

**ELSEWEDY**  
**ELECTRIC**



# **Oil Distribution**

Transformers








# TABLE OF CONTENTS

<b>About Elsewedy Electric</b> .....	<b>3</b>
<b>Oil Immersed Distribution</b> .....	<b>4</b>
<b>Standards &amp; Smart Readiness</b> .....	<b>5</b>
<b>Biodegradable, Fire Safety, Low Sound Level</b>	<b>6</b>
<b>Configuration &amp; Features</b> .....	<b>7</b>
<b>Construction</b> .....	<b>8</b>
<b>Accessories</b> .....	<b>9</b>
<b>Testing</b> .....	<b>10</b>
<b>Competitive Edge</b> .....	<b>11</b>
<b>Certificates</b> .....	<b>13</b>
<b>Reference List</b> .....	<b>14</b>
<b>Different Types of Transformers</b> .....	<b>24</b>

# ABOUT ELSEWEDY ELECTRIC

A global leader that has evolved from a local manufacturer of electrical products into an integrated infrastructure solutions provider; with over 19,000 employees and with recorded revenues of more than USD 5 Billion in 2023. We Operate in five key business sectors: Wire, Cable & Accessories, Electrical Products, Engineering & Construction, Digital Solutions, and Infrastructure Investments. With a strong presence in 19 different countries, 31 production facilities spread across African and Asian countries including Egypt, Algeria, KSA, Qatar, Indonesia, Pakistan, and Tanzania. We export a wide range of high-end products to over 110 countries worldwide. At the heart of our approach is an all-in-one integrated Engineering, Procurement & Construction (EPC) service, enabling us to deliver the most complex turnkey projects on time and with the highest efficiency.

## WE OPERATE IN FIVE KEY BUSINESS SECTORS

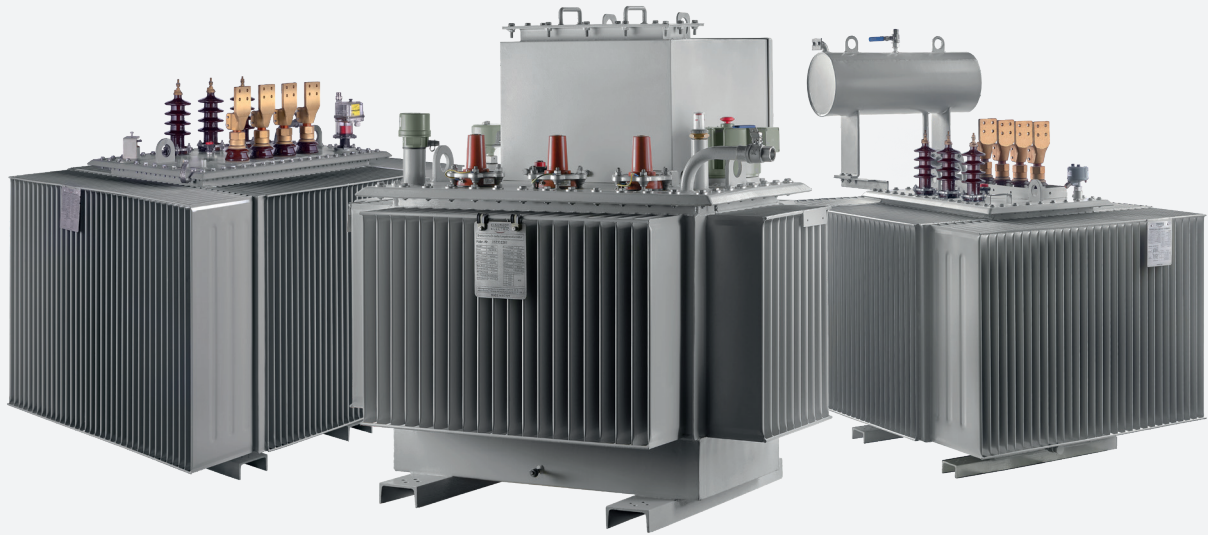
 <p>WIRE, CABLE &amp; ACCESSORIES</p>	 <p>ELECTRICAL PRODUCTS</p>	 <p>ENGINEERING &amp; CONSTRUCTION</p>	 <p>DIGITAL SOLUTIONS</p>	 <p>INFRASTRUCTURE INVESTMENTS</p>
--	--	---	--	---

## ELECTRICAL PRODUCTS

In an ever-changing world, with new developments arising each day, we strive for consistency by constantly innovating and adapting our electrical products and services to stay one step ahead of our customers' needs. We provide a wide range of world-class, trusted, safe, and reliable solutions. We offer tailored services to a variety of distinct industries worldwide. We offer Transformers, Busways, Motors, and Fiberglass Poles, produced and sold through 10 manufacturing facilities and 12 sales offices across Africa, Asia, and America. Our products' quality has been tested and certified according to international specifications and offered at competitive prices to our customers' convenience.

<p><b>TRANSFORMERS</b></p> <ul style="list-style-type: none"><li>✓ Power</li><li>✓ Oil Distribution</li><li>✓ Cast Resin Dry</li></ul> 	<p><b>SUBSTATIONS</b></p> <ul style="list-style-type: none"><li>✓ Mobile</li><li>✓ Package / Compact</li></ul> 
<p><b>MOTION APPLIANCES</b></p> 	<p><b>BUSWAY SYSTEMS</b></p> 

# OIL IMMERSED DISTRIBUTION



## ELSEWEDY ELECTRIC OIL DISTRIBUTION TRANSFORMERS

ARE WITH POWER RATINGS UP TO 15 MVA AND VOLTAGE OF UP TO 36 KV.

We produce oil distribution Transformers as hermetically sealed and conservator type, both ground and pole-mounted. our Transformers can be smart, eco design , and also we provide special transformers. Our portfolio of oil distribution transformers is serving a whole electricity distribution application for utilities, industries and infrastructure. Distribution Transformers are manufactured in almost all our manufacturing facilities globally in order to cover our customers needs worldwide in appropriate adaptation to their requirements and the maximum speed in responding to their queries and deliveries.

Elsewedy Electric's oil distribution transformers has passed the short circuit test, routine tests, and visual inspection at KEMA laboratory in Netherlands as per IEC60076 - for for Different Rating from 100 kva to 2MVA (Aluminum and copper Windings) Our Capabilities also comply to Tier 2 Eco design low-losses transformer specification where it is used in Europe and most of gulf areas

## PRODUCT RANGE

### **Small Distribution (50 KVA up to 250 KVA, 36 kV):**

Ground / Pole-Mounted / Pad-Mounted / Auxiliary Transformers.

### **Large distribution (250 KVA up to 5,000 KVA, 36 kV):**

Distribution Grid / Auxiliary Transformers / Pad Mounted / Unit Substation / Package Substation.

### **Medium power (5,000 KVA up to 15,000 KVA, 36 kV):**

Distribution Grid / Generation / Auxiliary Transformers.

### **Wide Range of Special transformers (up to 15,000 KVA, 36 kV):**

Solar / Wind / Variable Speed Drive / Converter / Arc Furnace / Traction / Zigzag Earthing / Earthing Auxiliary.

# STANDARDS

Elsowedy Electric is capable to produce Transformers according to IEC and ANSI AS, BS standards. However, usually - if not defined by our customers - the Transformers comply with the requirements of the following standards:

<b>IEC 60296</b>	Specification for mineral insulating oil for transformers & switchgear
<b>5-1 60076</b>	Power Transformers
<b>IEC 60354</b>	Loading Guide for Oil Immersed Transformers
<b>IEC 60137</b>	Insulated Bushings
<b>IEEEC 57.12.26</b>	ODT Specifications for American Market
<b>AS 60076</b>	ODT for Australian Market

# SMART READINESS

EcoDigital - Distribution Transformer

## KNAN COOLING

### DIGITAL

New digital era in Distribution Transformers where can be:

- ✔ Possibility to implement monitoring of the transformer via WEB, through cloud server for viewing on PC, tablet or Smartphone.
- ✔ Data transmission for remote control (Modbus RTU)
- ✔ Indication of oil loss or gas formation with double alarm threshold.



### GREEN & SAFE

From that concept we redesign transformers and change used fluid from normal mineral oil to K-class ester fluid with the following characteristic:

- ✔ Fire safer transformer, 100% Fire safety record, K- class fluid, higher fire flash point.
- ✔ Longer life time transformer, with better abilities to over load the transformer.
- ✔ Design and build a smaller substation in area size.
- ✔ It's a fully biodegradable fluid, No need to containment with the transformer, or at maximum, a reduced one.



# BIODEGRADABLE, FIRE SAFETY, LOW SOUND LEVEL

## INCREASE FIRE SAFETY

- ✓ Removing Fire walls
- ✓ Removing fire suppression systems
- ✓ Installation on smaller land area

## GREATER ENVIRONMENTAL PROTECTION

- ✓ Fully biodegradable
- ✓ Remove or reduced containment
- ✓ Non toxic
- ✓ Zero corrosive Sulphur




## MOISTURE SIGNIFICANCE IN TRANSFORMERS

- ✓ Increase transformers life time (paper life time could go 5 times more)
- ✓ Reduce maintenance cost
- ✓ Reduce the total ownership cost
- ✓ Retro filling existing Mineral oil transformers, to increase the life time of existing transformers



# PRODUCT RANGE

Voltage Class (KV)			Power Rating (KVA)		
36	24	12	25	500	15,000
			Small Distribution		
			Large Distribution		
			Special Transformers		

# CONFIGURATION & FEATURES

POLE MOUNTED		Small Distribution	Large Distribution	Special Transformer
High quality cold rolled grain-oriented Steel sheets		✓	✓	✓
Winding	Cu	✓	✓	✓
	Al	✓	✓	✓
Insulation Class	A	✓	✓	✓
	F	✓	✓	✓
Tap Changer	OCTC	(±2 x %2.5)	(±2 x %2.5)	(±2 x %2.5)
	OLTC	✓	✓	> 500 KVA
Fluid	Mineral Oil	✓	✓	✓
	Silicon Oil	✓	✓	✓
	Natural Oil	✓	✓	✓
	Synthetic Oil	✓	✓	✓
Cooling	ONAN	✓	✓	✓
	ONAF	✓	✓	✓
	KNAN	✓	✓	✓
Tank	Hermetically Sealed	✓	< 5000 KVA	< 5000 KVA
	With Conservator		5,000 - 15000 KVA	5,000 - 15000 KVA
	With Corrugated wall	✓	< 5000 KVA	< 5000 KVA
	With Radiators		15000 - 5,000 KVA	15000 - 5,000 KVA
	Galvanized Tank		Optional	Optional

**Insulation Class A:** Insulation rating 105, Maximum Winding temperature 105

**Insulation Class F:** Insulating rating 180, Maximum winding temperature 180

**OCTC:** Off Circuit Tap Changer

**OFF CTC:** On Load Tap Changer

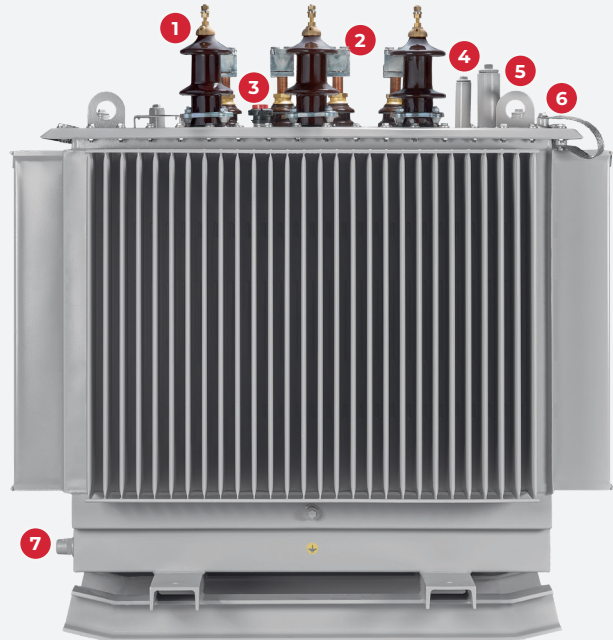
**Mineral Oil:** (Inhibited and Uninhibited) IEC 600296



# CONSTRUCTION

## SMALL DISTRIBUTION

1. H.V. Bushings
2. L.V. Bushings
3. Pressure Relief Valve
4. Additional Thermometer Pocket
5. Oil Level Indicator
6. Oil Filling Valve
7. Oil Drain Valve

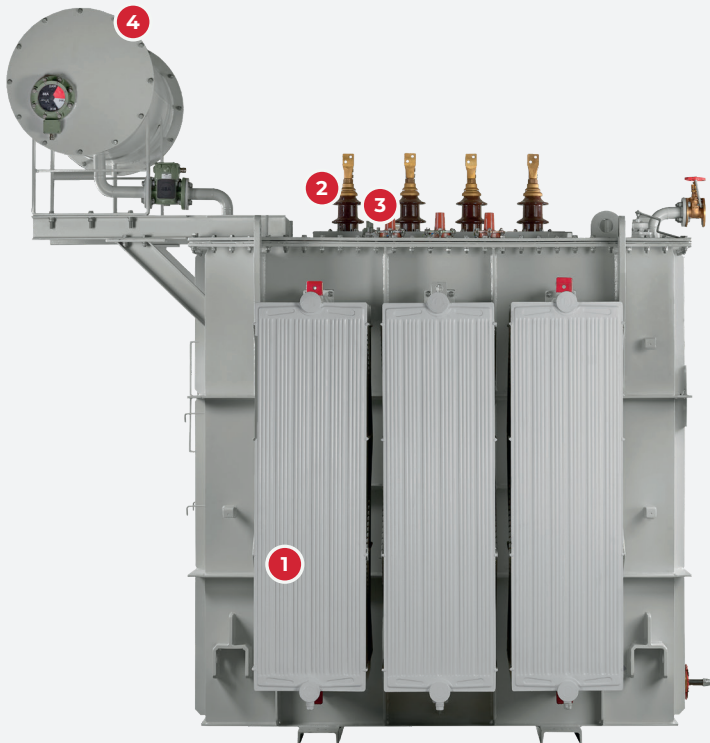


Other required accessories from our customers (DGPT, Oil Reduction Relay, OTI, WTI)




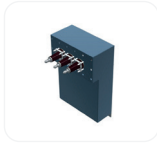




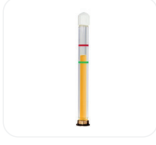









We provide both off circuit Tap changer and Onload tap changer Eco tap

## LARGE DISTRIBUTION

1. Radiators
2. H.V. Plug in Bushing
3. L.V. Plug in Bushing
4. Conservator with Air Bladder to the Tank via Buchholz Relay



# ACCESSORIES

STANDARD		OPTIONAL	
Porcelain HV and LV Bushing		Plug-In Bushing	
Earthing Terminals		Cable Box	
Thermometer Pocket		Neutral CT	
Pressure Relief Valve		DGPT2	
Visual Oil Level Indicator		Dial Thermometer with 2 Contact	
Lifting Lugs		Oil Level Indicator with 2 Contact	
Drain Cock		Pressure Relief Valve with Contact	
Rating Plate		Automatic Breather - Tank with Conservator	
Silica Gel Breather - Tank with Conservator		Winding Temperature Indicator is Recommended For Large Distribution & Special Transformers	

# TESTING

ROUTINE	TYPE & SPECIAL
Measurement of voltage ratio and check of vector relationship	Temperature rise test
Measurement of winding resistance	Measurement of zero-sequence impedance
Measurement of impedance voltage and load loss	Measurement of voltage and current harmonics
Measurement of no-load loss and current	Measurement of insulation resistance
Dielectric tests	Measurement of capacitance and $\tan \delta$
Separate-source voltage withstand test	Partial discharge measurement
Induced over-voltage withstand test	Lightning impulse test
Test on on-load tap changer	Switching impulse test
	Measurement of acoustic sound level



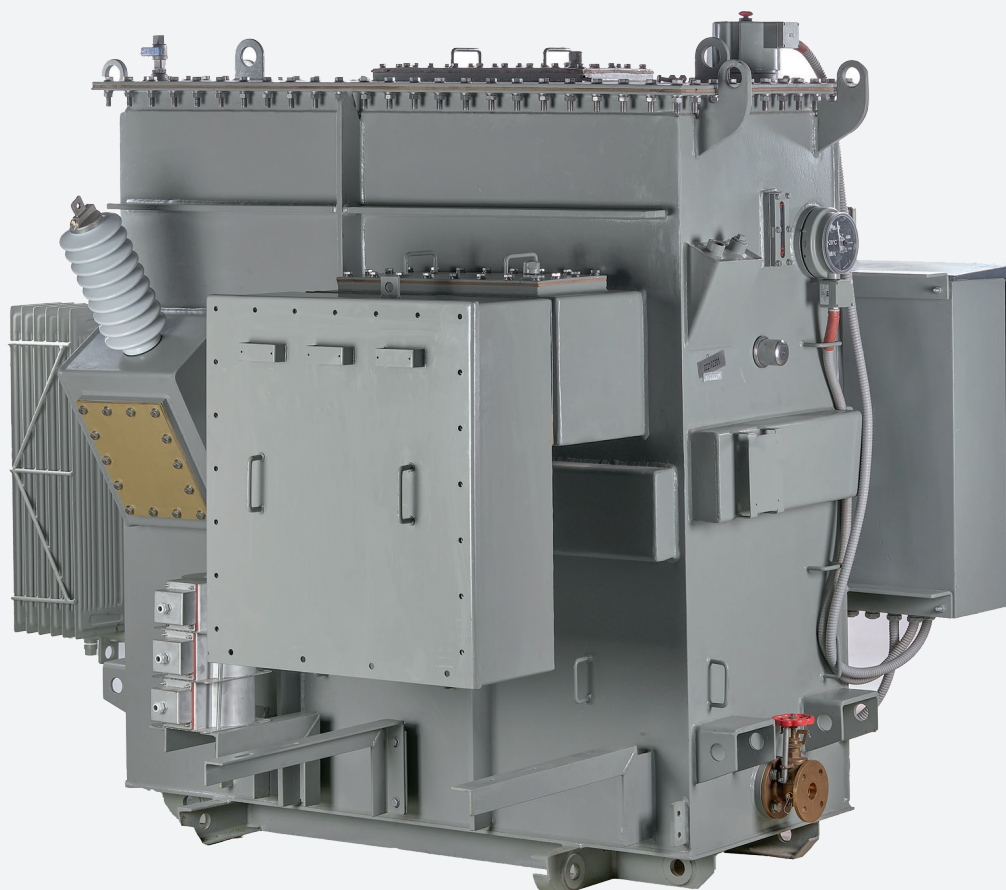
# COMPETITIVE EDGE

## EARTHING TRANSFORMERS

Grounding Transformers are designed to provide an artificial, neutral point for ungrounded three phase power systems. During the line-to-ground faults, grounding transformers provide an easy path to ground faults, thus limit the fault currents and transient over-voltages. Grounding transformers normally carry short-circuit ground current until the circuit breaker clears the fault.

Therefore, they have short time ratings.

4-Earthing Auxiliary Transformers It is combined Transformer 2x1 Where it can provide grounding for 3 phase power systems in the mean time the Auxiliary transformer can supply the substation light loads.

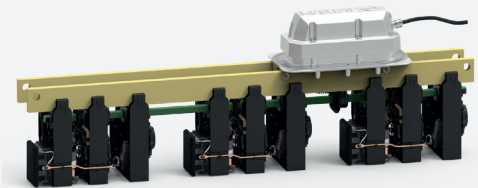
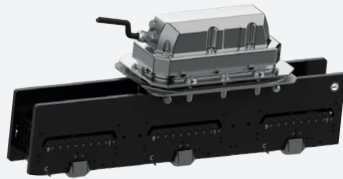


# COMPETITIVE EDGE

## ECO TAP OLTC

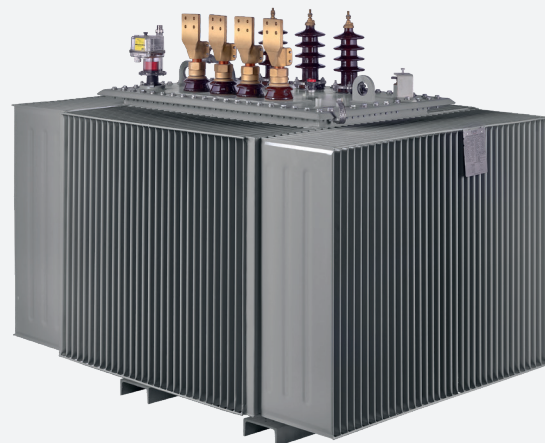
MR ECOTAP VPD Distribution Transformer On Load Tap Changers is the solution for all operators who have to maintain voltage, it turns fixed distribution grid transformers into regulating transformers which keep voltage stable in public, industrial, and private distribution grids.

- ✔ Large regulating range with up to 17 operating positions simple replacement.
- ✔ Standard for all grid types and applications.



## LOW LOSSES TRANSFORMERS

Low Loss transformers is art of technologically advanced core materials with low loss Winding which lead to significant reduction of both load and no load losses comply to Tier2 Eco design. operating costs can be reduced, loss savings over lifetime, improving the energy efficiency and resilience of your site.



# CERTIFICATES

**intertek**  
Test. Compare. Advance.

**ASTA CERTIFICATE OF TYPE TESTS**

Project No: G104489401 Certificate No: ASTA-TYPE-000790

Applicant: Elsewedy Transformers, 30<sup>th</sup> of Ramadan City Zone A4, Egypt.

Apparatus: Three phase, 30MVA, ONAN, Category 1, Dyn11, oil immersed transformers fitted with a manually operated tap changer.  
 1. 300 kVA, 111.2kV/22.5kV (U/L), L/U/V: 75 kV/28 kV /-3 kV  
 2. 500 kVA, 111.2kV/22.5kV (U/L), L/U/V: 75 kV/28 kV /-3 kV  
 3. 1200 kVA, 111.2kV/22.5kV (U/L), L/U/V: 75 kV/28 kV /-3 kV  
 4. 800 kVA, 221.2kV/54.3kV (U/L), L/U/V: 125 kV/50 kV /-3 kV  
 5. 1200 kVA, 221.2kV/54.3kV (U/L), L/U/V: 125 kV/50 kV /-3 kV  
 Each transformer has 5 taps and the principal tap was nominated by the manufacturer as tap 5.

Manufactured By: Elsewedy Transformers, 30<sup>th</sup> of Ramadan City Zone A4, Egypt.

Test Report No: 1112004.3/01 to 05

Designation: 3000 300/11, 5000 500/11, 5000 1200/11, 5000 1200/22 and 5000 800/22

The apparatus which is representative of the designation, supplied drawings and photographs has been evaluated in accordance with:  
 IEC 60076-2: Edition 3.0 2011-04 Clause 11, 11.4, 11.5 and 11.3.4.3  
 IEC 60076-2: Edition 3.0 2011-02 Clause 7  
 IEC 60076-3: Edition 1.1 2010-03 Clause 10, 11.2 and 13.2  
 IEC 60076-10: Edition 2.0 2014-03 Clause 11  
 and the STL Guide to IEC 60076, issue 6.0, 1<sup>st</sup> June 2015, where applicable.

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 standards and to justify the ratings assigned by the manufacturer as stated on the rating panel 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.

Certification Engineer  
 Certification Officer

1st June 2021 Date

ASTA TYPE 000790

**Type Test Certificate**  
**B4014695**

**Manufacturer**  
El Sewedy Transformers  
10th Ramadan City, 3rd Industrial Zone 3, Square A4  
Cairo (Egypt)

**Apparatus Designation**  
Oil-immersed power transformer  
Iraq

**CESI**  
ISIRIES ECH IPRH

Division Testing & Certification  
Business Area Testing Operation  
Mesin Platform

CESI B4014695

**CESI**  
Copy No. 1 Certificate No. B7009461

**Type Test Certificate**  
**of Short-Circuit Performance**

Test object: Three phase oil immersed power transformer, for continuous duty, with external cooling by oil natural convection  
**a THREE PHASE OIL-IMMERSED TRANSFORMER**

Designation: Rated power 2000 kVA - Rated voltage 110.4kV - Rated frequency 50 Hz  
 Elsewedy Transformer Industrial Zone 3, Square A4, Cairo, Egypt

Manufacturer: Elsewedy Transformers  
10th Ramadan City, 3rd Industrial Zone 3, Square A4 - Cairo - Egypt

Issued for: Elsewedy Transformers  
10th Ramadan City, 3rd Industrial Zone 3, Square A4 - Cairo - Egypt

Issued by: CESI S.p.A.  
Via Galvani 64  
20134 Milano - Italy

The test object, constructed in accordance with the description, drawings and photographs incorporated in this document has been subjected to the series of proving tests in accordance with IEC 60076-2 and IEC 60076-10 (2006-03) Clause 4.

The test object has successfully passed the required type tests of IEC 60076-1, IEC 60076-2, IEC 60076-3, IEC 60076-5, IEC 60076-10

The test results are recorded in Certificate No. **2167-20**

This Certificate was first issued on 2 November 2020

Certification Engineer  
 Certification Officer

11 November 2020 Date

CESI B7009461

**KEMA Labs** 66-07

**TYPE TEST CERTIFICATE OF COMPLETE TYPE TESTS**

APPARATUS: A three-phase oil-immersed distribution transformer

DESIGNATION: 1000 kVA SERIAL No. 07 0001 8

Rated power: 1000 kVA  
 Rated voltage: 22 kV ± 2.5% / 415 V  
 Connection system: Dyn11  
 Rated frequency: 50 Hz

MANUFACTURER: El Sewedy Electric B.V.  
 Damascus-Aria, Industrial zone

TESTED FOR: El Sewedy Electric B.V.  
 Damascus-Aria, Industrial zone

TESTED BY: KEMA HIGH POWER LABORATORY  
 Limborkweg 375 - 6512 AD Arnhem - The Netherlands

DATE(S) OF TESTS: 13, 18 and 19 July 2007

The apparatus, constructed in accordance with the description, drawings and photographs incorporated in this Certificate, has been subjected to the series of proving tests in accordance with the complete type test requirements of IEC 60076-2.

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

This Certificate shows on the record of Proving Tests and the oscillograms attached hereto. The values obtained, and the general performance are considered to comply with the above Standards and to justify the ratings assigned by the manufacturer as listed on page 4 and the dynamic ability and standard short-circuits.

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

This Certificate consists of 39 sheets in total.

These tests were carried out under the scope of the accreditation certificate L 020 and L 218 of the Dutch Council for Accreditation, given under page 7.

© Copyright. Only integral reproduction of this Certificate, or reproduction of its text, may be made without the prior written permission of KEMA. No part of this Certificate may be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of KEMA. KEMA Testing Services Arnhem, 21 August 2007

KEMA 66-07

**KEMA Labs**

**KEMA TYPE TEST CERTIFICATE OF COMPLETE TYPE TESTS**

was issued to: **Elsewedy Transformers**  
 Sharqia Governorate, Egypt

for the test object:  
 a three-phase oil-immersed **distribution transformer**  
 Type: 3 phase oil immersed Transformer  
 Rating: 1500 kVA - 22 kV ± 2.5% / 415 V - Dyn11 - 50 Hz

manufactured by: **Elsewedy Transformers**  
 Sharqia Governorate, Egypt

The test object has successfully passed the required type tests of **IEC 60076-1, IEC 60076-2, IEC 60076-3, IEC 60076-5, IEC 60076-10**

The test results are recorded in Certificate No. **2094-21**

This Certificate was first issued on 29 April 2021

**KEMA B.V.**  
 Shaukar Subramany  
 Director, High-Power Laboratory

KEMA 2094-21

**KEMA Labs**

**KEMA TYPE TEST CERTIFICATE OF COMPLETE TYPE TESTS**

was issued to: **Elsewedy Transformers**  
 Sharqia Governorate, Egypt

for the test object:  
 a three-phase oil-immersed **distribution transformer**  
 Type: 3 phase oil immersed Transformer  
 Rating: 1500 kVA - 11 kV ± 2.5% / 415 V - Dyn11 - 50 Hz

manufactured by: **Elsewedy Transformers**  
 Sharqia Governorate, Egypt

The test object has successfully passed the required type tests of **IEC 60076-1, IEC 60076-2, IEC 60076-3, IEC 60076-5, IEC 60076-10**

The test results are recorded in Certificate No. **2167-20**

This Certificate was first issued on 2 November 2020

**KEMA B.V.**  
 Shaukar Subramany  
 Director, High-Power Laboratory

KEMA 2167-20

**DNV-GL**

**KEMA TYPE TEST CERTIFICATE OF SHORT-CIRCUIT PERFORMANCE**

was issued to: **Elsewedy Transformers**  
 Cairo, Egypt

for the test object:  
 a three-phase oil-immersed **distribution transformer**  
 Type: 3-phase oil immersed transformer  
 Rating: 250 kVA - 11 kV ± 2.5% / 0.433 kV - Dyn11 - 50 Hz

manufactured by: **Elsewedy Transformers**  
 Cairo, Egypt

The test object has successfully passed the required type tests of **IEC 60076-5**

The test results are recorded in Certificate No. **2417-17**

This Certificate was issued on 14 February 2018.

J.P. Fontjeine  
 Executive Vice President  
 KEMA Laboratories

**KEMA Laboratories**

© DNV GL  
 Please note that this document has been issued for information purposes only, and that the original signed and sealed paper copy of the Certificate including the results of the tests of the object will prevail. This document does not imply that DNV GL has certified or approved any object other than the specimen tested.

KEMA 2417-17

# REFERENCE LIST

PROJECT DETAIL				PRODUCT DETAILS		
PROJECT NAME	CLIENT	COUNTRY	YEAR	KVA	KV	QTY
Wellhead Project	Energy Vault	USA	2023	2600	13.8/0.208	28
Borouge 4 (in progress)	Tecnimont	UAE	2023	1250		2
Borouge 4 (in progress)	Tecnimont	UAE	2023	1250		2
Borouge 4 (in progress)	Tecnimont	UAE	2023	1600		6
Borouge 4 (in progress)	Tecnimont	UAE	2023	2000		2
Borouge 4 (in progress)	Tecnimont	UAE	2023	2000		6
Borouge 4 (in progress)	Tecnimont	UAE	2023	2000		8
Borouge 4 (in progress)	Tecnimont	UAE	2023	2500		16
Borouge 4 (in progress)	Tecnimont	UAE	2023	2500		2
Borouge 4 (in progress)	Tecnimont	UAE	2023	1600		2
Borouge 4 (in progress)	Tecnimont	UAE	2023	2500		2
Borouge 4 (in progress)	Tecnimont	UAE	2023	2500		2
Borouge 4 (in progress)	Technip	UAE	2023	2500		8
Borouge 4 (in progress)	Technip	UAE	2023	1800		1
	EWE NETZ GmbH	Germany	2023	400	20/0.4	20
	EWE NETZ GmbH	Germany	2023	630	20/0.4	20
	EWE NETZ GmbH	Germany	2023	800	20/0.4	30
	EWE NETZ GmbH	Germany	2023	1000	20/0.4	40
	EWE NETZ GmbH	Germany	2023	1250	20/0.4	10
	EWE NETZ GmbH	Germany	2023	1600	20/0.4	12
	EWE NETZ GmbH	Germany	2023	2000	20/0.4	6
	EWE NETZ GmbH	Germany	2023	400	20/0.4	5
	EWE NETZ GmbH	Germany	2023	630	20/0.4	5
	Andel	Denmark	2023	100	10.5/0.42	6
	Servia	Denmark	2023	100	10.5/0.42	1
	Solar	Denmark	2023	200	10.5/0.42	15
	Solar	Denmark	2023	400	10.5/0.42	22
	Solar	Denmark	2023	630	10.5/0.42	22
	Solar	Denmark	2023	800	10.5/0.42	10
	Solar	Denmark	2023	1000	10.5/0.42	6
	Solar	Denmark	2023	1250	10.5/0.42	5
	Solar	Denmark	2023	1600	10.5/0.42	4
	Solar	Denmark	2023	2000	10.5/0.42	1
	Andel	Denmark	2023	4000	10.5/0.42	2
		Cote d'Ivoire	2023	50		20
		Cote d'Ivoire	2023	100		11
		Cote d'Ivoire	2023	160		5
		Cote d'Ivoire	2023	400		5
		Cote d'Ivoire	2023	630		5
		Cote d'Ivoire	2023	800		2
		Cote d'Ivoire	2023	250		3
		Cote d'Ivoire	2023	400	33/0.4	7
		Cote d'Ivoire	2023	630	33/0.4	10
		Cote d'Ivoire	2023	630	15/0.4	10

# REFERENCE LIST

PROJECT DETAIL				PRODUCT DETAILS		
PROJECT NAME	CLIENT	COUNTRY	YEAR	KVA	KV	QTY
		Cote d'Ivoire	2023	800	33/0.4	10
		Cote d'Ivoire	2023	800	15/0.4	5
		Cote d'Ivoire	2023	1000	33/0.4	10
500 Earthing Aux	PT. Elsewedy Electric Indonesia	Australia	2023	33/0.415	33/0.415	2
500 Earthing Tx	PT. Elsewedy Electric Indonesia	Australia	2023			2
500 Earthing Aux	PT. Elsewedy Electric Indonesia	Australia	2023	33/0.415	33/0.415	2
160 Aux		Burkina Faso	2023	160	160	4
	Energy & More S.A.L	Congo	2023	2500		2
	Atelier Electro Maintenance Industrielle	Congo	2023	2000		3
	Energy & More S.A.L	Congo	2023	4000		2
	Energy & More S.A.L	Congo	2023	2000		1
	Energy & More S.A.L	Congo	2023	630		1
		Sudan	2023	4000		2
		USA	2023	1000	24.94/0.48	1
		USA	2023	1000	24.94/0.208	1
KotoBabi		Ghana	2023	100		1
EFFAGE		Ghana	2023	11.5 kv -400 a		1
EFFAGE		Ghana	2023	250	11.5/0.433	1
Fives FCB		Senegal	2023	250	30/0.42	2
Fives FCB		Senegal	2023	800	30/0.42	2
Fives FCB		Senegal	2023	2000	30/0.42	9
Fives FCB		Senegal	2023	1600	30/6.3	3
Fives FCB		Senegal	2023	7000	30/6.3	2
	AK-AY	Nigeria	2023	300		16
	AK-AY	Nigeria	2023	500		1
	ELsewedy Electric Nigeria	Nigeria	2023	50		125
	Elsewedy Electric International Business FZE	Libya	2023	1000	11/0.4	11
	Elsewedy Electric International Business FZE	Libya	2023	1500	11/0.4	6
	Saad Solar	Saudi Arabia	2023	50	33/0.4	3
	Saad Solar	Saudi Arabia	2023	500A-33KV	33	2
	Accinoa	Saudi Arabia	2023	2500	13.8/0.38	8
	Accinoa	Saudi Arabia	2023	5000	13.8/0.69	2
	Accinoa	Saudi Arabia	2023	3150	13.8/0.38	6
	Accinoa	Saudi Arabia	2023	2000	13.8/0.38	2
	Accinoa	Saudi Arabia	2023	4200	13.8/0.69/0.38	2
	Accinoa	Saudi Arabia	2023	5000	13.8/0.69/0.39	2
		UAE	2023	100	11/0.415	14
	ABB Arab	UAE	2023	1000	22/0.415	1
	ABB Arab	UAE	2023	1500	22/0.415	2
	Servia	Denmark	2023	1250	10.5/0.42	2
	Servia	Denmark	2023	1600	10.5/0.42	2
	Servia	Denmark	2023	200	10.5/0.42	6



# REFERENCE LIST

PROJECT DETAIL				PRODUCT DETAILS		
PROJECT NAME	CLIENT	COUNTRY	YEAR	KVA	KV	QTY
	Servia	Denmark	2023	630	10.5/0.42	42
	EWE NETZ GmbH	Germany	2022	630	20/0.4	70
	EWE NETZ GmbH	Germany	2022	400	20/0.4	50
	EWE NETZ GmbH	Germany	2022	800	20/0.4	30
	Nexel A/S	Denmark	2022	630	10.5/0.42	131
	Nexel A/S	Denmark	2022	400	10.5/0.42	158
	ELsewedy Electric Nigeria	Nigeria	2022	500	33/0.415	14
	Nexel A/S	Denmark	2022	200	10.5/0.42	93
	TATU CITY LIMITED	KENYA	2022	1000	11/0.415	8
	Nexel A/S	Denmark	2022	500	10.5/0.42	71
	OCEANTRADE	MADAGASCAR	2022	1250	20/0.4	7
	ELsewedy Electric Nigeria	Nigeria	2022	500	33/0.415	6
	INTEGRATED POWER AND CONTROL SOLUTIONS (IPCS) SL	Sierra Leone	2022	400	11/0.4	4
Earthing Auxiliary transformer 100 KVA , 13.8 / 0.4 KV _Saudi.	ELSEWEDY ELECTRIC for Power System Projects - KSA	Saudi Arabia	2022	100	13.8/0.4	4
	TATU CITY LIMITED	Kenya	2022	50	11/0.415	3
	INTEGRATED POWER AND CONTROL SOLUTIONS (IPCS) SL	Sierra Leone	2022	315	11/0.4	3
	AOS ORWELL LIMITED	NIGERIA	2022	2500	6.6/0.4	2
	TATU CITY LIMITED	Kenya	2022	100	11/0.415	2
	TATU CITY LIMITED	Kenya	2022	200	11/0.415	2
	Elsewedy Electric East Africa Limited	Tanzania	2022	50	33/0.4	1
	Elsewedy Electric East Africa Limited	Tanzania	2022	100	33/0.4	1
	Elsewedy Electric East Africa Limited	Tanzania	2022	315	33/0.4	1
	Elsewedy Electric East Africa Limited	Tanzania	2022	1000	33/0.4	1
	INTEGRATED POWER AND CONTROL SOLUTIONS (IPCS) SL	Sierra Leone	2022	630	11/0.4	1
TANK FOR 1000 KVA 22/0.4 KV for Extra High voltage test		Egypt	2022	1000	22/0.4	1
ACTIVE PART FOR 1000 KVA 22/0.4 KV for Extra High voltage test		Egypt	2022	1000	22/0.4	1
OIL FOR 1000 KVA 22/0.4 KV for Extra High voltage test		Egypt	2022	1000	22/0.4	1
Distribution transformer 100 KVA 11/0.415 KV ADWEA 3	ADWEA	UAE	2022	100	11/0.415	1

# REFERENCE LIST

PROJECT DETAIL				PRODUCT DETAILS		
PROJECT NAME	CLIENT	COUNTRY	YEAR	KVA	KV	QTY
KAP 2	RTCC	Saudi Arabia	2022	25000-27000	different ratings	
	EWE NETZ GmbH	Germany	2022	400	20/0.4	50
	EWE NETZ GmbH	Germany	2022	630	20/0.4	50
	EWE NETZ GmbH	Germany	2022	800	20/0.4	10
	Andel	Denmark	2022	100	10.5/0.42	1
	Servia	Denmark	2022	400	10.5/0.42	8
	Servia	Denmark	2022	800	10.5/0.42	3
	Servia	Denmark	2022	1000	10.5/0.42	6
	El Sewedy Electric International (Sudan)	Sudan	2021	200	11/0.433	240
	El Sewedy Electric International (Sudan)	Sudan	2021	300	11/0.433	192
	El Sewedy Electric International (Sudan)	Sudan	2021	500	11/0.433	94
	El Sewedy Electric International (Sudan)	Sudan	2021	1000	11/0.433	69
	El Sewedy Electric International (Sudan)	Sudan	2021	100	11/0.433	40
	El Sewedy Electric International (Sudan)	Sudan	2021	750	11/0.433	20
	ADWEA	UAE	2021	500	11/0.415	20
	ADWEA	UAE	2021	1500	11/0.415	20
	Elsowedy Electrical Entegrated Energy Solutions (Libya)	Libya	2021	50	11/0.4	20
	ADWEA	UAE	2021	1250	11/0.415	18
	ADWEA	UAE	2021	1250	22/0.415	15
	Elsowedy Electrical Entegrated Energy Solutions (Libya)	Libya	2021	100	11/0.4	15
	ADWEA	UAE	2021	630	22/0.415	12
	El Sewedy Electric International (Sudan)	Sudan	2021	1500	11/0.433	10
	El Sewedy Electric Solutions (Libya)	Libya	2021	100	11/0.4	10
	El Sewedy Electric Solutions (Libya)	Libya	2021	200	11/0.4	10
	Elsowedy Electrical Entegrated Energy Solutions (Libya)	Libya	2021	200	11/0.4	10
	Elsowedy Electrical Entegrated Energy Solutions (Libya)	Libya	2021	500	11/0.4	10
	El Sewedy Electric Solutions (Libya)	Libya	2021	300	11/0.4	8
	El Sewedy Electric Solutions (Libya)	Libya	2021	500	11/0.4	6
	El Sewedy Electric Solutions (Libya)	Libya	2021	1000	11/0.4	6
	El Sewedy Electric International (Sudan)	Sudan	2021	2000	11/0.433	5
	OCEANTRADE (Madagascar)	Madagascar	2021	250	20/0.4	4

# REFERENCE LIST

PROJECT DETAIL				PRODUCT DETAILS		
PROJECT NAME	CLIENT	COUNTRY	YEAR	KVA	KV	QTY
	El Sewedy Electric East Africa (Tanzania)	Tanzania	2021	1600	33	2
	Elsowedy Electric KSA (SWCC Shoeiba)	Saudi Arabia	2021	3000	6.6/0.4	2
	Elsowedy Electric Transmission (Juba)	Sudan	2021	500	33/0.4	2
	Gelmax Power Solutions Limited (Kenya)	Kenya	2021	800	0.4/11	2
	H2O-AFRIQUE SARL (H2O Togo - Transformers Supply 50KVA)	Togo	2021	50	20/0.41	2
	OCEANTRADE (Madagascar)	Madagascar	2021	400	20/0.4	2
	OCEANTRADE (Madagascar)	Madagascar	2021	400	35/0.4	2
	OCEANTRADE (Madagascar)	Madagascar	2021	630	20/0.4	2
	OCEANTRADE (Madagascar)	Madagascar	2021	630	35/0.4	2
	OCEANTRADE (Madagascar)	Madagascar	2021	800	20/0.4	2
	OCEANTRADE (Madagascar)	Madagascar	2021	1000	20/0.4	2
	OCEANTRADE (Madagascar)	Madagascar	2021	1250	20/0.4	2
	El Sewedy Electric East Africa (Tanzania)	Tanzania	2021	1000	33	1
	El Sewedy Electric KSA (Air Defense Dahrhan)	Saudi Arabia	2021	300	13.8/0.4	1
	El Sewedy Electric Power System (Iraq)	Iraq	2021	1000	11/0.4	1
	ADWEA	UAE	2021	100	11/0.415	2
	Elsowedy Electric KSA (Mouasat)	Saudi Arabia	2021	2000	13.8/0.4	1
	Elsowedy Electric KSA (SWCC Shoeiba)	Saudi Arabia	2021	3000	13.8/0.4	1
	Elsowedy Electrical Entegrated Energy Solutions (Libya)	Libya	2021	1500	11/0.4	1
	OCEANTRADE (Madagascar)	Madagascar	2021	630	20-5/0.4	1
	OCEANTRADE (Madagascar)	Madagascar	2021	1000	35/0.4	1
	Yanabia Al-Khair Charity (Yemen)	Yemen	2021	13500	33/11.5	1
	Yanabia Al-Khair Charity (Yemen)	Yemen	2021	100	33/0.415	1
Al-Khobar 2 SWRO plant	Accinoa - SWCC	Saudi Arabia	2021	800	different ratings	
Ware House - KFNBCC Up gradation	National Company for Elec Industries.	Saudi Arabia	2021	750	different ratings	
Copper Coils	Elsowedy Electric	Nigeria	2020	0	0	336
Iron Core (Silicon steel)	Elsowedy Electric	Nigeria	2020	0	0	112
Tank	Elsowedy Electric	Nigeria	2020	0	0	112
Accessories	Elsowedy Electric	Nigeria	2020	0	0	112
	Elsowedy Cables-Egypt	Libya	2020	100	11	105
	Elsowedy Cables-Egypt	Libya	2020	50	11	70
	Elsowedy Cables-Egypt	Libya	2020	200	11	61
	Elsowedy Cables-Egypt	Libya	2020	300	11	34
	Elsowedy Cables-Egypt	Libya	2020	1000	11	22
	ADWEA	UAE	2020	1500	0	20

# REFERENCE LIST

PROJECT DETAIL				PRODUCT DETAILS		
PROJECT NAME	CLIENT	COUNTRY	YEAR	KVA	KV	QTY
	ADWEA	UAE	2020	500	0	20
	Elsowedy Cables-Egypt	Libya	2020	500	11	18
	FEWA	UAE	2020	250	11	11
	Elsowedy Cables-Egypt	Libya	2020	200	11	10
	ADWEA	UAE	2020	500	11	20
	FEWA	UAE	2020	250	11	7
	ADWEA	UAE	2020	1250	11	6
	Multi Zones Contracting Co.	Saudi Arabia	2020	2000	14	5
	Elsowedy Cables-Egypt	Libya	2020	1000	11	4
	FEWA	UAE	2020	3000	11	4
Oil Breakdown measurement	National Port Said Steel	Egypt	2020	0	0	4
	FEWA	UAE	2020	100	11	3
	ADWEA	UAE	2020	1000	22 Kv	3
	Rawafid Industrial Company	Saudi Arabia	2020	11500	14	2
	AL-Ruwaite Contracting Co. LTD.	Saudi Arabia	2020	16000	33 Kv	2
	ADWEA	UAE	2020	100	0	2
	ADWEA	UAE	2020	630	33 Kv	2
	ADWEA	UAE	2020	1250	33 Kv	2
	ELSEWEDY ELECTRIC EAST AFRICA LIMITED	Tanzania	2020	1600	33 Kv	2
Maintenance transformer 8000KVA	DANILEI- ELCO	Egypt	2020	0	0	1
	FEWA	UAE	2020	3000	11	1
	Elsowedy Cables-Egypt	Libya	2020	300	11	1
	Elsowedy Cables-Egypt	Libya	2020	100	11	1
	Elsowedy Cables-Egypt	Libya	2020	50	11	1
Spare parts Algeria order	INITEC Plantas Industriales, S.A.U.	Algeria	2020	0	0	1
	Elsowedy Electric for Cables	Sudan	2020	1000	11	1
	Elsowedy Cables-Egypt	Libya	2020	1000	11	1
	AL-Ruwaite Contracting Co. LTD.	Saudi Arabia	2020	4000	14	1
Supervision	AL-Ruwaite Contracting Co. LTD.	Saudi Arabia	2020	0	0	1
	As Tavrída Electric Export	Sierra Leone	2020	50	11 Kv	1
	SWCC	Saudi Arabia	2020	630	33 Kv	1
Materilas for Sudan		Sudan	2020	0	0	1
	Multi Zones Contracting Co.	Saudi Arabia	2020	2000	13 kv	1
	ALFAISAL FOR BUSINESS CORPORATION	Yemen	2020	100	33 Kv	1
	ALFAISAL FOR BUSINESS CORPORATION	Yemen	2020	13500	33 Kv	1
	PSP	Iraq	2020	1000	33 Kv	1
	Sudatraf	Sudan	2019	200	33 Kv	66
	Sudatraf	Sudan	2019	500	11	50
	Sudatraf	Sudan	2019	300	33 Kv	50
	Sudatraf	Sudan	2019	300	33 Kv	50

# REFERENCE LIST

PROJECT DETAIL				PRODUCT DETAILS		
PROJECT NAME	CLIENT	COUNTRY	YEAR	KVA	KV	QTY
	Sudatraf	Sudan	2019	300	11	50
	Sudatraf	Sudan	2019	200	33 Kv	50
	Sudatraf	Sudan	2019	300	33 Kv	50
	Sudatraf	Sudan	2019	200	11	46
	Sudatraf	Sudan	2019	100	33 Kv	38
	Sudatraf	Sudan	2019	100	11	34
	Sudatraf	Sudan	2019	200	11	25
	Sudatraf	Sudan	2019	300	11	25
	Sudatraf	Sudan	2019	1500	33 Kv	20
	SEWA	UAE	2019	1500	11	18
	FEWA	UAE	2019	250	11	16
Earthing Transformer 325 A	EL SEWEDY _ PSP	Iraq	2019	325	11	16
Oil Transformer 1000 KVA	EL SEWEDY _ PSP	Iraq	2019	1000	11	16
	SWCC	Saudi Arabia	2019	3150	6.6 Kv	15
	Sudatraf	Sudan	2019	1000	33 Kv	10
	Sudatraf	Sudan	2019	2000	33 Kv	10
	FEWA	UAE	2019	100	11	8
	FEWA	UAE	2019	500	11	6
	Sudatraf	Sudan	2019	1500	33 Kv	5
	As Tavrda Electric Export	Sierra Leone	2019	50	11	4
	Metito Saudi Ltd	Saudi Arabia	2019	2500	14	4
	SWCC	Saudi Arabia	2019	7000	14	4
	FEWA	UAE	2019	100	11	3
	FEWA	UAE	2019	1000	11	3
	FEWA	UAE	2019	2000	11	3
	As Tavrda Electric Export	Sierra Leone	2019	1000	11	2
	Metito Saudi Ltd	Saudi Arabia	2019	1600	14	2
	Metito Saudi Ltd	Saudi Arabia	2019	4500	14	2
	SWCC	Saudi Arabia	2019	1500	6.6 Kv	2
	SWCC	Saudi Arabia	2019	2500	6.6 Kv	2
	SWCC	Saudi Arabia	2019	11500	14	2
	SWCC	Saudi Arabia	2019	11500	33 Kv	2
	SWCC	Saudi Arabia	2019	12500	33 Kv	2
	SWCC	Saudi Arabia	2019	12500	14	2
	SWCC	Saudi Arabia	2019	5000	14	2
	SWCC	Saudi Arabia	2019	7000	33 Kv	2
	Sudatraf	Sudan	2019	3000	11	1
	Sudatraf	Sudan	2019	3000	33 Kv	1
Maintenance transformer 6000KVA-33/0.4KV	DANILEI- ELCO	Egypt	2019	0	0	1
Maintenance Transformer 5800 KVA, 11 KV_2	Esewedy cement	Egypt	2019	0	0	1
Maintenance transformer 3500 KVA , 11/0.42 KV	Esewedy cement	Egypt	2019	0	0	1

# REFERENCE LIST

PROJECT DETAIL				PRODUCT DETAILS		
PROJECT NAME	CLIENT	COUNTRY	YEAR	KVA	KV	QTY
United Metals Company maintenance	United Metal	Egypt	2019	0	0	1
United Metals Company maintenance #2	United Metal	Egypt	2019	0	0	1
Oil Testing	United Metal	Egypt	2019	0	0	1
Earthing transformer 11KV – 1200A -20sec- Serra lion	As Tavrída Electric Export	Sierra Leone	2019	350	11	1
Maintenance Transformer 5800 KVA, 11 KV_1	Elsowedy cement	Egypt	2019	0	0	1
Oil Testing for one transformer	Elsowedy cement	Egypt	2019	0	0	1
Maintenance Transformer 8000 KVA, 11 KV_1	Danilel	Egypt	2019	0	0	1
Transformer 2000KVA 11/0,433	FEWA	UAE	2019	2000	11	1
Oil Breakdown measurement	Egyptian Steel	Egypt	2019	0	0	1
repair service 8 MVA	Egyptian Steel	Egypt	2019	0	0	1
Maintenance JFR Distribution Step Voltage Regulator_SIEMENS	SIEMENS	Egypt	2019	0	0	1
Maintenance transformer 3750 KVA , 6.6/0.48 KV	Interdyne company	Egypt	2019	0	0	1
RC Substation	Siemens	Saudi Arabia	2019	25000	different ratings	
Al Mouwasat Hospit al Extension - Dammam	Multizones Contracting Co.	Saudi Arabia	2019	2000	different ratings	
KSA West Cost Desalination Plants	Rawafid Industrial Co.	Saudi Arabia	2019	different ratings	different ratings	
LV voltage coil 800KVA 10.5/0.4KV -Egytrafo	EGYTRAFO	Egypt	2018	0	0	156
Transformer 200 kva, 11/0.433 kv - Sudan	Sudatraf	Sudan	2018	200	11	150
LV voltage coil 800KVA 10.5/0.4KV -Egytrafo	EGYTRAFO	Egypt	2018	0	0	144
	Sudatraf	Sudan	2018	200	11	84
	Sudatraf	Sudan	2018	200	33 Kv	80
	Sudatraf	Sudan	2018	300	33 Kv	80
	Sudatraf	Sudan	2018	300	11	70
Transformer 1000 KVA, 11/0.433 KV - Sudan	Sudatraf	Sudan	2018	1000	11	64
Tank for 200 kva, 11/0.433 kv - Sudan	Sudatraf	Sudan	2018	0	11	50
	Sudatraf	Sudan	2018	500	11	50
	Sudatraf	Sudan	2018	300	11	40
	Sudatraf	Sudan	2018	300	33 Kv	40
LV voltage coil 800KVA 10.5/0.4KV -Egytrafo	EGYTRAFO	Egypt	2018	0	0	29
	FEWA	UAE	2018	2000	11 Kv	27

# REFERENCE LIST

PROJECT DETAIL				PRODUCT DETAILS		
PROJECT NAME	CLIENT	COUNTRY	YEAR	KVA	KV	QTY
	Sudatraf	Sudan	2018	200	33 Kv	26
	KASSAB BASHI CO. FOR TRADING & INVESTMENT W.L.L.	Syria	2018	630	20 KV	25
	Sudatraf	Sudan	2018	500	33 Kv	23
	Sudatraf	Sudan	2018	300	33 Kv	20
Maintenance transformer 1000 KVA 10.5 KV ELMACO	North Cairo Electricity	Egypt	2018	1000	11	18
	Sudatraf	Sudan	2018	100	11	16
	Sudatraf	Sudan	2018	750	11	15
	SEWA	UAE	2018	1500	11	10
	Sudatraf	Sudan	2018	2000	11	10
	Sudatraf	Sudan	2018	750	11	10
	Sudatraf	Sudan	2018	1000	11	10
	FEWA	UAE	2018	250	11	10
	Sudatraf	Sudan	2018	1000	33 Kv	10
	Sudatraf	Sudan	2018	1500	33 Kv	10
	Sudatraf	Sudan	2018	200	11	8
	Sudatraf	Sudan	2018	300	33 Kv	7
Maintenance transformer 500KVA, 10.5/0.4KV	North Cairo Electricity	Egypt	2018	500	11	6
	FEWA	UAE	2018	2000	11	5
	FEWA	UAE	2018	2000	11	4
	Sudatraf	Sudan	2018	300	11	2
	Habbab	Saudi Arabia	2018	5000	33 Kv	2
Renting workshop for AVR replacement and testing	Semiens Technologies SAE	Egypt	2018	0	0	2
	SEWA	UAE	2018	1000	11	1
	SEWA	UAE	2018	500	11	1
maintenance transformer 1500 KVA 10.5 KV ELMACO	North Cairo Electricity	Egypt	2018	1500	11	1
Set of spare parts for Angola Zigzag Transformers	Esewedy Electric Transmission	Angola	2018	0	0	1
	AL-OHADIEH CO. For Contracting Trading & Industrie	Saudi Arabia	2018	1500	14	1
	AL-OHADIEH CO. For Contracting Trading & Industrie	Saudi Arabia	2018	3000	14	1
	AL-OHADIEH CO. For Contracting Trading & Industrie	Saudi Arabia	2018	4000	14	1
	AL-OHADIEH CO. For Contracting Trading & Industrie	Saudi Arabia	2018	2000	14	1
	FEWA	UAE	2018	2000	11	1
KMP	Habbab	Saudi Arabia	2016	different ratings	different ratings	
Hafer Al Batin STP and Safwa STP	Al Ohadieh Company	Saudi Arabia	2016	different ratings	different ratings	

# REFERENCE LIST

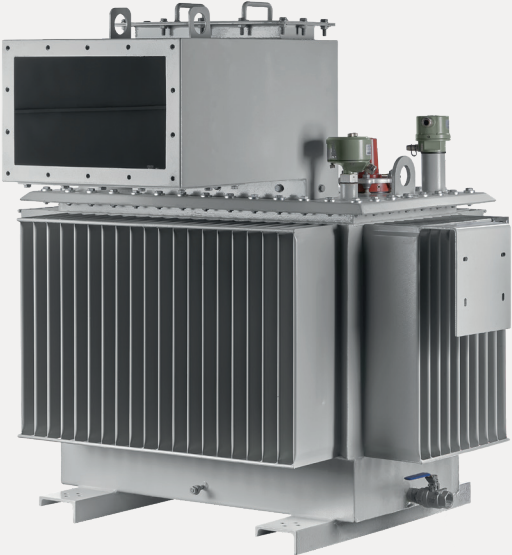
PROJECT DETAIL				PRODUCT DETAILS		
PROJECT NAME	CLIENT	COUNTRY	YEAR	KVA	KV	QTY
Gypsum Factory	Al Massa Est	Saudi Arabia	2016	1000	different ratings	
Qassim Factory	Al Massa Est	Saudi Arabia	2016	1750	different ratings	
KMP	Habbab	Saudi Arabia	2015	10000	different ratings	
Eastern Municipality Project	Al Asry Electric Co. LTD	Saudi Arabia	2014	100	different ratings	
Shinan substation	Pa-cost - SEC	Saudi Arabia	2014	20000	different ratings	
DRC Project	DRC	Saudi Arabia	2013	2500	different ratings	
Berida	DRC	Saudi Arabia	2013	1000-1500-2000	different ratings	
ARASCO	Riyadh Al-Aasemmah	Saudi Arabia	2013	2000 - 2500	different ratings	
Weissa	Al Ohadieh	Saudi Arabia	2013	1500 - 4000	different ratings	



# DIFFERENT TYPES OF TRANSFORMERS



**2600 INVERTER TRANSFORMER  
USA ANSI STANDARD**



**SMALL DISTRIBUTION  
WITH CABLE BOX DRC**



**500 KVA LOW SOUND  
LEVEL TRANSFORMER**

# DIFFERENT TYPES OF TRANSFORMERS



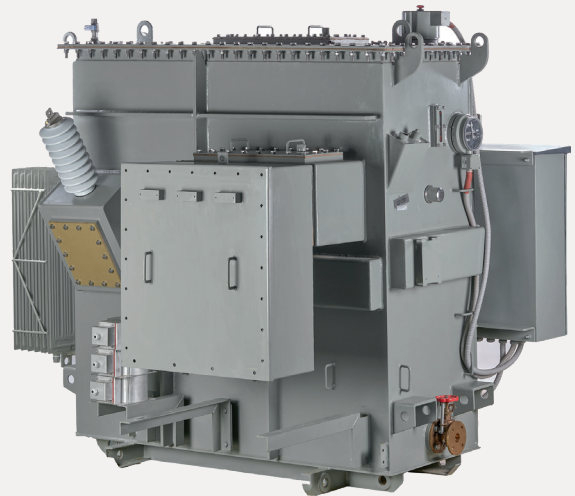
**1500 KVA DENMARK  
HERMETICALLY SEALED  
TRANSFORMER**



**400 KVA GERMANY  
ON LOAD ECOTAP  
TRANSFORMER**



**KNAN 2800 KVA FOR OIL &  
GAS UAE BRUJ TECHNO  
FARM**



**EARTHING - TRANSFORMER  
500 KVA, 33 KV  
AUSTRALIAN STANDARD**





**ELSEWEDY ELECTRIC S.A.E**

Plot No. 13co3, Cairo Festival City, 5th Settlement, P.O. Box 310, New Cairo, Egypt.



Call Now  
**19159**



+202 2759 9700  
+202 2759 9701



Info@elsewedyelectric.com  
www.elsewedyelectric.com