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PAT Testing methods for 3phase dimmer/relay racks

PAT testing of 3phase dimmer and relay racks is to be done to the local countries mandated standards at regular intervals. The notes below are to assist testers who are unfamiliar with 3phase devices and/or PAT testing of dimmer/switch racks. They are not instructions and if anything stated contradicts the local standard then the standard takes precedence.

Earth Continuity Test:
The earth continuity test is used to check the integrity of the Earth connection.
Attach one test probe from the tester to any exposed metal of the chassis. This may require the powder coating to be discretely removed in a small area to expose the base metal to make a good connection.
Connect the second test probe to the earth pin of the 3phase connector.
Perform the Earth Continuity Test.
The measured resistance shall be in accordance with the local countries published standard.
The expected result is <=1 Ohm.

Insulation Test:
The insulation test is undertaken to check that the internal wiring is in good condition and there is no breakdown of the insulation.
All the MCB/RCBO/RCDs must be turned on. Attach one test probe to the earth pin of the phase connector. Connect the second test probe to all 3 active (phase) pins (the 3 active wires must be connected together).
Perform the insulation test using a 500v DC voltage.
The measured resistance shall be in accordance with the local countries published standard.
The expected result is >=1M Ohm.

RCD/RCBO Test:

The RCD/RCBO test is used to check that the RCD is working correctly.
Plug an RCD tester into the dimmer outlet, set the channel to full (the test cannot be performed whilst the channel is off or dimmed at any level below 100%). Turn on the individual RCD/RCBO.
Perform the RCD test.
Check that the results are in accordance with the mandated standard.

End of TechNote

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