Furman Sound, Inc.
1997 South McDowell Blvd.
Petaluma, California 94954-6919 USA
Phone: 707-763-1010
Fax: 707-763-1310
Web: http://www.furmansound.com
E-mail: techsupport@furmansound.com

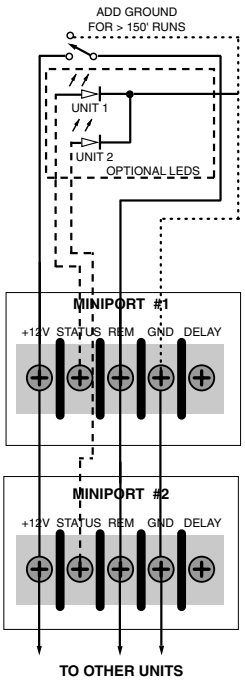
MiniPort AC Power Relays

MODELS MiniPort-15/15Q, MiniPort-20/20Q

Instruction Sheet

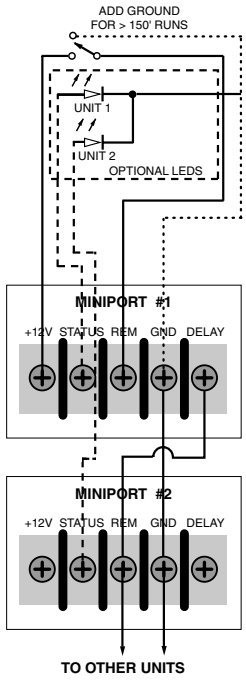
MiniPort-20 Wiring Diagram

Figure 1. *Connections for single or multiple MiniPort-20 units, Momentary or Maintained mode.*



For control from more than one location, use Momentary Mode and parallel switch connections.

Figure 2. *Connections for amplifier inrush current reduction, using delayed turn-on feature. (Turn-off is not delayed.)*



If using the delay feature and momentary switches, first unit must be in Momentary Mode, all others in Maintained Mode. For control from more than one location, parallel switch connections to Unit 1.

General Information

MiniPort-20

The **MiniPort-20 Power Relay** provides a 20 amp relay switched 120 VAC outlet, with a terminal strip that allows remote control via safe, inexpensive, low voltage Class 2 control wiring. The **MiniPort-15** is identical to the MiniPort-20, but is rated at 15 amps. Both units include an internal 12 VDC supply. They are housed in a rugged all-metal enclosure and come equipped with a heavy duty, 10 foot AC cord. The MiniPort-20 and -15 are listed by Underwriters' Laboratories (UL) for use in the U.S. and Canada. The MiniPort-15Q and 20Q, (see other side), are designed for quad box mounting and have fewer features.

The MiniPort-20 and MiniPort-15 can be used independently with an RS-1 System Control Panel, or with any other momentary or maintained-action SPST switch. MiniPorts can also be used with the Furman PowerLink or PowerPort for extra capacity.

With the addition of a PS-REL AC Relay, the MiniPort can also be used to extend the capacity of a Furman PS-8R or PS-PRO Power Sequencer — or any product with a switched outlet, such as a receiver/amp controlled with a wireless remote. When used in this manner, the MiniPort is switched on or off when the outlet that the PS-REL is plugged into goes on or off.

Momentary vs. Maintained Contact Switching

An on-off switch of either kind may be used to actuate the MiniPort. Maintained switches, such as most toggle switches, push-on/push-off button switches, and the Furman RS-1 locking key switch, stay open until thrown, then stay closed until thrown again. Momentary switches, usually pushbutton types, are normally open and stay closed only as long as the button is pressed.

Maintained switches are most convenient when there is only one remote switch location; momentary switches allow turn-on or turn-off from multiple locations.

MiniPorts come factory-configured for maintained operation. They may be easily converted to momentary operation by moving a jumper on the MiniPort's circuit board. To do this, first disconnect the unit from AC power. Remove the four screws that secure the bottom cover. In the middle of the circuit board (as viewed from the bottom of the unit), there are two pairs of terminals, one labeled "MAINTAINED" and the other "MOMENTARY." There is a small black jumper linking the MAINTAINED terminals. Slide it up and off, and replace it securely over the MOMENTARY terminals. Reattach the cover.

Maintained Mode

In the simplest configuration, to control a single MiniPort from a single remote location, connect a maintained-action SPST switch to the REM and +12V terminals. Power will be available at the MiniPort-20's AC outlet when the switch is open, and will be removed when it is closed. If the cable run is greater than 150 feet, we recommend that the REM wire be tied to ground during on operation rather than leaving it floating, using an SPDT switch as shown in Figure 1.

Momentary Mode

In Momentary Mode, the MiniPort-20 and MiniPort-15 have "memory" — they only need a momentary signal on the remote terminal to change their state from OFF to ON, or ON to OFF.

When first plugged in (or after power is lost and reapplied for any reason) the memory state is OFF, meaning that no power will be available at the outlet. It will stay OFF until turned ON by a momentary connection of the REM terminal to +12V. It will then stay ON until turned OFF by a second momentary connection. The ON or OFF state begins on the rising edge of the signal.

The Furman RS-1 Remote System Control Panel is an attractively finished key switch designed for use in single-gang wall mount boxes.It can control, from one location, most Furman power products that have remote capability. The RS-2 Remote System Control Panel is identical to the RS-1 in most respects, but with a momentary function rather than maintained. The RS-2 is ideal for installations requiring multiple remote switches.

IMPORTANT NOTE REGARDING MOMENTARY MODE:

If multiple MiniPorts are being controlled in Momentary Mode, power loss to any one of the units will likely cause its memory to be different than that of the other units. Not only will this be irritating, it can also be dangerous, as it may be ON when the others are OFF. To correct this potential problem (as exists in any simple momentary switch product), our thoughtful engineers devised a simple method of holding the switch down (REM to +12) for at least four seconds. This resets all units to the OFF condition, and avoids having to disconnect AC power from all units.

Linking Multiple Units

Multiple MiniPorts may be connected together so that all are controlled by a single switch closure. All the units must be set to the same mode depending on the type of switch or switches to be used (use momentary mode and momentary switches if more than one switch is required.) All the units must be paralleled by tying together all the +12V terminals, all the REM terminals, and all the GND terminals (see Figure 1).

Multiple MiniPorts may be linked so that they all turn on simultaneously, as discussed above, or in a delayed sequence. In a delayed sequence, only the turn-ons are delayed (all turn-offs occur simultaneously.) This feature is particularly useful in staggering the turn-on of large power amps to avoid large inrush currents that might trip the house circuit breakers. The delay interval is approximately two to three seconds (the first unit turns on with the switch closure, the second in the chain about 3 seconds later, the third unit 3 seconds after the second, etc.)

The choice of delayed or simultaneous linking is available regardless of whether maintained or momentary switching is used. However, if delayed linking is used with momentary switching, only the first MiniPort should be set to momentary mode, and all momentary switches should be connected in parallel between the first unit's +12V and REM terminals. The second and subsequent MiniPorts must be left in maintained mode. See Figure 2.

Optional Remote LED Indicator

The MiniPort terminal labeled STATUS is an output that may be used to illuminate an LED at a remote location to indicate that power is available at the MiniPort's outlets. If it is HIGH (+12V relative to the GND terminal), the unit is ON; if LOW, the unit is OFF. Simply connect the indicator LED between STATUS and GND (do not use a series resistor). If multiple units are used, a separate LED must be used to indicate the status of each. Do not connect the STATUS terminals of multiple units together.

Knockout Holes

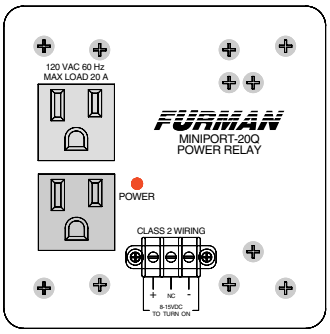
Both the MiniPort-15 and the MiniPort-20 come equipped with two knockout holes for permanent installation with 1/2" conduit — one on the top surface, the other on the bottom. Use of the bottom knockout hole requires removing the AC cord. The National Electrical Code allows for up to eleven 14awg conductors of THHN/THWN/THWN-2 type in 1/2" conduit (MiniPort-15) or up to eight 12awg conductors (MiniPort-20). For grounding and other details, please consult a licensed electrician.

MiniPort 20-Q/15Q Quad Box Power Relays

The new 20-amp MiniPort-20Q and the MiniPort-15Q (15 amps) provide a pair of remotely-activated, relay-controlled outlets, set up for mounting in any standard electrical quad box, either directly or with a "mud ring" attached.

Due to the space limitations of a quad box, the MiniPort "Q" models have a smaller feature set than the MiniPort-15 and MiniPort-20.

MiniPort-Q's have no internal power supply; a maintained 8-15 VDC supply capable of supplying 10 mA is required to turn on the outlets.



MiniPort-20Q

This can be supplied by a Furman PowerLink, ASD-120, or a PS-8R (with a simple internal modification to the PS-8R.)

Solder pads are available on the circuit board to allow control wiring from inside the quad box.

Dimensions

The MiniPorts' body dimensions are: 5.5" (H) x 3.75" (W) x 2" (D). The baseplate is 5.25" square.

Differences From the Earlier MiniPort

The MiniPort-20 and MiniPort-15 are upgraded versions of an earlier product designated simply "MiniPort". These new MiniPorts are equipped for remote operation using either maintained or momentary contact switches to initiate the turn-on or turn-off. (The original MiniPort required maintained contact switches.) Also, a Delay Out terminal has been added to permit sequenced turn-on when multiple MiniPorts are linked. Finally, the new MiniPorts have the previously described knockout holes at top and bottom for permanent installation with 1/2" metal conduit.

Three Year Limited Warranty

All Furman MiniPort models are protected by a limited three year warranty, covering defects in materials and workmanship, provided that the registration card is filled out and returned by the customer. Otherwise, a one year warranty applies. Products must have a proof of purchase from a Furman authorized dealer. During this period, Furman will make any necessary repairs without charge for parts or labor. Shipping charges to the factory or repair station must be prepaid by the owner; return shipping charges (via UPS Ground) will be paid by Furman. This warranty applies only to the original owner and is not transferable. Also, it does not apply to repairs done other than by the Furman factory or its Authorized Repair Stations.

This warranty may be cancelled by Furman at its sole discretion if the unit has been subjected to physical abuse or has been modified in any way without written authorization from Furman. Furman's liability under this warranty is limited to repair or replacement of the defective unit.

Furman will not be responsible for incidental or consequential damages resulting from the use or misuse of its products. Some states do not allow the exclusion of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Service

Before returning any equipment for repair, please be sure that it is adequately packed and cushioned against damage in shipment, and that it is insured. We suggest that you save the original packaging and use it to ship the product for servicing. Also, please enclose a note giving your name, address, phone number and a description of the problem.

NOTE: All equipment being returned for repair must have a Return Authorization (RA) Number. To get an RA Number, please call the Furman Service Department (707-763-1010 ext. 40) between 8 a.m. and 5 p.m. U.S. Pacific Time.

Please display your RA Number prominently on the front of all packages.