

COLLECTION OF CTL DECISIONS

Decision Sheet

Standard(s): IEC 60730-1:1999	Sub clause(s): 24	DSH - 561 page 1 (1)
Subject: electronic thermostat	Key words: capacitor placed across a reinforced insulation between the line 230 V and SELV circuit	Decision confirmed by CTL at its 42 nd meeting 2005 in Cancun
<p>Question: In an electronic thermostat a capacitor is placed across reinforced insulation between the line 230 V and SELV circuit. According to the manufacturer's information the use of this capacitor is necessary for the correct operation of a switching transformer which supplies the same SELV circuit. In IEC 60730-1:1999 (EN 60730-1:2000) there are no specific requirements that cover this situation. In clause 24 "Components" of IEC/EN 60730-1 capacitors are only evaluated in respect to their use as RFI suppressors. Conformity to IEC 60384-14 is required without any additional indications. We noted that IEC 60065:2001 and IEC 60950-1:2001 have requirements for capacitors bridging insulation. In particular: IEC 60065:2001: - 8 "Constructional requirements with regard to the protection against electric shock", sub-clause 8.6; - 9 "Electric shock hazard under normal operating conditions", sub-clause 9.1.1; - 14 "Components", 14.2 Capacitors and RC-units, sub-clause 14.2.1 b). IEC 60950-1:2001 - 1.5 "Components", 1.5.7 "Double insulation or reinforced insulation bridged by components", 1.5.7.2 "Bridging capacitors" and 1.5.7.4 "Accessible parts"; - 2.4 "Limited current circuits". According to both these standards in this case a Type Y1 capacitor or two Type Y2 capacitors in series are required across reinforced insulation. Is it possible to take into account the same above mentioned requirements for automatic controls falling into the scope of IEC/EN 60730-1?</p> <p>Decision: For an electronic thermostat in which a capacitor is placed across reinforced insulation between the line 230 V and SELV circuit, it is acceptable for two Type Y2 capacitors (according to IEC 60384-14) in series to be used. The safety level shall not be less than that required for "protective impedance" according to subclause H.8.1.10 and H.11.2.5 of IEC 60730-1:1999. The overvoltage category of the equipment in relation to maximum voltage of the capacitors shall also be taken into consideration. The controls shall be declared to be installed in overvoltage category II or less.</p> <p>Explanatory notes: None</p>		

