



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. E-11819

This is to certify that the
Circuit Breaker

with type designation(s)
NM8, NM8S

Manufactured by
Zhejiang Chint Electrics Co.,Ltd
Wenzhou, China

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards
IEC 60947

Application
Onboard ships and offshore installations

Type	Rated Voltage (V)	Rated Current (A)	Frequency (Hz)
NM8S	up to 690 (see application /limitation)	up to 1250	50/60
NM8	up to 415 / 690 (see application /limitation)	up to 1250	50/60

Høvik, 2012-08-08
for Det Norske Veritas AS

Marit Laumann
Head of Section



DNV local office:
Ningbo

This Certificate is valid until
2016-12-31

Nicolay Horn
Surveyor

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.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Certificate No.: E-11819
 File No.: 823.10
 Job Id.: 262.1-003167-3

Product description

Type: NM8 and NM8S: Low voltage moulded case circuit breakers for switching and protection of distribution circuits.

Technical data:

	NM8-125S	NM8-125H	NM8-125R	NM8-250S
Number of poles	1,2, 3,4	2,3,4	2,3,4	2,3,4
Rated insulation voltage U_i (V)	750	750	750	750
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8
Rated current I_n (A) at 40 °C	16 - 125	16 - 125	16 - 125	100 - 250
Rated voltage U_e (V AC)	220 - 690	220 - 690	220 - 690	220 - 690
Rated frequency AC (Hz)	50 - 60	50 - 60	50 - 60	50 - 60
Rated service breaking capacity (kA) I_{CS} , 220/230/240V AC	50	100	150	50
Rated service breaking capacity (kA) I_{CS} , 380/400/415V AC	50	100	150	50
Rated service breaking capacity (kA) I_{CS} , 600/660/690V AC	8	8	8	10
Rated ultimate breaking capacity (kA) I_{CU} , 220/230/240V AC	50	100	150	50
Rated ultimate breaking capacity (kA) I_{CU} , 380/400/415V AC	50	100	150	50
Rated ultimate breaking capacity (kA) I_{CU} , 600/660/690V AC	8	8	8	10
Utilisation category	A	A	A	A
Rated Short-circuit making capacity (kA) I_{cm} , 415 V AC	105	220	330	105
Rated Short-circuit making capacity (kA) I_{cm} , 690 V AC	13.6	13.6	13.6	17

	NM8-250H	NM8-250R	NM8-400S	NM8-400H
Number of poles	2,3,4	2,3,4	3,4	3,4
Rated insulation voltage U_i (V)	750	750	750	750
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8
Rated current I_n (A) at 40 °C	100 - 250	100 - 250	250 - 400	250 - 400
Rated voltage U_e (V AC)	220 - 690	220 - 690	220 - 690	220 - 690
Rated frequency AC (Hz)	50 - 60	50 - 60	50 - 60	50 - 60
Rated service breaking capacity (kA) I_{CS} , 220/230/240V AC	100	150	70	100
Rated service breaking capacity (kA) I_{CS} , 380/400/415V AC	100	150	70	100
Rated service breaking capacity (kA) I_{CS} , 600/660/690V AC	10	10	7.5	7.5
Rated ultimate breaking capacity (kA) I_{CU} , 220/230/240V AC	100	150	70	100
Rated ultimate breaking capacity (kA) I_{CU} , 380/400/415V AC	100	150	70	100
Rated ultimate breaking capacity (kA) I_{CU} , 600/660/690V AC	10	10	15	15
Utilisation category	A	A	A	A
Rated Short-circuit making capacity (kA) I_{cm} , 415 V AC	220	330	154	220
Rated Short-circuit making capacity (kA) I_{cm} , 690 V AC	17	17	30	30



Certificate No.: E-11819
 File No.: 823.10
 Job Id.: 262.1-003167-3

	NM8-400R	NM8-630S	NM8-630H	NM8-630R
Number of poles	3,4	3,4	3,4	3,4
Rated insulation voltage Ui (V)	750	750	750	750
Rated impulse withstand voltage Uimp (kV)	8	8	8	8
Rated current In (A) at 40 °C	250 - 500	250 - 500	250 - 500	250 - 500
Rated voltage Ue (V AC)	220 - 690	220 - 690	220 - 690	220 - 690
Rated frequency AC (Hz)	50 - 60	50 - 60	50 - 60	50 - 60
Rated service breaking capacity (kA) Ics , 220/230/240V AC	150	70	100	150
Rated service breaking capacity (kA) Ics , 380/400/415V AC	150	70	100	150
Rated service breaking capacity (kA) Ics , 600/660/690V AC	7.5	7.5	7.5	7.5
Rated ultimate breaking capacity (kA) Icu , 220/230/240V AC	150	70	100	150
Rated ultimate breaking capacity (kA) Icu , 380/400/415V AC	150	70	100	150
Rated ultimate breaking capacity (kA) Icu , 600/ 660/690V AC	15	15	15	15
Utilisation category	A	A	A	A
Rated Short-circuit making capacity (kA) Icm , 415 V AC	330	154	220	330
Rated Short-circuit making capacity (kA) Icm , 690 V AC	30	30	30	30

	NM8-800S	NM8-800H	NM8-1250S	NM8-1250H
Number of poles	3,4	3,4	3,4	3,4
Rated insulation voltage Ui (V)	750	750	750	750
Rated impulse withstand voltage Uimp (kV)	8	8	8	8
Rated current In (A) at 40 °C	630 - 800	630 - 800	630 - 1250	630 - 1250
Rated voltage Ue (V AC)	220 - 690	220 - 690	220 - 690	220 - 690
Rated frequency AC (Hz)	50 - 60	50 - 60	50 - 60	50 - 60
Rated service breaking capacity (kA) Ics , 220/230/240V AC	25	35	25	35
Rated service breaking capacity (kA) Ics , 380/400/415V AC	25	35	25	35
Rated service breaking capacity (kA) Ics , 600/660/690V AC	10	10	10	10
Rated ultimate breaking capacity (kA) Icu , 220/230/240V AC	50	70	50	70
Rated ultimate breaking capacity (kA) Icu , 380/400/415V AC	50	70	50	70
Rated ultimate breaking capacity (kA) Icu , 600/660/690V AC	20	20	20	20
Utilisation category	A	A	A	A
Rated Short-circuit making capacity (kA) Icm , 415 V AC	105	154	105	154
Rated Short-circuit making capacity (kA) Icm , 690 V AC	40	40	40	40

	NM8S-400S	NM8S-400 H	NM8S-400R	NM8S-630S
Number of poles	3,4	3,4	3,4	3,4
Rated insulation voltage Ui (V)	750	750	750	750
Rated impulse withstand voltage Uimp (kV)	8	8	8	8
Rated current In (A) at 40 °C	250 - 400	250 - 400	250 - 400	250 - 630
Rated voltage Ue (V AC)	220 - 690	220 - 690	220 - 690	220 - 690
Rated frequency AC (Hz)	50 - 60	50 - 60	50 - 60	50 - 60
Rated service breaking capacity (kA) Ics , 220/230/240V AC	70	100	150	70
Rated service breaking capacity (kA) Ics , 380/400/415V AC	70	100	150	70
Rated service breaking capacity (kA) Ics , 660/690V AC	7.5	7.5	7.5	7.5
Rated ultimate breaking capacity (kA) Icu , 220/230/240V AC	70	100	150	70
Rated ultimate breaking capacity (kA) Icu , 380/400/415V AC	70	100	150	70
Rated ultimate breaking capacity (kA) Icu , 600/660/690V AC	15	15	15	15
Utilisation category	A	A	A	A
Rated Short-circuit making capacity (kA) Icm , 415 V AC	154	220	330	154
Rated Short-circuit making capacity (kA) Icm , 690 V AC	30	30	30	30



Certificate No.: E-11819
 File No.: 823.10
 Job Id.: 262.1-003167-3

	NM8S-630H	NM8S-630R		
Number of poles	3,4	3,4		
Rated insulation voltage U_i (V)	750	750		
Rated impulse withstand voltage U_{imp} (kV)	8	8		
Rated current I_n (A) at 40 °C	250 - 630	250 - 630		
Rated voltage U_e (V AC)	220 - 690	220 - 690		
Rated frequency AC (Hz)	50 - 60	50 - 60		
Rated service breaking capacity (kA) I_{CS} , 220/230/240V AC	100	150		
Rated service breaking capacity (kA) I_{CS} , 380/400/415V AC	100	150		
Rated service breaking capacity (kA) I_{CS} , 600/660/690V AC	7.5	7.5		
Rated ultimate breaking capacity (kA) I_{CU} , 220/230/240V AC	100	150		
Rated ultimate breaking capacity (kA) I_{CU} , 380/400/415V AC	100	150		
Rated ultimate breaking capacity (kA) I_{CU} , 600/660/690V AC	15	15		
Utilisation category	A	A		
Rated Short-circuit making capacity (kA) I_{cm} , 415 V AC	220	330		
Rated Short-circuit making capacity (kA) I_{cm} , 690 V AC	30	30		

Application/Limitation

Suitable for use in an IT system with a capacity of 1.2 times the maximum trip current at up to 690 V for types NM8-125, NM-250, NM8-400, NM8S-400, NM8-630 and NM8S-630. Other types and voltages including 690 V are not suitable for use in an IT net. All types can be used in ships / platforms with non IT systems.

Data in the tables above is for an ambient temperature of 40 °C. For 45 °C ambient temperature the data must be derated. See manufacturer information for details.

Type Approval documentation

Technical info: "NM8 MCCB DNV Application Information", undated.

Test reports, type test after IEC 60947-2: KEMA test reports nos. S0509040.50/51/52/53/54 issued 2007-02-14, S0509040.90 issued 2007-01-04.

China National Centre for Quality Supervision and Test of Low Voltage Apparatus ref no. AT070339 issued 2007-08-08.

Shanghai Testing & Inspection Institute for Electrical Equipment test report ref. no 07065, issued 2007-11-19.

Tests carried out

IEC 60947-1, IEC 60947-2. Test sequence I, II, III and Annex H (partly).

Environmental tests (vibration, dry heat, damp heat) in accordance with DNV CN 2.4 Class A, EMC in accordance with IEC 60947-2. Annex F.

Marking of product

Product marking: NM8 or NM8S - Zhejiang Chint Electrics - Type designation



Certificate No.: E-11819
File No.: 823.10
Job Id.: 262.1-003167-3

Certificate retention survey

The scope of the retention/renewal survey 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 are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Survey to be performed at least every second year.

END OF CERTIFICATE