ETIBREAK

Moulded Case Circuit Breakers And Switch Disconnectors

/etigroup

SWITCH TO
A SAFE FUTURE

ETIBREAK Low Breaking Capacity Moulded Case Circuit Breakers EB2S

Low Breaking Capacity Moulded Case Circuit Breakers EB2S

Possibility of installation together with modular devices under a 45mm front panel.

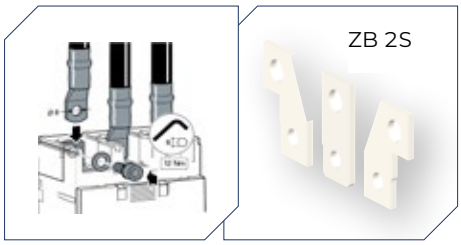
Protective covers (IP 20) prevent contact with live parts; partition barriers ensure terminal insulation; the MCCB housing has double insulation.

Unique accessory cover opens with only one screw.

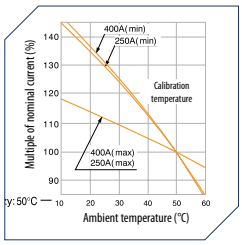
New series EB2S of MCCBs has excellent performances with reduced dimensions and new modern design.

Practical internal accessories can be installed with one touch:
- auxiliary switch
- alarm switch
- shunt trip unit
- undervoltage trip unit

EB2S series complies to safety recommendation standard IEC 60204-1. EB2S is marked with IEC symbol "direct opening action". This makes these devices also ideal for all OEM applications where safety and reliability are essential.

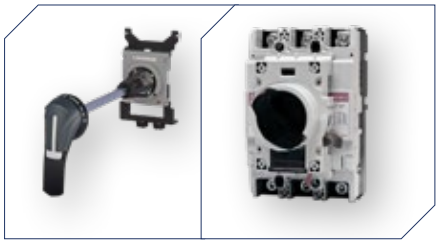


The ZB 2S busbar adapter supports large cross-section or multiple conductor connections.

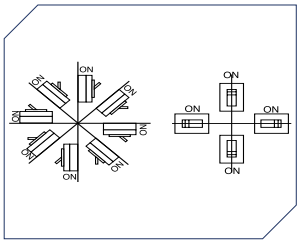


ETIBREAK 2S breakers are calibrated at 50°C.

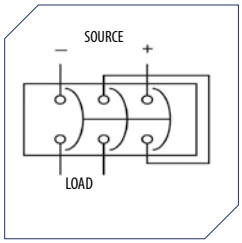
Remote breaker operation is enabled by a motor drive.



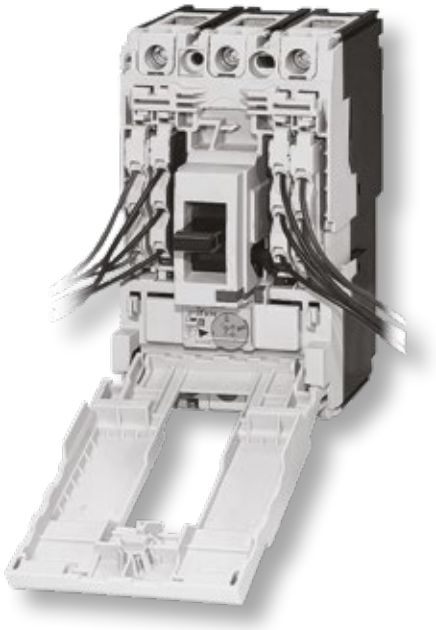
Rotary handles enable manual operation of circuit breakers, installable on the breaker itself or on the cabinet door.



EB2S breakers can be installed at any angle without affecting performance.



All breakers with thermal-magnetic protection can be used in DC circuits up to 250V.

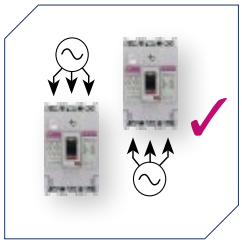


Mountable on a panel or TH 35 rail (160 frame only).

User can select between fixed and adjustable protection:
- Frame size 160A: fixed (series LF, SF & HF) or thermal trip adjustable (series LA, SA & HA)
- Frame size 250A: fixed (series LF, SF & HF) or thermal-magnetic trip adjustable (series LA, SA & HA)

WATCH THE VIDEO

All breaker components are eco-friendly: PBDE/PBB-free thermoplastic rubber, cadmium-free contacts, and lead-free soldering.



ETIBREAK 2S breakers support top or bottom load connection without affecting protection characteristics.

Application
MCCBs protect cables, power lines, motors, and other electrical equipment from short circuits and overloads.

Features:

- Compact dimensions
- Direct drive system
- Short-circuit current limitation through rapid arc quenching
- Minimal arc quenching time due to the special contact group design
- Adjustable thermal and magnetic protections
- Cable lug compatibility
- Mountable on a panel
- TH 35 rail mounting option (ETIBREAK 2S160 frame only)
- High voltage rating: up to 690V AC and 250V DC (for thermal-magnetic breakers only)
- Universal accessories for all ETIBREAK 2S series frames

Technical data

Dimensions	160 & 250
Rated current	16 - 250A
Number of poles	1, 3
Impulse withstand voltage Uimp	8 kV
Rated insulation voltage Ui	690 & 800 V
Breaking capacity Icu	16, 25, 40 kA
Standards	IEC 60947-2, EN 60947-2

ETIBREAK EB2S 160

EB2S 160 LF - economic, fixed protection

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 160/3LF 16A 3p	16	004671801					
EB2S 160/3LF 20A 3p	20	004671802					
EB2S 160/3LF 25A 3p	25	004671803					
EB2S 160/3LF 32A 3p	32	004671804					
EB2S 160/3LF 40A 3p	40	004671805					
EB2S 160/3LF 50A 3p	50	004671806	3			0,80	
EB2S 160/3LF 63A 3p	63	004671807					
EB2S 160/3LF 80A 3p	80	004671808					
EB2S 160/3LF 100A 3p	100	004671809					
EB2S 160/3LF 125A 3p	125	004671810					
EB2S 160/3LF 160A 3p	160	004671811					
EB2S 160/4LF 16A 4p	16	004671814		16/8	fixed/fixed		1
EB2S 160/4LF 20A 4p	20	004671815					
EB2S 160/4LF 25A 4p	25	004671816					
EB2S 160/4LF 32A 4p	32	004671817					
EB2S 160/4LF 40A 4p	40	004671818					
EB2S 160/4LF 50A 4p	50	004671819	4			1,00	
EB2S 160/4LF 63A 4p	63	004671820					
EB2S 160/4LF 80A 4p	80	004671821					
EB2S 160/4LF 100A 4p	100	004671822					
EB2S 160/4LF 125A 4p	125	004671823					
EB2S 160/4LF 160A 4p	160	004671824					

Legend:
L -> economic, lower short-circuit breaking capacity
S -> standard short-circuit breaking capacity
H -> high short-circuit breaking capacity

EB2S 160 SF - standard, fixed protection

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 160/3SF 16A 3p	16	004671827					
EB2S 160/3SF 20A 3p	20	004671828					
EB2S 160/3SF 25A 3p	25	004671829					
EB2S 160/3SF 32A 3p	32	004671830					
EB2S 160/3SF 40A 3p	40	004671831					
EB2S 160/3SF 50A 3p	50	004671832	3			0,80	
EB2S 160/3SF 63A 3p	63	004671833					
EB2S 160/3SF 80A 3p	80	004671834					
EB2S 160/3SF 100A 3p	100	004671835					
EB2S 160/3SF 125A 3p	125	004671836					
EB2S 160/3SF 160A 3p	160	004671837					
EB2S 160/4SF 16A 4p	16	004671840		25/13	fixed/fixed		1
EB2S 160/4SF 20A 4p	20	004671841					
EB2S 160/4SF 25A 4p	25	004671842					
EB2S 160/3SF 32A 4p	32	004671843					
EB2S 160/4SF 40A 4p	40	004671844					
EB2S 160/4SF 50A 4p	50	004671845	4			1,00	
EB2S 160/4SF 63A 4p	63	004671846					
EB2S 160/4SF 80A 4p	80	004671847					
EB2S 160/4SF 100A 4p	100	004671848					
EB2S 160/4SF 125A 4p	125	004671849					
EB2S 160/4SF 160A 4p	160	004671850					

EB2S 160 HF - high capacity, fixed protection

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 160/3HF 16A 3p	16	004671853					
EB2S 160/3HF 20A 3p	20	004671854					
EB2S 160/3HF 25A 3p	25	004671855					
EB2S 160/3HF 32A 3p	32	004671856					
EB2S 160/3HF 40A 3p	40	004671857					
EB2S 160/3HF 50A 3p	50	004671858	3			0,80	
EB2S 160/3HF 63A 3p	63	004671859					
EB2S 160/3HF 80A 3p	80	004671860					
EB2S 160/3HF 100A 3p	100	004671861					
EB2S 160/3HF 125A 3p	125	004671862					
EB2S 160/3HF 160A 3p	160	004671863					
EB2S 160/4HF 16A 4p	16	004671866		40/20	fixed/fixed		1
EB2S 160/4HF 20A 4p	20	004671867					
EB2S 160/4HF 25A 4p	25	004671868					
EB2S 160/4HF 32A 4p	32	004671869					
EB2S 160/4HF 40A 4p	40	004671870					
EB2S 160/4HF 50A 4p	50	004671871	4			1,00	
EB2S 160/4HF 63A 4p	63	004671872					
EB2S 160/4HF 80A 4p	80	004671873					
EB2S 160/4HF 100A 4p	100	004671874					
EB2S 160/4HF 125A 4p	125	004671875					
EB2S 160/4HF 160A 4p	160	004671876					

EB2S 160 adjustable protection

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 160/3LA 25A 3p	25	004671879					
EB2S 160/3LA 40A 3p	40	004671880					
EB2S 160/3LA 63A 3p	63	004671881					
EB2S 160/3LA 80A 3p	80	004671882	3			0,80	
EB2S 160/3LA 100A 3p	100	004671883					
EB2S 160/3LA 125A 3p	125	004671884					
EB2S 160/3LA 160A 3p	160	004671885		16/8	adjustable (0.63-1)/ fixed		1
EB2S 160/4LA 25A 4p	25	004671889					
EB2S 160/4LA 40A 4p	40	004671890					
EB2S 160/4LA 63A 4p	63	004671891					
EB2S 160/4LA 80A 4p	80	004671892	4			1,0	
EB2S 160/4LA 100A 4p	100	004671893					
EB2S 160/4LA 125A 4p	125	004671894					
EB2S 160/4LA 160A 4p	160	004671895					

EB2S 160 adjustable protection

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 160/3SA 25A 3p	25	004671899					
EB2S 160/3SA 40A 3p	40	004671900					
EB2S 160/3SA 63A 3p	63	004671901					
EB2S 160/3SA 80A 3p	80	004671902	3			0,80	
EB2S 160/3SA 100A 3p	100	004671903					
EB2S 160/3SA 125A 3p	125	004671904					
EB2S 160/3SA 160A 3p	160	004671905		25/13	adjustable (0.63-1)/ fixed		1
EB2S 160/4SA 25A 4p	25	004671909					
EB2S 160/4SA 40A 4p	40	004671910					
EB2S 160/4SA 63A 4p	63	004671911					
EB2S 160/4SA 80A 4p	80	004671912	4			1,0	
EB2S 160/4SA 100A 4p	100	004671913					
EB2S 160/4SA 125A 4p	125	004671914					
EB2S 160/4SA 160A 4p	160	004671915					

EB2S 160 adjustable protection

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 160/3HA 25A 3p	25	004671919					
EB2S 160/3HA 40A 3p	40	004671920					
EB2S 160/3HA 63A 3p	63	004671921					
EB2S 160/3HA 80A 3p	80	004671922	3			0,80	
EB2S 160/3HA 100A 3p	100	004671923					
EB2S 160/3HA 125A 3p	125	004671924					
EB2S 160/3HA 160A 3p	160	004671925		40/20	adjustable (0.63-1)/ fixed		1
EB2S 160/4HA 25A 4p	25	004671929					
EB2S 160/4HA 40A 4p	40	004671930					
EB2S 160/4HA 63A 4p	63	004671931					
EB2S 160/4HA 80A 4p	80	004671932	4			1,0	
EB2S 160/4HA 100A 4p	100	004671933					
EB2S 160/4HA 125A 4p	125	004671934					
EB2S 160/4HA 160A 4p	160	004671935					

ETIBREAK EB2S 250

EB2S 250 fixed protection

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 250/3LF 200A 3p	200	004671812	3	16/8	fixed/fixed	1,50	1
EB2S 250/3LF 250A 3p	250	004671813					
EB2S 250/4LF 200A 4p	200	004671825	4			1,90	
EB2S 250/4LF 250A 4p	250	004671826					

EB2S 250 fixed protection

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 250/3SF 200A 3p	200	004671838	3	25/19	fixed/fixed	1,50	1
EB2S 250/3SF 250A 3p	250	004671839					
EB2S 250/4SF 200A 4p	200	004671851	4			1,90	
EB2S 250/4SF 250A 4p	250	004671852					

EB2S 250 fixed protection

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 250/3HF 200A 3p	200	004671864	3	40/20	fixed/fixed	1,50	1
EB2S 250/3HF 250A 3p	250	004671865					
EB2S 250/4HF 200A 4p	200	004671877	4			1,90	
EB2S 250/4HF 250A 4p	250	004671878					

EB2S 250 adjustable protection

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 250/3LA 200A 3p	200	004671887	3	16/8	adjustable (0.63-1)/ adjustable (5-11)	1,50	1
EB2S 250/3LA 250A 3p	250	004671888					
EB2S 250/4LA 200A 4p	200	004671897	4			1,90	
EB2S 250/4LA 250A 4p	250	004671898					

EB2S 250 adjustable protection

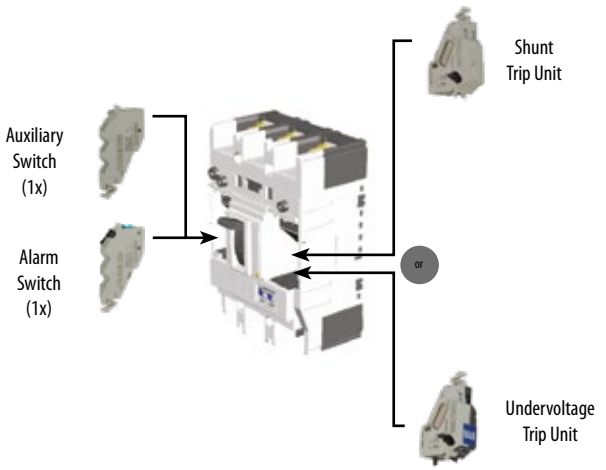
Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 250/3SA 200A 3p	200	004671907	3	25/19	adjustable (0.63-1)/ adjustable (5-11)	1,50	1
EB2S 250/3SA 250A 3p	250	004671908					
EB2S 250/4SA 200A 4p	200	004671917	4			1,90	
EB2S 250/4SA 250A 4p	250	004671918					

EB2S 250 adjustable protection

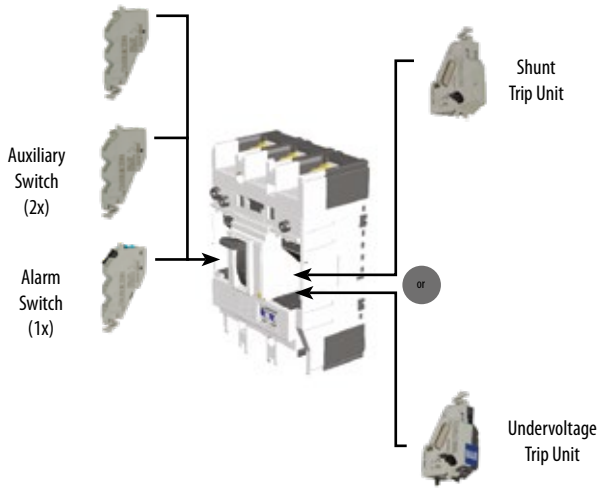
Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400V [kA]	Adjustment thermal/magnetic	kg	
EB2S 250/3HA 200A 3p	200	004671927	3	40/20	adjustable (0.63-1)/ adjustable (5-11)	1,50	1
EB2S 250/3HA 250A 3p	250	004671928					
EB2S 250/4HA 200A 4p	200	004671937	4			1,90	
EB2S 250/4HA 250A 4p	250	004671938					

Internal accessories

EB2S 160 F&A



EB2S 250 F&A



- Status indication switches mount in the left side of the MCCB.
- Only one alarm switch can be fitted to an MCCB.

Accessories for EB2S 160 and 250

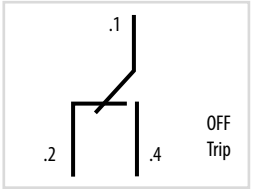
Internal accessories (can be mounted by customer)	Code No.	Description	Poles	
Auxiliary switch, PS2S 160-250	004671950	1 changeover contact	3, 4	1
Alarm switch, SS2S 160-250	004671951	1 changeover contact		
Shunt trip unit, DA2S 160-250 AC 200-240V	004671953	AC 200-240V		
Shunt trip unit, DA2S 160-250 AC 380-450V	004671954	AC 380-450V		
Shunt trip unit, DA2S 160-250 DC 24V	004671955	DC 24V		
Undervoltage trip unit, NA2S 160-250 AC 200-240V	004671956	AC 200-240V		
Undervoltage trip unit, NA2S 160-250 AC 380-450V	004671957	AC 380-450V		
Undervoltage trip unit, NA2S 160-250 DC 24V	004671958	DC 24V		

Ratings of Auxiliary switch

Volts (V)	AC Amperes (A)		DC Amperes (A)	
	Resistive Load	Inductive Load	Resistive Load	Inductive Load
480	-	-	-	-
250	3	2	0.4	0.05
125	3	2	3	2

The inductive load means power factor of no smaller than 0.4 and time constant of no larger than 7 ms.

Auxiliary Switch



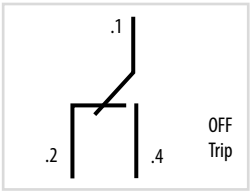
Terminal designations and function

Ratings of Alarm switch

Volts (V)	AC Amperes (A)		DC Amperes (A)	
	Resistive Load	Inductive Load	Resistive Load	Inductive Load
480	-	-	-	-
250	3	2	0.4	0.05
125	3	2	3	2

The inductive load means power factor of no smaller than 0.4 and time constant of no larger than 7 ms.

Alarm Switch



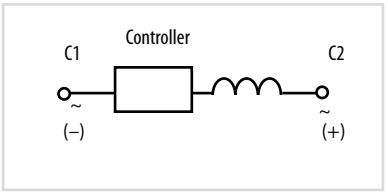
Terminal designations and function

Ratings of Shunt Trip

Rated Voltage	Voltage AC		Voltage DC
	200-240	380-450	24
Excitation Current (A)	0.014	0.0065	0.03

The permissible voltage is from 85% to 110% of the rated voltage for AC or 75% to 125% thereof for DC.
Ensure that the voltage does not drop exceeding the permissible voltage range when SHT is actuated.
Breaker contacts usually start opening within 30 ms after the rated voltage is applied to the breaker.

Shunt Trip Unit

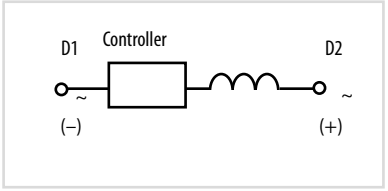


Terminal Designations of Shunt Trips

Ratings of Undervoltage Trips

Rated Voltage	Power supply capacity (VA) Voltage AC		Excitation current (mA) Voltage DC
	200-240	380-450	24
Power Supply Capacity (A)	2.8	2.3	23

Undervoltage Trips



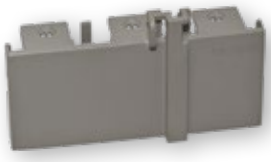
Terminal Designations of Undervoltage Trips

External accessories

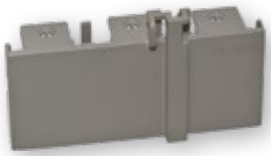
Accessories for EB2S 160

	Code No.	Poles	
Breaker mounted handle, RO2S 160	004671970	3, 4	1
Panel mounted handle, RO2S 160P	004671971		
Attach busbar, ZB2S 160/3 Spread	004671972	3	set = 3pcs
Attach busbar, ZB2S 160/4 Spread	004671977	4	set = 4pcs
Interpole barrier, IZ2S 160	004671973	3	
Terminal covers, PR2S 160/3 long	004671974	3	
Terminal covers, PR2S 160/4 long	004671990	4	
Terminal covers, PR2S 160/3 wide	004671991	3	1
Terminal covers, PR2S 160/4 wide	004671992	4	
Terminal covers, PR2S 160/3 RC	004671993	3	
Terminal covers, PR2S 160/4 RC	004671994	4	
Din Rail Adaptor, DIN-S 160	004671975	3, 4	
Rear Connections, RC2S 160/3	004671978	3	set = 3pcs
Rear Connections, RC2S 160/4	004671979	4	set = 4pcs

RO2S



PR2S RC

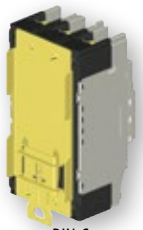


PR2S RC

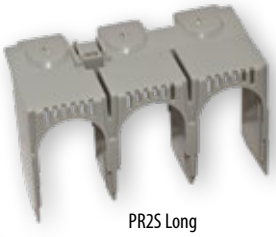
PR2S Long

Accessories for EB2S 250

	Code No.	Poles	
Motor operator, MO2S 250 AC230-240V	004671980	3, 4	1
Motor operator, MO2S 250 DC24V	004671981		
Breaker mounted handle, RO2S 250	004671982		
Panel mounted handle, RO2S 250P	004671983		
Attach busbar, ZB2S 250/3 Spread	004671984	3	set = 3pcs
Attach busbar, ZB2S 250/4 Spread	004671995	4	set = 4pcs
Rear Connections, RC2S 250/3	004671996	3	set = 3pcs
Rear Connections, RC2S 250/4	004671997	4	set = 4pcs
Cable Clamps, SP2S 250/3	004671998	3	set = 3pcs
Cable Clamps, SP2S 250/4	004671999	4	set = 4pcs
Interpole barrier, IZ2S 250	004671985	3, 4	1
Terminal covers, PR2S 250/3 short	004671986	3	
Terminal covers, PR2S 250/4 short	004672000	4	
Terminal covers, PR2S 250/3 long	004672001	3	
Terminal covers, PR2S 250/4 long	004672002	4	
Terminal covers, PR2S 250/3 spread	004672003	3	
Terminal covers, PR2S 250/4 spread	004672004	4	
Terminal covers, PR2S 250/3 RC	004672005	3	
Terminal covers, PR2S 250/4 RC	004672006	4	
Terminal covers, PR2S 250/3 CC	004672007	3	
Terminal covers, PR2S 250/4 CC	004672008	4	
Busbar adapter 3p, DA-60/250/3/FE-5	001696162	3	
Busbar adapter 4p, DA-60/250/4/FE-5	001696163	4	
DIN 125 & 250	004671186	3, 4	

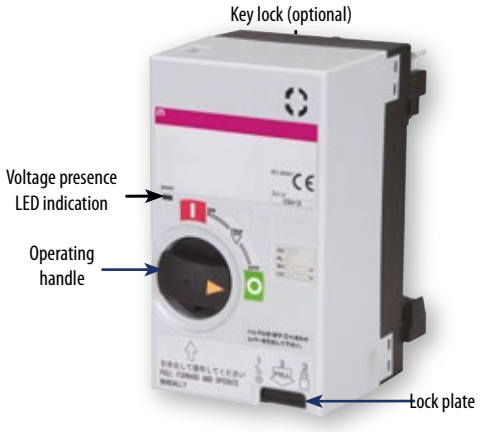

DIN-S


MO2S


PR2S Long


PR2S Short


DA-60



Features

- Installation and removal ease: Simply rotate two knobs allows the motor operator to be installed on or removed from the breaker.
- High-speed, stable actuation: The operating time as short as up to 0.1 second makes it possible to use the motor operators for synchronized closing of breakers.
- Silent operation: MO2S use a direct drive system, providing operational silence.
- “Lock-in off” capability: This capability allows the breaker to be padlocked in the OFF state. Up to thee padlocks with a 5 to 8 mm hasp diameter can be used. Padlocks are not supplied.

Ratings and specifications

Rated operational voltage (1*)		230-240V AC
		24V DC
Peak steady-state/starting current, A (2*)	230-240V AC	3.5/7
	24V DC	18/26
Operation method		Motor driven (direct drive system)
Operating time, s at rated voltage	ON	0.1
	OFF/RESET	0.1 (3*, 4*)
Operating switch ratings		100V 0.1A (open voltage/current: 44V/4 mA) (*5)
Power supply required		300VA or higher
Dielectric withstand voltage (for one minute)		1500V AC(1000V AC -> 24V DC)
Weight		1.4kg

1*: Permissible operating range is 85% to 110%.

2*: The currents shown are at the maximum rated operational voltage.

3*: The operating time is the value when the rated operational voltage is supplied. Allow the longer time for the motor operator to complete the operation.

4*: The motor operator is of a short time duty. Do not subject it to more than 10 continuous ON-OFF operations. If this occurs, allow the motor operator to cool for at least 15 minutes.

5*: When the rated operational voltage is DC24V the open voltage will be DC22V.

Motorized operation

The motor operator has an input-signal self-hold circuit; closing the ON or OFF switch (see circuit diagrams shown bellow) momentarily allows activating the motor operator. To reset the tripped breaker to the OFF position, close the OFF (RESET) switch. The voltage presence LED indication is on when the power is supplied to the motor operator.

n Auto reset feature (optional)
The auto reset feature allows the breaker to be automatically reset approx. 1.5 seconds after the breaker trips open. This option contains auto-reset switches and does not require to use auxiliary or alarm switches installed in the breaker.

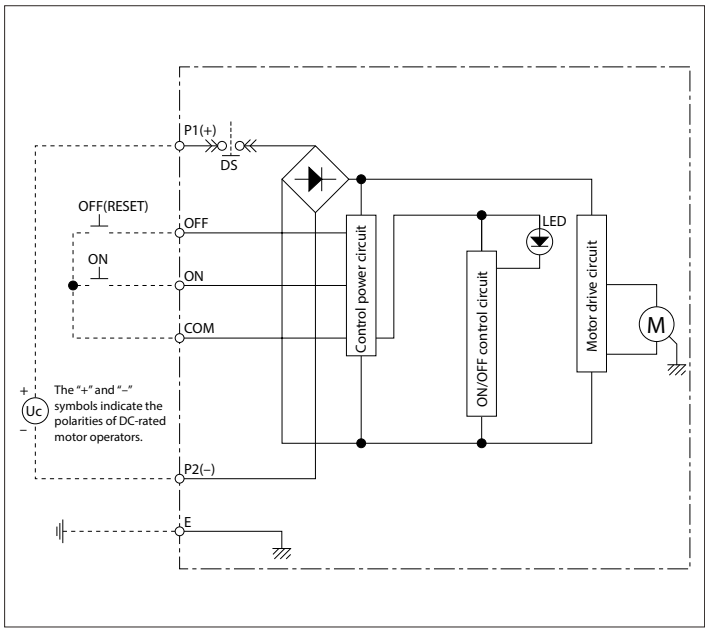
Note : that after the thermal OCR trips a thermal-magnetic breaker, the breaker cannot be immediately closed though it can be auto-reset. Wait for a few minutes after the tripping and provide a close signal to the breaker. This option resets the tripped breaker automatically, regardless of the cause of the tripping.

Manual operation

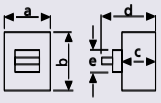
Pull the operating handle out. Rotating the handle counterclockwise turns ON the breaker and clockwise turns OFF or resets the breaker.

Operation precautions
1. Ensure that the actual operation voltage ranges from 85% to 110% of the rated one.
2. Use operation switches whose ratings and power capacity is as specified in the "Ratings and Specifications" table on the previous page.
3. Use noise filters if the control power supply of the motor operator is shared by peripheral devices. Otherwise, power supply noise may cause malfunction of the peripheral devices.
4. When the motors are used in conjunction with the mechanical interlock the electrical interlock should be provided between the motors in order to avoid the simultaneous closing. The followings are the available electrical interlock cables.

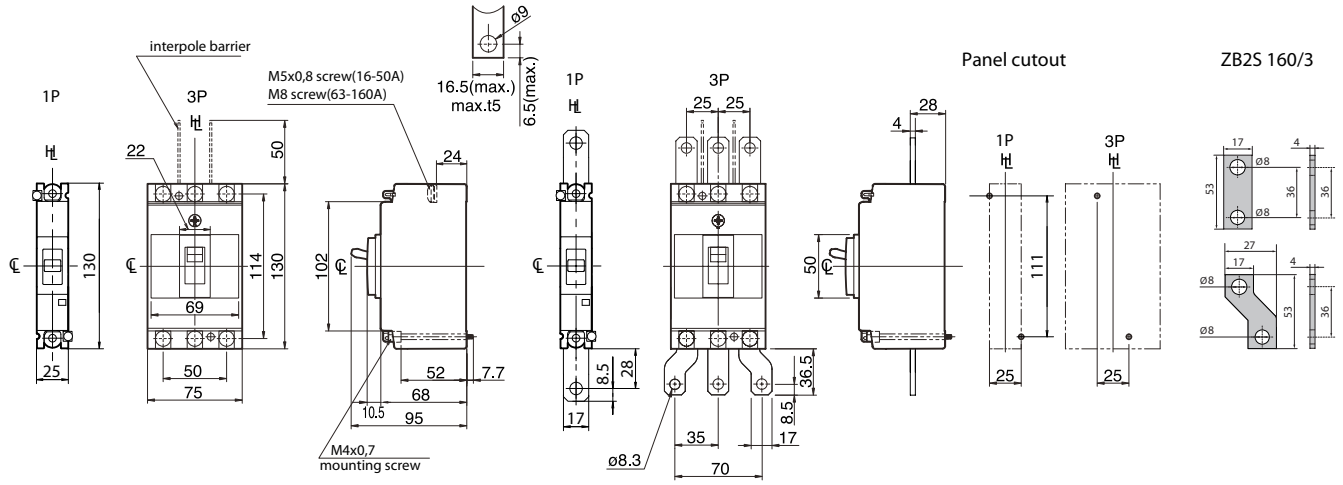
Wiring diagram



*F - fixed, A - adjustable

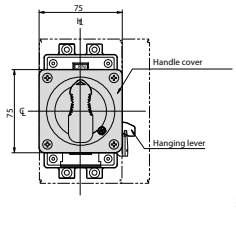
Product series	description	unit	condition	EB2S 160 F			EB2S 160 A			EB2S 250 F			EB2S 250 A		
Model-type				LF	SF	HF	LA	SA	HA	LF	SF	HF	LA	SA	HA
Number of poles				3, 4											
Nominal current ratings															
	In	(A)	50°C	16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160			25, 40, 63, 80, 100, 125, 160			200, 250			200, 250		
Electrical characteristics															
Rated insulation voltage	Ui	(V)		690	690	690	690	690	690	690	690	690	690	690	690
Rated impulse withstand voltage	Uimp	(kV)		8	8	8	8	8	8	8	8	8	8	8	8
Ultimate breaking capacity	Icu	(kA)	690V AC	-	-	6	-	-	6	-	-	4	-	-	4
(IEC, JIS, AS/NZS)			525V AC	6	7,5	10	6	7,5	10	6	10	25	6	7,5	10
			440V AC	10	15	25	10	15	25	10	15	30	10	15	30
			380/400/415V AC	16	25	40	16	25	40	16	25	40	16	25	40
			240V AC	25	35	50	25	35	50	25	35	85	25	35	85
			250V DC	13	20	25	13	20	25	13	15	25	13	15	25
			125V DC	20	30	40	20	30	40	20	25	40	20	25	40
Service breaking capacity	Ics	(kA)	690V AC	-	-	3	-	-	3	-	-	2	-	-	2
(IEC, JIS, AS/NZS)			525V AC	3	4	7,5	3	4	7,5	3	7,5	13	3	6	7,5
			440V AC	5	7,5	13	5	7,5	13	5	12	15	5	12	15
			380/400/415V AC	8	13	20	8	13	20	8	19	20	8	19	20
			240V AC	13	18	25	13	18	25	13	27	43	13	27	43
			250V DC	7	10	13	7	10	13	7	12	13	7	12	13
			125V DC	10	15	20	10	15	20	10	19	20	10	19	20
Rated short-circuit making capacity	Icm	(kA)	peak	33	33	33	33	33	33	33	33	33	33	33	33
Rated short-circuit withstand current	Icw	(kA)	rms	-	-	-	-	-	-	-	-	-	-	-	-
Protection															
Fixed thermal, fixed magnetic					■			-			■			-	
Adjustable thermal, fixed magnetic					-			■			-			-	
Adjustable thermal, adjustable magnetic					-			-			-			■	
Utilization category					A			A			A			A	
Outline dimensions															
	height (b)	(mm)			130			130			165			165	
	width (a)	(mm)	3 pole		75			75			105			105	
	width (a)	(mm)	4 pole		100			100			140			140	
	depth (c)	(mm)			68			68			68			68	
	depth (d)	(mm)			93			93			95			95	
	toggle cutout(e)	(mm)			45			45			45			45	
Weight		(kg)	3 pole		0.8			0.8			1.5			1.5	
			4 pole		1.0			1.0			1.9			1.9	
Operation															
Direct Opening Action					■			■			■			■	
Trip button					■			■			■			■	
Suitable for isolation					■			■			■			■	
Standards				IEC 60947-2, EN 60947-2											

Dimensions of EB2S 160. Handles.

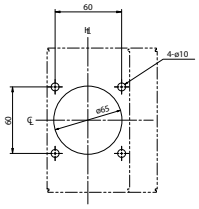


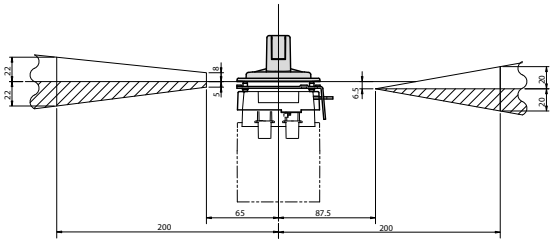
RO2S 160

Overall dimensions



Panel cutout dimensions

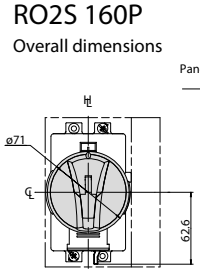


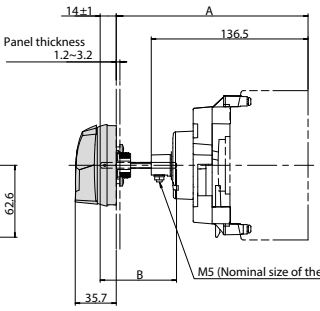


Positional relationship between the shaft and the handle. Side view of the circuit breaker.
The shaft must not extend beyond the shaded area.

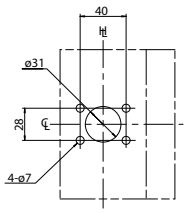
RO2S 160P

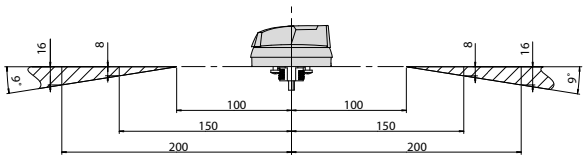
Overall dimensions





Panel cutout dimensions

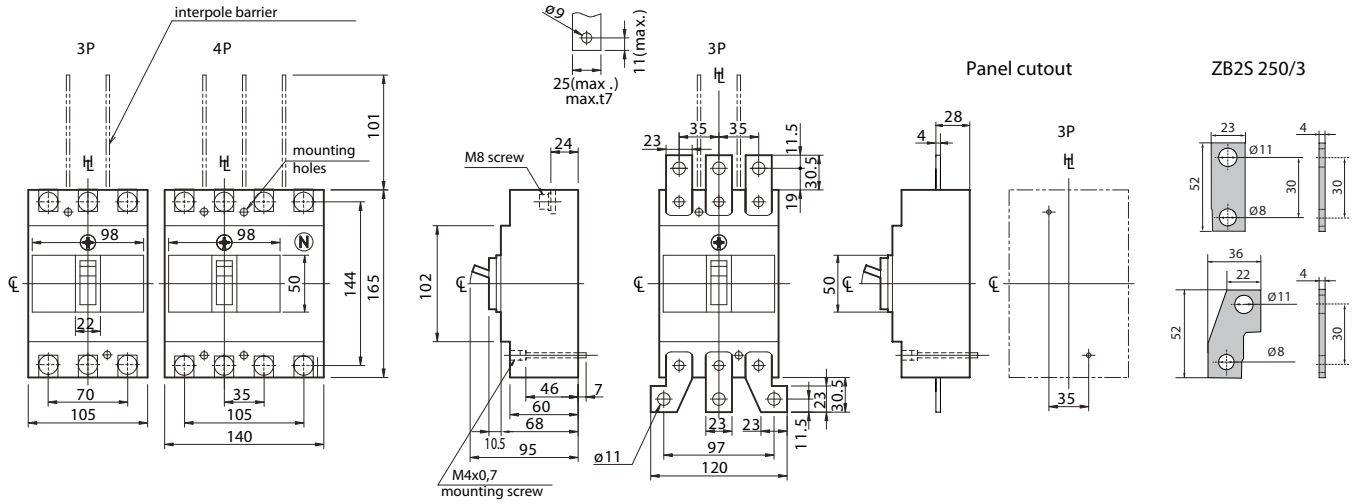




Positional relationship between the shaft and the handle. Side view of the circuit breaker.
The shaft must not extend beyond the shaded area.

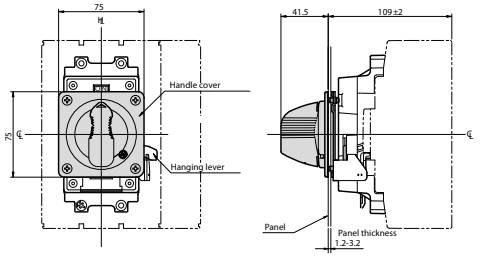
A±1,1	B±0,5	
175 min	74,5	* min – means the minimum length A with the shaft trimmed; * max – means the maximum length A without trimming the shaft; + The shaft can be trimmed to the required length.
453 max	352,5	A: Distance from the panel surface to the mounting surface of the circuit breaker. B: Length of the square shaft used.

Dimensions of EB2S 250. Handles.

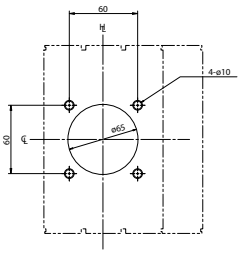


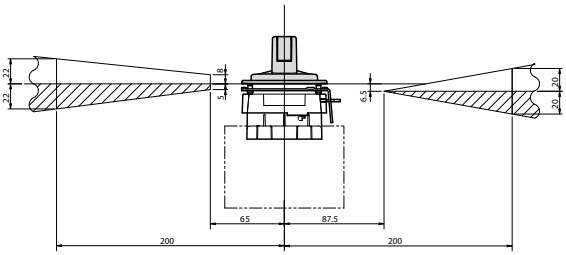
RO2S 250

Overall dimensions



Panel cutout dimensions

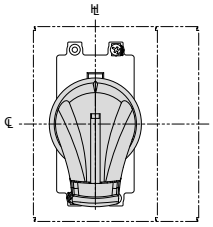


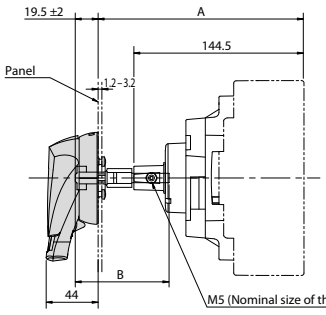


Positional relationship between the shaft and the handle. Side view of the circuit breaker.
The shaft must not extend beyond the shaded area.

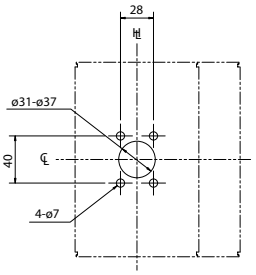
RO2S 250P

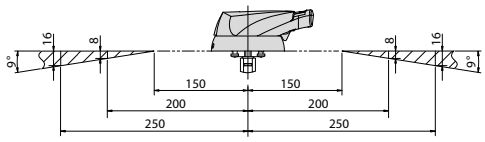
Overall dimensions





Panel cutout dimensions

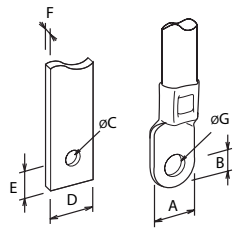




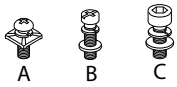
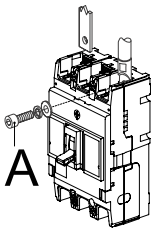
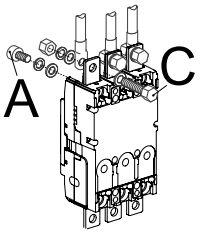
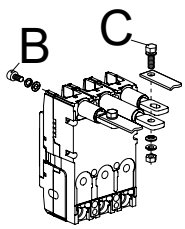
Positional relationship between the shaft and the handle. Side view of the circuit breaker.
The shaft must not extend beyond the shaded area.

A±1,1	B±0,5	
175 min	80	** min – means the minimum length A with the shaft trimmed; * max – means the maximum length A without trimming the shaft; + The shaft can be trimmed to the required length.
453 max	358	A: Distance from the panel surface to the mounting surface of the circuit breaker. B: Length of the square shaft used.

Dimensions of connected components



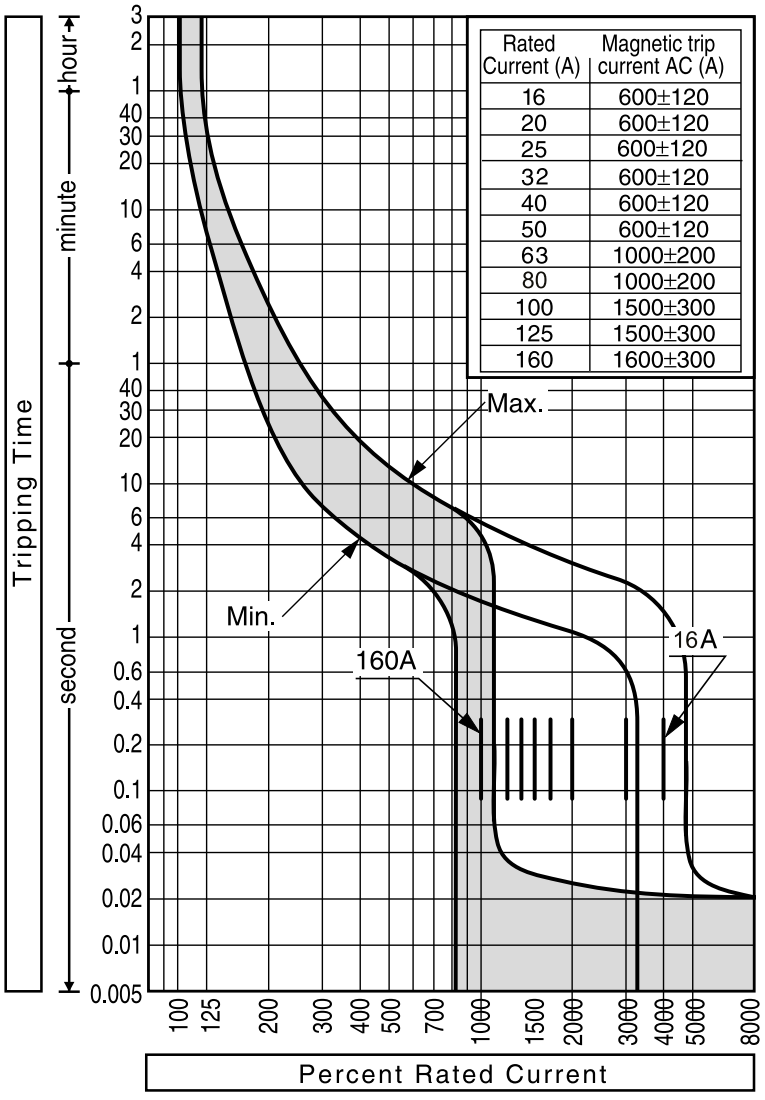
	EB2S 160	EB2S 250
	mm	mm
A	16,5	≤22
B	9	≤11
C	9	8,4
D	16,5	≤25
E	9	≤11
F	≤5	≤7
G	9	9

Type of connecting element	Front connection		Rear connection
	cable lug	busbar adapters	
			

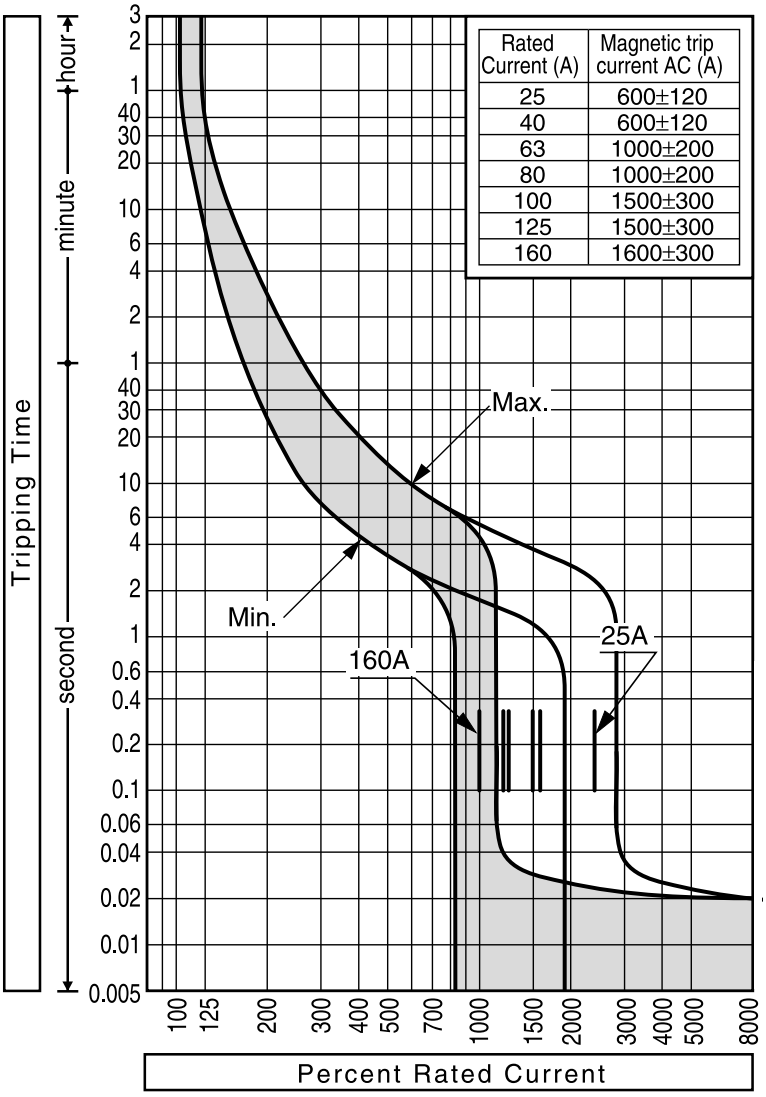
Frame size	Rated current	Supplied with the MCCB	Supplied with the MCCB	Supplied with busbar adapters	Supplied with the MCCB	Supplied with the MCCB
EB2S 160	16 - 50 A	M5x14 (A) 2,3 ... 3,4 (Nm)	M5x14 (A) 2,3 ... 3,4 (Nm)	M8x22 (C) 11,8 ... 18,6 (Nm)	M5x14 (B) 2,3 ... 2,8 (Nm)	M8x23 (C) 2,3 ... 4,5 (Nm)
	63 - 160 A	M8x14 (B) 4,9 ... 6,9 (Nm)	M8x14 (B) 4,9 ... 6,9 (Nm)	M8x22 (C) 11,8 ... 18,6 (Nm)	M6x18 (C) 7,8 ... 11,8 (Nm)	M8x22 (C) 11,8 ... 18,6 (Nm)
EB2S 250	200 - 250 A	M8x18 (C) 7,8 ... 12,7 (Nm)	M8x18 (C) 7,8 ... 12,7 (Nm)	M10x25 (C) 22,5 ... 37,2 (Nm)	M6x18 (C) 7,8 ... 11,8 (Nm)	M8x25 (C) 11,8 ... 18,6 (Nm)

Time current characteristics I/t

EB2S 160 LF, EB2S 160 SF, EB2S 160 HF

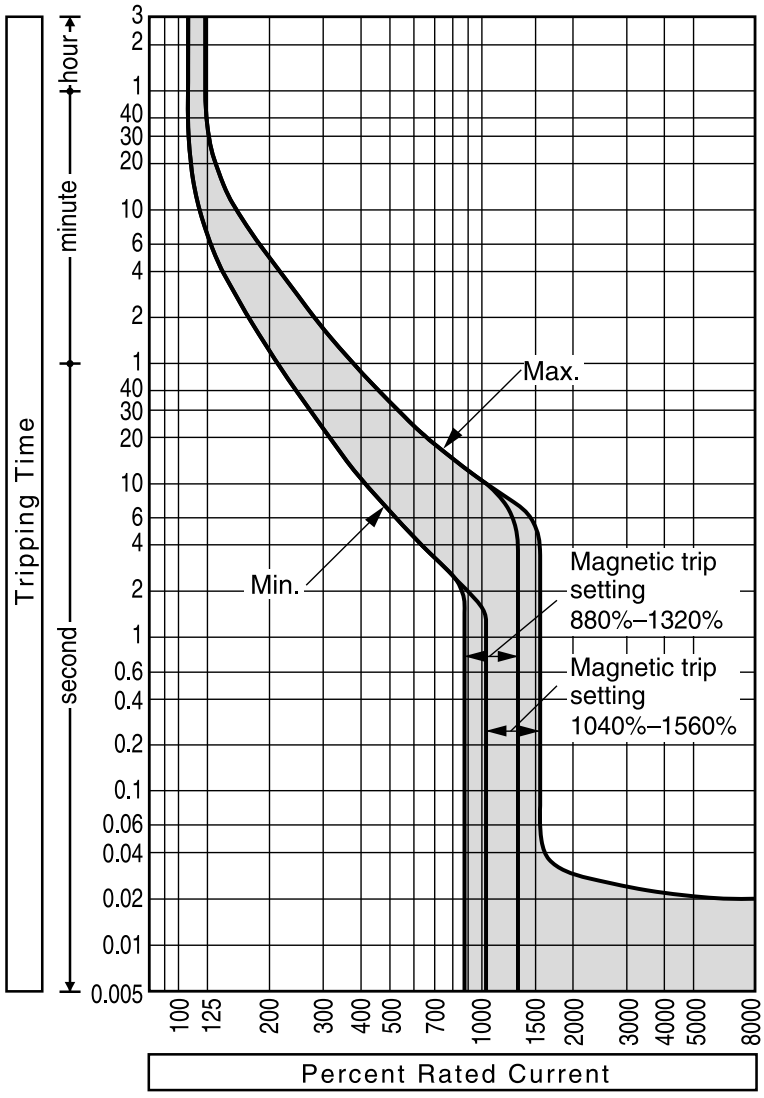


EB2S 160 LA, EB2S 160 SA, EB2S 160 HA



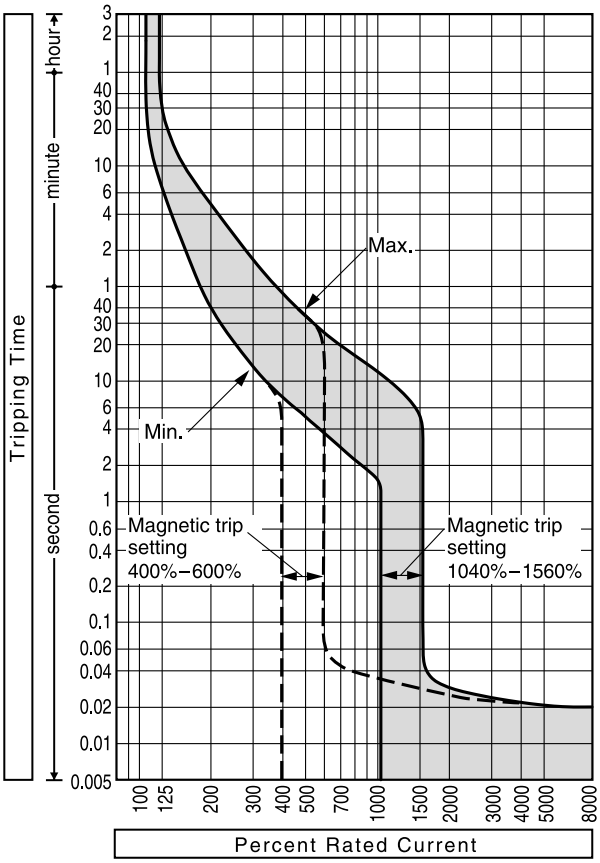
Rated Current (A)	Magnetic trip current AC (A)
25	600±120
40	600±120
63	1000±200
80	1000±200
100	1500±300
125	1500±300
160	1600±300

EB2S 250 LF, EB2S 250 SF, EB2S 250 HF

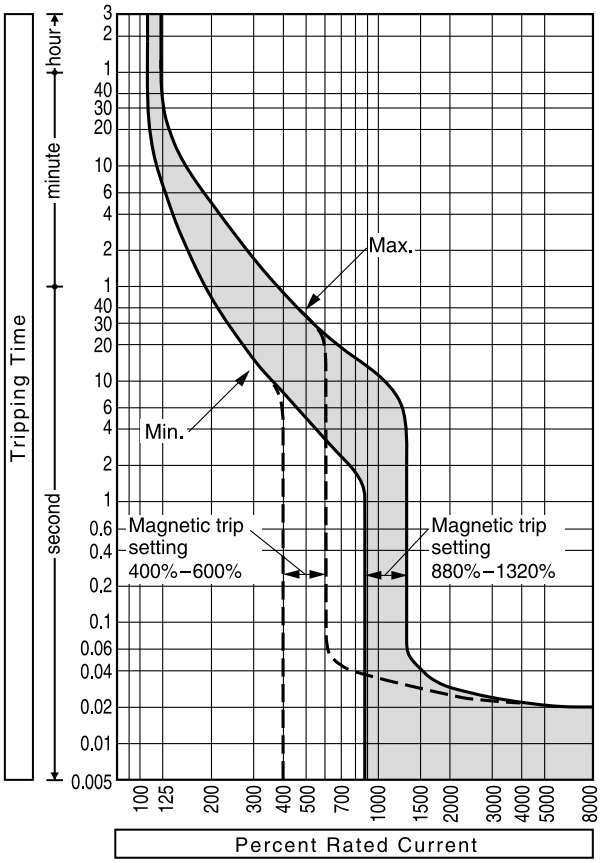


EB2S 250 LA, EB2S 250 SA, EB2S 250 HA

200A



250A



ETIBREAK Low Voltage Moulded Case Circuit Breakers And Low Voltage Switch Disconnectors

Moulded Case Circuit Breaker ETIBREAK EB2

Low voltage moulded case circuit breakers are used for the switching and protection of power supply cables, motors and other electrical equipment against overloads and short circuit faults. They provide, beside protection function, other functions as remote ON/OFF operation, undervoltage protection, main switch etc.
They are available in range from 20 A up to1600 A in 3 and 4 pole versions.

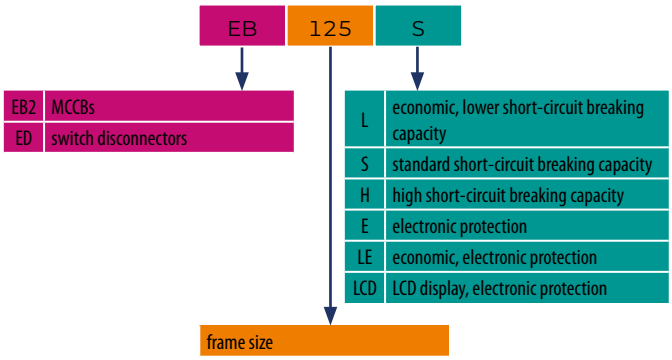
Advantages:

- Small dimensions,modular sizes
- Possibility of field-instalable accessories – up to 1600A frame size series 2 (EB2)
- High short circuit breaking capacity (up to 125 kA)
- Fast break mechanism
- Reduced energy let through I^2t – minimises thermal stresses
- Reduced tripping time – minimises damage after fault
- Reduced peak short current ampacity – minimised electrodynamic stresses on conductors and protected equipment
- Installation on mounting plate, 125 & 250 A frame size also on DIN-rail
- Wide range of accessories
- Compact design with high mechanical strength
- High dielectric withstand voltages (8 kV a.c.)
- Voltage level up to 690 V a.c. and 250 V d.c. – only MCCB's with thermal-magnetic tripping unit
- Direct opening – recommendation according to standard IEC 60204-1 – up to 1600 A frame size series 2 (EB2)
- Common internal accessories – up to 1600 A frame size series 2 (EB2)
- Visual safety
- Unsurpassed flexibility
- Direct drive system
- Short-circuit current limitation via rapid arc extinguishing
- Minimal arc extinguishing time due to a specialized contact group design
- Adjustable thermal and magnetic protection
- Cable lug compatibility
- Mountable on a panel
- High voltage rating: up to 690V AC and 250V DC (for thermal-magnetic breakers only)
- Universal accessories for all ETIBREAK2 series frames

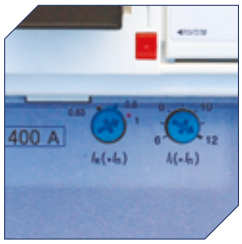
Technical data

Dimensions	125, 160&250, 400&630, 800, 1000, 1250, 1600
Rated current	20 - 1600A
Number of poles	3
Impulse withstand voltage Uimp	8 kV
Rated insulation voltage Ui	800 V
Breaking capacity Icu	25 ÷ 125 kA
Standards	IEC 60947-2, EN 60947-2

ETIBREAK2 accessories fit all frame sizes (except undervoltage release), install easily without tools, and are color-coded for identification.

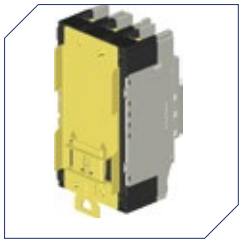


The model and type of the MCCB can be identified by the marking on the housing.

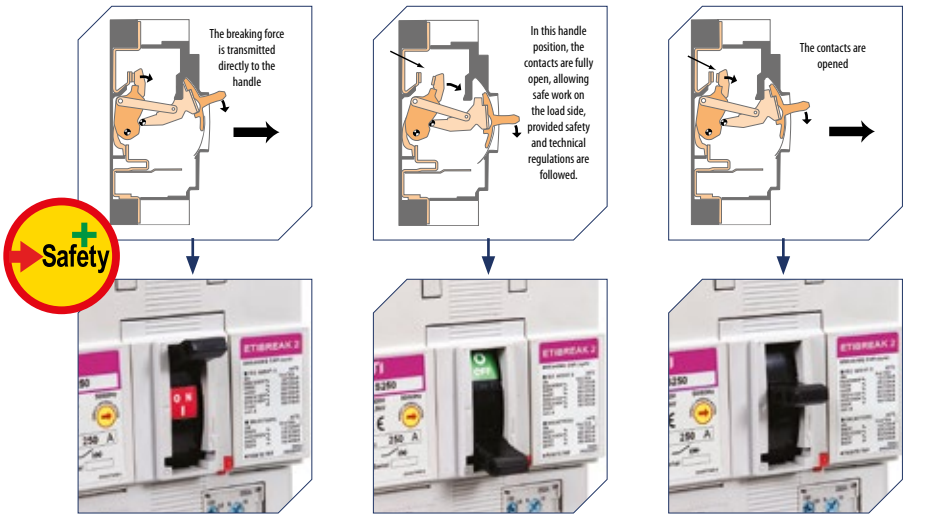


Magnetic protection in EB2 400 breakers is adjustable from 6 to 12 x I_n.

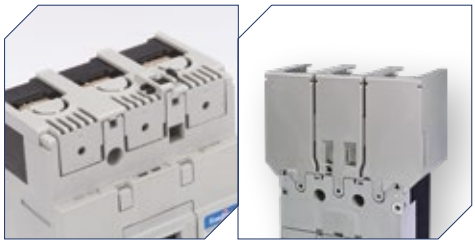
ETIBREAK2 MCCBs offer adjustable thermal and magnetic protections. Overload protection ranges from 0.63 to 1 x I_n, and magnetic protection is adjustable from 6 to 10 (12, 13) x I_n for EB2 125-250 breakers.



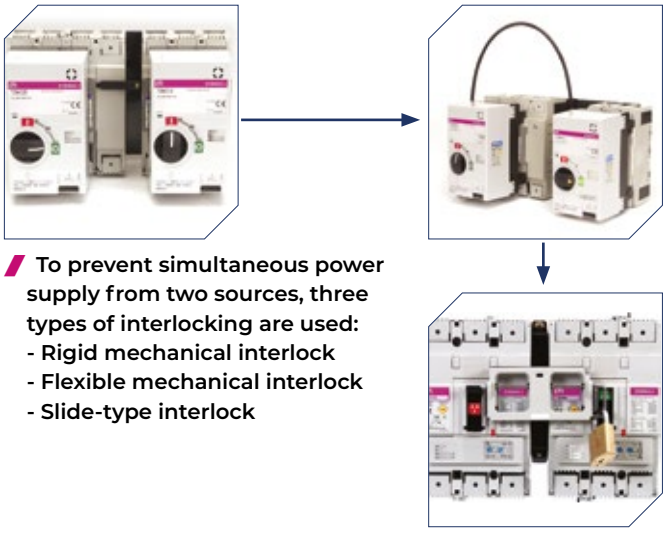
ETIBREAK2 MCCBs in the EB2 125 frame can be mounted on a TH 35 rail using an adapter. The design also allows alignment with MCBs (45mm height).



IEC 60204-1 recommends devices with direct disconnection to reduce short-circuit risks. The EB2 breaker handle and indicators align with the contact position, ensuring clear status visibility. ETIBREAK2 breakers, with direct disconnection, are among the safest for industrial use. During normal operation, color indicators show ON or OFF. In case of an emergency trip, the indicators are fully hidden, and only the black handle remains visible.



- Risk of contact with live parts is minimized:
  - Multiple terminal protective cover options (IP 20)
  - Handle protection (IP 30)
  - Partition barriers ensure maximum insulation between breaker terminals
  - Double insulation of the housing

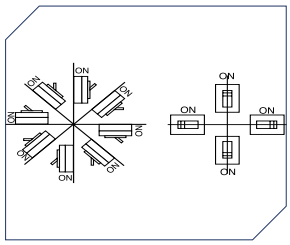


- To prevent simultaneous power supply from two sources, three types of interlocking are used:
  - Rigid mechanical interlock
  - Flexible mechanical interlock
  - Slide-type interlock

- Breakers with electronic trip units offer overload protection adjustable from 0.4 to 1 x I_n and feature seven preset magnetic protection settings.

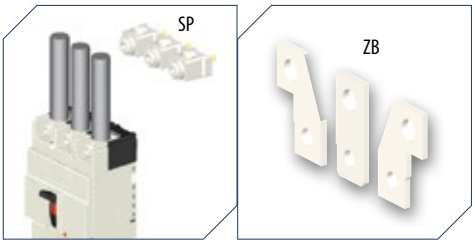
- Plug-in design allows easy breaker replacement without disrupting connections.

- Manual operation of breakers is enabled by rotary handles, mountable on the breaker or cabinet door. Yellow-red handles are used for operating the 'backup' circuit.

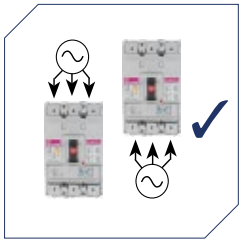


- ETIBREAK2 breakers can be installed at any angle without affecting performance.

- Remote breaker operation is enabled by a motor drive.

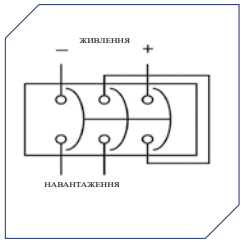


- Special SP 2 clamps are used for connecting flexible (stranded) conductors. The ZB 2 busbar adapter is used for large cross-section or multiple conductor connections.

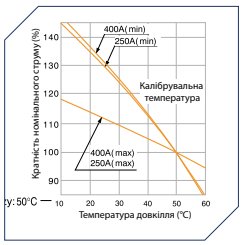


- ETIBREAK2 breakers support top or bottom load connections without affecting protection characteristics.

- All breaker components are eco-friendly: PBDE/PBB-free thermoplastic rubber, cadmium-free contacts, and lead-free soldering.



- All thermal-magnetic breakers can be used in DC circuits up to 250V.



- ETIBREAK2 breakers are calibrated at 50°C

Thermal magnetic
Thermal magnetic MCCBs are available in frame sizes from 125A to 800A. All frame sizes have adjustable both thermal and magnetic trip settings. Overload protection is adjustable between 63 % and 100 % of I_n, meanwhile short-circuit between 6-13xI_n (more details in the technical part of catalogue).

ETIBREAK EB2 125

Legend: EB2 -> series 2
L -> economic, lower short-circuit breaking capacity
S -> standard short-circuit breaking capacity
H -> high short-circuit breaking capacity

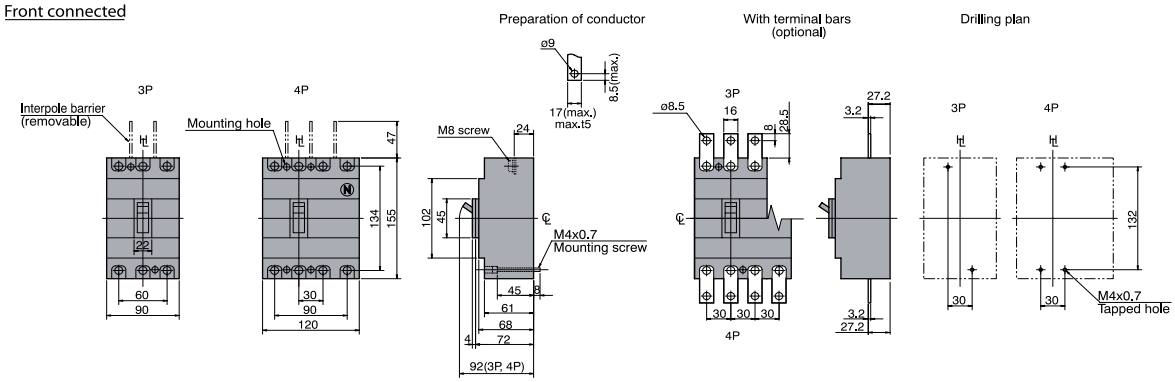
Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/ magnetic	kg	
EB2 125/3L 20A 3p	20	004671021	3	25/19	0,63-1/ 6-12	1,1	1
EB2 125/3L 32A 3p	32	004671022			0,63-1/ 6-12		
EB2 125/3L 50A 3p	50	004671023			0,63-1/ 6-12		
EB2 125/3L 63A 3p	63	004671024			0,63-1/ 6-12		
EB2 125/3L 100A 3p	100	004671025			0,63-1/ 6-12		
EB2 125/3L 125A 3p	125	004671026			0,63-1/ 6-10		
EB2 125/4L 20A 4p	20	004671027	4		0,63-1/ 6-12	1,4	
EB2 125/4L 32A 4p	32	004671028			0,63-1/ 6-12		
EB2 125/4L 50A 4p	50	004671029			0,63-1/ 6-12		
EB2 125/4L 63A 4p	63	004671030			0,63-1/ 6-12		
EB2 125/4L 100A 4p	100	004671031			0,63-1/ 6-12		
EB2 125/4L 125A 4p	125	004671032			0,63-1/ 6-10		
EB2 125/3S 20A 3p	20	004671041	3	36/36	0,63-1/ 6-12	1,1	1
EB2 125/3S 32A 3p	32	004671042			0,63-1/ 6-12		
EB2 125/3S 50A 3p	50	004671043			0,63-1/ 6-12		
EB2 125/3S 63A 3p	63	004671044			0,63-1/ 6-12		
EB2 125/3S 100A 3p	100	004671045			0,63-1/ 6-12		
EB2 125/3S 125A 3p	125	004671046			0,63-1/ 6-10		
EB2 125/4S 20A 4p	20	004671047	4		0,63-1/ 6-12	1,4	
EB2 125/4S 32A 4p	32	004671048			0,63-1/ 6-12		
EB2 125/4S 50A 4p	50	004671049			0,63-1/ 6-12		
EB2 125/4S 63A 4p	63	004671050			0,63-1/ 6-12		
EB2 125/4S 100A 4p	100	004671051			0,63-1/ 6-12		
EB2 125/4S 125A 4p	125	004671052			0,63-1/ 6-10		
EB2 125/3H 20A 3p	20	004672101	3	65/36	0,63-1/ 6-12	1,1	1
EB2 125/3H 32A 3p	32	004672102			0,63-1/ 6-12		
EB2 125/3H 50A 3p	50	004672103			0,63-1/ 6-12		
EB2 125/3H 63A 3p	63	004672104			0,63-1/ 6-12		
EB2 125/3H 100A 3p	100	004672105			0,63-1/ 6-12		
EB2 125/3H 125A 3p	125	004672106			0,63-1/ 6-10		
EB2 125/4H 20A 4p	20	004672107	4		0,63-1/ 6-12	1,4	
EB2 125/4H 32A 4p	32	004672108			0,63-1/ 6-12		
EB2 125/4H 50A 4p	50	004672109			0,63-1/ 6-12		
EB2 125/4H 63A 4p	63	004672110			0,63-1/ 6-12		
EB2 125/4H 100A 4p	100	004672111			0,63-1/ 6-12		
EB2 125/4H 125A 4p	125	004672112			0,63-1/ 6-10		
EB2 125/3V 20A 3p 1000V	20	004671371	3	4/4*	0,63-1/ 6-12	1,1	1
EB2 125/3V 32A 3p 1000V	32	004671372			0,63-1/ 6-12		
EB2 125/3V 50A 3p 1000V	50	004671373		6/4*	0,63-1/ 6-12		
EB2 125/3V 63A 3p 1000V	63	004671374			0,63-1/ 6-12		
EB2 125/3V 100A 3p 1000V	100	004671375			0,63-1/ 6-12		
EB2 125/3V 125A 3p 1000V	125	004671376			0,63-1/ 6-10		

*1100V AC

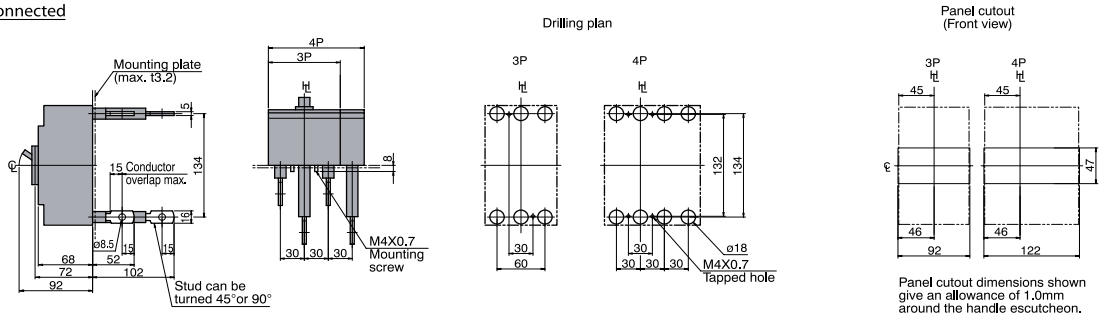
Dimensions

EB2 125

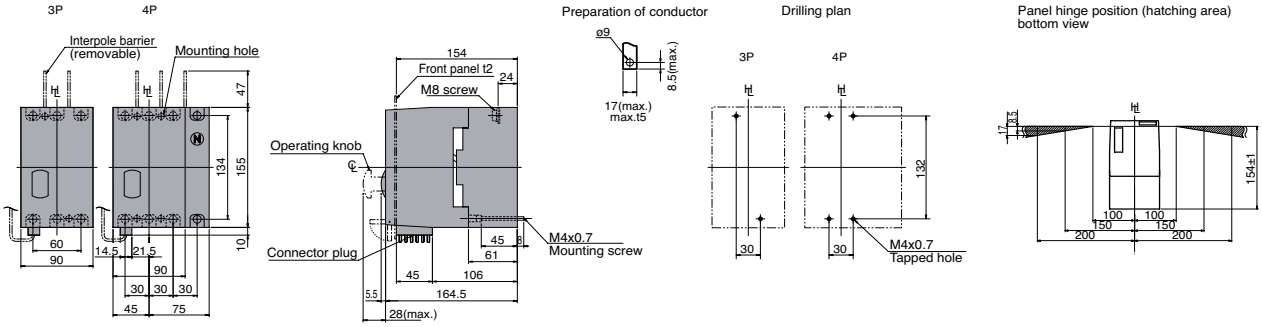
Front connected



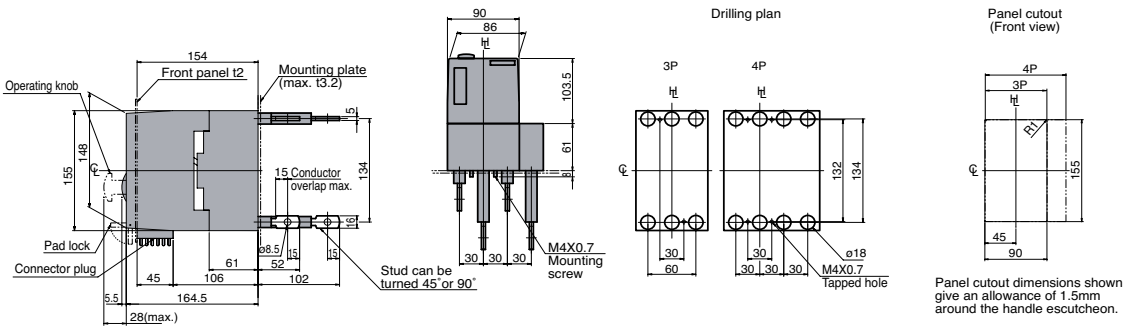
Rear connected



Front connected with Motor Operator



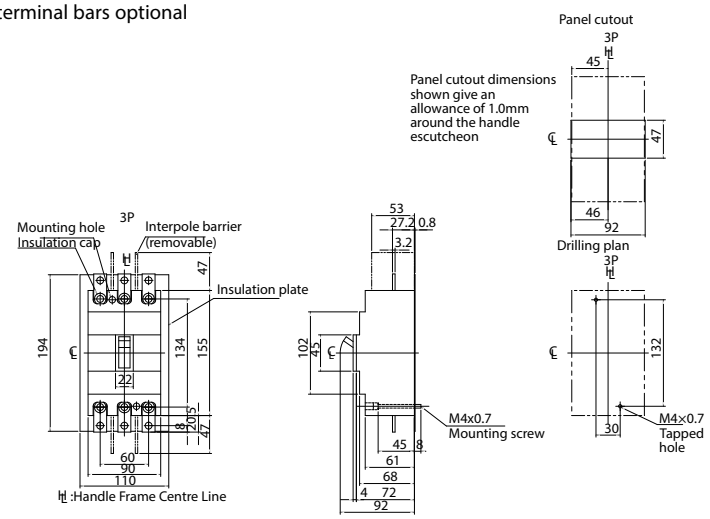
Rear connected with Motor Operator



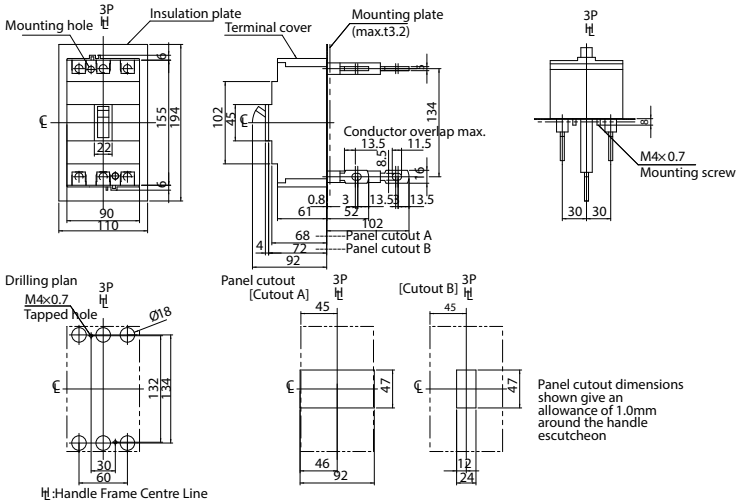
Dimensions

EB2 125 1000V

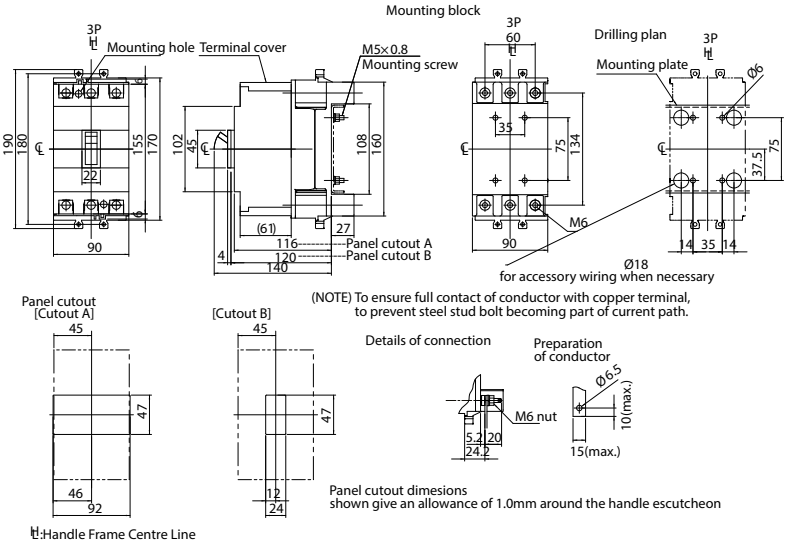
Front connected with terminal bars optional



Rear connected



Plug in (PMB)



ETIBREAK EB2 160/250

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/ magnetic	kg	
EB2 250/3L 200A 3p	200	004671072	3	25/19	0,63-1/ 6-13	1,5	1
EB2 250/3L 250A 3p	250	004671073			0,63-1/ 6-10		
EB2 250/4L 200A 4p	200	004671075	4		0,63-1/ 6-13	1,9	
EB2 250/4L 250A 4p	250	004671076			0,63-1/ 6-10		
EB2 160/3S 160A 3p	160	004671061	3	36/36	0,63-1/ 6-13	1,5	1
EB2 250/3S 200A 3p	200	004671082			0,63-1/ 6-13		
EB2 250/3S 250A 3p	250	004671083			0,63-1/ 6-10		
EB2 160/4S 160A 4p	160	004671062	4		0,63-1/ 6-13	1,9	
EB2 250/4S 200A 4p	200	004671085			0,63-1/ 6-13		
EB2 250/4S 250A 4p	250	004671086			0,63-1/ 6-10		
EB2 160/3H 160A 3p	160	004672120	3	65/36	0,63-1 / 6-13	1,5	1
EB2 250/3H 160A 3p	160	004672130			0,63-1 / 6-13		
EB2 250/3H 200A 3p	200	004672131			0,63-1 / 6-13		
EB2 250/3H 250A 3p	250	004672132			0,63-1 / 6-10		
EB2 160/4H 160A 4p	160	004672121	4		0,63-1 / 6-13	1,9	
EB2 250/4H 160A 4p	160	004672133			0,63-1 / 6-13		
EB2 250/4H 200A 4p	200	004672134			0,63-1 / 6-13		
EB2 250/4H 250A 4p	250	004672135			0,63-1 / 6-10		
EB2 250/3V 160A 3p 1000V	160	004671377	3	6/4*	0,63-1 / 6-13	1,5	1
EB2 250/3V 250A 3p 1000V	250	004671378			0,63-1 / 6-10		

*1100V AC

Microprocessor's MCCBs

Microprocessor's MCCBs are available in frame sizes from 250 A up to 1600 A, with rated current from 40 A up to 1600 A. All frame sizes have adjustable thermal and magnetic protection.
Series 2: Protection against overload can be adjusted between 0,4 – 1 x I_n, meanwhile short-circuit protection has already preset different curves, which can be easily selected according to the type of load.

Optional Functions:

A - Standard relay with LSI Characteristic (where no letters are present then MCCB is A type)
P - Preferential Trip Alarm
G - Ground Fault
N - Neutral Protection
S - Phase rotation function
C - Comunication function
W - Electrical energy pulse
H - Harmonic current

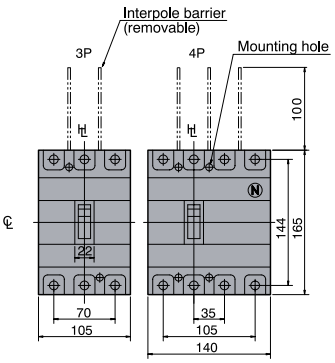
ETIBREAK EB2 250

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/magnetic	kg	
EB2 250/3LE 40A 3p	40	004671351	3	36/36	0,4-1/ adjustable	2,5	1
EB2 250/3LE 125A 3p	125	004671352					
EB2 250/3LE 160A 3p	160	004671353					
EB2 250/3LE 250A 3p	250	004671354					
EB2 250/4LE 40A 4p	40	004671355	4			3,3	
EB2 250/4LE 125A 4p	125	004671356					
EB2 250/4LE 160A 4p	160	004671357					
EB2 250/4LE 250A 4p	250	004671358					
EB2 250/3E 40A 3p	40	004671301	3	70/70	0,4-1/ adjustable	2,5	1
EB2 250/3E 125A 3p	125	004671302					
EB2 250/3E 160A 3p	160	004671303					
EB2 250/3E 250A 3p	250	004671304					
EB2 250/4E 40A 4p	40	004671305	4			3,3	
EB2 250/4E 125A 4p	125	004671306					
EB2 250/4E 160A 4p	160	004671307					
EB2 250/4E 250A 4p	250	004671308					

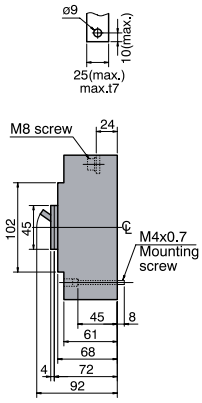
Dimensions

EB2 160 & EB2 250

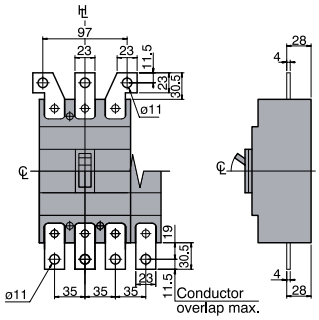
Front connected



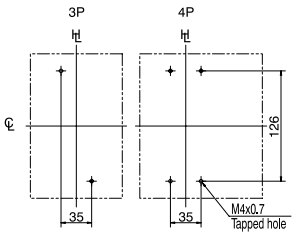
Preparation of conductor



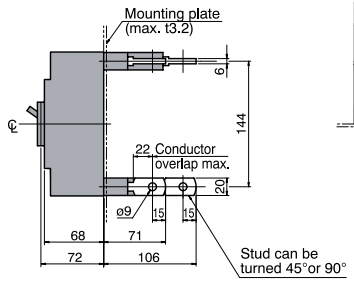
With terminal bars
(optional)

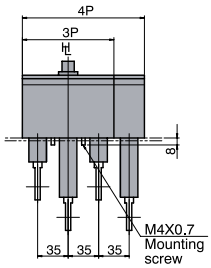


Drilling plan

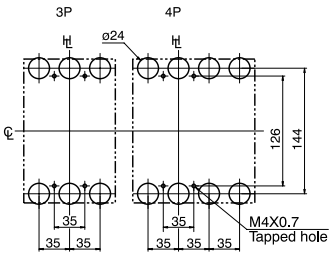


Rear connected

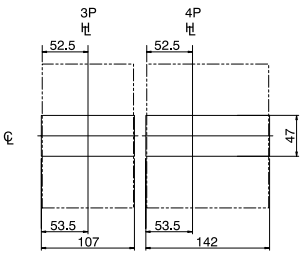




Drilling plan

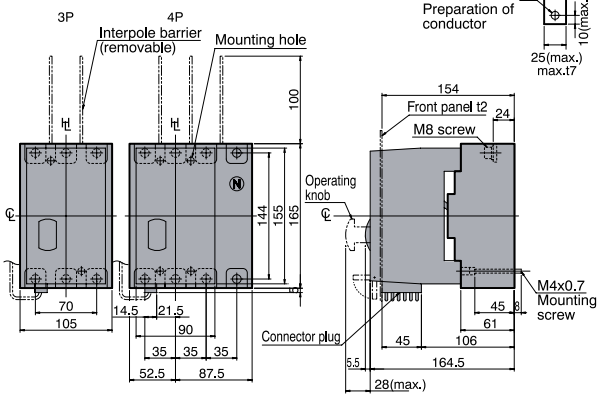


Panel cutout
(Front view)



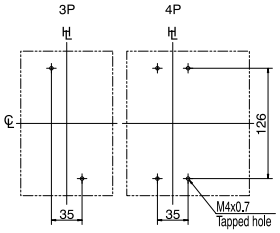
Panel cutout dimensions shown
give an allowance of 1.0mm
around the handle escutcheon.

Front connected with Motor Operator

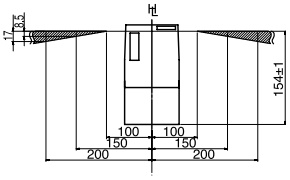


Preparation of
conductor

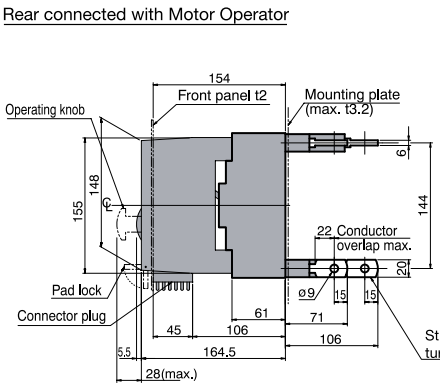
Drilling plan

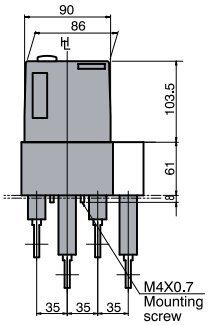


Panel hinge position (hatching area)
bottom view

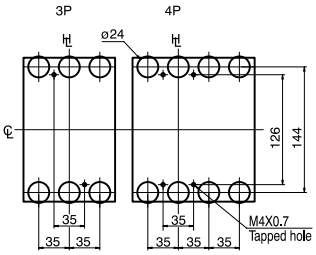


Rear connected with Motor Operator

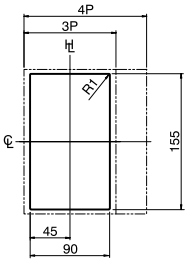




Drilling plan



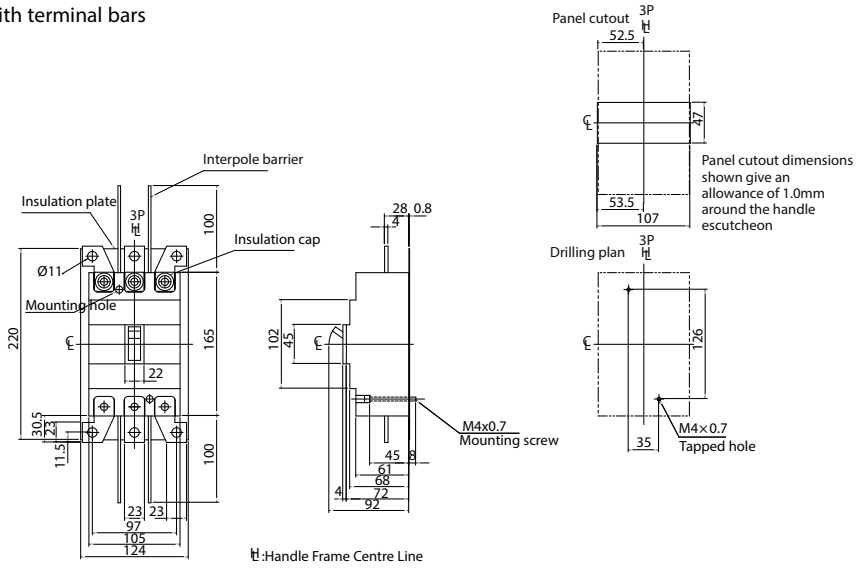
Panel cutout
(Front view)



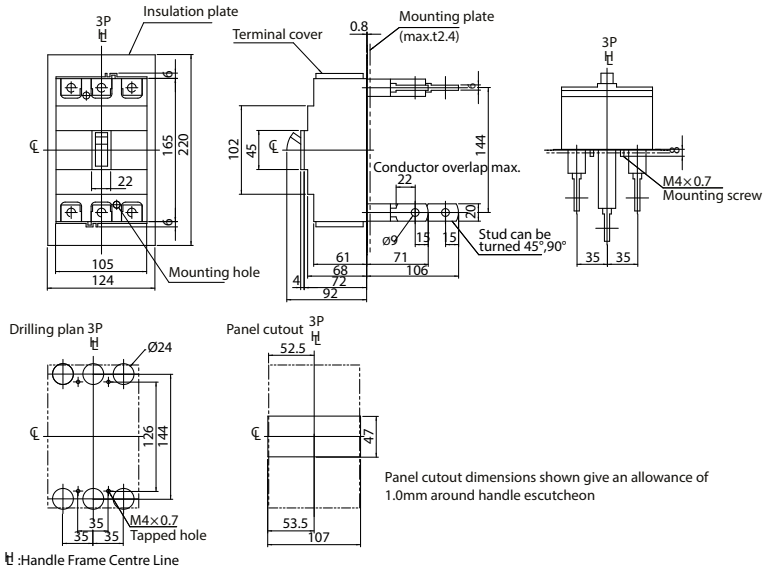
Panel cutout dimensions shown
give an allowance of 1.5mm
around the handle escutcheon.

EB2 250 1000V

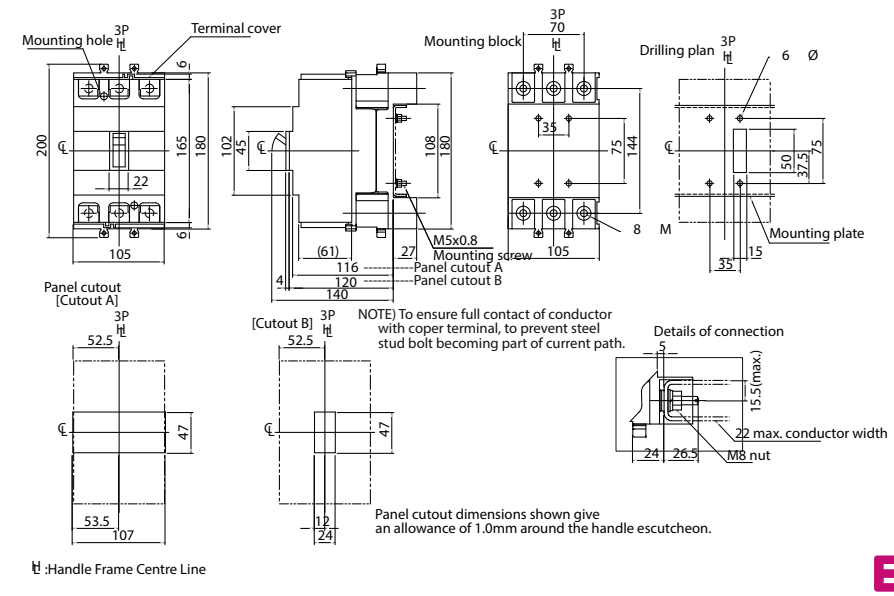
Front connected with terminal bars



Rear connected

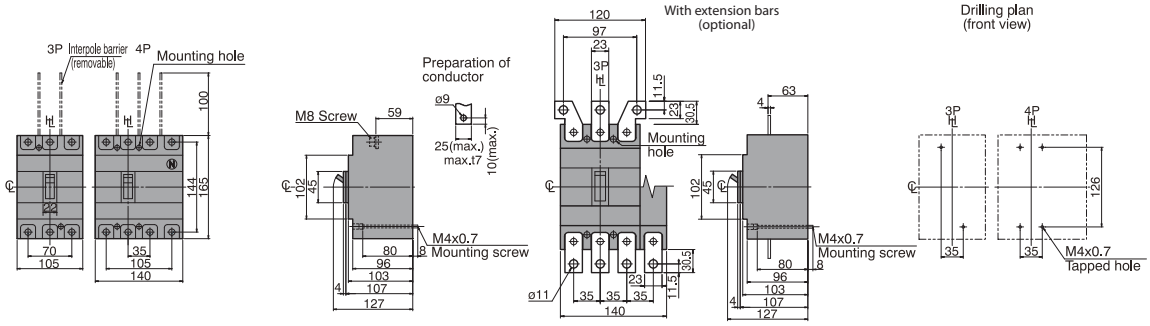


Plug in (PMB)

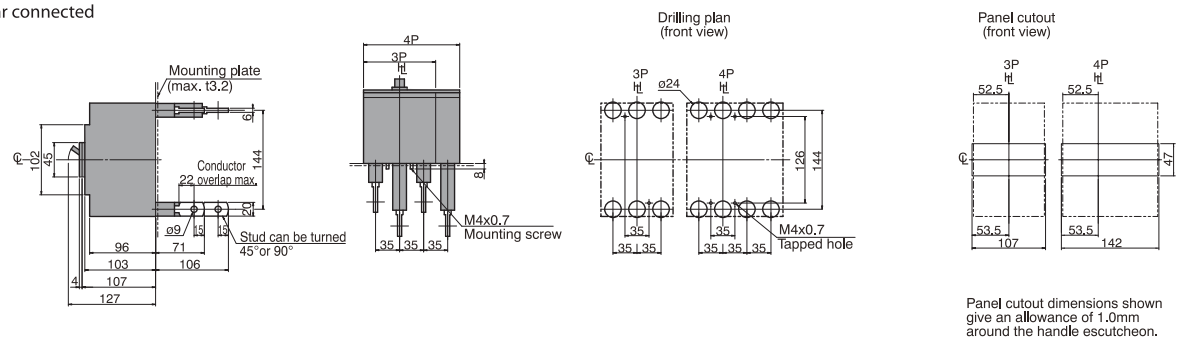


EB2 250/_E (Microprocessor's MCCBs)

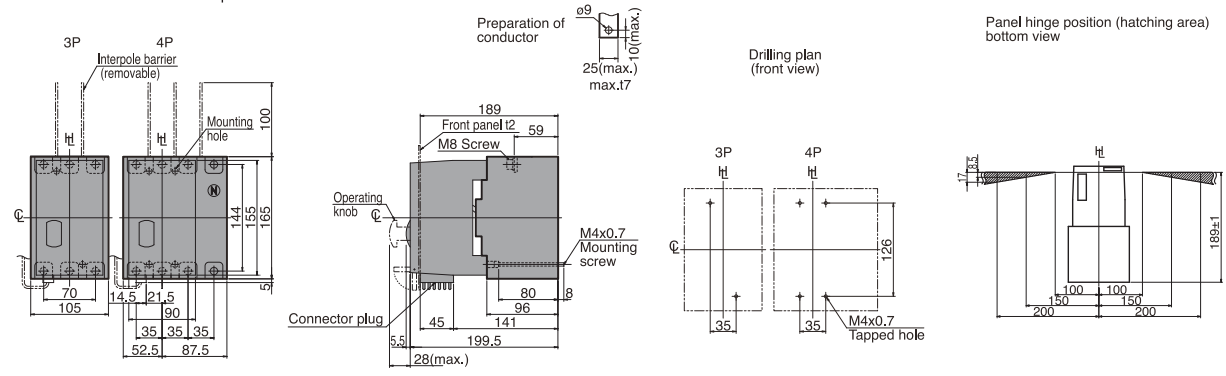
Front connected



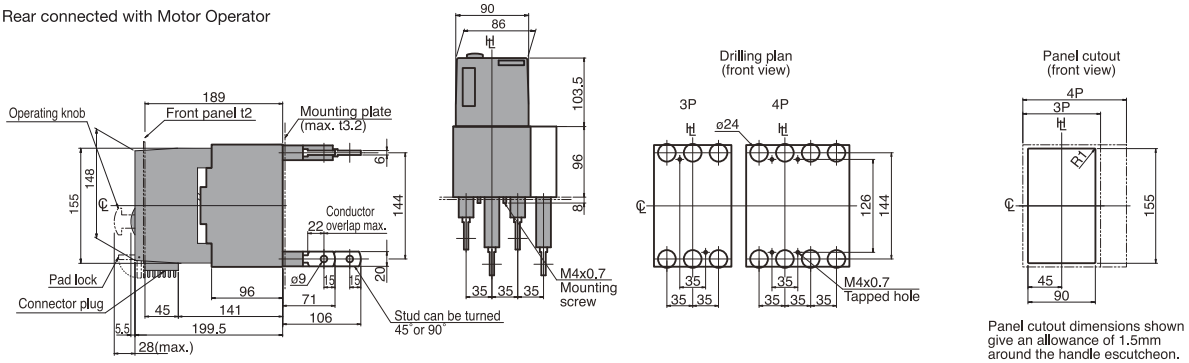
Rear connected



Front connected with Motor Operator



Rear connected with Motor Operator



ETIBREAK EB2 400

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/magnetic	kg	
EB2 400/3LF 400A 3p	400A	004671105	3	25/25	fixed/fixed	4,2	1
EB2 400/3SF 400A 3p	400A	004671106	3	36/36	fixed/adjustable (6-12)	4,2	
EB2 400/4SF 400A 4p	400A	004671108	4			5,6	
EB2 400/3L 250A 3p	250	004671091	3	25/25	0,63-1/ 6-12	4,2	1
EB2 400/3L 400A 3p	400	004671092	3			4,2	
EB2 400/4L 250A 4p	250	004671093	4			5,6	
EB2 400/4L 400A 4p	400	004671094	4			5,6	
EB2 400/3S 250A 3p	250	004671101	3	50/50	0,63-1/ 6-12	4,3	1
EB2 400/3S 400A 3p	400	004671102	3			4,3	
EB2 400/4S 250A 4p	250	004671103	4			5,7	
EB2 400/4S 400A 4p	400	004671104	4			5,7	

ETIBREAK EB2 400

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/magnetic	kg	
EB2 400/3E 250A 3p	250	004671111	3	50/50	0,4-1/ adjustable	4,3	1
EB2 400/3E 400A 3p	400	004671112	3			4,3	
EB2 400/3E 400A 3p APG	400	004671115	3			4,3	
EB2 400/4E 250A 4p	250	004671113	4			5,7	
EB2 400/4E 400A 4p	400	004671114	4			5,7	
EB2 400/4E 400A 4p APGN	400	004671116	4			5,7	
EB2 400/3VE 400A 3p 1100V*	400	004671379	3	12,5/6,3	0,63-1/adjustable	4,8	

* No external or internal accessories available

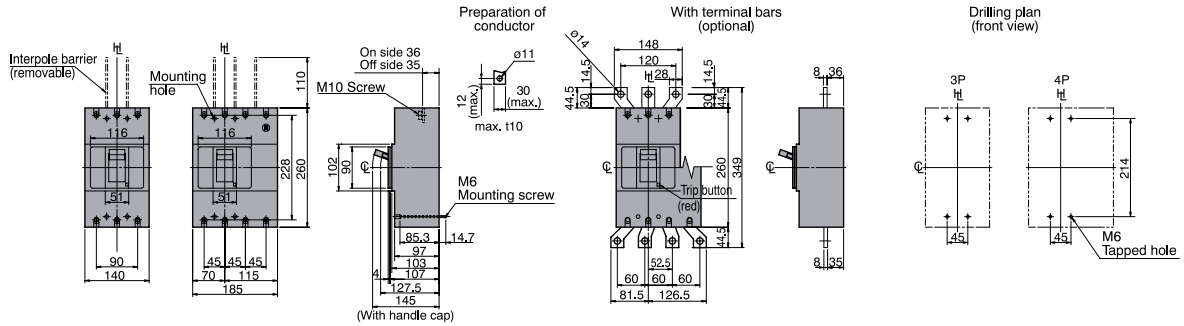
ETIBREAK EB2 400 LCD

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/magnetic	kg	
EB2 400/3LCD 250A 3p A	250	004672144	3	50/50	0,4-1 / adjustable	4,3	1
EB2 400/3LCD 250A 3p APCWH	250	004672145	3			4,3	
EB2 400/3LCD 400A 3p A	400	004672146	3			4,3	
EB2 400/3LCD 400A 3p APCWH	400	004672147	3			4,3	
EB2 400/4LCD 250A 4p A	250	004672148	4			5,7	
EB2 400/4LCD 250A 4p AGN	250	004672290	4			5,7	
EB2 400/4LCD 250A 4p APGNS	250	004672154	4			5,7	
EB2 400/4LCD 250A 4p APCWH	250	004672155	4			5,7	
EB2 400/4LCD 250A 4p APGNSCWH	250	004672291	4			5,7	
EB2 400/4LCD 400A 4p A	400	004672156	4			5,7	
EB2 400/4LCD 400A 4p AGN	400	004672292	4			5,7	
EB2 400/4LCD 400A 4p APGNS	400	004672157	4			5,7	
EB2 400/4LCD 400A 4p APCWH	400	004672158	4			5,7	
EB2 400/4LCD 400A 4p APGNSCWH	400	004672293	4			5,7	
EB2 400/4HLCD 250A 4p AGN	250	004672295	4	70/70	0,4-1 / adjustable	5,7	1
EB2 400/4HLCD 250A 4p APGNSCWH	250	004672296	4			5,7	
EB2 400/4HLCD 400A 4p AGN	400	004672297	4			5,7	
EB2 400/4HLCD 400A 4p APGNSCWH	400	004672298	4			5,7	

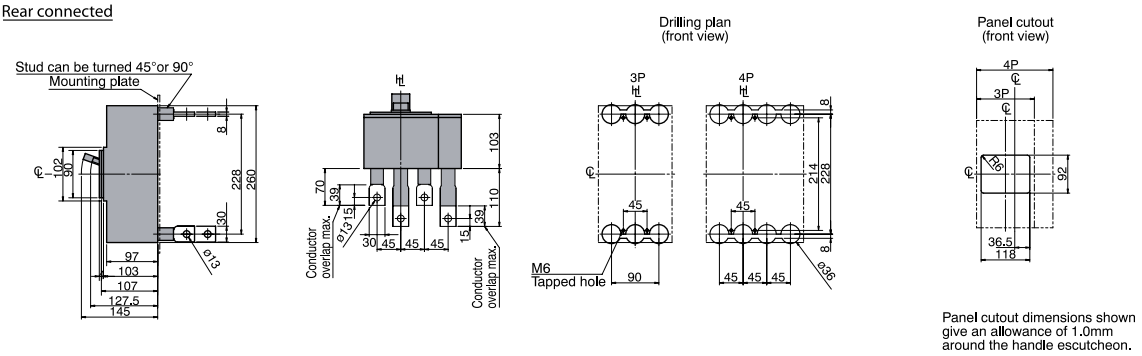
Dimensions

EB2 400

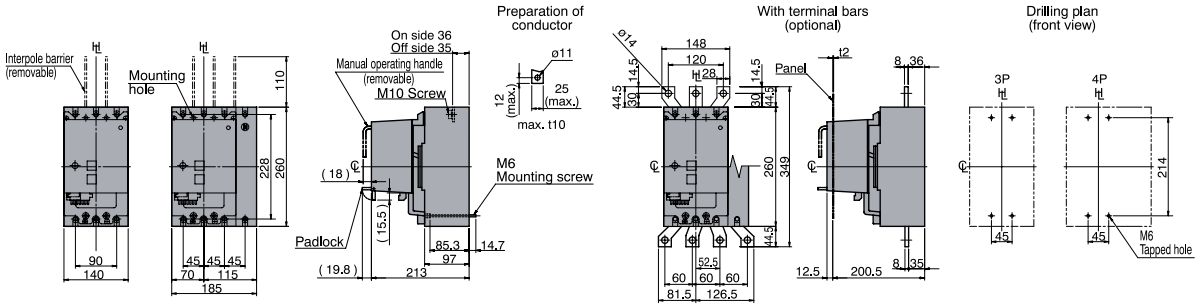
Front connected



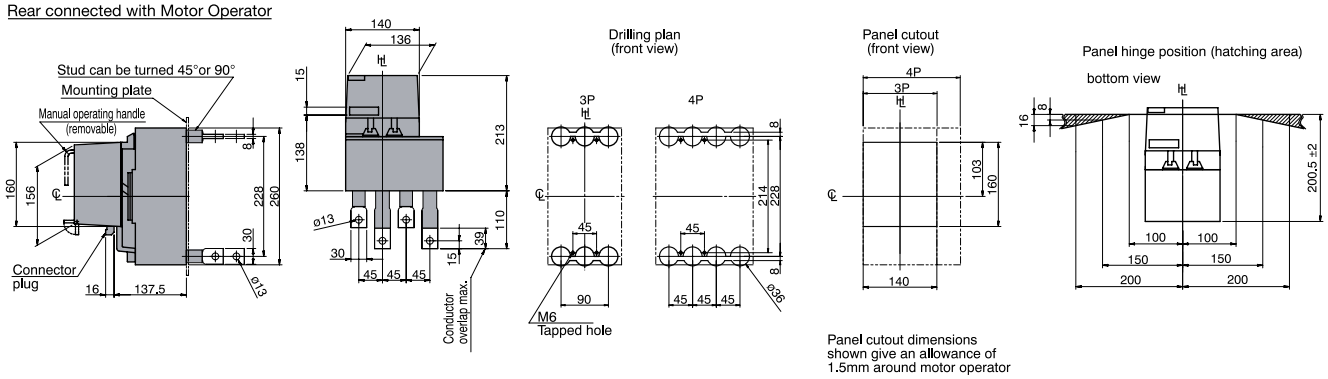
Rear connected



Front connected with Motor Operator



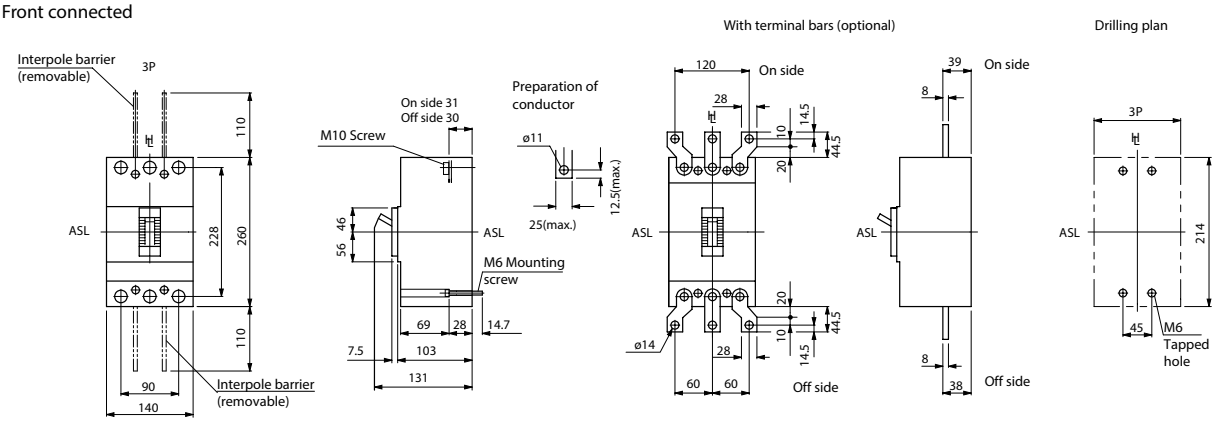
Rear connected with Motor Operator



EB2 400 1100V

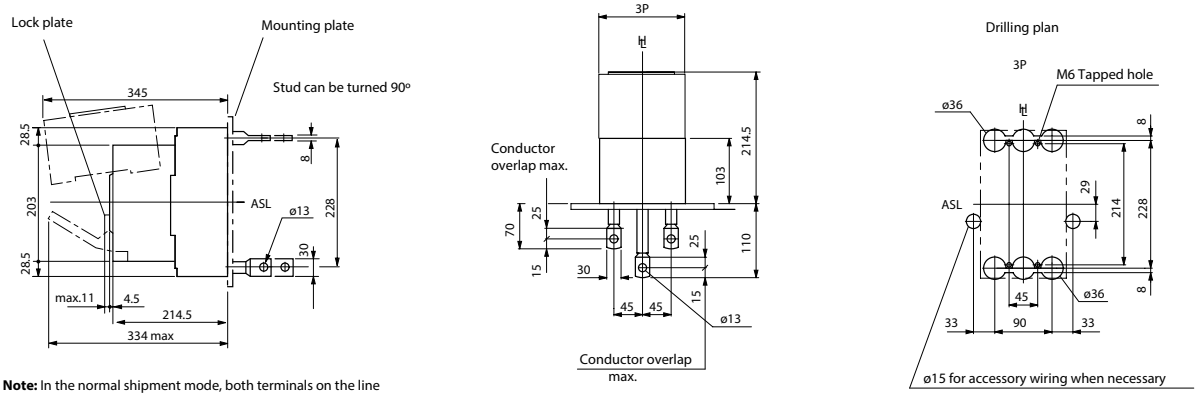
ASL : Arrangement Standard Line
⊬ : Handle Frame Centre Line

Front connected



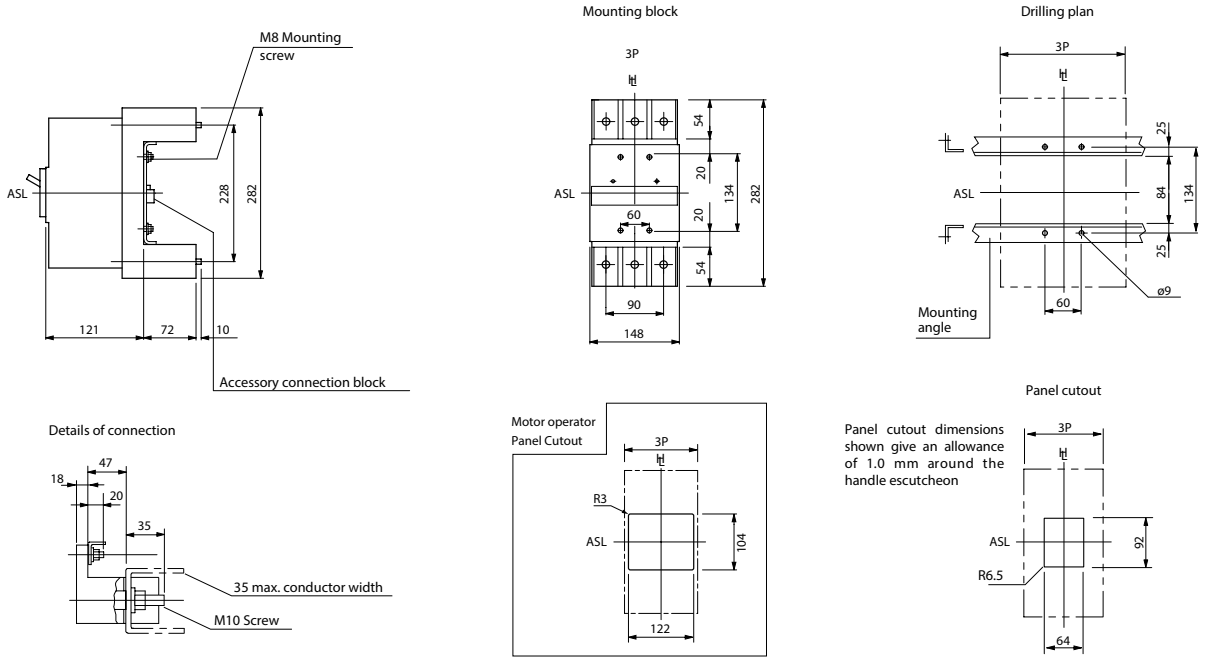
Note: Breakers with terminal bars available on request

Rear connected with motor operator



Note: In the normal shipment mode, both terminals on the line side and the load side are in the horizontal direction.

Plug-in connected



ETIBREAK EB2 630/800

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/magnetic	kg	
EB2 800/3LF 630A 3p	630	004671117	3	36/36	fixed/adjustable (5-10)	8	1
EB2 800/3LF 800A 3p	800	004672204				8,5	
EB2 800/4LF 630A 4p	630	004671118	4			11	
EB2 800/4LF 800A 4p	800	004672205				11,5	
EB2 800/3L 630A 3p	630	004672150	3	36/36	0,63-1 / 5-10	8,5	1
EB2 800/3L 800A 3p	800	004672151					
EB2 800/4L 630A 4p	630	004672152	4			11,5	
EB2 800/4L 800A 4p	800	004672153					
EB2 800/3S 630A 3p	630	004672160	3	50/50	0,63-1 / 5-10	8,5	1
EB2 800/3S 800A 3p	800	004672161					
EB2 800/4S 630A 4p	630	004672162	4			11,5	
EB2 800/4S 800A 4p	800	004672163					
EB2 800/3H 630A 3p	630	004672170	3	70/50	0,63-1 / 5-10	8,5	1
EB2 800/3H 800A 3p	800	004672171					
EB2 800/4H 630A 4p	630	004672172	4			11,5	
EB2 800/4H 800A 4p	800	004672173					

ETIBREAK EB2 630

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/magnetic	kg	
EB2 630/3LE 630A 3p	630	004671121	3	36/36	0,4-1/ adjustable	3,75	1
EB2 630/4LE 630A 4p	630	004671122	4			4,95	
EB2 630/4LE 630A 4p APGN	630	004671123	4			6,5	
EB2 630/3E 630A 3p	630	004671127	3	50/50	0,4-1/ adjustable	3,75	1
EB2 630/4E 630A 4p	630	004671128	4			4,95	
EB2 630/4E 630A 4p APGN	630	004671129	4			6,5	
EB2 630/3HE 630A 3p	630	004672140	3	70/70	0,4-1/ adjustable	3,75	1
EB2 630/4HE 630A 4p	630	004672141	4			4,95	
EB2 630/3VE 630A 3p 1100V*	630	004671380	3	18/13,5	0,63-1/adjustable	9,6	1

* No external or internal accessories available

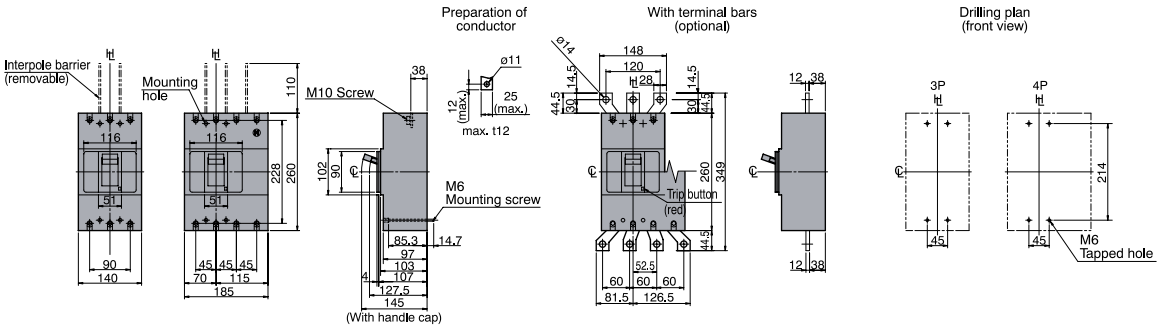
ETIBREAK EB2 630 LCD

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/magnetic	kg	
EB2 630/3LLCD 630A 3p A	630	004672122	3	36/36	0,4-1/ adjustable	5	1
EB2 630/3LLCD 630A 3p APCWH	630	004672123					
EB2 630/4LLCD 630A 4p A	630	004672124	4			6,5	
EB2 630/4LLCD 630A 4p AGN	630	004672125					
EB2 630/4LLCD 630A 4p APGNS	630	004672126					
EB2 630/4LLCD 630A 4p APCWH	630	004672127					
EB2 630/4LLCD 630A 4p APGNSCWH	630	004672128					
EB2 630/4LCD 630A 4p AGN	630	004672142	4	50/50	0,4-1/ adjustable	6,5	1
EB2 630/4LCD 630A 4p APGNSCWH	630	004672143					

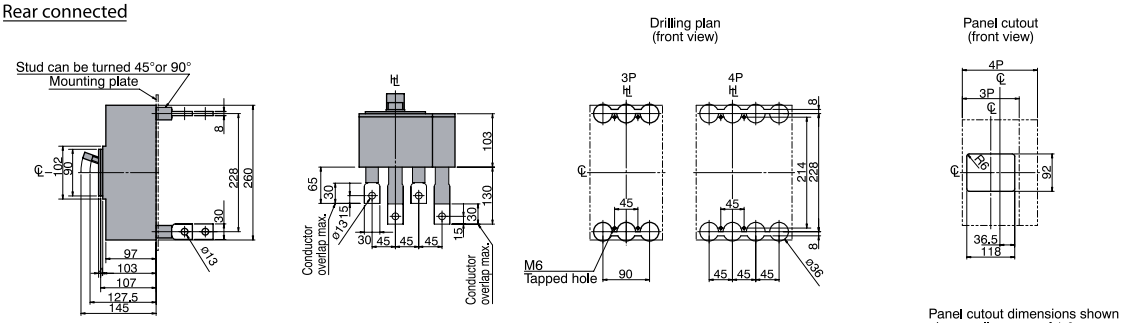
Dimensions

EB2 630

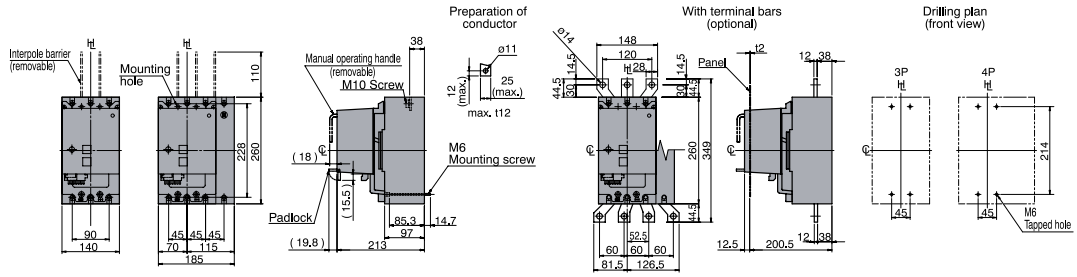
Front connected



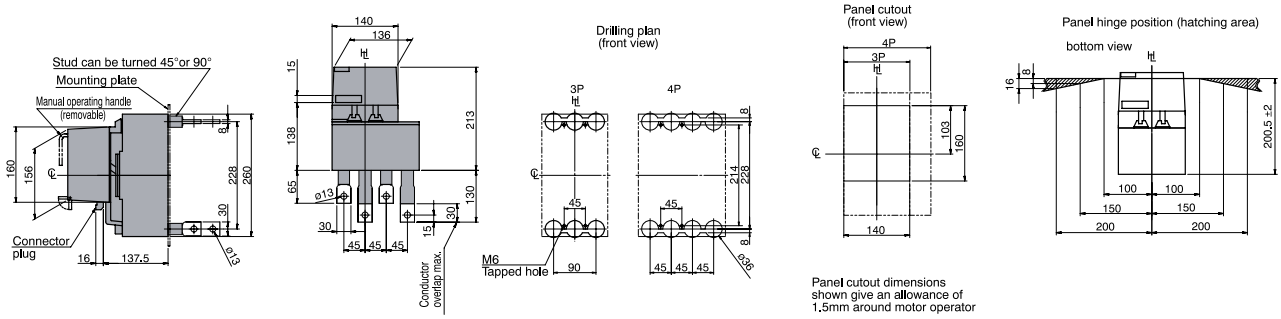
Rear connected



Front connected with Motor Operator



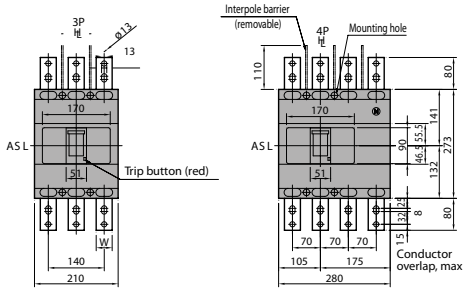
Rear connected with Motor Operator

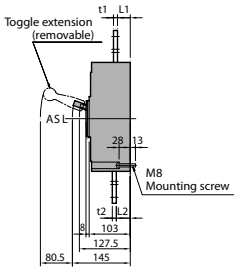


Dimensions

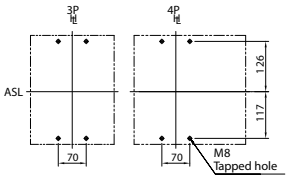
EB2 800

Front connected with extension bars (optional)



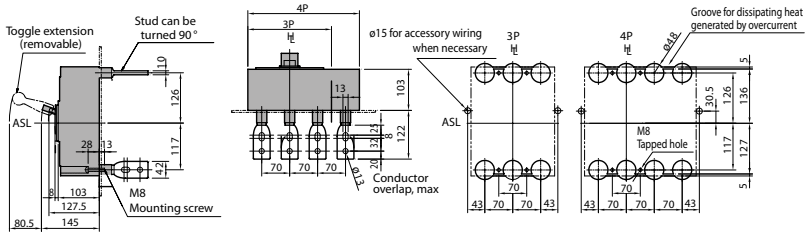


Drilling plan (front view)



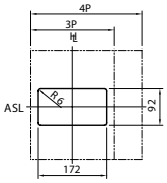
Breaker Type	Rated Current	t1	t2	L1	L2	W
EB2 800 Thermal magnetic	630A	8	8	32	34	40
	800A	10	10	32	35	40
EB2 800 Electronic	630A	8	8	32	36	40
	800A	10	10	32	36	40

Rear connected



Drilling plan (front view)

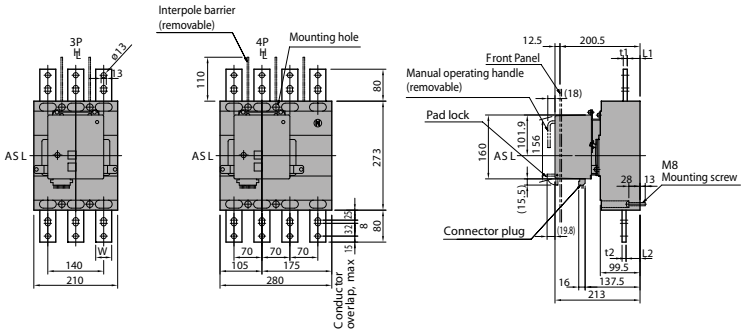
Panel cutout (front view)



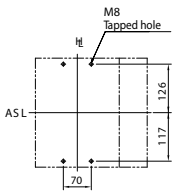
Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

Note: Studs are factory installed in horizontal direction both on the line and load sides.

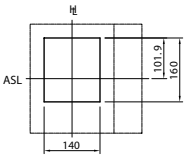
Front connected with Motor Operator



Drilling plan (front view)

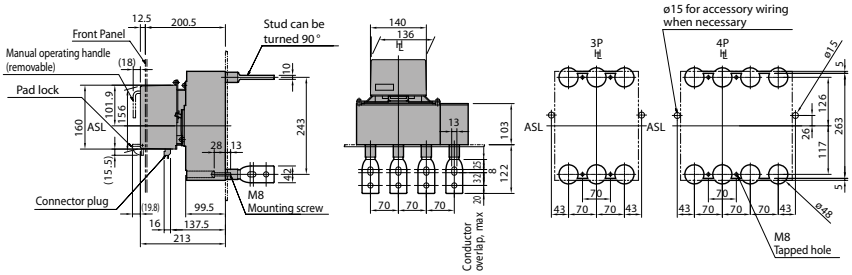


Panel cutout (front view)



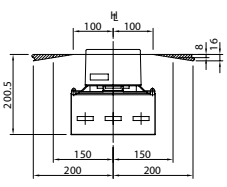
Panel cutout dimensions shown give an allowance of 1.5mm around motor operator.

Rear connected with Motor Operator



Drilling plan (front view)

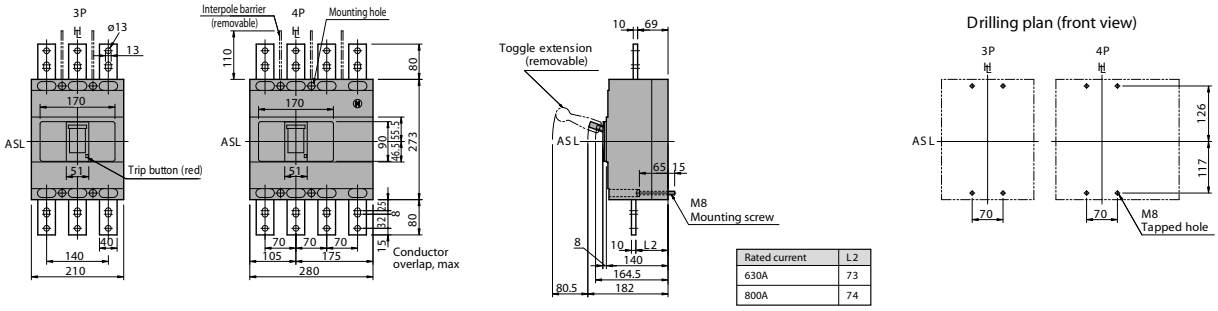
Panel hinge position (hatching area) (bottom view)



Note: Studs are factory installed in horizontal direction both on the line and load sides.

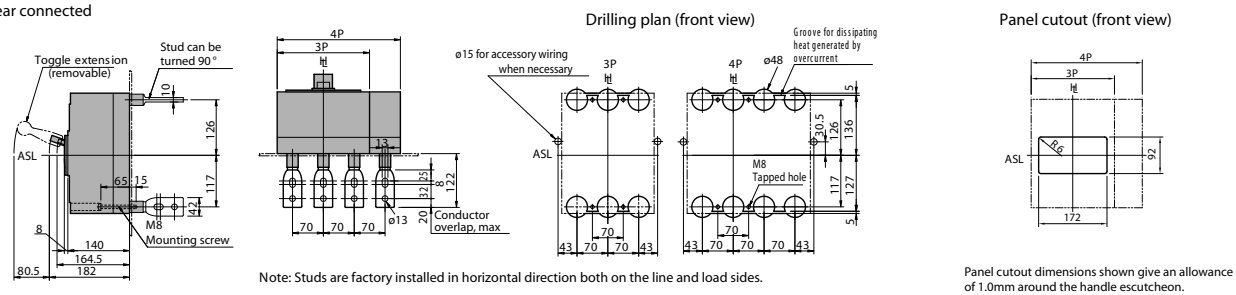
EB2 800 HE

Front connected



Rated current	L2
630A	73
800A	74

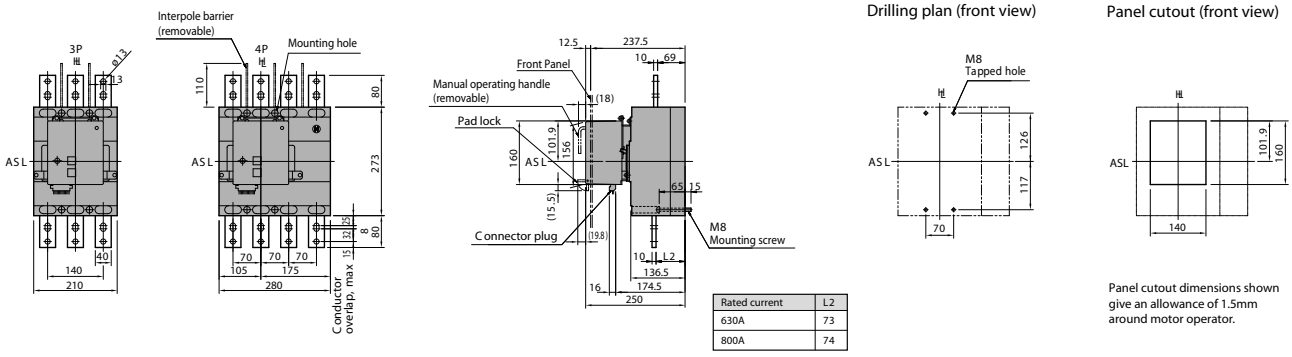
Rear connected



Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

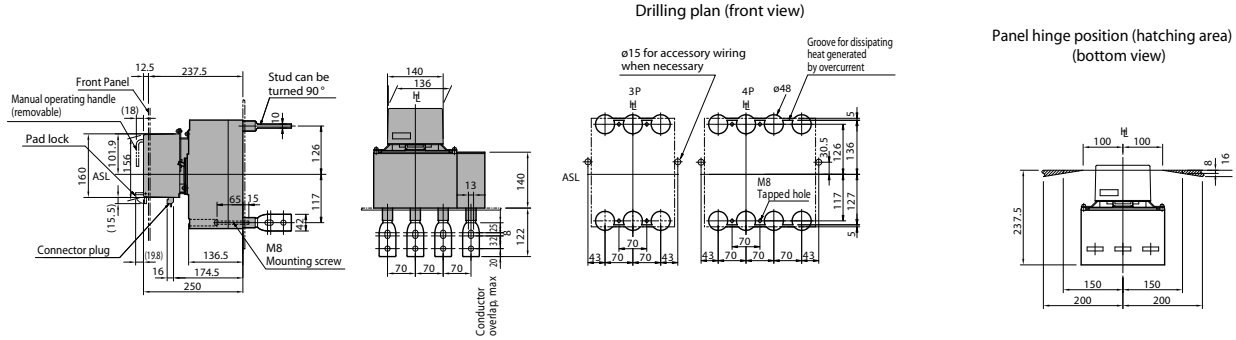
Front connected with Motor Operator



Rated current	L2
630A	73
800A	74

Panel cutout dimensions shown give an allowance of 1.5mm around motor operator.

Rear connected with Motor Operator

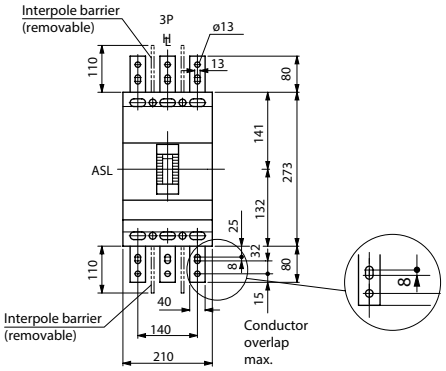


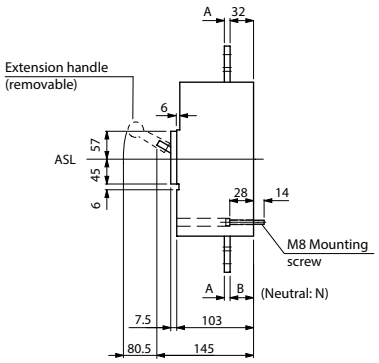
Note: Studs are factory installed in horizontal direction both on the line and load sides.

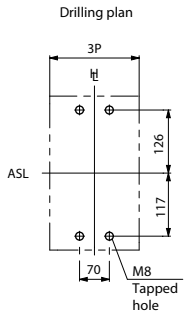
EB2 630 & 800 1100V

ASL : Arrangement Standard Line
卌 : Handle Frame Centre Line

Front connected



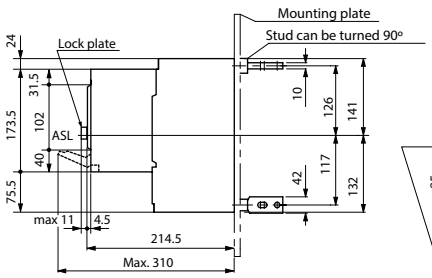


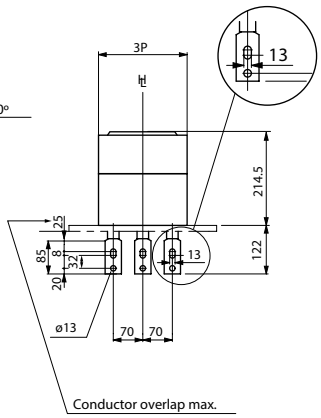


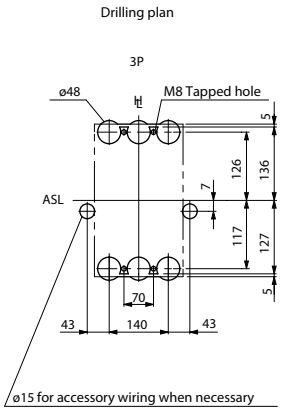
Breaker type	A	B	N
VS630-NE	8	36	36
VS800-NE	10	36	36

Note: Breakers with terminal bars available on request

Rear connected with motor operator

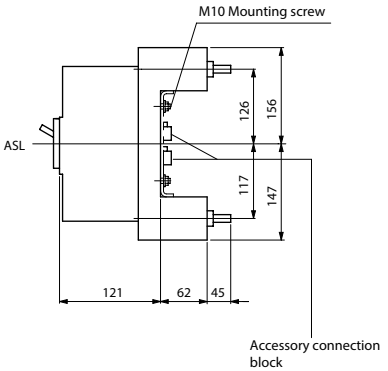


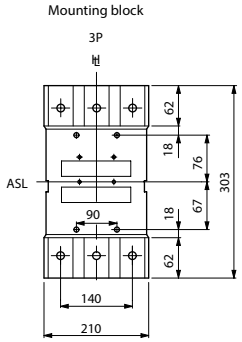


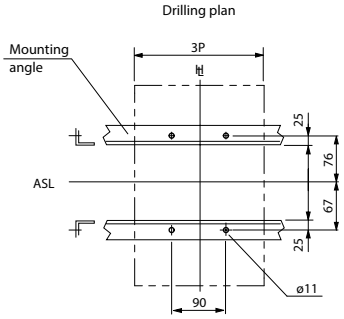


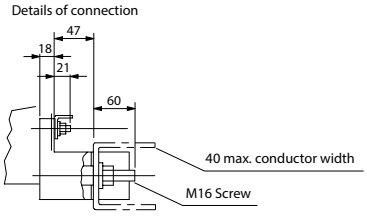
Note:In the normal shipment mode, both terminals on the line side and the load side are in the horizontal direction.

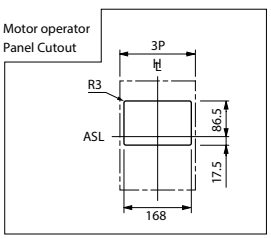
Plug-in connected

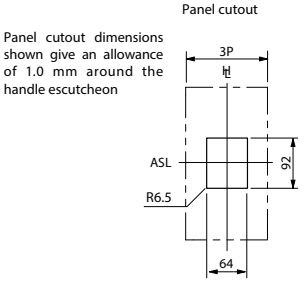












ETIBREAK EB2 800

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/magnetic	kg	
EB2 800/3LE 800A 3p	800	004672180	3	50/50	0,4-1 / adjustable	9,1	1
EB2 800/4LE 800A 4p	800	004672181	4			12,3	
EB2 800/4LE 800A 4p AGN	800	004672182	4			12,3	
EB2 800/4LE 800A 4p APGN	800	004672183	4			12,3	
EB2 800/3E 800A 3p	800	004672190	3	70/70	0,4-1 / adjustable	9,1	1
EB2 800/3E 800A 4p	800	004672191	4			12,3	
EB2 800/3HE 630A 3p	630	004672200	3	125/94	0,4-1 / adjustable	13,3	1
EB2 800/3HE 800A 3p	800	004672201				14,8	
EB2 800/4HE 630A 4p	630	004672202	4			16,8	
EB2 800/4HE 800A 4p	800	004672203				18,8	
EB2 800/3VE 800A 3p 1100V*	800	004671381	3	18/13,5	0,63-1/adjustable	9,7	1

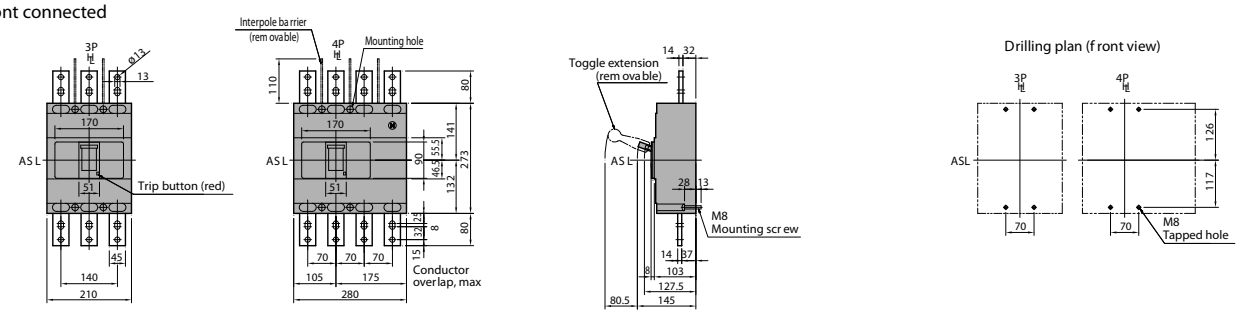
* No external or internal accessories available

ETIBREAK EB2 1000

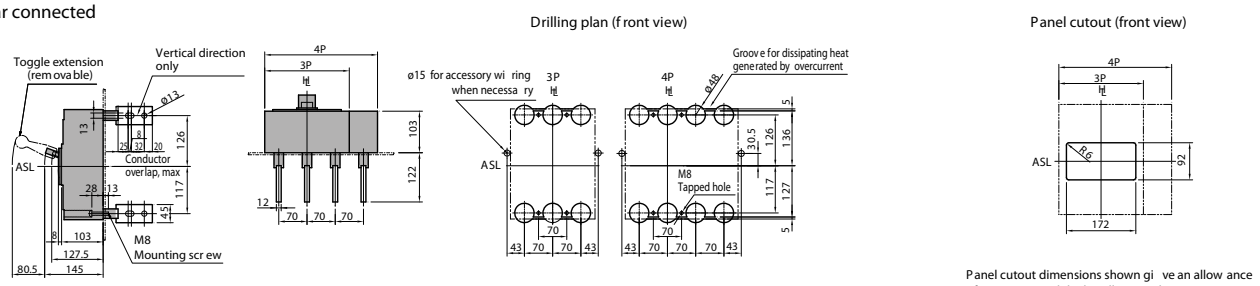
Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/magnetic	kg	
EB2 1000/3LE 1000A 3p	1000	004672210	3	50/38	0,4-1 / adjustable	11	1
EB2 1000/4LE 1000A 4p	1000	004672211	4			14,8	
EB2 1000/4LE 1000A 4p APGN	1000	004672212	4			14,8	
EB2 1000/3E 1000A 3p	1000	004672220	3	70/50	0,4-1 / adjustable	11	1
EB2 1000/3E 1000A 4p	1000	004672221	4			14,8	
EB2 1000/4E 1000A 4p APGN	1000	004672222	4			14,8	

EB2 1000

Front connected

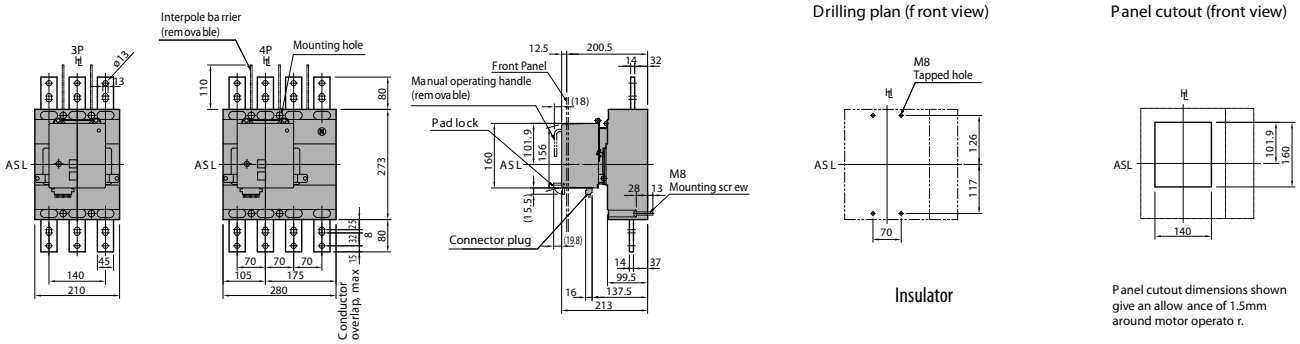


Rear connected



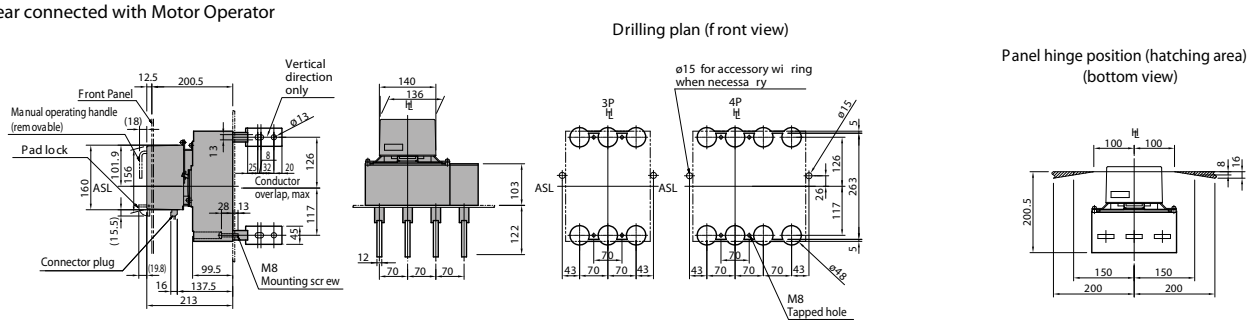
Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

Front connected with Motor Operator



Panel cutout dimensions shown give an allowance of 1.5mm around motor operator.

Rear connected with Motor Operator



Note: Studs are factory installed in horizontal direction both on the line and load sides.

ETIBREAK EB2 1250

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/magnetic	kg	
EB2 1250/3LE 1250A 3p	1250	004672230	3	50/38	0,4-1 / adjustable	19,8	1
EB2 1250/4LE 1250A 4p	1250	004672231	4			25	
EB2 1250/4LE 1250A 4p APGN	1250	004672232	4			25	
EB2 1250/3E 1250A 3p	1250	004672240	3	70/50	0,4-1 / adjustable	19,8	1
EB2 1250/3E 1250A 4p	1250	004672241	4			25	
EB2 1250/4E 1250A 4p APGN	1250	004672242	4			25	
EB2 1250/3VE 800A 3p 1100V	800	004671382	3	30/20	0,4-1/adjustable	19,8	1
EB2 1250/3VE 1250A 3p 1100V	1250	004671383	3			19,8	

ETIBREAK EB2 1600

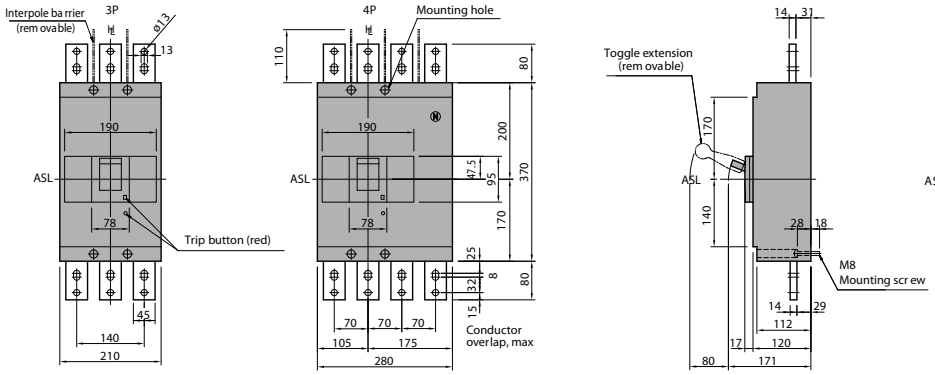
Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} 400/415V [kA]	Adjustment thermal/magnetic	kg	
EB2 1600/3LE-FC 1600A 3p	1600	004672250	3	50/38	0,4-1 / adjustable	27	1
EB2 1600/4LE-FC 1600A 4p	1600	004672251	4			35	
EB2 1600/4LE-FC 1600A 4p APGN	1600	004672252	4			35	
EB2 1600/3LE-RC 1600A 3p	1600	004672270	3			27	
EB2 1600/4LE-RC 1600A 4p	1600	004672271	4			35	
EB2 1600/4LE-RC 1600A 4p APGN	1600	004672272	4			35	
EB2 1600/3E-RC 1600A 3p	1600	004672280	3	100/75	0,4-1 / adjustable	27	1
EB2 1600/4E-RC 1600A 4p	1600	004672281	4			35	
EB2 1600/4E-RC 1600A 4p APGN	1600	004672282	4			35	
EB2 1600/3E-FC 1600A 3p	1600	004672260	3			27	
EB2 1600/3E-FC 1600A 4p	1600	004672261	4			35	
EB2 1600/4E-FC 1600A 4p APGN	1600	004672262	4			35	

FC - Front Conection
RC - Rear Conection

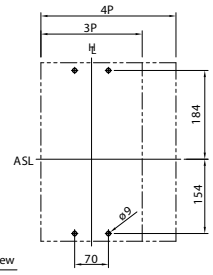
Dimensions

EB2 1250

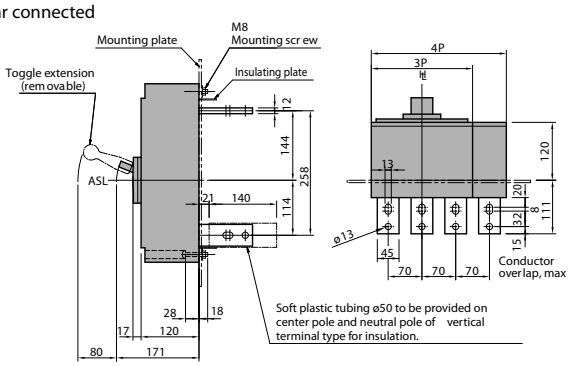
Front connected



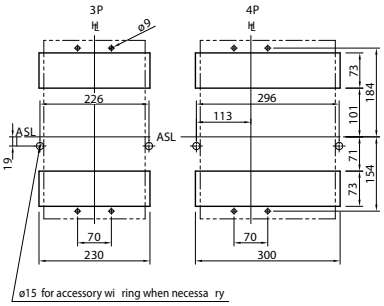
Drilling plan (front view)



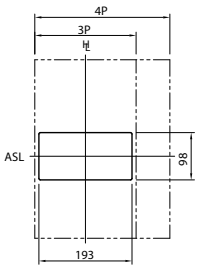
Rear connected



Drilling plan (front view)



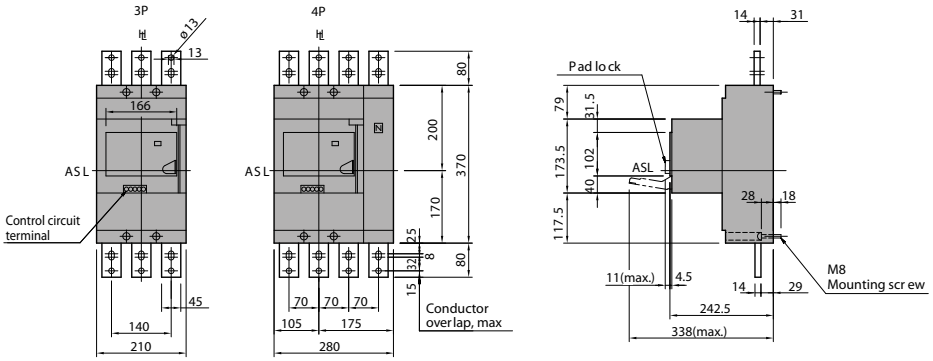
Panel cutout (front view)



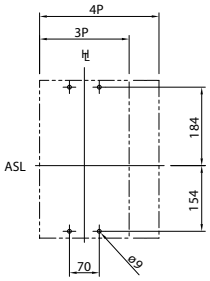
Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

Note: Studs are factory installed in horizontal direction both on the line and load sides.

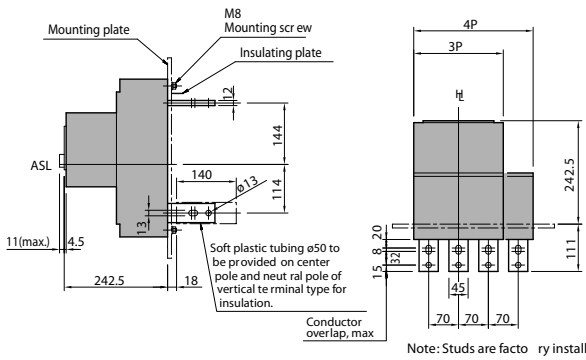
Front connected with Motor Operator



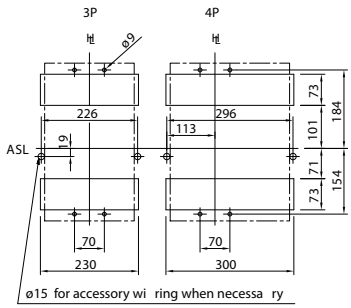
Drilling plan (front view)



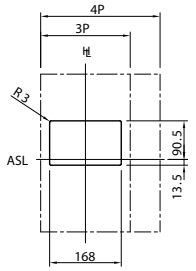
Rear connected with Motor Operator



Drilling plan (front view)



Panel cutout (front view)



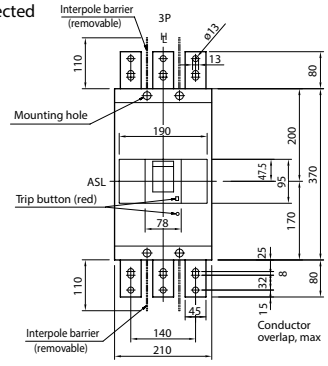
Panel cutout dimensions shown give an allowance of 1.0mm around motor operator.

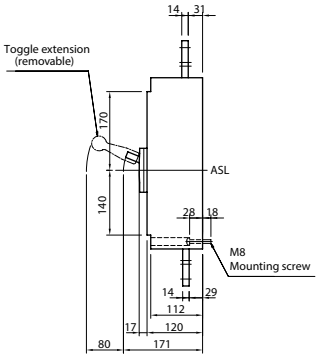
Note: Studs are factory installed in horizontal direction both on the line and load sides.

EB2 1250 1100V

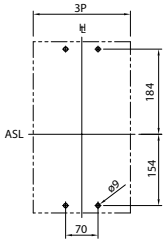
ASL : Arrangement Standard Line
⊬ : Handle Frame Centre Line

Front connected

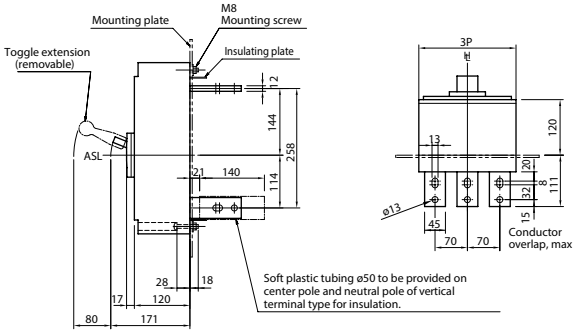




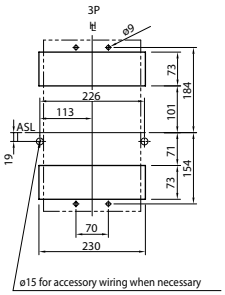
Drilling plan (front view)



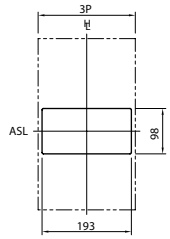
Rear connected



Drilling plan (front view)



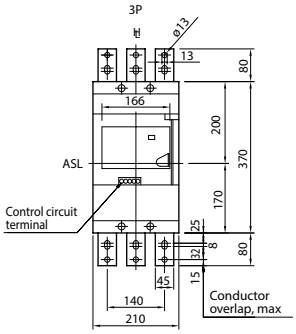
Panel cutout (front view)

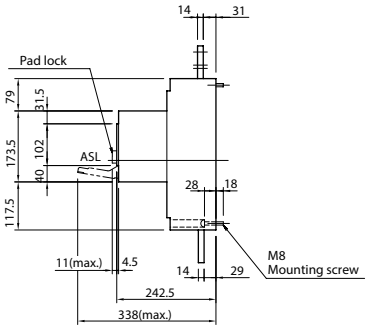


Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

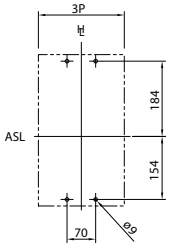
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Front connected with Motor Operator

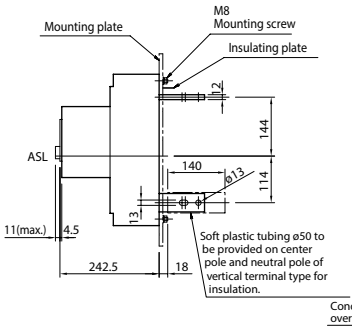


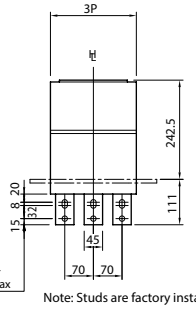


Drilling plan (front view)

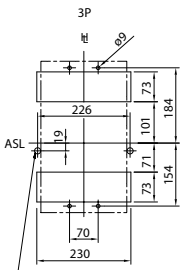


Rear connected with Motor Operator

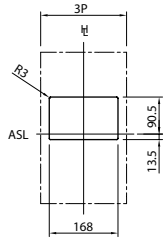




Drilling plan (front view)



Panel cutout (front view)

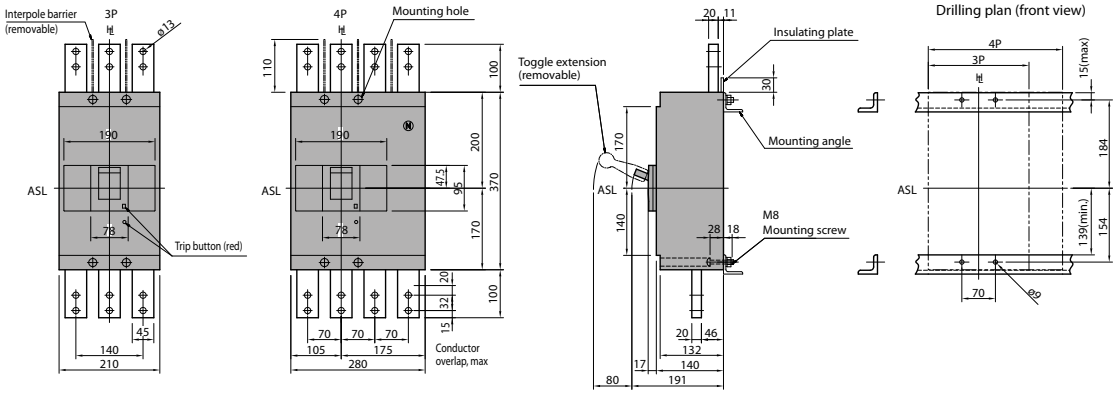


Panel cutout dimensions shown give an allowance of 1.0mm around motor operator.

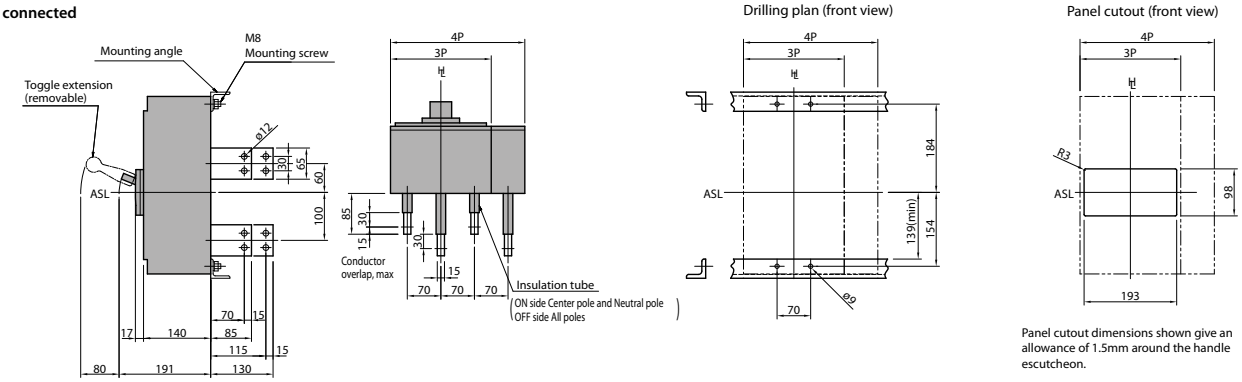
Note: Studs are factory installed in horizontal direction both on the line and load sides.

EB2 1600

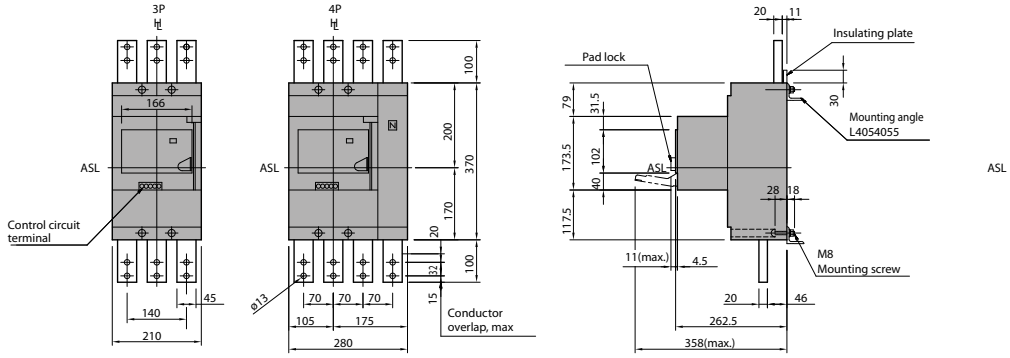
Front connected



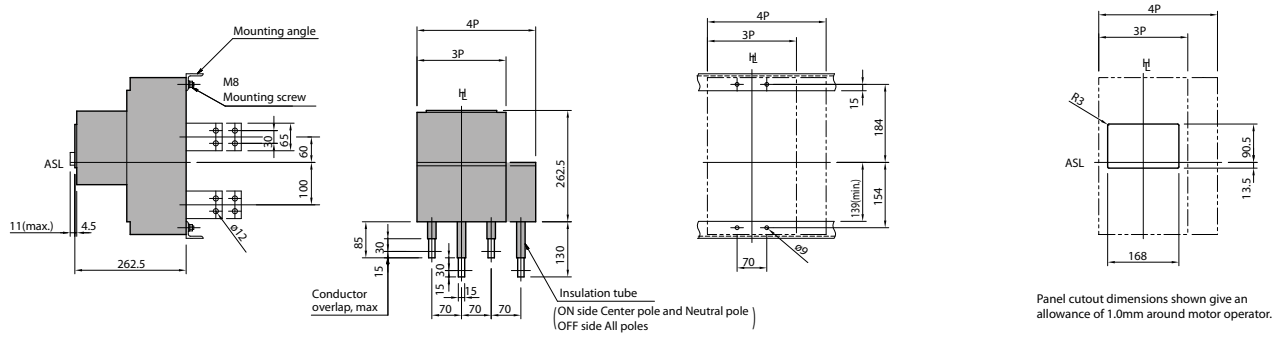
Rear connected

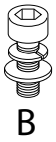
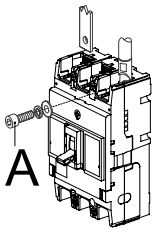
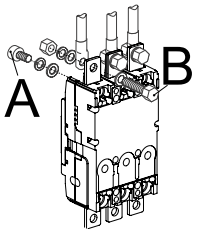
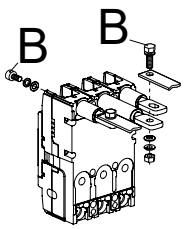


Front connected with Motor Operator

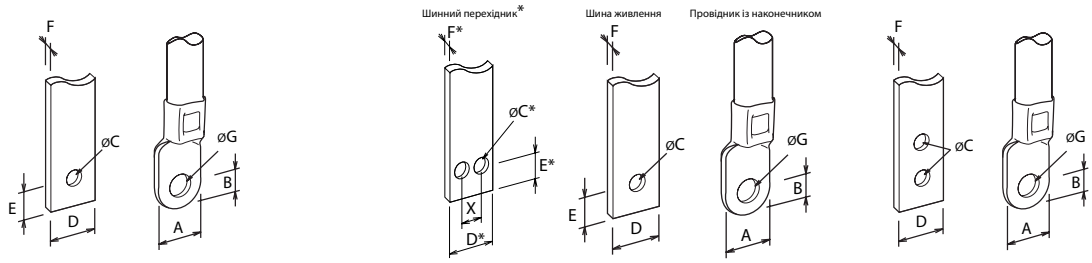


Rear connected with Motor Operator



Type of connecting element		Front connection			Rear connection	
		cable lug	busbar adapters			
						
Frame size	Rated current	Supplied with the MCCB	Supplied with the MCCB	Supplied with busbar adapters	Supplied with the MCCB	Supplied with the MCCB
EB2 125	20-125	M8x16 (A) / 4,9 ... 6,9 (Nm)	M8x16 (A) / 4,9 ... 6,9 (Nm)	M8x25 (B) / 11,8 ... 18,6 (Nm)	M6x20 (B) / 7,8 ... 11,8 (Nm)	M8x25 (B) / 11,8 ... 18,6 (Nm)
EB2 160/250	160-250	M8x20 (B) / 7,8 ... 12,7 (Nm)	M8x20 (B) / 7,8 ... 12,7 (Nm)	M10x25 (B) / 22,5 ... 37,2 (Nm)		
EB2 400	400	M10x25 (B) / 13,7 ... 22,5 (Nm)	M10x25 (B) / 13,7 ... 22,5 (Nm)	M12x35 (B) / 40,2 ... 65,7 (Nm)	M10x20 (B) / 18,6 ... 29,4 (Nm)	M12x35 (B) / 40,2 ... 65,7 (Nm)
EB2 630	630	M10x30 (B) / 13,7 ... 22,5 (Nm)	M10x30 (B) / 13,7 ... 22,5 (Nm)	M12x40 (B) / 40,2 ... 65,7 (Nm)	M8x25 (B) / 8,8 ... 14,7 (Nm)	M12x30 (B) / 40,2 ... 65,7 (Nm)
EB2 800 LF	630-800	-	M12x40 (B) / 40,2 ... 65,7 (Nm)		M10x27 (B) / 18,6 ... 29,4 (Nm)	M12x40 (B) / 40,2 ... 65,7 (Nm)
EB2 800	630	M8x25 (B) / 9,5 ... 14,5 (Nm)	M8x25 (B) / 9,5 ... 14,5 (Nm)	M12x40 (B) / 40,2 ... 65,7 (Nm)		
	800	M8x30 (B) / 9,5 ... 14,5 (Nm)	M8x30 (B) / 9,5 ... 14,5 (Nm)			
EB2 1000	1000	-	M12x55 (B) / 40,2 ... 65,7 (Nm)		M12x47 (B) / 40,2 ... 65,7 (Nm)	
EB2 1250&1600	1250	-				
	1600	-	M12x60 (B) / 40,2 ... 65,7 (Nm)		M10x45 (B) / 22,5 ... 37,2 (Nm)	

Dimensions of connected components



	EB2 125	EB2 160/250	EB2 400	EB2 630	EB2 800 (630A)	EB2 800 (800A)	EB2 800 LF	EB2 1000	EB2 1250/1600
	mm	mm	mm	mm	mm	mm	mm	mm	mm
A	≤16	≤22	≤25	≤25	≤50,5	≤50,5	≤50,5	≤50,5	≤50,5
B	≤8	≤11	≤12,5	≤12,5	≤19	≤19	≤19	≤19	≤21
C	8,4	8,4	10,5	10,5	13 (9)*	13 (9)*	13	13	13
D	≤17	≤25	≤25	≤25	≤50,5 (≤40)*	≤50,5 (≤40)*	≤50,5	≤50,5	≤50,5
E	≤8,5	≤10	≤12	≤12	11,5*	-	-	-	-
F	≤5	≤7	≤10	≤12	≤10 (≤10)*	≤10 (≤12)*	10	10	10
G	9	9	11	11	13	13	13	13	13
X	-	-	-	-	≤25	≤25	-	-	-

* Dimensions for connecting busbar adapters ZB2 S800-630 & ZB2 S800-800 (Straight) or direct power bus connection to EB2 800 (630/800).

Clamps for flexible conductors SP

	Conductor cross-section (mm^2)
SP2 125/3	1,5 - 50 (1 Conductor)
SP2 160&250/3	35 - 120 (1 Conductor)
SP2 400/3	80 - 240 (1 Conductor)
	60 - 120 (2 Conductors)

Low Voltage Switch Disconnector ETIBREAK ED2

ETIBREAK ED2 125-1600

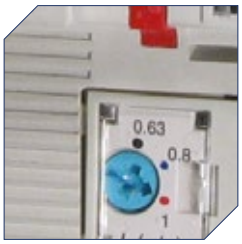
Type	I_n [A]	Code No.	Poles	I_{cm} [kA peak]	U_e AC/DC [V]	kg	
ED2 125/3	125	004671271	3	3,6	690/250	1,1	1
ED2 160/3	160	004671272	3	6	690/250	1,5	1
ED2 250/3	250	004671273	3	6	690/250	1,5	1
ED2 400/3	400	004671274	3	9	690/250	4,2	1
ED2 630/3	630	004671275	3	9	690/250	4,4	1
ED2 800/3	800	004672370	3	17	690/250	8,5	1
ED2 1000/3	1000	004672373	3	17	690/250	10,4	1
ED2 1250/3	1250	004672371	3	32	690/250	18,2	1
ED2 1250/3 PI 3C	1250	004672374	3	32	690/250	18,2	1
ED2 1600/3 FC	1600	004672372	3	45	690/250	24,9	1
ED2 125/4	125	004671276	4	3,6	690/250	1,4	1
ED2 160/4	160	004671277	4	6	690/250	1,9	1
ED2 250/4	250	004671278	4	6	690/250	1,9	1
ED2 400/4	400	004671279	4	9	690/250	5,6	1
ED2 630/4	630	004671280	4	9	690/250	5,8	1
ED2 800/4	800	004672380	4	17	690/250	11,5	1
ED2 1000/4	1000	004672383	4	17	690/250	14,0	1
ED2 1250/4	1250	004672381	4	32	690/250	23,4	1
ED2 1600/4 FC	1600	004672382	4	45	690/250	32,9	1

Note:
All internal and external accessories for MCCBs can also be mounted to corresponding type of switch disconnectors.

ED2 1250/3 PI 3C:
This is an already prepared Plug-in version for ED2 with 3 AUX terminals on conversion side. Beside that you have to order base side (NPF) and AUX terminals for base side (please see accessories for 1250AF)

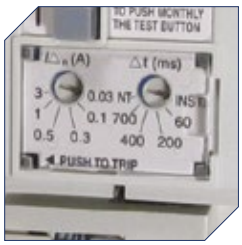
ETIBREAK Low Voltage Moulded Case Circuit Breakers With Residual Current Protection

- Breaking capacities as on MCCBs



- Adjustable overload protection I_r can be set between 63% and 100% of I_n

- Type A: Tripping is ensured for residual sinusoidal AC in the presence of residual pulsating DC.



- Adjustable residual current tripping thresholds between 30mA and 3A. Adjustable time delay for residual current protection between 60ms and 700ms including INST (instantaneous) and NT (No Trip).

- Voltage Presence LED Indicator and Trip Indicator (the yellow button pops up to indicate tripping due to residual current)

- Test Button (to test the residual current detection and tripping system)

- Dielectric test device plug (to allow dielectric testing with the EB2R closed – ON)

Main advantages:
- Combined protection against overloads, short circuits and earth leakage integrated in one device
- The new EB2R save the space
- The EB2R has the same dimensions and fixing as the EB2 MCCBs
- The EB2R eliminates the need for either an external relay with current transformers or add-on block
- Residual current is adjustable
- Earth leakage protection time delay is adjustable
- Wide range of accessories (as MCCB – only shunt/undervoltage trip units can not be fitted to EB2R)

ETIBREAK EB2R 125

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} [kA]	Adjustment thermal/ magnetic	kg	
EB2R 125/3L 20A 3P	20	004671501	3	25/19	0.63-1/12	1,1	1
EB2R 125/3L 32A 3P	32	004671502	3	25/19	0.63-1/12	1,1	1
EB2R 125/3L 50A 3P	50	004671503	3	25/19	0.63-1/12	1,1	1
EB2R 125/3L 63A 3P	63	004671504	3	25/19	0.63-1/12	1,1	1
EB2R 125/3L 100A 3P	100	004671505	3	25/19	0.63-1/12	1,1	1
EB2R 125/3L 125A 3P	125	004671506	3	25/19	0.63-1/10	1,1	1
EB2R 125/4L 20A 4P	20	004671507	4	25/19	0.63-1/12	1,4	1
EB2R 125/4L 32A 4P	32	004671508	4	25/19	0.63-1/12	1,4	1
EB2R 125/4L 50A 4P	50	004671509	4	25/19	0.63-1/12	1,4	1
EB2R 125/4L 63A 4P	63	004671510	4	25/19	0.63-1/12	1,4	1
EB2R 125/4L 100A 4P	100	004671511	4	25/19	0.63-1/12	1,4	1
EB2R 125/4L 125A 4P	125	004671512	4	25/19	0.63-1/10	1,4	1

Note: all internal and external accessories can be used with EB2R – only exceptions are DA shunt trip unit and NA undervoltage trip unit (cannot be fitted to EB2R)

Residual current monitor and pre trip module - ETIBREAK EB2R 125

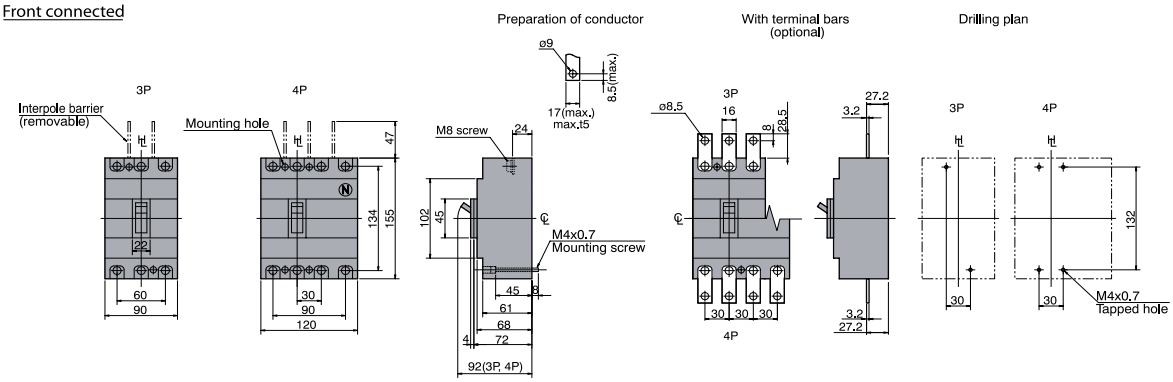
Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} [kA]	Adjustment thermal/ magnetic	kg	
EB2R-M 125/3L 20A 3P	20	004671513	3	25/19	0,63-1/12	1,1	1
EB2R-M 125/3L 32A 3P	32	004671514			0,63-1/12	1,1	
EB2R-M 125/3L 50A 3P	50	004671515			0,63-1/12	1,1	
EB2R-M 125/3L 63A 3P	63	004671516			0,63-1/12	1,1	
EB2R-M 125/3L 100A 3P	100	004671517			0,63-1/12	1,1	
EB2R-M 125/3L 125A 3P	125	004671518			0,63-1/10	1,1	
EB2R-M 125/4L 20A 4P	20	004671519	4		0,63-1/12	1,4	
EB2R-M 125/4L 32A 4P	32	004671520			0,63-1/12	1,4	
EB2R-M 125/4L 50A 4P	50	004671521			0,63-1/12	1,4	
EB2R-M 125/4L 63A 4P	63	004671522			0,63-1/12	1,4	
EB2R-M 125/4L 100A 4P	100	004671523			0,63-1/12	1,4	
EB2R-M 125/4L 125A 4P	125	004671524			0,63-1/10	1,4	

Note: all internal and external accessories can be used with EB2R – only exceptions are DA shunt trip unit and NA undervoltage trip unit (cannot be fitted to EB2R)

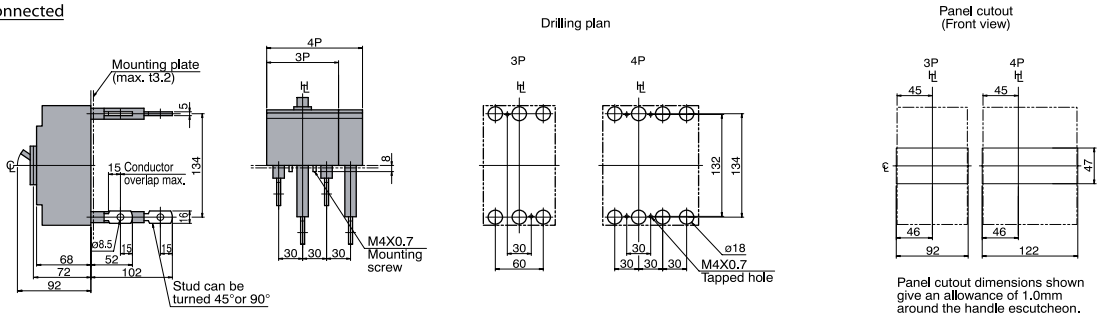
Dimensions

EB2R 125

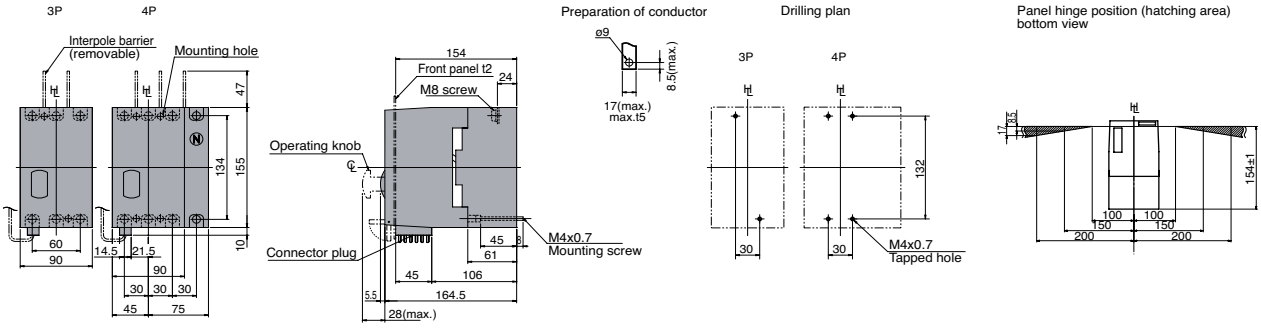
Front connected



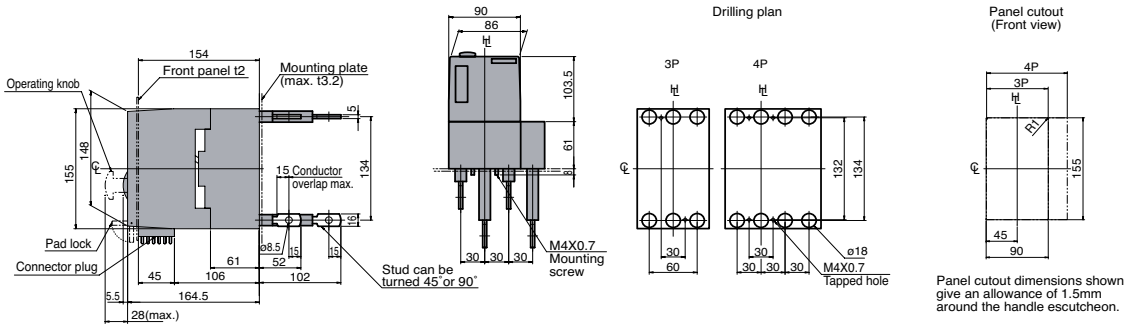
Rear connected



Front connected with Motor Operator



Rear connected with Motor Operator



ETIBREAK EB2R 250

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} [kA]	Adjustment thermal/ magnetic	kg	
EB2R 250/3L 160A 3P	160	004671581	3	25/19	0.63-1/13	1,5	1
EB2R 250/3L 250A 3P	250	004671582	3	25/19	0.63-1/10	1,5	1
EB2R 250/4L 160A 4P	160	004671583	4	25/19	0.63-1/13	1,9	1
EB2R 250/4L 250A 4P	250	004671584	4	25/19	0.63-1/10	1,9	1

Note: all internal and external accessories can be used with EB2R – only exceptions are DA shunt trip unit and NA undervoltage trip unit (cannot be fitted to EB2R)

Residual current monitor and pre trip module - ETIBREAK EB2R 250

Type	I_n [A]	Code No.	Poles	I_{cu}/I_{cs} [kA]	Adjustment thermal/ magnetic	kg	
EB2R-M 250/3L 160A 3P	160	004671585	3	25/19	0,63-1/13	1,5	1
EB2R-M 250/3L 250A 3P	250	004671586			0,63-1/10	1,5	
EB2R-M 250/4L 160A 4P	160	004671587	4		0,63-1/13	1,9	
EB2R-M 250/4L 250A 4P	250	004671588			0,63-1/10	1,9	

Note: all internal and external accessories can be used with EB2R – only exceptions are DA shunt trip unit and NA undervoltage trip unit (cannot be fitted to EB2R)

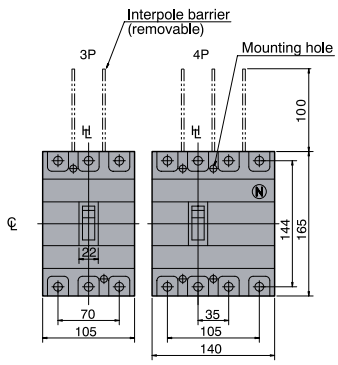
Residual current monitor and pre trip module (optional)

- normally open alarm contact (2A, 250V AC) closes on detection of residual current. Alarm treshold is adjustable.
- Green LED indicates voltage is present
- Red LED provides visual indications of residual current.
- Can be configured to provide trip + alarm or alarm only.
- Remote trip terminals allow tripping by push-button
- Can be configured to provide voltage drop protection.

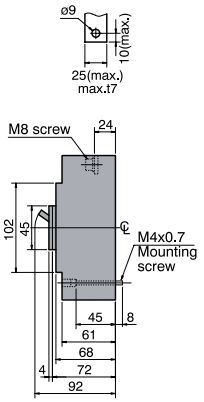
Dimensions

EB2R 250

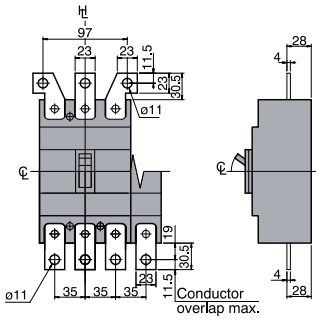
Front connected



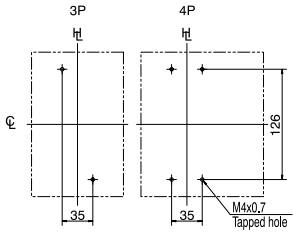
Preparation of conductor



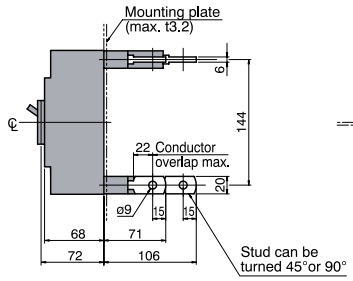
With terminal bars
(optional)

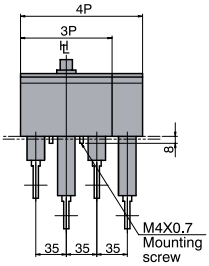


Drilling plan

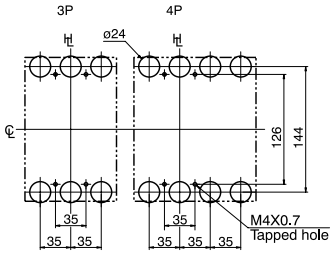


Rear connected

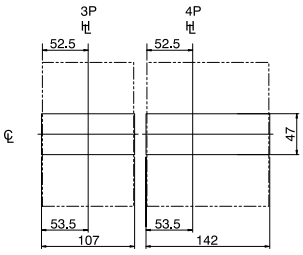




Drilling plan

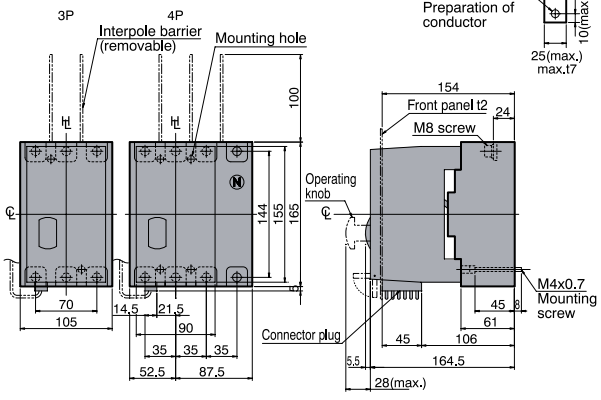


Panel cutout
(Front view)



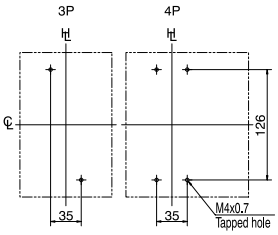
Panel cutout dimensions shown
give an allowance of 1.0mm
around the handle escutcheon.

Front connected with Motor Operator

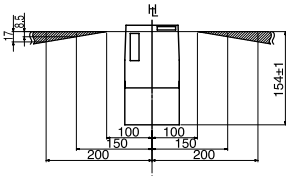


Preparation of
conductor

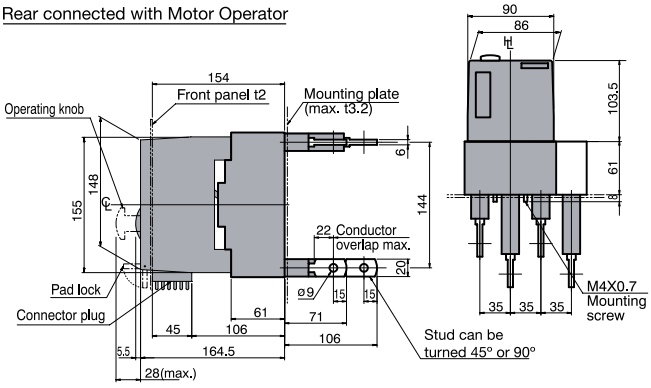
Drilling plan



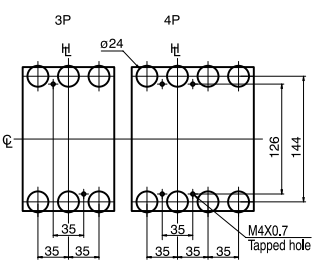
Panel hinge position (hatching area)
bottom view



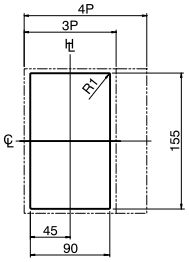
Rear connected with Motor Operator



Drilling plan



Panel cutout
(Front view)



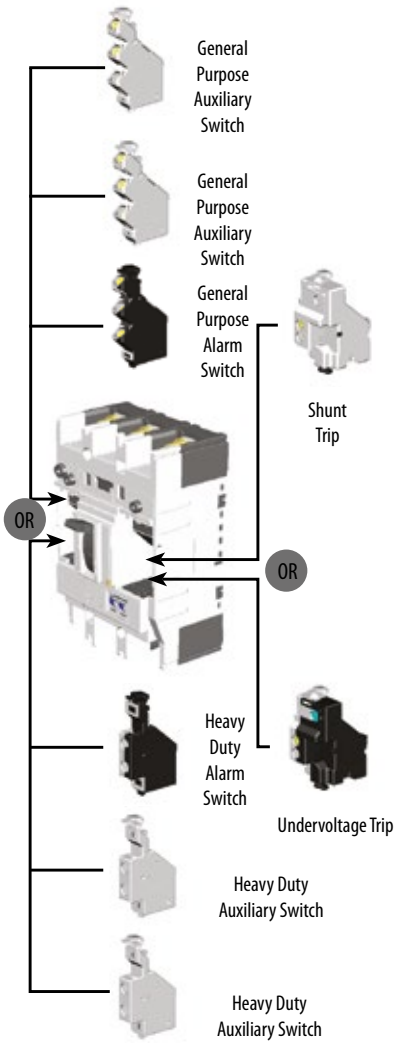
Panel cutout dimensions shown
give an allowance of 1.5mm
around the handle escutcheon.

ETIBREAK Accessories

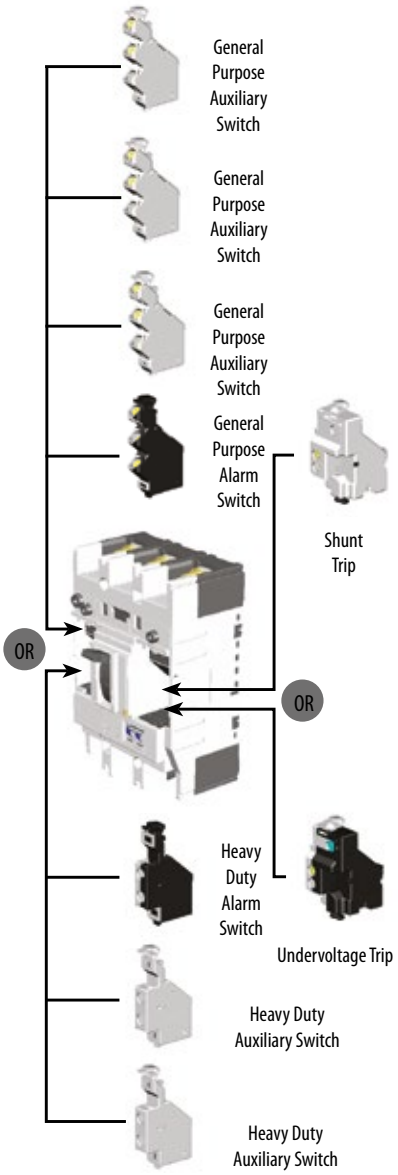
Internal accessories

Ampere Frame size (A):

125, 160, 250

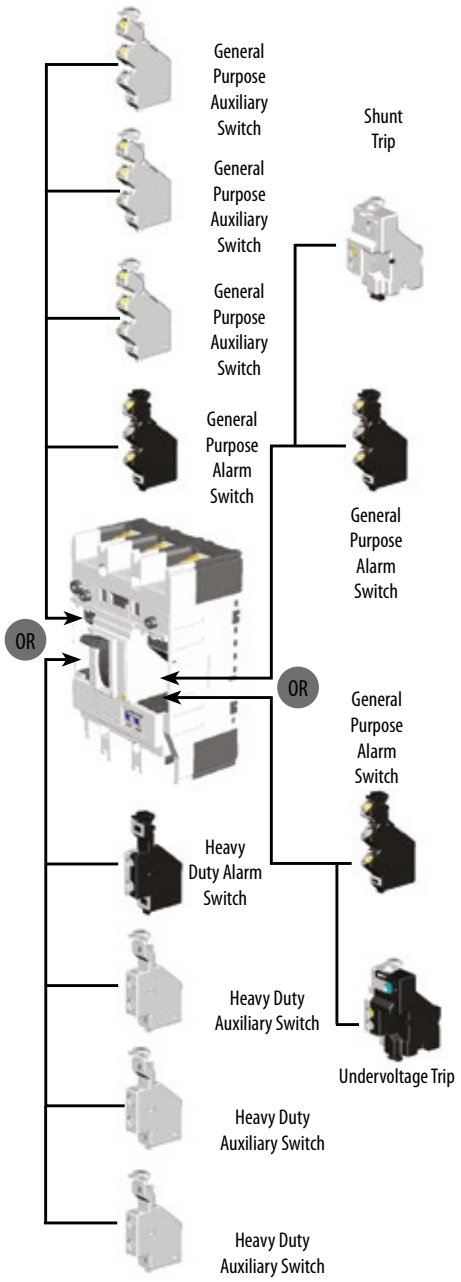


400, 630

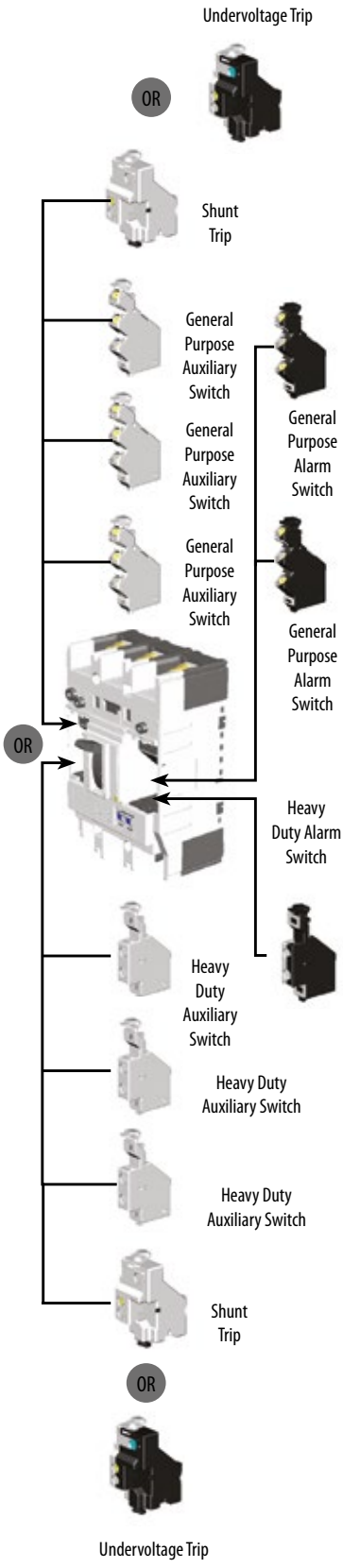


Ampere Frame size (A):

800, 1000



1250, 1600



- Status indication switches mount in the left side of the MCCB. General purpose and heavy duty status indication switches cannot be mixed in the same MCCB. Only one alarm switch can be fitted to an MCCB.
- Shunt trips and undervoltage trips mount in the right side of the MCCB.
- It is not possible to install a shunt trip and an undervoltage trip in an MCCB as they occupy the same location. Undervoltage trips can provide remote tripping if necessary by wiring a normally closed contact or pushbutton in series with the protected supply.
- Undervoltage trips with time delays require an external time delay controller which clips to the side of the MCCB.

Undervoltage trip for EB2, ED2 125-630

Internal accessories can be mounted by customer	Code No.	Description	Poles	
Undervoltage trip unit NA2 125-630AF AC200-240V	004671153	200-240 V AC	3, 4	1/1
Undervoltage trip unit NA2 125-630AF AC380-450V	004671154	380-450 V AC	3, 4	1/1
Undervoltage trip unit NA2 125-630AF DC24V	004671155	24 V DC	3, 4	1/1
Undervoltage trip unit NA2 125-630AF DC100-120V	004671156	100-120 V DC	3, 4	1/1
Undervoltage trip unit NA2 125-630AF DC200-240V	004671157	200-240 V DC	3, 4	1/1

Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker

NA2

Undervoltage trip for EB2, ED2 800-1600

Internal accessories can be mounted by customer	Code No.	Description	Poles	
Undervoltage trip unit NA2 800-1600AF AC380-415V	004672299	AC 380-415V	3, 4	1/1
Undervoltage trip unit NA2 800-1600AF AC220-240V	004672300	AC 220-240 V	3, 4	1/1
Undervoltage trip unit NA2 800-1600AF AC415-450V	004672301	AC 415-450 V	3, 4	1/1
Undervoltage trip unitNA2 800-1600AF DC24V	004672302	24 V DC	3, 4	1/1
Undervoltage trip unit NA2 800-1600AF DC100-120V	004672303	100-120 V DC	3, 4	1/1
Undervoltage trip unit NA2 800-1600AF DC200-240V	004672304	200-240 V DC	3, 4	1/1

Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker

PS2

Undervoltage trip for EB2, ED2 125-630AF - Time Delay

Internal accessories can be mounted by customer	Code No.	Description	Poles	
NA2 TD 125-630AF AC230-240V	004672341	230-240V AC	3, 4	1/1
NA2 TD 125-630AF AC380-415V	004672342	380-415V AC	3, 4	1/1
NA2 TD 125-630AF AC440-450V	004672343	440-450V AC	3, 4	1/1
NA2 TD 125-630AF DC24V	004672344	24V DC	3, 4	1/1
NA2 TD 125-630AF DC115-120V	004672345	115-120V DC	3, 4	1/1

Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker
Time delay of 500ms
Time delay units are fitted to the outside of MCCBs

Undervoltage trip for EB2, ED2 400-630AF only 4p - Time Delay

Internal accessories can be mounted by customer	Code No.	Description	Poles	
NA2 TD 4p 400-630AF AC230-240V	004672365	230-240V AC	4	1/1
NA2 TD 4p 400-630AF AC380-415V	004672366	380-415V AC	4	1/1
NA2 TD 4p 400-630AF AC440-450V	004672367	440-450V AC	4	1/1
NA2 TD 4p 400-630AF DC24V	004672368	24V DC	4	1/1
NA2 TD 4p 400-630AF DC115-120V	004672369	115-120V DC	4	1/1

Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker
Time delay of 500ms
Time delay units are fitted to the outside of MCCBs

Undervoltage trip for EB2, ED2 800-1000AF - Time Delay

Internal accessories can be mounted by customer	Code No.	Description	Poles	
NA2 TD 800-1000AF AC230-240V	004672305	230-240V AC	3, 4	1/1
NA2 TD 800-1000AF AC380-415V	004672306	380-415V AC	3, 4	1/1
NA2 TD 800-1000AF AC440-450V	004672307	440-450V AC	3, 4	1/1
NA2 TD 800-1000AF DC24V	004672308	24V DC	3, 4	1/1
NA2 TD 800-1000AF DC115-120V	004672309	115-120V DC	3, 4	1/1

Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker
Time delay of 500ms
Time delay units are fitted to the outside of MCCBs

Undervoltage trip for EB2, ED2 1250-1600AF - Time Delay

Internal accessories can be mounted by customer	Code No.	Description	Poles	
NA2 TD 1250-1600AF AC230-240V	004672390	230-240V AC	3, 4	1/1
NA2 TD 1250-1600AF AC380-415V	004672391	380-415V AC	3, 4	1/1
NA2 TD 1250-1600AF AC440-450V	004672392	440-450V AC	3, 4	1/1
NA2 TD 1250-1600AF DC24V	004672393	24V DC	3, 4	1/1
NA2 TD 1250-1600AF DC115-120V	004672394	115-120V DC	3, 4	1/1

Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker
Time delay of 500ms
Time delay units are fitted to the outside of MCCBs

Auxiliary & Alarm switch for EB2, ED2 125-1600 AF

Internal accessories can be mounted by customer	Code No.	Description	Poles	
Auxiliary switch, PS2 125-1600AF	004671141	1 changeover contact	3, 4	1/1
Auxiliary switch, heavy duty PS2-NO 125-1600AF	004671142	1 contact, NO	3, 4	1/1
Auxiliary switch, heavy duty PS2-NC 125-1600AF	004671143	1 contact, NC	3, 4	1/1
Alarm switch SS2 125-1600AF	004671144	1 changeover contact	3, 4	1/1
Alarm switch, heavy duty SS2-NO 125-1600AF	004671145	1 contact, NO	3, 4	1/1
Alarm switch, heavy duty SS2-NC 125-1600AF	004671146	1 contact, NC	3, 4	1/1

SS2

Shunt trip for EB2, ED2 125-1000A

Internal accessories can be mounted by customer	Code No.	Description	Poles	
DA2 125-1000AF AC200-240V	004671147	AC200-240V	3, 4	1/1
DA2 125-1000AF AC380-450V	004671148	AC380-450V	3, 4	1/1
DA2 125-1000AF DC24V	004671149	DC24V	3, 4	1/1
DA2 125-1000AF DC48V	004671150	DC48V	3, 4	1/1
DA2 125-1000AF DC100-120V	004671151	DC110-120V	3, 4	1/1
DA2 125-1000AF DC 200-240V	004671152	DC 200-240V	3, 4	1/1
DA2 125-1000AF DC 12V	004671159	12V DC	3, 4	1/1
DA2 125-1000AF AC 24V	004671189	24V AC	3, 4	1/1

Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker

DA2

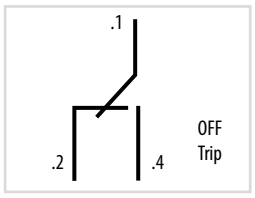
Shunt trip for EB2, ED2 1250 & 1600A

Internal accessories can be mounted by customer	Code No.	Description	Poles	
DA2 1250-1600AF AC200-240V	004671135	AC200-240V	3, 4	1/1
DA2 1250-1600AF AC380-450V	004671136	AC380-450V	3, 4	1/1
DA2 1250-1600AF DC24V	004671137	DC24V	3, 4	1/1
DA2 1250-1600AF DC48V	004671138	DC48V	3, 4	1/1
DA2 1250-1600AF DC100-120V	004671139	DC110-120V	3, 4	1/1
DA2 1250-1600AF DC 200-240V	004671140	DC 200-240V	3, 4	1/1
DA2 1250-1600AF AC 24V	004671190	24V AC	3, 4	1/1

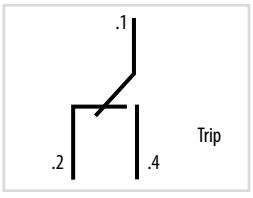
Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker

General Purpose Auxiliary Switch

General Purpose Alarm Switch



Terminal Designations and Function of General Purpose Auxiliary Switch

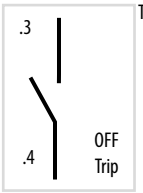


Terminal Designations and Function of General Purpose Alarm Switch

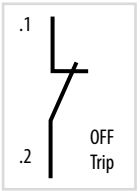
General purpose auxiliaries and alarm switch ratings

Volts (V)	AC Amperes (A)		Volts (V)	DC Amperes (A)		Minimum Load
	Resistive Load	Inductive Load		Resistive Load	Inductive Load	
440	-	-	250	-	-	100mA -> 15V DC.
240	3	2	125	0.4	0.05	
110	3	2	30	3	2	

Heavy Duty Auxiliary Switch

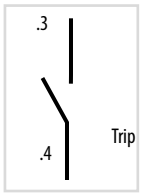


Terminal Designations and Function of Heavy Duty Auxiliary Switch NO contact

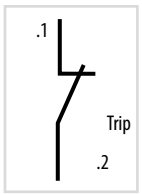


Terminal Designations and Function of Heavy Duty Auxiliary Switch, NC contact

Heavy Duty Alarm Switch



Terminal Designations and Function of Heavy Duty Alarm Switch, NO contact



Terminal Designations and Function of Heavy Duty Alarm Switch, NC contact

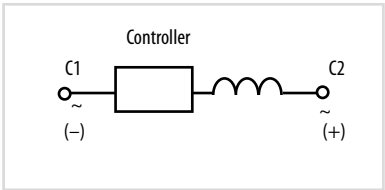
Ratings of Heavy Duty Auxiliary and Alarm switches

Volts (V)	AC Amperes (A)		Volts (V)	DC Amperes (A)	
	Resistive Load	Inductive Load		Resistive Load	Inductive Load
440	3	3	250	0.5	0.5
240	4	4	125	1	1
110	5	5	48	3	2.5
48	6	6	24	6	2.5

Shunt Trips

Ratings of Shunt Trips

Rated Voltage	Voltage AC		Voltage DC			
	200-240	380-450	24	48	100-120	200-240
Excitation Current (A)	0.014	0.0065	0.03	0.03	0.011	0.011

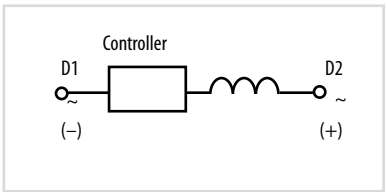


Terminal Designations of Shunt Trips

Undervoltage Trips

Ratings of Undervoltage Trips

Rated Voltage	Power supply capacity (VA) Voltage AC		Excitation current (mA) Voltage DC		
	200-240	380-450	24	100-120	200-240
Power Supply Capacity (A)	1.4	2.28	23	10	10



Terminal Designations of Undervoltage Trips

External accessories

IZ – Interpole barrier. Installed between MCCB teminal, which increases the distance between poles to reduce the possibility of creepage.

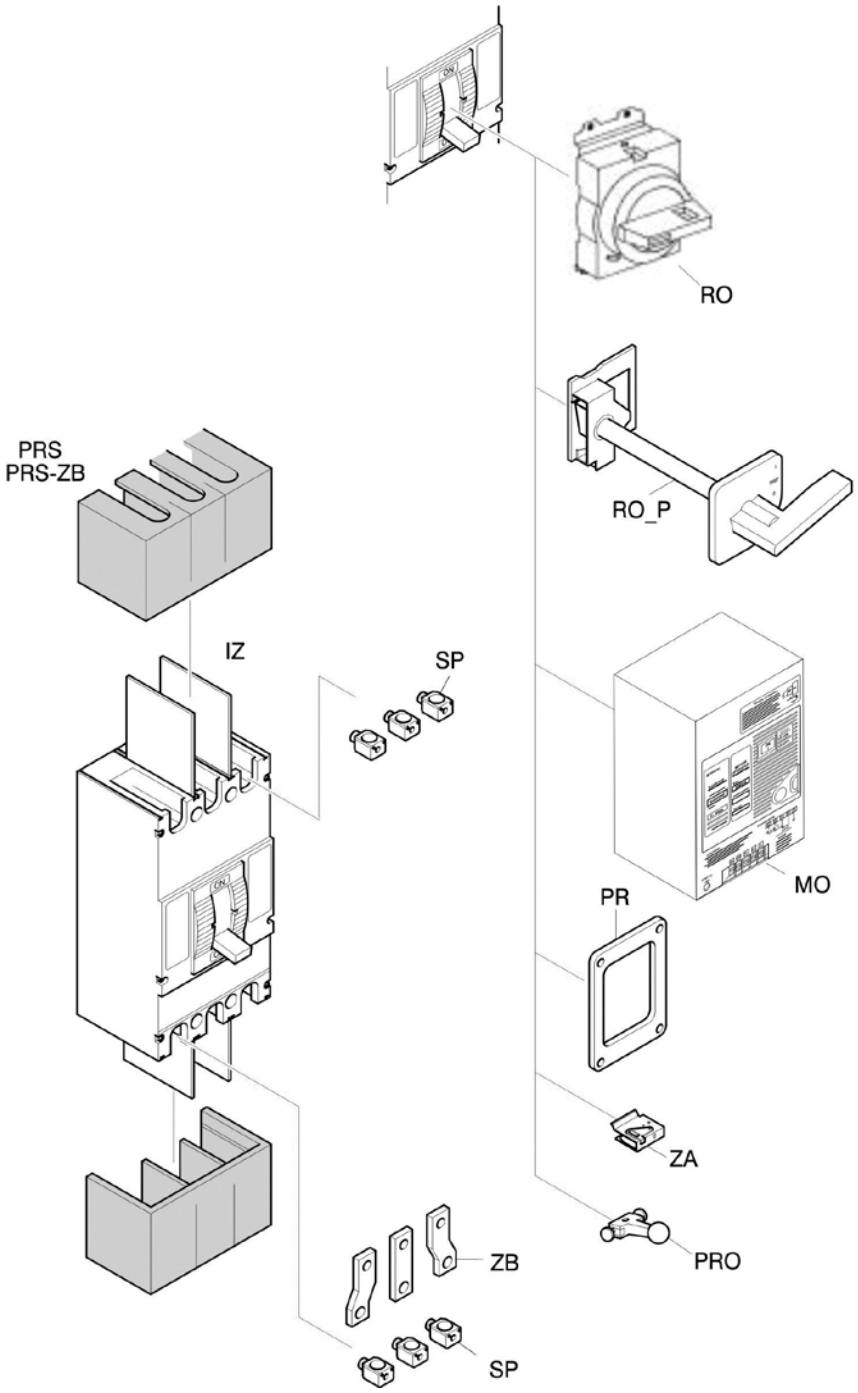
PRS – Terminal cover. The terminal covers are applied to the MCCB to prevent accidental contact with live parts and thereby protection against direct contact.

PRS-ZB – Terminal cover for att. Busbar. The terminal covers are applied to the MCCB to prevent accidental contact with live parts and thereby protection against direct contact. The width is different because of attach busbar.

SP – Solderless terminal

RO – Operating handle, breaker mounted. It's used when MCCB is installed in control centre/ switchboard

RO_P – Operating handle, panel mounted, variable depth. This consists of an operating mechanism mounted on the breaker, an operating handle mounted on the panel door and a square shaft to connect the mechanism with the handle.



MO – Motor operator. Enabling to switch MCCB ON or OFF remotly.
PR – Door flange. Accessory for mounting on panel door.
ZA – Handle lock. Enables the MCCB to be padlocked in neither the ON or OFF position.

ZB – Attach busbar. Used for easier instalation on busbar systems (widen terminals).
PRO – Handle extension. Used for easier manipulation ON/OFF at bigger MCCB's.

Accessories for EB2, ED2 125-1600 AF

	Code No	Poles	
Plug for aux. And alarm switches PSPSS 125-630AF	004671457	3, 4	1/1
Plug for shunt trips and underv. trips PSHUV 125-630AF	004671458	3, 4	1/1
Socket – for internal accessories PIO 125-1000AF	004671459	3, 4	1/1
Mechanical interlock, MW cable 1m	004671178	3, 4	1/1
Mechanical interlock, MW cable 1,5m	004671179	3, 4	1/1
OCR checker 200-240V AC	004672310	3, 4	1/1
Terminal cover lock PZ 125-630AF	004672400	3, 4	1/1

PSPSS / PSHUV

Accessories for EB2, ED2 125

	Code No	Poles	
Attach busbar, ZB2 125/3 Straight	004671161	3	3
Attach busbar, ZB2 125/4 Straight	004671162	4	3
Solderless Terminal, SP2 125/3	004671163	3	4
Solderless Terminal, SP2 125/4	004671164	4	4
Rear connections, RC2 125/3	004671187	3	3
Rear connections, RC2 125/4	004671188	4	4

PIO

ZB2 Straight

Accessories for EB2, ED2 125

	Code No	Poles	
Motor Operator, MO2 125 AC230-240V	004671165	3, 4	1
Motor Operator, MO2 125 AC100-110V	004671311	3, 4	1
Motor Operator, MO2 125 DC24V	004671313	3, 4	1
Motor Operator, MO2 125 DC48V	004671314	3, 4	1
Motor Operator, MO2 125 DC100V	004671315	3, 4	1
Motor Operator, MO2 125 AC230-240V, reset	004671166	3, 4	1
Motor Operator, MO2 125 AC100-110V, reset	004671316	3, 4	1
Motor Operator, MO2 125 DC24V, reset	004671318	3, 4	1
Motor Operator, MO2 125 DC48V, reset	004671319	3, 4	1
Motor Operator, MO2 125 DC100V, reset	004671320	3, 4	1
Motor Operator, MO2 125 DC220V, reset	004671327	3, 4	1

MO2

Accessories for EB2, ED2 125

	Code No	Poles	
Door Flange, PR2 125-250	004671167	3, 4	1
Door Flange, PR2 - mot 125-250	004671472	3, 4	1
Breaker mounted handle IP3X, RO2 125, black	004671168	3, 4	1
Breaker mounted handle IP3X, RO2 125, keylock (cylindrical), black	004671169	3, 4	1
Breaker mounted handle IP3X, RO2 125, red	004671321	3, 4	1
Breaker mounted handle IP3X, RO2 125, keylock (cylindrical), red	004671322	3, 4	1
Door mounted handle IP55, RO2 125P, black	004671170	3, 4	1
Door mounted handle IP65, RO2 125P, keylock (cylindrical), black	004671171	3, 4	1
Door mounted handle IP55, RO2 125P, red	004671323	3, 4	1
Door mounted handle IP65, RO2 125P, keylock (cylindrical), red	004671324	3, 4	1

Handle operating mechanism can be padlocked in OFF

IP3X RO2

Accessories for EB2, ED2 125

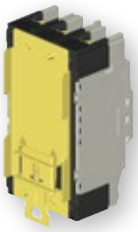
	Code No	Poles	
Slide mechanical interlock, MS 125 3P, MO or RO assembly not possible	004671172	3	1
Slide mechanical interlock, MS 125 4P, MO or RO assembly not possible	004671173	4	1
Link mechanical interlock, MLR 125 right, MO or RO assembly possible	004671174	3, 4	1
Link mechanical interlock, MLL 125 left 3p, MO or RO assembly possible	004671175	3	1
Link mechanical interlock, MLL 125 left 4p, MO or RO assembly possible	004671176	4	1
Wire mechanical interlock, MW 125, mechanism, MO or RO assembly possible	004671177	3, 4	1

Link mechanical configuration; MLR_right + MLL_left
Wire mechanical configuration; 2x MW_mech. + MW_cable

MLR+MLL

Accessories for EB2, ED2 125

	Code No	Poles	
OCR sealing cover 125 & 250	004671160	3, 4	1
Handle locks, ZA2 125-250	004671180	3, 4	1
Terminal cover lock, PZ 125-630AF	004672400	3, 4	1
Terminal cover, PRS2 125/3, front	004671181	3	1
Terminal cover, PRS2 125/4, front	004671182	4	1
Terminal cover, PRS2-SP 125/3, cable clamps	004671183	3	1
Terminal cover, PRS2-SP 125/4, cable clamps	004671184	4	1
Terminal cover, PRS2-NPF 125/3, plug-in	004671473	3	1
Terminal cover, PRS2-NPF 125/4, plug-in	004671474	4	1
Interpol barrier, IZ2 125	004671185	3, 4	1
DIN rail adapter, DIN 125 & 250	004671186	3, 4	1



DIN 125, 250

PRS2

Accessories for EB2, ED2 125

	Code No	Poles	
Fixed plug-in 3-p, NPF 125	004671451	3	1
Fixed plug-in 4-p, NPF 125	004671452	4	1
Plug-in Conversion 3-p, NPI 125	004671453	3	1
Plug-in Conversion 4-p, NPI 125	004671454	4	1
Extension terminal for fixed Plug-in 3-p, SK3 125	004671455	3	3
Extension terminal for fixed Plug-in 4-p, SK4 125	004671456	4	4

- basic configuration: fixed plug-in + plug-in conversion
- extension terminals is used when fixed part of plug-in is under mounting plate - not used for basic configuration
- if additional accessories are installed in MCCB, plugs and sockets (PSPSS, PSHUV and PIO) are required

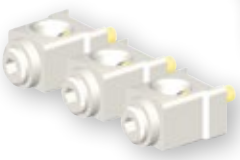
NPF

NPI

Accessories for EB2, ED2 160 and EB2, ED2 250

	Code No	Poles	
Attach busbar ZB2 250/3 Offset	004671191	3	3
Attach busbar, ZB2 250/4 Straight	004671192	4	4
Attach busbar, ZB2 250/3 Straight	004671325	3	3
Solderless Terminal, SP2 250/3	004671193	3	3
Solderless Terminal, SP2 250/4	004671194	4	4
Rear connections, RC2 250/3S-L	004671477	3	3
Rear connections, RC2 250/3E	004671478	3	3
Rear connections, RC2 250/4S-L	004671479	4	4
Rear connections, RC2 250/4E	004671480	4	4
Busbar adapter 3p, DA-60/250/3/FE-5	001696162	3	1
Busbar adapter 4p, DA-60/250/4/FE-5	001696163	4	1

ZB2 Offset



SP2

RC2

DA-60

Accessories for EB2, ED2 160 and EB2, ED2 250

	Code No	Poles	
Motor Operator, MO2 250 AC230-240V	004671195	3, 4	1
Motor Operator, MO2 250 AC100-110V	004671331	3, 4	1
Motor Operator, MO2 250 DC24V	004671333	3, 4	1
Motor Operator, MO2 250 DC48V	004671334	3, 4	1
Motor Operator, MO2 250 DC100V	004671335	3, 4	1
Motor Operator, MO2 250, AC230-240, reset	004671196	3, 4	1
Motor Operator, MO2 250 AC100-110V, reset	004671336	3, 4	1
Motor Operator, MO2 250 DC24V, reset	004671338	3, 4	1
Motor Operator, MO2 250 DC48V, reset	004671339	3, 4	1
Motor Operator, MO2 250 DC100V, reset	004671340	3, 4	1
Motor Operator, MO2 250 DC 200-220V, reset	004671328	3, 4	1

MO2

Accessories for EB2, ED2 160 and EB2, ED2 250

	Code No	Poles	
Door Flange, PR2 125-250	004671167	3, 4	1
Door Flange, PR2 - mot 125-250	004671472	3, 4	1
Breaker mounted handle IP3X, RO2 250, black	004671197	3, 4	1
Breaker mounted handle IP3X, RO2 250, keylock (cylindrical), black	004671198	3, 4	1
Breaker mounted handle IP3X, RO2 250, red	004671341	3, 4	1
Breaker mounted handle IP3X, RO2 250, keylock (cylindrical), red	004671342	3, 4	1
Door mounted handle IP55, RO2 250P, black	004671199	3, 4	1
Door mounted handle IP65, RO2 250P, black	004671200	3, 4	1
Door mounted handle IP55, RO2 250P, red	004671343	3, 4	1
Door mounted handle IP65, RO2 250P, red	004671344	3, 4	1

Handle operating mechanism can be padlocked in OFF

IP3X RO2

Accessories for EB2, ED2 160 in EB2, ED2 250

	Code No	Poles	
Slide mechanical interlock, MS 250 3P, MO or RO assembly not possible	004671201	3	1
Slide mechanical interlock, MS 250 4P, MO or RO assembly not possible	004671202	4	1
Link mechanical interlock, MLR 250 right, MO or RO assembly possible	004671203	3, 4	1
Link mechanical interlock, MLL 250 left 3p, MO or RO assembly possible	004671204	3	1
Link mechanical interlock, MLL 250 left 4p, MO or RO assembly possible	004671205	4	1
Wire mechanical interlock, MW 250, mechanism, MO or RO assembly possible	004671206	3, 4	1

Link mechanical interlock configuration; MLR_right + MLL_left
Wire mechanical interlock configuration; 2xMW_mech. + MW_cable

MS

Accessories for EB2, ED2 160 and EB2, ED2 250

	Code No	Poles	
OCR sealing cover 125 & 250	004671160	3, 4	1
Handle locks, ZA2 125-250	004671180	3, 4	1
Terminal cover lock, PZ 125-630AF	004672400	3, 4	1
Terminal cover, PRS2 250/3, front	004671207	3	1
Terminal cover, PRS2 250/4, front	004671208	4	1
Terminal cover, PRS2-SP 250/3, cable clamps	004671209	3	1
Terminal cover, PRS2-SP 250/4, cable clamps	004671210	4	1
Terminal cover, PRS2-NPF 250/3, plug-in	004671475	3	1
Terminal cover, PRS2-NPF 250/4, plug-in	004671476	4	1
DIN rail adapter, DIN 125 & 250	004671186	3, 4	1

PRS2

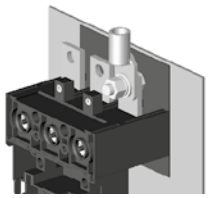
PRS2 SP

Accessories for EB2, ED2 160 and EB2, ED2 250

	Code No	Poles	
Interpol barrier, IZ2 250	004671211	3, 4	1
Lateral block, LTBL 250, left	004671212	3. 4	1
Lateral block, LTBR 250, right	004671213	3, 4	1
Fixed plug-in 3-p, NPF 250	004671460	3	1
Fixed plug-in 4-p, NPF 250	004671461	4	1
Plug-in Conversion 3-p, NPI 250 for use with EB2 160/3S, 250/3L_S	004671462	3	1
Plug-in Conversion 4-p, NPI 250 for use with EB2 160/4S, 250/4L_S	004671463	4	1
Plug-in Conversion 3-p, NPI 250_E for use with EB2 250/3E	004671485	3	1
Plug-in Conversion 4-p, NPI 250_E for use with EB2 250/4E	004671486	4	1
Extension terminal for fixed Plug-in 3-p, SK3 250	004671464	3	set = 3 pcs
Extension terminal for fixed Plug-in 4-p, SK4 250	004671465	4	set = 4 pcs

- basic configuration: fixed plug-in + plug-in conversion
- extension terminals is used when fixed part of plug-in is under mounting plate - not used for basic configuration
- if additional accessories are installed in MCCB, plugs and sockets (PSPSS, PSHUV and PIO) are required,

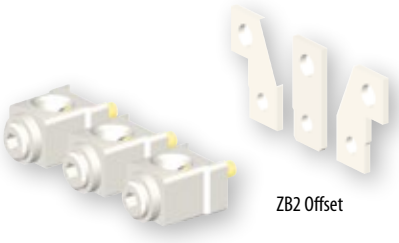
IZ2



SK3

Accessories for EB2, ED2 400 and EB2, ED2 630

	Code No	Poles	
Attach busbar, ZB2 400/3 Offset	004671221	3	set = 3 pcs
Attach busbar, ZB2 400/4 Offset	004671222	4	set = 4 pcs
Attach busbar, ZB2 400/3 Straight	004671326	3	set = 3 pcs
Attach busbar, ZB2 630/3 Straight	004671223	3	set = 3 pcs
Attach busbar, ZB2 ZB2 630/3 Offset	004671220	3	set = 3 pcs
Attach busbar, ZB2 630/4 Offset	004671224	4	set = 4 pcs
Solderless Terminal, SP2 400/3	004671225	3	set = 3 pcs
Solderless Terminal, SP2 400/4	004671226	4	set = 4 pcs
Rear connections, RC2 400/3	004671247	3	3
Rear connections, RC2 400/4	004671248	4	4
Rear connections, RC2 630/3	004671249	3	3
Rear connections, RC2 630/4	004671250	4	4



ZB2 Offset

SP2

RC2

Accessories for EB2, ED2 400 and EB2, ED2 630

	Code No	Poles	
Motor Operator, MO2 630, AC100-240V	004671227	3, 4	1
Motor Operator, MO2 630 DC24V	004671441	3, 4	1
Motor Operator, MO2 630 DC100-120V	004671442	3, 4	1
Motor Operator, MO2 630, AC100-240V, reset	004671228	3, 4	1
Motor Operator, MO2 630 DC24V, reset	004671443	3, 4	1
Motor Operator, MO2 630 DC100-120V, reset	004671444	3, 4	1
Motor Operator, MO2 630 DC200-220V, reset	004671329	3, 4	1

MO2

Accessories for EB2, ED2 400 and EB2, ED2 630

	Code No	Poles	
Breaker mounted handle IP3X, RO2 630, black	004671229	3, 4	1
Breaker mounted handle IP3X, RO2 630, keylock, black	004671230	3, 4	1
Breaker mounted handle IP3X, RO2 630, red	004671445	3, 4	1
Breaker mounted handle IP3X, RO2 630, keylock, red	004671446	3, 4	1
Door mounted handle IP55, RO2 630 P, black	004671231	3, 4	1
Door mounted handle IP65, RO2 630P, black	004671232	3, 4	1
Door mounted handle IP55, RO2 630P, red	004671447	3, 4	1
Door mounted handle IP65, RO2 630P, red	004671448	3, 4	1

Handle operating mechanism can be padlocked in OFF

IP55, RO2P

Accessories for EB2, ED2 400 and EB2, ED2 630

	Code No	Poles	
Slide mechanical interlock, MS 630 3P, MO or RO assembly not possible	004671233	3	1
Slide mechanical interlock, MS 630 4P, MO or RO assembly not possible	004671234	4	1
Link mechanical interlock, MLR 630 right , MO or RO assembly possible	004671235	3, 4	1
Link mechanical interlock, MLL 630 left 3p, MO or RO assembly possible	004671236	3	1
Link mechanical interlock, MLL 630 left 4p, MO or RO assembly possible	004671237	4	1
Wire mechanical interlock, MW 630, mechanism, MO or RO assembly possible	004671238	3, 4	1

Link mechanical interlock configuration; MLR_right + MLL_left
Wire mechanical interlock configuration; 2xMW_mech. + MW_cable

MW

Accessories for EB2, ED2 400 and EB2, ED2 630

	Code No	Poles	
Handle locks, ZA2 400/1000	004671239	3, 4	1
Terminal cover lock, PZ 125-630AF	004672400	3, 4	1
Terminal cover, PRS2 630/3, front	004671240	3	1
Terminal cover, PRS2 630/4, front	004671241	4	1
Terminal cover, PRS2-SP 630/3, cable clamps	004671242	3	1
Terminal cover, PRS2-SP 630/4, cable clamps	004671243	4	1
Interpol barrier, IZ2 400-1600	004671244	3, 4	1
Lateral block, LTBL 400-1000, left	004671245	3, 4	1
Lateral block, LTBR 400-1000, right	004671246	3, 4	1
Door Flange , PR2 400-630	004671449	3, 4	1

PRS2

Accessories for EB2, ED2 400 and EB2, ED2 630

	Code No	Poles	
Fixed plug-in 3-p, NPF 400-630	004671466	3	1
Fixed plug-in 4-p, NPF 400-630	004671467	4	1
Plug-in Conversion 3-p, NPI 400-630AF - 400A 3p	004671468	3	1
Plug-in Conversion 4-p, NPI 400-630AF - 400A 4p	004671469	4	1
Plug-in Conversion 3-p, NPI 400-630AF - 630A 3p	004671487	3	1
Plug-in Conversion 4-p, NPI 400-630AF - 630A 4p	004671488	4	1
Extension terminal for fixed Plug-in 3-p, SK3 400-630	004671470	3	set = 3 pcs
Extension terminal for fixed Plug-in 4-p, SK4 400-630	004671471	4	set = 4 pcs

- at 630A plug-in Conversion is max Rated current 504A at 50°C and 535,5A at 30°C and 40°C
- basic configuration: fi xed plug-in + plug-in conversion
- extension terminals is used when fi xed part of plug-in is under mounting plate - not used for basic configuration
- if additional accessories are installed in MCCB, plugs and sockets (PSPSS, PSHUV and PIO) are required,

NPI

Accessories for EB2, ED2 800

	Code No	Poles	
Attach busbar, ZB2 S800-630/3 Straight	004672320	3	set = 3 pcs
Attach busbar, ZB2 S800-630/4 Straight	004672321	4	set = 4 pcs
Attach busbar, ZB2 S800-800/3 Straight	004672322	3	set = 3 pcs
Attach busbar, ZB2 S800-800/4 Straight	004672323	4	set = 4 pcs

ZB2 Straight

Accessories for EB2, ED2 800 and EB2, ED2 1000

	Code No	Poles	
Motor Operator, MO2 800-1000, AC100-240V	004672324	3, 4	1
Motor Operator, MO2 800-1000 DC24-48V	004672325	3, 4	1
Motor Operator, MO2 800-1000 DC100-120V	004672326	3, 4	1
Motor Operator, MO2 800-1000 AC100-240V, reset	004672396	3, 4	1
Motor Operator, MO2 800-1000 DC24-48V, reset	004672397	3, 4	1
Motor Operator, MO2 800-1000 DC100-120V, reset	004672398	3, 4	1

Accessories for EB2, ED2 800 and EB2, ED2 1000

	Code No	Poles	
Handle Operating Mechanism, RO2 800-1000, black	004672327	3, 4	1
Handle Operating Mechanism, RO2 800-1000, key lock, black	004672328	3, 4	1
Handle Operating Mechanism, RO2 800-1000, red	004672329	3, 4	1
Handle Operating Mechanism, RO2 800-1000, key lock, red	004672330	3, 4	1
External Handle Operating Mechanism, RO2 800-1000 P, black	004672331	3, 4	1
External Handle Operating Mechanism, RO2 800-1000P, red	004672332	3, 4	1
Toggle Extension, PRO2 800-1600A	004672319	3, 4	1

Door mounted handle
(door interlock handle)

Accessories for EB2, ED2 800 and EB2, ED2 1000

	Code No	Poles	
Slide mechanical interlock, MS 800 3P, MO or RO assembly not possible	004672333	3	1
Slide mechanical interlock, MS 800 4P, MO or RO assembly not possible	004672334	4	1
Link mechanical interlock, MLR 800-1000 right , MO or RO assembly possible	004672335	3, 4	1
Link mechanical interlock, MLL 800-1000 left 3p, MO or RO assembly possible	004672336	3	1
Link mechanical interlock, MLL 800-1000 left 4p, MO or RO assembly possible	004672337	4	1
Wire mechanical interlock, MW 800-1000, mechanism, MO or RO assembly possible	004672338	3, 4	1

Link mechanical interlock configuration; MLR_right + MLL_left
Wire mechanical interlock configuration; 2xMW_mech. + MW_cable

MW_cable

Accessories for EB2, ED2 800 and EB2, ED2 1000

	Code No	Poles	
Handle locks, ZA2 400/1000	004671239	3, 4	1
Terminal cover, PRS2 800-1000/3, front	004672339	3	1
Terminal cover, PRS2 800-1000/4, front	004672340	4	1
Interpol barrier, IZ2 400-1600	004671244	3, 4	1
Lateral block, LTBL 400-1000, left	004671245	3	1
Lateral block, LTBR 400-1000, right	004671246	4	1

PRS2

Accessories for EB2, ED2 800

	Code No	Poles	
Fixed, Plug-in 3-p, NPF 800/3 AB	004672402	3	1
Fixed, Plug-in 4-p, NPF 800/4 AB	004672404	4	1
Plug-in Conversion 3-p, NPI 800/3	004672405	3	1
Plug-in Conversion 4-p, NPI 800/4	004672406	4	1
3 flat bars for Plug-in mount blocks, ZB2 800/3 NPF	004672407	3	set = 3 pcs
4 flat bars for Plug-in mount blocks, ZB2 800/4 NPF	004672408	4	set = 4 pcs
Plug for aux. and alarm switches PSPSS 800-1000AF	004671491	3, 4	1
Plug for shunt trips and underv. trips PSHUV 800-1000AF	004671492	3, 4	1

- basic configuration: fi xed plug-in + plug-in conversion
- extension terminals is used when fi xed part of plug-in is under mounting plate - not used for basic configuration
- if additional accessories are installed in MCCB, plugs and sockets (PSPSS, PSHUV and PIO) are required,
- AB suitable for attach bars

NPF

NPI

Accessories for EB2, ED2 1250 and EB2, ED2 1600

	Code No	Poles	
Motor Operator, MO2 1250-1600, AC240V	004672350	3, 4	1
Motor Operator, MO2 1250-1600 DC24-48V	004672351	3, 4	1
Motor Operator, MO2 1250-1600 DC100-110V	004672352	3, 4	1

Handle Operating Mechanism

Accessories for EB2, ED2 1250 and EB2, ED2 1600

	Code No	Poles	
Handle Operating Mechanism, RO2 1250-1600, black	004672353	3, 4	1
Handle Operating Mechanism, RO2 1250-1600, key lock, black	004672354	3, 4	1
Handle Operating Mechanism, RO2 1250-1600, red	004672355	3, 4	1
Handle Operating Mechanism, RO2 1250-1600, key lock, red	004672356	3, 4	1
External Handle Operating Mechanism, RO2 1250-1600 P, black	004672357	3, 4	1
External Handle Operating Mechanism, RO2 1250-1600P, red	004672358	3, 4	1
Toggle Extension, PRO2 800-1600A	004672319	3, 4	1

Accessories for EB2, ED2 1250

	Code No	Poles	
Slide mechanical interlock, MS 1250 3P, MO or RO assembly not possible	004672359	3	1
Slide mechanical interlock, MS 1250 4P, MO or RO assembly not possible	004672360	4	1

Accessories for EB2, ED2 1250

	Code No	Poles	
Fixed plug-in 3-p, NPF 1250/3	004672411	3	1
Fixed plug-in 4-p, NPF 1250/4	004672412	4	1
Plug-in Conversion 3-p, NPI 1250/3	004672413	3	1
Plug-in Conversion 4-p, NPI 1250/4	004672414	4	1
AUX terminal 1250A Base Side	004672415	3, 4	1

- Plug in version of MCCB has to be assembled by ETI
- max 3 AUX terminals can be used and each has 5 connections

Accessories for EB2, ED2 1250

	Code No	Poles	
Terminal cover, PRS2 1250/3, front	004672361	3	1
Terminal cover, PRS2 1250/4, front	004672362	4	1
Interpol barrier, IZ2 400-1600	004671244	3, 4	3/4

Terminal Cover

Detailed Technical Data for MCCBs EB2

Product series	description	unit	condition	EB2 125				EB2 160	
Model-type				L	S	H	V	S	H
Number of poles				3, 4			3	3, 4	
Nominal current ratings									
	In	(A)	50°C	20,32,50,				160	
				63,100,125					
Electrical characteristics									
Rated operational voltage	Ue	(V)	AC 50/60 Hz	690	690	690	1100	690	690
			DC	250	250	250	-	250	250
Rated insulation voltage	Ui	(V)		800	800	800	1100	800	800
Rated impulse withstand voltage	Uimp	(kV)		8	8	8	8	8	8
Ultimate breaking capacity	Icu	(kA)	1100V AC	-	-	-	4*/6**	-	-
(IEC, JIS, AS/NZS)			690V AC	-	6	6		7.5	7.5
			525V AC	8	22	25		25	25
			440V AC	15	25	50		25	50
			400/415V AC	25	36	65		36	65
			220/240V AC	35	50	85		65	85
			250V DC	25	25	40		40	40
Service breaking capacity	Ics	(kA)	1100V AC	-	-	-	4	-	-
(IEC, JIS, AS/NZS)	Ics	(kA)	690V AC	-	6	6		7.5	7.5
			525V AC	6	22	22		25	25
			440V AC	12	25	25		25	25
			400/415V AC	19	36/30	36/33		36	36
			220/240V AC	27	50	85		65	85
			250V DC	19	19	40		40	40
Rated breaking capacity (NEMA)		(kA)	480V AC	8	22	25		22	25
			240VAC	35	50	85		65	85
Protection									
Adjustable thermal, adjustable magnetic				■	■		■	■	
Fixed thermal, fixed magnetic				■					
Microprocessor									
Utilisation category				A	A		A	A	
Installation									
Front connection				■	■		■	■	
Attached flat bar				•	•		•	•	
Solderless terminal (cable clamp)				•	•		•	•	
Rear connection				•	•		•	•	
Plug-in				•	•		•	•	
Draw- out				-	-			-	
DIN rail mounting				•	•		-	-	
Dimensions	h	(mm)		155	155		155	165	
	w	(mm)		90	90		90	105	
				120	120			140	
	d	(mm)		68	68		68	68	
Weight		(kg)		1.1	1.1		1.1	1.5	
				1.4	1.4			1.9	
Operation									
Direct Opening Action				■	■		■	■	
Toggle operation				■	■		■	■	
Variable depth / direct mount operating handle				•	•		•	•	
Motor operator				•	•		•	•	
Endurance	Electrical	cycles	415V AC	30000	30000			20000	
			1100V AC				1000		
	Mechanical	cycles		30000	30000		7000	30000	
Standards				IEC 60947-2, EN 60947-2					

■ Standard • Optional - Not Available

*20, 32A
**50, 63, 100, 125A

Product series	description	unit	condition	EB2 250				EB2 250	
Model-type				L	S	H	V	LE	E
Number of poles				3, 4			3	3, 4	
Nominal current ratings									
	In	(A)	50°C	200, 250			160, 250	40, 125, 160, 250	
Electrical characteristics									
Rated operational voltage	Ue	(V)	AC 50/60 Hz	690	690	690	1100	690	690
			DC	250	250	250	-	-	-
Rated insulation voltage	Ui	(V)		800	800	800	1100	800	800
Rated impulse withstand voltage	Uimp	(kV)		8	8	8	8	8	8
Ultimate breaking capacity	Icu	(kA)	1100V AC	-	-	-	6	-	-
(IEC, JIS, AS/NZS)			690V AC	-	7.5	7.5		7,5	20
			525V AC	10	25	25		25	35
			440V AC	15	25	50		25	50
			400/415V AC	25	36	65		36	70
			220/240V AC	35	65	85		65	125
			250V DC	25	40	40		-	-
Service breaking capacity	Ics	(kA)	1100V AC	-	-	-	4	-	-
(IEC, JIS, AS/NZS)			690V AC	-	7.5	7.5		7,5	15
			525V AC	7.5	25	25		25	35
			440V AC	12	25	25		25	50
			400/415V AC	19	36	36		36	70
			220/240V AC	27	65	85		65	125
			250V DC	19	40	40		-	-
Rated breaking capacity (NEMA)		(kA)	480V AC	10	22	25		25	35
			240VAC	35	65	85		65	125
Rated short-time withstand current	Icw	(kA)	0.3 s	-	-		-	-	-
Protection									
Adjustable thermal, adjustable magnetic				■	■		■	-	-
Fixed thermal, fixed magnetic								-	-
Microprocessor								■	■
Utilisation category				A	A		A	A	A
Installation									
Front connection				■	■		■	■	■
Attached flat bar				•	•		•	•	•
Solderless terminal (cable clamp)				•	•		•	•	•
Rear connection				•	•		•	•	•
Plug-in				•	•		•	•	•
Draw- out				-	-			-	-
DIN rail mounting				-	-		-	-	-
Dimensions	h	(mm)		165	165		165	165	165
	w	(mm)	3 pole	105	105		105	105	105
		(mm)	4 pole	140	140			140	140
	d	(mm)		68	68		68	103	103
Weight		(kg)	3 pole	1.5	1.5		1.5	2.3	2.5
			4 pole	1.9	1.9			3.1	3.3
Operation									
Direct Opening Action				■	■		■	■	■
Toggle operation				■	■		■	■	■
Variable depth / direct mount operating handle				•	•		•	•	•
Motor operator				•	•		•	•	•
Endurance	Electrical	cycles	415V AC	10000	10000			10000	10000
			1100V AC				10000		
	Mechanical	cycles		30000	30000		70000	30000	30000
Standards				IEC 60947-2, EN 60947-2					

■ Standard • Optional - Not Available

ETIBREAK / Additional Technical Data

Product series	description	unit	condition	EB2 400		EB2 400			EB2 630			
Model-type				L	S	E, LCD	HLCD	VE	LE, LLCD	E, LCD	HE	VE
Number of poles				3, 4	3, 4	3, 4	4	3	3, 4	3, 4	3, 4	3
Nominal current ratings												
	In	(A)	50°C	250, 400	250, 400	250, 400		400	630	630	630	630
Electrical characteristics												
Rated operational voltage	Ue	(V)	AC 50/60 Hz	525	690	690	690	1100	690*	690*	690*	1100
			DC	250	250	-	-	-	-	-	-	-
Rated insulation voltage	Ui	(V)		800	800	800	800	1100	800	800	800	1100
Rated impulse withstand voltage	Uimp	(kV)		8	8	8	8	8	8	8	8	8
Ultimate breaking capacity	Icu	(kA)	1100V AC					12,5				18
(IEC, JIS, AS/NZS)			690V AC	-	20	20	20		10*	20*	20*	
			525V AC	15	30	30	30		15	30	30	
			440V AC	22	45	45	65		25	45	65	
			400/415V AC	25	50	50	70		36	50	70	
			220/240V AC	35	85	85	100		50	85	100	
			250V DC	25	40	-	-		-	-	-	
Service breaking capacity	Ics	(kA)	1100V AC					6,3				13,5
(IEC, JIS, AS/NZS)			690V AC	-	15	15	15		10*	15*	15*	
			525V AC	15	30	30	30		15	30	30	
			440V AC	22	45	45	50		25	45	50	
			400/415V AC	25	50	50	50		36	50	50	
			220/240V AC	35	85	85	85		50	85	85	
			250V DC	19	40	-	-		-	-	-	
Rated breaking capacity (NEMA)		(kA)	480V AC	15	25	25	30		15	25	30	
			240VAC	35	85	85	100		50	85	100	
Rated short-time withstand current	Icw	(kA)	0.3 s	-	-	5	5	-	-	-		-
Protection												
Adjustable thermal, adjustable magnetic				■	■							
Fixed thermal, fixed magnetic												
Microprocessor						■	■	■	■	■	■	■
Utilisation category				A	A	B	B	A	A	A	A	A
Installation												
Front connection				■	■	■	■	■	■	■	■	-
Attached flat bar				•	•	•	•	•	•	•	•	■
Solderless terminal (cable clamp)				•	•	•	•	-	-	-	-	-
Rear connection				•	•	•	•	•	-	-	-	•
Plug-in				•	•	•	•	•				•
Draw- out				•	•	•	•	-	-	-	-	-
DIN rail mounting				-	-	-	-	-	-	-	-	-
Dimensions	h	(mm)		260	260	260	260	260	260	260	260	273
	w	(mm)	3 pole	140	140	140	-	140	140	140	140	210
		(mm)	4 pole	185	185	185	185		185	185	185	
	d	(mm)		103	103	103	103	103	103	103	103	103
Weight		(kg)	3 pole	4.2	4.2	4.3	-	4,8	5.0	5.0	5.0	9,6
			4 pole	5.6	5.6	5.7	5.7		6.5	6.5	6.5	
Operation												
Direct Opening Action				■	■	■	■	-	■	■	■	-
Toggle operation				■	■	■	■	■	■	■	■	■
Variable depth / direct mount operating handle				•	•	•	•	•	•	•	•	•
Motor operator				•	•	•	•	•	•	•	•	•
Endurance	Electrical	cycles	415V AC	4500	4500	4500	4500		4500	4500	4500	
			1100V AC					1000				1000
	Mechanical	cycles		15000	15000	15000	15000	5000	15000	15000	15000	5000
Standards				IEC 60947-2, EN 60947-2								

■ Standard • Optional - Not Available

* MCCB can not be used in IT system at this voltage

Product series	description	unit	condition	EB2 800			EB2 800			
Model-type				L	S	H	LE	E	HE	VE
Number of poles				3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3
Nominal current ratings										
	In	(A)	50°C	630, 800	630, 800	630, 800	800	800	800	800
Electrical characteristics										
Rated operational voltage	Ue	(V)	AC 50/60 Hz	690	690	690	690	690	690	1100
			DC	250	250	250	-	-		
Rated insulation voltage	Ui	(V)		800	800	800	800	800	800	1100
Rated impulse withstand voltage	Uimp	(kV)		8	8	8	8	8	8	8
Ultimate breaking capacity	Icu	(kA)	1100V AC							18
(IEC, JIS, AS/NZS)			690V AC	10*	20*	25*	20*	25*	25*	
			525V AC	15*	30	45	30	35	40	
			440V AC	30	50	65	50	65	125	
			400/415V AC	36	50	70	50	70	125	
			220/240V AC	50	85	100	85	100	150	
			250V DC	50	50	50	-	-	-	
Service breaking capacity	Ics	(kA)	1100V AC							13,5
(IEC, JIS, AS/NZS)			690V AC	10*	20*	20*	20*	20*	20*	
			525V AC	15*	30	34	30	30	34	
			440V AC	30	50	50	50	50	94	
			400/415V AC	36	50	50	50	50	94	
			220/240V AC	50	85	75	85	75	150	
			250V DC	50	50	50	-	-	-	
Rated breaking capacity (NEMA)		(kA)	480V AC	15	30	45	30	35	40	
			240V AC	50	85	100	85	100	150	
Rated short-time withstand current	Icw	(kA)	0,3 sec	-	-	-	10	10	10	-
Protection										
Adjustable thermal, adjustable magnetic				■	■	■	-	-	-	-
Fixed thermal, fixed magnetic				-	-	-	-	-	-	-
Microprocessor				-	-	-	■	■	■	■
Utilisation category				A	A	A	B	B	B	A
Installation										
Front connection				■	■	■	■	■	-	-
Attached flat bar				•	•	•	•	•	■	■
Solderless terminal (cable clamp)				•	•	•	-	-	-	-
Rear connection				•	•	•	-	-	•	•
Plug-in				•	•	•	-	-	•	•
Draw- out				-	-	-	-	-	-	-
DIN rail mounting				-	-	-	-	-	-	-
Dimensions	h	(mm)		273	273	273	273	273	273	273
	w	(mm)	3 pole	210	210	210	210	210	210	210
		(mm)	4 pole	280	280	280	280	280	280	
	d	(mm)		103	103	103	103	103	140	103
Weight		(kg)	3 pole	8,5	8,5	8,5	9,1	9,1	12,3	9,7
			4 pole	11,5	11,5	11,5	12,3	12,3	14,8	
Operation										
Direct Opening Action				■	■	■	■	■	■	-
Toggle operation				■	■	■	■	■	■	■
Variable depth / direct mount operating handle				•	•	•	•	•	•	•
Motor operator				•	•	•	•	•	•	•
Endurance	Electrical	cycles	690V AC	4000	4000	4000	4000	4000	4000	
			1100V AC							500
	Mechanical	cycles		10000	10000	10000	10000	10000	10000	3000
Standards				IEC 60947-2, EN 60947-2						

■ Standard • Optional - Not Available

* MCCB can not be used in IT system at this voltage

ETIBREAK / Additional Technical Data

Product series	description	unit	condition	EB2 1000		EB2 1250			EB2 1600	
Model-type				LE	E	LE	E	VE	LE	E
Number of poles				3, 4	3, 4	3, 4	3, 4	3	3, 4	3, 4
Nominal current ratings										
	In	(A)	50°C	1000	1000	1250	1250	800, 1250	1600	1600
Electrical characteristics										
Rated operational voltage	Ue	(V)	AC 50/60 Hz	690	690	690	690	1100	690	690
			DC	-	-	-	-		-	-
Rated insulation voltage	Ui	(V)		800	800	800	800	1100	800	800
Rated impulse withstand voltage	Uimp	(kV)		8	8	8	8	8	8	8
Ultimate breaking capacity	Icu	(kA)	1100V AC					30		
(IEC, JIS, AS/NZS)			690V AC	20*	25*	20*	25*		20*	45*
			525V AC	30	45	30	45		30	65
			440V AC	45	65	45	65		45	85
			400/415V AC	50	70	50	70		50	100/85
			220/240V AC	85	100	85	100		85	125
			250V DC	-	-	-	-		-	-
Service breaking capacity	Ics	(kA)	1100V AC					20		
(IEC, JIS, AS/NZS)			690V AC	15*	20*	15*	20*		15*	34*
			525V AC	23	34	23	34		23	50
			440V AC	34	50	34	50		34	65
			400/415V AC	38	50	38	50		38	75/65
			220/240V AC	65	75	65	75		65	94
			250V DC	-	-	-	-		-	-
Rated breaking capacity (NEMA)		(kA)	480V AC	30	45	30	45		30	65
			240V AC	85	100	85	100		85	125
Rated short-time withstand current	Icw	(kA)	0,3 sec	-	-	15	15	15	20	20
Protection										
Adjustable thermal, adjustable magnetic				-	-	-	-	-	-	-
Fixed thermal, fixed magnetic				-	-	-	-	-	-	-
Microprocessor				■	■	■	■	■	■	■
Utilisation category				A	A	B	B	B	B	B
Installation										
Front connection				-	-	-	-	-	-	-
Attached flat bar				■	■	■	■	■	■	■
Solderless terminal (cable clamp)				-	•	-	-	-	-	-
Rear connection				•	-	-	-	•	•	•
Plug-in				-	-	-	-	•	-	-
Draw- out				-	-	-	-	-	-	-
DIN rail mounting				-	-	-	-	-	-	-
Dimensions	h	(mm)		273	273	370	370	370	370	370
	w	(mm)	3 pole	210	210	210	210	210	210	210
		(mm)	4 pole	280	280	280	280		280	280
	d	(mm)		103	103	120	120	120	140	140
Weight		(kg)	3 pole	11	11	19,8	19,8	19,8	27	27
			4 pole	14,8	14,8	25	25		35	35
Operation										
Direct Opening Action				■	■	■	■	■	■	■
Toggle operation				■	■	■	■	■	■	■
Variable depth / direct mount operating handle				•	•	•	•	•	•	•
Motor operator				•	•	•	•	•	•	•
Endurance	Electrical	cycles	690V AC	4000	4000	4000	4000		2000	2000
			1100V AC					4000		
	Mechanical	cycles		10000	10000	5000	5000	5000	5000	5000
Standards				IEC 60947-2, EN 60947-2						

■ Standard • Optional - Not Available

* MCCB can not be used in IT system at this voltage

Product series	description	unit	condition	EB2R	EB2R
Model-type				125L	250L
Number of Poles				3, 4	3, 4
Nominal current ratings					
	In	(A)	50°C	20, 32, 50	160, 250
				63, 100, 125	
Electrical characteristics					
Rated operational voltage	Ue	(V)	AC 50/60 Hz	525	525
Rated impulse withstand voltage	Uimp	(kV)		8	8
Ultimate breaking capacity	Icu	(kA)	525V AC	8	10
(IEC, JIS, AS/NZS)			440V AC	15	15
			400/415V AC	25	25
			220/240V AC	35	35
Service breaking capacity	Ics	(kA)	525V AC	6	7.5
(IEC, JIS, AS/NZS)			440V AC	12	12
			400/415V AC	19	19
			220/240V AC	27	27
Protection					
Adjustable thermal, adjustable magnetic				■	■
Residual current protection, Type A				■	■
Utilization category				A	A
Installation					
Front connection				■	■
Attached flat bar				•	•
Solderless terminal (cable clamp)				•	•
Rear connection				•	•
Plug-in				-	-
DIN rail mounting				•	-
Dimensions	h	(mm)		155	165
	w	(mm)	3 pole	90	105
			4 pole	120	140
	d	(mm)		68	68
Weight		(kg)	3 pole	1.1	1.5
			4 pole	1.4	1.9
Operation					
Direct Opening Action				■	■
Toggle operation				■	■
Variable depth / direct mount operating handle				•	•
Mechanical interlocks				-	-
Motor operator				•	•
Endurance	Electrical	cycles	440V AC	30000	30000
	Mechanical	cycles		30000	30000
Standards				IEC 60947-2, EN 60947-2	

■ Standard • Optional - Not Available

ETIBREAK / Additional Technical Data

Product series	description	unit	condition	EB2 400		EB2 800	
Model-type				LF	SF	LF	LF
Number of poles				3	3, 4	3, 4	
Nominal current ratings							
	In	(A)	50°C	400 (45°C)	400 (45°C)	630 (45°C)	800 (45°C)
Electrical characteristics							
Rated operational voltage	Ue	(V)	AC 50/60 Hz	690	690	690	690
			DC	250	250	250	250
Rated insulation voltage	Ui	(V)		690	690	690	690
Rated impulse withstand voltage	Uimp	(kV)		8	8	8	8
Ultimate breaking capacity	Icu	(kA)	3,817	10	15	10	10
(IEC, JIS, AS/NZS)			525V AC	15	22	15	15
			440V AC	22	30	30	30
			400/415V AC	25	36	36	36
			220/240V AC	35	50	50	50
			250V DC	35	40	50	50
Service breaking capacity	Ics	(kA)	690V AC	10	15	10	10
(IEC, JIS, AS/NZS)			525V AC	15	22	15	15
			440V AC	22	30	30	30
			400/415V AC	25	36	36	36
			220/240V AC	35	50	50	50
			250V DC	35	40	50	50
Rated breaking capacity (NEMA)		(kA)	480V AC				
			240VAC				
Rated short-time withstand current			0.3 s				
Protection							
Fixed thermal, adjustable magnetic				-	■		
Fixed thermal, fixed magnetic				■		-	-
Microprocessor				-	-	-	-
Utilisation category				A	A	A	A
Installation							
Front connection				■	■	-	-
Attached flat bar				•	•	■	■
Solderless terminal (cable clamp)				•	•	•	•
Rear connection				•	•	•	•
Plug-in				•	•	•	•
Draw- out						-	-
DIN rail mounting				-	-	-	-
Dimensions	h	(mm)		260	260	273	273
	w	(mm)	3 pole	140	140	210	210
		(mm)	4 pole	-	185	280	280
	d	(mm)		103	103	103	103
Weight		(kg)	3 pole	4.2	4.2	8	8,5
			4 pole	-	5.6	11	11,5
Operation							
Direct Opening Action				■	■	■	■
Toggle operation				■	■	■	■
Variable depth / direct mount operating handle				•	•	•	•
Motor operator				•	•	•	•
Endurance	Electrical cycles		415V AC	4500	4500	4000	4000
	Mechanical cycles			15000	15000	10000	10000
Standards				IEC 60947-2, EN 60947-2			

■ Standard • Optional - Not Available

Detailed Technical Data for Low Voltage Switch Disconnectors ED2

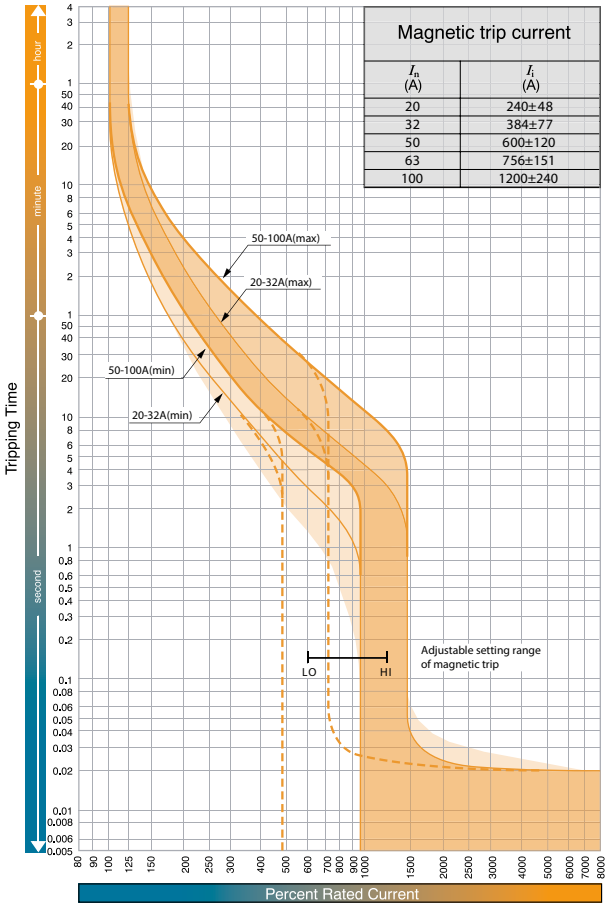
Product series	desc.	unit	condition	ED2	ED2	ED2	ED2	ED2	ED2	ED2	ED2	ED2
Model-type				125	160	250	400	630	800	1000	1250	1600
Number of Poles				3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
Nominal current ratings												
	In	(A)		125	160	250	400	630	800	1000	1250	1600
Electrical characteristics												
Rated operational voltage	Ue	(V)	AC 50/60 Hz	690	690	690	690	690	690	690	690	690
			DC	250	250	250	250	250	250	250	250	250
Rated insulation voltage	Ui	(V)		800	800	800	800	800	800	800	800	800
Rated impulse withstand voltage	Uimp	(kV)		8	8	8	8	8	8	8	8	8
Rated short-circuit making capacity	Icm	(kA peak)		3,6	6	6	9	9	17	17	32	45
Rated short-time withstand current	Icw	(kA rms)	0.3s	2	3	3	5	5	10	10	10	10
			AC	AC-23A	AC-23A	AC-23A	AC-23A	AC-23A	AC-23A	AC-23A	AC-23A	AC-23A
			DC	DC-22A	DC-22A	DC-22A	DC-22A	DC-22A	DC-22A	DC-22A	DC-22A	DC-22A
Installation												
Front connection				■	■	■	■	■	■	-	-	-
Attached flat bar				•	•	•	•	•	•	■	■	•
Solderless terminal				•	•	•	•	•	-	-	-	-
Rear connection				•	•	•	•	•	•	•	•	■
Plug-in				•	•	•	•	•	•	-	•	-
Draw- out				•	•	•	•	•	•	-	•	•
DIN rail mounting				•	-	-	-	-	-	-	-	-
Dimensions	h	(mm)		155	165	165	260	260	273	273	370	370
	w	(mm)	3 pole	90	105	105	140	140	210	210	210	210
		(mm)	4 pole	120	140	140	185	185	280	280	280	280
	d	(mm)		68	68	68	103	103	103	103	120	140
Weight		(kg)	3 pole	1.1	1.5	1.5	4.2	4.4	8,5	10,4	18,2	24,9
			4 pole	1.4	1.9	1.9	5.6	5.8	11,5	14,0	23, 4	32,9
Operation												
Direct Opening Action				■	■	■	■	■	■	■	■	■
Toggle operation				■	■	■	■	■	■	■	■	■
Variable depth / direct mount operating handle				•	•	•	•	•	•	•	•	•
Motor operator				•	•	•	•	•	•	•	•	•
Endurance	Elec.	cycles	415V AC	30000	10000	10000	4500	4500	4000	4000	4000	2000
	Mech.	cycles		30000	30000	30000	15000	15000	10000	10000	5000	5000
Standards				IEC 60947-2, EN 60947-2						IEC 60947-3, EN 60947-3		

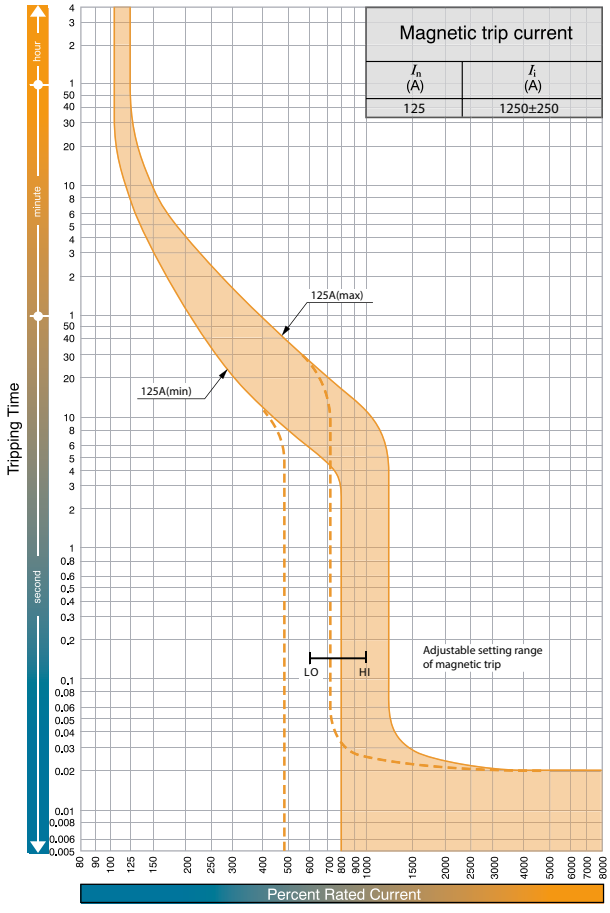
Thermal magnetic adjustments and characteristics

Thermal adjustment
Low voltage moulded case circuit breakers have a wide thermal adjustment range, one of the largest on the market. The rated current 'Ir' is continuously adjustable from 63% to 100% of this nominal current 'In'. There are three main points of calibration marked at 63%, 80% and 100%.

Magnetic adjustment
An adjustable magnetic characteristics allows short-circuit protection to be matched to the load and supply characteristics, for example motor inrush current or generator short-circuit current.

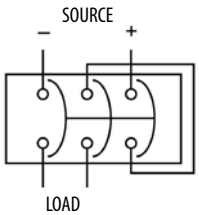
Time, current characteristics curves
EB2 125



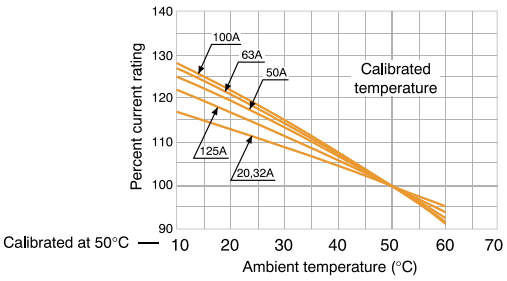


Special applications of thermal magnetic MCCBs

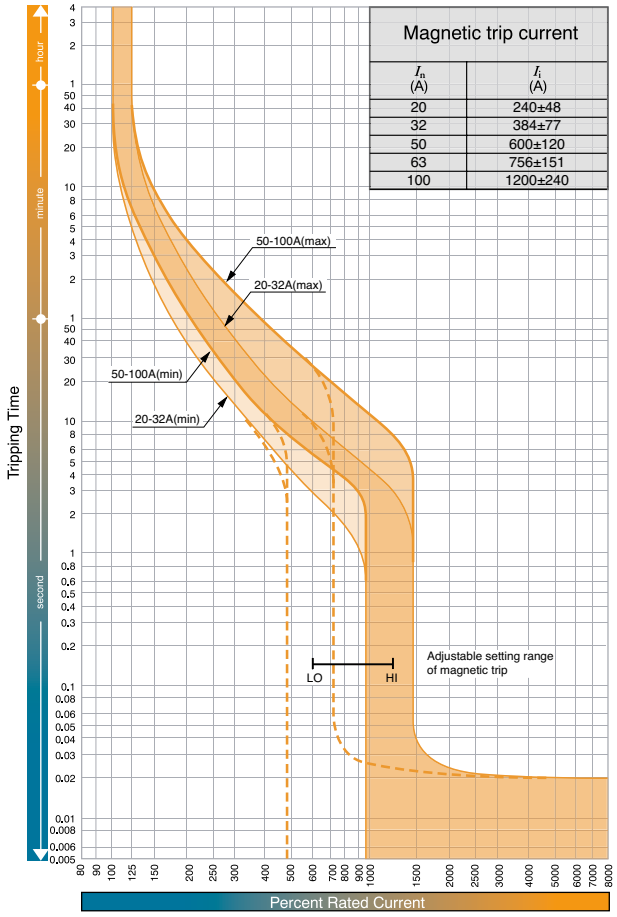
All standard thermal magnetic MCCBs are suitable for DC application up to 250 V DC.

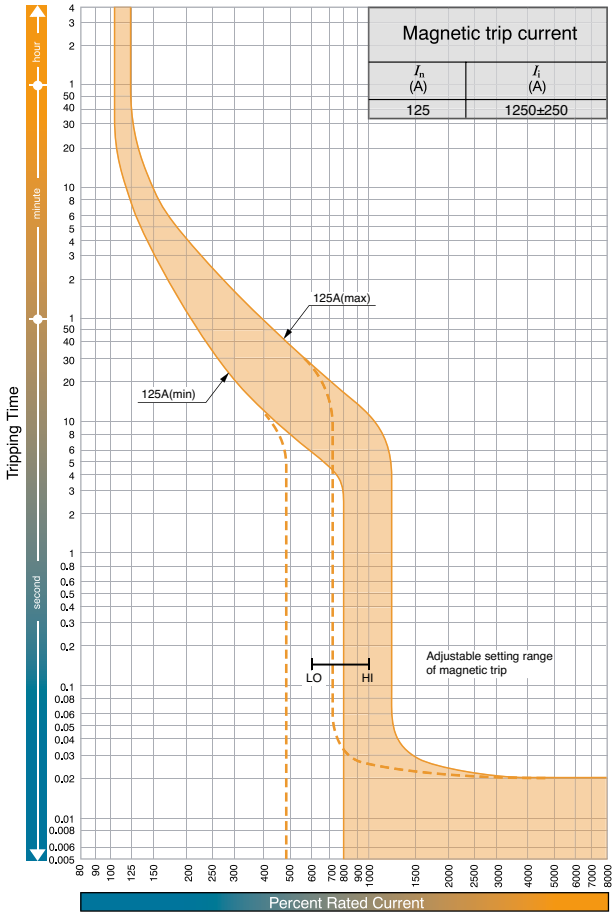


Ambient compensating curves

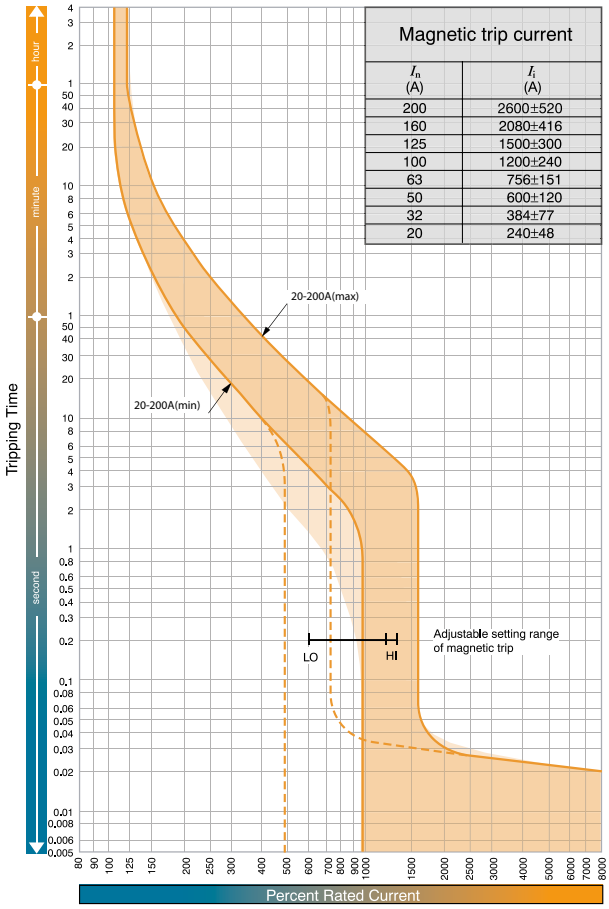


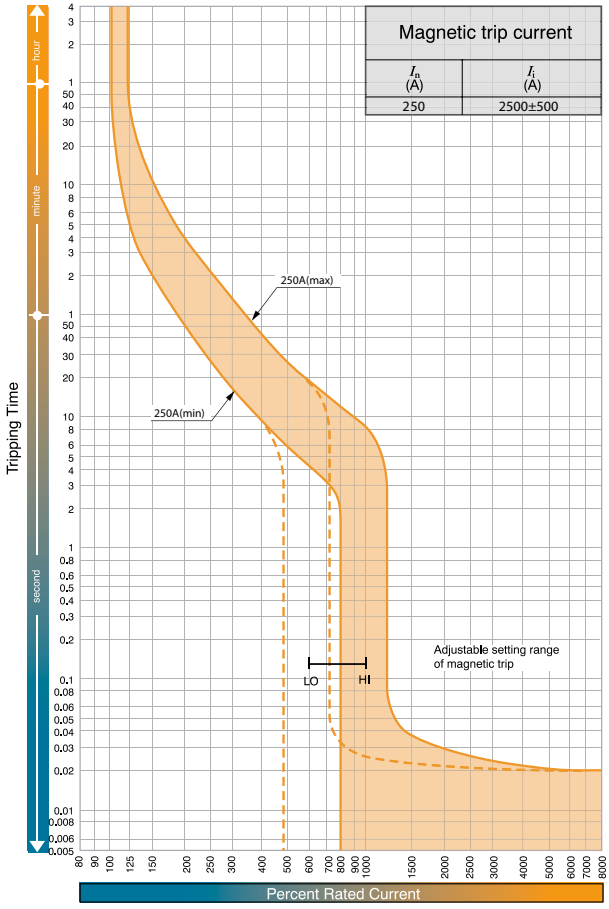
Time, current characteristics curves
EB2 125 1000V



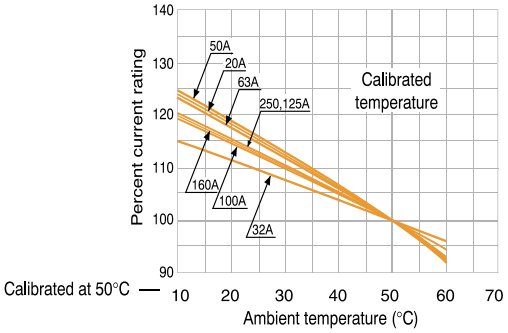


Time, current characteristics curves
EB2 160 and EB2 250





Ambient compensating curves



Special applications of thermal magnetic MCCBs

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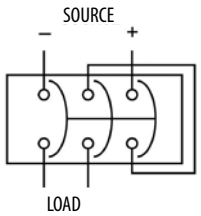
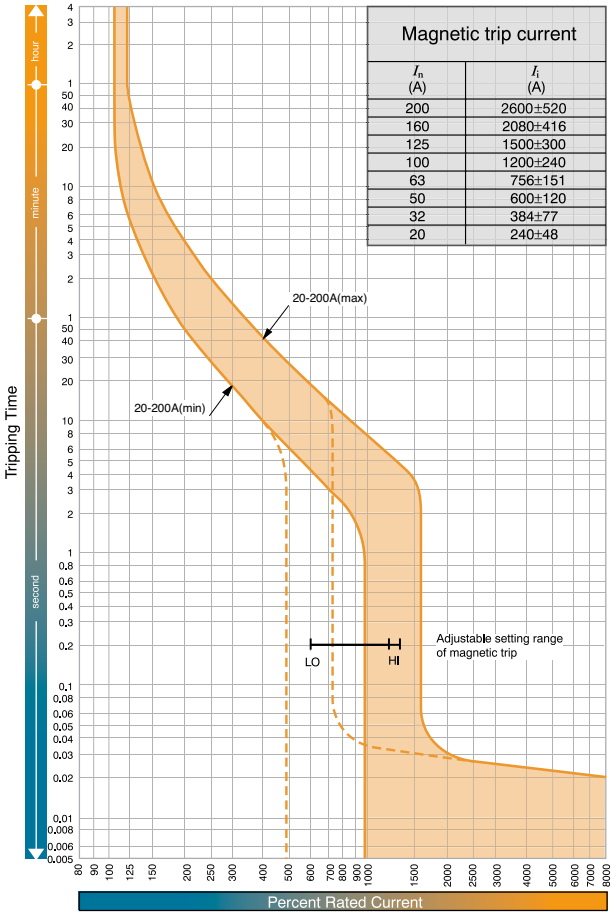
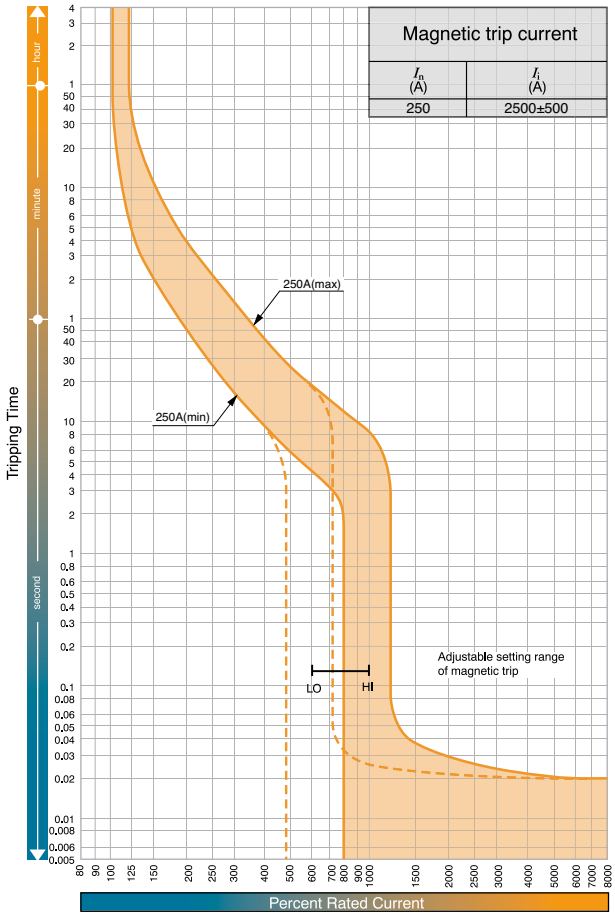
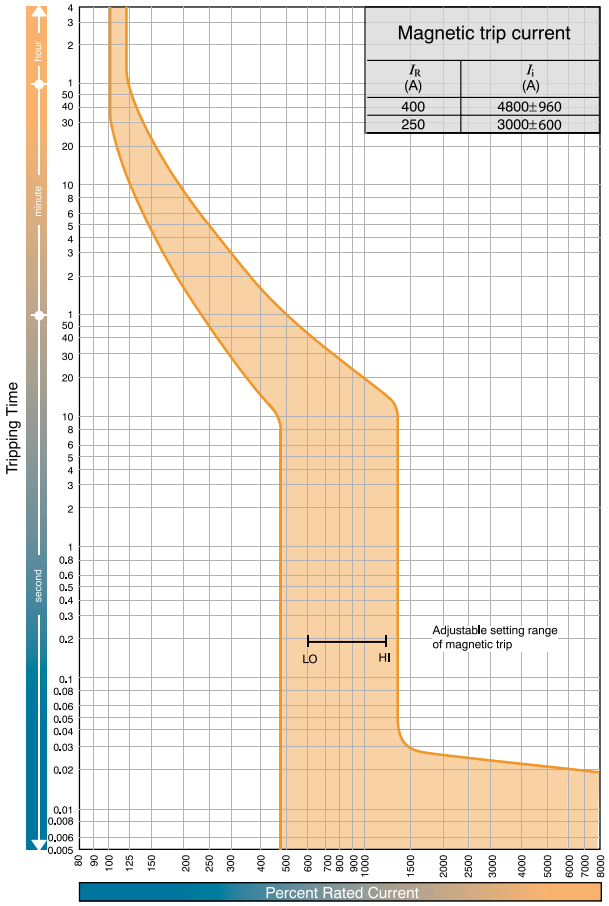


Time, current characteristics curves
EB2 250 1000V

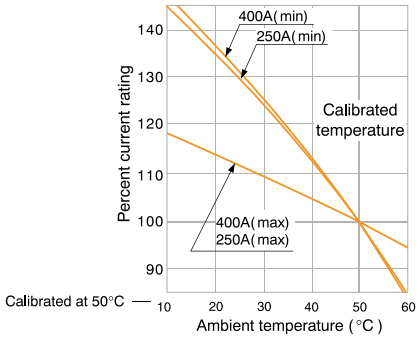




Time, current characteristics curves
EB2 400



Ambient compensating curves



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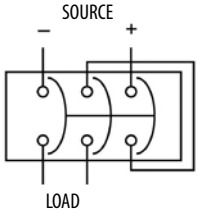
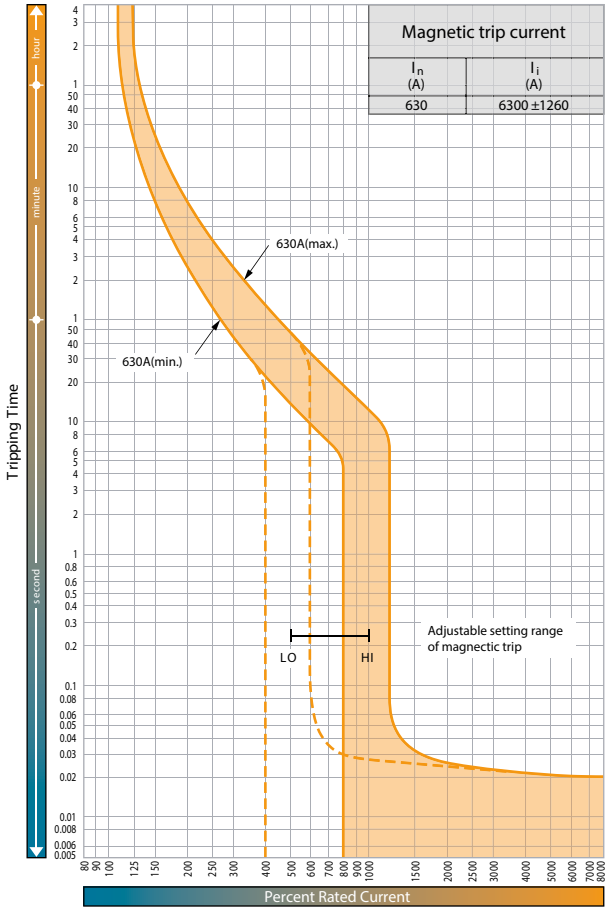
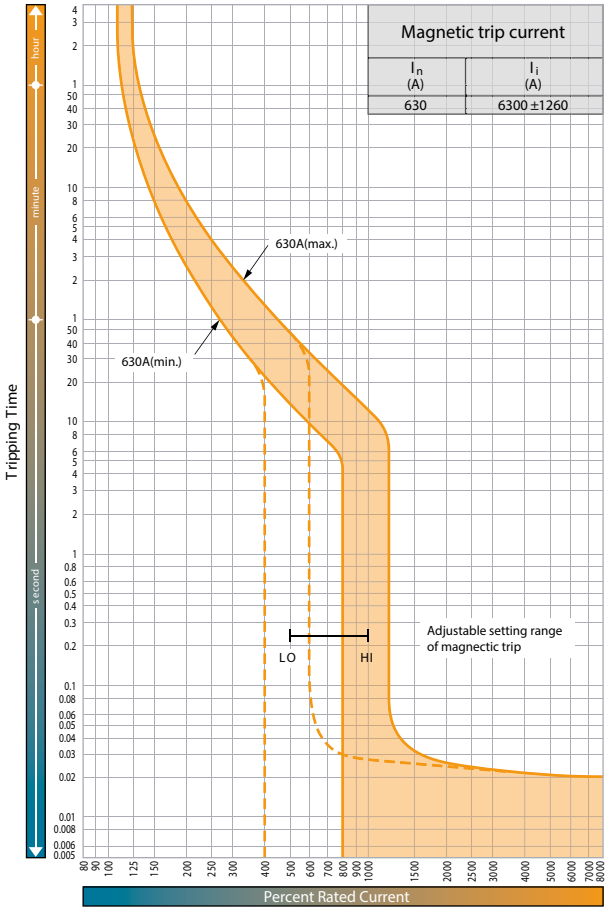
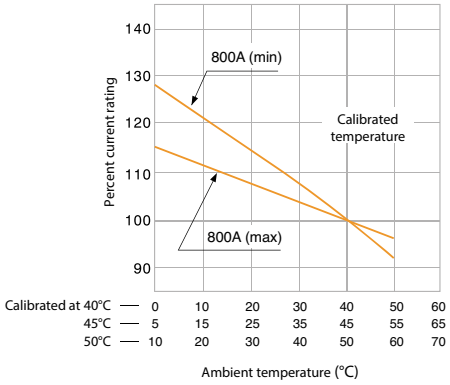


Time, current characteristics curves
EB2 630 and EB2 800





Ambient compensating curves



Special applications of thermal magnetic MCCBs

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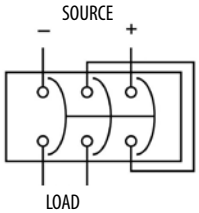
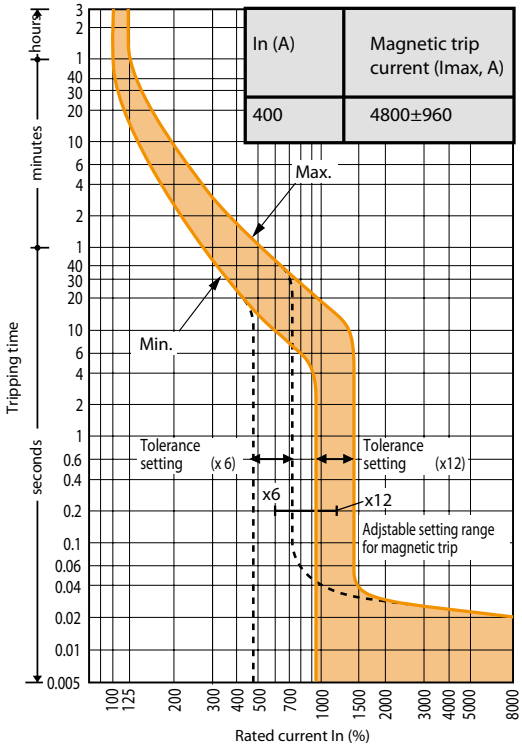
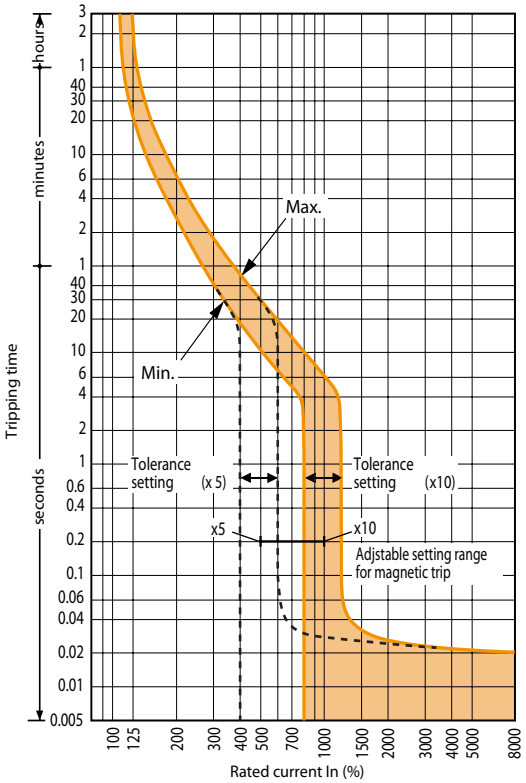


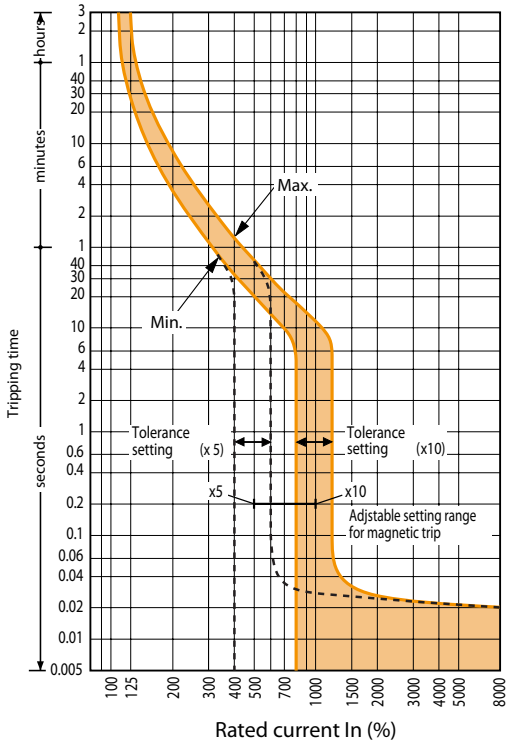
Time, current characteristics curves
EB2 400 SF



Time, current characteristics curves
EB2 800/LF 630A



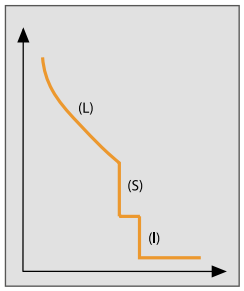
Time, current characteristics curves
EB2 800/LF 800A



Microprocessor (electronic) based characteristics and adjustments EB2 series

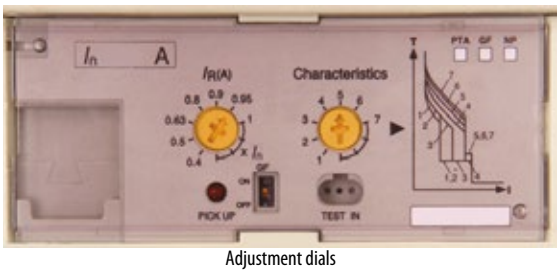
Etibreak 2 MCCBs from 250A to 1600A frame sizes are available with
electronic protection units. Current ratings, In, of 40A, 125A, 160A, 250A, 400A, 630A, 800A, 1000A, 1250A and 1600A are available. These offer great flexibility as their characteristics can be set to suit a wide range of application conditions. Overload protection can be set between 0.4 and 1.0 times In.

Selecting a Preset Characteristic for a 400A Etibreak 2 MCCB with Electronic Protection



Electronic protection characteristic

Every Etibreak electronic protection unit includes overload protection (L), delayed short-circuit protection (S) and instantaneous protection (I) as standard.



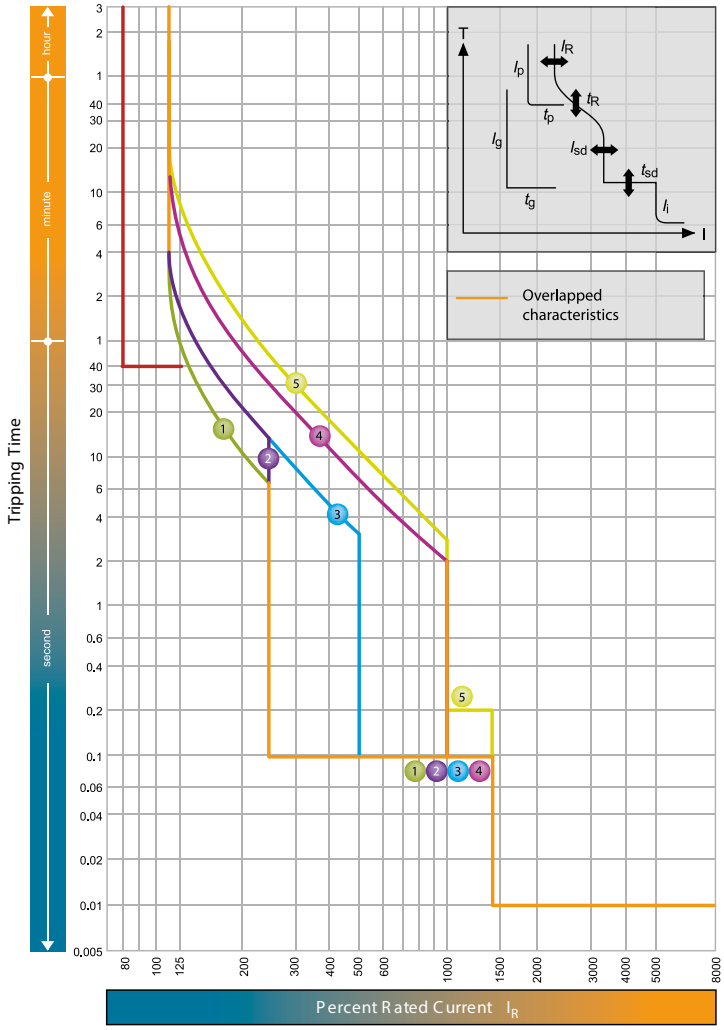
Adjustment dials

The left adjustment dial sets the rated current to match the conductor rating. The right adjustment dials select one of six on 630A models preset characteristics. The effects of the left adjustment dial (labelled IR(A)), and the right adjustment dial (labelled Characteristics) are detailed in the tables shown underneath each time/current graph.

Tolerances of Characteristics

Characteristics		Tolerance
Long Time Delay (LTD)	tR	+/- 20%
Short Time Delay (STD)	Isd	+/- 15%
	tsd	Total clearnig time +50ms, resettable time - 20ms
Instantaneous (INST)	Ii	+/- 20%

EB2 250 LE &E

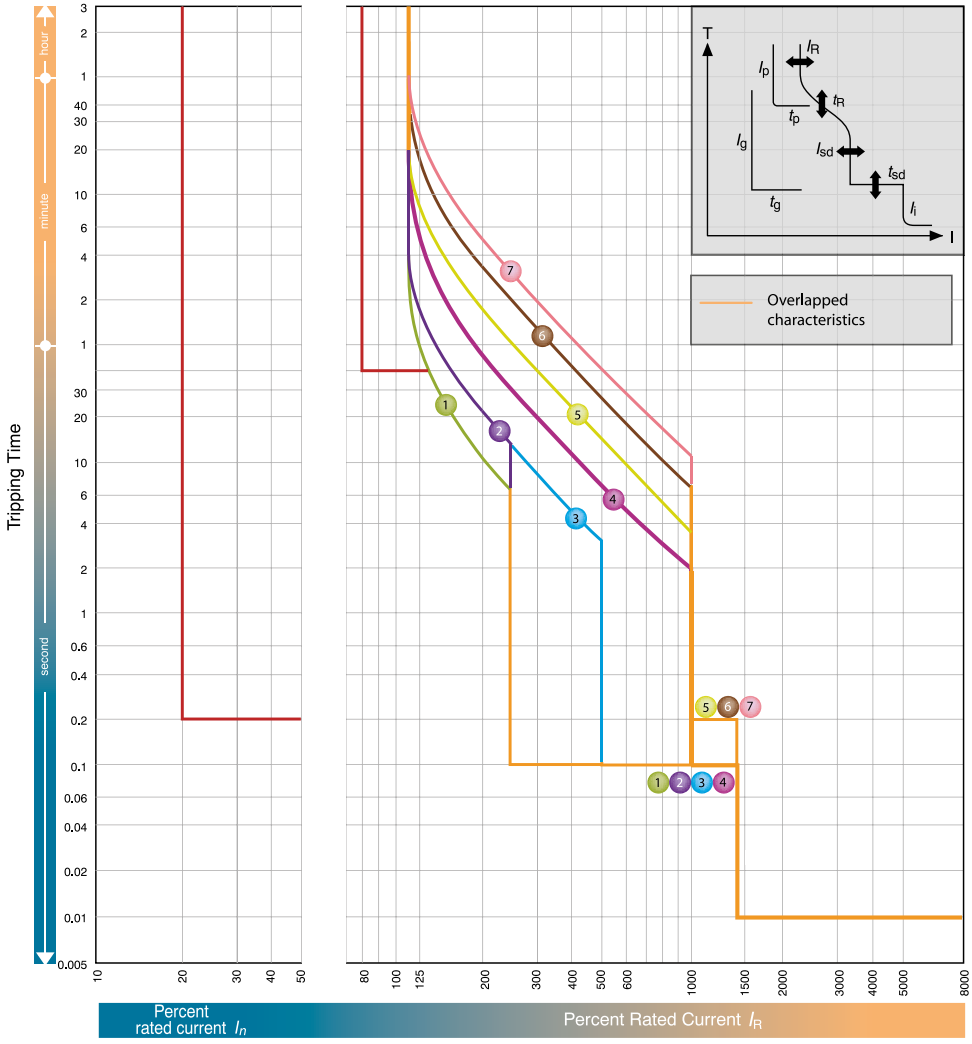


I_n = 40, 125, 160, 250

			I_R (A)							
			LTD Pick-up current I_R	x I_n	0.4	0.5	0.63	0.8	0.9	0.95	1.0
			Characteristics	**No.**	**1**	**2**	**3**	**4**	**5**		
Standard	LTD	Index t_R	Index (s)		11	21	21	5	7,5		
					@ 200 % x I_R			@ 200 % x I_R			
	STD	Index I_{sd}	Index x I_R		2,5		5	10			
		Index t_{sd}	Index (s)		0,1				0,2		
	INST	Index I_i	Index x I_R		14 (Max: 13 x I_n) Note (1)						

Note: (1) I_i max. = 12 x I_n.

EB2 400 E, LCD, HLCD

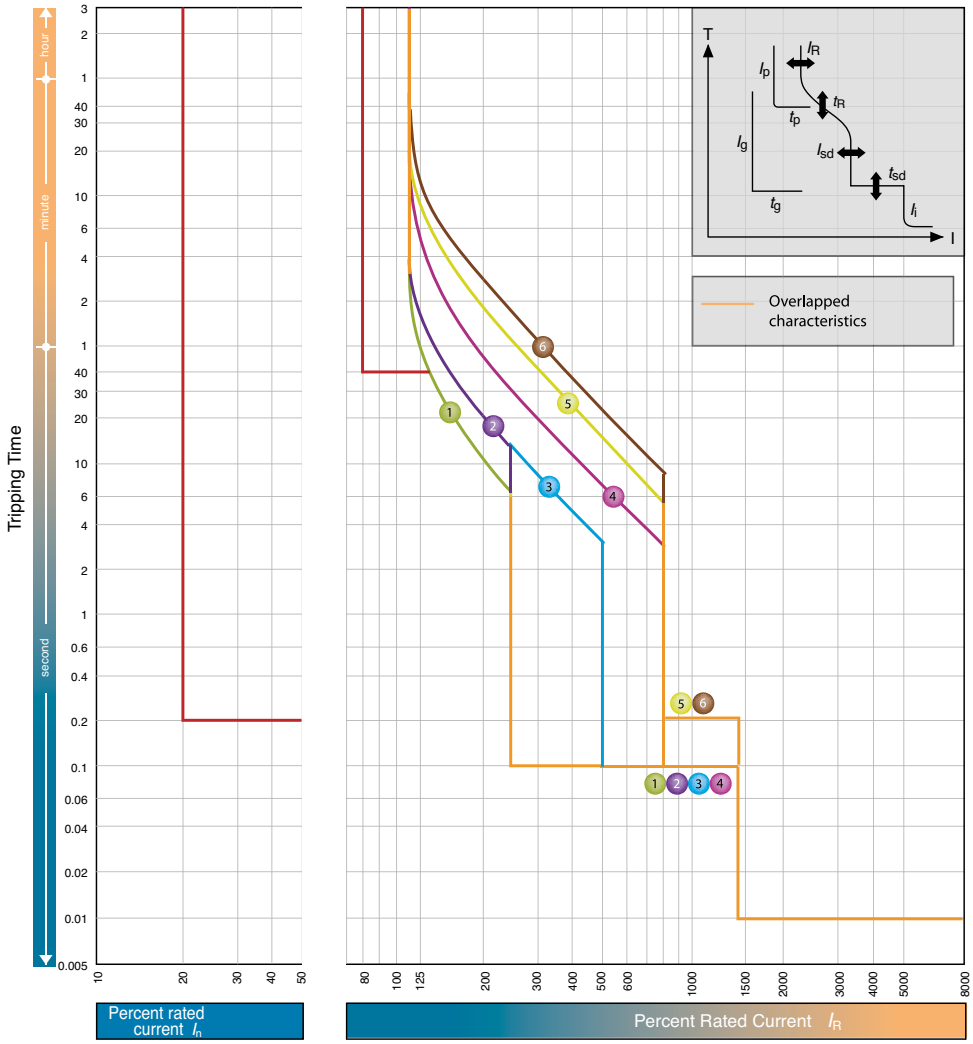


I_n = 250*, 400

				I_R (A)							
		LTD Pick-up current I_R	x I_n	0.4	0.5	0.63	0.8	0.9	0.95	1.0	
		Characteristics	**No.**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	
Standard	LTD	Index t_R	Index (s)	11	21	21	5	10	19	29	
				@ 200 % x I_R			@ 600 % x I_R				
	STD	Index I_{sd}	Index x I_R	2.5		5		10			
		Index t_{sd}	Index (s)	0.1					0.2		
	INST	Index I_i	Index x I_R	14 (Max: 13 x I_n)**							
Option	PTA	Index I_p	Index x I_R	0,8							
		Index t_p	Index (s)	40							
	GF	Index I_g	Index x I_n	0,2							
		Index t_g	Index (s)	0,2							
	NP	Index I_N	Index x I_R	1,0/0,5***							
		Index t_N	Index (s)	t_N=t_R							

Notes:
* GF is not available when In is 250A.
**Ii max. = 13 x In.
*** 1,0 x IR or 0,5 x IR can be selected. Characteristic of neutral protection (tN vs. IN) is identical to characteristic of phase protection (tR vs. IR).
**** When you specify gF on MCCBs with 3 poles the terminal block is automatically fitted to connect with the external neutral CT for 3 phases 4 wires system. See terminal blocks in section 4.

EB2 630 LE, E, LCD, HLCD

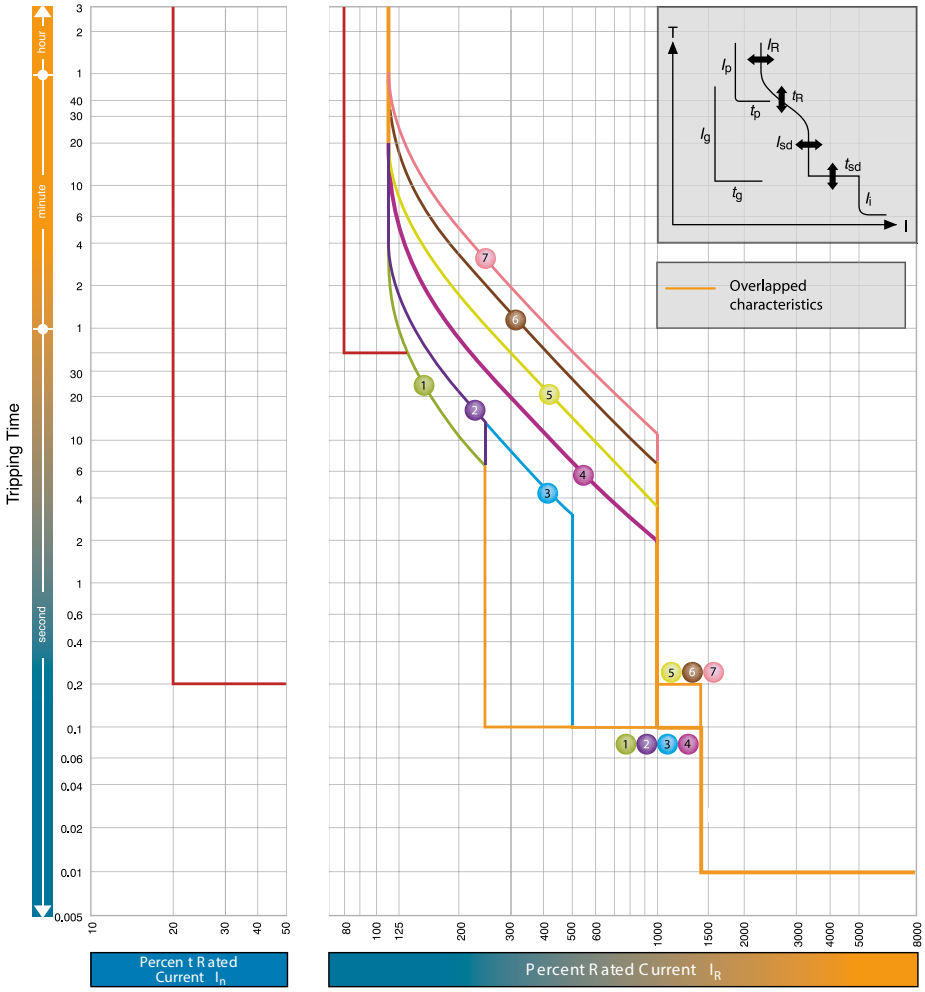


I_n = 630A

			I_R (A)								
	LTD Pick-up current I_R		x I_n	0.4	0.5	0.63	0.8	0.85	0.9	0.95	1.0
	Characteristics		**No.**	**1**	**2**	**3**	**4**	**5**	**6**		**
Standard	LTD	Index t_R	Index (s)	11	21	21	5	10	16		
				@ 200 % x I_R			@ 600 % x I_R				
	STD	Index I_{sd}	Index x I_R	2.5		5	8				
		Index t_{sd}	Index (s)	0.1			0.2				***
	INST	Index I_i	Index x I_R	14 (Max: 10 x I_n)*							
Option	PTA	Index I_p	Index x I_R	0,8							
		Index t_p	Index (s)	40							
	GF	Index I_g	Index x I_n	0,2							
		Index t_g	Index (s)	0,2							
	NP	Index I_N	Index x I_R	1,0/0,5**							
		Index t_N	Index (s)	t_N=t_R							

Notes:
*Ii max. = 10 x In.
1,0 x IR or 0,5 x IR can be selected. Characteristic of neutral protection (tN vs. IN) is identical to characteristic of phase protection (tR vs. IR).
When you specify gF on MCCBs with 3 poles the terminal block is automatically fitted to connect with the external neutral CT for 3 phases 4 wires system. See terminal blocks in section 4.

EB2 800 LE, E, HE



I_n = 800

				I_R (A)							
	LTD Pick-up current I_R		x I_n	0.4	0.5	0.63	0.8	0.9	0.95	1.0	
	Characteristics		**No.**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	
Standard	LTD	Index t_R	Index (s)	11	21	21	5	10	19	29	
				@ 200 % x I_R			@ 600 % x I_R				
	STD	Index I_{sd}	Index x I_R	2.5		5		10			
		Index t_{sd}	Index (s)	0.1					0.2		
	INST	Index I_i	Index x I_R	14 (max.: 12 x I_n)*							
Option	PTA	Index I_p	Index x I_R	0,8							
		Index t_p	Index (s)	40							
	GF	Index I_g	Index x I_n	0,2							
		Index t_g	Index (s)	0,2							
	NP	Index I_N	Index x I_R	1,0/0,5***							
		Index t_N	Index (s)	t_N=t_R							

Notes:
*Ii max. = 12 x In.
** 1,0 x IR or 0,5 x IR can be selected. Characteristic of neutral protection (tN vs. IN) is identical to characteristic of phase protection (tR vs. IR).
*** When you specify gF on MCCBs with 3 poles the terminal block is automatically fitted to connect with the external neutral CT for 3 phases 4 wires system. See terminal blocks in section 4.

Characteristics for 1100V AC MCCBs with frame sizes: 400AF, 630AF & 800AF

In addition to the standard overload and short circuit protection, there are a number of options available to meet specific applications.

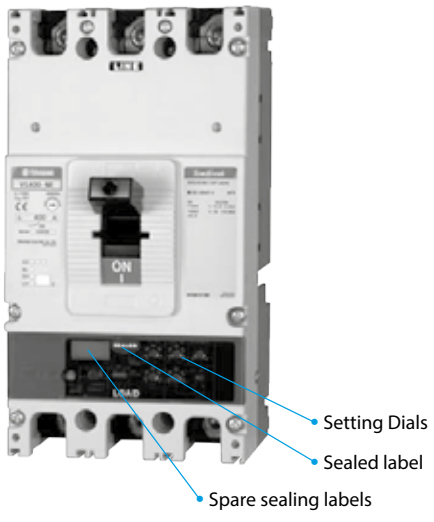
MCCB Type	LTD	STD	INST	PICK-UP LED	TEST PORT	GFT
EB2 400-VE	◉	◉	◉	◉	◉	–
EB2 630-VE	◉	◉	◉	◉	◉	○
EB2 800-VE	◉	◉	◉	◉	◉	○

◉ Standard
○ Optional
– Not available

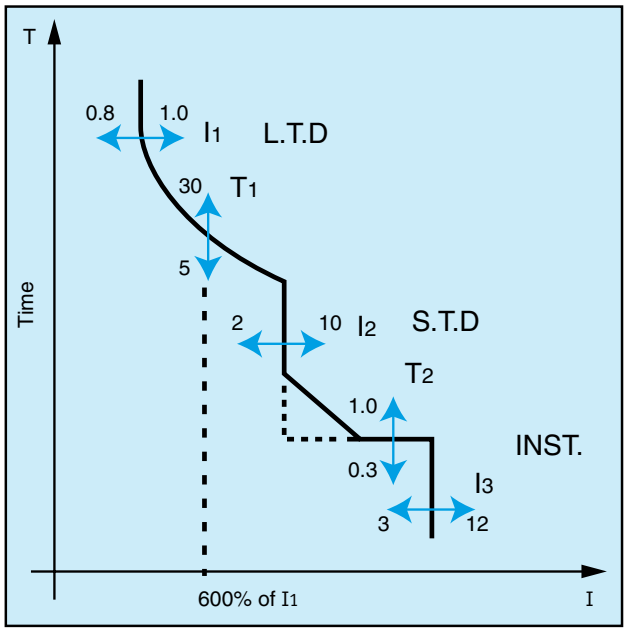
Legend		Application
LTD	**Long Time Delay**	: Overload protection, True R.M.S.
STD	**Short Time Delay**	: Short circuit protection and selectivity
INST	**Instantaneous**	: Short circuit protection, fast acting
Pick-up LED		: Lights on LTD overload, flashes on PTA pick-up
Test Port		: Facility for TNS-1 OCR checker for calibration checking
GFT	**Ground Fault Trip**	: Protection against ground faults

Access to Setting Dials

To adjust the settings on the microprocessor EB2, the sealed label must be broken and the covering fixing screws removed. To adjust the individual trip settings, turn the setting dial with a flat bladed screw driver. Align the setting required between the black dots marked on the dial.

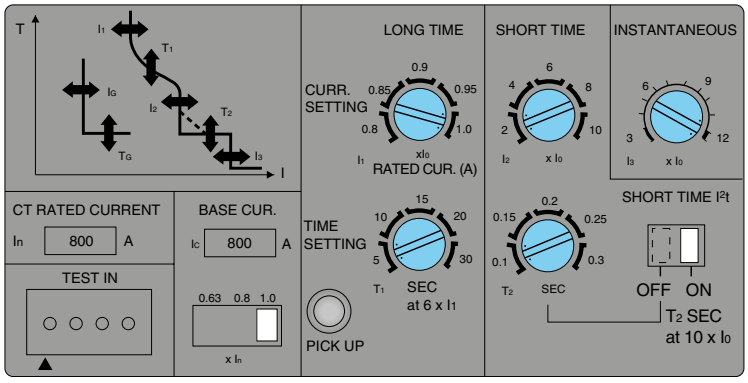


Standard Time Currents Curves for 1100 V AC MCCBs with frame sizes: 400AF, 630AF & 800AF



Each part of the characteristic curve can be independently adjusted.

Standard Microprocessor Adjustments



Setting Dial		Available Adjustments	
Base Current Setting	I_0	0.63 - 0.8 - 1.0 x I_n	Amps
LTD Pick up	I_1	0.8 - 0.85 - 0.9 - 0.95 - 1.0 x I_0	Amps
LTD Setting	T_1	5 - 10 - 15 - 20 - 25 - 30 (at I_1 x 600%)	Secs
STD Pick up	I_2	2 - 4 - 6 - 8 - 10 x I_0	Amps
STD Setting	T_2	0.1 - 0.15 - 0.2 - 0.25 - 0.3	Secs
INST Pick up	I_3	3 - 12 x I_0 (continuously adjustable)	Amps

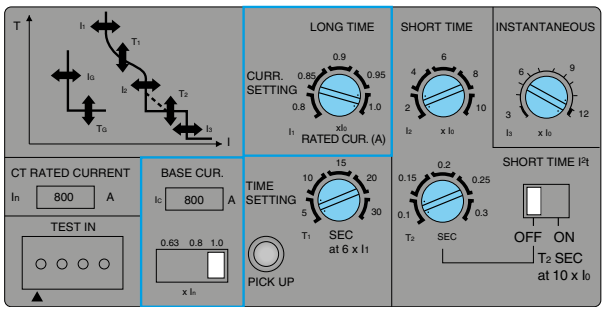
Overload Adjustment for 1100V AC MCCBs (400AF, 630AF & 800AF)

The rated current of the microprocessor based EB2 is adjusted using two current multipliers. This process achieves high accuracy adjustment from 50% to 100%. These are the LTD pickup dial I_1 and the Base Current I_0 selector switch.
The rated current (LTD pickup) is achieved as follows:

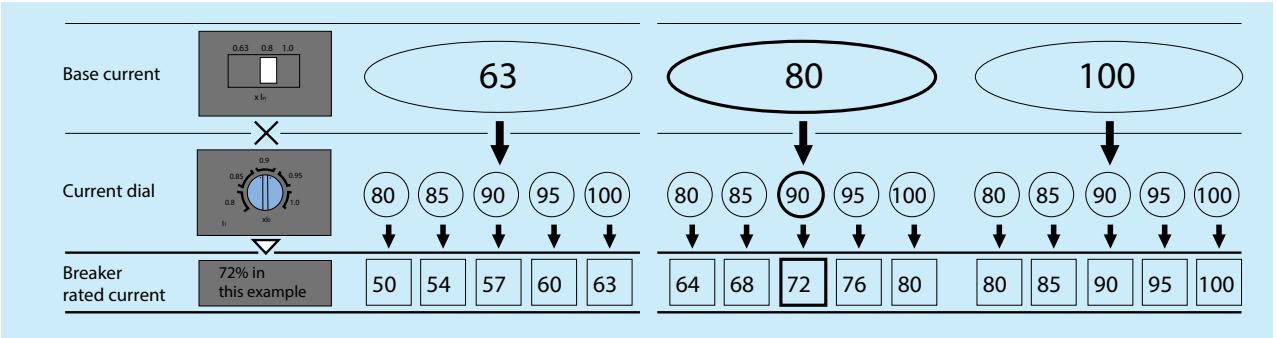
$$I_{RATED} = I_n \times I_0 \times I_1$$

In the example shown on the right the rating would be:

$$I_{RATED} = 1250 \times 1.0 \times 1.0 = 1250A$$

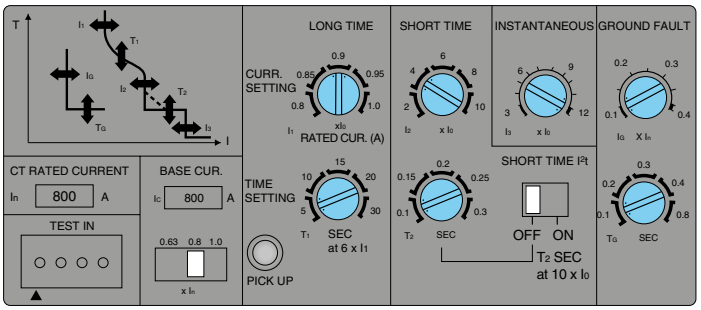


In total there are 15 possible increments of adjustment between 50 and 100% as shown below.



Example - Settings

In the example shown on the right what are all the settings in Amps?



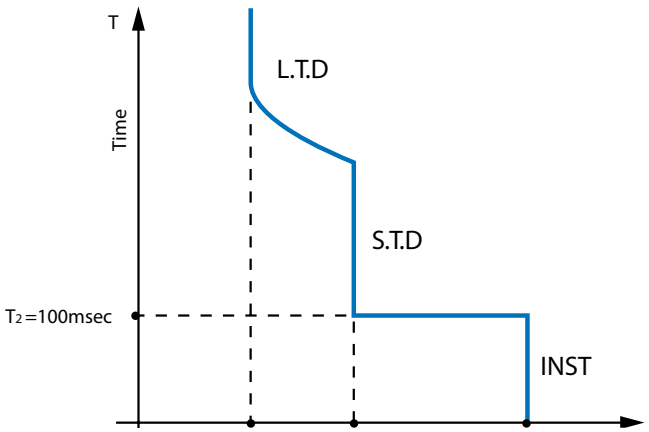
Solution I_{RATING} LTD pickup = $I_n \times I_0 \times I_1$
800 x 0.8 x 0.9 = 576A

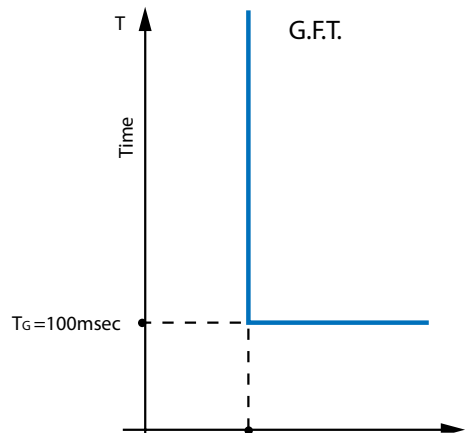
STD pickup = $I_n \times I_0 \times I_2$
800 x 0.8 x 4 = 2560A

INST pickup = $I_n \times I_0 \times I_3$
800 x 0.8 x 12 = 7680A

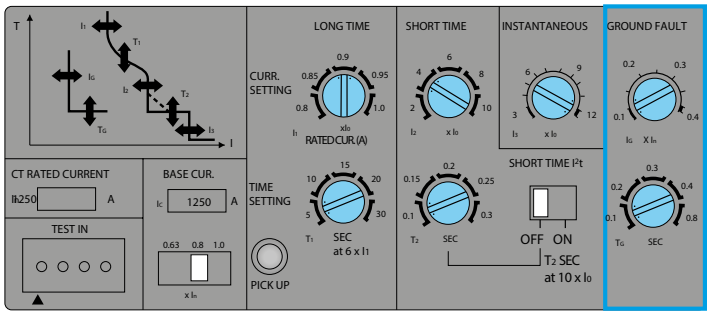
GFT pickup = $I_n \times I_G$
800 x 0.1 = 80A
(Note that GFT is a function of I_n and not I_0)

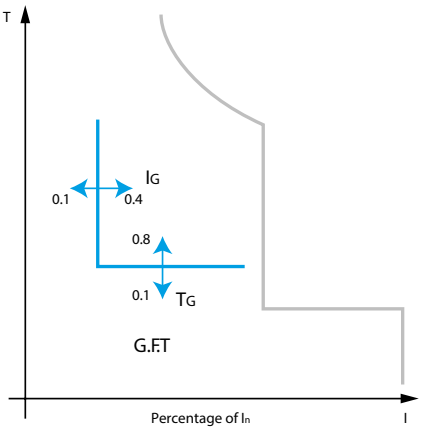
Example - Time/Current Curves





Ground Fault Adjustments





Setting Dial Available Adjustments

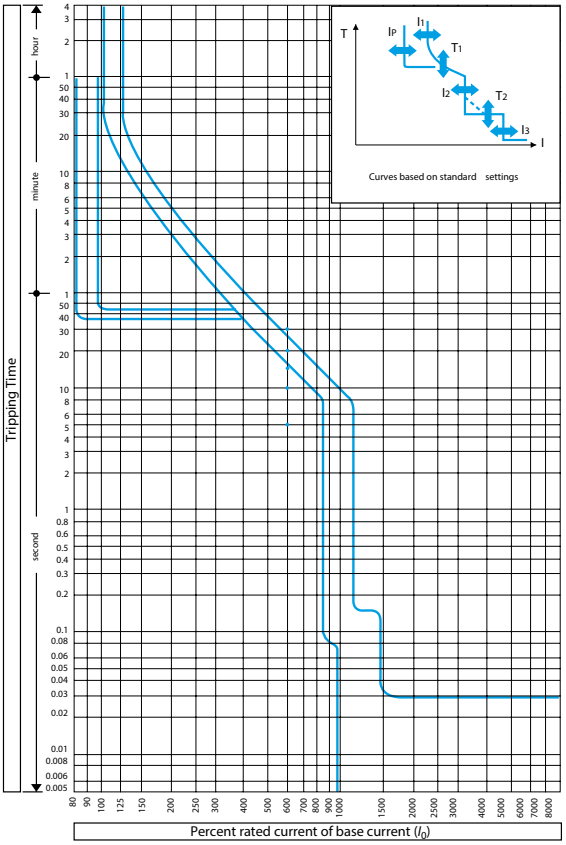
GFT Pickup	I_G	0.1 to 0.4 continuously adjustable x I_n	Amps
GFT Setting	T_G	0.1 - 0.2 - 0.3 - 0.4 - 0.8	seconds

When a 3 pole MCCB is used on a 3 phase 4 wire system a separate CT is required for the neutral line. No control power is required for this option.

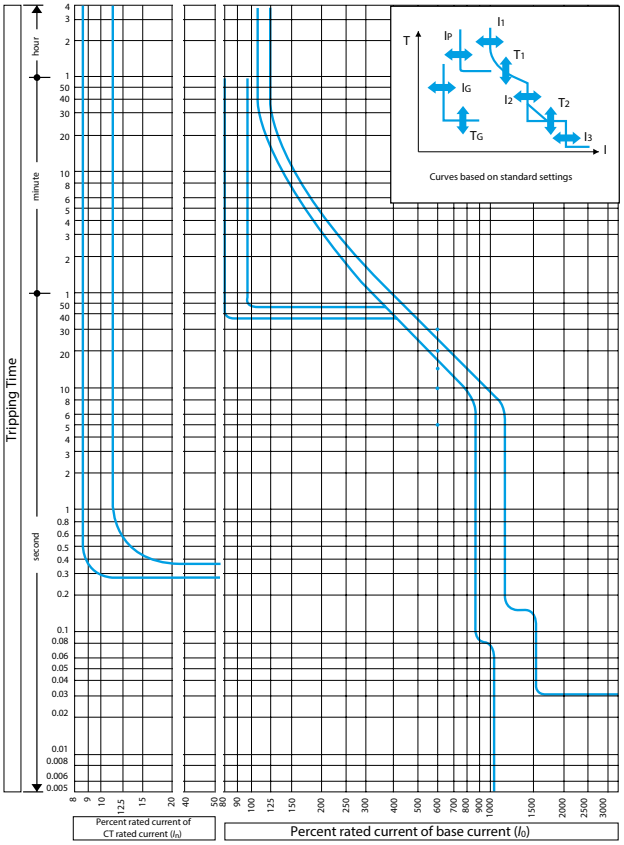
THERMAL MAGNETIC CHARACTERISTICS

1100V AC MCCBs (400A, 630A and 800A Frames)

Time/current characteristic curves
EB2 400-VE



Time/current characteristic curves
EB2 630-VE, EB2 800-VE



Overcurrent tripping characteristics

CT rated current (A) (I_n)	63, 125, 250, 400
Base current setting (A): (I_o)	(I_n) x (0.63-0.8-1.0)
Long time-delay pick-up current (A): (I_1)	(I_o)x (0.8- 0.85- 0.9- 0.95- 1.0) Non-tripping at (I_1) setting x 105% and below. Tripping at 125% and above.
Long time-delay time settings (S) (T_1)	(5–10–15–20–30) at (I_1) x 600% current. Setting tolerance ± 20%
Short time-delay pick-up current (A): (I_2)	(I_n) x (2-4-6-8-10) Setting tolerance ± 15%
Short time-delay time settings (S) (T_2)	Opening time (0.1, 0.15, 0.2, 0.25, 0.3) in the definite time-delay. Total clearing time is + 50 mS and resettable time -20mS for the time-delay setting
Instantaneous trip pick-up current (A) (I_3)	Continuously adjustable from (I_o) x (3 to12) Setting tolerance ± 20%

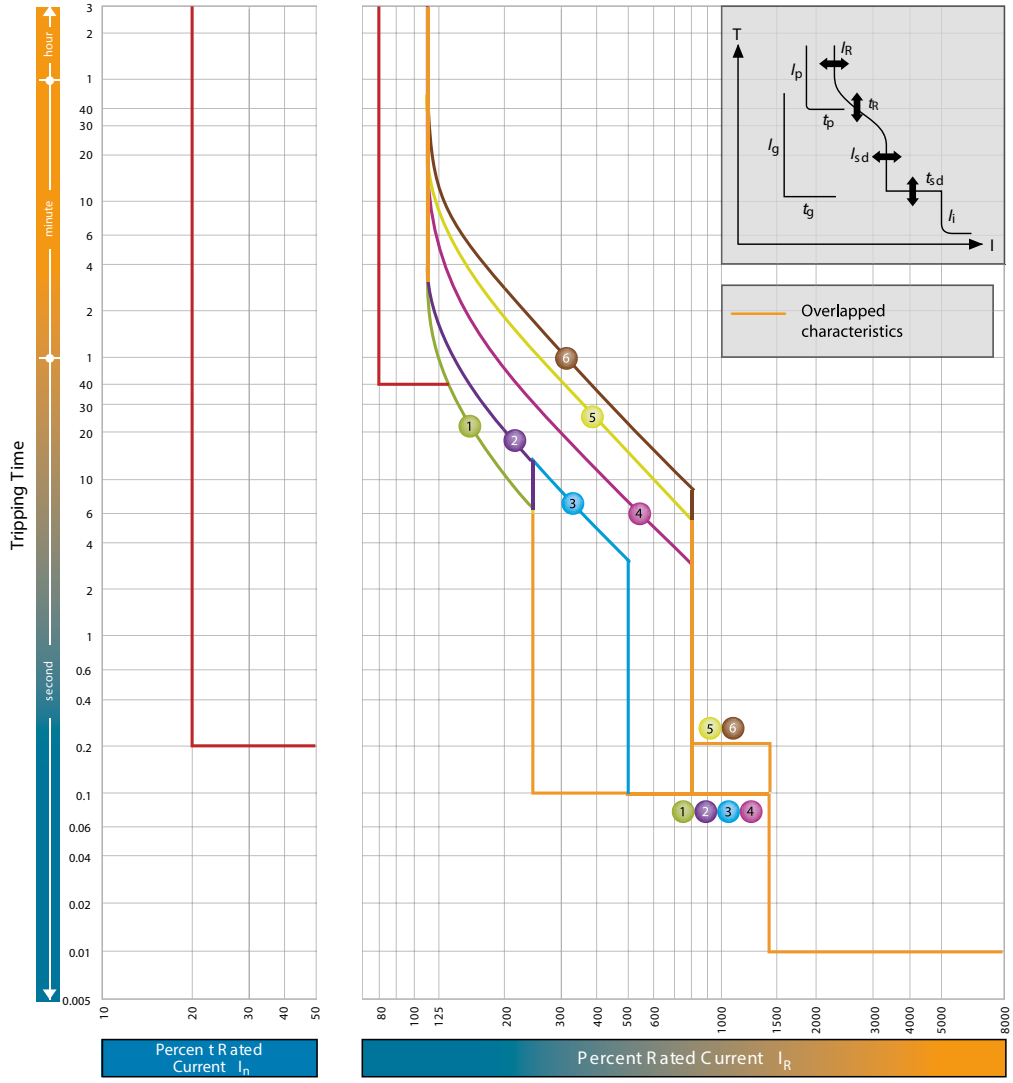
Note: * Optional
Note: The underlined values will be applied as standard ratings unless otherwise specified when ordering.

Overcurrent tripping characteristics

CT rated current (A) (I_n)	630, 800
Base current setting (A): (I_o)	(I_n) x (0.63-0.8-1.0)
Long time-delay pick-up current (A): (I_1)	(I_o) x (0.8- 0.85- 0.9- 0.95- 1.0) Non-tripping at (I_1) setting x 105% and below. Tripping at 125% & above.
Long time-delay time settings (S) (T_1)	(5–10–15–20–30) at (I_1) x 600% current. Setting tolerance ± 20%
Short time-delay pick-up current (A): (I_2)	(I_o) x (2-4-6-8-10) Setting tolerance ± 15%
Short time-delay time settings (S) (T_2)	Opening time (0.1, 0.15, 0.2, 0.25, 0.3) in the definite time-delay. Total clearing time is + 50 mS and resettable time -20mS for the time-delay setting.
Instantaneous trip pick-up current (A) (I_3)	Continuously adjustable from (I_o) x (3 to 12) Setting tolerance ± 20%
* Ground fault trip pick-up current (A): (I_G)	Continiuously adjustable from (I_n) x (0.1 to 0.4) Setting tolerance ± 15%
* Ground fault trip time setting (S): (T_G)	Opening time (0.1-0.2-0.3-0.4-0.8) in the definite time-delay. Total clearing time is + 50mS and resettable time is - 20mS for the time-delay settings

Note: * Optional
Note: The underlined values will be applied as standard ratings unless otherwise specified when ordering.

EB2 1000 LE, E

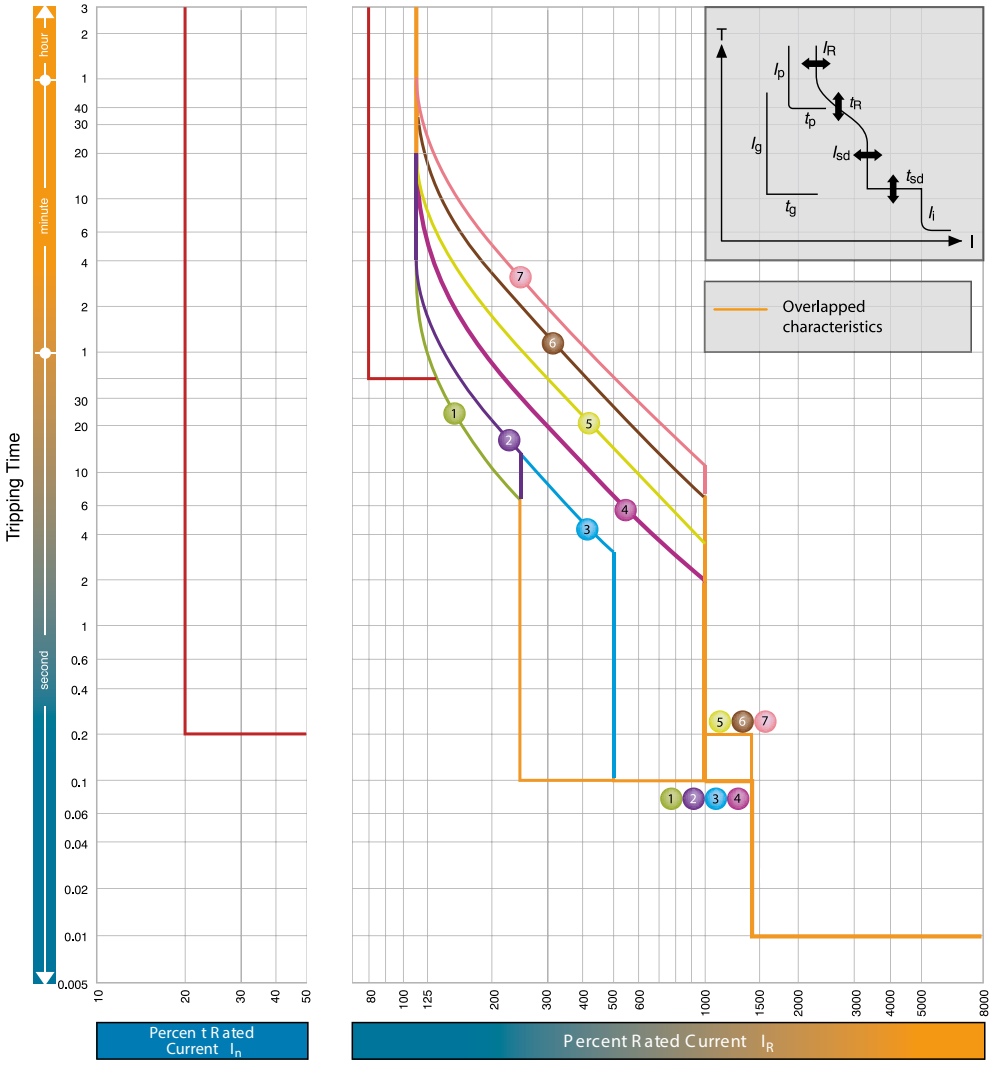


I_n = 1000A

				I_R (A)								
		LTD Pick-up current I_R		x I_n	0.4	0.5	0.63	0.8	0.85	0.9	0.95	1.0
		Characteristics		**No.**	**1**	**2**	**3**	**4**	**5**	**6**		
Standard	LTD	Index t_R		Index (s)	11 @ 200 % x I_R		21	21	5	10	16 @ 600 % x I_R	
	STD	Index I_{sd}		Index x I_R	2.5		5			8		
		Index t_{sd}		Index (s)			0.1			0.2		
	INST	Index I_i		Index x I_R	14 (max.: 10 x I_n)*							
Option	PTA	Index I_p		Index x I_R	0,8							
		Index t_p		Index (s)	40							
	GF	Index I_g		Index x I_n	0,2							
		Index t_g		Index (s)	0,2							
	NP	Index I_N		Index x I_R	1,0/0,5***							
		Index t_N		Index (s)	t_N=t_R							

Notes:
*Ii max. = 10 x In.
** 1,0 x IR or 0,5 x IR can be selected. Characteristic of neutral protection (tN vs. IN) is identical to characteristic of phase protection (tR vs. IR).
*** When you specify gF on MCCBs with 3 poles the terminal block is automatically fitted to connect with the external neutral CT for 3 phases 4 wires system. See terminal blocks in section 4.

EB2 1250 LE, E



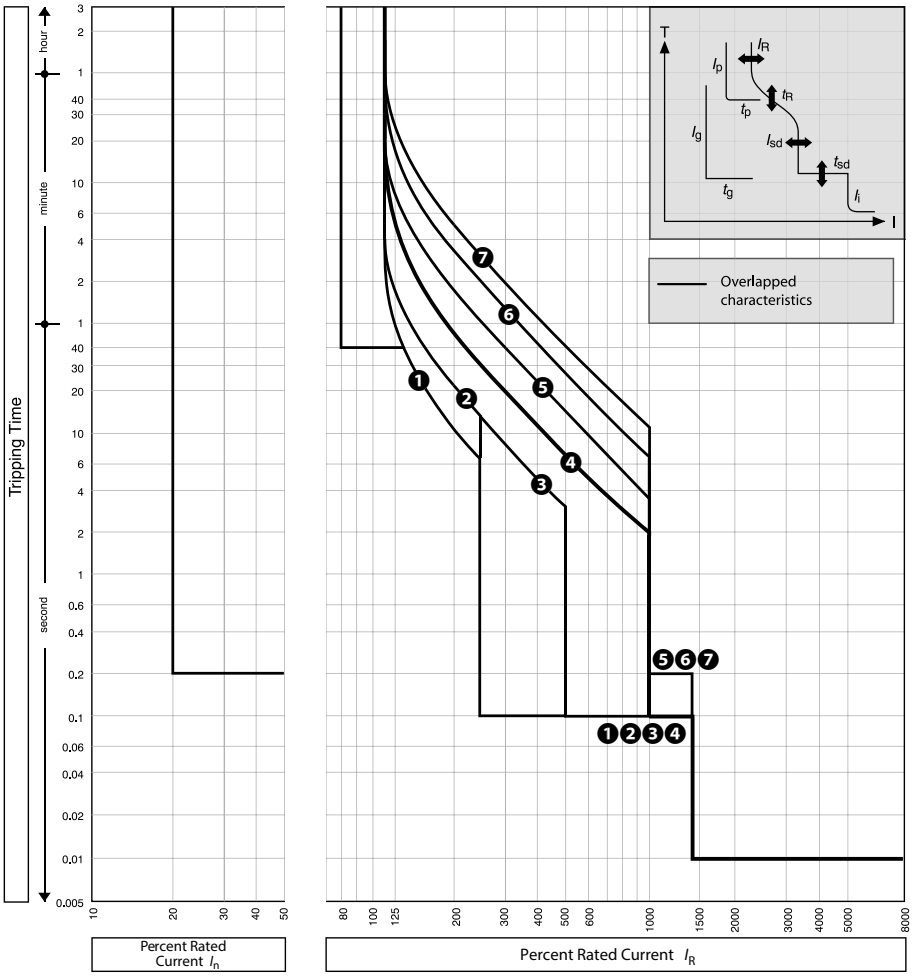
I_n = 1250

				I_R (A)							
	LTD Pick-up current I_R		x I_n	0.4	0.5	0.63	0.8	0.9	0.95	1.0
	Characteristics		**No.**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Standard	LTD	Index t_R	Index (s)	11	21	21	5	10	19	29
				@ 200 % x I_R			@ 600 % x I_R			
	STD	Index I_{sd}	Index x I_R	2.5		5		10		
		Index t_{sd}	Index (s)	0.1					0.2	
	INST	Index I_i	Index x I_R	14 (max.: 12 x I_n)*						
Option	PTA	Index I_p	Index x I_R	0,8						
		Index t_p	Index (s)	40						
	GF	Index I_g	Index x I_n	0,2						
		Index t_g	Index (s)	0,2						
	NP	Index I_N	Index x I_R	1,0/0,5***						
		Index t_N	Index (s)	t_N=t_R						

Notes:
*Ii max. = 12 x In.
** 1,0 x IR or 0,5 x IR can be selected. Characteristic of neutral protection (tN vs. IN) is identical to characteristic of phase protection (tR vs. IR).
*** When you specify gF on MCCBs with 3 poles the terminal block is automatically fitted to connect with the external neutral CT for 3 phases 4 wires system. See terminal blocks in section 4.

ELECTRONIC CHARACTERISTICS (STANDARD TYPE)

EB2 1250-VE

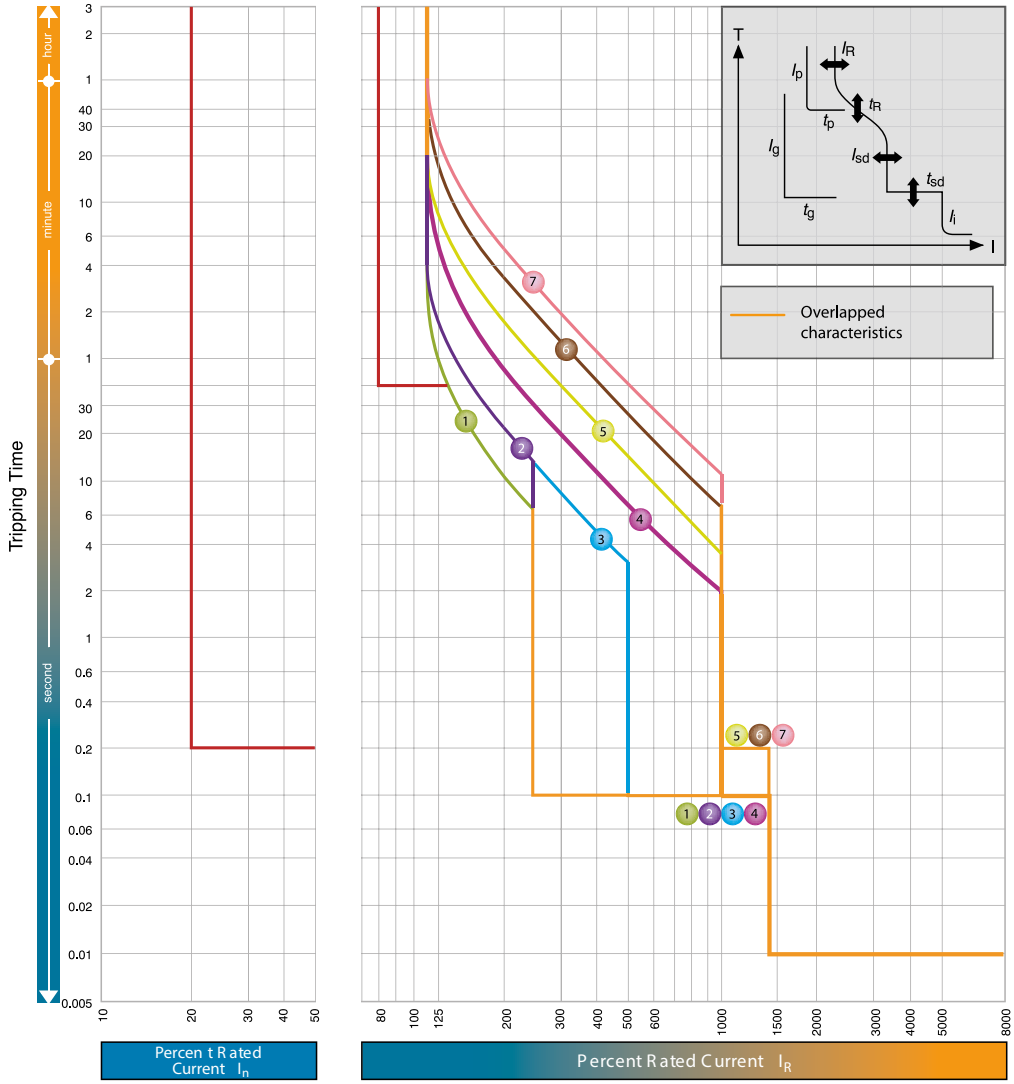


I_n = 800A; 1250A

	I_R (A)									
	LTD Pick-up current IR		xI_n	0.4	0.5	0.63	0.8	0.9	0.95	1.0
	Characteristics		No.	1	2	3	4	5	6	7
Standard	LT	t_R	(s)	11	21	21	5	10	19	29
				at 200% x I_R			at 600% x I_R			
	ST	I_{sd}	xI_R	2.5		5	10			
		t_{sd}	(s)	0.1			0.2			
	INST	I_i	xI_R	14(Max: 12 x I_n) Note (1)						
Option	GF Note (3)	I_g	xI_n	0.2						
		t_g	(s)	0.2						

Note:
(1) I_i max. = 12 x I_n. (2) When you specify GF on MCCBs with 3 poles the terminal block is automatically fitted to connect with the external neutral CT for 3 phases 4 wires system.

EB2 1600 LE, E



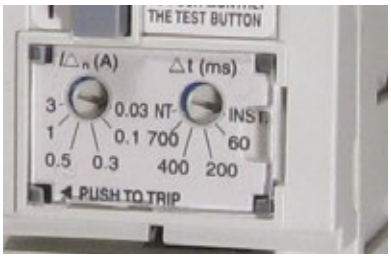
I_n = 1600A

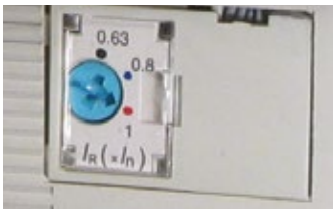
				I_R (A)							
		LTD Pick-up current I_R		x I_n	0.4	0.5	0.63	0.8	0.9	0.95	1.0
	Characteristics		**No.**		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Standard	LTD	Index t_R	Index (s)		11	21	21	5	10	19	29
					@ 200 % x I_R			@ 600 % x I_R			
	STD	Index I_{sd}	Index x I_R		2.5		5		10		
		Index t_{sd}	Index (s)		0.1				0.2		
	INST	Index I_i	Index x I_R		14 (max.: 12 x I_n)*						
Option	PTA	Index I_p	Index x I_R		0,8						
		Index t_p	Index (s)		40						
	GF	Index I_g	Index x I_n		0,2						
		Index t_g	Index (s)		0,2						
	NP	Index I_N	Index x I_R		1,0/0,5***						
		Index t_N	Index (s)		t_N=t_R						

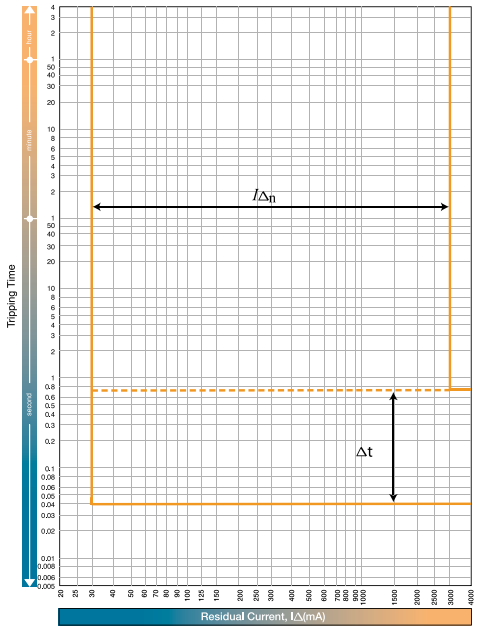
Notes:
*Ii max. = 12 x In.
** 1,0 x IR or 0,5 x IR can be selected. Characteristic of neutral protection (tN vs. IN) is identical to characteristic of phase protection (tR vs. IR).
*** When you specify gF on MCCBs with 3 poles the terminal block is automatically fitted to connect with the external neutral CT for 3 phases 4 wires system. See terminal blocks in section 4.

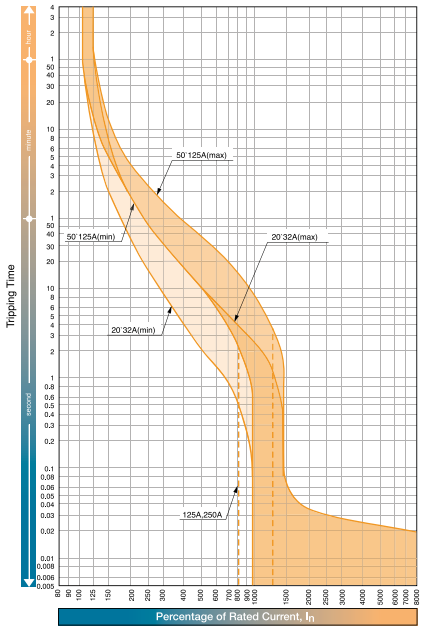
EB2R adjustments

	Residual current ID is the adjustable tripping threshold for earth leakage protection. It can be set between 30mA and 3A. Available settings are 30mA, 100mA, 300mA, 500mA, 1000mA and 3000mA. Available settings are shown below	Time delay Δt is introduced to the residual current (earth leakage) protection characteristic. Available settings are; INST, 60ms, 200ms, 400ms, 700ms and NT. INST means EB2R set to time delay 0 (max. actual tripping time is 40ms) NT means No trip (tripping time is 0) The maximum breaking time is shown in brackets. Note that IΔn is set at 30mA, Δt defaults 0.	IR is the adjustable tripping threshold for overload protection. It can be set between 0,63 and 1,0 times In. Available In ratings are shown below	Ii is the tripping threshold for short-circuit protection. It is fixed at the values shown below
Model	**$I_{\Delta n}$**	**Δt (ms)**	**I_n (A)**	**I_i**
EB2R 125	0.03, 0.1, 0.3, 0.5, 1, 3	0(40), 60(195), 200(365), 400(620), 700(950), NT (∞)	20, 32, 50, 63, 100	12 x I_n (+/- 20%)
EB2R 125	0.03, 0.1, 0.3, 0.5, 1, 3	0(40), 60(195), 200(365), 400(620), 700(950), NT (∞)	125	10 x I_n (+/- 20%)
EB2R 250	0.03, 0.1, 0.3, 0.5, 1, 3	0(40), 60(195), 200(365), 400(620), 700(950), NT (∞)	160	13 x I_n (+/- 20%)
EB2R 250	0.03, 0.1, 0.3, 0.5, 1, 3	0(40), 60(195), 200(365), 400(620), 700(950), NT (∞)	250	10 x I_n (+/- 20%)









ETIBREAK Low Voltage Moulded Case Circuit Breakers NBS

Low voltage moulded case circuit breakers are used for the switching and protection of power supply cables, motors and other electrical equipment against overloads and short circuit faults.

NBS-TMS series MCCBs can be adjusted between 0.8 - 1.0 x I_n, while short-circuit protection is fixed at 10 x I_n.

NBS-TMD series MCCBs can be adjusted between 0.8 - 1.0 x I_n for frame sizes up to 250A, and between 0.7 - 1.0 x I_n for frame sizes from 315A to 630A. Short-circuit protection is adjustable between 5 - 10 x I_n.

Microprocessor breakers:
NBS-E 100, 160, 250, 400, 630: Standard LSI adjustment dial:
- L - Overload protection
- S - Delayed short-circuit protection
- I - Instantaneous protection

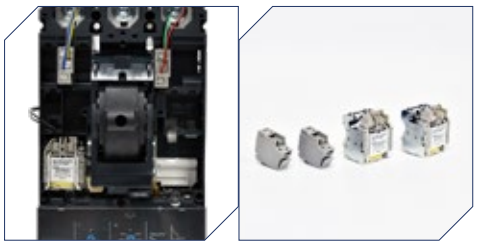
NBS-E 1600: LI protection relay:
- L - Overload protection
- I - Instantaneous protection

NBS-E LCD microprocessor trip units feature an LSI trip unit with adjustable:
- Overload protection
- Short-circuit protection (current and time)
- Instantaneous short-circuit current

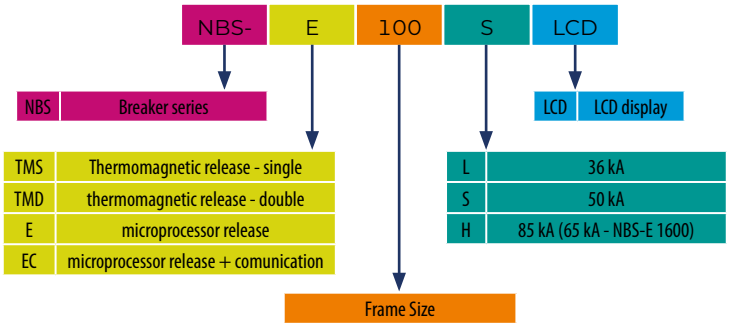
NBS-EC LCD microprocessor trip units provide an LSI trip unit with:
- Overload protection adjustment
- Short-circuit protection adjustment (current and time)
- Instantaneous short-circuit current adjustment
- RS-485 communication port
- Source Microprocessor power supply

Additionally, NBS-EC LCD offers advanced protection functions:
- High and low voltage protection
- Disconnection, asymmetry, and phase change protection
- Frequency control (over and under)
- Temperature monitoring and overheating protection

All protection functions have 3 modes of operation:
- Trip: Protection activates, and the breaker trips when control values are exceeded.
- Alarm: The red LED flashes when control values are exceeded.
- OFF: Protection functions and indicators are disabled.



- **Auxiliary and Alarm Contacts suit all frames up to 1600A. SHT and UVT types:**
  Type 1: Frames 100-630A
  Type 2: Frame 1600A



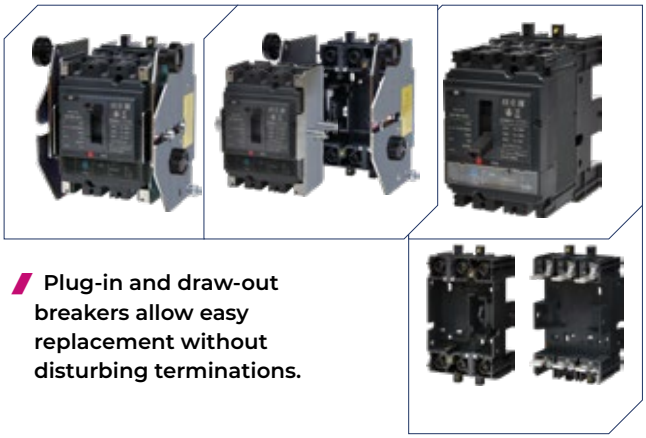
- **All data on the front side of the breaker are laser printed.**

- **NBS-E and NBS-EC series allow disabling protection functions, enabling the circuit breaker to be used as a switch disconnector.**

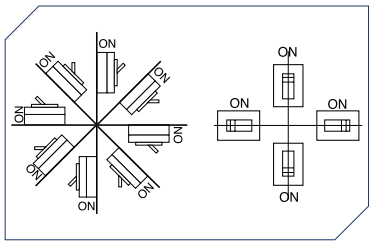
- **Standard Frame Sizes**

- **Indication on the breaker and the handle shows the status "ON" / "OFF" or "TRIP"**

The risk of touching live parts has been minimized by:
- Terminal protection covers
- Interpole barriers, which provide maximum insulation between phases at the terminals



Plug-in and draw-out breakers allow easy replacement without disturbing terminations.



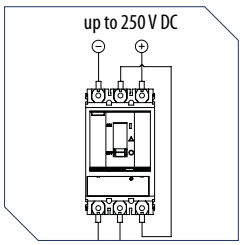
ETIBREAK NBS circuit breakers can be mounted at any angle without affecting performance.

Marking plate on the breaker body indicates minimum and maximum value of the MCCB current

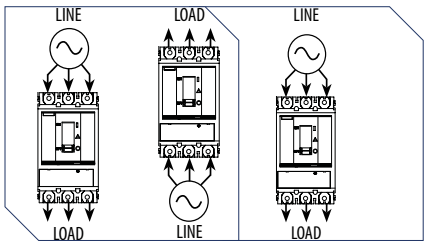
Motor operator provide the possibility of remote ON/ OFF function of MCCB.

Adjustment dials are protected by a transparent cover that can be sealed.

Door-mounted handles enable manual operation of breakers installed in cabinets from the outside.



TMS and TMD series of MCCB's can be used in systems with DC voltage up to 250V.



TMS, TMD, E, and E LCD support bidirectional power flow without performance loss, while EC LCD allows top entry only.

NBS-TC clamps are used for flexible (multicore) conductors. NBS-ZB extension bars are used for compression terminals or flat bars.

Technical data

Frame Size ETIBREAK NBS	100&160&250, 400&630, 1600
Nominal currents	20 - 1600A
Number of poles	3 & 4
Rated impulse withstand voltage Uimp	8 kV
Rated insulation voltage Ui	1000 V
Ultimate breaking capacity Icu	36 - 85 kA
Standards	IEC 60947-2, EN 60947-2

ETIBREAK NBS-TMS/TMD (L - 36kA, with thermomagnetic release

ETIBREAK NBS-TMS 100/3L...4L (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	Adjustment thermal/magnetic	kg	
NBS-TMS 100/3L 20A 3P	20	004673001	3	36	(0,8...0,9...1)xIn / 10xIn	1,9	1
NBS-TMS 100/3L 25A 3P	25	004673010				1,9	1
NBS-TMS 100/3L 32A 3P	32	004673002				1,9	1
NBS-TMS 100/3L 40A 3P	40	004673003				1,9	1
NBS-TMS 100/3L 50A 3P	50	004673004				1,9	1
NBS-TMS 100/3L 63A 3P	63	004673005				1,9	1
NBS-TMS 100/3L 80A 3P	80	004673006				1,9	1
NBS-TMS 100/3L 100A 3P	100	004673007				1,9	1
NBS-TMS 100/4L 20A 4P	20	004673011	4	36		2,15	1
NBS-TMS 100/4L 25A 4P	25	004673020				2,15	1
NBS-TMS 100/4L 32A 4P	32	004673012				2,15	1
NBS-TMS 100/4L 40A 4P	40	004673013				2,15	1
NBS-TMS 100/4L 50A 4P	50	004673014				2,15	1
NBS-TMS 100/4L 63A 4P	63	004673015				2,15	1
NBS-TMS 100/4L 80A 4P	80	004673016				2,15	1
NBS-TMS 100/4L 100A 4P	100	004673017				2,15	1

NBS-TMS 100/3L
NBS-TMS 160/3L

ETIBREAK NBS-TMS 160/3L...4L (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	Adjustment thermal/magnetic	kg	
NBS-TMS 160/3L 125A 3P	125	004673008	3	36	(0,8...0,9...1)xIn / 10xIn	1,9	1
NBS-TMS 160/3L 160A 3P	160	004673009				1,9	1
NBS-TMS 160/4L 125A 4P	125	004673018	4	36	(0,8...0,9...1)xIn / 10xIn	2,15	1
NBS-TMS 160/4L 160A 4P	160	004673019				2,15	1

NBS-TMD 250/3L

ETIBREAK NBS-TMD 250/3L ...4L(L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	Adjustment thermal/magnetic	kg	
NBS-TMD 250/3L 200A 3P	200	004673071	3	36	(0,8...0,9...1)xIn /(5-10)xIn	1,9	1
NBS-TMD 250/3L 250A 3P	250	004673072				1,9	1
NBS-TMD 250/4L 200A 4P	200	004673073	4	36	(0,8...0,9...1)xIn /(5-10)xIn	2,15	1
NBS-TMD 250/4L 250A 4P	250	004673074				2,15	1

NBS-TMD 250/4L

ETIBREAK NBS-TMD 400/3L...4L (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	Adjustment thermal/magnetic	kg	
NBS-TMD 400/3L 315A 3P	315	004673101	3	36	(0,7..0,8...0,9..1)xIn/ (5-10)xIn	6,75	1
NBS-TMD 400/3L 400A 3P	400	004673102				6,75	1
NBS-TMD 400/4L 315A 4P	315	004673103	4	36	(0,7..0,8...0,9..1)xIn/ (5-10)xIn	8,75	1
NBS-TMD 400/4L 400A 4P	400	004673104				8,75	1

NBS-TMD 400/4L

ETIBREAK NBS-TMD 630/3L...4L (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	Adjustment thermal/magnetic	kg	
NBS-TMD 630/3L 500A 3P	500	004673131	3	36	(0,7..0,8...0,9..1)xIn/(5-10)xIn	6,75	1
NBS-TMD 630/3L 600A 3P	600	004673132				6,75	1
NBS-TMD 630/4L 500A 4P	500	004673133	4	36	(0,7..0,8...0,9..1)xIn/(5-10)xIn	8,75	1
NBS-TMD 630/4L 600A 4P	600	004673134				8,75	1

NBS-TMD 400/3L
NBS-TMD 630/3L

ETIBREAK NBS-TMS/TMD (S - 50kA, with thermomagnetic release)

ETIBREAK NBS-TMS 100/3S...4S (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	Adjustment thermal/magnetic	kg	
NBS-TMS 100/3S 20A 3P	20	004673021	3	50	(0,8...0,9...1)xIn / 10xIn	1,9	1
NBS-TMS 100/3S 25A 3P	25	004673030				1,9	1
NBS-TMS 100/3S 32A 3P	32	004673022				1,9	1
NBS-TMS 100/3S 40A 3P	40	004673023				1,9	1
NBS-TMS 100/3S 50A 3P	50	004673024				1,9	1
NBS-TMS 100/3S 63A 3P	63	004673025				1,9	1
NBS-TMS 100/3S 80A 3P	80	004673026				1,9	1
NBS-TMS 100/3S 100A 3P	100	004673027				1,9	1
NBS-TMS 100/4S 20A 4P	20	004673031	4	50		2,15	1
NBS-TMS 100/4S 25A 4P	25	004673040				2,15	1
NBS-TMS 100/4S 32A 4P	32	004673032				2,15	1
NBS-TMS 100/4S 40A 4P	40	004673033				2,15	1
NBS-TMS 100/4S 50A 4P	50	004673034				2,15	1
NBS-TMS 100/4S 63A 4P	63	004673035				2,15	1
NBS-TMS 100/4S 80A 4P	80	004673036				2,15	1
NBS-TMS 100/4S 100A 4P	100	004673037				2,15	1

NBS-TMS 100/3S
NBS-TMS 160/3S

NBS-TMS 100/4L

ETIBREAK NBS-TMS 160/3S...4S (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	Adjustment thermal/magnetic	kg	
NBS-TMS 160/3S 125A 3P	125	004673028	3	50	(0,8...0,9...1)xIn / 10xIn	1,9	1
NBS-TMS 160/3S 160A 3P	160	004673029				1,9	1
NBS-TMS 160/4S 125A 4P	125	004673038	4	50	(0,8...0,9...1)xIn / 10xIn	2,15	1
NBS-TMS 160/4S 160A 4P	160	004673039				2,15	1

NBS-TMD 250/3S

ETIBREAK NBS-TMD 250/3S...4S (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	Adjustment thermal/magnetic	kg	
NBS-TMD 250/3S 200A 3P	200	004673075	3	50	(0,8...0,9...1)xIn / (5-10)xIn	1,9	1
NBS-TMD 250/3S 250A 3P	250	004673076				1,9	1
NBS-TMD 250/4S 200A 4P	200	004673077	4	50	(0,8...0,9...1)xIn / (5-10)xIn	2,15	1
NBS-TMD 250/4S 250A 4P	250	004673078				2,15	1

NBS-TMD 400/3S
NBS-TMD 630/3S

ETIBREAK NBS-TMD 400/3S...4S (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	Adjustment thermal/magnetic	kg	
NBS-TMD 400/3S 315A 3P	315	004673105	3	50	(0,7..0,8...0,9..1)xIn/(5-10)xIn	6,75	1
NBS-TMD 400/3S 400A 3P	400	004673106				6,75	1
NBS-TMD 400/4S 315A 4P	315	004673107	4	50	(0,7..0,8...0,9..1)xIn/(5-10)xIn	8,75	1
NBS-TMD 400/4S 400A 4P	400	004673108				8,75	1

ETIBREAK NBS-TMD 630/3S...4S (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	Adjustment thermal/magnetic	kg	
NBS-TMD 630/3S 500A 3P	500	004673135	3	50	(0,7..0,8...0,9..1)xIn/(5-10)xIn	6,75	1
NBS-TMD 630/3S 600A 3P	600	004673136				6,75	1
NBS-TMD 630/4S 500A 4P	500	004673137	4	50	(0,7..0,8...0,9..1)xIn/(5-10)xIn	8,75	1
NBS-TMD 630/4S 600A 4P	600	004673138				8,75	1

ETIBREAK NBS-E (L - 36kA, S - 50kA, H - 65/85kA, with microprocessor release)

ETIBREAK NBS-E 100...250/3L...4L (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	$L(I_r)/S(I_{sd})/I(I_i)$	kg	
NBS-E 100/3L 100A 3P	100	004673041	3	36	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 1500A	1,9	1
NBS-E 160/3L 160A 3P	160	004673055			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 2400A	1,9	1
NBS-E 250/3L 250A 3P	250	004673079			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 3000A	1,9	1
NBS-E 100/4L 100A 4P	100	004673042	4	36	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 1500A	2,15	1
NBS-E 160/4L 160A 4P	160	004673056			0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 2400A	2,15	1
NBS-E 250/4L 250A 4P	250	004673080			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 3000A	2,15	1

NBS-E 100/3L ..3S ..3H
NBS-E 160/3L ..3S ..3H
NBS-E 250/3L ..3S ..3H

ETIBREAK NBS-E 400&630/3L...4L (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	$L(I_r)/S(I_{sd})/I(I_i)$	kg	
NBS-E 400/3L 400A 3P	400	004673109	3	36	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 4800A	6,75	1
NBS-E 630/3L 630A 3P	630	004673139			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 6930A	6,75	1
NBS-E 400/4L 400A 4P	400	004673110	4	36	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 4800A	8,75	1
NBS-E 630/4L 630A 4P	630	004673140			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 6930A	8,75	1

NBS-E 400/3L ..3S ..3H
NBS-E 630/3L ..3S ..3H

ETIBREAK NBS-E 800...1600/3L...4L (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	$L(I_r)/S(I_{sd})/I(I_i)$	kg	
NBS-E 1600/3L 800A 3P	800	004673160	3	36	(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/3L 1000A 3P	1000	004673161			(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/3L 1250A 3P	1250	004673162			(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/3L 1600A 3P	1600	004673163			(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/4L 800A 4P	800	004673165	4	36	(0,4-1) x In / (1,5-10) x Ir	17,5	1
NBS-E 1600/4L 1000A 4P	1000	004673166			(0,4-1) x In / (1,5-10) x Ir	17,5	1
NBS-E 1600/4L 1250A 4P	1250	004673167			(0,4-1) x In / (1,5-10) x Ir	17,5	1
NBS-E 1600/4L 1600A 4P	1600	004673168			(0,4-1) x In / (1,5-10) x Ir	17,5	1

NBS-E 1600/3L ..3S ..3H

ETIBREAK NBS-E 100...250/3S...4S (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	$L(I_r)/S(I_{sd})/I(I_i)$	kg	
NBS-E 100/3S 100A 3P	100	004673043	3	50	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 1500A	1,9	1
NBS-E 160/3S 160A 3P	160	004673057			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 2400A	1,9	1
NBS-E 250/3S 250A 3P	250	004673081			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 3000A	1,9	1
NBS-E 100/4S 100A 4P	100	004673044	4	50	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 1500A	2,15	1
NBS-E 160/4S 160A 4P	160	004673058			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 2400A	2,15	1
NBS-E 250/4S 250A 4P	250	004673082			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 3000A	2,15	1

ETIBREAK NBS-E 400&630/3S...4S (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-E 400/3S 400A 3P	400	004673111	3	50	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 4800A	6,75	1
NBS-E 630/3S 630A 3P	630	004673141			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 6930A	6,75	1
NBS-E 400/4S 400A 4P	400	004673112	4	50	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 4800A	8,75	1
NBS-E 630/4S 630A 4P	630	004673142			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 6930A	8,75	1

ETIBREAK NBS-E 800...1600/3S...4S (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / I (I_{sd})	kg	
NBS-E 1600/3S 800A 3P	800	004673170	3	50	(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/3S 1000A 3P	1000	004673171			(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/3S 1250A 3P	1250	004673172			(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/3S 1600A 3P	1600	004673173			(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/4S 800A 4P	800	004673175	4	50	(0,4-1) x In / (1,5-10) x Ir	17,5	1
NBS-E 1600/4S 1000A 4P	1000	004673176			(0,4-1) x In / (1,5-10) x Ir	17,5	1
NBS-E 1600/4S 1250A 4P	1250	004673177			(0,4-1) x In / (1,5-10) x Ir	17,5	1
NBS-E 1600/4S 1600A 4P	1600	004673178			(0,4-1) x In / (1,5-10) x Ir	17,5	1

NBS-E 100/4L ..4S ..4H
NBS-E 160/4L ..4S ..4H
NBS-E 250/4L ..4S ..4H

ETIBREAK NBS-E 100...250/3H...4H (H - 85kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-E 100/3H 100A 3P	100	004673045	3	85	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 1500A	1,9	1
NBS-E 160/3H 160A 3P	160	004673059			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 2400A	1,9	1
NBS-E 250/3H 250A 3P	250	004673083			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 3000A	1,9	1
NBS-E 100/4H 100A 4P	100	004673046	4	85	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 1500A	2,15	1
NBS-E 160/4H 160A 4P	160	004673060			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 2400A	2,15	1
NBS-E 250/4H 250A 4P	250	004673084			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 3000A	2,15	1

NBS-E 400/4L ..4S ..4H

ETIBREAK NBS-E 400&630/3H...4H (H - 85kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-E 400/3H 400A 3P	400	004673113	3	85	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 4800A	6,75	1
NBS-E 630/3H 630A 3P	630	004673143			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 6930A	6,75	1
NBS-E 400/4H 400A 4P	400	004673114	4	85	(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 4800A	8,75	1
NBS-E 630/4H 630A 4P	630	004673144			(0,4-1) x In x (0,9-1) / (1,5-10) x Ir / 6930A	8,75	1

ETIBREAK NBS-E 800...1600/3H...4H (H - 65kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / I (I_{sd})	kg	
NBS-E 1600/3H 800A 3P	800	004673180	3	65	(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/3H 1000A 3P	1000	004673181			(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/3H 1250A 3P	1250	004673182			(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/3H 1600A 3P	1600	004673183			(0,4-1) x In / (1,5-10) x Ir	13,8	1
NBS-E 1600/4H 800A 4P	800	004673185	4	65	(0,4-1) x In / (1,5-10) x Ir	17,5	1
NBS-E 1600/4H 1000A 4P	1000	004673186			(0,4-1) x In / (1,5-10) x Ir	17,5	1
NBS-E 1600/4H 1250A 4P	1250	004673187			(0,4-1) x In / (1,5-10) x Ir	17,5	1
NBS-E 1600/4H 1600A 4P	1600	004673188			(0,4-1) x In / (1,5-10) x Ir	17,5	1

NBS-E 1600/4L ..4S ..4H

ETIBREAK NBS-E (L - 36kA, S - 50kA, with microprocessor release and LCD display)

ETIBREAK NBS-E 100...250/3L...4L LCD (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-E 100/3L LCD 100A 3P	100	004673047	3	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	1,9	1
NBS-E 160/3L LCD 160A 3P	160	004673061				1,9	1
NBS-E 250/3L LCD 250A 3P	250	004673085				1,9	1
NBS-E 100/4L LCD 100A 4P	100	004673048	4	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	2,15	1
NBS-E 160/4L LCD 160A 4P	160	004673062				2,15	1
NBS-E 250/4L LCD 250A 4P	250	004673086				2,15	1

NBS-E 100/3L ..3S LCD
NBS-E 160/3L ..3S LCD
NBS-E 250/3L ..3S LCD

ETIBREAK NBS-E 400&630/3L...4L LCD (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-E 400/3L LCD 400A 3P	400	004673115	3	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	6,75	1
NBS-E 630/3L LCD 630A 3P	630	004673145				6,75	1
NBS-E 400/4L LCD 400A 4P	400	004673116	4	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	8,75	1
NBS-E 630/4L LCD 630A 4P	630	004673146				8,75	1

NBS-E 400/3L ..3S LCD NBS-E 630/3L ..3S LCD

ETIBREAK NBS-E 100...250/3S...4S LCD (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-E 100/3S LCD 100A 3P	100	004673049	3	50	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	1,9	1
NBS-E 160/3S LCD 160A 3P	160	004673063				1,9	1
NBS-E 250/3S LCD 250A 3P	250	004673087				1,9	1
NBS-E 100/4S LCD 100A 4P	100	004673050	4	50	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	2,15	1
NBS-E 160/4S LCD 160A 4P	160	004673064				2,15	1
NBS-E 250/4S LCD 250A 4P	250	004673088				2,15	1

ETIBREAK NBS-E 400&630/3S...4S LCD (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-E 400/3S LCD 400A 3P	400	004673117	3	50	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	6,75	1
NBS-E 630/3S LCD 630A 3P	630	004673147				6,75	1
NBS-E 400/4S LCD 400A 4P	400	004673118	4	50	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	8,75	1
NBS-E 630/4S LCD 630A 4P	630	004673148				8,75	1

ETIBREAK NBS-E 800&1600/3L...4L LCD (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-E 1600/3L LCD 800A 3P	800	004673190	3	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	13,8	1
NBS-E 1600/3L LCD 1000A 3P	1000	004673191				13,8	1
NBS-E 1600/3L LCD 1250A 3P	1250	004673192				13,8	1
NBS-E 1600/3L LCD 1600A 3P	1600	004673193				13,8	1
NBS-E 1600/4L LCD 800A 4P	800	004673195	4	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	17,5	1
NBS-E 1600/4L LCD 1000A 4P	1000	004673196				17,5	1
NBS-E 1600/4L LCD 1250A 4P	1250	004673197				17,5	1
NBS-E 1600/4L LCD 1600A 4P	1600	004673198				17,5	1

ETIBREAK NBS-E 800&1600/3S...4S LCD (L - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-E 1600/3S LCD 800A 3P	800	004673200	3	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	13,8	1
NBS-E 1600/3S LCD 1000A 3P	1000	004673201				13,8	1
NBS-E 1600/3S LCD 1250A 3P	1250	004673202				13,8	1
NBS-E 1600/3S LCD 1600A 3P	1600	004673203				13,8	1
NBS-E 1600/4S LCD 800A 4P	800	004673205	4	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	17,5	1
NBS-E 1600/4S LCD 1000A 4P	1000	004673206				17,5	1
NBS-E 1600/4S LCD 1250A 4P	1250	004673207				17,5	1
NBS-E 1600/4S LCD 1600A 4P	1600	004673208				17,5	1

ETIBREAK NBS-EC (L - 36kA, S - 50kA, with microprocessor release, LCD display +RS485)

ETIBREAK NBS-EC 100&160&250/3L...4L LCD (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-EC 100/3L LCD 100A 3P	100	004673051	3	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	1,9	1
NBS-EC 160/3L LCD 160A 3P	160	004673065				1,9	1
NBS-EC 250/3L LCD 250A 3P	250	004673089				1,9	1
NBS-EC 100/4L LCD 100A 4P	100	004673052	4	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	2,15	1
NBS-EC 160/4L LCD 160A 4P	160	004673066				2,15	1
NBS-EC 250/4L LCD 250A 4P	250	004673090				2,15	1

NBS-EC 100/3L ..3S LCD
NBS-EC 160/3L ..3S LCD
NBS-EC 250/3L ..3S LCD

ETIBREAK NBS-EC 400&630/3L...4L LCD (L - 36kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-EC 400/3L LCD 400A 3P	400	004673119	3	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	6,75	1
NBS-EC 630/3L LCD 630A 3P	630	004673149				6,75	1
NBS-EC 400/4L LCD 400A 4P	400	004673120	4	36	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	8,75	1
NBS-EC 630/4L LCD 630A 4P	630	004673150				8,75	1

NBS-EC 400/3L ..3S LCD NBS-EC 630/3L ..3S LCD

ETIBREAK NBS-EC 100&160&250/3S...4S LCD (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-EC 100/3S LCD 100A 3P	100	004673053	3	50	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	1,9	1
NBS-EC 160/3S LCD 160A 3P	160	004673067				1,9	1
NBS-EC 250/3S LCD 250A 3P	250	004673091				1,9	1
NBS-EC 100/4S LCD 100A 4P	100	004673054	4	50	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	2,15	1
NBS-EC 160/4S LCD 160A 4P	160	004673068				2,15	1
NBS-EC 250/4S LCD 250A 4P	250	004673092				2,15	1

ETIBREAK NBS-EC 400&630/3S...4S LCD (S - 50kA)

Type	I_N [A]	Code No.	Poles	$I_{cs}=I_{cu}$ 415V [kA]	L (I_r) / S (I_{sd}) / I (I_i)	kg	
NBS-EC 400/3S LCD 400A 3P	400	004673121	3	50	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	6,75	1
NBS-EC 630/3S LCD 630A 3P	630	004673151				6,75	1
NBS-EC 400/4S LCD 400A 4P	400	004673122	4	50	(0,4-1) x In / (1,5-12) x Ir / (2-15) x In	8,75	1
NBS-EC 630/4S LCD 630A 4P	630	004673152				8,75	1

Internal accessories

Auxiliary switch for NBS

Type	Code No.	Description	Compatibility	
NBS-PS 100-1600AF	004673211	Auxiliary switch 1xCO	NBS 20-1600A	1/1

Operating current: 24V AC/DC – AC15/3A, DC14/1A; 220/240V AC – AC15/2A; 380/440V AC – AC15/1.5A.

Auxiliary switch 1xCO

Signal switch for NBS

Type	Code No.	Description	Compatibility	
NBS-SS 100-1600AF	004673212	Signal switch 1xCO	NBS 20-1600A	1/1

Operating current: 24V AC/DC – AC15/3A, DC14/1A; 220/240V AC – AC15/2A; 380/440V AC – AC15/1.5A.

Signal switch 1xCO

Shunt trip for NBS

Type	Code No.	Description	Compatibility	
NBS-DA 100-630AF AC220/230V	004673215	Shunt trip AC 220-230V	NBS 20-630A	1/1
NBS-DA 100-630AF AC380/400V	004673216	Shunt trip AC 380-400V		1/1
NBS-DA 1600AF AC220/230V	004673217	Shunt trip AC 220-230V	NBS 800-1600A	1/1
NBS-DA 1600AF AC380/400V	004673218	Shunt trip AC 380-400V		1/1
NBS-DA 100-630AF DC24V	004673219	Shunt trip DC 24V	NBS 20-630A	1/1
NBS-DA 1600AF DC24V	004673220	Shunt trip DC 24V	NBS 800-1600A	1/1

IMPORTANT NOTE: The shunt trip unit NBS-DA and undervoltage trip unit NBS-NA cannot be mounted in the same breaker

Shunt trip
NBS-DA 100-630AF

Shunt trip
NBS-DA 1600AF

Undervoltage trip for NBS

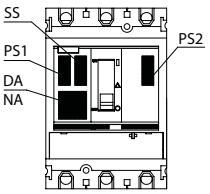
Type	Code No.	Description	Compatibility	
NBS-NA 100-630AF AC220/230V	004673221	Undervoltage trip AC 220-230V	NBS 20-630A	1/1
NBS-NA 100-630AF AC380/400V	004673222	Undervoltage trip AC 380-400V		1/1
NBS-NA 1600AF AC220/230V	004673223	Undervoltage trip AC 220-230V	NBS 800-1600A	1/1
NBS-NA 1600AF AC380/400V	004673224	Undervoltage trip AC 380-400V		1/1

IMPORTANT NOTE: The shunt trip unit NBS-DA and undervoltage trip unit NBS-NA cannot be mounted in the same breaker

Undervoltage trip NBS-NA
100-630AF

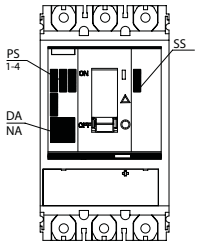
Undervoltage trip
NBS-NA 1600AF

ETIBREAK NBS 100, 160, 250



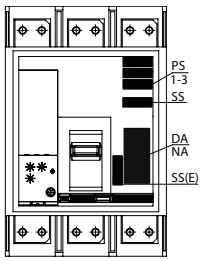
NBS-PS 100-1600AF
NBS-SS 100-1600AF

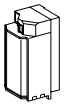
ETIBREAK NBS 400, 630



NBS-DA 100-630AF
NBS-NA 100-630AF

ETIBREAK NBS 1600





NBS-DA 1600AF
NBS-NA 1600AF

NBS-MO 100-250

NBS-MO 400-630

External accessories

Motor operator for NBS

Type	Code No.	Description	Compatibility	kg	
NBS-MO 100-250AF AC220/230V	004673231	Motor operator AC 220-230V	NBS 20-250A	1,32	1
NBS-MO 400-630AF AC220/230V	004673232	Motor operator AC 220-230V	NBS 400-630A	3,67	1
NBS-MO 1600AF AC220/230V	004673233	Motor operator AC 220-230V	NBS 800-1600A	4,76	1
NBS-MO 100-250AF AC220/230V 4P	004673281	Motor operator AC 220-230V	NBS 20-250A	1,5	1
NBS-MO 400-630AF AC220/230V 4P	004673282	Motor operator AC 220-230V	NBS 400-630A	3,9	1
NBS-MO 1600AF AC220/230V 4P	004673283	Motor operator AC 220-230V	NBS 800-1600A	5,0	1

NBS-MO 1600

Door mounted handle for NBS

Type	Code No.	Description	Compatibility	kg	
NBS-RO 100-250AF	004673225	Door mounted handle	NBS 20-250A	0,45	1
NBS-RO 400-630AF	004673226	Door mounted handle	NBS 400-630A	0,65	1
NBS-RO 1600AF	004673227	Door mounted handle	NBS 800-1600A	2,12	1

NOTE: NBS-RO 100-250AF, NBS-RO 400-630AF - shaft length 470mm. NBS-RO 1600AF - shaft length 425mm.

Plug-in kit for NBS

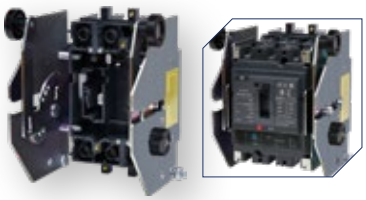
Type	Code No.	Description	Compatibility	kg	
NBS-PLIN 100-250AF 3P	004673271*	Plug-in base	NBS 20-250A	1,25	1
NBS-PLIN 400-630AF 3P	004673272**	Plug-in base	NBS 400-630A	3,42	1
NBS-PLIN 100-250AF 4P	004673273*	Plug-in base	NBS 20-250A	1,6	1
NBS-PLIN 400-630AF 4P	004673274**	Plug-in base	NBS 400-630A	4,52	1

NOTE: * Caution! The maximum rated current of the kit NBS-PLIN for NBS 100&250A circuit breakers without exceeding the permissible temperature is 210A. ** Caution! The maximum rated current of the kit NBS-PLIN for NBS 400&630A circuit breakers without exceeding the permissible temperature is 500A. NBS-PRS protective covers are included.

Draw-out set for NBS

Type	Code No.	Description	Compatibility	kg	
NBS-DOS 100-250AF 3P	004673275*	Chassis	NBS 20-250A	3,34	1
NBS-DOS 400-630AF 3P	004673276**	Chassis	NBS 400-630A	7,90	1
NBS-DOS 100-250AF 4P	004673277*	Chassis	NBS 20-250A	-	1
NBS-DOS 400-630AF 4P	004673278**	Chassis	NBS 400-630A	-	1

NOTE: * Caution! The maximum rated current of the kit NBS-DOS for NBS 100&250A circuit breakers without exceeding the permissible temperature is 210A. ** Caution! The maximum rated current of the kit NBS-DOS for NBS 400&630A circuit breakers without exceeding the permissible temperature is 500A.



Terminal protective cover for NBS

Type	Code No.	Description	Compatibility	kg	
NBS-PRS 100-250AF 3P	004673235	Terminal cover	NBS 20-250A	0,08	2
NBS-PRS 400-630AF 3P	004673236	Terminal cover	NBS 400-630A	0,16	2
NBS-PRS 100-250AF 4P	004673237	Terminal cover	NBS 20-250A	0,11	2
NBS-PRS 400-630AF 4P	004673238	Terminal cover	NBS 400-630A	0,22	2

Interpole barriers for NBS

Type	Code No.	Description	Compatibility	kg	
NBS-IZ 100-250AF 3P	004673241	Interpole barriers	NBS 20-250A	0,10	4
NBS-IZ 400-630AF 3P	004673242	Interpole barriers	NBS 400-630A	0,15	4
NBS-IZ 1600AF 3P	004673243	Interpole barriers	NBS 800-1600A	0,20	4
NBS-IZ 100-250AF 4P	004673244	Interpole barriers	NBS 20-250A	0,15	6
NBS-IZ 400-630AF 4P	004673245	Interpole barriers	NBS 400-630A	0,23	6
NBS-IZ 1600AF 4P	004673246	Interpole barriers	NBS 800-1600A	0,30	6

Attach busbars for NBS

Type	Code No.	Description	Compatibility	kg	
NBS-ZB 100-250AF 3P	004673251	Interpole barriers	NBS 20-250A	0,28	6
NBS-ZB 400-630AF 3P	004673252	Interpole barriers	NBS 400-630A	0,75	6
NBS-ZB 1600AF 3P	004673253	Interpole barriers	NBS 800-1600A	3,15	6
NBS-ZB 100-250AF 4P	004673254	Interpole barriers	NBS 20-250A	0,38	8
NBS-ZB 400-630AF 4P	004673255	Interpole barriers	NBS 400-630A	1,01	8
NBS-ZB 1600AF 4P	004673256	Interpole barriers	NBS 800-1600A	4,29	8

Cable clamp terminals for NBS

Type	Code No.	Description	Compatibility	kg	
NBS-TC 100-250AF 3P	004673261	Clamps for flexible conductors 150-240mm^2	NBS 20-250A	0,12	6
NBS-TC 100-250AF 4P	004673262	Clamps for flexible conductors 150-240mm^2	NBS 20-250A	0,27	8

Release types

Thermomagnetic release NBS-TMS

MCCB's with thermomagnetic release can be used in industrial and comercial electrical instalations for protection of cables supplied by transformers.

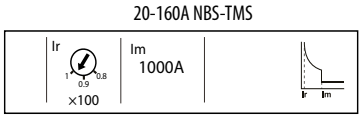
Protection:
Thermal protection (I_r)
Overload protection (thermal protection) is ensured by using a bimetallic plate which will be activated when its temperature, due to overcurent, will increase and consequently activate the switching mechanism which will trip the MCCB.
Overload protection setting I_r - adjustable in amperes (A) within 0.8 - 1 of rated current of the MCCB.

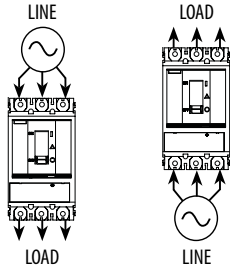
Magnetic protection (I_m)
Protection against short circuits is carried out using an electromagnetic release, which performs an instant shutdown of the MCCB, when the I_m set point is exceeded. In this series of MCCB's I_m is fixed and it is 10 x I_n.

Note: Adjustment dials are covered with transparent covers which can be sealed.

Thermomagnetic relese NBS-TMS

Rated current (A)	I_n @ 40°C	20	25	32	40	50	63	80	100	125	160
MCCB type	NBS-TMS 100	•	•	•	•	•	•	•	•		
	NBS-TMS 160									•	•
Thermal protection											
Current setting (A) Release between 1.05 and 1.2 Ir	$I_r = I_n$ x ...	Adjustable in range from 0.8 to 1 x In									
Time adjustment (s)	t_r	NON - adjustable									
Electromagnetic protection											
Current setting (A) Tolerance ±20%	I_m	NON - adjustable Im = 10 x In									





Thermomagnetic release NBS-TMD

MCCB's with thermomagnetic release can be used in industrial and comercial electrical instalations for protection of cables supplied by transformers.

Protection:
Thermal protection (I_r)
Overload protection (thermal protection) is ensured by using a bimetallic plate which will be activated when its temperature, due to overcurent, will increase and consequently activate the switching mechanism which will trip the MCCB.
Overload protection setting settings I_r - adjustable in amperes for ratings 200-250A within 0.8 - 1, and for ratings 315-600A within 0.7 - 1 of the rated current of MCCB.

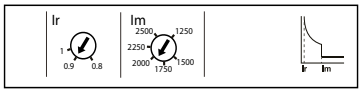
Magnetic protection (I_m)
Protection against short circuits is carried out using an electromagnetic release, which performs an instant shutdown of the MCCB, when the I_m set point is exceeded. In this series of MCCB's I_m is adjustable between 5 and 10 x I_n.

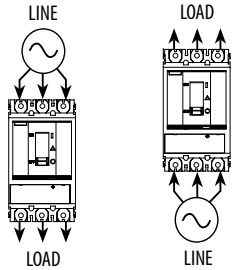
Note: Adjustment dials are covered with transparent covers which can be sealed.

Thermomagnetic release NBS-TMD

Rated current (A)	I_n @ 40°C	200	250	315	400	500	600
MCCB type	NBS-TMD 250	•	•				
	NBS-TMD 400			•	•		
	NBS-TMD 630					•	•
Thermal protection							
Current setting (A) Release between 1.05 and 1.2 Ir	$I_r = I_n$ x ...	Adjustable in range from 0.8 to 1 x In		Adjustable in range from 0.7 to 1 x In			
Time adjustment (s)	t_r	NON - adjustable					
Electromagnetic protection							
Current setting (A) Tolerance ±20%	I_m	Adjustable Im = (5-10) x In					

200-600A NBS-TMD





Electronic release NBS-E (100-630A)

MCCB's with electronic release can be used in industrial and comercial electrical instalations for protection of cables supplied by transformers.

Protection:
Adjustment dials on the front panel provides fine adjustment.

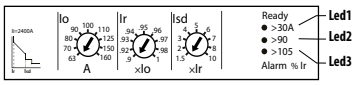
L Overload protection (Ir)
Inverse time protection against overloads with 2 adjustment dials:
Io- rough adjustment between 0,4 to 1 x In
Ir - fine adjustment between 0,9 and 1 of set Io

S Fixed time delayed short-circuit protection (Isd)
Protection with an adjustable pick-up Isd. Tripping takes place after a very short delay used to allow discrimination with the downstream device.
I Instantaneous short-circuit protection (Ii)
Instantaneous short-circuit protection with non-adjustable current setting Ii.

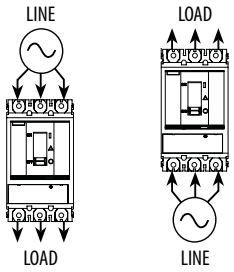
Indication:
On the front panel of the MCCB are 3 LED lights indicating the status of the breaker:
Green - ready LED. Flashes slowly, signaling that MCCB is working and is prepared to operate, protect the instalation. Minimum load current is required so that this function will work.... minimum load current of 30A for MCCB with rated current up to 250A and 50A for MCCB with a rated current of more than 250A.
Orange - overload warning LED. Lights up when current is higher than 90% of the set value of Ir.
Red - overload alarm LED. Lights up when the current is higher than 105% of the set value of Ir.

Note: Adjustment dials are covered with transparent covers which can be sealed.

100-630A NBS-E



Indication
- Led1 - green
- Led2 - orange
- Led3 - red



Electronic release NBS-E

Rated current (A)	In @ 40°C	100	160	250	400	630
MCCB type	NBS-E 100	•				
	NBS-E 160		•			
	NBS-E 250			•		
	NBS-E 400				•	
	NBS-E 630					•

(L) Overload protection										
		I_o	Value of possible current settings depending on In adjustment dials positions							
Current setting (A) Switching off between 1,05 and1,2 Ir	$I_n = 100$	$I_o =$	40	45	50	55	63	70	80	90	100
	$I_n = 160$	$I_o =$	63	70	80	90	100	110	125	150	160
	$I_n = 250$	$I_o =$	100	112	125	140	160	175	200	225	250
	$I_n = 400$	$I_o =$	160	180	200	230	250	280	320	360	400
	$I_n = 630$	$I_o =$	250	280	320	350	400	450	500	570	630
	$I_r = I_o$ x ...		Fine adjustment from 0.9 to 1, possible positions (0.9 – 0.92 – 0.93 – 0.94 – 0.95 – 0.96 – 0.97 – 0.98 – 1) for each value of Io								
Time adjustment (s)	t_r		NON - adjustable								
Selective current disconnection with constant time setting											
Current setting(A) Tolerance±10%	$I_{sd} = I_r$ x ...		1,5	2	3	4	5	6	7	8	10
Time delay (ms)	t_{sd}		NON - adjustable								
	min tripping time		20								
	max tripping time		80								
Instantaneous protection											
Current setting (A) Tolerance ±15 %	NON - adjustable Ii		1500		2400		3000		4800		6930
	min tripping time		10ms								
	max tripping time		50ms								

Electronic release NBS-E (800-1600A)

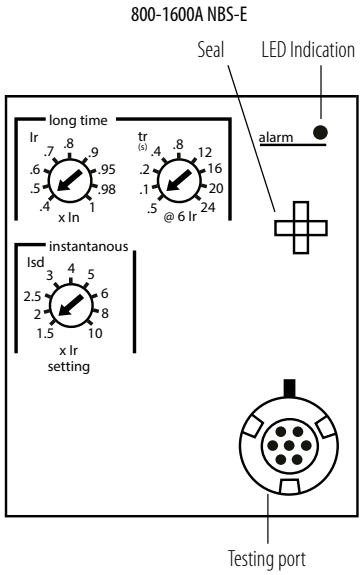
MCCB's with electronic release can be used in industrial and comercial electrical instalations for protection of cables supplied by transformers.

Protection:
Protection settings are made by using adjustment dials on the front panel of the MCCB.

L Overload protection (Ir)
Inverse time protection against overloads with 2 adjustment dials:
Ir- setting of release current in amperes between 0,4 to 1 x In
tr - overload time protection setting

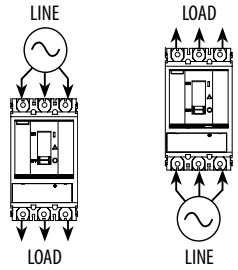
I Instantaneous short-circuit protection (Isd)
Protection with an adjustable pick-up Isd. Tripping takes place after a very short
delay used to allow discrimination with the downstream device.

Indication:
On the front panel of the MCCB is an overload LED alarm which lights up when the load exceeds the set value of Ir.



Electronic release NBS-E

Rated current(A)	In @ 40°C		800		1000		1250		1600	
MCCB type	NBS-E 800		•							
	NBS-E 1000				•					
	NBS-E 1250						•			
	NBS-E 1600								•	
(L) Overload protection										
Current setting (A) Switching off between 1,05 and 1,2 I_r		I_r	Value of possible current settings depending on In adjustment dials positions							
	I_n = 800	I_r =	320	400	480	560	640	720	760	784	800
	I_n = 1000	I_r =	400	500	600	700	800	900	950	980	1000
	I_n = 1250	I_r =	500	625	750	875	1000	1125	1187	1225	1250
	I_n = 1600	I_r =	640	800	960	1120	1280	1440	1520	1568	1600
Time setting (s)	Load current		Adjusted value								
			0,5	1	2	4	8	12	16	20	24
	1,5 x I_r (tolerance 0-30%)		12,5	25	50	100	200	300	400	500	600
	6 x I_r (tolerance 0-20%)		0,5	1	2	4	8	12	16	20	24
	7,2 x I_r (tolerance 0-20%)		0,7	0,69	1,38	2,7	5,5	8,3	11	13,8	16,6
(I) Instantaneous protection											
Current setting (A) Tolerance ±10%	$I_{sd} = I_r$ x ...		1,5	2	2,5	3	4	5	6	8	10
	min tripping time		20 ms								
	max tripping time		80 ms								



Electronic release NBS-E LCD

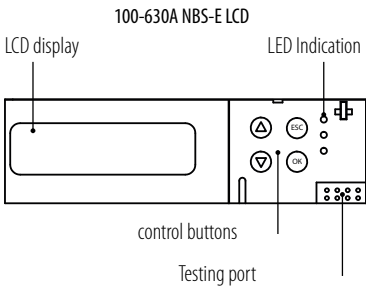
NBS-E LCD MCCB's have a built-in display to indicate parameter settings and display of measurement values and are equipped with a microprocessor-based trip unit, which has significant advantages compared to a thermomagnetic release: a diverse selection of settings needed by the user, high accuracy of execution of the given program, status indicators of release.
This makes it possible to use these switches in various areas, in particular during construction of selective protection schemes
Protection:
Protection settings are made using the control buttons on the front panel of the MCCB with the possibility of fine adjustment. The setting buttons are covered with transparent covers which can be sealed.
L Overload protection (Ir)
Inverse time protection against overloads with 2 adjustments:
Ir- setting of release current in amperes
tr - overload time protection setting

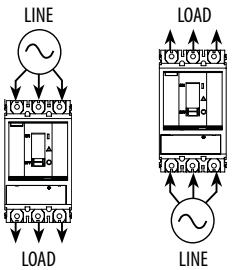
S Time delay short-circuit protection (Isd)
Selective current tripping with adjustable current setting Isd and adjustable time setting tsd.

I Instantaneous short-circuit protectio (Ii)
Instantaneous short-circuit protection with adjustable current setting Ii.

Indication:
Green - ready LED. Flashes slowly, signaling that MCCB is working and is prepared to operate, protect the instalation. Minimum load current is required so that this function will work.... minimum load current of 30A for MCCB with rated current up to 250A and 50A for MCCB with a rated current of more than 250A.
Orange - overload warning LED. Lights up when current is higher than 90% of the set value of Ir.
Red - overload alarm LED. Lights up when the current is higher than 105% of the set value of Ir.

NBS-E LCD MCCB's do not have a built-in microprocessor power source, therefore, for setting the necessary settings, through the circuit breaker should flow minimum load current. For MCCB's with rated current up to 250A the minimum load current must be greater than 40A and for MCCB's with rated current from 400A, the minimum load current must be higher than 50A.





Electronic release NBS-E LCD

Rated current(A)	In @ 40°C		100	160	250	400	630
MCCB type	NBS-E 100 LCD		•				
	NBS-E 160 LCD			•			
	NBS-E 250 LCD				•		
	NBS-E 400 LCD					•	
	NBS-E 630 LCD						•
(L) Overload protection							
Current setting (A) Switching off between 1,05 and 1,2 Ir	$I_r = \ldots$	Settings by using control buttons	The exact setting of the overload protection is carried out by using buttons with a step of 1A in the range between 0.4 and 1 x In				
Time adjustment (s) Tolerance 0-20%	$t_r = \ldots$	Settings by using control buttons	The setting is carried out using control buttons in steps by 0.1 s. / OFF - overload protection is disabled.				
Time setting (s) Tollerance 0-20%	Load current		Setting value				
			1,5	2	4	8	12
	1,5 x I_r		33	50	100	200	300
	6 x I_r		1,5	2	4	8	12
	7,2 x I_r		1	1,4	2,8	5,5	8,2
(S) Fixed time delay short circuit protection							
Current setting (A) Tolerance ±10%	$I_{sd} = I_r$ x ...		The exact setting of the short-circuit protection is carried out by using control buttons in steps of 0.5 x In in the range between 1.5 and 12 x In				
Time setting (s)	$t_{sd} = \ldots$		Settings using the control buttons / OFF - protection against short circuits is disabled.				
			Settings value				
			0,00	0,10	0,20	0,30	0,40
	min tripping time (ms)		20	80	140	230	350
	max tripping time (ms)		80	140	200	320	500
(I) Instantaneous short circuit protection							
Current setting (A) Tolerance ±15%	$I_i = \ldots$		Adjustment is carried out using the control buttons with a step of 1 x In in the range from 2 to 15 x In / OFF - instantaneous protection is disabled				
	min tripping time		10 ms				
	max tripping time		50 ms				

Electronic release NBS-EC LCD

NBS-EC LCD MCCB's have a built-in display to indicate parameter settings and display of measurement values and are equipped with a microprocessor-based trip unit, which has significant advantages compared to a thermomagnetic release: a diverse selection of settings needed by the user, high accuracy of execution of the given program, status indicators of release.
This makes it possible to use these switches in various areas, in particular during construction of selective protection schemes.

Protection:
Protection settings are made using the control buttons on the front panel of the MCCB with the possibility of fine adjustment. The setting buttons are covered with transparent covers which can be sealed.

L Overload protection (Ir)
Inverse time protection against overloads with 2 adjustments:
Ir- setting of release current in amperes
tr - overload time protection setting

S Time delay short-circuit protection (Isd)
Selective current tripping with adjustable current setting Isd and adjustable time setting tsd.
I Instantaneous short-circuit protectio (Ii)
Instantaneous short-circuit protection with adjustable current setting Ii.

Indication:
On the front panel of the MCCB are 3 LED lights indicating the status of the breaker:
Green - ready LED. Flashes slowly, signaling that MCCB is working and is prepared to operate, protect the instalation. Minimum load current is required so that this function will work.... minimum load current of 30A for MCCB with rated current up to 250A and 50A for MCCB with a rated current of more than 250A.
Orange - overload warning LED. Lights up when current is higher than 90% of the set value of Ir.
Red - overload alarm LED. Lights up when the current is higher than 105% of the set value of Ir.

NBS-EC LCD MCCB's have a built-in RS 485 communication port and a power source microprocessor. When connecting the supply voltage to any of two upper terminals of the switch, the microprocessor is activated, making it possible to configure it. In addition to basic protections NBS-EC LCD switches have a number of additional protections and functions.
When installing these MCCB's, it is important to follow the connection diagram:
power supply - from the top, load - from the bottom.

Additional protection and features

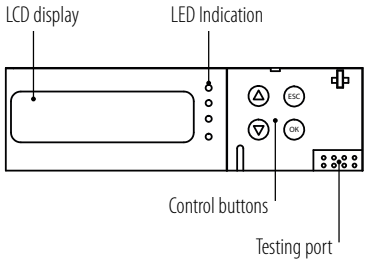
Over-voltage protection	Umax	Voltage range adjustment	140-520 V (Phase)	Trip - Switching OFF Alarm - Signalisation OFF - Protection is disabled
		Tripping time adjustment	36-1 s	
Under-voltage protection	Umin	Voltage range adjustment	100-500 V (Phase)	
		Tripping time adjustment	36-1 s	
Phase loss protection	Open-phase	Voltage range adjustment	50-80 V (Phase)	
		Tripping time adjustment	0,2-5 s	
Phase sequence protection	Phase rotation	Choice of configurations	ABC; ACB	
		Fixed trigger time	0,3s	
Over-frequency protection	Fmax	Frequency adjustment range	45-65 Hz	
		Tripping time adjustment	0,2-5 s	
Under-frequency protection	Fmin	Frequency adjustment range	45-65 Hz	
		Tripping time adjustment	0,2-5 s	
Phase asymmetry protection	Uunbal	Asymmetry adjustment range	5-30 %	
		Tripping time adjustment	1-40 s	
Over temperature protection	Overtemper.	Temperature control range	40-80 °C	
		Tripping time adjustment	1-60 s	
Measurement	I	Current in each phase, current unbalance ratio		
	U	Phase and line voltage, voltage imbalance factor		
	F	Frequency		
Event registration log	Trip history	Registration of trippings due to various types of protection		
	Alarm history	Registration of warnings		
	CO history	Registration of ON and OFF functions		
Additionally	RTC	Built-in real-time clock		
	Temperature	Built-in temperature sensor		
	Contact wear	Contact wear monitoring		
	User password	Ability to set a password to protect against unauthorized access		

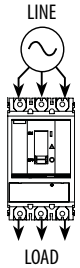
All protection functions have 3 modes of operation:
Trip - the protective function is enabled. If the control values are exceeded, the MCCB is turned off;
Alarm - LED alarm is on. When the control values are exceeded, red LED starts to flash;
OFF - protection functions and indications are disabled.

Electronic release NBS EC LCD

Rated current(A)	In @ 40°C	100	160	250	400	630
Electronic release	NBS-EC 100 LCD	•				
	NBS-EC 160 LCD		•			
	NBS-EC 250 LCD			•		
	NBS-EC 400 LCD				•	
	NBS-EC 630 LCD					•
(L) Overload protection						
Current setting (A) Switching off between 1.05 and 1.2 Ir	$I_r = \ldots$ Settings by using control buttons	The exact setting of the overload protection is carried out by using buttons with a step of 1A in the range between 0.4 and 1 x In				
Time adjustment (s) Tolerance 0-20%	$t_r = \ldots$ Settings by using control buttons	The setting is carried out using control buttons in steps by 1 s				
Time setting (s) Tollerance 0-20%	Load current	Setting value				
		0,5	1	2	4	8	16	24
	1,5 x I_r	15	25	50	100	200	400	600
	6 x I_r	0,5	1	2	4	8	16	24
	7,2 x I_r	0,35	0,7	1,4	2,8	5,5	11	16
(S) Fixed time delay short circuit protection						
Current setting (A) Tolerance ±10%	$I_{sd} = I_r$ x ...	The exact setting of the short-circuit protection is carried out by using control buttons in steps of 0.5 x In in the range between 1.5 and 12 x In				
Time setting (s)	$t_{sd} = \ldots$	Settings using the control buttons				
		Setting value				
		0,00	0,10	0,20	0,30	0,40
	min tripping time (ms)	20	80	140	230	350
	max tripping time (ms)	80	140	200	320	500
(I) Instantaneous short circuit protection						
Current setting (A) Tolerance ±15%	$I_i = \ldots$	Adjustment using buttons in steps of 1A in the range from 2 to 15x In				
	min tripping time	10ms				
	max tripping time	50ms				

100-630A NBS-EC LCD





WARNING! Connection scheme:
Power supply - from the top,
Load - from the bottom.

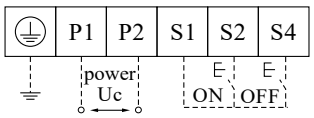
Electrical control using motorised operation

Application - Motor operators provide the possibility of opening and closing an MCCB on application of electrical control signals.

Ratings and specifications

		100, 160, 250	400, 630	1600
MCCB Frame size				
Rated operating voltage		220-230V AC		
Rated frequency		50-60Hz		
Power loss	Rated working power (W)	2W	2W	2W
	Peak value (W)	25W	50W	65W
Required power supply (W)		>100W	>200W	>200W
Starting current (A)		≤0,25A	≤0,45A	≤0,50A
Rated parameters	Voltage (V)	AC230V	AC230V	AC230V
	Voltage (A)	Only voltage is required for starting, no current		
Operating method		Direct drive		
Tripping time		0,7-1,5 s		
Dielectric properties		1500V < 5 s		
Operating temperature range		-5 ~ +40°C		
Climatic conditions		50°C, humidity 90%		
Weight (kg)		1,28	3,58	4,00

Motor operator connection diagram



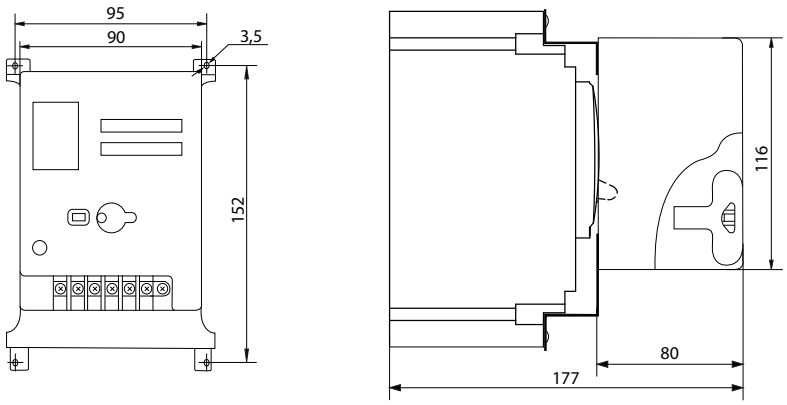
The NBS-MO is a special device driven by a small DC motor, the purpose of which is remote control of MCCB's with rated currents from 20 to 1600A.
- To install the Motor operator on the NBS 100, 160 & 250 it is necessary to remove the extension handle. For installing the Motor operator on the NBS 400, 630 & 1600, it is necessary to replace the extension handle on the MCCB with the one that comes together with Motor operator.
- The motor drive allows 10 operations (ON/OFF) in a row with at least 10s pause between operations.
- In the presence of voltage in the control circuit of the Motor operator, the process of switching ON and OFF ends automatically if the contacts of the electric drive control buttons were in the closed position for at least 0.2 seconds.
- After installing the Motor operator, you should first carry out a trial operation manually so that you check whether it is possible to turn ON and OFF the MCCB and switch it to the "TRIP" position.
- When connecting a Motor operator without an installed MCCB and supplying connections on terminals, continuous rotation of the drive mechanism without stops is considered as a normal mode of operation.

IMPORTANT! After the automatic activation of the device, it is necessary to eliminate the cause of tripping, inspect the device and only then turn the toggle to the "OFF" position. Turning ON can be performed after identifying and eliminating the causes of the tripping.

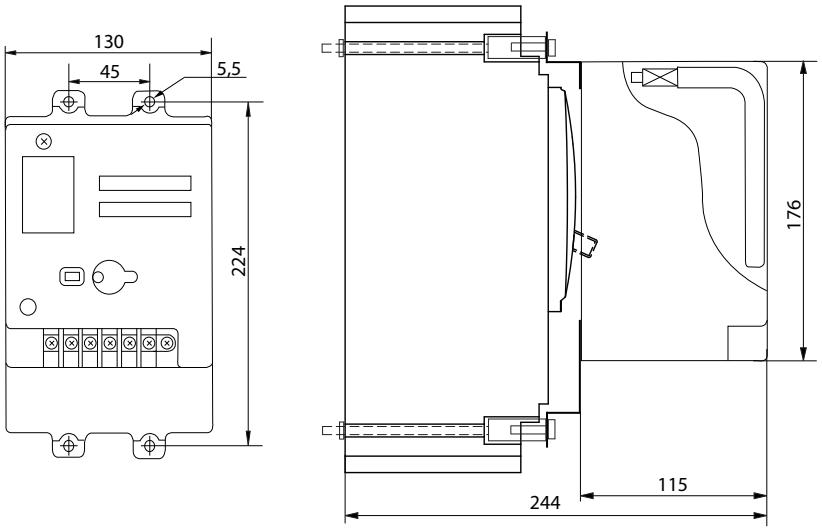
IMPORTANT! For manual control, rotate the handle 180 degrees clockwise, counterclockwise rotation is prohibited.
If the angle of rotation was less than 180 degrees, turning ON the MCCB, using the control terminals, will not be possible. To do this, it is necessary to set the handle to the correct angle manually or send a command to the "OFF" terminal.
If the angle of rotation was less than 180 degrees when opening the power contacts of the MCCB, using the manual control handle, then when the mode switch is turned to the "AUTO" position, the Motor operator will automatically move the mechanism, after which the ON comand can be given.

Dimensions of Motor operator

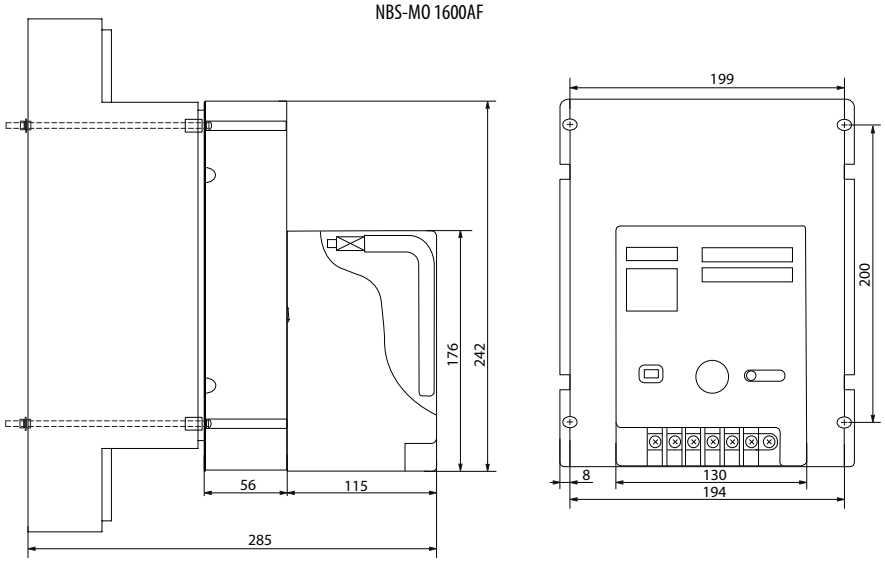
NBS-MO 100-250AF



NBS-MO 400-630AF



NBS-MO 1600AF



Technical data

				NBS 100								NBS 160								NBS 250							
Parameters/Electrical characteristics																											
Release type				TMS		E			E LCD		EC LCD	TMS		E			E LCD		EC LCD	TMD		E			E LCD		EC LCD	
Nr. Poles				3 / 4								3 / 4								3 / 4							
Nominal current	In	(A)	40°C	20, 25, 32, 40, 50, 63, 80, 100		100			100		100	125, 160		160			160		160	200, 250		250			250		250	
Model-type				L	S	L	S	H	L	S	L	S	L	S	L	S	H	L	S	L	S	L	S	L	S	L	S	L	S	L	S
Service breaking capacity Ics = 100% Icu	Ics	(kA)	415 V	36	50	36	50	85	36	50	36	50	36	50	36	50	85	36	50	36	50	36	50	36	50	85	36	50	36	50	36	50
			500 V	25	35	25	35	50	25	35	25	35	25	35	25	35	50	25	35	25	35	25	35	25	35	50	25	35	25	35	25	35
			690 V	6									6									6									
Rated operational voltage	Ue	(V)	AC 50/60 Hz	690									690									690									
			DC	250		-							250		-							250		-							
Rated insulation voltage	Ui	(V)		1000									1000									1000									
Rated impulse withstand voltage	Uimp	(kV)		8									8									8									
Protection																															
Adjustable thermal / fixed magnetic				■		-			-		-	■		-			-		-	-		-			-		-				
Adjustable thermal / adjustable magnetic				-		-			-		-	-		-			-		-	■		-			-		-				
Microprocessor				-		■			■		■	-		■			■		■	-		■			■		■				
Utilisation category				A									A									A									
Installation																															
Front connection				■									■									■									
Attached flat bar				•									•									•									
Cable clamp terminals				•									•									•									
Plug-in				•									•									•									
Draw-out				•									•									•									
Dimensions 3P / 4P	h	(mm)		161									161									161									
	w	(mm)		105 / 140									105 / 140									105 / 140									
	d	(mm)		86									86									86									
Weight 3P / 4P	W	(kg)		1,9 / 2,15									1,9 / 2,15									1,9 / 2,15									
Operation																															
Direct opening action				■									■									■									
Door mounted handle				•									•									•									
Motor operator				•									•									•									
Endurance	Electrical			10000									8000									8000									
	Mechanical			20000									20000									20000									

■ - Standard
• - Optional
- - Not available

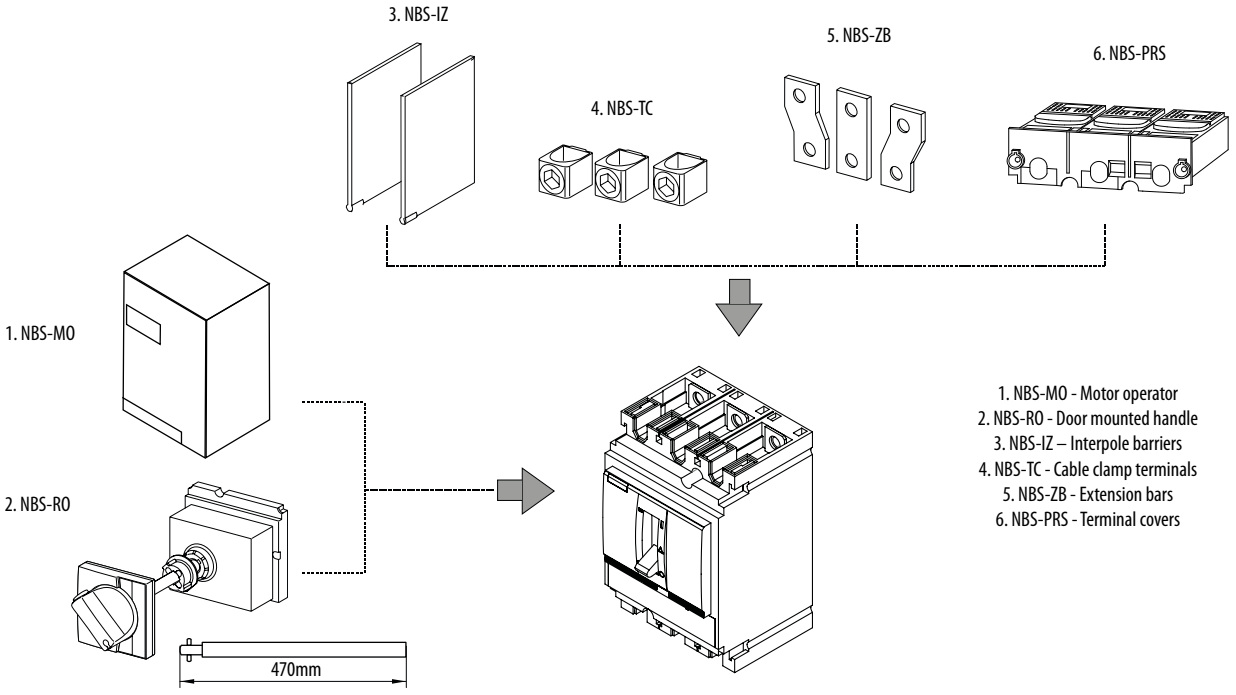
Technical data

				NBS 400									NBS 630								NBS 1600		
Parameters/Electrical characteristics																							
Release type				TMD		E			E LCD		EC LCD		TMD		E			E LCD		EC LCD		E	
Nr. Poles				3 / 4									3 / 4								3 / 4		
Nominal current	In	(A)	40°C	315, 400		400			400		400		500, 600		630			630		630	800, 1000, 1250, 1600		
Model-type				L	S	L	S	H	L	S	L	S	L	S	L	S	H	L	S	L	S	L	S	H
Service breaking capacity Ics = 100% Icu	Ics	(kA)	415 V	36	50	36	50	85	36	50	36	50	36	50	36	50	85	36	50	36	50	36	50	65
			500 V	25	35	25	35	50	25	35	25	35	25	35	25	35	50	25	35	25	35	25	35	45
			690 V	8	10	8	10	10	8	10	8	10	8	10	8	10	10	8	10	8	10	10	20	30
Rated operational voltage	Ue	(V)	AC 50/60 Hz	690									690								690		
			DC	250		-							250		-						-		
Rated insulation voltage	Ui	(V)		1000									1000								1000		
Rated impulse withstand voltage	Uimp	(kV)		8									8								8		
Protection																							
Adjustable thermal / fixed magnetic				-		-			-		-		-		-			-		-	-		
Adjustable thermal / adjustable magnetic				■		-			-		-		■		-			-		-	-		
Microprocessor				-		■			■		■		-		■			■		■	■		
Utilisation category				A									A								B		
Installation																							
Front connection				■									■								■		
Attached flat bar				•									•								•		
Cable clamp terminals				-									-								-		
Plug-in				•									•								-		
Draw-out				•									•								-		
Dimensions 3P / 4P	h	(mm)		255									255								326		
	w	(mm)		140 / 185									140 / 185								210 / 280		
	d	(mm)		111									111								147		
Weight 3P / 4P	W	(kg)		6,75 / 8,75									6,75 / 8,75								13,8 / 17,5		
Operation																							
Direct opening action				■									■								■		
Door mounted handle				•									•								•		
Motor operator				•									•								•		
Endurance	Electrical			6000									5000								1500		
	Mechanical			10000									10000								10000		

■ - Standard
• - Optional
- - Not available

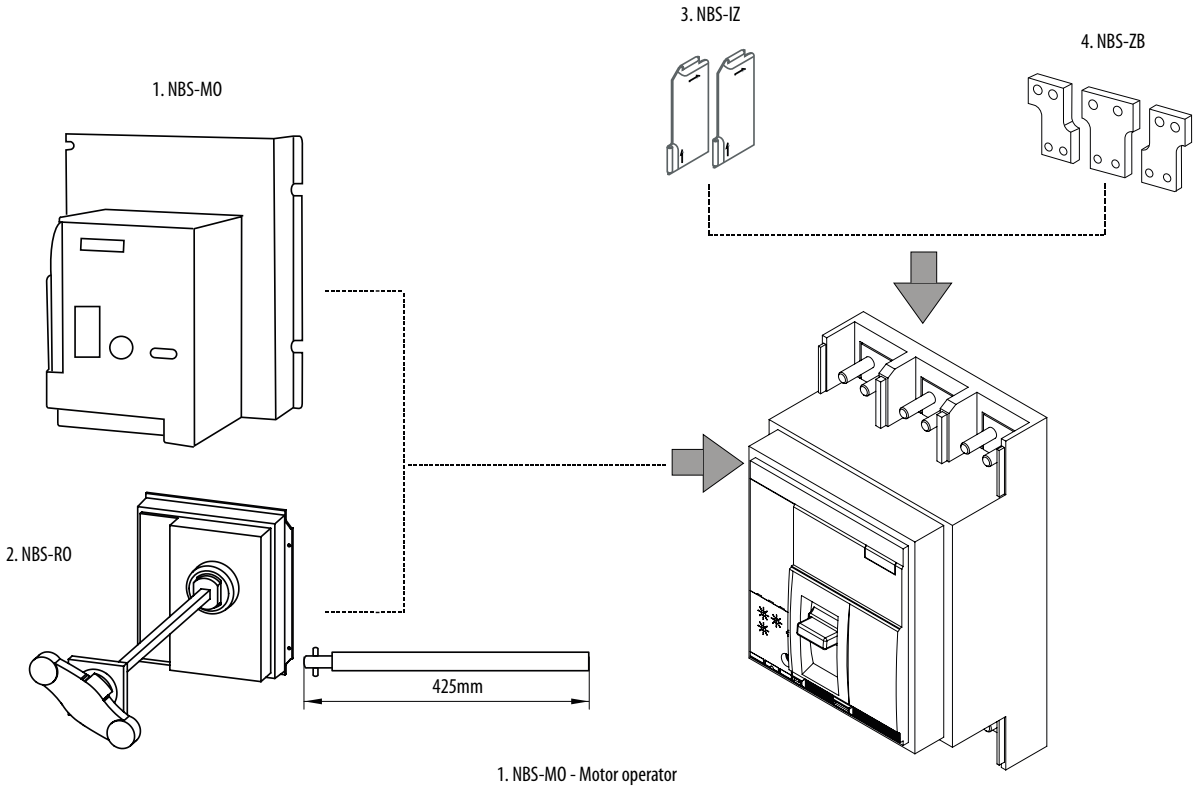
External accessories

NBS 100, 160, 250, 400, 630



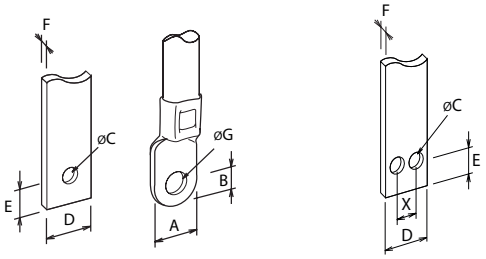
1. NBS-MO - Motor operator
2. NBS-RO - Door mounted handle
3. NBS-IZ – Interpole barriers
4. NBS-TC - Cable clamp terminals
5. NBS-ZB - Extension bars
6. NBS-PRS - Terminal covers

NBS 1600

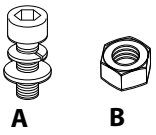
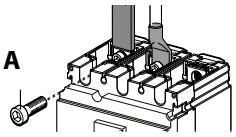
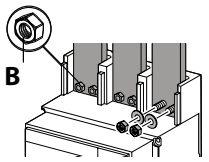


1. NBS-MO - Motor operator
2. NBS-RO - Door mounted handle
3. NBS-IZ – Interpole barriers
4. NBS-ZB - Extension bars

Dimensions of connection accessories



	NBS 100 (mm)	NBS 160/250 (mm)	NBS 400/630 (mm)	NBS 1600 (mm)
A	≤25	≤25	≤32	-
B	≤10	≤10	≤15	-
C	≥6	≥8	≥10	≥11
D	≤25	≤25	≤32	≤45
E	≤10	≤10	≤15	≤10,5
F	≤6	≤6	≤10	≤10
G	≥6	≥8	≥10	-
X	-	-	-	25

Connecting type element	Front connection NBS 100, 160, 250, 400, 630	Front connection NBS 1600
		

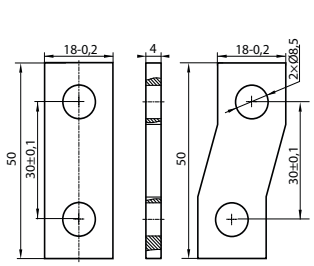
Frame size	Rated current	In complete with MCCB	In complete with MCCB
NBS 100	20-100	M6x20 (A) / 3 (Nm)	-
NBS 160/250	125-250	M8x20 (A) / 6 (Nm)	-
NBS 400/630	400-630	M10x27,5 (A) / 10 (Nm)	-
NBS 1600	800-1600	-	M10 (B) / 10 (Nm)

Cable clamp terminals

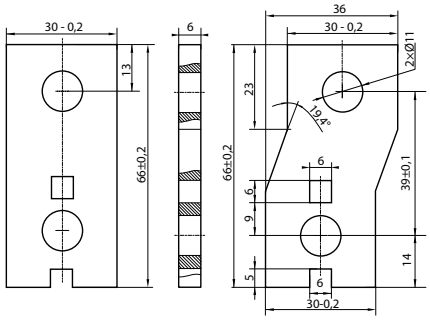
NBS-TC 100-250AF 3P

S=120-185 mm 2
(1 conductor) Cu/Al

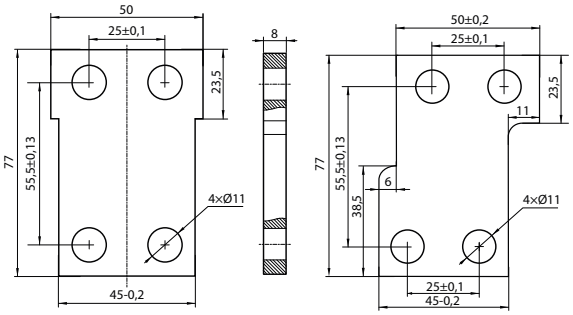
Extension bars NBS-ZB



NBS-ZB 100-250AF 3P



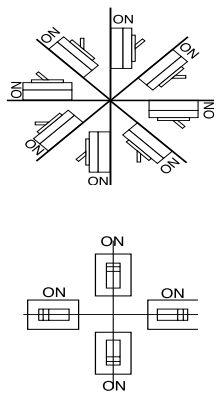
NBS-ZB 400-630AF 3P



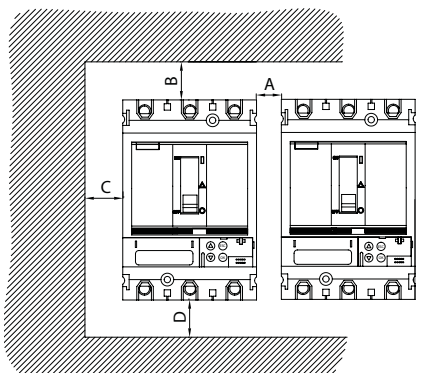
NBS-ZB 1600AF 3P

Installation

Mounting angle

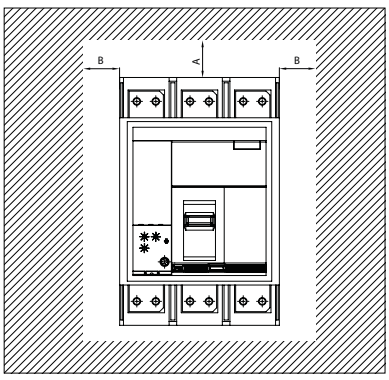


Minimum distance for NBS 100, 160, 250, 400, 630



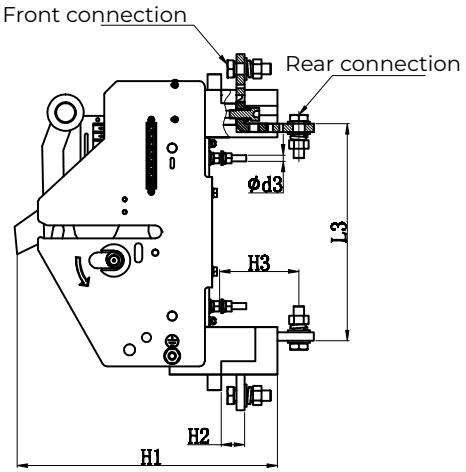
	(mm)
A	0
B	30
C	5
D	30

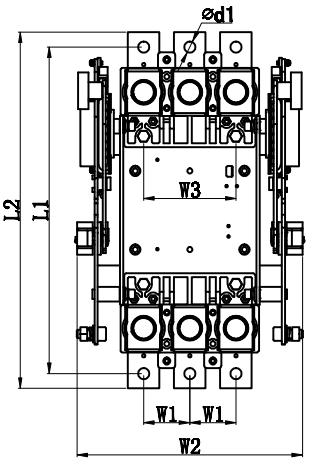
Minimum distance for NBS 1600

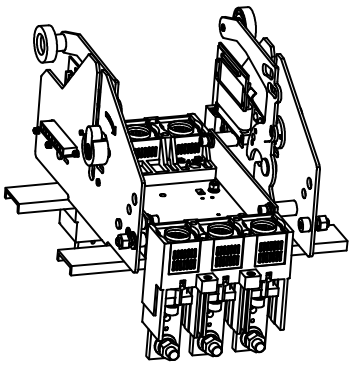


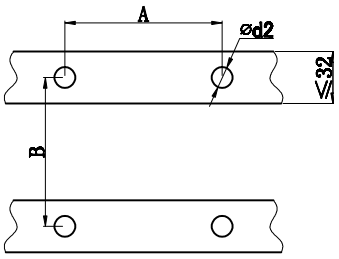
	A	B
	(mm)	
Isolated parts	0	0
Metal parts	120	10
Live parts	180	60

Dimensions NBS-DOS (for Draw-out version ETIBREAK NBS 100-630)





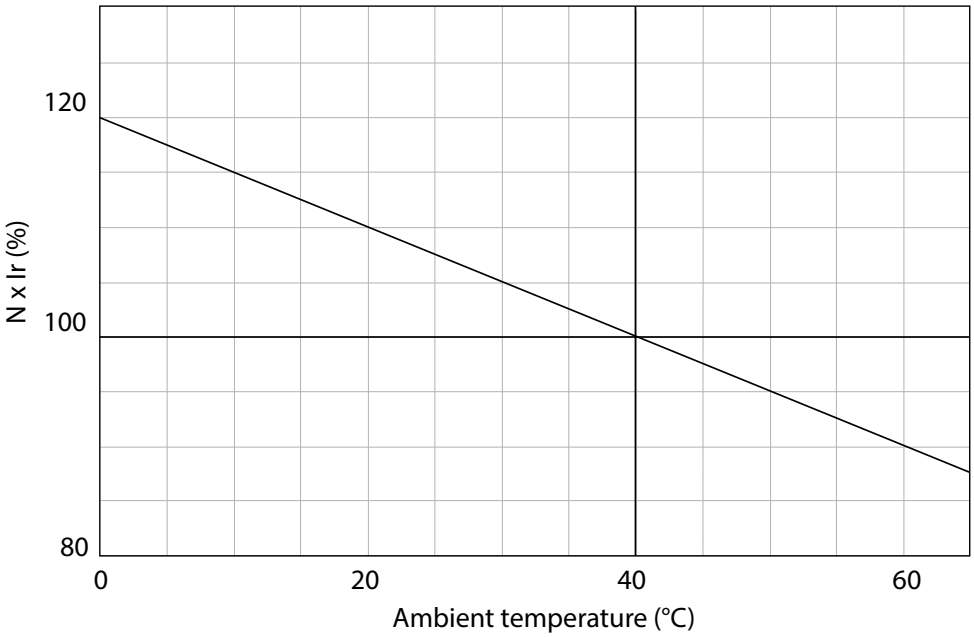




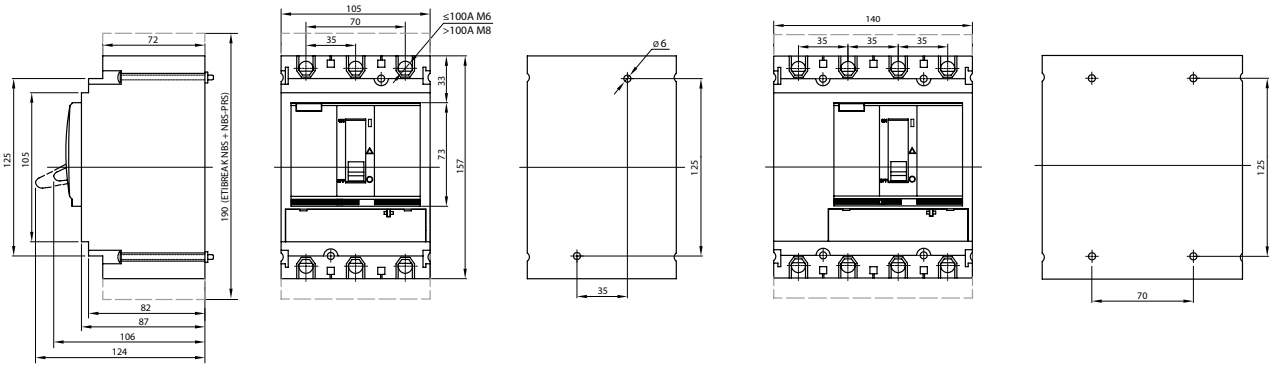
Type	Outline dimensions											Mounting dimensions		
	L1	L2	L3	H1	H2	H3	W1	W2	W3	Ød1	Ød3	A	B	Ød2
NBS-DOS 100-250AF 3P	199	217	124	182	17	40	35	180	70	8,5	M5	68	75	6
NBS-DOS 400-630AF 3P	313	340	206	268	23	85	45	215	90	11	M6	100	150	7

Temperature compensation of time-current characteristics for ETIBREAK NBS

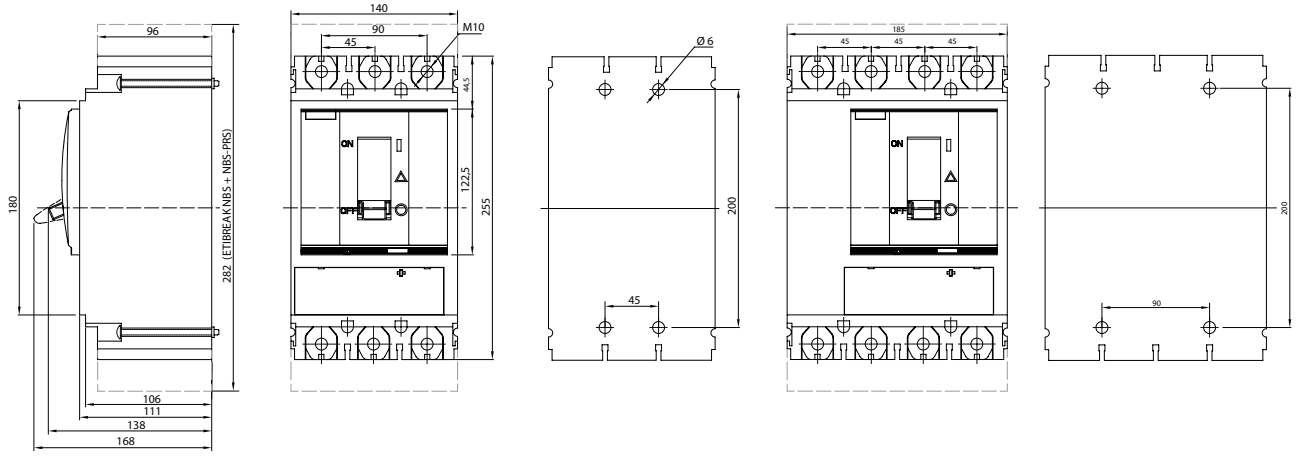
Effect of the ambient temperature on the tripping characteristics
Calibration temperature is 40°C



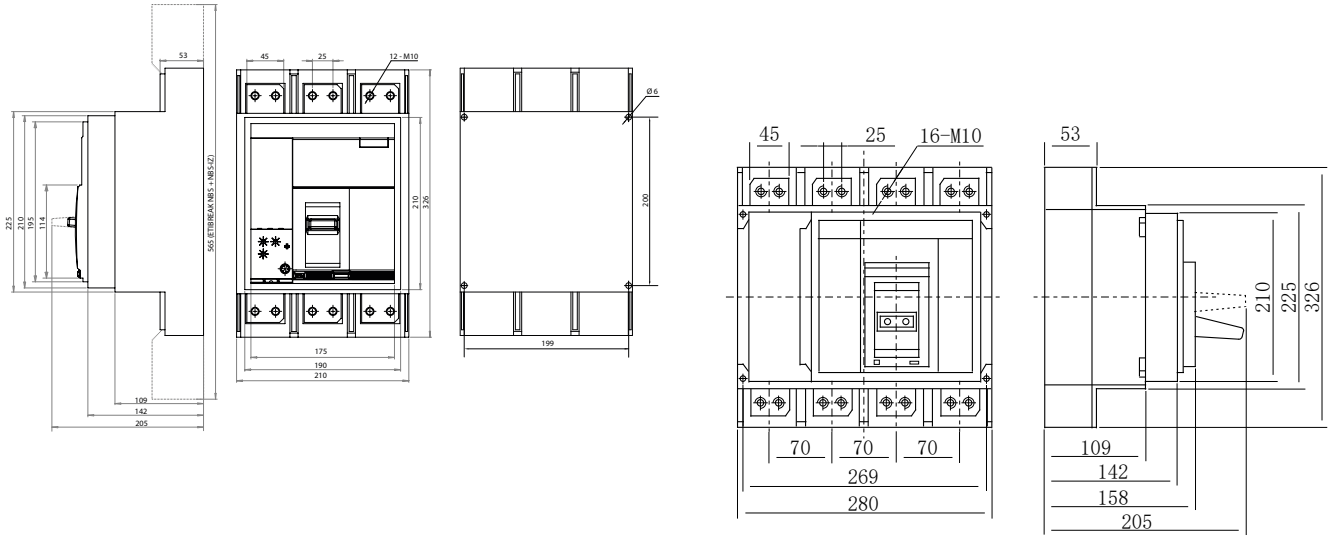
Dimensions ETIBREAK NBS 100, 160, 250



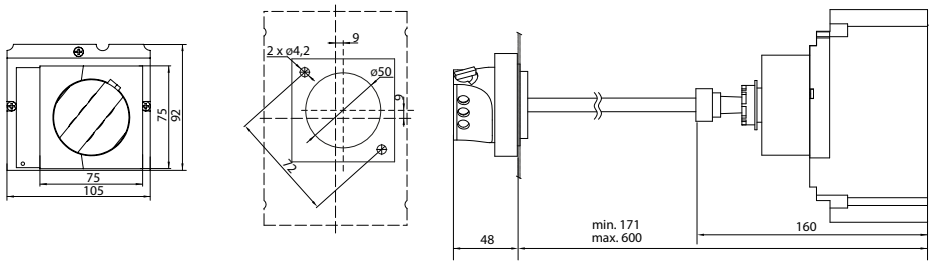
Dimensions ETIBREAK NBS 400, 630



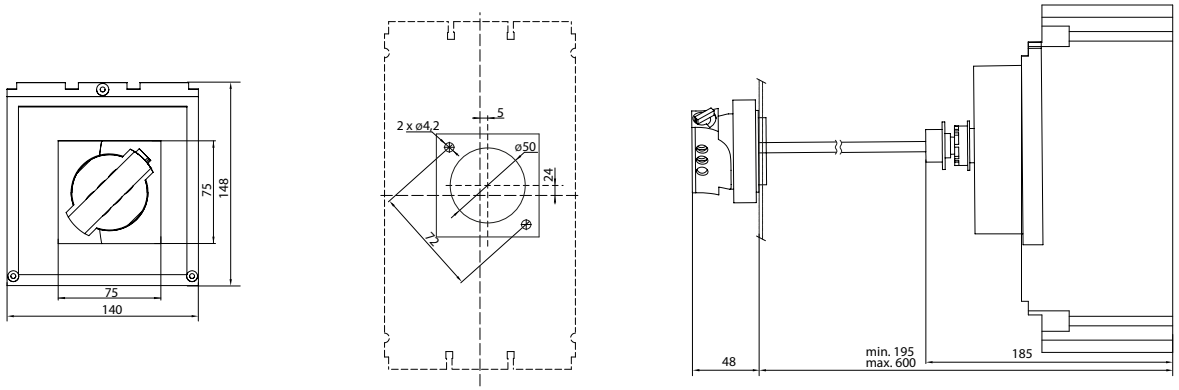
Dimensions ETIBREAK NBS 1600



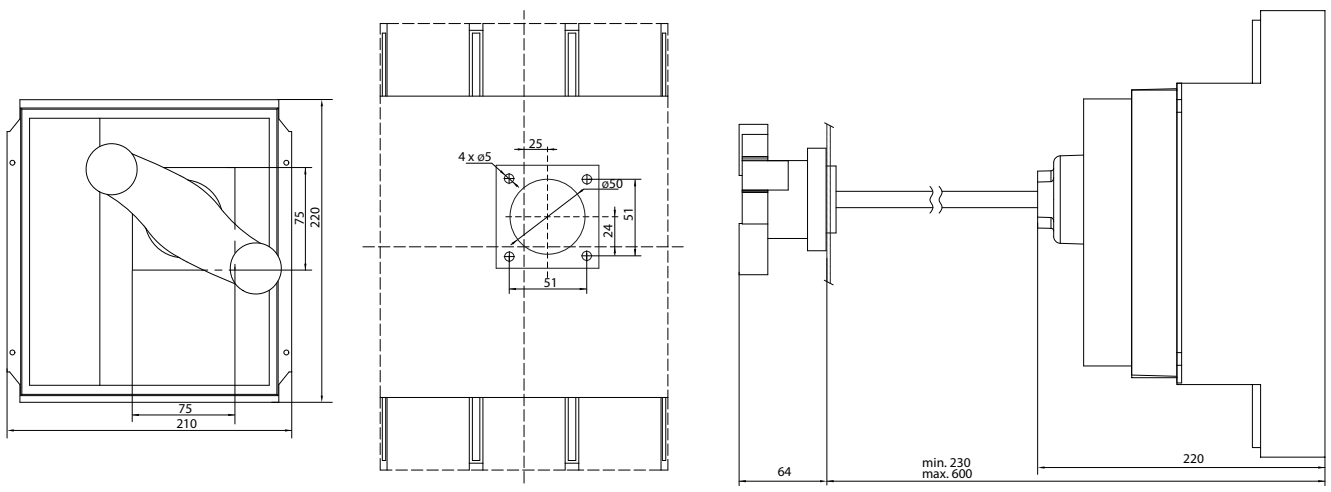
Dimensions NBS-RO 100-250



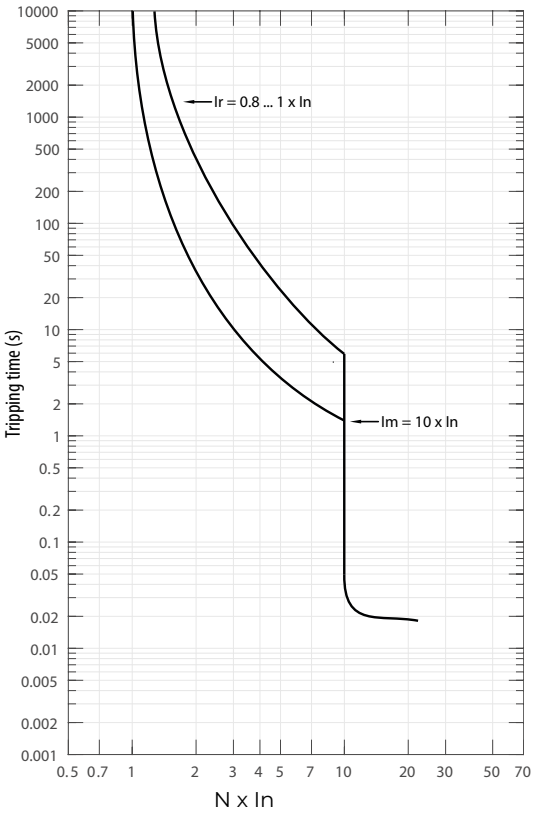
Dimensions NBS-RO 400-630



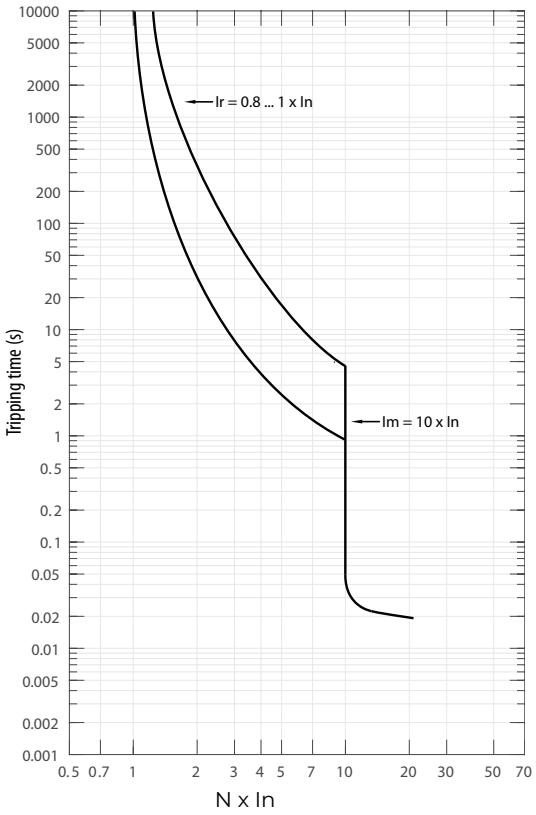
Dimensions NBS-RO 1600



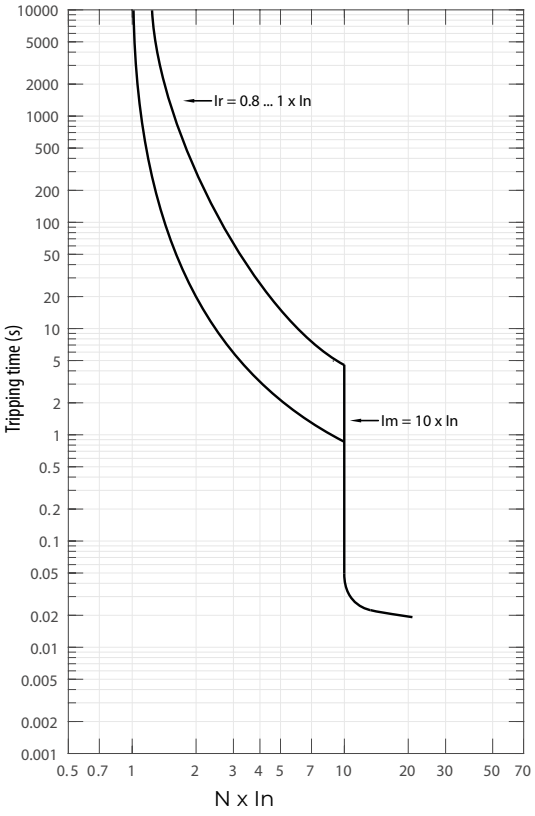
NBS-TMS 100/3 (20A) I/t characteristic



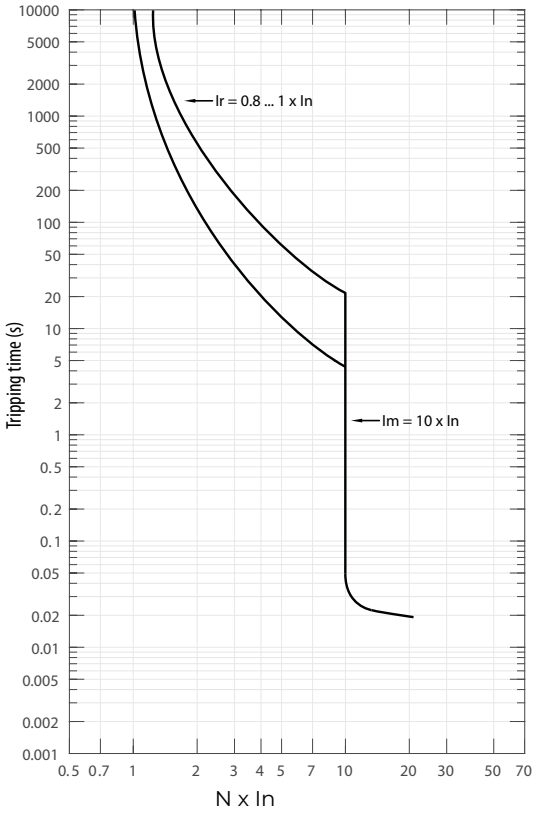
NBS-TMS 100/3 (25A) I/t characteristic



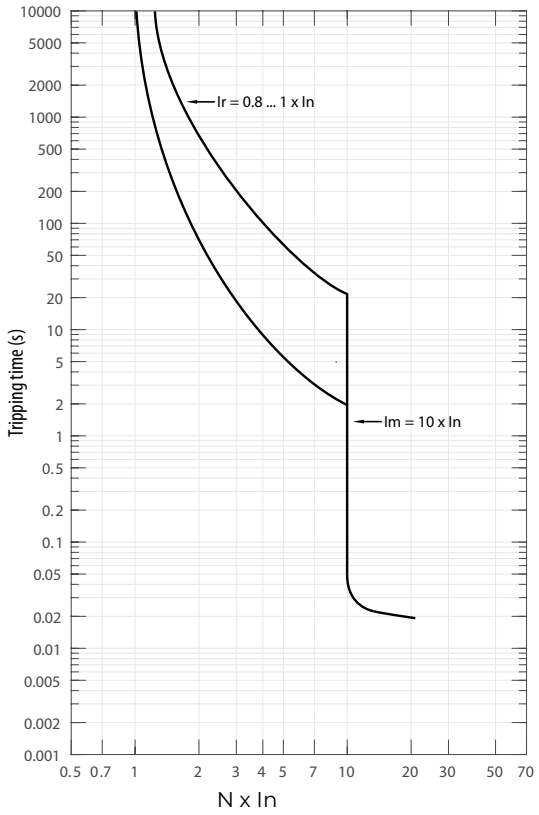
NBS-TMS 100/3 (32, 40A) I/t characteristic



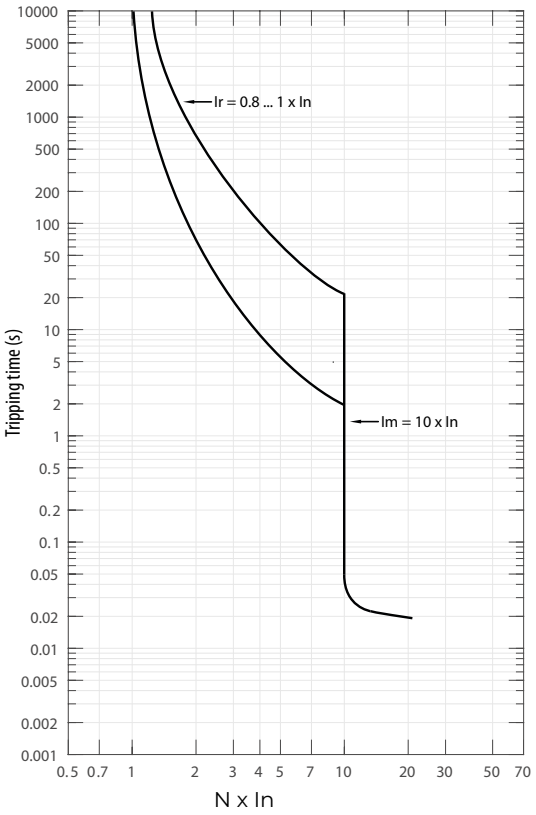
NBS-TMS 100/3 (50, 63A) I/t characteristic



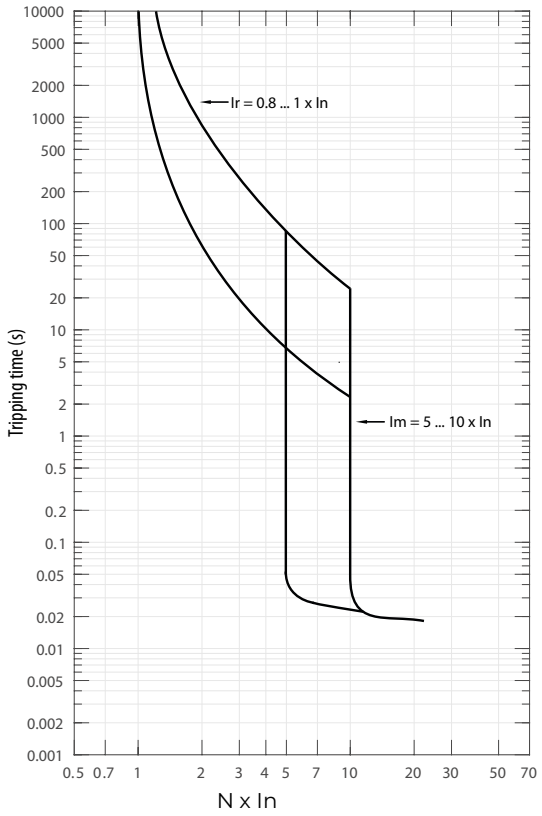
NBS-TMS 100/3 (80, 100A) I/t characteristic



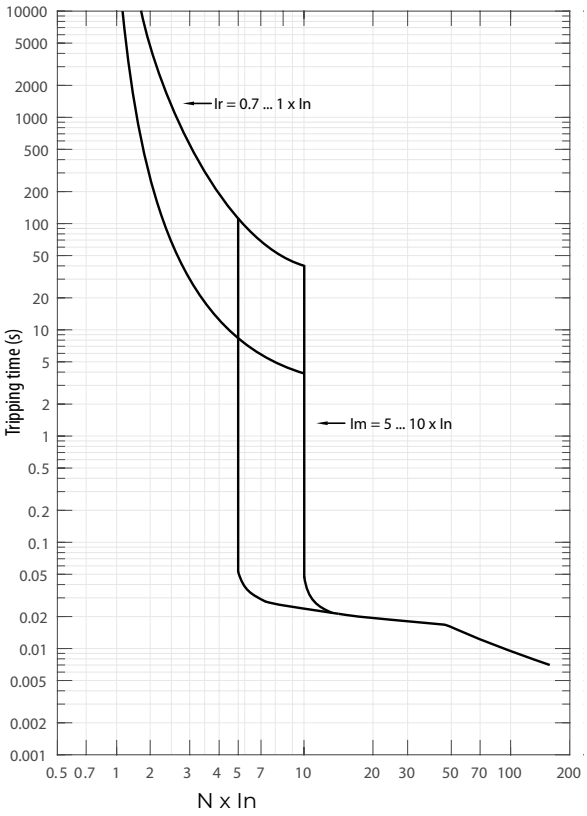
NBS-TMS 160/3 (125, 160A) I/t characteristic



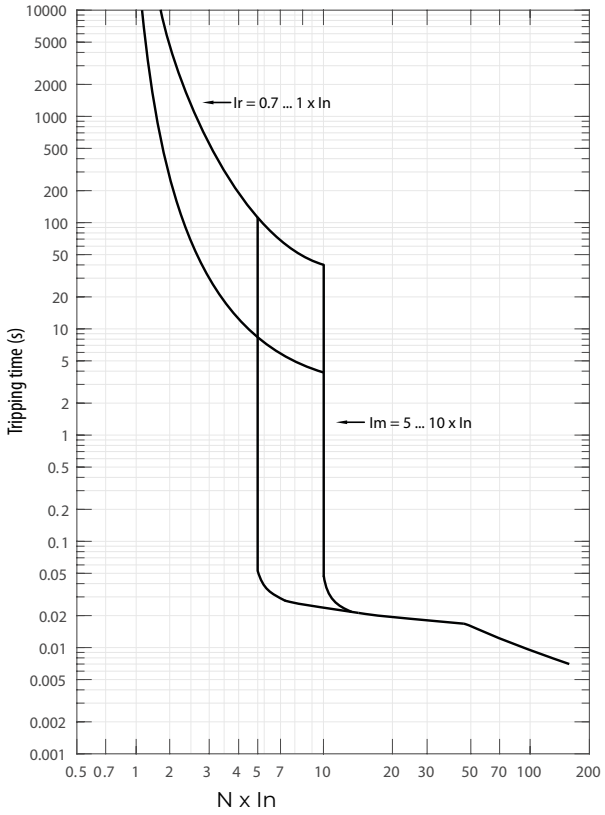
NBS-TMD 250/3 (200, 250A) I/t characteristic



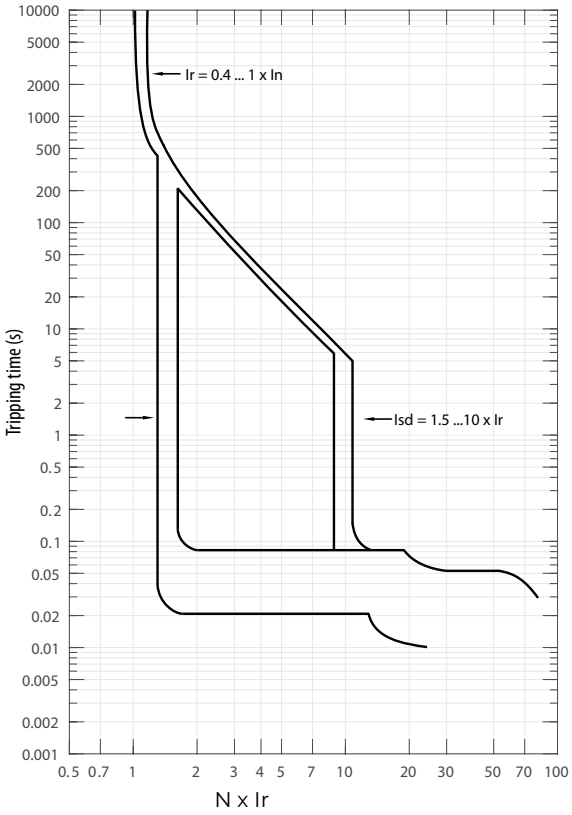
NBS-TMD 400/3 (315, 400A) I/t characteristic



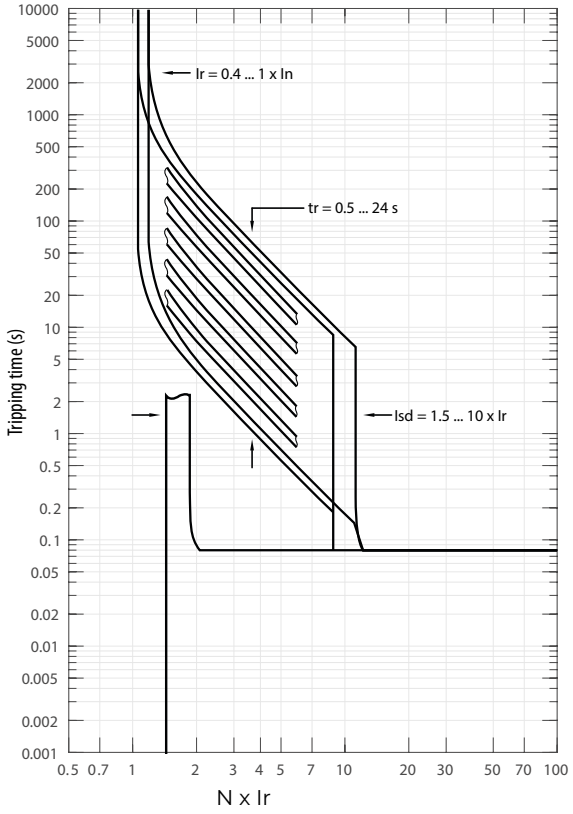
NBS-TMD 630/3 (500, 600A) I/t characteristic



NBS-E (100 - 630A) I/t characteristic



NBS-E (800 - 1600A) I/t characteristic



NBS-E&EC LCD (100 - 630A) I/t characteristic