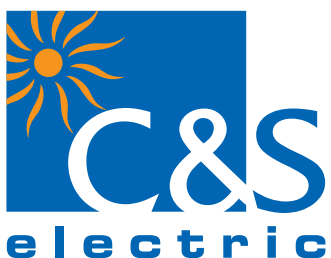


# WiNbreak1

An Absolute Solution for  
Distribution & Protection



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—YEARS—

## Moulded Case Circuit Breakers

CSE-Series



# WiNbreak1

An Absolute Solution for  
Distribution & Protection

WiNbreak1 CSE Series MCCB is an incredibly innovative high quality circuit breaker supported with state-of-the-art manufacturing technologies, contemporary design, ergonomics and compactness.

WiNbreak1 CSE Series MCCB in compliance with latest standard IS/IEC60947-2

WiNbreak1 CSE Series MCCB provides accurate and impeccable protection against overload and short circuit which ensures utmost performance, reliability and complete safety. The high breaking capacity of these MCCBs reflects the robustness of its design and ensures high electrical and mechanical life.

# MCCB | CSE Series

Range: 16~400A

Breaking Capacity: 25kA, 35kA, 36kA, 50kA

Ui: 750V

Uimp: 8kV

## Protection of power distribution system

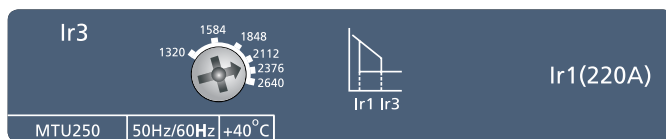
**FMU** - Adjustable Thermal & Fixed Magnetic Trip unit



**ATM** - Adjustable thermal adjustable magnetic trip unit



**MTU** - Magnetic only trip unit (for Motor Protection)



**ETM** - "MicroPro WB" Microprocessor (LSIGN) multi function unit



# Technical Specification

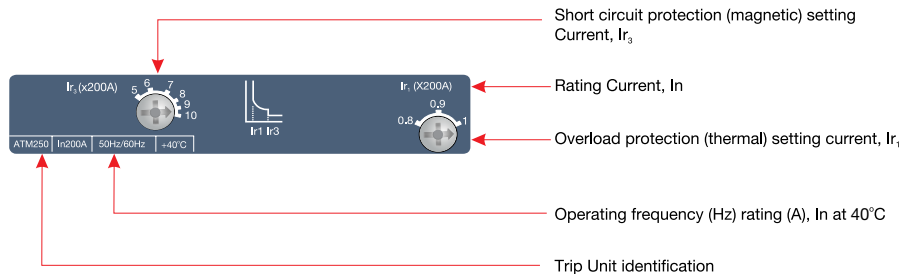
CSE2	N		250		ATM		3P	-	Current Rating		
Frame Size	Breaking Capacity @ 415V AC		Ampere Frame		Trip Unit		Poles	Connection	(A)		
CSE1	M	25kA	CSE1	125AF	Thermal Magnetic	FMU	Adjustable Thermal Fixed Magnetic	3P 4P	Front Connection	CSE1	16, 20, 25, 32, 40, 50, 63, 80, 100, 125
CSE2	N	35kA	CSE2	250AF		ATM				Adjustable Thermal Adjustable Magnetic	CSE2
CSE3	S	50kA	CSE3	400AF	*Magnetic	MTU	Magnetic only			CSE3	250, 320, 350, 400
					MicroProcessor	ETM	MicroPro WB (LSIGN) Adjustable				

Electrical Characteristics			CSE1			CSE2			CSE3			
Frame size	[AF]		125			250			400			
Rated current, In	[A]		16, 20, 25, 32, 40, 50, 63, 80, 100, 125			125, 160, 200, 250			250, 320, 350, 400			
Poles			3, 4			3, 4			3, 4			
Rated operational Voltage (Max.), Ue AC	[V]		690			690			690			
DC	[V]		250			250			250			
Rated impulse withstand Voltage, Uimp	[kV]		8			8			8			
Rated insulation voltage, Ui	[V]		750			750			750			
Category of Utilization			A			A			A			
Reference Standard			IS/IEC60947-2			IS/IEC60947-2			IS/IEC60947-2			
<b>Rated ultimate short circuit breaking capacity, Icu</b>			<b>M</b>	<b>N</b>	<b>MX</b>	<b>M</b>	<b>NX</b>	<b>N</b>	<b>S</b>	<b>M</b>	<b>N</b>	<b>S</b>
AC 50/60Hz	220/240V	[kA]	35	50	35	35	50	50	75	35	50	75
	380/415V	[kA]	25	35	25	25	35	35	50	25	36	50
	440/460V	[kA]	15	25	15	15	25	25	37	15	25	37
	480/500V	[kA]	10	18	10	10	18	18	25	10	18	25
	600/690V	[kA]	5	5	5	5	5	5	7	5	5	7
DC (3 Pole in Series)	250V	[kA]	25	35	25	25	35	35	42	25	36	42
Rated service breaking capacity Ics as%Icu			100%	100%	75%	100%	75%	100%	50%	100%	100%	100%
Trip Unit (Release)												
- Fixed Magnetic Unit (FMU)						available						
- Adjustable Thermal Magnetic (ATM)						available						
- Magnetic Unit (MTU)						available						
- Adjustable Microprocessor (ETM)						available						
Isolation Behaviour						available						
Total Opening Time						<10m sec.						
Mechanical Life [operation]			20000			20000			10000			
Electrical Life [operation]			5000			5000			3000			
<b>Basic Dimension</b> - WxHxD (mm)			3 Pole	92 x 150 x 81		108 x 165.8 x 81			150 x 260 x 110			
			4 Pole	122.5 x 150 x 81		142.5 x 165.8 x 81			198 x 260 x 110			
<b>Weight</b> (Kg)			3 Pole	1.65		2.2			4.8			
			4 Pole	1.98		2.65			5.8			
Mounting Positions						Vertical and 90° in both direction						
<b>Internal Accessories</b>												
- Auxiliary Switch						●						
- Trip Alarm Switch						●						
- Auxiliary & Trip Alarm Switch						●						
- Shunt Release [voltage]						24V DC, 48V DC, 110V DC, 220VDC, 220V AC, 415V AC						
- Under Voltage Release [voltage]						24V DC, 48V DC, 110V DC, 220VDC, 220V AC, 415V AC			110V AC, 220VDC, 220V AC, 415V AC			
<b>External Accessories</b>												
- Rotary Operating Mechanism						●						
- Key Lock						●						
- Mechanical Interlock						●						
- Direct Pad Lock						●						
- Extended Terminal						●						

● Internal & External accessories available. Maximum possibilities of internal accessories, please refer page no. 7

\*MCCB with Magnetic Trip Release (for motor protection) is also available. For technical detail, please contact to nearest Branch Office.

# Trip Release



Thermal Magnetic Trip Units FMU, ATM																
Trip Unit Rating, $I_n$ (A)	16	20	25	32	40	50	63	80	100	125	160	200	250	320	350	400
CSE1	■	■	■	■	■	■	■	■	■	■						
CSE2										■	■	■	■			
CSE3													■	■	■	■

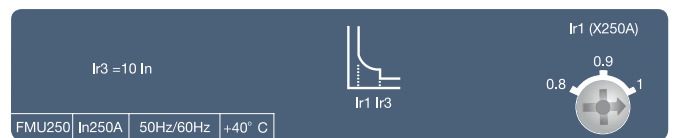
■ Available

Overload Protection - Thermal		
Current Setting (A) $I_{r1}$	FMU	Adjustable 0.8 to x 1 $I_n$
	ATM	Adjustable 0.8 to x 1 $I_n$

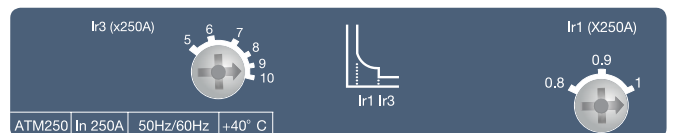
Short Circuit Protection - Magnetic		
Current Setting (A) $I_{r3}$	FMU	Fixed 10 x $I_n$
	ATM	Adjustable 5, 6, 7, 8, 9, 10 x $I_n$ (6 settings)

Protection of N Pole	
4P	Neutral Protection (100% $I_{r1}$ )
3P+SN	Neutral No Protection

Adjustable Thermal, Fixed Magnetic trip units			
FMU	Rated Current	Adjustable Thermal	Fixed Magnetic
	16A...50A	0.8~1 x $I_n$	10 x $I_n$



Adjustable Thermal, Adjustable Magnetic trip units			
ATM	Rated Current	Adjustable Thermal	Fixed Magnetic
	63A...400A	0.8~1 x $I_n$	5-10 $I_n$



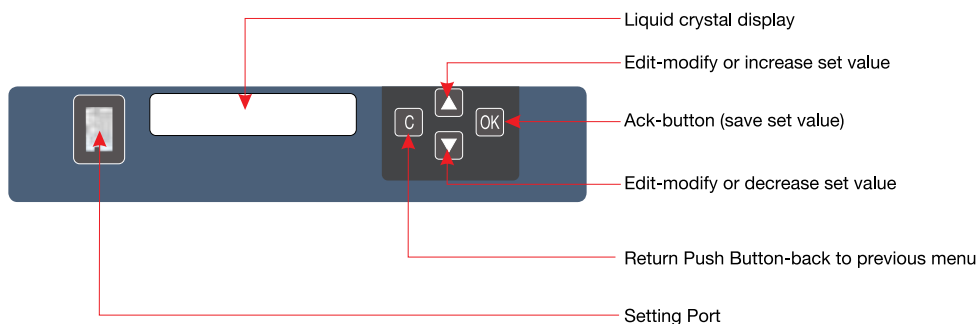
# Trip Release

## MCCB for power distribution microprocessor Trip Unit "MicroPro WB" for CSE1, CSE2, CSE3

- Adjustable Over Load from 0.4~1.0 In
- Adjustable Short Circuit from 2~12 Ir
- Instantaneous Protection available (4~14) Ir
- Inbuilt Ground fault Protection available 20% to 100% of In
- Adjustable neutral overload protection available: 50% to 100% of Ir
- Adjustable Current imbalance protection available: (30%~70%) of Ir
- Thermal Memory: ON/OFF
- Setting Port: Apply DC 12V power supply from outside
- Communication; MODBUS PROTOCOL
- View Last Trip information
- Default display Line current+Ground current, Line current +N Phase current
- Wide Range of Internal and External Accessories
- LCD display

Microprocessor (LSIGN) multi function Trip Unit ETM (MicroPro WB)												
Trip Unit Rating, In (A)	40	50	63	80	100	125	160	200	250	320	350	400
CSE1	■	■	■	■	■	■						
CSE2						■	■	■	■			
CSE3									■	■	■	■






■ Available



Setting Values		
Overload protection (long time)	Setting current (A), Ir	Adjustable (0.4~1.0) In, in step of .01
	Tripping time (s) at 2Ir	Adjustable 12s, 60s, 80s, 100s at 2Ir
Short-circuit protection (short time)	Tripping threshold (A), Isd	Adjustable (2~12) Ir + OFF in step of .01
	Time delay (tsd)	Adjustable 0.1s, 0.2s, 0.3s, 0.4s at 1.5Isd
Short-circuit protection (instantaneous)	Tripping threshold(A), Ii	Adjustable (4~14)Ir + OFF in step of .01
	Adjustable (4~14)Ir + OFF in step of .01	
Earth Fault protection	Setting Current (A), Ig	Adjustable (0.2-1.0) In + OFF in step of .01
	Time delay (tg)	Adjustable 0.1s, 0.2s, 0.3s, 0.4s at 6Ig
Neutral protection, Ir	50%, 100% and OFF	
Current Imbalance protection	(30%-70%) & OFF	
Time delay	<10s	

# Internal Accessories

## Electrical Auxiliaries of 125AF - 400AF

	<p><b>Shunt Trip (SHT)</b> The shunt trip opens the mechanism in response to an externally applied voltage signal. Shunt trips include clearing contacts that automatically clear the signal circuit when the mechanism has tripped.</p>
	<p><b>Under Voltage trip (UVT)</b> The under voltage trip coil automatically opens a circuit breaker when voltage drops to a value ranging between 35% to 70% of the line voltage. The operation is instantaneous and the circuit breaker cannot be re-closed until the voltage returns to 85% of line voltage. Continuously energized, the under voltage trip must be operating before the breaker can be closed.</p>
	<p><b>Auxiliary Switch (AX)</b> Auxiliary switch is for applications requiring remote ON and OFF indication. Each switch contains two contacts having a common connection. One is open and the other closed when the circuit breaker is open and vice-versa.</p>
	<p><b>Alarm Switch (AL)</b> Alarm switches offer provisions for immediate audio or visual indication of a tripped breaker due to overload, short-circuit, operation of shunt trip or under voltage trip conditions, operation of push button. They are particularly useful in automated plants where operators must be signaled about changes in the electrical distribution system. This switch features a closed contact when the circuit breaker is operated manually. Its contact is open when the circuit breaker is reset.</p>
	<p><b>Combination Switch (AX+AL)</b> It consists of one Auxiliary Switch (AX) and Alarm Switch (AL) in a body to connect into the same position in the breaker</p>

## Maximum Possibilities for Internal Accessories

FOR MCCB - CSE1, CSE2 (16~250A)				FOR MCCB - CSE3 (250~400A)			
MCCB with Thermal Release		MCCB with MicroProcessor Release		MCCB with Thermal Release		MCCB with MicroProcessor Release	
3 Pole	4 Pole	3 Pole	4 Pole	3 Pole	4 Pole	3 Pole	4 Pole

● Alarm Switch    ○ Auxiliary Switch    ▲ Under Voltage Release  
■ Shunt Release    □ Combination Switch (AX+AL)    ⊗ No seat available

### Notes:

- 3Pole, MCCB with Thermal Release, Any two accessories can be fitted at one time
- 4Pole, MCCB with Thermal Release, Any Three accessories can be fitted at one time
- 3Pole MCCB with Microprocessor Release, Right hand seat is not available. Hence, one accessories can be fitted at one time.
- 4Pole MCCB with Microprocessor Release, Any two accessories can be fitted at one time.
- UVT can be fitted only in left hand seat.



# External Accessories



## Extended Terminals

It is recommended to use extended terminals for enhancing terminal capacity and phase clearance.



## Mechanical Interlocking Device

The Mechanical Interlock (MIT) can be applied on the front of two breakers mounted side by side, in either the 3-Pole or 4-Pole version and prevents simultaneous closing of the two breakers. Fixing is carried out directly on the cover of the breakers.



## Removable locking device

This device allows the handle to be locked in the OFF Position.



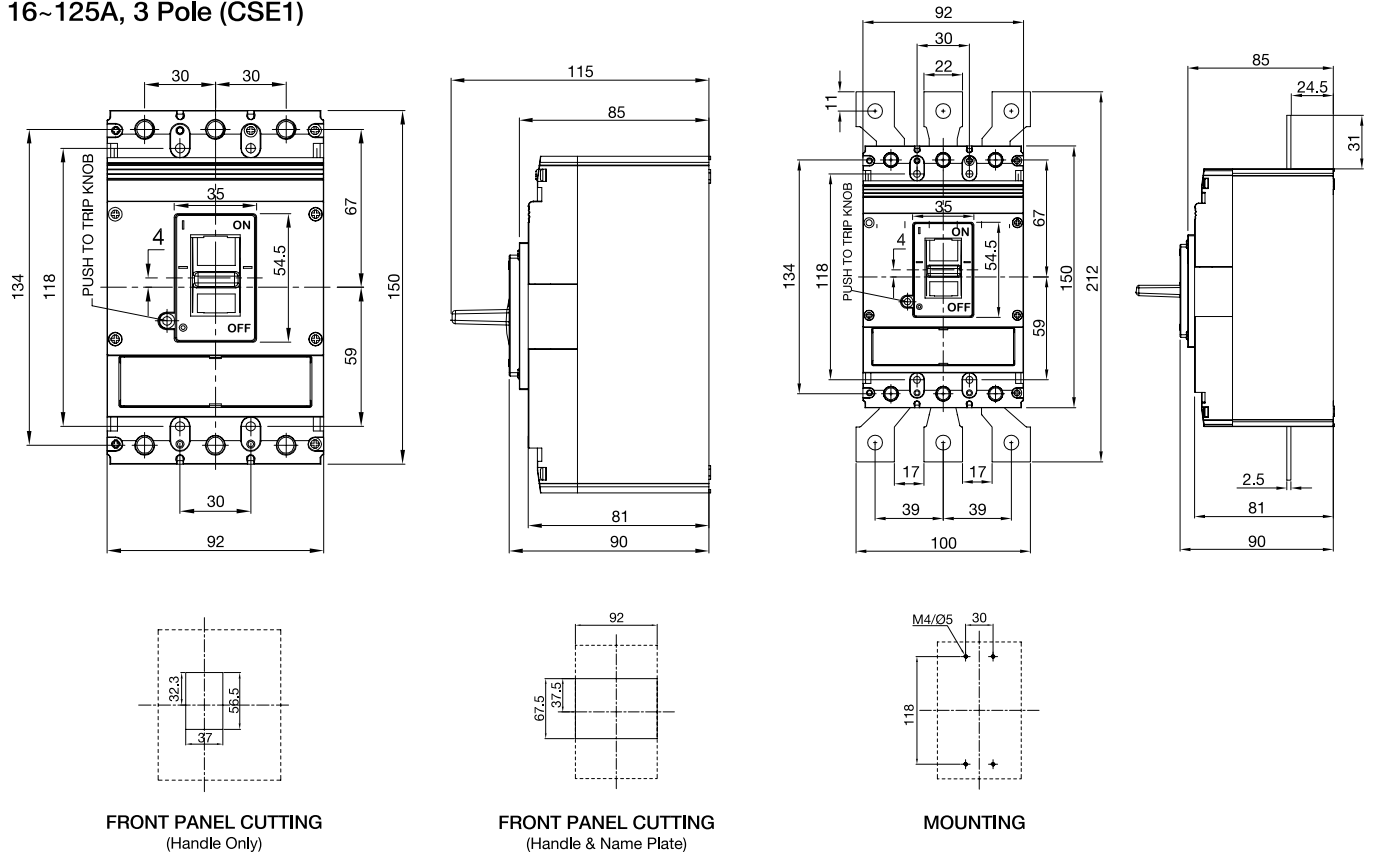
## Key Lock

This device is used to lock the circuit-breaker in TRIP & OFF position.

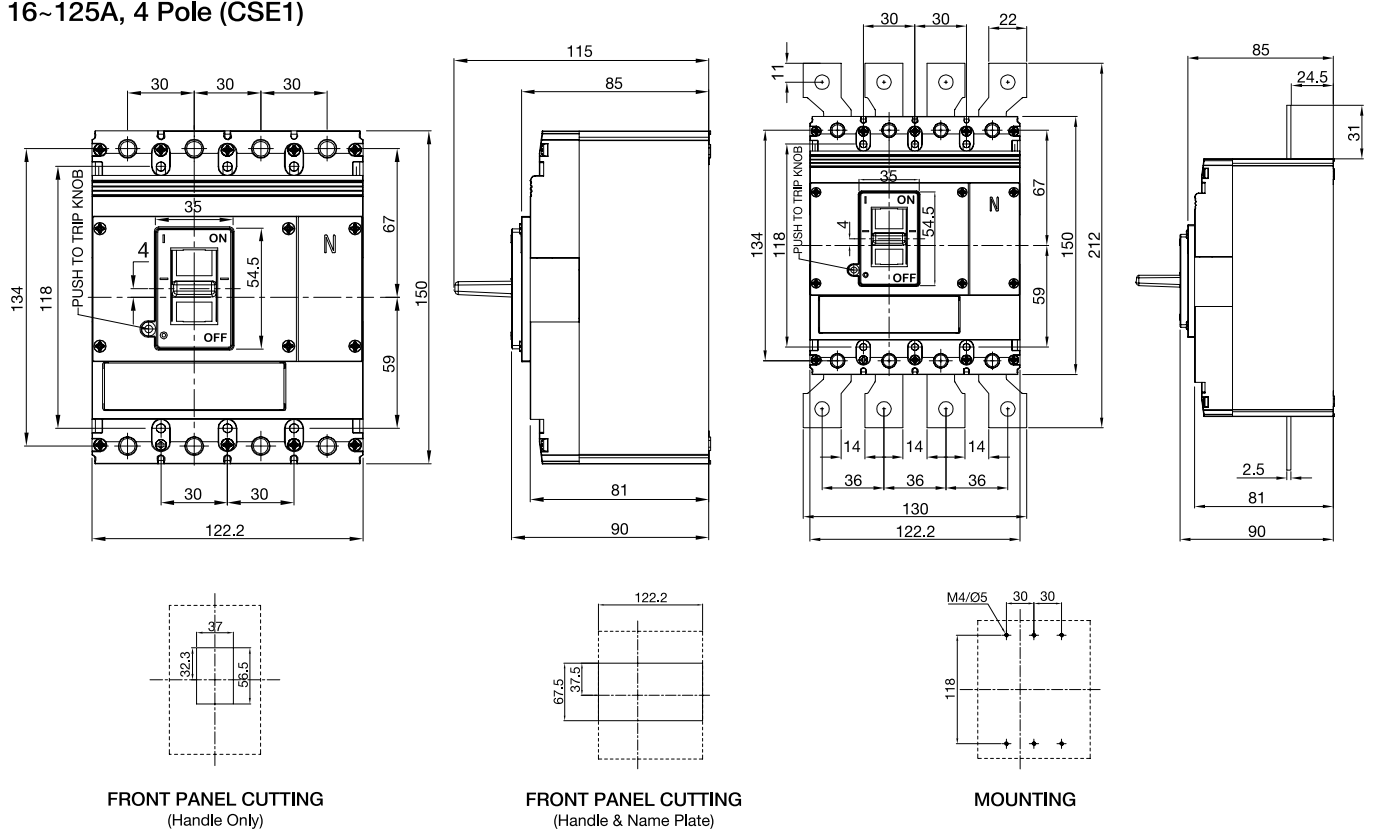


# Dimensions

## 16~125A, 3 Pole (CSE1)



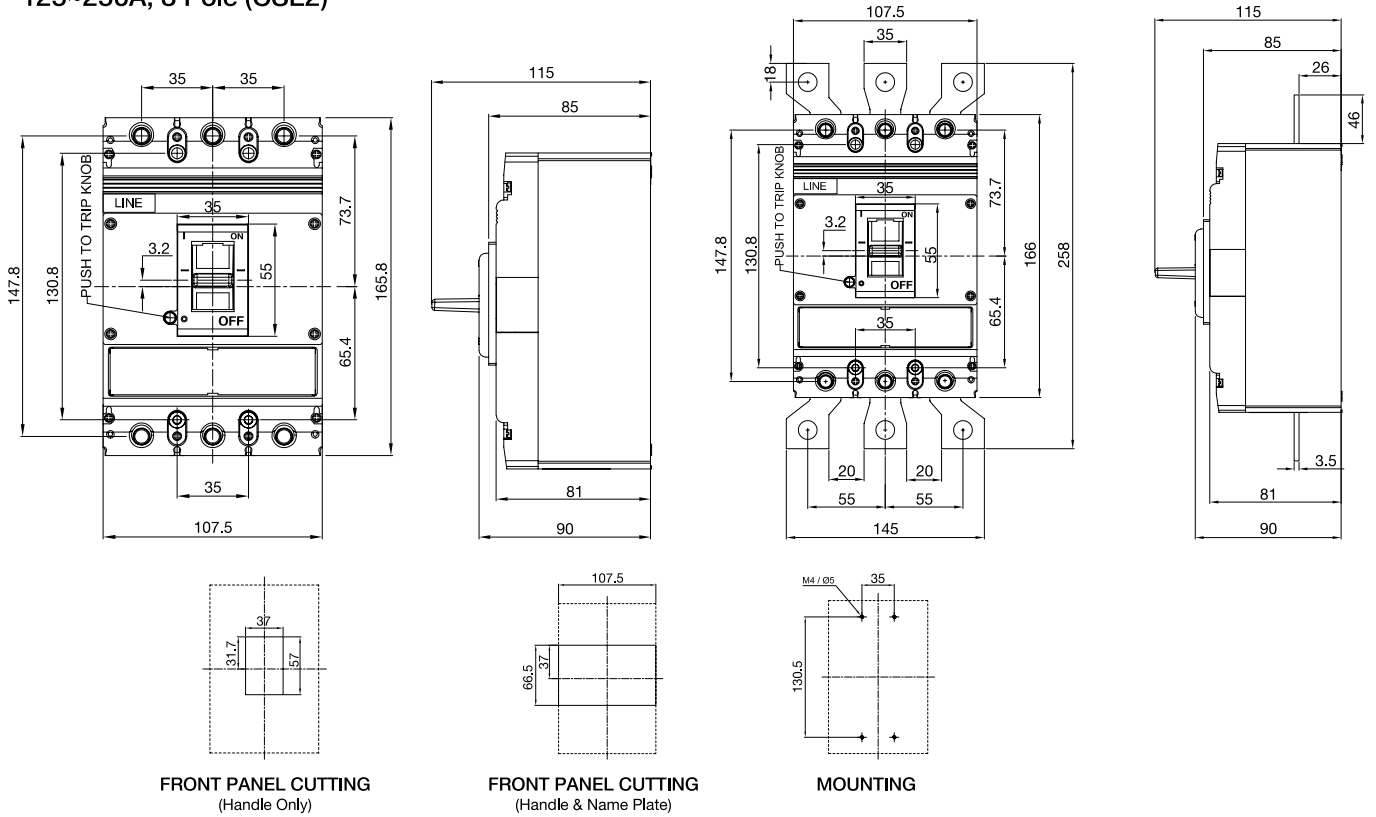
## 16~125A, 4 Pole (CSE1)



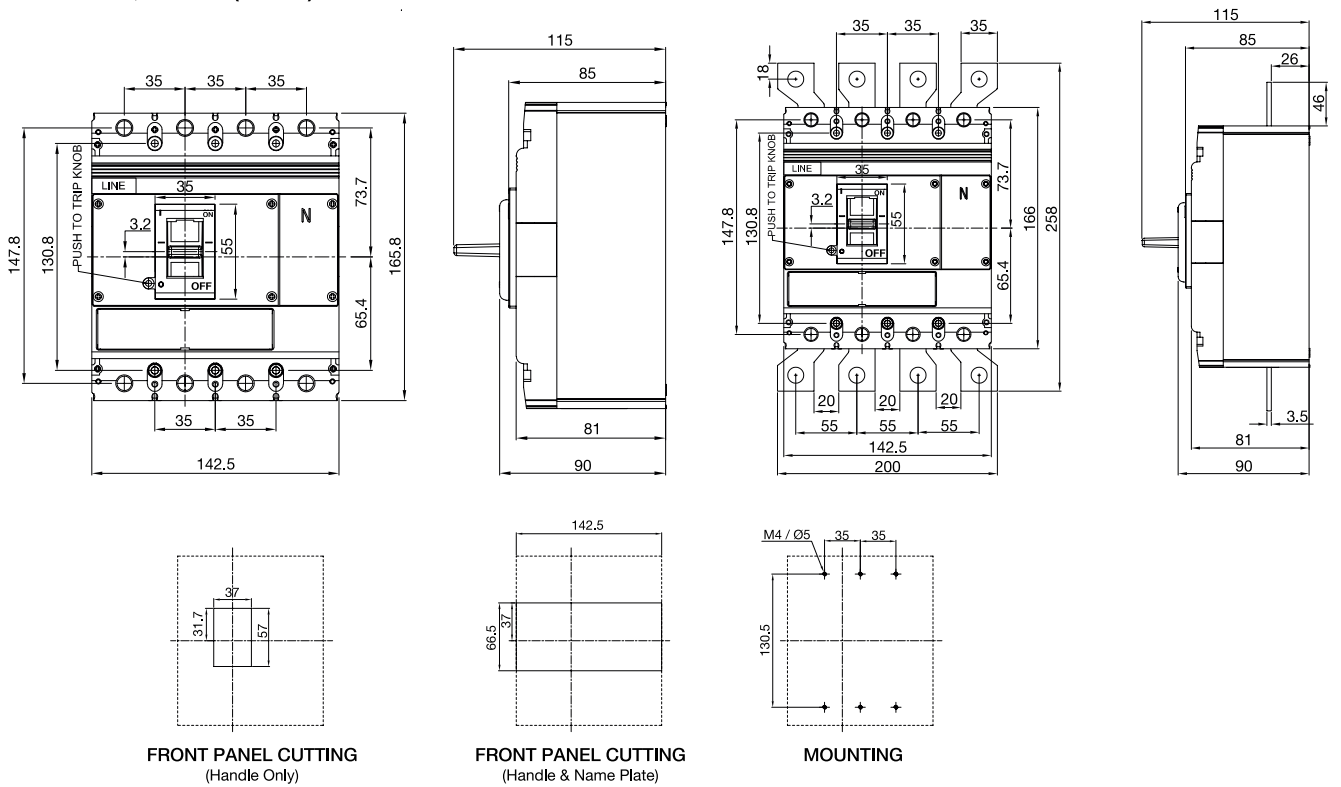
All dimensions are in mm

# Dimensions

## 125~250A, 3 Pole (CSE2)



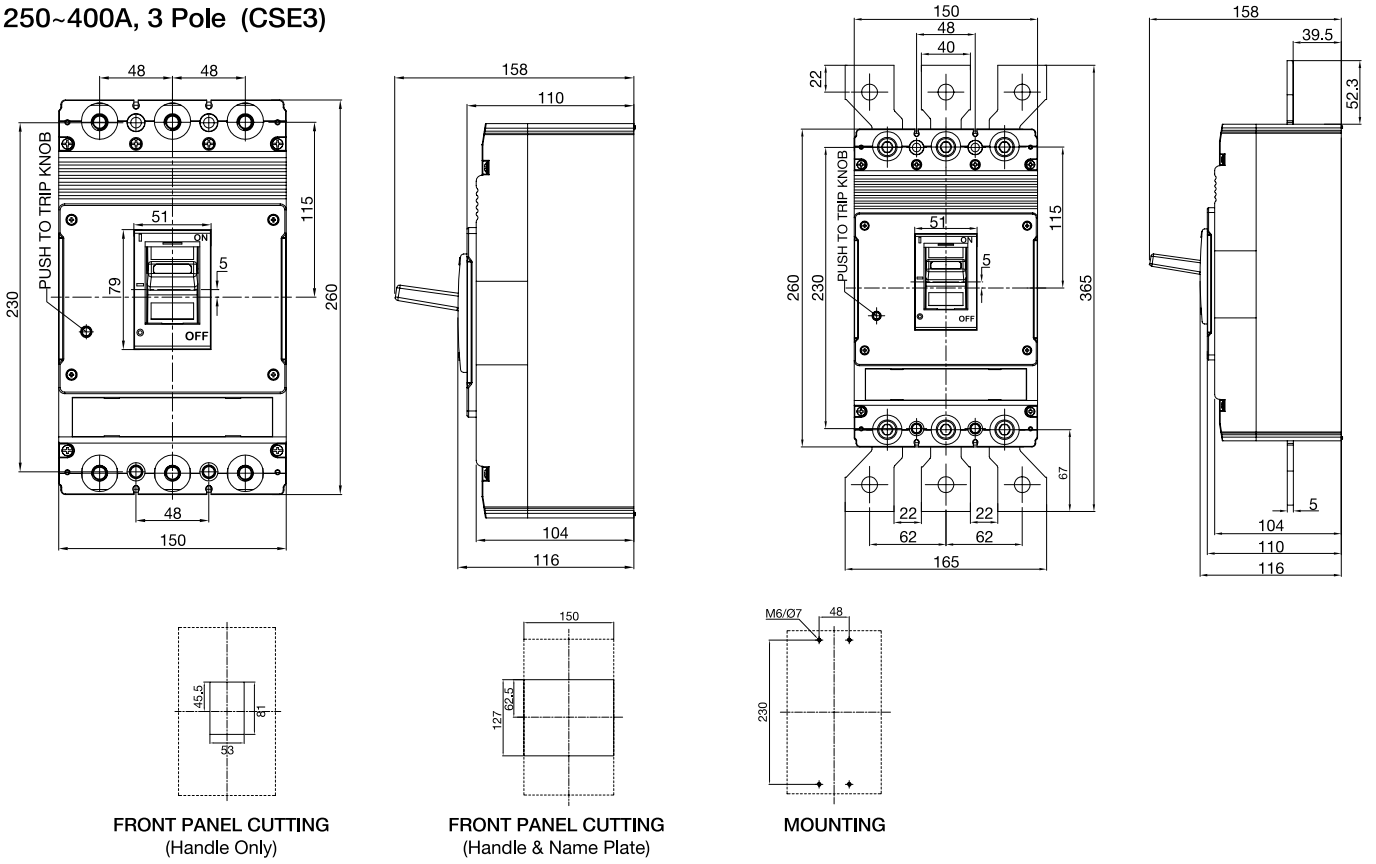
## 125~250A, 4 Pole (CSE2)



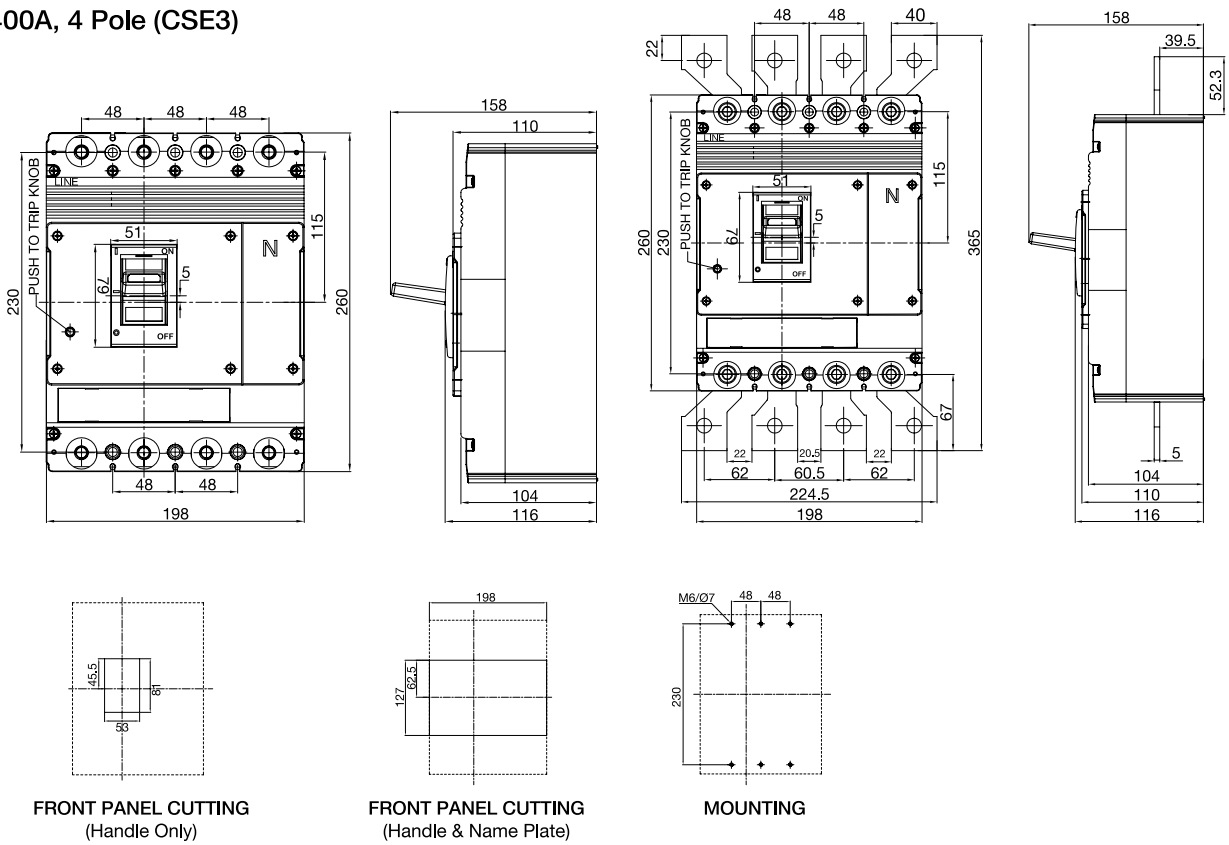
All dimensions are in mm

# Dimensions

## 250~400A, 3 Pole (CSE3)



## 250~400A, 4 Pole (CSE3)

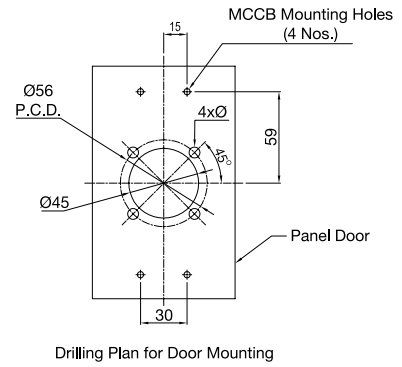
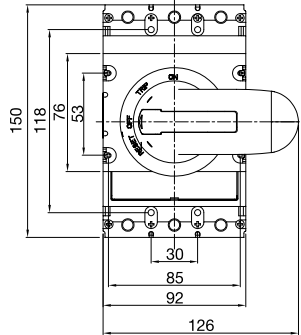
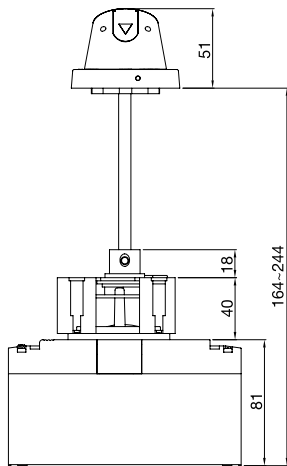


All dimensions are in mm

# Dimensions

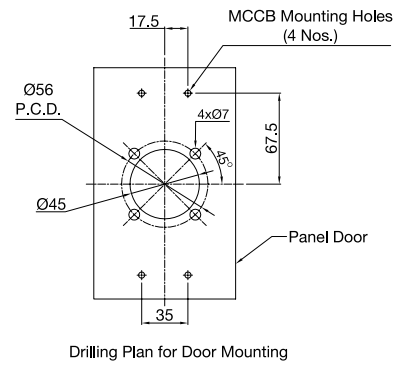
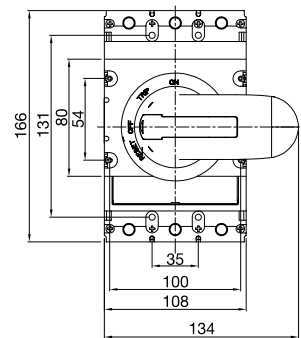
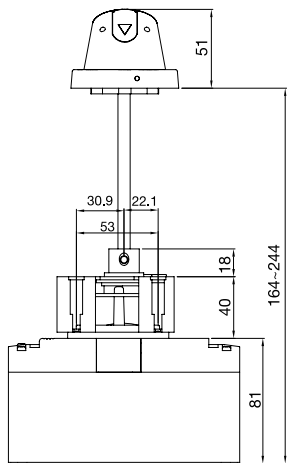
## Rotary Handle for CSE1 (125AF) FMU / ATM / ETM

EHW1-125



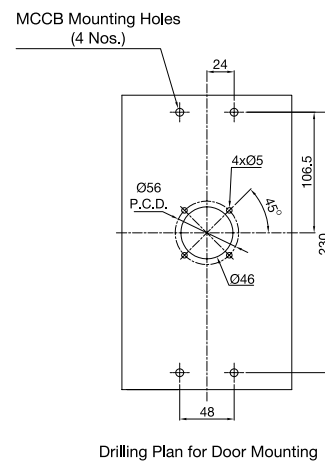
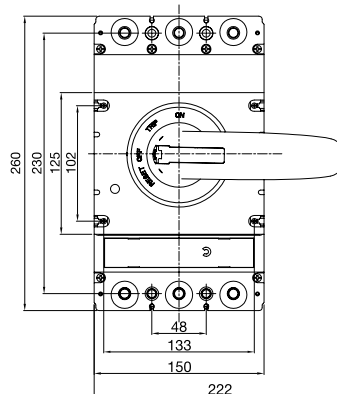
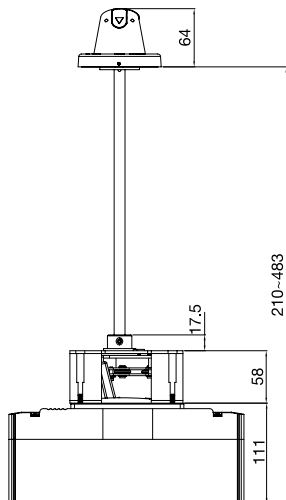
## Rotary Handle for CSE2 (250AF) ATM / ETM

EHW1-250



## Rotary Handle for CSE3 (400AF) ATM

EHW1-400

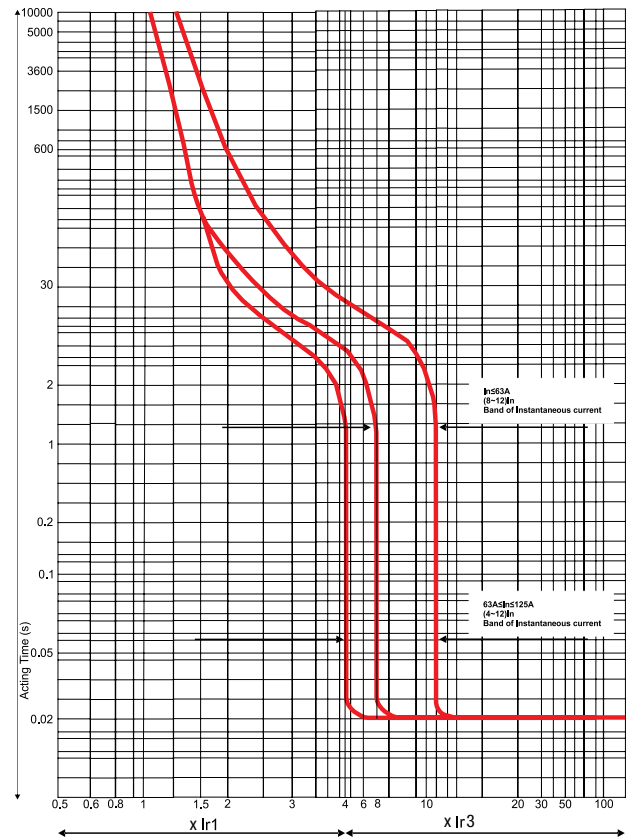


All dimensions are in mm

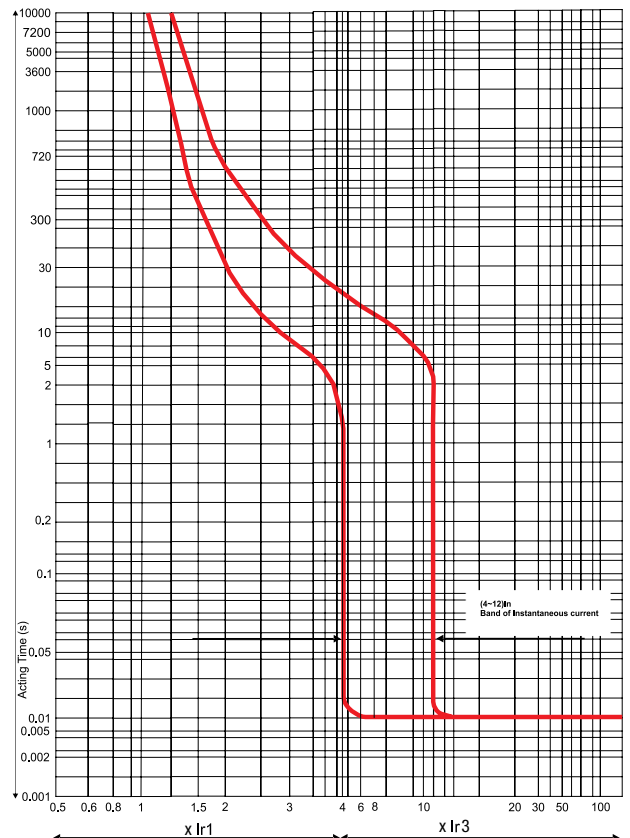
# Tripping Curve

## Circuit Breakers with Thermal /Magnectic Trip unit

CSE1M / CSE1N / CSE1S (125AF)



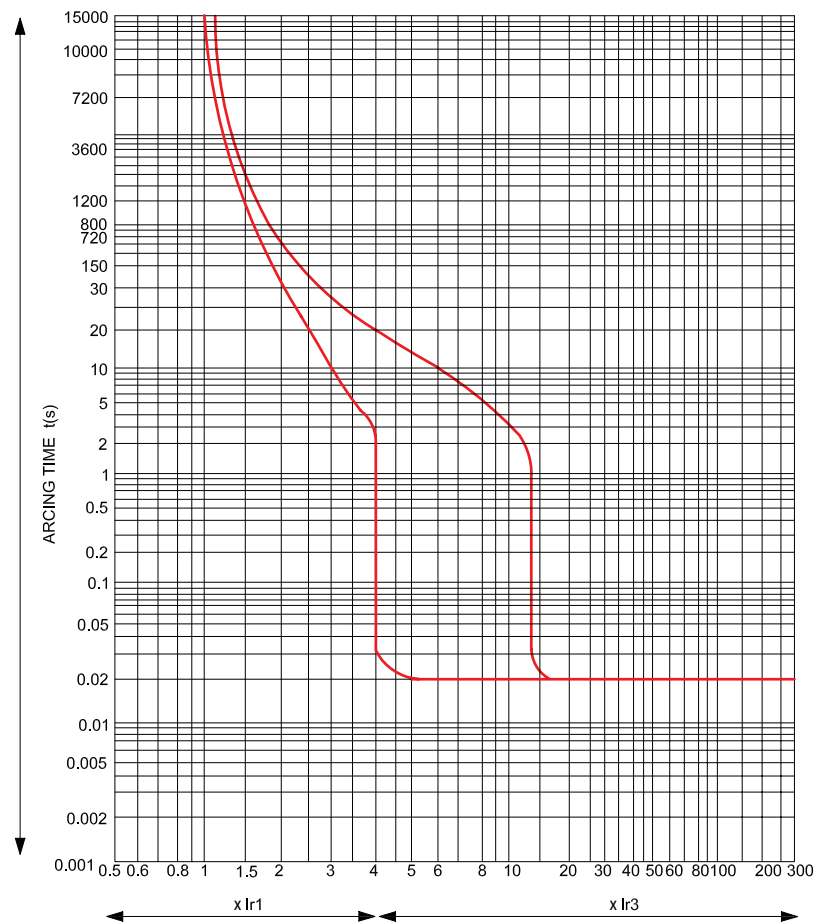
CSE2M / CSE2N / CSE2S / CSE2H (250AF)



# Tripping Curve

## Circuit Breakers with Thermal/Magnetic Trip unit

CSE3M / CSE3N / CSE3S (400AF)

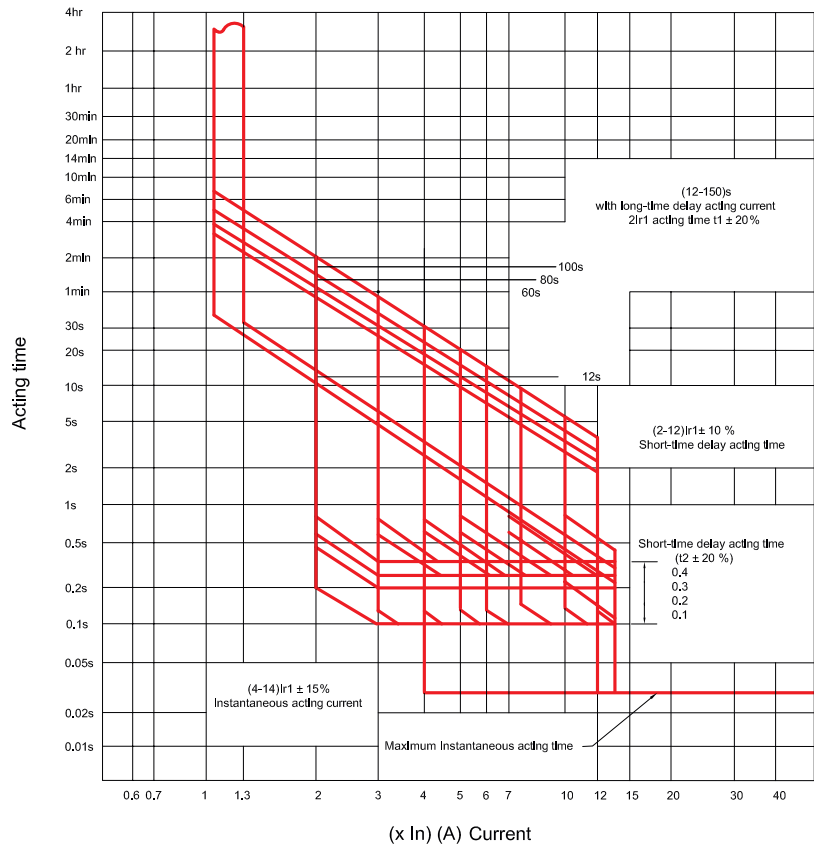


# Tripping Curve

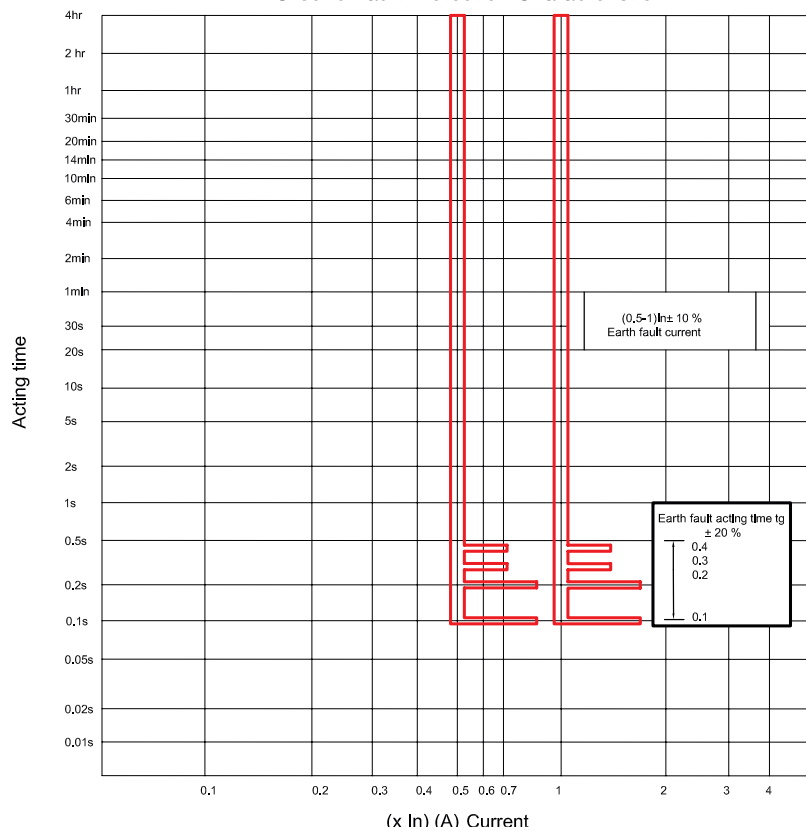
## Circuit Breakers with Microprocessor Trip unit

CSE3M / CSE3N / CSE3S (400AF)

## Overload & Short Circuit Protection Characteristic



## Ground Fault Protection Characteristic





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Ph.: +91 11 3384 9333/34/38, +91 120 3914333

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Fax : (+91 11) 26847342

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Ph. : (+91 172) 3021144

Fax : (+91 172) 2631059-3201144

E-Mail : chandigarh@cselectric.co.in

##### LUDHIANA

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Fax : (+91 161) 2541900, 2541800

E-Mail : ludhiana@cselectric.co.in

##### LUCKNOW

Ph. : (+91 522) 3917843, 4102044

E-Mail : lucknow@cselectric.co.in

##### KANPUR

Ph. : (+91 522) 3917843, 4102044

E-Mail : kanpur@cselectric.co.in

##### INDORE

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E-Mail : indore@cselectric.co.in

##### RAIPUR

Ph. : (+91 771) 4061404

E-Mail : raipur@cselectric.co.in

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Fax : (+91 712) 2528923

E-Mail : nagpur@cselectric.co.in

#### EASTERN REGION

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Fax : (+91 33) 22275849

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Fax : (+91 79) 30074519

E-Mail : ahmedabad@cselectric.co.in

##### BARODA

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Fax : (+91 265) 2338754

E-Mail : baroda@cselectric.co.in

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Fax : (+91 20) 30283239

E-Mail : pune@cselectric.co.in

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E-Mail : surat@cselectric.co.in

##### JAIPUR

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###### BHUBANESWAR

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###### MUMBAI

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###### AHMEDABAD

B-25-B/C Meldi Industrial Estate, Opp. West Coast Pharmaceutical, Nr. Gota Over Bridge, Gota, Ahmedabad - 382481 Ph.: (+91 79) 65453044

###### BENGALURU

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