



香港標準及檢定中心
Hong Kong Standards and Testing Centre

DATE : 2002-06-28

TEST REPORT

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No.: HE102209

APPLICANT:

Everbright Electrical Industries (HK) Ltd.

ADDRESS OF APPLICANT:

1505 15/F., Kowloon Bldg.,
 555 Nathan Rd., Mongkok,
 Kowloon, Hong Kong.

DATE OF SAMPLES SUBMITTED:

2002-04-17, 2002-06-06

TEST DURATION:

2002-04-27 to 2002-06-25

DESCRIPTION OF SAMPLES:

Sample Description : Vandal-resistant Push button
 Brand Name : Everbright
 Model No. : EB20 Millennium Series
 Declared index of protection : IP41
 Country of Origin : Hong Kong & PRC
 Quantity submitted : 5 pcs. of push button + 1 pc of dummy mounting box
 Dummy mounting box : The box is said for mounting the push button, made of stainless steel, measures 125mm (L) x 125mm (W) x 75mm (D). The front panel measures 100mm x 100mm is recessed 10mm inwards and is secured to the 10 mm wide flange of the box with 4 machine screws, where the flange is covered with rubber gasket. The push button is fitted to this panel. A cable entry of $\varnothing 20$ mm is made in the bottom panel with a rubber bushing.

INVESTIGATIONS REQUESTED:

- Mechanical operation with electric load (Ref: IEC60512-5, Test 9C:1992)
- Impact testing of vision panels, pressels and indicators (Vandal resistance) (Ref: BS5655 PT13 Annex A:1995)
- Corrosion Resistance Test (salt mist) (Ref: IEC60068-2-11:1981, Test Ka)
- Test for ingress protection IP41 (Ref: IEC60529:2001)
- Fire Hazard Test (Glow wire test) (Ref: IEC60695-2-1/0:1994)

RESULTS/REMARKS:

Please refer to the following page(s).

Reference documents specified in test items 1 and 2 are provided by applicant.

Verified By

for Chief Executive



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TEST DATA

1. Mechanical operation with electric load

- Reference** : IEC60512-5, Test 9C:1992
- Deviations** : Only functional test is required after mechanical operation.
- Sample tested** : One out of the five submitted samples was selected randomly for test. The sample was mounted on the dummy mounting box as specified on page 1 and oriented in vertical position as in normal use.
- Equipment used** : A pneumatic driven endurance tester providing reciprocating strokes was used for test.
- Test conditions** : The sample was connected with a resistive load and a 24V d.c. regulated power supply to produce a current of 0.5A through the contact when being pushed.
- No. of cycles** : The sample was tested for a total of 1,000,000 cycles of push, at a speed of 2 cycles per second. (each cycle consisted of a push and a release)
- Duty cycles** : Approx. 50% (push), 50% (release).
- Test result** : The switch contact of the sample still allowed the current of 0.5A to pass through after the test. No physical damage was observed.

2. Impact testing of vision panels, pressels and indicators (Vandal resistance)

- Reference** : BS5655 PT13 Annex A:1995
- Sample tested** : One out of the five submitted samples was selected randomly for test. The sample was mounted on the dummy mounting box as specified on page 1 and oriented in horizontal position. The box was supported by a rigid floor with the impact surface horizontal.
- Equipment used** : An impactor weighing 1.0kg with a rounded head in a radius of 10mm.
- Test conditions** : The impactor was dropped freely onto the centre of the sample 3 times from a height of 0.5m.
- Test result** : The sample was functional after the test. It complied with the requirements of BS5655 PT13 Annex A:1995.

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3. Corrosion Resistance Test (salt mist)

Reference : IEC60068-2-11:1981, Test Ka

Deviations : Observation after test was carried out only on the stainless steel push pad of the sample.

Sample tested : One out of the five submitted samples was selected randomly for test.

Equipment used : As specified in the above reference document.

Test conditions : The sample was inspected for physical damage before test. It was hung freely in a salt mist saturated chamber which was set to the following parameters.

Temperature : 35°C
 Salt solution : 5% by weight dissolved in distill water.
 pH value : 7

Test duration : 48 hours.

Test result : There was no observable change of the push pad of the sample after the test.

4. Test for ingress protection

Reference : IEC60529:2001

Declared IP index : IP41

Sample tested : One out of the five submitted samples was selected randomly for test. The sample was mounted on the dummy mounting box as specified on page 1.

Equipment used : Drip box for test of IPX1; \varnothing 1.0 mm test pin for test of IP4X.

Test method : As specified in the reference document.

Test result : The test sample complied with IEC60529 for the requirement of IP41.

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5. Fire Hazard Test (Glow wire test)

- Reference** : IEC60695-2-1/0:1994
- Sample tested** : One out of the five submitted samples was selected randomly for test. The insulating material supporting the terminals of the switch was tested.
- Equipment used** : As specified in the reference document.
- Test method** :
 - The specimen to be tested (body in white) was cut from the sample and fixed on the mount so that the surface in contact with the tip of the glow-wire is vertical. The temperature of the glow wire was set to 550°C.
 - The tip of the glow-wire was then brought into contact with the specimen for 30s. After this period, the glow-wire and the specimen were slowly separated to avoid any further heating of the specimen and any movement of air which might affect the result of the test.
 - For the further 30s, observation was made to ensure that any ignition of the specimen would extinguish within this period and no ignition of tissue paper underneath was allowed throughout the test period and the observation period.
- Test result** : No self-ignition of specimen and ignition of tissue paper was observed. The insulating material complied with the requirement when tested to IEC60695-2-1/0.

*** End of test Report ***

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