

DNV·GL

Certificate No:
E-14280

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Circuit Breaker

with type designation(s)

FW, FWF & HFW

Issued to

Eaton Electrical

Moon Township, United States

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Rated Voltage (V) 690

Rated Current (A) 16 - 225

Frequency (Hz) 50 - 60

This Certificate is valid until **2019-06-30**.

Issued at **Høvik** on **2015-09-29**

DNV GL local station: **New York**

Approval Engineer: **Nicolay Horn**



for **DNV GL**

Digitally Signed By: **Laumann, Marit**

Location: **DNV GL Høvik, Norway**

Signing Date: **2015-11-13**

Marit Laumann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id: **262.1-017170-1**
Certificate No: **E-14280**

Name and place of manufacturer

Cutler-Hammer Industries,
Park Industrial Itabo KM18, Arecibo Plant,
Carretera Sanchez, Haina

Product description

Technical info:

Product:	Moulded case circuit breakers
Types:	FW, FWF and HFW
Number of poles:	1 (FW), 2, 3 and 4
Rated current (A):	16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 175, 200 and 225
Rated operational voltage:	240, 415 and 690 V AC
Rated insulation voltage:	690
Rated impulse withstand voltage Uimp:	8 kV
Rated frequency Hz:	50 - 60
Utilization category:	A
Max ambient temperature:	50 °C

Short circuit data:

	FW	FWF	HFW
Rated Short-circuit Service Breaking cap. Ics (kA)			
240V AC	40	85	100
415V AC	-	40	70
690V AC	-	6	7
Rated Ultimate short- circuit Breaking cap. Icu (kA)			
240V AC	40	85	100
415V AC	-	40	70
690V AC	-	12	14

Type Approval documentation

Technical:

"Specification of the Certified Product, Annex to KEMA- KEUR CERTIFICATE nos. 2012668.06 & 07 issued 2001-06-20.

Test reports:


KEMA test reports nos.:98.2808-KRO/COM and -QUA/COM issued 1998-03-04.
CLARK test report no.: EL8006 dated February 2006.

Tests carried out

Type tests according to IEC 60947-2, vibration test and damp heat test.

Marking of product

EATON/Cutler Hammer -FW/FWF/HFW- Circuit-Breaker -Type data



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Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the survey to be dealt with:

- Ensure that type approved documentation is available.
- Ensure that materials used comply with type approved documents and/or referenced material specifications.
- Review design, materials, performance and production process with respect to possible changes, in order to ensure compliance with the type approved documentation and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and the DNV Type Approval Certificate.

Assessment to be carried out at least every second year.

END OF CERTIFICATE