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**EXPLOSION AND FIRE  
HAZARDS GROUP**

**CONFIDENTIAL REPORT OF DUST  
AND LIQUID INGRESS TESTS CARRIED  
OUT ON TWO TUNNEL POWER TRANSFORMER  
UNITS**

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## **CONFIDENTIAL REPORT OF DUST AND LIQUID INGRESS TESTS CARRIED OUT ON TWO TUNNEL POWER TRANSFORMER UNITS**

### **1 MANUFACTURER**

BLAKLEY ELECTRICS LIMITED  
Conington Road  
Lewisham  
London  
SE13 7LJ

### **2 APPARATUS**

Tunnel Power Transformer Unit option one comprising a two compartment mild steel fabricated enclosure fitted with two covers secured by means of M5 socket head cap screws and sealed by self adhesive 3 mm thick nitril rubber gaskets. The lower control compartment cover is fitted with 2 niphan sockets, two push buttons and a hinged circuit breaker cover. The transformer compartment is positioned above the control compartment for the option one unit.

Tunnel Power Transformer Unit option three utilising the same construction method and cover mounted components as the option one unit. However, the transformer compartment is positioned to one side of the control compartment.

### **3 TESTS**

The Tunnel Power Transformer units option one and three were tested for their ability to resist the entry of dust and liquids in accordance with the requirement for Degree of Protection IP54 as specified in BS EN 60 529 : 1992 "Degrees of Protection provided by enclosures (IP Code)", for Category 1 enclosures.

### **4 TEST RESULTS**

#### **4.1 Dust Ingress Test Results TPT Option One**

Date of test 11 January 1993.

No dust entered the enclosure as a result of the test.

#### **4.2 Dust Ingress Test Results TPT Option Three**

Date of test 12 January 1993.

No dust entered the enclosure as a result of the test.

#### **4.3 Water Ingress Test TPT Option One**

Date of test 13 January 1993.

No water entered the enclosure as a result of the test.

#### **4.4 Water Ingress Test TPT Option Three**

Date of test 13 January 1993.

No water entered the enclosure as a result of the test.

### **5 CONCLUSIONS**

The Sample Tunnel Power Transformer Units options one and three have been tested and found to comply with the requirements for Degree of Protection IP54 as specified in BS EN 60 529 : 1992 for Category 1 enclosures.

Any accessory to be used with the apparatus (eg a cable gland) must maintain the required degree of protection.

The test results and conclusion detailed above apply only to the samples tested. The conclusions may be extended to apply to other samples of the same design subject to provision to ERA Technology Ltd of drawings describing the sealing arrangements of the samples tested and confirmation that the further samples comply with the drawings.

**Note:** The results of the dust test showed that no dust entered the sample enclosures, the apparatus was therefore found to comply with the requirement for Degree of Protection IP64 as specified in BS EN 60529 : 1992 for Category 1 enclosures.