Instruction sheet
MTL fieldbus networks

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INS 801-772 Rev B

CROUSE-HINDS
SERIES

FS32-XE
MTL Trunk & Spur Surge Protection Device

1. INTRODUCTION

The FS32-XE protects Fieldbus components complying with IEC 61158-2 physical layer and associated sensitive electronics from the degradation and damage caused by surges and transients. Designed for ease of installation, the FS32-XE can be used at both ends of the trunk and on spurs where mounting type and configuration allows. More details of this are shown throughout this instruction sheet.

IMPORTANT: The FS32-XE is designed specifically for use with fieldbus apparatus manufactured by Eaton where the trunk and spur connections are organised as shown in Figure 1. These connectors are certified for Ex e and the mating connector for the PCB header is PxC # PCB plug - MVSTBW 2,5/ 3-STF-5,08 EX - 1809791. part of IECEx Certificate#IECEx KEM 10.0093U & ATEX Certificate# KEMA10ATEX0196U.

2. IMPORTANT SAFETY INFORMATION

WARNING

- Before starting any electrical installation work, ensure that the incoming trunk connection to the MTL fieldbus barrier or MTL Megablock device coupler is isolated from any source of power.

- The FS32-XE must be installed, operated and maintained by trained competent personnel. The FS32-XE unit must not be subjected to mechanical or thermal stresses in excess of those outlined in the ATEX specifications.

- The FS32-XE range must not be installed in an area where it may be attacked by aggressive substances.

- The protected equipment must be electrically isolated during the installation procedure of FS32-XE

- All installation and maintenance must be carried out in accordance with all appropriate international, national and local standard codes of practice and site regulations, which may include reference to the IEC code of practice IEC 60079-14, and in accordance with the instructions contained here.
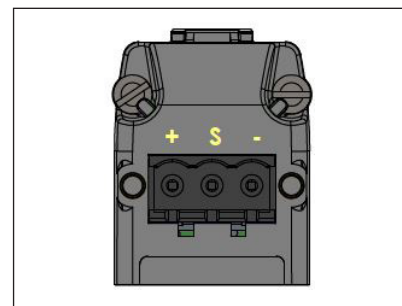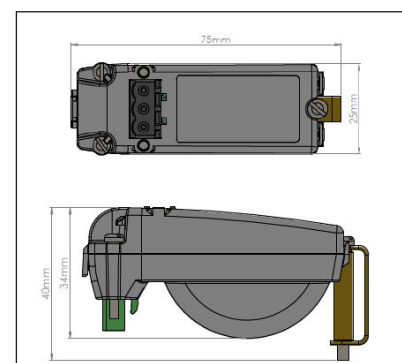

Figure 1 - Spur & Trunk connections

Figure 2 - FS32-XE dimensions

3. INSTALLATION

When used with MTL 937x-FB3 range of MTL compact fieldbus barriers

The FS32-XE may be used to protect the fieldbus trunks in 937x-FB3 range of MTL compact fieldbus barriers supplied by Eaton's MTL product line. One FS32-XE is required for each protected trunk.

3.1 Remove the existing 3-position connector plug and insert the FS32-XE in its place- securing it with the two side screws and the central grounding screw- do not over-tighten. Insert the existing connector plug into the top of the FS32-XE and tighten the two connector fixing screws. If the wiring is not connected, insert the wires into the appropriate terminals '+', 'S' '-' and tighten their securing screws.

3.2 Reconnect circuit and test system to verify operational status.

When used with F200-XE MTL increased safety Megablock device couplers

3.3 Remove the existing 3-position trunk or spur connector plug and insert the FS32-XE in its place - securing it with the two side screws. Insert the existing connector plug into the top of the FS32-XE and tighten the two connector fixing screws. If the wiring is not connected, connect to the appropriate terminals '+', 'S', '-'.

3.4 Determine length required for the grounding bar (FS32-BAR) and using tools (e.g. pliers), break at the score marks. Tighten the FS32-XE ground screw into the grounding bar. Do not over-tighten.

3.5 Connect an Earth wire, (minimum 3mm²) with a ring terminal to the M4 threaded hole. Ensure this wire is connected to the chassis or the Earth reference of the protected equipment.

3.6 Reconnect the circuit and test the system to verify operational status.

4. MAINTENANCE

At intervals of not more than one year (more frequently for particularly harsh environments) visually check the installation and ensure that:

i) the device and/or its enclosure is firmly attached to its mounting

ii) there are no signs of external damage or corrosion

iii) the interconnecting cables are not frayed or otherwise damaged

iv) all connections are properly made with clear labelling.

If the unit has suffered damage, send it back to Eaton for evaluation, which should be carried out only by MTL product line. This product is not repairable.

5. APPROVALS

In hazardous locations check the marking on the device to ensure that it is appropriate for the application. See Certificate number IECEx BAS 20.0079U and/or SGS20ATEX0120U.

ATEX / IECEx Special Conditions:

1. The FS32-XE demonstrates a surface temperature rise of <5°C when operating in the most onerous operating conditions. A Temperature Classification of T4 in a +80°C ambient would be considered applicable.

2. The FS32-XE is suitable for use within equipment with an Equipment Protection Level of Gb. The FS32-XE may also form part of a Group III circuit within

3. The FS32-XE must be installed in equipment such that it is afforded a degree of protection of at least IP54 in accordance with EN IEC 60079-0, EN 60079-7 and EN 60529.

4. The equipment in which the FS32-XE is installed will not be capable of withstanding a 500Vac isolation test voltage between all inputs to earth. This must be taken into account during installation.

5. The PCB Header connector must be mated with an appropriately certified connector. See section 1 for the details of the connector.

Terminal Block Wiring

Conductor size (solid or flexible) 0.2mm² to 2.5mm² (12AWG to 24 AWG)
Min 0.25mm² if with ferrule
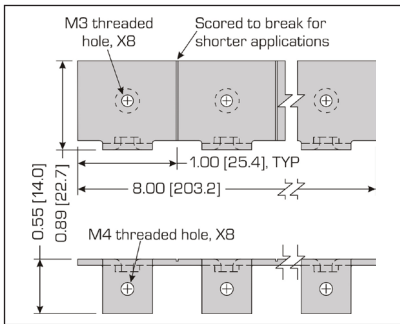
Min tightening torque 0.5 Nm
Max tightening torque 0.6 Nm
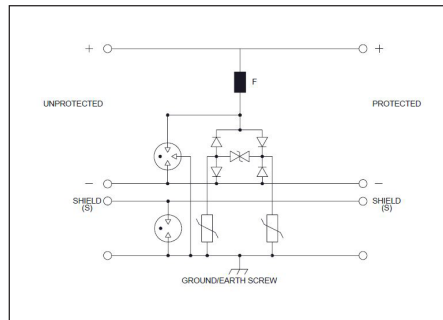

Figure 3 - Nickel-plated steel grounding bar

Figure 4 - FS32-XE Schematic

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