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TESTLA
Elektrik Laboratuvarları Tic. Ltd. Şti.

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TÜRKAK
Test
TS EN ISO/IEC 17025
AB-0386-T

AB-0386-T
1903.27.08/00
06.08.2019

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	CK20 300/5 A Current Transformer		
Order No.	**1903.27**	**Sample Acceptance Date**	**22.07.2019**
Num. Of Pages of The Report	10 + 13 pages of annexes 23 pages in total	**Test Date(s)**	**23.07.2019-01.08.2019**
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 •2019•	**06.08.2019**	**Mehmet KALYONCU**	**Caner EREN**

TABLE OF CONTENTS

TESTLA ELEKTRİK LABORATUVARLARI TESLAB • 2010 •

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)
24,1-27,9	47-59	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	CK20
Declared Primary Current / Declared Secondary Current	300/5A Icth= 1,2 In
Rated Frequency	50/60 Hz
Cl / VA	Cl:1 FS5 3,75VA
Rated Short-Time Thermal Current (Ith) and Duration (sec)	18 kA / 1 sn.
Serial Number	04198543

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.

(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	360 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		28,00			
Outdoor (Oil) Temperature -1		27,88			
Outdoor (Oil) Temperature -2		28,13			
CK20 300/5 A	Secondary 1	92,57	64,56	75,00	POSITIVE
	Secondary 2	85,82	57,82	75,00	POSITIVE
	Plastic Body Side	61,40	33,40	75,00	POSITIVE
	Plastic Cover Upper	49,09	21,08	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
110,65	132,89	53

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= 49 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.	18 kA RMS 1000 ms 45 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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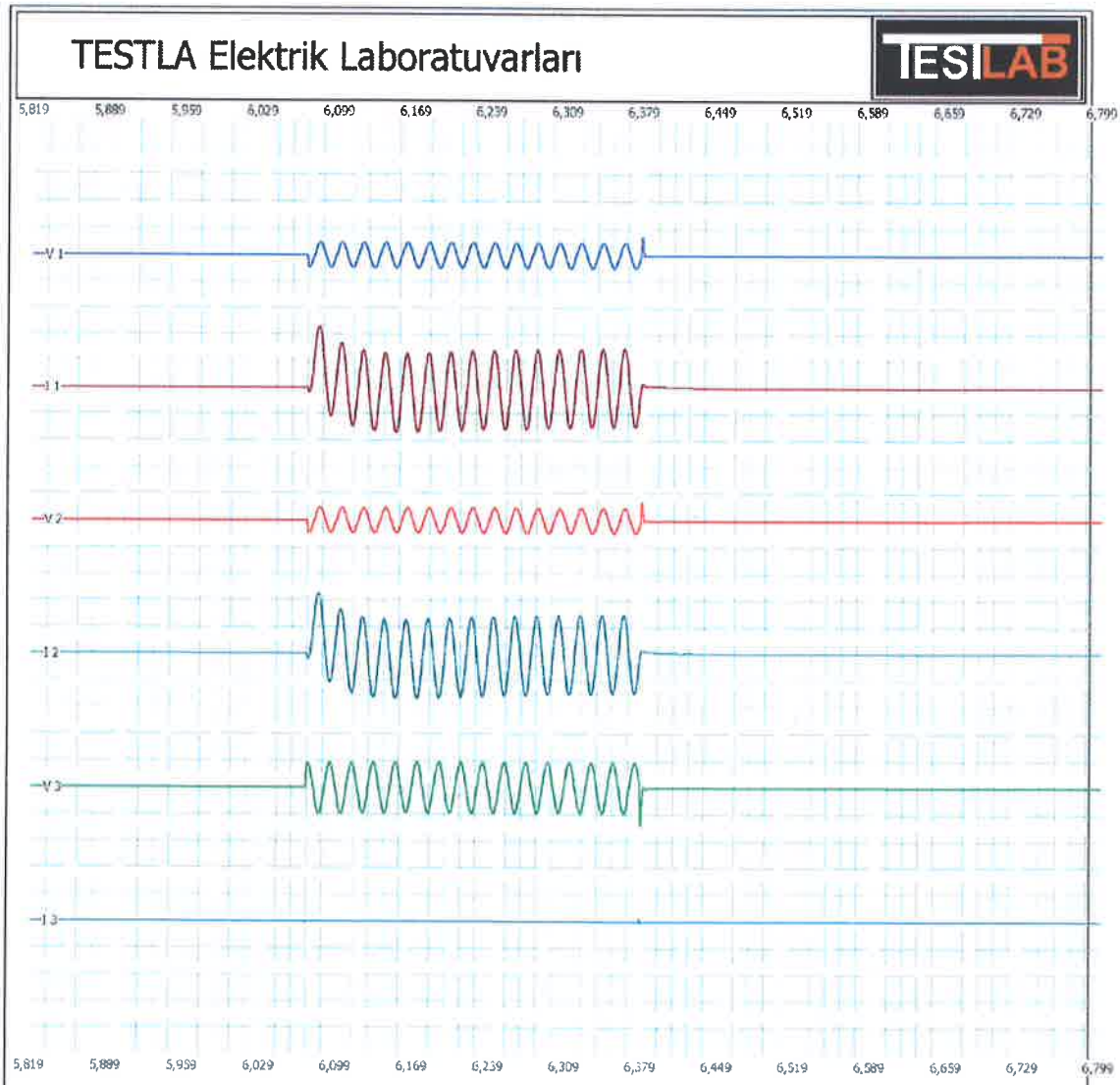
(IEC 61869-1) IEC 61869-2			
Clause	**Required-Requirement**	**Measured-Observed**	**Result**

Oscillogram of Short-Time Current Test



V 1	V 2	V 3	I 1	I 2	I 3
129,919 V	128,528 V	257,024 V	21.919,659 A	21.895,460 A	0,000 A
Cos Phi 1	Cos Phi 2	Cos Phi 3	I1 time	I2 time	I3 time
0,256	0,254	0,000	302 msec	301 msec	0 msec
I1 Peak	I2 Peak	I3 Peak	I1 Joul	I2 Joul	I3 Joul
45.935,292 A	45.584,840 A	0,000 A	144,862 kA²sn	144,423 kA²sn	0,001 kA²sn

Osc. No :	1903.27-42676	Test Date :	01.08.2019
Company :	VTEK Elektrik		
Test Current :	18 kA		
Test Maneuvers :	45 kA Peak		
Tip/Model :	CK20 300-5 Akım Trafosu		
Sample No :	1903.27.08		

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ID : 4_42676

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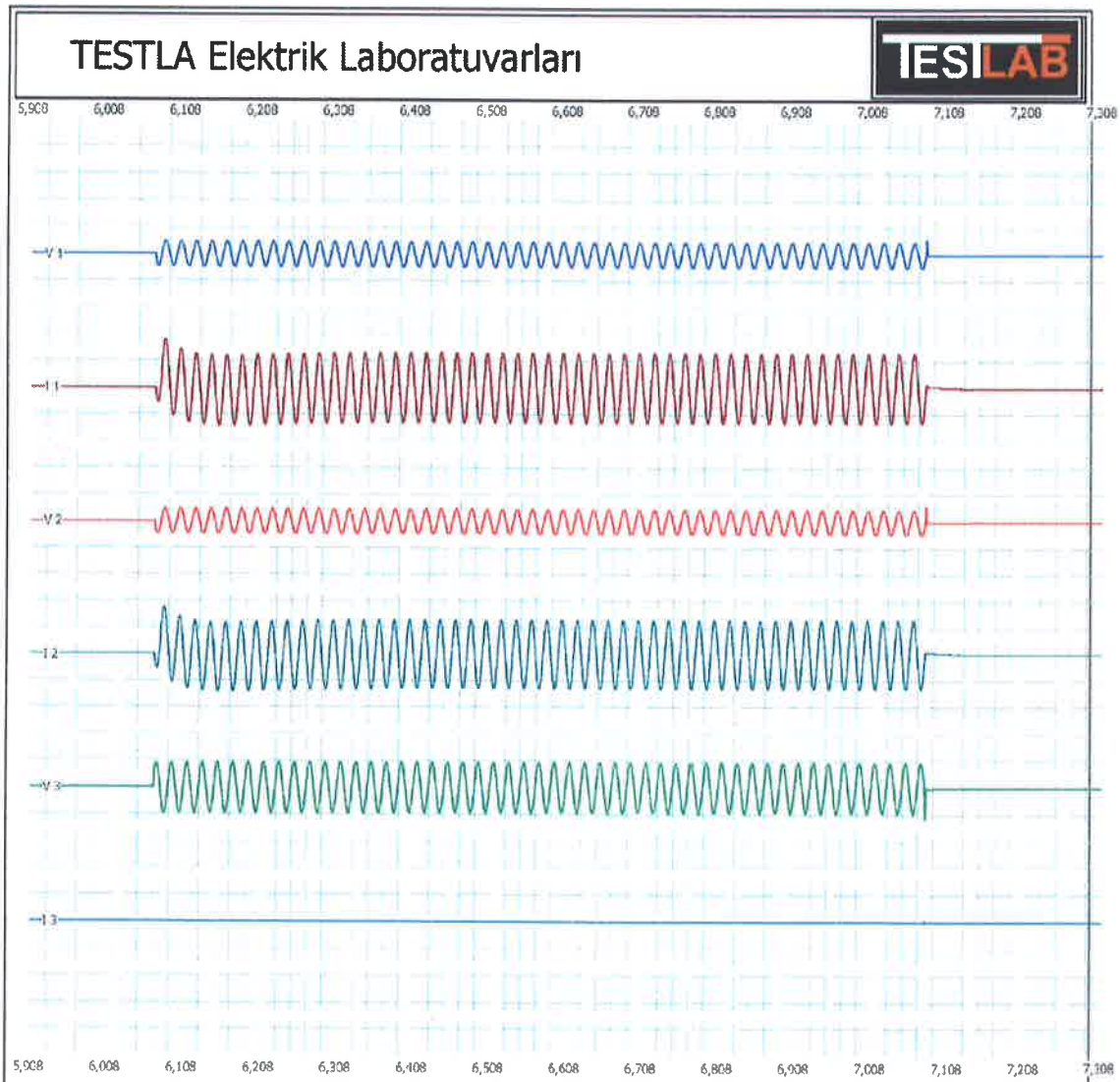
(IEC 61869-1) IEC 61869-2

Clause	Required-Requirement	Measured-Observed	Result



V 1	V 2	V 3	I 1	I 2	I 3
130,388 V	127,819 V	256,163 V	18.787,497 A	18.764,164 A	0,000 A
Cos Phi 1	Cos Phi 2	Cos Phi 3	I1 time	I2 time	I3 time
0,277	0,273	0,000	1.006 msec	1.006 msec	0 msec
I1 Peak	I2 Peak	I3 Peak	I1 Joul	I2 Joul	I3 Joul
35.891,852 A	35.626,807 A	0,000 A	355,176 kA²sn	354,294 kA²sn	0,001 kA²sn

Osc. No :	1903.27-42677	Test Date :	01.08.2019
Company :	VTEK Elektrik		
Test Current :	18 kA		
Test Maneuvers :	18 kA Rms		
Tip/Model :	CK20 300-5 Akım Trafosu		
Sample No :	1903.27.08		

www.testla.com.tr ID : 4_42677

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(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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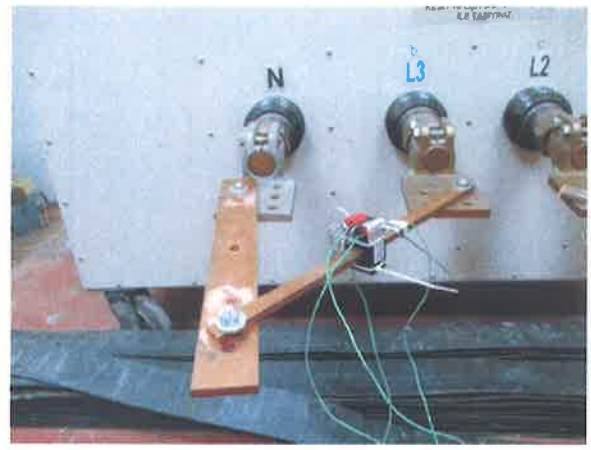
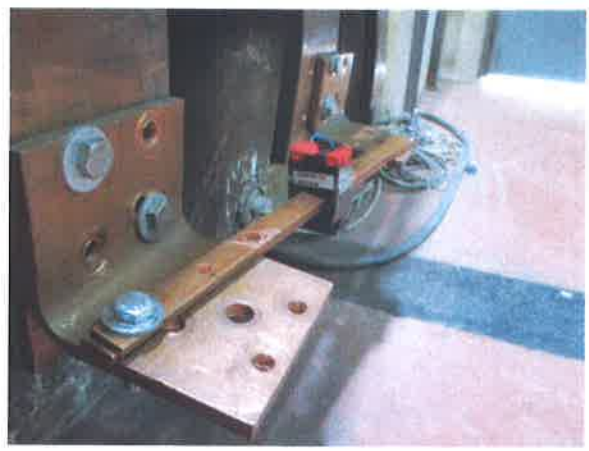
6. Test Assembly and Test Item Photographs





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.
- 5 pages technical document.

END OF REPORT

Company Name:	
Company Address:	
Order Number:	

OMICRON

General test information:

Date/Time: 2019-07-23, 13:09:59

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

Used test settings:

I-pn:	300,0 A		Location:		Object:
I-sn:	5,0 A		Company:		Manufacturer: VTEK ELEKTRİK
Rated burden:	3,75 VA / 1		Country:		Type: CK20
Operating burden:	3,75 VA / 1		Station:	Testla	Serial number: 04198543
Applied standard:	IEC 61869-2		Feeder/Bay:		Core number: S1-S2
Core type (P/M):	M		Phase:		Tap: SC BEFORE
Class:	1		IEC-ID	61869-2	Optional: 1903.27.08
FS: 5,0	ext (Icth):	120 %			
f: 50,0 Hz	max. Rct:	0,156 Ω			

Resistance test:

Rmeas (25°C):	0,1306 Ω
Rref (75°C):	0,15576 Ω

Burden test:

Burden:	cos φ:	Z:
Vmeas:	Imeas:	

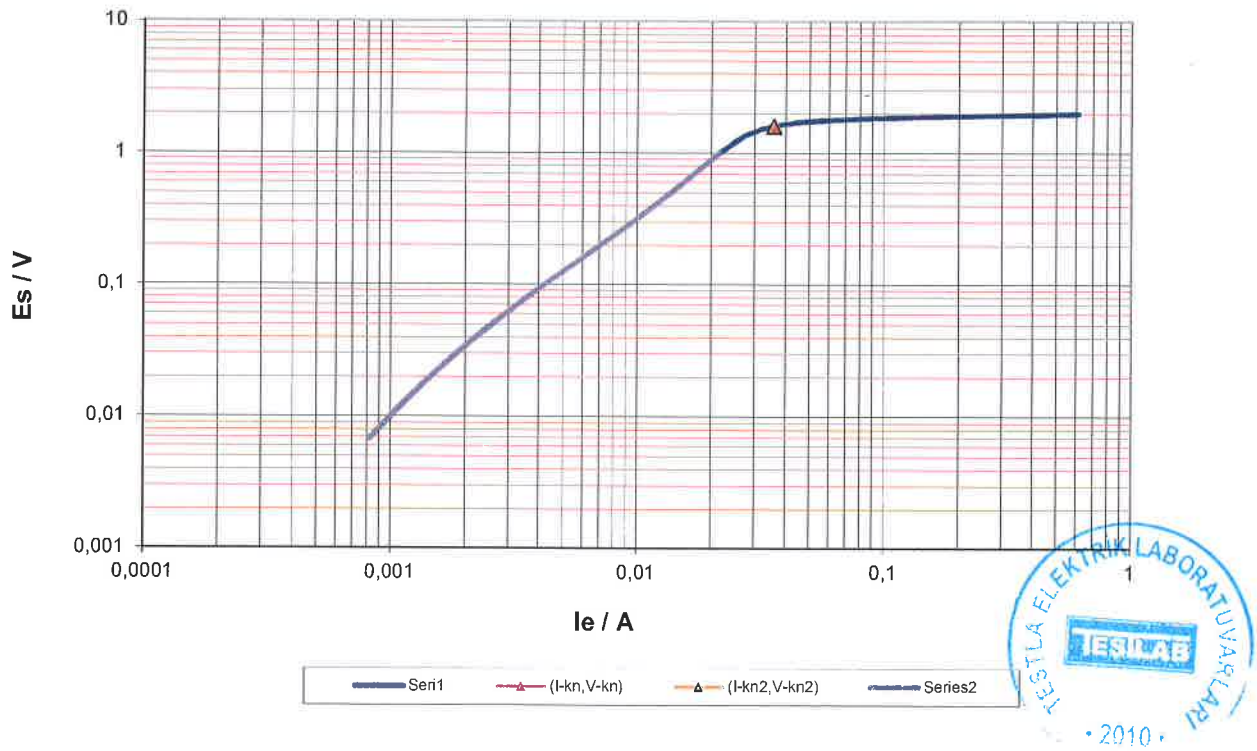
Excitation test:

V-kn:	1,607 V	I-kn:	0,035843 A	Result with rated burden:				Result with operating burden:	
V-kn 2:	#YOK	I-kn 2:	#YOK	FS:	>1,300698	FSi:	>1,3004665	FS: >1,300698	FSi: >1,3004665
Ls:	0,0001799H	Lm:	0,1414H	Ts:	0,463s			Ts: 0,463s	
Kr:	77,9 %								

Ratio test:

Ratio:	300,0 : 5,01685	ε :	0,337 %	Δφ:	10,22 min	Polarity: OK	N: 59,49
		ε_c :	0,4497 %				

Excitation curve data



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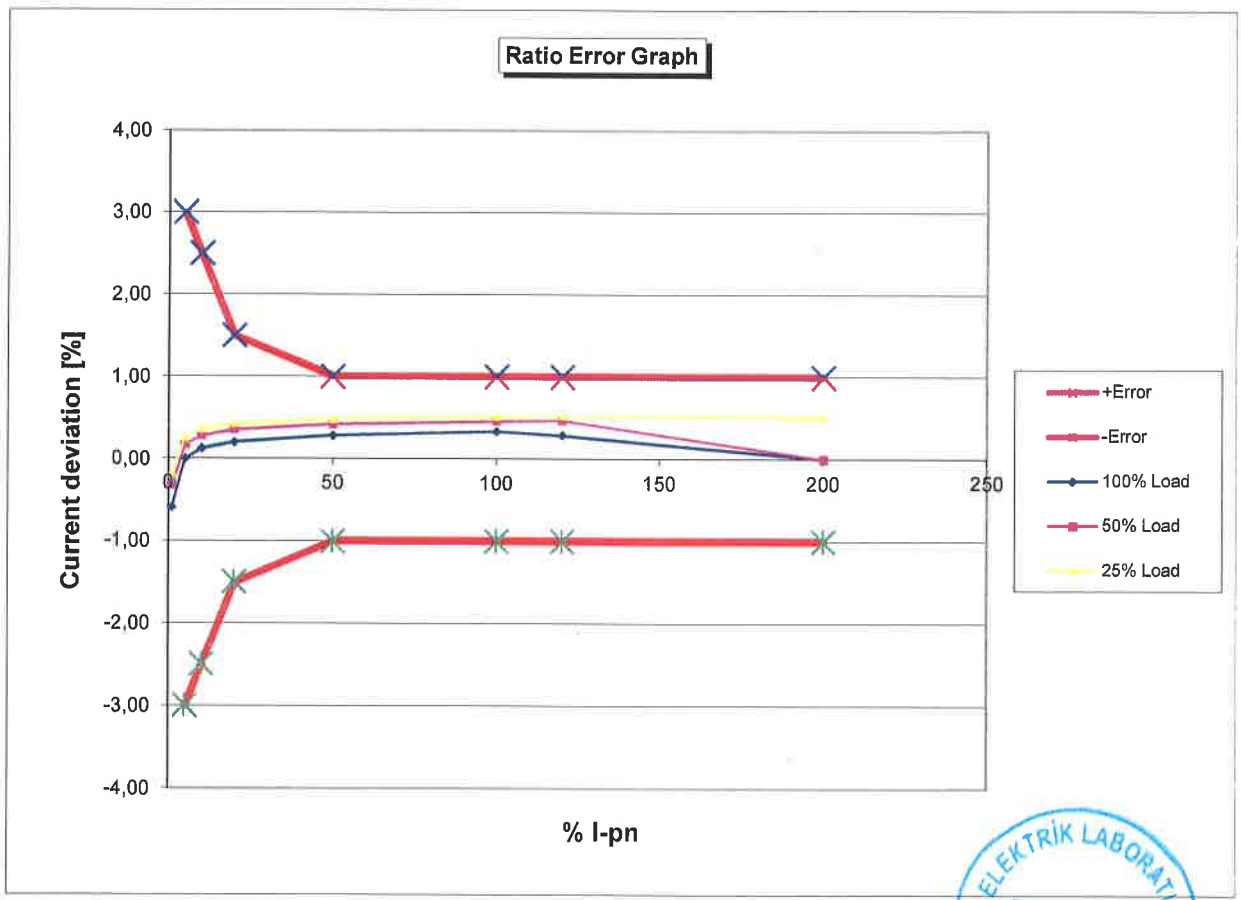
TESTLAB
• 2010 •

	Current ratio error in % at % of rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	-0,591	-0,002	0,121	0,203	0,284	0,337	0,289	
1,88 VA/ 1	-0,326	0,168	0,279	0,354	0,417	0,459	0,472	
0,94 VA/ 1	-0,170	0,258	0,361	0,430	0,485	0,521	0,529	0,514
0,47 VA/ 1	-0,091	0,303	0,404	0,468	0,521	0,552	0,560	0,573
VA/								

	Phase displacement in [min] at % rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	65,010	33,371	27,368	21,896	13,292	10,215	14,547	
1,88 VA/ 1	56,416	27,159	21,895	17,937	11,944	7,545	7,387	
0,94 VA/ 1	52,102	23,844	19,004	15,633	10,909	7,055	6,187	8,768
0,47 VA/ 1	49,615	22,200	17,478	14,355	10,279	6,791	5,982	5,775
VA/								



Company Name:	
Company Address:	
Order Number:	

OMICRON

General test information:

Date/Time: 2019-07-23, 13:17:33

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

Used test settings:

I-pn:	300,0 A			Location:		Object:	
I-sn:	5,0 A			Company:		Manufacturer:	VTEK ELEKTRİK
Rated burden:	3,75 VA / 1			Country:		Type:	CK20
Operating burden:	3,75 VA / 1			Station:	Testla	Serial number:	04198543
Applied standard:	IEC 61869-2			Feeder/Bay:		Core number:	S1-S2
Core type (P/M):	M			Phase:		Tap:	SC BEFORE
Class:	1			IEC-ID	61869-2	Optional:	1903.27.08
FS:	5,0	ext (Icth):	120 %				
f:	60,0 Hz	max. Rct:	0,156 Ω				

Resistance test:

Rmeas (25°C):	0,13087 Ω
Rref (75°C):	0,15609 Ω

Burden test:

Burden:	cos φ:	Z:
Vmeas:	Imeas:	

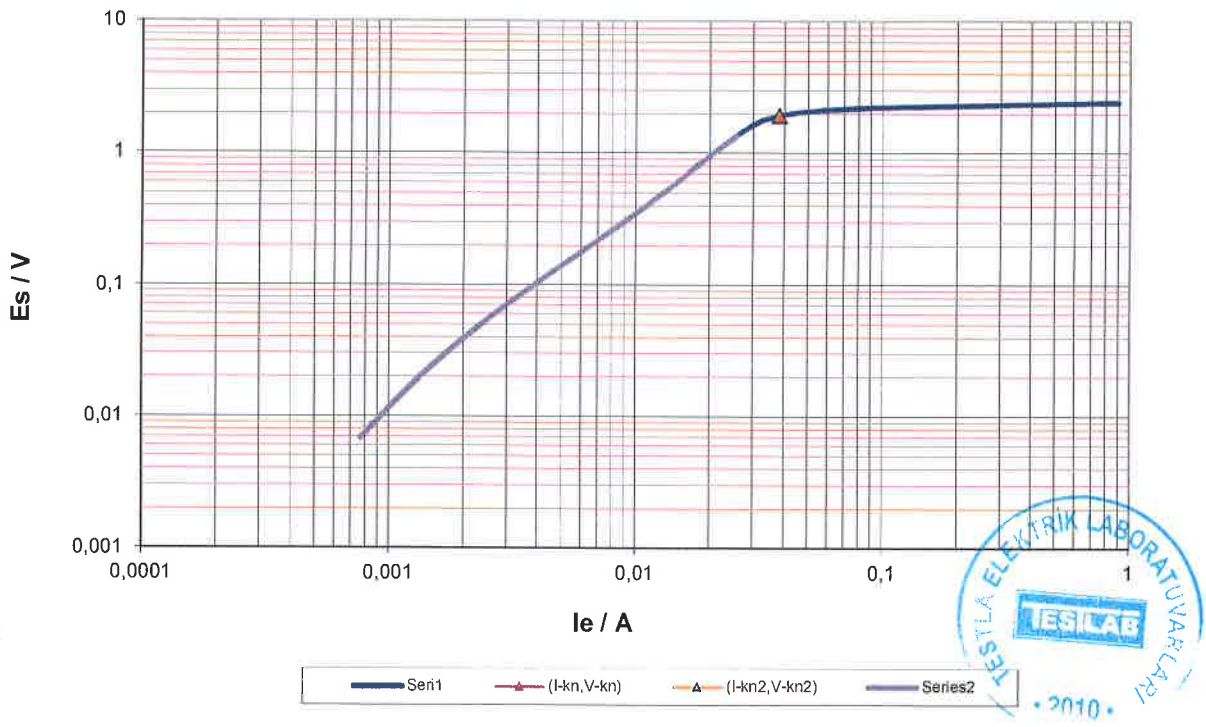
Excitation test:

V-kn:	1,928 V	I-kn:	0,038096 A	Result with rated burden:				Result with operating burden:			
V-kn 2:	#YOK	I-kn 2:	#YOK	FS:	>1,5758155	FSi:	1,57	FS:	>1,5758155	FSi:	1,57
Ls:	0,0001184H	Lm:	0,1338H	Ts:	0,437s			Ts:	0,437s		
Kr:	78,75 %										

Ratio test:

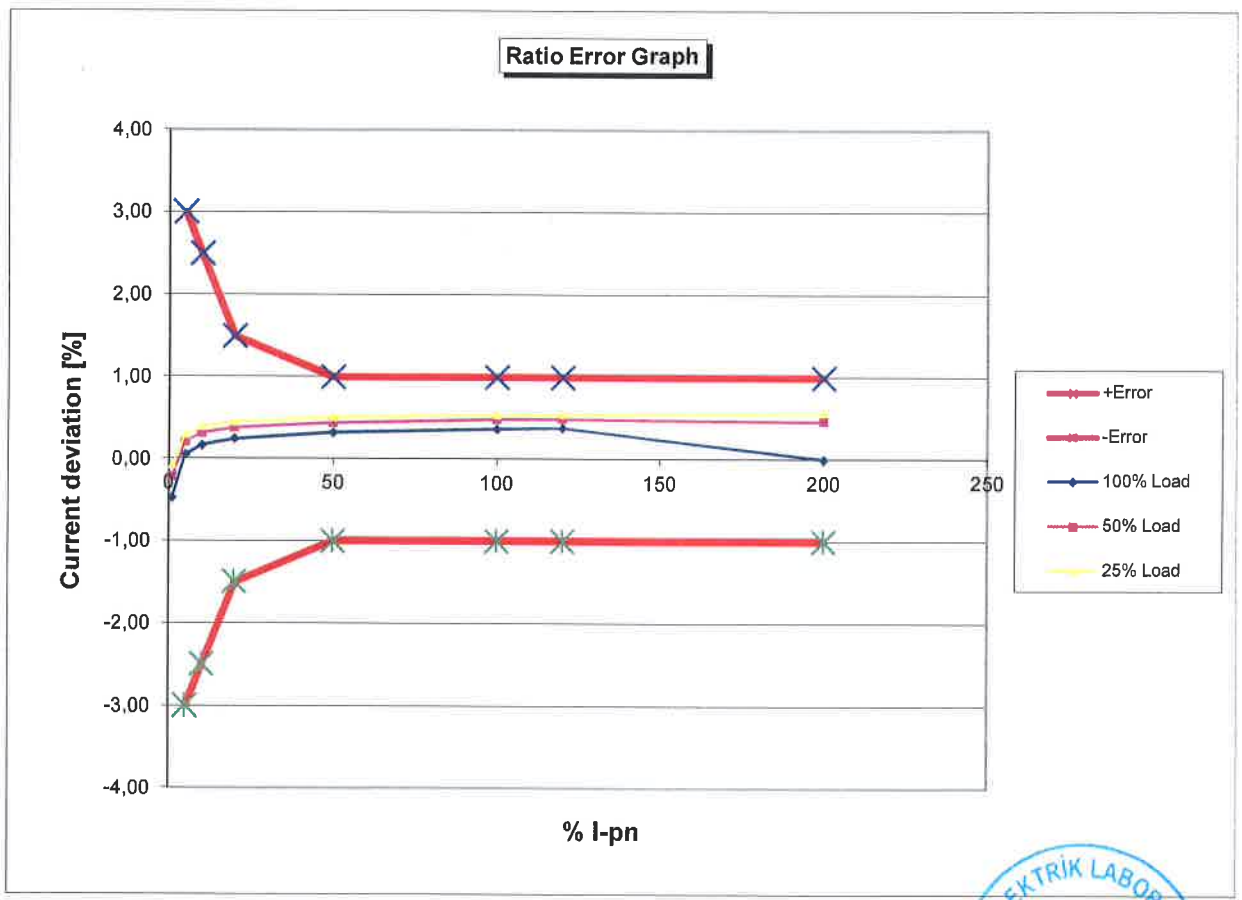
Ratio:	300,0 : 5,01838	ε :	0,3676 %	Δφ:	8,06 min	Polarity:	OK	N:	59,49
		ε_c :	0,424 %						

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	-0,480	0,048	0,164	0,243	0,322	0,368	0,382	
1,88 VA/ 1	-0,224	0,210	0,314	0,383	0,442	0,484	0,492	0,466
0,94 VA/ 1	-0,074	0,294	0,392	0,454	0,508	0,543	0,551	0,571
0,47 VA/ 1	0,001	0,338	0,432	0,490	0,541	0,573	0,580	0,597
VA/								

	Phase displacement in [min] at % rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	60,448	30,242	24,657	20,102	13,100	8,062	8,680	
1,88 VA/ 1	52,783	24,628	19,777	16,274	11,389	7,364	6,374	10,035
0,94 VA/ 1	48,751	21,747	17,155	14,097	10,273	6,992	6,104	5,215
0,47 VA/ 1	46,415	20,262	15,805	12,943	9,624	6,718	5,935	4,417
VA/								



Company Name:	
Company Address:	
Order Number:	

OMICRON

General test information:

Date/Time: 2019-08-01, 16:20:21

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

Used test settings:

I-pn:	300,0 A		Location:		Object:
I-sn:	5,0 A		Company:		Manufacturer: VTEK ELEKTRİK
Rated burden:	3,75 VA / 1		Country:		Type: CK20
Operating burden:	3,75 VA / 1		Station:	Testla	Serial number: 04198543
Applied standard:	IEC 61869-2		Feeder/Bay:		Core number: S1-S2
Core type (P/M):	M		Phase:		Tap: SC AFTER
Class:	1		IEC-ID	61869-2	Optional: 1903.27.08
FS: 5,0	ext (Icth):	120 %			
f: 50,0 Hz	max. Rct:	0,151 Ω			

Resistance test:

Rmeas (25°C):	0,12663 Ω
Rref (75°C):	0,15103 Ω

Burden test:

Burden:	cos φ:	Z:
Vmeas:	Imeas:	

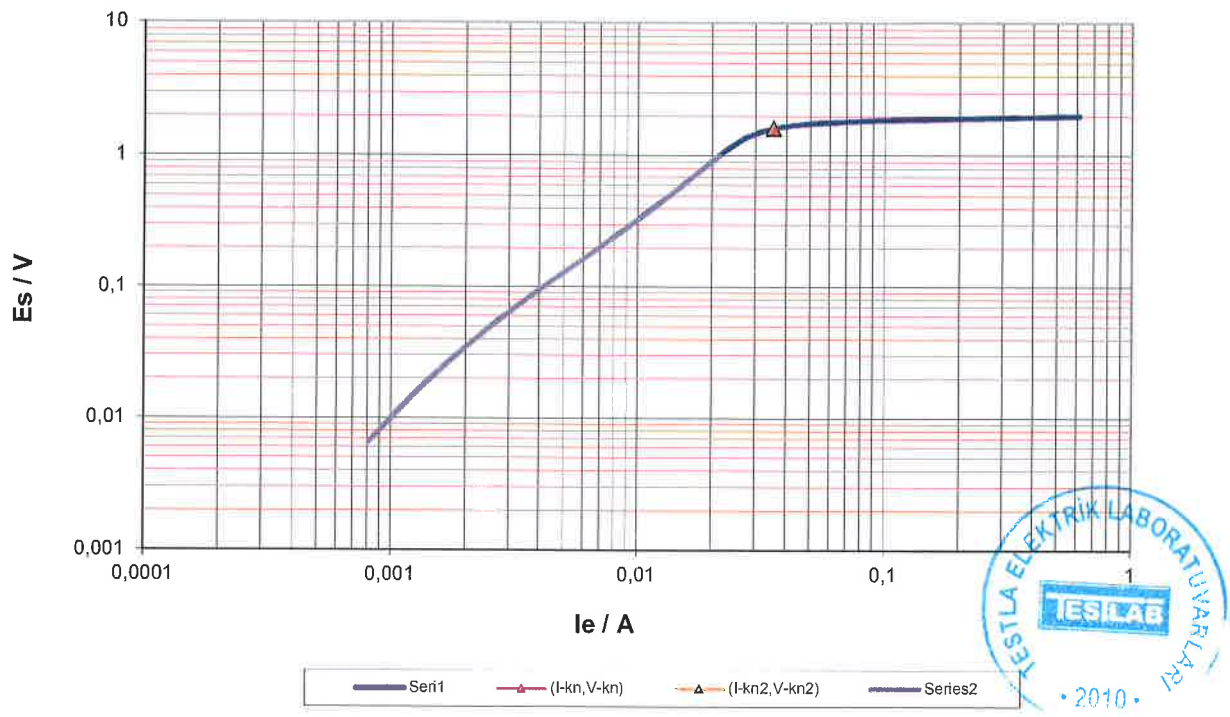
Excitation test:

V-kn: 1,607 V	I-kn: 0,035341 A	Result with rated burden:				Result with operating burden:			
V-kn 2: #YOK	I-kn 2: #YOK	FS:	>1,31963113	FSi:	>1,31977375	FS:	>1,31963113	FSi:	>1,31977375
Ls: 0,0001806H	Lm: 0,1433H	Ts:	0,476s			Ts:	0,476s		
Kr: 78,21 %									

Ratio test:

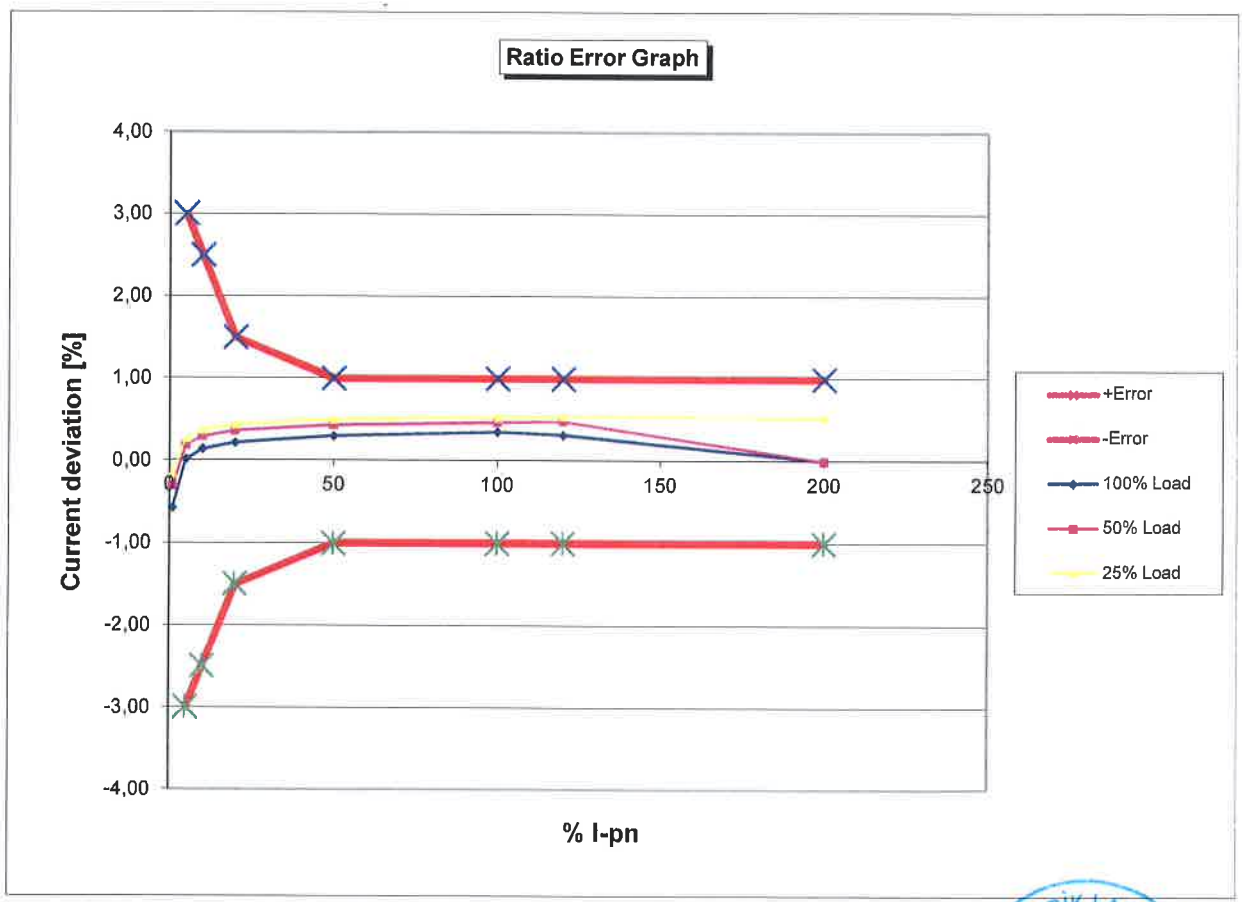
Ratio: 300,0 : 5,01749	ε :	0,3498 %	Δφ:	9,83 min	Polarity: OK	N:	59,49
	ε_c :	0,4458 %					

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	-0,576	0,013	0,138	0,218	0,300	0,350	0,314	
1,88 VA/ 1	-0,310	0,182	0,294	0,368	0,432	0,471	0,482	
0,94 VA/ 1	-0,154	0,271	0,375	0,443	0,499	0,533	0,541	0,534
0,47 VA/ 1	-0,074	0,316	0,417	0,481	0,534	0,564	0,572	0,586
VA/								

	Phase displacement in [min] at % rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	64,280	32,420	26,493	21,191	12,996	9,835	13,045	
1,88 VA/ 1	55,847	26,356	21,149	17,287	11,665	7,278	7,119	
0,94 VA/ 1	51,556	23,125	18,318	15,014	10,600	6,877	5,988	7,573
0,47 VA/ 1	49,068	21,521	16,821	13,765	9,937	6,602	5,832	5,339
VA/								



Company Name:	
Company Address:	
Order Number:	

OMICRON

General test information:

Date/Time: 2019-08-01, 16:23:52

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

Used test settings:

I-pn:	300,0 A		Location:		Object:
I-sn:	5,0 A		Company:		Manufacturer: VTEK ELEKTRİK
Rated burden:	3,75 VA / 1		Country:		Type: CK20
Operating burden:	3,75 VA / 1		Station:	Testla	Serial number: 04198543
Applied standard:	IEC 61869-2		Feeder/Bay:		Core number: S1-S2
Core type (P/M):	M		Phase:		Tap: SC AFTER
Class:	1		IEC-ID	61869-2	Optional: 1903.27.08
FS: 5,0	ext (Icth):	120 %			
f: 60,0 Hz	max. Rct:	0,149 Ω			

Resistance test:

Rmeas (25°C):	0,12507 Ω
Rref (75°C):	0,14917 Ω

Burden test:

Burden:	cos φ:	Z:
Vmeas:	Imeas:	

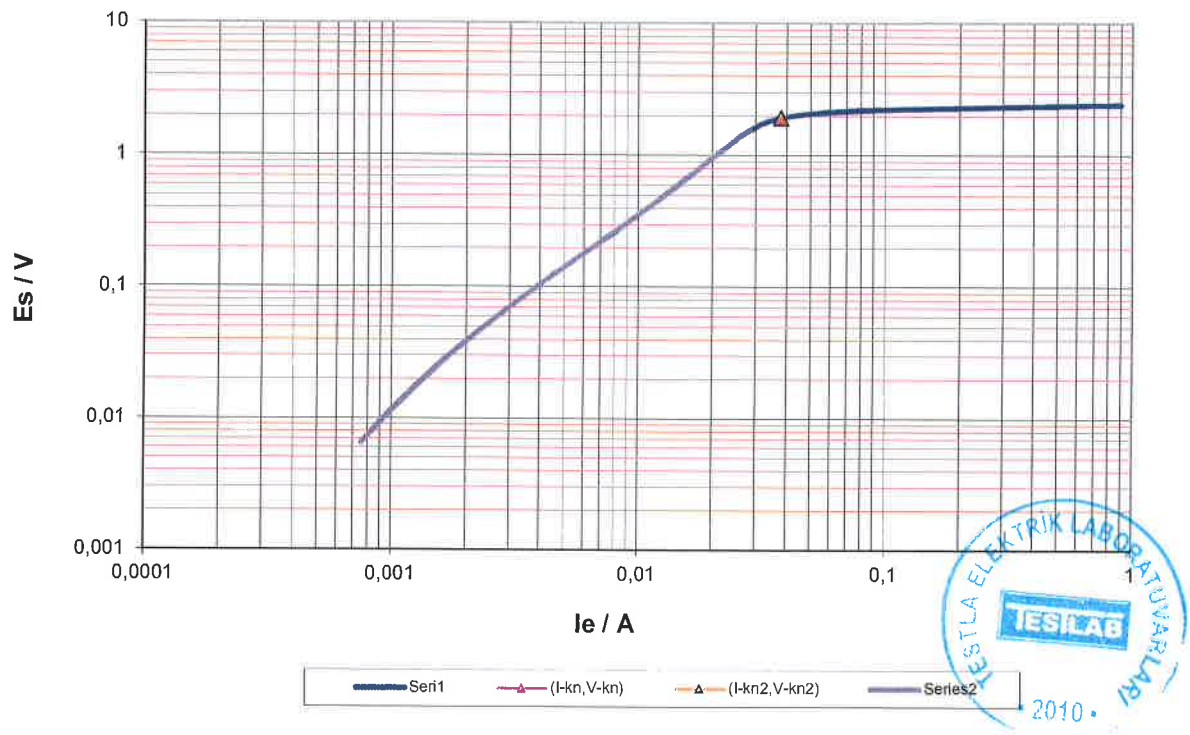
Excitation test:

V-kn:	1,928 V	I-kn:	0,03786 A	Result with rated burden:				Result with operating burden:			
V-kn 2:	#YOK	I-kn 2:	#YOK	FS:	>1,6105585	FSi:	1,61	FS:	>1,6105585	FSi:	1,61
Ls:	0,0001188H	Lm:	0,1351H	Ts:	0,452s			Ts:	0,452s		
Kr:	78,98 %										

Ratio test:

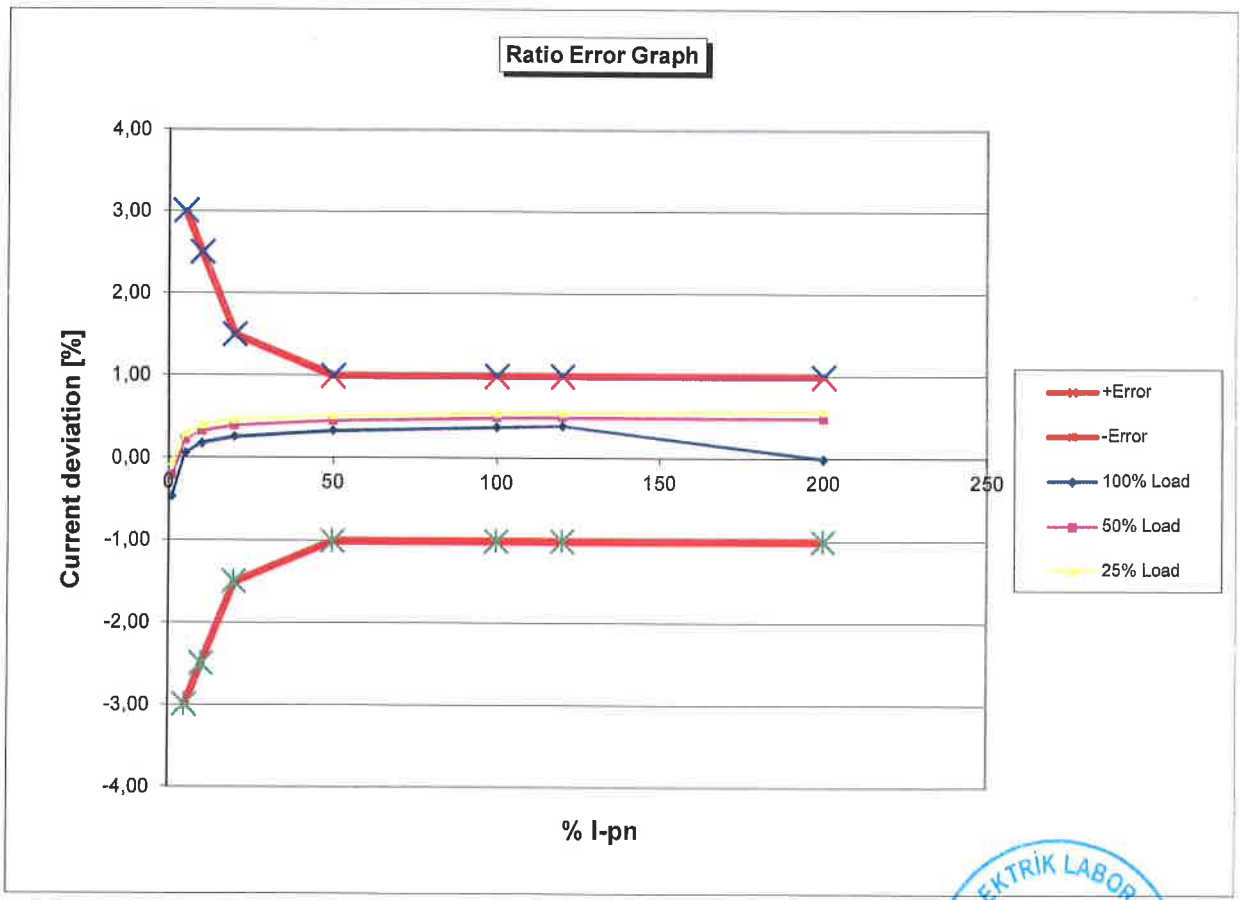
Ratio:	300,0 : 5,01895	ε :	0,379 %	Δφ:	7,75 min	Polarity:	OK	N:	59,49
		ε_c :	0,4275 %						

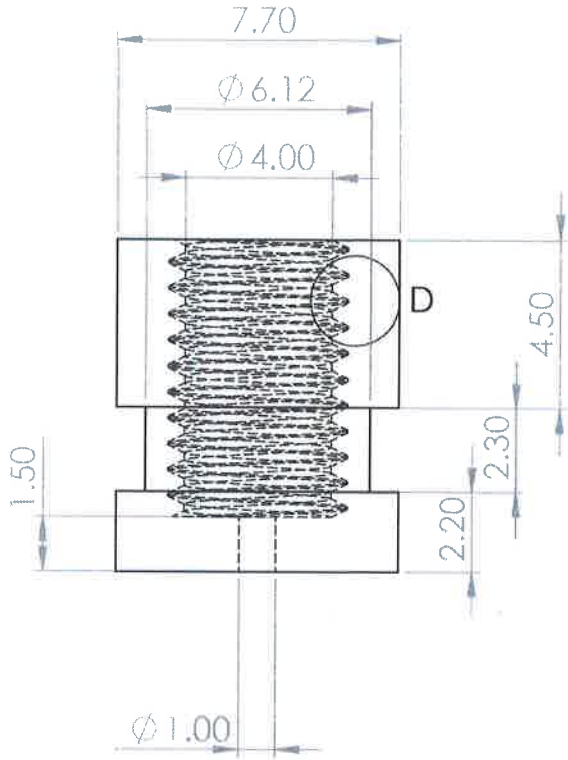
Excitation curve data

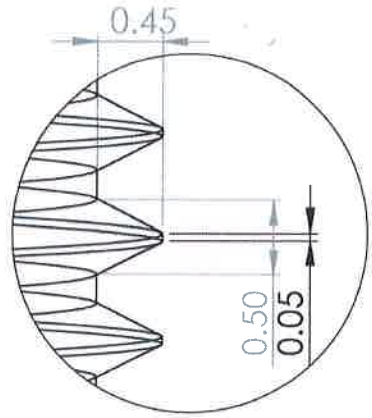


	Current ratio error in % at % of rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	-0,466	0,061	0,179	0,257	0,334	0,379	0,392	
1,88 VA/ 1	-0,207	0,223	0,328	0,398	0,455	0,495	0,503	0,492
0,94 VA/ 1	-0,055	0,308	0,405	0,468	0,521	0,554	0,561	0,580
0,47 VA/ 1	0,022	0,352	0,444	0,504	0,554	0,583	0,591	0,607
VA/								

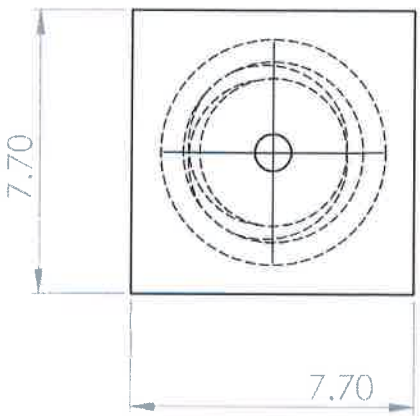
	Phase displacement in [min] at % rated current							
VA/cosPhi	1	5	10	20	50	100	120	200
3,75 VA/ 1	60,340	29,845	24,297	19,757	12,832	7,753	8,341	
1,88 VA/ 1	52,611	24,239	19,387	15,949	11,117	7,184	6,265	8,377
0,94 VA/ 1	48,581	21,369	16,742	13,747	9,999	6,820	5,956	4,912
0,47 VA/ 1	46,224	19,878	15,401	12,580	9,345	6,535	5,786	4,137
VA/								







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 Harlı		
KALİTE	Onur Çolak		

GENEL TOLERANS: DIN ISO 2768 mm

MALZEME: Pirinç

AĞIRLIK:

RESMİ ÖLÇEKLENDİRMEYİN

REVİZYON: R.0

RESİM NO.

1004.3

BAŞLIK:

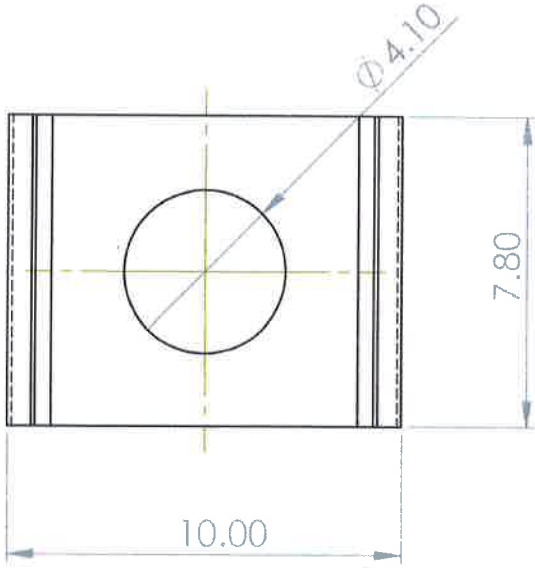
Klemens 8*8 mm

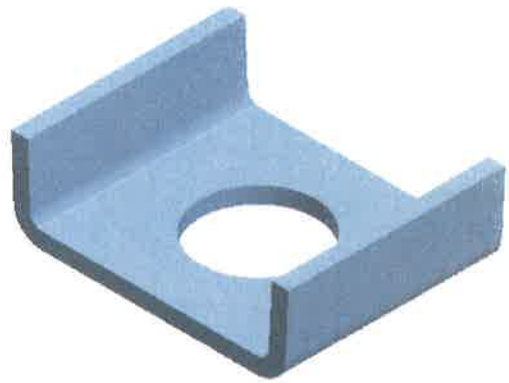
VTEKE

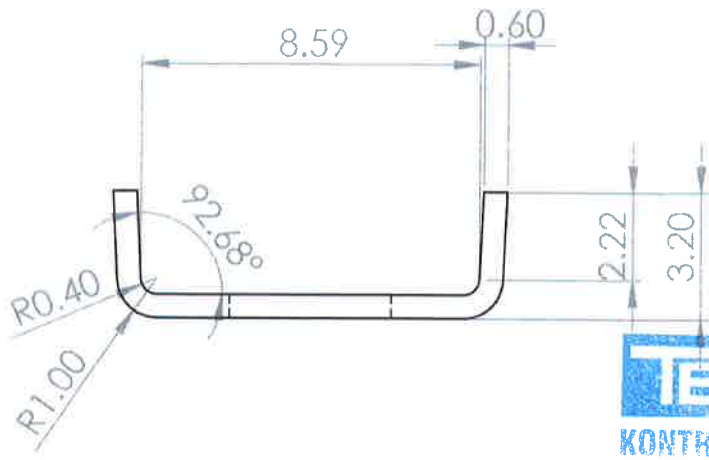
A4

ÖLÇEK:1:1

SAYFA 1 / 1







TESLAB
KONTROL EDİLMİŞTİR

TESTLA ELEKTRİK LABORATUVARLARI
TESLAB
2010

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

GENEL TOLERANS: DIN ISO 2768 mm

MALZEME:

AĞIRLIK:

TEKNİK RESMİ ÖLÇEKLENDİRMEYİN

REVİZYON: R.0

RESİM NO.

1008.7

BAŞLIK:

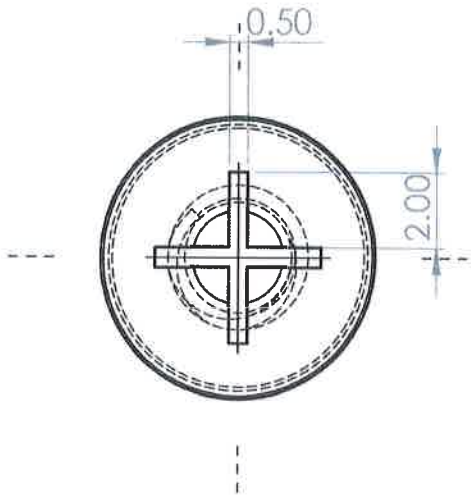
Klemens üst parça Ck20

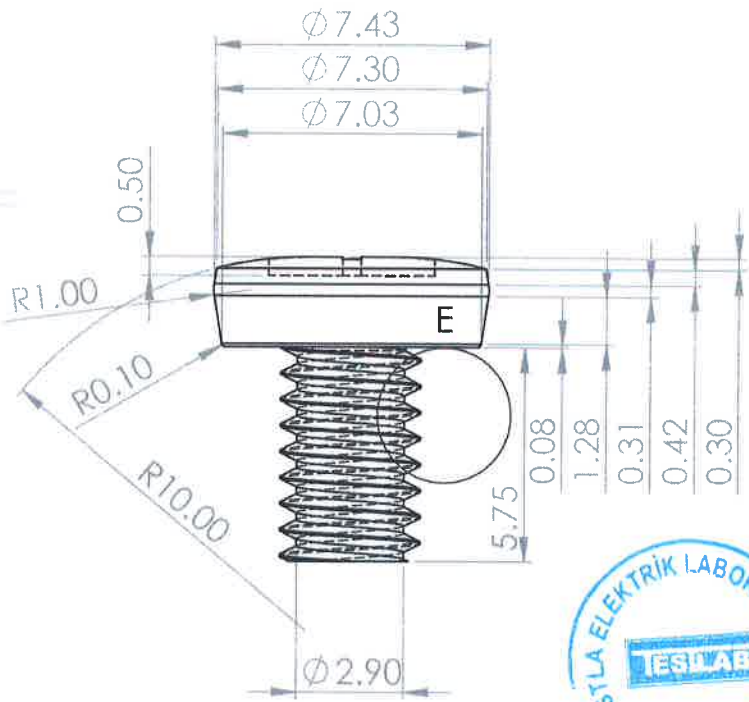
YTEKE

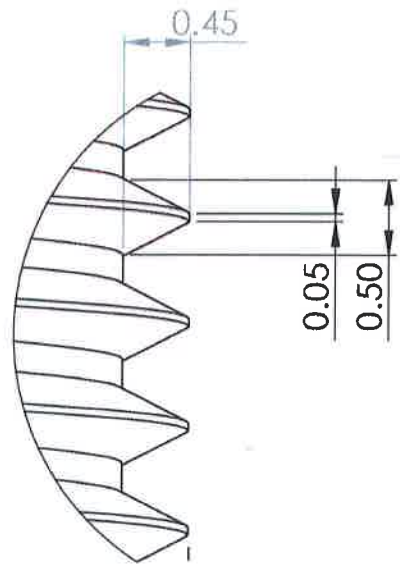
A4

ÖLÇEK:1:1

SAYFA 1 / 1







DETAIL E
SCALE 20 : 1

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TESLAB KONTROL EDİLMİŞTİR

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

GENEL TOLERANS: DIN ISO 2768 mm

TEKNİK RESMİ ÖLÇEKLENDİRMEYİN | REVİZYON: R.0

RESİM NO.: 1008.8

BAŞLIK: Klemens vidası Ck20 (Nikel Kaplama)

MALZEME: Pirinç

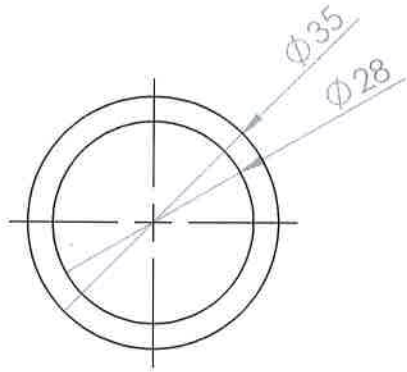
AĞIRLIK:

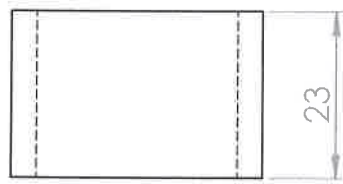
ÖLÇEK:1:1

SAYFA 1 / 1

YTEKE

A4





TESLAB
KONTROL EDİLMİŞTİR

TESLA ELEKTRİK LABORATUVARLARI
TESLAB
• 2010 •

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

GENEL TOLERANS: DIN ISO 2768 mm

MALZEME: Silicone Steel

AĞIRLIK:

TEKNİK RESMİ ÖLÇEKLENDİRMEYİN | REVİZYON: R.0

RESİM NO. CK20-Nüve

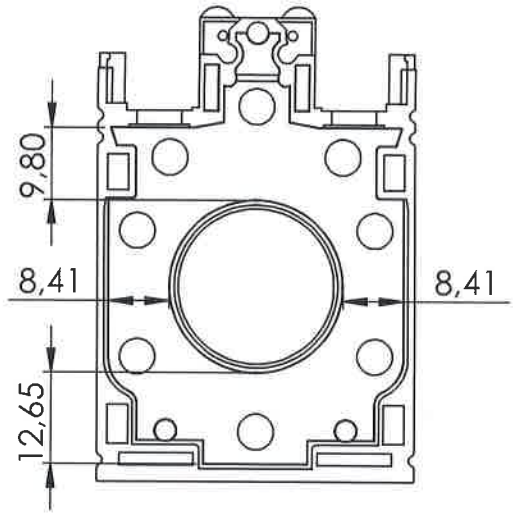
BAŞLIK: CK20-Nüve

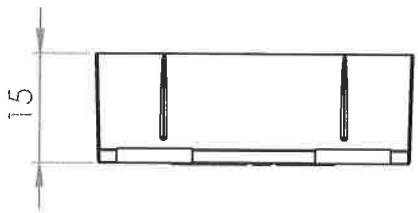
VTEKE

A4

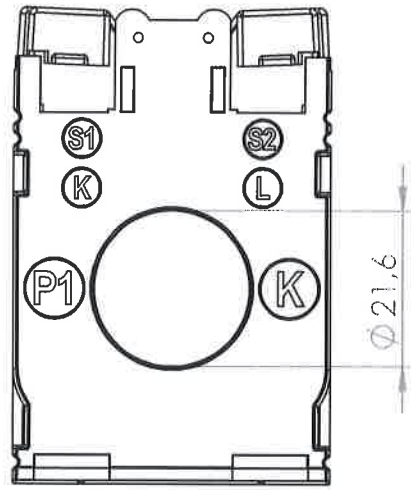
ÖLÇEK:1:1 | SAYFA 1 / 1

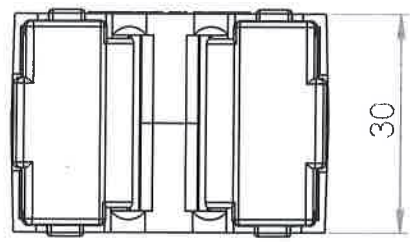
YARI MAMUL

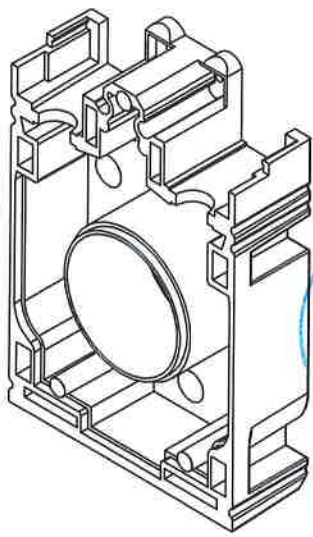


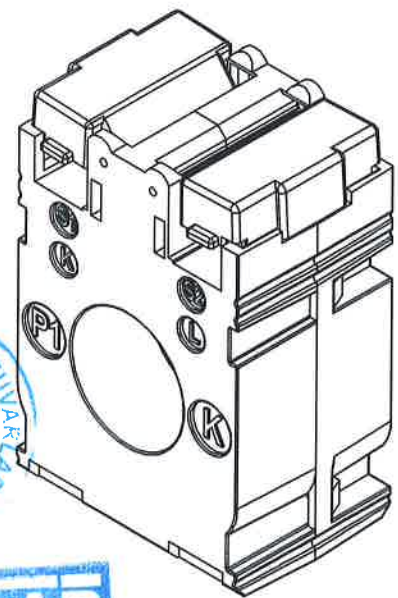


MONTAJ









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TESLAB KONTROL EDİLMİŞTİR

TEKNİK RESMİ ÖLÇEKLENDİRMEYİN

REVİZYON: R.0

CK20PK

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

GENEL TOLERANS: DIN ISO 2768 mm

MALZEME:
Alev Geciktiricili Yanmaz ABS

AĞIRLIK:

BAŞLIK:

CK-20 PLASTİK GÖVDE

VTEKE

A4

ÖLÇEK:1:1

SAYFA 1 / 1