

INTRODUCTION

This document explains how to install Furse MMP Protectors for mains power supplies:

MMP 2BA Series



1. Safety note:

Warning! Installation by person with electrotechnical expertise only.

Warnung! Installation nur durch elektrotechnische Fachkraft.

Avvertenza! Fare installare solo da un elettricista qualificato.

Avertissement! Installation uniquement par des personnes qualifiées en électrotechnique.

Advertencia! La instalación deberá ser realizada únicamente por electricistas especializados.

2. Application

The Furse MMP range of mains surge protection devices are suitable for use on single and three phase mains supplies and power distribution boards. They are a cost-effective way of preventing transient overvoltages (or surges) from damaging mains powered electronic equipment.

3. Mounting location

Maximum protection of electrical equipment is achieved by installing the protectors very close to the power supply to be protected. Usually the protectors will be installed in a power distribution panel or right next to it in an enclosure (use Furse part MMP ENC4)..

4. Connection

4.1 The individual phase and neutral terminals are not pre-labelled. Care should be taken so that the phase and neutral inputs are correctly noted for future reference. If the MMP ENC4 is used, the label provided can be used to denote the L1, L2, L3, and N connections.

4.2 When connecting the line conductors, strip the conductor insulation back by 11 mm. Torque rating for power connections is 3Nm. For remote contact, stripping length is 7mm and torque rating 0.25Nm.

4.3 The side marked 'L/N' on the MMP is connected to a line conductor (L1, L2, or L3). In the case of the MMP 2B***A/2 (single phase) and MMP 2B***A/4 (three phase) the units are also connected to the neutral conductor (N). The other side should be earthed via the local main earth or earth star point (sometimes referred to as equipotential bonding). In multi-protector installations only one of the MMP modules needs to be earthed as they are bonded together by a busbar-style strip.

The connecting leads between the supply and the MMP terminals should be as short as possible, otherwise the effectiveness of the protector may be reduced.

5. System variations
See table 2 for summary of protection modes offered with each system.

5.1 TN-C Systems
Each line conductor is connected to earth via an individual surge protection module.

5.2 TN-S Systems
Each line conductor plus the neutral conductor is connected to earth via an individual surge protection module.

5.3 IT System
Each line conductor is connected to earth via an individual surge protection module, there is no neutral conductor protection. For three phase systems only three surge protectors are required.

4.4 TT System (3+1 circuit)
The type of installation system recommended is in accordance with E DIN VDE 0100 part 534/A1:1996-10.

The line conductors, L1, L2, and L3, are connected to the neutral conductor (N) via individual surge protection modules, the neutral terminal is also connected to the earth (PE) conductor via a fourth surge protector. All the surge protectors should be installed on the input (power) side of the RCD.
Note: Ensure this type of installation is not in violation of any national regulations.

6. Remote alarm contacts
This section is only applicable to MMP units with the /S suffix in the part code.

6.1 The remote contact facility enables a remote alarm to be tripped if a fault develops on the supply lines. When a fault occurs terminals 11-14 (14 is NC) break contact and terminals 11-12 (12 is NO) make contact.

6.2 Unless further specific surge protection is in place the signalling wires should only be used inside the building or the MMP surge protection may be effected.

6.3 The operation of the remote facility can be verified by removing the protection module from its base unit. The NC terminals should break and the NO terminals should close.

7. Cabling/Backup fusing
The requirements specified in table 1 relating to the cross-sectional area of the conductors must be maintained in order for the installation to comply with DIN VDE 0298 part 4:1998-02 and DIN VDE 0100 part 430:1991-11 (supplement 1:1991-11).

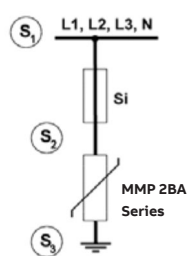
8. Maintenance
An internal thermal supervision device monitors the operation of the surge protector. Should a fault occur, this device disconnects the surge protector from the mains supply and displays a red indicator in the status window (for normal status display is clear).

Note: After the supervision device has disconnected the surge protection, all equipment connected after the surge protector will no longer be protected from transient overvoltages. The plug-in protection module can easily be replaced. This should be done immediately, ensuring the supply is isolated prior to insertion of a new module.

IMPORTANT NOTE
The MMP surge protectors should be fully disconnected from the mains supply before insulation tests (flash tests) are performed on the electrical installation. The MMP will treat the insulation test as a transient overvoltage and control the voltage to a low level, thereby defeating the object of the test. With Furse MMPs it is only necessary to remove the replaceable protection module from its base.

Environment
Consider the protection of the environment! Used electrical and electronic equipment must NOT be disposed of with domestic waste. The device contains valuable raw materials which can be recycled. Therefore, contact ABB for disposal of this equipment.

Installation diagram¹



Installation Requirements			
S ₁	S ₂	Additional backup fusing S ₂ ² for protector	
≤25 mm ²	Like S ₁	Only required if pre-fusing >160 AgL/gG	6-25 mm ² Cu
>25 mm ²	25 mm ²	Si: 160 AgL/gG	

Table 1 – Cabling/backup fusing

¹ Only one pole shown for clarity
² S₂ and the main earth star point (equipotential) bonding cable are dimensioned according to DIN VDE 0100 Part 540:1991-11. S₂ depends on the cross-sectional area of the conductor coming from the main distribution board or service point entry. S₂ is half the cross-sectional area of the main conductor, subject to a minimum of 6 mm² Cu and a maximum of 25 mm² Cu.

System	Supply Type	Protector and modes offered			
		MMP 2B*A/1	MMP 2B*A/2	MMP 2B*A/3	MMP 2B*A/4
TN-C	Single phase	L-E			
	Three phase	L1-E, L2-E, L3-E			
TN-S	Single phase	L-E, N-E			
	Three phase	L1-E, L2-E, L3-E, N-E			
IT	Single phase	L1-E, L2-E			
	Three phase	L1-E, L2-E, L3-E			
TT	Single phase	L-N, E-N			
	Three phase	L1-N, L2-N, L3-N, E-N			

Table 2 – Summary of protection modes offered



MMP 2BA Series
for mains protectors
INSTALLATION INSTRUCTIONS



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