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TEST RESULTS

Type of Test : IP 44 Test
 Test Method : IEC 60529: 2001-02
 Product / Model : 2 Core TTOC-FFP-2P-AB; FTTH Fiber Wall Socket

CLAUSE	REQUIREMENTS	RESULT-REMARKS	VERDICT
10	Marking		Not Applicable
11	General requirements for tests		
11.1	Atmospheric conditions for water and dust tests		
	The tests should be carried out under the atmospheric conditions as follows;		
	Temperature range: 15°C to 35°C	25°C	Pass
	Relative humidity: 25% to 75%	63%	Pass
11.2	Test samples		
	The test samples for each test shall be in clean and new condition with all parts in place and mounted in the manner stated by the manufacturer.		Pass
11.3	Application of test requirements and interpretation of test results		Pass
11.4	Combination of test conditions for the 1 st characteristic numeral. Tests for protection against:		
	Protection against access to hazardous parts	See Clause 12	Pass
	Protection against solid foreign objects	See Clause 13	Pass
11.5	Empty enclosures		
	If the enclosure is tested without equipment inside, manufacture shall indicate which parts might be affected by test condition of 1 st characteristic numeral		Not Applicable
12	Test for protection against access to hazardous parts indicated by the 1 st characteristic numeral		
12.1	Access probes		
	Access probes to test are as specified in the standard	Test wire Ø 1.0 mm	Pass



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CLAUSE	REQUIREMENTS	RESULT-REMARKS	VERDICT
12.2	Test conditions		
	Access probe is pushed against or inserted through any openings of the enclosure with a specified force	1 N $\pm$ 10%	Pass
12.3	Acceptance conditions		
	Adequate clearance is kept between the access probe and hazardous parts.	Access probe not touch hazardous live parts	Pass
12.3.1	Low-voltage equipment (rated voltage < 1000VAC and 1500 VDC)		
	Access probe shall not touch hazardous live parts. If the test using a signal circuit, the lamp shall not light		Pass
12.3.2	High-voltage equipment (rated voltage > 1000VAC and 1500 VDC)		
	When the access probe is placed in the most unfavourable positions, the equipment shall withstand the dielectric test as specified in the relevant product standard.		Not Applicable
12.3.3	Equipment with hazardous mechanical parts		
	Access probe shall not touch hazardous live parts. If the test using a signal circuit, the lamp shall not light.		Not Applicable
13	Tests for protection against solid foreign objects indicated by the 1st characteristic numeral		
13.1	Test means		
	Test means and main test conditions as specified in the standard	Rigid steel rod $\varnothing$ 1.0 mm	Pass
13.2	Test conditions for the 1st characteristic numeral 1, 2, 3, 4		
	The object probe is pushed against any openings of the enclosure with the force	1 N $\pm$ 10 %	Pass
13.3	Acceptance conditions for 1st characteristic numeral 1, 2, 3, 4		
	The protection is satisfactory if the full diameter of the probe does not pass through any opening as specified in the standard	See Table 1	Pass



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CLAUSE	REQUIREMENTS	RESULT-REMARKS	VERDICT
13.4	Dust test for 1st characteristic numeral 5 and 6		
	Test is made using a dust chamber as specified in the standard		Not Applicable
13.5	Special conditions for 1st characteristic numeral 5		
13.5.1	Test conditions for the 1st characteristic numeral 5		
	The enclosure shall deemed category 1 unless the relevant product standard for the equipment specifies that the enclosure is category 2		Not Applicable
13.5.2	Acceptance conditions for 1st characteristic numeral 5		
	The protection is satisfactory if, on inspection, talcum powder has not accumulated in a quantity or location such that, as with any other kind of dust, it could interfere with the correct operation of the equipment or impair safety. Except for special cases to be clearly specified in the relevant product standard, no dust shall deposit where it could lead to tracking along the creep age distances		Not Applicable
14	Tests for protection against water indicated by the 2nd characteristic numeral		
14.1	Test means		
	Test means and main test conditions as specified in the standard.		Pass
14.2	Test conditions		
	Tests are conducted with fresh water		Pass
14.2.1	Test for 2nd numeral characteristic numeral 1 with drip box		
	Test is made with a device which produces a uniform flow of water drops over the whole area of the enclosure. Enclosure is placed on the turntable.		Not Applicable



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CLAUSE	REQUIREMENTS	RESULT-REMARKS	VERDICT
14.2.2	Test for 2nd numeral characteristic numeral 2 with drip box		
	Test is made with a device which produces a uniform flow of water drops over the whole area of the enclosure. Enclosure is tilted at 15° at four fixed positions.		Not Applicable
14.2.3	Test for 2nd numeral characteristic numeral 3 with oscillating tube or spray nozzle		
	Test is made by using oscillating tube as specified in standard. Spray $\pm 60^\circ$ from vertical.		Not Applicable
	Test is made by using spray nozzle as specified in standard. Spray $\pm 60^\circ$ from vertical.		Not Applicable
14.2.4	Test for 2nd numeral characteristic numeral 4 with oscillating tube or spray nozzle		
	Test is made by using oscillating tube as specified in standard. Spray $\pm 180^\circ$ from vertical.		Not Applicable
	Test is made by using spray nozzle as specified in standard. Spray $\pm 180^\circ$ from vertical.	See Table 2	Pass
14.2.5	Test for 2nd numeral characteristic numeral 5; with the 6.3 mm nozzle		
	Test is made by spraying the enclosure from all practicable direction with a stream of water from a test nozzle as specified in the standard.		Not Applicable
14.2.6	Test for 2nd numeral characteristic numeral 6; with the 12.5 mm nozzle		
	Test is made by spraying the enclosure from all practicable direction with a stream of water from a test nozzle as specified in the standard.		Not Applicable
14.2.7	Test for 2nd numeral characteristic numeral 7; temporary immersion between 0.15 m and 1 m		
	Test is made by completely immersing the enclosure in water.		Not Applicable



Signature

CLAUSE	REQUIREMENTS	RESULT-REMARKS	VERDICT
14.2.8	Test for 2 nd numeral characteristic numeral 8; continuous immersion subject to agreement		
	Test is made by completely immersing the enclosure in water. Test is subject to agreement between manufactured and user.		Not Applicable
14.3	Acceptance conditions		
	The enclosure shall be inspected for ingress of water	See Table 2	Pass
15	Test for protection against access to hazardous parts indicated by the additional letter		Not Applicable

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Table 1: Acceptance Condition for 1st Characteristic Numeral 4 – Degrees of protection against the ingress of solid foreign object

TEST METHOD	REQUIREMENT	VERDICT
IEC 60529: 2001-02 Test wire of Ø 1.0 mm, Clause 13.2 The object probe is pushed against any openings of the enclosure with the force 1 N ± 10 %	The test wire of Ø 1.0 mm shall not penetrate and adequate clearance shall be kept The protection is satisfactory if the full diameter of the probe specified does not pass through any opening.	Pass



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Table 2: Acceptance Condition for 2nd Characteristic Numerals 4 – Degrees of protection against ingress of water.

NO	BY INSPECTION	RESULT/REMARKS	VERDICT
1	Appliance has the ventilation opening	Yes	-
2	Appliance has the drain-holes.	No	-
3	If it is has drain-holes; any water which enters does not accumulate and that it drains away without doing any harm to the appliance.		Not Applicable
4	Ingress of water	No water visible in the enclosure	Pass
5	If water has entered, it shall not;		
	a) Interfere with the correct operation of the appliance or impair the safety.		Not Applicable
	b) Deposit on insulation parts which could lead to tracking along the creep age distances.		Not Applicable
	c) Reach live parts or windings not designed to operate when wet		Not Applicable
	d) Accumulate near the cable end / enter the cable.		Not Applicable



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Type of Test : UL 94 Vertical Burning Test

Test Method : UL 94: 1997 – Underwriters Laboratories. Title: Test for Flammability of Plastic Materials for Parts in Devices and Appliances

Product / Model : 2 Core TTOC-FFP-2P-AB; FTTH Fiber Wall Socket

No.	Type of Test	Test Method	Results				
			Specimen 1	Specimen 2	Specimen 3	Specimen 4	Specimen 5
1.	Flammability, <u>Test Condition:</u> Temperature : 23±2° Relative Humidity : 50±5% Duration : 48 Hours	UL 94 Clause 8 20 mm Vertical Burning Test					
1.1	Afterflame time after first flame application, t_1 (seconds)		0.8	1.0	1.0	1.1	1.1
1.2	Afterflame time after second flame application, t_2 (seconds)		1.0	1.1	1.2	1.1	0.9
1.3	Afterglow time after second flame application, t_3 (seconds)		0	0	0	0	0
1.4	The test specimens burned up to the holding clamp		No	No	No	No	No
1.5	The test specimens drip flaming particles that ignited the cotton indicator		No	No	No	No	No
1.6	$t_1 + t_2$ (seconds)		1.8	2.1	2.2	2.2	2.0
1.7	$t_2 + t_3$ (seconds)		1.0	1.1	1.2	1.1	0.9
1.8	Classification ⁽¹⁾		V-0				

Note: ⁽¹⁾ Reference Standard UL94:1997 Table 8.1 Materials Classifications

Criteria Conditions	V-0	V-1	V-2
a) Afterflame time for each individual specimen t_1 or t_2	≤ 10s	≤ 30s	≤ 30s
b) Total afterflame time for any condition set (t_1 plus t_2 for the 5 specimens)	≤ 50s	≤ 250s	≤ 250s
c) Afterflame plus afterglow time for each individual specimen after the second flame application ($t_2 + t_3$)	≤ 30s	≤ 60s	≤ 60s
d) Afterflame or afterglow of any specimen up to the holding clamp	No	No	No
e) Cotton indicator ignited by flaming particles or drops	No	No	Yes



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No.	Type of Test	Test Method	Results				
			Specimen 1	Specimen 2	Specimen 3	Specimen 4	Specimen 5
2.	Flammability <u>Test Condition:</u> Temperature : 70±1° Duration : 168 Hours	UL 94 Clause 8 20 mm Vertical Burning Test					
2.1	Afterflame time after first flame application, t_1 (seconds)		0.9	0	0.9	1.1	0
2.2	Afterflame time after second flame application, t_2		1.1	1.3	1.2	1.4	0
2.3	Afterglow time after second flame application, t_3 (seconds)		0	0	0	0	0
2.4	The test specimens burned up to the holding clamp		No	No	No	No	No
2.5	The test specimens drip flaming particles that ignited the cotton indicator		No	No	No	No	No
2.6	$t_1 + t_2$ (seconds)		2.0	1.3	2.1	2.5	0
2.7	$t_2 + t_3$ (seconds)		1.1	1.3	1.2	1.4	0
2.8	Classification ⁽¹⁾		V-0				

Note: ⁽¹⁾ Reference Standard UL94:1997 Table 8.1 Materials Classifications

Criteria Conditions	V-0	V-1	V-2
a) Afterflame time for each individual specimen t_1 or t_2	≤ 10s	≤ 30s	≤ 30s
b) Total afterflame time for any condition set (t_1 plus t_2 for the 5 specimens)	≤ 50s	≤ 250s	≤ 250s
c) Afterflame plus afterglow time for each individual specimen after the second flame application ($t_2 + t_3$)	≤ 30s	≤ 60s	≤ 60s
d) Afterflame or afterglow of any specimen up to the holding clamp	No	No	No
e) Cotton indicator ignited by flaming particles or drops	No	No	Yes



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APPENDIX



Photo 1: Sample of 2 Core TTOC-FFP-2P-AB; FTTH Fiber Wall Socket

