F.No. 8(1)/2018-HEI Part-(1)
Government of India
Ministry of Heavy Industries
HEI Division

Website Link : https://heavyindustries.gov.in/

Udyog Bhawan, New Delhi
Dated: 27th, February, 2023

Office Memorandum

Subject: Changes in Conformity Assessment Scheme in Electrical Equipment (Quality Control) Order, (EEQCO) 2020 and Product Specific Guidelines for Circuit Breaker- regarding.

As you are aware that this ministry has issued Electrical Equipment (Quality Control) Order, 2020 for Low Voltage Switchgear and Controlgear vide Gazette Notification S.O. 4044(E) on 11th November 2020. Initially, the implementation time was kept one year for the implementation, further on the representation of manufacturers and manufacturers association it has been extended till 10th May 2023.

2. Now, after prolonged consultation with stakeholders on the various bottlenecks raised by manufacturers, it was emerged out that the timely implementation of the EEQCO is not feasible under Scheme-II. Therefore, Technical Committee formed for monitoring and streamlining the implementation of EEQCO has recommended to use the Scheme-X in placed of Scheme-II.

3. In this regard, following documents are drafted to implement the changes :

a. Electrical Equipment (Quality Control) Amendment Order (with phased implementation plan).
b. Product Specific Guidelines for Circuit Breakers.

4. Further, it is informed that the product specific guidelines and phased implementation plan for other products under EEQCO are being drafted and will be put up for consultation in due course of time.

5. In this connection, it is requested to kindly send comments, if any through email on divhei-dhi@gov.in within the 15 days.

Encl. As mentioned above

27-2

(Rama Kant Singh)
Director

To,

All concerned

Draft

[To be published in the Gazette of India, Extraordinary, part II, Section 3, Sub-section (ii))]

Ministry of Heavy Industries

Government of India

Order

New Delhi, the ----, 2023

S. O. (E) .— In exercise of the powers conferred by section 16, read with section 17 and section 25 of the Bureau of Indian Standards Act, 2016 (11 of 2016), the Central Government, after consulting the Bureau of Indian Standards, is of the opinion that it is necessary or expedient so to do in the public interest, hereby makes the following Order to amend the Electrical Equipment (Quality Control) Order, 2020 namely:-

1. Short title and commencement. – (1) This order may be called the Electrical Equipment (Quality Control) Amendment Order, 2023.

(2) It shall come into force from the date as mentioned in column (5) of the Table to this order.

2. In the Electrical Equipment (Quality Control) Order, 2020 :-

a) In clause 2 i.e. **Conformity to standards and essential requirements**, after sub clause (1) , the following sub clause shall be inserted, namely:-
(2) However, if any product specific requirement is mentioned in column (6) of the Table to this order to the corresponding Electrical Equipment specified in column (2) of the Table to this order, the same shall be applicable instead of Indian standards specified in column (3) with effect from the dates specified in column (5) thereof.

b) in clause 3 i.e. Compulsory certification, marking and labelling., in sub-clause (1) and (2) "Scheme–X in Schedule–II to the Bureau of Indian Standards (Conformity Assessment) Regulations, 2018" shall be substituted instead of "Scheme–II in Schedule–II to the Bureau of Indian Standards (Conformity Assessment) Regulations, 2018" .

c) in the Table, column (6) shall be inserted namely "Product Specific Requirements" with product specific requirement corresponding to the Electrical Equipment specified in column (2) of the Table and Date for implementation shall be substituted in following manner in the amended Table to this order:-

Sl. No.	Electrical Equipment (Goods and Article)	Indian Standards	Title of Indian Standard	Date of Implementation	Product Specific Requirements
(1)	(2)	(3)	(4)	(5)	(6)
1.	Low - Voltage switchgear and controlgear: Circuit - Breakers	IS/IEC 60947 : Part 2 : 2016	Low - Voltage switchgear and controlgear: Part 2 circuit - Breakers (First Revision)	In phase wise manner from the date as mentioned in Annex-A for the different variant of product mentioned at column (2) of this row of this Table .	In phase wise manner as per Annex-A

2.	Low - Voltage switchgear and controlgear: switches, disconnectors, switch disconnectors and fuse - Combination units	IS/IEC 60947 : Part 3 : 2012	Low - Voltage switchgear and controlgear: Part 3 switches, disconnectors, switch disconnectors and fuse - Combination units	One year from the date of notification of Electrical Equipment (Quality Control) Amendment Order, 2022 in the Gazette of India.	Same as column (3) of this row of this Table .
3.	Low - Voltage switchgear and controlgear: electromechanical contactors and motor - Starters	IS/IEC 60947 : Part 4 : Sec 1 : 2012	Low - Voltage switchgear and controlgear: Part 4 contactors and motor - Starters: Sec 1 electromechanical contactors and motor - Starters (First Revision)	One year from the date of notification of Electrical Equipment (Quality Control) Amendment Order, 2022 in the Gazette of India.	Same as column (3) of this row of this Table .
4.	Low - Voltage switchgear and controlgear: a.c semiconductor motor controllers and starters	IS/IEC 60947 : Part 4 : Sec 2 : 2011	Low - Voltage switchgear and controlgear: Part 4 contactors and motor - Starters: Sec 2 a.c semiconductor motor controllers and starters (First Revision)	One year from the date of notification of Electrical Equipment (Quality Control) Amendment Order, 2022 in the Gazette of India.	Same as column (3) of this row of this Table .
5.	Low - Voltage switchgear and controlgear: a.c. semiconductor motor controllers and contactors for non - Motor loads	IS/IEC 60947 : Part 4 : Sec 3 : 2014	Low - Voltage switchgear and controlgear: Part 4 contactors and motor - Starters: Sec 3 a.c. semiconductor motor controllers and contactors for non - Motor loads (Second Revision)	One year from the date of notification of Electrical Equipment (Quality Control) Amendment Order, 2022 in the Gazette of India.	Same as column (3) of this row of this Table .
6.	Low - Voltage switchgear and controlgear: electromechanical control circuit devices	IS/IEC 60947 : Part 5 : Sec 1 : 2009	Low - Voltage switchgear and controlgear: Part 5 control circuit devices and switching elements: Sec 1 electromechanical control circuit devices (First Revision)	One year from the date of notification of Electrical Equipment (Quality Control) Amendment Order, 2022 in the Gazette of India.	Same as column (3) of this row of this Table .
7.	Low - Voltage switchgear and controlgear	IS/IEC 60947 : Part 5 : Sec	Low - Voltage switchgear and controlgear: Part 5	One year from the date of notification of Electrical Equipment (Quality	Same as column (3) of this

	proximity switches	2 : 2007	control circuit devices and switching elements: Sec 2 proximity switches	Control) Amendment Order, 2022 in the Gazette of India.	row of this Table .
8.	Low - Voltage switchgear and controlgear: electrical emergency stop devices with mechanical latching function	IS/IEC 60947 : Part 5 : Sec 5 : 2016	Low - Voltage switchgear and controlgear: Part 5 control circuit devices and switching elements: Sec 5 electrical emergency stop devices with mechanical latching function	One year from the date of notification of Electrical Equipment (Quality Control) Amendment Order, 2022 in the Gazette of India.	Same as column (3) of this row of this Table .

d) after the Table, the following Annex shall be inserted, namely:-

"

Annex-A

Product Specific Requirement

i) Low - Voltage switchgear and controlgear: Circuit - Breakers

Sr. No.	Phase	Product Category	Date of implementation	Testing Requirements
(1)	(2)	(3)	(4)	(5)
1 (a)	Phase-1	AC Circuit - Breakers (Category A)- Upto 630 A/ Upto 440V AC	11th Nov. 2023	All test as per IS/IEC 60947 : Part 2 : 2016 except the test listed below in Sr. No. 1(b) of this table.
1(b)	Phase-1	AC Circuit - Breakers (Category A)- Upto 630 A/ Upto 440V AC	11th Nov 2025*	Electromagnetic compatibility (EMC) mentioned in Annex J and All test specified for specific application as mentioned in the Annexure of the IS/IEC 60947 : Part 2 : 2016
2(a)	Phase 2	AC Circuit - Breakers (Category - A)- All ratings above 630A / Upto 440V AC	11th Nov. 2024	All test as per IS/IEC 60947 : Part 2 : 2016 except the test listed below in Sr. No. 2(b) of this table.
2(b)	Phase 2	AC Circuit - Breakers (Category - A)- All ratings above 630A / Upto 440V AC	11th Nov 2025*	Electromagnetic compatibility (EMC) mentioned in Annex J and All test specified for specific application as mentioned in the Annexure of the IS/IEC 60947 : Part 2 : 2016

3(a)	Phase-2	AC Circuit Breakers (Category -B)- Upto 2000 A/ Upto 440V AC	11th Nov. 2024	All test as per IS/IEC 60947 : Part 2 : 2016 except the test listed below in Sr. No. 3(b) of this table.
3(b)	Phase-2	AC Circuit Breakers (Category -B)- Upto 2000 A/ Upto 440V AC	11th Nov 2025*	Electromagnetic compatibility (EMC) mentioned in Annex J and All test specified for specific application as mentioned in the Annexure of the IS/IEC 60947 : Part 2 : 2016
4(a)	Phase-3	AC Circuit - Breakers (Category - A)- above 440V AC	11th Nov. 2025	All test as per IS/IEC 60947 : Part 2 : 2016.
4(b)	Phase-3	AC Circuit - Breakers (Category- B)- ratings above2000A/ Upto 440V AC	11th Nov. 2025	All test as per IS/IEC 60947 : Part 2 : 2016.
5(a)	Phase-4	DC Circuit - Breakers (Category - A)- All ratings	11th Nov 2026	All test as per IS/IEC 60947 : Part 2 : 2016.
5(b)	Phase-4	AC Circuit - Breakers (Category - B)- All ratings above 440V AC	11th Nov 2026	All test as per IS/IEC 60947 : Part 2 : 2016.
5(c)	Phase-4	DC Circuit - Breakers (Category - B) - All ratings	11th Nov 2026	All test as per IS/IEC 60947 : Part 2 : 2016.

Note:- A separate product grouping guideline for obtaining a license from certifying and enforcing authority i.e. Bureau of Indian Standards in this regard will be issued separately with the approval of Competent Authority.

* Subjected to the condition that Manufacturer shall submit declaration to Bureau of Indian Standards for submit ion of a report of test compliance by 11th November, 2025 or if any other date notified in this regard, whichever is later.

[F. No. 8(1)/2018-HEI-Part(1)]
Vijay Mittal, Jt. Secy.

Note : The principal order i.e. Electrical Equipment (Quality Control) Order, 2020 was published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-Section (ii) vide notification number S.O. 4044(E) dated the 11th November 2020.

Subsequently, extension in timelines for the implementation was given through notification number S.O. 4492(E). dated the 18th October 2021 and S.O. 5083(E). dated the 28th October 2022.

Product Specific Guidelines for Low Voltage Switchgear and Controlgear: Circuit Breakers conforming to IS/IEC60947-2:2016 under Electrical Equipment (Quality Control) Order.

1. This Product Specific Guidelines/sampling shall be used for the purpose of grant of licence/change in scope of licence for Low Voltage Switchgear and Controlgear: Circuit Breakers conforming to IS/IEC60947-2:2016 under Electrical Equipment (Quality Control) Order, 2020 and subsequent amendments made from time to time and as per the procedure defined by Bureau of Indian Standards, accordingly.

2. For purpose of obtaining the licence/change in scope of licence from the Bureau, Manufacturer shall apply to Bureau of Indian Standards ascertaining the scope of licence and technical file including test report(s) /certificate(s), etc. as per the procedure defined by the Bureau of Indian Standards under the Conformity Assessment Scheme as mentioned in the Electrical Equipment (Quality Control) Order, 2020 and subsequent amendments made from time to time ensuring the minimum number of sample(s) in respect of a product series/ range or group.

3. Product Grouping

3.1 Product Series of circuit-breaker(s)- A group of circuit breakers having a common frame size[1] used for a range of current ratings with a unique combination of feature(s) under classification mention in Table at Annexure-I subjected to allowable construction break [2].

[1] **Frame size** ***(as per clause 2.1.1 of IS/IEC 60947-2:2016)*** **-** a term designating a group of circuit-breakers, the external physical dimensions of which are common to a range of current ratings.

Note 1 to entry: Frame size is expressed in amperes corresponding to the highest current rating of the group.

Note 2 to entry: Within a frame size, the width OR height may vary according to the number of poles OR types of termination e.g. spreader links, prepared conductors, unprepared conductors, phase separators.

Note 3 to entry: This definition does not imply dimensional standardization.

[2] **Construction Break** ***(as per clause 2.2.1 of IS/IEC 60947-2:2016)***- a significant difference in construction between circuit-breakers of a given frame size, requiring additional type testing.

Note- the classification is indicative, and the possible classification may be increase on the basis of any specific requirements.

3.2 List of allowable construction breaks ***(as per clause 7.1.6 of IS/IEC 60947-2:2016)***

3.2.1 Circuit-breakers of a given frame size are considered to have a construction break, if any one of the following features are not the same:

i. material, finish and dimensions of internal current-carrying parts, admitting, however, the variations listed in a), b), c), f) and g) below;
ii. size, material, configuration and method of attachment of the main contacts;
iii. any integral manual operating mechanism, its materials and physical characteristics;
iv. moulding and insulating materials;
v. the principle of operation, materials and construction of the arc extinction device;
vi. the basic design of the over-current tripping devices, admitting, however, the variations detailed in a), b) and c) below.

Variations in the following do not constitute a construction break:

a) dimensions of terminals, provided that creepage and clearance distances are not reduced;
b) in the case of thermal and magnetic releases those dimensions and materials of the release components, including flexible connections, which determine the current rating;
c) secondary windings of current transformer operated releases;
d) external operating means, additional to the integral operating means;
e) type designation and/or purely aesthetic features (e.g. labels);
f) in the case of the 2-pole and 4-pole variants, replacement of the trip unit in one pole by a
link, to provide an unprotected neutral;

g) creating a 2-pole breaker from a 3-pole breaker by removing the centre current path;

h) difference in embedded software (firmware) in electronic trip units, which has no impact on
the required performance, in particular the tripping function;

i) addition / deletion / types of communication ports OR visual display OR visual indications OR setting means (touch Vs dip switch Vs membrane soft key pad) in electronic trip units, which has no impact on
the required performance, in particular the tripping function;

j) electronic trip unit hardware, due to omitted components on identical printed circuit board layout (e.g. rotary knobs, display, etc.).

4. Sampling and Testing

4.1 sampling and testing - The type test for each product series shall be as below

4.1.1 For each product series type test report, **a circuit breaker** with ***maximum current rating*** and maximum features satisfying all operational performance criteria shall be tested. The test and number of sample(s) must be in accordance with the clause 8.3, Table 9, 9a and Table 10 of IS/IEC 60947-2: 2016.

4.1.2 Type tests are grouped together in a number of sequences, the test shall be done as per sequence and applicability defined in clause 8.3 and Table 9 of IS/IEC 60947-2:2016.

Note :- 1) For each sequence, tests shall be made in the order listed unless otherwise specified in the IS/IEC 60947-2:2016

2) Spares, accessories and sub-assemblies are integral part of product series. They shall be tested as far as possible with the equipment. (Spares and sub-assemblies being the integral part of the device, separate testing is not envisaged; Accessories may please be used while testing. Any one of the representative test voltages can be used for accessory.)

Clarification-

4.1.3 Each product rating(s) /varieties are not subjected to testing. Product sample as mentioned in para 4.1.1 will cover all the Product rating (s) / varieties having

ratings equal or below under the Scope of Licence is by virtue of this grouping guidelines.

4.1.4 For any change in the design or operation in terms of the non-permissible construction break the manufacturer shall have additional sample submission for testing as defined and may have common test report of a given Frame with construction breaks.

4.1.5 However, for ease of Product Series formation or in case of same fundamental design spread in more than one phases under phase -wise plan as mentioned Electrical Equipment (Quality Control) Order, 2020 and subsequent amendments made from time to time , higher product rating(s) tested will cover the lower product ratings(s) of other phase of phase -wise plan.

4.1.6 However, for cases as mentioned in Annexure-II separate type test report is not required for inclusion of the same under scope of license.

Annexure-I

Table A. Classification of Circuit Breaker (physical and operational parameter)

S. No.	Classification based on	Types of Circuit Breaker
	Classification as per Clause 3	
1	*Selectivity*	a) Category type, A; b) Category type, B
2	*Interrupting Medium*	a) Air-break; b) Vacuum break; c) Gas-break.
3	*Method of installation*	a) Fixed; b) Plug-in; c)Withdrawable.
4	*By controlling the operating mechanism (Operation)*	a) Dependent manual; b) Independent manual; c) Dependent power; d) Independent Power; e) Stored Energy
5	*Design / Construction Type*	a) Open construction; b)Moulded case
6	*Suitability for isolation*	a) Suitable; b) Not suitable
7	*Provision for maintenance*	a) Maintainable; b) Non-maintainable
	Operational Characteristic	
8	*Type of Supply*	a) 1 Phase AC; b) 3 phase AC; c) Direct Current
9	*Number of Pole*	a) One Pole; b) Two Pole; c) Three Pole; d) Four Pole
	Additional Features	
10	*Release type*	a) Thermal, b) Electromagnetic, c) Electronic, etc.
11	*Degree of protection*	With maximum Ingress Protection code/rating[3]

For Example-

Product Series 1- *Air-break Type- Fixed installation -Dependent manual operation-Open construction- Selectivity Type A,* ***suitable for isolation;*** *maintainable, IP68D- having a common frame size for a range of current ratings subjected to allowable construction break.*

Product Series 2- *Air-break Type- Fixed installation -Dependent manual operation-Open construction- Selectivity Type A,* ***not suitable for isolation****; maintainable, IP68D having a common frame size for a range of current ratings with to allowable construction break.*

[3] Degree of protection provided by the enclosure as per 7.1.12 and Annex C of IEC 60947-1:2007

Annexure-II

Table. Circuit breaker can be added under the scope of license without additional type testing. (vice versa condition is not applicable)

Case	Circuit Breaker Type	Condition
A	circuit breaker not-suitable for isolation	if product series is tested for circuit breaker suitable for isolation.
B	circuit breaker with trip releases having different features/settings	if product series is tested, with trip releases with maximum or higher settings, then all other variants will be covered.
C	Fixed, plug in, withdrawable circuit breaker	If product series is tested, with highest complexity will cover the lower complexity breaker , i.e.- a) if withdrawable breaker is tested it will cover plug in and fixed variants. b) if plug in breaker is tested it will cover fixed variants
D	One, two, three and four poles	If the higher Pole Combination device is tested then lower Pole Combination will be covered subject to identical pole designs. e.g. 4 Pole or 3P+N testing covered 3 Pole Circuit breaker test, 2 Pole testing covered 1 Pole test.
E	Circuit breaker with different types of releases (Shunt, UV, Closing etc.)	If a product series is tested with a representative release(s), it will cover the other variants. However, declaration to be provided for all such releases by Manufacturer.
F	Circuit breaker with Multiple Ue rated voltage ratings	If product is tested for highest Ue all range of operational voltages are covered
G	Multiple Short Circuit Breaking capacity (at same Ue)	Highest Breaking capacity if tested, lower breaking capacity are covered