TAMURA ELCOMPONICS TECH. PVT. LTD.

Joint Venture between Elcomponics & Tamura Corp. Japan

www.tamuraelcomponics.com

EL GROUP

ELCOMPONICS GROUP

CELEBRATING 29 YEARS OF EXCELLENCE

ELRay

EL ELCOMPONICS AEROB

ELKOTHA see the light

ELSOLAR THE FUTURE OF POWER

AGRO & ORGANIC FOOD PRODUCTS ELWORLD

Who We Are?

- Founded in 1988
- Headquartered in Noida with Eight manufacturing units (2nos – 100% EOU) in India, branches across Asia & America.
- Annual Turnover: Rs.300 Cr (Avg last 3yrs). CAGR @20% (Last 10 years)
- Total Number of Employees: 1000+, Manufacturing Area - 2,00,000 sq feet
- 29 years of excellence in the Electronics / Electrical Industry
- One of the Largest manufacturers of Electronics / Electrical components for consumer durables, power electronics & industrial applications globally
- The Leading exporter in our product category with global customer base in Asia, Europe, USA etc.
- Full fledged R&D facilities ,Reliability testing with full Technical support from our technology partners (JAPAN & SWEDEN)

Corporate Office

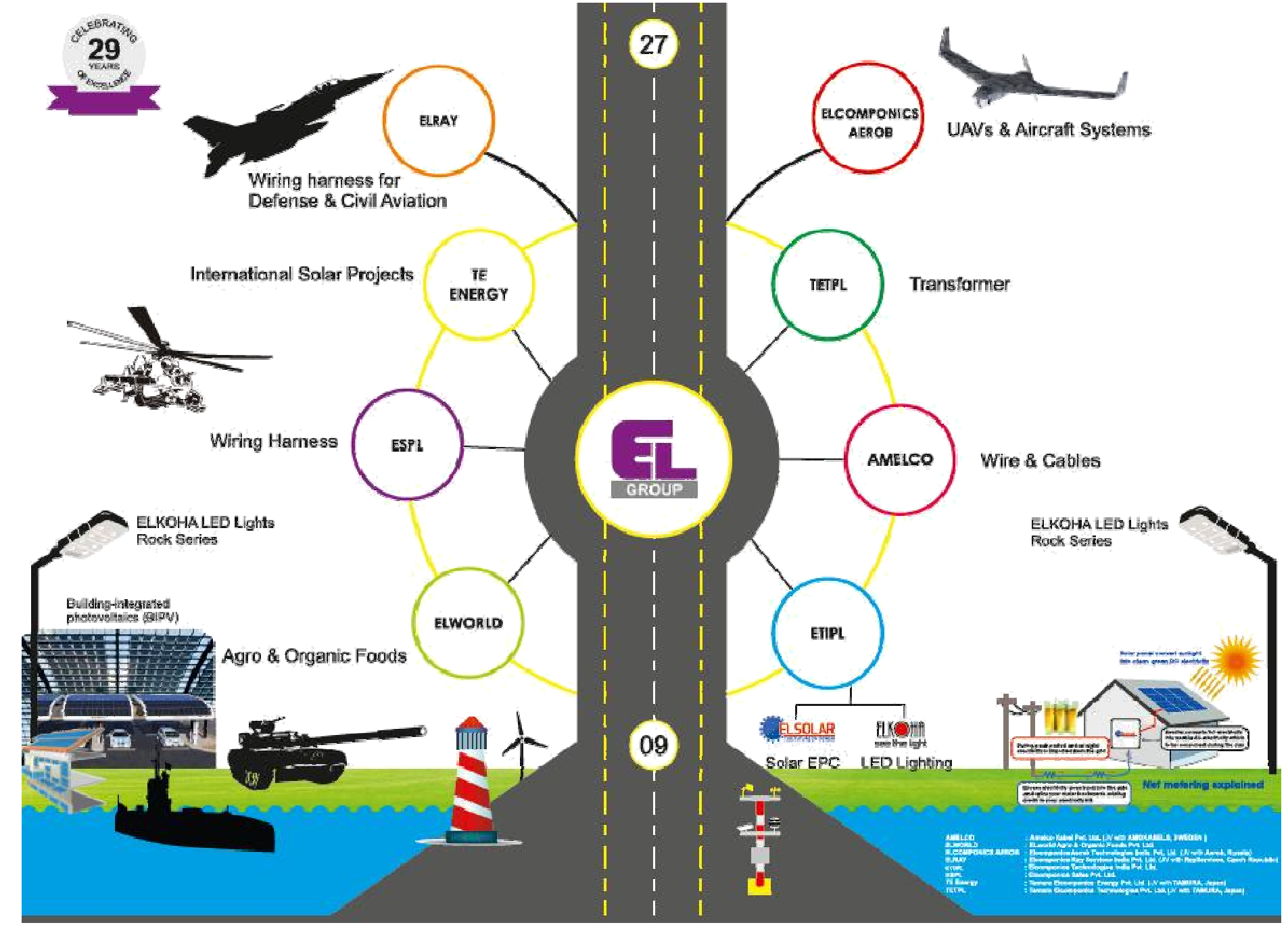
C-24, Phase II, Noida

Solar Solutions Unit,
Sec 58, Noida

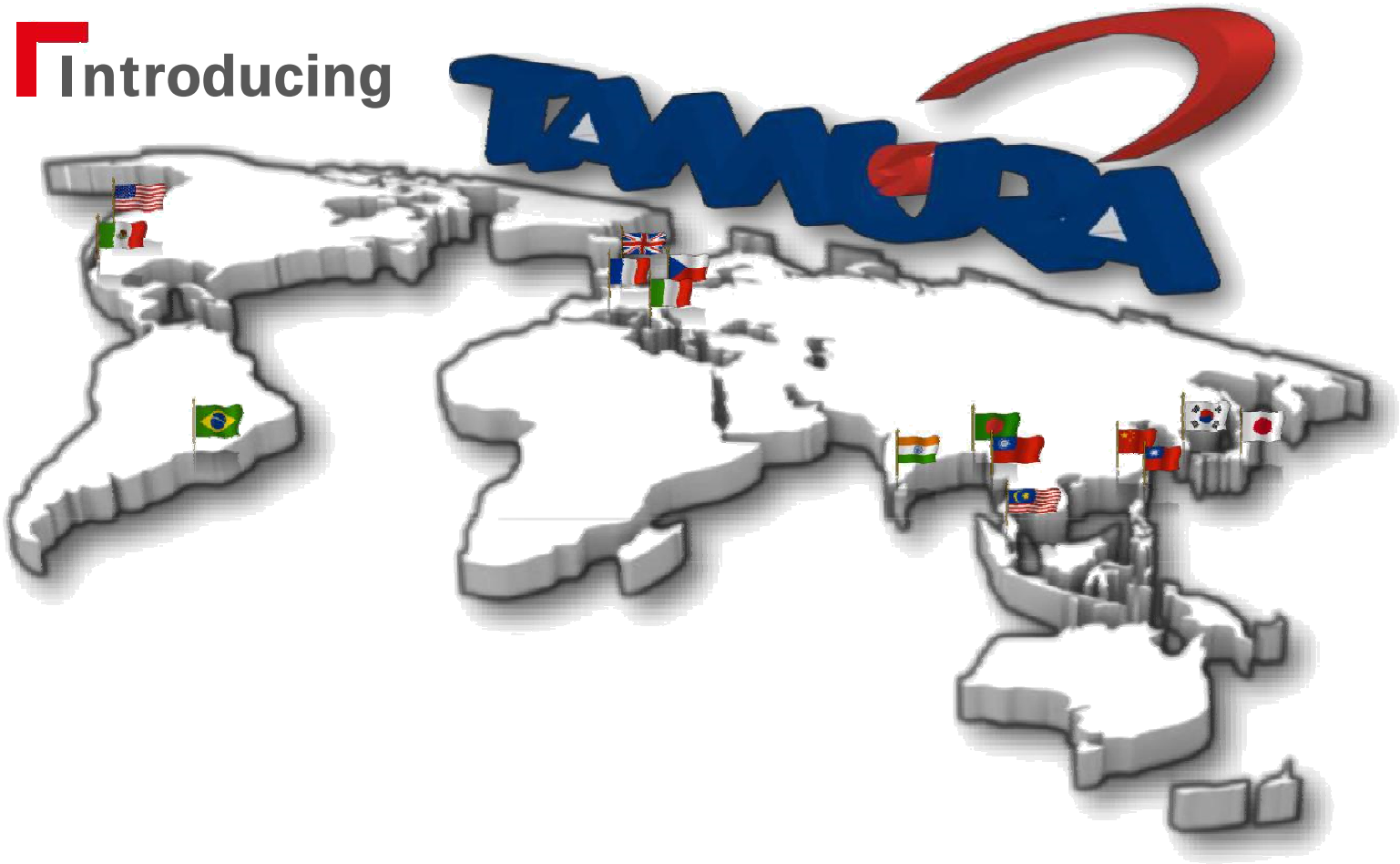
LED Solutions Unit
Sec 63, Noida

Elcomponics Group Companies

EL RAY	: Elcomponics Ray Systems India Pvt Ltd
AMELCO	: Amelco Kabel Pvt. Ltd.
EL AEROB	: Elcomponics Aerob Technologies India Pvt. Ltd.
ELWORLD	: Elworld Agro & Organic Foods Pvt. Ltd.
ESPL	: Elcomponics Sales Pvt. Ltd.
ETIPL	: Elcomponics Technologies India Pvt. Ltd.
TE Energy	: Tamura Elcomponics Energy
TETPL	: Tamura Elcomponics Technologies Pvt. Ltd.


CELEBRATING
29
YEARS
OF EXCELLENCE
27
ELRAY
Wiring harness for
Defense & Civil Aviation
ELCOMPONICS
AEROB
UAVs & Aircraft Systems
International Solar Projects
TE
ENERGY
TIETPL
Transformer
Wiring Harness
ESPL
EL
GROUP
AMELCO
Wire & Cables
ELKOHA LED Lights
Rock Series
ELKOHA LED Lights
Rock Series
Building-integrated
photovoltaics (BIPV)
ELWORLD
Agro & Organic Foods
ETIPL
09
EL SOLAR
Solar EPC
LED Lighting
Net metering explained

Introducing



Tamura Group supplies a wide range of products and services, highly regarded in the global electronics market, to satisfy the evolving needs of customers, employees and shareholders supporting the Group's growth.

Naoki Tamura
President
Tamura Corporation

History of Tamura

1924 Established
Tamura Radio Store
in Shinjuku, Tokyo, Japan

1924～
Radio receiving sets
Gramophones

1930～
Transformers

BUSINESS UNITS

Development of
transformers

Electronic Components

1956~ Power supplies
1956~ Current Sensors
1994~ Piezoelectric transformers
2008~ Large magnetics >100kg

Development of
***soldering** technology*

Electronic Chemicals / FA Systems

1956~ Flux
1957~ Solder paste 1961~
Liquid resist 1968~
Soldering systems

Development of
Information & Communication

Information Equipment

1961~ Audio mixing console
1976~ Transmission monitoring device

TETPL – Chennai

Establishment Year	Started operations Apr-2015 at SIDCO Thirumazhisai. Shifted to the new premises in Jan-2016
Location	K-62, SIPCOT Apparel Park, Irungattukottai, Kattrambakkam, Sriperumbudur, Dist :- Kanchipuram
Factory area	20,000 m^2 (Covered – 3250 m^2)
Total Employees (Dir/Ind)	50 nos.
Production Tech	Dry type Transformers & Reactors

TET Chennai Facility






Testing Facility

- Routine test for transformer as per IS 2026/ IEC 76
- **DVDF** capability up to 400 Hz, 1000 V at Chennai
- Exclusive **Acoustic** chamber for Noise measurement
- For chokes to inject current up to 4000 A & Voltage up to 3300 V for transformer
- **Surge test** (layer short) for inductance up to 15 KV
- Multi Channel **Dielectric & Insulation** resistance test up to10 KV
- **Heat Run** with temp scanner & data logger up to 6000 A & 3000 KVA

Magnetics Capability

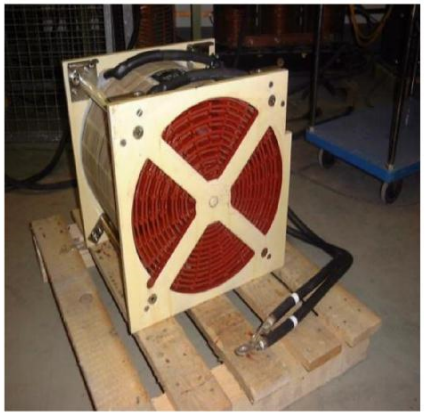
- Transformers (Single and Three Phase) 500 VA to 3000 KVA, 11 KV
- Chokes (Single and Three Phase) 1 KVAr to 1 MVAr, 4000 A
- Approved UL insulation system

Magnetics Capability - Traction

Various Wound Components for Traction Applications

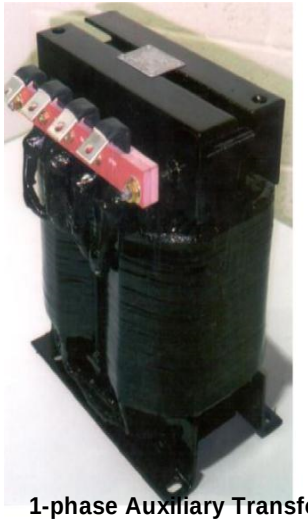
DC Line Inductor

(1.45MVA 1350kg)



Air-cored DC chopper Inductor
(201 kVA 115kg)

Line Filter Inductor
(490kVA 450kg)



1-phase Auxiliary Transformer
(60kVA, 230kg)

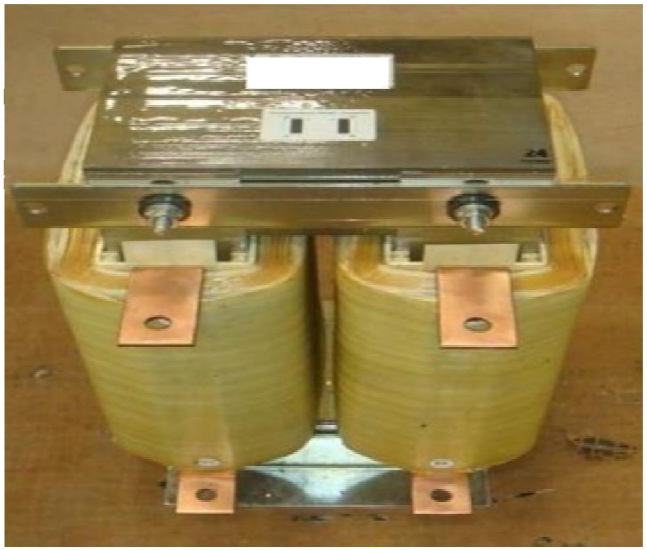
Battery Charger Components
(90kW, total 255kg)

3-phase Auxiliary Transformer
(320kVA, 800kg)

Magnetics Capability – Renewable Energy

LC Assy for Solar Power Application Inductor Assembly- 420A, 0.146mH

Inductor for Wind Power 730 A,0.3 mH



Inductor for Solar Power 1100 A, 0.08 mH

Engagements in Special Segments

Transformers for Marine Application

-60kVA-440Volts

-80kVA-440Volts

-120kVA-440Volts Developed for Marine Application with IP23 Class

<u>120kVA Certified by DNV</u>

DET NORSKE VERITAS

Certificate No BOM14032-1

CERTIFICATE FOR ELECTRIC TRANSFORMER

Manufacturer: Tamura Elcomponics Technologies Private Limited
Manufacturer's order No.:
Purchaser: Schneider Electric IT Business India Private Ltd.
Purchaser's order No.:
The product is intended for
Yard: Stock
Yard No.:
Name of vessel:
DNV Id. No.:

THIS IS TO CERTIFY:
that the product: Power Transformer

Type designation: 3 Phase
Serial No(s): 001
Power (kVA): 120
Voltage (V): Primary: 440 Secondary: 400
Current (A): Primary: 158 Secondary: 175
Frequency (Hz): 60
Ingress protection (IP rating): 23

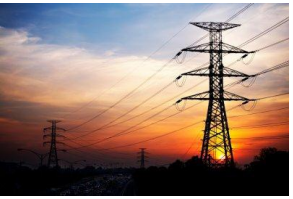
Has been built and tested in accordance with the relevant requirements of:
DNV Rules for Classification: ☒ Ships ☐ HSLC ☐ Naval ☐ Offshore
☐ Other standards:

Remarks (if more than one line, use page 2):

The product was marked: NV BOM14032-1 On: NAME PLATE

This field is only to be filled in when the certification is based on a Manufacturing Survey Arrangement (MSA).
The undersigned manufacturer declares that the product/system has been built and tested in accordance with the specification/standard stated above and the conditions referred to in
Manufacturing Survey Arrangement No:
Quality System Certificate No:
For Manufacturer:
Place:
Date:
(name)
(title)

This Certificate is only valid when signed by a DNV surveyor.
For Det Norske Veritas AS
Place: Tumkur, India
Date: 2014.03.24
(Partha Basu)
Principal Surveyor



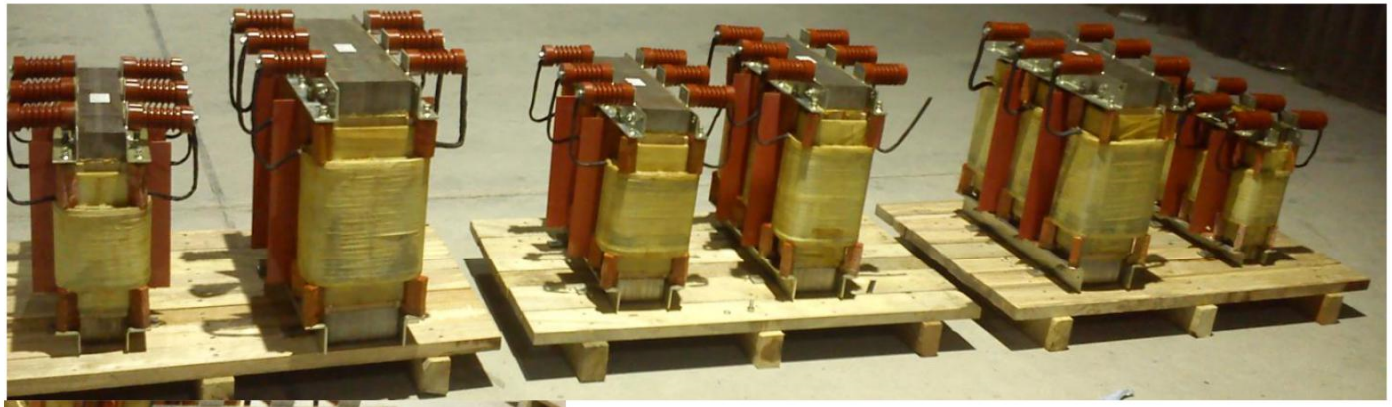
Dry type Transformers for Distribution Application

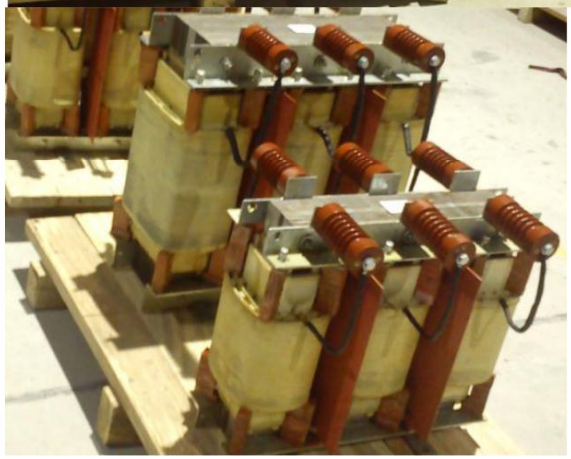
250KVA, 4160/ 480-208V

Engagements in Special Segments

Indoor, Dry type Inverter Duty Transformer with 2 LV & 1 HV winding with enclosure 2000 KVA, 420/350/350 V

Engagements in Special Segments





Inductors for Power factor improvement

33.98 mH, 49.4 A, 11 KV

61.16 mH, 27.44 A, 11KV

76.44 mH, 21.95 A, 11 KV

152.89 mH, 10.98 A, 11 KV

305.78 mH, 5.49 A, 11 KV

Strengths

Design & Manufacturing Capability

- Transformers & Inductors to the International Standards & Directives like, **IS, IEC, UL, RoHS, CE,** etc.
- Experience in **Traction, UPS, Solar & Wind** Applications
- World class infrastructure for Winding / Cutting / VPI Machines
- Testing facility consists of **DVDF**, Hipot testers etc.
- Global manufacturing & Service presence

Design team

- Global team with **local Design office** in Bangalore, India
- Experience on design of the magnetics for various application viz. Wind, Inverter / rectifier duty, Isolation Transformers, K-Rated Transformers, Filter chokes etc.

Logistics & Quality

- Global sourcing team for sourcing RM with Optimized lead times
- Committed to process Quality, Traceability, Environmental, & EHS norms

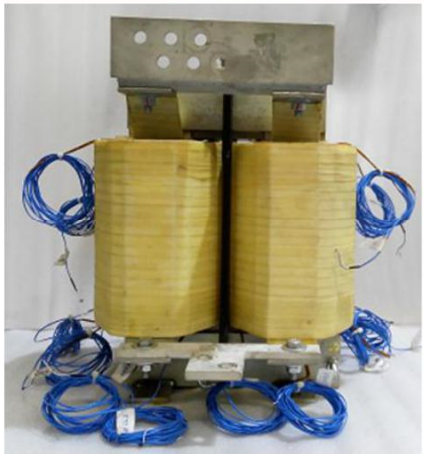
Design & Product Features

Our Products have been designed and manufactured to meet

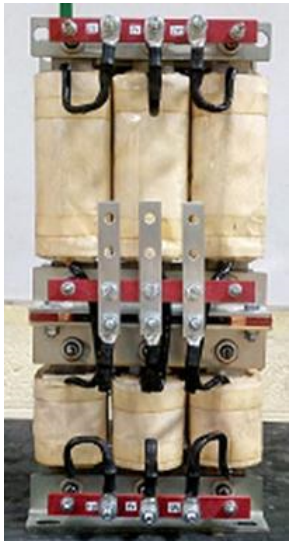
- High Efficiency, Low loss
- Low noise and High temperature Class
- Foil wound which Provides high Short Circuit Strength
- Both in Al and Cu
- ROHS Compliant
- UL approved Insulation systems
  - Class F :- 155 Deg C
  - Class H :- 180 Deg C
  - Class R :- 220 Deg C
  - Class S :- 240 deg C
- Meet both Indian and International Standards

New developments

418A, 4.5µH, 50Hz



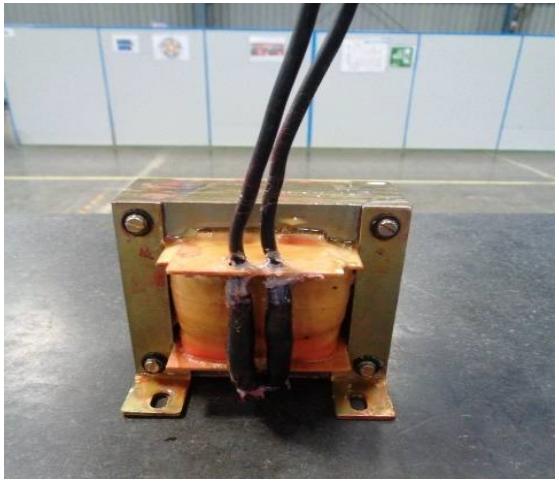
1100A, 80µH, 50Hz (solar)



Lc – 882 uH, 51 Amp, Lm – 294 uH, 50 Amp, (Drives)

150 KVA Transformer (UPS)

New developments



1-6044698Z - 3.5mH 18ADC Dry type reactor (TRACTION)

Case Studies

Wind Power Choke Case Study - 1

Original concept (Customer was purchasing inductors from Europe)

This used Aluminium conductor for their frequency converter

Customer Buying Price Rs. 89000/- (Basic)

Efforts Put in

1. Team deployed at customer site to study temperature rise & wind flow data along with the working / environmental condition
2. Data collected for 6 months and a simulation done
3. Based on this a new design proposed at Rs. 55000/- (Landed) price
4. Annual savings to customer :- Rs. 7.65 Cr
5. Next steps being taken
    1. Single phase being converted to 3 phase – prototype under progress (20% net savings)
    2. Alternate design in single phase being worked out with value engineering in insulation / core (savings of 10%)

3 Phase Choke Case Study - 2

Original concept (Customer designed & asked us to replicate)

Issues with the original concept:-

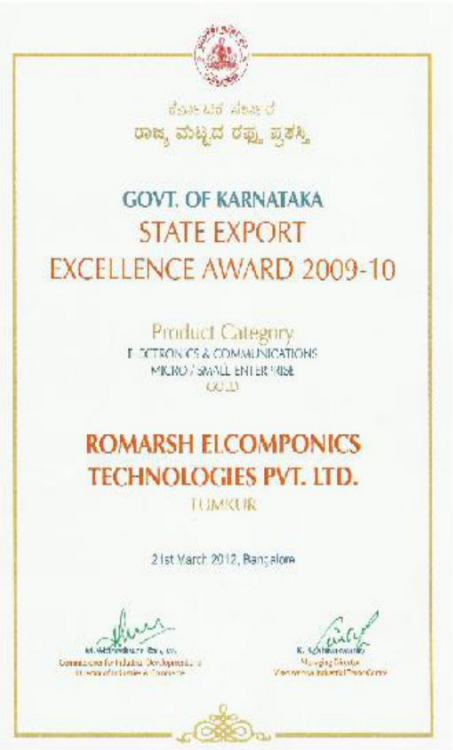
1. Temperature rise
2. Mechanical fitment issues

Efforts put in

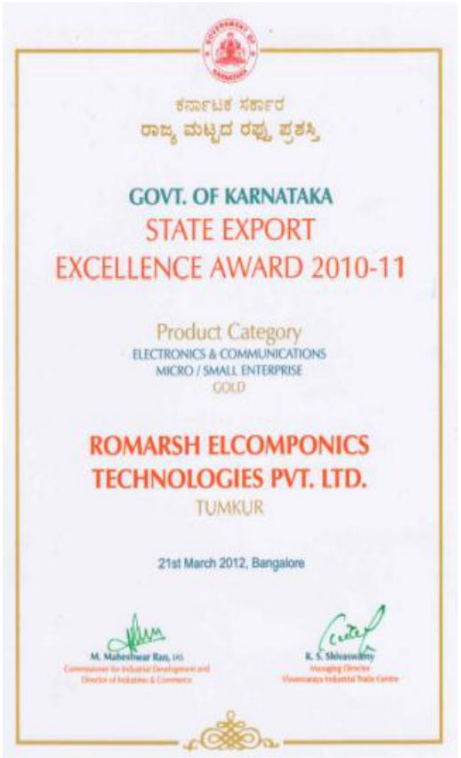
1. A team was deputed from Italy to USA to study at customer end
2. Internal workforce created in TETPL
3. Alternate design proposed with improvement in the airflow
4. New mechanical structure designed with better strength and easy for fitment
5. Produced 273 nos. from Apr 2015 – Jan 2016. No issues reported till now

Certificates / Approvals / Awards

State Export Excellence Award: 2009-2010



State Export Excellence Award: 2010-2011



UL

RoHS

CE

- TET received State Export Excellence Award for the years 2009-2010 & 2010-2011
- ISO 9001:2008 Certified
- ISO 14001:2004 Certified
- TET can produce UL, RoHS & CE compliant Products

Customers being served

UPS

- ✓ Schneider Electric
- ✓ Riello PCI
- ✓ Emerson
- ✓ Socomec
- ✓ Optimal Power

Traction

- ✓ Bombardier
- ✓ ABB
- ✓ Lloyd
- ✓ BHEL
- ✓ Toshiba

Control Panels

- ✓ EPCOS
- ✓ Power Gear
- ✓ Green Power

Defence

- ✓ DRDO (through Keltron)

Renewable Energy

- ✓ Bloom Energy
- ✓ GE Power Conversion
- ✓ Regen Power tech
- ✓ Hitachi
- ✓ Optimal Power
- ✓ BHEL

Drives

- ✓ Vacon
- ✓ Hitachi Hirel
- ✓ GE Energy
- ✓ Danfoss Industries

Air-Conditioning

- ✓ Daikin

Future Technology

- ✓ High Frequency Torroidal Products
- ✓ Amorphous Core / Resin Cast Transformers
- ✓ Water Cooled Reactors

We aim to be most preferred partner to our esteemed customer & are committed to it


THANK YOU