Applicant	:	GE Power Controls France Route de Guise - BP 642 02322 Saint-Quentin Cedex France
Application date	:	2002-07-12
Order number	:	2022690.00-QUA/COM
Subject	:	Moulded-case circuit-breaker
Trade name	:	GE Power Controls
Type	:	Record Plus ETU FEN 250 (Normal) 3 and 4 poles with not interchangeable electronic trip-unit

Arnhem, June 10, 2003

Manufacturer	:	GE Power Controls Ltd., Neumünster, Germany
Test requirements	:	EN 60947-2:1996 + C:1997-06 + A1:1997 + A11:1997 IEC 60947-2: Edition 2.2, 2001-11

The performance of the circuit-breakers tested and the observations made during the tests have been recorded in the tables with test results.

Issued by	:	H.L. Schendstok
Checked by	:	H.H.M. Versteegen

enclosures:
- 24 test data sheets
- 3 test circuit drawings
- 7 oscillograms of circuit calibrations
- 31 oscillograms of tests
- 1 photograph + 1 exploded view drawing
- 2 tripping curves

Pt/Sco 1257-03

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SUBJECT

3 and 4 pole moulded-case circuit-breaker Record Plus ETU - Type FEN 250 (Normal) with not interchangeable electronic trip-unit.

Ratings assigned by the manufacturer

Rated operational current (I_e)	: 125 A - 250 A
Rated operational voltage (U_e)	: 240, 415, 440, 500 and 690
Rated ultimate short-circuit breaking capacity (I_{cu})	: 240 Vac, 3-phase - 85 kA 415 Vac, 3-phase - 50 kA 440 Vac, 3-phase - 42 kA 500 Vac, 3-phase - 30 kA 690 Vac, 3-phase - 10 kA
Rated service short-circuit breaking capacity (I_{cs})	: 240 Vac, 3-phase - 85 kA 415 Vac, 3-phase - 50 kA 440 Vac, 3-phase - 42 kA 500 Vac, 3-phase - 30 kA 690 Vac, 3-phase - 10 kA
Rated short-time withstand current (I_{cw})	: not applicable
Rated individual pole short-circuit breaking capacity (I_{IT})	: 690 Vac - 3,9 kA
Utilization category	: A
Rated insulation voltage (U_i)	: 690 Vac
Rated impulse withstand voltage (U_{imp})	: 8 kV

Location of the tests

The tests were carried out in the laboratories of GE Power Controls France at St-Quentin, France.

Manufacturer's representatives during tests:

G. Jodehl GE Power Controls, Neumünster, Germany
B. Czysch GE Power Controls, Neumünster, Germany

The tests were observed by:

H. Harms-van Dijk KEMA Quality B.V., Arnhem, The Netherlands
H.L. Schendstok KEMA Quality B.V., Arnhem, The Netherlands
L.J.W. van Megen KEMA Quality B.V., Arnhem, The Netherlands

General notes on tests:

On request of the manufacturer the tests were performed on more samples than required by the standard. The tests were carried out on the following samples:

number of poles	sample number	rating & setting (A)	**FEN 250 (ETU)** operational voltage (V) / test current (kA)				
			sequence I	sequence II	sequence III	sequence II + III	annex H
4	536 618	250 250	690 690				
3 4 3	1016 1306 1017	250 250 125 x 0.4				240 / 85 240 / 85 240 / 85	
3	1018	250				415 / 50	
3	1018R	250				440 / 42	
3	1023	250				500 / 30	
3	1020	250				690 / 10R	
4	1307	250		poles 1+2 poles 3+4	289 / 51N 289 / 51NR		
3	1024	250					690 / 3,9

Notes: R: Connections reversed
N: (fourth) pole and its adjacent pole

The circuit-breaker was mounted in accordance with figure 1 of IEC 60947-2. The rigid shield and the metallic screen were combined into one single conductive metal plate.

During the O-tests the polyethylene sheet was mounted at a distance of 10 mm from the closing handle of the circuit-breaker.

With exception of the verification of the releases, pole per pole, all tests were carried out on circuit-breakers surrounded by a metallic screen.

The distances of the metallic screen to the circuit-breaker during the tests:

Back + front:	0 mm
Left + right:	5 mm
Top + bottom:	120 mm

During the short-circuit breaking capacity tests at 440 V, 500 V and 690 V, phase separators were mounted at the line side and the load side and an insulating back plate.

The frequency during the AC tests was 50 Hz.

On request of the manufacturer the verification of operational performance tests as part of sequences II and III was performed at a voltage of 690 V.

In accordance with the standard for additional test of the 4-pole circuit breaker a new circuit breaker was used for short-circuit tests between phase and neutral.

The overload releases are independent on ambient air temperature.