

■ Power Switching & Controls
For *Business-Critical Continuity*[™]

DRS Series Surge Protective Device

Installation, Operation and Maintenance Manual



The Emerson Network Power DRS Series surge protective device is a high quality, high energy surge current diversion system designed to protect sensitive equipment from damaging transient voltage surges resulting from load switching, lightning strikes and other sources. The DRS Series is a modular product designed to be easily installed in existing AC panelboards and control panels using standard DIN-rail mounting brackets.

The installer should perform the following steps to assure a quality installation. Please read all instructions before starting the installation of this product. These instructions do not replace national or local electrical codes.

INSTALLATION

Proper installation is required for maximum system performance. Read the following information to assure a quality installation.

Environment – For use indoors, in an ambient temperature of -40°C to +85°C, with a relative humidity of 0% to 95% (non-condensing).

Mounting – Unit mounts to standard 35mm symmetrical Din rail (EN50022/ DIN46277-3).

Connections – Unit should be connected in parallel with the power source (see **Diagram 1 on next page**). The length of wire is critical to the performance of this device; therefore the connection wires should be as short as possible. If installation cannot accommodate short wires the Kelvin method of wiring should be used to improve performance of the SPD (see **Diagram 2 on next page**).

Wire Sizing/Routing – Wire connection terminals accept wire with the cross sectional area of 6 - 35mm². To reduce the wire impedance to surge currents all conductors should be twisted together and routed in the same conduit raceway. All sharp bends in conductors should be avoided.

Over Current Protection – External over-current protection is required. A 50A rated fuse or a 32A circuit breaker is to precede the incoming terminals of the SPD.

Remote Status Connections – Unit is provided with remote status contacts located on the base of the device. The contacts may be wired using either the normally open “NO” or normally closed positions depending whether there is a need to monitor if the unit is in ok or failed status. After all modules are installed and operating normally the contacts are open. If modules are removed or failed the contacts are closed (see **Diagram 3 on next page**).

OPERATION

This product is designed for years of trouble-free operation and requires little or no operator intervention after installation. If a green indicator appears in the window of the module, the device is operating normally. If the red indicator appears, the module has reduced protection and must be replaced. Prior to replacing module assure the voltage supplied to the unit is correct and that the modules are not loose in the base causing a false failure. Replacement modules are available for this device; see **Part Numbering**.

PART NUMBERING

Example: DRS27731

DRS	Nominal Voltage (Un) (XXX)	# of Metal Oxide Varistor Modules* (X)	# of Gas Tube Modules** (X)	Higher Rated Voltage*** (Optional)
	120	0	0	Q
	230	1	1	
	240	2		
	277	3		
	346	4		
	480			
	600			

- * MOV modules are typically one module per phase and may be wired L-N, L-G or N-G
- ** Gas tube modules typically used in the N-G mode for type TT grounding systems.
- *** Certain applications require higher rated components in order to survive frequent voltage rises, in this case order a unit with a “Q” at the end of the part number.

Replacement modules available:
Order DRS + Un + M (for MOV) or G (for Gas tube)

Example: DRS150M

DIAGRAMS

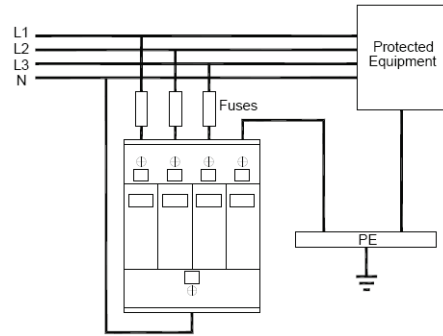


Diagram 1
Standard Connection

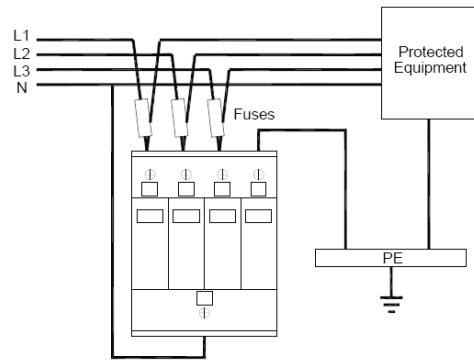


Diagram 2
Kelvin Connection

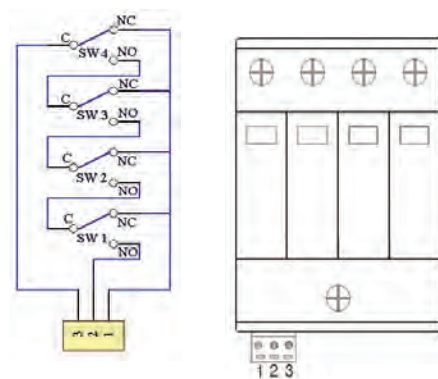


Diagram 3
Remote Output

LIMITED WARRANTY

This Warranty is given **ONLY** to purchasers who buy for commercial or industrial use in the ordinary course of each purchaser's business.

General: Emerson Network Power Surge Protection, Inc. products are in our opinion the finest available. We take pride in our products and are pleased that you have chosen them. Under certain circumstances we offer with our products the following Five Year Warranty Against Defects in Material and Workmanship. Please read your Warranty carefully. This Warranty sets forth our responsibilities in the unlikely event of defect and tells you how to obtain performance under this Warranty.

FIVE YEAR LIMITED WARRANTY AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP EMERSON NETWORK POWER SURGE PROTECTION, INC. PRODUCTS COVERED: DRS Series

Terms of Warranty: As provided herein, the Emerson Network Power Surge Protection, Inc. product is warranted to be free of defects in material and workmanship for a period of five (5) years from the date of delivery of the product to User. The delivery date will be determined only from the Emerson Network Power Surge Protection, Inc. bill of lading. If any of the Emerson Network Power Surge Protection, Inc. product fails to conform to the warranty within the warranty period, Emerson Network Power Surge Protection, Inc., at its option, will furnish new or factory remanufactured parts for repair or replacement of that part.

Warranty Extends to First Purchaser for Use, Non-transferable: This Warranty is extended to the first person, firm, association or corporation for whom the Emerson Network Power Surge Protection, Inc. product specified herein is originally installed for use in the United States (the "User"). This Warranty is not transferable or assignable without the prior written permission of Emerson Network Power Surge Protection, Inc..

Assignment of Warranties: Emerson Network Power Surge Protection, Inc. assigns to User any warranties which are made by manufacturers and suppliers of components of the Emerson Network Power Surge Protection, Inc. product and which are assignable, but Emerson Network Power Surge Protection, Inc. makes NO REPRESENTATIONS as to the effectiveness or extent of such warranties, assumes NO RESPONSIBILITY for any matters which may be warranted by such manufacturers or suppliers and extends no coverage under this warranty to such components.

Descriptions: Emerson Network Power Surge Protection, Inc. warrants for the period and on the terms of the Warranty set forth herein that the Emerson Network Power Surge Protection, Inc. product will conform to the descriptions contained in Emerson Network Power Surge Protection, Inc. final invoices, orders and Emerson Network Power Surge Protection, Inc.' product brochures. Emerson Network Power Surge Protection, Inc. does not control the installation and use of any Emerson Network Power Surge Protection, Inc. product. Accordingly, it is understood that the Descriptions are NOT WARRANTIES OF PERFORMANCE and NOT WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE.

Obtaining Performance Under This Warranty: Within a reasonable time, but in no case to exceed thirty (30) days, after User's discovery of a defect, User shall contact Emerson Network Power Surge Protection, Inc. and request a return authorization number. User shall ship the product, with proof of purchase, to Emerson Network Power Surge Protection, Inc. freight prepaid. Emerson Network Power Surge Protection, Inc. products shipped to Emerson Network Power Surge Protection, Inc. without a return authorization number will be refused and returned freight collect to User at User's expense. Emerson Network Power Surge Protection, Inc. products shipped by User to Emerson Network Power Surge Protection, Inc. which have incurred freight damage due to User's improper packaging of the product will not be covered by this Warranty and any repairs or replacement parts, components or products needed will be invoiced in the full current price amount and returned freight collect to User.

Subject to the limitations specified herein, Emerson Network Power Surge Protection, Inc. will repair or replace, at its option, without charge for Emerson Network Power Surge Protection, Inc. labor or materials, subsequent to its inspection and F.O.B. Emerson Network Power Surge Protection, Inc. facility, the Emerson Network Power Surge Protection, Inc. product shipped to Emerson Network Power Surge Protection, Inc. with a return authorization number and warranted hereunder which does not conform to the Warranty. Replacement parts, components or products shipped to User prior to Emerson Network Power Surge Protection, Inc. receipt and inspection of the product claimed to be defective, shall be invoiced in the full current price amount and shipped freight collect F.O.B. Emerson Network Power Surge Protection, Inc. facility. Warranty coverage will be extended only after Emerson Network Power Surge Protection, Inc.' receipt of the claimed defective product within thirty (30) days of shipment of any replacement parts, components or products, if applicable, Emerson Network Power Surge Protection, Inc.' inspection discloses the claimed defect and the returned product shows no signs of treatment or use which would void the coverage of this Warranty.

Items Not Covered By Warranty: THIS WARRANTY DOES NOT COVER DAMAGE OR DEFECT CAUSED BY misuse, improper application, wrong or inadequate electrical current or connection, inadequate water or drain services, negligence, inappropriate on site operating conditions, corrosive atmosphere, repair by non-Emerson Network Power Surge Protection, Inc. designated personnel, accident in transit, tampering, alterations, a change in location or operating use, exposure to the elements, Acts of God, theft or installation contrary to Emerson Network Power Surge Protection, Inc. recommendations or specifications, or in any event if the Emerson Network Power Surge Protection, Inc. serial number has been altered, defaced or removed.

THIS WARRANTY DOES NOT COVER shipping costs, installation costs, circuit breaker resetting or maintenance or service items and further, except as provided herein, does NOT include labor costs or transportation charges arising from the replacement of the Emerson Network Power Surge Protection, Inc. product or any part thereof or charges to remove same from any premises of the User.

THIS WARRANTY DOES NOT COVER DAMAGE OR DEFECT CAUSED BY use of the Emerson Network Power Surge Protection, Inc. product in combination with any electrical or electronic components, circuits, systems, assemblies, or other materials not furnished by Emerson Network Power Surge Protection, Inc. Emerson Network Power Surge Protection, Inc. does NOT warrant the suitability for use or the results of the Emerson Network Power Surge Protection, Inc. product in combination with the products of others. REPAIR OR REPLACEMENT OF A DEFECTIVE PRODUCT OR PART THEREOF DOES NOT EXTEND THE ORIGINAL WARRANTY PERIOD.

Limitations:

- THIS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
- USER'S SOLE AND EXCLUSIVE REMEDY IS REPAIR OR REPLACEMENT OF THE Emerson Network Power Surge Protection, Inc. PRODUCT AS SET FORTH HEREIN.
- IF USER'S REMEDY IS DEEMED TO FAIL OF ITS ESSENTIAL PURPOSE BY A COURT OF COMPETENT JURISDICTION, EMERSON NETWORK POWER SURGE PROTECTION, INC. RESPONSIBILITY FOR PROPERTY LOSS OR DAMAGE SHALL NOT EXCEED ONE TIMES THE NET PRODUCT PURCHASE PRICE.
- IN NO EVENT SHALL EMERSON NETWORK POWER SURGE PROTECTION, INC. ASSUME ANY LIABILITY FOR INDIRECT, SPECIAL, INCIDENTAL, OR ECONOMIC CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER, INCLUDING WITHOUT LIMITATION, LOST PROFITS, BUSINESS INTERRUPTION OR LOSS OF DATA, WHETHER ANY CLAIM IS BASED UPON THEORIES OF CONTRACT, NEGLIGENCE, STRICT LIABILITY, TORT OR OTHERWISE.

Miscellaneous:

- NO SALESPERSON, EMPLOYEE OR AGENT OF EMERSON NETWORK POWER SURGE PROTECTION, INC. IS AUTHORIZED TO ADD TO OR VARY THE TERMS OF THIS WARRANTY. Warranty terms may be modified, if at all, only in a writing signed by a Emerson Network Power Surge Protection, Inc. officer.
- This Warranty is effective as of the date of Emerson Network Power Surge Protection, Inc. receipt of payment and supersedes all previous warranties. Emerson Network Power Surge Protection, Inc. reserves the right to supplement or change the terms of this Warranty in any subsequent warranty offering to User or others.
- In the event that any provision of this Warranty should be or becomes invalid and/or unenforceable during the warranty period, the remaining terms and provisions shall continue in full force and effect.
- This Warranty is given in and is intended to be construed under the laws of the State of New York.
- This Warranty represents the entire agreement between Emerson Network Power Surge Protection, Inc. and User with respect to the subject matter herein and supersedes all prior or contemporaneous oral or written communications, representations, understandings or agreements relating to this subject.

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