

Figure 1. CNCS, AC Current Sensor

DESCRIPTION:

The CNCS, illustrated in figure 1, measures the average current of each half cycle of an AC load. The current sensing circuitry is highly sensitive with a wide range of adjustment. The high sensitivity makes the CNCS ideally suited for use with low power units such as VCRs, TV tuners, and satellite receivers. The wide range makes the CNCS ideally suited for medium and high powered units such as TV sets, video projectors, and power amplifiers.

The CNCS provides an isolated relay closure when the average current drawn by a monitored unit exceeds the FULL LOAD preset threshold.

A second set of relay contacts determine whether the average current is less than FULL LOAD, but more than no load. This PARTIAL LOAD threshold is also adjustable. The FULL LOAD and PARTIAL LOAD relay closures are mutually exclusive so that only one closure is ever connected to the common. However, FULL LOAD and PARTIAL LOAD indicators are implemented, so that at FULL LOAD, both LEDs are illuminated.

Threshold adjustments are accomplished by use of a 15-turn precision potentiometer (POT). The POT permits highly accurate and repeatable current threshold settings.

LEADING SPECIFICATIONS:

Table 1 provides a summary of leading specifications for the CNCS. Dimensions and weight are approximations rounded to the nearest tenth unit.

Table 1. Leading Specifications

SPECIFICATION	DETAILS
Power Requirements	24 VDC, Load Factor of 3 W
Maximum AC Load	8.5 A, 1 KW at 120 VAC
Minimum AC Load	0.033 A, 4 W at 120 VAC
Voltage Range	0 to 220 VAC, 45 to 65 Hz
Relay Contact Rating	1 A, 24 V (AC or DC)

Table 1. Leading Specifications (continued)

SPECIFICATION	DETAILS
Dimensions & Weight	Height: 1.8 in (4.6 cm) Width: 4.2 in (10.7 cm) Depth: 4.3 in (10.9 cm) Weight: 1.8 lb (0.8 kg)
Construction	18 gauge cold-rolled steel, black painted finish

LED INDICATORS:**PWR (Power)**

The green LED illuminates when 24 volts DC is supplied to the CNCS.

FULL LOAD

The red LED illuminates when FULL LOAD threshold has been exceeded.

PARTIAL LOAD

The yellow LED illuminates when PARTIAL LOAD threshold has been exceeded.

USER ADJUSTMENTS:**FULL LOAD Threshold**

Clockwise (CW) rotation of the 15-turn POT increases threshold (i.e., reduces sensitivity) and changes partial load threshold, accordingly.

PARTIAL LOAD Threshold

Clockwise rotation of the 15-turn POT increases threshold (i.e., reduces sensitivity).

THRESHOLD ADJUSTMENTS:

Refer to figure 2 for a block diagram illustrating hookup connections for the CNCS.

NOTES

1. Do not attempt adjustments during periods of high or low power line voltage or voltage fluctuations.
2. Partial power output may be used as the primary output if increased sensitivity is required.
3. If the partial power output is not required, the partial power adjustment may be placed in any position which does not cause LED flashing or relay chatter.

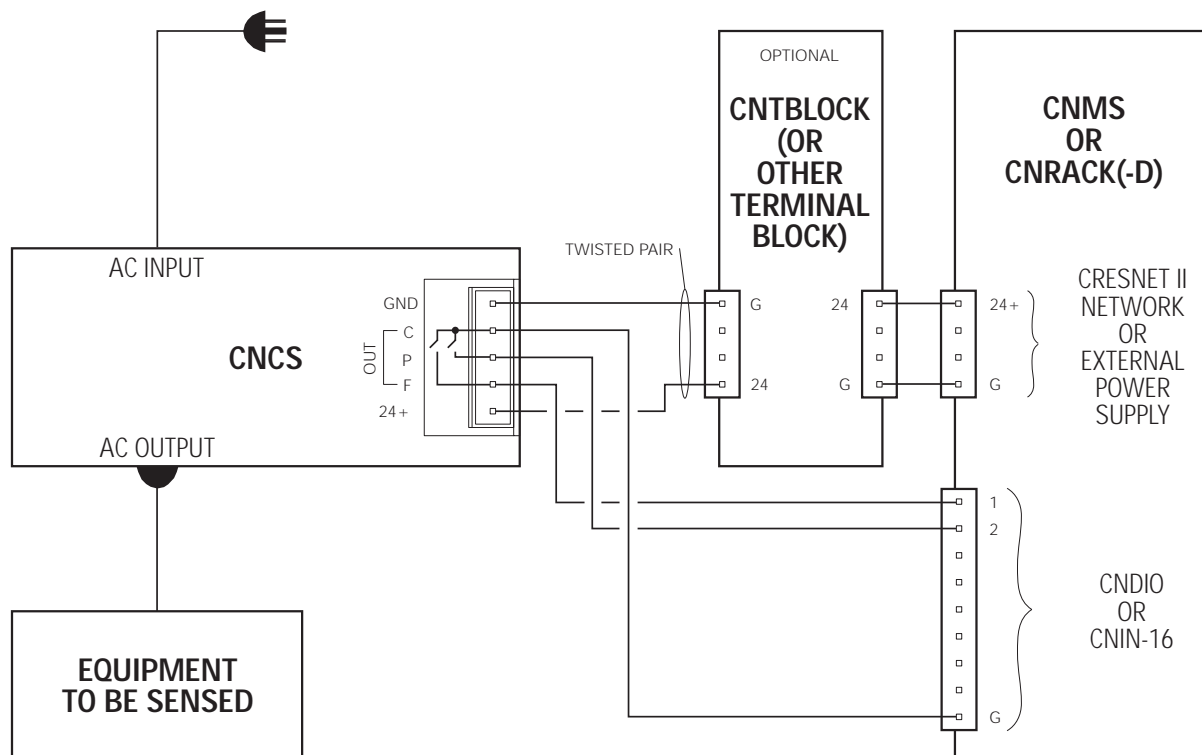


Figure 2. CNCS, Hookup Block Diagram

Low Power (Loads such as VCRs)

1. Rotate FULL LOAD POT 15 turns counterclockwise (CCW).
2. Rotate PARTIAL LOAD POT 15 turns CCW.
3. Place VCR in "ON" mode. Red and yellow LEDs should illuminate.
4. Slowly rotate FULL LOAD POT CW until red LED flashes and relay chatters.
5. Place VCR in "OFF" (i.e., standby) mode. Red LED should extinguish.
6. Slowly rotate FULL LOAD POT CCW and count turns until red LED flashes and relay chatters.

NOTE

If the LED flash and relay chatter can not be achieved in step 6, start procedure again with step 1. After performing step 4, rotate FULL LOAD POT two turns CCW. Continue procedure with step 5, omitting steps 6 and 7.

7. Rotate FULL LOAD POT CW half the number of turns required in the previous step. For example, if the POT was rotated four CCW turns in step 6, the POT should then be rotated CW two turns for this step.
8. Rotate PARTIAL LOAD POT CW until yellow LED flashes and relay chatters.
9. Rotate PARTIAL LOAD POT two to five turns CCW.

High Power with Partial Power (Loads such as TV Sets)

1. Rotate FULL LOAD POT 15 turns CW.
2. Rotate PARTIAL LOAD POT 15 turns CCW.
3. Place TV in standby mode.
4. Slowly rotate FULL LOAD POT CCW until yellow LED flashes and relay chatters.
5. Slowly rotate PARTIAL LOAD POT CW until yellow LED extinguishes.
6. Slowly rotate PARTIAL LOAD POT CW for an additional two turns.
7. Slowly rotate FULL LOAD POT CCW until yellow LED flashes and relay chatters.
8. Slowly rotate PARTIAL LOAD POT CCW for an additional two turns. Yellow LED should remain illuminated.

High Power (Loads such as TV Sets)

1. Rotate FULL LOAD POT 15 turns CW.
2. Rotate PARTIAL LOAD POT 15 turns CCW.
3. Place TV in "ON" mode. Red and yellow LEDs should be extinguished.
4. Slowly rotate FULL LOAD POT CCW until red LED flashes and relay chatters.
5. Slowly rotate FULL LOAD POT CCW for an additional two to four turns.

PROGRAMMING:

A basic CNCS SIMPL program is illustrated in figure 4. The sample program illustrates discrete ON/OFF for toggle type IR control.

NOTE

The program example is provided as a sample of CNCS implementation and may not be relevant for every application.

An example follows the figure to illustrate the CRESNET II screen display for CNCS signal assignment. The "screen saves" in the example are accessible from the "Define Rack" section of the SIMPL-I Menu in the CRESNET II Workshop and are shown for the CNDIO (which is built-in to the CRESNET II MiniSystem) and CNIN-16 (which can be inserted into the CRESNET II MiniSystem or RACK).

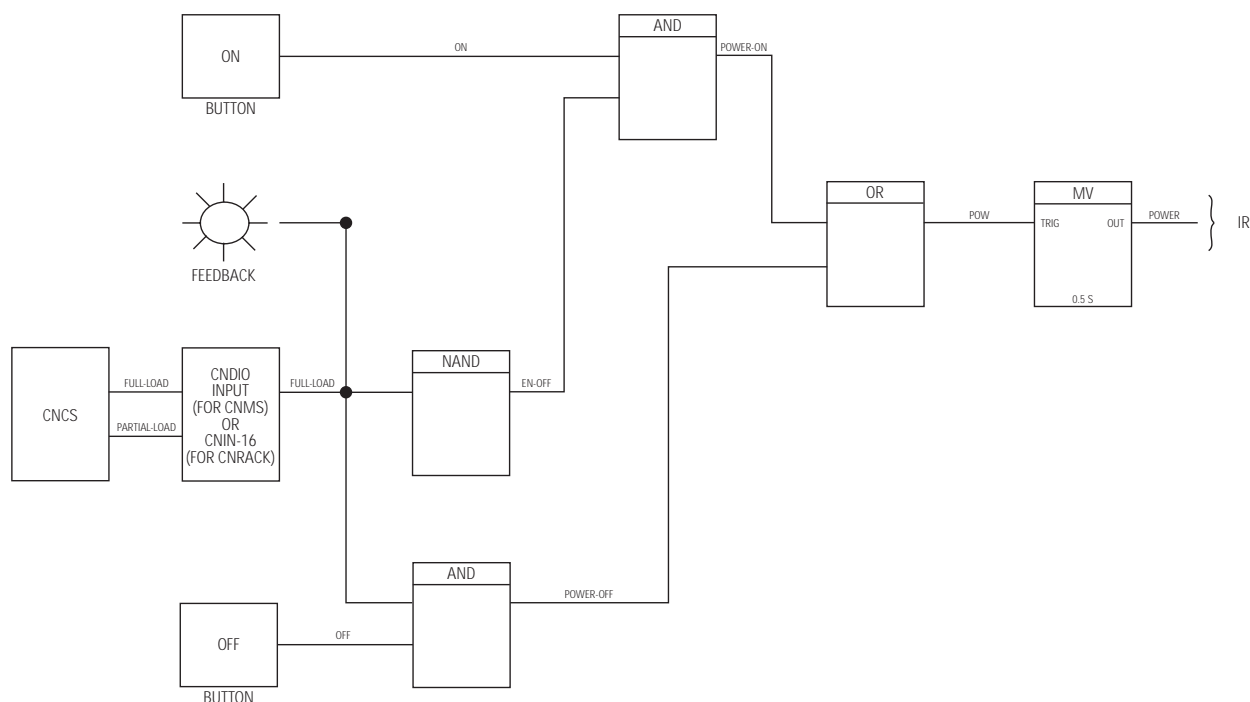


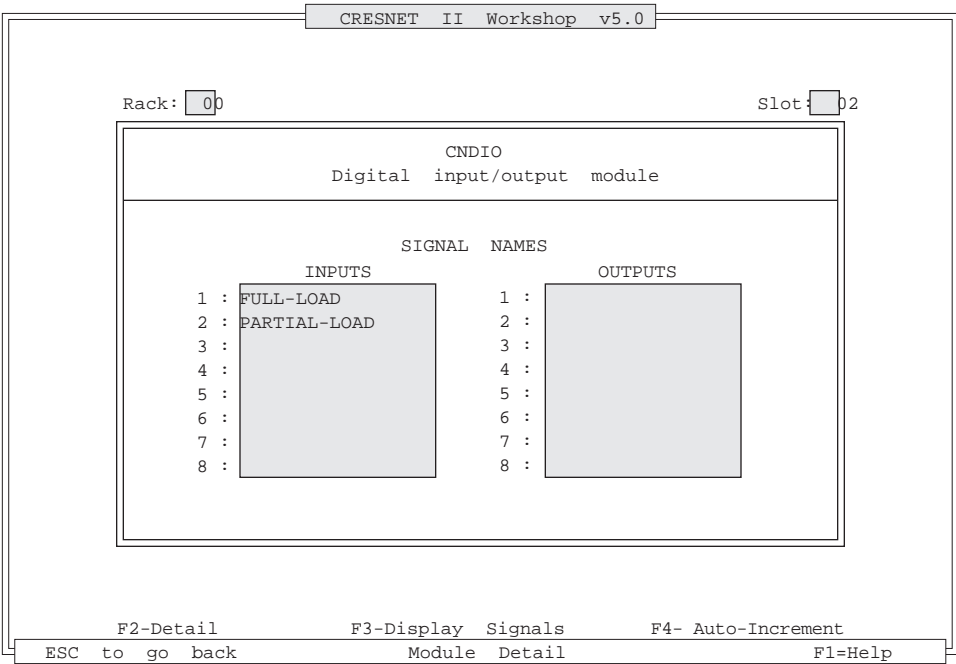
Figure 4. CNCS, SIMPL Program

FURTHER INQUIRIES:

If after reviewing this Operations Guide you still have additional questions, please contact a CRESTRON technical representative by dialing (888) CRESTRON [(888) 273-7876] or (201) 894-0660.

Program Example:

CNDIO Signal Assignment



CNIN-16 Signal Assignment

