



# CONTACTOR

Technical Catalog



**ELMEASURE**<sup>®</sup>  
Possibilities...Infinite



# Versatile Contactors for every applications.

Explore our comprehensive range of contactors that are designed to meet every demand and suit every requirement across diverse applications. Whether you need to control a motor, switch a capacitor, or handle supply changeover in a single-phase or three-phase application, you can always rely on finding the perfect solution in our extensive range of contactors. Our contactors are complemented with a range of thermal overload relays, making them a complete package for your electrical needs.

# Ideal choice for a wide range of industrial and commercial applications.

## Contactors - Utilization categories

AC-1	Non-inductive / Slightly inductive loads / Resistance furnaces
AC-2	Slip-Ring induction motors - Starting and stopping
AC-3	Squirrel cage induction motors - starting and stopping during running
AC-4	Squirrel cage induction motors - starting, plugging, inching

### ■ Very robust and durable construction

Built to withstand even the harshest of industrial environments, the E3MX contactor is constructed with durability in mind. With the ability to withstand extreme temperatures, humidity, and other environmental factors, the E3MX contactor provides reliable and consistent switching operation, even in the most demanding applications.

### ■ Efficient Power Switching

The E3MX contactor is designed to provide efficient and effective power switching, resulting in reduced wear and tear on the contacts, improved energy efficiency, and cost savings. With high-speed switching over millions of operations, minimal arcing, and low energy consumption, the E3MX contactors are a perfect solution for high-demanding power switching applications.

### ■ Advanced Control System

The E3MX contactor comes equipped with advanced control system, with a range of accessories available to enhance its functionality. From auxiliary contacts to timers and other control modules, the E3MX contactor can be customized to meet the specific needs of any application.

### ■ Modular design for maximum flexibility

The E3MX contactor boasts a unique modular design, making it the perfect solution for applications that require flexible and customizable solutions. With a wide range of sizes and configurations, there is an E3MX model to meet the needs of any application.

### ■ Easy Installation and Maintenance

The E3MX contactor's compact and lightweight design, combined with simple and intuitive wiring and mounting options, makes it incredibly easy to install and maintain, even in tight or hard-to-reach spaces. This feature ensures that the E4MX contactor can be quickly and easily installed, minimizing downtime and maximizing productivity.

### ■ Highest quality of standards

Compliant to International Standard

- IS/IEC 60947-4-1 Low Voltage Switchgear and Controlgear, Part 4: Electromechanical Contactors and Motor starters

# High-performance switching for any load applications.

## Contactor — An vital component in electrical control

They provide a reliable means of controlling the flow of electrical power, allowing machines and equipment to be remotely turned on and off as needed. The benefits of using contactors include improved process control, improved energy efficiency, reduced wear and tear on equipment, and increased safety. By selecting the right contactor for the applications, plant operators can ensure that the equipment operates efficiently and safely, leading to increased productivity and profitability.



### Industrial/Manufacturing Plants

Contactors is an essential component in safety systems. They are mainly used to safely control pumps and motors that power machines and equipment, by ensuring reliable, safe and smooth switching ON or OFF operations. They also play a crucial role in preventing accidents and injuries by disconnecting power to equipment in emergency situations.

### Infrastructures

Contactors help ensure smooth and safe operation of building infrastructure systems, promoting energy efficiency, safety, and cost savings. Settings such as commercial office spaces, retail stores, shopping malls, uses contactors to control the lighting circuits, heating/cooling equipments in HVAC, elevators, lifts, etc. They also a part of emergency safety systems that disconnect power in dangerous situations.

### Oil and Gas

The rugged construction and high resistance to harsh environmental conditions make contactors a reliable choice for load switching operations in oil and gas industry. They are typically used in controlling motor drives for pumping, compressing, drilling and driving heavy drilling rigs and equipment. They are also used to control systems for emergency shutdown systems.

# E3MX/E4MX

## Power Contactors

The E3MX contactors play a vital role in electrical control systems by offering efficient and dependable switching for various applications. These contactors are engineered to meet the rigorous demands of industrial and commercial settings, ensuring reliable performance even in challenging environments. Boasting sturdy construction, efficient power switching, advanced control system, and straightforward installation and maintenance, the E3MX contactor is a versatile solution suitable for a broad range of industrial and commercial applications.

E3MX Series  
Range 9–250A



E4MX Series  
Range 16–255A



**Safe, reliable, and efficient power control with E×MX contactors.**

## E3MX Key Features/Benefits

- **Wide range of ratings:** With ratings ranging from 9A to 650A, E3MX contactors provides flexibility in choosing the appropriate size for the application.
- **Conformance to standards:** The E3MX contactor conforms to IS / IEC 60947-4-1, ensuring that it meets the necessary safety and performance standards.
- **Versatile coil options:** The universal coil options for both 50Hz and 60Hz applications, as well as a universal electronic coil version, provides versatility and ease of use.
- **Easy maintenance:** The E3MX contactor allows for easy inspection and replacement of coils and contacts, minimizing downtime and maintenance costs.
- **Convenient labeling:** Alpha-numeric terminal markings on the E3MX contactor make installation and maintenance easier and more efficient.
- **Clear indication:** The front ON/OFF indication on the E3MX contactor allows for easy monitoring and control.
- **Space-saving design:** Featuring a compact and aesthetic design, E3MX contactor saves space on panels.
- **Top mounting options:** The E3MX contactor offers top mounting add-on blocks up to 80A, providing flexibility in installation and use.
- **Long life:** Offering a high electromechanical life, E3MX contactors ensures that it can withstand heavy usage and provide reliable operation over a long period of time.
- **Wide operating band:** Operating band from 65% to 120% up to 32A, allows for a flexible operation under a wide range of conditions.
- **Wide temperature range:** Designed to operate in a wide temperature range, from -20°C to 55°C, making it suitable for use in harsh environments.



## E3MX Models

Frame	Model number	CAT Code	Rating	Remark
FR1	E3MX 09	E3MX 09B	9A	<b>1 NO</b>
	E3MX 18	E3MX 18B	18A	
FR2	E3MX 25	E3MX 25B	25A	#
	E3MX 32	E3MX 32B	32A	
	E3MX 40	E3MX 40B	40A	
FR3	E3MX 50	E3MX 50B	50A	#
	E3MX 70	E3MX 70B	70A	
	E3MX 80	E3MX 80B	80A	
FR4	E3MX 95	E3MX 95B	95A	<b>2 NO + 2 NC</b>
	E3MX 110	E3MX 110B	110A	
	E3MX 140	E3MX 140B	140A	
FR5	E3MX 180	E3MX 180B	180A	
	E3MX 250	E3MX 250B	250A	

### Coil Voltage

Model	Ref. Code	Coil Voltage
E3MX 09B	A*	220 V AC
	B	240 V AC
	C*	415 V AC
	D*	110 V AC

\* A, C & D available on request.

**NOTE:** Models available for rating above 250A on request.

## E4MX Key Features/Benefits



- **Wide range of ratings:** 16A to 255A, providing flexibility in choosing the appropriate size for the application.
- **Genset/changeover applications:** E4MX contactors are suitable for supply changeover and genset applications.
- **Electro-mechanical interlock:** This optional feature prevents the E4MX contactors from accidental closure or opening, enhancing safety.
- **Continuous Duty applications:** The E4MX contactor is designed for extended periods of continuous operations without overheating, reducing maintenance and downtime.
- **Convenient labeling:** Alpha-numeric terminal markings make the installation/maintenance easier and efficient.
- **Wide operating band:** The E4MX contactor offers an operating band from 65% to 120% up to 32A, allowing for flexible operation under a range of conditions.
- **Wide temperature range:** The E4MX contactors can withstand a wide range of temperatures from -20°C to 60°C, making it reliable and versatile even for use in harsh environments.

## E4MX Range of models

Frame	Model Number	CAT Code	Rating	Remark
FR1	E4MX 16	E4MX 16B	16A	#
	E4MX 32	E4MX 32B	32A	#
	E4MX 40	E4MX 40B	40A	#
FR2	E4MX 50	E4MX 50B	50A	#
	E4MX 63	E4MX 63B	63A	#
	E4MX 80	E4MX 80B	80A	#
FR3	E4MX 100	E4MX 100B	100A	#
	E4MX 130	E4MX 130B	130A	#
FR4	E4MX 160	E4MX 160B	160A	2 NO + 2 NC
	E4MX 200	E4MX 200B	200A	2 NO + 2 NC
	E4MX 255	E4MX 255B	255A	2 NO + 2 NC

### Coil Voltage

Model	Ref. Code	Coil Voltage
E3MX 09B	A*	220 V AC
	B	240 V AC
	C*	415 V AC
	D*	110 V AC

\* A, C & D available on request.  
B - Default

# E3MX (9-80A) Technical Specs

Technical Parameters		Units	E3MX										
Model Range			9	12	18	22	25	32	40	50	70	80	
Conformance to standards			IS/IEC 60947-4-1, IEC 60947-4-1, EN 60947-4-1										
<b>Power Contacts</b>													
Rated insulation voltage $U_i$		V	690	690	690	690	690	690	690	690	690	690	
Rated impulse withstand voltage, $U_{imp}$		kV	8	8	8	8	8	8	8	8	8	8	
Rated kW	240 V AC	kW	2.2	3.0	4.0	5.5	5.5	7.5	11.0	15.0	18.6	22.0	
	415 V AC	kW	4.0	5.5	9.3	11.0	11.0	17.0	22.5	26.0	37.0	40.0	
	500 V AC	kW	5.5	7.5	9.3	11.0	15.0	18.6	22.5	30.0	45.0	55.0	
Rated making capacity	240 V AC	A	450	450	450	450	480	550	550	900	900	900	
	415 - 500 V AC	A	450	450	450	450	480	550	550	900	900	900	
Rated breaking capacity	240 V AC	A	200	250	250	250	400	500	500	750	750	750	
	415-500 V AC	A	200	250	250	250	400	500	500	750	750	750	
Rated operational current, $I_e$ at 550°C / 60°C Motor duty: 3Φ, 415 V, 50Hz	Utilization category AC-1	A	25	30	30	32	45	55	55	85	100	100	
	Utilization category AC-2	A	9	12	18	22	25	32	32	50	70	80	
	Utilization category AC-3	A	9	12	18	22	25	32	40	50	70	80	
	Utilization category AC-4	A	9	12	18	22	25	32	40	50	63	70	
	Utilization category AC-4 (2,00,000 operations)	A	5.5	7.1	8	8.5	13.5	16	20	24	28.5	43	
AC-8b rating at 415V, 50Hz		A	11.5	15.5	23.5	28.5	32.5	41.5	52	65	91	104	
Permissible short time ratings	1 Seconds		250	300	300	300	400	600	600	1000	1000	1000	
	10 Seconds	A	105	145	145	145	240	400	400	650	650	650	
	30 Seconds		70	90	90	102	120	225	225	370	370	370	
	1 Minute	A	60	80	80	80	110	150	150	250	250	262	
	10 Minute		30	40	40	40	50	70	70	120	120	120	
	15 Minute	A	25	30	30	30	45	65	65	110	110	110	
Mechanical life, No. of operating cycles		millions	15	15	15	15	10	10	10	10	10	10	
Max. frequency of operations: Operating cycles/hr	Mechanical	cy/hr	7200	7200	7200	7200	7200	7200	3600	3600	3600	3600	
	Utilization category AC-1	cy/hr	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
	Utilization category AC-2	cy/hr	750	750	750	750	750	750	750	750	750	750	
	Utilization category AC-3	cy/hr	750	750	750	750	750	750	750	750	750	750	
	Utilization category AC-4	cy/hr	300	300	300	300	300	300	300	300	300	300	
Vibration resistance conforming to IEC 60068-2-6			5..... 300 Hz : 3g										
Ambient temperature around the device	Service temperature	°C	-20°C to +55°C										
	Storage temperature	°C	-40°C to +80°C						-15°C to +80°C				
Altitude without deration		m	3000										
Degree of pollution			3										
Degree of protection			IP 20										
Protective treatment as per IEC 60068-2-30			TH										
Watt loss per pole	Utilization category AC-1	W	1.5	2	2	2.2	3.7	5.1	5.1	9.7	12.9	12.9	
	Utilization category AC-3	W	0.5	0.2	0.8	0.8	1.15	2.15	2.7	5	6.6	7	
Type of Terminal			Philip and Slot Head Combination Screw					Slot Head Screw					
Maximum Main terminal capacity	Cable with Lug	mm <sup>2</sup>	6	6	6	6	10	10	10	1 x 35	1 x 35	1 x 35	
	Cable with Lug (spreader link)	mm <sup>2</sup>	-	-	-	-	-	-	-	1 x 12.5 x 3			
	Solid conductors	mm <sup>2</sup>	2 x 4	2 x 4	2 x 4	2 x 4	2 x 6	2 x 6	2 x 6	-	-	-	
	Multi strand conductors	mm <sup>2</sup>	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 4	2 x 4	2 x 4	-	-	-	
Tightening Torque	Main pole terminal	Nm	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.3	M4/1.3	M4/1.3	M4/1.3	M5/2.4	M6/4.5	M6/4.5	
	Aux. Pole / Coil / Add on block terminal	Nm	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	

Technical Parameters		Units	E3MX										
Range of Models			9A	12A	18A	22A	25A	32A	40A	50A	70A	80A	
<b>Auxiliary Contacts</b>													
No. of additional aux. contact possible			8	8	8	8	8	8	8	8	8	8	
No. of built-in auxiliary contacts			1 NO or 1 NC				#	#	#	#	#	#	
Conventional thermal current, I <sub>th</sub> at 55°C		A	10	10	10	10	10	10	10	10	10	10	
Endurance of auxiliary contacts		million	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
AC-15 rating, 50 Hz	24-110 V	A	6	6	6	6	6	6	6	6	6	6	
	220-240 V	A	4	4	4	4	4	4	4	4	4	4	
	360-440 V	A	4	4	4	4	4	4	4	4	4	4	
	525-600 V	A	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
DC-13 rating	24 V	A	6	6	6	6	6	6	6	6	6	6	
	110-125 V	A	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	
	250 V	A	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	
	480 V	A	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	
	500 V	A	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	
600 V	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
Terminal capacity (Solid or multi strand conductors)		mm <sup>2</sup>	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	
<b>Coil</b>													
Voltage available U <sub>c</sub>	50 / 60 Hz	V	24, 42, 110, 220, 240, 415, 525						24/29, 42/50, 110/132, 220/264, 240/288, 415/500, 525/630				
Pick-up	VA	VA	68						190				
Hold-on	VA	VA	11						21				
	Watts	W	4						5.5				
Limits of operation	Pick-up (%U <sub>c</sub> ) 50Hz	%U <sub>c</sub>	65 - 120						80 - 110				
	Pick-up (%U <sub>c</sub> ) 60Hz	%U <sub>c</sub>	85 - 110										
	Drop-off (%U <sub>c</sub> )	%U <sub>c</sub>	35 - 50						35 - 65				
Operating time	Closing time	ms	10 - 12						15 - 35				
	Opening time	ms	7 - 18						10 - 25				
Safe isolation between coil and auxiliary contacts		V	400										
Overall dimensions H x W x D		mm <sup>2</sup>	83 x 45 x 88				83 x 45 x 95.7			109 x 89 x 120.5			
Mounting clearance (front)		mm	10										
Weight		kg	0.36				0.4			1.1			
DC ratings with 3 poles in series and AC coil operation	DC 1 (110V)	A	9	12	18	22	25	32	40	50	63	80	
	DC 1 (220V)	A	9	12	18	22	25	32	40	50	63	80	
	DC 3 (110V)	A	9	12	18	22	25	32	40	50	63	80	
	DC 3 (220V)	A	9	12	18	22	25	32	40	50	63	80	
	DC 5 (110V)	A	9	12	18	22	25	32	40	50	63	80	
	DC 5 (220V)	A	9	7.5	9	12	20	25	50	50	50	63	

# E3MX (95-650A) Technical Specs

Technical Parameters		Units	E3MX									
Range			95	110	140	185	225	250	300	400	550	650
Conformance to standards			IS/IEC 60947-4-1, IEC 60947-4-1, EN 60947-4-1									
<b>Power Contacts</b>												
Rated insulation voltage $U_i$		V	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage, $U_{imp}$		kV	8	8	8	8	8	8	8	8	8	8
Rated kW	240 V AC	kW	25.0	30.0	40.0	55.0	63.0	63.0	90.0	110.0	160.0	180.0
	415 V AC	kW	45.0	55.0	75.0	90.0	110.0	132.0	160.0	200.0	315.0	355.0
	500 V AC	kW	55.0	75.0	90.0	110.0	132.0	142.0	180.0	250.0	365.0	-
Rated making capacity	240 V AC	A	1680	1680	1800	2220	2400	3000	4500	4500	5500	6500
	415 - 500 V AC	A	1680	1680	1800	2220	2400	3000	4500	4500	5500	6500
Rated breaking capacity	240 V AC	A	1400	1400	1600	1850	2000	2500	4000	4000	4500	5200
	415-500 V AC	A	1400	1400	1600	1850	2000	2500	4000	4000	4500	5200
Rated operational current, $I_e$ at 55°C / 60°C Motor duty: 3 $\Phi$ , 415 V, 50Hz	Utilization category AC-1	A	160	160	160	250	300	300	400	425	650	800
	Utilization category AC-2	A	95	110	140	185	225	250	300	400	550	650
	Utilization category AC-3	A	95	110	140	185	225	250	300	400	550	650
	Utilization category AC-4	A	95	110	140	160	200	200	235	275	300	400
	Utilization category AC-4 (2,00,000 operations)	A	53	58	66	90	100	120	140	150	150	-
AC-8b rating at 415V, 50Hz		A	123.5	143	182	240.5	292.5	325	390	520	715	845
Permissible short time ratings	1 Seconds		1320	1320	1320	2000	2500	2500	3500	4600	7000	7000
	10 Seconds	A	800	800	800	1500	1700	1700	2400	4400	6400	6400
	30 Seconds		500	509	647	1000	1200	1200	1500	3100	4500	4500
	1 Minute	A	400	400	458	800	1000	1000	1100	2500	3500	3500
	10 Minute		170	170	170	350	450	450	550	900	1400	1400
	15 Minute	A	160	160	160	320	400	400	500	840	1300	1300
Mechanical life, No. of operating cycles		millions	10	10	10	10	10	10	10	10	10	10
Max. frequency of operations: Operating cycles/hr	Mechanical	cy/hr	3600	3600	3600	3600	3600	3600	3600	3600	1200	1200
	Utilization category AC-1	cy/hr	3000	3000	3000	3000	3000	3000	3000	3000	750	750
	Utilization category AC-2	cy/hr	750	750	750	750	750	750	750	750	750	750
	Utilization category AC-3	cy/hr	750	750	750	750	750	750	750	750	750	750
	Utilization category AC-4	cy/hr	300	300	300	250	150	150	150	150	150	150
Vibration resistance conforming to IEC 60068-2-6			5..... 300 Hz : 3g									
Ambient temperature around the device	Service temperature	°C	-20°C to +55°C									
	Storage temperature	°C	-15°C to +80°C									
Altitude without deration		m	3000									
Degree of pollution			3									
Degree of protection			IP 20									
Protective treatment as per IEC 60068-2-30			TH									
Watt loss per pole	Utilization category AC-1	W	13.5	13.5	17.6	16.6	19.4	20.8	17.6	40	52.7	61.2
	Utilization category AC-3	W	5	7	11.7	9.4	15	15	12.7	20.7	45	48.6
Type of Terminal			Slot Head Screw									
Maximum Main terminal capacity	Cable with Lug	mm <sup>2</sup>	1x120	1x120	1x120	1x185	1x185	1x185	2x240/ 1x300	2x240/ 1x300	2x50x5	-
	Cable with Lug (spreader link)	mm <sup>2</sup>	2 x 25 x 3	2 x 25 x 3	2 x 25 x 3	2 x 30 x 5	2 x 30 x 5	2 x 30 x 5	2 x 50 x 5	2 x 50 x 5	2 x 50 x 5	2 x 60 x 5
	Solid conductors	mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-
	Multi strand conductors	mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-
Tightening Torque	Main pole terminal	Nm	M8 / 11	M8 / 11	M8 / 11	M10/14	M10/14	M10/14	M12/27	M12/27	M12/27	M12/27
	Aux. Pole / Coil / Add on block terminal	Nm	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1

Technical Parameters		Units	E3MX										
Range of Models			95	110	140	185	225	250	300	400	550	650	
<b>Auxiliary Contacts</b>													
No. of additional aux. contact possible			4	4	4	4	4	4	4	4	4	4	
No. of built-in auxiliary contacts			2 NO + 2 NC				#	#	#	#	#	#	
Conventional thermal current, I <sub>th</sub> at 55°C		A	10	10	10	10	10	10	10	10	10	10	
Endurance of auxiliary contacts		million	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
AC-15 rating, 50 Hz	24-110 V	A	6	6	6	6	6	6	6	6	6	6	
	220-240 V	A	4	4	4	4	4	4	4	4	4	4	
	360-440 V	A	4	4	4	4	4	4	4	4	4	4	
	525-600 V	A	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
DC-13 rating	24 V	A	6	6	6	6	6	6	6	6	6	6	
	110-125 V	A	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	
	250 V	A	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	
	480 V	A	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	
	500 V	A	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	
	600 V	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Terminal capacity (Solid or multi strand conductors)		mm <sup>2</sup>	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	
<b>Coil</b>													
Voltage available U <sub>c</sub>	50 / 60 Hz	V	24/29, 42/50, 110/132, 220/264, 240/288, 415/500, 525/630				110/132, 2020/264, 240/288, 415/500, 525/630				110, 220, 240, 415		
Pick-up	VA	VA	550				960		2100		1000		
Hold-on	VA	VA	36				56		95		25		
	Watts	W	10				16		35		10		
Limits of operation	Pick-up (%U <sub>c</sub> ) 50Hz	%U <sub>c</sub>	80 - 110										
	Pick-up (%U <sub>c</sub> ) 60Hz	%U <sub>c</sub>	85 - 110										
	Drop-off (%U <sub>c</sub> )	%U <sub>c</sub>	35 - 65										
Operating time	Closing time	ms	20 - 40				20 - 45				40 - 70		
	Opening time	ms	10 - 25										
Safe isolation between coil and auxiliary contacts		V	690										
Overall dimensions H x W x D		mm <sup>2</sup>	175 x 137 x 152				208.2 x 147 x 181			275 x 200 x 220			29 x 200 x 220
Mounting clearance (front)		mm	10										
Weight		kg	3				5.2			9.7		10.4	
DC ratings with 3 poles in series and AC coil operation	DC 1 (110V)	A	95	110	140	185	225	225	300	400	550	650	
	DC 1 (220V)	A	95	110	140	185	225	225	265	400	550	650	
	DC 3 (110V)	A	95	110	140	185	225	225	300	400	550	650	
	DC 3 (220V)	A	95	110	140	185	225	225	265	400	550	650	
	DC 5 (110V)	A	95	110	140	185	225	225	300	400	550	650	
	DC 5 (220V)	A	95	110	125	185	225	225	265	400	550	650	

# E4MX (16-130) Technical Specs

Technical Parameters		Units	E4MX								
Range			16	25	32	40	50	63	80	100	130
Conformance to standards			IS/IEC 60947-4-1, IEC 60947-4-1								
Preferred DG rating		kVA	7.5	15	20	25	30	40	50	62.5	82.5
<b>Power contacts</b>											
No. of poles			4	4	4	4	4	4	4	4	4
Number of built-in auxiliary contacts			-	-	-	-	-	-	-	-	-
Rated insulation voltage, U <sub>i</sub>		V	690	690	690	690	690	690	690	690	690
Rated operational voltage, U <sub>o</sub>		V	415	415	415	415	415	415	415	415	415
Rated impulse withstand voltage, U <sub>imp</sub>		kV	8	8	8	8	8	8	8	8	8
<b>Conventional thermal current I<sub>th</sub> / AC1 at 55°C / 60°C</b>		A	16	25	32	40	50	63	80	100	130
Permissible short time rating	1 Second	A	250	250	320	400	400	504	640	1000	1300
	10 Seconds	A	105	105	134	168	240	302	384	650	845
	15 Seconds	A	70	70	90	112	120	151	192	370	481
	1 Minute	A	60	60	77	96	110	139	176	250	325
	10 Minutes	A	30	30	38	48	50	63	80	120	156
	15 Minutes	A	25	25	32	40	45	57	72	110	143
Vibration resistance conforming to IEC 60068-2-6			5.....300 Hz : 3g								
Ambient temperature around the device	Service temperature	°C	-20 °C to 60 °C								
	Storage temperature	°C	-40 °C to 80 °C							-15 °C to 80 °C	
Altitude without deration		m	3000								
Degree of pollution			3								
Degree of protection			IP 20								
Protective treatment			TH								
Watts loss per pole		W	1	1.1	2	3.1	4.8	6.6	7	7.3	7.8
Type of terminal			Philp and Slot Head Combination Screw				Slot Head Screw				
Maximum main terminal capacity	Cable with Lug	mm <sup>2</sup>	1 x 6	1 x 6	1 x 6	1 x 6	1 x 16	1 x 16	1 x 16	1 x 35	1 x 50
	Busbar (with spreader)	mm <sup>2</sup>	-	-	-	-	-	-	-	1 x (12.5 x 3)	1 x (12.5 x 3)
	Solid conductor	mm <sup>2</sup>	2 x 4	2 x 4	2 x 4	2 x 4	2 x 10	2 x 10	2 x 10	-	-
	Multistrand conductors	mm <sup>2</sup>	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 6	2 x 6	2 x 6	-	-
Tightening torque	Main pole terminal	Nm	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M5 / 2.4	M5 / 2.4	M5 / 2.4	M6 / 4.5	M6 / 4.5
	Aux, Pole / Coil / Add on block terminal	Nm	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1
<b>Auxiliary Contacts</b>											
Endurance of auxiliary contacts		million	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
AC-15 rating, 50 Hz	24-110 V	A	6	6	6	6	6	6	6	6	6
	220-440 V	A	4	4	4	4	4	4	4	4	4
	360-440 V	A	4	4	4	4	4	4	4	4	4
	525-600 V	A	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
DC-13 rating	24 V	A	6	6	6	6	6	6	6	6	6
	110-125 V	A	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	250 V	A	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
	480 V	A	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
	500 V	A	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Auxiliary terminal capacity		mm <sup>2</sup>	-	-	-	-	-	-	-	-	-
Operating time	Closing time	ms	10 - 12	10 - 12	10 - 12	10 - 12	10 - 12	10 - 12	10 - 12	15 - 35	15 - 35
	Operating time	ms	7 - 18	7 - 18	7 - 18	7 - 18	7 - 18	7 - 18	7 - 18	10 - 25	10 - 25
<b>Coil</b>											
Voltage available for 50 Hz operation, U <sub>c</sub>		V	110, 220, 240, 415							240,415	
Pick-up	VA	VA	68	68	68	68	180	180	180	190	190
	Watts	W	4	4	4	4	5	5	5	5.5	5.5
Limits of operation	Pick-up	%U <sub>c</sub>	55 - 120		55 - 120	55 - 120	50 - 110	50 - 110	50 - 110	65 - 120	180 - 110
	Drop-off	%U <sub>c</sub>	30 - 50			25 - 45			40 - 60		
Safe isolation between coil and auxiliary contacts		V	400								
Overall dimensions H x W x D		mm <sup>2</sup>	83x45x83.7				80x83.5x91.8			109x103x120.5	
Mounting dimensions H x W		mm <sup>2</sup>	60-65-70)x35				(55-58)x70			80x85	
Mounting clearance (front)		mm	10								
Weight		kg	0.35				0.8			1.3	

# E4MX (160-255) Technical Specs

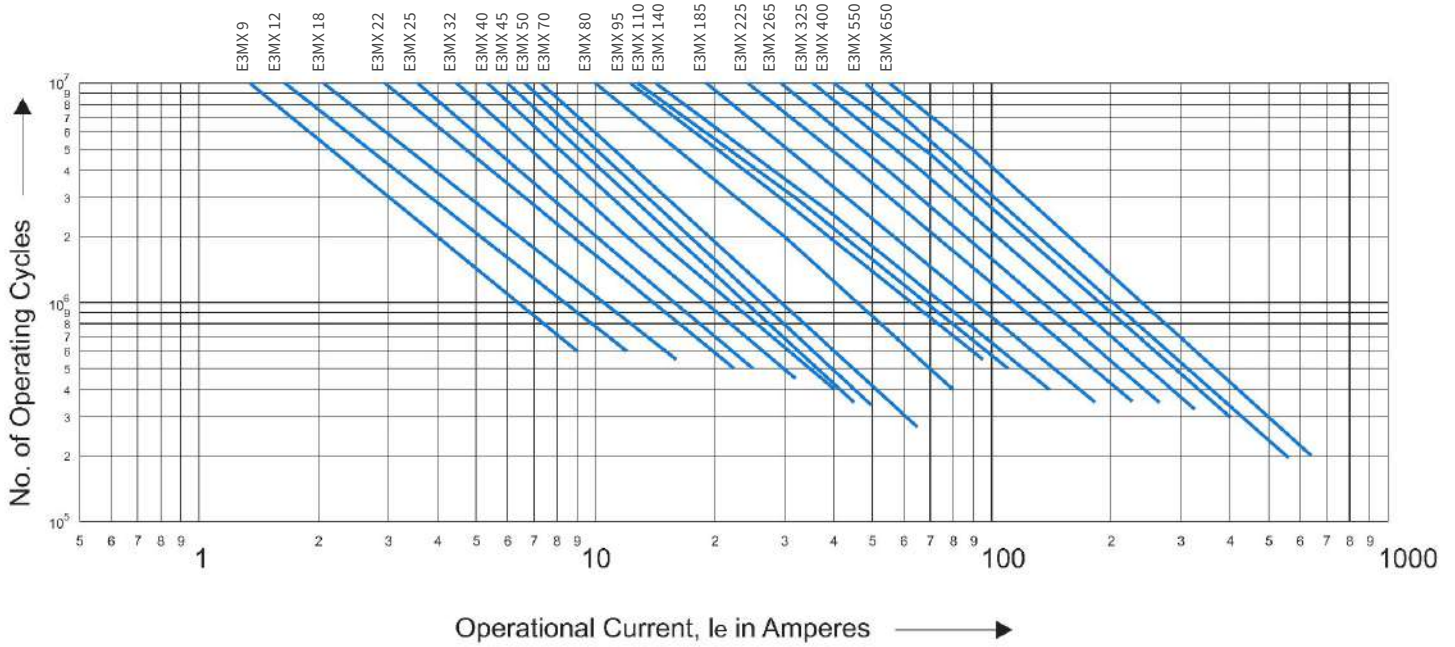
Technical Parameters		Units	E4MX		
Range			160	200	255
Conformance to standards			IS/IEC 60947-4-1, IEC 60947-4-1		
Preferred DG rating		kVA	100	125	160
<b>Power contacts</b>					
No. of poles			4	4	4
Number of built-in auxiliary contacts			2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC
Rated insulation voltage, $U_i$		V	1000	1000	1000
Rated operational voltage, $U_o$		V	415	415	415
Rated impulse withstand voltage, $U_{imp}$		kV	8	8	8
<b>Conventional thermal current <math>I_{th}</math> / AC1 at 55°C / 60°C</b>		A	160	200	225
Permissible short time rating	1 Second	A	1320	1320	1683
	10 Seconds	A	880	1120	1428
	15 Seconds	A	500	500	638
	1Minute	A	400	400	510
	10 Minutes	A	170	170	217
	15 Minutes	A	160	160	204
Vibration resistance conforming to IEC 60068-2-6				5.....300 Hz : 3g	
Ambient temperature around the device	Service temperature	°C		-20 °C to 60 °C	
	Storage temperature	°C		-15 °C to 80 °C	
Altitude without deration		m		3000	
Degree of pollution				3	
Degree of protection				IP 20	
Protective treatment				TH	
Watts loss per pole		W	17	22	25
Type of terminal				Hexagon Head Screw	
Maximum main terminal capacity	Cable with Lug	mm <sup>2</sup>	1 x 120	1 x 120	1 x 120
	Busbar (with spreader)	mm <sup>2</sup>	2 x (25 x 3)	2 x (25 x 3)	2 x (25 x 3)
	Solid conductor	mm <sup>2</sup>	-	-	-
	Multistrand conductors	mm <sup>2</sup>	-	-	-
Tightening torque	Main pole terminal	Nm	M8 / 11	M8 / 11	M10 / 14
	Aux, Pole / Coil / Add on block terminal	Nm	M3.5 / 1.1	M3.5 / 1.1	M3.5 / 1.1
<b>Auxiliary Contacts</b>					
Endurance of auxiliary contacts		million	0.5	0.5	0.5
AC-15 rating, 50 Hz	24-110 V	A	6	6	6
	220-440 V	A	4	4	4
	360-440 V	A	4	4	4
	525-600 V	A	1.2	1.2	1.2
DC-13 rating	24 V	A	6	6	6
	110-135 V	A	1.1	1.1	1.1
	250 V	A	0.55	0.55	0.55
	480 V	A	0.31	0.31	0.31
	500 V	A	0.27	0.27	0.27
	600 V	A	0.2	0.2	0.2
Auxiliary terminal capacity		mm <sup>2</sup>	-	-	-
Operating time	Closing time	ms	20 - 40	20 - 40	20 - 40
	Operating time	ms	10 - 25	10 - 25	10 - 25
<b>Coil</b>					
Voltage available for 50 Hz operation, $U_c$		V	110,240,415	110,240,415	110,240,415
Pick-up	VA	VA	550	550	550
	Watts	W	36	36	36
Hold-on	VA	VA	10	10	10
	Watts	W	10	10	10
Limits of operation	Pick-up	% $U_c$	80 - 110	80 - 110	80 - 110
	Drop-off	% $U_c$	35 - 65	35 - 65	35 - 65
Safe isolation between coil and auxiliary contacts		V	690	690	690
Overall dimensions H x W x D		mm <sup>2</sup>	175x183.5x152	175x183.5x152	175x183.5x152
Mounting dimensions H x W		mm <sup>2</sup>	115x165	115x165	115x165
Mounting clearance (front)		mm	10	10	10
Weight		kg	4.6	4.6	4.6

# E4MX (325-800A) Technical Specs

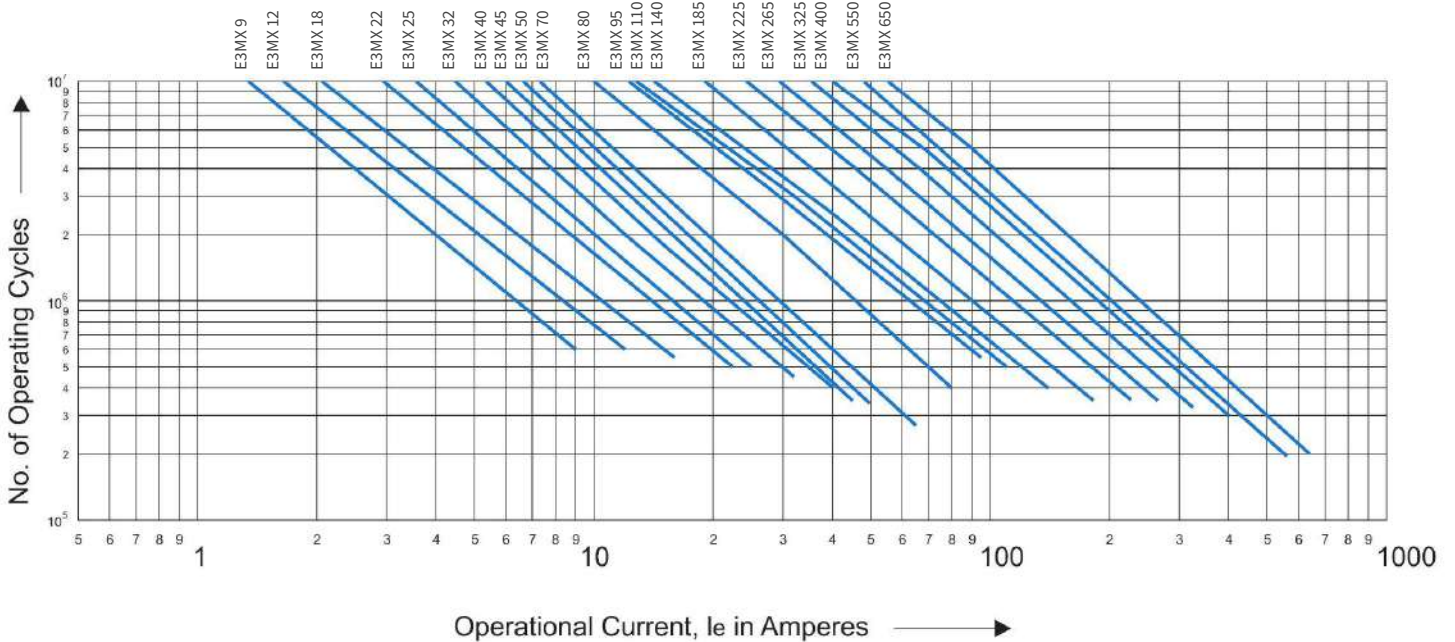
Technical Parameters		Units	E4MX						
Range			325	360	400	500	600	700	800
Conformance to standards			IS/IEC 60947-4-1, IEC 60947-4-1						
Preferred DG rating		kVA	200	225	250	320	380	437.5	500
<b>Power contacts</b>									
No. of poles			4	4	4	4	4	4	4
Number of built-in auxiliary contacts			2NO + 2NC						
Rated insulation voltage, U <sub>i</sub>		V	1000	1000	1000	1000	1000	1000	1000
Rated operational voltage, U <sub>o</sub>		V	415	415	415	415	415	415	415
Rated impulse withstand voltage, U <sub>imp</sub>		kV	8	8	8	8	8	8	8
<b>Conventional thermal current I<sub>th</sub> / AC1 at 55°C / 60°C</b>		A	325	360	400	500	600	700	800
Permissible short time rating	1 Second	A	2500	2500	3500	4375	5250	6125	7000
	10 Seconds	A	1800	1800	2400	3000	3600	4200	6400
	15 Seconds	A	1200	1200	1500	1875	2250	2625	4500
	1Minute	A	1000	1000	1100	1375	1650	1925	3500
	10 Minutes	A	450	450	550	688	825	963	1400
	15 Minutes	A	400	400	500	625	750	875	1300
Vibration resistance conforming to IEC 60068-2-6			5.....300 Hz : 3g						
Ambient temperature around the device	Service temperature	°C	-20 °C to 60 °C						
	Storage temperature	°C	-15 °C to 80 °C						
Altitude without deration		m	3000						
Degree of pollution			3						
Degree of protection			IP 20						
Protective treatment			TH						
Watts loss per pole		W	25	25	30	38	48	60	66
Type of terminal			Hexagon Head Screw						
Maximum main terminal capacity	Cable with Lug	mm <sup>2</sup>	2 x 240	2 x 240	2 x 240	2 x 240	2 x 240	2 x 240	2 x 240
	Busbar (with spreader)	mm <sup>2</sup>	2 x (50 x 5)						
	Solid conductor	mm <sup>2</sup>	-	-	-	-	-	-	-
	Multi-strand conductors	mm <sup>2</sup>	-	-	-	-	-	-	-
Tightening torque	Main pole terminal	Nm	M12 / 27	M12 / 27	M12 / 27	M12 / 27	M12 / 27	M12 / 27	M12 / 27
	Aux, Pole / Coil / Add on block terminal	Nm	M3.5 / 1.1						
<b>Auxiliary Contacts</b>									
Endurance of auxiliary contacts		million	0.5	0.5	0.5	0.5	0.5	0.5	0.5
AC-15 rating, 50 Hz	24-110 V	A	6	6	6	6	6	6	6
	220-440 V	A	4	4	4	4	4	4	4
	360-440 V	A	4	4	4	4	4	4	4
	525-600 V	A	1.2	1.2	1.2	1.2	1.2	1.2	1.2
DC-13 rating	24 V	A	6	6	6	6	6	6	6
	110-125 V	A	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	250 V	A	0.55	0.55	0.55	0.55	0.55	0.55	0.55
	480 V	A	0.31	0.31	0.31	0.31	0.31	0.31	0.31
	500 V	A	0.27	0.27	0.27	0.27	0.27	0.27	0.27
	600 V	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Auxiliary terminal capacity		mm <sup>2</sup>	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5	2 x 2.5
Operating time	Closing time	ms	20 - 45	20 - 45	20 - 45	20 - 45	40 - 70	40 - 70	40 - 70
	Operating time	ms	10 - 25	10 - 25	10 - 25	10 - 25	30 - 60	30 - 60	30 - 60
<b>Coil</b>									
Voltage available for 50 Hz operation, U <sub>c</sub>		V	110, 220, 240, 415						
Pick-up	VA	VA	2100	2100	2100	2100	1000	1000	1000
Hold-on	VA	VA	95	95	95	95	25	25	25
	Watts	W	35	35	35	35	10	10	10
Limits of operation	Pick-up	%U <sub>c</sub>	80 - 110	80 - 110	80 - 110	80 - 110	80 - 110	80 - 110	80 - 110
	Drop-off	%U <sub>c</sub>	35 - 65	35 - 65	35 - 65	35 - 65	35 - 65	35 - 65	35 - 65
Safe isolation between coil and auxiliary contacts		V	690	690	690	690	690	690	690
Overall dimensions H x W x D		mm <sup>2</sup>	275 x 248 x 221						
Mounting dimensions H x W		mm <sup>2</sup>	170 x 225						
Mounting clearance (front)		mm	10						
Weight		kg	11.8	11.8	11.8	11.8	12.1	12.1	12.1

# ExMX series Electrical life curves

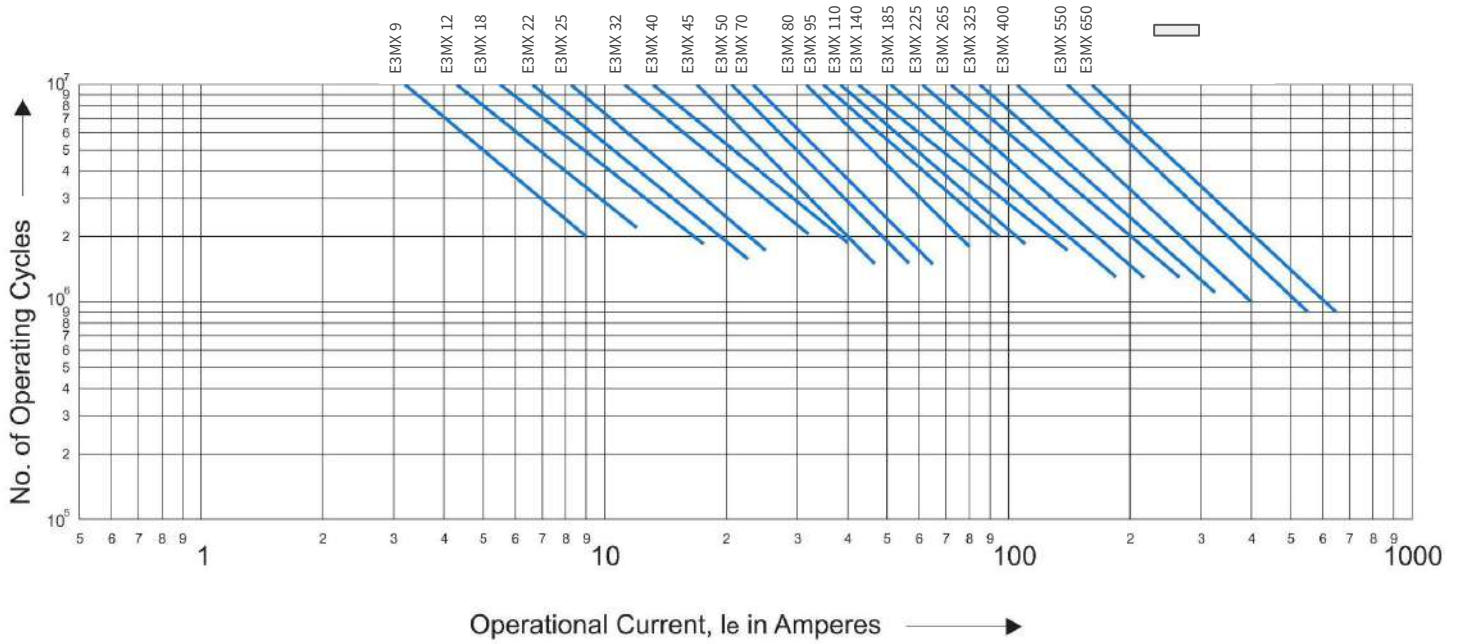
## Utilization Category AC-1



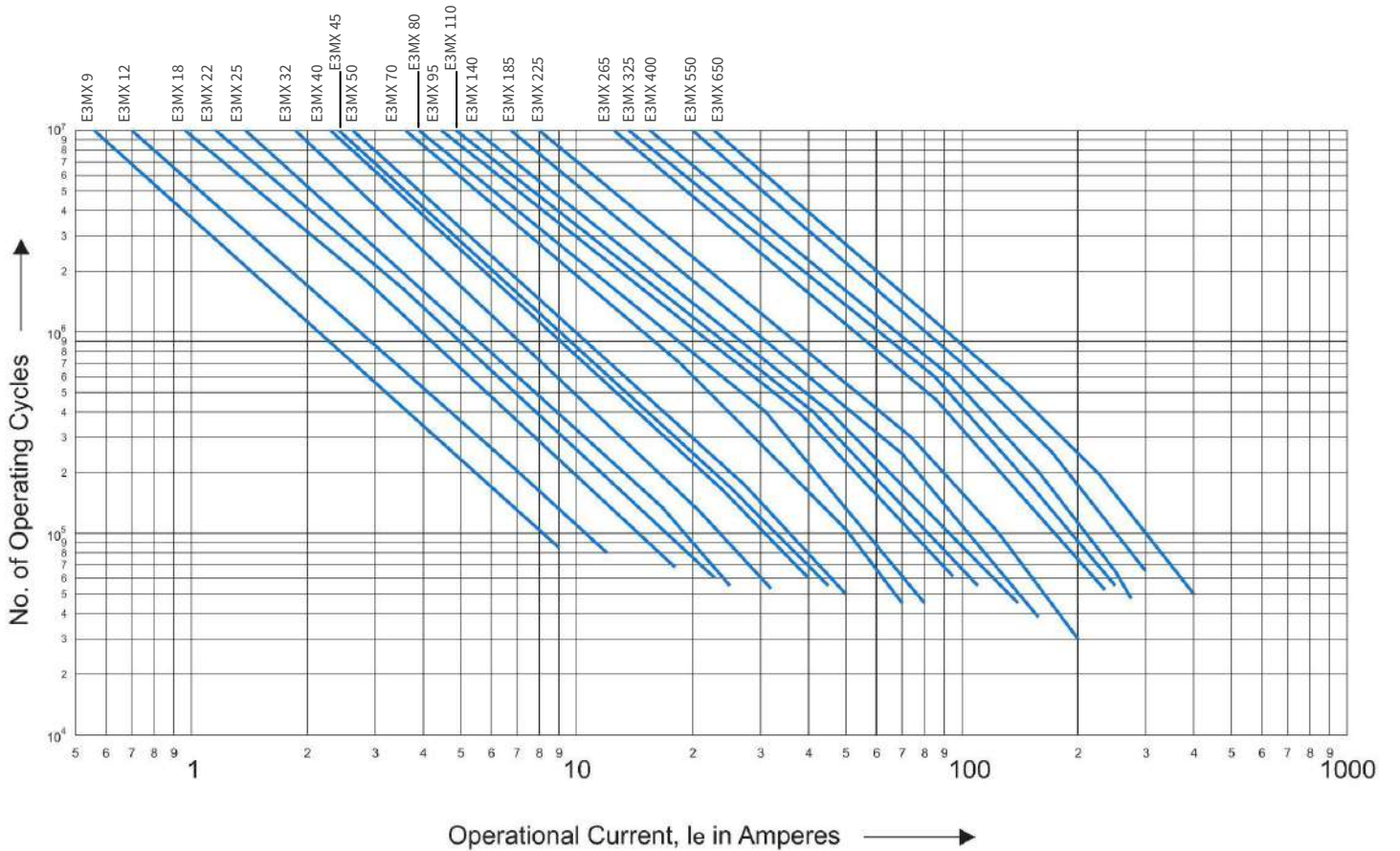
## Utilization Category AC-2



## Utilization Category AC-3

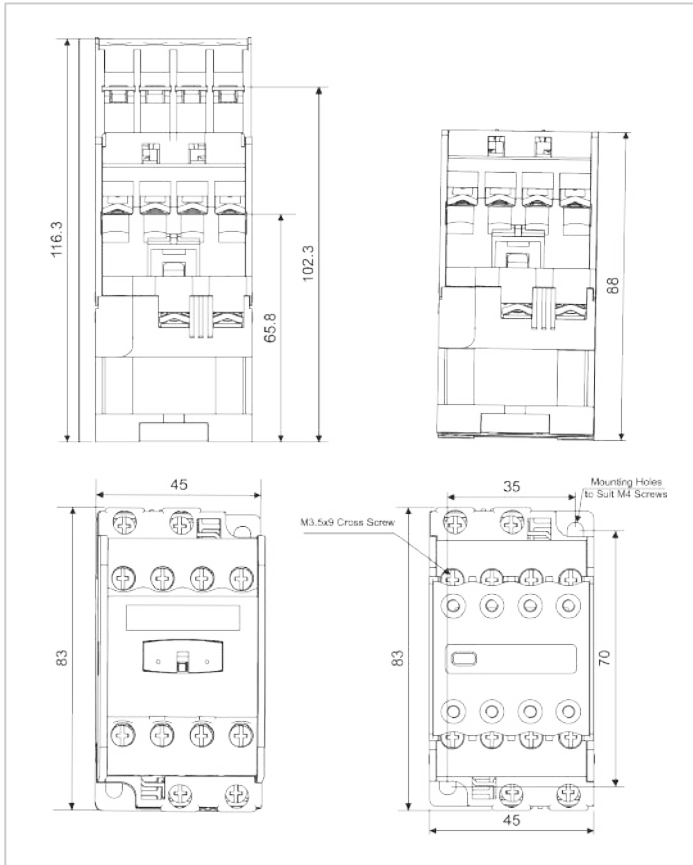


## Utilization Category AC-4

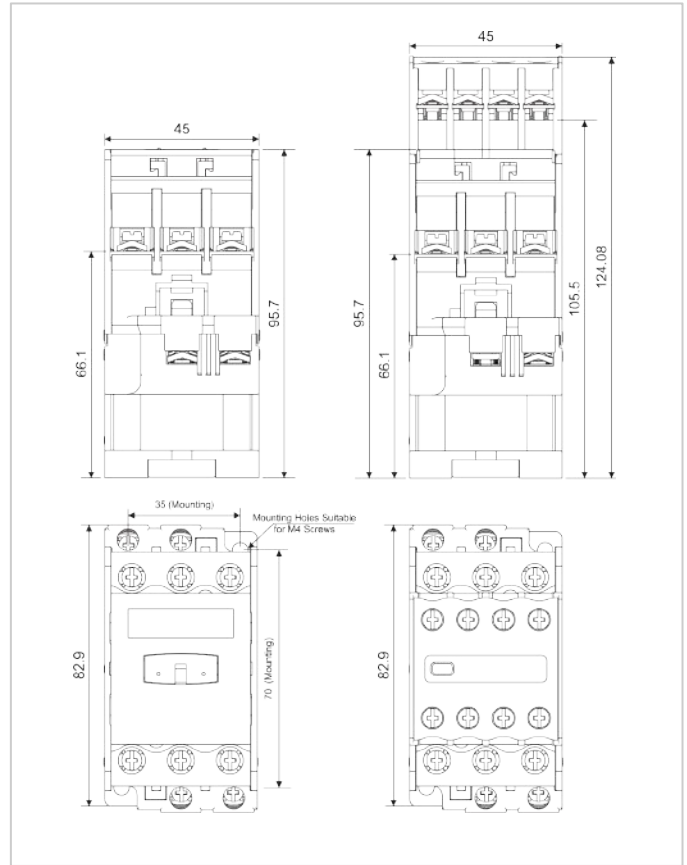


# ExMX Mechanical Dimensions

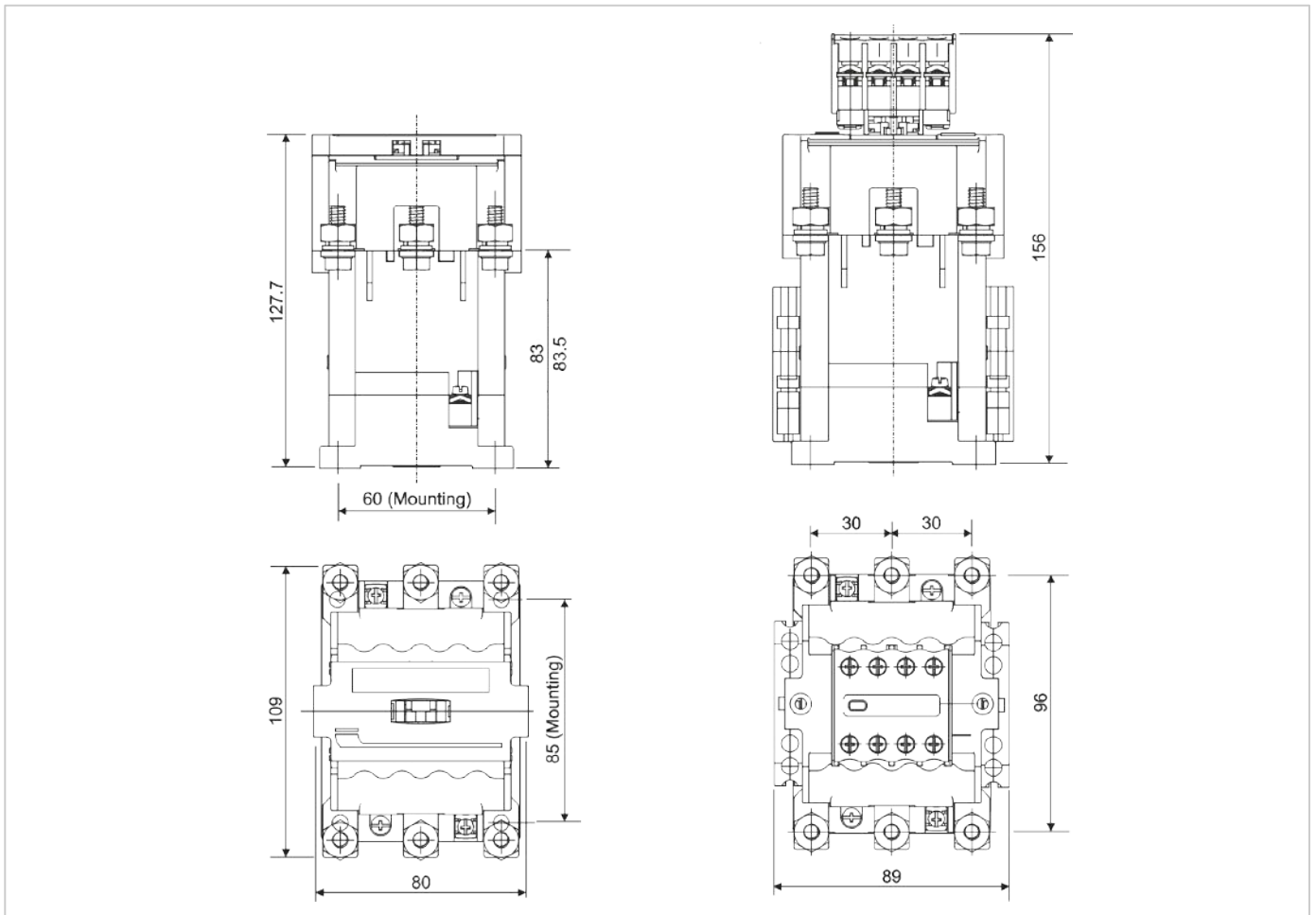
## E3MX - 9A, 12A, 18A, 22A



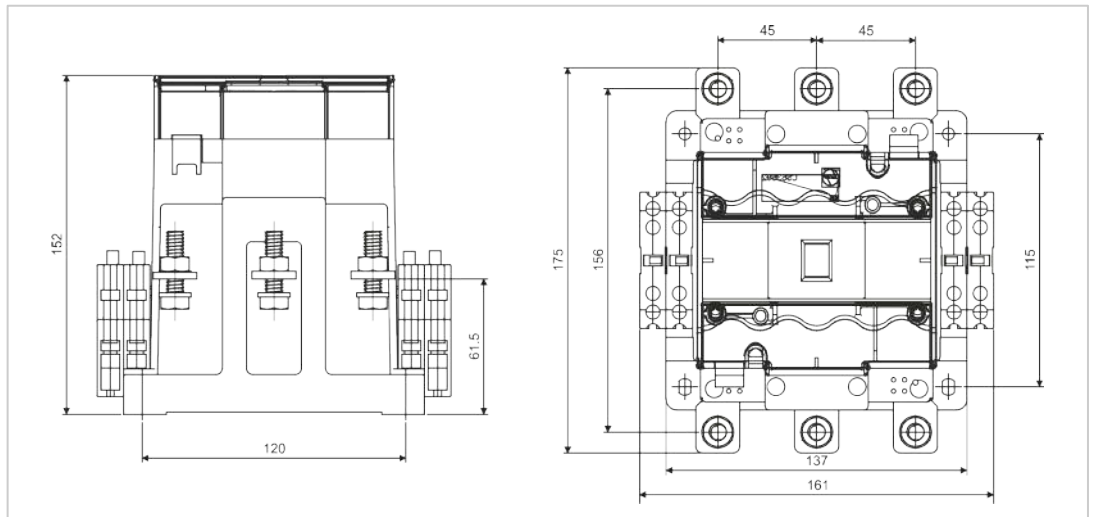
## E3MX - 25A, 32A, 40A



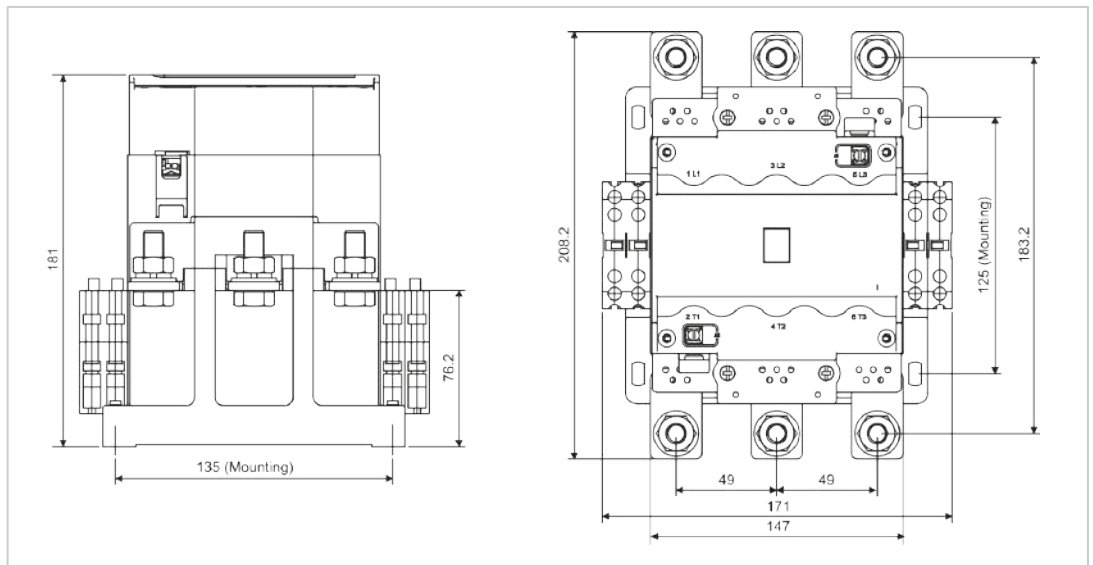
## E3MX - 50A, 70A, 80A



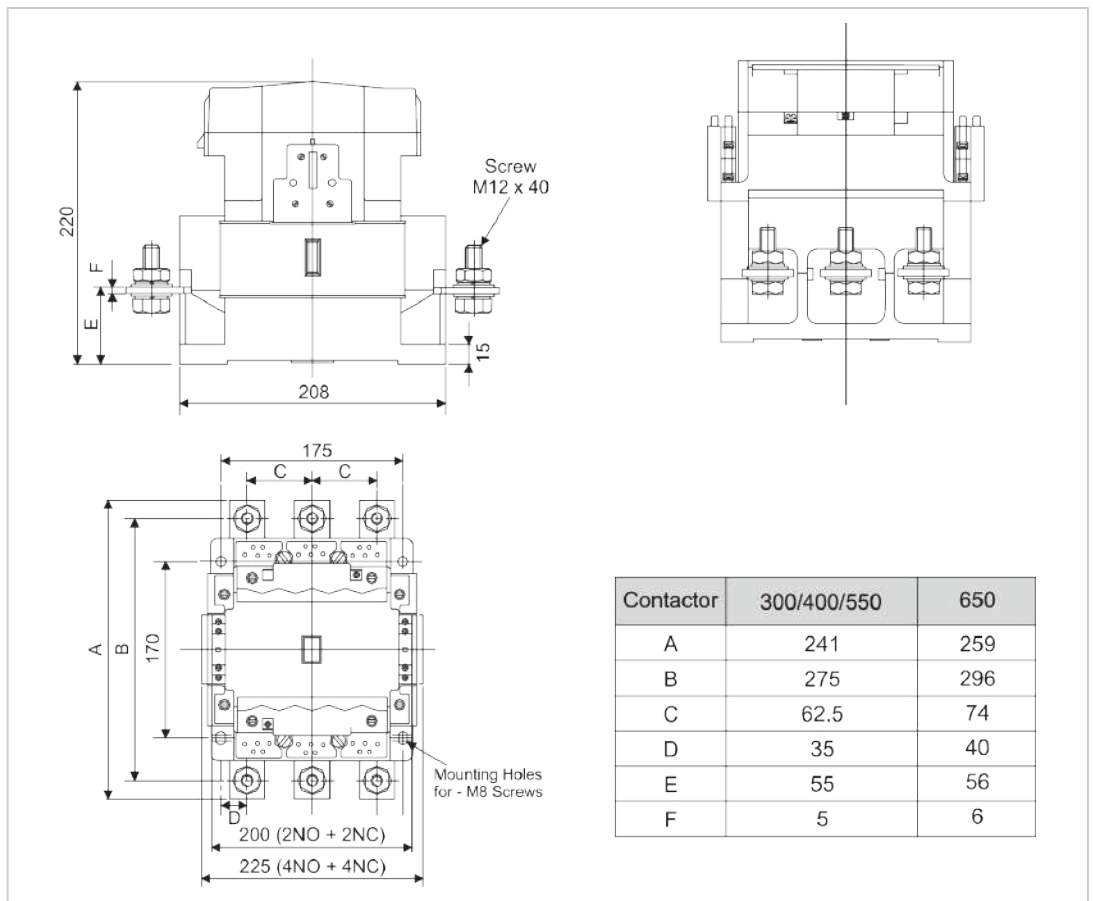
**E3MX**  
95A, 110A, 140A



**E3MX**  
185A, 225A, 250A

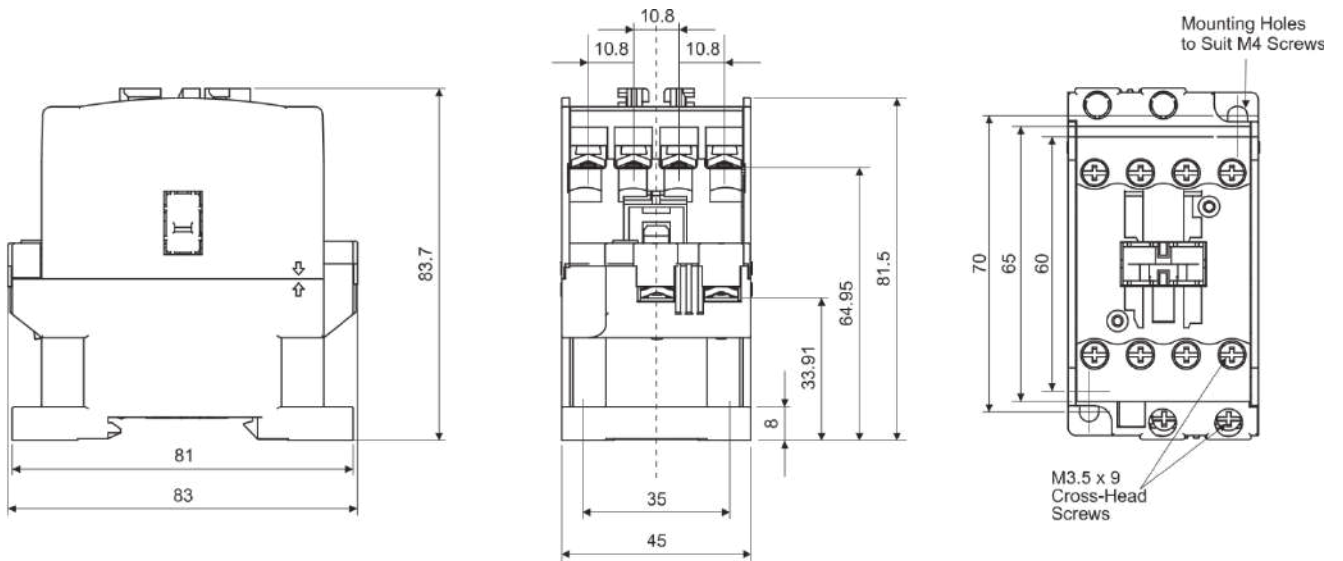


**E3MX**  
300A, 400A, 550A,  
650A

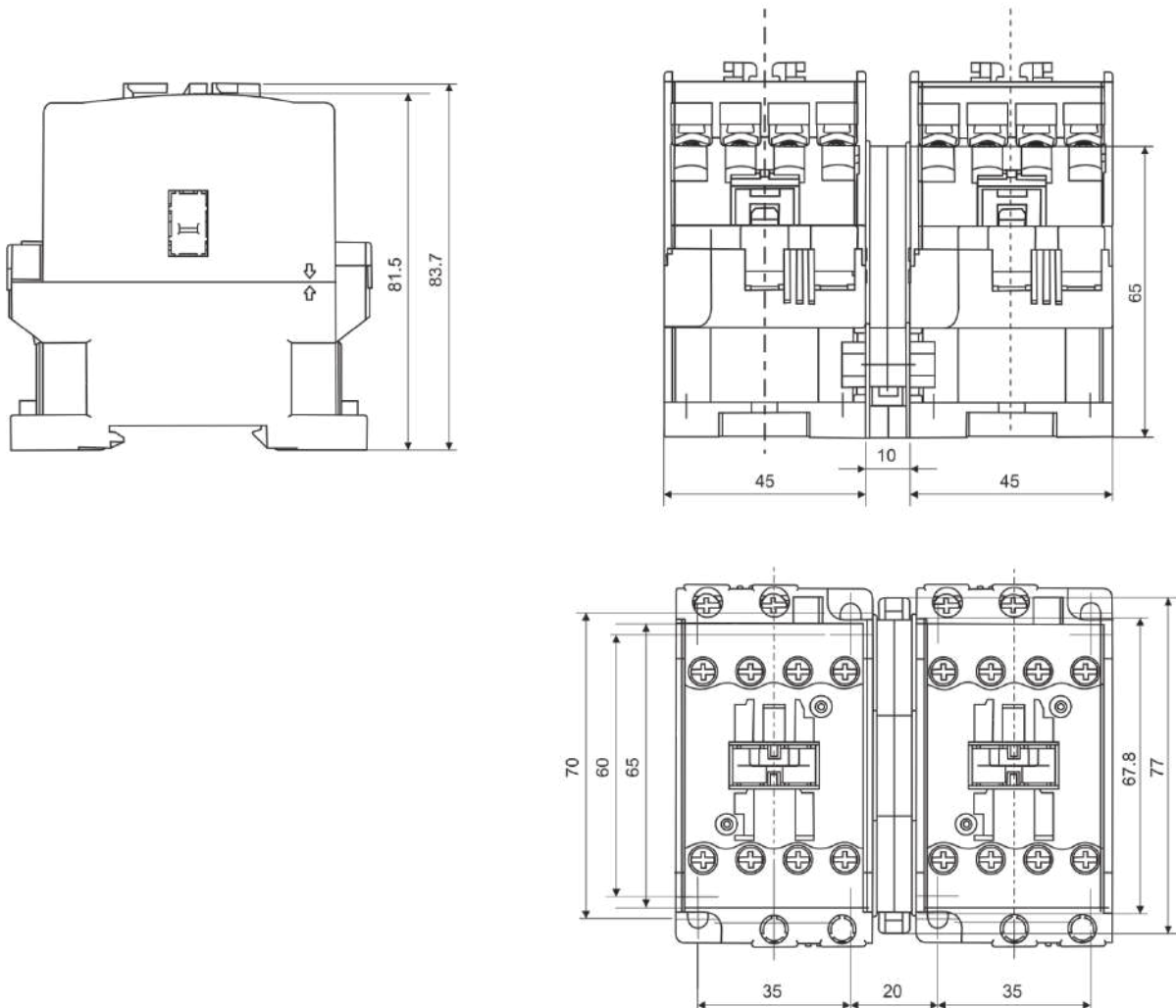


Contactor	300/400/550	650
A	241	259
B	275	296
C	62.5	74
D	35	40
E	55	56
F	5	6

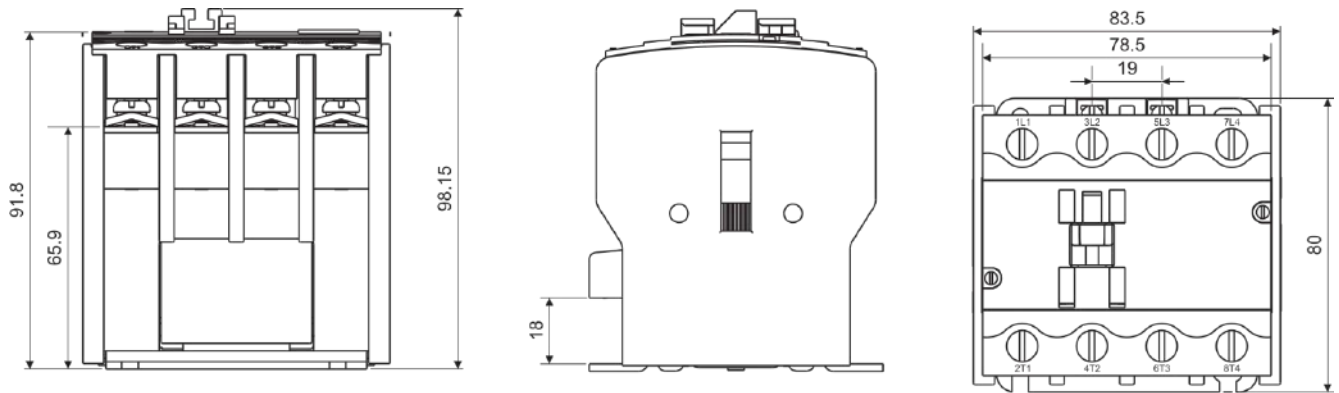
## E4MX - 16A to 40A



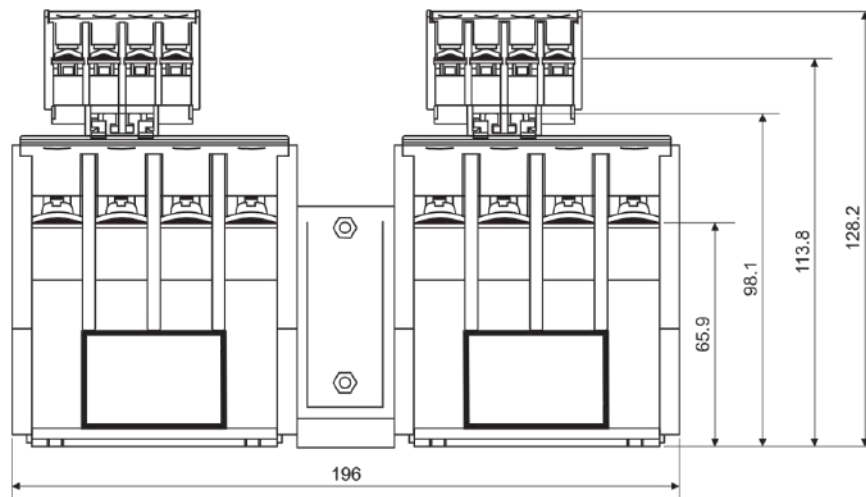
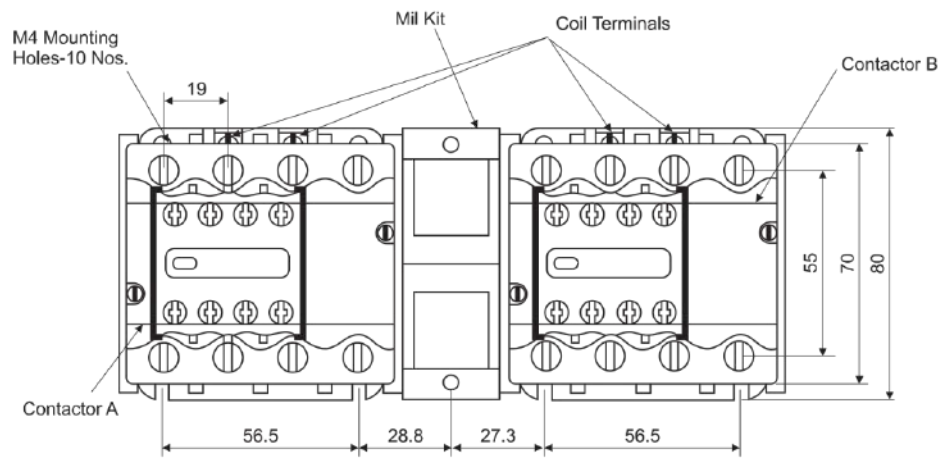
## E4MX (16A to 40A) with Mechanical Interlock



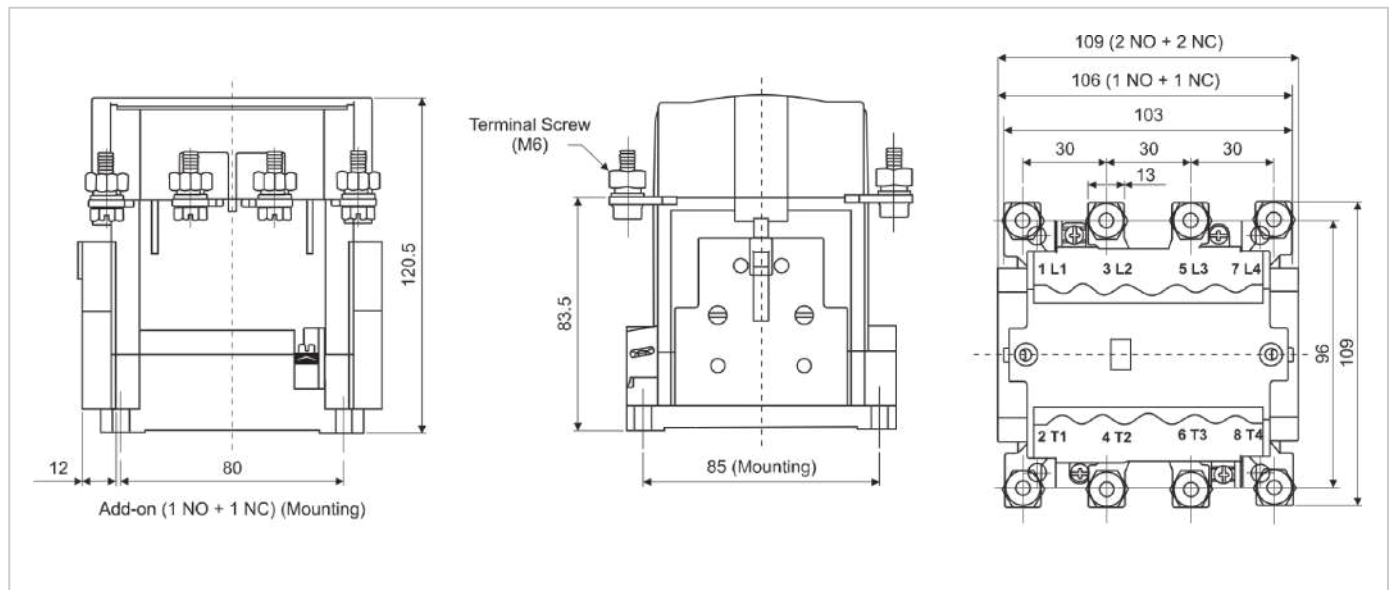
## E4MX - 50A to 80A



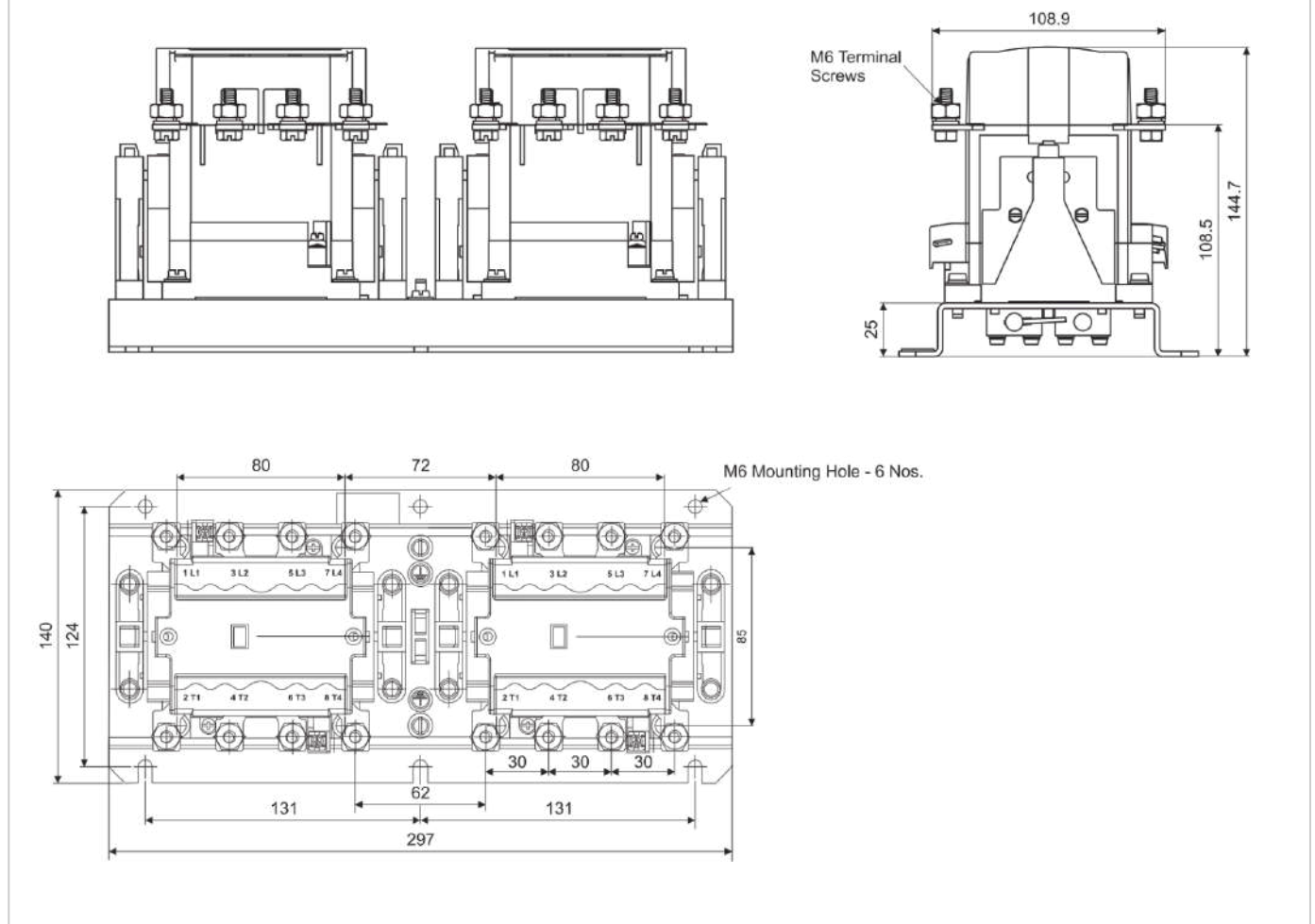
## E4MX (50A to 80A) with Mechanical Interlock



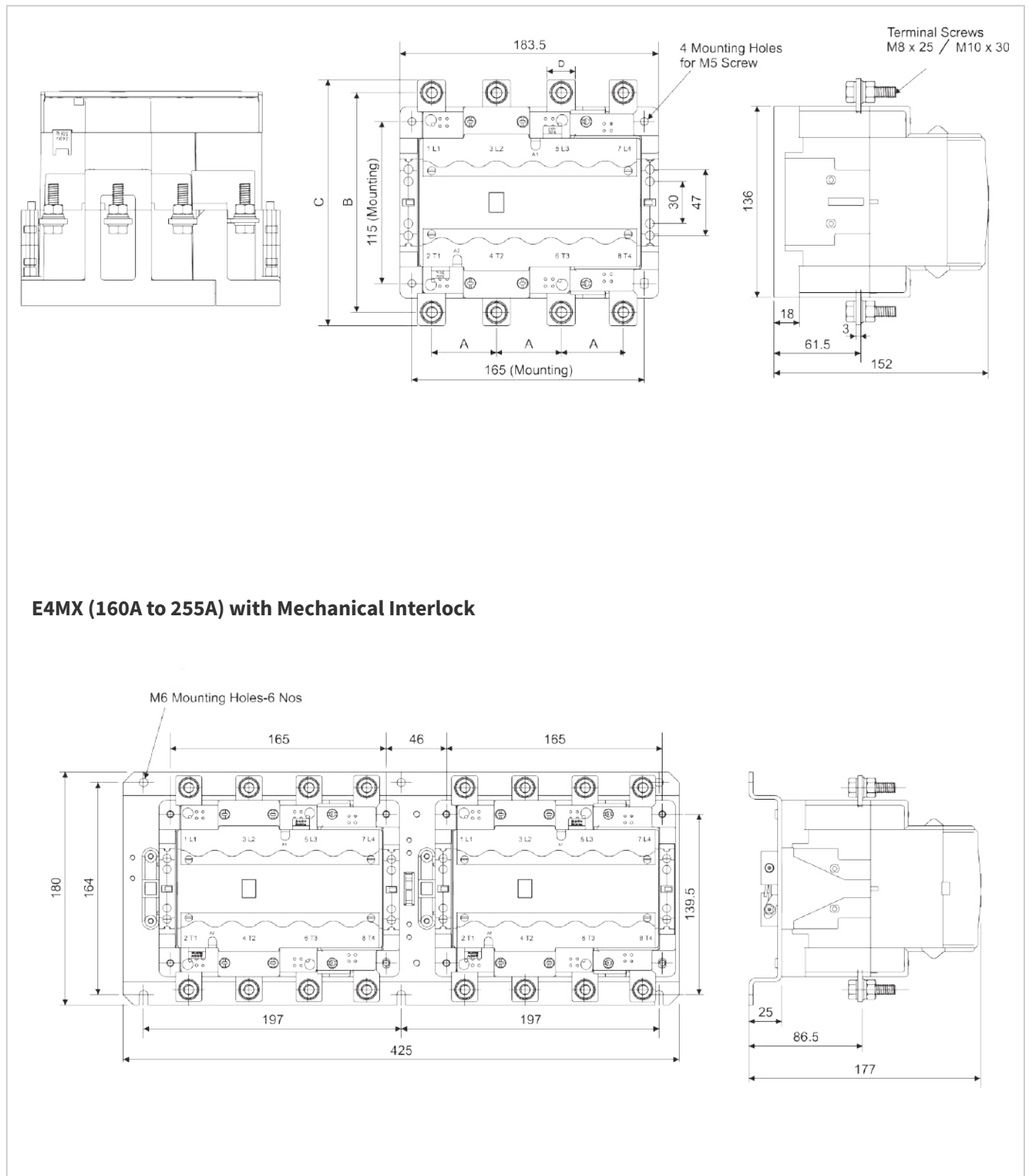
## E4MX - 100A to 130A



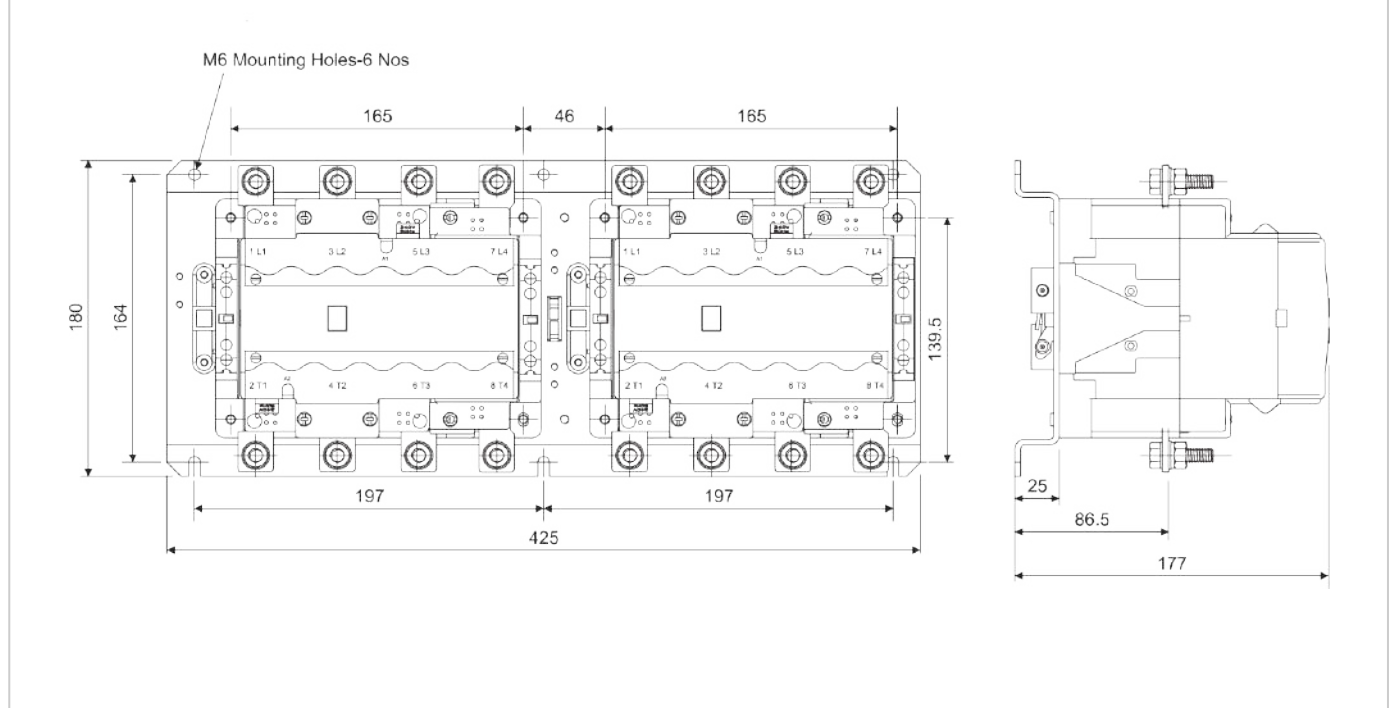
## E4MX (100A to 130A) with Mechanical Interlock



## E4MX - 160A to 255A



## E4MX (160A to 255A) with Mechanical Interlock



# Capacitive Duty Contactors

Looking for a safe and reliable way to switch power capacitors in your system? Look no further than our range of capacitive duty contactors. Specifically designed for capacitor switching applications, these contactors are equipped with damping resistors that limit inrush current to a safe level, ensuring smooth and reliable operation. Our contactors are an ideal solution for APFC panels, where power capacitors require switching to provide reactive power compensation. Choose our capacitive duty contactors for efficient, effective, and worry-free switching of your power capacitors.

E3MO Series  
Range 5–100 kVAr





**For safe damping of in-rush currents  
and smooth switching of capacitors.**

## Capacitive Duty Contactors

- Ranges from 5 -100 kVAr
- Conforms to IS / IEC 60947-4-1 & IEC 60947-4-1
- Delatching type early make contacts
- Low pick-up VA consumption
- Damping resistors provide protection from inrush current during switching
- Suitable for Lug and lugless termination
- High withstand capacity contacts

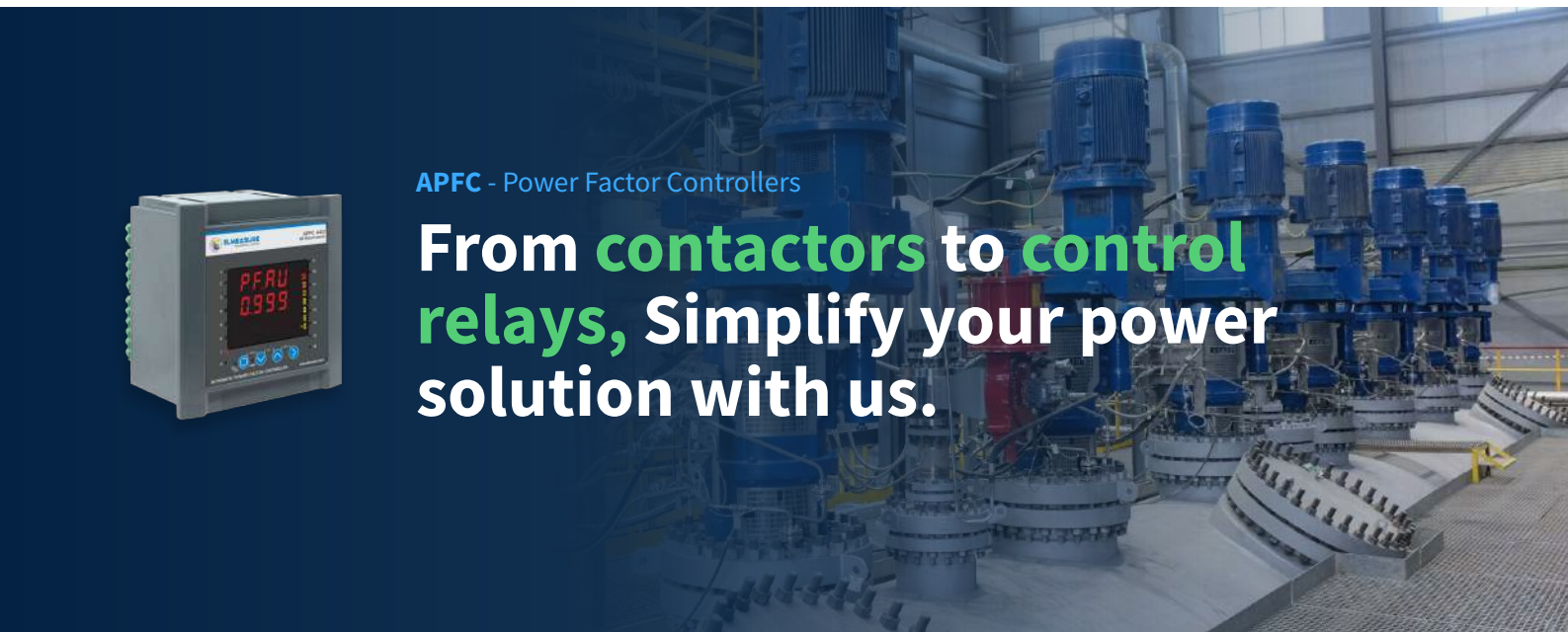
## E3MO Models

Frame	Model Number	CAT Code	Rating	In-built AUX Contact
FR1	E3MO 5	E3MO 5B	5 kVAr	1NO
	E3MO 8.5	E3MO 8.5B	8.5 kVAr	1NO
	E3MO 10	E3MO 10B	10 kVAr	1NO
	E3MO 12.5	E3MO 12.5B	12.5 kVAr	1NO
	E3MO 15	E3MO 15B	15 kVAr	1NO
	E3MO 20	E3MO 20B	20 kVAr	1NO
	E3MO 25	E3MO 25B	25 kVAr	1NO
FR2	E3MO 30	E3MO 30B	30 kVAr	1NO
	E3MO 40	E3MO 40B	40 kVAr	1NO
	E3MO 50	E3MO 50B	50 kVAr	1NO
FR3	E3MO 60	E3MO 60B	60 kVAr	1NO
	E3MO 75	E3MO 75B	75 kVAr	1NO
	E3MO 85	E3MO 85B	85 kVAr	1NO
	E3MO 100	E3MO 100B	100 kVAr	1NO



APFC - Power Factor Controllers

From **contactors to control relays**, Simplify your power solution with us.



# E3MO (3-30 kVAr) Technical Specs

Type Designation		Units	E3MO									
kVAr Rating (at System voltage 440 V) <sup>#</sup>		kVAr	3	5	9	10	13	15	20	25	30	
Conformance to standards			IS/IEC 60947-4-1, IEC 60947-4-1, EN 60947-4-1									
Rated Operational Current at 440 V, 50/60Hz (AC-1), I <sub>e</sub>		A	10	10	25	25	40	40	50	50	55	
Rated Operational Current at 440 V, 50/60Hz (AC-6b), I <sub>e</sub>		A	3.9	6.6	11.2	13.1	16.4	19.7	26.2	32.8	39.4	
Short Circuit Protection			gG type fuses rated at 1.5-2 I <sub>e</sub>									
Max.Operational Voltage, U <sub>e</sub>		V	690	690	690	690	690	690	690	690	690	
Rated insulation Voltage, U <sub>i</sub>		V	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Rated Impulse Withstand Voltage, U <sub>imp</sub>		kV	8	8	8	8	8	8	8	8	8	
Degree of Protection			IP20									
Main Terminal Capacity No. of cable x (Max.Range-Min.Range)	Cable with Ferrule type Lug	mm	1X(4-10)									-
	Cable with Pin type Lug	mm	1X(4-10)									-
	Cable with Fork type Lug	mm	1X(4-10),For width 12.4 mm Max									-
	Cable with Ring type Lug	mm	-									2x16 max lug palm width 12mm
	Solid Conductor	mm <sup>2</sup>	2X10	2X10	2X10	2X10	2X10	2X10	2X10	2X10 <sup>§</sup>	-	
	Stranded Conductor	mm <sup>2</sup>	2X6	2X6	2X6	2X6	2X6	2X6	2X6	2X6 <sup>§</sup>	-	
	Finely Stranded Conductor	mm <sup>2</sup>	2X6	2X6	2X6	2X6	2X6	2X6	2X6	2X6 <sup>§</sup>	2X16 <sup>§§</sup>	
Coil Operating Band	Pick-up	V	65- 110	65- 110	65- 110	65- 110	65- 110	65- 110	65- 110	65- 110	65- 110	
	Drop-off, % U <sub>c</sub>	V	35- 65	35- 65	35- 65	35- 65	35- 65	35- 65	35- 65	35- 65	35- 65	
Coil Consumption	Pick-up, % U <sub>c</sub>	VA	77	77	77	77	77	77	77	77	77	
	Hold-on	VA	9	9	9	9	9	9	9	9	9	
		W	3	3	3	3	3	3	3	3	3	
Life (Operating Cycles)	Mechanical	Million	10	10	10	10	10	10	10	10	10	
	Electrical	Million	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Max. Operating Frequency	Operations/Hr		240	240	240	240	240	240	240	240	240	
Operating Sequence	Making											
	Breaking											
Overall Dimensions	Height, H	mm	87	87	87	87	87	87	87	87	115**	
	Width, W	mm	45	45	45	45	45	45	45	45	56**	
	Depth, D	mm	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5**	
	Mounting Dimensions	mm	35X60-65-70									
Watt loss per pole		W	0.03	0.08	0.2	0.3	0.5	0.7	1.3	2.0	2.9	
Weight		kg	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.56**	

**Note:**

\* Accessories and spares same as that of E3MO contactor.

\*\* With spreader link

# kVAr ratings should be selected as per the net kVAr of the capacitor reactor combination irrespective of capacitor voltage (440V / 480V / 525V).

## While selection it should be ensured that current rating of capacitor is less than the current through the contactor.

\$ Use spreader while using 16 sq.mm cable

\$\$ Terminal capacity mentioned is with spreader

# E3MO (40-100 kVAr ) Technical Specs

Type Designation		Units	E3MO						
kVAr Rating (at System voltage 440 V) <sup>#</sup>		kVAr	40	50	60	75	85	100	
Conformance to standards			IS/IEC 60947-4-1, IEC 60947-4-1, EN 60947-4-1						
Rated Operational Current at 440 V , 50/60Hz (AC-1), I <sub>e</sub>		A	80	90	100	140	140	180	
Rated Operational Current at 440 V , 50/60Hz (AC-6b), I <sub>e</sub>		A	52.5	65.6	78.7	98.4	111.5	130	
Short Circuit Protection			gG type fuses rated at 1.5-2						
Max.Operational Voltage, U <sub>e</sub>		V	690	690	690	690	690	690	
Rated insulation Voltage, U <sub>i</sub>		V	1000	1000	1000	1000	1000	1000	
Rated Impulse Withstand Voltage, U <sub>imp</sub>		kV	8	8	8	8	8	8	
Degree of Protection			IP20						
Main Terminal Capacity No. of cable x (Max.Range-Min.Range)	Cable with Ferrule type Lug	mm	1x(25-35),2x(16-25)		1x (50-70),2x (25-35)				
	Cable with Pin type Lug	mm							
	Cable with Fork type Lug	mm							
	Cable with Ring type Lug	mm			2x50 max lug palm width 12mm		2x95 max lug palm width 25mm		
	Solid Conductor	mm <sup>2</sup>							
	Stranded Conductor	mm <sup>2</sup>	2x (10-35)	2x (10-35)	2x 35 <sup>\$\$</sup>	2x (16-70)	2x (16-70)		
	Finely Stranded Conductor	mm <sup>2</sup>	2x (10-35)	2x (10-35)	2x 35 <sup>\$\$</sup>	2x (16-70)	2x (16-70)		
Coil Operating Band	Pick-up	V	75 -110	75 -110	75 -110	75 -110	75 -110	75 -110	
	Drop-off, % U <sub>c</sub>	V	35-65	35-65	35-65	35-65	35-65	35-65	
Coil Consumption	Pick-up, % U <sub>c</sub>	VA	144	144	144	240	240	240	
		VA	15	15	15	25	25	25	
	Hold-on	W	6	6	6	9	9	9	
Life (Operating Cycles)	Mechanical	Million	10	10	10	10	10	10	
	Electrical	Million	0.2	0.2	0.2	0.2	0.2	0.2	
Max. Operating Frequency	Operations/Hr		240	240	240	240	240	240	
Operating Sequence	Making		Early Make /Main						
	Breaking		Main Contacts Break						
Overall Dimensions	Height, H	mm	123.5	123.5	174 <sup>**</sup>	135	135	195	
	Width, W	mm	55	55	73 <sup>**</sup>	70	70	95 <sup>**</sup>	
	Depth, D	mm	163	163	163 <sup>**</sup>	175	175	175 <sup>**</sup>	
	Mounting Dimensions	mm	45x100-105			60x115-120			
Watt loss per pole	W	4.1	6.4	9.2	9.4	12.1	12.1		
Weight	kg	1.15	1.15	1.32 <sup>**</sup>	1.72	1.72	1.9 <sup>**</sup>		

Note:

\* Accessories and spares same as that of E3MO contactor.

\*\* With spreader link

# kVAr ratings should be selected as per the net kVAr of the capacitor reactor combination irrespective of capacitor voltage (440V / 480V / 525V).

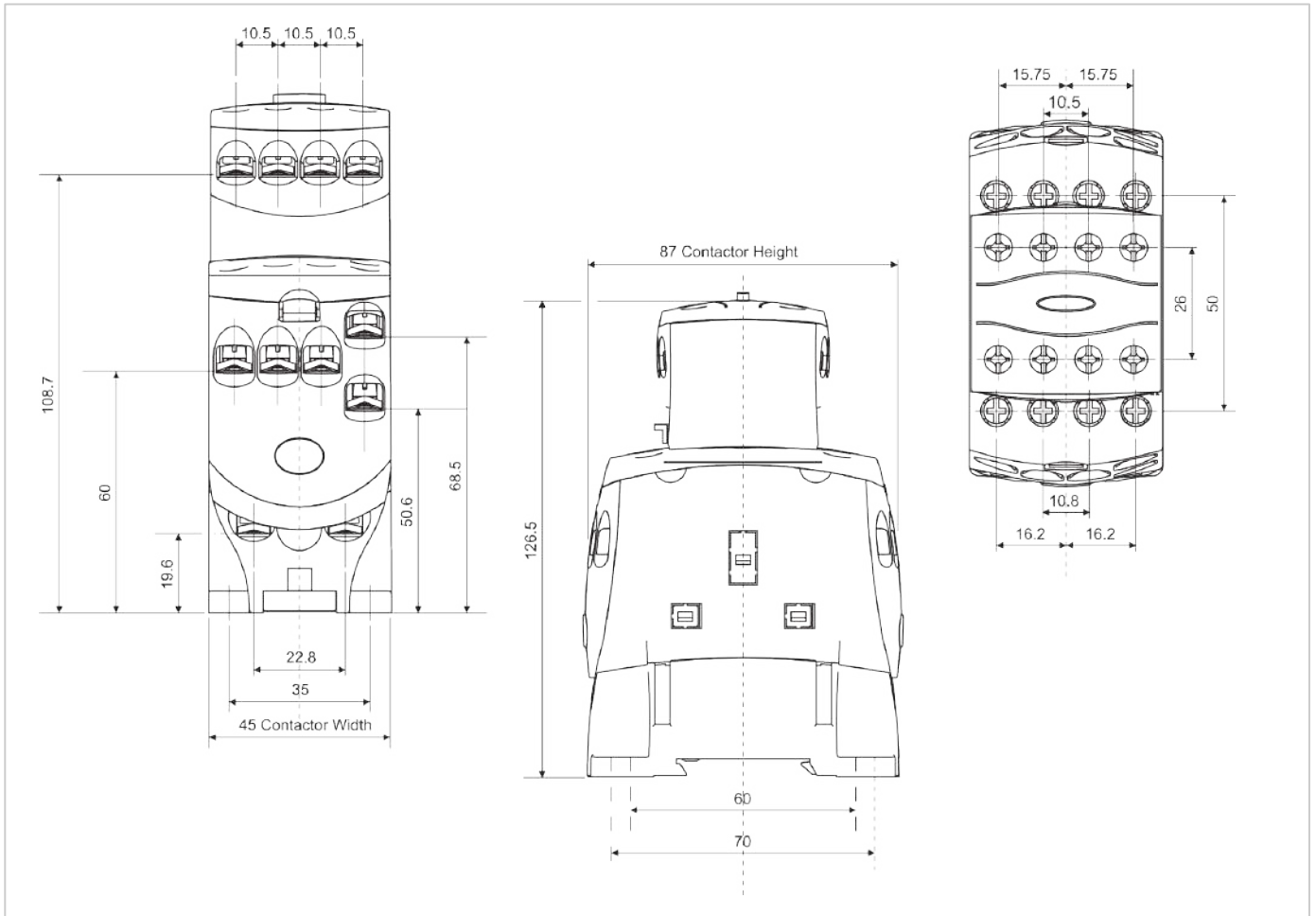
## While selection it should be ensured that current rating of capacitor is less than the current through the contactor.

\$ Use spreader while using 16 sq.mm cable

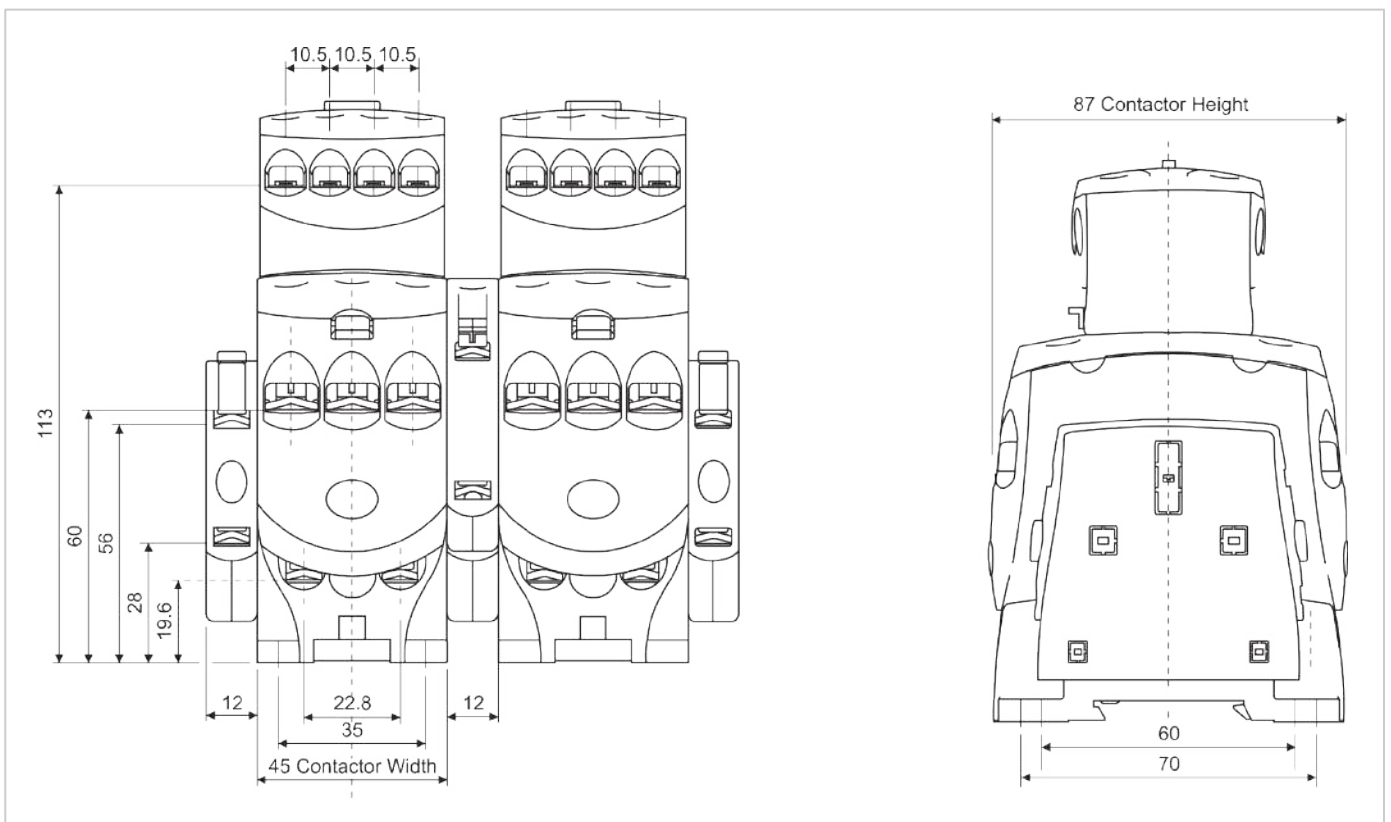
\$\$ Terminal capacity mentioned is with spreader

# E3MO Mechanical Dimensions

## E3MO - 9-18 kVAr

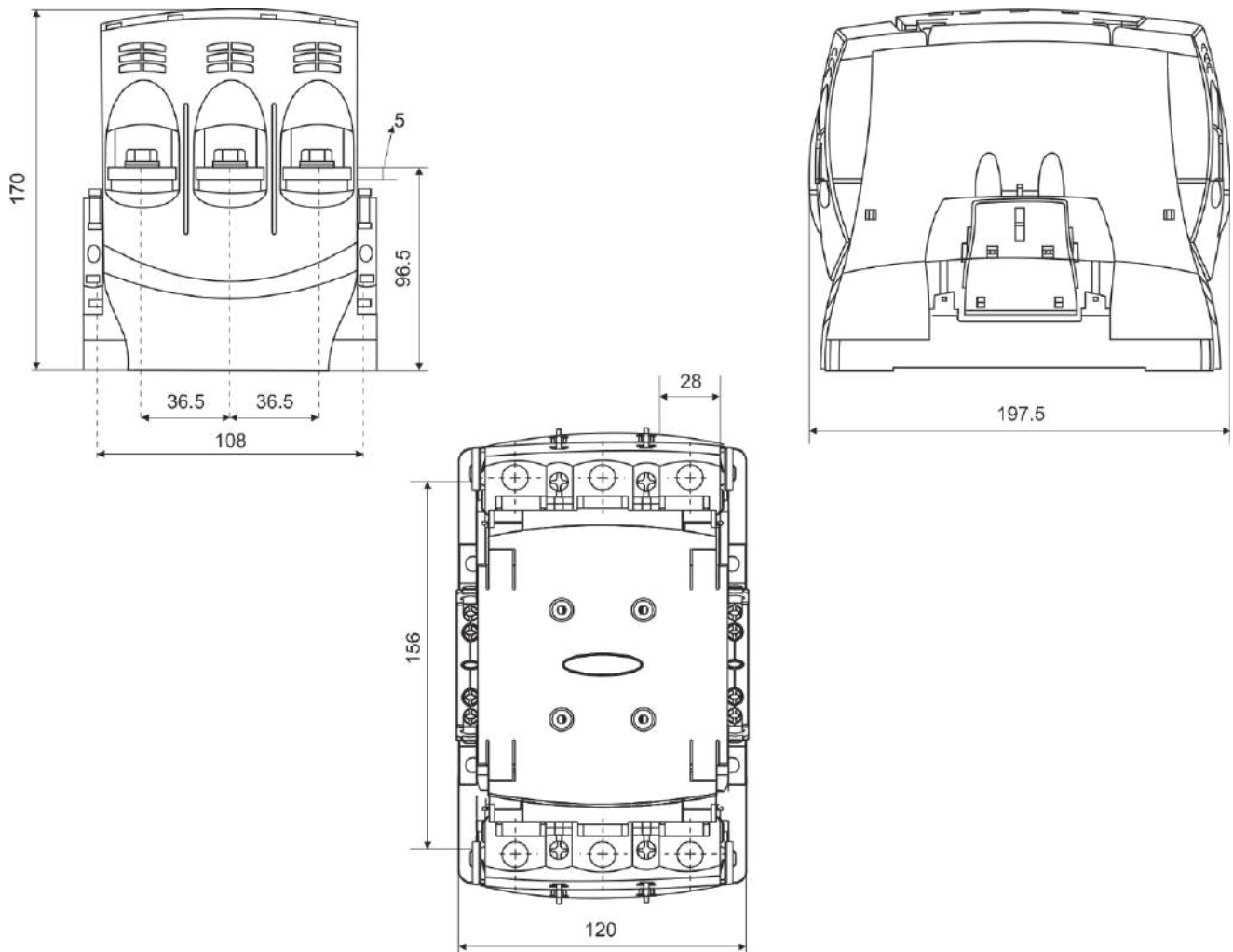


## E3MO - 25A, 32A, 40A, 45A

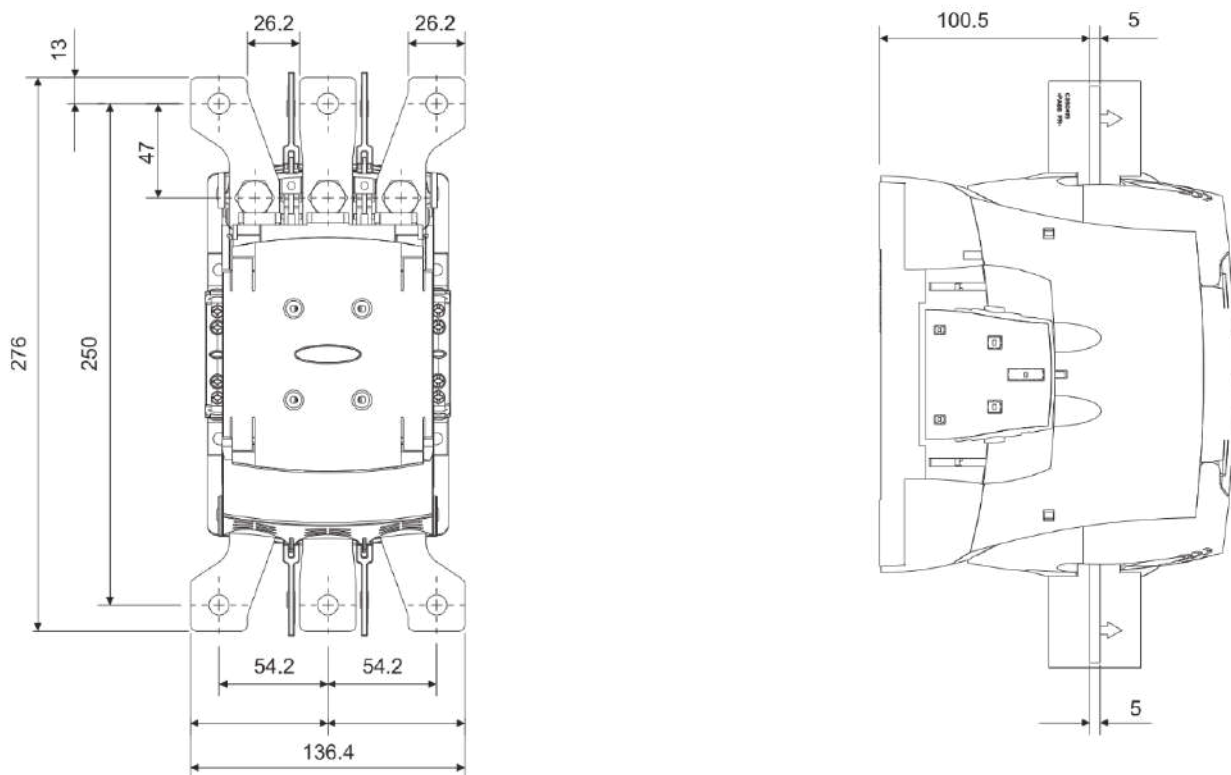




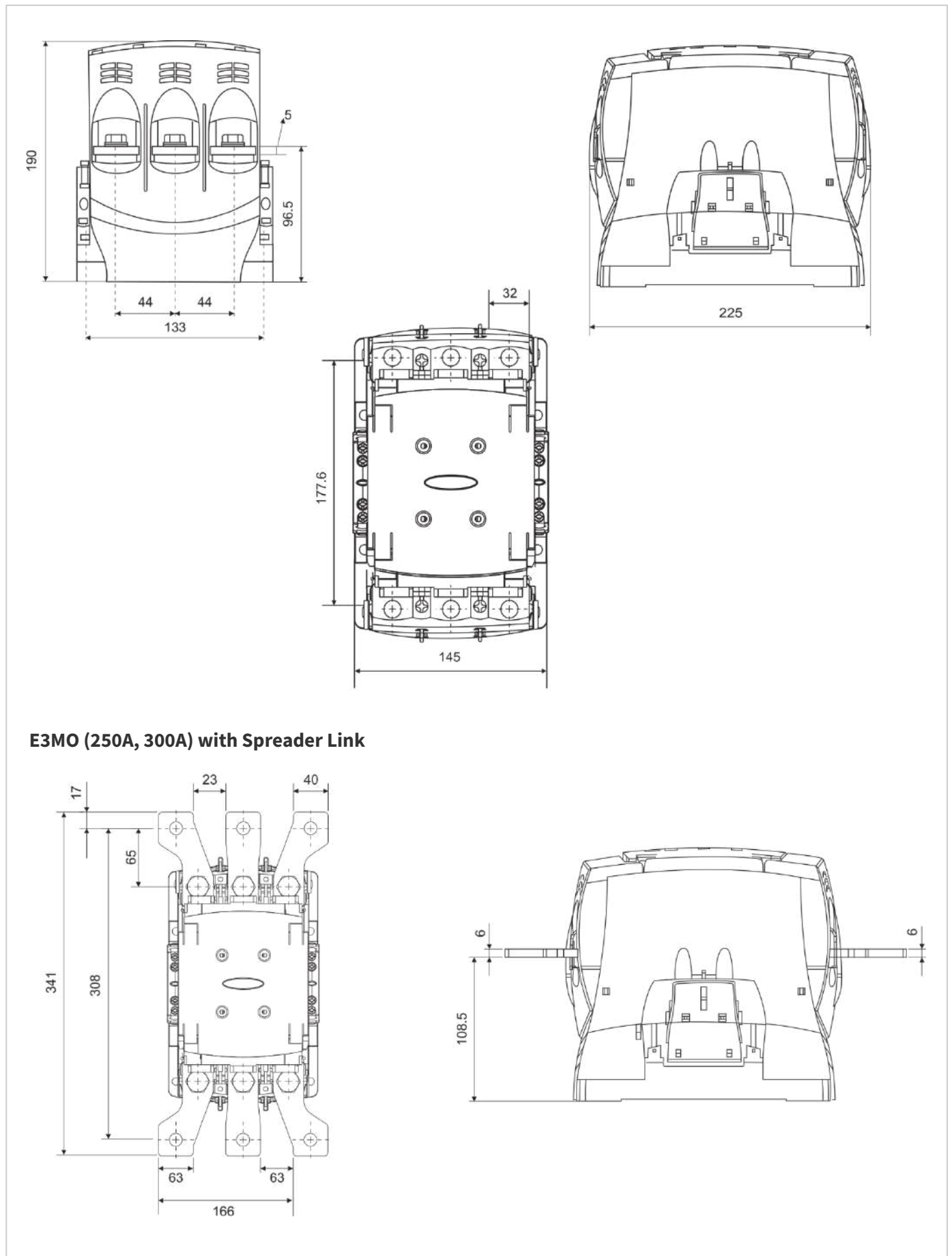
## E3MO - 140A, 185A, 225A



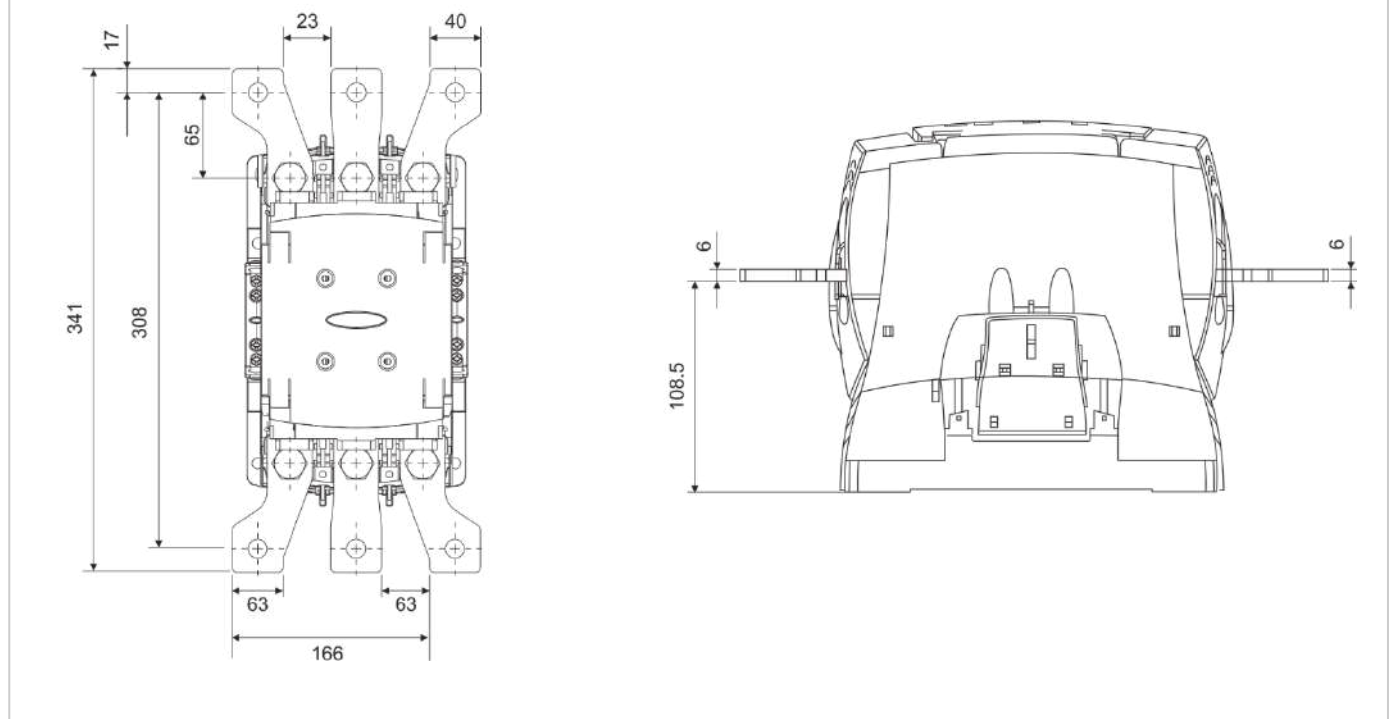
## E3MO (140A, 185A, 225A) with Spreader Link



## E3MO - 250A, 300A



## E3MO (250A, 300A) with Spreader Link



# Thermal Overload Relays (OLR)

Thermal overload relays are essential safety devices that protect motors from damage caused by overloads and single phasing. As motors operate, they generate heat that can cause them to overheat and fail, potentially resulting in costly repairs or replacements. Thermal overload relays are designed to detect the temperature rise in a motor caused by an overload or single phasing and disconnect the motor's power supply before it's damaged. The use of thermal overload relays in motor starter combinations is critical for ensuring the safe and efficient operation of industrial equipment. In this context, this technology plays a vital role in maintaining the reliability and longevity of machinery and ultimately contributes to a safer work environment.

■ EMN Series  
Range 1.4A-110A





**Overload and single-phasing protection at its best with our high-quality EMN relays.**

# Thermal Overload Relays

- Ranges from 1.4A - 110A
- Conforms to IS / IEC 60947-4-1 & IEC 60947-4-1
- Ambient temperature compensated up to 55 C
- Inbuilt Single phase missing Protection
- Manual / Auto Reset Provision
- Accurate overload tripping
- On/Off/Trip Indication contacts

## EMN 40/110 Models

Frame	Model Number	Rating	Remark
EMN 20	EMN402X3	1.4-2.3	Directly operated
	EMN403X3	2-3.3	
	EMN405XX	3-5	
	EMN407X5	4.5-7.5	
	EMN40100	6-10	
	EMN40150	9-15	
	EMN40230	14-23	
	EMN40330	20-33	
	EMN40400	24-40	
EMN 50	EMN40150	9-15	
	EMN50230	14-23	
	EMN50330	20-33	
	EMN50500	30-50	
	EMN50600	30-60	
	EMN50750	45-75	
	EMN50100	66-110	

EMN 40



EMN 110



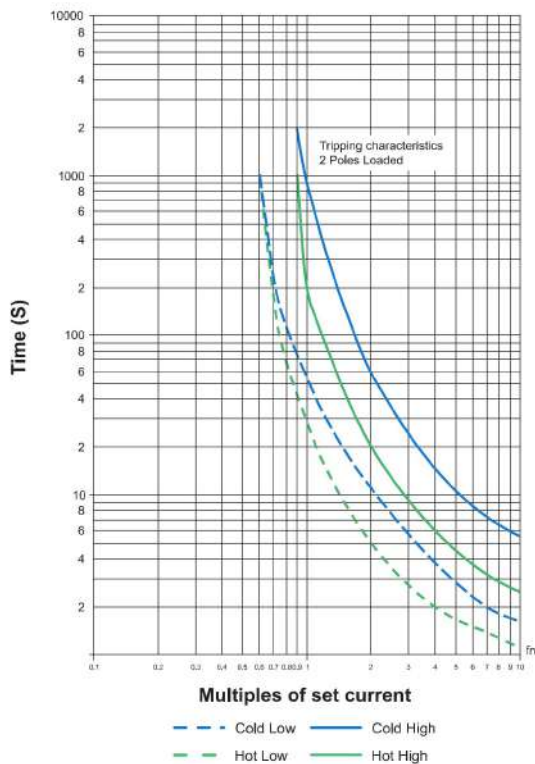
# EMN Technical Specs



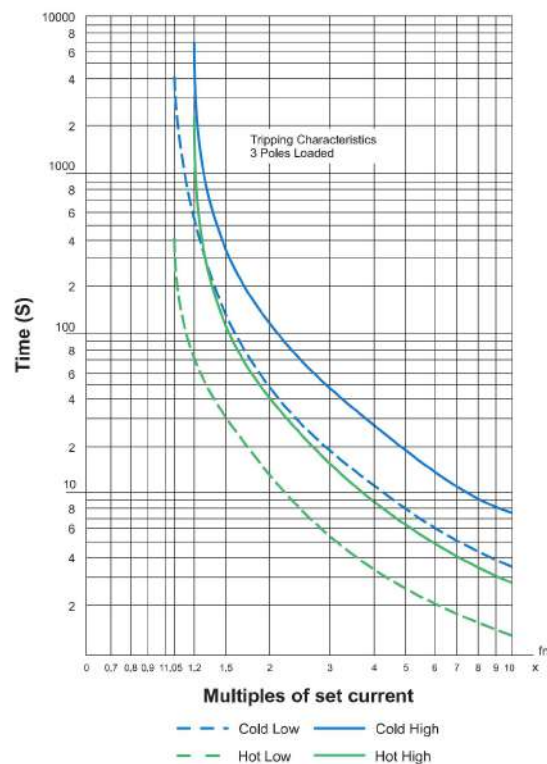
Technical Parameters		EMN	
Model Range		EMN 40	EMN 110
Conformance to standards		IS/IEC 60947-4-1, IEC 60947-4-1	
Mounting		Direct	Direct
		Separate	Separate
Suitable for contactors		E3MX 9, 12, 18, 22, 25, 32, 40	E3MX 50, 70, 80, 90, 110
Rated insulation voltage	$U_i$	690 V	690 V
Rated impulse voltage	$U_{imp}$	6 kV	6 kV
Service temperature		-5°C to +55°C	
Start & OFF / Reset		1 Start & OFF / Reset	
Built-in contacts		2 NO + 1 NC	
Rated operational current for AC-15 utilization category at 50 Hz	24 V	6 A	6 A
	110 V	5 A	5 A
	220 V	3 A	3 A
	380 / 415 V	2 A	2 A
	500 V	2 A	2 A
Trip Class		10 A	10 A
Max. frequency of operations		30 cycles/hr	30 cycles/hr
Main terminal capacity	Lug	10 mm <sup>2</sup>	50 mm <sup>2</sup>
Aux. terminal capacity	Wires	2 x 2.5 mm <sup>2</sup>	2 x 2.5 mm <sup>2</sup>

## Current Time I-T Characteristics

EMN 40 / EMN 110 Relay



EMN 40 / EMN 110 Relay





Helping you  
simplify energy  
and process  
management.

Explore solutions >

**ELMEASURE**<sup>®</sup>  
Possibilities...Infinite

©2023 Elmeasure. All Rights Reserved.  
Elmeasure brand name and the logo are  
registered trademarks of Elmeasure.  
This document is protected by copyright laws.  
Reproduction and distribution of the same  
without a prior written permission is prohibited.

Changes to the products or the information  
contained in this document. Product photos  
are for representation purpose do not warrant  
a specific feature or functionality. Their use in  
whatever form is subject to our prior approval.

Registered Address:  
Elmeasure India Private Limited,  
#47P, KIADB, Huvinayakanahalli,  
Jala Hobli, Bagalur - 562149  
Bangalore, Karnataka, India.

Visit: [www.elmeasure.com](http://www.elmeasure.com)

For latest updates, follow us:

