity.
- 2) Turn the upper pot fully CCW for minimum hold time.
- 3) Plug in the target Item; if there is current flow when the Item is Off (such as a TV with "Instant On") adjust the lower Gain pot CCW until the CS2 gives an "open" indication (the LED turns Off).
- 4) Turn the Item On & Off, adjusting the pot for On/Off transitions of the indicator LED.
- 5) Adjust the upper Delay pot CW if a dropout delay longer than 50mS is desired - Fully CW gives 8 Seconds of ON time after a turn-off. The noise rejection time to avoid false turn-Ons remains constant at 1mS.

NOTE: Some gear has virtually no difference in current draw between the On and Off states. For this type of equipment (some VCRs, tuners, and DVDs) an LS2, VS2, or AV2 is a more optimum choice.

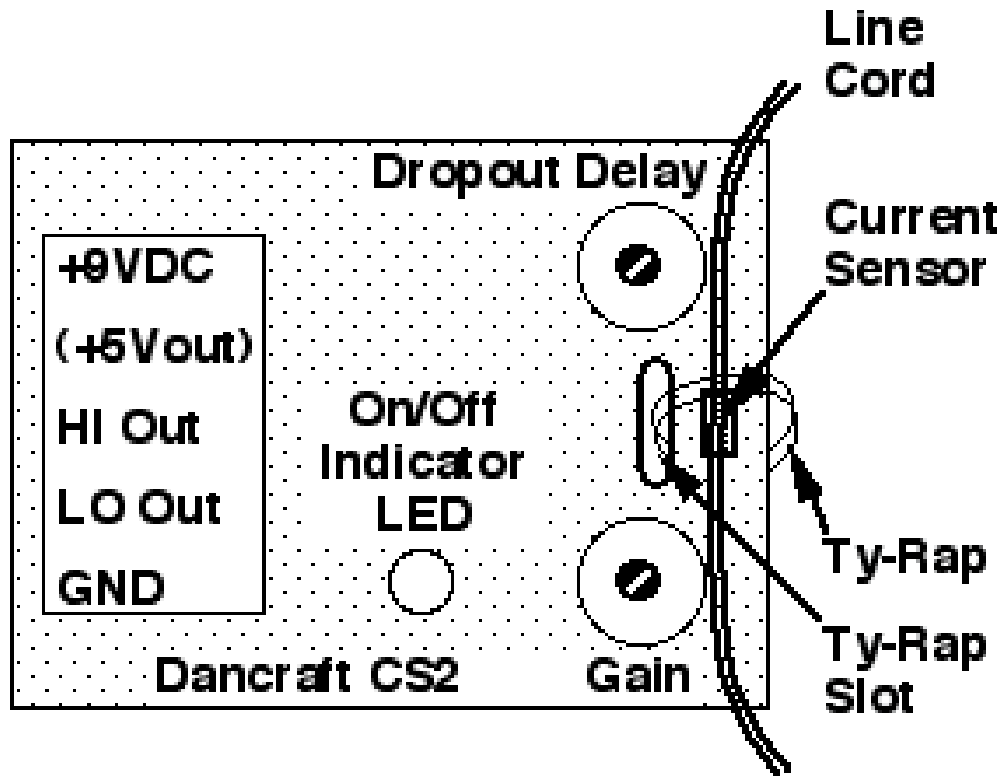


Figure 1: Attaching the Line Cord to a CS2-1 Sensor

VS2 Voltage sensor

The **VS2 Voltage sensor** is designed to allow a differential DC Voltage generated by any Item to be sensed, even if it is referenced to another grounding system with up to 100V of AC or DC offset. When an adjustable level (0.4V to 50V) of DC Voltage is exceeded, the VS2 will report its "Closed" Status by either reporting back to IR Master via 3LAN (-3), or for the stand-alone versions (-1) by changing the HI output from Open Circuit to the Supplied Voltage level through a 430½ current-limiting resistor, and the LO output from Open Circuit to a logic LO capable of sinking up to 100mA.

Properly installed, it provides a convenient means of sensing any floating Voltage as an indicator of On/Off status or equipment Mode.

Installation of the VS2:

- 1) Mount the VS2 gray snap-in track securely using screws or double-stick tape near the target equipment.
- 2) Snap the VS2 into position, and connect the input Voltage pair of wires via the 3.5mm (1/8") jack. See Figure 1.
- 3) Make sure that the Tip of the jack is connected to the positive side of the Voltage source being sensed, with the barrel connected to the negative, or reference of that source.
- 4a) For the (-3) 3LAN version, connect the IN RJ-11 connector (with up to 800' of cable) to the next upstream 3LAN OUT jack on the "upstream" 3LAN. Connect the next downstream 3LAN board with up to 800' of cable to the CS2's OUT jack.

NOTE: If it is the first 3LAN board in the Daisy Chain, the shrink-wrapped end of the 10' adapter cable connects to the IN RJ-11 on the Sensor and the other end connects to the 3LAN jack on the back of the IR Master.

- 4b) For the (-1) stand-alone version, connect a 9-12VDC power source between the + and G terminals at the ends of the terminal board. Connect the desired output (H or L) to your Input.

NOTE: The unlabelled terminal is a +5 VDC @ 10mA Output.

Adjustment of the VS2:

- 1) Turn the lower pot fully clockwise for maximum sensitivity.
- 2) Turn the upper pot fully CCW for minimum hold time.
- 3) Plug in the target Item; if there is a nominal Voltage present when the Item is Off (such as a VCR with "some active circuits") adjust the lower Gain pot CCW until the VS2 gives an "open" indication (the LED turns Off).

- 4) Turn the Item On & Off, adjusting the pot for On/Off transitions of the indicator LED.
- 5) Adjust the upper Delay pot CW if a dropout delay longer than 50mS is desired - Fully CW gives 8 Seconds of ON time after a turn-off. The noise rejection time to avoid false turn-Ons remains constant at 1mS.

NOTE: Most gear does not allow sensing of internal Voltages without opening the unit. This should only be done after proper training, and care should be taken to avoid connecting to hazardous Voltage levels. For most types of equipment (some VCRs, most Stereos, and TVs) an LS2, CS2, or AV2 is a more optimum choice.

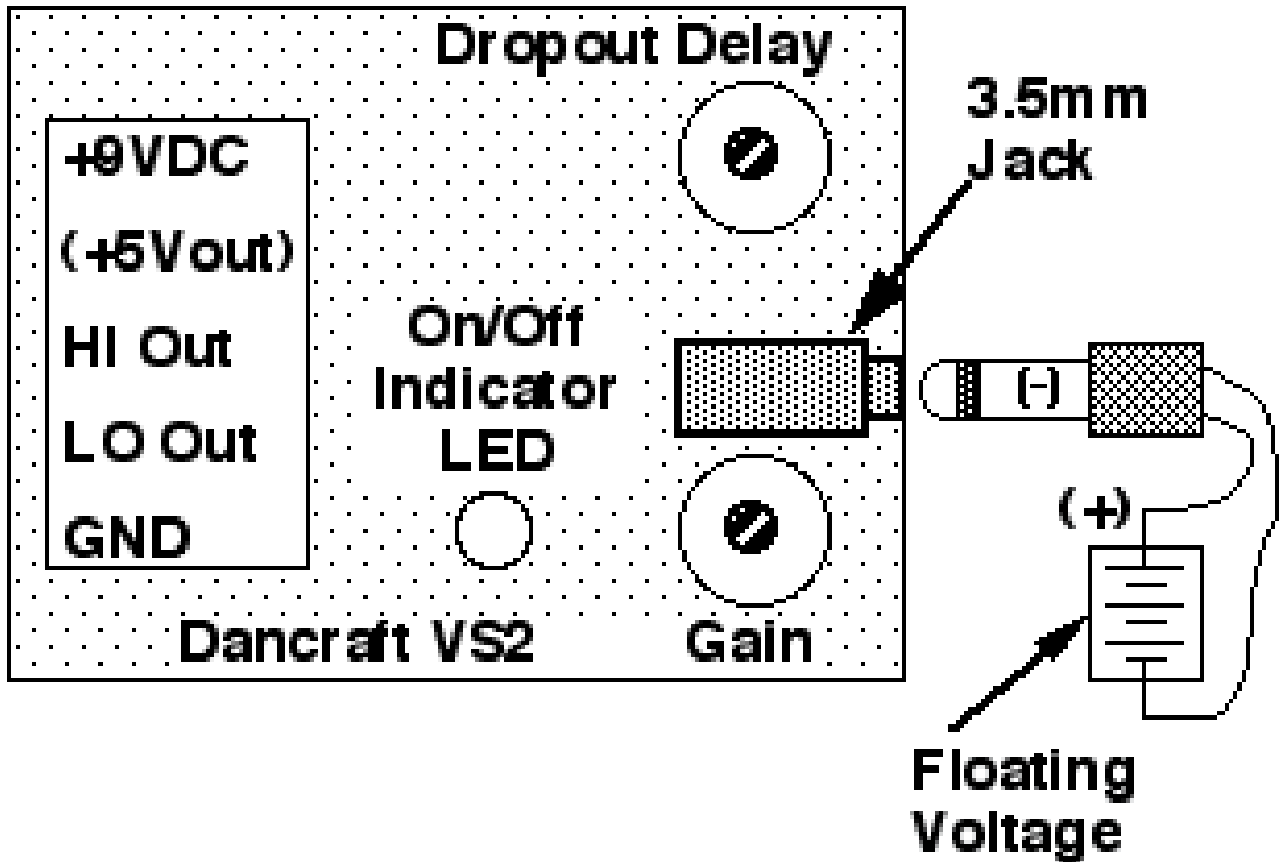


Figure 1: Connecting the floating Voltage to a VS2-1 Sensor

AV2 Voltage sensor

The **AV2 Voltage sensor** is designed to allow an AC Voltage generated by any Item to be sensed, such as the Video output of a VCR or the line-level Audio of a Stereo. When an adjustable level (0.25V to 10V) of AC Voltage is exceeded, the VS2 will report its "Closed" Status by either reporting back to **IR Master** via 3LAN (-3), or for the stand-alone versions (-1) by changing the HI output from Open Circuit to the Supplied Voltage level through a 430½ current-limiting resistor, and the LO output from Open Circuit to a logic LO capable of sinking up to 100mA.

Properly installed, it provides a convenient means of sensing any Audio or Video Voltage as an indicator of On/Off status or equipment Mode.

Installation of the AV2:

- 1) Mount the AV2 gray snap-in track securely using screws or double-stick tape near the target equipment.
- 2) Snap the AV2 into position, and connect either or both inputs from the source gear via the 3.5mm (1/8") jack. See Figure 1.
- 3) Make sure that both Tips of the jacks (if both are used) are connected to the signal side of the source being sensed as both barrels are connected together in the AV2.
- 4a) For the (-3) 3LAN version, connect the IN RJ-11 connector (with up to 800' of cable) to the next upstream 3LAN OUT jack on the "upstream" 3LAN. Connect the next downstream 3LAN board with up to 800' of cable to the CS2's OUT jack.

NOTE: If it is the first 3LAN board in the Daisy Chain, the shrink-wrapped end of the 10' adapter cable connects to the IN RJ-11 on the Sensor and the other end connects to the 3LAN jack on the back of the IR Master.

- 4b) For the (-1) stand-alone version, connect a 9-12VDC power source between the + and G terminals at the ends of the terminal board. Connect the desired output (H or L) to your Input.

NOTE: The unlabelled terminal is a +5 VDC @ 10mA Output.

Adjustment of the AV2:

- 1) Turn the lower pot fully clockwise for maximum sensitivity.
- 2) Turn the upper pot fully CCW for minimum hold time.
- 3) Plug in the target Item; if there is a nominal Voltage present when the Item is Off (such as some AC line pickup) adjust the lower Gain pot CCW until the AV2 gives an "open" indication (the LED turns Off).
- 4) Turn the Item On & Off, adjusting the pot for On/Off transitions of the indicator LED.
- 5) Adjust the upper Delay pot CW if a dropout delay longer than 50mS is desired - Fully CW gives 8 Seconds of ON time after a turn-off. The noise rejection time to avoid false turn-Ons remains constant at 1mS.

NOTE: The longer dropout times allow connection to an Audio source that may have quiet periods in the programming. For some types of Audio (some CD changers and some Audio styles) an LS2, CS2, or VS2 is a more optimum choice.

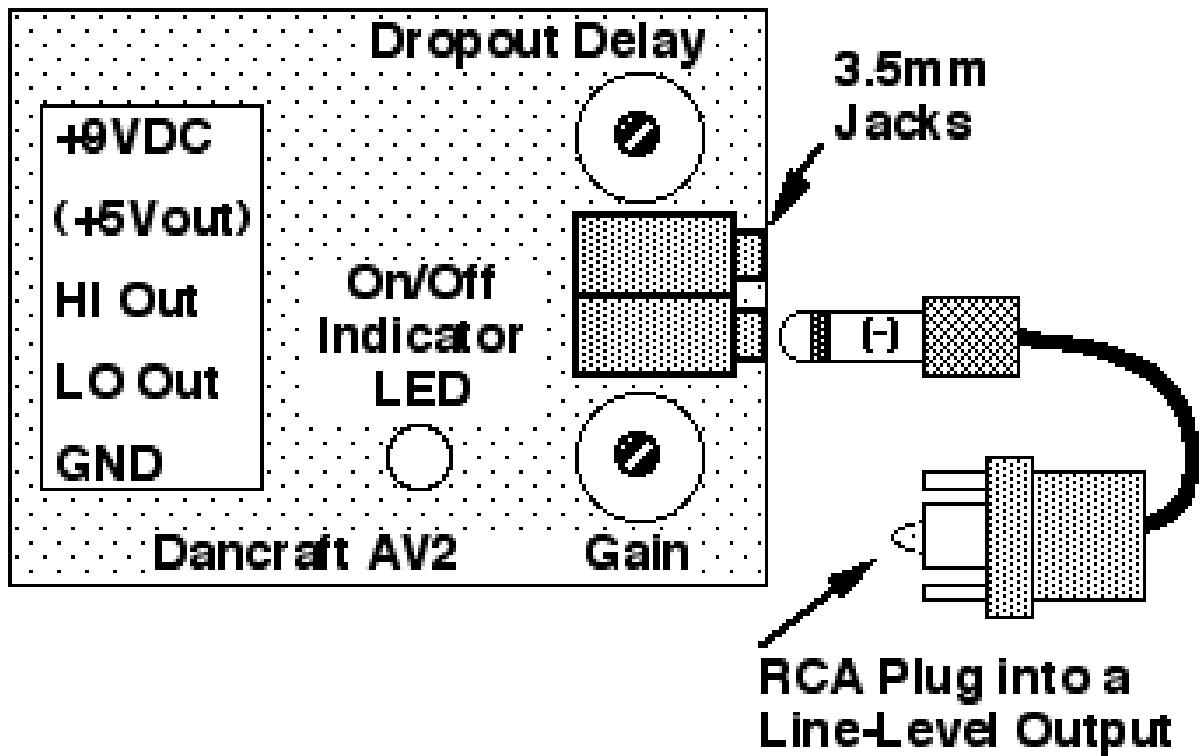


Figure 1: Connecting the A/V Voltage to an AV2-1 Sensor

LS2 Light sensor

The **LS2 Light sensor** is designed to allow a light level generated by any Item to be sensed, such as the ambient lighting level in a room, or the Mode LED on a TV. When an adjustable level of light sensed by the stick-on sensor head is exceeded, the LS2 will report its "Closed" Status by either reporting back to **IR Master** via 3LAN (-3), or for the stand-alone versions (-1) by changing the HI output from Open Circuit to the Supplied Voltage level through a 430½ current-limiting resistor, and the LO output from Open Circuit to a logic LO capable of sinking up to 100mA.

Properly installed, it provides a convenient means of sensing any level of light as an indicator of On/Off status or equipment Mode.

Installation of the LS2:

- 1) Mount the LS2 gray snap-in track securely using screws or double-stick tape near the target equipment.
- 2) Snap the LS2 into position, and connect the input plug on the supplied Sensor head to the 3.5mm (1/8") jack. See Figure 1.
- 3) Stick the Sensor head over the light source being monitored. A black blocking plate is included for keeping ambient light from entering the sensor (if needed).

4a) For the (-3) 3LAN version, connect the IN RJ-11 connector (with up to 800' of cable) to the next upstream 3LAN OUT jack on the "upstream" 3LAN. Connect the next downstream 3LAN board with up to 800' of cable to the CS2's OUT jack.

NOTE: If it is the first 3LAN board in the Daisy Chain, the shrink-wrapped end of the 10' adapter cable connects to the IN RJ-11 on the Sensor and the other end connects to the 3LAN jack on the back of the IR Master.

4b) For the (-1) stand-alone version, connect a 9-12VDC power source between the + and G terminals at the ends of the terminal board. Connect the desired output (H or L) to your Input.

NOTE: The unlabelled terminal is a +5 VDC @ 10mA Output.

Adjustment of the LS2:

- 1) Turn the lower pot fully clockwise for maximum sensitivity.
- 2) Turn the upper pot fully CCW for minimum hold time.
- 3) Turn Off the target light source; if there is a nominal light level present when the Item is Off (such as some ambient light pickup) adjust the lower Gain pot CCW until the LS2 gives an "open" indication (the LED turns Off).
- 4) Turn the light source On & Off, adjusting the pot for On/Off transitions of the indicator LED.
- 5) Adjust the upper Delay pot CW if a dropout delay longer than 50mS is desired - Fully CW gives 8 Seconds of ON time after a turn-off. The noise rejection time to avoid false turn-Ons remains constant at 1mS.

NOTE: Check for maximum ambient lighting levels to ensure there are no false indications from stray light pickup. Use the supplied blocking plate to reduce stray light. For some types of sensing (where ambient light will always be a concern due to adjacent light sources inside the Unit) an AV2, CS2, or VS2 may be a more optimum choice.

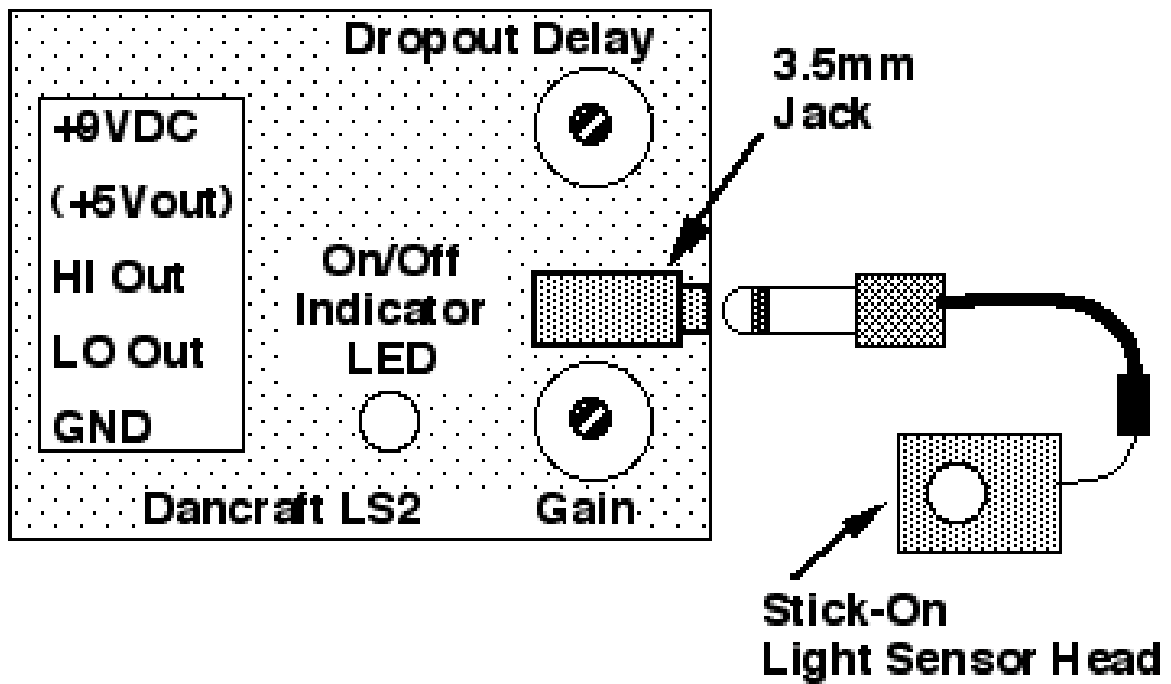


Figure 1: Attaching the Sensor Head to a LS2-1 Sensor

3LAN Hook-up for IR MASTER Model Cybermate

3LAN devices include six Sensor types:

- CS2** Current Sensor (non-contact, 5W to 2000W)
- LS2** Light Sensor (with stick-on Sensor head)
- FB2** Flyback Sensor (for CRT Energy sensing)
- AV2** Audio / Video sensor (with dual inputs)
- VS2** Voltage Sensor (0.4V - 50V true Differential input)
- TS2** Temperature Sensor (with adjustable trip-point)

and one Combination Type:

TSR, which contains an analog temperature sensor, a dry contact input, and a relay output.

These devices daisy chain off Cybermate's 3LAN port via RJ11 6/4 cables. A 3LAN Tee can also be used anywhere in the string to create a new branch or can be used to have all sensors home run to IR Master Cybermate.

TSR

The **TSR** 3LAN-only board contains three independent functions: an Analog Temperature sensor, a Digital Input sensor, and a Digital Output relay . The Temperature will be read out and the Relay Output will be Opened or Closed on demand by IR Master. The digital Input will report only when the input contact connected to it is closed.

Properly installed, it provides a convenient means of sensing a local Temperature, commanding a Relay On or Off, and sensing a dry contact Input all in one package.

Installation of the TSR:

- 1) Mount the TSR using double-stick tape near the target equipment. The Temperature Sensor mounted on TSR will report the local ambient when polled. Its accuracy is $\pm 1^{\circ}\text{C}$, from 55°C to 125°C .
- 2) Connect the input Switch Input to Gnd via any dry contact. Less than $100\frac{1}{2}$ is Closed, greater than 1 Meg Ohm is Open. Note that the contact must be Closed for this Input to be "found" by IR Master. See Figure 1.
- 3) Connect the two Relay Output terminals in series with the load to be controlled. The contact Rating is: 200 Vac/dc; switched 0.5 Amp; Carry: 1.2 Amp.
- 4) Connect the IN RJ-11 connector (with up to 800' of cable) to the next upstream 3LAN OUT jack on the "upstream" 3LAN. Connect the next downstream 3LAN board with up to 800' of cable to the CS2's OUT jack.

NOTES:

Each new 3LAN device should be connected "one at a time" so you can determine its unique address and give it a name.

With the **TSR**, you will first need to jumper the Switch Input so that it can be found by the software, otherwise only the Temperature Sensor and Relay will be found.

To do the search using **WHAM** or Couch Potato, do a **Search for New Devices** under **3LAN Setup**. A new Switch Sensor, Relay, and Temperature Sensor should be found. Give each of these a logical name (like its location) so it can be used in your macros.

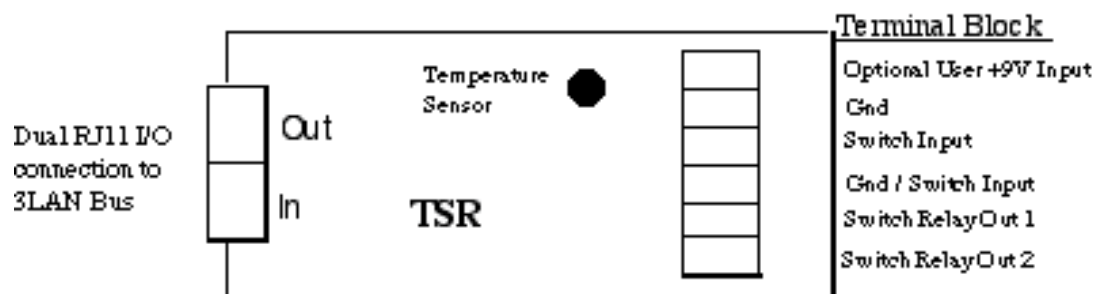


Figure 1: Attaching to a TSR Board

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