

# Owner's Manual

## SPC-20X

### SEQUENCING POWER CONDITIONER EXPANSION UNIT



*Please be sure to read this manual before using this FSR electronic product. Additionally, to be sure of obtaining full protection under the terms of the Limited Warranty in the event that your original ownership documents are lost, fill out and return the Warranty Registration Card immediately. Also verify that the serial number on the Warranty Card matches the serial number on your unit.*

**FSR****POWER PRODUCT GROUP**

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## INTRODUCTION

Thank you for your purchase of an **FSR 16 AMP SEQUENCING POWER CONDITIONER EXPANSION UNIT(S) (SPC-20X)** and congratulations on your choice. This equipment, not only sequences the power turn on, it also provides maximum protection from the types of hazards faced by delicate analog and digital pro audio and video equipment.

Your SPC-20X provides the most complete and comprehensive protection from power line-related transient voltages, noise and wiring faults available. It combines a high voltage surge and transient suppressor with an RFI/EMI interference filter. The fast-acting suppression circuit responds in less than a nanosecond, clamping transient voltages to safe levels, the filter works to prevent noise from fluorescent lights, certain dimmers, radio transmitters, and similar sources of “electronic pollution” from contaminating the AC line and from there, leaking into sensitive audio, video, or computer circuits.

**What sets the FSR SPC Series apart from other sequencers and conditioners is the use of TRIACS as the switching element in stead of relays, which are prone to failure.** Also another distinguishing feature is the quantity, quality, and configuration of its suppression devices. These include MOV's, gas discharge tubes, fast-blow fuses, and high voltage inductors and capacitors.

This unique combination can safely absorb and dissipate large spikes from nearby lightning strikes and other sources as well as highly attenuate audible high frequency noise.

NOTE: SPC-20X requires that a safety ground be present for proper operation. Any attempt to operate the SPC-20X without a safety ground is considered improper operation and could invalidate the warranty.

### Effects of Lightning

Lightning is a natural phenomenon of overwhelming force that represents the most difficult circumstance faced by a power protection product. The degree of protection a SPC-20X can offer depends on the intensity of the strike. If lightning strikes a distant power line and causes a relatively small disturbance to reach your location, the spike suppressors in the SPC-20X will absorb the excess voltage invisibly and harmlessly. However, if lightning strikes the actual building where the SPC-20X is installed (or somewhere very nearby) some damage may be unavoidable due to the extremely high voltage and current present. If this does occur, most likely damage will be limited to the SPC-20X itself and will affect only certain spike suppression components (called varistors or MOV's.) In this “suicide” mode, the SPC-20X may sustain minor damage but generally will protect all equipment plugged into it from much more serious and costly damage as long as the equip-

ment is properly grounded. Proper grounding requires the use of three-prong AC cords, and that the building's outlets are actually grounded to earth as specified by the National Electrical Code.

Any SPC-20X known to have taken a direct lightning hit should be checked by a qualified technician or the FSR factory to determine whether the MOV's need replacement. **If the surge circuits indicator is not lit, there is definitely some damage. Some spike suppression capability may still be available, but there is no guarantee of this.**

For optimum protection, you should not rely exclusively on the SPC-20X to protect against a direct lightning hit. The first line of defense against lightning should be a lightning arrestor installed on your building's electrical service entrance. If your building does not have one, contact your local power company or a contractor to have one installed.

## FUNCTION

This is an expansion unit which means you can extend the proper sequencing of AC power circuits to accommodate as many additional loads as needed by the particular installation. Each SPC-20X will handle one 20 amp circuit (derated to 16 amps). The installation is straight forward, the first SPC-20X is connected to the main SPC-20 via the expansion connector and then any additional SPC-20X units are connected in a daisy chain fashion to the first SPC-20X.

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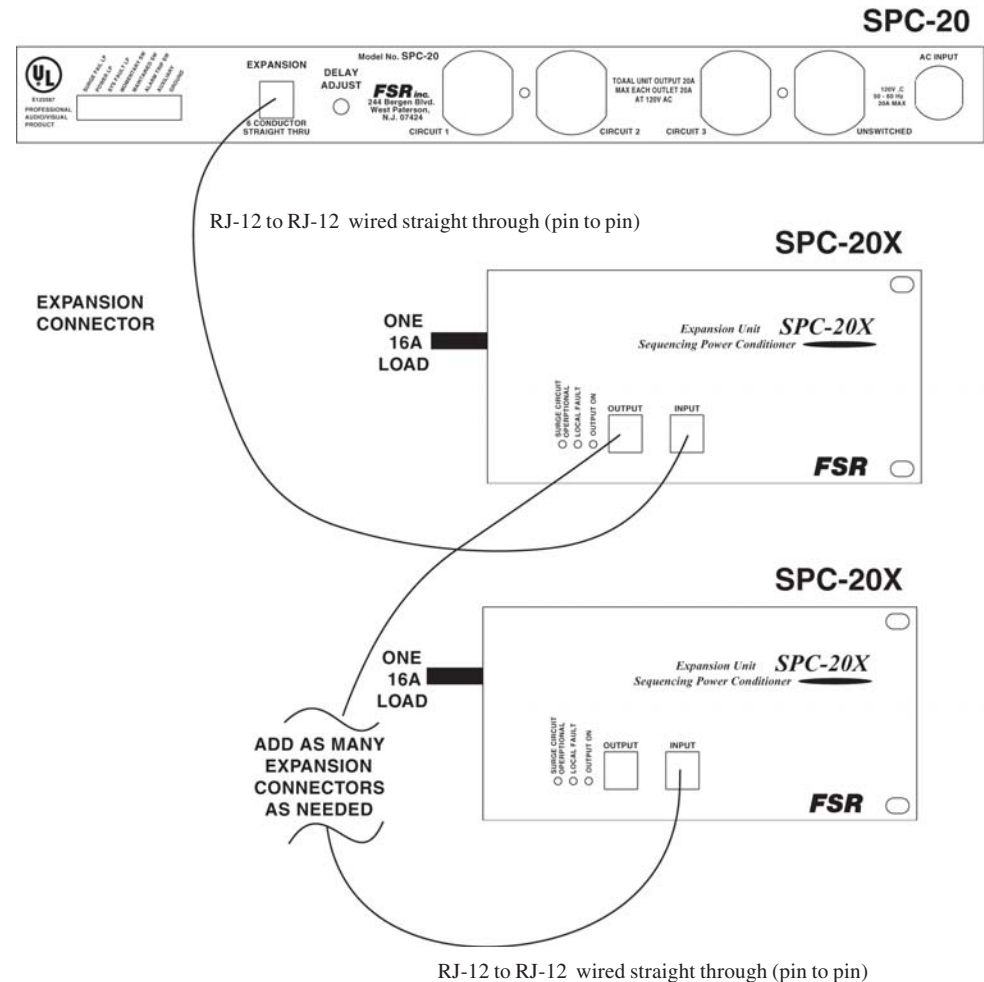
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# SPECIFICATIONS

AC SWITCHING:	Solid state zero crossing (no relays that bounce, arc, and pit)
AC INPUT	120VAC, 60 Hz, 20Amps max.
AC INPUT:	Full line conditioning and RFI suppression
AC OUTLET:	Surge suppression on the outlet
AC OUTLET:	<b>Total output current must not exceed 16 Amps. The AC outlet is rated at 16 Amps but remember that the total current out of the SPC-20X must not exceed 16 Amps.</b>
CONTROL	RJ-12 to RJ-12 wired straight through (pin to pin)
SURGE PROTECTION:	
	Spike protection modes: Line to neutral, neutral to ground, line to ground
	Spike protection voltage: Max clamping voltage 340V peak, L-N, N-G, L-G
	Response time: 1 nanosecond
	Maximum surge current: >29000 AMPS (8x20 usec pulse)
	Maximum spike energy: >200 joules
	Noise attenuation: Differential 13 dB @ 150 kHz increasing to 45 dB @ 30 Mhz
	Common mode: 15 dB @ 150 kHz, increasing to >45 dB @ 30 Mhz
SIZE:	6" x 5 1/2" x 3"
WEIGHT:	4 pounds

## SPC-20X HOOKUP

DAISEY CHAIN EACH SPC-20X AND SEQUENCE EACH UNDER THE CONTROL OF THE MASTER SPC-20.



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## LIMITED WARRANTY

The FSR SPC-20X is warranted against failures due to defective parts or faulty workmanship for a period of three years after delivery to the original owner. During this period, FSR 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 FSR.

This warranty applies only to the original owner and is not transferable. Also, it does not apply to repairs done other than by the FSR factory or authorized Repair Stations.

This warranty shall be cancelable by FSR at its sole discretion if the SPC-20X unit has been subjected to physical abuse or has been modified in any way without written authorization from FSR. FSR's liability under this warranty is limited to repair or replacement of the defective unit. FSR 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.

Warranty claims should be accompanied by a copy of the original purchase invoice showing the purchase date (if a Warranty Registration Card was mailed in at the time of purchase, this is not necessary). Before returning any equipment for repair, please read the important information on service below.

## 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 a RA Number, please call the FSR Service Department (973-785-4347). Please display your R/A Number prominently on the front of all packages.

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The logo for FSR, consisting of the letters 'FSR' in a bold, italicized, sans-serif font.

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