



PROCESS HEATING SERVICES LTD

for industrial electric heaters

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PAT Testing

PAT Testing throws up all sorts of potential problems with clients / end users. There are different classes of appliance that require PAT testing. Devices with heating elements must be treated differently from other portable electrical equipment, but some clients use tests that do not discriminate between different classes of equipment and can lead to “false failures” of appliances containing heating elements, where there is no fault with the element.

minimum insulation resistance readings

Appliance Class	Insulation Resistance
for Class I heating equipment with a rating \geq 3 kW	0.3 megohm
all other Class I equipment	1.0 megohm
Class II equipment	2.0 megohm
Class III equipment	250 kilohm

We are unable to PAT Test elements because they are only a component and not a Portable Appliance. Many other factors including other components, methods of connection and assembly or storage may adversely affect the testing.

Element test as follows:

Insulation Resistance (DCIR)

Output 1000 V

Time up 1.0 seconds

Time Hold 1.0 seconds

Time Down 0.5 seconds

IR Hi 9999 m Ω

IR Low 10 m Ω

Mili-Amp to Earth (50Hz Hi-Pot)

Output 1480 V (240 V x 2 + 1000 V)

Time up 1.0 Seconds

Time Hold 1.0 Seconds

Time Down 0.5 Seconds

IR Hi 1.0 mA

IR Low 0.0 mA

The insulation resistance of an element does drop a few Megohms when in operation.