for a greener tomorrow

MITSUBISHI ELECTRIC
Changes for the Better

SMART LOW VOLTAGE SWITCHGEAR SOLUTIONS

Intelligent, Safe, Efficient & Reliable

AIR CIRCUIT BREAKERS

World Super AE

GLOBAL

BEST SOLUTION

HIGH PERFORMANCE

HIGH RELIABILITY

USER FRIENDLY

Available Frame Size

Product Range
630-6300A
Rated Insulation Voltage
1000 V AC
Number of Poles
3.4
Rated Operational Voltage
690 V AC
Available Types
Drawout type, Fixed type
Network Links*
Profibus/DP, CC-Link, MODBUS

Product Special Features

- Standard Pre Trip Alarm
- Fully Modular and Scalable Electronic Trip Unit
- Colour Changing Display to acknowledge faults and alarm
- Temperature Alarm
- Records last 10 Trips and 10 Alarams
- LED to indicate% Current Loading
- Fault Differentiating LED for OC, SC, EF & EL

Higher short circuit protection performance by high breaking capacity
In Case of 690V AC, Icu = Ics
65 kA for AE630-SW-AE2000-SWA
75 kA for AE2000-SW-AE4000-SWA
85 kA for AE4000-SW-AE6300-SW

Wide coordination range by High rated short-time withstand current Icw (1s)
65 kA for AE630-SW-AE2000-SWA
75 kA for AE2000-SW-AE4000-SWA
100kA for AE4000-SW-AE6300-SW

Icu=Ics (Rated Breaking Capacity)

65kA	75kA	85kA
(AE630-SW~AE200-SWA)	(AE2000-SW~AE4000-SWA)	AE4000-SW~AE6900-SW)

Icw (1s) (Rated short-time withstand current)

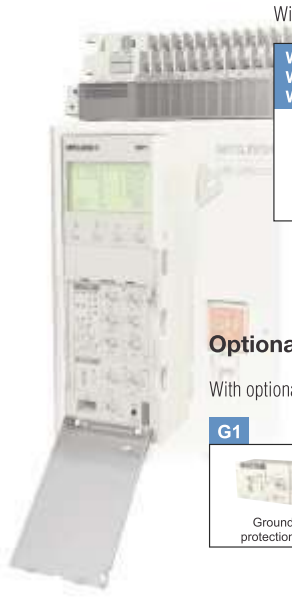
75 kA	100 kA
(AE2000-SW~AE4000-SWA)	(AE4000-SW~AE6300-SW)

ELECTRONIC TRIP RELAY (ETR)

Main Setting Module

With interchangeable & add-on modules

WS1 WS2 WS3 General use	WM1 WM2 WM3 Generator protection use	WB1 WB2 WB3 Special use
		
LTD+STD+INST / MCR	LTD+STD+INST / MCR	INST / MCR



Optional Setting Module

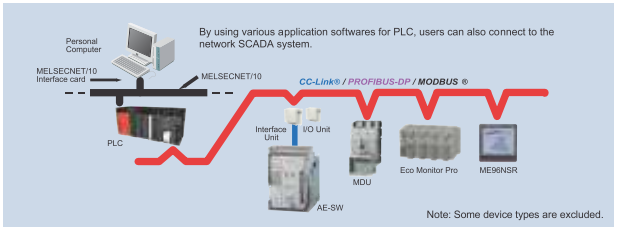
With optional setting modules, GFR, ER etc are added easily.

G1	E1	AP	N5
			
Ground fault protection (GFR)	Earth leakage (ER)(1)	2nd Additional Pre-alarm	Neutral pole (2) 50% protection

Temperature Alarm (TAL)

When TAL sensor is installed in the breaker, temperature alarm is operative. When the temperature of main contact exceeds normal level, temperature alarm is indicated by LED on main setting module and also the output contact is made energize if power supply with output contact is installed. It is possible to know temperature rise caused by wearof main contact because TAL sensor is installed near main contact. When the temperature of main contact goes down to the normal level, temperature alarm turns off automatically.

Network



MOULDED-CASE CIRCUIT BREAKERS

World Super WS-V Series

GLOBAL

INTELLIGENT

STANDARDISATION

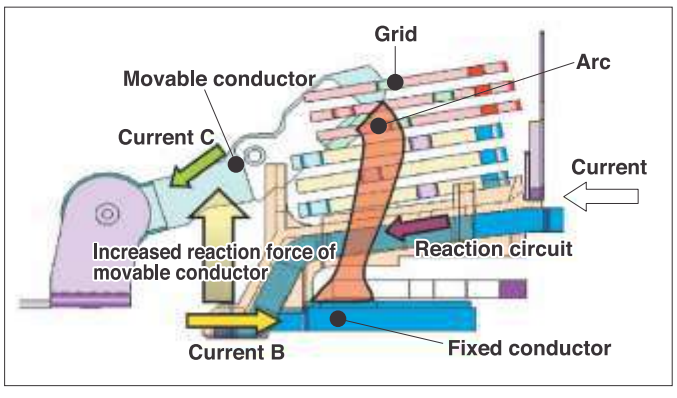
HIGH QUALITY

HIGH PERFORMANCE

Product Range WS-V/W
3-1600 A
Rated Insulation Voltage
500-690 V AC
Rated operation Voltage
up to 690 V AC, 500 V DC
Number of Poles
2, 3, 4
Tripping Mechanism
Thermal Magnetic, Electronic
Network Links*
CC-Link®, Modbus
Special Type
Earth Leakage and Motor Duty
Version
Motorized and Plug-in

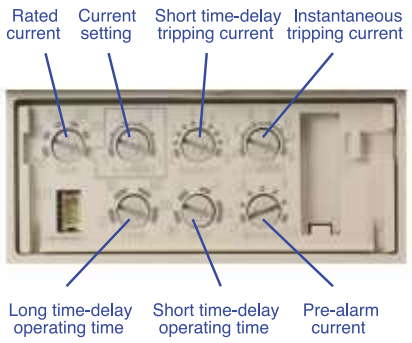
Expanded ISTAC - The Patented Trip Technology

The new circuit breaking technology "Expanded ISTAC" has improved the current-limiting performance and upgraded the overall breaking capacity. Expansion of the conductor under the stator shortens the contact parting time of the mover as compared to the conventional ISTAC structure. The current-limiting performance has been improved remarkably. (The maximum peak current value has been reduced by approx. 10%.)



Current Limiting Performance

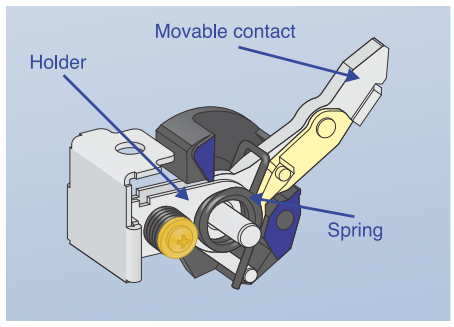
High-level flexibility



The electronic trip relay for 400-630 Amp provides high-level flexibility according to your demands

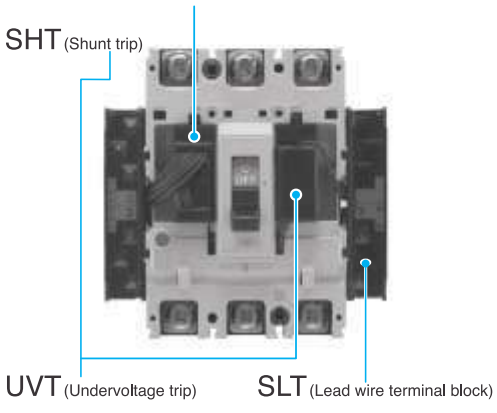
Shunt-less Current Flow Technology

The constructive design of movable and fixed conductors considerably contributes to an increased life.



Constructive design for an increased life

Modular accessories



FINAL DISTRIBUTION PRODUCTS

DIN Series

PRODUCT LINE-UP

Model type		No of poles (P)	Rating	Instantaneous tripping	Voltage (V)	Short-Circuit capacity (kA)	Compliance standard
MCB	BHW-T10	1, 1+N, 2, 3, 3+N, 4	6 to 63A	TYPE B	240/415AC	10 (Icn)	IEC 60898-1
		1, 1+N, 2, 3, 3+N, 4	0.5 to 63A	TYPE C, D	240/415AC	10 (Icn)	IEC 60898-1
		1, 1+N, 2, 3, 3+N, 4	80 to 125A	TYPE B*,C	240/415AC	10 (Icn)	IEC 60898-1*
						10/7.5 (Icu/Ics)	IEC 60947-2
RCCB	BVW-T	2(1+N), 4(3+N)	10 TO 100A	–	240/415AC	10 (Icn)	IEC 61008-1
Isolating Switch	KBW-T	1, 2, 3, 4	25, 40, 63A	–	240/415AC	–	IEC 60947-3
		2, 3, 4	80, 100, 125A	–	240/415AC	–	IEC 60947-3

*This standard will be confirmed shortly please contact our branch office for release period and more details.

Technical Specificatinos

Ambient temperature range	-10 to +40
Frequency	50/60Hz

- SPN Horizontal Door Distribution Board-04 way to 16 way
- TPN Horizontal Double Door Distribution Board-04 way to 16 way
- VTPN Distribution Board with Miniature Circuit Breaker (upto 63A) as incomer-04,08,12 way
- VTPN Distribution Board with Moulded Case Circuit Breaker (upto 250A) as incomer-04.08,12 way
- Flexi (Tier) Distribution Board 2 Row/ 3 Row/ 4 Row-upto 13 module per Row
- Seven segment Distribution Board-04 way to 12 way
- Per Phase Isolation Distribution Board-04 way to 12 way
- TPN Phase Selector Distribution Board-04 way to 12 way
- Plug and Socket Distribution Board-SPN-10A, 20A and TPN-20A,30A
- Cable End Box Distribution Board

MAGNETIC CONTACTORS AND MAGNETIC STARTERS

MS-T Series
MS-N Series

S Down-sizing
mall
S Standardization
tandardization
S Safety & Quality
afety & Quality
S Smart Wiring
mart Wiring
S Global Standard
tandard

Easy Branch Circuit Wiring with Manual Motor Circuit Breaker and optional connection Conductor Unit

Easy wiring is available for the new MS-T Series by using the Manual Motor Circuit Breaker and optional connection Conductor Unit, contributing to increased productivity.

Magnetic Contactors

Product Range
9A-800A
Operating Voltage
280-440 V AC (50/60 Hz)
Integrated Auxiliary Contacts
1-4 (NO and/or NC)

Motor Protection Circuit Breaker

Product Range
0.1A to 32A
Operating Voltage
200-690 V AC (50/60 Hz)

Additional Product offering

- Solid State Time Delay Relays
- Pneumatic Time Delay Relays
- Electronic Motor Protection Relay
- Thermal Motor Protection Relay
- Voltage Detection Relays
- Restarting Relays
- Solid State Contractors
- DC Contractors
- DC Interface Contractors
- Medium Voltage Vacuum Contractors

ENERGY MONITORING SOLUTIONS

① ME96SSHA-MB (High-Performance Model)

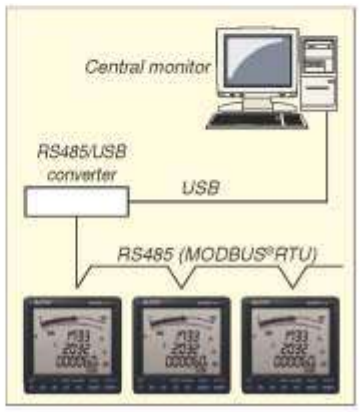
Major features

[1] Active energy measuring accuracy of class 0.5S
[2] Applicable to harmonics of ±1.0% (31st)
[3] Applicable to demands A and W,var,VA
[4] Optional units can be added.

② ME96SSRA-MB (Standard Model)

Major features

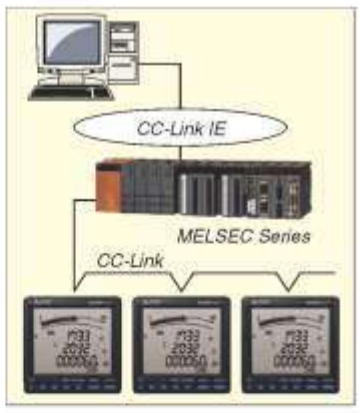
[1] Active energy measuring accuracy of class 0.5S
[2] Applicable to harmonics of ±1.0% (19th)
[3] Applicable to demands A and W,var,VA
[4] Optional units can be added.



③ ME96SSEA-MB (Economy Model)

Major features

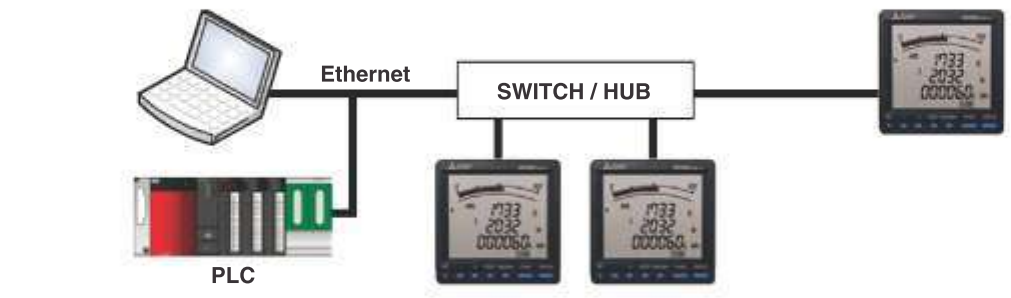
[1] Active energy measuring accuracy of class 0.5S
[2] Applicable to harmonics (THD)
[3] Applicable to current demand

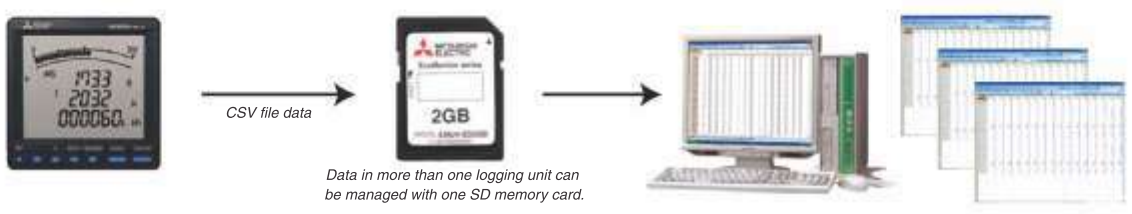


④ Optional plug-in modules

Major features

[1] MODBUS® TCP communication unit **NEW**
[2] Data logging unit **NEW**
[3] CC-Link communication unit
[4] Digital input and output unit
[5] Analog, pulse and alarm output unit





Data in more than one logging unit can be managed with one SD memory card.

Note: Use the SD memory card (EMU4-SD2GB) made by Mitsubishi Electric.
Use of any memory card other than our product (EMU4-SD2GB) is not covered by the warranty.

Related Products

Super-S Series

‡EcoWebServerIII

Mitsubishi Electric Energy-saving Data Collection Server
From visualization to publication of energy data

Collection, storage, visualization,
publication on the web, analysis and monitoring
All can be realized by one server.

Simple Set-up

When using the set-up software supplied, power management meters connected to CC-Link and measurement data can be set by mouse and keyboard operations.

Display Measurement Data as Graphs on a Web Browser

The main unit has a built-in web server that allows anyone, anywhere to understand the amount of energy being used in real time via computer without requiring additional software, thereby supporting early detection of energy waste.

Automatic Transmission of Data Collected, Mail Notifications and Contact Output

Users are notified of changes in energy, facilities, etc. via e-mail and alarms. Energy management targets and status monitoring of entire factories and buildings help ensure that problems onsite are detected without fail.

◇*PLC data can also be sent to EcoWebServerIII by Ethernet.*
◇*Data of various sites can be browsed in the head office by utilizing the internal network.*

‡EcoMonitorPlus

Energy measuring units helpful in adding units for increased number of measuring circuits and preventive maintenance by simultaneous measurement of electric power and leakage

Phased expansion of energy-saving system

At first, energy-saving measurement can be started on a small scale from a desired place.
The system can be configured by adding units according to the increase of measuring circuits.

Leakage current monitoring

Lineup of basic units for monitoring insulation
Helpful in early detection of equipment problems through accurate leakage current trend monitoring by Ior method
** Ior: Leakage current caused by insulation deterioration (leakage current of resistive component)*

Simple management of measurement data with prepared forms and graphs

Data can be collected by the logging unit (SD memory card) without the host application on the PC, etc.
Forms and graphs can be easily prepared by using the spreadsheet software (logging unit utility).*
** The logging unit utility can be downloaded for free from Mitsubishi Electric FA site.*

‡EcoMonitorLight

Energy measuring unit with integrated display for easily realizing the visualization of energy

A two-model line-up: a Three phase 3-wire system designed for users wanting simple power measurements at low cost; and a Three phase 4-wire system designed for users looking for basic power measurements plus something extra (harmonic measurements, alarm monitoring, etc.).

Simple Measurements

The built-in LCD enables easy setting, measurement and display of power used for energy management.

MODBUS® RTU (RS-485) Communication as Standard Equipment

Meters come with MODBUS® RTU communication as standard equipment, allowing the device to be used as a PLC system, other high-order system, display device (GOT), etc.

Logging/Communication Units for Expanded Measurement Applications

The product line-up also includes logging units/communication units (CC-Link communication unit) that can be incorporated as add-on options, enabling installations that best match to the customer's usage environment.

‡*Logging unit: Data measured by the main unit (current, voltage, power, etc.) can be output to an SD memory card in CSV file format, realizing simple data management.*

Highly Accurate Measurements and Support Functions

Customer activities are supported through functions such as 250μs high-precision (short-cycle load) measurement, operating time measurement, wiring error detection and test output.

ELECTRONIC MULTI-MEASURING INSTRUMENT

MODEL: EMMS7-96

Product Outline

Highly appreciated 'Electronic Multi-Measuring Instrument' have been launched with economical version with seven-segment display. New EMMS7-96 meter with improved measurement function and MODBUS® RTU communication support.

It allows more effective energy monitoring function with seven-segment LED display, brilliant 3 Row, 4 digits per line LED display readable from larger distance having built-in MODBUS® RTU communication.

Salient Features

- 7-segment bright red LED display; 3 rows of 4 digits
- Measurement of major electrical parameters and power quality
- User selectable phase wire system: 3-phase 4-wire, 3-phase 3-wire (3CT, 2CT), 1-phase 3-wire, 1-phase 2-wire
- User programmable CT/PT primary, CT/PT secondary
- Built-in RS-485 MODBUS® RTU communication
- Easy display navigation and settings

Application Area

1. Control panels
2. Motor Control Centres (MCC)
3. Power distribution panels
4. Breaker panels
5. Original Equipment Manufacturers (OEMs)
6. Building Management Systems (BMS)
7. Genset panels

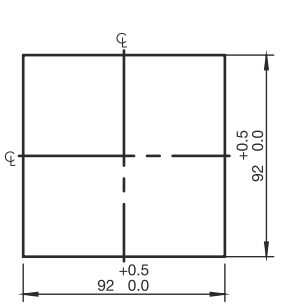
User Benefits

- Multiple parameters monitoring for network reliability and diagnosis
- Reduce energy cost by tracking Energy consumption
- Basic power quality analysis with THD
- MODBUS® RTU communication system optimizes computer monitoring operations
- Remote monitoring of parameters A, DA, V, W, var, VA, Wh, varh, VAh, PF, Hz, harmonic voltage and harmonic current (Total)

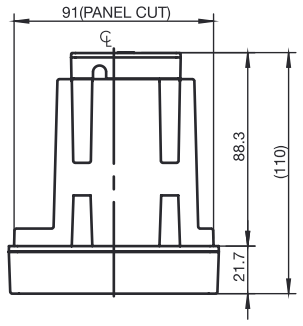
SPECIFICATIONS

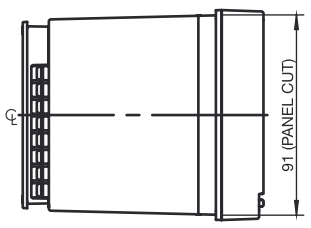
Type		EMMS7-96EA-MB	
Phase Wire System		3-PHASE 4-WIRE, 3-PHASE 3-WIRE (3CT, 2CT), 1-PHASE 3-WIRE,1-PHASE 2-WIRE	
Rating	Current	5A AC, 1A AC	
	Voltage	3-PHASE 4-WIRE: max 277/480VAC 3-PHASE 3-WIRE: (DELTA) max 220VAC, (STAR) max 440VAC 1-PHASE 3-WIRE: max 220/440VAC 1-PHASE 2-WIRE: (DELTA) max 220VAC, (STAR) max 440VAC	
	Frequency	50-60Hz	
Item		Measurement Item	Measurement Accuracy
Measurement Elements	Current (A)	A1, A2, A3, AN, A_{AVG}	±0.5%
	Current Demand (DA)	DA1, DA2, DA3, DAN, DA_{AVG}	±0.5%
	Voltage (V)	V12, V23, V31, V_{AVG}(L-L), V1N, V2N, V3N, V_{AVG}(L-N)	±0.5%
	Active Power (W)	W1, W2, W3, ∑W	±0.5%
	Reactive Power (var)	var1, var2, var3, ∑var	±0.5%
	Apparent Power (VA)	VA1, VA2, VA3, ∑VA	±0.5%
	Power Factor (PF)	PF1, PF2, PF3, ∑PF	±2.0%
	Frequency (Hz)	Hz	±0.5%
	Active Energy (Wh)	Imported, Exported	Class1 (IEC62053-21)
	Reactive Energy (varh)	Imported Lag, Imported Lead, Exported Lag, Exported Lead	Class2 (IEC62053-23)
	Apparent Energy (VAh)	Imported + Exported	± 2.0%
	Harmonic Current (HI)	Total	± 2.0%
	Harmonic Voltage (HV)	Total	± 2.0%
	Operation Time (h)	Operation time 1, Operation time 2	---
Communication Specification		MODBUS® RTU communication	
Auxiliary Power		100-240VAC (±15%) 50-60 Hz, 100-240VDC (-30%, +15%)	
Weight		0.5kg	
Dimensions		96 (H) X 96 (W) X 88 (D)	
Operating Temperature / Humidity		-5 to +55°C (average temperature : 35°C or less per day), 0 to 85% RH, non condensing	
Storage Temperature / Humidity		-25 to +75°C (average temperature : 35°C or less per day), 0 to 85% RH, non condensing	

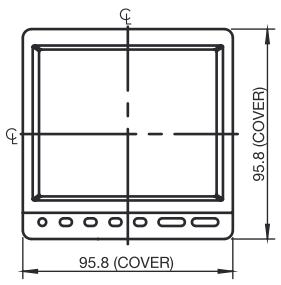
DIMENSIONS AND WIRING DIAGRAMS



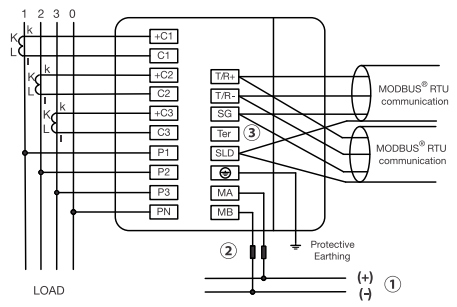
Panel Hole Dimensions : It can be installed to a panel of thickness 1.6 - 4.0 mm

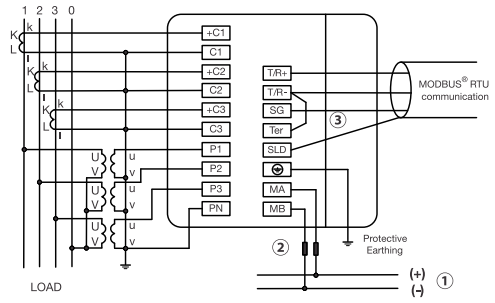






3P/3W and 3P4W / MODBUS® RTU COMMUNICATION





① Auxiliary power supply : AC100 to 240V or DC100 to 240V.
② Fuses 0.5A
③ Some MODBUS® RTU equipment doesn't have SG. In this case, the wiring between SG is unnecessary.
1: For low voltage circuits, grounding the secondary side of VT and CT is not necessary.

for a greener tomorrow

Safety Warning

To ensure proper use of the products listed in this catalogue, please be sure to read the instruction manual prior to use.

West Zone

Pune Head Office
ICC-Devi Gaurav Technology Park,Unit no. 402, Fourth Floor, Opp. Vallabh Nagar Bus Depot,Pune – 411018, Maharashtra, India.
Phone: +91 (20) 2710-2000

Mumbai Office
305-306, 3rd Floor, "Windfall", Sahar Plaza Complex, Next to Kohinoor Hotel, Andheri Kuria Road, J. B. Nagar, Andheri (E.) Mumbai-400 059, India
Phone: +91 (22) 6611-6200
Fax: +91 (22) 6611-6299

Ahmedabad Office
2nd floor, 31Five , Opp. Paladium, Near Vodafone House Corporate Road, Prahladnagar, Ahmedabad -380015
Phone: +91 (79) 65120063

Vadodara Office
A-1/2, 2nd Floor, Status Plaza, Opp.Relish Resort Aksar Square, O.P Road, Vadodara -390020, India
Phone: +91 (265) 231-4699/ 235-8137
Fax:+91 (265) 233-3307

Nagpur Office
Plot No. 8, NIIT Layout, Ravindra Nagar, Ring Road, Nagpur - 440022, Maharashtra India.
Phone: +91 (712) 228-4020

North Zone

Gurgaon Office
2nd Floor, Tower A & B, DLF Cyber Greens, Dlf Cyber City, DLF Phase -III,Gurgaon-122002, India
Phone: +91 (124) 463-0300 +91 (124) 673-9300
Fax: +91 (124) 463-0399 / 398

Jaipur Office
Office No. 9B & 10, 4th Floor, C-44 Man Upasana Plaza, Sardar Patel Marg, C-Scheme, Jaipur-302001, Rajasthan, India
Phone: +91 (141) 4011109

Chandigarh Office
SCO- 376, Second Floor, Sector 32 D, Chandigarh – 160036 , Chandigarh, India.
Phone: +91 (172) 4601645

Indore Office
110, 1st Floor, Shagun Commercial Complex, Plot No. 7/PU - 4, Scheme No. 54, Vijay Nagar, Indore - 452010, Madhya Pradesh, India
Phone: +91 (731) 6050013

Rudrapur Office
181/6, Awas Vikas Ring Road, Udham Singh Nagar, Rudrapur - 263153, Uttarakhand, India.
Phone: +91 (5944) 246899

South Zone

Bangalore Office
Esquire Centre, No.-9, Ground Floor, B-Block, Trinity Circle, MG Road, Bangalore-560001
Phone: +91 (80) 4020-1600
Fax:+91 (80) 4020-1699

Chennai Office
Isana Katima, 3rd Floor, Door No.497 & 498, Poonamallee High Road, Arumbakkam, Chennai-600 106
Phone: +91 (44) 4923-2222
Fax: +91 (44) 4923-2249

Coimbatore Office
(BMH srinivas) 2nd floor, Door no.1604 trichy road Coimbatore - 641018
Phone: +91 (422) 438-5600

Hyderabad Office
5th Floor Imperial Towers, HNIS, 7-1-616 and 617/a, Ameerpet - 500 016, Telangana
Phone: +91 (40) 4343-8888
Fax: +91 (40) 4343-8899

East Zone

Kolkata Office
Plot – A3,1st Floor, Infinity Think Tank, Tower –II, Block GP, Sector–V,Salt Lake, Kolkata – 700091, West Bengal, India.
Phone: +91 (33) 65001375

MITSUBISHI ELECTRIC
Changes for the Better

MITSUBISHI ELECTRIC INDIA PVT. LTD.
Factory Automation and Industrial Division

2nd Floor, Tower A & B DLF Cyber Greens, DLF Cyber City, DLF Phase - III,Gurgaon-122002, India Phone: +91 (124) 463-0300 +91 (124) 673-9300 Fax: +91 (124) 463-0399 / 398

Learn more at www.MitsubishiElectric.in

LVS COMBINED/09-2019/VOL-03