

CETECOM™

CERTIFICADO DE ENSAYO

TEST CERTIFICATE

Nº: 18679CSE:001

Producto : TRANSFORMADOR DE CORRIENTE
Product : CURRENT TRANSFORMER

Marca comercial : CIRCUTOR
Trade Mark

Modelo / Tipo Ref. : TC6 200/5A
Model / Type Ref.

Fabricante : INSTRUMENTACIÓN INDUSTRIAL ZURC, S.A.
Manufacturer

Peticionario : CIRCUTOR, S.A.
Tested on request of

Otros datos de identificación - n/s : Transformador de intensidad para barra pasante con una relación
Full identification of the product - s/n : 200/5A, una clase de precisión 0.5 y clase térmica B (130°C), para una
tensión de servicio de 720Vc.a. y una frecuencia de trabajo de 50-
60Hz. Posee carcasa aislante. Nº de serie: 320012-1006.
Current transformer for bar going through it with a rate of 200/5A, with a
precision class 0.5 and thermal class B (130°C), for a rated voltage of 720V.a.c. and
a rated frequency of 50-60Hz. It has insulating enclosure. Serial number: 320012-
1006.

Norma(s) de referencia : EN 60044-1 (1999), apartados 7.1., 7.2., 8.3., 8.4., 10.1. y 11.2.
Standard(s) : EN 60044-1 (1999), subclauses 7.1., 7.2., 8.3., 8.4., 10.1. and 11.2.

Certificado basado en el informe : Nº. 18679RSE.001 DE FECHA: 2003-07-22
Test certificate based on the test report : No. 18679RSE.001 dated: 2003-07-22

Resultado : CONFORME
Summary : COMPLIANT

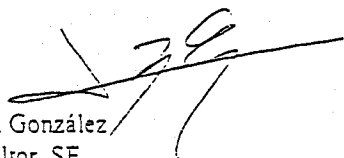
CETECOM es un laboratorio de ensayo competente, para la realización de los ensayos objeto del presente informe.

CETECOM is a testing laboratory competent to carry out the tests described in this report.


Nota: Este certificado de ensayo sólo es aplicable a los objetos sometidos a ensayo cuya identificación se recoge en el apartado 4.3. del informe en que se basa, ensayados en el modo y fecha(s) declaradas en el apartado 5.1 y 5.2 del mismo informe. Por tanto, no implica una certificación de la producción.

Note: This test certificate is only applicable to the unit(s) of the product submitted, shown in the reference report (clause 4.3), tested and used in the mode and date shown in clauses 5.1 and 5.2 of the mentioned test report. It does not imply a certification of the production.

Málaga, a 22 de Julio de 2003


Rafael González
Consultor SE
ES Consultant


CENTRO DE TECNOLOGIA
DE LAS COMUNICACIONES, S. A.


Francisco Broissin
Director de Área
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133 Hoja MA3729

TEST REPORT


NIE: 18679RSE.001

TEST NAME: Partial safety tests on instruments transformers. Current transformers.

Product : CURRENT TRANSFORMER
Trade Mark : CIRCUTOR
Model/type Ref. : TC6 200/5A
Manufacturer : INSTRUMENTACIÓN INDUSTRIAL ZURC, S.A.
Requested by : CIRCUTOR, S.A.
Other identification of the product : Current transformer for bar going through it with a rate of 200/5A, with a precision class 0.5 and termal class B (130°C), for a rated voltaje of 720Va.c. and a rated frequency of 50-60Hz. It has insulating enclosure. Serial number: 320012-1006.
Standard(s) : EN 60044-1 (1999), subclauses 7.1., 7.2., 8.3., 8.4., 10.1. and 11.2.

This test report includes 2 annexes and therefore the total number of pages is 14.

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Date: 2003-07-22	Test operator: Date: 2003-07-22 Juan Cañizares E.S. Consultor	Revised by: Date: 2003-07-22 Rafael González E.S. Consultor	Approved by: Date: 2003-07-22 Francisco Broissin Area Director	Page: 1 of 14
				

INDEX

1. COMPETENCE AND GUARANTEES.....	3
2. GENERAL CONDITIONS	3
3. CHARACTERISTICS OF THE TEST.....	3
3.1. TEST REQUESTED	3
3.2. REQUIREMENTS AND METHOD.....	3
4. IDENTIFICATION DATA SUPPLIED BY THE APPLICANT	4
4.1. APPLICANT	4
4.2. TEST SAMPLES SUPPLIER	4
4.3. IDENTIFICATION OF ITEM/ITEMS TESTED	4
5. USAGE OF SAMPLES, PERIOD OF TESTING AND ENVIRONMENTAL CONDITIONS	5
5.1. USAGE OF SAMPLES	5
5.2. PERIOD OF TESTING	5
5.3. ENVIROMENTAL CONDITIONS	5
6. TEST RESULTS	5
6.1. RESULTS.....	6
7. SUMMARY.....	6
ANNEXES.....	7
A.- RESULTS DETAILS OF THE TEST ACCORDING TO EN 60044-1	8
B.- PHOTOGRAPHS	12

1. COMPETENCE AND GUARANTEES

CETECOM is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, CETECOM has a calibration and maintenance programme for its measuring equipment.

CETECOM guarantees the reliability of the data presented in this report, which is the result of measurements and tests performed to the item under test on the date and under the conditions stated on the report and is based on the knowledge and technical facilities available at CETECOM at the time of execution of the test.

CETECOM is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the item under test and the results of the test.

2. GENERAL CONDITIONS

1. This report only refers to the item that has undergone the test.
2. This report does not constitute or imply by its own an approval of the product by the Certification Body or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without written approval of CETECOM.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of CETECOM and the Accreditation Bodies.

3. CHARACTERISTICS OF THE TEST

3.1. TEST REQUESTED

Partial electrical safety tests according to the standard EN 60044-1 on a current transformer. More specifically, it was requested the performance of the tests relevant to the subclauses 7.1., 7.2., 8.3., 8.4., 10.1. and 11.2. of this standard.

3.2. REQUIREMENTS AND METHOD

The test has been carried out according to the following documents and standards:

1. EN 60044-1 (1999) "Instruments transformers. Part 1: Current transformers".

The testing procedures used are:

1. Test Procedure POSE000 of CETECOM.

Uncertainty (factor $k=2$) was calculated according to the following CETECOM's internal documents:

1. PODT000: Procedure for measurement of uncertainty factors.

4. IDENTIFICATION DATA SUPPLIED BY THE APPLICANT

Identification data included in this section has been supplied by the client.

4.1. APPLICANT

Name / Company: CIRCUTOR, S.A

Contact person: Carles Pujol

V.A.T. Registration number / Passport number: A-08513178

Address: Vial Sant Jordi, s/n. Viladecavalls (Barcelona).

Country: Spain

P.C.: E-08232

Telephone: +34 93 745 29 03

ax: +34 93 745 29 14

4.2. TEST SAMPLES SUPPLIER

Name / Company: CIRCUTOR, S.A

V.A.T. Registration number / Passport number: A-08513178

Address: Vial Sant Jordi, s/n. Viladecavalls (Barcelona).

Country: Spain

P.C.: E-08232

Telephone: +34 93 745 29 03

ax: +34 93 745 29 14

Samples undergoing test have been selected by: the client.

4.3. IDENTIFICATION OF ITEM/ITEMS TESTED

Product: CURRENT TRANSFORMER

Trade mark: CIRCUTOR

Model: TC6 200/5A

Manufacturer: INSTRUMENTACIÓN INDUSTRIAL ZURC. S.A.

Country of manufacture: Spain

Manufacture site address: C./ Pujadas, 77-79.7ª planta. P.C. 08005. Barcelona.

Description: Current transformer for bar going through it with a rate of 200/5A. with a precision class 0.5 and thermal class B (130°C), for a rated voltaje of 720Va.c. and a rated frequency of 50-60Hz. It has insulating enclosure. Serial number: 320012-1006.

For further information, see the photographs in Annex B.

5. USAGE OF SAMPLES, PERIOD OF TESTING AND ENVIRONMENTAL CONDITIONS

5.1. USAGE OF SAMPLES

Sample M/01 is composed of the following elements:

<u>Control No.</u>	<u>Description</u>	<u>Model</u>	<u>Serial No.</u>	<u>Date of reception</u>
18679/02	Current transformer	TC6 200/5A	320012-1006	2003-06-23

1. Sample M/01 has undergone all the test described in 3.1. TEST REQUESTED.

5.2. PERIOD OF TESTING

The performed test started on 2003-07-14 and finished on 2003-07-16.

The tests as detailed in this report have been performed at CETECOM.

5.3. ENVIROMENTAL CONDITIONS

General environmental conditions:

Temperature	Min. = 24.4 °C Max. = 26.9 °C
Relative humidity	Min. = 35 % Max. = 52 %
Air pressure	Min. = 1007 mbar Max. = 1011 mbar

6. TEST RESULTS

Abbreviations used in the VERDICT column of the following tables are:

- P Pass
- F Fail
- NA not applicable
- NM not measured

6.1. RESULTS

PARAGRAPH OF THE STANDARD EN 60335-1 (1999)	VERDICT			
	NA	P	F	NM
6. TYPE TESTS (partial).		P		
8. ROUTINE TESTS (partial).		P		
10. MARKING.		P		
11. ADDITIONAL REQUIREMENTS FOR INSTRUMENTS CURRENT TRANSFORMERS (partial).		P		

7. SUMMARY

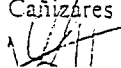
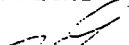
Considering the results of the performed test, stated in annex A, the items under test are IN COMPLIANCE with the specifications listed in section 3.1 "TEST REQUESTED".

NOTE: The results presented in this Test Report apply only to the particular item under test established in section "4.3. IDENTIFICATION OF ITEM/ITEMS TESTED" of this document, as presented for test on the date(s) shown in section 5, "USAGE OF SAMPLES. TESTING PERIOD AND ENVIRONMENTAL CONDITIONS".

ANNEXES

A.- RESULTS DETAILS OF THE TEST ACCORDING TO EN 60044-1

Report No.: 18679RSE.001

Date: 2003-07-22	Test operator: Date: 2003-07-22 Juan Cañizares 	Revised by: Date: 2003-07-22 Rafael González 	Page: 8 of 14
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The tests detailed below have been developed on a CURRENT TRANSFORMER, model TC6 200/5A of CIRCUTOR, S.A.. The next paragraphs are according to EN 60044-1 (1999).

Uncertainties were calculated with a factor K=2.

GENERAL INFORMATION.

The current transformer has the following characteristics:

- Rate: 200/5A
- Rated voltage: 720 Va.c.
- Rated frequency: 50-60 Hz
- Rated power: 5 VA
- Thermal class: B (130°C)
- Precision class: 0.5
- Safety factor (FS): 5
- Shortcircuit thermal current (Ith): 60·In
- Dynamic current (Idyn): 2.5·Ith
- Peso: 0.39 kg

7. TYPE TESTS

7.1. Shortcircuit current test..... [P] [] [] [] []

The Shortcircuit thermal current (Ith) is 60·In; therefore, it has been applied a current with a value of 12.0 ± 1.1 kA for 1.0 ± 0.1 seconds, with the secondary winding shortcircuited.

The Dynamic current (Idyn) is 2.5·Ith; therefore, it has been applied a current with a value of 30.0 ± 3.0 kA for 0.02 ± 0.01 seconds, with the secondary winding shortcircuited.

After these two tests, the equipment under test:

- has no visible damages. It passes.
- the measured error in current, after deducing the original error that the transformer had previously to the test, has been 0.66±0.05%

Report No. 18679RSE.001		Page: 9 of 14
Date: 2003-07-22		Annex A

P

lower than the value of 0.75% (50% of the error in current for a current transformer with a precision class 0.5). It passes.

The measured error in phase lag is $< 30 \pm 5$ minutes, which is lower than 45 minutes (50% of the error in current for a current transformer with a precision class 0.5). It passes.

- withstands the dielectric strength test between primary and secondary at 2700Va.c. (90% of the relevant value of 3000Va.c.). It passes.

-the insulation close to the surface of the conductor shows no damage. It passes.

7.2. Heating test [P] [] [] [] [] []

The heating test has been carried out making pass 200 ± 18 A through the primary of the winding transformer for 3 hours, with the secondary winding loaded till reaching a power of 5 VA. After the test, the winding has reached a temperature rise of 28.3 ± 2.4 K, which is lower than 85 K (limit for a class B winding).

8. ROUTINE TESTS

8.3. Dielectric strength test at industrial frequency between sections of the primary and secondary windings and between secondary windings [P] [] [] [] [] []

The rated voltage is 0.72 kV.

The transformer withstands the dielectric strength test between terminals of primary and secondary windings at 3000Va.c. for 60 ± 1 seconds. It passes.

8.4. Overvoltage test between turns of the coil [P] [] [] [] [] []

The transformer withstands the dielectric strength test between primary and secondary windings at 3000Va.c. for 60 ± 1 seconds, with a current of 200 ± 18 Ac.a. passing through the primary, with the secondary in open circuit. It passes.

10. MARKING

10.1. Marking of the terminals [P] [] [] []

The terminals of the primary winding are marked with P1 and P2; and those of the secondary winding are marked with S1 and S2. All these marks are located close to their relevant terminal in a visible place. These marks are all legible and durable.

11. ADDITIONAL REQUIREMENTS FOR THE INSTRUMENTS CURRENT TRANSFORMERS.

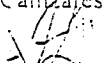
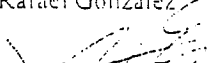
11.2. Limits of error of current and phase of the instruments current transformers [P] [] [] []

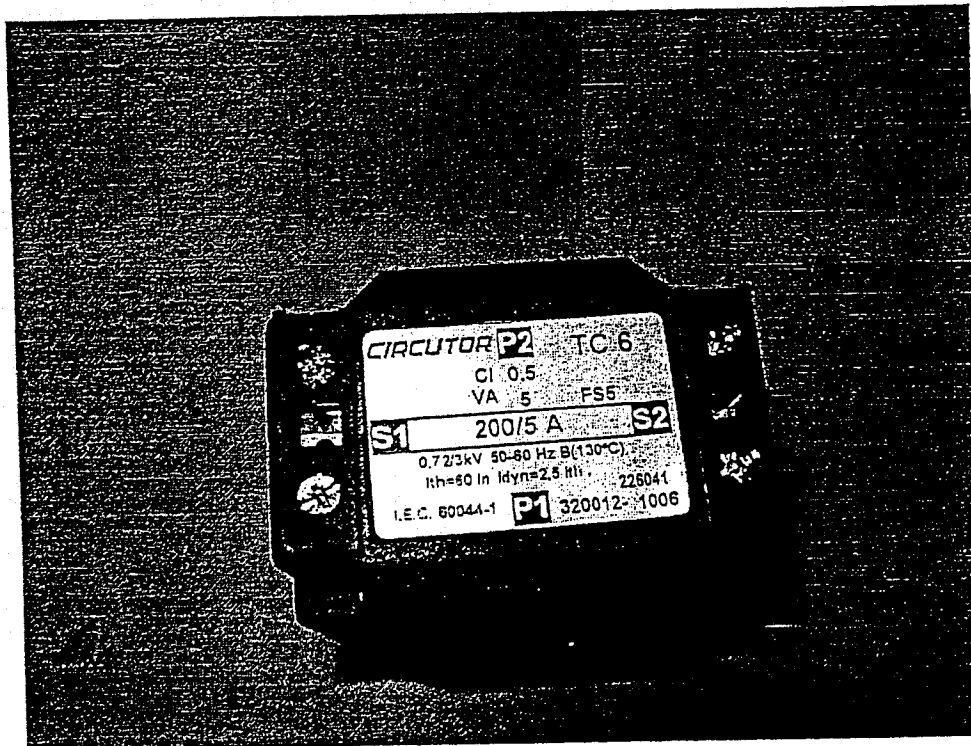
The measured error in current has been $0.70 \pm 0.05\%$ lower than the value of 1.5% (the value of the error in current for a current transformer with a precision class 0.5). It passes.

The measured error in phase lag is $< 30 \pm 5$ minutes, which is lower than 90 minutes (the value of the error in current for a current transformer with a precision class 0.5). It passes.

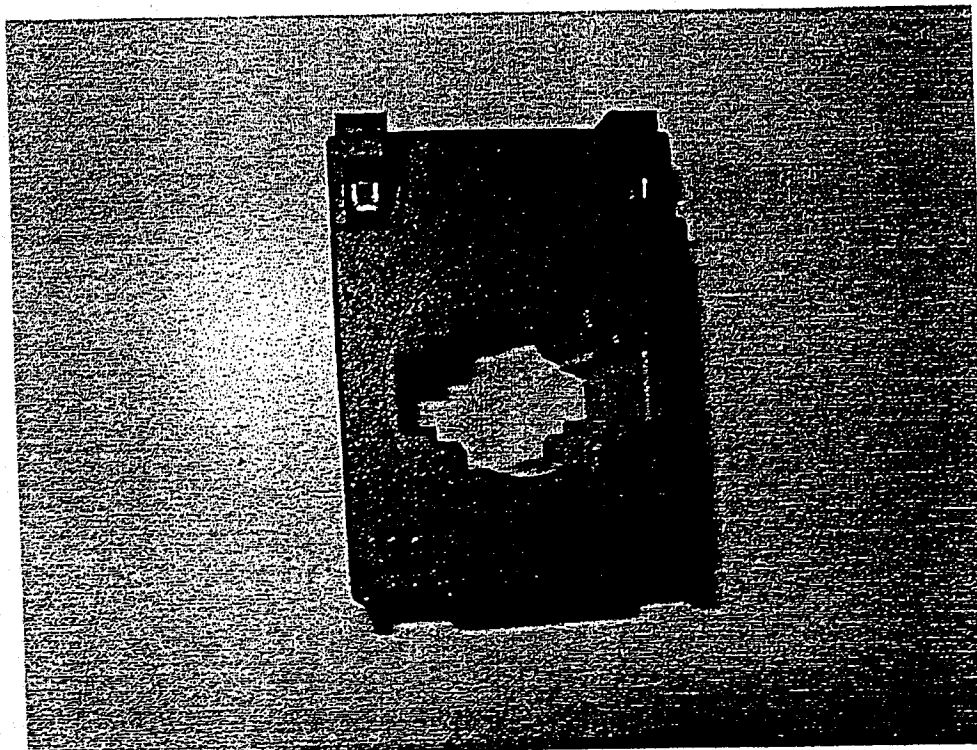
B.- PHOTOGRAPHS

Report No.:18679RSE.001

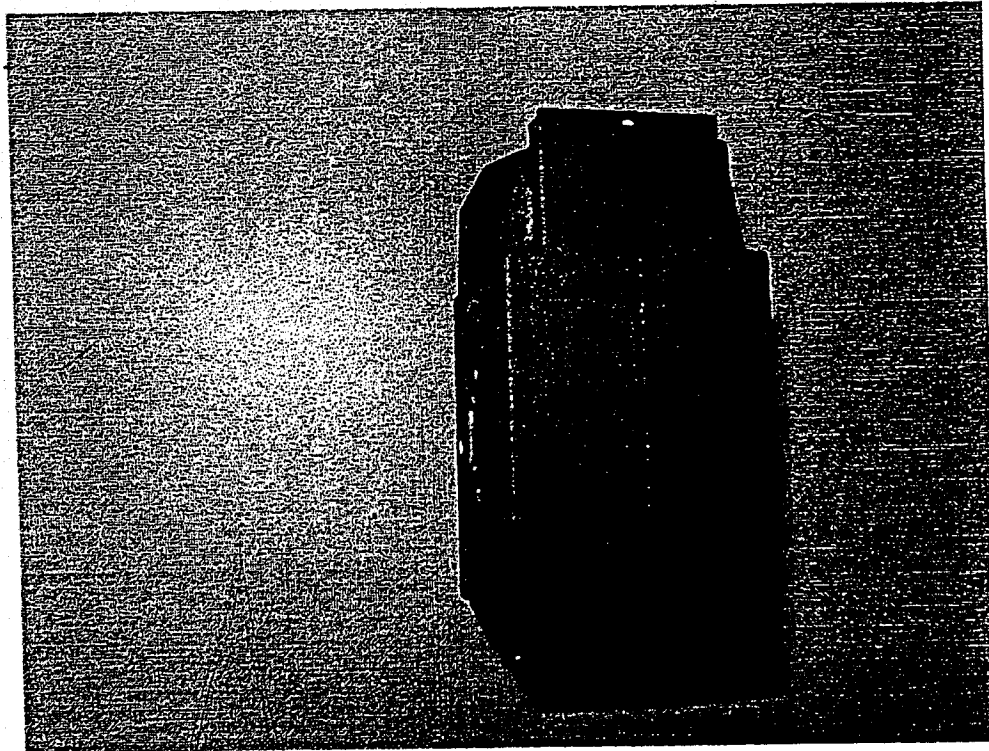
Date: 2003-07-22	Test operator: Date: 2003-07-22 Juan Cañizares 	Revised by: Date: 2003-07-22 Rafael González 	Page: 12 of 14
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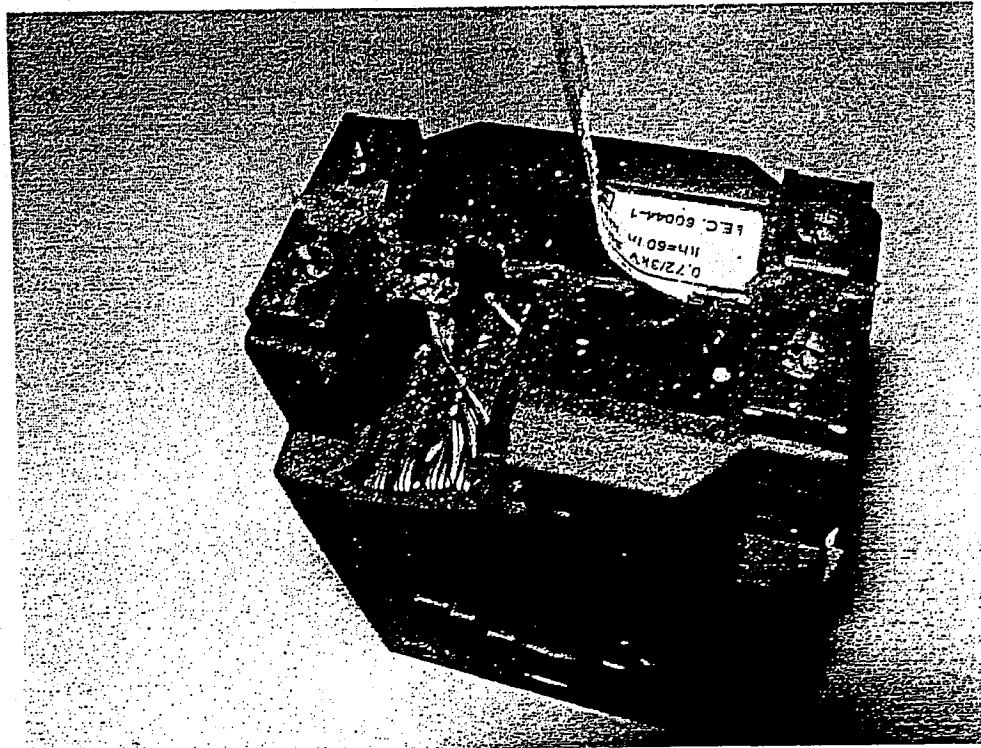
CURRENT TRANSFORMER, model TC6 200/5A
NIE:18679RSE.001 GENERAL VIEW



CURRENT TRANSFORMER, model TC6 200/5A
NIE:18679RSE.001 GENERAL VIEW



CURRENT TRANSFORMER, model TC6 200/5A
NIE:18679RSE.001 GENERAL VIEW



CURRENT TRANSFORMER, model TC6 200/5A
NIE:18679RSE.001 INSIDE VIEW