



4M320 Test Manual

Test Plug

relay monitoring systems pty ltd

Advanced Protection Devices



4M320 Test Manual

Test Certification

This is to certify that the equipment detailed below has been manufactured, inspected & tested in accordance with a Quality System which complies with the requirements of AS/NZS ISO9001-2000.

Order Number	Factory Type Number	Serial Number

Only valid when the "Passed" box has been signed off by Production Personnel.

Version Control

Issue	Date	Summary of changes
A	31/01/2002	Initial issue.
B	30/07/2007	Update Images
C	07/04/2009	Updated to finger safe sockets

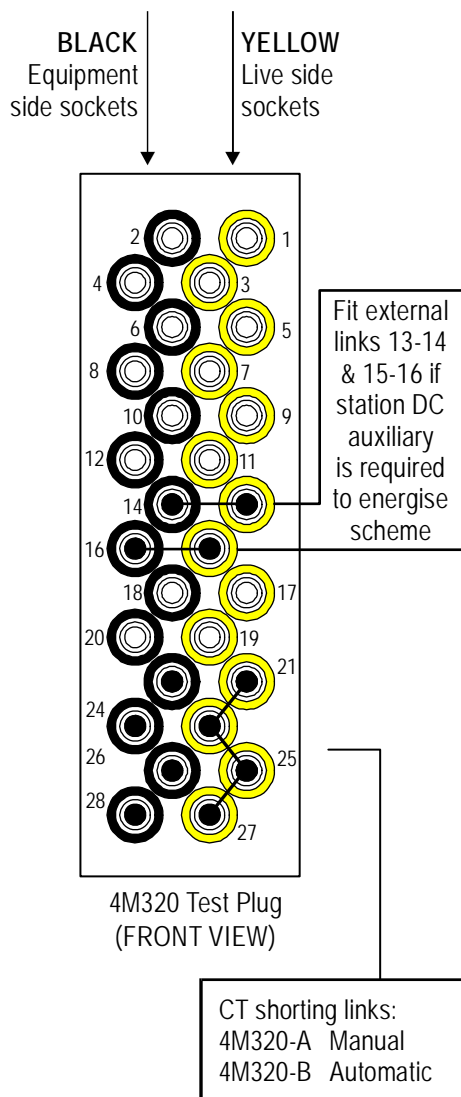
Due to RMS continuous product improvement policy, this information is subject to change without notice.
This document is uncontrolled and subject to copyright.

Author	Checked & Registered	.pdf file created	Released
ARF	DG	DG	

RECOMMENDED WIRING LAYOUT

It is recommended that the Test Block is always wired with connections to the protective relay or scheme made to the EVEN numbered equipment side terminals. Connections to other equipment, e.g. CT's , VT's & DC supplies, should be made to the ODD numbered live side terminals on the Test Block. This ensures that when the Test Plug is used, the BLACK sockets of the Test Plug are the isolated relay circuits & the YELLOW sockets on the Test Plug are connected to the potentially live supplies as shown below.

Test equipment can be connected to the relay or scheme using the BLACK sockets in the Test Plug, & operation of contacts can be monitored. When using the 4M300-B Test Block, the DC supply may be used during testing by linking across sockets 13/14 & 15/16 of the Test Plug.



4M320 Front view depicting typical connection arrangement

CT SHORTING – MANUAL (External)

It is essential that the sockets of the 4M320 Multi-Finger Test Plug which correspond to the current transformer (CT), secondary windings are linked prior to the test plug being inserted into the test block. This ensures that the current transformer secondary windings are not open circuited when they are isolated from the protection relay scheme.

This may be achieved using external shorting links to ensure that the CT secondary windings are short circuited before they are disconnected from the protection relay or scheme, thereby avoiding dangerously high voltages.

The continuity of the shorting plug / wire links & their state of insulation should be checked prior to into the 4M300 test block.

CT SHORTING – AUTOMATIC (Internal)

The 4M320 may be ordered with internal CT shorting links fitted to pre-designated positions as follows:

4M320-B Internal links between terminals 21-23-25-27
 Refer figure 8

Where these 4M320 test plug versions are employed it is essential that the CT circuits are wired to the 4M300 test block in the matching positions.

To Reiterate: The 4M320 requires the **USER** to ensure that the necessary shorting links - manual or automatic – are fitted prior to plugging into the 4M300 test block.

TEST LEAD INSERTION

Before use the insulation of the flying leads should be visibly checked for damage.

Flexible banana test leads with shrouded plugs are recommended for operator safety. 2.5mm² multi-strand wire with PVC insulation is recommended for adequate current rating and flexibility.

TEST PLUG INSERTION



To avoid high voltage shock hazard external CT circuits must NOT be open circuited. Shorting links must be in position BEFORE test plug insertion.

Insertion of the 4M320 connects the live side circuits to the YELLOW test sockets on the front panel. The equipment side circuits are connected to the BLACK test sockets on the front panel. Each test socket is identified by a number, which corresponds to the numbered terminal on the rear of the case when the Test Plug is inserted. Refer to the 4M320 side label for further details.

FINGER SAFE TEST SOCKETS

- BLACK - even numbered - equipment side sockets
- YELLOW - odd numbered - live side sockets



Close up view of the 'finger safe' test plug sockets that accept standard 4mm shrouded test plugs



VERIFICATION

This is to certify that the equipment has been manufactured, inspected and tested in accordance with a Quality System, which complies with the requirements of ISO9001: 2000.

Testing has been carried out against the declared performance specification 195-320-800 and in accordance with the relevant International (IEC) Standards.

PASSED BY	DATE