

NR/L2/SIG/30014/G130/EL52
Non-Conceptual Test Plan
Install a Varistor Surge Protector
Issue No. 01
Issue Date: 03/09/11
Compliance Date: 03/09/11

Caution:



Varistors shall not be added to 'relay rectifiers' in AC line circuits.

Safety:



The installation work shall be carried out by a competent person independent of the person undertaking the testing

Includes:	Retrospective fitment of DC Track Circuit Feed Sets and Transformer/Rectifier Sets ('T/J') with outputs not exceeding 120V or 5A that supply external circuits.
Excludes:	Non-DC Track Circuit Feed Sets, T/J sets exceeding 120V or 5A output, AC line circuit 'relay rectifiers', Constant voltage battery chargers with sealed batteries, T/J sets only supplying internal circuits.

Note: For retrospective fitment, a single device shall be connected between the B & N output terminals, preferably on the 'internal' side. (For centre-tapped units, connect one Varistor between B & 0, with a second between 0 & N). The leads to the Varistor shall be kept as short as possible and sleeved if necessary. The body of the Varistor is to be in free space, clear of metal cases and other wiring.

- Note:**
- Varistors are not polarity-sensitive.
 - Retrospective Varistor fitment shall be regarded as 'internal' to T/Js, etc. and not requiring wiring design and updating of site records.
 - AWS inductor circuit designs incorporate freewheeling diodes, however these do not protect against reverse voltage spikes, so T/Js in these circuits will benefit from Varistor fitment.

BEFORE INSTALLATION WORK

- 01 [Check](#) feed set or T/J set is of [Correct Type](#).
- 02 [Isolate](#) set from supply.

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- 03 [WIRE COUNT](#) output side of feed set or T/J to wiring diagram.
- 04 [Check](#) existing wiring has [Safe Insulation](#).
- 05 [Check](#) existing wiring is [Correctly Labelled](#).
- 06 [Check](#) Varistor is [Not Damaged](#) and is [Correct Type](#) (275 V).

AFTER INSTALLATION WORK

- 07 [Check](#) Varistor has been [Correctly Installed](#). (On output side of the unit, to the terminals that have the INTERNAL wires fitted – note that the Varistor is not polarity sensitive.)
- 08 Reconnect set to supply.
- 09 [Test](#) track circuit [Track circuit full test (NR/SMS/Test/251)] and [Record](#) the test measurements on the appropriate NR/SMS record card, together with the reason for the test.
(TRACK CIRCUITS ONLY)
- 10 [Record](#) on the NR/SMS track circuit record card that Varistor has been fitted.
(TRACK CIRCUITS ONLY)
- 11 [Test](#) output voltage and polarity.
(OTHER T/J APPLICATIONS)

End