Precision Circuits Inc

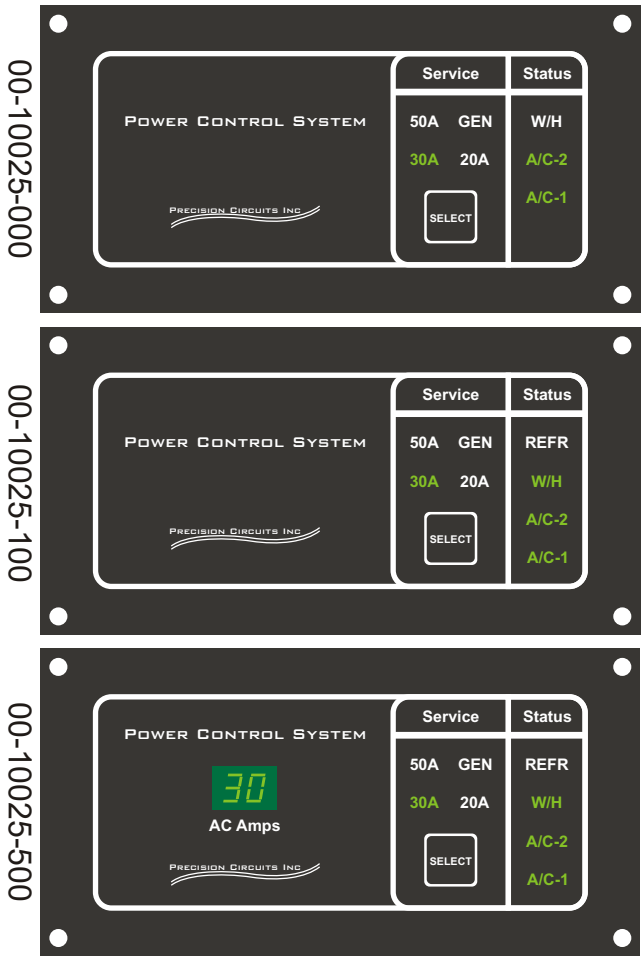
MINI POWER CONTROL SYSTEM

I/O Modules

00-10024-000

00-10024-100

Display Panels



120V Energy Management features usually found in high end Class A Motor homes are now made affordable for all RV's including Class C and Trailer Market. The Mini-PCS monitors the total AC current of an RV and prevents circuit breaker tripping by momentarily shedding up to four loads. As the owner turns on additional appliances such as a Microwave, Coffee Pot, or Hair Dryer, the Mini-PCS can shed two 120VAC appliances such as the Refrigerator and Water Heater, then if additional reduction in power is required the second air conditioner, and lastly the first air conditioner is shed. As the owner selected appliances are turned off, the Mini-PCS will automatically turn power back on to each of the shed loads in reverse sequence. The Mini-PCS will constantly monitor 120VAC RV power and shed and restore power to the four controlled loads.

The I/O Module is installed inside any circuit breaker panel and fits into a standard 3/4" knock-out hole. The screw terminals are used to make the 120VAC connections. Outside the circuit breaker panel a data cable is connected through the 3/4" knock-out which goes to the Display Panel. The Display Panel has a Data connector and also another connector to control the air conditioner units through low voltage signals.

Key Features:

1. Helps owners who are use to 50amp service, deal with the common situation of camp grounds where only 30amp service is available.
2. Limits total current to 30 amps, when 50amp service is not available.
3. Minimizes Circuit Breaker Tripping.
4. Monitors current draw for entire RV including owner added loads.
5. Learns controlled appliance current draw.
6. Allows 2 air conditioners to run on 30 amp service
   when other appliances are not in use.
7. I/O Module fits into a standard 3/4" knock-out
   Two Relays capable of 120VAC 18 Amp load.
8. 120VAC Sense
   I/O Module has built in 120VAC sense circuitry so that it knows when shore power is available and does not draw on the battery when dry camping. No AC wall adaptor or other sensors required.
9. Display Panel has built in relays to control two air conditioners, no other modules required.
10. All relays are normally closed allowing full operation of appliance in case of fault.

5403 Patton Drive Unit 222 Lisle, IL 60532 www.PrecisionCircuitsInc.com 630-515-9100 Rev D

MINI-POWER CONTROL SYSTEM

Operation:

30-amp Service - PCS senses 0VAC between L1 and L2. The I/O Module has a current sensor which monitors the current on the neutral wire. When the current exceeds the 30-amp limit, because possibly the owner has turned on the Microwave, the **MINI-PCS** will limit the current by shedding appliances. Once the total RV current has dropped, for example because an owner operated appliance has been turned off, the **MINI-PCS** will reverse the above procedure, returning power to appliances whose operation was not immediately critical. Appliance shed order is easily determined by the manufacturer by wiring the appliances to the appropriate number relay.

20-amp Service - MINI-PCS senses 0VAC between L1 and L2, and the owner selects 20A on the Remote Display. **MINI-PCS** performs the same functions as above except that it limits total current to 20amps.

Generator - MINI-PCS senses power to the Genenerator Hour Meter. In this mode **MINI-PCS** assumes enough power is available and goes to sleep. It displays the fact that Gen-Set is running, that all Loads are powered.

50-amp Service - MINI-PCS senses 240VAC between L1 and L2 to determine this mode of operation. In this mode **MINI-PCS** assumes enough power is available and goes to sleep. It displays the fact that 50-amp Service is available and that all Loads are powered.

I/O Module - Features include:

- Current Sensor
- Two 18amp Relays
- Power Line sensing
- Two Screw Terminal configurations available

Remote Display - Features include:

- Displays Service Type
- Displays the Status of the Controlled Appliances
- Custom Load Names available

Specifications:

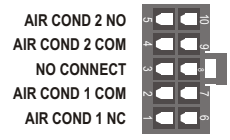
Part Numbers:	00-10024-000	Mini- PCS I/O Module, w/Vertical Terminals
	00-10024-100	Mini- PCS I/O Module, w/Right Angle Screw Terminals
	00-10025-000	Mini-PCS Display Panel, 3 Loads, W/H, A/C-2, A/C-1
	00-10025-100	Mini-PCS Display Panel, 4 Loads, Refr, W/H, A/C-2, A/C-1
	00-10025-500	Mini-PCS Display Panel, Amp Meter, 4 Loads, Refr, W/H, A/C-2, A/C-1
Service type:	120/240VAC max	
Relays:	(2) DC 16VDC, 1.0A (Display Panel, Thermostat)	
	(2) AC 120VAC, 18A, 1HP (I/O Module)	
Delay:	2 minute minimum off time on all loads	
Environment:	Indoor, Out of direct weather	
Dimensions:	6.25" wide, 3.20" high, 1.0" deep	
Mounting Hole:	5.45" wide, 2.91" high (centered with .15" clearance), .188" mount holes	

	Minimum	Typical	Maximum
Volts DC	9.0VDC	12.0VDC	16.0VDC
Volts AC	90VAC/line	240VAC	135VAC/line
Ambient Temperature	-40°C		-85°C

Display Panel Low Voltage Connector:

01 AIR COND 1 NC
02 AIR COND 1 COM
03 NO CONNECT
04 AIR COND 2 COM
05 AIR COND 2 NO
06 AIR COND 1 NO
07 GEN SET RUN
08 COACH BAT
09 GROUND
10 AIR COND 2 NC

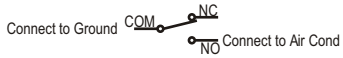
Mating Connector: MOLEX MINI-FIT JR 10-PIN, #39-01-2100
Contact: MOLEX MINI-FIT JR 5556 18-24 AWG, 39-00-0039



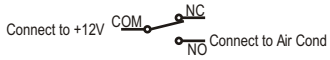
View of connector is from contact insertion side

Four different Air Condition Compressor wiring options are shown above. Relay Contacts are drawn in Non-Shed or Operation Mode.

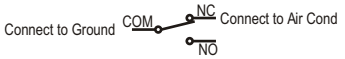
Option 1, A/C sheds with Ground Signal



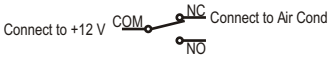
Option 2, A/C sheds with +12V Signal

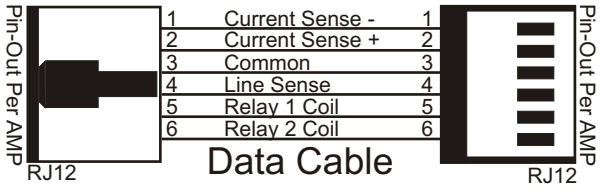


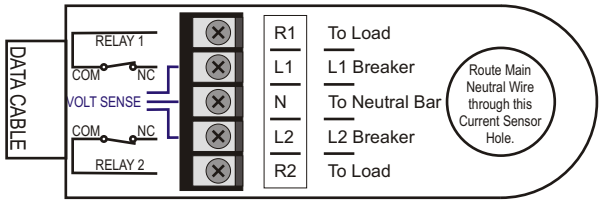
Option 3, A/C operates with Ground Signal



Option 4, A/C operates with +12V Signal







I/O Module Screw Terminal Block Torque: 9-in-lbs

Note: The three Voltage Sense terminals must always be wired for proper Service Type detection, even if corresponding relays are not used.