

STANDARD INFORMATION

Standard: UL 60730-2-5 / ANSI Z21.20 / CSA C22.2 No. 60730-2-5

Standard ID:

Automatic Electrical Controls for Household and Similar Use - Part 2-5: Particular Requirements for Automatic Electrical Burner Control Systems [UL 60730-2-5:2022 Ed.4]

Automatic Electrical Controls for Household and Similar Use - Part 2-5: Particular Requirements for Automatic Electrical Burner Control Systems [CSA C22.2#60730-2-5:2022 Ed.2]

Automatic Electrical Controls for Household and Similar Use - Part 2-5: Particular Requirements for Automatic Electrical Burner Control Systems [ANSI Z21.20:2022 Ed.2]

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Automatic Electrical Controls For Household And Similar Use - Part 2-5: Particular Requirements For Automatic Electrical Burner Control Systems [UL 60730-2-5:2014 Ed.3+R:05Aug2014]

Automatic Electrical Controls for Household and Similar Use - Part 2-5: Particular Requirements for Automatic Electrical Burner Control Systems [CSA C22.2#60730-2-5:2014 Ed.1]

Automatic Electrical Controls for Household and Similar Use - Part 2-5: Particular Requirements for Automatic Electrical Burner Control Systems [ANSI Z21.20:2014 Ed.1]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **October 1, 2025**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard. Reports not updated to this version by the effective date above will be withdrawn.

Overview of Changes:

- New requirements for class C control functions
- New requirements for high-temperature operation
- New requirements for reset from lock-out
- New requirements for 2.AL burner control systems
- New requirements for abnormal operation
- New annex for solid-state oil igniters

Specific details of new/revise requirements are found in table below.

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		<i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined out below.</i>
1	Info	Scope and normative references
1.1	Info	Scope
		<i>New clause added;</i>
1.1.2		This document applies to AC or DC powered systems with a rated voltage not exceeding 660 V AC or 600 V DC.
11	Info	Constructional requirements
11.3	Info	Actuation and operation
11.3.5	Info	Contacts – General
		<i>New clause added;</i>
		Replacement:
		Systems of CLASS C CONTROL FUNCTIONS shall include at least two switching elements to directly deenergize the safety relevant terminals.
		NOTE 1 A single relay operating two independent contacts is considered to be only one switching element.
11.3.5.2		Designs where relays are used as switching elements, a non-replaceable fuse (see Table H.24 Note I) in series with two independent relay contacts with I_N fuse $< 0,6 * I_e$ relay are considered to comply with the following requirements for prevention of common cause ERROR.
		NOTE 2 I_N : values for the fuse (see IEC 60127-1:2015, 3.16);
		I_e : rated operational current of the contact (see IEC 60947-1:2007; 4.3.2.3)
		As an alternative to the two switching elements that directly de-energize the safety relevant terminals, burner control systems (Type 2.AL) are permitted and shall meet all of the following:



CLAUSE	VERDICT	COMMENT
		<ul style="list-style-type: none">• have at least one switching element that directly de-energizes the safety relevant terminals and be connected to an external pressure control in such a manner that both the direct and indirect switching contacts are in series to each other,• be integrated within the warm air heating appliances (furnaces),• meet the requirements of 11.103. <p>NOTE 3 The burner control system is a class C control function.</p> <p>In Part 1, the term</p> <ul style="list-style-type: none">• “safety related output terminals” is equivalent to “valve terminals”.• “safety shut-down” shall be used as defined in this document,• “control” shall be used as “burner control systems”.
		<p>New clause added;</p> <p>Modification of 11.3.5.2.1 of the Part 1 by replacing Item b) with the following:</p>
11.3.5.2.1DV		<p>b) When current limitation techniques are used as the protection measure (for example, transformer), the control shall either be tested with the same current limiting means, or simulated using the declared (Table 1, requirement 95) short circuit current.</p>
		<p>New clause added;</p> <p>Modification of 11.3.101 of the Part 2 by adding the following:</p>
11.3.101DV		<p>In the US and Canada, circuits required for CLASS C CONTROL FUNCTIONS of TYPE 2 ACTION (e.g., for fuel and combustion air control such as valves, fuel-air ratio controls, etc.) shall have a voltage rating of not more than a nominal 120 volts.</p> <p>The supply system for circuits of CLASS A or B CONTROL FUNCTIONS of TYPE 1 ACTION (e.g., for combustion or conditioned air blower, air proving, ignition transformer, lead/lag boiler sequencing, alarm/annunciation, call for heat, proved ignition, user interface, etc.) is not specified.</p>
		<p>New clause added;</p> <p>Modification of 11.3.104 of the Part 2 by replacing the last sentence with the following:</p>
11.3.104DV		<p>Devices used in burner control circuits shall open all ungrounded conductors (unearthed phases) of the supply circuit, when operated.</p>
		<p>New clause added;</p> <p>For CONTROLS intended for HTO using HTO-SENSORS, the temperature shall be monitored. In the event the temperature falls below the defined temperature limit for HTO, the CONTROL shall proceed to SAFETY SHUT-DOWN or switch over to flame supervision (e.g. ionization, UV, IR etc.). This function (including sensor,</p>
11.3.114		



CLAUSE	VERDICT	COMMENT
		<p>detector and programming unit) shall be a CLASS C CONTROL FUNCTION with TYPE 2 ACTION.</p> <p>The defined temperature limit for HTO (see Table 1, requirement 139) shall be the temperature value, which includes the auto-ignition temperature, given in IEC 60079-20-1 or otherwise specified by the product standard, and the tolerances of the signal processing circuit including the sensor.</p>
11.102	Info	<p>Reset from lock-out function</p> <p><i>New section added;</i></p> <p>Performance requirements</p>
11.102.2		<p>The use of an AUTOMATIC ACTION to perform the RESET FROM LOCK-OUT FUNCTION (e.g. RESETS generated by automatic devices, like TIMERS, etc.) shall be permitted provided it is accepted by the specific application standards. See standard for details.</p> <p><i>New section added;</i></p>
11.103		<p>Application requirements for the use of Type 2.AL burner control systems in warm air heating appliances (furnaces)</p> <p>The design of Type 2.AL burner control systems for warm air heating appliances (furnaces) is intended for appliances that shall have the following construction: See standard for details.</p>
12	Info	<p>Moisture and dust resistance</p> <p><i>New clause added;</i></p>
12.2.8DV		<p>Modification of 12.2.8 of the Part 1 by adding the following text:</p> <p>The value of (t) shall be 40 °C ±2 °C.</p>
Annex H	Info	<p>Requirements for electronic controls</p>
H.26	Info	<p>Electromagnetic compatibility (EMC) requirements – Immunity</p> <p><i>New clause added;</i></p> <p>Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests Addition:</p>
H.26.4		<p>The test shall be performed</p> <ul style="list-style-type: none"> a) during stand-by time; b) during start-up period; d) in the RUNNING POSITION; e) in the LOCK-OUT position.



CLAUSE	VERDICT	COMMENT
		<p>The system shall tolerate harmonics and interharmonics including mains signalling at a.c. power port, so that, when tested in accordance with H.26.4, either it shall continue to function in accordance with the requirements of this document or it may proceed to safety shut-down, which may be followed by a system restart or, if in volatile lock-out, it may proceed to a system restart.</p> <p>NOTE 101 NON-VOLATILE LOCK-OUT excludes the use of SYSTEM RESTART.</p>
H.26.8	Info	<p>Surge immunity test</p> <p>Test procedure</p> <p>Replacement of the second paragraph:</p> <p>The test shall be carried out by subjecting the system to five pulses and with the voltage and current values listed in Table H.14 at intervals of not less than 60 s. The five pulses of each polarity (+, –) and each phase angle as described in IEC 61000-4-5 are delivered in the following operating modes:</p> <ul style="list-style-type: none">a) 2 pulses with the system in the LOCK-OUT position;b) 1 pulse with the system in the RUNNING POSITION;c) 2 pulses randomly applied during the start-up sequence. <p>The system shall tolerate voltage surges on the mains supply and relevant signal terminals, so that, when tested in accordance with H.26.8.3,</p> <p>1) <u>for the values of Table H.16 installation class 2, it shall continue to function in accordance with the requirements of this standard. It shall neither proceed to SAFETY SHUT-DOWN or lock-out nor shall it RESET from LOCK-OUT;</u></p> <p>2) <u>for the values of Table H.16 installation class 3 for all listed tests, either it shall perform as in 1) or it may proceed to SAFETY SHUT-DOWN, which may be followed by a SYSTEM RESTART or, if in VOLATILE LOCK-OUT, it may proceed to a SYSTEM RESTART.</u></p> <p>NOTE NON-VOLATILE LOCK-OUT excludes the use of SYSTEM RESTART.</p> <p>3) <u>for the values of Table H.16 installation class 4 with line to earth on power supply only, either it shall perform as in 1) or 2) or it shall go into the defined state “out of OPERATION” as declared by the manufacturer in accordance with Table 1, requirement 119.</u></p> <p><u>For compliance criteria 1) and 2), after the tests of H.26.8.3, the surge protective components shall not be destroyed.</u></p>



CLAUSE	VERDICT	COMMENT
H.26.9	Info	Electrical fast transient/burst immunity test Test procedure Modification: <u>Replace the 2nd paragraph of Part 1 by the following:</u> <u>The test shall be performed for 20 cycles with the system having reached the RUNNING POSITION, remaining in the RUNNING POSITION for a minimum of 30 s within each cycle. The test shall also be performed for a minimum of 2 min with the system in the LOCK-OUT position and with the system in the stand-by position.</u> The system shall tolerate electrical fast transient bursts on the mains supply and signal lines, so that, when tested in accordance with H.26.9.2, H.26.9.3 a) for test level 2 of Table H.17: it shall continue to function in accordance with the requirements of this document. It shall neither go to SAFETY SHUT-DOWN or LOCK-OUT, nor shall it RESET from LOCK-OUT; b) for test level 3 of Table H.17: either it shall perform as in a) or it may proceed to SAFETY SHUT-DOWN which may be followed by a SYSTEM RESTART or, if in VOLATILE LOCK-OUT, it may proceed to a SYSTEM RESTART; NOTE Non-volatile lock-out excludes the use of system restart. c) for test level 4 of Table H.17, either it shall perform as in a) or b) or it shall be set out of OPERATION into a defined state as declared by the manufacturer in accordance with Table 1, requirement 119.
H.26.10	Info	Ring wave test <i>New clause added;</i> Test levels
H.26.10.4		Replacement: BURNER CONTROL SYSTEMS are to be tested at two of the severity levels of the peak values of open-circuit voltage and short-circuit current of the surges, in accordance with Table H.18.
H.26.10.5		<i>New section added;</i> SYSTEMS other than those operating at SELV are tested according to severity level II and severity level III respectively. See standard for details.



CLAUSE	VERDICT	COMMENT
H.26.13	Info	Test of influence of supply frequency variations <i>New clause added;</i> Test procedure Addition: The test shall be performed at least once with the system in each of the following operating modes: <ul style="list-style-type: none">• START POSITION;• RUNNING POSITION;• LOCK-OUT position. The system shall tolerate supply frequency variations such that, when tested, <ul style="list-style-type: none">a) for test level 2 of Table H.22: it shall continue to function in accordance with the requirements of this document. It shall neither go to SAFETY SHUT-DOWN or LOCK-OUT, nor shall it RESET from LOCK-OUT. Variation in programme timings shall not exceed the percentage of applied frequency variations;b) for test level 3 of Table H.22: either it shall perform as in a) or it may proceed to SAFETY SHUT-DOWN which may be followed by a SYSTEM RESTART or, if in VOLATILE LOCK-OUT, it may proceed to a SYSTEM RESTART. NOTE 101 NON-VOLATILE LOCK-OUT excludes the use of SYSTEM RESTART.
H.26.14	Info	Power frequency magnetic field immunity test <i>New clause added;</i> Test procedure Addition: The test shall be done at least once with the system in each of the following operating modes: <ul style="list-style-type: none">• START POSITION;• RUNNING POSITION;• LOCK-OUT position. The system shall tolerate power frequency magnetic fields so that, when tested, <ul style="list-style-type: none">a) for test level 2 of Table H.23: it shall continue to function in accordance with the requirements of this standard. It shall neither go to SAFETY SHUT-DOWN or LOCK-OUT, nor shall it RESET from LOCK-OUT.



CLAUSE	VERDICT	COMMENT
		b) for test level 3 of Table H.23: either it shall perform as in a) or it may proceed to SAFETY SHUT-DOWN which may be followed by a SYSTEM RESTART or, if in VOLATILE LOCK-OUT, it may proceed to a SYSTEM RESTART. NOTE 101 NON-VOLATILE LOCK-OUT excludes the use of SYSTEM RESTART.
		<i>New section added;</i>
H.27	Abnormal operation	See standard for details.
		<i>New Annex added;</i>
Annex DVMM	Requirements for solid-state oil igniters	Annex DVMM is supplementary to or mandatory of those requirements given elsewhere in this Standard and applied to solid-state oil igniters and to the igniter portion of burner control systems. See standard for details.