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TESTLA
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Test
TS EN ISO IEC 17025
AB-0386-T

AB-0386-T
1903.27.07/00
22.08.2019

TEST REPORT

Client Name/Address	**VTEK ELEKTRİK İTH. İHR. SAN. VE TİC. LTD. ŞTİ.** Merkez Mah. Aldemir Çk. Sk. No: 6/3 Gaziosmanpaşa / İSTANBUL		
Name and Identity of Test Item	TK30S 400/5 A Current Transformer		
Order No.	**1903.27**	**Sample Acceptance Date**	**22.07.2019**
Num. Of Pages of The Report	10 + 16 pages of annexes 26 pages in total	**Test Date(s)**	**23.07.2019-21.08.2019**
Test Standard(s)	**IEC 61869-1:** 09.10.2013 Instrument Transformers- Part 1: General Requirements **IEC 61869-2:** 12.06.2013 Instrument Transformers- Part 2: Additional Requirements for Current Transformers		
Test Result(s)	**POSITIVE / Details are given on the following pages which are part of this report.**		

Remarks

The test results relate only to the items tested.

Tests marked (#) in this test report are not included in the TÜRKAK accreditation schedule for this laboratory.

TESTLA Elektrik Laboratuvarları accredited by TÜRKAK under registration number AB-0386-T for IEC ISO/IEC 17025:2012 as test laboratory.

Turkish Accreditation Agency (TURKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.

The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Seal	Report Date	Person in Charge of Test	Laboratory Manager
TESTLA ELEKTRİK LABORATUVARLARI TESTLAB 2010	**22.08.2019**	**Mehmet KALYONCU**	**Caner EREN**

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1. Participants of Tests

Sequence No.	Name, Last Name	Position	Company
1.	Caner Eren	Head of Laboratory	TESTLA
2.	Mehmet Şumnu	Laboratory Chief / Test Personnel	
3.	Mehmet Kalyoncu	Test Personnel	
4.	Selçuk Aygün	Prepared By	

2. Performed Test

Sequence No.	Test name	IEC 61869-2 Clause	Result
1.	Temperature-rise test	7.2.2	P
2.	Tests for accuracy	7.2.6	P
3.	Short-time current tests	7.2.201	P
4.	Power-frequency voltage withstand tests on primary terminals	7.3.1	P
5.	Power-frequency voltage withstand tests on secondary terminals	7.3.4	P

The test details are given in the following pages (Chapter 5).

3. General Ambient Conditions

Ambient temperature (°C)	Ambient Humidity (RH%)	Atmospheric pressure (mbar)
24,1-28,7	47-63	1005-1009

Laboratory Indoor ambient conditions are climatically controlled and registered. Special ambient conditions are specified separately in relevant test.

4. Rated Values of Test Item

Manufacturer	VTEK ELEKTRİK
Model/Type	TK30S
Declared Primary Current / Declared Secondary Current	400/5A Icth= 1 In
Rated Frequency	50/60 Hz
Cl / VA	Cl:05 FS5 3,75VA
Rated Short-Time Thermal Current (Ith) and Duration (sec)	36 kA / 1 sec.
Serial Number	07203231

Photograph of the test sample

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5. Test Results

Explanations on the presentation and reporting of results.

This report applies only to samples for which tests have been carried out.

Tests marked in this test report (#) are not within the scope of accreditation obtained from TÜRKAK.

Since the test sample was provided by the customer, the contribution resulting from sampling was not included in the measurement uncertainty. The test sample was tested as received.

In line with customer requests,
Tests according to IEC 61869-1 and IEC 61869-2 standards were shown as follows in the table in the column of the test standard, as **"(IEC 61869-1) IEC 61869-2"**

(IEC 61869-1) IEC 61869-2			
Clause	**Required-Requirement**	**Measured-Observed**	**Result**

In this table,

1. Column: **Clause**
The clause number of the standard specified in the top line. (The clauses of the test standard cited to the other standards are specified under the Requirement-Necessity section-column)

2. Column: **Required -Requirement**
Structural requirements-conditions-guidelines for the described tests to determine the suitability of the sample described in the relevant standard clause and the property defined in the relevant standard clause of this sample.

3. Column: **Measured-Observed**
The results of measurements and observations (if any, are made in the NOTES section of this section and / or in the last-bottom section of the relevant test page, if the customer requests, technical or other reasons are omitted)

4. Column: **Result**

Display of decisions in Possible Tests Results:

— Non-applicable for the sample	:	**NA**	(Not Apply)
— Sample meets the requirements	:	**P**	(Pass) (if any) *
— Sample does not meet the requirements	:	**F**	(Fail) (if any) *
— Given information and topics	:	--	Out of Assessment

It is signed as above.

(*) Situations in which the "passed" / "failed" evaluation can not be made with regard to the tests made:
- Deviations, additions and removals from standards (to affect to the results positively) related with customer request or other situations.
- The possibility that the numerical results obtained from the sample in the tests are positive / negative when the measurement uncertainties of the relevant test-device participate in the calculation (In such cases the measurement uncertainty values of the relevant tests are specified in the report)
- Absence of declaration values (necessary for evaluation of the suitability of the results) of the samples in relation to the experiments performed.
- By the nature of the Test being undertaken there is no limit or criterion for assessing compliance (the relevant test-product standard or the customer's pre-determined) of the results obtained to be positive or negative.

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(IEC 61869-1) IEC 61869-2

Clause	Required-Requirement	Measured-Observed	Result
7.2.2	**Temperature-rise test**		
	IEC 61869-1, 7.2.2 is apply.		--
(7.2.2)	**Temperature-rise test**		
	For this test, the transformer shall be mounted in a manner representative of the mounting in service.	Suitable mounted	--
	The temperature rise of windings shall, when practicable, be measured by the increase in resistance method, but for windings of very low resistance, thermocouples may be employed.	Measured by the increase in resistance method. See 7.3.201.	--
	Instrument transformers shall be considered to have attained a steady-state temperature when the rate of temperature rise does not exceed 1 K/h.	--	--
	Class of insulation	A	--
	Test current	400 A	--
	Limit values according to insulation class of solid or gas insulated transformers; • Class Y 45 K • Class A 60 K • Class E 75 K • Class B 85 K • Class F 110 K • Class H 135 K	The measurement results are given in the table below.	--

Temperature-rise table

Measuring Points		Data-1 (°C)	Difference (K)	Limit (K)	Result
Average Outdoor Temperature		25,95			
Outdoor (Oil) Temperature -1		25,72			
Outdoor (Oil) Temperature -2		26,18			
TK30S 400/5 A	Secondary 1	51,69	25,74	75,00	POSITIVE
	Secondary 2	48,08	22,13	75,00	POSITIVE
	Plastic Body Side	57,17	31,22	75,00	POSITIVE
	Plastic Cover Upper	36,97	11,01	75,00	POSITIVE

--

7.3.201	**Determination of the secondary winding resistance**	

Resistance measurement table

Before Temperature-rise test (mΩ)	After Temperature-rise test (mΩ)	K
167	204,21	58

The temperature rises of the windings measured by the resistance increase method are within the limits.

P

Notes:

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(IEC 61869-1) IEC 61869-2

Clause	Required-Requirement	Measured-Observed	Result
7.2.6	**Tests for accuracy**		
	The measurement results are given in the annex.	See list of annexes.	**P**
7.2.201	**Short-Time Current Tests**		
	For the short time (Ith) current tests, CT should be in a temperature between 10 and 40 °C before test	Temperature= 24,9 °C Humidity= 60 RH%	--
	This test should be performed by according to; (I^2t) will not be less then (I^2th), predicted t duration will be in between 0,5 second and 5 second and during the t duration seconder units will be short circuit at the I Current	t= 1000 ms	--
	Dynamic test should be performed with primer current which should be more than (Idyn) and seconder unit should be short circuit.	36 kA RMS 1000 ms 90 kA Peak	--
	Dynamic test may be combined to thermal test with the condition that first I Peak should be more than (Idyn)	Applied separately.	--
	The transformer shall be deemed to have passed these tests if, after cooling to ambient temperature (between 10 °C and 40 °C), it satisfies the following requirements:		
	a) There should be no visible damage,	Yes	**P**
	b) Limits of error after the current is cut off and magnetized; should not differ from the values recorded before the experiment by more than half of the error limits corresponding to their own accuracy class,	Yes The measurement results are given in the list of annexes.	**P**
	c) It should be withstand to dielectric test according to clause 7.3.1, 7.3.3 and 7.3.4, but test current and voltage should be decreased %90 of the values	Primary= 2,7 kV Secondary= 2,7 kV Between sections= NA There was no disruptive discharge.	**P**
	d) In the examination, there shouldn't be a deformation on the cover of conductive	There is no deformation.	**P**

Notes:

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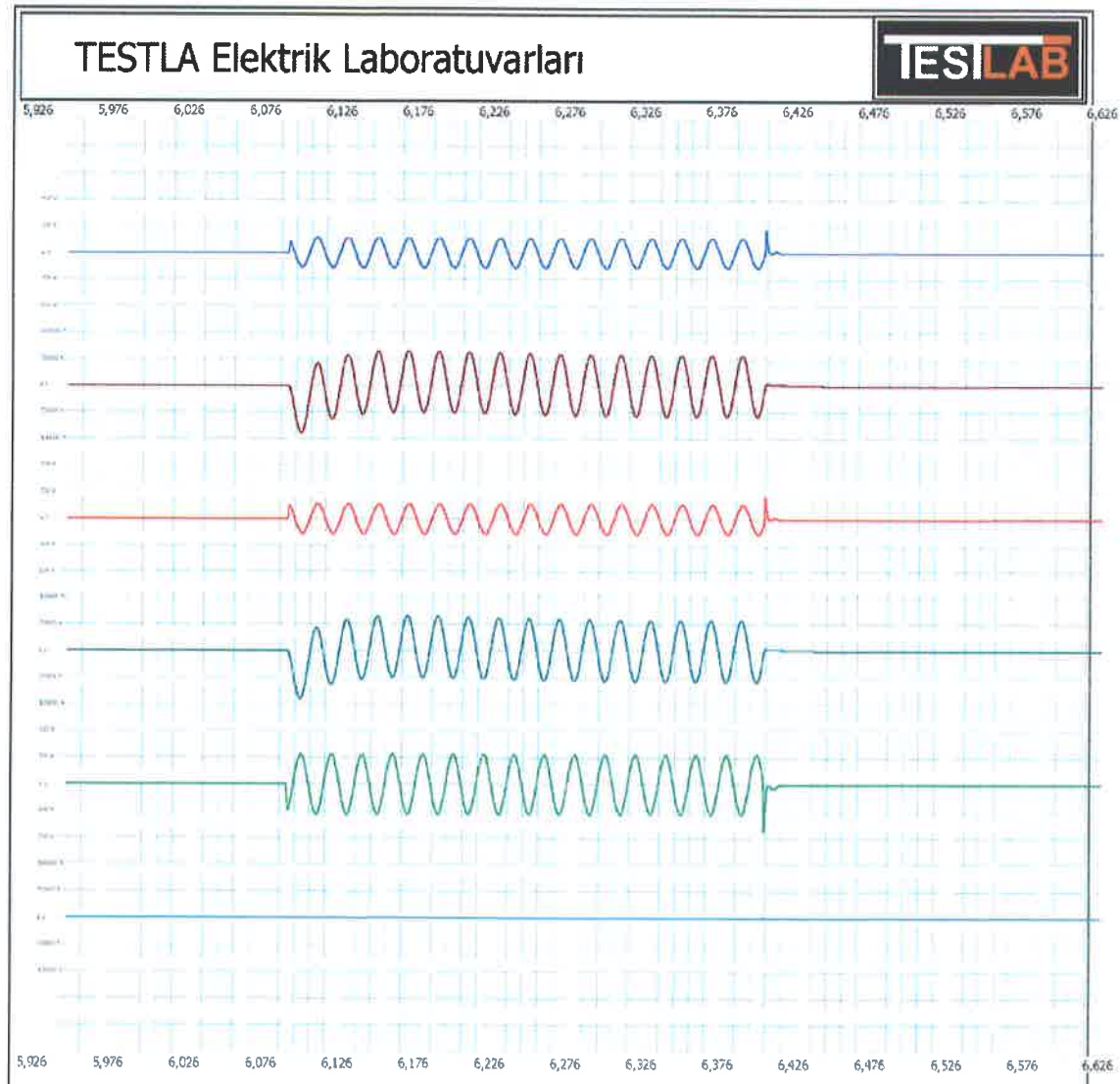
(IEC 61869-1) IEC 61869-2

Clause	Required-Requirement	Measured-Observed	Result

Oscillogram of Short-Time Current Test



V 1	V 2	V 3	I 1	I 2	I 3
122,502 V	120,601 V	240,177 V	42.717,386 A	42.855,141 A	0,000 A
Cos Phi 1	Cos Phi 2	Cos Phi 3	I1 time	I2 time	I3 time
0,325	0,323	0,000	312 msec	312 msec	0 msec
I1 Peak	I2 Peak	I3 Peak	I1 Joul	I2 Joul	I3 Joul
-90.677,252 A	-90.904,158 A	0,000 A	568,874 kA²sn	572,549 kA²sn	0,001 kA²sn

Osc. No :	1903.27-42688	Test Date :	20.08.2019
Company :	VTEK Elektrik		
Test Current :	36 kA		
Test Maneuvers :	90 kA Peak		
Tip/Model :	TK30S 400/5A Current Transformer		
Sample No :	1903.27.07		

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ID : 4_42688

(IEC 61869-1) IEC 61869-2

Clause	Required-Requirement	Measured-Observed	Result

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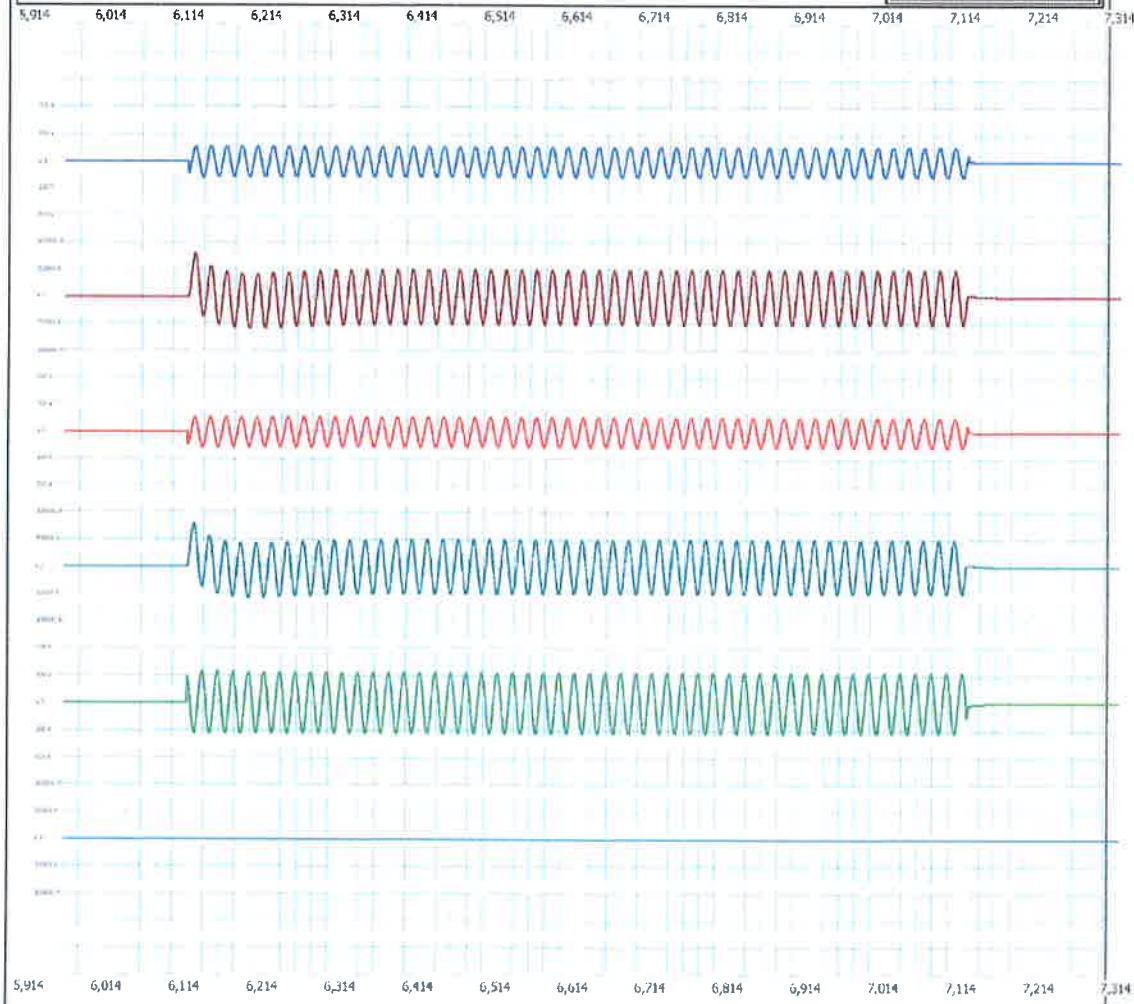

V 1	V 2	V 3	I 1	I 2	I 3
122,496 V	119,216 V	238,358 V	36.541,821 A	36.313,800 A	0,000 A
Cos Phi 1	Cos Phi 2	Cos Phi 3	I1 time	I2 time	I3 time
0,322	0,319	0,000	1.002 msec	1.002 msec	0 msec
I1 Peak	I2 Peak	I3 Peak	I1 Joul	I2 Joul	I3 Joul
80.386,179 A	79.744,468 A	0,000 A	1.337,975 kA²sn	1.321,329 kA²sn	0,001 kA²sn

Osc. No :	1903.27-42689	Test Date :	20.08.2019
Company :	VTEK Elektrik		
Test Current :	36 kA		
Test Maneuvers :	36 kA Rms		
Tip/Model :	TK30S 400/5A Current Transformer		
Sample No :	1903.27.07		

TESTLA ELEKTRİK LABORATUVARLARI TESLAB • 2010 •

www.testla.com.tr ID : 4-42689

(IEC 61869-1) IEC 61869-2

Clause	Required-Requirement	Measured-Observed	Result
7.3.1	**Power-frequency voltage withstand tests on primary terminals**		
	This clause of IEC 61689-1 is applicable with the addition of the following		--
	The test voltage shall be applied between the short-circuited primary winding and earth.	--	--
	The short-circuited secondary winding(s), the frame, case (if any) and core (if there is a special earth terminal) shall be connected to earth.	--	--
(7.3.1)	**Power-frequency voltage withstand tests on primary terminals**		
	The power-frequency withstand test shall be performed in accordance with IEC 60060-1.	--	--
	The test voltage shall have the appropriate value given in Table 2, depending on the highest voltage tor equipment.	Test voltage= 3 kV	--
	Table 2 – Rated primary terminal insulation levels for instrument transformers		

Highest voltage for equipment U_m (r.m.s.) kV	Rated power-frequency withstand voltage (r.m.s.) kV	Rated lightning impulse withstand voltage (peak) kV	Rated switching withstand voltage (peak) kV
0,72	3	---	
1,2	6	---	
3,6	10	20 40	
7,2	20	40 60	

	The duration shall be 60 s, unless otherwise specified.	Test duration= 60 s	--
	The secondary terminals, the frame, case (if any) and core (if there is a special earth terminal) shall be connected to earth.	--	--
	The test voltage shall be applied: - between the primary terminals and earth, - between primary terminals, where applicable.	Test voltage= 3 kV	P
	Repeated power-frequency tests on primary terminals should be performed at 80 % of the specified test voltage.	--	NA
(7.3.4)	**Power-frequency voltage withstand tests on secondary terminals**		
	The frame, case (if any), core (if there is a special earth terminal), and all the other terminals shall be connected to earth.	--	--
	The test voltage according to 5.3.5 shall be applied far 60 s in turn between the short circuited terminals of each winding and earth.	Test voltage= 3 kV Test duration= 60 sec.	P

Notes:

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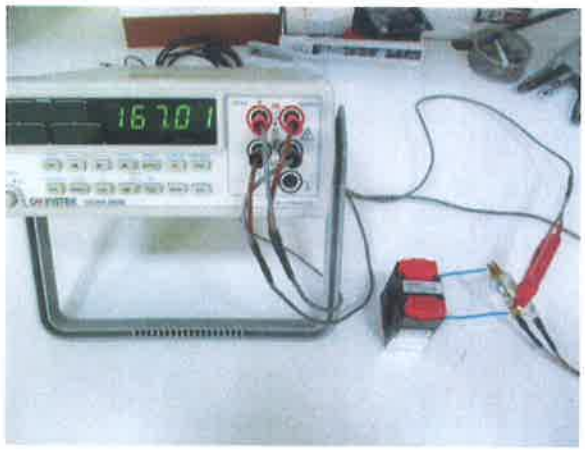
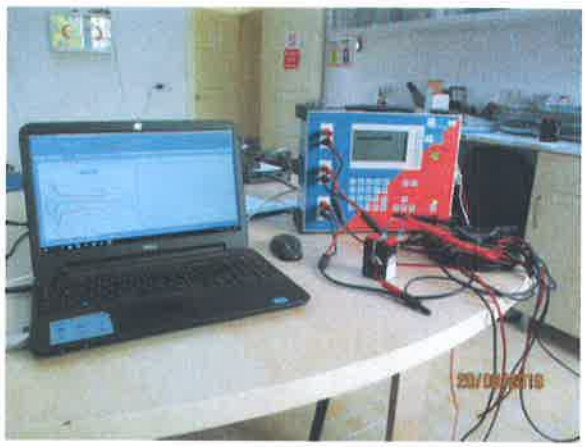
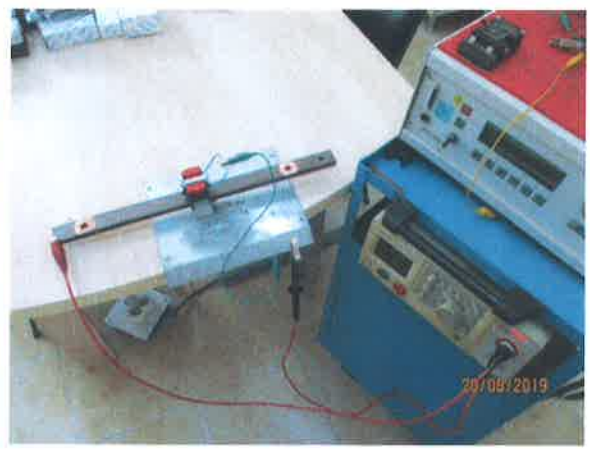
6. Test Assembly and Test Item Photographs







7. List of Annexes

- 8 pages Measurement of fault limits for short-time current test in clause 7.2.201 and measurement of tests for accuracy in clause 7.2.6.
- 8 pages technical document.

END OF REPORT

TESTLA ELEKTRİK LABORATUVARLARI TESTLAB • 2010 •

Company Name:	
Company Address:	
Order Number:	

OMICRON

General test information: Date/Time: 2019-08-20, 09:47:35

Test device:	CT-Analyzer	Device Serial No.:	LF491J
File name:	C:\Users\SicakLT\Documents\OMICRON\CTAnalyzer\RemoteEFL\TEMP\XMLData(1).xml		
Assessments:	OK		

Used test settings:

I-pn:	400,0 A			Location:		Object:	
I-sn:	5,0 A			Company:		Manufacturer:	VTEKE
Rated burden:	3,75 VA / 1			Country:		Type:	TK30S
Operating burden:	3,75 VA / 1			Station:	Testla	Serial number:	07203231
Applied standard:	IEC 61869-2			Feeder/Bay:		Core number:	S1-S2
Core type (P/M):	M			Phase:		Tap:	SC BEFORE
Class:	0,5			IEC-ID	61869-2	Optional:	1903.27.07
FS:	5,0	ext (Icth):	120 %				
f:	50,0 Hz	max. Rct:	0,227 Ω				

Resistance test:

Rmeas (25°C):	0,18997 Ω
Rref (75°C):	0,22658 Ω

Burden test:

Burden:	cos φ:	Z:
Vmeas:	Imeas:	

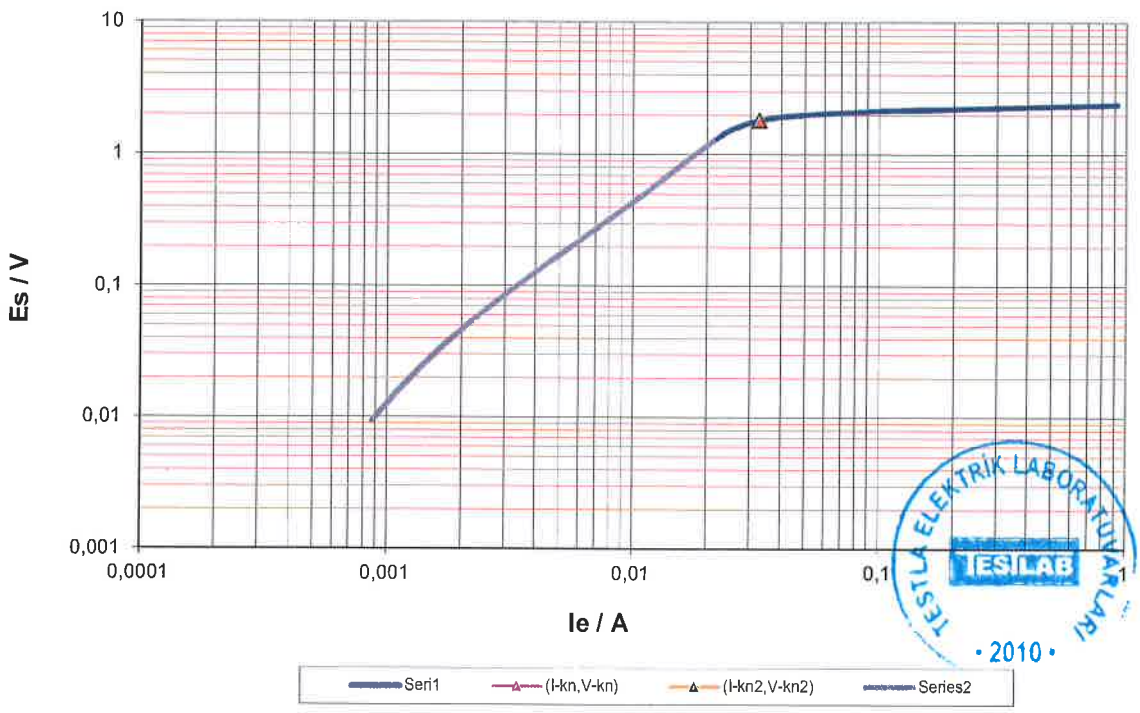
Excitation test:

				Result with rated burden:			Result with operating burden:		
V-kn:	1,816 V	I-kn:	0,032501 A	FS:	>1,254991	FSi: 1,23	FS:	>1,254991	FSi: 1,23
V-kn 2:	#YOK	I-kn 2:	#YOK	Ts:	0,439s		Ts:	0,439s	
Ls:	0,0001588H	Lm:	0,1653H						
Kr:	80,83 %								

Ratio test:

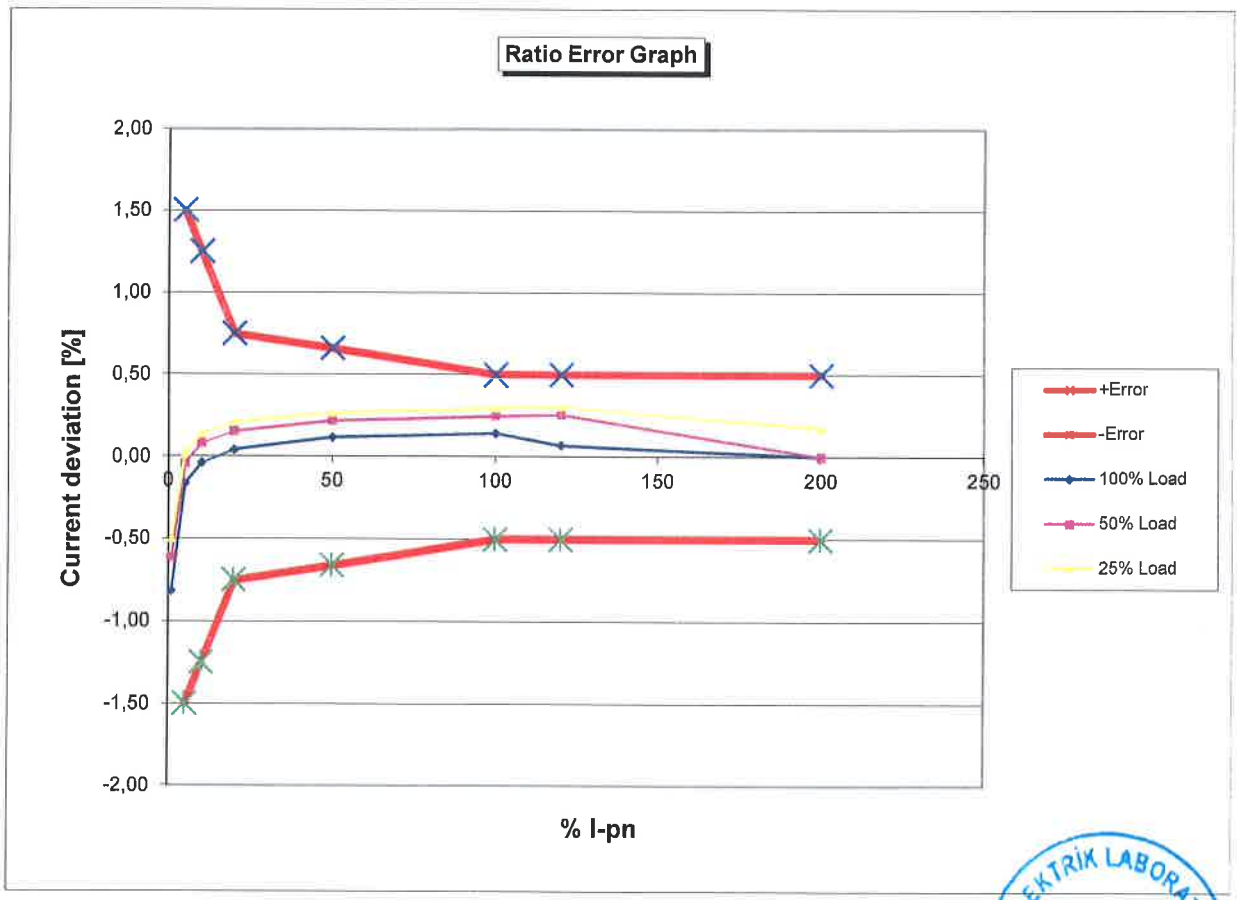
Ratio:	400,0 : 5,007	ε :	0,14 %	Δφ:	11,12 min	Polarity:	OK	N:	79,49
		ε_c :	0,4552 %						

Excitation curve data



	Current ratio error in % at % of rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	-0,815	-0,167	-0,038	0,041	0,115	0,140	0,069	
1,88 VA/ 1	-0,610	-0,040	0,080	0,154	0,216	0,248	0,256	
0,94 VA/ 1	-0,496	0,026	0,140	0,212	0,267	0,298	0,306	0,176
0,47 VA/ 1	-0,438	0,059	0,171	0,240	0,293	0,324	0,327	0,273
VA/								

	Phase displacement in [min] at % rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	61,218	30,171	24,655	19,863	12,654	11,116	22,036	
1,88 VA/ 1	55,310	25,626	20,606	16,872	11,397	7,655	8,213	
0,94 VA/ 1	52,244	23,188	18,521	15,217	10,576	6,982	6,649	72,952
0,47 VA/ 1	50,537	22,044	17,436	14,330	10,112	6,781	5,973	17,692
VA/								



Company Name:	
Company Address:	
Order Number:	

OMICRON

General test information: Date/Time: 2019-08-20, 09:51:27

Test device:	CT-Analyzer	Device Serial No.:	LF491J
File name:	C:\Users\SicakLT\Documents\OMICRON\CTAnalyzer\RemoteEFL\TEMP\XMLData(1).xml		
Assessments:	OK		

Used test settings:

I-pn:	400,0 A	Location:		Object:	
I-sn:	5,0 A	Company:		Manufacturer:	VTEKE
Rated burden:	3,75 VA / 1	Country:		Type:	TK30S
Operating burden:	3,75 VA / 1	Station:	Testla	Serial number:	07203231
Applied standard:	IEC 61869-2	Feeder/Bay:		Core number:	S1-S2
Core type (P/M):	M	Phase:		Tap:	SC BEFORE
Class:	0,5	IEC-ID	61869-2	Optional:	1903.27.07
FS: 5,0	ext (Icth): 120 %				
f: 60,0 Hz	max. Rct: 0,226 Ω				

Resistance test:

Rmeas (25°C):	0,1896 Ω
Rref (75°C):	0,22614 Ω

Burden test:

Burden:	cos φ:	Z:
Vmeas:	Imeas:	

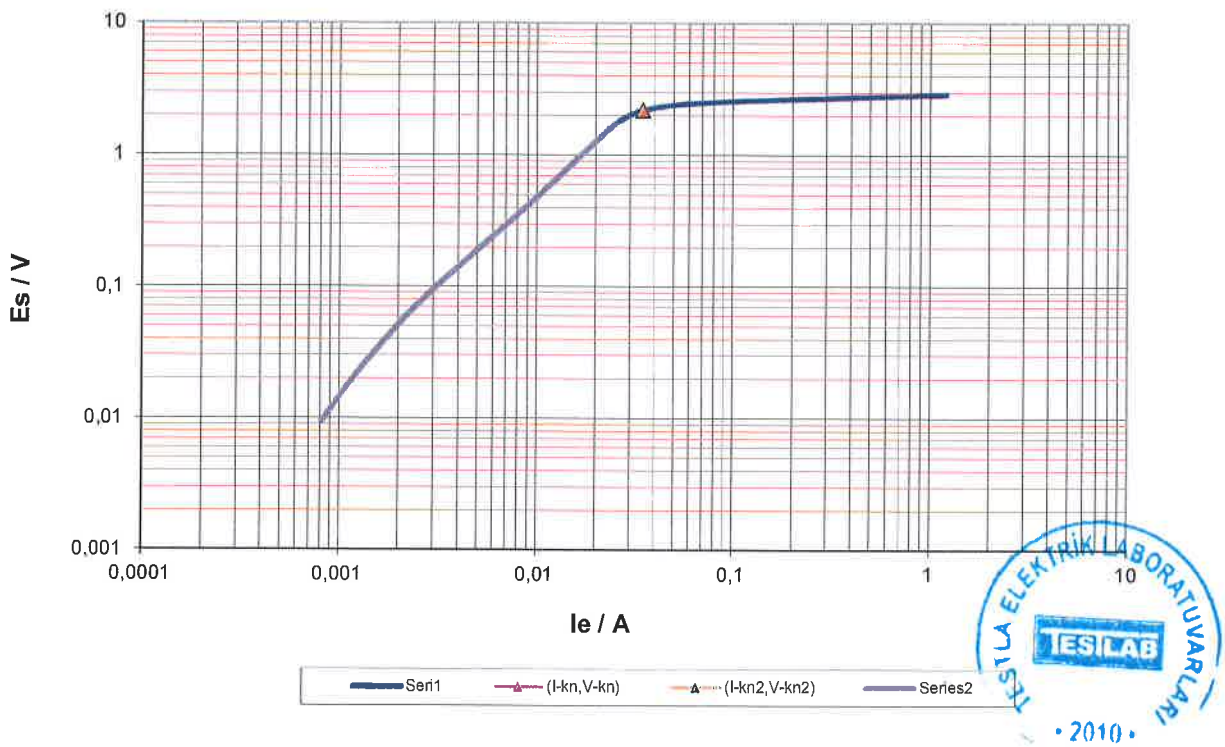
Excitation test:

V-kn:	2,186 V	I-kn:	0,034751 A	Result with rated burden:			Result with operating burden:		
V-kn 2:	#YOK	I-kn 2:	#YOK	FS:	>1,518059	FSi: 1,49	FS:	>1,518059	FSi: 1,49
Ls:	0,0001078H	Lm:	0,1663H	Ts:	0,442s		Ts:	0,442s	
Kr:	71,17 %								

Ratio test:

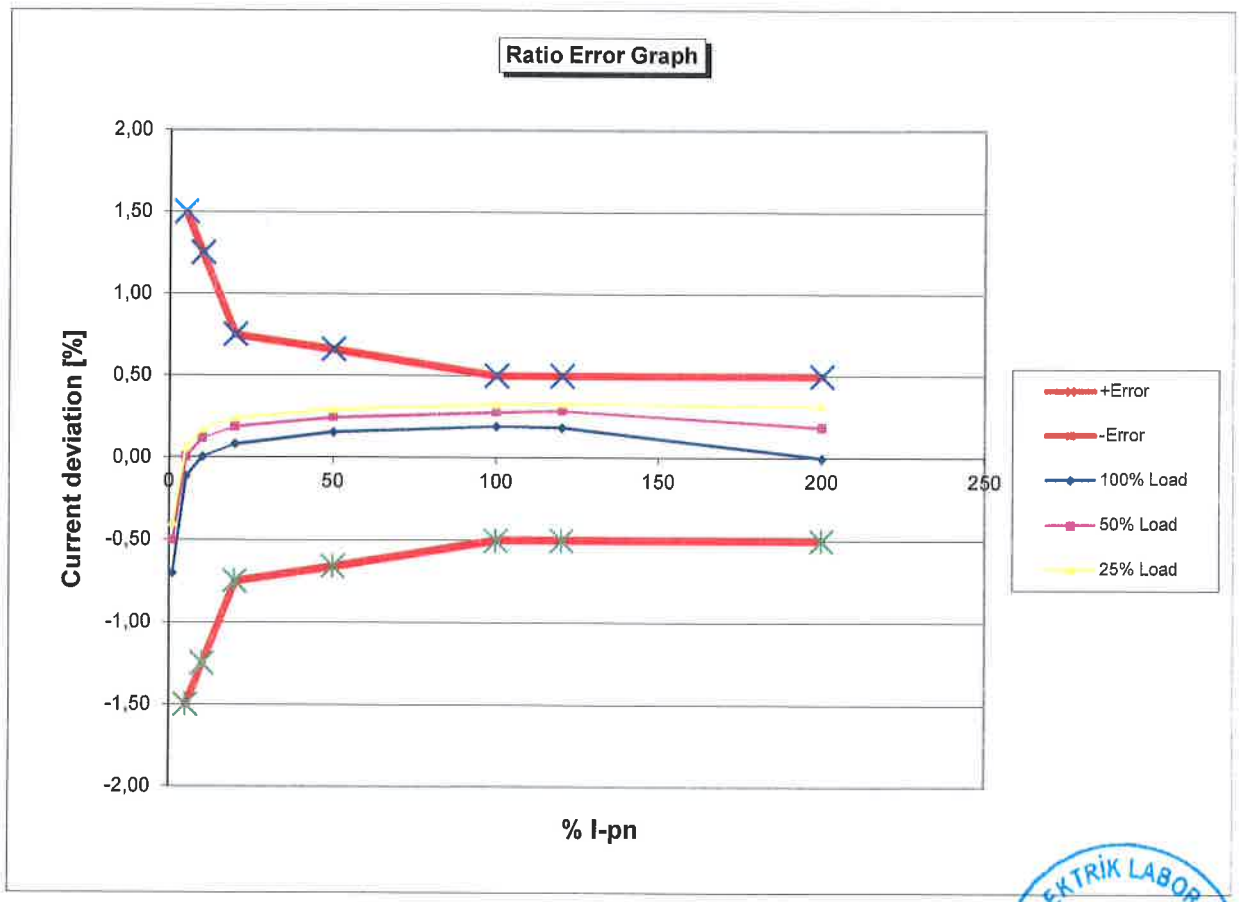
Ratio:	400,0 : 5,0095	ε :	0,1899 %	Δφ:	8,6 min	Polarity: OK	N: 79,49
		ε_c :	0,321 %				

Excitation curve data



	Current ratio error in % at % of rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	-0,703	-0,118	0,004	0,080	0,153	0,190	0,183	
1,88 VA/ 1	-0,503	0,004	0,115	0,187	0,246	0,279	0,286	0,187
0,94 VA/ 1	-0,393	0,066	0,172	0,240	0,294	0,326	0,331	0,316
0,47 VA/ 1	-0,337	0,098	0,202	0,267	0,318	0,349	0,354	0,357
VA/								

	Phase displacement in [min] at % rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	57,384	27,628	22,385	18,281	12,115	8,601	9,325	
1,88 VA/ 1	52,088	23,427	18,768	15,445	10,834	7,174	6,566	39,728
0,94 VA/ 1	49,259	21,301	16,878	13,867	10,007	6,797	6,031	8,113
0,47 VA/ 1	47,672	20,258	15,894	13,027	9,534	6,556	5,871	5,944
VA/								



Company Name:	
Company Address:	
Order Number:	

OMICRON

General test information:

Date/Time: 2019-08-20, 13:43:50

Test device:	CT-Analyzer	Device Serial No.:	LF491J
File name:	C:\Users\SicakLT\Documents\OMICRON\CTAnalyzer\RemoteEFL\TEMP\XMLData(1).xml		
Assessments:	OK		

Used test settings:

I-pn:	400,0 A	Location:		Object:	
I-sn:	5,0 A	Company:		Manufacturer:	VTEKE
Rated burden:	3,75 VA / 1	Country:		Type:	TK30S
Operating burden:	3,75 VA / 1	Station:	Testla	Serial number:	07203231
Applied standard:	IEC 61869-2	Feeder/Bay:		Core number:	S1-S2
Core type (P/M):	M	Phase:		Tap:	SC AFTER
Class:	0,5	IEC-ID	61869-2	Optional:	1903.27.07
FS: 5,0	ext (Icth): 120 %				
f: 50,0 Hz	max. Rct: 0,232 Ω				

Resistance test:

Rmeas (25°C):	0,19468 Ω
Rref (75°C):	0,23219 Ω

Burden test:

Burden:	cos φ:	Z:
Vmeas:	Imeas:	

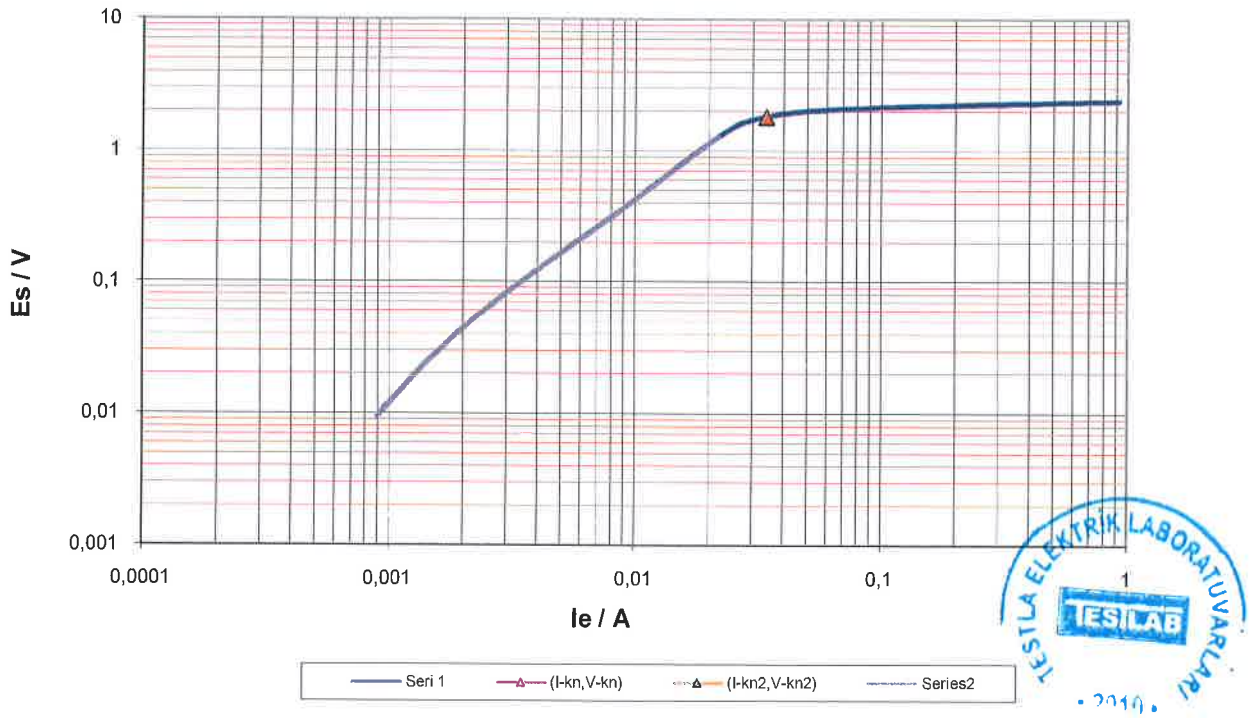
Excitation test:

V-kn:	1,82 V	I-kn:	0,034115 A	Result with rated burden:				Result with operating burden:			
V-kn 2:	#YOK	I-kn 2:	#YOK	FS:	>1,23669113	FSi:	1,21	FS:	>1,23669113	FSi:	1,21
Ls:	0,0001584H	Lm:	0,1628H	Ts:	0,426s			Ts:	0,426s		
Kr:	77,68 %										

Ratio test:

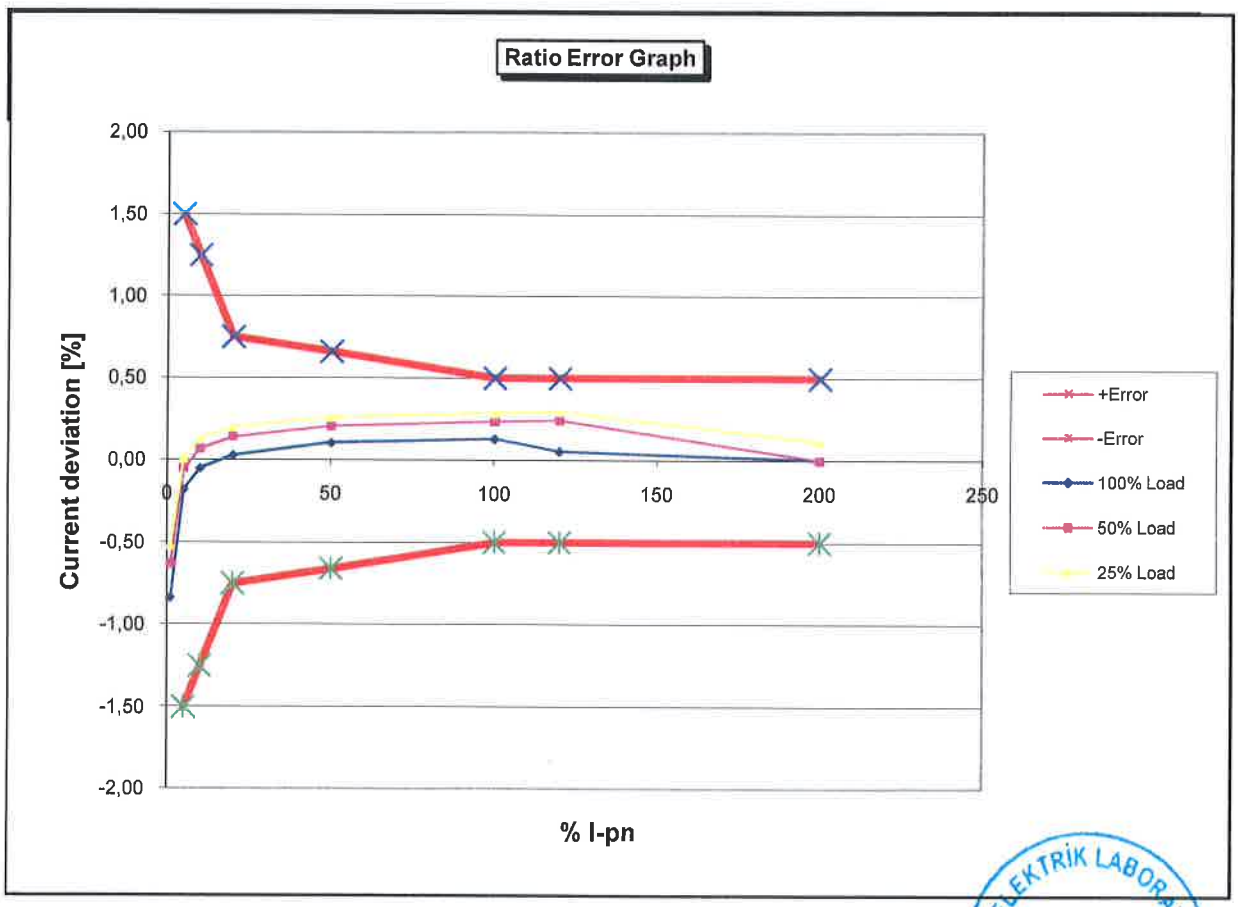
Ratio:	400,0 : 5,00633	ε :	0,1267 %	Δφ:	12,47 min	Polarity: OK	N: 79,49
		ε_c :	0,5246 %				

Excitation curve data



	Current ratio error in % at % of rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	-0,837	-0,182	-0,054	0,026	0,103	0,127	0,052	
1,88 VA/ 1	-0,631	-0,054	0,067	0,140	0,206	0,237	0,245	
0,94 VA/ 1	-0,518	0,014	0,128	0,199	0,258	0,287	0,295	0,114
0,47 VA/ 1	-0,460	0,047	0,159	0,228	0,284	0,314	0,317	0,266
VA/								

	Phase displacement in [min] at % rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	63,471	31,622	25,679	20,506	13,141	12,468	26,510	
1,88 VA/ 1	57,332	26,905	21,593	17,507	11,821	8,231	9,080	
0,94 VA/ 1	54,142	24,371	19,471	15,844	10,969	7,347	7,205	118,840
0,47 VA/ 1	52,376	23,181	18,366	14,960	10,491	7,114	6,363	23,213
VA/								



Company Name:	
Company Address:	
Order Number:	

OMICRON

General test information:

Date/Time: 2019-08-20, 13:47:05

Test device:	CT-Analyzer	Device Serial No.:	LF491J
File name:	C:\Users\SicakLT\Documents\OMICRON\CTAnalyzer\RemoteEFL\TEMP\XMLData(1).xml		
Assessments:	OK		

Used test settings:

I-pn:	400,0 A			Location:		Object:	
I-sn:	5,0 A			Company:		Manufacturer:	VTEKE
Rated burden:	3,75 VA / 1			Country:		Type:	TK30S
Operating burden:	3,75 VA / 1			Station:	Testla	Serial number:	07203231
Applied standard:	IEC 61869-2			Feeder/Bay:		Core number:	S1-S2
Core type (P/M):	M			Phase:		Tap:	SC AFTER
Class:	0,5			IEC-ID	61869-2	Optional:	1903.27.07
FS:	5,0	ext (Icth):	120 %				
f:	60,0 Hz	max. Rct:	0,231 Ω				

Resistance test:

Rmeas (25°C):	0,19351 Ω
Rref (75°C):	0,2308 Ω

Burden test:

Burden:	cos φ:	Z:
Vmeas:	Imeas:	

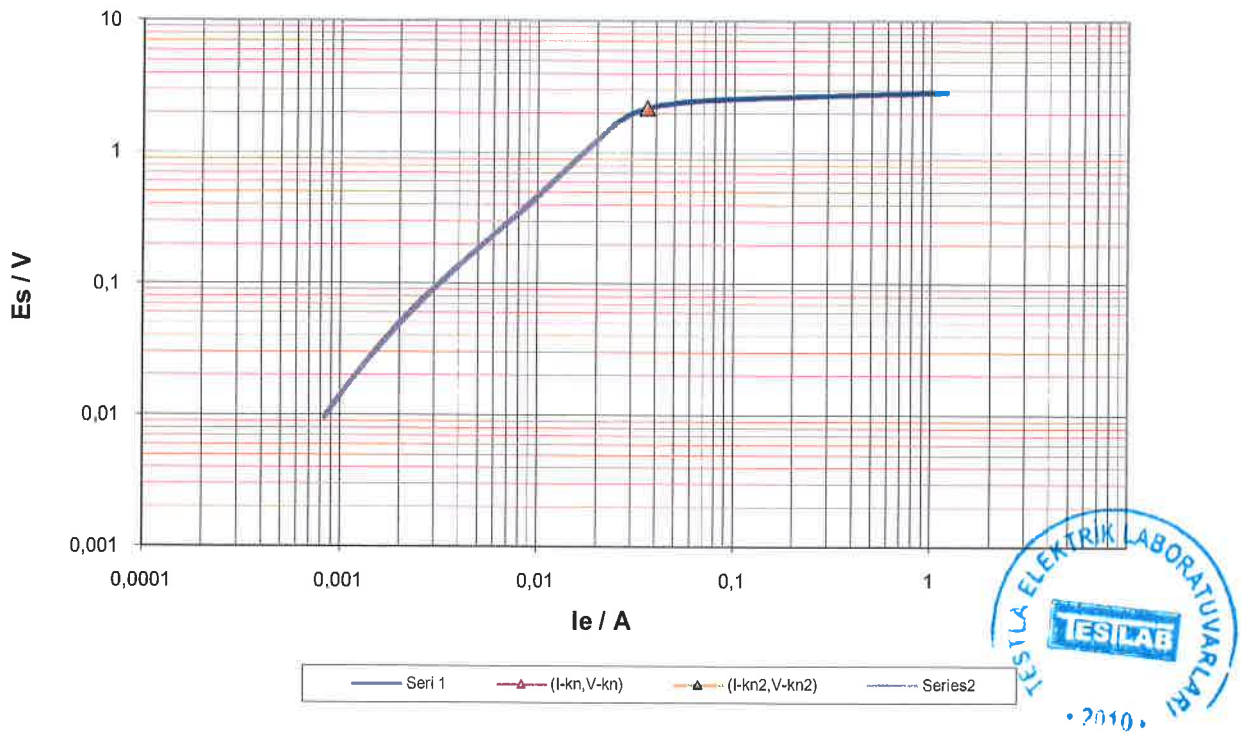
Excitation test:

V-kn:	2,189 V	I-kn:	0,036209 A	Result with rated burden:				Result with operating burden:			
V-kn 2:	#YOK	I-kn 2:	#YOK	FS:	>1,49971275	FSi:	1,47	FS:	>1,49971275	FSi:	1,47
Ls:	0,0001059H	Lm:	0,1638H	Ts:	0,43s			Ts:	0,43s		
Kr:	73,27 %										

Ratio test:

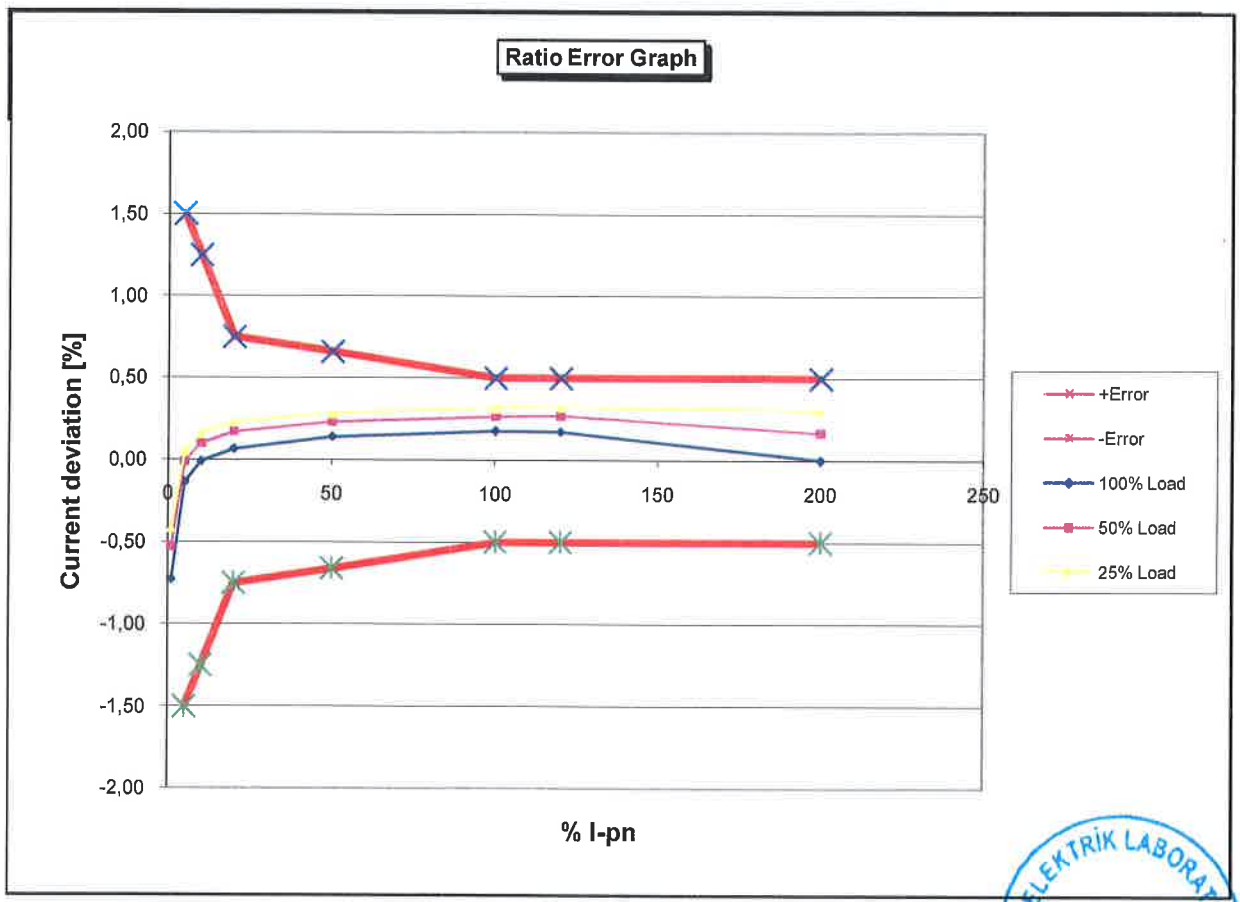
Ratio:	400,0 : 5,00881	ε :	0,1762 %	Δφ:	9,22 min	Polarity:	OK	N:	79,49
		ε_c :	0,3388 %						

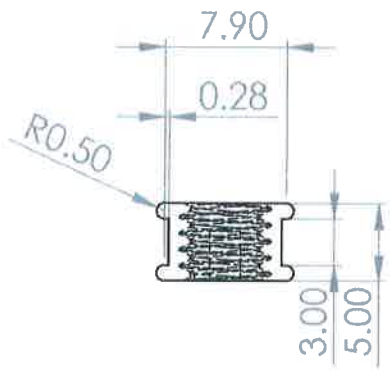
Excitation curve data

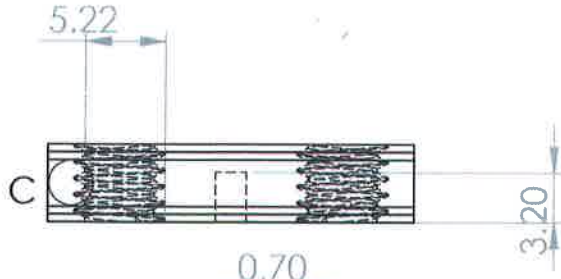


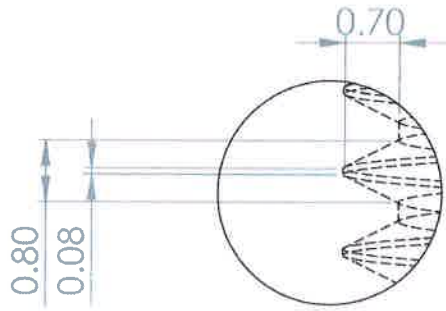
	Current ratio error in % at % of rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	-0,727	-0,137	-0,011	0,065	0,139	0,176	0,171	
1,88 VA/ 1	-0,527	-0,012	0,101	0,174	0,234	0,268	0,274	0,170
0,94 VA/ 1	-0,417	0,052	0,159	0,228	0,283	0,315	0,321	0,305
0,47 VA/ 1	-0,362	0,084	0,188	0,255	0,308	0,339	0,344	0,347
VA/								

	Phase displacement in [min] at % rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	59,053	28,552	23,161	18,771	12,378	9,219	10,434	
1,88 VA/ 1	53,586	24,319	19,453	15,935	11,057	7,504	7,020	52,579
0,94 VA/ 1	50,686	22,154	17,502	14,357	10,231	7,043	6,329	9,505
0,47 VA/ 1	49,066	21,084	16,488	13,517	9,771	6,765	6,126	6,831
VA/								

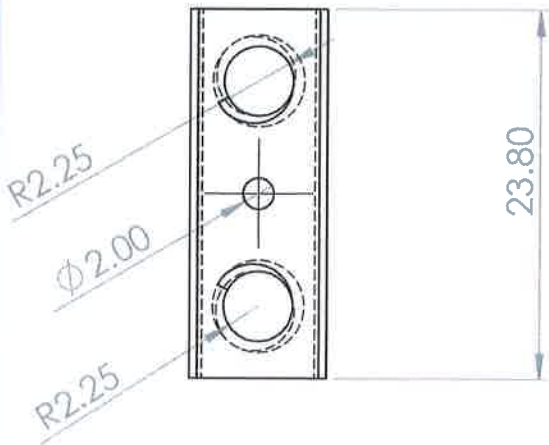








DETAIL C
SCALE 10 : 1



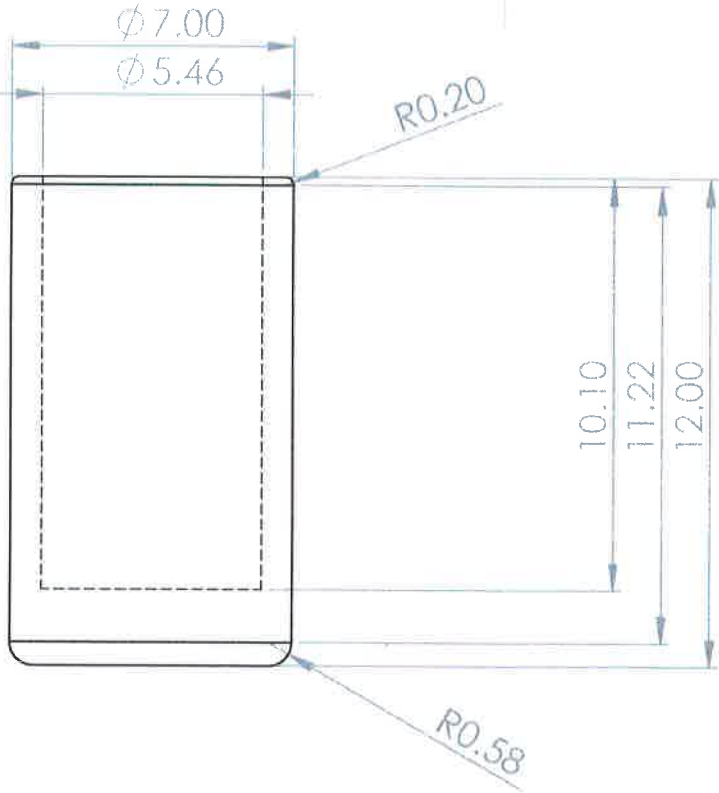
TESTLA ELEKTRİK LABORATUVARLARI
TESLAB
• 2010 •

				TEKNİK RESMİ ÖLÇEKLENDİRMEYİN	REVİZYON: R.0
				RESİM NO:	1004.2
	İSİM	İMZA	TARİH		
ÇİZEN	Burak ÜNLÜTAŞ		08.08.2018		
DENET.	Ramazan ÖZCAN		08.08.2018		
ONAY.	Abdulmoniem Saleh				
ÜRET.	Ahmet Hariri				
KALİTE	Onur Çolak				
				MALZEME: Pirinç	A4
	GENEL TOLERANS: DIN ISO 2768 mm			AĞIRLIK:	ÖLÇEK:1:1 SAYFA 1 / 1

TESLAB KONTROL EDİLMİŞTİR

Klemens 24 mm

VTEKE



TESTLA ELEKTRİK LABORATUVARLARI
TESLAB
• 2010 •

TEKNİK RESMİ ÖLÇEKLENDİRMEYİN	REVİZYON: R.0

TESLAB KONTROL EDİLMİŞTİR

	İSİM	İMZA	TARİH
ÇİZEN	Burak ÜNLÜTAŞ		08.08.2018
DENET.	Ramazan ÖZCAN		08.08.2018
ONAY.	Abdulmonlem Saleh		
ÜRET.	Ahmet Harirl		
KALİTE	Onur Çolak		

RESİM NO:

BAŞLIK: Vida Başı

MALZEME: ABS Yanmaz

YTEKE

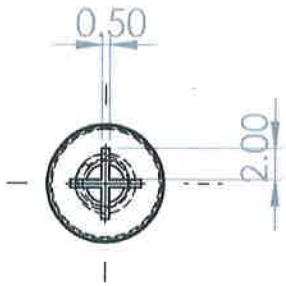
A4

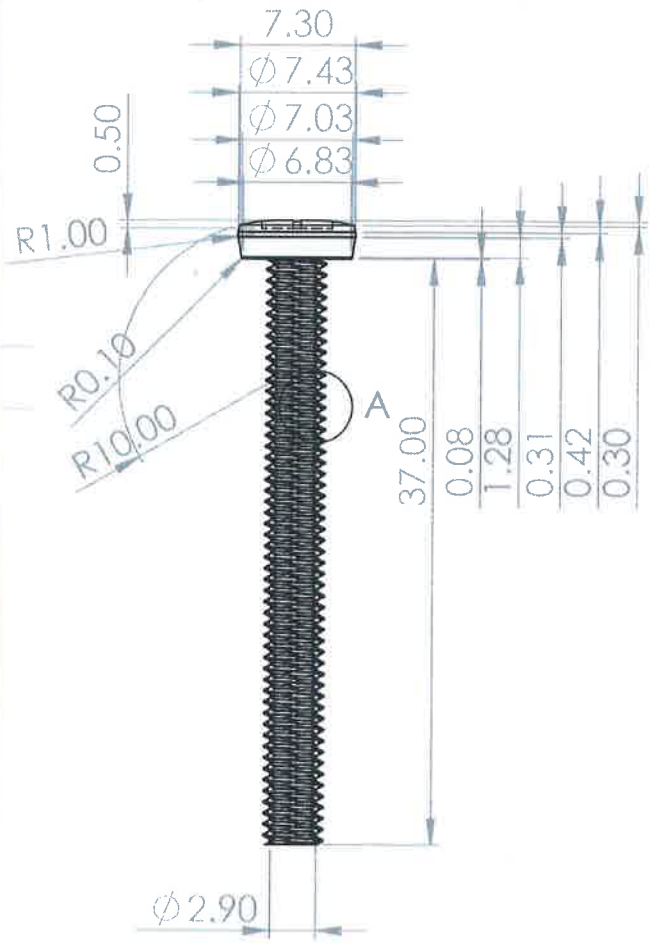
GENEL TOLERANS: DIN ISO 2768 mm

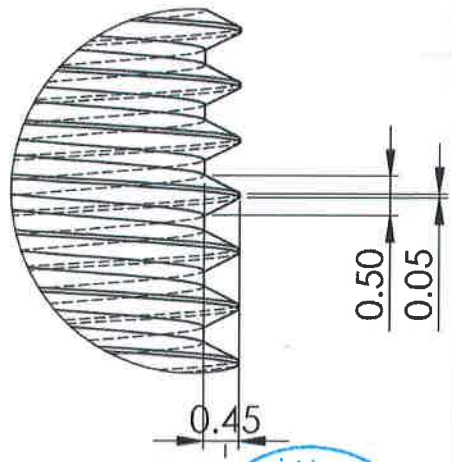
AĞIRLIK:

ÖLÇEK:1:1

SAYFA 1 / 1







DETAIL A
SCALE 10 : 1

TESLA ELEKTRİK LABORATUVARI
TESLAB
• 2010 •

	İSİM	İMZA	TARİH	TEKNİK RESMİ ÖLÇEKLENDİRMEYİN	REVİZYON: R.0
ÇİZEN	Burak ÜNLÜTAŞ		08.08.2018	RESİM NO: 1008.1	
DENET.	Ramazan ÖZCAN		08.08.2018		
ONAY	Abdulmonlem Saleh				
ÜRET.	Ahmet Harirl				
KALİTE	Onur Çolak			MALZEME:	
	GENEL TOLERANS: DIN ISO 2768 mm			AĞIRLIK:	ÖLÇEK:1:1

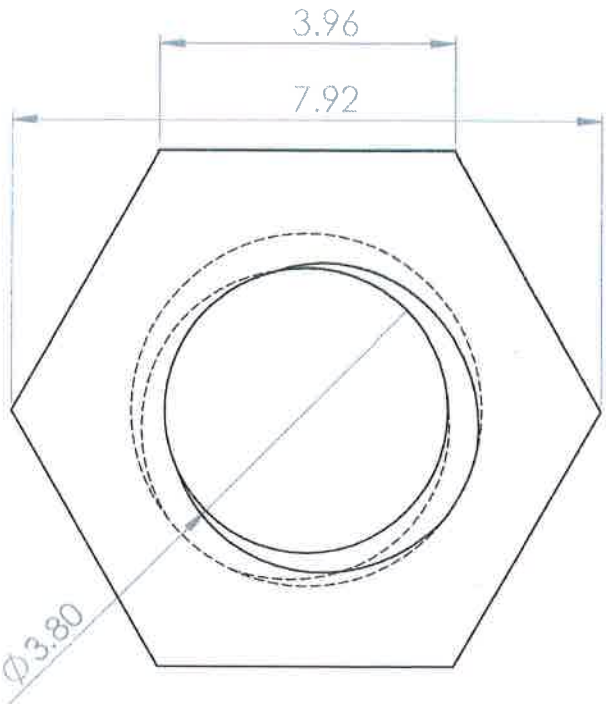
TESLAB KONTROL EDİLMİŞTİR

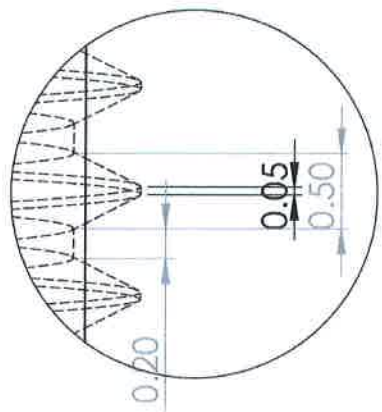
Yan vida 4*35 ysb

YTEKE

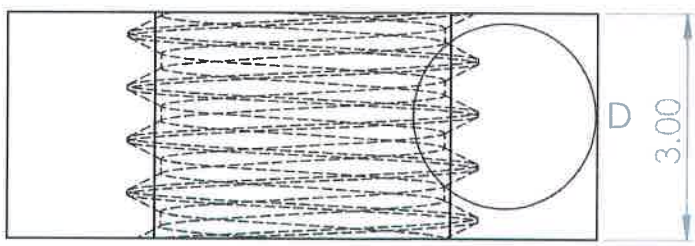
A4

SAYFA 1 / 1





DETAIL D
SCALE 20 : 1



TESTLA ELEKTRİK LABORATUVARLARI
TESLAB
2010

TESLAB
KONTROL EDİLMİŞTİR

	İSİM	İMZA	TARİH
ÇİZEN	Burak ÜNLÜTAŞ		08.08.2018
DENET.	Ramazan ÖZCAN		08.08.2018
ONAY.	Abdulmoniem Saleh		
ÜRET.	Ahmet Harki		
KALİTE	Onur Çolak		

GENEL TOLERANS: DIN ISO 2768 mm

MALZEME:

AĞIRLIK:

TEKNİK RESMİ ÖLÇEKLENDİRMEYİN

REVİZYON: R.0

RESİM NO.

1008.4

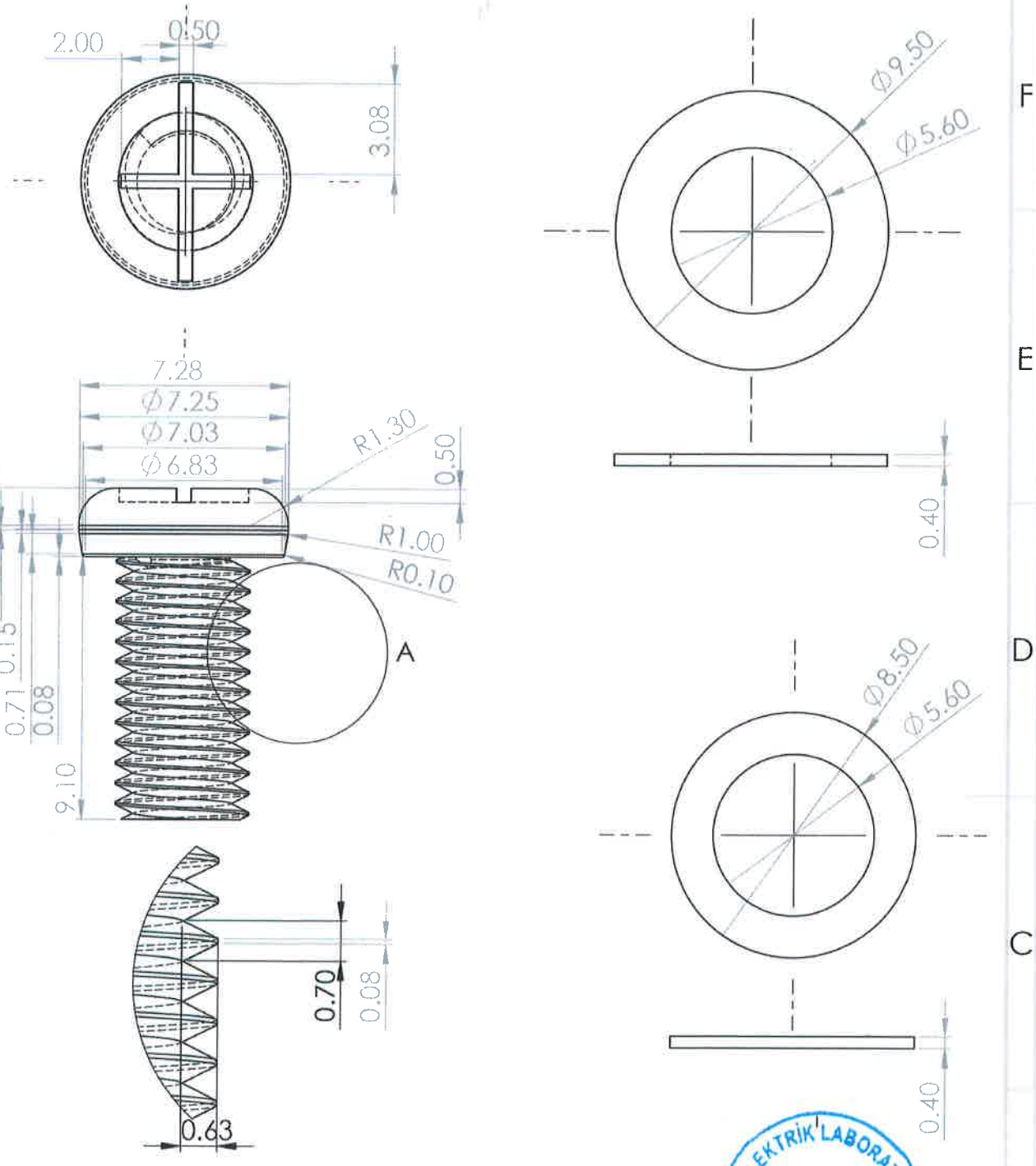
Somun

YTEKE

A4

ÖLÇEK:1:1

SAYFA 1 / 1



DETAIL A
SCALE 10 : 1

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• 2019 •

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KONTROL EDİLMİŞTİR

TEKNİK RESMİ ÖLÇEKLENDİRMEYİN | REVİZYON: R.0

RESİM NO: 1008.5

	İSİM	İMZA	TARİH
ÇİZEN	Burak ÜNLÜTAŞ		08.08.2018
DENET.	Ramazan ÖZCAN		08.08.2018
ONAY.	Abdulmonlem Saleh		
ÜRET.	Ahmet Harlı		
KALİTE	Onur Çolak		

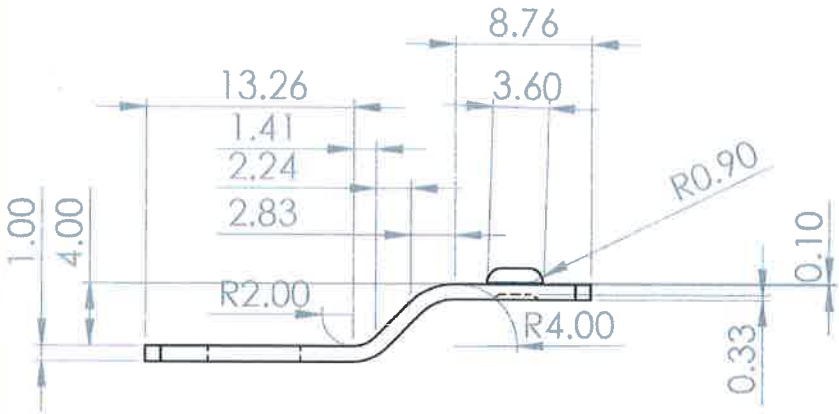
BAŞLIK: Trafo vidası (Nikel Kaplama) 5*10

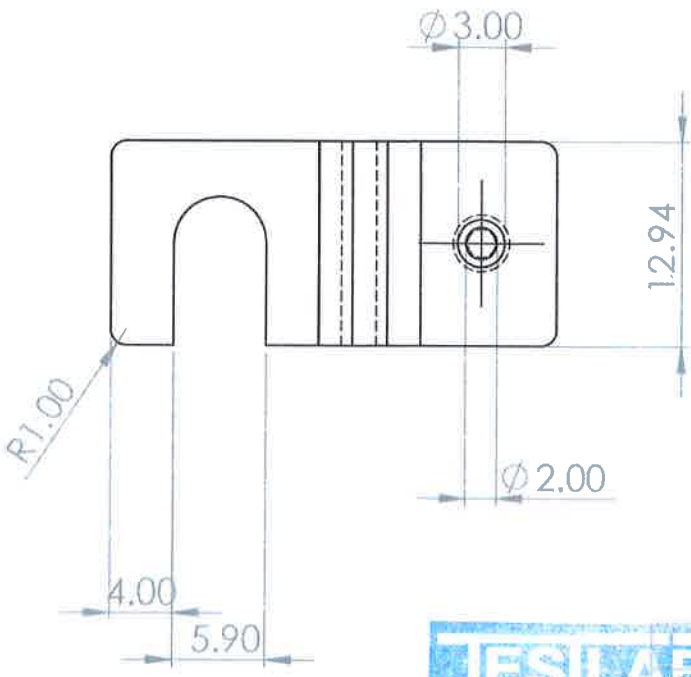
MALZEME:

YTEKE

A4

GENEL TOLERANS: DIN ISO 2768 mm | AĞIRLIK: | ÖLÇEK:1:1 | SAYFA 1 / 1





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• 2010 •

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TEKNİK RESMİ ÖLÇEKLENDİRMEYİN | REVİZYON: R.0

RESİM NO.: 1008.6

	İSİM	İMZA	TARİH
ÇİZEN	Burak ÜNLÜTAŞ		08.08.2018
DENET.	Ramazan ÖZCAN		08.08.2018
ONAY.	Abdulmoniem Saleh		
ÜRET.	Ahmet Harir		
KALİTE	Onur Çolak		

BAŞLIK: Sac ayak

MALZEME:

YTEKE

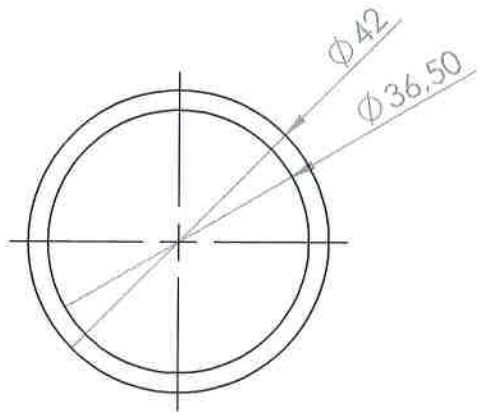
A4

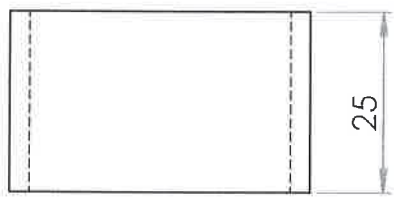
GENEL TOLERANS: DIN ISO 2768 mm

AĞIRLIK:

ÖLÇEK:1:1

SAYFA 1 / 1





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TEKNİK RESMİ ÖLÇEKLENDİRMEYİN | REVİZYON: R.0

RESİM NO: TK30S-Nüve

	İSİM	İMZA	TARİH
ÇİZEN	Burak ÜNLÜTAŞ		08.08.2018
DENET.	Ramazan ÖZCAN		08.08.2018
ONAY	Abdulmoniem Saleh		
ÜRET.	Ahmet Hariri		
KALİTE	Onur Çolak		

BAŞLIK: TK30S-Nüve

MALZEME: Silicone Steel

VTEKE

A4

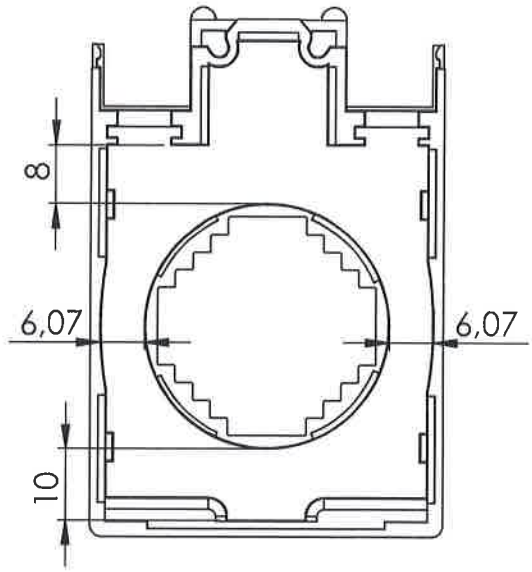
GENEL TOLERANS: DIN ISO 2768 mm

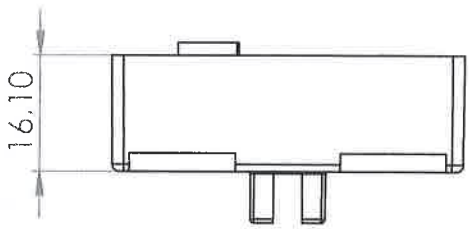
AĞIRLIK:

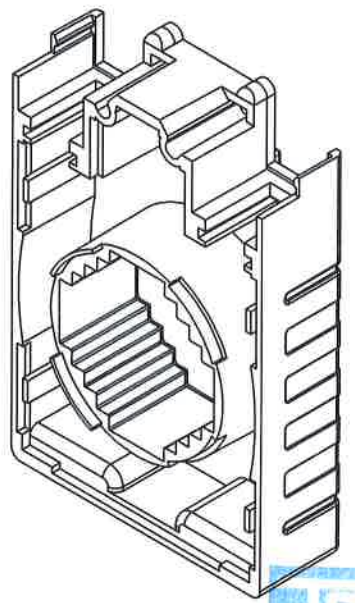
ÖLÇEK:1:1

SAYFA 1 / 1

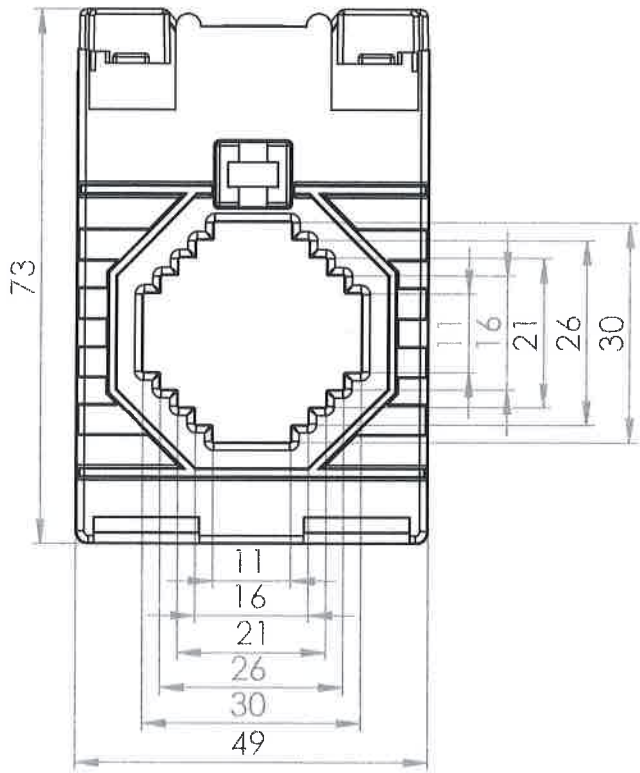
YARI MAMUL

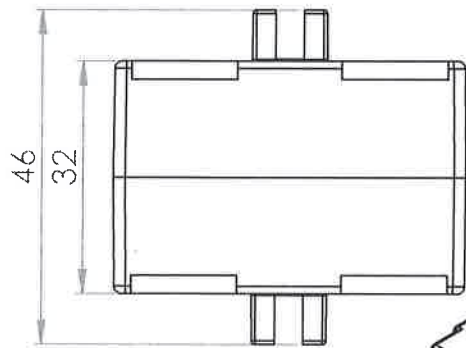


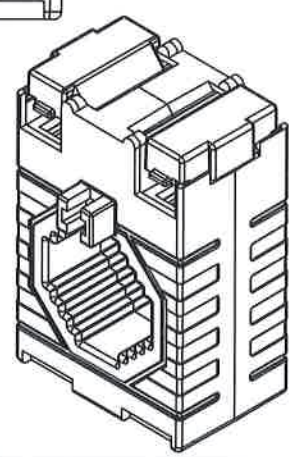




MONTAJ







TESTLA ELEKTRİK LABORATUVARLARI
TESILAB
• 2010 •

TESILAB
KONTROL EDİLMİŞTİR

	İSİM	İMZA	TARİH
ÇİZEN	Burak ÜNLÜTAŞ		20/01.2018
DENET.	Ramazan ÖZCAN		26/01.2018
ONAY.	Abdulmoniem Saleh		
ÜRET.	Ahmet Hariri		
KALİTE	Onur Çolak		

GENEL TOLERANS: DIN ISO 2768 mm

MALZEME: Alev Geciktiricili Yanmaz ABS

AĞIRLIK:

TEKNİK RESMİ ÖLÇEKLENDİRMEYİN | REVİZYON: R.0

RESİM NO. TK30SPK

BAŞLIK: **TK-30S PLASTİK GÖVDE**

VTEKE

A4

ÖLÇEK:1:1 | SAYFA 1 / 1