ASTA TYPE CERTIFICATE

VERIFICATION OF TEST

Project No: G104238411 **Certificate No:** ASTA-TYPE-000133

Applicant: Veritek Engineering Pvt. Ltd.
Plot No. 222, EL - Electronic Zone, T.T.C. Industrial Area, M.I.D.C., Mahape, New Mumbai - 400 701,India

Apparatus: 0.72/4kV (Um/ Insulation level), 50/60Hz, window type measuring current transformers:

a) 100/5A, 5VA, Class 0.5, Class E insulation
b) 200/5A, 10VA, Class 0.5, Class E insulation
c) 300/5A, 10VA, Class 0.5, Class E insulation
d) 400/5A, 5VA, Class 1, Class E insulation
e) 600/5A, 10VA, Class 0.5, Class E insulation
f) 1000/5A, 15VA, Class 0.5, Class E insulation
g) 1600/5A, 15VA, Class 0.2S, Class E insulation
h) 2500/5A, 15VA, Class 0.2S, Class E insulation
i) 3000/5A, 15VA, Class 0.2S, Class E insulation
j) 3000/5A, 45VA, Class 1 (Split core), Class H insulation
k) 3000/5A, 15VA, Class 0.2S (ring type), Class E insulation

Manufactured By: Veritek Engineering Pvt. Ltd.
Plot No. 222, EL - Electronic Zone, T.T.C. Industrial Area, M.I.D.C., Mahape, New Mumbai - 400 701,India

Test Report No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Designation: VIPS

The apparatus which is representative of the designation, supplied drawings and photographs has been evaluated in accordance with:

IEC 61869-2: Edition 1.0: 2012-09 Clauses 7.2.2, 7.2.6, 7.2.201, 7.3.1, 7.3.4, 7.3.5, 7.3.6, 7.3.204 and 7.5.2 and the STL Guide to IEC 61869-2, Issue 1.1, 1st July 2016

The results are shown in the record of tests 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 on the ratings page(s) of this Certificate. This Certificate applies only to the apparatus tested. Responsibility for conformity of any apparatus having the same or other designations rests with the Manufacturer.

UKAS PRODUCT CERTIFICATION
010

C. Nick-Evans — Certification Engineer

B J McGill — Certification Officer

10 July 2020 — Date

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Project No: G104238411 **Certificate No:** ASTA-TYPE-000133

Verification of: Current transformers

Limitations of Use

Characteristic Verified	Clause/ Subclause	Verified Tests and Ratings
Temperature-rise test Rated continuous thermal current I_{cth} a) 100/5A, 5VA, Class 0.5, Class E insulation b) 200/5A, 10VA, Class 0.5, Class E insulation c) 300/5A, 10VA, Class 0.5, Class E insulation d) 400/5A, 5VA, Class 1, Class E insulation e) 600/5A, 10VA, Class 0.5, Class E insulation f) 1000/5A, 15VA, Class 0.5, Class E insulation g) 1600/5A, 15VA, Class 0.2S, Class E insulation h) 2500/5A, 15VA, Class 0.2S, Class E insulation i) 3000/5A, 15VA, Class 0.2S, Class E insulation j) 3000/5A, 45VA, Class 1 (split core), Class H insulation k) 3000/5A, 15VA, Class 0.2S (ring type), Class E insulation	**7.2.2**	- 100/5A, 5VA 200/5A, 10VA 300/5A, 10VA 400/5A, 5VA 600/5A, 10VA 1000/5A, 15VA 1600/5A, 15VA 2500/5A, 15VA 3000/5A, 15VA 3000/5A, 45VA 3000/5A, 15VA
Tests for accuracy a) 100/5A, 5VA, Class 0.5, Class E insulation b) 200/5A, 10VA, Class 0.5, Class E insulation c) 300/5A, 10VA, Class 0.5, Class E insulation d) 400/5A, 5VA, Class 1, Class E insulation e) 600/5A, 10VA, Class 0.5, Class E insulation f) 1000/5A, 15VA, Class 0.5, Class E insulation g) 1600/5A, 15VA, Class 0.2S, Class E insulation h) 2500/5A, 15VA, Class 0.2S, Class E insulation i) 3000/5A, 15VA, Class 0.2S, Class E insulation j) 3000/5A, 45VA, Class 1 (split core), Class H insulation k) 3000/5A, 15VA, Class 0.2S (ring type), Class E insulation	**7.2.6**	- Verified

Project No: G104238411 **Certificate No:** ASTA-TYPE-000133

Limitations of Use

Characteristic Verified	Clause/ Subclause	Verified Tests and Ratings
Short-time current tests	**7.2.201**	Verified
a) 100/5A, 5VA, Class 0.5 Rated Short-time thermal Current: Rated Dynamic Current:		 I_{th}: 6kA rms for 1 sec. I_{dyn}: 15kA peak
b) 200/5A, 10VA, Class 0.5 Rated Short-time thermal Current: Rated Dynamic Current:		 I_{th}: 12kA rms for 1 sec. I_{dyn}: 30kA peak
c) 300/5A, 10VA, Class 0.5 Rated Short-time thermal Current: Rated Dynamic Current:		 I_{th}: 18kA rms for 1 sec. I_{dyn}: 45kA peak
d) 400/5A, 5VA, Class 1 Rated Short-time thermal Current: Rated Dynamic Current:		 I_{th}: 24kA rms for 1 sec. I_{dyn}: 60kA peak
e) 600/5A, 10VA, Class 0.5, Rated Short-time thermal Current: Rated Dynamic Current:		 I_{th}: 36kA rms for 1 sec. I_{dyn}: 90kA peak
f) 1000/5A, 15VA, Class 0.5 Rated Short-time thermal Current: Rated Dynamic Current:		 I_{th}: 60kA rms for 1 sec. I_{dyn}: 150kA peak
g) 1600/5A, 15VA, Class 0.2S Rated Short-time thermal Current: Rated Dynamic Current:		 I_{th}: 96kA rms for 1 sec. I_{dyn}: 240kA peak
h) 2500/5A, 15VA, Class 0.2S Rated Short-time thermal Current: Rated Dynamic Current:		 I_{th}: 150kA rms for 1 sec. I_{dyn}: 375kA peak
i) 3000/5A, 15VA, Class 0.2S Rated Short-time thermal Current: Rated Dynamic Current:		 I_{th}: 60kA rms for 1 sec. I_{dyn}: 150kA peak
j) 3000/5A, 45VA, Class 1 (split core) Rated Short-time thermal Current: Rated Dynamic Current:		 I_{th}: 60kA rms for 1 sec. I_{dyn}: 150kA peak
k) 3000/5A, 15VA, Class 0.2S (ring type) Rated Short-time thermal Current: Rated Dynamic Current:		 I_{th}: 60kA rms for 1 sec. I_{dyn}: 150kA peak

Project No: G104238411 **Certificate No:** ASTA-TYPE-000133

Limitations of Use

Characteristic Verified	Clause/ Subclause	Verified Tests and Ratings
Power-frequency voltage withstand tests on primary terminals	**7.3.1**	Verified
a) 100/5A, 5VA, Class 0.5 b) 200/5A, 10VA, Class 0.5 c) 300/5A, 10VA, Class 0.5 d) 400/5A, 5VA, Class 1 e) 600/5A, 10VA, Class 0.5, f) 1000/5A, 15VA, Class 0.5 g) 1600/5A, 15VA, Class 0.2S, h) 2500/5A, 15VA, Class 0.2S i) 3000/5A, 15VA, Class 0.2S j) 3000/5A, 45VA, Class 1 (split core) k) 3000/5A, 15VA, Class 0.2S (ring type)		4kV for 1minute
Power-frequency voltage withstand tests on secondary terminals a) 100/5A, 5VA, Class 0.5 b) 200/5A, 10VA, Class 0.5 c) 300/5A, 10VA, Class 0.5 d) 400/5A, 5VA, Class 1 e) 600/5A, 10VA, Class 0.5, f) 1000/5A, 15VA, Class 0.5 g) 1600/5A, 15VA, Class 0.2S, h) 2500/5A, 15VA, Class 0.2S i) 3000/5A, 15VA, Class 0.2S j) 3000/5A, 45VA, Class 1 (split core) k) 3000/5A, 15VA, Class 0.2S (ring type)	**7.3.4**	Verified 4kV for 1minute
Verification of markings a) 100/5A, 5VA, Class 0.5 b) 200/5A, 10VA, Class 0.5 c) 300/5A, 10VA, Class 0.5 d) 400/5A, 5VA, Class 1 e) 600/5A, 10VA, Class 0.5, f) 1000/5A, 15VA, Class 0.5 g) 1600/5A, 15VA, Class 0.2S, h) 2500/5A, 15VA, Class 0.2S i) 3000/5A, 15VA, Class 0.2S j) 3000/5A, 45VA, Class 1 (split core) k) 3000/5A, 15VA, Class 0.2S (ring type)	**7.3.6**	Verified

Project No: G104238411 **Certificate No:** ASTA-TYPE-000133

Limitations of Use

Characteristic Verified	Clause/ Subclause	Verified Tests and Ratings
Inter-turn overvoltage test a) 100/5A, 5VA, Class 0.5 b) 200/5A, 10VA, Class 0.5 c) 300/5A, 10VA, Class 0.5 d) 400/5A, 5VA, Class 1 e) 600/5A, 10VA, Class 0.5, f) 1000/5A, 15VA, Class 0.5 g) 1600/5A, 15VA, Class 0.2S, h) 2500/5A, 15VA, Class 0.2S i) 3000/5A, 15VA, Class 0.2S j) 3000/5A, 45VA, Class 1 (Split core) k) 3000/5A, 15VA, Class 0.2S (ring type)	**7.3.204**	Verified
Determination of the instrument security factor (FS) of measuring current transformers a) 100/5A, 5VA, Class 0.5 b) 200/5A, 10VA, Class 0.5 c) 300/5A, 10VA, Class 0.5 d) 400/5A, 5VA, Class 1 e) 600/5A, 10VA, Class 0.5, f) 1000/5A, 15VA, Class 0.5 g) 1600/5A, 15VA, Class 0.2S, h) 2500/5A, 15VA, Class 0.2S i) 3000/5A, 15VA, Class 0.2S j) 3000/5A, 45VA, Class 1 (split core) k) 3000/5A, 15VA, Class 0.2S (ring type)	**7.5.2**	Verified FS = 5 FS = 5 FS = 5 FS = 5 FS = 5 FS = 5 FS = 5 FS = 5 FS = 5 FS = 10 FS = 5

Project No: G104238411 **Certificate No:** ASTA-TYPE-000133

Certificate Contents:

The following documents are attached to and form part of this certificate:

Documents:	Number of pages
Test Report no: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E	48
Circuit diagrams	1
Oscillograms	11
Photographs	33
Drawings	11

Certificate Revision Amendment Table

Certificate Number	Issue Date	Amendment
ASTA-TYPE-000133	10 Jul 2020	Initial issue

APPARATUS TESTED: : 0.72/4kV (Um/ Insulation level), 50/60Hz, window type measuring current transformers:
a) 100/5A, 5VA, Class 0.5, Class E insulation
b) 200/5A, 10VA, Class 0.5, Class E insulation
c) 300/5A, 10VA, Class 0.5, Class E insulation
d) 400/5A, 5VA, Class 1, Class E insulation
e) 600/5A, 10VA, Class 0.5, Class E insulation
f) 1000/5A, 15VA, Class 0.5, Class E insulation
g) 1600/5A, 15VA, Class 0.2S, Class E insulation
h) 2500/5A, 15VA, Class 0.2S, Class E insulation
i) 3000/5A, 15VA, Class 0.2S, Class E insulation
j) 3000/5A, 45VA, Class 1 (split core), Class H insulation
k) 3000/5A, 15VA, Class 0.2S (ring type), Class E insulation

STANDARD: : IEC 61869-2: Edition 1.0: 2012 – 09 and the STL Guide to IEC 61869-2, Issue 1.1, 1st July 2016

MANUFACTURER: : Veritek Engineering Pvt. Ltd.
Plot No. 222, EL - Electronic Zone, T.T.C. Industrial Area,
M.I.D.C., Mahape, New Mumbai - 400 701,India

TESTING LABORATORY: : TECNALIA Research & innovation
Parque Científico y Tecnológico de Bizkaia
Laida Bidea. Edificio 413, 48170 Zamudio, SPAIN

APPROVED BY: : Rajani Menon, ASTA Observer, Intertek

DATE: : 25.06.2020

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CONTENTS (contd.)

Schedule of drawings: The following drawings are included in this document.

Drawing number	Issue Status		Description
	Revision	Date	
VEPL / RA / VIPS 5010 - 100 / 5	R - 0	07.12.2019	Current Transformer VIPS 50102630
VEPL / RA / VIPS 5010 - 200 / 5	R - 0	07.12.2019	Current Transformer VIPS 50102630
VEPL / RA / VIPS 4010 - 300 / 5	R - 0	07.12.2019	Current Transformer VIPS 40103240
VEPL / RA / VIPS 3010 - 400/5	R - 0	07.12.2019	Current Transformer VIPS 30103010
VEPL / RA / VIPS 6310 - 600 / 5	R - 0	07.12.2019	Current Transformer VIPS 63104460
VEPL / RA / VIPS 6310 - 1000 / 5	R - 0	07.12.2019	Current Transformer VIPS 63104460
VEPL / RA / VIPS 8010 - 1600 / 5	R - 0	07.12.2019	Current Transformer VIPS 80105580
VEPL / RA / VIPS 10030 - 2500 / 5	R - 0	07.12.2019	Current Transformer VIPS 100308510
VEPL / RA / VIPS 10030 - 3000 / 5	R - 0	07.12.2019	Current Transformer VIPS 100308510
VEPL / RA / VIPS SC04	R - 0	20.03.2020	SPLIT CORE CT VIPS SC04
VEPL / RA / VIPS 11315940	R - 0	20.03.2020	RMCT BIG VIPS 11315940

The drawings were verified by the ASTA Observer as adequately representing the apparatus tested.

APPARATUS TESTED

a) 100/5A, 0.72/4kV (U_m/Insulation level), 5VA, 0.5 class, 50/60Hz, Window type Measuring Current Transformer.

The following values were assigned by the manufacturer:

Manufacturer Name / Trademark:	Veritek
Type:	VIPS 50102630
Rated Primary/Secondary Current:	100/5A
Accuracy Class:	0.5
Rated Burden:	5VA
Rated Frequency:	50/60 Hz
Rated Short-time Thermal Current (I_{th}):	6kA rms
Rated Dynamic Current (I_{dyn}):	15kA peak
Purpose of Use:	Measuring
Instrument Security Factor (FS):	5
Application:	Indoor
Class of Insulation:	E

The manufacturer assigned a current ratio of 100/5A, rated short-time thermal current of 100A, rated short-time thermal current of 6kA rms for 1 second, and a rated dynamic current of 15kA peak, with the secondary winding short-circuited.

b) 200/5A, 0.72/4kV (U_m/Insulation level), 10VA, 0.5 class, 50/60Hz, Window type Measuring Current Transformer.

The following values were assigned by the manufacturer:

Manufacturer Name / Trademark:	Veritek
Type:	VIPS 50102630
Rated Primary/Secondary Current:	200/5A
Accuracy Class:	0.5
Rated Burden:	10VA
Rated Frequency:	50/60 Hz
Rated Short-time Thermal Current (I_{th}):	12kA rms
Rated Dynamic Current (I_{dyn}):	30kA peak
Purpose of Use:	Measuring
Instrument Security Factor (FS):	5
Application:	Indoor
Class of Insulation:	E

The manufacturer assigned a current ratio of 200/5A, rated short-time thermal current of 200A, rated short-time thermal current of 12kA rms for 1 second, and a rated dynamic current of 30 kA peak, with the secondary winding short-circuited.

APPARATUS TESTED (continued)

c) 300/5A, 0.72/4kV (U_m/Insulation level), 10VA, 0.5 class, 50/60Hz, Window type Measuring Current Transformer.

The following values were assigned by the manufacturer:

Manufacturer Name / Trademark:	Veritek
Type:	VIPS 40103240
Rated Primary/Secondary Current:	300/5A
Accuracy Class:	0.5
Rated Burden:	10VA
Rated Frequency:	50/60 Hz
Rated Short-time Thermal Current (I_{th}):	18kA rms
Rated Dynamic Current (I_{dyn}):	45kA peak
Purpose of Use:	Measuring
Instrument Security Factor (FS):	5
Application:	Indoor
Class of Insulation:	E

The manufacturer assigned a current ratio of 300/5A, rated short-time thermal current of 300A, rated short-time thermal current of 18kA rms for 1 second, and a rated dynamic current of 45kA peak, with the secondary winding short-circuited.

d) 400/5A, 0.72/4kV (U_m/Insulation level), 5VA, 1 class, 50/60Hz, Window type Measuring Current Transformer.

The following values were assigned by the manufacturer:

Manufacturer Name / Trademark:	Veritek
Type:	VIPS 30103010
Rated Primary/Secondary Current:	400/5A
Accuracy Class:	1
Rated Burden:	5VA
Rated Frequency:	50/60 Hz
Rated Short-time Thermal Current (I_{th}):	24kA rms
Rated Dynamic Current (I_{dyn}):	60kA peak
Purpose of Use:	Measuring
Instrument Security Factor (FS):	5
Application:	Indoor
Class of Insulation:	E

The manufacturer assigned a current ratio of 400/5A, rated short-time thermal current of 400A, rated short-time thermal current of 24 kA rms for 1 second, and a rated dynamic current of 60 kA peak, with the secondary winding short-circuited.

APPARATUS TESTED (continued)

e) 600/5A, 0.72/4kV (U_m/Insulation level), 10VA, 0.5 class, 50/60Hz, Window type Measuring Current Transformer.

The following values were assigned by the manufacturer:

Manufacturer Name / Trademark:	Veritek
Type:	VIPS 63104460
Rated Primary/Secondary Current:	600/5A
Accuracy Class:	0.5
Rated Burden:	10VA
Rated Frequency:	50/60 Hz
Rated Short-time Thermal Current (I_{th}):	36kA rms
Rated Dynamic Current (I_{dyn}):	90kA peak
Purpose of Use:	Measuring
Instrument Security Factor (FS):	5
Application:	Indoor
Class of Insulation:	E

The manufacturer assigned a current ratio of 600/5A, rated short-time thermal current of 600A, rated short-time thermal current of 36 kA rms for 1 second, and a rated dynamic current of 90 kA peak, with the secondary winding short-circuited.

f) 1000/5A, 0.72/4kV (U_m/Insulation level), 15VA, 0.5 class, 50/60Hz, Window type Measuring Current Transformer.

The following values were assigned by the manufacturer:

Manufacturer Name / Trademark:	Veritek
Type:	VIPS 63104460
Rated Primary/Secondary Current:	1000/5A
Accuracy Class:	0.5
Rated Burden:	15VA
Rated Frequency:	50/60 Hz
Rated Short-time Thermal Current (I_{th}):	60kA rms
Rated Dynamic Current (I_{dyn}):	150kA peak
Purpose of Use:	Measuring
Instrument Security Factor (FS):	5
Application:	Indoor
Class of Insulation:	E

The manufacturer assigned a current ratio of 1000/5A, rated short-time thermal current of 1000A, rated short-time thermal current of 60 kA rms for 1 second, and a rated dynamic current of 150 kA peak, with the secondary winding short-circuited.

APPARATUS TESTED (continued)

g) 1600/5A, 0.72/4kV (U_m/Insulation level), 15VA, 0.2S class, 50/60Hz, Window type Measuring Current Transformer.

The following values were assigned by the manufacturer:

Manufacturer Name / Trademark:	Veritek
Type:	VIPS 80105580
Rated Primary/Secondary Current:	1600/5A
Accuracy Class:	0.2S
Rated Burden:	15VA
Rated Frequency:	50/60 Hz
Rated Short-time Thermal Current (I_{th}):	96kA rms
Rated Dynamic Current (I_{dyn}):	240 kA peak
Purpose of Use:	Measuring
Instrument Security Factor (FS):	5
Application:	Indoor
Class of Insulation:	E

The manufacturer assigned a current ratio of 2500/5A, rated short-time thermal current of 2500A, rated short-time thermal current of 96 kA rms for 1 second, and a rated dynamic current of 240 kA peak, with the secondary winding short-circuited.

h) 2500/5A, 0.72/4kV (U_m/Insulation level), 15VA, 0.2S class, 50/60Hz, Window type Measuring Current Transformer.

The following values were assigned by the manufacturer:

Manufacturer Name / Trademark:	Veritek
Type:	VIPS 100308510
Rated Primary/Secondary Current:	2500/5A
Accuracy Class:	0.2S
Rated Burden:	15VA
Rated Frequency:	50/60 Hz
Rated Short-time Thermal Current (I_{th}):	150kA rms
Rated Dynamic Current (I_{dyn}):	375kA peak
Purpose of Use:	Measuring
Instrument Security Factor (FS):	5
Application:	Indoor
Class of Insulation:	E

The manufacturer assigned a current ratio of 2500/5A, rated short-time thermal current of 2500A, rated short-time thermal current of 150 kA rms for 1 second, and a rated dynamic current of 375 kA peak, with the secondary winding short-circuited.

APPARATUS TESTED (continued)

i) 3000/5A, 0.72/4kV (U_m/Insulation level), 15VA, 0.2S class, 50/60Hz, Window type Measuring Current Transformer.

The following values were assigned by the manufacturer:

Manufacturer Name / Trademark:	Veritek
Type:	VIPS 100308510
Rated Primary/Secondary Current:	3000/5A
Accuracy Class:	0.2S
Rated Burden:	15VA
Rated Frequency:	50/60 Hz
Rated Short-time Thermal Current (I_{th}):	60kA rms
Rated Dynamic Current (I_{dyn}):	150kA peak
Purpose of Use:	Measuring
Instrument Security Factor (FS):	5
Application:	Indoor
Class of Insulation:	E

The manufacturer assigned a current ratio of 3000/5A, rated short-time thermal current of 3000A, rated short-time thermal current of 60 kA rms for 1 second, and a rated dynamic current of 150 kA peak, with the secondary winding short-circuited.

j) 3000/5A, 0.72/4kV (U_m/Insulation level), 45VA, 1 class, 50/60Hz, split core Window type Measuring Current Transformer.

The following values were assigned by the manufacturer:

Manufacturer Name / Trademark:	Veritek
Type:	VIPS SC04
Rated Primary/Secondary Current:	3000/5A
Accuracy Class:	1
Rated Burden:	45VA
Rated Frequency:	50/60 Hz
Rated Short-time Thermal Current (I_{th}):	60kA rms
Rated Dynamic Current (I_{dyn}):	150kA peak
Purpose of Use:	Measuring
Instrument Security Factor (FS):	10
Application:	Indoor
Class of Insulation:	H

The manufacturer assigned a current ratio of 3000/5A, rated short-time thermal current of 3000A, rated short-time thermal current of 60 kA rms for 1 second, and a rated dynamic current of 150 kA peak, with the secondary winding short-circuited.

APPARATUS TESTED (continued)

k) 3000/5A, 0.72/4kV (U_m/Insulation level), 15VA, 0.2S class, 50/60Hz, window type (ring) measuring current transformer.

The following values were assigned by the manufacturer:

Manufacturer Name / Trademark:	Veritek
Type:	VIPS 11315940
Rated Primary/Secondary Current:	3000/5A
Accuracy Class:	0.2S
Rated Burden:	15VA
Rated Frequency:	50/60 Hz
Rated Short-time Thermal Current (I_{th}):	60kA rms
Rated Dynamic Current (I_{dyn}):	150kA peak
Purpose of Use:	Measuring
Instrument Security Factor (FS):	5
Application:	Indoor
Class of Insulation:	E

The manufacturer assigned a current ratio of 3000/5A, rated short-time thermal current of 3000A, rated short-time thermal current of 60 kA rms for 1 second, and a rated dynamic current of 150 kA peak, with the secondary winding short-circuited.

CUSTOMER

Veritek Engineering Pvt. Ltd.
Plot No. 222, EL - Electronic Zone,
T.T.C. Industrial Area, M.I.D.C.,
Mahape, New Mumbai - 400 701,India

DATE OF RECEIPT OF APPARATUS

12th December 2019

CUSTOMER ORDER NUMBER

997761-3

MANUFACTURER

The manufacturer has declared that the apparatus was manufactured at the following location.

Veritek Engineering Pvt. Ltd.
Plot No. 222, EL - Electronic Zone, T.T.C. Industrial Area, M.I.D.C.,
Mahape, New Mumbai - 400 701,India

WITNESSES OF THE TESTS:

1. Mrs. Rajani Menon, ASTA Observer, Intertek.
2. Mr. Iván Fernández Almaraz, Tecnalia
3. Mr. Agustin Ramos, Tecnalia
4. Mr. Luis Martinez, Tecnalia
5. Mr. Sreekumar Peringoth, Intertek
6. Mr. Raakesh Verma, Veritek Engineering, India
7. Mr. Prakash Hirani, for Veritek Engineering, India

LABORATORY

The apparatus was tested at:

Tecnalia Research and Innovation:

tecnalia Inspiring Business

TECNALIA Research & innovation

Parque Científico y Tecnológico de Bizkaia

Laida Bidea. Edificio 413

The laboratory accreditation details are:

ilac-MRA ENAC ENSAYOS Nº 4/LE148

This Laboratory is accredited by the Spanish National Accreditation Entity for Testing and Calibration Laboratories (ENAC) in accordance with ISO/IEC 17025, 2017. Certificate Number: LE/148. Further ENAC, SPAIN is a signatory to ILAC MRA based on its qualifying on APLAC MRA.

INTERTEK ASTA RECOGNIZED LABORATORY

**This Laboratory is recognised by Intertek ASTA against the requirements of BSEN ISO/IEC 17025: 2017 and the regulations of ASTA Recognised Laboratories by ASTA Intertek.
Reference No. 2017-RTL-L2-243**

SCHEDULE OF TESTS

Tests in accordance with IEC 61869-2: Edition 1.0: 2012-09 clauses 7.2.2, 7.2.6, 7.2.201, 7.3.1, 7.3.4, 7.3.5, 7.3.6, 7.3.204 and 7.5.2 and the STL Guide to IEC 61869-2, Issue 1.1, 1st July 2016

1. Power-frequency voltage withstand tests on primary terminals (Clause 7.3.1)

The test voltage was applied between the short-circuited primary winding and earth of each current transformer in succession. The current transformers withstood 4000V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding, connected together and earth. The secondary terminals and exposed metal parts were connected to earth during the test.

Observation: No unintentional disruptive discharge was observed during the test. The requirements of test were met as per the standard.

2. Power-frequency voltage withstand tests on secondary terminals (Clause 7.3.4)

The test voltage was applied between the short-circuited secondary winding and earth of each current transformer in succession. The current transformers withstood 4000V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary winding, connected together and earth. The primary terminals and exposed metal parts were connected to earth during the test.

Observation: No unintentional disruptive discharge was observed during the test. The requirements of test were met as per the standard.

Photograph nos.: B26-20-AA-01E/01, B26-20-AA-02E/01, B26-20-AA-02E/01, B26-20-AA-03E/01, B26-20-AA-04E/01, B26-20-AA-05E/01, B26-20-AA-06E/01, B26-20-AA-07E/01, B26-20-AA-08E/01, B26-20-AA-09E/01, B26-20-AA-10E/01 and B26-20-AA-11E/01

3. Tests for accuracy (Clause 7.3.5)

Tests for ratio error and phase displacement of measuring current transformers (Clauses 7.2.6.201 and 7.3.5.201)

The ratio error and phase displacement of the current transformers were measured at rated frequency and at 1% (for 0.2S class only), 5%, 20%, 100% and 120% of rated currents with 25% and 100% rated output.

Rating: 100/5A Class 0.5 5VA		Ratio error (±%) at current (% of rated)				Phase displacement (±minutes) at current (% of rated)			
		5	20	100	120	5	20	100	120
25%VA	1.5VA	-0.1094	-0.0958	-0.0541	-0.0499	11.67	5.82	3.35	3.29
100%VA	5VA	-0.4170	-0.2420	-0.1406	-0.1451	9.73	3.56	3.14	4.01

Rating: 200/5A Class 0.5 10VA		Ratio error (±%) at current (% of rated)				Phase displacement (±minutes) at current (% of rated)			
		5	20	100	120	5	20	100	120
25%VA	2.5VA	0.0914	0.2290	0.2740	0.2770	19.53	13.87	10.16	9.67
100%VA	10VA	-0.6850	-0.4060	-0.1939	-0.1662	17.57	12.09	4.06	2.69

3. Tests for accuracy (Clause 7.3.5) (Continued)

Tests for ratio error and phase displacement of measuring current transformers (Clause 7.2.6.201 and 7.3.5.201) (Continued)

Rating: 300/5A Class 0.5 10VA		Ratio error (±%) at current (% of rated)				Phase displacement (±minutes) at current (% of rated)			
		5	20	100	120	5	20	100	120
25%VA	2.5VA	0.1491	0.2150	0.2320	0.2330	14.46	11.20	8.99	8.51
100%VA	10VA	-0.4930	-0.3290	-0.1722	-0.1536	13.93	10.81	2.80	1.418

Rating: 400/5A Class 1 5VA		Ratio error (±%) at current (% of rated)				Phase displacement (±minutes) at current (% of rated)			
		5	20	100	120	5	20	100	120
25%VA	1.5VA	0.220	0.320	0.364	0.373	18.28	14.86	8.21	7.30
100%VA	5VA	-0.1507	0.0207	0.1975	0.2100	17.78	13.18	3.89	3.10

Rating: 600/5A Class 0.5 10VA		Ratio error (±%) at current (% of rated)				Phase displacement (±minutes) at current (% of rated)			
		5	20	100	120	5	20	100	120
25%VA	2.5VA	0.1407	0.1756	0.1982	0.2060	15.94	13.21	8.36	7.76
100%VA	10VA	-0.4510	-0.3300	-0.0968	-0.0687	18.23	13.35	2.98	2.30

Rating: 1000/5A Class 0.5 15VA		Ratio error (±%) at current (% of rated)				Phase displacement (±minutes) at current (% of rated)			
		5	20	100	120	5	20	100	120
25%VA	3.75VA	-0.0272	0.0517	0.0864	0.0942	13.30	9.33	5.07	4.79
100%VA	15VA	-0.0434	-0.2620	-0.1064	-0.0957	4.9	7.61	2.23	2.21

Rating: 1600/5A Class 0.2S 15VA		Ratio error (±%) at current (% of rated)					Phase displacement (±minutes) at current (% of rated)				
		1	5	20	100	120	1	5	20	100	120
25%VA	3.75VA	-0.0896	0.0016	0.0319	0.0165	0.0160	13.60	9.51	6.82	5.47	5.85
100%VA	15VA	-0.3430	-0.1908	-0.1201	-0.0971	-0.0843	13.19	9.53	5.79	4.48	4.31

3. Tests for accuracy (Clause 7.3.5) (Continued)

Tests for ratio error and phase displacement of measuring current transformers (Clause 7.2.6.201 and 7.3.5.201) (Continued)

Rating: 2500/5A Class 0.2S 15VA		Ratio error (±%) at current (% of rated)					Phase displacement (±minutes) at current (% of rated)				
		1	5	20	100	120	1	5	20	100	120
25%VA	3.75VA	-0.0044	0.0765	0.0903	0.0951	0.1066	7.870	3.500	2.600	2.130	1.968
100%VA	15VA	-0.0833	0.0228	0.0474	0.0623	0.0639	6.580	3.680	2.730	1.938	1.776

Rating: 3000/5A Class 0.2S 15VA		Ratio error (±%) at current (% of rated)					Phase displacement (±minutes) at current (% of rated)				
		1	5	20	100	120	1	5	20	100	120
25%VA	3.75VA	-0.0716	-0.0059	0.0105	0.0173	0.0182	4.980	2.580	1.880	1.422	1.348
100%VA	15VA	-0.1387	-0.0441	-0.0213	-0.0068	-0.0043	5.180	2.780	2.030	1.245	1.126

Rating: 3000/5A Class 0.2S 15VA (Ring type)		Ratio error (±%) at current (% of rated)					Phase displacement (±minutes) at current (% of rated)				
		1	5	20	100	120	1	5	20	100	120
25%VA	3.75VA	0.0387	0.0630	0.0685	0.0673	0.0658	4.510	2.650	2.090	1.590	1.501
100%VA	15VA	-0.0244	0.0242	0.0369	0.0423	0.0400	4.910	2.910	2.240	1.489	1.375

Rating: 3000/5A Class 1 45VA (Split core)		Ratio error (±%) at current (% of rated)				Phase displacement (±minutes) at current (% of rated)			
		5	20	100	120	5	20	100	120
25%VA	11.25VA	-0.0189	0.0420	0.0745	0.0935	8.09	7.68	7.11	5.16
100%VA	45VA	-0.2410	-0.1598	-0.0960	-0.3110	14.94	14.24	10.59	12.79

Observation: The turns ratio error and phase displacement at the rated frequency did not exceed the values given in clause 5.6.201.3 (Table 201 for classes 0.1 to 1 and Table 202 for Class 0.2S) of IEC 61869-2:2012.

Photograph nos.: B26-20-AA-01E/02, B26-20-AA-02E/02, B26-20-AA-02E/02, B26-20-AA-03E/02, B26-20-AA-04E/02, B26-20-AA-05E/02, B26-20-AA-06E/02, B26-20-AA-07E/02, B26-20-AA-08E/02, B26-20-AA-09E/02, B26-20-AA-10E/02 and B26-20-AA-11E/02

4. Verification of markings (clause 7.3.6)

The nameplate and terminal markings were verified for correctness and were satisfactory.

5. Inter-turn overvoltage test (Clause 7.3.204)

The test was performed according to procedure B of clause no.7.3.204.
With the primary winding open-circuited, the test voltage was applied to the terminals of secondary winding for 15s of each current transformer.

Test frequency: 400Hz, Test duration: 15s

Rating	Test voltage	Current*	Frequency	Result
100/5A, 5VA, Cl 0.5	150.33V	6.0511A	409.88 Hz	Withstood for 15s
200/5A, 10VA, Cl 0.5	279.167V	6.1138A	410.07Hz	Withstood for 15s
300/5A, 10VA, Cl 0.5	220.833V	6.0442A	410.01Hz	Withstood for 15s
400/5A, 5VA, Cl 1	183.333V	6.1605A	410.02Hz	Withstood for 15s
600/5A, 10VA, Cl 0.5	258.333V	6.1304A	410.05Hz	Withstood for 15s
1000/5A, 15VA, Cl 0.5	304.167V	6.1977A	409.99Hz	Withstood for 15s
1600/5A, 15VA, Cl 0.2S	400.000V	6.1905A	409.74Hz	Withstood for 15s
2500/5A, 15VA, Cl 0.2S	770.833V	6.0974A	409.08Hz	Withstood for 15s
3000/5A, 45VA, Cl 1	1.00000kV	6.1628A	409.47Hz	Withstood for 15s
3000/5A, 15VA, Cl 0.2S	1.60417kV	6.6339A	409.04Hz	Withstood for 15s
3000/5A, 15VA, Cl 0.2S	1.06250kV	6.3476A	409.50Hz	Withstood for 15s

Note: *The higher value of the secondary current was applied as required by the manufacturer

Result: The current transformers withstood the test voltage for 15s and there was no disruptive discharge and no damage in the insulation observed during and after the test.

Photograph nos.: B26-20-AA-01E/03, B26-20-AA-02E/03, B26-20-AA-02E/03, B26-20-AA-03E/03, B26-20-AA-04E/03, B26-20-AA-05E/03, B26-20-AA-06E/03, B26-20-AA-07E/03, B26-20-AA-08E/03, B26-20-AA-09E/03, B26-20-AA-10E/03 and B26-20-AA-11E/03

6. Determination of the instrument security factor (FS) of measuring current transformers (Clause 7.5.2)

With the primary winding open-circuited, the secondary winding of each transformer was energized at rated frequency by a substantially sinusoidal voltage. The voltage was increased until the exciting current I_e reached $I_{sr} \times FS \times 10$ %. The results obtained for each current transformer is reported below:

Rating	FS	I_e: $I_{sr} \times FS \times 10$ %	I_e *(Measured)*	E_{FS} (Measured)	E_{FS} Limit
100/5A, 5VA, Cl 0.5	5	2.5A	2.6807A	2.552V	6.119V
200/5A, 10VA, Cl 0.5	5	2.5A	2.6028A	2.662V	11.833V
300/5A, 10VA, Cl 0.5	5	2.5A	2.5519A	4.772V	11.822V
400/5A, 5VA, Cl 1	5	2.5A	2.5519A	3.372V	9.252V
600/5A, 10VA, Cl 0.5	5	2.5A	2.5510A	6.213V	13.667V
1000/5A, 15VA, Cl 0.5	5	2.5A	2.5396A	7.927V	20.307V
1600/5A, 15VA, Cl 0.2S	5	2.5A	2.6582A	11.816V	24.952V
2500/5A, 15VA, Cl 0.2S	5	2.5A	2.8230A	28.050V	31.175V
3000/5A, 45VA, Cl 1	10	5A	5.0493A	59.992V	90.054V
3000/5A, 15VA, Cl 0.2S	5	2.5A	2.5961A	34.408V	34.556V
3000/5A, 15VA, Cl 0.2S	5	2.5A	2.6526A	32.944V	35.252V

The r.m.s. value of the terminal voltage was less than the secondary limiting e.m.f. E_{FS} calculated for each current transformer.

7. Temperature-rise Tests (Clause: 7.2.2):

The current transformers were mounted in a manner representative of the mounting in service and a continuous thermal current equal to the rated primary current at rated frequency was circulated in a primary conductor copper busbar passed through the window of the CTs. The sizes of the primary conductors were 1 x 30mm x 10 mm for the 100/5A, 200/5A, 300/5A and 400/5A CTs, 3 x 50mm x 6 mm for 600/5A and 1000/5A CTs, 1 x 50mm x 20mm for 1600/5A CT and 3 x 100mm x 10mm for 2500/5A and 3000/5A CTs. The rated burden was connected across the secondary winding terminals of the CTs.

K-Type thermocouples were used to measure the surface temperature of the CT's.

The ambient temperature was measured using thermocouples suspended in oil cups positioned around the CT at about half its height at a distance of about 1 metre from the CT's.
The CT's were tested in an environment substantially free from air currents.
The test current was applied until the temperature of the body of the CT reached a constant value (i.e. the variation did not exceed 1 K/h for 1 hour during three consecutive temperature-rise readings.).
The resistances of the secondary windings were measured immediately after shut down.

The temperature-rise measurements of the secondary terminals and body are listed in Table 1 and the values of the secondary winding and temperature-rises are listed in Table 2 for each current transformer.

The final winding temperature was determined by the formula:

$\theta_t = \{R_t/R_0 [235 + \theta_0]\} - T$

R_t = Resistance at the instant of test switch off.

R_0 = Resistance at cold condition.

T = 235 - Temperature constant for copper

θ_0 = Temperature at cold winding resistance measurement

$\Delta\theta = \theta_t - \theta_a$

Where θ_t = Final temperature of winding during temperature-rise test.

θ_a = Ambient temperature at the time of shut down

7. Temperature-rise Tests (Clause: 7.2.2) (contd.)

a) Temperature-rise test results for 100/5A CT:

Table 1:

Thermo-couple No.	Measurement Point	Measured Temperature °C	Ambient Temperature °C	Temp. Rise (Δt) K	Limit (K)
101	Body 1	20.6	16.5	4.1	75
102	Body 2	20.4		3.9	75

Table 2:

Winding Resistance (S1 S2)		Initial Temp. θ_0 in °C	Final Temp. θ_t in °C	Ambient at shut down θ_a in °C	Temp. Rise (Δt) (K)	Limit (K)
R_0 in Ω	R_t in Ω					
0.0438	0.0450	17.1	23.8	16.5	7.3	75

RESULT: The temperature-rise of the secondary winding was within the limits specified by the standard.

Photograph no.: B26-20-AA-01E/04

b) Temperature-rise test results for 200/5A CT:

Table 1:

Thermo-couple no.	Measurement point	Measured temperature °C	Ambient temperature °C	Temp. rise (Δt) K	Limit (K)
101	Body 1	26.7	17.3	9.4	75
102	Body 2	27.3		10.0	75

Table 2:

Winding Resistance (S1 S2)		Initial Temp. θ_0 in °C	Final Temp. θ_t in °C	Ambient at shut down θ_a in °C	Temp. rise (Δt) (K)	Limit (K)
R_0 in Ω	R_t in Ω					
0.0846	0.0898	18.0	35.0	17.3	17.7	75

RESULT: The temperature-rise of the secondary winding was within the limits specified by the standard.

Photograph no.: B26-20-AA-02E/04

7. Temperature-rise Tests (Clause: 7.2.2) (contd.)

c) Temperature-rise test results for 300/5A CT:

Table 1:

Thermo-couple No.	Measurement Point	Measured Temperature °C	Ambient Temperature °C	Temp. Rise (Δt) K	Limit (K)
101	Body 1	28.6	18.2	10.4	75
102	Body 2	27.8		9.6	75

Table 2:

Winding Resistance (S1 S2)		Initial Temp. θ_0 in °C	Final Temp. θ_t in °C	Ambient at shut down θ_a in °C	Temp. Rise (Δt) (K)	Limit (K)
R_0 in Ω	R_t in Ω					
0.0704	0.0754	18.8	37.6	18.2	19.4	75

RESULT: The temperature-rise of the secondary winding was within the limits specified by the standard.

Photograph no.: B26-20-AA-03E/04

d) Temperature rise test results for 400/5A CT:

Table 1:

Thermo-couple no.	Measurement point	Measured temperature °C	Ambient temperature °C	Temp. rise (Δt) K	Limit (K)
101	Body 1	38.7	19.2	19.5	75
102	Body 2	39.9		20.7	75

Table 2:

Winding Resistance (S1 S2)		Initial Temp. θ_0 in °C	Final Temp. θ_t in °C	Ambient at shut down θ_a in °C	Temp. rise (Δt) (K)	Limit (K)
R_0 in Ω	R_t in Ω					
0.1553	0.1876	18.5	72.1	19.2	52.9	75

RESULT: The temperature-rise of the secondary winding was within the limits specified by the standard.

Photograph no.: B26-20-AA-04E/04

7. Temperature-rise Tests (Clause: 7.2.2) (contd.)

e) Temperature-rise test results for 600/5A CT:

Table 1:

Thermo-couple No.	Measurement Point	Measured Temperature °C	Ambient Temperature °C	Temp. Rise (∆t) K	Limit (K)
101	Body 1	37.7	17.9	19.7	75
102	Body 2	39.4		21.5	75

Table 2:

Winding Resistance (S1 S2)		Initial Temp. θ_0 in °C	Final Temp. θ_t in °C	Ambient at shut down θ_a in °C	Temp. Rise (∆t) (K)	Limit (K)
R_0 in Ω	R_t in Ω					
0.1363	0.1526	17.6	50.0	17.9	32.1	75

RESULT: The temperature-rise of the secondary winding was within the limits specified by the standard.

Photograph no.: B26-20-AA-05E/04

f) Temperature rise test results for 1000/5A CT:

Table 1:

Thermo-couple no.	Measurement point	Measured temperature °C	Ambient temperature °C	Temp. rise (∆t) K	Limit (K)
101	Body 1	53.9	17.7	36.2	75
102	Body 2	54.2		36.5	75

Table 2:

Winding Resistance (S1 S2)		Initial Temp. θ_0 in °C	Final Temp. θ_t in °C	Ambient at shut down θ_a in °C	Temp. rise (∆t) (K)	Limit (K)
R_0 in Ω	R_t in Ω					
0.2039	0.2434	18.4	69.8	17.7	52.1	75

RESULT: The temperature-rise of the secondary winding was within the limits specified by the standard.

Photograph no.: B26-20-AA-06E/04

7. Temperature-rise Tests (Clause: 7.2.2) (contd.)

g) Temperature-rise test results for 1600/5A CT:

Table 1:

Thermo-couple No.	Measurement Point	Measured Temperature °C	Ambient Temperature °C	Temp. Rise (∆t) K	Limit (K)
101	Body 1	47.1	18.5	65.6	75
102	Body 2	44.9		63.4	75

Table 2:

Winding Resistance (S1 S2)		Initial Temp. θ_0 in °C	Final Temp. θ_t in °C	Ambient at shut down θ_a in °C	Temp. Rise (∆t) (K)	Limit (K)
R_0 in Ω	R_t in Ω					
0.3151	0.3984	18.0	84.5	18.5	66.0	75

RESULT: The temperature-rise of the secondary winding was within the limits specified by the standard.

Photograph no.: B26-20-AA-07E/04

h) Temperature-rise test results for 2500/5A CT:

Table 1:

Thermo-couple no.	Measurement point	Measured temperature °C	Ambient temperature °C	Temp. rise (∆t) K	Limit (K)
101	Body 1	47.5	18.3	29.2	75
102	Body 2	59.2		29.2	75

Table 2:

Winding Resistance (S1 S2)		Initial Temp. θ_0 in °C	Final Temp. θ_t in °C	Ambient at shut down θ_a in °C	Temp. rise (∆t) (K)	Limit (K)
R_0 in Ω	R_t in Ω					
0.4287	0.5432	17.7	85.5	18.3	67.2	75

RESULT: The temperature-rise of the secondary winding was within the limits specified by the standard.

Photograph no.: B26-20-AA-08E/04

7. Temperature-rise Tests (Clause: 7.2.2) (contd.)

i) Temperature-rise test results for 3000/5A, 15VA, 0.2S CT:

Table 1:

Thermo-couple No.	Measurement Point	Measured Temperature °C	Ambient Temperature °C	Temp. Rise (Δt) K	Limit (K)
101	Body 1	59.3	20.2	39.2	75
102	Body 2	44.9		24.8	75

Table 2:

Winding Resistance (S1 S2)		Initial Temp. θ_0 in °C	Final Temp. θ_t in °C	Ambient at shut down θ_a in °C	Temp. Rise (Δt) (K)	Limit (K)
R_0 in Ω	R_t in Ω					
0.4510	0.5899	17.3	95.0	20.2	74.8	75

RESULT: The temperature-rise of the secondary winding was within the limits specified by the standard.

Photograph no.: B26-20-AA-09E/04

j) Temperature-rise test results for 3000/5A, 45VA, Class 1 CT (Split core):

Table 1:

Thermo-couple no.	Measurement point	Measured temperature °C	Ambient temperature °C	Temp. rise (Δt) K	Limit (K)
101	Body 1	117.0	20	97.0	135
102	Body 2	115.5		95.5	135

Table 2:

Winding Resistance (S1 S2)		Initial Temp. θ_0 in °C	Final Temp. θ_t in °C	Ambient at shut down θ_a in °C	Temp. rise (Δt) (K)	Limit (K)
R_0 in Ω	R_t in Ω					
1.1034	1.682	17.3	149.6	20.0	129.6	135

RESULT: The temperature-rise of the secondary winding was within the limits specified by the standard.

Photograph no.: B26-20-AA-10E/04

7. Temperature-rise Tests (Clause: 7.2.2) (contd.)

k) Temperature-rise test results for 3000/5A, 15VA, Class 0.2S CT (ring type):

Table 1:

Thermo-couple No.	Measurement Point	Measured Temperature °C	Ambient Temperature °C	Temp. Rise (Δt) K	Limit (K)
101	Body 1	54.6	20.0	34.6	75
102	Body 2	51.5		31.5	75

Table 2:

Winding Resistance (S1 S2)		Initial Temp. θ_0 in °C	Final Temp. θ_t in °C	Ambient at shut down θ_a in °C	Temp. Rise (Δt) (K)	Limit (K)
R_0 in Ω	R_t in Ω					
0.4207	0.5266	17.3	78.1	20.0	60.8	75

RESULT: The temperature-rise of the secondary winding was within the limits specified by the standard.

Photograph no.: B26-20-AA-11E/04

8. Short-time Current Tests (Clause 7.2.201):

Test conditions:

1. The test supply for the short-time current test: 50Hz with the supply neutral earthed and the short-circuit point not earthed.

2. The short-time current test was performed on the primary winding (by centralising the CT on a copper busbar) connected to source and the secondary winding terminals of the current transformer short circuited.

3. The following tests were conducted after the short-time current test:

   a. Visual examination (Clause. No. 7.1.a)
   b. Tests for ratio error and phase displacement of measuring current transformers (Clauses 7.2.6.201 and 7.3.5.201)
   c. Power-frequency withstand tests on primary winding (at 90%)
   d. Power-frequency withstand tests on secondary winding (at 90%)
   e. Physical examination

8. Short-time Current Tests (Clause 7.2.201) (continued):

a) Short-time current test for 100/5A CT:

Test at rated short-time thermal current of 6kA rms for 1 sec and rated dynamic current of 15kA peak.

Condition before test:	New sample
Test connection details:	Primary conductor cross section of 1 x 20mm x 20mm copper bar
Short-circuit position:	Secondary winding terminals
Ratio:	100/5A
Rated short-time thermal current:	6kA rms
Rated dynamic current:	15kA peak
Photograph Nos	B26-20-AA-01E/05 and B26-20-AA-01E/06

Test	**Current**		Duration in Seconds	Oscillogram no.
	Asymmetrical kA peak	Symmetrical kA rms		
Rated short-time and peak withstand current test	15.80	6.059	1.012	B26-20-AA004
Date of test :10th February 2020				

8. Short-time Current Tests (Clause 7.2.201) (continued):

a) Short-time current test for 100/5A CT (contd.)
Test Results After Short-time Current Test

After the short-time current tests, the current transformer was cooled to ambient air temperature and the following requirements as per Clause 7.2.201 were verified as detailed below:

1) No Visible External Damage Observed. (Clause No. 7.1.a)

2) Tests for ratio error and phase displacement (Accuracy Test) (Cl. No. 7.3.5.201)

Rating: 100/5A Class 0.5 5VA			Ratio error (±%) at current (% of rated)				Phase displacement (±minutes) at current (% of rated)			
			5	20	100	120	5	20	100	120
Before test	25%VA	1.5VA	-0.1094	-0.0958	-0.0541	-0.0499	11.67	5.82	3.35	3.29
	100%VA	5VA	-0.4170	-0.2420	-0.1406	-0.1451	9.73	3.56	3.14	4.01
After test	25%VA	1.5VA	-0.0959	-0.0883	-0.0493	-0.0452	11.61	5.92	3.46	3.39
	100%VA	5VA	-0.4010	-0.2330	-0.1337	-0.1381	9.58	3.53	3.04	3.93
Difference	25%VA	1.5VA	-0.0135	-0.0075	-0.0048	-0.0047	0.06	-0.10	-0.11	-0.10
	100%VA	5VA	-0.0160	-0.0090	-0.0069	-0.0070	0.15	0.03	0.10	0.08
Limit			0.75	0.375	0.25	0.25	45	22.5	15	15

Result:

The difference in current error and phase displacement measured before and after short-time current test was within half the limit of accuracy class as specified in standard.

3) Power-frequency withstand tests (at 90% test voltage)

Primary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding and earth.

Secondary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary windings (connected together) and earth.

4) Physical Examination (Clause No. 7.1.d)

The insulation next to the surface of the conductor did not show significant deterioration (such as carbonization) upon undergoing physical examination

8. Short-time Current Tests (Clause 7.2.201) (continued):

b) Short-time current test for 200/5A CT:

Test at rated short-time thermal current of 12kA rms for 1 sec and rated dynamic current of 30kA peak.

Condition before test:	New sample
Test connection details:	Primary conductor cross section of 1 x 20mm x 20mm copper bar
Short-circuit position:	Secondary winding terminals
Ratio:	200/5A
Rated short-time thermal current:	12kA rms
Rated dynamic current:	30kA peak
Photograph Nos	B26-20-AA-02E/05 and B26-20-AA-02E/06

Test	**Current**		Duration in Seconds	Oscillogram no.
	Asymmetrical kA peak	Symmetrical kA rms		
Rated short-time and peak withstand current test	31.36	12.23	1.003	B26-20-AA006
Date of test :10th February 2020				

8. Short-time Current Tests (Clause 7.2.201) (continued):

b) Short-time current test for 200/5A CT (contd.)
Test Results After Short-time Current Test

After the short-time current tests, the current transformer was cooled to ambient air temperature and the following requirements as per Clause 7.2.201 were verified as detailed below:

1) No Visible External Damage Observed. (Clause No. 7.1.a)

2) Tests for ratio error and phase displacement (Accuracy Test) (Cl. No. 7.3.5.201)

Rating: 200/5A Class 0.5 10VA			Ratio error (±%) at current (% of rated)				Phase displacement (±minutes) at current (% of rated)			
			5	20	100	120	5	20	100	120
Before test	25%VA	2.5VA	0.0914	0.2290	0.2740	0.2770	19.53	13.87	10.16	9.67
	100%VA	10VA	-0.6850	-0.4060	-0.1939	-0.1662	17.57	12.09	4.06	2.69
After test	25%VA	2.5VA	0.1015	0.2340	0.2790	0.2800	19.12	13.79	10.18	9.74
	100%VA	10VA	-0.6700	-0.4040	-0.1894	-0.1620	17.43	12.08	4.10	2.82
Difference	25%VA	2.5VA	-0.0101	-0.0050	-0.0050	-0.0030	0.41	0.08	-0.02	-0.07
	100%VA	10VA	-0.0150	-0.0020	-0.0045	-0.0042	0.14	0.01	-0.04	-0.13
Limit			0.75	0.375	0.25	0.25	45	22.5	15	15

Result:

The difference in current error and phase displacement measured before and after short-time current test was within half the limit of accuracy class as specified in standard.

3) Power-frequency withstand tests (at 90% test voltage)

Primary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding and earth.

Secondary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary windings (connected together) and earth.

4) Physical Examination (Clause No. 7.1.d)

The insulation next to the surface of the conductor did not show significant deterioration (such as carbonization) upon undergoing physical examination.

8. Short-time Current Tests (Clause 7.2.201) (continued):

c) Short-time current test for 300/5A CT:

Test at rated short-time thermal current of 18kA rms for 1 sec and rated dynamic current of 45kA peak.

Condition before test:	New sample
Test connection details:	Primary conductor cross section of 1 x 20mm x 20mm copper bar
Short-circuit position:	Secondary winding terminals
Ratio:	300/5A
Rated short-time thermal current:	18kA rms
Rated dynamic current:	45kA peak
Photograph Nos	B26-20-AA-03E/05 and B26-20-AA-03E/06

Test	**Current**		Duration in Seconds	Oscillogram no.
	Asymmetrical kA peak	Symmetrical kA rms		
Rated short-time and peak withstand current test	46.81	18.41	1.002	B26-20-AA008
Date of test :10th February 2020				

8. Short-time Current Tests (Clause 7.2.201) (continued):

c) Short-time current test for 300/5A CT (contd.)
Test Results After Short-time Current Test

After the short-time current tests, the current transformer was cooled to ambient air temperature and the following requirements as per Clause 7.2.201 were verified as detailed below:

1) No Visible External Damage Observed. (Clause No. 7.1.a)

2) Tests for ratio error and phase displacement (Accuracy Test) (Cl. No. 7.3.5.201)

Rating: 300/5A Class 0.5 10VA			Ratio error (±%) at current (% of rated)				Phase displacement (±minutes) at current (% of rated)			
			5	20	100	120	5	20	100	120
Before test	25%VA	2.5VA	0.1491	0.2150	0.2320	0.2330	14.46	11.20	8.99	8.51
	100%VA	10VA	-0.4930	-0.3290	-0.1722	-0.1536	13.93	10.81	2.80	1.418
After test	25%VA	2.5VA	0.1583	0.2220	0.2370	0.2330	14.58	11.46	9.03	8.44
	100%VA	10VA	-0.4910	-0.3260	-0.1745	-0.176	14.09	11.01	2.94	1.768
Difference	25%VA	2.5VA	-0.0092	-0.0070	-0.0050	0.0000	-0.12	-0.26	-0.04	0.07
	100%VA	10VA	-0.0020	-0.0030	0.0023	0.0224	-0.16	-0.20	-0.14	-0.35
Limit			0.75	0.375	0.25	0.25	45	22.5	15	15

Result:

The difference in current error and phase displacement measured before and after short-time current test was within half the limit of accuracy class as specified in standard.

3) Power-frequency withstand tests (at 90% test voltage)

Primary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding and earth.

Secondary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary windings (connected together) and earth.

4) Physical Examination (Clause No. 7.1.d)

The insulation next to the surface of the conductor did not show significant deterioration (such as carbonization) upon undergoing physical examination.

8. Short-time Current Tests (Clause 7.2.201) (continued):

d) Short-time current test for 400/5A CT:

Test at rated short-time thermal current of 24kA rms for 1 sec and rated dynamic current of 60kA peak.

Condition before test:	New sample
Test connection details:	Primary conductor cross section of 1 x 20mm x 20mm copper bar
Short-circuit position:	Secondary winding terminals
Ratio:	400/5A
Rated short-time thermal current:	24kA rms
Rated dynamic current:	60kA peak
Photograph Nos	B26-20-AA-04E/05 and B26-20-AA-04E/06

Test	**Current**		Duration in Seconds	Oscillogram no.
	Asymmetrical kA peak	Symmetrical kA rms		
Rated short-time and peak withstand current test	61.78	24.24	1.012	B26-20-AA010
Date of test :10th February 2020				

8. Short-time Current Tests (Clause 7.2.201) (continued):

d) Short-time current test for 400/5A CT (contd.)
Test Results After Short-time Current Test

After the short-time current tests, the current transformer was cooled to ambient air temperature and the following requirements as per Clause 7.2.201 were verified as detailed below:

1) No Visible External Damage Observed. (Clause No. 7.1.a)

2) Tests for ratio error and phase displacement (Accuracy Test) (Cl. No. 7.3.5.201)

Rating: 400/5A Class 1 5VA			Ratio error (±%) at current (% of rated)				Phase displacement (±minutes) at current (% of rated)			
			5	20	100	120	5	20	100	120
Before test	30%VA	1.5VA	0.2200	0.3200	0.3640	0.3730	18.28	14.86	8.21	7.30
	100%VA	5VA	-0.1507	0.0207	0.1975	0.2100	17.78	13.18	3.89	3.10
After test	30%VA	1.5VA	0.2300	0.3230	0.3570	0.3730	20.10	15.37	8.34	7.37
	100%VA	5VA	-0.1605	0.0050	0.1765	0.2140	19.30	14.19	4.88	3.29
Difference	30%VA	1.5VA	-0.0100	-0.0030	0.0070	0.0000	-1.82	-0.51	-0.13	-0.07
	100%VA	5VA	0.0098	0.0157	0.021	-0.004	-1.52	-1.01	-0.99	-0.19
Limit			0.75	0.375	0.75	0.375	0.25	0.25	45	22.5

Result:

The difference in current error and phase displacement measured before and after short-time current test was within half the limit of accuracy class as specified in standard.

3) Power-frequency withstand tests (at 90% test voltage)

Primary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding and earth.

Secondary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary windings (connected together) and earth.

4) Physical Examination (Clause No. 7.1.d)

The insulation next to the surface of the conductor did not show significant deterioration (such as carbonization) upon undergoing physical examination.

8. Short-time Current Tests (Clause 7.2.201) (continued):

e) Short-time current test for 600/5A CT:

Test at rated short-time thermal current of 36kA rms for 1 sec and rated dynamic current of 90kA peak.

Condition before test:	New sample
Test connection details:	Primary conductor cross section of 1 x 50mm x 30mm copper bar
Short-circuit position:	Secondary winding terminals
Ratio:	600/5A
Rated short-time thermal current:	36kA rms
Rated dynamic current:	90kA peak
Photograph Nos	B26-20-AA-05E/05 and B26-20-AA-05/06

Test	**Current**		Duration in Seconds	Oscillogram no.
	Asymmetrical kA peak	Symmetrical kA rms		
Rated short-time and peak withstand current test	93.87	36.68	1.013	B26-20-AA013
Date of test :10th February 2020				

8. Short-time Current Tests (Clause 7.2.201) (continued):

e) Short-time current test for 600/5A CT (contd.)
Test Results After Short-time Current Test

After the short-time current tests, the current transformer was cooled to ambient air temperature and the following requirements as per Clause 7.2.201 were verified as detailed below:

1) No Visible External Damage Observed. (Clause No. 7.1.a)

2) Tests for ratio error and phase displacement (Accuracy Test) (Cl. No. 7.3.5.201)

Rating: 600/5A Class 0.5 10VA			Ratio error (±%)				Phase displacement (±minutes)			
			at current (% of rated)				at current (% of rated)			
			5	20	100	120	5	20	100	120
Before test	25%VA	2.5VA	0.1407	0.1756	0.1982	0.2060	15.94	13.21	8.36	7.76
	100%VA	10VA	-0.4510	-0.3300	-0.0968	-0.0687	18.23	13.35	2.98	2.30
After test	25%VA	2.5VA	0.1387	0.1685	0.1741	0.1795	17.85	14.57	8.72	8.14
	100%VA	10VA	-0.4510	-0.3290	-0.1475	-0.1340	19.10	13.53	4.19	4.61
Difference	25%VA	2.5VA	0.0020	0.0071	0.0241	0.0265	-1.91	-1.36	-0.36	-0.38
	100%VA	10VA	0.0000	-0.0010	0.0507	0.0653	-0.87	-0.18	-1.21	-2.31
Limit			0.75	0.375	0.25	0.25	45	22.5	15	15

Result:

The difference in current error and phase displacement measured before and after short-time current test was within half the limit of accuracy class as specified in standard.

3) Power-frequency withstand tests (at 90% test voltage)

Primary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding and earth.

Secondary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary windings (connected together) and earth.

4) Physical Examination (Clause No. 7.1.d)

The insulation next to the surface of the conductor did not show significant deterioration (such as carbonization) upon undergoing physical examination.

8. Short-time Current Tests (Clause 7.2.201) (continued):

f) Short-time current test for 1000/5A CT:

Test at rated short-time thermal current of 60kA rms for 1 sec and rated dynamic current of 150kA peak.

Condition before test:	New sample
Test connection details:	Primary conductor cross section of 1 x 50mm x 30mm copper bar
Short-circuit position:	Secondary winding terminals
Ratio:	1000/5A
Rated short-time thermal current:	60kA rms
Rated dynamic current:	150kA peak
Photograph Nos	B26-20-AA-06E/05 and B26-20-AA-06E/06

Test	**Current**		Duration in Seconds	Oscillogram no.
	Asymmetrical kA peak	Symmetrical kA rms		
Rated short-time and peak withstand current test	156.7	60.84	1.012	B26-20-AA016
Date of test :10th February 2020				

8. Short-time Current Tests (Clause 7.2.201) (continued):

f) Short-time current test for 1000/5A CT (contd.)
Test Results After Short-time Current Test

After the short-time current tests, the current transformer was cooled to ambient air temperature and the following requirements as per Clause 7.2.201 were verified as detailed below:

1) No Visible External Damage Observed. (Clause No. 7.1.a)

2) Tests for ratio error and phase displacement (Accuracy Test) (Cl. No. 7.3.5.201)

Rating: 1000/5A Class 0.5 15VA			Ratio error (±%)				Phase displacement (±minutes)			
			at current (% of rated)				at current (% of rated)			
			5	20	100	120	5	20	100	120
Before test	25%VA	3.75VA	-0.0272	0.0517	0.0864	0.0942	13.30	9.33	5.07	4.79
	100%VA	15VA	-0.0434	-0.2620	-0.1064	-0.0957	4.90	7.61	2.23	2.21
After test	25%VA	3.75VA	-0.0629	0.0163	0.0634	0.0683	14.77	10.24	7.12	5.71
	100%VA	15VA	-0.4950	-0.3220	-0.2080	-0.1506	12.83	8.19	4.68	3.46
Difference	25%VA	3.75VA	0.0357	0.0354	0.0230	0.0259	-1.47	-0.91	-2.05	-0.92
	100%VA	15VA	0.4516	0.0600	0.1016	0.0549	-7.93	-0.58	-2.45	-1.25
Limit			0.75	0.375	0.25	0.25	45	22.5	15	15

Result:

The difference in current error and phase displacement measured before and after short-time current test was within half the limit of accuracy class as specified in standard.

3) Power-frequency withstand tests (at 90% test voltage)

Primary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding and earth.

Secondary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary windings (connected together) and earth.

4) Physical Examination (Clause No. 7.1.d)

The insulation next to the surface of the conductor did not show significant deterioration (such as carbonization) upon undergoing physical examination.

8. Short-time Current Tests (Clause 7.2.201) (continued):

g) Short-time current test for 1600/5A CT:

Test at rated short-time thermal current of 96kA rms for 1 sec and rated dynamic current of 240kA peak.

Condition before test:	New sample
Test connection details:	Primary conductor cross section of 1 x 50mm x 30mm copper bar
Short-circuit position:	Secondary winding terminals
Ratio:	1600/5A
Rated short-time thermal current:	96kA rms
Rated dynamic current:	240kA peak
Photograph Nos	B26-20-AA-07E/05 and B26-20-AA-07E/06

Test	**Current**		Duration in Seconds	Oscillogram no.
	Asymmetrical kA peak	Symmetrical kA rms		
Rated short-time and peak withstand current test	241.1	97.12	1.012	B26-20-AA023
Date of test :10th February 2020				

8. Short-time Current Tests (Clause 7.2.201) (continued):

g) Short-time current test for 1600/5A CT (contd.)
Test Results After Short-time Current Test

After the short-time current tests, the current transformer was cooled to ambient air temperature and the following requirements as per Clause 7.2.201 were verified as detailed below:

1) No Visible External Damage Observed. (Clause No. 7.1.a)

2) Tests for ratio error and phase displacement (Accuracy Test) (Cl. No. 7.3.5.201)

Rating: 1600/5A Class 0.2S 15VA			Ratio error (±%) at current (% of rated)					Phase displacement (±minutes) at current (% of rated)				
			1	5	20	100	120	1	5	20	100	120
Before test	25%VA	3.75VA	-0.0896	0.0016	0.0319	0.0165	0.0160	13.60	9.51	6.82	5.47	5.85
	100%VA	15VA	-0.3430	-0.1908	-0.1201	-0.0971	-0.0843	13.19	9.53	5.79	4.48	4.31
After test	25%VA	3.75VA	-0.1043	0.0051	0.0296	0.0468	0.0636	13.60	9.69	6.92	4.16	3.36
	100%VA	15VA	-0.3550	-0.1917	-0.1338	-0.0505	-0.0433	13.24	9.60	5.88	2.91	2.72
Difference	25%VA	3.75VA	0.0147	-0.0035	0.0023	-0.0303	-0.0476	00.00	-0.18	-0.1	1.31	2.49
	100%VA	15VA	0.0120	0.0009	0.0137	-0.0466	-0.0410	-0.05	-0.07	-0.09	1.57	1.59
Limit			0.375	0.175	0.1	0.1	0.1	15	8	5	5	5

Result:

The difference in current error and phase displacement measured before and after short-time current test was within half the limit of accuracy class as specified in standard.

3) Power-frequency withstand tests (at 90% test voltage)

Primary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding and earth.

Secondary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary windings (connected together) and earth.

4) Physical Examination (Clause No. 7.1.d)

The insulation next to the surface of the conductor did not show significant deterioration (such as carbonization) upon undergoing physical examination.

8. Short-time Current Tests (Clause 7.2.201) (continued):

h) Short-time current test for 2500/5A CT:

Test at rated short-time thermal current of 150kA rms for 1 sec and rated dynamic current of 375kA peak.

Condition before test:	New sample
Test connection details:	Primary conductor cross section of 2 x 80mm x 10mm copper bars
Short-circuit position:	Secondary winding terminals
Ratio:	2500/5A
Rated short-time thermal current:	150kA rms
Rated dynamic current:	375kA peak
Photograph Nos	B26-20-AA-08E/05 and B26-20-AA-08E/06

Test	**Current**		Duration in Seconds	Oscillogram no.
	Asymmetrical kA peak	Symmetrical kA rms		
Rated short-time and peak withstand current test	386.7	153.4	1.014	B26-20-AA027
Date of test :11th February 2020				

8. Short-time Current Tests (Clause 7.2.201) (continued):

h) Short-time current test for 2500/5A CT (contd.)
Test Results After Short-time Current Test

After the short-time current tests, the current transformer was cooled to ambient air temperature and the following requirements as per Clause 7.2.201 were verified as detailed below:

1) No Visible External Damage Observed. (Clause No. 7.1.a)

2) Tests for ratio error and phase displacement (Accuracy Test) (Cl. No. 7.3.5.201)

Rating: 2500/5A Class 0.2S 15VA			Ratio error (±%) at current (% of rated)					Phase displacement (±minutes) at current (% of rated)				
			1	5	20	100	120	1	5	20	100	120
Before test	25%VA	3.75VA	-0.0044	0.0765	0.0903	0.0951	0.1066	7.87	3.50	2.60	2.13	1.968
	100%VA	15VA	-0.0833	0.0228	0.0474	0.0623	0.0639	6.58	3.68	2.73	1.938	1.776
After test	25%VA	3.75VA	-0.0698	0.0621	0.0824	0.0881	0.1498	8.70	4.26	3.22	2.39	2.12
	100%VA	15VA	-0.1874	-0.0040	0.0273	0.0465	0.0906	9.12	4.81	3.57	2.09	1.766
Difference	25%VA	3.75VA	0.0654	0.0144	0.0079	0.0070	-0.0432	-0.83	-0.76	-0.62	-0.26	-0.152
	100%VA	15VA	0.1041	0.0268	0.0201	0.0158	-0.0267	-2.54	-1.13	-0.84	-0.152	0.01
Limit			0.375	0.175	0.1	0.1	0.1	15	8	5	5	5

Result:

The difference in current error and phase displacement measured before and after short-time current test was within half the limit of accuracy class as specified in standard.

3) Power-frequency withstand tests (at 90% test voltage)

Primary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding and earth.

Secondary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary windings (connected together) and earth.

4) Physical Examination (Clause No. 7.1.d)

The insulation next to the surface of the conductor did not show significant deterioration (such as carbonization) upon undergoing physical examination.

8. Short-time Current Tests (Clause 7.2.201) (continued):

i) Short-time current test for 3000/5A, 15VA, Class 0.2S CT:

Test at rated short-time thermal current of 60kA rms for 1 sec and rated dynamic current of 150kA peak.

Condition before test:	New sample
Test connection details:	Primary conductor cross section of 1 x 50mm x 30mm copper bar
Short-circuit position:	Secondary winding terminals
Ratio:	3000/5A, 15VA, Class 0.2S
Rated short-time thermal current:	60kA rms
Rated dynamic current:	150kA peak
Photograph Nos	B26-20-AA-09E/05 and B26-20-AA-09E/06

Test	**Current**		Duration in Seconds	Oscillogram no.
	Asymmetrical kA peak	Symmetrical kA rms		
Rated short-time and peak withstand current test	155.7	60.44	1.012	B26-20-AA019
Date of test :10th February 2020				

8. Short-time Current Tests (Clause 7.2.201) (continued):

i) Short-time current test for 3000/5A, 15VA, Class 0.2S (contd.)
Test Results After Short-time Current Test

After the short-time current tests, the current transformer was cooled to ambient air temperature and the following requirements as per Clause 7.2.201 were verified as detailed below:

1) No Visible External Damage Observed. (Clause No. 7.1.a)

2) Tests for ratio error and phase displacement (Accuracy Test) (Cl. No. 7.3.5.201)

Rating: 3000/5A Class 0.2S 15VA			Ratio error (±%) at current (% of rated)					Phase displacement (±minutes) at current (% of rated)				
			1	5	20	100	120	1	5	20	100	120
Before test	25%VA	3.75VA	-0.0716	-0.0059	0.0105	0.0173	0.0182	4.98	2.58	1.88	1.422	1.348
	100%VA	15VA	-0.1387	-0.0441	-0.0213	-0.0068	-0.0043	5.18	2.78	2.03	1.245	1.126
After test	25%VA	3.75VA	-0.0950	-0.0070	0.0119	0.0204	0.0214	4.89	2.42	1.72	1.28	1.21
	100%VA	15VA	-0.1482	-0.0455	-0.0170	-0.0020	0.0010	4.86	2.49	1.78	1.132	1.101
Difference	25%VA	3.75VA	0.0234	0.0011	-0.0014	-0.0031	-0.0032	0.09	0.16	0.16	0.142	0.138
	100%VA	15VA	0.0095	0.0014	-0.0043	-0.0048	-0.0053	0.32	0.29	0.25	0.113	0.025
Limit			0.375	0.175	0.1	0.1	0.1	15	8	5	5	5

Result:

The difference in current error and phase displacement measured before and after short-time current test was within half the limit of accuracy class as specified in standard.

3) Power-frequency withstand tests (at 90% test voltage)

Primary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding and earth.

Secondary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary windings (connected together) and earth.

4) Physical Examination (Clause No. 7.1.d)

The insulation next to the surface of the conductor did not show significant deterioration (such as carbonization) upon undergoing physical examination.

8. Short-time Current Tests (Clause 7.2.201) (continued):

j) Short-time current test for 3000/5A, 45VA, Class 1 split core CT:

Test at rated short-time thermal current of 60kA rms for 1 sec and rated dynamic current of 150kA peak.

Condition before test:	New sample
Test connection details:	Primary conductor cross section of 1 x 50mm x 30mm copper bar
Short-circuit position:	Secondary winding terminals
Ratio:	3000/5A, 45VA, Class 1
Rated short-time thermal current:	60kA rms
Rated dynamic current:	150kA peak
Photograph Nos	B26-20-AA-10E/05 and B26-20-AA-10E/06

Test	**Current**		Duration in Seconds	Oscillogram no.
	Asymmetrical kA peak	Symmetrical kA rms		
Rated short-time and peak withstand current test	154.8	60.12	1.012	B26-20-AA018
Date of test :10th February 2020				

8. Short-time Current Tests (Clause 7.2.201) (continued):

j) Short-time current test for 3000/5A, 45VA, Class 1 split core CT (contd.)
Test Results After Short-time Current Test

After the short-time current tests, the current transformer was cooled to ambient air temperature and the following requirements as per Clause 7.2.201 were verified as detailed below:

1) No Visible External Damage Observed. (Clause No. 7.1.a)

2) Tests for ratio error and phase displacement (Accuracy Test) (Clause No. 7.3.5.201)

Rating: 3000/5A Class 1 45VA			Ratio error (±%)				Phase displacement (±minutes)			
			at current (% of rated)				at current (% of rated)			
			5	20	100	120	5	20	100	120
Before test	25%VA	11.25VA	-0.0189	0.0420	0.0745	0.0935	8.09	7.68	7.11	5.16
	100%VA	45VA	-0.2410	-0.1598	-0.0960	-0.3110	14.94	14.24	10.59	12.79
After test	25%VA	11.25VA	0.0948	0.1885	0.2560	0.1928	7.46	6.32	4.53	4.99
	100%VA	45VA	-0.1070	0.0150	0.0300	-0.2000	13.51	11.59	9.78	12.00
Difference	25%VA	11.25VA	-0.1137	-0.1465	-0.1815	-0.0993	0.63	1.36	2.58	0.17
	100%VA	45VA	-0.1340	-0.1748	-0.1260	-0.1110	1.43	2.65	0.81	0.79
Limit			1.5	0.75	0.5	0.5	90	45	30	30

Result:

The difference in current error and phase displacement measured before and after short-time current test was within half the limit of accuracy class as specified in standard.

3) Power-frequency withstand tests (at 90% test voltage)

Primary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding and earth.

Secondary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary windings (connected together) and earth.

4) Physical Examination (Clause No. 7.1.d)

The insulation next to the surface of the conductor did not show significant deterioration (such as carbonization) upon undergoing physical examination.

8. Short-time Current Tests (Clause 7.2.201) (continued):

k) Short-time current test for 3000/5A, 15VA, Class 0.2S (ring type) CT:

Test at rated short-time thermal current of 60kA rms for 1 sec and rated dynamic current of 150kA peak.

Condition before test:	New sample
Test connection details:	Primary conductor cross section of 1 x 50mm x 30mm copper bar
Short-circuit position:	Secondary winding terminals
Ratio:	3000/5A, 15VA, Class 0.2S (ring type)
Rated short-time thermal current:	60kA rms
Rated dynamic current:	150kA peak
Photograph Nos	B26-20-AA-11E/05 and B26-20-AA-11E/06

Test	**Current**		Duration in Seconds	Oscillogram no.
	Asymmetrical kA peak	Symmetrical kA rms		
Rated short-time and peak withstand current test	155.7	60.60	1.012	B26-20-AA020
Date of test :10th February 2020				

8. Short-time Current Tests (Clause 7.2.201) (continued):

k) Short-time current test for 3000/5A, 15VA, Class 0.2S (ring type) (contd.)
Test Results After Short-time Current Test

After the short-time current tests, the current transformer was cooled to ambient air temperature and the following requirements as per Clause 7.2.201 were verified as detailed below:

1) No Visible External Damage Observed. (Clause No. 7.1.a)

2) Tests for ratio error and phase displacement (Accuracy Test) (Cl. No. 7.3.5.201)

Rating: 3000/5A Class 0.2S 15VA (Ring type)			Ratio error (±%) at current (% of rated)					Phase displacement (±minutes) at current (% of rated)				
			1	5	20	100	120	1	5	20	100	120
Before test	25%VA	3.75VA	0.0387	0.0630	0.0685	0.0673	0.0658	4.51	2.65	2.09	1.590	1.501
	100%VA	15VA	-0.0244	0.0242	0.0369	0.0423	0.0400	4.91	2.91	2.24	1.489	1.375
After test	25%VA	3.75VA	0.0305	0.0636	0.0710	0.0695	0.0655	6.12	4.20	2.41	1.75	1.70
	100%VA	15VA	-0.0622	0.0246	0.0404	0.0477	0.0449	5.84	3.13	2.42	1.57	1.46
Difference	25%VA	3.75VA	0.0082	-0.0006	-0.0025	-0.0022	0.0003	-1.61	-1.55	-0.32	-0.16	-0.199
	100%VA	15VA	0.0378	-0.0004	-0.0035	-0.0054	-0.0049	-0.93	-0.22	-0.18	-0.081	-0.085
Limit			0.375	0.175	0.1	0.1	0.1	15	8	5	5	5

Result:

The difference in the ratio error and phase displacement measured before and after short-time current test was within half the limit of accuracy class as specified in standard.

3) Power-frequency withstand tests (at 90% test voltage)

Primary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the primary winding and earth.

Secondary winding:

The current transformer withstood 3600V rms (f = 50Hz) applied for 60 seconds between the terminals of the secondary windings (connected together) and earth.

4) Physical Examination (Clause No. 7.1.d)

The insulation next to the surface of the conductor did not show significant deterioration (such as carbonization) upon undergoing physical examination.

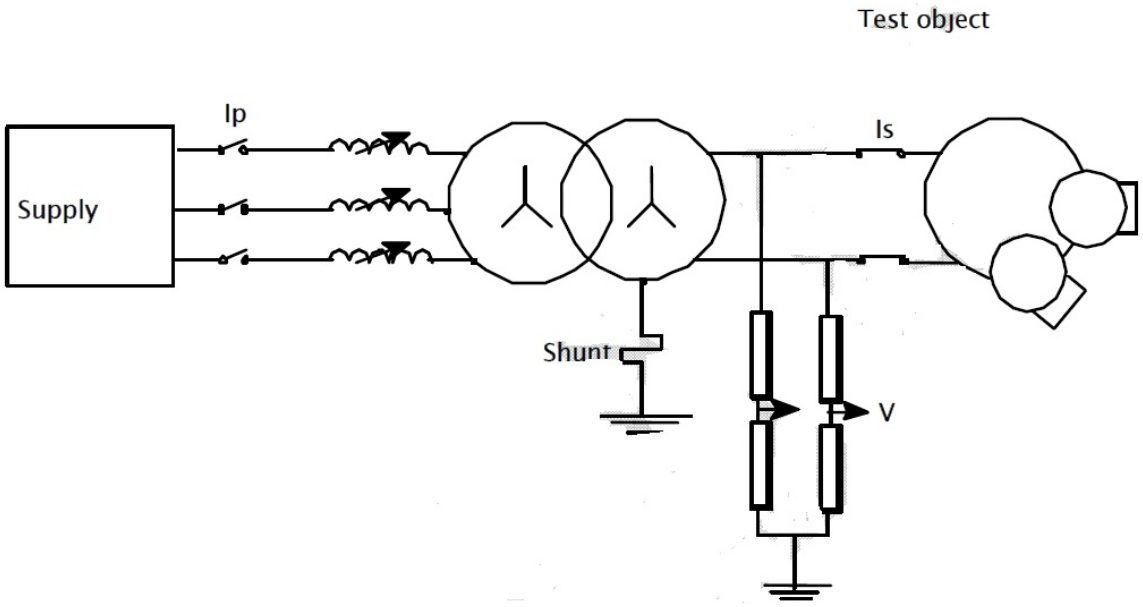


Diagram No.-B26-20-AA/D1
Test set up for short-time current test

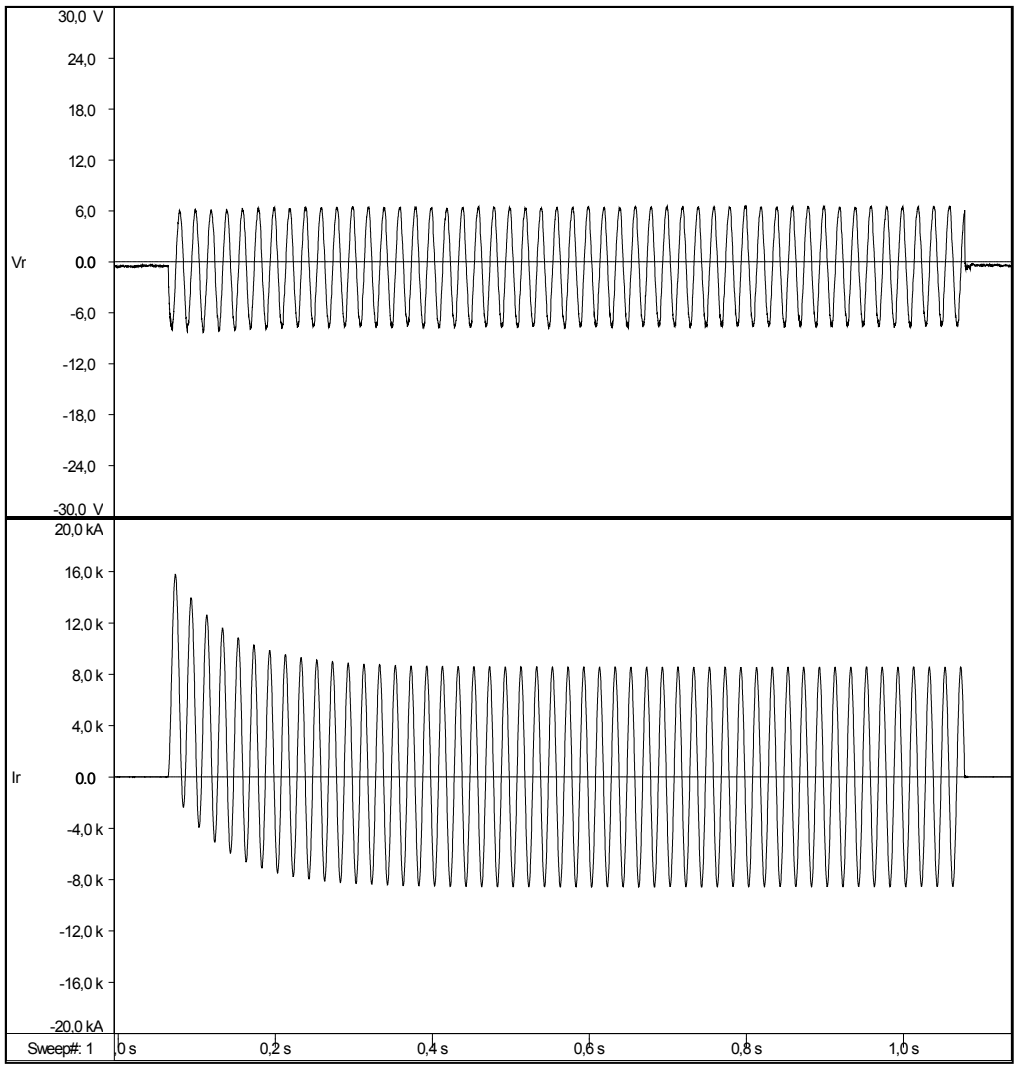
RECORD OF PROVING TESTS

ASTA

Laboratory Ref. No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Date: 10/02/2020
Osc. no: B26-20-AA 004

V_r	5,026 V
I_r (rms)	6,059 kA
I_r (peak)	15,80 kA
t_r	1,012 s
$I_r^2 t$	3,96E+07 AAs



Date of Tests: 27th January to 12th February 2020

Rajani Menon, ASTA Observer

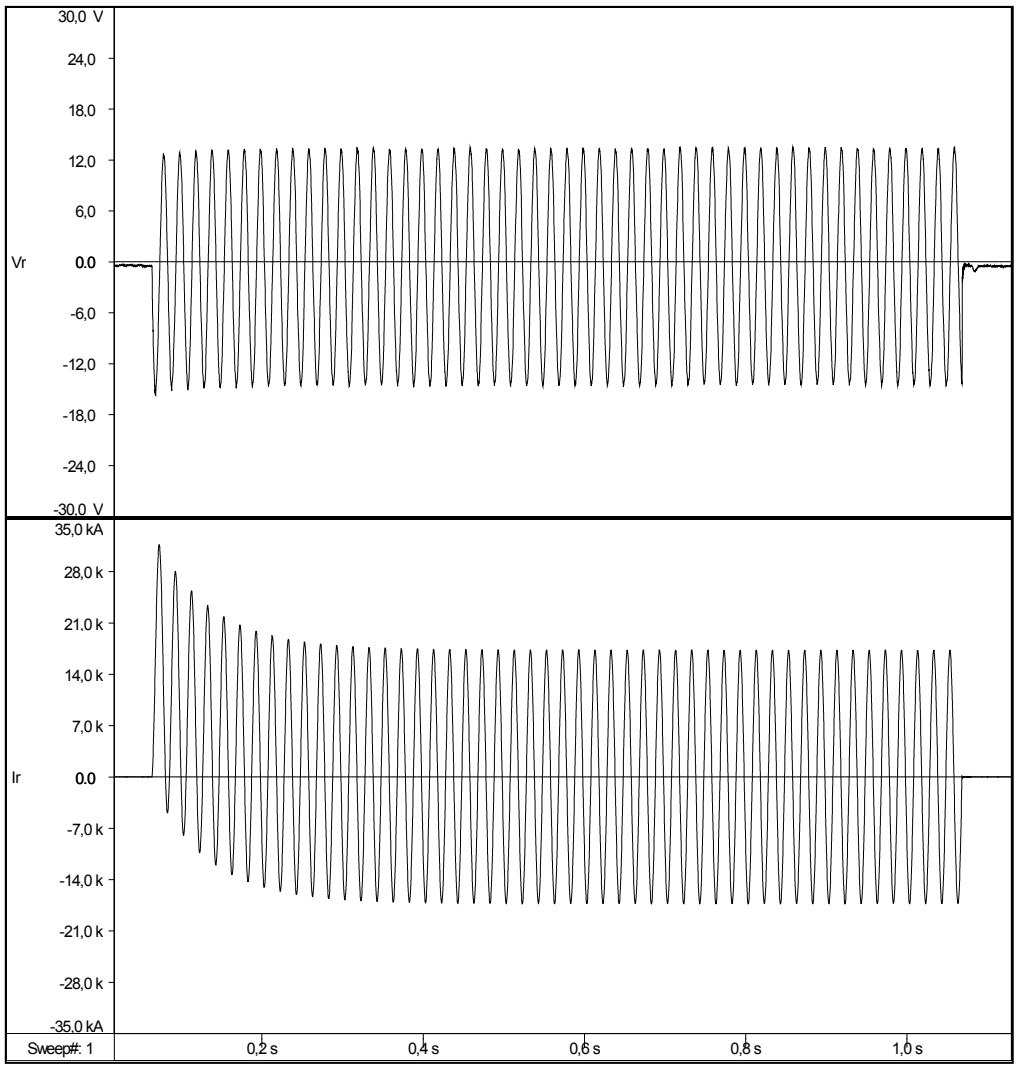
RECORD OF PROVING TESTS

ASTA

Laboratory Ref. No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Date: 10/02/2020
Osc. no: B26-20-AA 006

V_r	9,902 V
I_r (rms)	12,23 kA
I_r (peak)	31,36 kA
t_r	1,003 s
$I_r^2 t$	1,6E+08 AAs



Date of Tests: 27th January to 12th February 2020

Rajani Menon, ASTA Observer

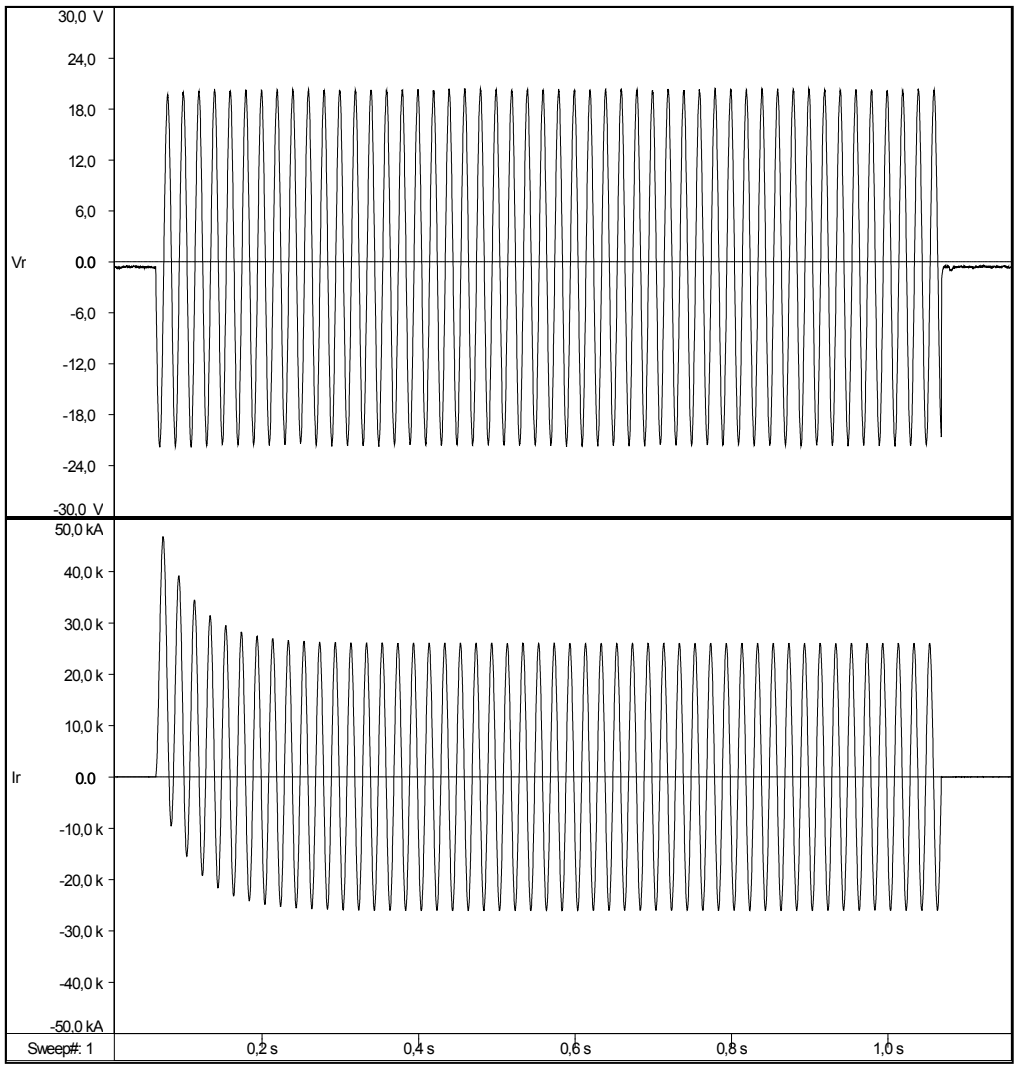
RECORD OF PROVING TESTS

ASTA

Laboratory Ref. No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Date: 10/02/2020
Osc. no: B26-20-AA 008

V_r	14,75 V
I_r (rms)	18,41 kA
I_r (peak)	46,81 kA
t_r	1,002 s
$I_r^2 t$	3,55E+08 AAs



Date of Tests: 27th January to 12th February 2020

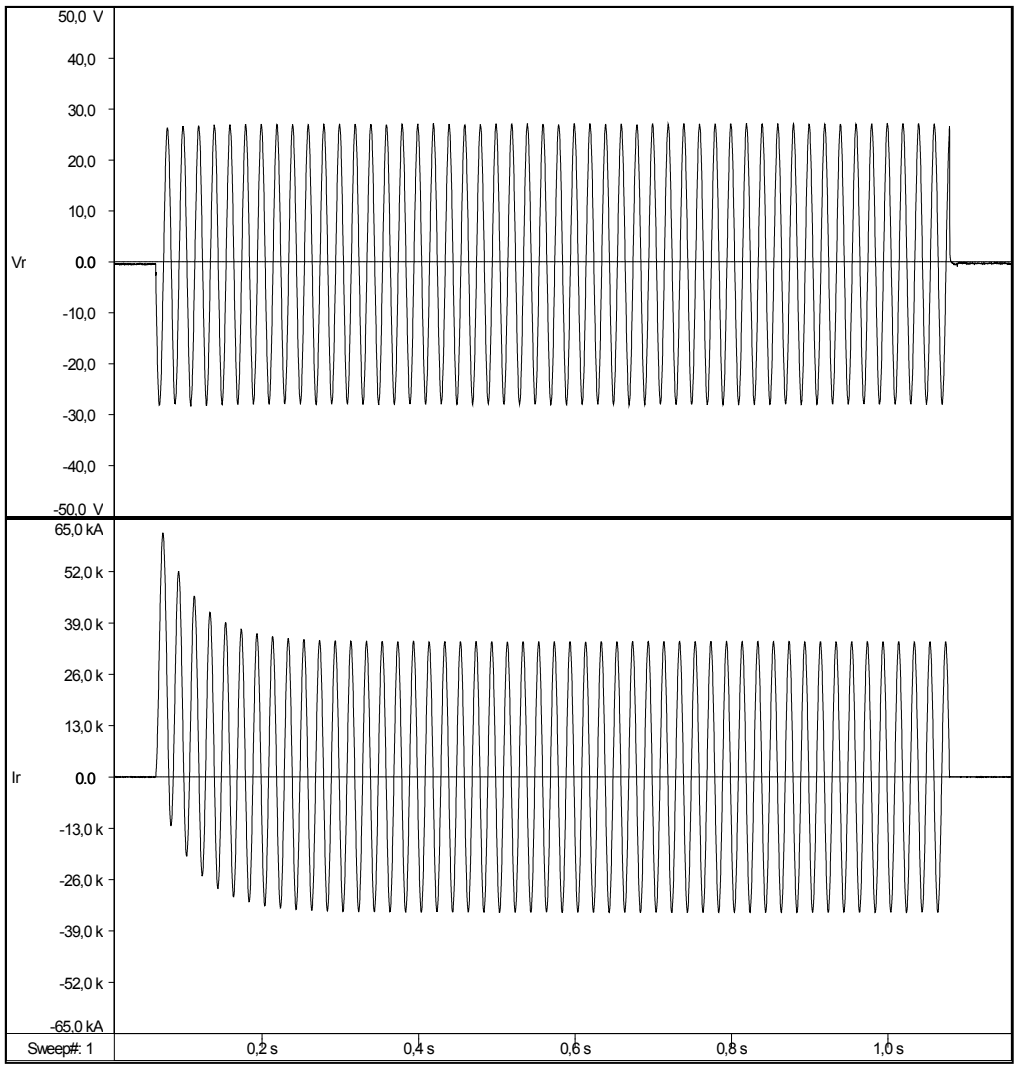
Rajani Menon, ASTA Observer

RECORD OF PROVING TESTS **ASTA**

Laboratory Ref. No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Date: 10/02/2020
Osc. no: B26-20-AA 010

V_r	19,29 V
I_r (rms)	24,24 kA
I_r (peak)	61,78 kA
t_r	1,012 s
$I_r^2 t$	6,22E+08 AAs



Date of Tests: 27th January to 12th February 2020

Rajani Menon, ASTA Observer

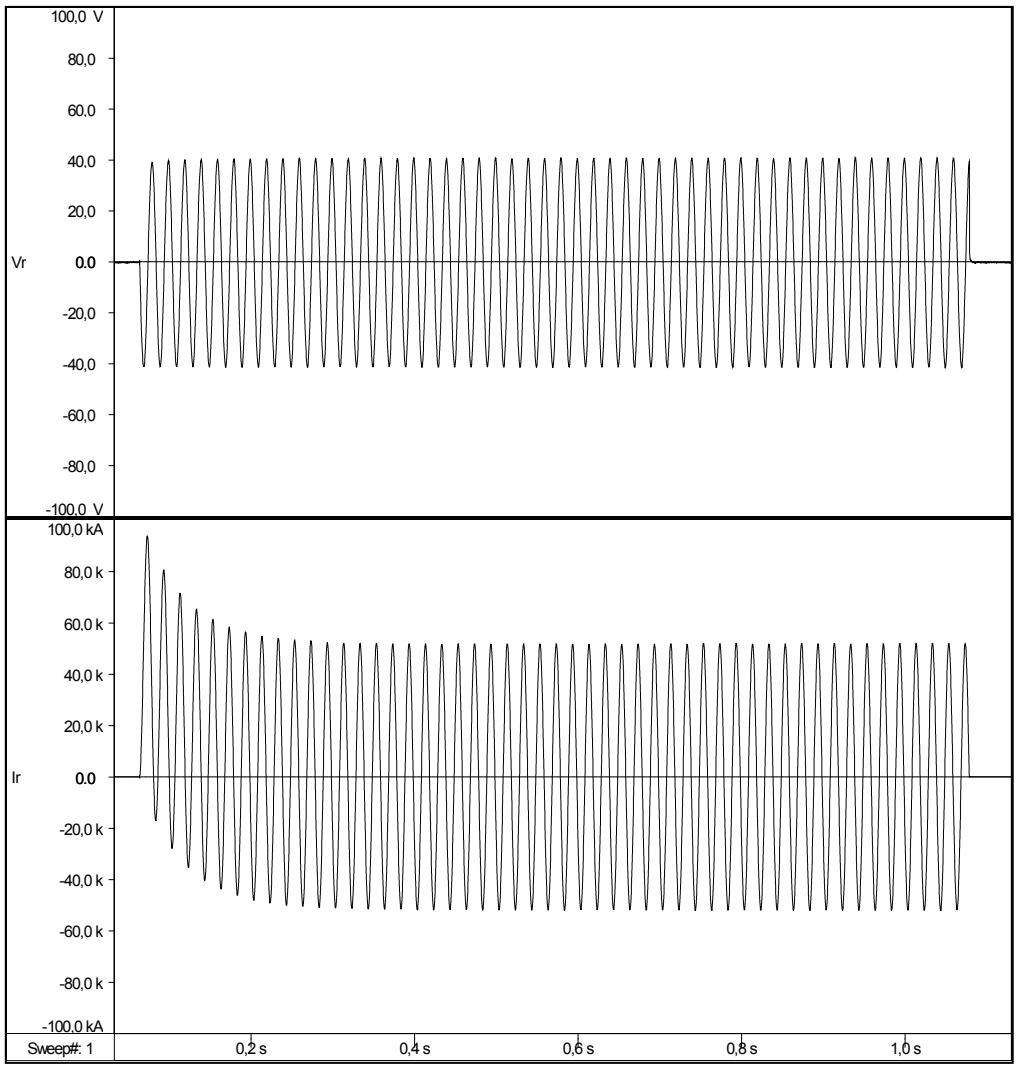
RECORD OF PROVING TESTS

ASTA

Laboratory Ref. No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Date: 10/02/2020
Osc. no: B26-20-AA 013

V_r	28,70 V
I_r (rms)	36,68 kA
I_r (peak)	93,87 kA
t_r	1,013 s
$I_r^2 t$	1,43E+09 AAs



Date of Tests: 27th January to 12th February 2020

Rajani Menon, ASTA Observer

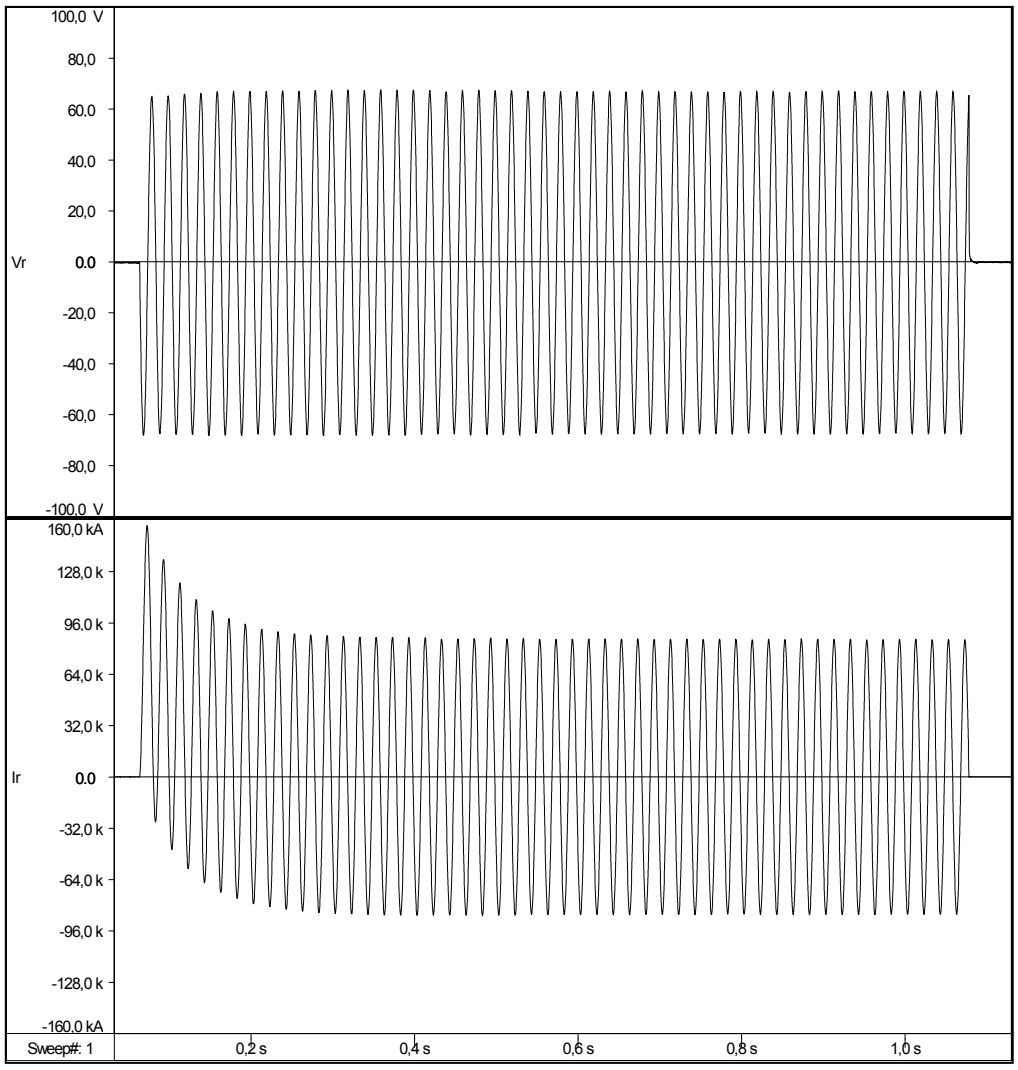
RECORD OF PROVING TESTS

ASTA

Laboratory Ref. No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Date: 10/02/2020
Osc. no: B26-20-AA 016

V_r	47,27 V
I_r (rms)	60,84 kA
I_r (peak)	156,7 kA
t_r	1,012 s
$I_r^2 t$	3,95E+09 AAs



Date of Tests: 27th January to 12th February 2020

Rajani Menon, ASTA Observer

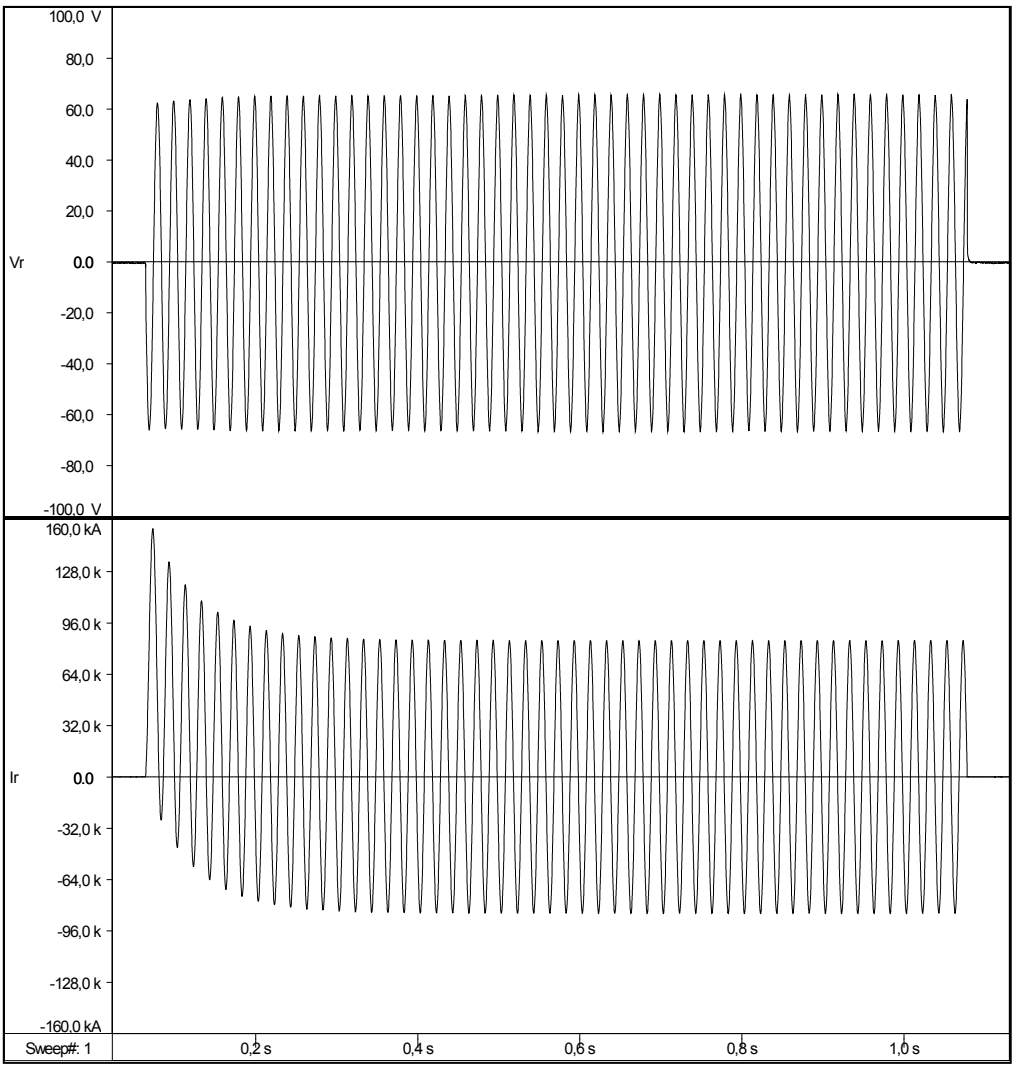
RECORD OF PROVING TESTS

ASTA

Laboratory Ref. No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Date: 10/02/2020
Osc. no: B26-20-AA 018

V_r	45,92 V
I_r (rms)	60,12 kA
I_r (peak)	154,8 kA
t_r	1,012 s
$I_r^2 t$	3,86E+09 AAs



Date of Tests: 27th January to 12th February 2020

Rajani Menon, ASTA Observer

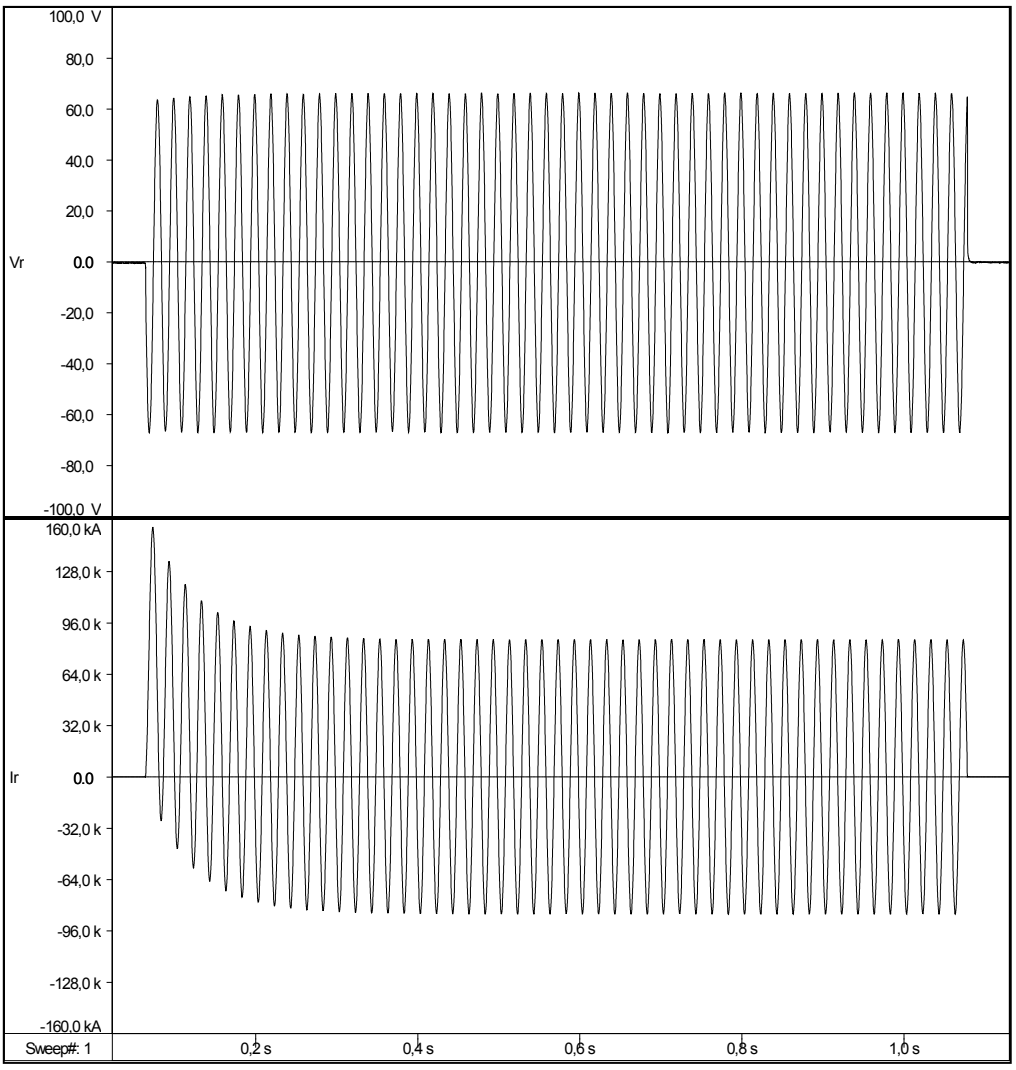
RECORD OF PROVING TESTS

ASTA

Laboratory Ref. No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Date: 10/02/2020
Osc. no: B26-20-AA 019

V_r	46,63 V
I_r (rms)	60,44 kA
I_r (peak)	155,7 kA
t_r	1,012 s
$I_r^2 t$	3,91E+09 AAs



Date of Tests: 27th January to 12th February 2020

Rajani Menon, ASTA Observer

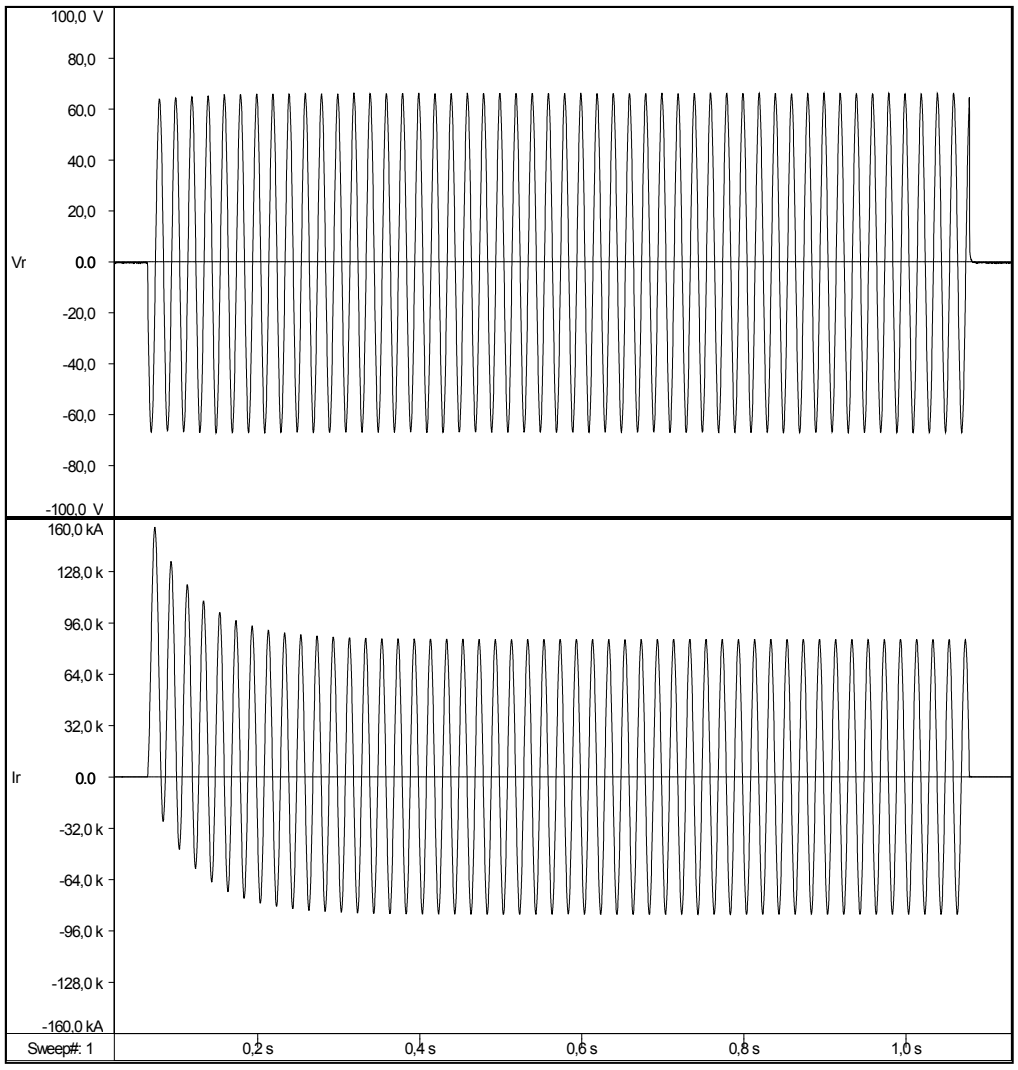
RECORD OF PROVING TESTS

ASTA

Laboratory Ref. No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Date: 10/02/2020
Osc. no: B26-20-AA 020

V_r	46,65 V
I_r (rms)	60,60 kA
I_r (peak)	155,7 kA
t_r	1,012 s
$I_r^2 t$	3,92E+09 AAs



Date of Tests: 27th January to 12th February 2020

Rajani Menon, ASTA Observer

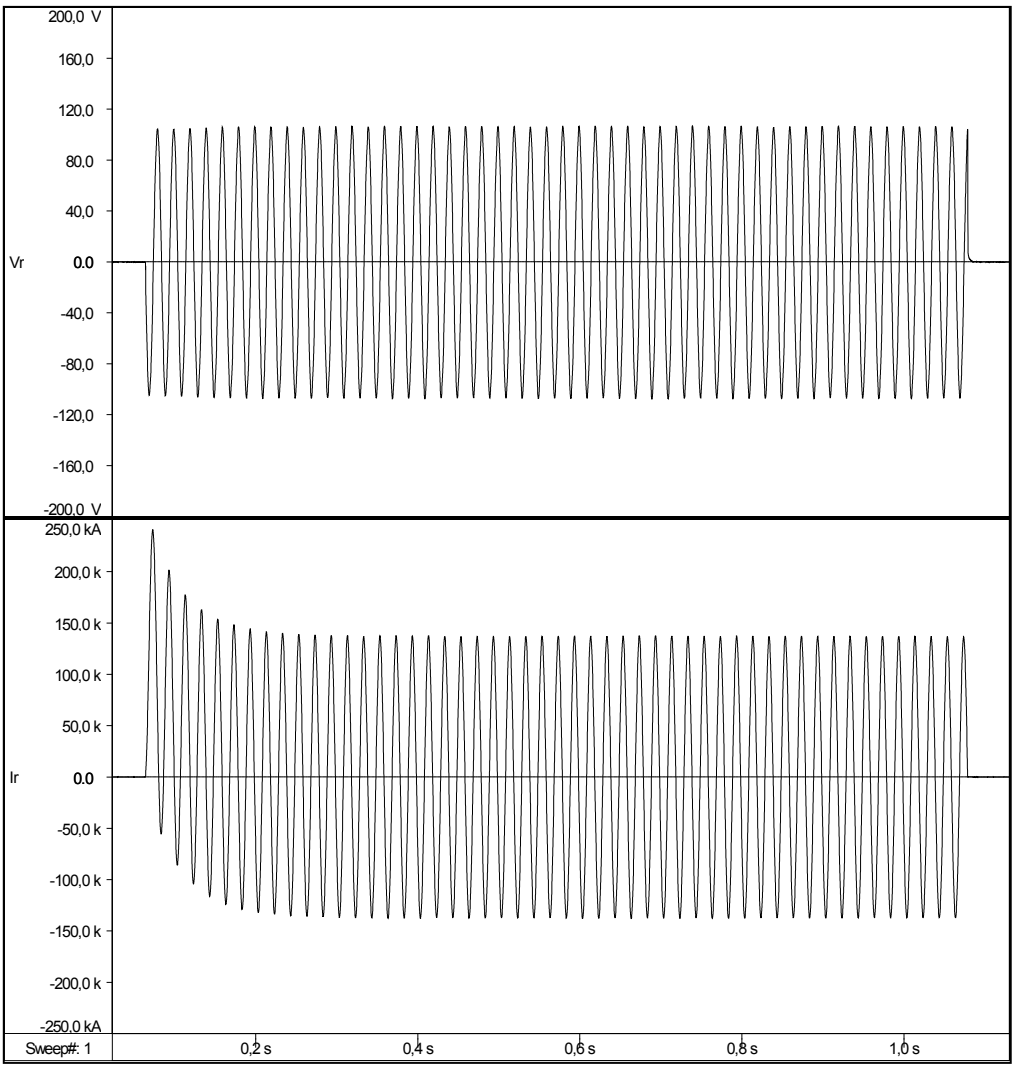
RECORD OF PROVING TESTS

ASTA

Laboratory Ref. No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Date: 10/02/2020
Osc. no: B26-20-AA 023

V_r	74,52 V
I_r (rms)	97,12 kA
I_r (peak)	241,1 kA
t_r	1,012 s
$I_r^2 t$	9,84E+09 AAs



Date of Tests: 27th January to 12th February 2020

Rajani Menon, ASTA Observer

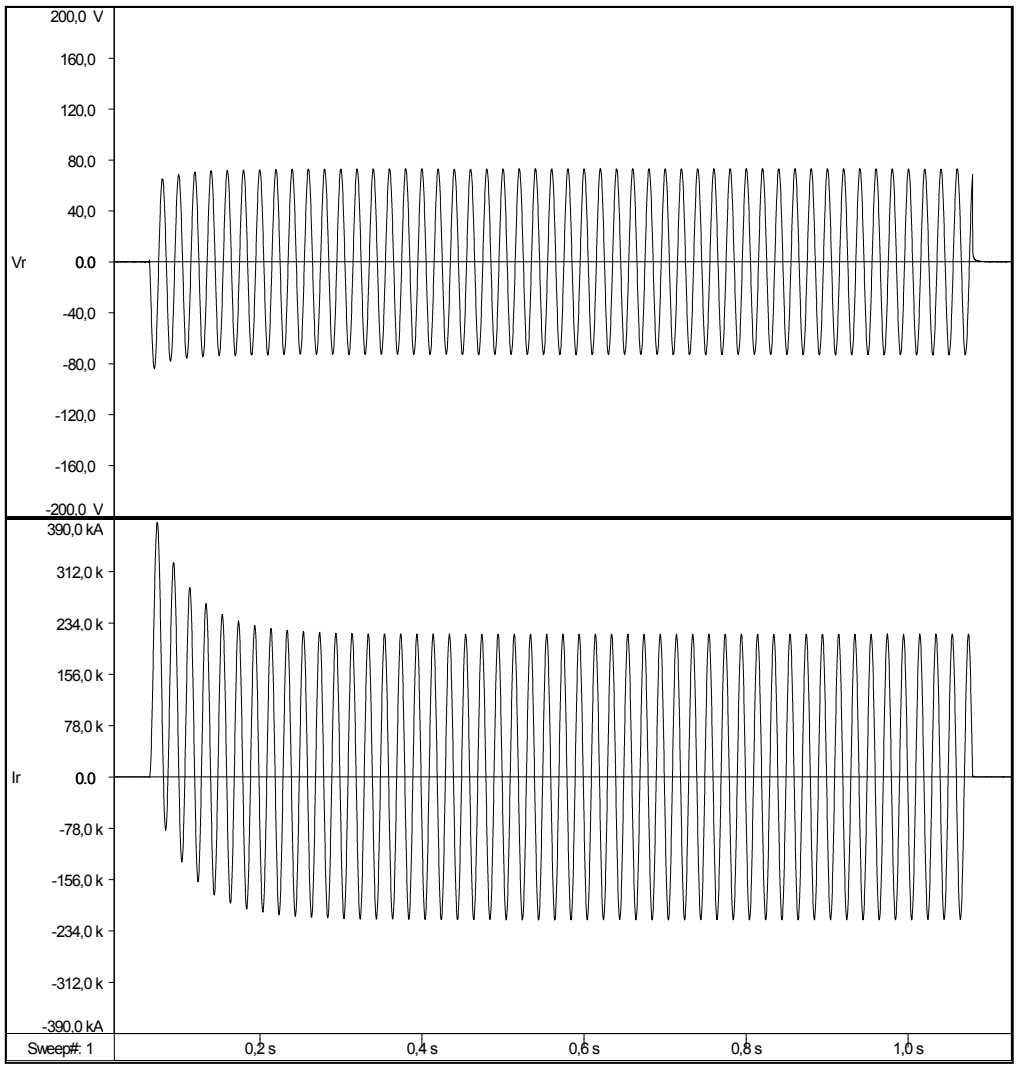
RECORD OF PROVING TESTS

ASTA

Laboratory Ref. No: B26-20-AA-01E/02E/03E/04E/05E/06E/07E/08E/09E/10E/11E

Date: 11/02/2020
Osc. no: B26-20-AA 027

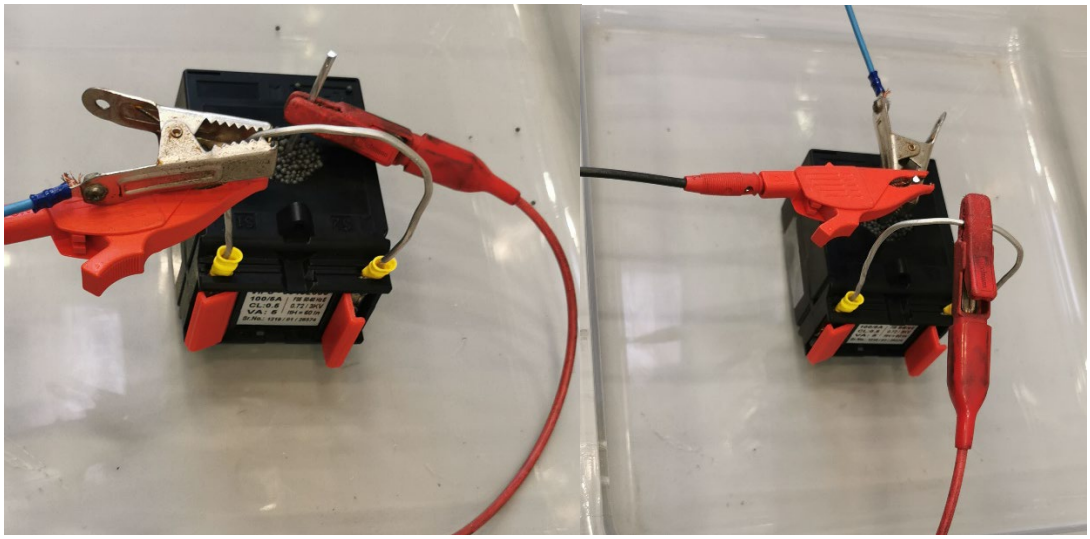
V_r	51,64 V
I_r (rms)	153,4 kA
I_r (peak)	386,7 kA
t_r	1,014 s
$I_r^2 t$	2,5E+10 AAs



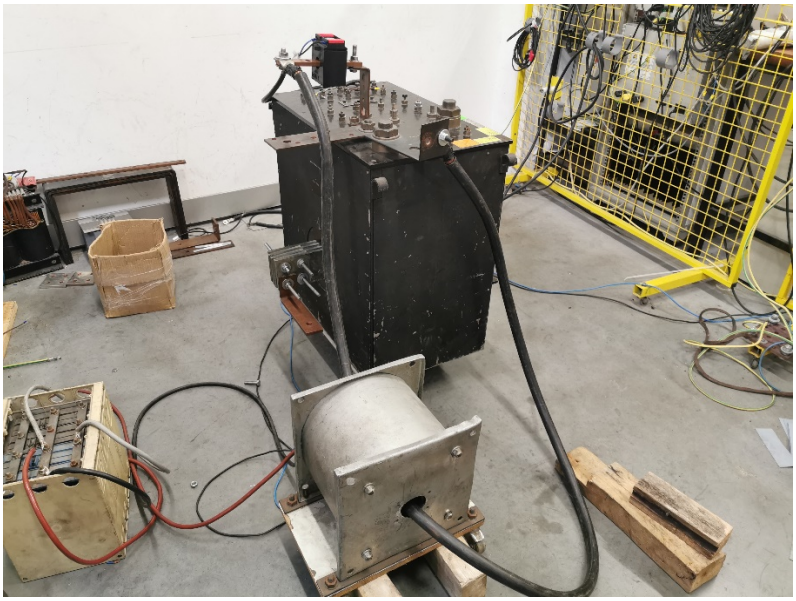
Date of Tests: 27th January to 12th February 2020

Rajani Menon, ASTA Observer

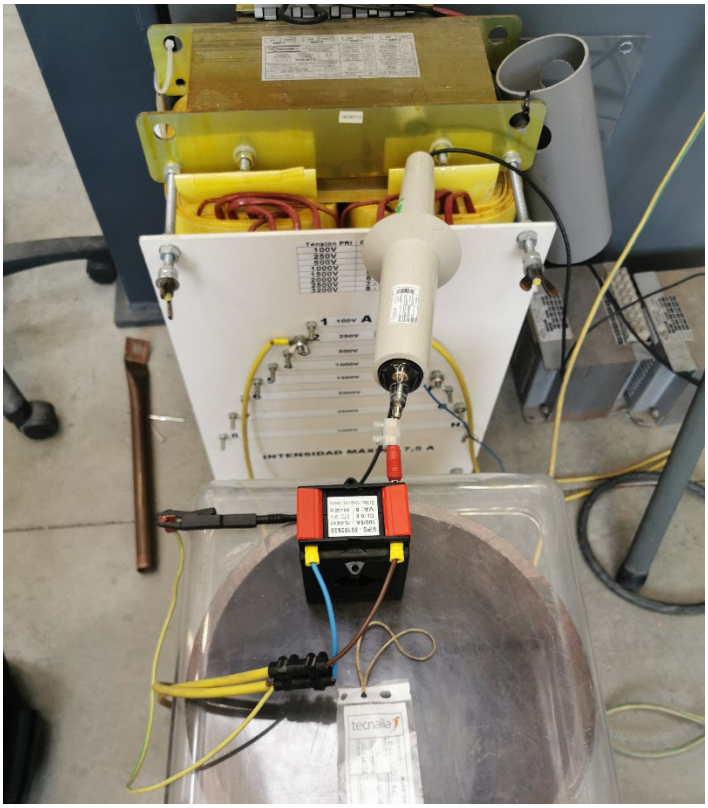
a) 100/5A, 5VA, Class 0.5



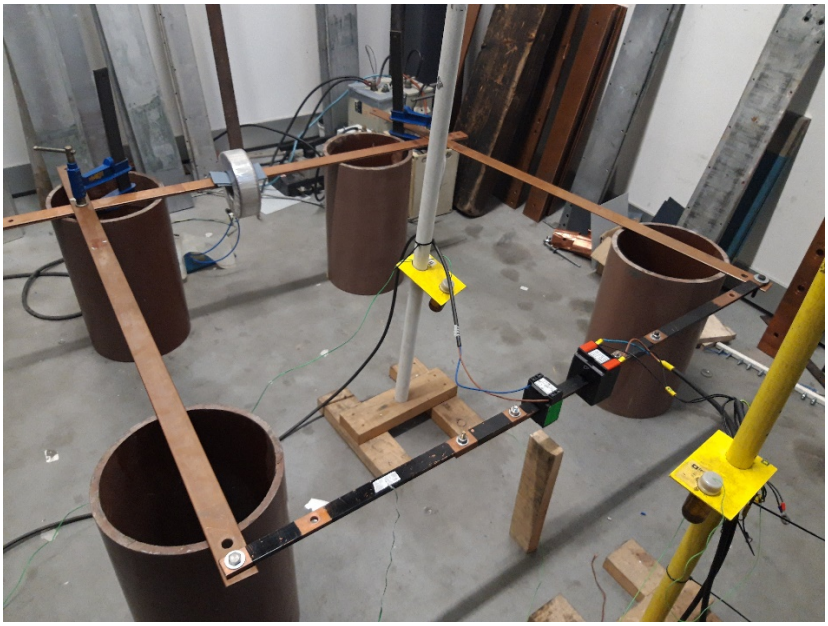
a) 100/5A CT
Photograph no. B26-20-AA-01E/01
Power-frequency voltage withstand tests on primary and secondary terminals



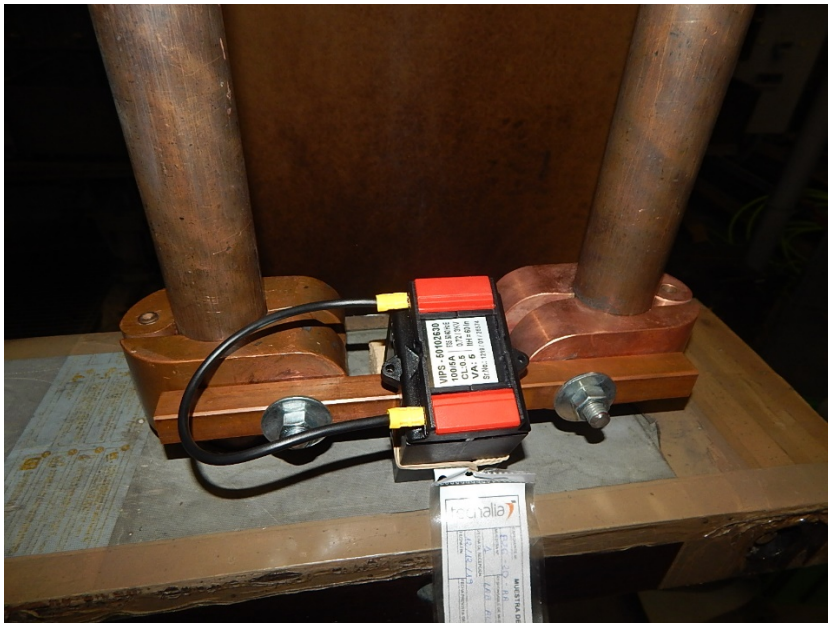
a) 100/5A CT
Photograph no. B26-20-AA-01E/02
Tests for accuracy



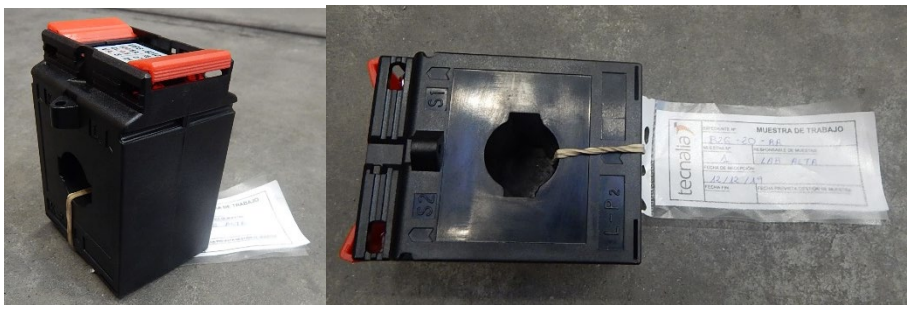
a) 100/5A CT
Photograph no. B26-20-AA-01E/03
Inter-turn overvoltage test



a) 100/5A CT
Photograph no. B26-20-AA-01E/04
Temperature-rise test

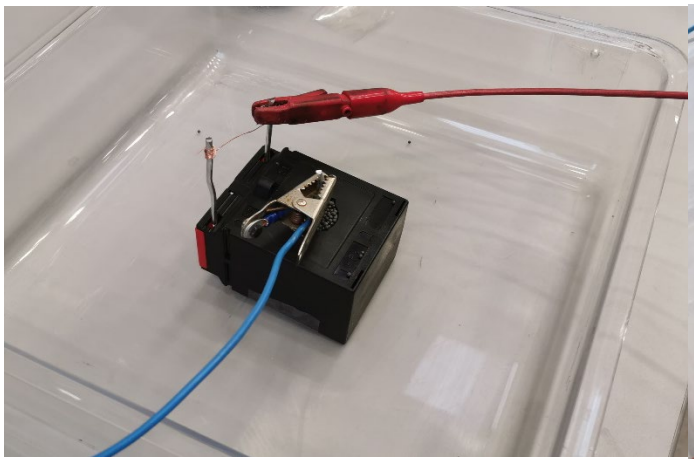


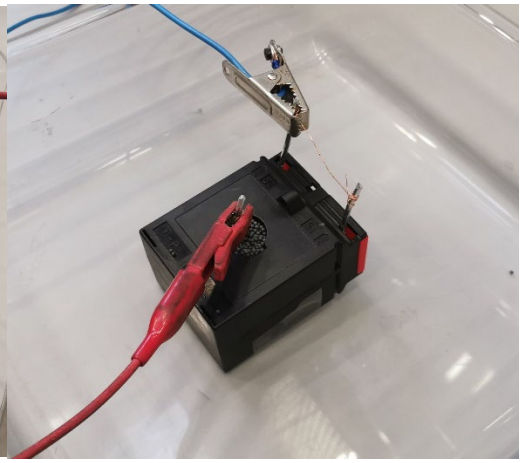
a) 100/5A CT
Photograph no. B26-20-AA-01E/05
Short-time current tests



a) 100/5A CT
Photograph no. B26-20-AA-01E/06
After short-time current tests

b) 200/5A, 10VA, Class 0.5





b) 200/5A CT
Photograph no. B26-20-AA-02E/01
Power-frequency voltage withstand tests on primary and secondary terminals

b) 200/5A CT
Photograph no. B26-20-AA-02E/02
Tests for accuracy

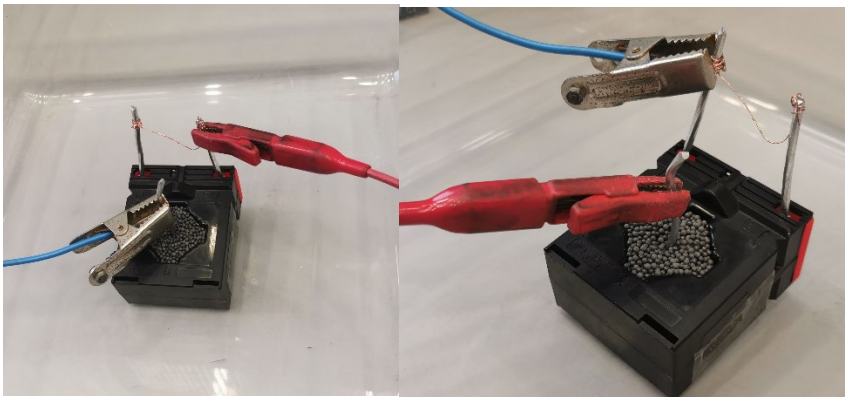
b) 200/5A CT
Photograph no. B26-20-AA-02E/03
Inter-turn overvoltage test

b) 200/5A CT
Photograph no. B26-20-AA-02E/04
Temperature-rise test

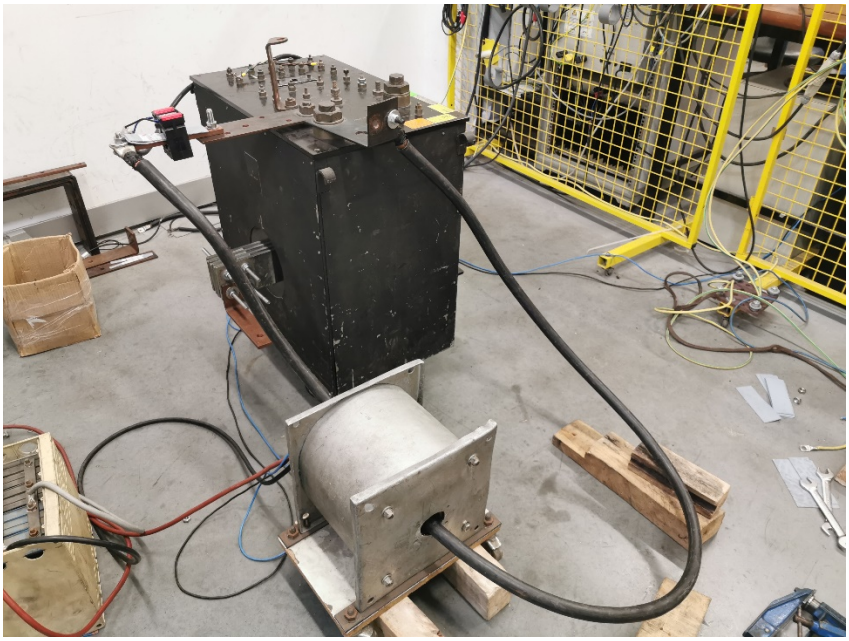
b) 200/5A CT
Photograph no. B26-20-AA-02E/05
Short-time current tests

b) 200/5A CT
Photograph no. B26-20-AA-02E/06
After short-time current tests

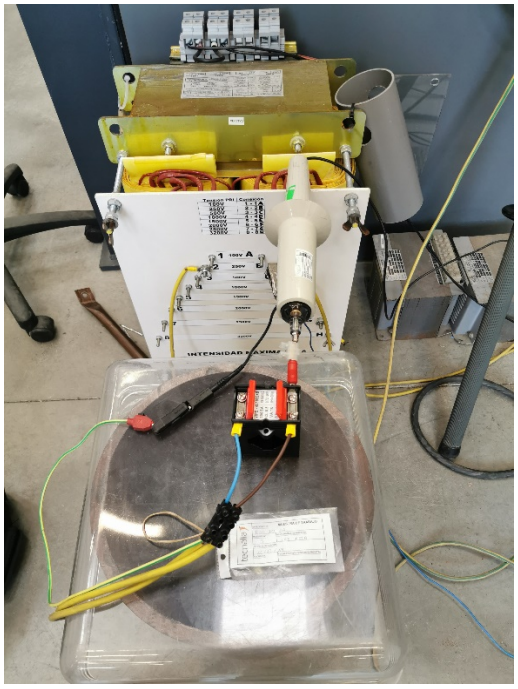
c) 300/5A, 10VA, Class 0.5



c) 300/5A CT
Photograph no. B26-20-AA-03E/01
Power-frequency voltage withstand tests on primary and secondary terminals



c) 300/5A CT
Photograph no. B26-20-AA-03E/02
Tests for accuracy



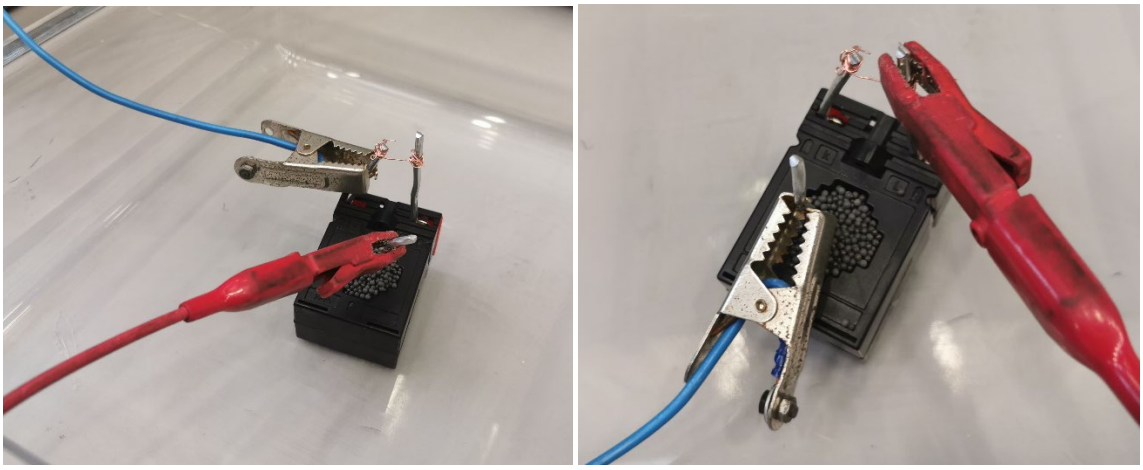
c) 300/5A CT
Photograph no. B26-20-AA-03E/03
Inter-turn overvoltage test

c) 300/5A CT
Photograph no. B26-20-AA-03E/04
Temperature-rise test

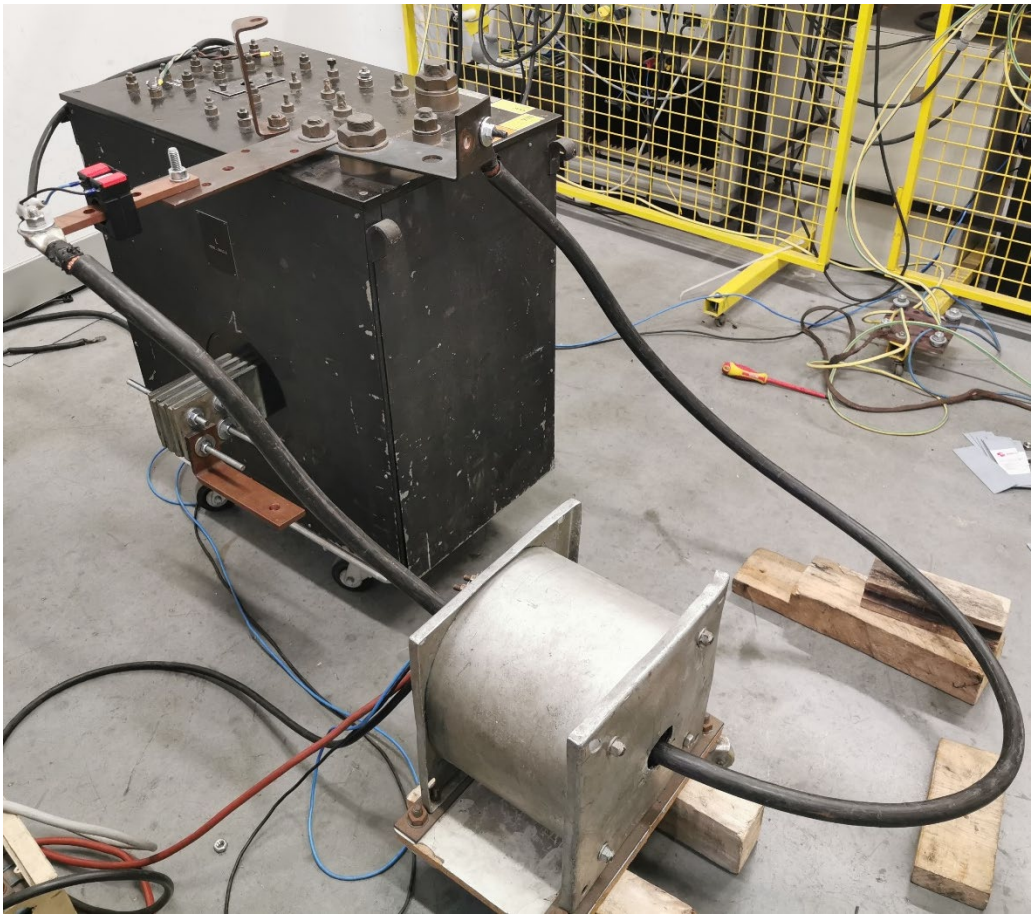
c) 300/5A CT
Photograph no. B26-20-AA-03E/05
Short-time current tests

c) 300/5A CT
Photograph no. B26-20-AA-03E/06
After short-time current tests

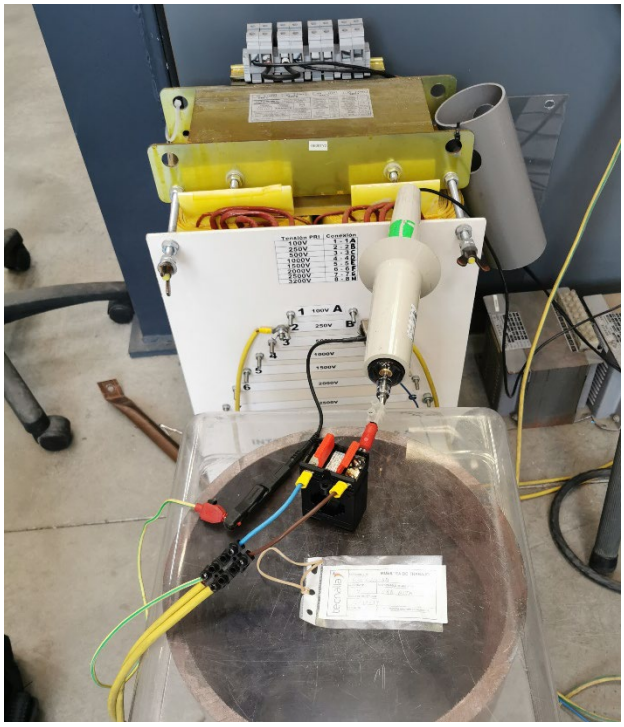
d) 400/5A, 5VA, Class 1



d) 400/5A CT
Photograph no. B26-20-AA-04E/01
Power-frequency voltage withstand tests on primary and secondary terminals

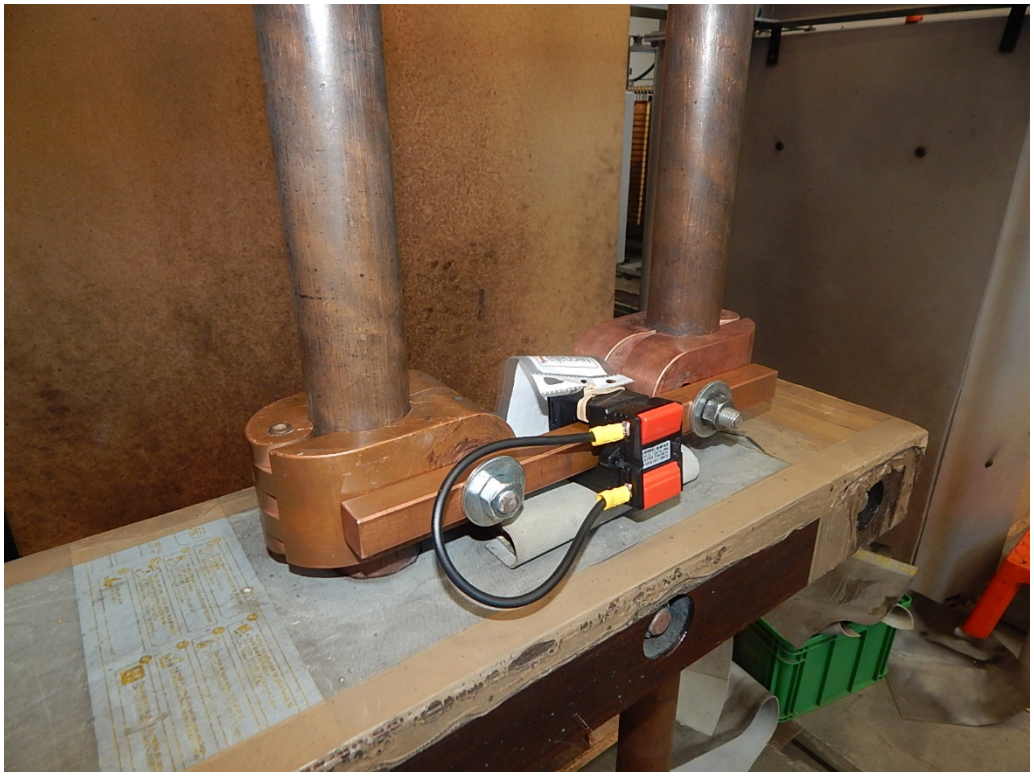


d) 400/5A CT
Photograph no. B26-20-AA-04E/02
Tests for accuracy



d) 400/5A CT
Photograph no. B26-20-AA-04E/03
Inter-turn overvoltage test

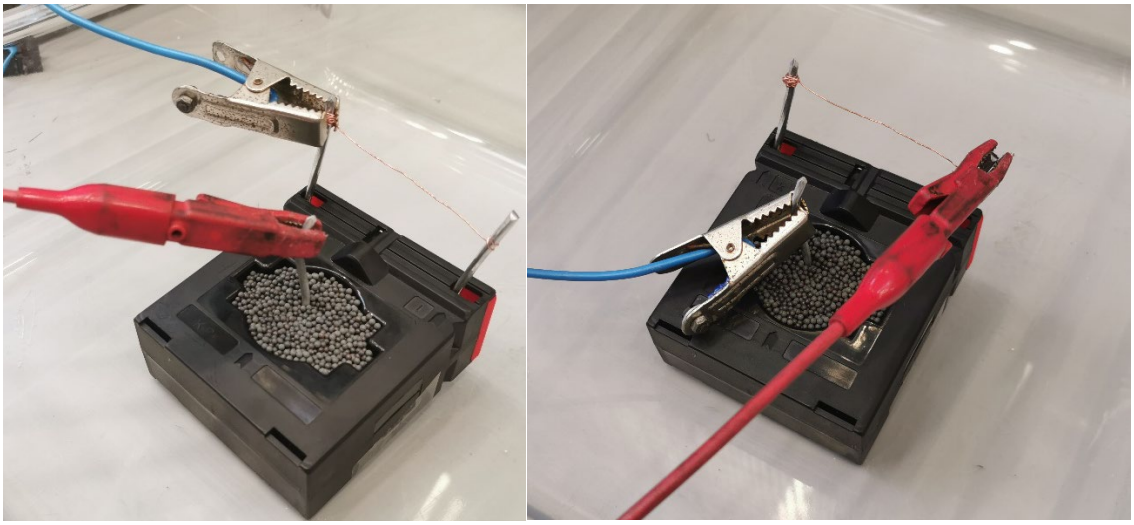
d) 400/5A CT
Photograph no. B26-20-AA-04E/04
Temperature-rise test



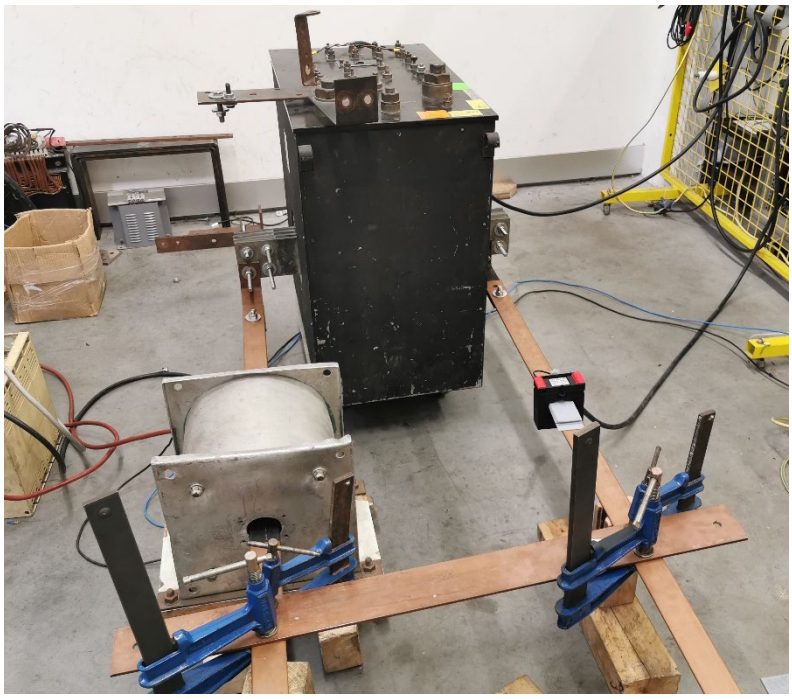
d) 400/5A CT
Photograph no. B26-20-AA-04E/05
Short-time current tests

d) 400/5A CT
Photograph no. B26-20-AA-04E/06
After short-time current tests

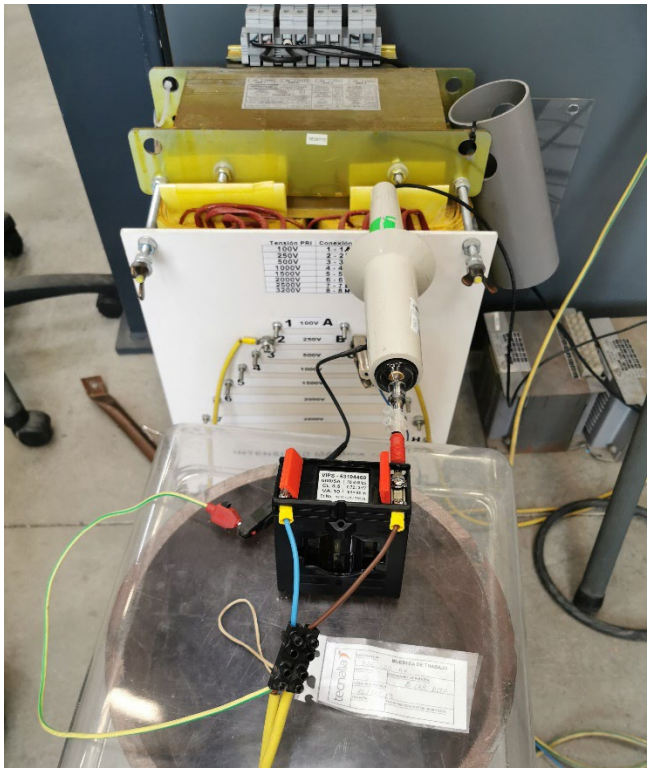
e) 600/5A, 10VA, Class 0.5



e) 600/5A CT
Photograph no. B26-20-AA-05E/01
Power-frequency voltage withstand tests on primary and secondary terminals



e) 600/5A CT
Photograph no. B26-20-AA-05E/02
Tests for accuracy



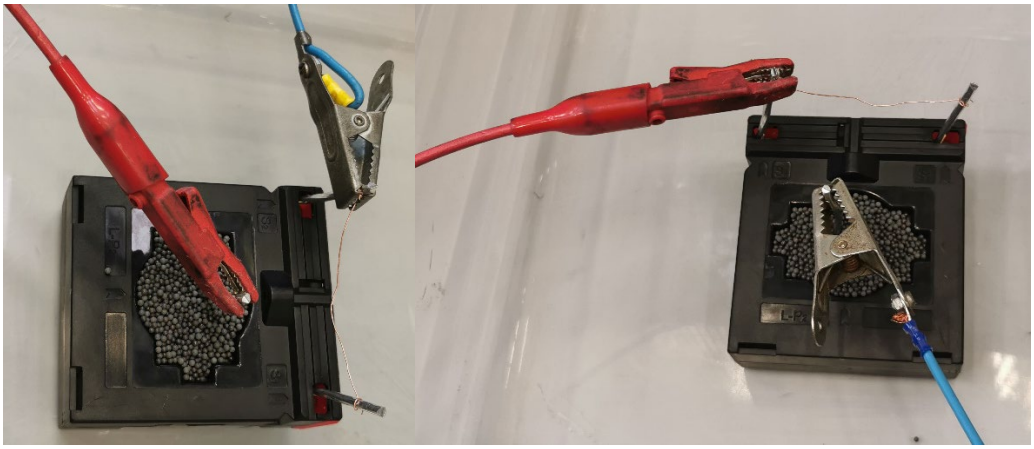
e) 600/5A CT
Photograph no. B26-20-AA-05E/03
Inter-turn overvoltage test

e) 600/5A CT
Photograph no. B26-20-AA-05E/04
Temperature-rise test

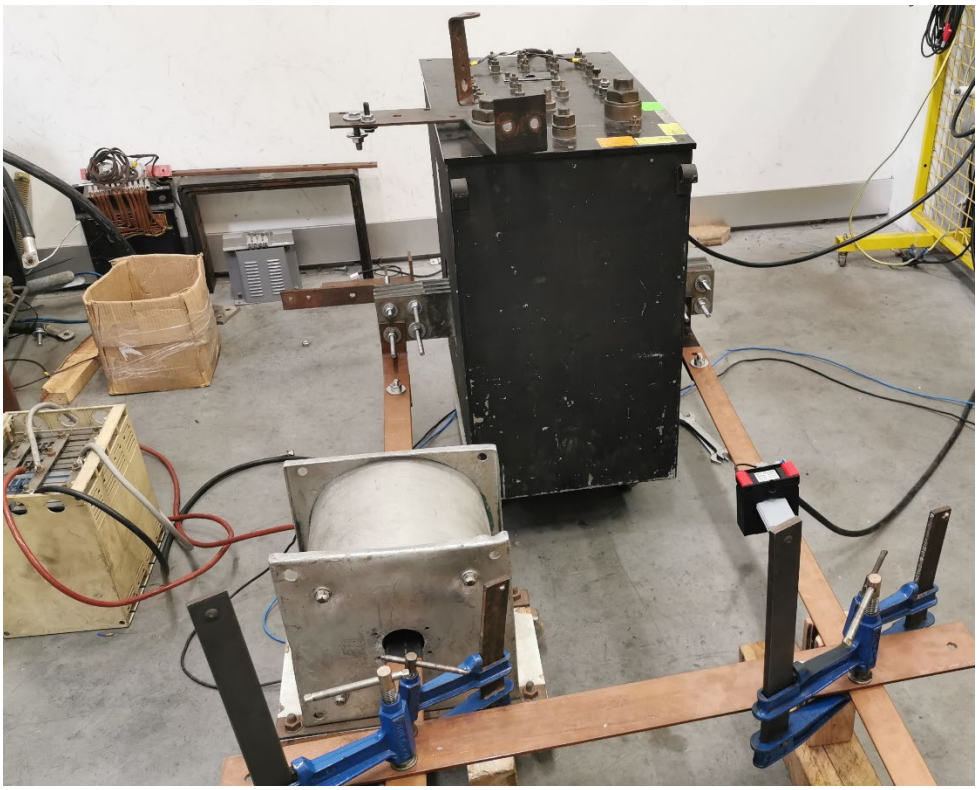
e) 600/5A CT
Photograph no. B26-20-AA-05E/05
Short-time current tests

e) 600/5A CT
Photograph no. B26-20-AA-05E/06
After short-time current tests

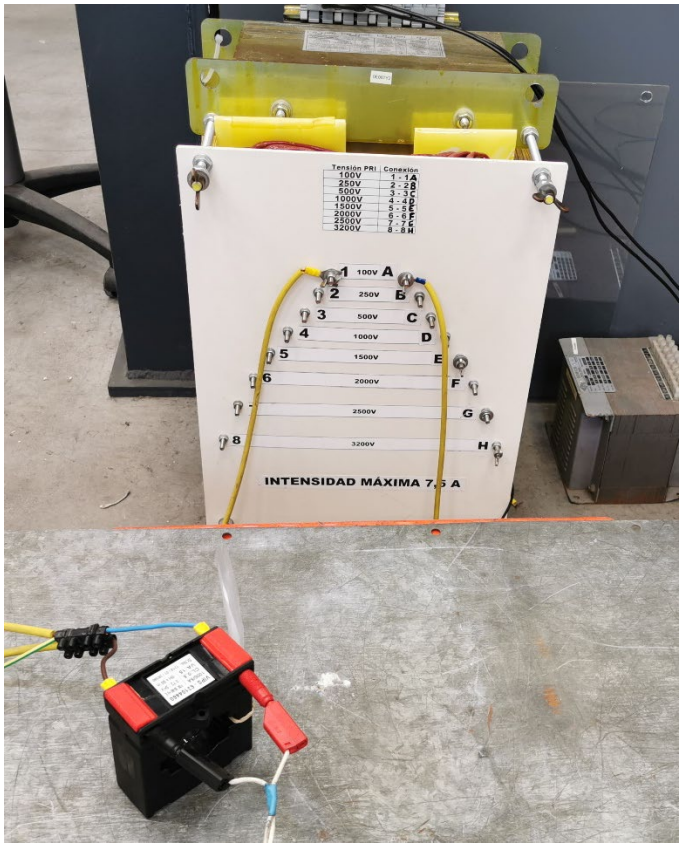
f) 1000/5A, 15VA, Class 0.5



f) 1000/5A CT
Photograph no. B26-20-AA-06E/01
Power-frequency voltage withstand tests on primary and secondary terminals



f) 1000/5A CT
Photograph no. B26-20-AA-06E/02
Tests for accuracy



f) 1000/5A CT
Photograph no. B26-20-AA-06E/03
Inter-turn overvoltage test

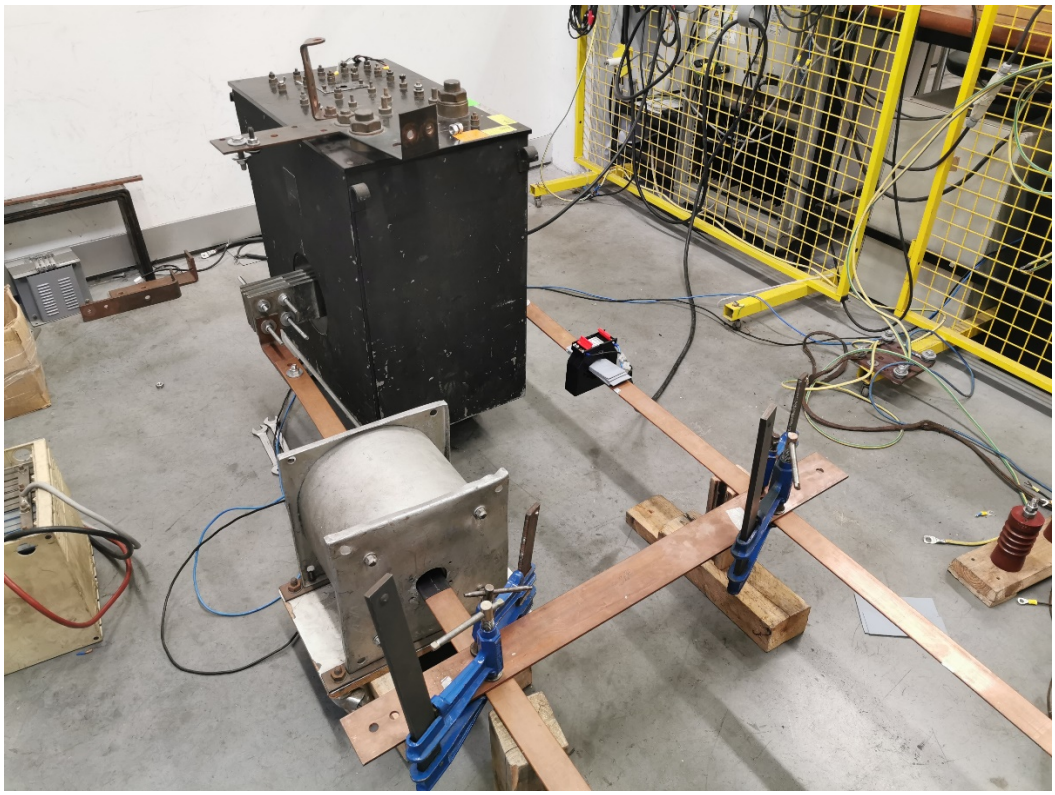
f) 1000/5A CT
Photograph no. B26-20-AA-06E/04
Temperature-rise test

f) 1000/5A CT
Photograph no. B26-20-AA-06E/05
Short-time current tests

f) 1000/5A CT
Photograph no. B26-20-AA-06E/06
After short-time current tests

g) 1600/5A, 15VA, Class 0.2S

g) 1600/5A CT
Photograph no. B26-20-AA-07E/01
Power-frequency voltage withstand tests on primary and secondary terminals



g) 1600/5A CT
Photograph no. B26-20-AA-07E/02
Tests for accuracy

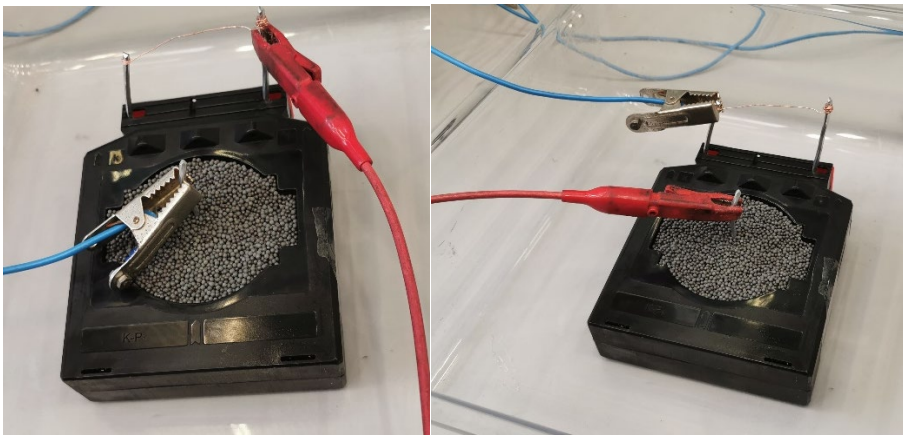
g) 1600/5A CT
Photograph no. B26-20-AA-07E/03
Inter-turn overvoltage test

g) 1600/5A CT
Photograph no. B26-20-AA-07/04
Temperature-rise test

g) 1600/5A CT
Photograph no. B26-20-AA-07E/05
Short-time current tests

g) 1600/5A CT
Photograph no. B26-20-AA-07E/06
After short-time current tests

h) 2500/5A, 15VA, Class 0.2S

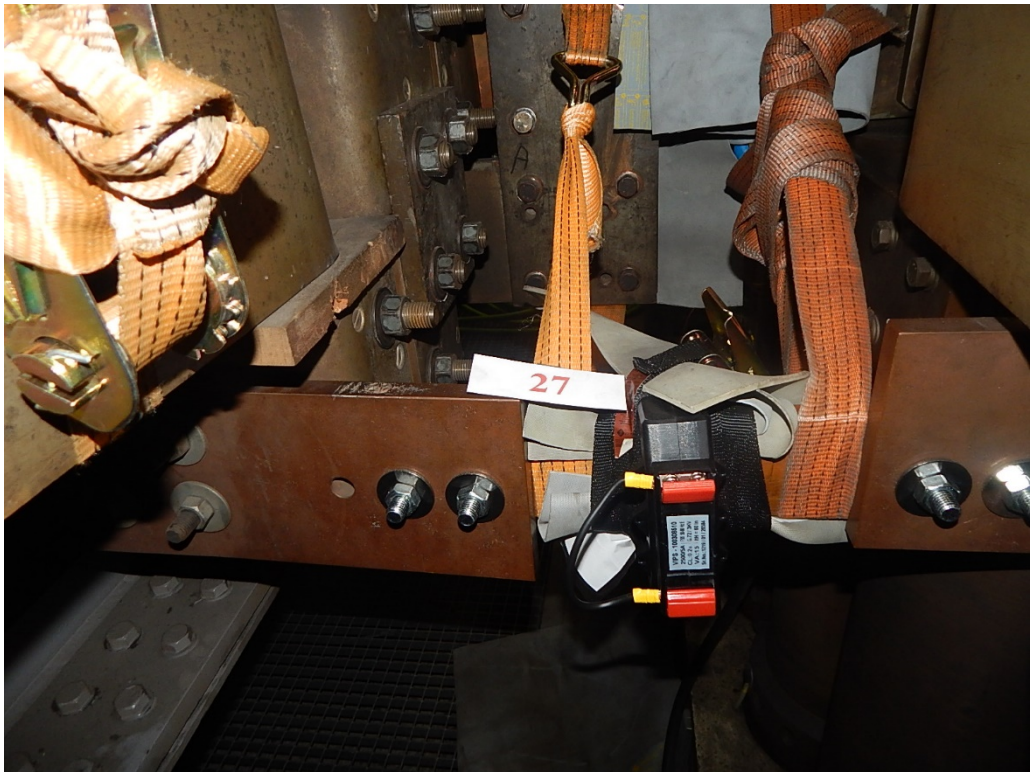


h) 2500/5A CT
Photograph no. B26-20-AA-08E/01
Power-frequency voltage withstand tests on primary and secondary terminals

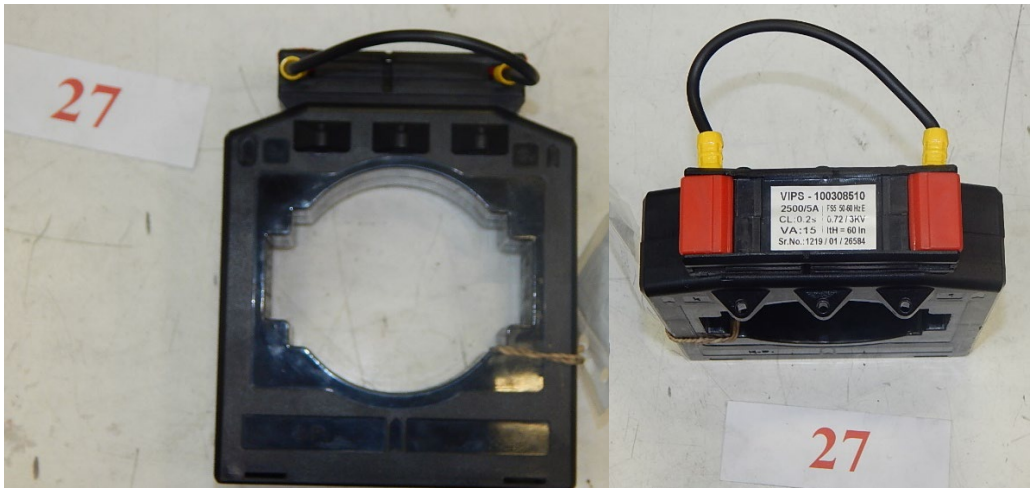
h) 2500/5A CT
Photograph no. B26-20-AA-08E/02
Tests for accuracy

h) 2500/5A CT
Photograph no. B26-20-AA-08E/03
Inter-turn overvoltage test

h) 2500/5A CT
Photograph no. B26-20-AA-08/04
Temperature-rise test

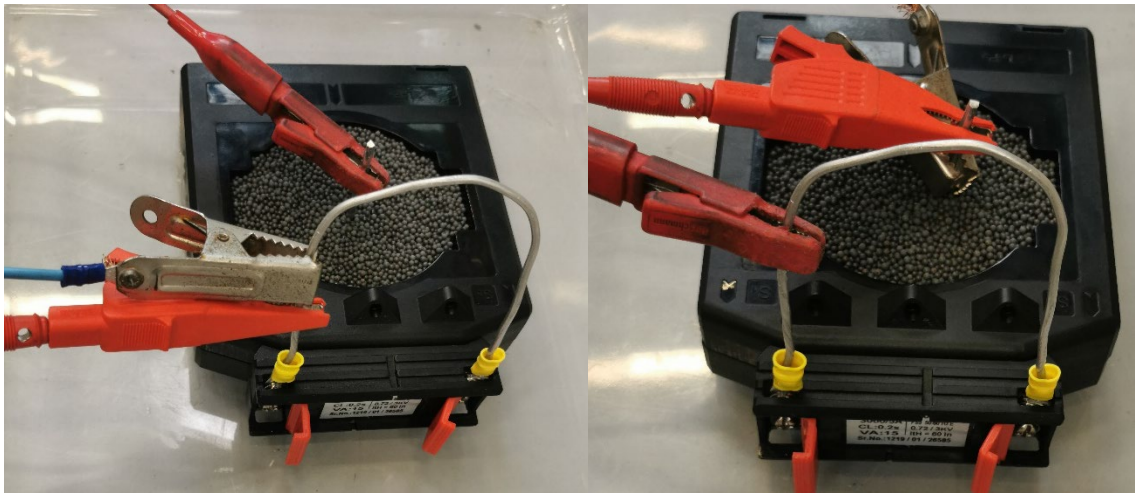


h) 2500/5A CT
Photograph no. B26-20-AA-08E/05
Short-time current tests



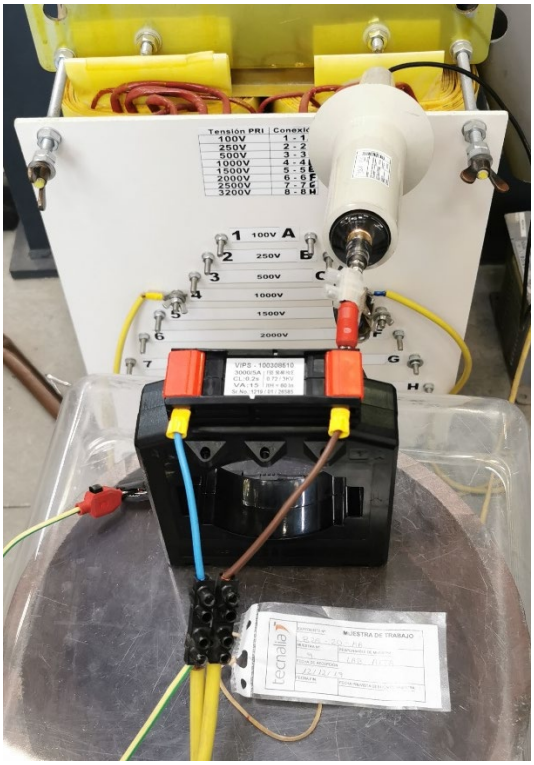
h) 2500/5A CT
Photograph no. B26-20-AA-08E/06
After short-time current tests

i) 3000/5A, 15VA, Class 0.2S



i) 3000/5A CT
Photograph no. B26-20-AA-09E/01
Power-frequency voltage withstand tests on primary and secondary terminals

i) 3000/5A CT
Photograph no. B26-20-AA-09E/02
Tests for accuracy



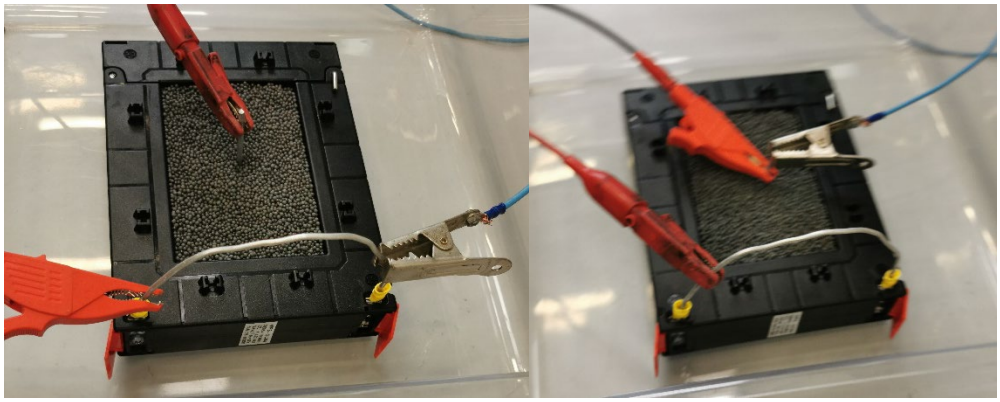
i) 3000/5A CT
Photograph no. B26-20-AA-09E/03
Inter-turn overvoltage test

i) 3000/5A CT
Photograph no. B26-20-AA-09E/04
Temperature-rise test

i) 3000/5A CT
Photograph no. B26-20-AA-09E/05
Short-time current tests

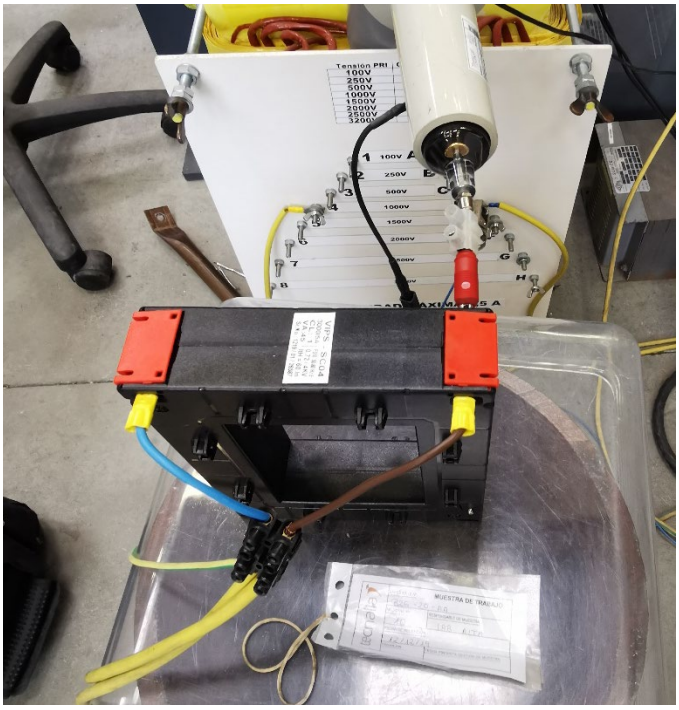
i) 3000/5A CT
Photograph no. B26-20-AA-09E/06
After short-time current tests

j) 3000/5A, 45VA, Class 1



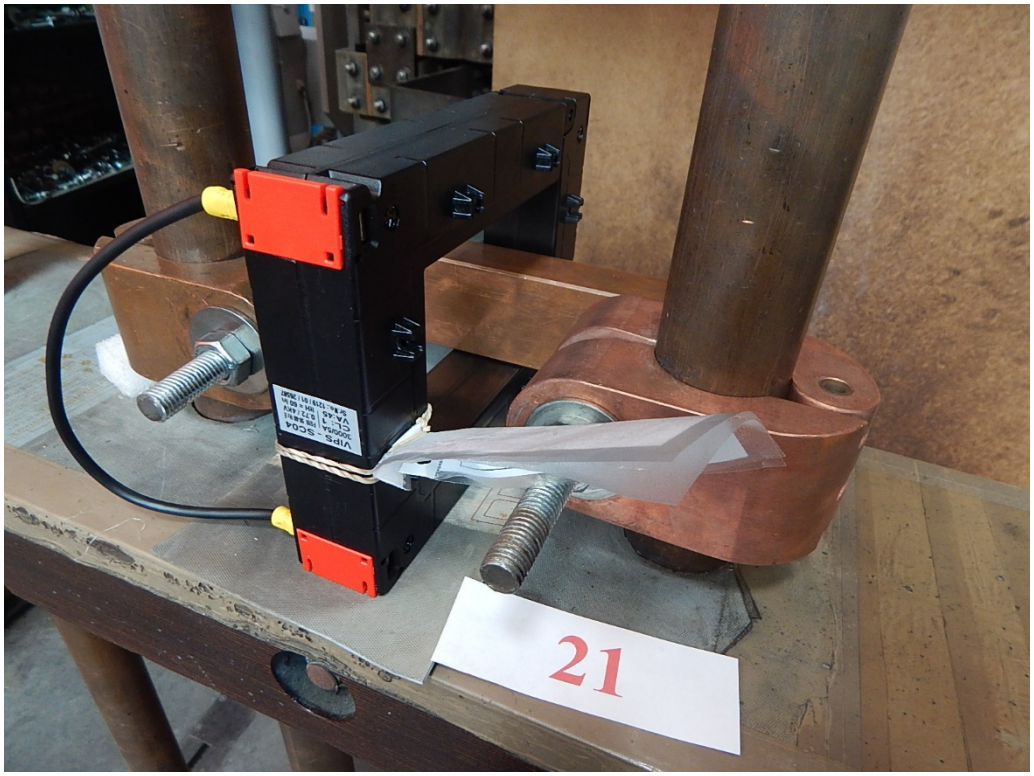
j) 3000/5A CT
Photograph no. B26-20-AA-10E/01
Power-frequency voltage withstand tests on primary and secondary terminals

j) 3000/5A CT
Photograph no. B26-20-AA-10E/02
Tests for accuracy

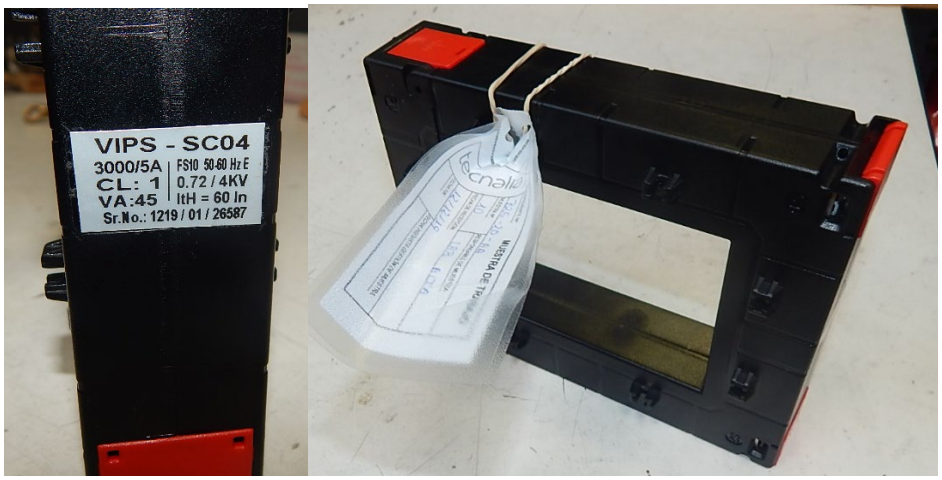


j) 3000/5A CT
Photograph no. B26-20-AA-10E/03
Inter-turn overvoltage test

j) 3000/5A CT
Photograph no. B26-20-AA-10E/04
Temperature-rise test

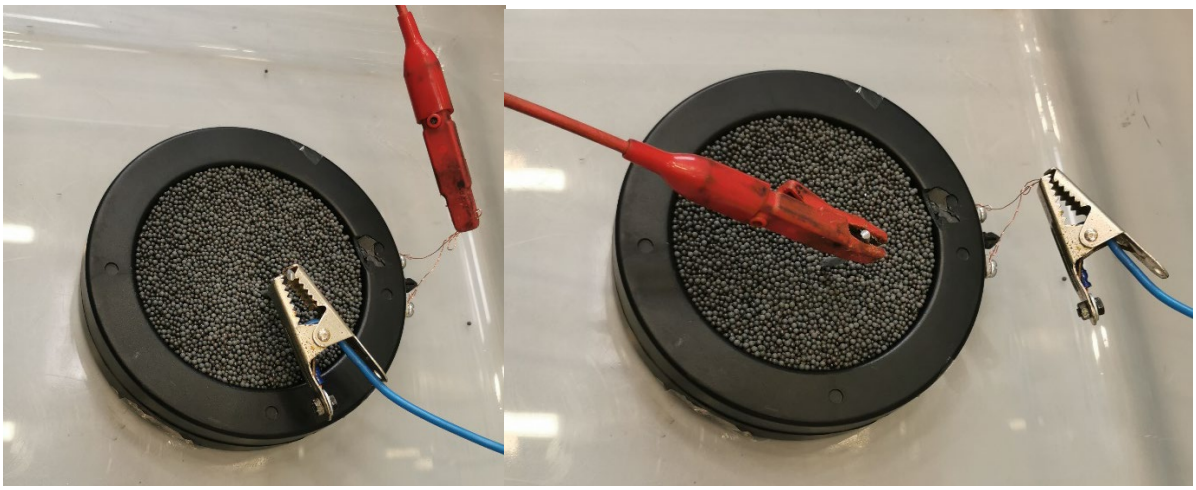


j) 3000/5A CT
Photograph no. B26-20-AA-10E/05
Short-time current tests



j) 3000/5A CT
Photograph no. B26-20-AA-10E/06
After short-time current tests

k) 3000/5A, 15VA, Class 0.2S (ring type)



k) 3000/5A CT
Photograph no. B26-20-AA-11E/01
Power-frequency voltage withstand tests on primary and secondary terminals

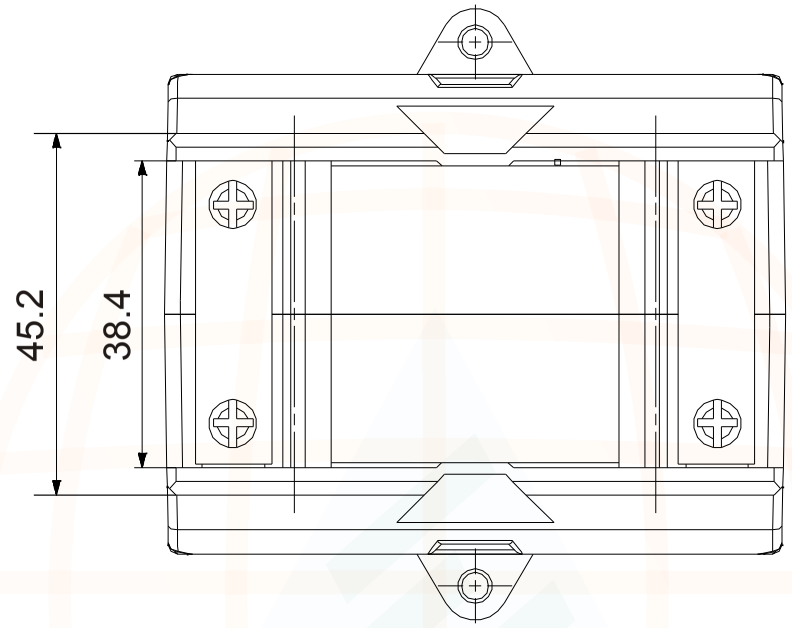
k) 3000/5A CT
Photograph no. B26-20-AA-11E/02
Tests for accuracy

k) 3000/5A CT
Photograph no. B26-20-AA-11E/03
Inter-turn overvoltage test

k) 3000/5A CT
Photograph no. B26-20-AA-11E/04
Temperature-rise test

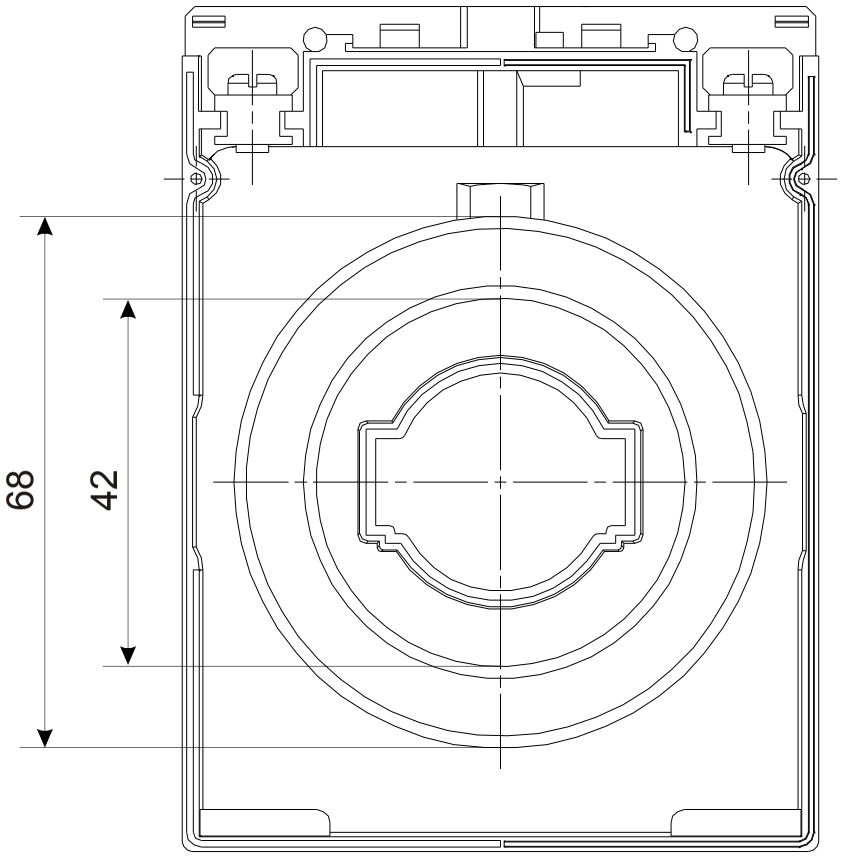
k) 3000/5A CT
Photograph no. B26-20-AA-11E/05
Short-time current tests

k) 3000/5A CT
Photograph no. B26-20-AA-11E/06
After short-time current tests

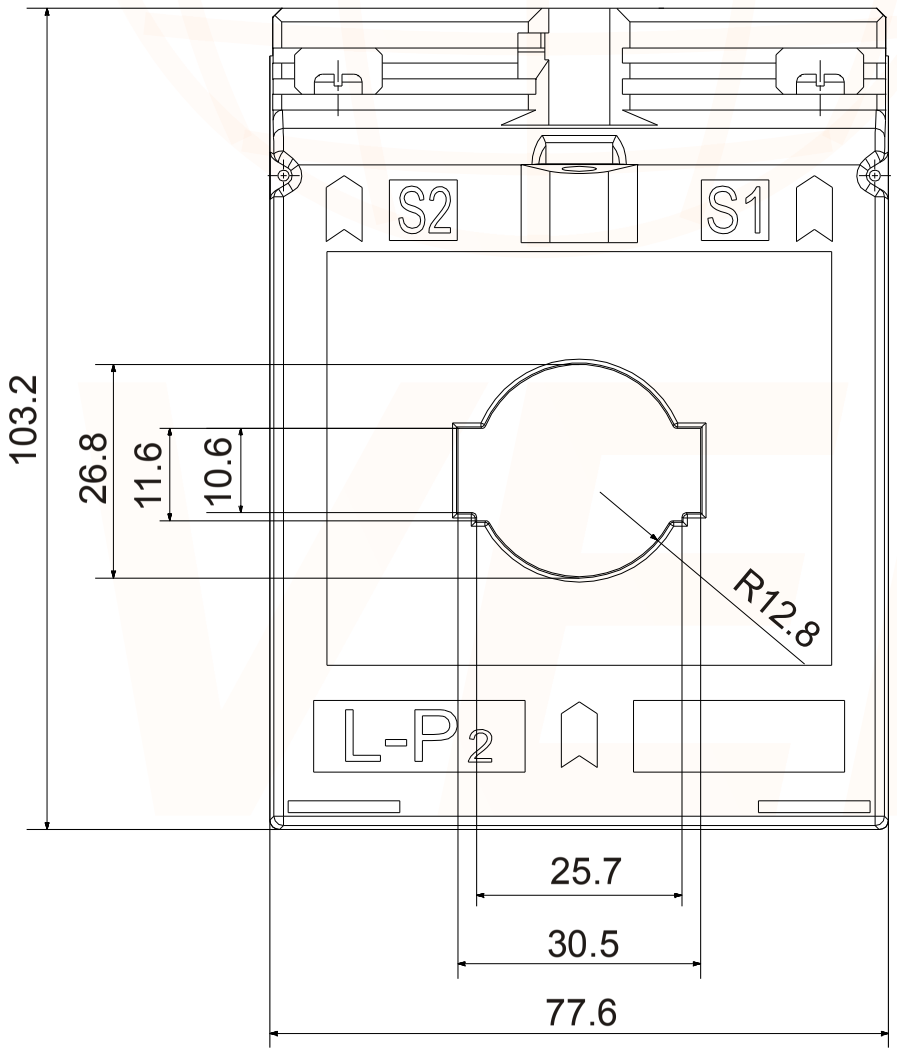


PLAN

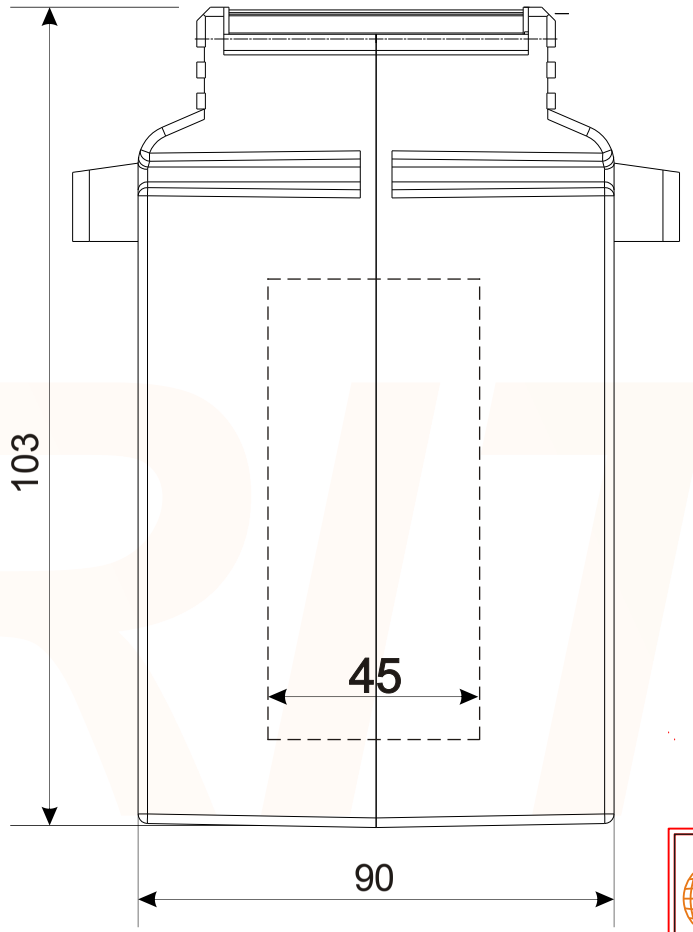
VERITEK	FS5 50 - 60 Hz E
100 / 5	0.72 / 4KV
VA - 5	Ith = 60In
CL - 0.5	Sr.No. : 1219/01/26574



SECTIONAL VIEW



ELEVATION

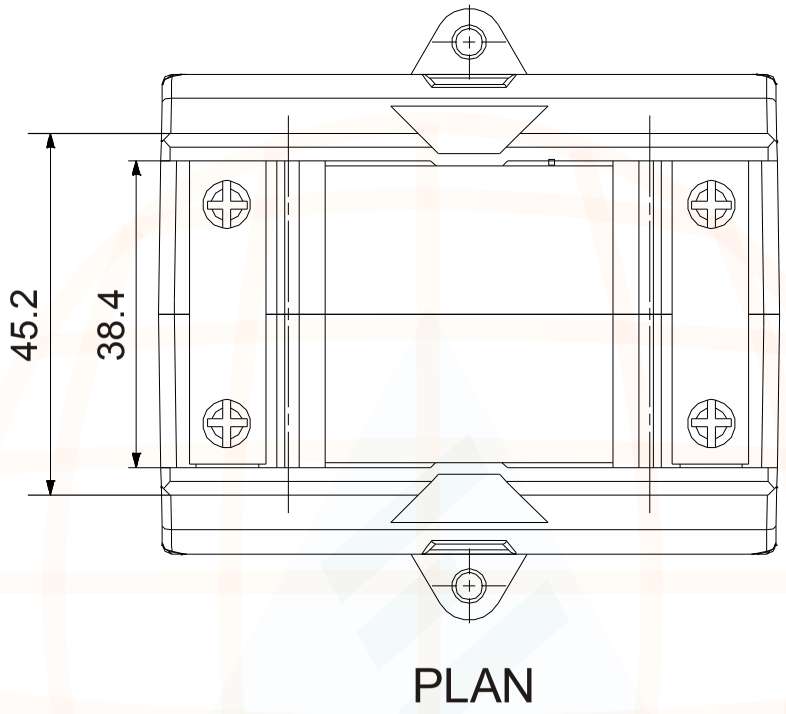


SIDE VIEW

SECONDARY	20 TURNS
WIRE	19 X 1 SWG
	25 X 1 SWG
MATERIAL	DUAL COAT COPPER WIRE

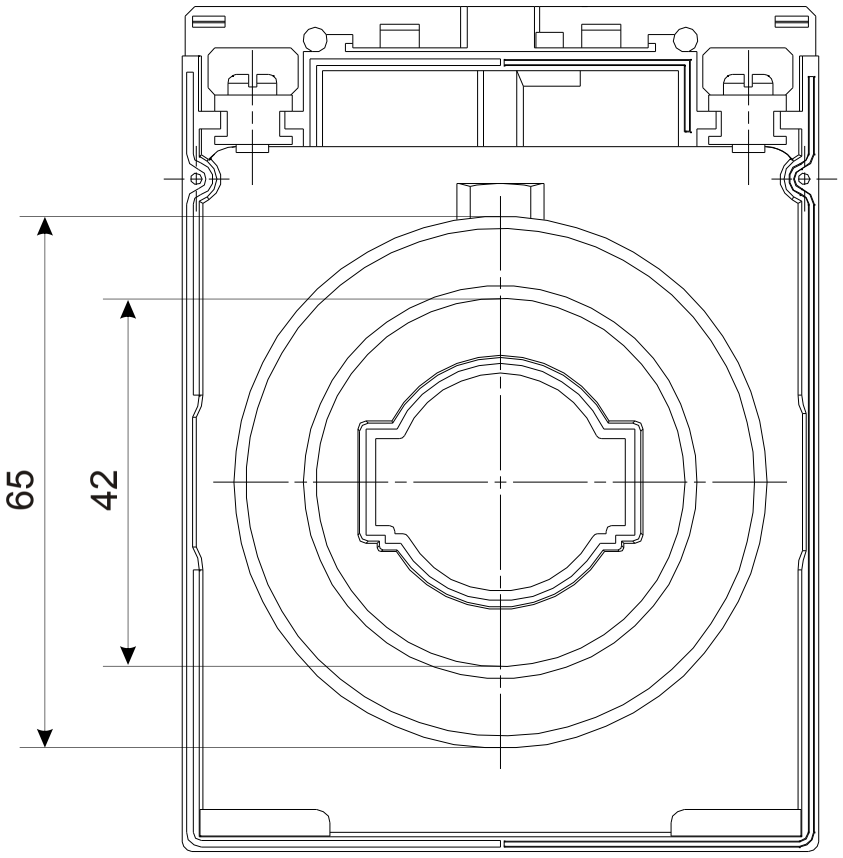
VERITEK ENGINEERING PVT. LTD.
Plot No. 222, EL-Electronic Zone,
MIDC, TTC Industrial Area,
Mahape, Navi Mumbai - 400701, India
Tel. : +91-74 0041 5391 / 92 / 93
Email : sales@veritekindia.com
Web : www.veritekindia.com

DRN.	R. A.	07.12.2019	TITLE : Current Transformer
SCALE	NTS		MODEL NO : VIPS 50102630
DRG. NO. :	VEPL / RA / VIPS 5010 - 100 / 5		R - 0

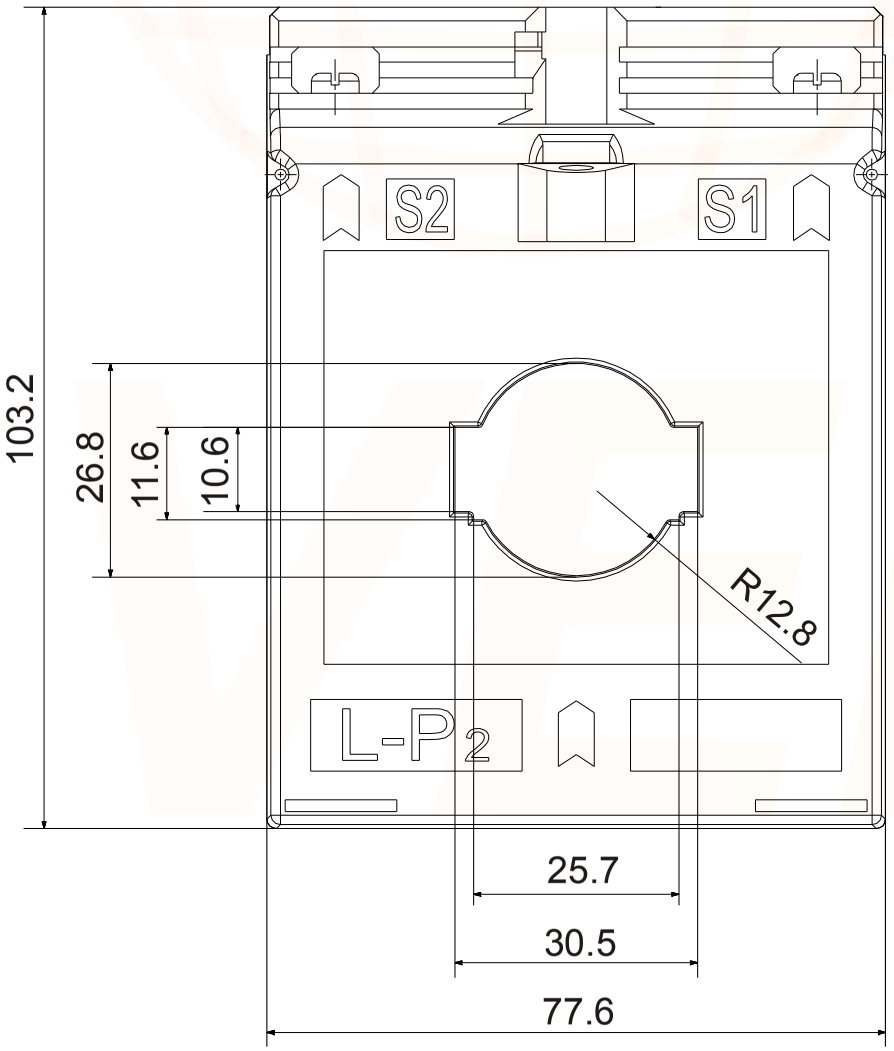


PLAN

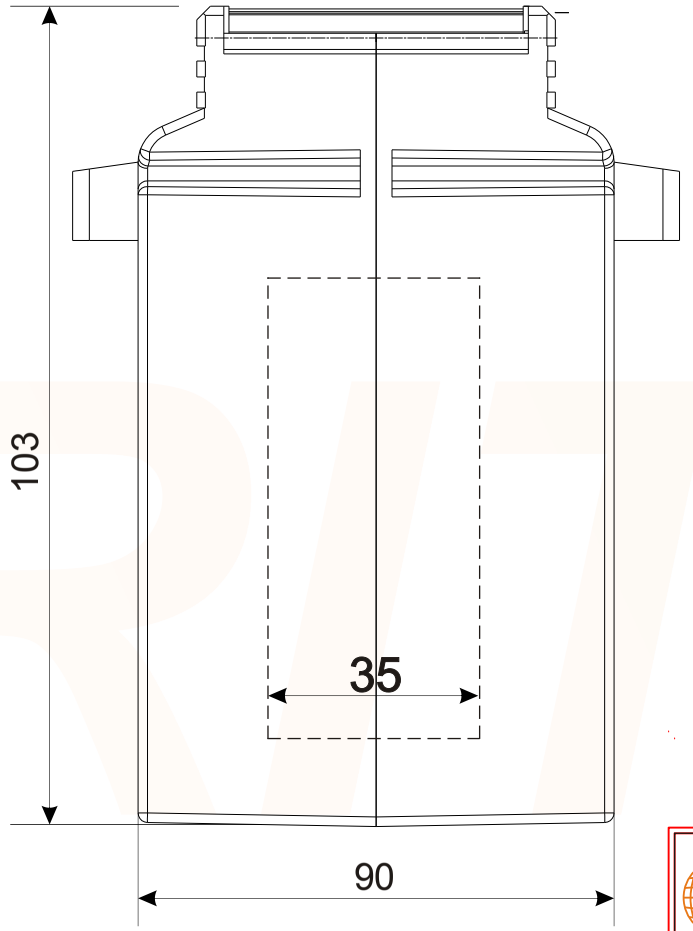
VERITEK	FS5 50 - 60 Hz E
200 / 5	0.72 / 4KV
VA - 10	Ith = 60In
CL - 0.5	Sr.No. : 1219/01/26575



SECTIONAL VIEW



ELEVATION



SIDE VIEW

SECONDARY	40 TURNS
WIRE	25 X 5 SWG
MATERIAL	DUAL COAT COPPER WIRE

VERITEK ENGINEERING PVT. LTD.
Plot No. 222, EL-Electronic Zone,
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Mahape, Navi Mumbai - 400701, India
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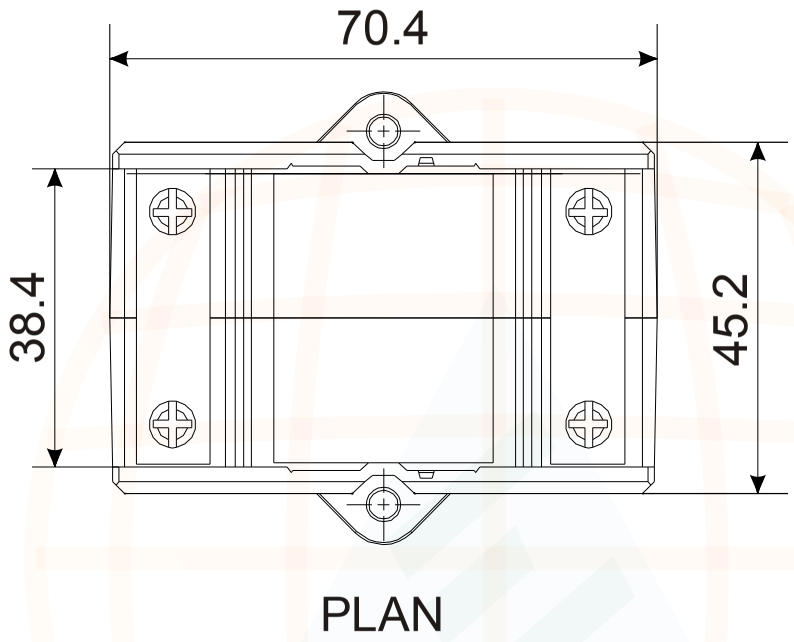
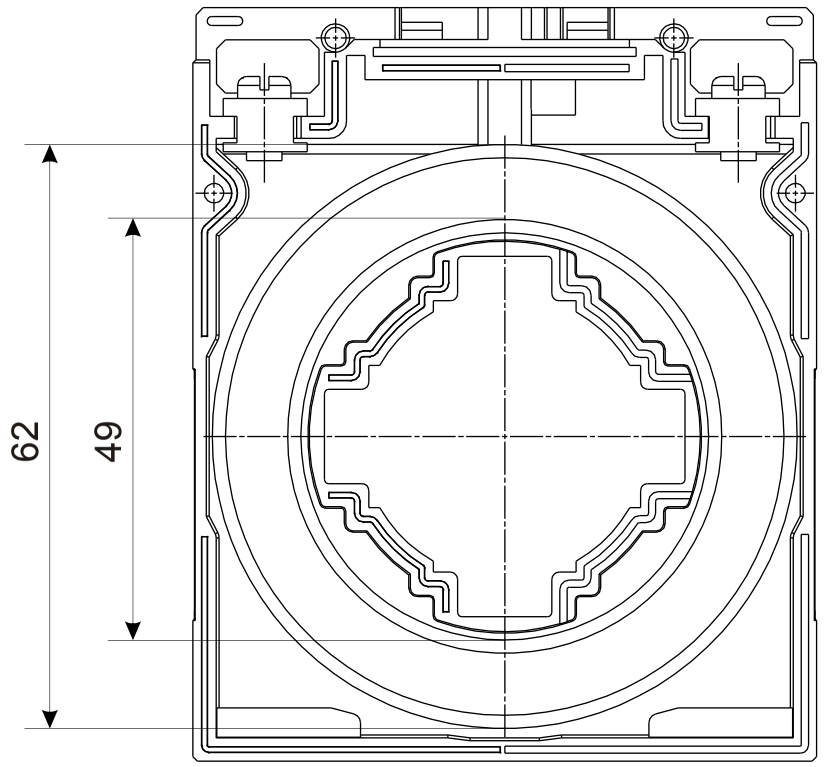
Email : sales@veritekindia.com
Web : www.veritekindia.com

DRN.	R. A.	07.12.2019	TITLE : Current Transformer
SCALE	NTS		MODEL NO : VIPS 50102630
DRG. NO. :	VEPL / RA / VIPS 5010 - 200 / 5		R - 0

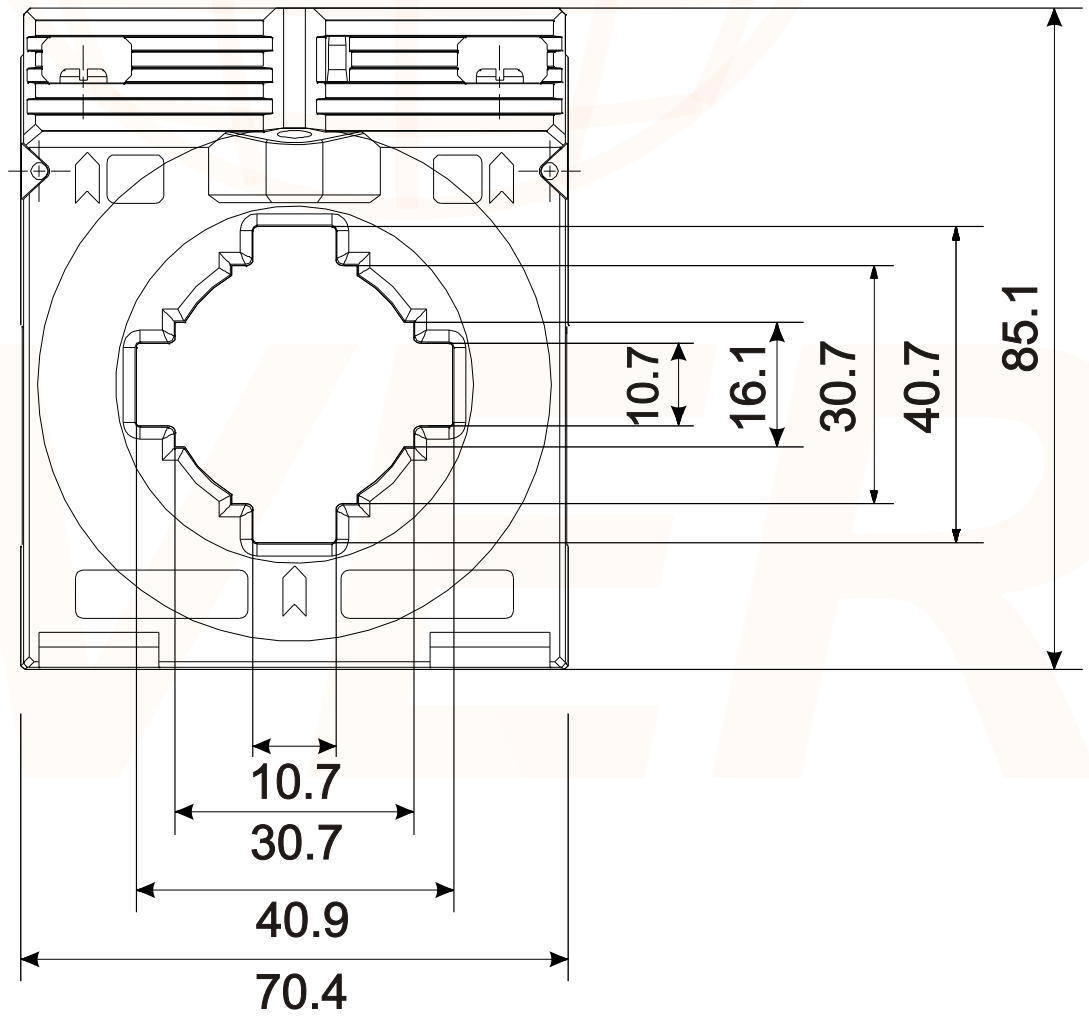


PLAN

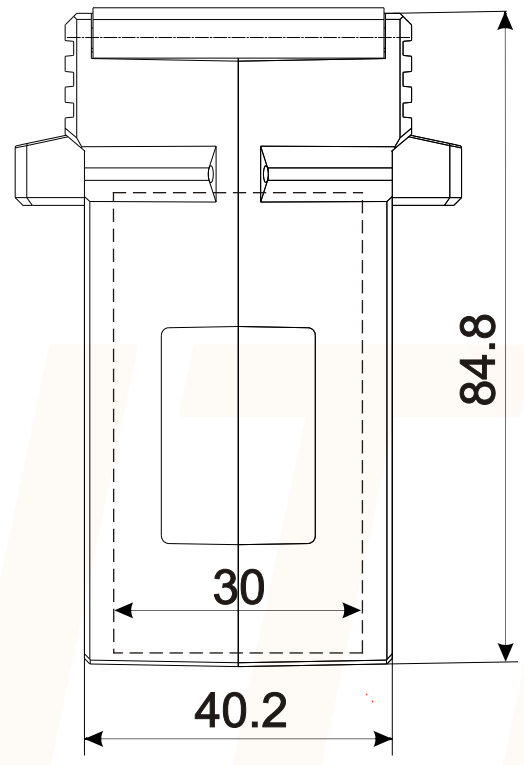
VERITEK	FS5 50 - 60 Hz E
300 / 5	0.72 / 4KV
VA - 10	Ith = 60In
CL - 0.5	Sr.No. : 1219/01/26576



SECTIONAL VIEW



ELEVATION



SIDE VIEW

SECONDARY	60 TURNS
WIRE	23 X 4 SWG
MATERIAL	DUAL COAT COPPER WIRE

VERITEK ENGINEERING PVT. LTD.
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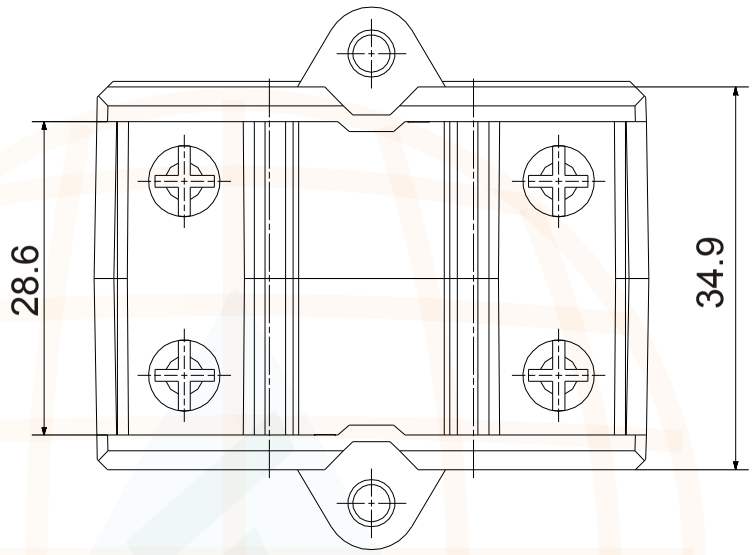
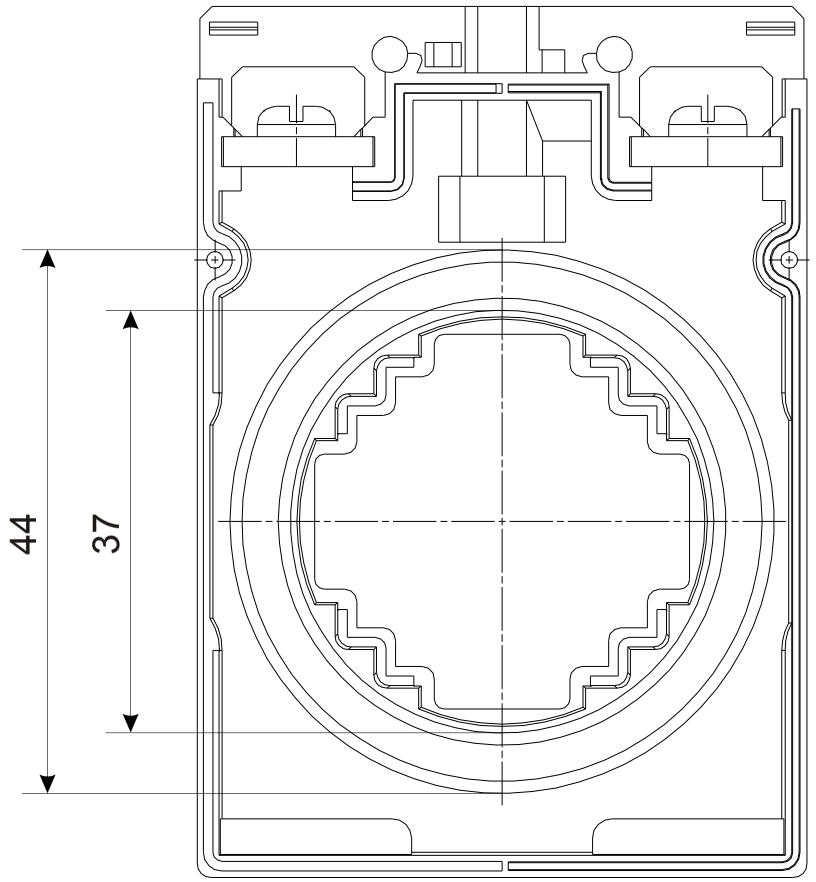
Email : sales@veritekindia.com
Web : www.veritekindia.com

DRN.	R. A.	07.12.2019	TITLE : Current Transformer
SCALE	NTS		MODEL NO : VIPS 40103240
DRG. NO. :	VEPL / RA / VIPS 4010 - 300 / 5		R - 0

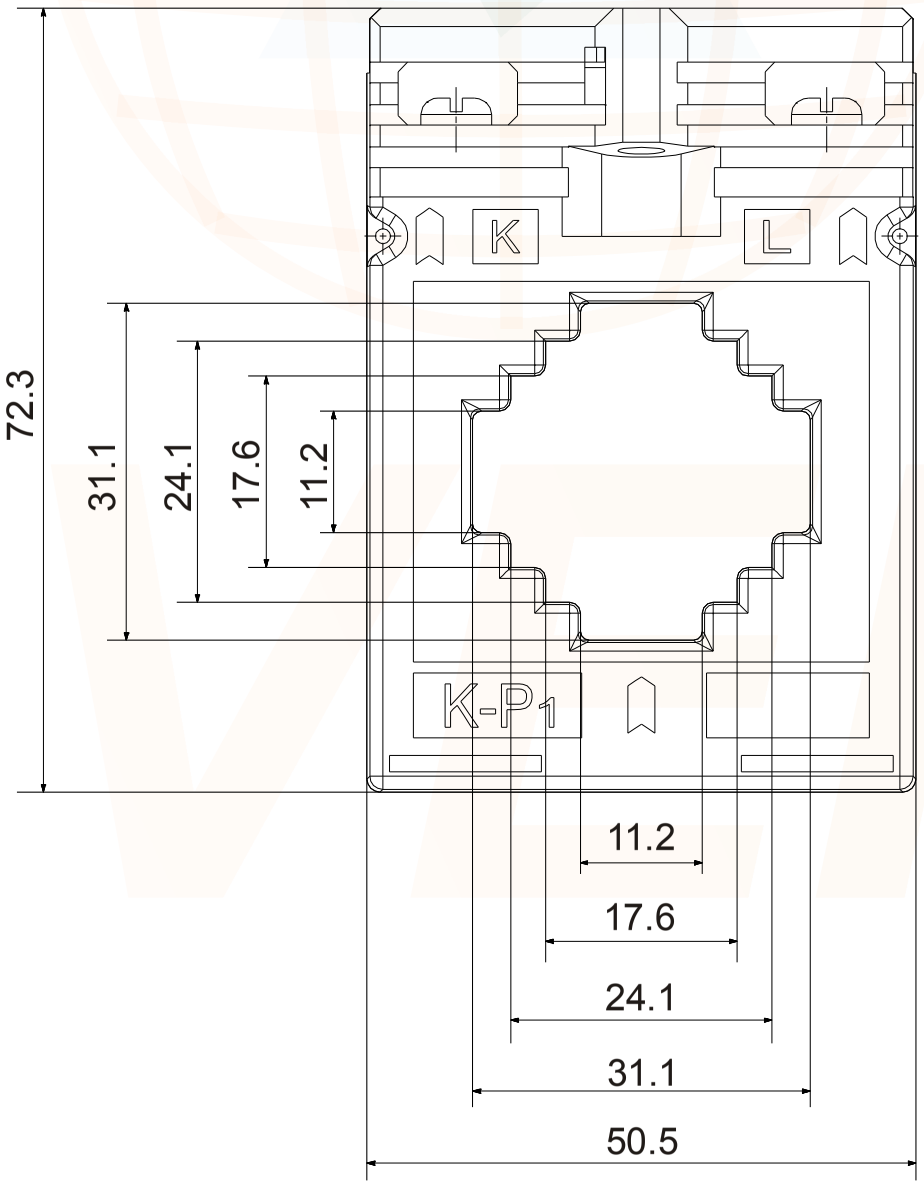


PLAN

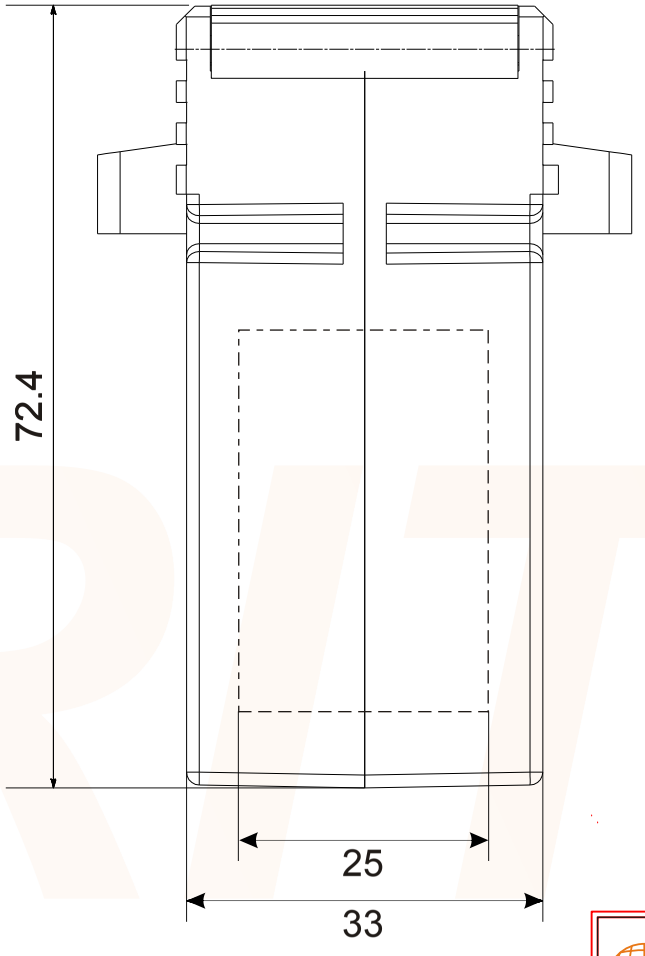
VERITEK	FS5 50 - 60 Hz E
400 / 5	0.72 / 4KV
VA - 5	Ith = 60In
CL - 1.0	Sr.No. : 1219/01/26572



SECTIONAL VIEW



ELEVATION



SIDE VIEW

SECONDARY	80 TURNS
WIRE	23 X 2 SWG
MATERIAL	DUAL COAT COPPER WIRE

Intertek Testing & Certification Ltd

VERITEK

VERITEK ENGINEERING PVT. LTD.

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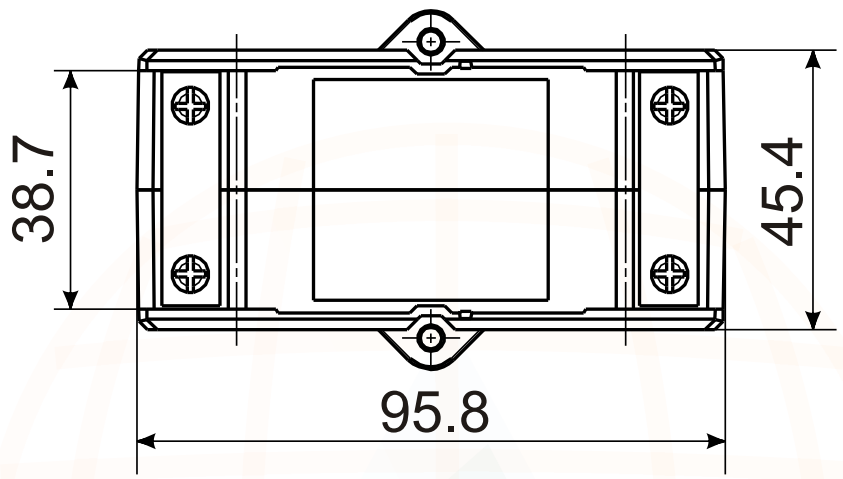
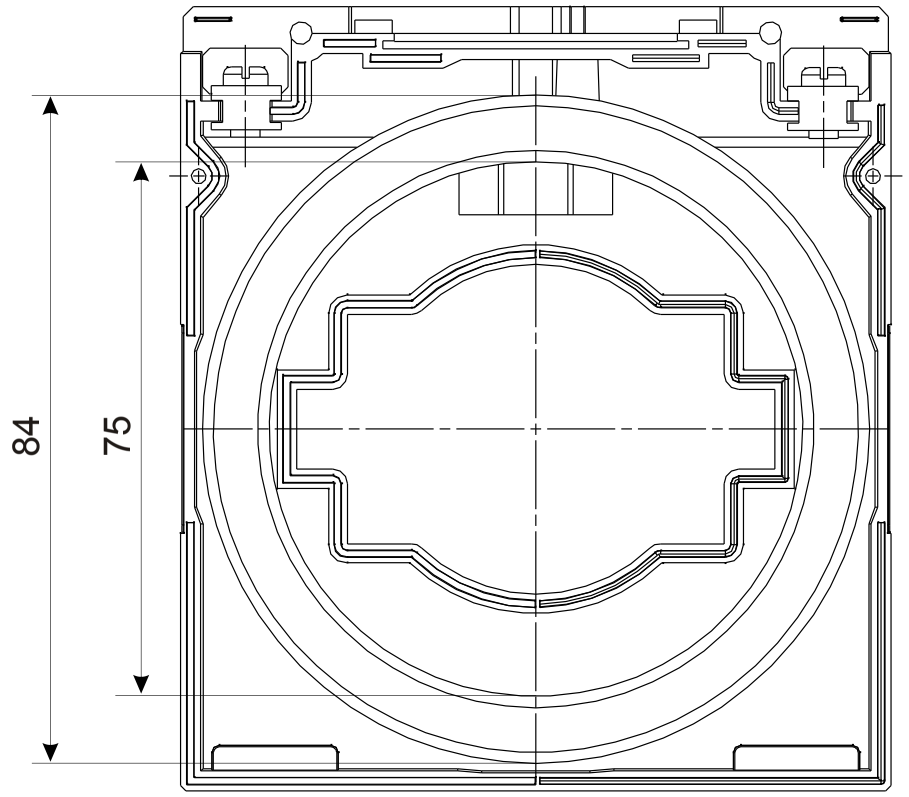
Mahape, Navi Mumbai - 400701, India
Tel. : +91-74 0041 5391 / 92 / 93
Email : sales@veritekindia.com
Web : www.veritekindia.com

DRN.	R. A.	07.12.2019	TITLE : Current Transformer
SCALE	NTS		MODEL NO : VIPS 30103010
DRG. NO. :	VEPL / RA / VIPS 3010 - 400/5		R - 0

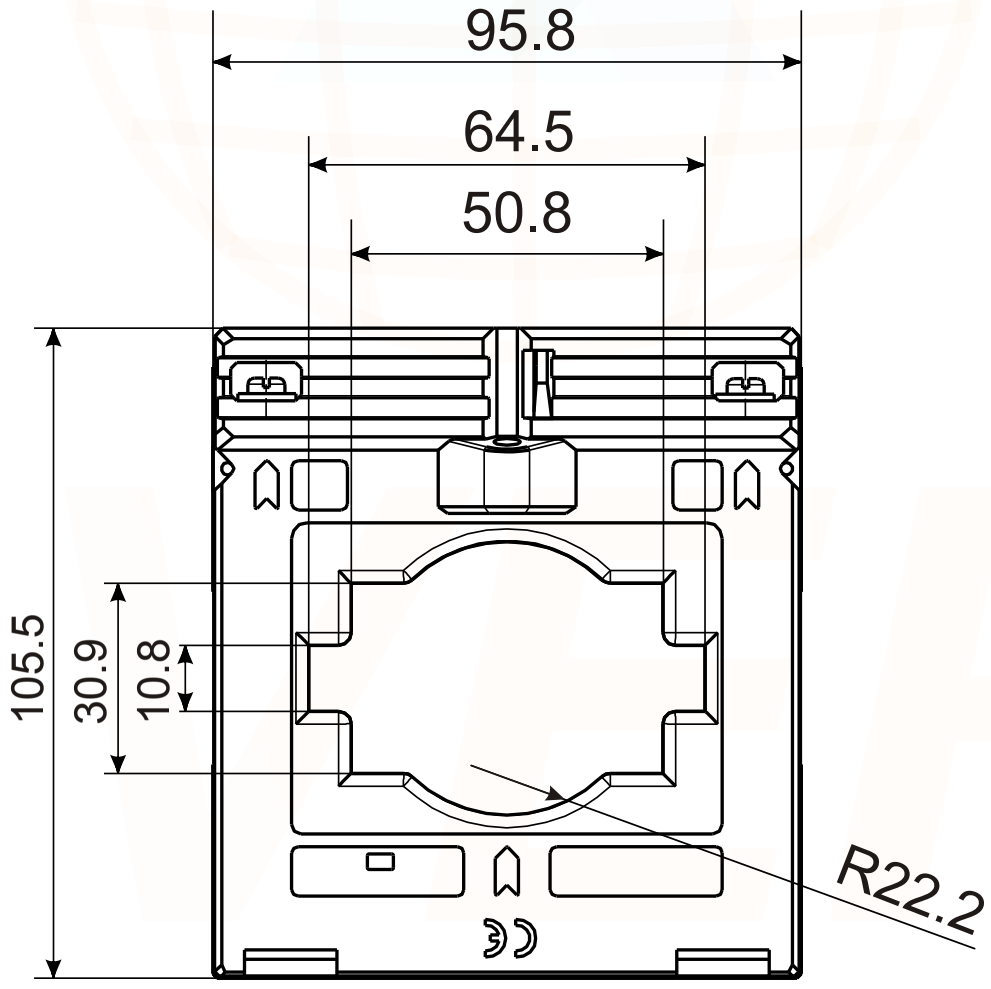


PLAN

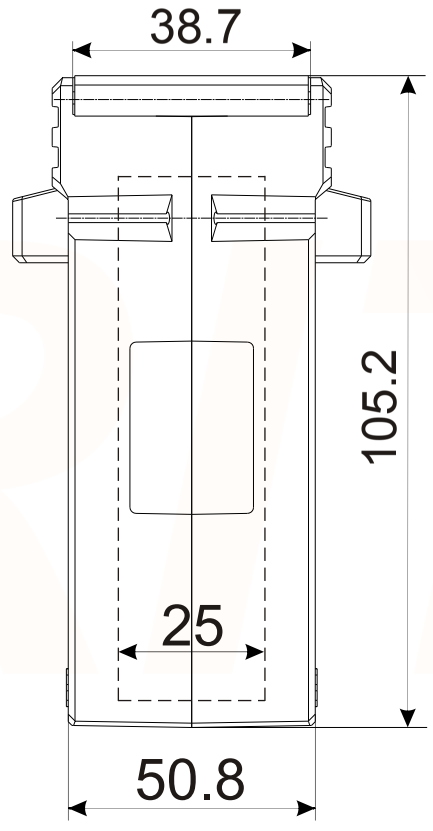
VERITEK	FS5 50 - 60 Hz E
600 / 5	0.72 / 4KV
VA - 10	Ith = 60In
CL - 0.5	Sr.No. : 1219/01/26579



SECTIONAL VIEW



ELEVATION



SIDE VIEW

SECONDARY	120 TURNS
WIRE	21 X 2 SWG
MATERIAL	DUAL COAT COPPER WIRE

VERITEK ENGINEERING PVT. LTD.
Plot No. 222, EL-Electronic Zone,
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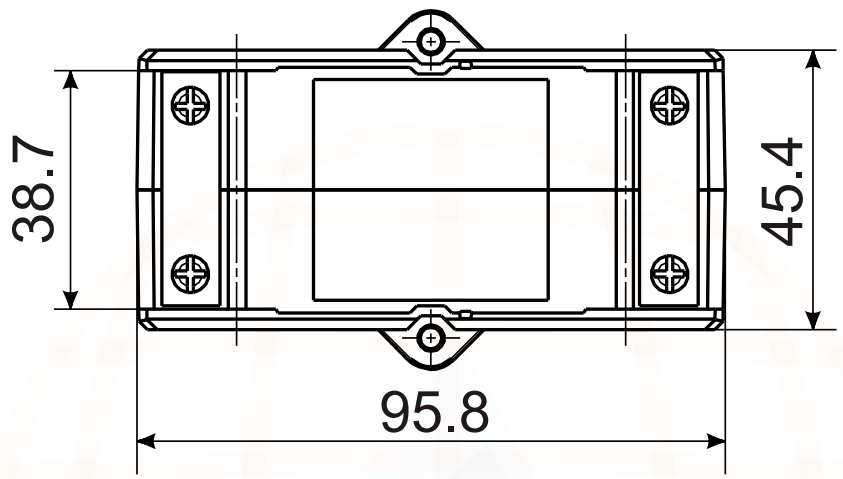
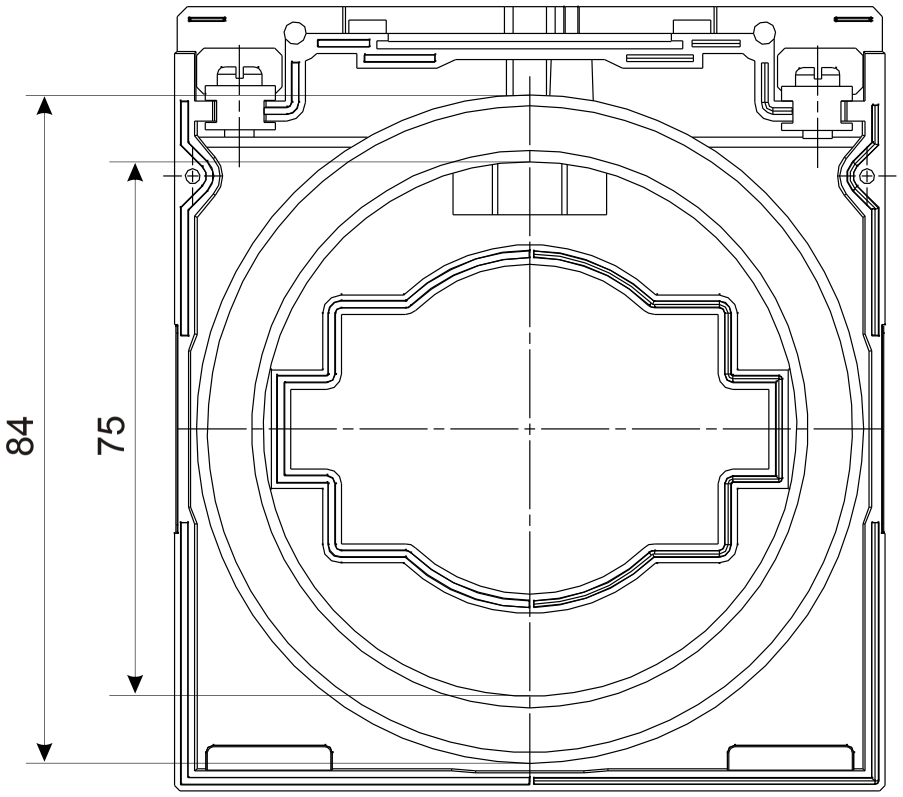
Mahape, Navi Mumbai - 400701, India
Tel. : +91-74 0041 5391 / 92 / 93
Email : sales@veritekindia.com
Web : www.veritekindia.com

DRN.	R. A.	07.12.2019	TITLE : Current Transformer
SCALE	NTS		MODEL NO : VIPS 63104460
DRG. NO. :	VEPL / RA / VIPS 6310 - 600 / 5		R - 0

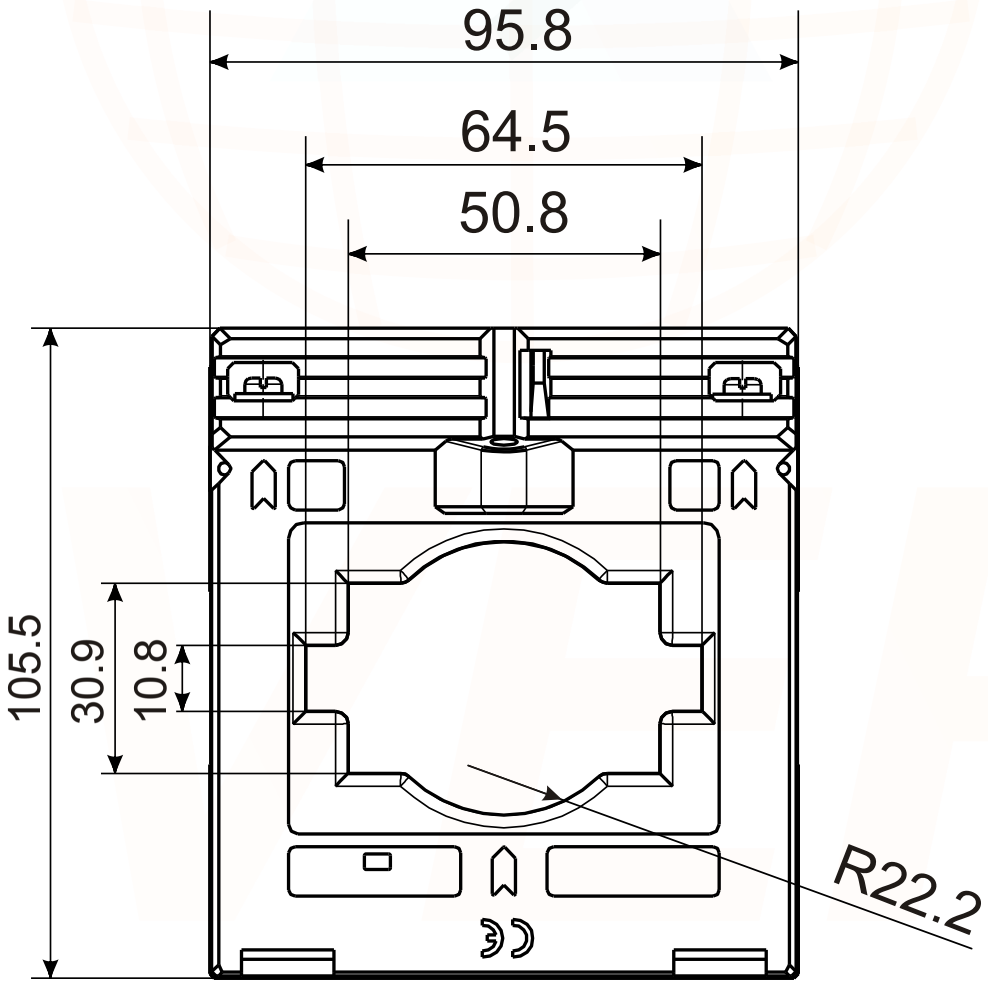


PLAN

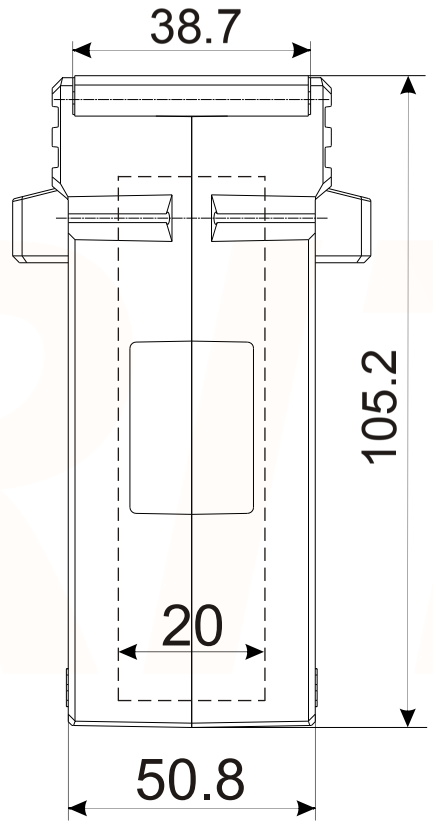
VERITEK	FS5 50 - 60 Hz E
1000 / 5	0.72 / 4KV
VA - 15	Ith = 60In
CL - 0.5	Sr.No. : 1219/01/26580



SECTIONAL VIEW



ELEVATION



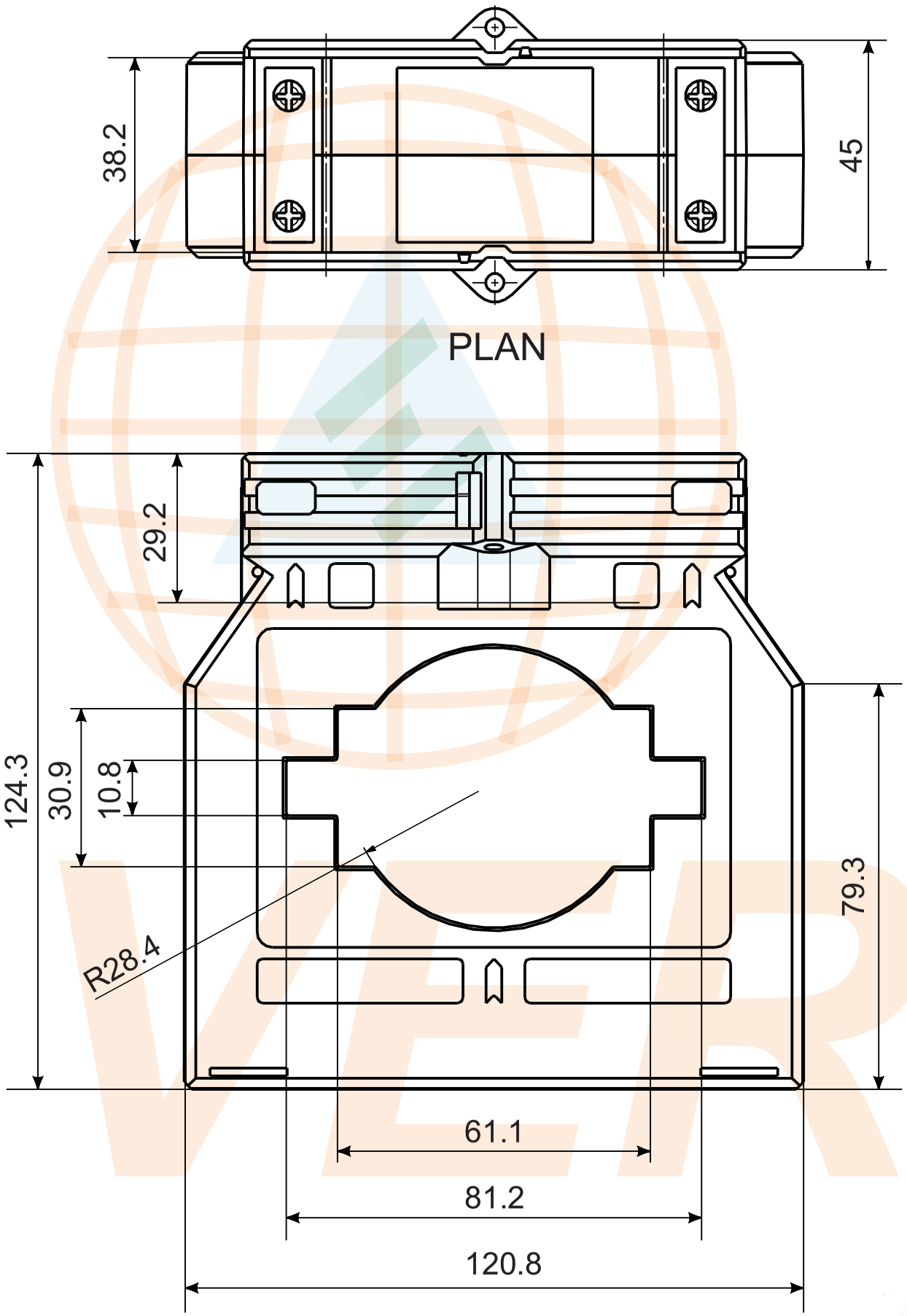
SIDE VIEW

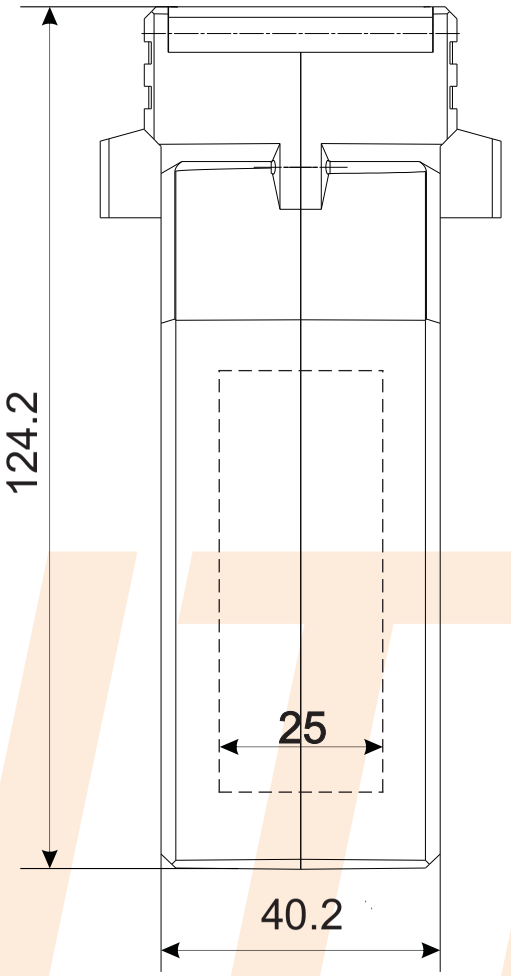
SECONDARY	200 TURNS
WIRE	21 X 2 SWG
MATERIAL	DUAL COAT COPPER WIRE

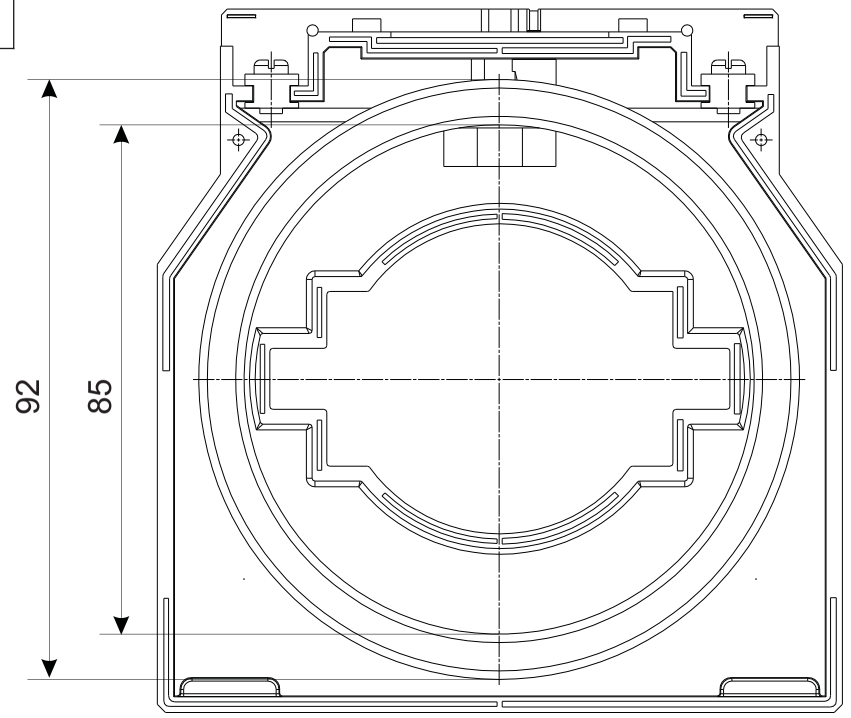
VERITEK ENGINEERING PVT. LTD.
Plot No. 222, EL-Electronic Zone,
MIDC, TTC Industrial Area,
Mahape, Navi Mumbai - 400701, India
Tel. : +91-74 0041 5391 / 92 / 93
Email : sales@veritekindia.com
Web : www.veritekindia.com

DRN.	R. A.	07.12.2019	TITLE : Current Transformer
SCALE	NTS		MODEL NO : VIPS 63104460
DRG. NO. :	VEPL / RA / VIPS 6310 - 1000 / 5		R - 0

VERITEK	FS5 50 - 60 Hz E
1600 / 5	0.72 / 4KV
VA - 15	Ith = 60In
CL - 0.2S	Sr.No. : 1219/01/26581







SECONDARY	320 TURNS
WIRE	19 X 1 SWG
	21 X 1 SWG
MATERIAL	DUAL COAT COPPER WIRE

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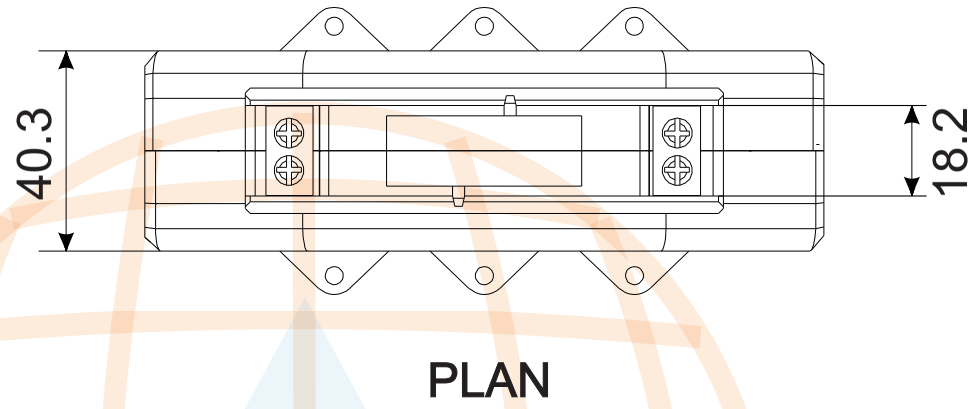
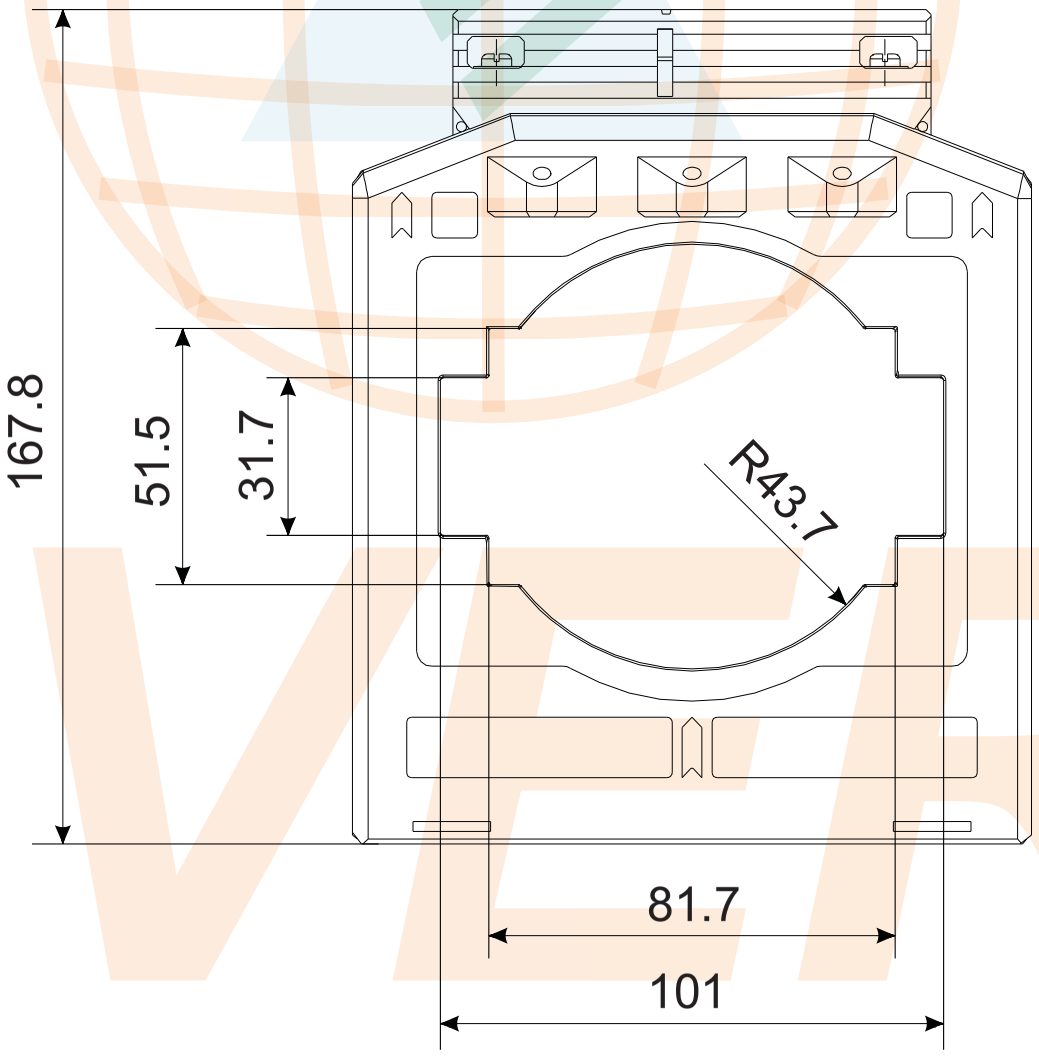
DRN.	R. A.	07.12.2019	TITLE : Current Transformer
SCALE	NTS		MODEL NO : VIPS 80105580
DRG. NO. :	VEPL / RA / VIPS 8010 - 1600 / 5		R - 0

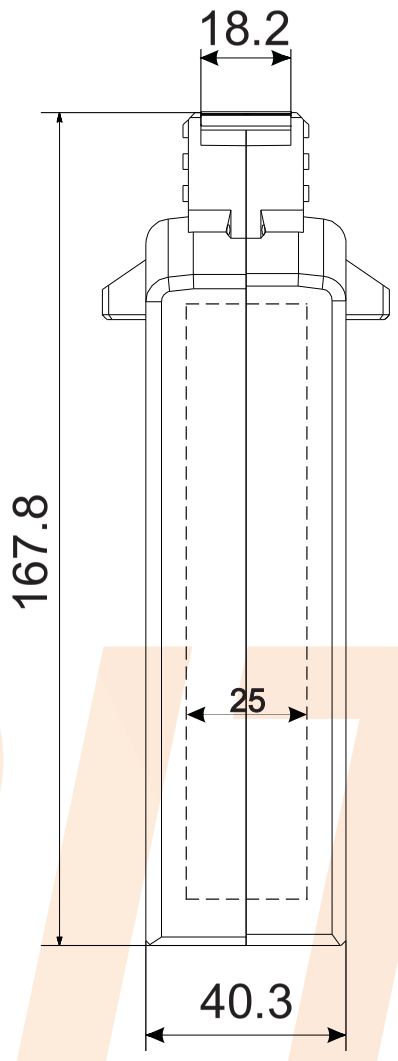


PLAN

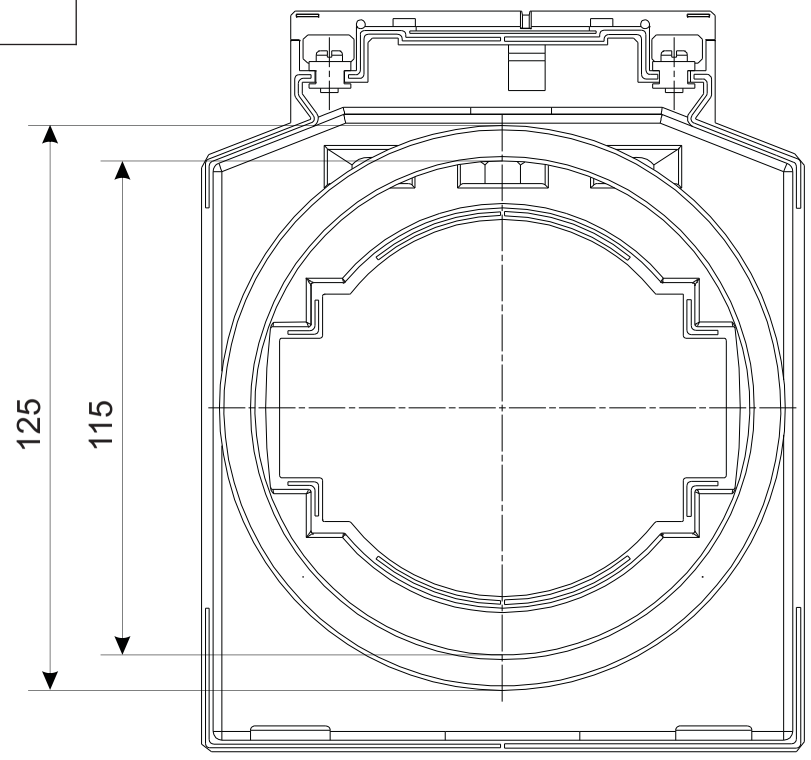
VERITEK	FS5 50 - 60 Hz E
2500 / 5	0.72 / 4KV
VA - 15	Ith = 60In
CL - 0.2S	Sr.No. : 1219/01/26584



ELEVATION



SIDE VIEW



SECTIONAL VIEW

SECONDARY	500 TURNS
WIRE	19 X 1 SWG
	21 X 1 SWG
MATERIAL	DUAL COAT COPPER WIRE

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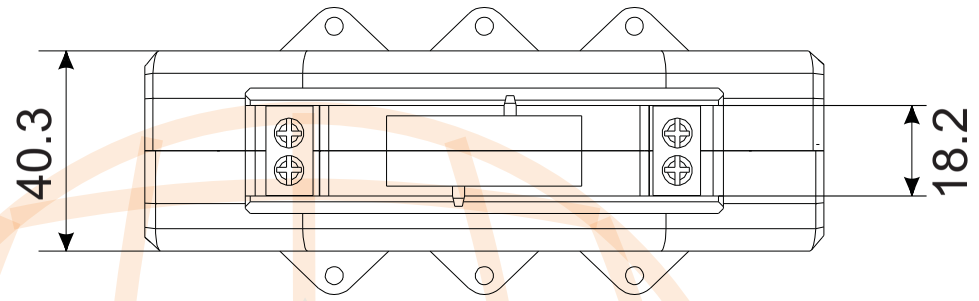
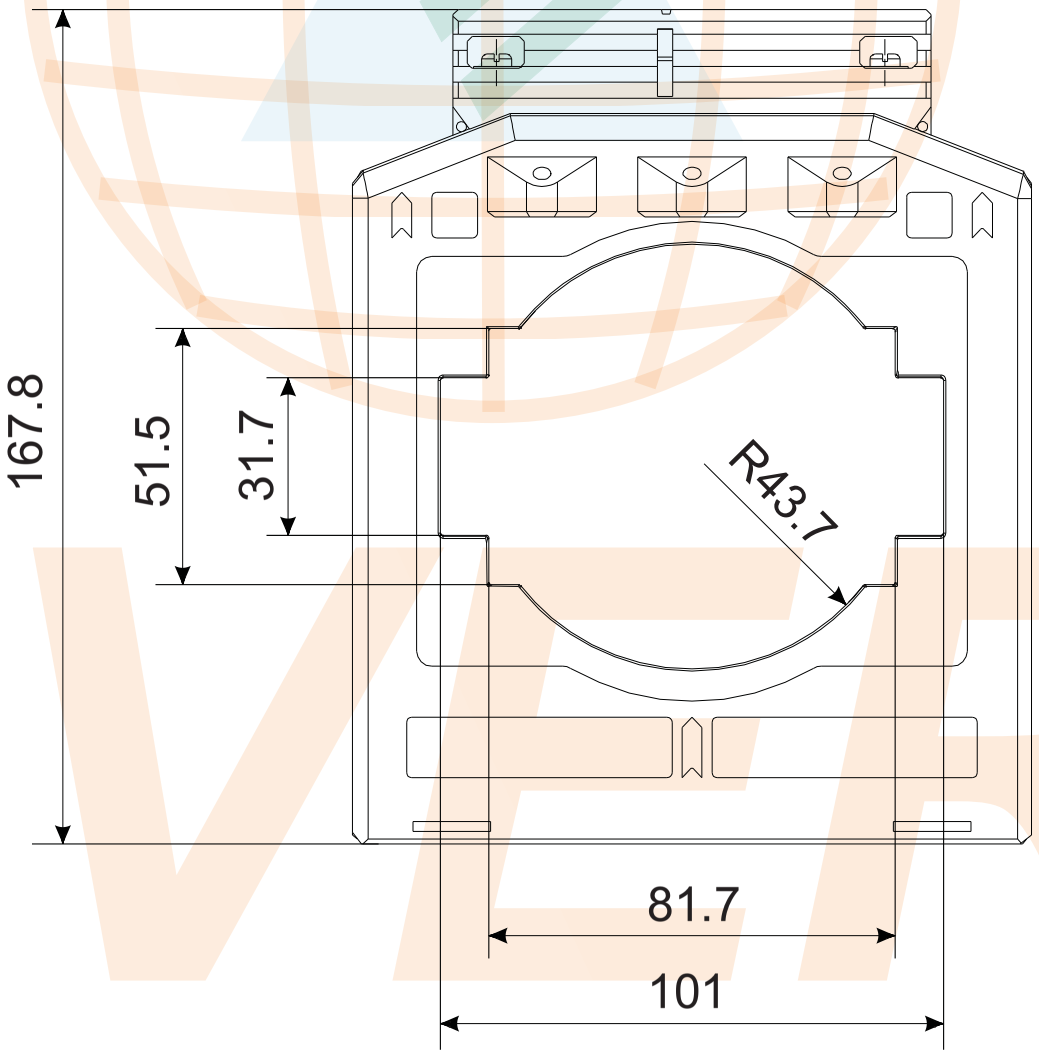
Web : www.veritekindia.com

DRN.	R. A.	07.12.2019	TITLE : Current Transformer
SCALE	NTS		MODEL NO : VIPS 100308510
DRG. NO. :	VEPL / RA / VIPS 10030 - 2500 / 5		R - 0

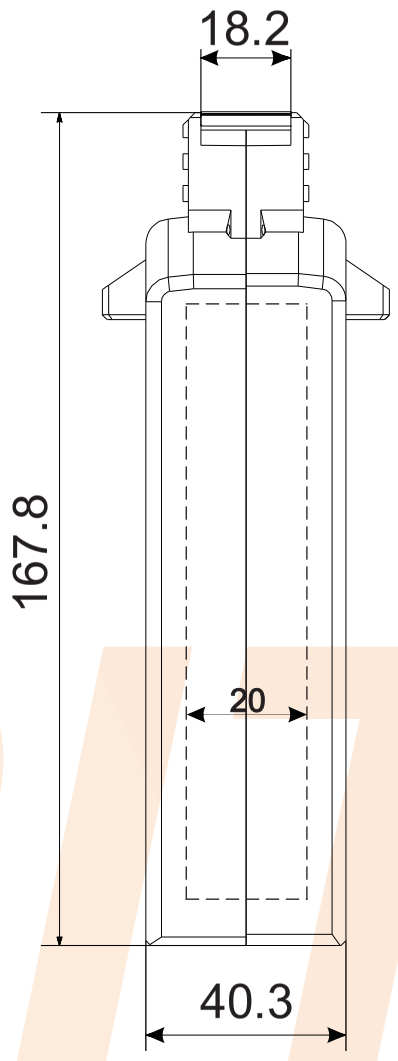


PLAN

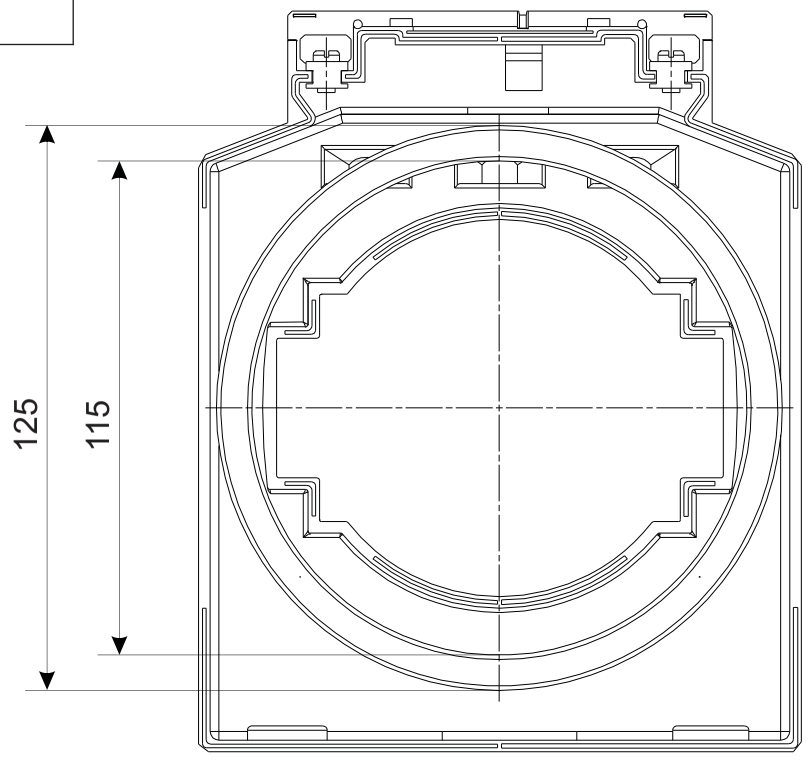
VERITEK	FS5 50 - 60 Hz E
3000 / 5	0.72 / 4KV
VA - 15	Ith = 60In
CL - 0.2S	Sr.No. : 1219/01/26585



ELEVATION



SIDE VIEW



SECTIONAL VIEW

SECONDARY	600 TURNS
WIRE	19 X 1 SWG
	21 X 1 SWG
MATERIAL	DUAL COAT COPPER WIRE

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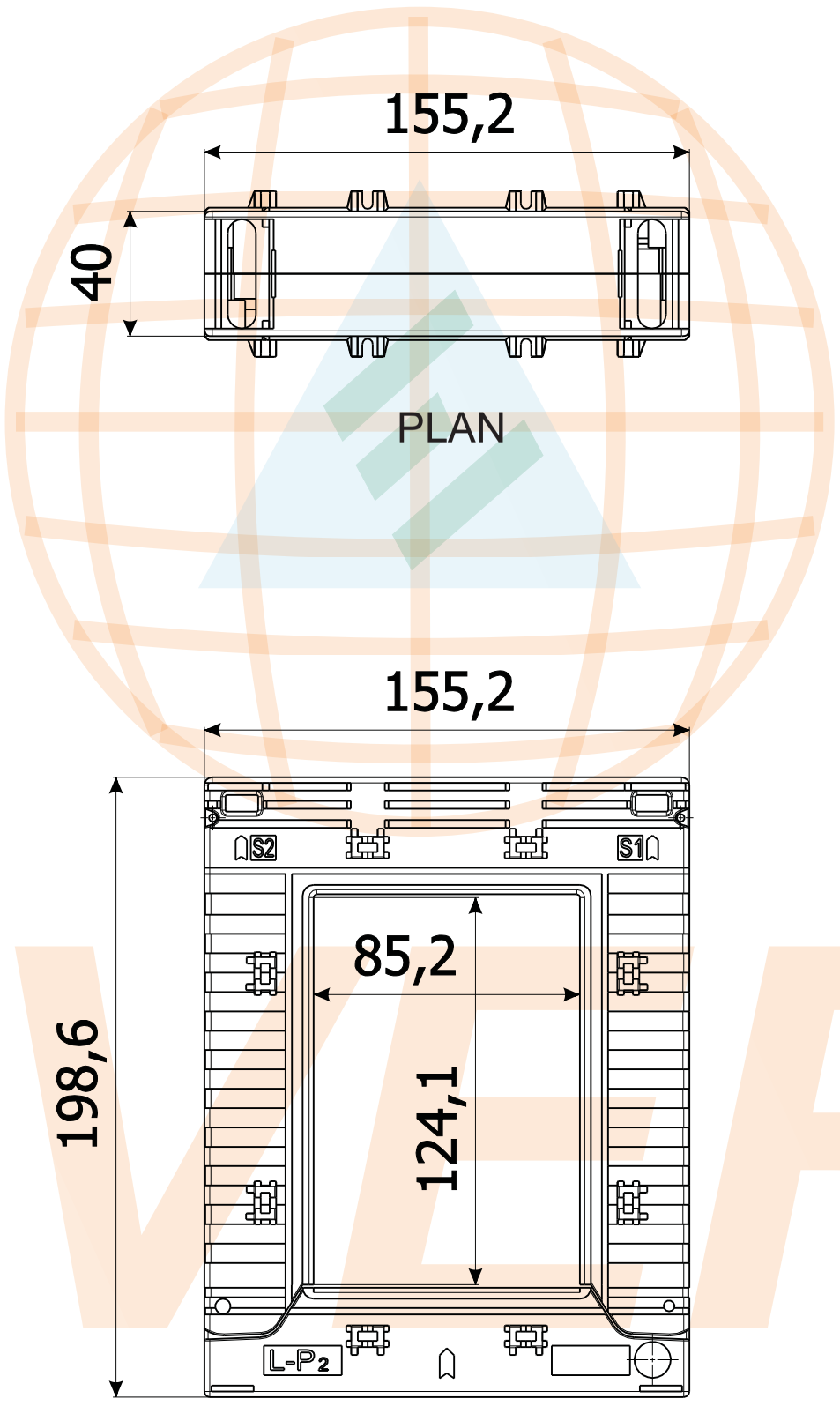
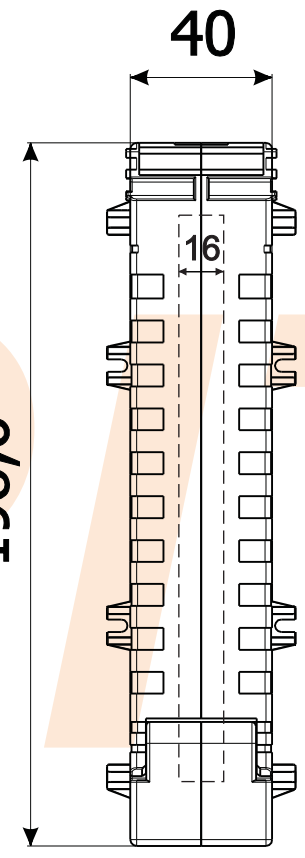
Web : www.veritekindia.com

DRN.	R. A.	07.12.2019	TITLE : Current Transformer
SCALE	NTS		MODEL NO : VIPS 100308510
DRG. NO. :	VEPL / RA / VIPS 10030 - 3000 / 5		R - 0

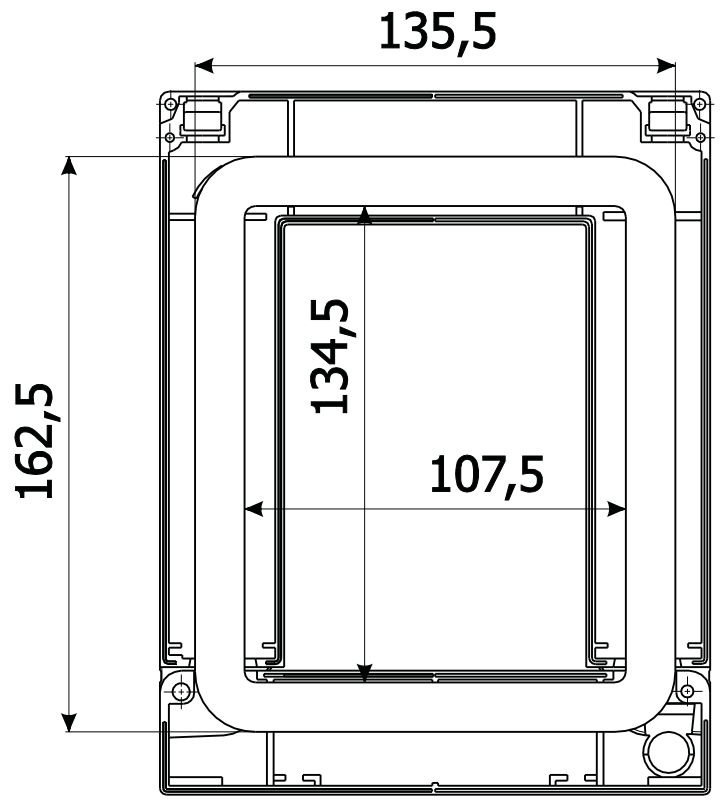


ELEVATION

VERITEK	Fs10 50 - 60 Hz H
3000 / 5	0.72 / 4KV
VA - 45	Ith = 60In
CL - 1	Sr.No. : 1219/01/20587



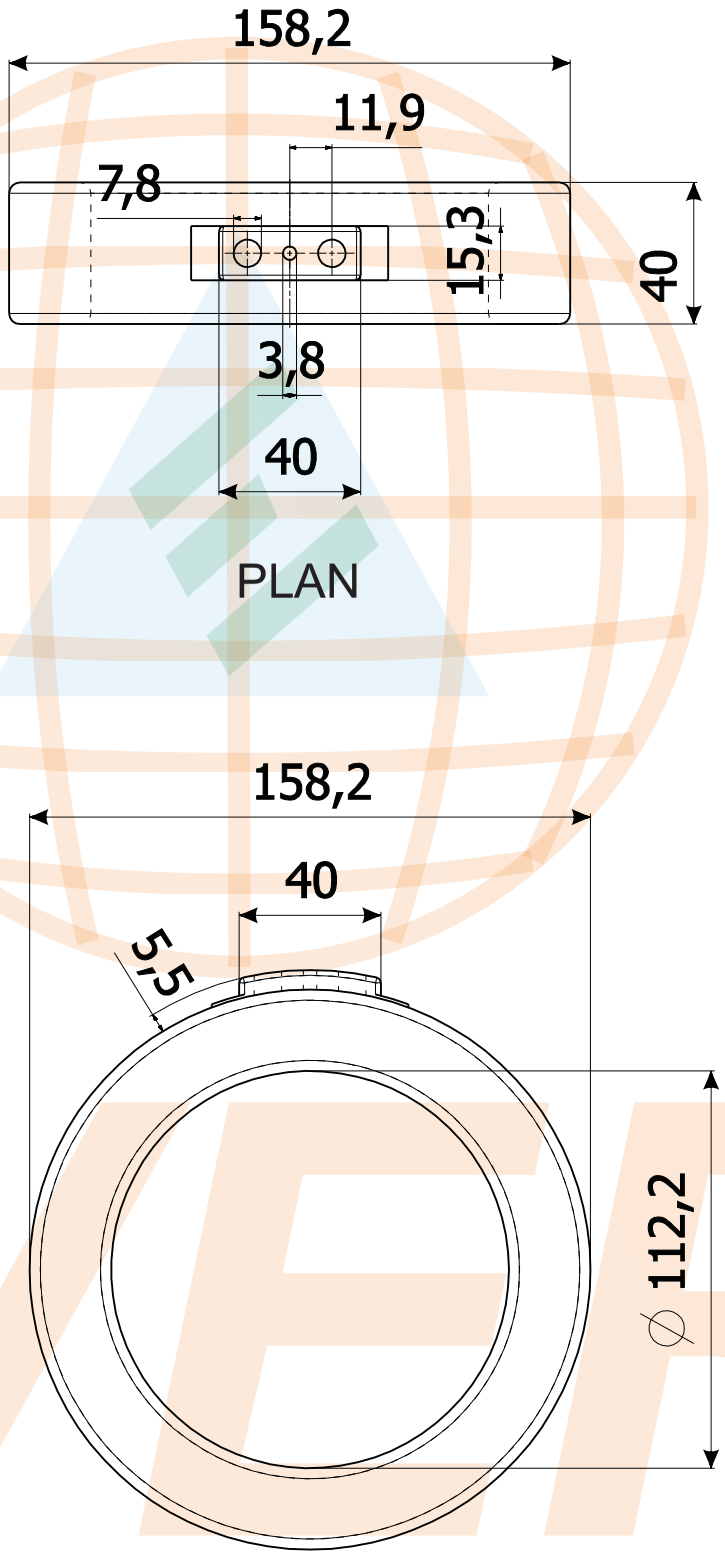
SIDE VIEW



SECTIONAL VIEW

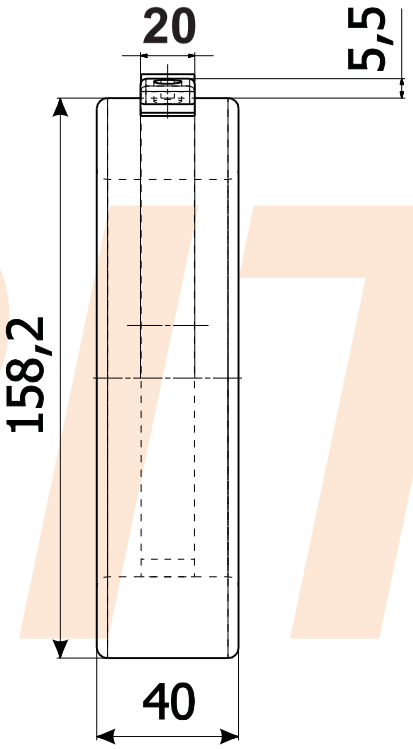
SECONDARY	600 TURNS
WIRE	19 X 1 SWG
	21 X 1 SWG
MATERIAL	DUAL COAT COPPER WIRE

VERITEK	VERITEK ENGINEERING PVT. LTD.		Plot No. 222, EL-Electronic Zone, MIDC, TTC Industrial Area, Mahape, Navi Mumbai - 400701, India Tel. : +91-74 0041 5391 / 92 / 93 Email : sales@veritekindia.com Web : www.veritekindia.com
DRN.	R. A.	20.03.2020	TITLE : SPLIT CORE CT
SCALE	NTS		MODEL NO : VIPS SC01
DRG. NO. :	VEPL / RA / VIPS SC01		R - 0

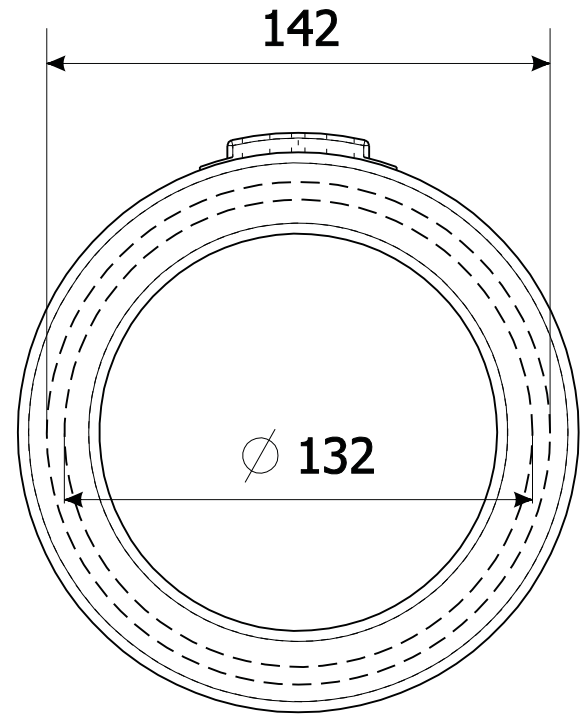


ELEVATION

VERITEK	Fs5 50 - 60 Hz H
3000 / 5	0.72 / 4KV
VA - 15	Ith = 60In
CL - 0.25	Sr.No. : 0120/01/15148



SIDE VIEW



SECTIONAL VIEW

SECONDARY	600 TURNS
WIRE	19 X 1 SWG
	21 X 1 SWG
MATERIAL	DUAL COAT COPPER WIRE

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DRN.	R. A.	20.03.2020	TITLE : RMCT BIG
SCALE	NTS		MODEL NO : VIPS 11315940
DRG. NO. :	VEPL / RA / VIPS 11315940		R - 0