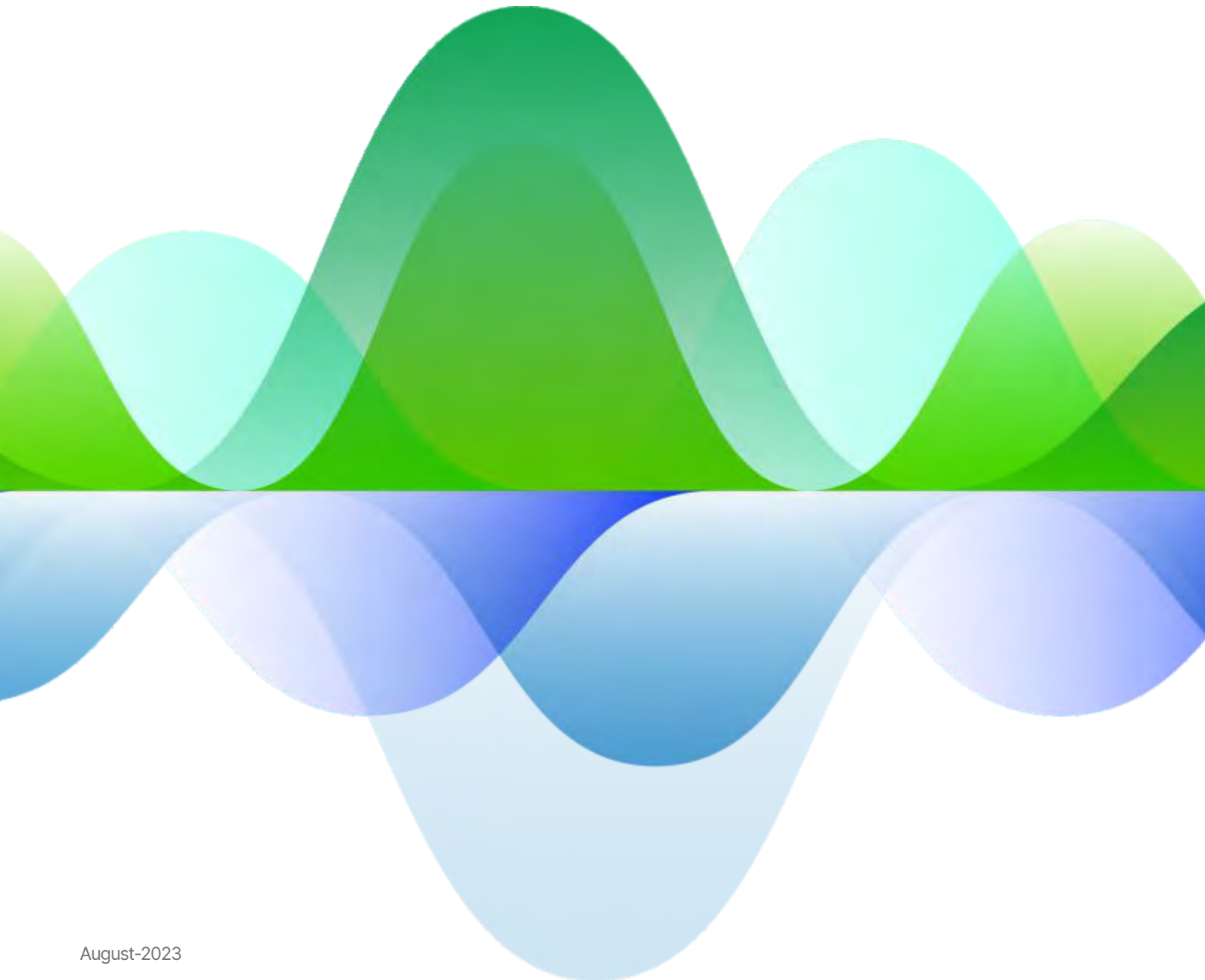




# Cut the Noise.



# Solving EMI challenges of the world, one at a time.

EMIS is the global customer's best choice for delivering efficient EMI and EMC solutions across industries and applications. With a robust global supply footprint across 8 industry segments, EMIS is continuously investing in technology and skill to deliver its promise of efficiency with seamless customer support.

EMI Solutions was founded with a passion to solve EMI challenges. Over the years, it grew to deliver standard manufactured and custom designed components, establish a state-of-the art EMI test facility and provide technical consultancy services – offering a comprehensive solution to EMI challenges across the spectrum, applications and industry segments. Our team of highly skilled and motivated employees, trustworthy supply partners and devoted investors collectively push forward the boundaries of growth and success story. Our vision to deliver efficiency in the world through engineering expertise and resourcefulness has now become a collective guiding path, helping us continually exceed our clients' expectations.

# Making it Better.

Our core values encourage us to continuously work towards enhancing our processes, leaving things better than we found them.

01

## Building Value

We acknowledge our ability to build from resources around us. We build value at every stage, leaving things better than we found them.

02

## First Principles Approach

We avoid assumptions and baseless claims. Every problem statement that we undertake is broken down into its core truths and we build our solutions scientifically from there.

03

## Profitability

Our focus on profitability keeps intact our winning spirit and resolve to build value.

04

## Agility & Adaptability

We are agile and adaptable, finding the most optimized solutions for problems at hand.

A person wearing a green glove is using a tool to work on a metal component in a factory setting. The background is blurred, showing other industrial equipment. The overall color scheme is green and blue.

# Delivering Efficiency, across the board

Our focus on delivering efficiency is not constrained to the product we sell. We incorporate this focus in all aspects of our management style. Stringent protocols are followed for optimal efficiency while delivering our products and services.

## Requirement

Following the first principles approach, our specialized team engages with the client representatives to identify the needs. They follow an extensive process to determine the context within which the need is placed, the variables that affect the output, the materials used and so forth. They use this information to create a suitability and feasibility analysis; post which the customer is either directed towards the standard product catalog or a conversation for customized solution.

## Design and Development

The extensive feasibility and analysis reports act as a detailed input for the engineering scientists who scientifically craft the product solution. The design inputs are evaluated through stringent ISO standards to produce an elaborate design output. In the case of a customized solution being offered, the customer team is brought on as co-creators. The teams collectively take decisions on the product output for the best possible solution.

## Inspection and Validation

The EMI components design and integrated product solution is then validated by an auditing team of experts thoroughly, to meet customer requirements. The solutions are tested in-house, in our state of the art R&D and testing facility in accordance with the desired quality standards for a quick turnaround time.

## Manufacture and Assembly

Our flexible and efficient state-of-the-art in house manufacturing facility helps us be with the partners all the way. Complete control over the manufacturing and component assembly process can be tuned to support even low volumes or short lead times.

## Packaging and Documentation

Our component deliveries are supported with detailed, methodical packaging and elaborate product documentation. These processes help us ensure that our partners can easily install and deploy the solutions at the customer site. The product brochures and support documentation is available on request in multiple languages for the ease of the customer.

## Delivery

EMIS ensures an end-to-end solution and arranges for customer product deliveries through its own forwarders or work with customer nominated forwarders. Our extensive footprints cover Europe, North America and Asia through direct representation or partners to deliver satisfaction till the last mile.

## After Sales Support

Our relationship is beyond transactional with our client partners. Post delivery of the solution, we are in touch with the client representative teams for technical support, feedback and progress of the project. A continuous communication channel allows us to foster a valuable relationship and enhance our products and services.

# Built today, for the future

At EMIS, we understand the pace of technology and innovation in the world. We understand that to build sustainable solutions, they need to be relevant and adaptable to the evolving requirements and environments. All our processes and scientific infrastructure systems come together to ensure that our products are built to stay.





## EMI/EMC Products

EMI can cause service interruption, data loss, permanent damage to equipment and failure when left unattended. Our sophisticated EMI/EMC products use high quality, grade A raw materials in an exhaustive range of specifications that meet customers' varied requirements.

## Power Quality Products

Power quality products provide uninterrupted power supply and manage EMI, maintaining consistent power quality. Our superior range of Line and Load Reactors and Harmonic filters ensure reliable and efficient quality power for industrial and home needs.

## Feedthrough Components

Electromagnetic Feedthrough is one of the key sources of electrical noise in signal transmission. Specifically seen as a challenge in Si/ZnO Surface Acoustic Wave (SAW) devices, our Feedthrough Components (filters and capacitors) attenuate the EM/RF noise by carrying high frequency /voltage electrical signals through PCBs or enclosures.

## Military Grade Filters

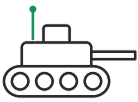
Military standards are much more stringent when compared to commercial applications because of negligible room for error. Military Grade Filters are especially used for Point of Entry (POE) protection. They are broadly categorized as Power Line, Data Line and Signal line filters covering the power supply and telecommunication equipment in defence applications.

## Surge Protectors

Lightning and power system faults can cause high voltage surges subsequently causing enormous damage to electrical equipment. Our surge suppression and spark quencher solutions handle short duration over-voltages and protect electrical equipment from damage.

# Precision, across the Spectrum

Industries we support



## Defence & Aerospace

In the aerospace and defense industry, absolute precision with assurance is the keystone. The equipment brave harsh and unpredictable weather conditions and the allowance for margin of error is close to negligible. EMIS, as a trusted player in the segment, ensures highest precision for the design, verification and test of electronic systems.



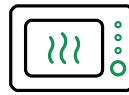
## Medical & Healthcare

Medical instruments in hospitals, labs and diagnostic centers are prone to high levels of electromagnetic interference, which can be life threatening. Electro-magnetic compatibility is therefore crucial for a trouble-free operation. EMIS appreciates the criticality of its solutions and leads the way with the highest international standards of conducted and radiated emission tests to meet the Medical Standards IEC 60601-1-2.



## Automotive & Transit

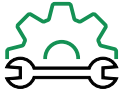
Consisting of several electro-mechanical components and sub-assemblies; the automotives segment tackles both broadband and narrowband EMI. We offer an exhaustive range of single phase EMI filters, 3 phase filters, harmonic filters, AC line reactors, output ferrite chokes for on-board communication units among other shielding, coupling and grounding solutions.



## Consumer Appliances

Increase in both the number of consumer appliances in a household and their electronic complexity is causing high degrees of EMI that interferes with their seamless, high-quality performance. Known for an uncompromising technical compliance to standards - CE Marking for Europe, FCC for North America, EMIS holds a pre-eminent position in providing comprehensive EMI/EMC solutions to consumer and home appliances.





## Industrial

EMI in industrial machinery can be caused by intermittent events like sparking on motor brushes, power circuit switches or circuit breaks; which can slowly degrade the equipment over time. EMIS delivers sophisticated solutions that control the electromagnetic noise, increasing the lifespan and the efficiency of the industrial equipment.



## Building Technology

Nuanced BIM and green buildings require reliable electromagnetic compliance solutions so that the buildings can seamlessly transmit data back and forth. EMIS understands the complexities of interconnectivity among sensors and systems and provides holistic solutions that help buildings to be safer, smarter and more efficient.



## Power & Energy Management

Specifically designed for the challenges of renewable energy systems - supporting high contact reliability with shock proof terminals and providing good attenuation from incoming interference; EMIS offers CE marked, custom designed and manufactured solutions that are cost effective, compact size, and come with multiple mounting options.



## Telecommunication

Management of EMI emissions from an ever increasing pool of new telecommunication devices is a colossal challenge for the industry. Our wide range of input filters reduce conducted and radiated EMI across the entire frequency spectrum and also offer associated products for grounding, shielding and cabling to manage the radiated emissions.



# Building **Exactitude**

**Efficiency is not a milestone. It is a continuous process, evolving as per the requirements and the dynamic environments. We too, do not stop once a great product is created. We constantly test and build more products for the ever-changing world.**

EMIS houses sophisticated and fully equipped testing facilities for EMI/EMC testing at our plant in Bangalore, India. Our state-of-the-art testing facility is accredited by the National Accreditation Board for Testing and Calibration Laboratories in accordance with the standard ISO/IEC 17025:2017.

Our laboratory is a thriving hotspot for constant innovation and scientific rigor. Due to this, we are able to also support on-site testing in compliance with international standards.

Our wide array for testing capabilities services many industry sectors like consumer electronics, aviation, defense, medical electronics and telecommunication.

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# 01 Test Facilities as per Commercial Specifications

The image shows a large-scale industrial test facility. In the foreground, a large, dark, cylindrical component, possibly a turbine or engine part, is visible. The background is filled with a complex network of pipes, ducts, and structural elements, all illuminated by a bright, overhead light source, creating a high-contrast, somewhat washed-out appearance. The overall scene suggests a sophisticated engineering or manufacturing environment.

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## Conducted Emission

### Single phase up to 16A Three phase up to 63A

This test measures the amount of electromagnetic energy that is conducted by the Product Under Test onto the power supply cords. These energy levels have to be within the prescribed limits set by the standard agencies applicable for that appropriate geographic region. This test is intended to ensure that the product under test-

- Does not pollute the power supply lines
- Nearby electrical devices are not affected by the device under test

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Test Standard	Test Description	Range of Testing / Limits of Detection
CISPR 11/BS EN55011	Emission requirement for Industrial, Scientific & Medical Radio Frequency equipments	150KHz to 30MHz
CISPR 14-1/BS EN 55014-1	Emission requirement for Household Appliances, Electrical tools and similar Electrical apparatus	150KHz to 30MHz
CISPR 35 / BS EN 55035	Emission requirement for multimedia equipments	150KHz to 30MHz
IEC 61000-6-3 IEC 61000-6-4	Generic standards. Emission requirement for residential, commercial and light-industrial equipments	150KHz to 30MHz

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## Conducted Immunity

## Single phase up to 16A Three phase up to 32A

External EMI could come in any one of the following types - Conducted or radiated, Transient or continuous. Immunity tests are intended to qualify and quantify how immune and resilient the device under test is to external EMI. Care has to be taken by the manufacturers that their equipment has built-in features to protect itself from external EMI.

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Test Standard	Test Description	Range of Testing / Limits of Detection
IEC 61000-6-1 IEC 61000-4-2 IEC 61000-6-2 CISPR 14-2, CISPR 35	Electro Static Discharge (ESD) - Contact Discharge - Air Discharge	1kV to 8kV 1kV to 16kV
IEC 61000-6-1 IEC 61000-4-4 IEC 61000-6-2 CISPR 14-2, CISPR 35	Electrical Fast Transients (Burst) - Amplitude - Pulse duration	0.25kV to 6kV 15ms & 0.75ms
IEC 61000-6-1 IEC 61000-4-5 IEC 61000-6-2 CISPR 14-2, CISPR 35	High Energy Surge - Amplitude - Pulse duration	0.25kV to 4kV 1.2 / 50µs
IEC 61000-6-1 IEC 61000-4-5 IEC 61000-6-2 CISPR 14-2, CISPR 35	Telecom Surge - Amplitude - Pulse duration	up to 6.6kV 10/ 700µs
IEC 61000-4-11 IEC 61000-6-1 IEC 61000-6-2 CISPR 14-2, CISPR 35	Power Fail (Line Voltage Dips & Short Interruption)	230 Vrms / 415 Vrms at 50Hz / 60Hz 0% of Uin 80% of Uin 70% of Uin 40% of Uin ½ Cycle to 250 Cycles
IEC 61000-4-6 IEC 61000-6-1 IEC 61000-6-2 CISPR 35	Conducted susceptibility on Power and Signal Lines	100KHz to 400MHz

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## Radiated Emission

## Open Area Test Site - 3M

This test involves measuring the electro-magnetic field strength of the emissions that are generated by any electrical product or equipment. These emissions have to be within the limit prescribed by the standards that are prevalent in that country/region.

Open Area Test Site (OATS - 3M) is the most common test to measure the EMI generated by a product under open area conditions.

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Test Standard	Test Description	Range of Testing / Limits of Detection
CISPR 11/ BS EN 55011 IEC 61000-6-3 IEC 61000-6-4	Emission requirement for Industrial, Scientific & Medical Radio Frequency equipments	30MHz to 1GHz

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## Harmonic Emission

This test involves measuring the harmonic currents drawn by the electrical equipments and so maintain the mains voltage quality. The harmonic current has to be within the limit prescribed by the standards.

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Test Standard	Test Description	Range of Testing / Limits of Detection
IEC 61000-3-2	Harmonics Current Emission requirements for the equipments	Single phase up to 16A

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## Flicker Emission

This test involves measuring the voltage fluctuations and flicker impressed on the public low-voltage system from the device under test. Voltage fluctuations and flicker have to be within the limit prescribed by the standards.

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Test Standard	Test Description	Range of Testing / Limits of Detection
IEC 61000-3-3	Voltage Fluctuation and Flicker requirements for the equipments	Single phase under 16A

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## Power Frequency Magnetic Field (PFMF)

This test is performed for evaluating the performance of electrical and electronic equipment when subjected to magnetic fields at power frequency.

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Test Standard	Test Description	Range of Testing / Limits of Detection
IEC 61000-4-8	Power Frequency Magnetic Field requirements for the equipments	Up to 160A/m

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## 02 Test Facilities as per Military Specifications





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## Conducted Emission Test

### Single phase & Three phase up to 50A

This test measures the amount of electromagnetic energy that is conducted by the Product Under Test onto the power supply cords. These energy levels have to be within the prescribed limits set by the standard agencies applicable for that appropriate geographic region. This test is intended to ensure that the product under test -

- Does not pollute the power supply lines
- Nearby electrical devices are not affected by the device under test

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Test Standard	Test Description	Range of Testing / Limits of Detection
CE101–Power leads (As per MIL-STD-461 E/F/G)	Requirements for the control of Electromagnetic Interference Characteristics of Subsystems and equipment	30Hz to 10KHz
CE102–Power leads (As per MIL-STD-461E/F/G)	Requirements for the control of Electromagnetic Interference Characteristics of Subsystems and equipment	10KHz to 10MHz

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# 03 EMI/EMC Compliance Testing



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## Overview

EMIS houses sophisticated and fully equipped testing facilities at our EMI/EMC testing laboratory in Bangalore, India. Our EMI Testing Facility is accredited by the National Accreditation Board for Testing and Calibration Laboratories (A Constituent Board of Quality Council of India) in accordance with the standard ISO/IEC 17025:2017. We also support on-site testing.

We provide industry-specific EMC testing services. Some of the industries we cater to include:

- Consumer Electronics
- Defence
- Medical electronics
- Telecommunication

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## Tests at DSIR recognised R&D Lab

Hi-Pot Test  
LCR Measurements  
DC Resistance Test  
Insulation Resistance  
Temperature Rise Test  
Surge withstand Test  
Leakage Current Test  
Overload Test  
Endurance Test  
Insertion Loss Test

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## Tests at our in-house EMI/EMC Lab

Test Name	Test Standard	Test Range
Conducted Emission	IEC 61000-6-3 IEC 61000-6-4 CISPR 11, 32, 14-1, 15	150KHz to 30MHz Up to 63A
Conducted Immunity	IEC 61000-4-6 IEC 61000-6-1 IEC 61000-6-2 CISPR 14-2, 35	100KHz to 400MHz
Electro Static Discharge	IEC 61000-4-2 IEC 61000-6-1 IEC 61000-6-2 CISPR 14-2,35	Contact Discharge: up to $\pm 8$ kV Air Discharge: Up to $\pm 15$ kV
Electrical Fast Transient	IEC 61000-4-4 IEC 61000-6-1 IEC 61000-6-2 CISPR 14-2,35	Up to $\pm 6.6$ kV 3 Phase up to 32A Power & Signal lines
Surge Immunity	IEC 61000-4-5 IEC 61000-6-1 IEC 61000-6-2 CISPR 14-2,35	Up to $\pm 4.4$ kV 3 Phase up to 32A Power line
Telecom Surge	IEC 61000-4-5	$\pm 6.6$ kV 10/700 $\mu$ S Power & Signal lines
V-Dips & Interruption	IEC 61000-4-11,29 IEC 61000-6-1 IEC 61000-6-2 CISPR 14-2,35	3 phase up to 32A
Power Frequency Magnetic Field	IEC 61000-4-8 IEC 61000-6-1 IEC 61000-6-2 CISPR 14-2,35	3 phase up to 32A
Harmonics Emission	IEC 61000-3-2 CISPR 35	Single phase up to 16A
Flicker Test	IEC 61000-3-3 CISPR 35	Single phase up to 16A



## Global Reach

3 Continents | 19 Countries

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**Asia** ASEAN, India, Israel

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**Europe** Germany, Italy, Netherlands, Sweden, Spain, UK

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**North America** USA

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**Building an  
efficient future,  
together.**

**We undertake effective steps to enable efficiency in the lives of those who have joined us in our vision of making the world a more efficient place.**

## Structured Professional Growth

One of the key reasons that our employees choose to grow with us is because of our open, transparent employee RnR systems. Our inclusive HR systems offer growth possibilities at each career stage - encouraging our team members to constantly push envelopes, learn and take on new challenges.

## Payscale over the industry average

We value talent and commitment in our team. To attract and retain the best, our wage rates are above the industry standards, fostering a growth mindset and encouraging productivity. Higher employee retention helps move forward towards our goals at a faster pace, in turn providing growth to everyone.

## Constant Learning

World class training seminars and upskilling is regularly for team members that allows them to keep up with the latest innovations in the engineering world, streamline their personal productivity and learn from global leaders.

## Employee Family Welfare

We understand the huge responsibility that comes with being a parent. In addition to having parent-friendly policies, we also offer educational scholarships and comprehensive health care schemes.

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