

# CERTIFICATE

Issued to:  
Applicant:  
**Mitsubishi Electric Corporation Fukuyama Works**  
**1-8 Midori-Machi**  
**Fukuyama-City**  
**Hiroshima-Pref 720 8647, Japan**

Licensee:  
**Mitsubishi Electric Corporation Fukuyama Works**  
**1-8 Midori-Machi**  
**Fukuyama-City**  
**Hiroshima-Pref 720 8647, Japan**

Product : Moulded-Case Circuit-Breaker  
Trade name(s) : MITSUBISHI ELECTRIC  
Type(s)/model(s) : NF160-HGV, NF160-LGV and NF160-SGV

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:

- a type test according to the standard EN 60947-2:2006, EN 60947-2:2006/A1:2009 and EN 60947-2:2006/A2:2013
- an inspection of the production location according to CENELEC Operational Document CIG 021
- a certification agreement with the number 2116095

DEKRA hereby grants the right to use the KEMA-KEUR certification mark.

The KEMA-KEUR certification mark may be applied to the product as specified in this certificate for the duration of the KEMA-KEUR certification agreement and under the conditions of the KEMA-KEUR certification agreement.

This certificate is issued on 4 April 2018 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 33-103330

DEKRA Certification B.V.



drs. G.J. Zoetbrood  
Managing Director



Henk Schendstok  
Certification Manager

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DUTCH ACCREDITATION  
COUNCIL



**SPECIFICATION OF THE CERTIFIED PRODUCT**
**Product data**

Product	: Moulded-Case Circuit-Breaker
Trade name(s)	: MITSUBISHI ELECTRIC
Type(s)/model(s)	: NF160-HGV, NF160-LGV and NF160-SGV
Number of poles	: 3P or 4P (N pole without protection)
Protected pole	: 3
Rated operational voltage (U <sub>e</sub> )	: 230 Vac, 380 Vac, 400 Vac, 415 Vac, 250 Vdc
Rated insulation voltage (U <sub>i</sub> )	: 690 V
Rated impulse withstand voltage (U <sub>imp</sub> )	: 8 kV
Reference temperature (°C)	: 40 °C
Rated tightening torque for terminals (Nm)	: 6 Nm for M8
Rated current (I <sub>n</sub> )	: 160 A
Conventional thermal current (I <sub>th</sub> )	: Equal to I <sub>n</sub>
Current rating for four-pole circuit-breakers	: Equal to I <sub>n</sub>
Rated frequency	: 50 / 60 Hz
Suitable for isolation	: Suitable
Utilization category	: A
Instantaneous release	: Magnetic type, fixed, I <sub>i</sub> = 10 I <sub>n</sub> for 2 phases in series (AC) I <sub>i</sub> = 15 I <sub>n</sub> for single pole (AC) I <sub>i</sub> = 14 I <sub>n</sub> for 2 phases in series (DC) I <sub>i</sub> = 21 I <sub>n</sub> for single pole (DC)
Inverse time delay release	: Thermal type, adjustable, I <sub>r</sub> = 125 A - 160 A
Time setting of the inverse time delay release	: Fixed
Method of mounting	: Fixed
EMC environment	: A and B
Individual pole short-circuit breaking capacity (I <sub>it</sub> )	: Yes (only suitable for 3P) 15 I <sub>n</sub> at 415 Vac
Line/load terminal Connection	: Immaterial Prepared copper conductor with cable lug

**Product data – type NF160-HGV**

Rated ultimate short-circuit breaking capacity (I <sub>cu</sub> )	: 100 kA at 230 Vac, 75 kA at 380 / 400 Vac, 70 kA at 415 Vac, 40 kA at 250 Vdc
Rated service short-circuit breaking capacity (I <sub>cs</sub> )	: 100% I <sub>cu</sub>
Safety distance (screen-circuit breaker)	: Left / Right: 60 mm Up / Down: 80 mm Front / Back: 160 mm

**Product data – type NF160-LGV**

Rated ultimate short-circuit breaking capacity (I <sub>cu</sub> )	: 90 kA at 230 Vac, 50 kA at 380 / 400 / 415 Vac, 20 kA at 250 Vdc
Rated service short-circuit breaking capacity (I <sub>cs</sub> )	: 100% I <sub>cu</sub>
Safety distance (screen-circuit breaker)	: Left / Right: 60 mm Up / Down: 80 mm Front / Back: 160 mm

**Product data – type NF160-SGV**

Rated ultimate short-circuit breaking capacity (Icu) : 85 kA at 230 Vac, 36 kA at 380 / 400 / 415 Vac, 20 kA at 250 Vdc  
Rated service short-circuit breaking capacity (Ics) : 100% Icu  
Safety distance (screen-circuit breaker) : Left / Right: 50 mm  
Up / Down: 70 mm  
Front / Back: 160 mm

**TESTS****Test requirements**

EN 60947-2:2006  
EN 60947-2:2006/A1:2009  
EN 60947-2:2006/A2:2013

**Test result**

The test results are laid down in DEKRA test file 331338500.

**Additional information**

This certificate is based on certificate no. 3310628.02 issued on 17 January 2017.

The referred test reports are 3313385.50, 3310628.50, 3302725.50 and also based on CQC CB test certificate CN20815 issued on 2011-07-05 with CQC CB test report C009-CB2010CQC-028669 issued on 2011-05-18.

The product also complies with IEC 60947-2:2006 + A1:2009 + A2:2013.

This certificate replaces certificate No. 33-102741 which we herewith declare invalid.

**Conclusion**

The examination proved that all requirements were met.

**Factory location**

Mitsubishi Electric Dalian Industrial Products Co., Ltd.  
Dongbei 3-5, Dalian Economic & Technical Development Zone,  
116600 Liaoning Province, China