

# ASTA

## CERTIFICATE OF TYPE TESTS

Certificate No. 18135

Laboratory Ref. No: LSWGWO00812033/02

**APPARATUS:** Unenclosed, 3-Pole Moulded Case Circuit-breaker fitted with adjustable/fixed Over Current Releases. (Rated Current  $I_n = 16A$  to  $200A$ ,  $U_e = 400/415V$ ,  $U_i = 750V$ ,  $U_{imp} = 8kV$ . Utilisation Category A), Terminals marked: Line and Load, Reference Ambient Temperature  $55^\circ C$

**DESIGNATION:** FTCT/FTCFW (16A – 200A) 50kA

**MANUFACTURER:** Farraj Trading & Manufacturing Co,  
P.O. Box 61122, Jebel Ali Free Zone, Dubai, United Arab Emirates

**TESTED BY:** Electrical Research & Development Association  
ERDA Road, Makarpura Industrial Estate, Vadodara-390 010, Gujarat, INDIA

**DATES OF TESTS:** 2<sup>nd</sup> March to 5<sup>th</sup> May 2011

The apparatus, constructed in accordance with the description, drawings and photographs incorporated in this certificate has been subjected to the series of proving tests in accordance with

**IEC 60947 –2: 2009-05 Edition 4.1 with Amendment 1: 2009 - Clause 8.3.3, 8.3.4 & 8.3.5  
Test sequence I, II & III**

The results are shown in the record of Proving Tests and the oscillograms attached hereto. The values obtained and the general performance is considered to comply with the above standard(s) and to justify the ratings assigned by the manufacturer as stated below.

**For ratings assigned by the manufacturer and proved by the tests see page 1.**

The record of Proving Tests applies only to the apparatus tested. The responsibility for conformity of any apparatus having the same designations with that tested rests with the Manufacturer.

This Certificate comprises 26 pages, 1 diagram, 28 oscillograms, 15 photographs, 36 drawings and no other sheets as detailed on pages 2 & 3

Only integral reproduction of this Certificate, or reproductions of this page accompanied by any page(s) on which are stated the assigned rated characteristics of the apparatus tested, are permitted without written permission Intertek Testing and Certification Ltd, Hilton House, Corporation Street, Rugby. CV21 2DN, England.



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*Rajani Menon*  
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Rajani Menon  
ASTA Observer

*P. Gill*  
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P. Gill  
Certification  
Manager

*20<sup>TH</sup> JUNE 2011*  
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20<sup>TH</sup> JUNE 2011  
Date

## Ratings Assigned by the Manufacturer and Proved by Tests

### Test Sequence I : General performance characteristics (Clause 8.3.3):

Tripping limits and characteristics (Clause 8.3.3.1):	Verified
Dielectric properties (Clause 8.3.3.2):	
<b>Rated operational voltage (<math>U_e</math>):</b>	<b>400V/415V</b>
<b>Rated insulation voltage (<math>U_i</math>):</b>	<b>750V</b>
<b>Rated Impulse withstand voltage (<math>U_{imp}</math>):</b>	<b>8kV</b>
Mechanical operation and operational performance capability (Clause 8.3.3.3):	Verified
Overload performance (Clause 8.3.3.4):	Verified
Verification of dielectric withstand (Clause 8.3.3.5):	Verified
Verification of temperature-rise (Clause 8.3.3.6):	
<b>Rated current (<math>I_n</math>):</b>	<b>200A</b>
Verification of overload releases (Clause 8.3.3.7):	Verified
Verification of under voltage and shunt releases (If applicable) (Clause 8.3.3.8):	Not applicable
Verification of main contact position (Clause 8.3.3.9): (for circuit breaker suitable for isolation)	Verified

### Test Sequence II (Clause 8.3.4) & III (Clause 8.3.5):

Rated service short-circuit breaking capacity ( $I_{cs}$ ):	50kA at 415V, pf=0.25
Rated ultimate short-circuit breaking capacity ( $I_{cu}$ ):	50kA at 415V, pf=0.25