

FPS200

TRUNKGUARD™ Fieldbus Power Conditioner

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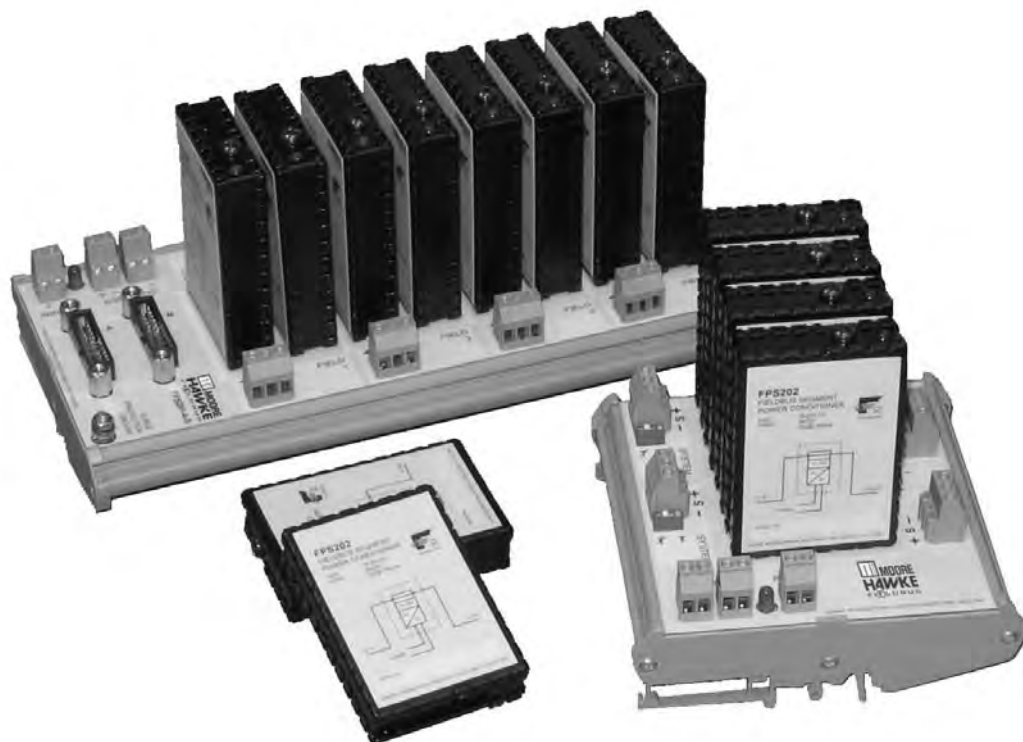


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Introduction

The TRUNKGUARD FPS200 Fieldbus Power Conditioner enables fast and easy implementation of fieldbus systems by providing properly conditioned power for Foundation fieldbus™ (H1) networks. The FPS200 is fully compliant with FF831-1 (the technical specification for fieldbus power supplies) and is FOUNDATION fieldbus™ registered.

The FPS200 is composed of a multi-position DIN Carrier populated with individual Power Conditioner Modules. To accommodate segment changes or additions, Power Conditioner Modules can be added, or removed, from the carrier without affecting power or fieldbus communications on any other segment. Built in connectors accept one or two DC (18-32V) power supply inputs.

The FPS200 provides fieldbus conditioning via FPS202 Segment Power Conditioner modules, incorporating DC/DC isolation and signal filtering. The Segment Power Conditioners are fitted onto a FPS201 Carrier which provides connection facilities for DC power (one or two, as required) for both system- and field-side segment wiring. The Carrier also includes a switchable terminator per segment.

Redundant configurations use two FPS202 Segment Power Conditioners per segment.

Refer to the latest product Data Sheet for full technical information. Visit our website at <http://www.miinet.com/moorehawke>.

Installation

FPS201 Carrier Units

Each unit is designed to fit onto a 32mm (EN50035) G-type and 35mm (EN50022) Top Hat DIN-rail and should be mounted in such a way as to allow easy access to terminal receptacles and to keep LEDs visible. Horizontal DIN-rails are preferred so that air can flow vertically between the Conditioners to assist in module cooling.

An outdoor location will require an external enclosure. Any enclosure meeting the requirements of the location in relation to electrical and mechanical safety can be used (a minimum of IP54 recommended). Contact MooreHawke for specific advice regarding installation of FPS200 Series in any hazardous area.

FPS202 Segment Power Conditioner

Segment Power Conditioners fit onto the sockets on the Carrier face. They only mount in one orientation. A screw (accessible through the top of the Segment Conditioner) is used to secure the module to the Carrier. For duplex (redundant) operation, two Segment Power Conditioners are required.

Wiring Connections

For wire terminations, cables should be stripped to expose no more than 8mm (0.31 in) of conductor and inserted fully into the terminal opening. Bootlace ferrules are recommended for use with stranded cable.

Field-side segment wiring is made via screw clamp terminals marked FIELD. DCS connections are made either through the terminals marked SYSTEM or via multi-way cables plugged directly to socket(s) A and B on board the FPS201-4 and FPS201-4-S Carriers. These sockets accept Yokogawa AKB336 cables directly.

Nominal 24Vdc (18–32V) power is required for terminals marked DC Power. Provisions are made for two independent DC feeds to the Carrier.

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Figure 1. FPS201 Dimensions

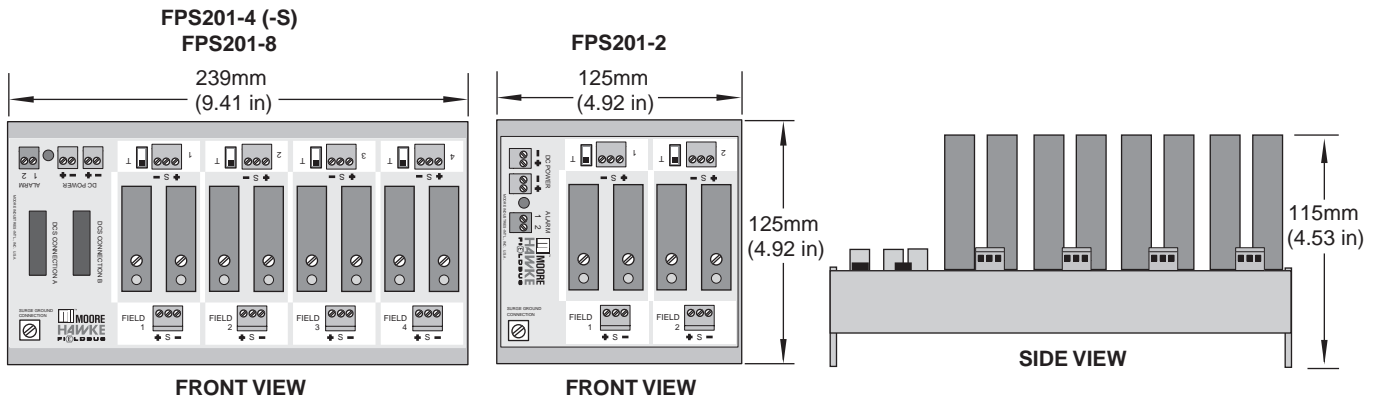
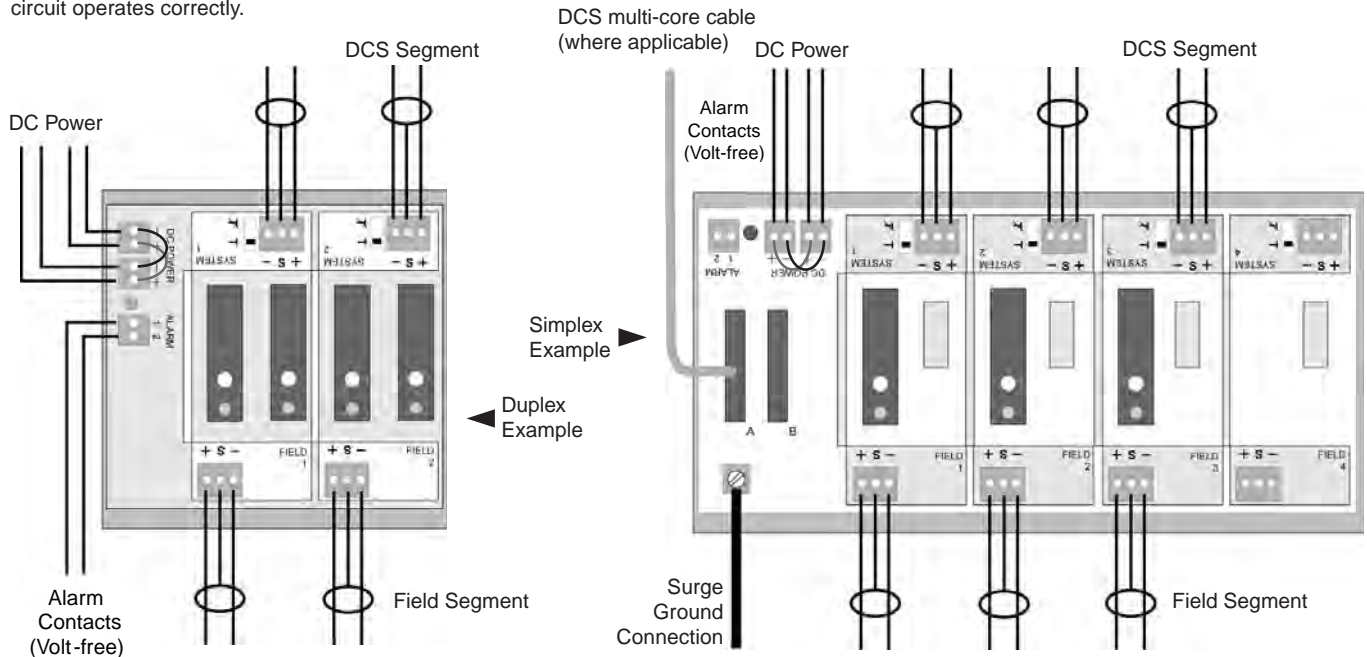


Figure 2. Hook-Up Diagrams for Simplex and Duplex Configurations

Note:

If only one DC power feed is to be used, a pair of jumper wires is required to the second set of DC feed terminals to ensure that the alarm monitoring circuit operates correctly.



The FPS201-4-S has surge protection components on board, per segment, and to be effective, this Carrier type must be connected to a low-impedance ground with a direct cable equivalent to 4mm² or 10 AWG.

Once all wiring connections have been correctly made, all retaining screws on each module should be securely fastened and any external enclosure closed (where applicable).

Terminator

Set the switch to position “T” for a local terminator in that segment, if required. Termination is usually required at the Carrier, with the other terminator on the segment provided by the Device Coupler. In this configuration, there should not be a terminator in the circuit at the DCS. Contact MooreHawke if the DCS link cable is in excess of 100m (328ft).

Testing and Troubleshooting

Refer to Table 1 regarding LED indications of fault conditions.

Table 1. LED Indications

Module LED	Alarm LED	Diagnosis
ON	OFF	Normal condition; Modules available for use
OFF	OFF	Fault condition; No DC power – check DC supply
ON	ON	Fault condition; One DC feed <18V – check DC supply. Link both DC input terminals when using one DC feed
OFF	ON	Fault condition; Segment short circuit – check field wiring. Individual module failure – replace module

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Recommended Ground Wiring Practices

Moore Industries recommends the following ground wiring practices:

- Any MooreHawke product in a metal case or housing should be grounded.
- The protective earth conductor must be connected to a system safety earth ground before making any other connections.
- All input signals to, and output signals from MooreHawke's products should be wired using a shielded, twisted pair technique. Shields are to be connected to an earth or safety ground at the unit itself.
- The maximum length of unshielded input and output signal wiring should be 2 inches.

Fieldbus cable shields are "carried through" the Carrier's input/output terminals and require a suitable, noise-free ground connection point.

CE Conformity

Installation of any MooreHawke products that carry CE certification (Commission Electrotechnique) **must** adhere to the guidelines in *Recommended Ground Wiring Practices* (above) in order to meet the requirements set forth in applicable EMC (Electromagnetic Compatibility) directives 89/336/EEC, EN 61326. Consult the factory for the most current information on products that have been CE certified.

Operation

During normal operation, the GREEN LED should be lit on all working Segment Power Conditioners.

If RED LED is ON, or GREEN LED is OFF, refer to the *Testing and Troubleshooting* section of this document.

Maintenance

FPS200 Series modules contain no user-serviceable parts. Non-functioning units under warranty should be returned to MooreHawke for replacement or repair.

Note:

The FPS200 is manufactured using painted steel (Conditioners), and polyamide and polycarbonate plastics (Carriers). The user and installer should take the performance of these materials into account with regard to possible attack by aggressive substances in any specific installation.

Customer Support

If service assistance is ever required for an instrument in your application, refer to the back cover of this manual for the telephone numbers to MooreHawke's customer service department.

If possible, make a note of the model number of the offending unit before calling. For fastest assistance, have the following available: serial number and the job and purchase order number under which it was shipped.

RETURN PROCEDURES

To return equipment to Moore Industries for repair, follow these four steps:

1. Call Moore Industries and request a Returned Material Authorization (RMA) number.

Warranty Repair –

If you are unsure if your unit is still under warranty, we can use the unit's serial number to verify the warranty status for you over the phone. Be sure to include the RMA number on all documentation.

Non-Warranty Repair –

If your unit is out of warranty, be prepared to give us a Purchase Order number when you call. In most cases, we will be able to quote you the repair costs at that time. The repair price you are quoted will be a "Not To Exceed" price, which means that the actual repair costs may be less than the quote. Be sure to include the RMA number on all documentation.

2. Provide us with the following documentation:
 - a) A note listing the symptoms that indicate the unit needs repair
 - b) Complete shipping information for return of the equipment after repair
 - c) The name and phone number of the person to contact if questions arise at the factory
3. Use sufficient packing material and carefully pack the equipment in a sturdy shipping container.
4. Ship the equipment to the Moore Industries location nearest you.

The returned equipment will be inspected and tested at the factory. A Moore Industries representative will contact the person designated on your documentation if more information is needed. The repaired equipment, or its replacement, will be returned to you in accordance with the shipping instructions furnished in your documentation.

WARRANTY DISCLAIMER

THE COMPANY MAKES NO EXPRESS, IMPLIED OR STATUTORY WARRANTIES (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY GOODS OR SERVICES SOLD BY THE COMPANY. THE COMPANY DISCLAIMS ALL WARRANTIES ARISING FROM ANY COURSE OF DEALING OR TRADE USAGE, AND ANY BUYER OF GOODS OR SERVICES FROM THE COMPANY ACKNOWLEDGES THAT THERE ARE NO WARRANTIES IMPLIED BY CUSTOM OR USAGE IN THE TRADE OF THE BUYER AND OF THE COMPANY, AND THAT ANY PRIOR DEALINGS OF THE BUYER WITH THE COMPANY DO NOT IMPLY THAT THE COMPANY WARRANTS THE GOODS OR SERVICES IN ANY WAY.

ANY BUYER OF GOODS OR SERVICES FROM THE COMPANY AGREES WITH THE COMPANY THAT THE SOLE AND EXCLUSIVE REMEDIES FOR BREACH OF ANY WARRANTY CONCERNING THE GOODS OR SERVICES SHALL BE FOR THE COMPANY, AT ITS OPTION, TO REPAIR OR REPLACE THE GOODS OR SERVICES OR REFUND THE PURCHASE PRICE. THE COMPANY SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES EVEN IF THE COMPANY FAILS IN ANY ATTEMPT TO REMEDY DEFECTS IN THE GOODS OR SERVICES, BUT IN SUCH CASE THE BUYER SHALL BE ENTITLED TO NO MORE THAN A REFUND OF ALL MONIES PAID TO THE COMPANY BY THE BUYER FOR PURCHASE OF THE GOODS OR SERVICES.

ANY CAUSE OF ACTION FOR BREACH OF ANY WARRANTY BY THE COMPANY SHALL BE BARRED UNLESS THE COMPANY RECEIVES FROM THE BUYER A WRITTEN NOTICE OF THE ALLEGED DEFECT OR BREACH WITHIN TEN DAYS FROM THE EARLIEST DATE ON WHICH THE BUYER COULD REASONABLY HAVE DISCOVERED THE ALLEGED DEFECT OR BREACH, AND NO ACTION FOR THE BREACH OF ANY WARRANTY SHALL BE COMMENCED BY THE BUYER ANY LATER THAN TWELVE MONTHS FROM THE EARLIEST DATE ON WHICH THE BUYER COULD REASONABLY HAVE DISCOVERED THE ALLEGED DEFECT OR BREACH.

RETURN POLICY

For a period of thirty-six (36) months from the date of shipment, and under normal conditions of use and service, Moore Industries ("The Company") will at its option replace, repair or refund the purchase price for any of its manufactured products found, upon return to the Company (transportation charges prepaid and otherwise in accordance with the return procedures established by The Company), to be defective in material or workmanship. This policy extends to the original Buyer only and not to Buyer's customers or the users of Buyer's products, unless Buyer is an engineering contractor in which case the policy shall extend to Buyer's immediate customer only. This policy shall not apply if the product has been subject to alteration, misuse, accident, neglect or improper application, installation, or operation. THE COMPANY SHALL IN NO EVENT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.



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