ITC INDIA

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ELECTRICAL LABORATORY- TEST REPORT

Automatic electrical controls for household and similar use- Part 2-15: Particular requirements for automatic electrical air flow, water flow and water level sensing controls

Test Report N°.....	
Date of issue.....	05-07-2016
Sample date in.....	06-05-2016
Date of performance.....	06-05-2016 to 28-06-2016
Applicant.....	
Customer.....	

Sample description.....	Float Switch
Sample Condition.....	OK
Customer reference.....	N/A

Trade mark / Manufacturer.....	
Model / Type / Reference.....	AFS 1515
Ratings.....	220/240VAC, 8A, 50 Hz
Test method(s).....	IEC 60730-2-15:2008 & IEC 60730-1:2015

Overall verdict

Pass ☒

Fail ☐

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60730-2-15	60730-1	Requirement – Test	Results – Remarks	Verdict
6		**Classification**		
		A control is classified		
	6.1	**According to nature of supply**		
	6.1.1	Control for a.c. only		P
	6.1.2	Control for d.c. only		N/A
	6.1.3	Control for a.c. and d.c.		N/A
	6.1.4	Control for Specific supplies or multiple supplies		N/A
	6.1.5	Battery powered control		N/A
	6.2	**According to type of load to be controlled be each circuit of the control**		
		A control having more than one circuit need not have the same classification for each circuit.		
	6.2.1	Circuit for a substantially resistive load with a power factor not less than 0,95.		N/A
	6.2.2	Circuit suitable for either a resistive load or for an inductive load with a power factor not less than 0,6 or a combination of both.		N/A
	6.2.3	Circuit for declared specific load.	Upto 2.0 HP Pump	P
	6.2.4	Circuit for a current less than 20 mA.		N/A
	6.2.5	Circuit for a.c. motor load whose characteristics are defined by the control manufacturer's declaration.		P
	6.2.6	Circuit for Pilot load.		N/A
	6.3	**According to their purpose**		
		A control may be classified for more than one purpose, in which case it is referred to as a multi-purpose control.		
	6.3.1	thermostat:		N/A
	6.3.2	temperature limiter;		N/A
	6.3.3	thermal cut-out:		N/A

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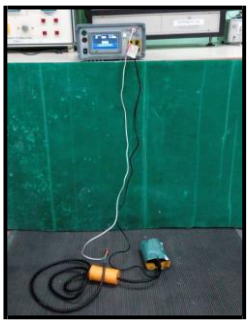
60730-2-15	60730-1	Requirement – Test	Results – Remarks	Verdict
	6.3.5	energy regulator,		N/A
	6.3.6	timer;		N/A
	6.3.7	time switch;		N/A
	6.3.8	manual control;		N/A
	6.3.9	sensing control		N/A
6.3.9.101		Boiler water level cut-out;		N/A
6.3.9.102		Boiler water level limiter;		N/A
6.3.9.103		Boiler water feed control;		N/A
6.3.9.104		Water level operating control;		P
6.3.9.105.		Water level protective control;		N/A
6.3.9.106.		Air flow operating control;		N/A
6.3.9.107.		Water flow operating control;		N/A
6.3.9.108		Air flow cut out;		N/A
6.3.9.109		Water flow cut-out;		N/A
	6.3.10	electrically operated control;		N/A
	6.3.11	motor protector;		P
	6.3.11.1	thermal motor protector;		N/A
	6.3.12	electrically operated valve		N/A
	6.3.13	electrically operated mechanism;		N/A
	6.3.14	protective control;		P
	6.3.15	operating control		P
	6.4	**According to features of automatic action**		
	6.4.1	Type 1 action		P

	12.3.5	The measuring circuit shall have a total impedance of (1750±250) Ω and be shunted by a capacitor such that the time constant of the circuit is (225 ± 15) μs.		N/A
	12.3.6	The measurement circuit shall not have an error of more than 5 % at an indicated 0,75 mA of leakage and shall have an accuracy of within 5 % for all frequencies in the range of 20 Hz to 5 kHz.		N/A
	12.3.7	The maximum leakage current, after the temperature of the control has stabilized, shall not exceed the values given in 13.3.4.		N/A
	13	**Electric strength and insulation resistance**		
	13.1	**Insulation resistance**		
		The insulation resistance of in-line cord, free standing and independently mounted controls shall be adequate.		P
	13.1.1	Compliance is checked by the test of 13.1.2 to 13.1.4 inclusive. This test is made where specified in clause 12.		P
	13.1.2	When measuring reinforced or supplementary insulation is covered with a metal foil to provide an electrode for the test.		P
	13.1.3	The insulation resistance is measured with a d.c. voltage of approximately 500 V applied, the measurement being made 1 min after application of the voltage.		P
	13.1.4	The insulation resistance shall not be less than show in Table 11 (13.1 of the previous edition).	Measured value: >1.00GΩ	P

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60730-2-15	60730-1	Requirement – Test	Results – Remarks	Verdict
	13.2	**Electric strength**		
		The electric strength of all controls shall be adequate.		P
	13.2.1	Compliance is checked by the following test of 13.2.2 to 13.2.4 inclusive.		P
	13.2.2	When measuring reinforced or supplementary insulation is covered with a metal foil to provide an electrode for the test.		P
	13.2.3	The insulation is subjected to a voltage of substantially sine-wave from, having frequency of 50 Hz or 60 Hz.		P
		Voltage is applied for 1 min across the insulation or disconnection indicated in Table 12 and has the value shown in the table.	 No flashover or breakdown detected.	P
	13.2.4	No flashover or breakdown shall occur. Glow discharges without drop in voltage are neglected.	In compliance	P
	13.3	**Additional tests for in-line cord and free-standing controls**		N/A
13.101		**Electric strength of probes**		
		Probes of electrodes-sensor type boiler water level sensing controls shall be subjected to the following test.		N/A
		Three samples of the probe shall be condition for 10 days in a test boiler operating at the manufacture's declared maximum working pressure and water temperature.		N/A
		The average breakdown voltage of the conditioned samples shall not be less than 50% of the breakdown voltage of the unconditioned samples.		N/A

60730-2-15	60730-1	Requirement – Test	Results – Remarks	Verdict
	27.5	**Overload tests**		
	27.5.1	The following overload tests are carried out on in-line cord controls as indicated in 11.10.2 and provided with a plug and socket outlet:		N/A
	-	Controls as specified without protective devices and without incorporated fuses are loaded for 1 h.		N/A
	-	Controls protected by protective devices (including fuses) are loaded.		N/A
	-	Controls protected by incorporated fuses complying with IEC 60127-1 shall have those fuses replaced by links of negligible impedance and shall be loaded.		N/A
	-	Controls protected both by incorporated fuses and by protective devices are loaded.		N/A
	-	Controls protected by protective devices which will short-circuit only in case of overload shall be tested both as controls with protective devices and as controls without protective devices.		N/A
	27.5.2	**Overload tests carried out on in-line cord controls as indicated in 11.10.2 and provided with a plug and socket outlet**		
		The temperature shall not exceed those indicated in Table 13		N/A
	27.5.3	**For controls not covered by 27.5.2**		
		The test according to 27.5.1 shall be carried out at ambient temperature (20±5)˚C.		N/A
	27.6	**Battery short-circuit test**		N/A
	28	**Guidance on the use of electronic disconnection**		N/A

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