TEST REPORT

EN 62094-1

Indicator Light units for household and similar fixed-electrical installations

Part 1: General requirements

Report Reference No.....:	22ZCTB1213007SP
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Approved by (name + signature).....:	Tomy Wu
Date of issue.....:	2022-12-14
Testing Laboratory Name.....:	Shenzhen ZCT Technology Co.,Ltd.
Address.....:	3/F., Building 5, Hongsheng Industrial Zone, Bao'an Road, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China.
Testing location.....:	Same as above
Applicant.....:	**Wenzhou Yijie Electric Co., Ltd**
Address. .....:	No. 83, Fengquan Road, Tianhe Street, Wenzhou Economic and Technological Development Zone, Wenzhou City, Zhejiang Province
Test specification:	
Standard.....:	EN 62094-1:2003+A11:2003
Test procedure.....:	Test report
Non-standard test method……..:	N/A
Test Report Form No.....:	Test report
Test item description.....:	Indicator Light
Trade Mark.....:	N/A
Manufacturer.....:	Same as applicant
Model/Type reference.....:	AN2919 AB0303, AN0303, AG0303, VA0303, AB0323, AN0323, AG0323, VA0323, AN2919, AN2922, AN2916, AN2921, AN2923
Ratings.....:	230VAC 50/60Hz 0.6W
Operating condition……:	Continuous

Test item particulars..... :	Indicator Light
Temperature by measurement..... :	25℃
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing:	
Date of receipt of test item..... :	Nov. 29, 2022
Date (s) of performance of tests ..... :	Nov. 29, 2022 to Dec. 13, 2022
General remarks:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a comma (point) is used as the decimal separator.	
General product information: Maximum recommended ambient (Tmra): 25°C.	

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Clause	Requirement	Remark	Result
6	**Ratings**		—
6.1	Indicator Light units shall preferably have rated voltages of 6 V, 12 V, 24 V, 48 V, 130 V, 230V, 250 V, 277 V, 380 V, 400 V, 415 V and 440 V.	**230V**	P
6.2	Indicator Light units shall have rated power not exceeding 10 W.		P
6.3	Indicator Light units shall preferably have a degree of protection IP20, IP40, IP44, IP54 or IP55.		P
7	**Classification**		P
7.1	According to the degree of protection against access to hazardous parts and against harmful effects due to the ingress of solid foreign objects:		P
	– IP2X: Indicator Light units protected against access to hazardous parts with a finger and against harmful effects due to ingress of solid foreign objects of 12,5 mm diameter and greater;		P
	– IP4X: Indicator Light units protected against access to hazardous parts with a wire and against harmful effects due to ingress of solid foreign objects of 1,0 mm diameter and greater;		P
	– IP5X: Indicator Light units protected against access to hazardous parts with a wire and protected against dust.		P
7.2	According to the degree of protection against harmful effects due to the ingress of water:		P
	– IPX0: Indicator Light units not protected against ingress of water;		P
	– IPX4: Indicator Light units protected against splashing water;		P
	– IPX5: Indicator Light units protected against water jets.		P
7.3	According to the method of mounting the Indicator Light units:		P
	– surface-type;		N/A
	– flush-type;		P
	– semi flush-type;		P
	– panel-type;		P
	– architrave-type.		P
7.4	According to the method of installation, as a consequence of the design of the indicator light units:		P
	– Indicator Light units where the cover or cover plate can be removed without displacement of the conductors (design A);		P
	– Indicator Light units where the cover or cover plate cannot be removed without displacement of the conductors (design B).		P

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Clause	Requirement	Remark	Result
7.5	According to the type of terminals or terminations:		P
	– Indicator Light units with screw-type terminals;		P
	– Indicator Light units with screwless terminals for rigid conductors only;		P
	– Indicator Light units with screwless terminals for rigid and flexible conductors;		P
	– Indicator Light units without terminals equipped with connecting leads.		P
7.6	According to the possibility of changing the light source:		P
	– with a tool;		N/A
	– without a tool;		N/A
	– not possible		P
8	**Marking**		N/A
8.1	Indicator Light units shall be marked with:		P
	– rated voltages in volts;		P
	– symbol for nature of supply;		P
	– manufacturer's or responsible vendor's name, trade mark or identification mark;		P
	– type reference, which may be a catalogue number;		P
	– first characteristic numeral for the degree of protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects, if declared higher than 2, in which case the second characteristic numeral shall also be marked;		P
	– second characteristic numeral for the degree of protection against harmful effects due to the ingress of water, if declared higher than 0, in which case the first characteristic numeral shall also be marked;		P
	– the rated power of each lamp in watts (or the rated current in amperes) for replaceable lamp(s) only. For Indicator Light units with more than one lamp holder, this marking shall be placed near each individual lamp holder unless the lamp holders are identical, in which case the marking may only appear once.		P
	In addition, Indicator Light units with screwless terminals shall be marked with:		P
	– an indication of the suitability to accept rigid conductors only, for those Indicator Light units having this restriction;		P
	– the minimum and maximum cross-section area of connectable conductors;		P

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Clause	Requirement	Remark	Result
	– the length of conductor insulation to be removed (12.3.8).		P
	This additional information may be put on the Indicator Light unit or the smallest packaging unit.		P
8.2	When symbols or abbreviations are used, they shall be as follows:		P
	Watts:	**W**	P
	Amperes	**A**	P
	Volts	**V**	P
	Alternating current	**~**	P
	Neutral	**N**	P
	Line	**L**	P
	Protective earth		P
	Degree of protection, when relevant	**IPXX**	P
	Screwless terminals which are able to accept rigid conductors only	**r**	P
8.3	The following markings shall be placed on the main part of the Indicator Light unit:		P
	– the rated power, rated voltage, nature of supply,		P
	– either the name, trade mark, or identification mark of the manufacturer or of the responsible vendor,		P
	– type reference.		P
8.4	Terminals intended for the connection of phase conductors shall be identified unless this is of no importance, is self-evident or is indicated on a wiring diagram.		P
	When placed on the product these markings shall not be on screws or any other easily removable parts.		P
8.5	Terminals intended exclusively for the neutral conductor shall be indicated by the letter N.		P
	Earthing terminals shall be indicated by the symbol .		P
	These markings shall not be placed on screws or any other easily removable part.		P
8.6	If it is necessary to take special precautions when installing the Indicator Light units, details of these shall be given in an instruction sheet which accompanies the Indicator Light unit.		P
	if it is necessary to take precaution against touching		P

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Clause	Requirement	Remark	Result
	live parts when changing a lamp, details shall be given in an instruction sheet which accompanies the indicator unit.		
8.7	Marking shall be durable and easily legible.		P
	The marking is rubbed by hand for 15 s with a piece of cloth soaked with water and again for 15 s with a piece of cloth soaked with petroleum spirit.		P
9	**Checking of dimensions**		P
	Indicator Light units and boxes shall comply with the appropriate standard sheets (if any).		P
10	Protection against electric shock		P
10.1	Indicator Light units shall be so designed that when they are mounted and wired as in normal use and equipped with lamp(s), live parts are not accessible even after removal of parts which can be removed without the use of a tool.		P
10.2	Accessible parts of Indicator Light units classified IXP0 shall be made of insulating material with the exception of the following:		P
	a) small screws and the like which are insulated from live parts and which are used for fixing bases and covers or cover plates;		P
	b) covers and cover plates of metal which comply with the requirements of 10.2.1 or 10.2.2.		P
10.2.1	Covers or cover plates of metal shall be protected by additional insulation made by insulating linings or insulating barriers. The insulating linings or insulating barriers shall:		P
	– either be fixed to covers or cover plates or the body of the Indicator Light units in such a way that they cannot be removed without being permanently damaged,		P
	– or be so designed that • they cannot be replaced in an incorrect position; • if they are omitted, the Indicator Light units are rendered inoperable or manifestly incomplete; • there is no risk of accidental contact between live parts and metal covers or cover plates, for example through their fixing screws, even if a conductor should come away from its terminal; • precautions are taken in order to prevent creepage distances or clearances becoming less than the values specified in Clause 20.		P

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Clause	Requirement	Remark	Result
10.2.2	The earthing of metal covers or cover plates is made while fixing the covers or cover plates and may be made without requiring the use of means other than the fixing means; the resulting connection shall be of low resistance.		P
10.3	Replacement of a lamp		P
	When equipped with lamp(s), Indicator Light units shall be so constructed that their live parts are not accessible when they are opened for replacing lamp(s), unless for the replacement of the lamp a tool is necessary (see 8.6).		P
11	Provision for earthing		P
11.1	Accessible metal parts which can become live in the event of an insulation fault shall be provided with, or permanently and reliably connected to, an earthing terminal.		P
11.2	Earthing terminals shall be terminals with screw clamping or screwless terminals and shall comply with the appropriate requirements of Clause 12.		P
11.3	Surface-type indicator units with an enclosure of insulating material, having an IP code higher than IPX0 and more than one cable inlet, shall be provided with either an internal fixed earthing terminal or adequate space for a floating terminal allowing the connection of an incoming and outgoing conductor for the continuity of the earthing circuit.		N/A
11.4	The connection between the earthing terminal and accessible metal parts to be connected thereto shall be of low resistance.	In no case shall the resistance exceed 0,05 Ω	P
12	Terminals		P
12.1	General		P
	Terminals of Indicator Light units shall be provided with screw clamping or with screwless clamping.		P
	The means for clamping the conductors in the terminals shall not serve to fix any other component, although they may hold the terminals in place or prevent them from turning.		P
12.2	Terminals with screw clamping for external copper conductors		P
12.2.1	Indicator Light units provided with terminals with screw clamping shall allow the proper connection of rigid (solid or stranded) or flexible copper conductors having nominal cross-sectional areas from 1 mm 2 up to 2,5 mm 2 inclusive (the largest conductor having a diameter of 2,21 mm).		P

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Clause	Requirement	Remark	Result
	Each supply terminal shall allow the connection of two 2,5 mm 2 conductors.		P
	The conductor space shall be at least that specified in Figures 1, 2 or 3.		P
12.2.2	Terminals with screw clamping shall allow conductors to be connected without special preparation.		P
12.2.3	Terminals with screw clamping shall have adequate mechanical strength.		P
	Screws and nuts for clamping the conductors shall have a metric ISO thread or a thread comparable in pitch and mechanical strength.		P
	Screws shall not be of metal which is soft or liable to creep, such as zinc or aluminium.		P
12.2.4	Terminals with screw clamping shall comply with 19.5.		P
12.2.5	Screw-type terminals shall be so designed and constructed that they clamp the conductor(s) without unduly damaging them.		P
12.2.6	Terminals with screw clamping shall be so designed that they clamp the conductor reliably between metal surfaces.		P
12.2.7	Terminals with screw clamping shall be so designed or placed that neither a rigid solid conductor nor a wire of a stranded conductor can slip out while the clamping screws or nuts are tightened.		P
12.2.8	Terminals with screw clamping shall be so fixed or located within the Indicator Light unit that, when the clamping screws or nuts are tightened or loosened, the terminals shall not work loose from their fixing to the Indicator Light units.		P
12.2.9	Clamping screws or nuts of earthing terminals with screw clamping shall be adequately locked against accidental loosening and it shall not be possible to loosen them without the aid of a tool.		P
12.2.10	Earthing terminals with screw clamping shall be such that there is no risk of corrosion resulting from contact between these parts and the copper of the earthing conductor, or any other metal that is in contact with these parts.		P
	The body of the earthing terminals shall be of brass or other metal no less resistant to corrosion, unless it is a part of the metal frame or enclosure, when the screw or nut is of brass or other metal no less resistant to corrosion.		P

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Clause	Requirement	Remark	Result
	If the body of the earthing terminal is a part of a frame or enclosure of aluminium alloy, precautions shall be taken to avoid the risk of corrosion resulting from contact between copper and aluminium or its alloys.		P
12.2.11	For pillar terminals, the distance between the clamping screw and the end of the conductor, when fully inserted, shall be at least that specified in Figure 1.		P
12.3	Screwless terminals for external copper conductors		P
12.3.1	Screwless terminals may be of the type suitable for rigid copper conductors only or of the type suitable for both rigid and flexible copper conductors.		P
12.3.2	Screwless terminals shall be provided with clamping units which allow the proper connection of rigid or of rigid and flexible copper conductors having nominal cross-sectional areas as shown in Table 5.		P
12.3.3	Screwless terminals shall allow the conductor to be connected without special preparation.		P
12.3.4	Parts of screwless terminals mainly intended for carrying current shall comply with 19.5.		P
12.3.5	Screwless terminals shall be so designed that they clamp the specified conductors with sufficient contact pressure and without unduly damaging them.		P
	The conductor shall be clamped between metal surfaces.		P
12.3.6	It shall be clear how the connection and disconnection of the conductors is to be made.		P
	The disconnection of a conductor shall require an operation, other than a pull on the conductor, so that it can be made manually with or without the help of a general purpose tool.		P
	It shall not be possible to confuse the opening for the use of a tool to assist the connection or disconnection with the opening intended for the insertion of the conductor.		P
12.3.7	Screwless terminals which are intended to be used for the interconnection of two or more conductors shall be so designed that:		P
	- during the insertion the operation of the clamping means of one of the conductors is independent of the operation of that (those) of the other conductor(s);		P
	- during the disconnection, the conductors can be		P

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Clause	Requirement	Remark	Result
	disconnected either at the same time or separately;		
	– each conductor is introduced in a separate clamping unit (not necessarily in separate holes)		P
	It shall be possible to clamp securely any number of conductors up to the maximum as designed.		P
12.3.8	Screwless terminals shall be so designed that over-insertion of the conductor is prevented and adequate insertion is obvious (see 8.1).		P
12.3.9	Screwless terminals shall be properly fixed to the Indicator Light units.		P
	They shall not work loose when the conductors are connected or disconnected during installation.		P
12.3.10	Screwless terminals shall withstand the mechanical stresses occurring in normal use.		P
12.3.11	Screwless terminals shall withstand the electrical and thermal stresses occurring in normal use		N/A
	a) The test is carried out loading the screwless terminals for 1 h with an alternating current as specified in Table 6, column I and connecting rigid solid conductors 1 m long having the cross-sectional area as specified in the same table.		P
	b) The screwless terminals already subjected to the determination of the voltage drop specified in the previous test a) are tested as follows.		P
12.3.12	Screwless terminals shall be so designed that the connected rigid solid conductor remains clamped, even when it has been deflected during normal installation, for example during mounting in a box, and the deflecting stress is transferred to the clamping unit.		P
	The test apparatus, the principle of which is shown in Figure 7a, shall be so constructed that:		P
	– a specified conductor properly inserted into a terminal is allowed to be deflected in any of the 12 directions differing from each other by 30°, with a tolerance referred to each direction of ±5°;		P
	– the starting point can be varied by 10° and 20° from the original point.		P
	The deflecting device shall be so designed that:		P
	– the force is applied in the direction perpendicular to the undeflected conductor;		P
	– the deflection is attained without rotation or displacement of the conductor within the clamping unit;		P

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Clause	Requirement	Remark	Result
	– the force remains applied while the prescribed voltage drop measurement is made.		P
13	Constructional requirements		P
13.1	Insulating linings, barriers and the like, shall have adequate mechanical strength and shall be secured in a reliable manner.		P
13.2	Indicator Light units shall be constructed so as to permit:		P
	– easy introduction and connection of the conductors in the terminals;		P
	– correct positioning of the conductors;		P
	– easy fixing of the Indicator Light units to a wall or in a box;		P
	– adequate space between the underside of the base and the surface on which the base is mounted or between the sides of the base and the enclosure (cover or box) so that, after installation of the Indicator Light units, the insulation of the conductors is unlikely to be pressed against live parts of different polarity or against moving parts of the mechanism, such as the spindle of a rotary Indicator Light unit.		P
	Surface-type Indicator Light units shall be constructed so that the fixing means do not damage the insulation of the cables during the installation.		P
13.3	Covers, cover plates and other accessible parts, or parts of them which are intended to ensure protection against electric shock, shall be held in place at two or more points by effective fixing.		P
	Covers, cover plates and other accessible parts, or parts of them, may be fixed by means of a single fixing, for example, by a screw, provided that they are located by another means (for example, by a shoulder).		P
13.3.1	For covers, cover plates or other accessible parts whose fixing is of the screw-type:		N/A
13.3.2	For covers, cover plates or other accessible parts whose fixing is not dependent on screws and whose removal is obtained by applying a force in a direction approximately perpendicular to the mounting/supporting surface (see Table 8),		P
	a) when their removal may give access, with the standard test finger, to live parts:		P
	b) when their removal may give access, with the standard test finger, to non-earthed metal parts		P

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Clause	Requirement	Remark	Result
	separated from live parts in such a way that creepage distances and clearances have the values shown in Table 13:		
	c) when their removal may give access, with the standard test finger, only to: • insulating parts, or • earthed metal parts, or • metal parts separated from live parts in such a way that creepage distances and clearances have twice the values shown in Table 13:		P
13.3.3	For covers, cover plates or other accessible parts whose fixing is not dependent on screws and whose removal is obtained by using a tool, in accordance with the manufacturer's instructions given in an instruction sheet or catalogue:		P
	– by the same tests of 13.3.2 except that the covers, cover plates, other accessible parts or parts of them need not come off when applying a force not exceeding 120 N in directions perpendicular to the mounting/supporting surface.		P
13.4	Indicator Light units shall be so constructed that, when they are fixed and wired as in normal use, there are no free openings in their enclosures according to their IP classification.		P
13.5	Screws or other means for mounting the Indicator Light units on a surface or in a box or enclosure shall be easily accessible from the front. These means shall not serve any other fixing purpose.		P
13.6	Combinations of Indicator Light units, or of Indicator Light units and other accessories, comprising separate bases shall be so designed that the correct position of each base is ensured. The fixing of each base shall be independent of the fixing of the combination to the mounting surface.		P
13.7	Surface-type Indicator Light units that have an IP code higher than IP20 shall be according to their IP classification when fitted with conduits or with sheathed cables as for normal use.		P
	Surface-type Indicator Light units that have a degree of protection IPX4 or IPX5 shall have provisions for opening a drain hole.		P
	If an Indicator Light unit is provided with a drain hole, it shall be not less than 5 mm in diameter, or 20 mm 2 in area with a width and a length not less than 3 mm.		P
	If the design of the Indicator Light units is such that only one mounting position is possible, the drain		P

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Clause	Requirement	Remark	Result
	hole shall be effective in that position. Alternatively, the drain hole shall be effective in at least two positions of the Indicator Light unit when it is mounted on a vertical wall, one of these with the conductors entering at the top and the other with the conductors entering at the bottom.		
	Lid springs, if any, shall be of corrosion-resistant material, such as bronze or stainless steel.		P
13.8	Indicator Light units to be installed in a box shall be so designed that the conductor ends can be prepared after the box is mounted in position, but before the Indicator Light unit is fitted in the box.		P
	In addition, the base shall have adequate stability when mounted in the box.		P
13.9	Surface type Indicator Light units classified IPX4 or IPX5, with an enclosure having more than one inlet opening, shall be provided for maintaining the continuity of a second current-carrying conductor either with a fixed additional terminal complying with the appropriate requirements of Clause 12 or with an adequate space for a floating terminal.		P
13.10	Inlet openings shall allow the introduction of the conduit or the sheath of the cable so as to provide complete mechanical protection.		P
	Surface-type Indicator Light units other than those classified IPX4 or IPX5 shall be so constructed that the conduit or protective covering can enter at least 1 mm into the enclosure.		P
	In surface-type Indicator Light units, the inlet opening for conduit entries, or at least two of them if there are more than one, shall be capable of accepting conduit sizes of 16, 20, 25 or 32 or a combination of at least two of any of these sizes not excluding two of the same size.		P
13.11	If surface-type Indicator Light units other than those classified IPX4 or IPX5 are intended for back entry from a conduit they shall be so designed that they have provision for back entry from a conduit perpendicular to the mounting surface of the Indicator Light units.		P
13.12	If the Indicator Light units are provided with membranes or the like for inlet openings they shall be replaceable.		P
13.13	Requirements for membranes in inlet openings		P
13.13.1	Membranes shall be reliably fixed and shall not be displaced by the mechanical and thermal stresses occurring in normal use.		P

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Clause	Requirement	Remark	Result
13.13.2	It is recommended that membranes be so designed and made of such material that the introduction of the cables into the Indicator Light units is permitted when the ambient temperature is low.		P
13.14	The ends of leads of Indicator Light units, if any, may be prepared but pre-soldering shall not be used.		P
14	Resistance to ageing, protection provided by enclosures of indicator units and resistance to humidity		P
14.1	Resistance to ageing		P
	Indicator Light units shall be resistant to ageing.		
14.2	Protection provided by enclosures of Indicator Light units		P
14.2.1	Protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects		P
14.2.1.1	Protection against access to hazardous parts		P
14.2.1.2	Protection against harmful effects due to ingress of solid foreign bodies		P
14.2.2	Protection against harmful effects due to ingress of water		P
	Enclosures of Indicator Light units shall provide a degree of protection against harmful effects due to ingress of water in accordance with their IP classification.		P
14.3	Resistance to humidity		P
	Indicator Light units shall be proof against humidity which may occur in normal use.		P
15	Insulation resistance and electric strength		P
	The insulation resistance and electric strength of Indicator Light units shall be adequate.		P
15.1	The insulation resistance is measured with d.c. voltage of approximately 500 V, the measurement being made 1 min after application of the voltage.		P
15.2	The insulation is subjected for 1 min to a voltage of substantially sinewave form, having a frequency of 50 Hz or 60 Hz. The value of the test voltage and the points of application are shown in Table 10.		P
16	Temperature rise		P
	Indicator Light units shall be so constructed that the temperature rise in normal use is not excessive and not affected by oxidation or any other deterioration.		P

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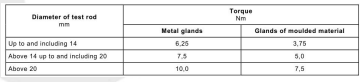
Clause	Requirement	Remark	Result
17	Mechanical strength		P
	Indicator Light units, boxes and screwed glands shall have adequate mechanical strength so as to withstand the stresses imposed during installation and use.		P
17.1	The specimens are subjected to blows by means of an impact-test apparatus as shown in Figures 8, 9,10 and 11.		P
17.2	The bases of surface-type Indicator Light units are first fixed to a cylinder of rigid steel sheet, which has a radius equal to 4,5 times the distance between fixing holes but in any case no less than 200 mm. The axes of the holes are in a plane perpendicular to the axis of the cylinder and parallel to the radius through the centre of the distance between the holes.		P
17.3	Screwed glands are fitted with a cylindrical metal rod having a diameter, in millimetres, equal to the nearest whole number below the internal diameter, in millimetres, of the packing.		P
	The glands are then tightened by means of a suitable spanner, the torque shown in Table 12 being applied to the spanner for 1 min.		P
17.4	Indicator Light units equipped with connecting leads are submitted to the following additional test.		P
17.5	When verifying the force necessary for covers, cover plates and other accessible parts to come off or not come off, the Indicator Light units are mounted as for normal use. Flush- type Indicator Light units are fixed in appropriate mounting boxes, which are installed as for normal use so that the rims of the boxes are flush with the walls, and the covers, cover plates and other accessible parts are fitted. If they are provided with locking means which can be operated without the aid of a tool, these means are unlocked.		P
17.5.1	Verification of the non-removal of covers, cover plates and other accessible parts		P
	Forces are gradually applied in directions perpendicular to the mounting surfaces, in such a way that the resulting force acting on the centre of the covers, cover plates, or other accessible parts or parts of them, is respectively:		P
	– 40 N, for covers, cover plates, or other accessible parts or parts of them, complying with the tests of 17.7 and 17.8, or		P
	– 80 N, for other covers, cover plates, or other		P

Diameter of test rod mm	Torque Nm	
	Metal glands	Glands of moulded material
Up to and including 14	6,25	3,75
Above 14 up to and including 20	7,5	5,0
Above 20	10,0	7,5

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	accessible parts or parts of them.		
17.5.2	Verification of the removal of covers, cover plates, or other accessible parts or parts of them		P
17.6	The test is made as described in 17.5, but applying, for 17.5.1, the following forces:		P
	– 10 N, for covers, cover plates, or other accessible parts or parts of them, complying with the test of 17.8 and 17.9.;		P
	– 20 N, for other covers, cover plates, or other accessible parts or parts of them.		P
17.7	The test is made as described in 17.5, but applying, for 17.5.1, the force of 10 N for all covers, cover plates, or other accessible parts or parts of them.		P
17.8	The gauge shown in Figure 13 is pushed toward each side of each cover or cover plate which is fixed without screws on a mounting or supporting surface, as shown in Figure 14. The face B resting on the mounting/supporting surface, with the face A perpendicular to it, the gauge is applied at right angles to each side under test.		P
	In the case of a cover or cover plate fixed without screws to another cover or cover plate or to a mounting box having the same outline dimensions, the face B of the gauge shall be placed at the same level as the junction; the outline at the cover or cover plate shall not exceed the outline of the supporting surface.		P
17.9	A gauge according to Figure 16, applied with a force of 1 N, shall not enter more than 1,0 mm from the upper part of any groove, hole or reverse taper or the like when the gauge is applied parallel to the mounting/supporting surface and at right angles to the part under test, as shown in Figure 17.		P
18	Resistance to heat		P
	Indicator Light units and boxes shall be sufficiently resistant to heat.		P
	a) for surface mounting boxes, separable covers, separable cover plates and separable frames by the test of 18.3;		P
	b) for Indicator Light units , with the exception of the parts, if any, covered by a), by the tests of 18.1, 18.2 and, with the exception of the Indicator Light units made from natural or synthetic rubber or a mixture of both, by the test of 18.3.		P
18.1	The specimens are kept for 1 h in a heating cabinet at a temperature of (100 ± 2) °C.		P

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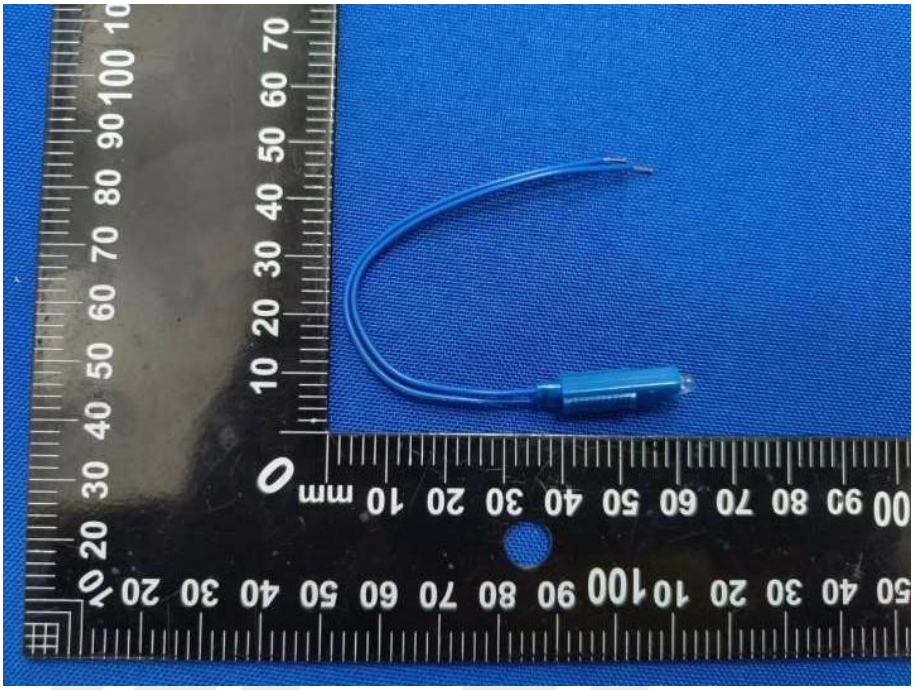
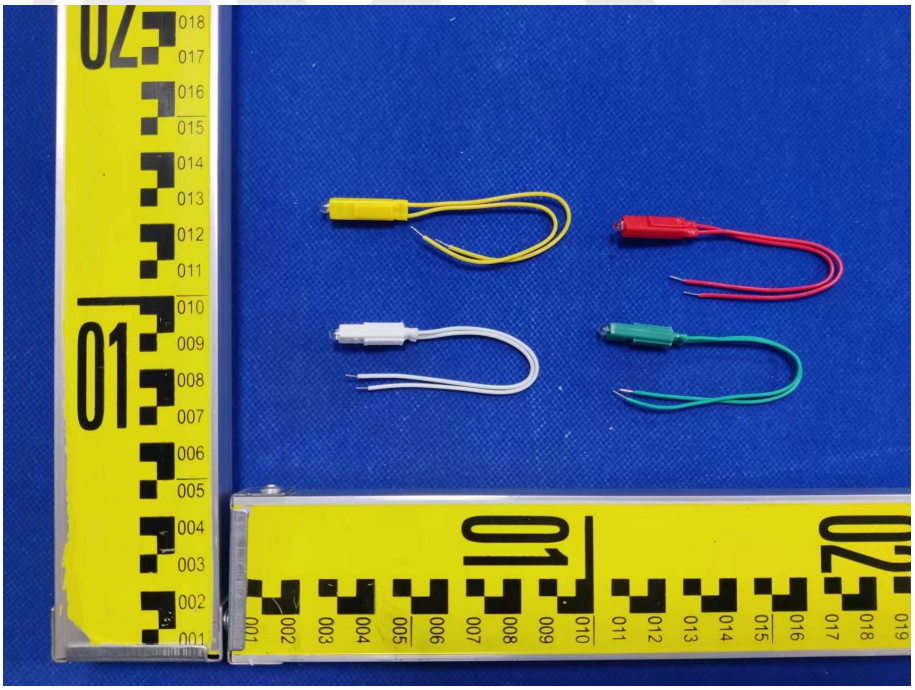
Clause	Requirement	Remark	Result
18.2	Parts of insulating material necessary to retain current-carrying parts and parts of the earthing circuit in position are subjected to a ball-pressure test by means of the apparatus shown in Figure 18, except the insulating parts necessary to retain the earthing terminals in a box shall be tested as specified in 18.3.		P
18.3	Parts of insulating material not necessary to retain current-carrying parts and parts of the earthing circuit in position, even though they are in contact with them, are subjected to a ball pressure test in accordance with 18.2, but the test is made at a temperature of (70°± 2) °C, or (40 ± 2) °C plus the highest temperature rise determined for the relevant part during the test of Clause 18, whichever is the higher.		P
19	Screws, current-carrying parts and connections		P
19.1	Connections, electrical or mechanical, shall withstand the mechanical stresses occurring in normal use.		P
	Mechanical connections to be used during installation of Indicator Light units may be made using thread-forming screws or thread-cutting screws only when the screws are supplied together with the piece in which they are intended to be inserted.		P
19.22	For screws in engagement with a thread of insulating material which are operated when mounting the Indicator Light units during installation, their correct introduction into the screw hole or nut shall be ensured.		P
19.3	Electrical connections shall be so designed that contact pressure is not transmitted through insulating material other than ceramic, pure mica or other material with characteristics no less suitable, unless there is sufficient resiliency in the metallic parts to compensate for any possible shrinkage or yielding of the insulating material.		P
19.4	Screws and rivets, which serve as electrical as well as mechanical connections, shall be locked against loosening or turning.		P
19.5	Current-carrying parts, including those of terminals (also earthing terminals), shall be of a metal having, under the conditions occurring in the equipment, mechanical strength, electrical conductivity and resistance to corrosion adequate for their intended use.		P
19.6	Thread-forming screws and thread-cutting screws shall not be used for the connection of current-		P

EN 62094-1			
Clause	Requirement	Remark	Result
	carrying parts. Thread-forming screws and thread-cutting screws may be used to provide earthing continuity, provided that it is not necessary to disturb the connection in normal use and at least two screws are used for each connection.		
20	Creepage distances, clearances and distances through sealing compound		P
20.1	Creepage distances, clearances and distances through sealing compound shall be not less than the values shown in Table 13.		P
20.2	Insulating compound shall not protrude above the edge of the cavity in which it is contained.		P
21	Resistance of insulating material to abnormal heat, to fire and to tracking		P
21.1	Resistance to abnormal heat and to fire		P
	Parts of insulating material which might be exposed to thermal stresses due to electric effects, and the deterioration of which might impair the safety of the accessory, shall not be unduly affected by abnormal heat and by fire.		P
21.2	Glow-wire test		P
	The test is performed according to IEC 60695-2-10 and 60695-2-11 under the following conditions:		P
	a) for parts of insulating material necessary to retain current-carrying parts, and parts of the earthing circuit, in position, by the test made at a temperature of 850 °C;		P
	b) for parts of insulating material not necessary to retain current-carrying parts and parts of the earthing circuit in position, even though they are in contact with them, by the test made at a temperature of 650 °C.		P
21.3	Resistance to tracking		P
	For Indicator Light units other than those classified IPX0, parts of insulating material retaining live parts in position shall be of material resistant to tracking.		P
22	Resistance to rusting		P
	Ferrous parts, including covers and boxes, shall be adequately protected against rusting.		P

ANNEX I Photos of Product





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