# **CESI**





#### TYPE TEST CERTIFICATE

**APPROVED** 

B6000645



Type Test Certificate of Complete Type Tests

Apparatus Enclosed three-phase dry-type power transformer, with encapsulated

windings, for continuous duty, with cooling by air natural convection

**Designation** TTR-A ECO A0-10% Ak

Rated power 1500 kVA; Rated voltages 11/0,4 kV; Rated frequency 50 Hz

Manufacturer S.E.A. Società Elettromeccanica Arzignanese S.p.A.

Via Leonardo Da Vinci, 14 – 36071 Tezze di Arzignano (VI) Italy

Client S.E.A. Società Elettromeccanica Arzignanese S.p.A.

Via Leonardo Da Vinci, 14 – 36071 Tezze di Arzignano (VI) Italy

**Tested by** CESI S.p.A. Milan, Italy

Tests date from April 7, 2015 to June 18, 2015

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

**IEC 60076-11 (2004-05)** Clauses 21, 23 and 25

This Type Test Certificate has been issued by CESI following exclusively the STL Guides.

The results are shown in the record of Proving Tests and the oscillograms attached in the Test Reports. The values obtained and the general performance are considered to comply with the above Standard(s) and to justify the ratings assigned by the Manufacturer as listed on page No. 3.

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

Only integral reproduction of this Certificate, or reproductions of this page accompanied by any pages on which are stated the endorsed ratings of the apparatus tested, are permitted without written permission from CESI.

No. of pages 4 No. of pages annexed

**Issue date** January 13, 2016

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TYPE TEST CERTIFICATE

**APPROVED** 

B6000645



# 1 RATINGS ASSIGNED BY THE MANUFACTURER AS PROVED BY THE TESTS

Dry-type cast resin power transformer	
Manufacturer S.	E.A. Società Elettromeccanica Arzignanese S.p.A.
Designation	TTR-A ECO A0-10% Ak
Serial number	109159
Rated power	1500 kVA
Number of phases	3
Rated voltage of the high-voltage winding (primary winding	) 11 kV
Rated voltage of the low-voltage winding (secondary windin	g) 400 V
Rated current of the high-voltage winding (primary winding	g) 78,73 A
Rated current of the low-voltage winding (secondary winding	ng) 2165 A
Rated frequency	50 Hz
Connection symbol	Dyn11
Short-circuit impedance	7,25 %
Load loss	8892 W
No-load current	0,21 %
No-load loss	1686 W
Rated insulation level of the high-voltage winding (primary	winding) LI 75 AC 28
Rated insulation level of the low-voltage winding (secondar	y winding) AC 3
Cooling method	AN

# **2 ADDITIONAL TYPE TESTS**

This Certificate also verifies:

- Measurement of sound level, according to IEC 60076-11 clause 24.

## **3 REFERENCE DOCUMENTS**

The following reference documents are integral part of this Certificate:

No.	Description	CESI registration
1	Test Report	B5007459-1
2	Test Report	B5008216-1
3	Test Report	B5009245-1
4	Test Report	B5009524-1
5	Manufacturer's drawings	B5014117





#### 4 ADDITIONAL REFERENCES

Not applicable

### 5 RECORD OF PROVING TESTS

The table below lists all the tests performed and the references to the relevant Test Reports containing the test values.

No. Standard and clause	Description of tests	Reference documents
IEC 60076-11 clause 21	Lightning impulse test	B5009245-1
IEC 60076-11 clause 23	Temperature rise test	B5007459-1
IEC 60076-11 clause 25	Short-circuit test	B5008216-1
IEC 60076-11 clauses 15 to 18	Routine tests measurement before and after short circuit tests	B5007459-1
IEC 60076-11 clauses 19, 20 and 22.4.1.1	Dielectric routine tests before and after short circuit tests	B5007459-1 B5009524-1
IEC 60076-11 clause 24	Measurement of sound level	B5007459-1

### 6 IDENTIFICATION OF THE APPARATUS

The Manufacturer guarantees that the tested apparatus is manufactured according to the submitted drawings.

CESI checked that these drawings adequately represent in shape and dimensions the essential details and the main parts of the tested apparatus.

These drawings, identified by CESI and numbered B5014117 No.1 to 7 have been returned to the Client.