FOR A JOB WELL DONE, HERE IS ALL THAT YOU NEED.

OptiPower

INDOASIAN™
MAKES SENSE


17
17
15
15

Tools that make the task

In any industry, experts are defined by the tools they use. The best tools truly make the task, because they are the key to the best solutions; solutions that are adaptable, can be applied in a variety of ways, and offer great value for money.

In the field of Energy Distribution, Optibreak, Optium and Opticon are part of a range of power products. They offer all-in-one solutions, with the capacity of handling power distribution, control and protection requirement of every segment, across size and capacity. Designed user friendly, our products are highly reliable and support one-stop, cost effective solutions, for a job well done.

Optibreak

A high-performance, high-quality range of ACBs with a host of features and accessories built to give you the advantage.

Frame 1 Draw-Out

Frame 2 Fixed

Frame 2 Draw-Out

LSIg
Trip Unit

Complete range till 6300A

Frame	ICU (kA)	630	800	1000	1250	1600	2000	2500	3200	4000	5000*	6300*
2000	50 / 65											
3200	50 / 65											
4000	85 / 100											

Fixed & Draw-Out type

*contact nearest sales office

Nomenclature

optibreak

50/60 Hz	Ue [v]
	415

I1-M-3P
820211
Ie=2000A

Icw(1s)=65kA
Icm(415V)=143kA
Uimp=12kV
Ui=1000V

IEC/EN 60947-3
Category AC-23A

CE

INDOASIAN

optibreak

50/60 Hz	Ue [v]	Icu [kA]
	415	65
	690	40

B1- M-3P
820126
In=2000A

Icw(1s)=65kA
Ics=100%Icu
Uimp=12kV
Ui=1000V

IEC/EN 60947-2
Category-B

CE

INDOASIAN

Optibreak B2 L 3200A 4P

Optibreak □ □ □ □ □

- No. of poles: 3P, 4P
- Rated current: 630A, 800A, 1000A, 1250A, 1600A & 2000A, 2500A & 3200A
- Breaking capacity - L for 50kA Ics=Icu=Icw(1s)
  - M for 65kA Ics=Icu=Icw(1s)
  - H for 85kA Ics=Icu=Icw(1s)
- Frame size: ACB - B1 for 2000A & B2 for 3200A
  Trip free - I1 for 2000A & I2 for 3200A
- Design model of air circuit-breaker

Two types of releases

LSI

LSIG

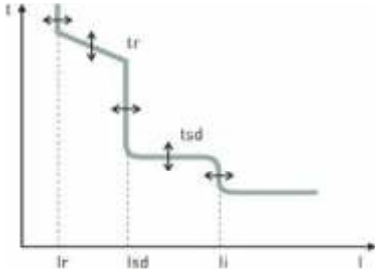
Settings

LSI protection

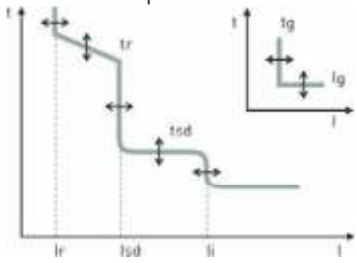
LSIG protection

Use the adjustment knob to select the following settings:

- Long delay overload protection: Ir
- Over delay protection operation time: tr
- Short circuit short delay protection: I sd
- Short delay action time: tsd
- Instantaneous short circuit protection: Ii
- Neutral line protection: N

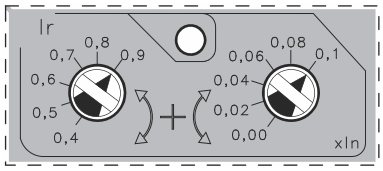


- Long delay overload protection: Ir
- Over delay protection operation time: tr
- Short circuit short delay protection: I sd
- Short delay action time: tsd
- Instantaneous short circuit protection: Ii
- Ground-fault protection: Ig
- Ground-fault protection time: tg
- Neutral line protection: N

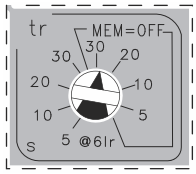


Overload protection (Long Time setting)
Setting of current
(@12xIg 2x6 steps)
Ir=0,4 ÷ 1 x In
With 2 switches
(0,4 ÷ 0,9, steps of 0,1
0,0 ÷ 0,1, steps of 0,02)

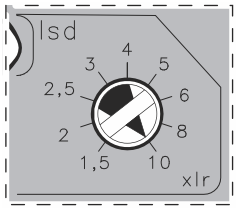
Example:
Ir = 0.4 + 0.06
= 0.46 In



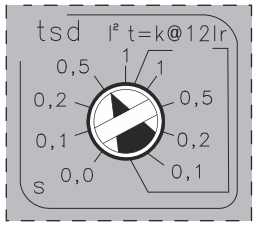
Setting of time delay
(@6Ir)
(4+4 steps)
tr= 5-10-20-30s
(MEM ON)
tr = 30-20-10-5s
(MEM OFF)



Short circuit protection
Setting of current
(9 steps)
Isd = 1.5-2-2.5
3-4-5-6-8-10x Ir
Isd = 1.5-2-2.5
3-4-5-6-8-10x In

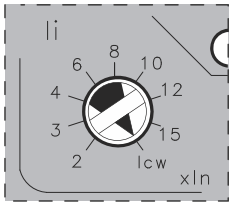


Setting of time delay
(5+4 steps)
Tsd = 0-0.1-0.2-
0.5-1s (t=const)
Tsd= 1-0.5-0.2-
0.1s (I^2t=const)



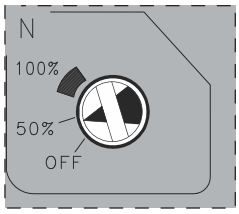
Instantaneous short circuit protection

Setting of current
(9 steps
Ii= 2-3-4-6-8
10-12-15x In-Icw



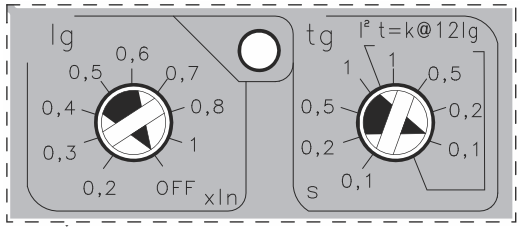
Neutral protection

Setting of current
(3 steps)
N=OFF - 50%-100%



Protection against over temperature
(not adjustable)
t>95°C

Ground-fault protection
Setting of current
(9 steps) Ig = 0.2-
0.3-0.4-0.5-0.6-0.7-
0.8-1 x In - OFF
Setting of time delay
(@12x Ig) (4+4 steps)
tg=0.1-0.2-0.5-1s
(t=const)
tg= 1-0.5-0.2-0.1s
(I^2t= const)

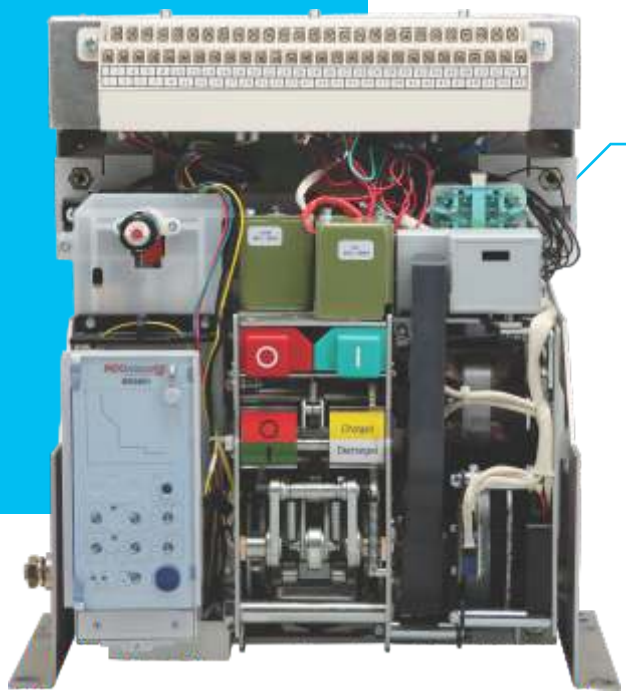


Adjustable range Ics=100% Icu

ICU	ICS	ICW
50 kA	50 kA	50 kA
65 kA	65 kA	65 kA
100 kA	100 kA	100 kA

ICW = 100% Ics for 1 Sec

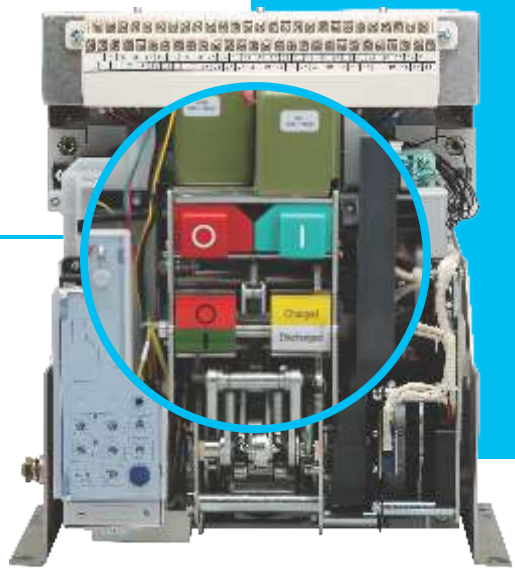
Sliding shutters



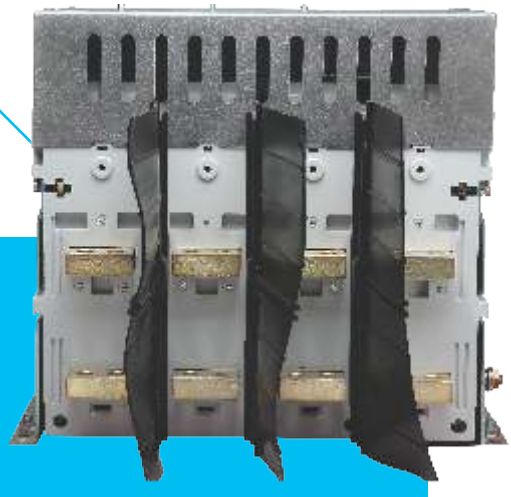
Front-mounted accessories

Wide rear terminals for connections

Dedicated mounting space for accessories



Inbuilt phase barriers



Front accessory connections for easy and quick wiring

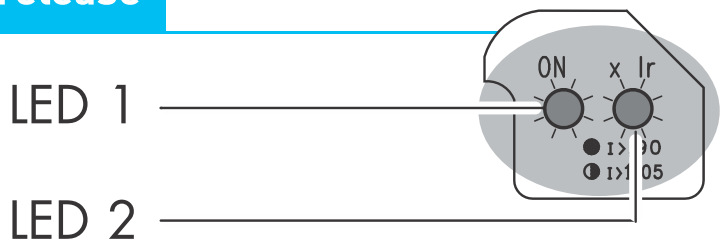
Front facia indication for ON/OFF and Spring status

Inbuilt temperature protection

Protection against over temperature

(not adjustable)
t >95°C

Front indication on release



Protection	LED 1	LED 2
Inactive	Switched off	Switched off
Active(1≥100A or supplied)	Green	Fix Switched off
Active: (overload pre alarm(1>0,9lr)	Green Fix	Red Fix
Active: (overload alarm 1>1, 05lr)	Green Fix	Red Flashing
Active: over temperature alarm (1>75° C)	Green Flashing	Red Flashing

Complete range of accessories

- Power module
- Shunt release
- Auxiliary contact
- Closing release
- UV release
- Motor operator
- Door frame
- Key lock on the Off position
- Phase separator
- Door interlock
- Mechanical interlock lever type
- Dust cover
- Mechanical interlock cable type
- External neutral pole CT

Optibreak B1 & B2

General product information

Type Explanation

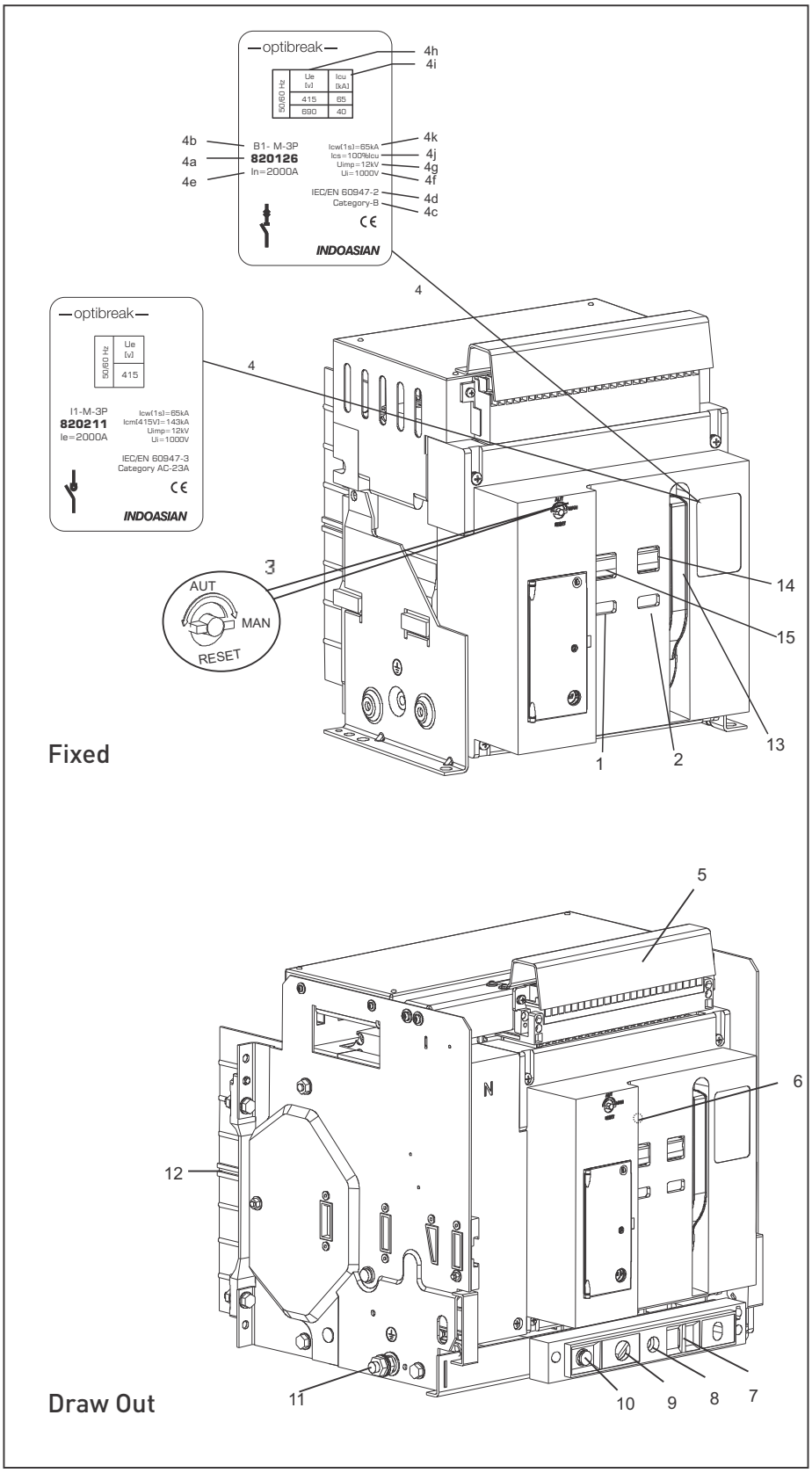
Example

optibreak	B2	-	L	-	3200A	-	4P
optibreak	Λ		Λ		Λ		Λ

- optibreak — Design model of air circuit-breaker
- B2 — Frame Size: ACB - B1 for 2000A & B2 for 3200A
  Trip Free - I1 for 2000A & I2 for 3200A
- L — Breaking Capacity- L for 50kA Ics=Icu=Icw(1s)
  M for 65kA Ics=Icu=Icw(1s)
  H for 85kA Ics=Icu=Icw(1s)
- 3200A — Rated Current: 630A, 800A, 1000A,1250A, 1600A & 2000A,2500A & 3200A
- 4P — No. of Poles: 3P, 4P

Optibreak B1 & B2

1. Open / close Indication
2. Charge and Discharge Indicator
3. Release the reset button
4. Laser Nameplate
   - 4a Product Code
   - 4b Frame Rating
   - 4c Selectivity category
   - 4d Standard Compliance
   - 4e Rated current
   - 4f Rated insulation voltage
   - 4g Rated impulse withstand voltage
   - 4h Rated operating voltage
   - 4i Rated ultimate short circuit breaking capacity
   - 4j Rated service short circuit breaking capacity
   - 4k Rated short time withstand current
5. Dust Cover (optional)
6. key Lock (optional) Location(knockout)
7. Pad Lock in Isolate Position
8. Rack in Handle insertion hole
9. Draw out position indicator
10. Rack in handle storage
11. Earthing Terminals
12. Phase barriers
13. Manual Charging Handle
14. ON Button
15. OFF Button



Product Function and Characteristics: B1 & B2

Air Circuit Breakers			Optibreak B1		Optibreak B2
Frame Inm A			2000		3200
Rated current In A			630 800 1000 1250 1600 2000		2500 3200
Poles			3/4		3/4
Rating of N-Pole			100% In		100% In
Rated Operating voltage Ue			AC 415V/AC 690V		AC 415V/AC 690V
Rated insulation voltage Ui			1000V		1000V
Ratedimpulse withstand voltage Uimp			12KV		12KV
Pollution Degree			Grade-3		
Mounting		Fixed	■		■
		Drawer	■		■
Rated ultimate short-circuit breaking capacityIcu(kA)			**L**	**M**	**M**
AC 415V 50/60Hz			50	65	65
AC 690V 50/60Hz			40	40	50
Rated Service short-circuit breaking capacityIcs(kA)					
AC 415V 50/60Hz			50	65	65
AC 690V 50/60Hz			40	40	50
Rated short time withstand current Icw (1s)kA					
AC 415V 50/60Hz			50	65	65
AC 690V 50/60Hz			40	40	50
Utilization category			B		B
Protection unit PU	LSI(Ir,Ii,Isd)		■		■
	LSIG(Ir,Ii,Isd,Ig)		■		■
Suitable For Isolation			■		■
Standards compliant			IEC 60947-2		
Operating Life	Mechanical life		15000		10000
	Electrical life		8000		5000
Dimensions WxDxH(mm)	Fixed	3P	362x323x402		422x323x402
		4P	457x323x402		537x323x402
	Drawer	3P	375x421x432		435x421x432
		4P	470x421x432		550x421x432
Weight (Kg)	Fixed	3P	41		56
		4P	50		68
	Drawer	3P	71		96
		4P	91		118

Product Function and Characteristics: B3

Air Circuit Breakers			**Optibreak B3**
Frame Inm A			4000
Rated current In A			3200 & 4000A
Poles			3/4
Rating of N-Pole			100% In
Rated Operating voltage Ue			AC 415V/AC 690V
Rated insulation voltage Ui			1000V
Ratedimpulse withstand voltage Uimp			12KV
Pollution Degree			Grade-3
Mounting	Fixed		■
	Drawer		■
Rated ultimate short-circuit breaking capacityIcu(kA)			**H**
AC 415V 50/60Hz			100
AC 690V 50/60Hz			85
Rated Service short-circuit breaking capacityIcs(kA)			
AC 415V 50/60Hz			100
AC 690V 50/60Hz			85
Rated short time withstand current Icw (1s)kA			
AC 415V 50/60Hz			100
AC 690V 50/60Hz			85
Utilization category			B
Protection unit PU	LSI(Ir,Ii,Isd)		■
	LSIG(Ir,Ii,Isd,Ig)		■
Suitable For Isolation			■
Standards compliant			IEC 60947-2
Operating Life	Mechanical life		10000
	Electrical life		5000
Dimensions WxDxH(mm)	Fixed	3P	419×308×416
		4P	545×308×416
	Drawer	3P	440×407×450
		4P	566×407×450
Weight (Kg)	Fixed	3P	4000A- 66 kg, below- 55kg
		4P	4000A- 80 kg, below- 68kg
	Drawer	3P	4000A- 131 kg, below- 120kg
		4P	4000A- 160 kg, below- 148kg

Accessories

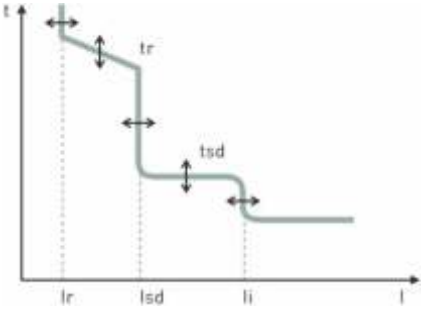
LSI protection

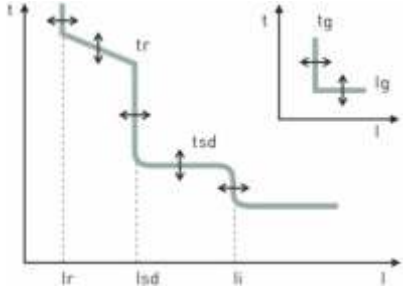
LSIG protection

Use the adjustment knob to select the folowing settings:

- Long delay overload protection: lr
- Over delay protection operation time: tr
- Short circuit short delay protection: l sd
- Short delay action time: tsd
- Instantaneous short circuit protection: li
- Neutral line protection: N

- Long delay overload protection: l r
- Over delay protection operation time: tr
- Short circuit short delay protection: l sd
- Short delay action time: tsd
- Instantaneous short circuit protection: l i
- Ground-fault protection : l g
- Ground-fault protection time: tg
- Neutral line protection: N





Cat. Ref.	
820401	LSI protection Ir=0.4-1 In Adjustable tr=5-10-20-30s Adjustable(6Ir) Isd=1.5-2-2.5-3-4-5-6-8-10Ir Adjustable tsd=0-0.1-0.2-0.5-1s Adjustable Ii=2-3-4-6-8-10-12-15In-Icw Adjustable

Cat. Ref.	
820402	LSIg protection Ir=0.4-1 In Adjustable tr=5-10-20-30s Adjustable(6Ir) Isd=1.5-2-2.5-3-4-5-6-8-10Ir Adjustable tsd=0-0.1-0.2-0.5-1s Adjustable Ii=2-3-4-6-8-10-12-15In-Icw Adjustable Ig=o.2-0.3-0.4-0.5-0.6-0.7-0.8-1In Adjustable / can be turned off tg=0.1-0.2-0.5-1s Adjustable

Protection Unit (PU)- Tripping Curve

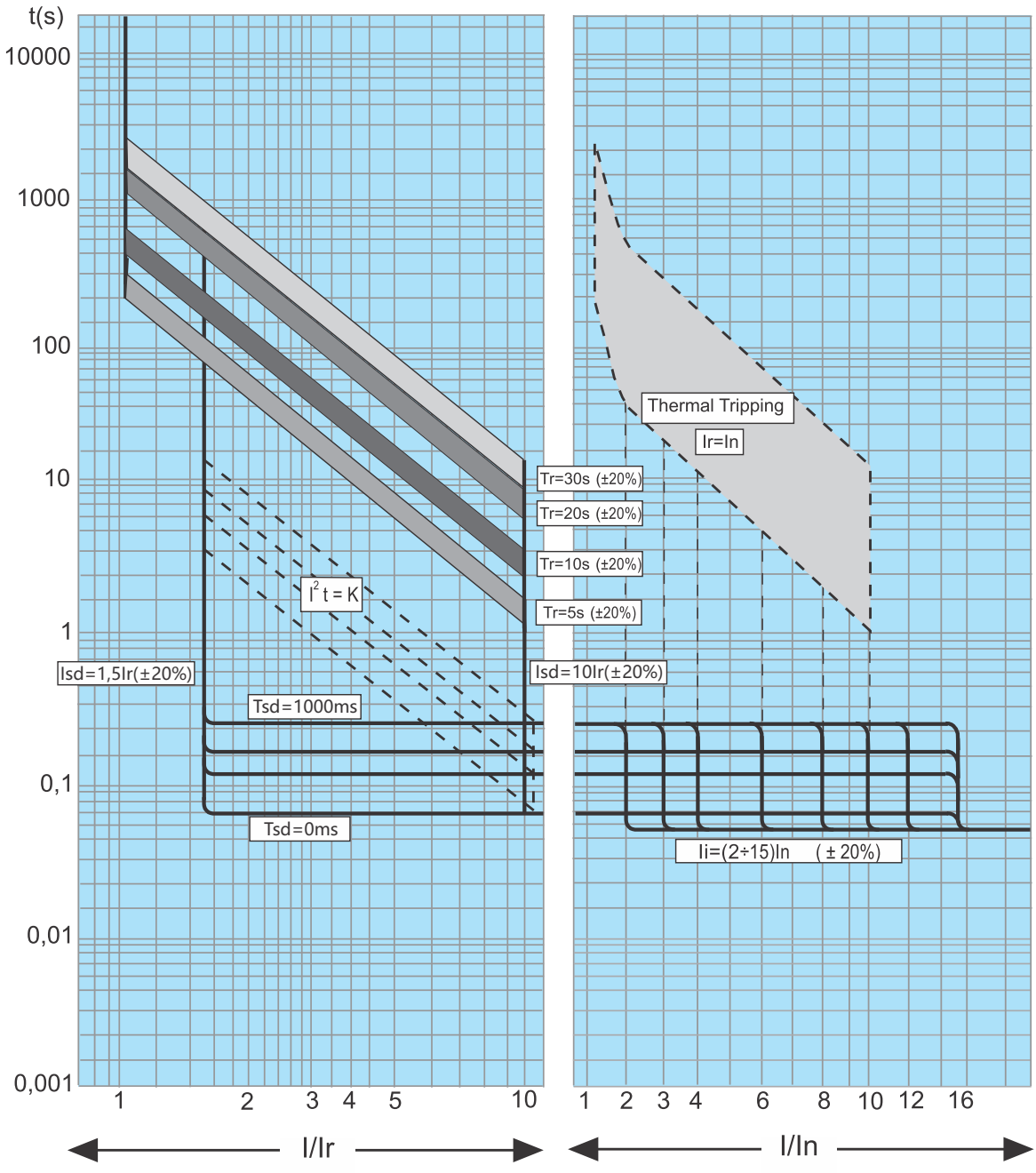
Ir=Long time setting current

Tr=Long time delay

Isd=Short circuit short time delay setting current

Tsd=Short circuit short time delay setting time

Ii=Instantaneous intervention setting current



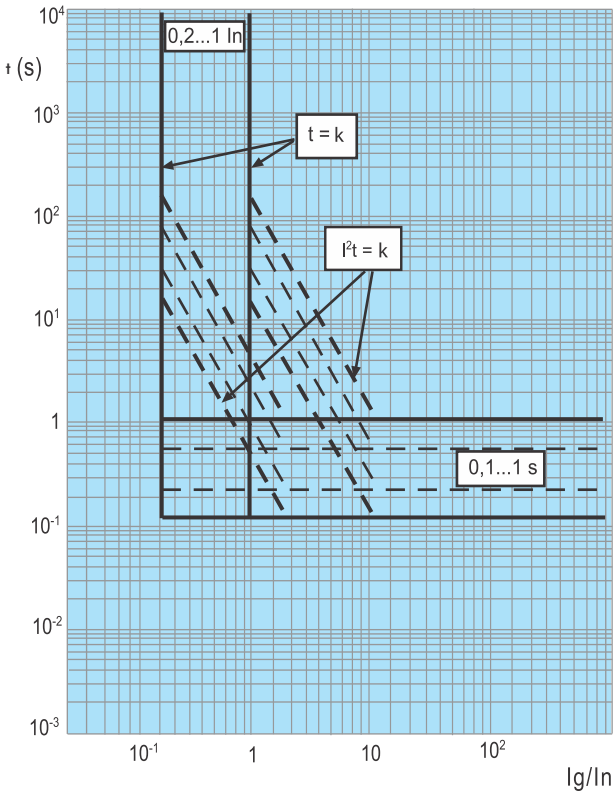
If short-circuit current is higher than Icw value or Ii is setted at Icw position,tripping time is equal to 30ms.

Protection Unit (PU)- Tripping Curve

Ground fault tripping characteristic

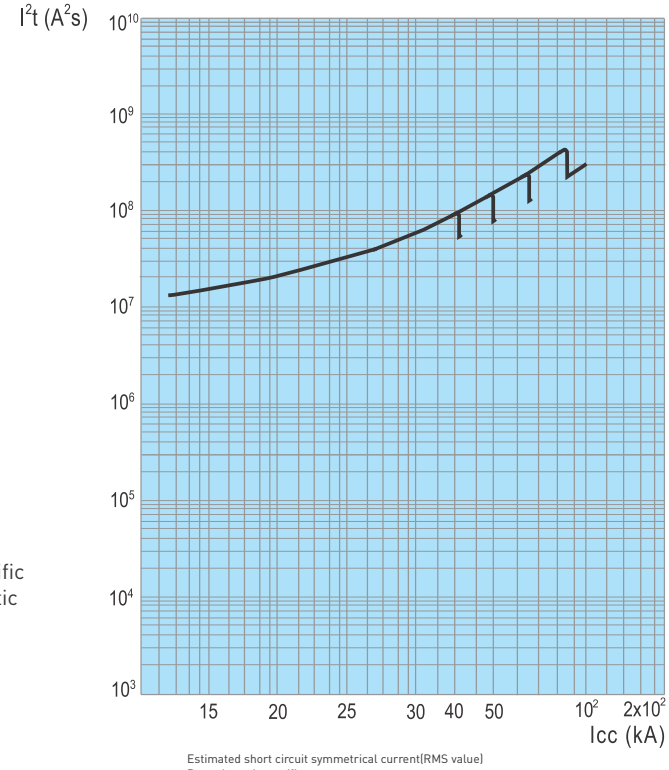
Ig=Ground Fault setting Current ±20%

tg=Ground Fault Time delay ±20%



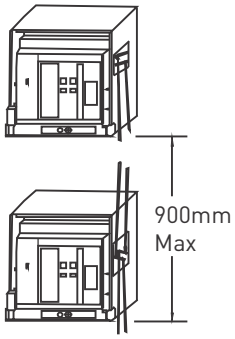
Protection Unit (PU)- Energy Curve

Pass-through specific energy characteristic

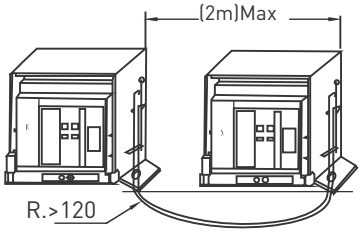


Estimated short circuit symmetrical current(RMS value)
Pass-through specific energy

Details of Accessories



Picture a



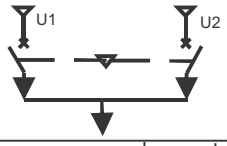
820478 Picture b

Mechanical interlock

The components should be installed on the right side plate of the draw-out breaker. There are two type of component: the lever type and the wirerope type. The lever type is useable for the vertical installation referring to the picture a. The wirerope type is usable for the vertical or horizontal installation referring to picture b.

When one breaker is closed, the another breaker can not be closed. The components should be installed by the customer and the type of the components should be specified.

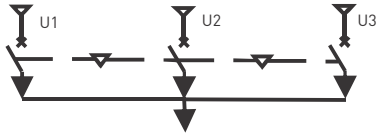
Delivery method: optional (Customer to mention references during order booking)



number of the power	U1	U2
the probably case of the breakers interlocking	C	O
	O	C
	O	O

Mechanical interlock type

two breakers refer to the left diagram
three breakers refer to the below diagram

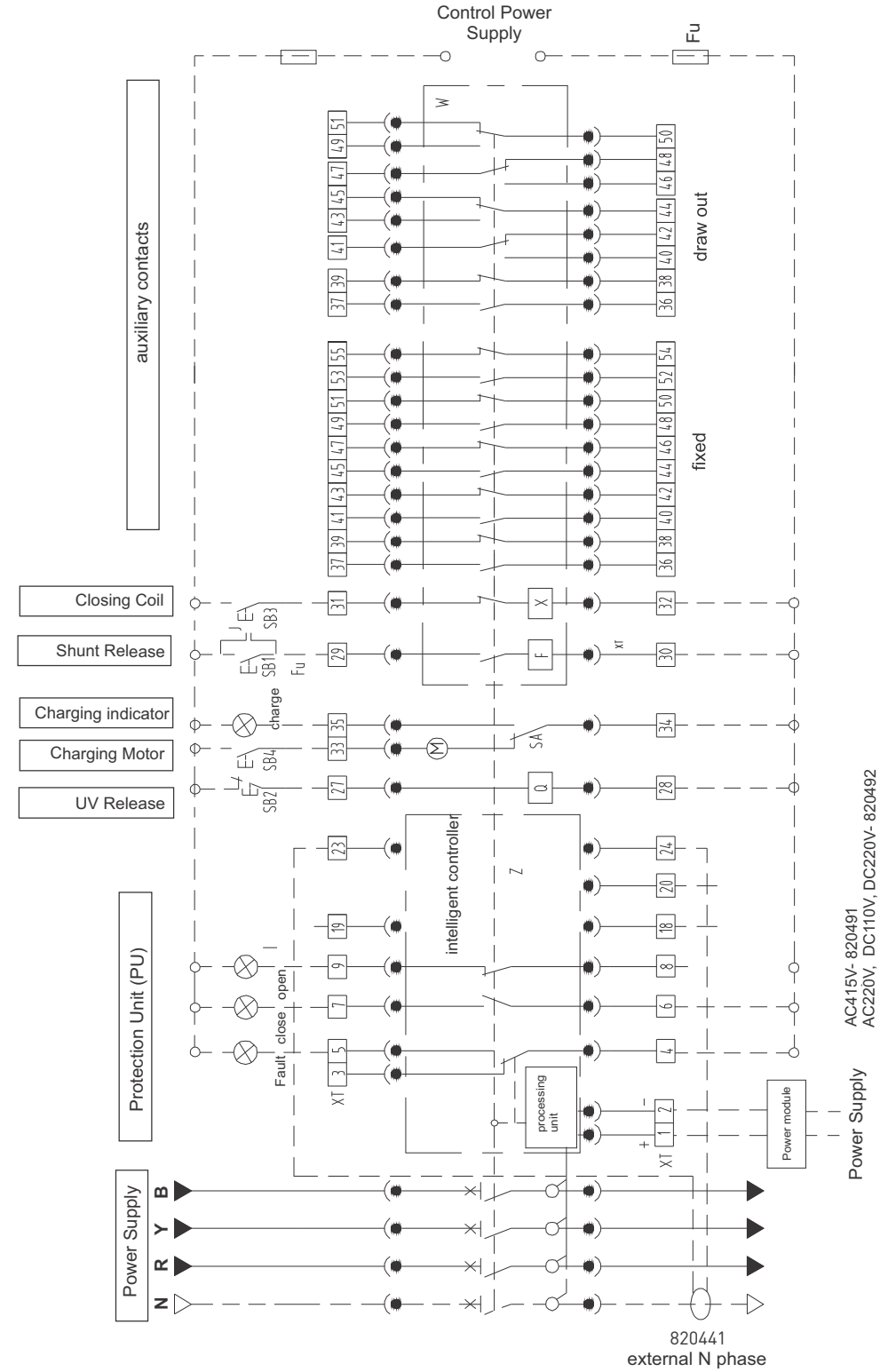


number of the power	U1	U2	U3
the probably case of the breakers interlocking	C	O	O
	O	C	O
	C	O	C
	O	O	O

Wiring Diagram

1 & 2	- PU'S Power supply input 12V DC Regulated through 820491 or 820492.
3,4,5	- Fault Signal contact output (4=Common, 3=NC & 5=NO), Capacity: AC250V 16A.
6,7	- NO Aux Contact for ACB close indication, Capacity: AC250V 16A.
8,9	- NC Aux Contact for ACB open indication, Capacity: AC250V 16A.
18,19,20	- Not in Use.
23 & 24	- 3P ACB, external N phase Current Transformer port. (optional)
27 & 28	- Undervoltage release connection. (optional)
29,30	- Shunt Release connection. (optional)
31,32	- Closing Release connection. (optional)
33,34	- Motor Charging connection. (optional) (Advance charging)
34,35	- Motor charging indicator.
36,51	- 6 NO/NC auxiliary contact for the Draw-out ACB. (40 to 51 change over contact)
36,55	- 6 NO/NC auxiliary contact for the Fixed ACB. (All are potential free contact)

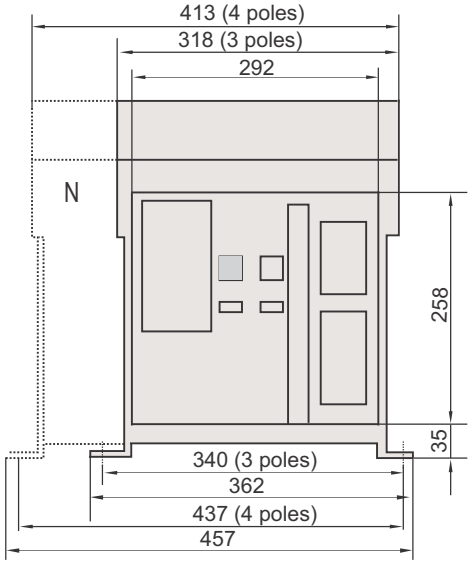
SB1	- Shunt Push Button (arranged by customer)
SB2	- UVR Push Button (arranged by customer)
SB3	- Closing Coil Push Button (arranged by customer)
SB4	- Motor Push Button (arranged by customer)
SA	- Motor Limit switch
XT	- Secondary isolating Contact circuit
J	- Relay normally open remote control circuit breaker
F	- Shunt release
X	- Closing coil
Q	- Undervoltage (instantaneous or delay) release
W	- Breaker auxiliary contacts, 6NO + 6NC
FU	- Fuse
M	- Charging Motor
Z	- Protection Unit (Intelligent controller).

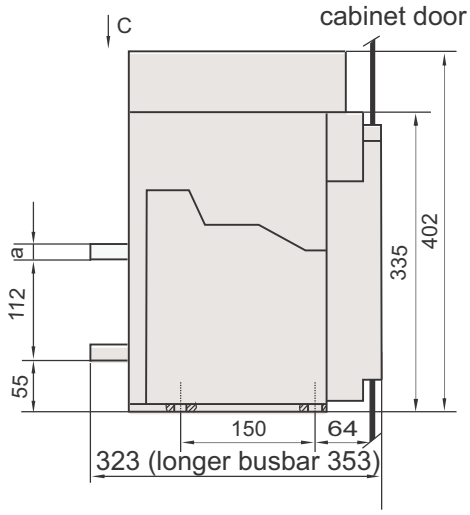


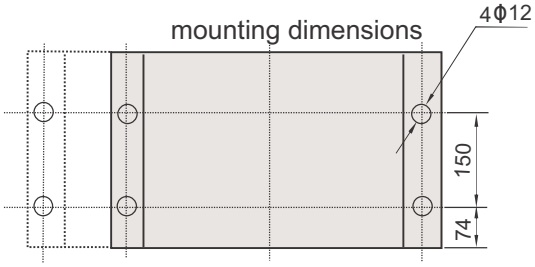
Note
:
1. If Voltage Q, F X M & PU is different, connect separate supply
2. Dash line wiring diagram to be done by user.

Dimensions & Mounting

■ Optibreak B1/I1 - Fixed Type

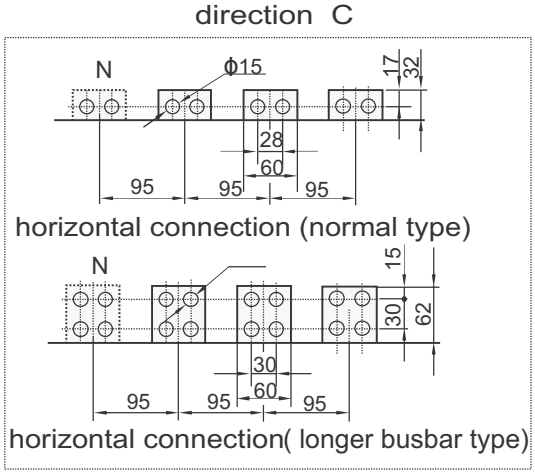






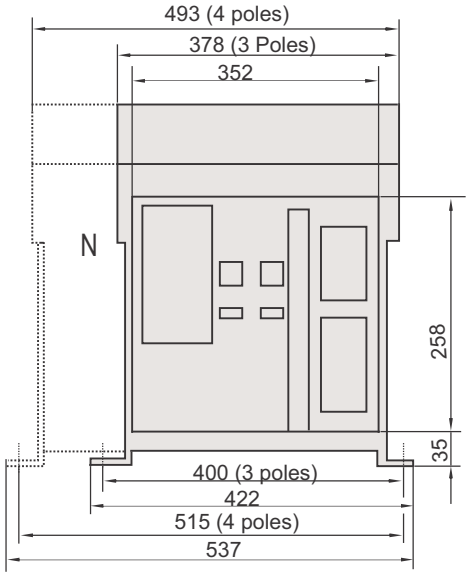
mm

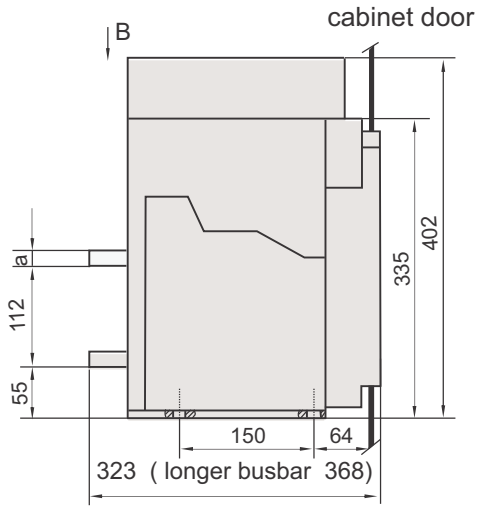
In(A)	a
630-1000	10
1250-2000	20

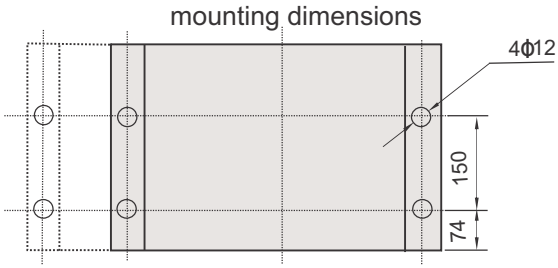


Dimensions & Mounting

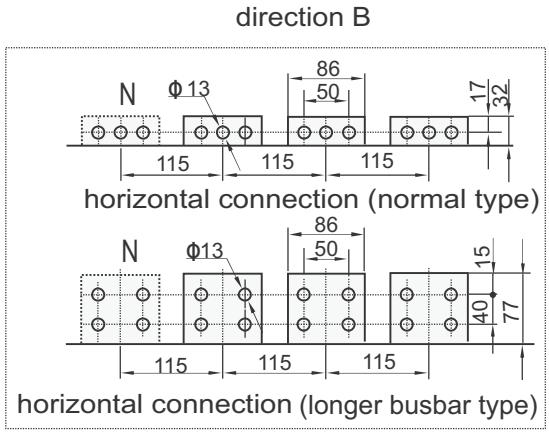
■ Optibreak B2/I2 - Fixed Type





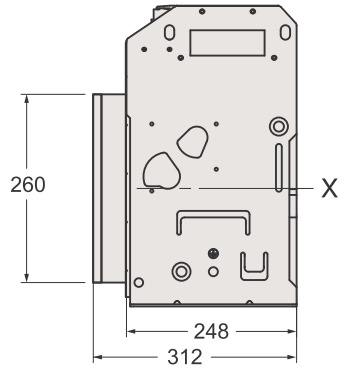


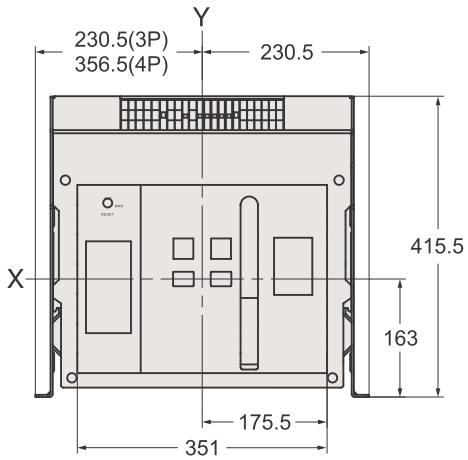
In(A)	a
2500-3200	30

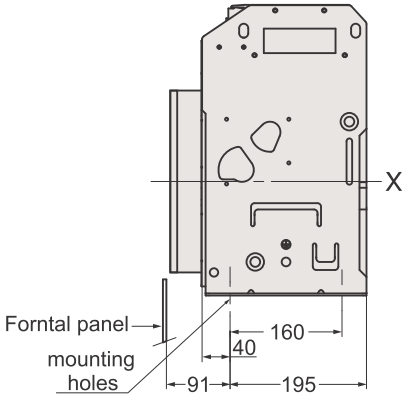


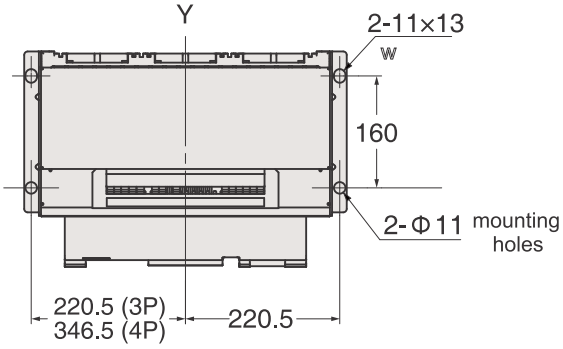
Dimensions & Mounting

Optibreak B3/I3 - Fixed Type

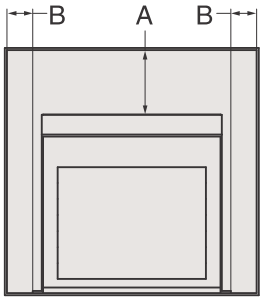








Safety distance:

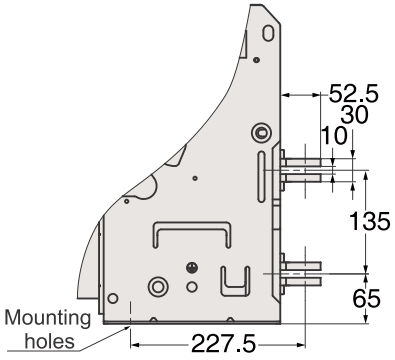


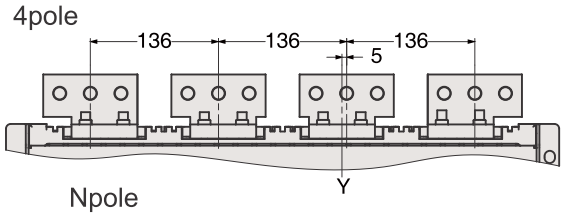
	Insulation part	Metallic part	Electrified part
A	0	0	100
B	0	0	60

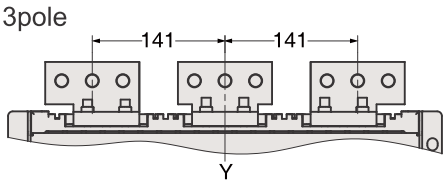
Dimensions & Mounting

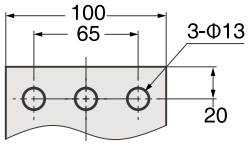
■ Optibreak B3/I3 - Fixed Type

Horizontal rear connection
3200A

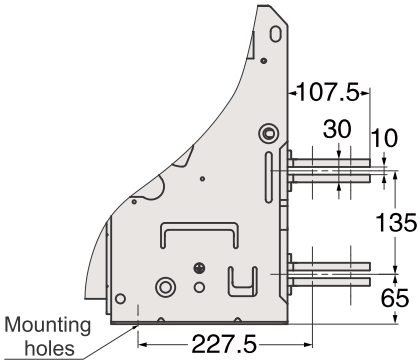


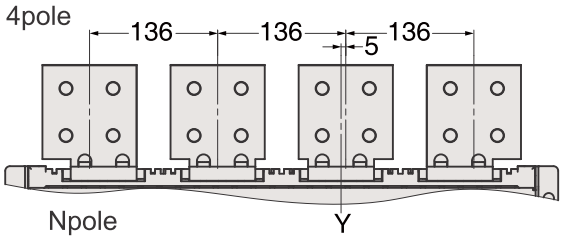


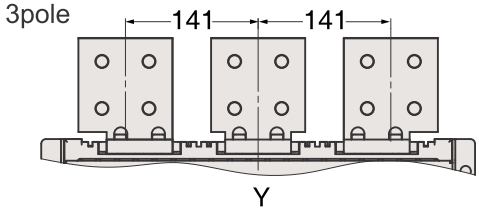


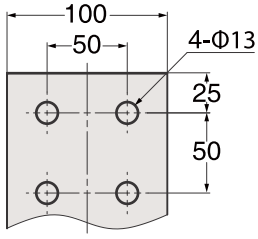


Horizontal rear connection
4000A





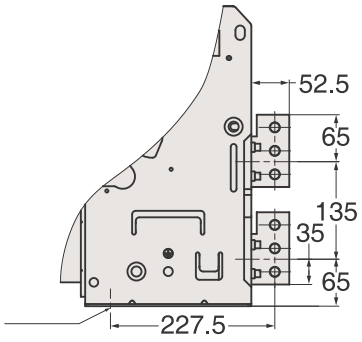


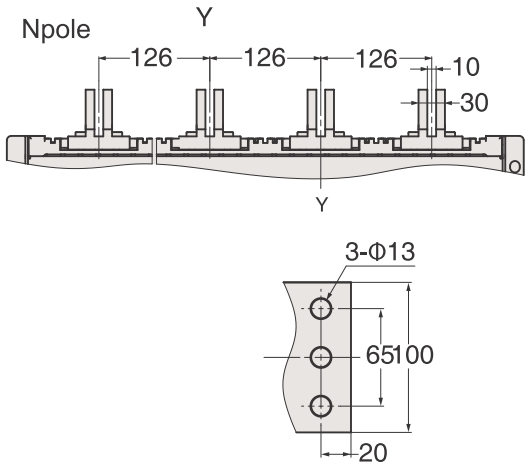


Dimensions & Mounting

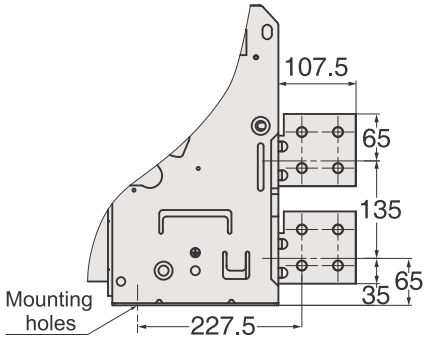
Optibreak B3/I3 - Fixed Type

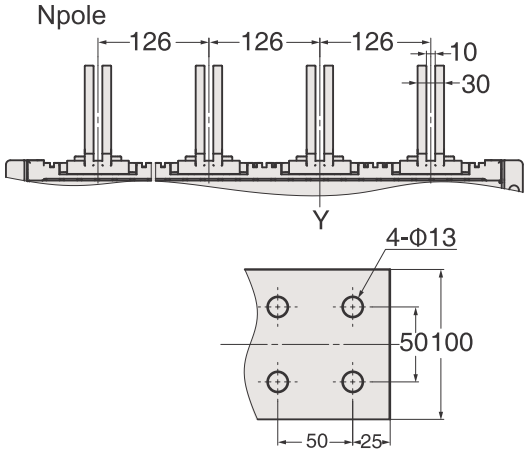
Vertical rear connection
3200A

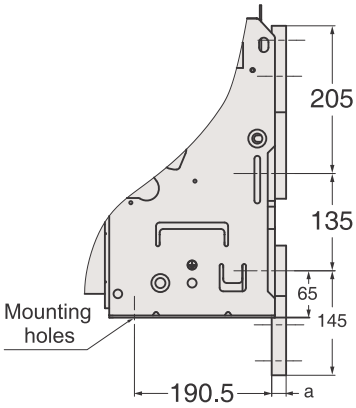


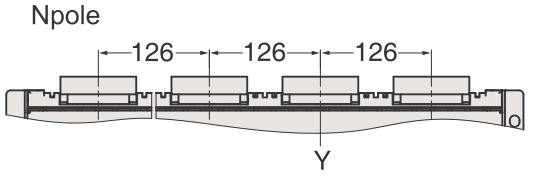


Vertical rear connection
4000A

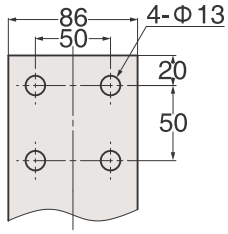




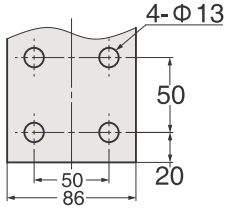




Top connection



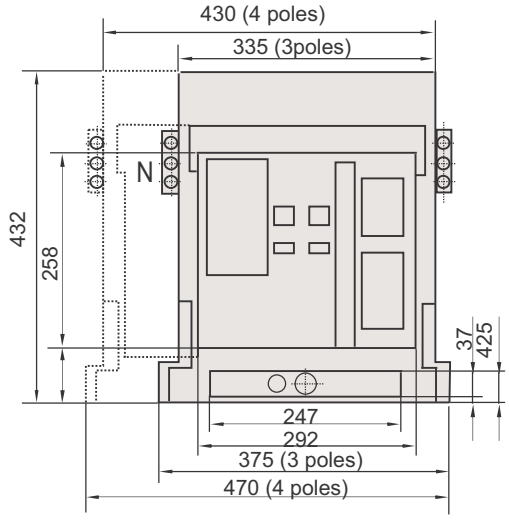
Bottom connection

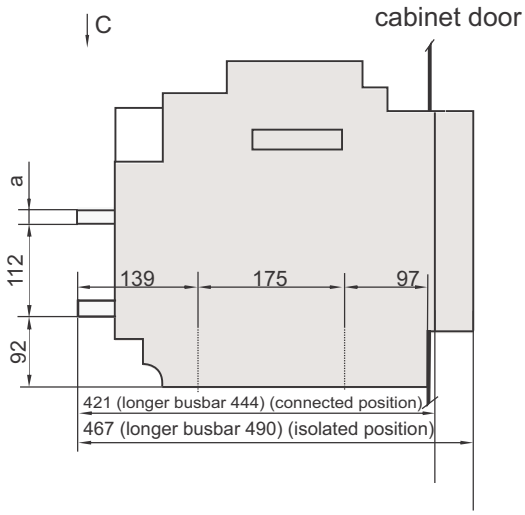


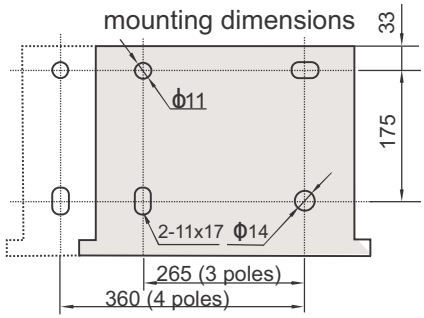
In	a
3200A	15
4000A	0

Dimensions & Mounting

Optibreak B1/I1 - Draw-out Type

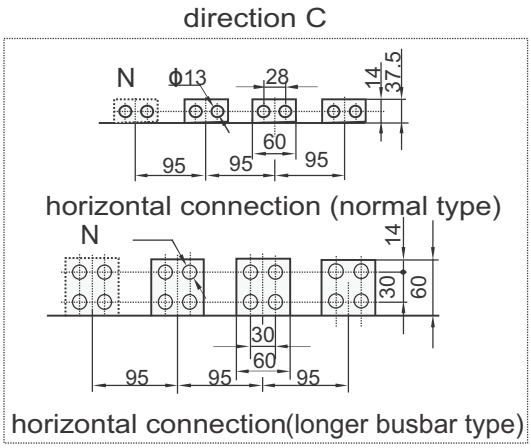






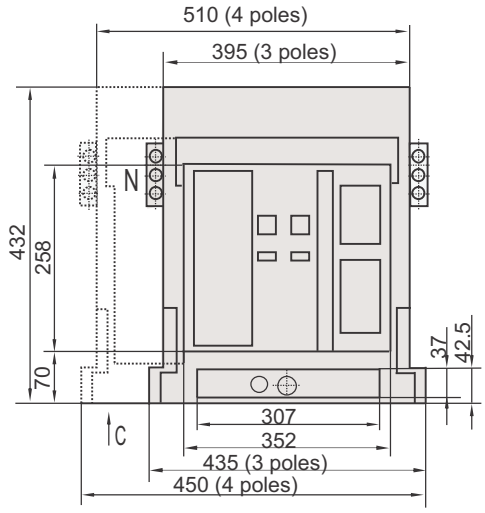
mm

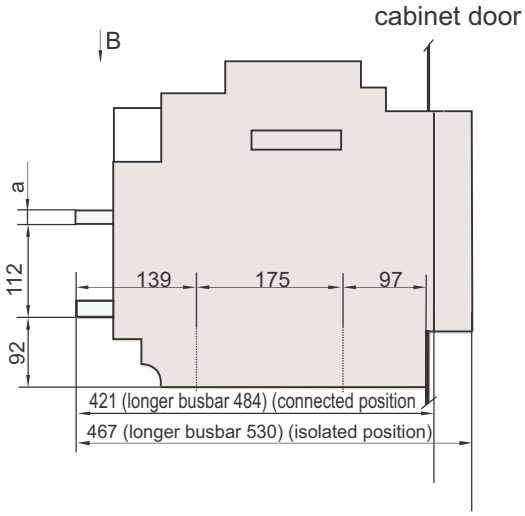
In(A)	
630-1000	10
1250-2000	20

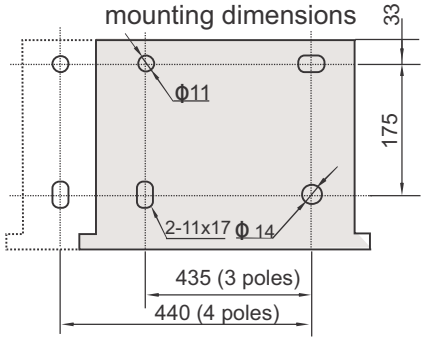


Dimensions & Mounting

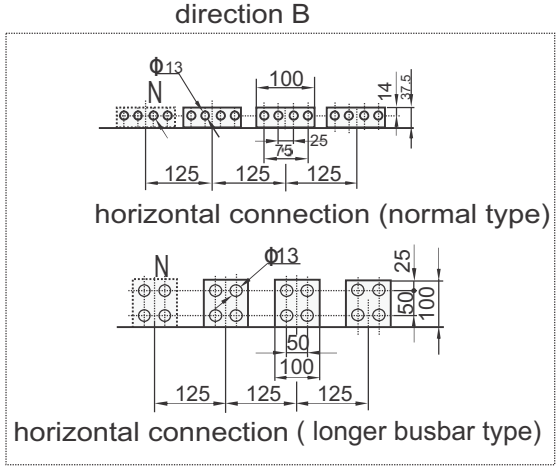
Optibreak B2/I2 - Draw-out Type





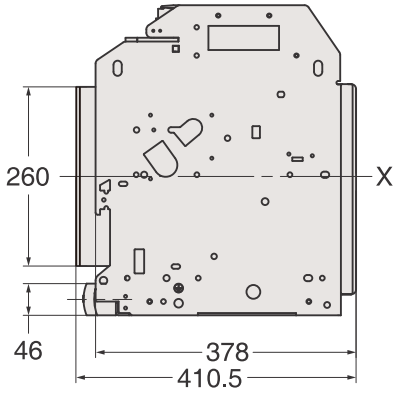


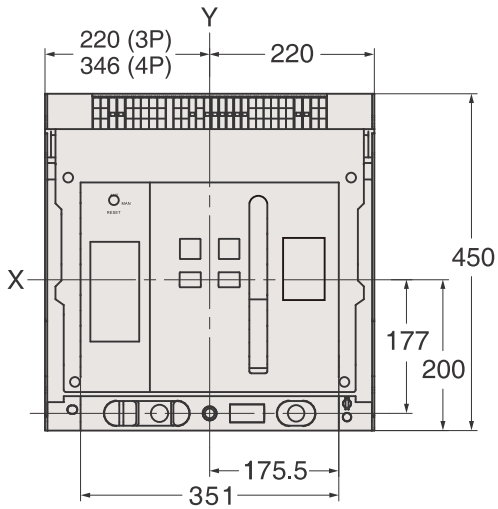
In(A)	a
2500-3200	30

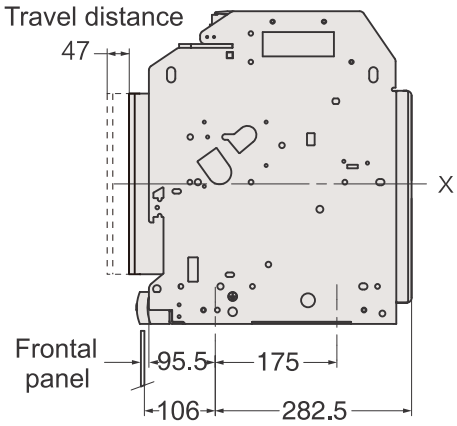


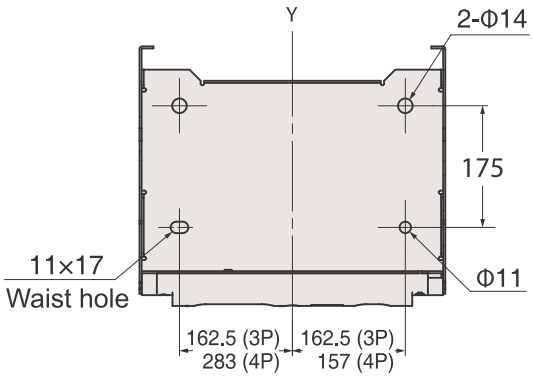
Dimensions & Mounting

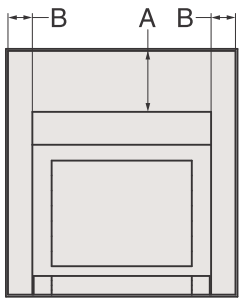
Optibreak B3/I3 - Draw-out Type









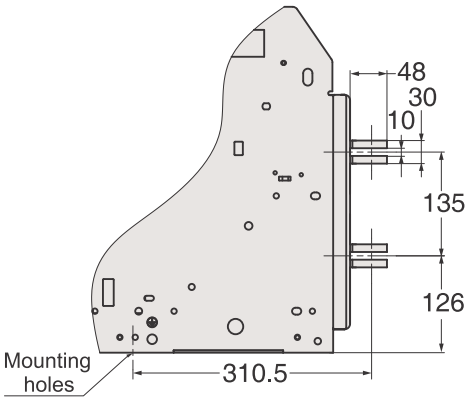


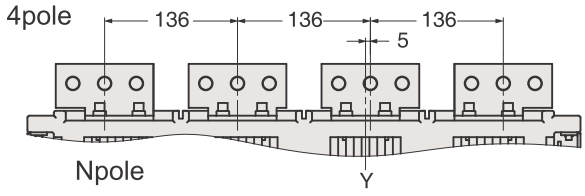
	Insulation part	Metallic part	Electrified part
A	0	0	100
B	0	0	60

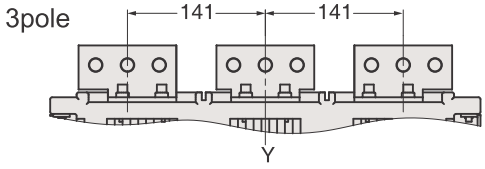
Dimensions & Mounting

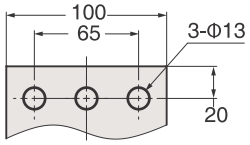
■ Optibreak B3/I3 - Draw-out Type

Horizontal rear connection
3200A

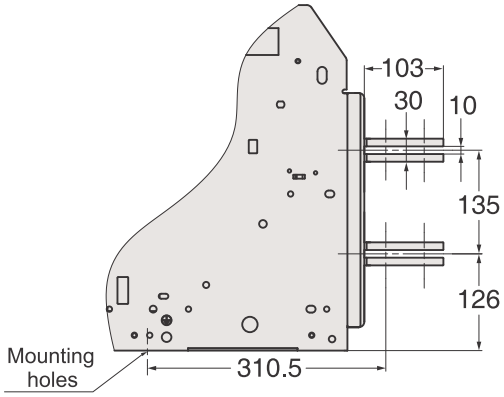


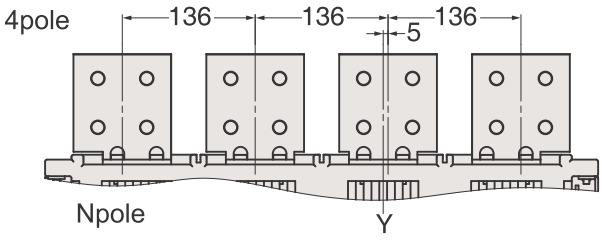


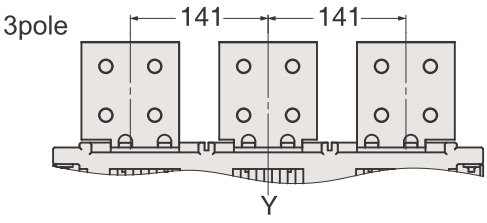


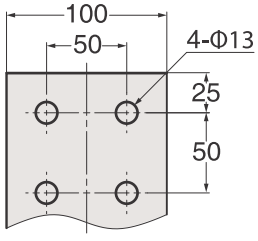


Horizontal rear connection
4000A





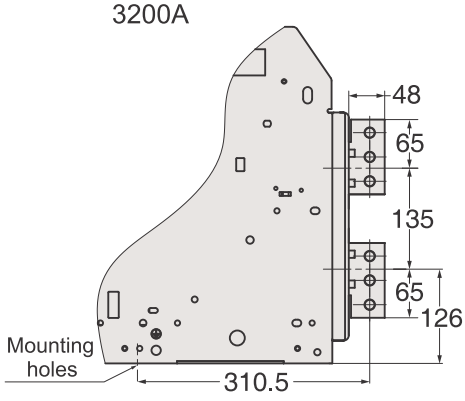


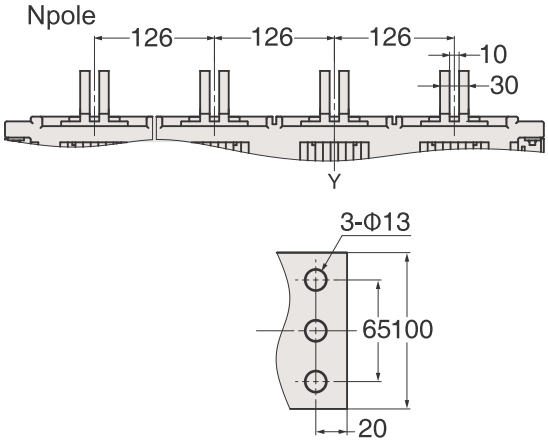


Dimensions & Mounting

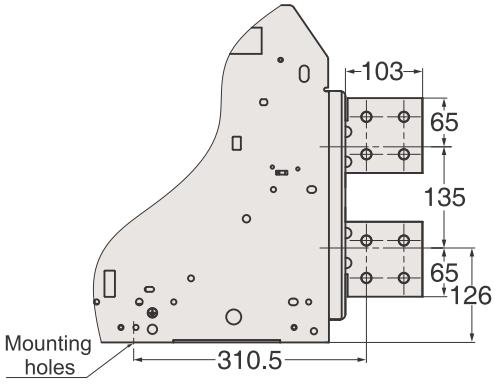
■ Optibreak B3/I3 - Draw-out Type

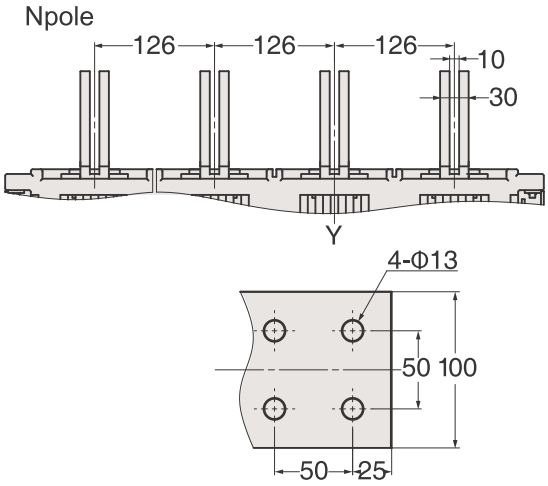
Vertical rear connection
3200A

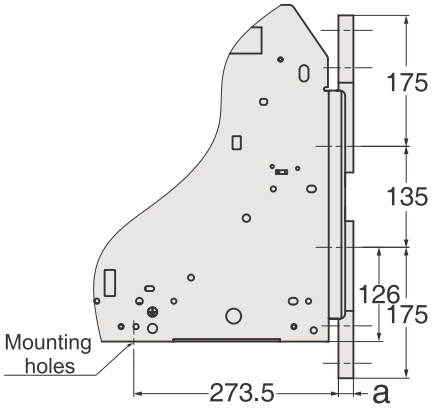




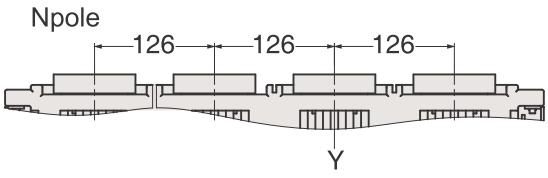
Vertical rear connection
4000A



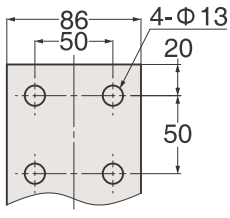




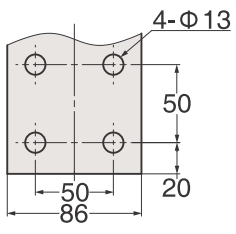
In	Dimension a
3200A	15
4000A	0



Top connection



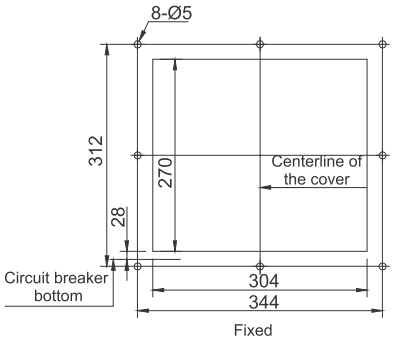
Bottom connection

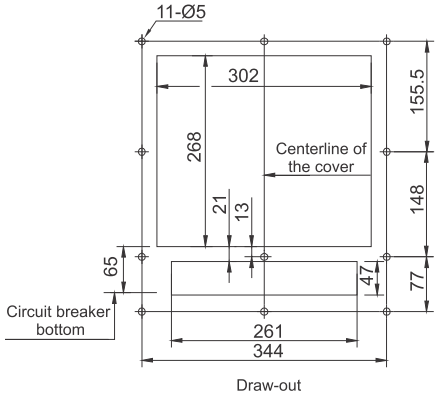


Dimensions & Mounting

Door frame mounting dimensions

Optibreak B1/ I1





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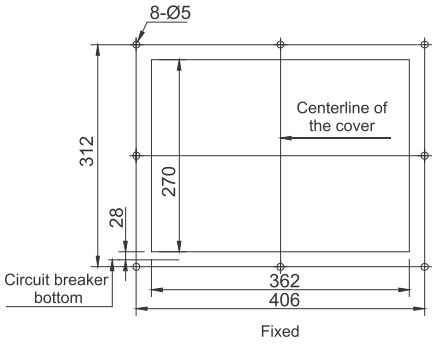
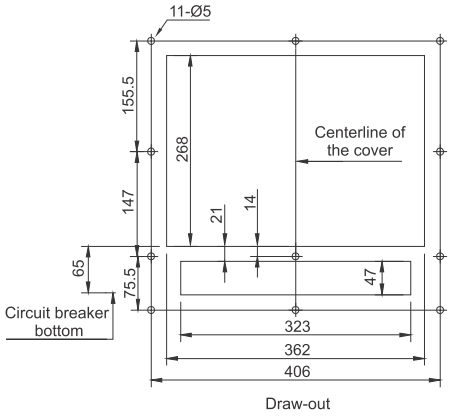
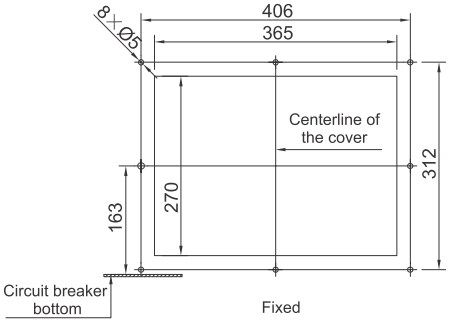
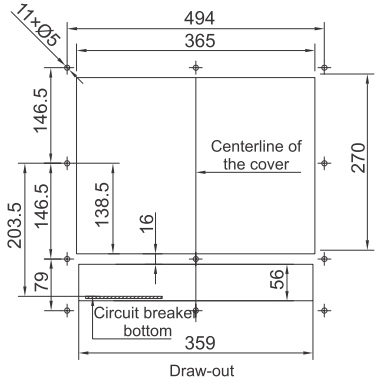




Optibreak B3/ I3





Air Circuit Breaker

Type	Breaking capacity	Frame	Rating	3P	4P
Fixed	50kA	B1	630	820001	820011
Fixed	50kA	B1	800	820002	820012
Fixed	50kA	B1	1000	820003	820013
Fixed	50kA	B1	1250	820004	820014
Fixed	50kA	B1	1600	820005	820015
Fixed	50kA	B1	2000	820006	820016
Fixed	50kA	B2	2500	820007	820017

Type	Breaking capacity	Frame	Rating	3P	4P
D/O	50kA	B1	630	820101	820111
D/O	50kA	B1	800	820102	820112
D/O	50kA	B1	1000	820103	820113
D/O	50kA	B1	1250	820104	820114
D/O	50kA	B1	1600	820105	820115
D/O	50kA	B1	2000	820106	820116
D/O	50kA	B2	2500	820107	820117

Type	Breaking capacity	Frame	Rating	3P	4P
Fixed	65kA	B1	630	820021	820031
Fixed	65kA	B1	800	820022	820032
Fixed	65kA	B1	1000	820023	820033
Fixed	65kA	B1	1250	820024	820034
Fixed	65kA	B1	1600	820025	820035
Fixed	65kA	B1	2000	820026	820036
Fixed	65kA	B2	2500	820027	820037
Fixed	65kA	B2	3200	820051	820061
Fixed	100kA	B3	4000	820052	820062

Air Circuit Breaker

Type	Breaking capacity	Frame	Rating	3P	4P
D/O	65kA	B1	630	820121	820131
D/O	65kA	B1	800	820122	820132
D/O	65kA	B1	1000	820123	820133
D/O	65kA	B1	1250	820124	820134
D/O	65kA	B1	1600	820125	820135
D/O	65kA	B1	2000	820126	820136
D/O	65kA	B2	2500	820127	820137
D/O	65kA	B2	3200	820151	820161
D/O	100kA	B3	4000	820152	820162

Type	Breaking capacity	Frame	Rating	3P	4P
Fixed	100kA	B3	3200	820071	820073
Fixed	100kA	B3	4000	820072	820074

Type	Breaking capacity	Frame	Rating	3P	4P
D/O	100kA	B3	3200	820171	820173
D/O	100kA	B3	4000	820172	820174

Trip Free Switch Disconnector

Type	Breaking capacity	Frame	Rating	3P	4P
Fixed	65kA	I1	1000	820201	820205
Fixed	65kA	I1	1250	820202	820206
Fixed	65kA	I1	1600	820203	820207
Fixed	65kA	I1	2000	820211	820213
Fixed	65kA	I2	2500	820212	820214
Fixed	100kA	I3	3200	820215	820217
Fixed	100kA	I3	4000	820216	820218

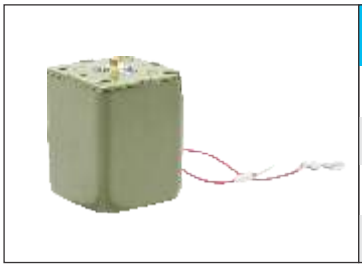
Type	Breaking capacity	Frame	Rating	3P	4P
D/O	65kA	I1	1000	820301	820305
D/O	65kA	I1	1250	820302	820306
D/O	65kA	I1	1600	820303	820307
D/O	65kA	I1	2000	820311	820313
D/O	65kA	I2	2500	820312	820314
D/O	100kA	I3	3200	820315	820317
D/O	100kA	I3	4000	820316	820318

Accessories

Product	Frame	Cat Ref.
Release	LSI	820401
Release	LSIg	820402

Product	Frame	Cat Ref.
Auxiliary contact	-	820411

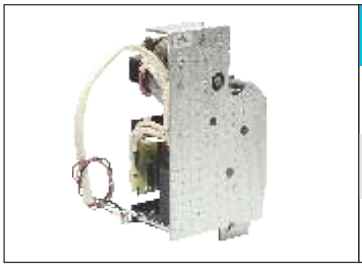
Accessories



Product	Frame	Cat Ref.
Shunt trip 230 V AC	-	820412
Shunt trip 415 V AC	-	820413
Shunt trip 110 V DC	-	820414
Shunt trip 220 V DC	-	820415

Product	Frame	Cat Ref.
Undervoltage 230VAC	B1, B2 & B3	820417
Undervoltage 415VAC	B1, B2 & B3	820419
Undervoltage 230VAC(0.3 ~ 5s)	B1, B2 & B3	820421
Undervoltage 415VAC(0.3 ~ 5s)	B1, B2 & B3	820423

Product	Frame	Cat Ref.
Closing coil 230 V AC	-	820424
Closing coil 415 V AC	-	820425
Closing coil 110 V DC	-	820426
Closing coil 220 V DC	-	820427



Product	Frame	Cat Ref.
Motor Operator 230VAC/220VDC	B1	820428
Motor Operator 415VAC	B1	820429
Motor Operator 110VDC	B1	820430

Product	Frame	Cat Ref.
Motor Operator 230VAC/220VDC	B2 & B3	820431
Motor Operator 415VAC	B2 & B3	820432
Motor Operator110VDC	B2 & B3	820433

Accessories

	Product	Frame	Cat Ref.
	Ext Neutral CT B1& B2	-	820441

	Product	Frame	Cat Ref.
	Vertical terminal 3P till 1000A	-	820456
	Vertical terminal 4P till 1000A	-	820457
	Vertical terminal 3P till 2000A	-	820458
	Vertical terminal 4P till 2000A	-	820459
	Vertical terminal 3P 3200A Fixed	-	820460
	Vertical terminal 4P 3200A Fixed	-	820462
	Vertical terminal 3P 3200A D/O	-	820461
	Vertical terminal 4P 3200A D/O	-	820463

	Product	Frame	Cat Ref.
	Phase Seperator3P Fixed	-	820471
	Phase Seperator3P DO	-	820472
	Phase Seperator4P Fixed	-	820473
	Phase Seperator4P DO	-	820474

	Product	Frame	Cat Ref.
	MIL- LeverFixed	-	820475
	MIL- LeverDO	-	820476
	MIL- CableFixed	-	820477
	MIL- CableDO	-	820478

Accessories

	Product	Frame	Cat Ref.
	Key-Lock1L + 1k	-	820479
	Key-Lock2L + 1k	-	820480
	Key-Lock3L + 1k	-	820481
	Key-Lock3L + 2k	-	820482
	Key-Lock5L + 3k	-	820483

	Product	Frame	Cat Ref.
	Door interlock B1,B2	-	820485

	Product	Frame	Cat Ref.
	Door frame fixed B1	-	820486
	Door frame fixed B2	-	820487
	Door frame D/O B1	-	820488
	Door frame D/O B2	-	820489

	Product	Frame	Cat Ref.
	Dust cover B1,B2	-	820490

	Product	Frame	Cat Ref.
	Power module 415V B1,B2	-	820491
	Power module 230V B1,B2	-	820492

Optium

Adjustable, compact and ease of installation are just some of the features of our wide range of MCCBs.

F1

F2

F3

F4

F5

Variants

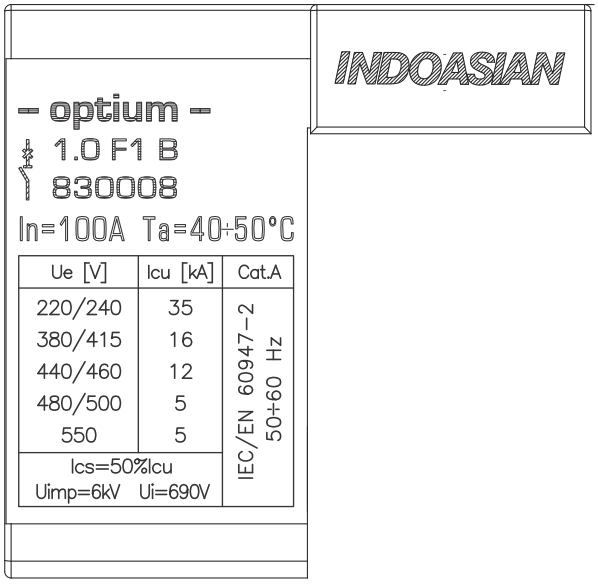
Fixed type T/M

Adjustable T/M

Electronic LSI

Electronic LSIg

Nomenclature



Example >> | Optium | 1.0 | F1 | B | 100A |

Optium □ □ □ □

Rating(In)
Form 16A to 1250A

Breaking Capacity (Icu@415V)
B=16kA, L=25kA, M=36kA & H=50kA

Frame Code
F1= 125, F2=250, F3=250HP, F4=630 & F5=1250

Release Code
1.0= TM Fixed, 2.0= TM Adj,
2.1= Elec. LSI & 2.2 = Elec. LSIG

Design Model of MCCB

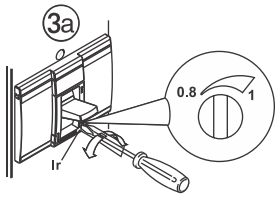
Adjustable settings

F1

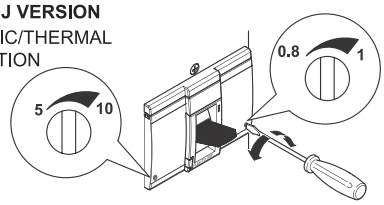
F2-F3

ONLY ADJ VERSION
THERMAL
REGULATION

$I_r = (0,8 \div 1) \times I_n$



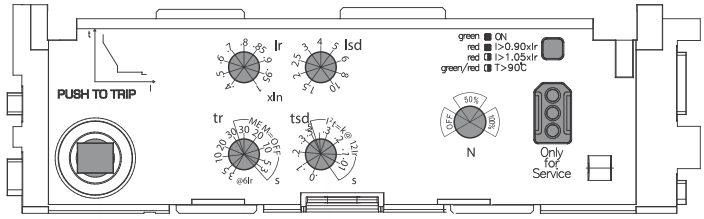
ONLY ADJ VERSION
MAGNETIC/THERMAL
REGULATION



Ir = (0,8÷1) × In
Isd = (5 ÷10) × In

F4-F5

830510...830517



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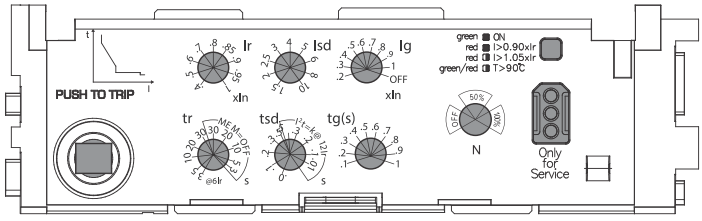
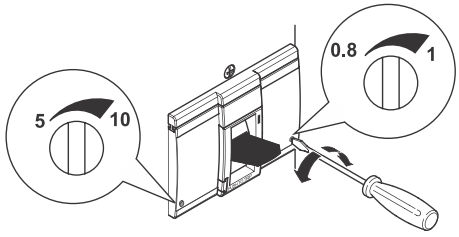


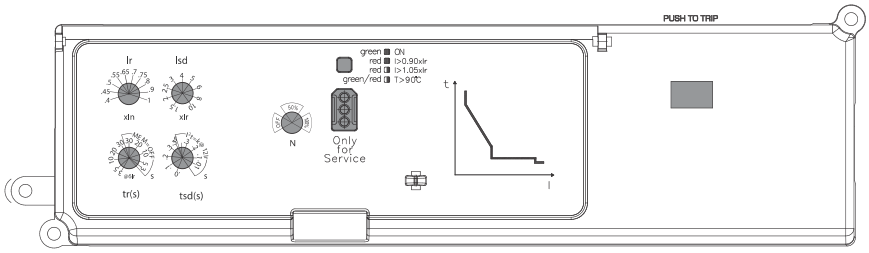
ONLY ADJ VERSION
MAGNETIC/THERMAL
REGULATION



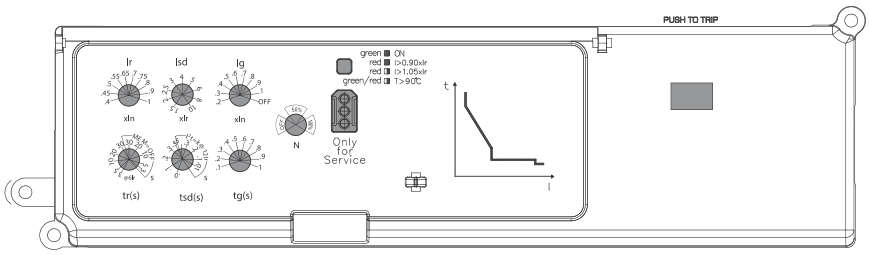
Ir = (0,8÷1) × In
Isd = (5 ÷10) × In

F4-F5

830540...830547



830550...830557



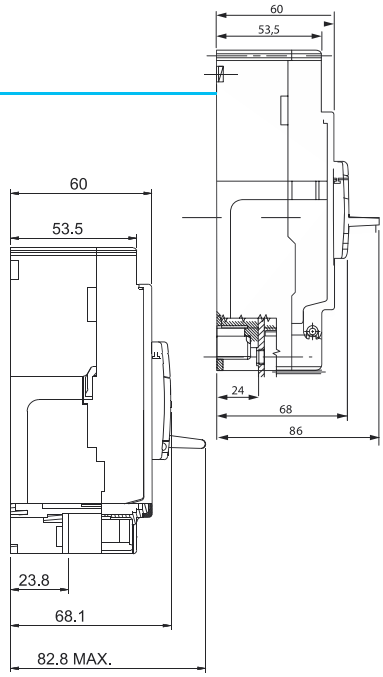
Adjustable range Ics=100% Icu

ICU		ICS
16 kA	=	16 kA
25 kA		25 kA
36 kA		36 kA
50 kA		50 kA

Line load reversibility

Compact sizes

Frame 1 & 2 is compact and suitable for installation in DB



Wide choice of electrical accessories

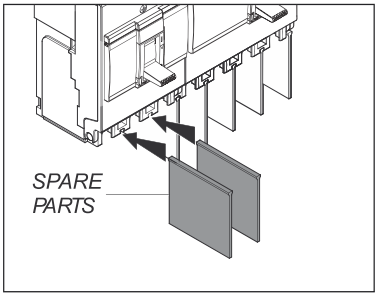
Aux contact

Shunt trip

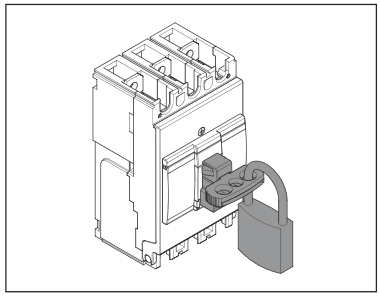
Undervoltage

Accessories

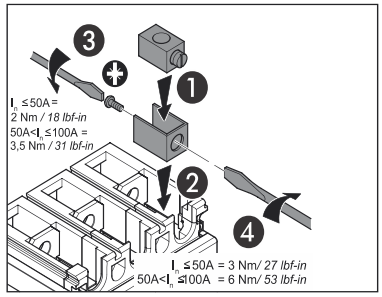
Phase Separator



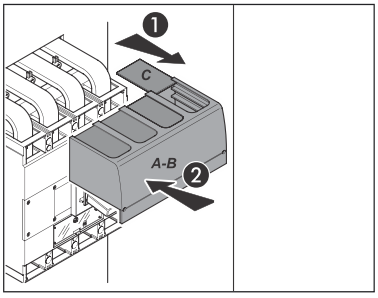
Padlock - Off Position



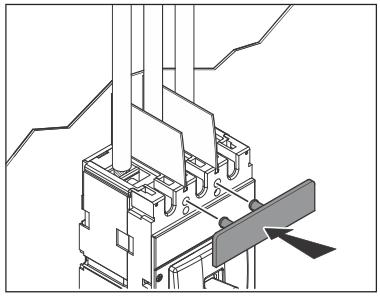
Cage Terminals



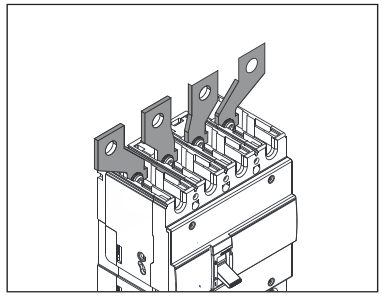
Terminal Shield



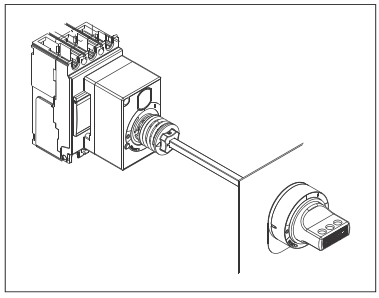
Terminal Cover



Spreader Link



Rotary Handle



Spreaders

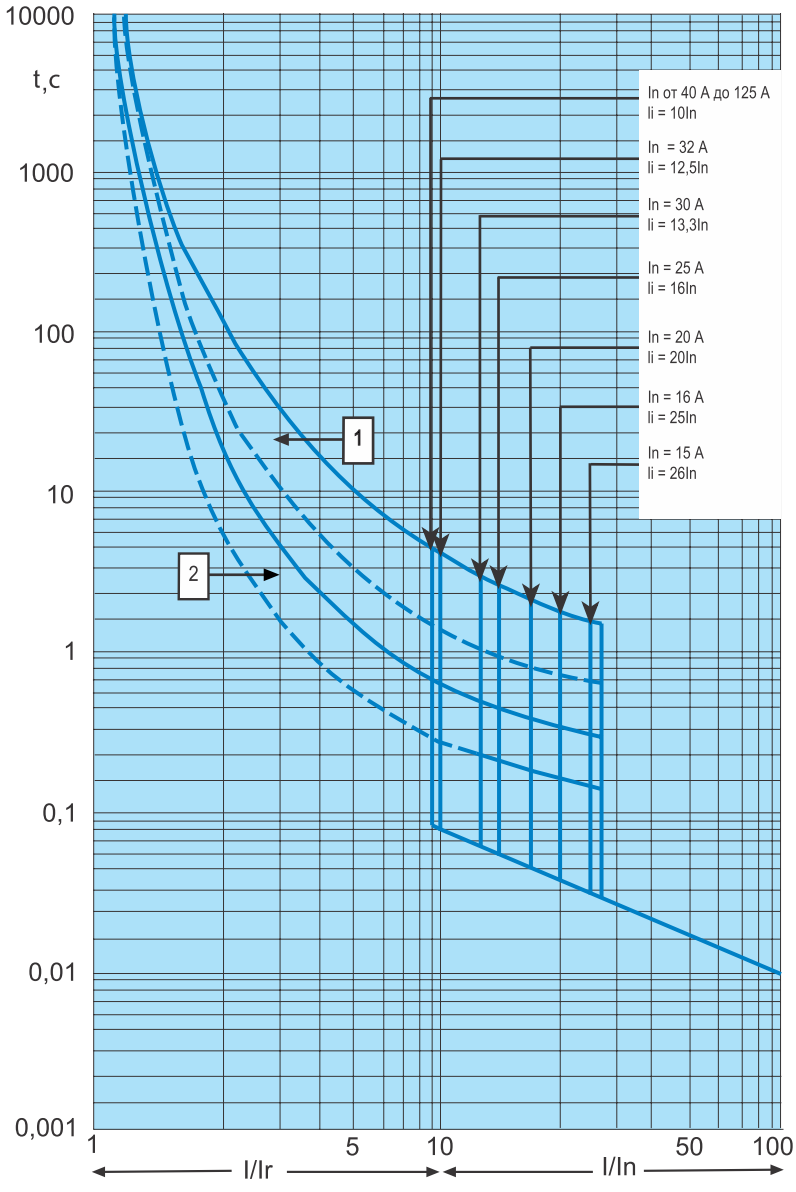
Easy-to-install accessories

Technical Characteristics - MCCB

Time current characteristics

Time current tripping characteristics at ambient temperature 40° C

Frame 1 - In (16A - 125A)



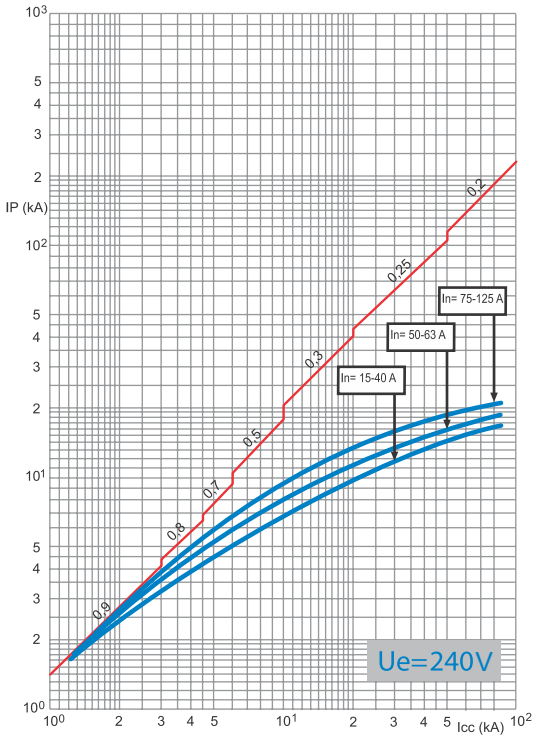
The multiplicity of the load current to the rated current of the circuit breaker

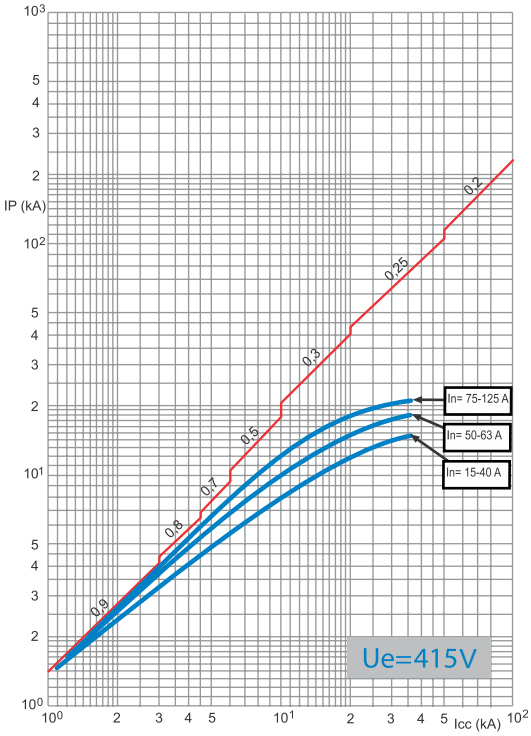
I - load current ;
Ir - the maximum value of the current setpoint thermal release . Current Rating You are a breaker is determined by the rated current thermal release ;
1 - working area of the "hot" state TE Pilaf release (in working condition) ;
2 - area of work from the "cold" state thermal release

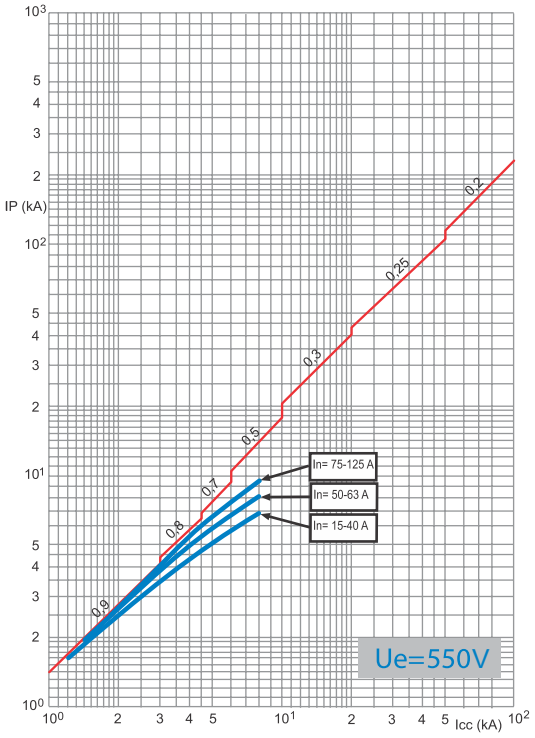
Technical Characteristics - MCCB

Data limitations of current

Frame 1 - In (16A - 125A)





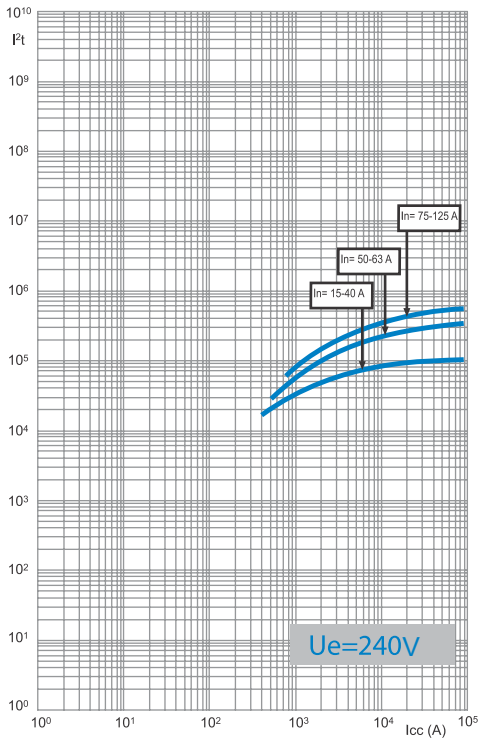


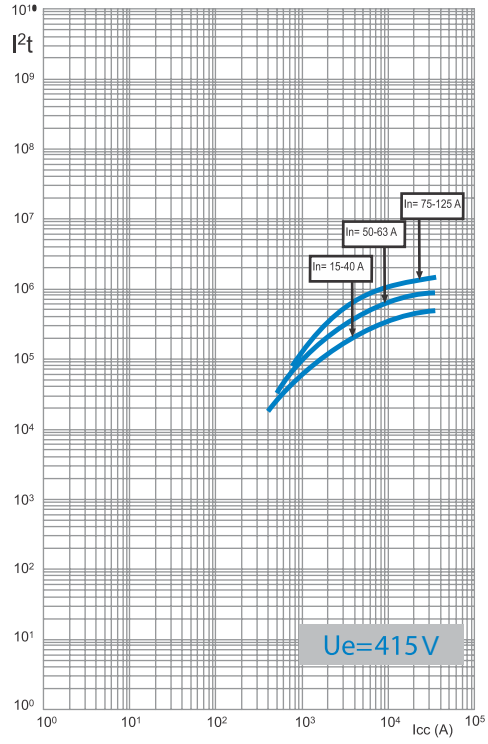
Limitation of shock value Short- current contiguity (actual maximum value) in the Depending on the current value of the expected direct fault current

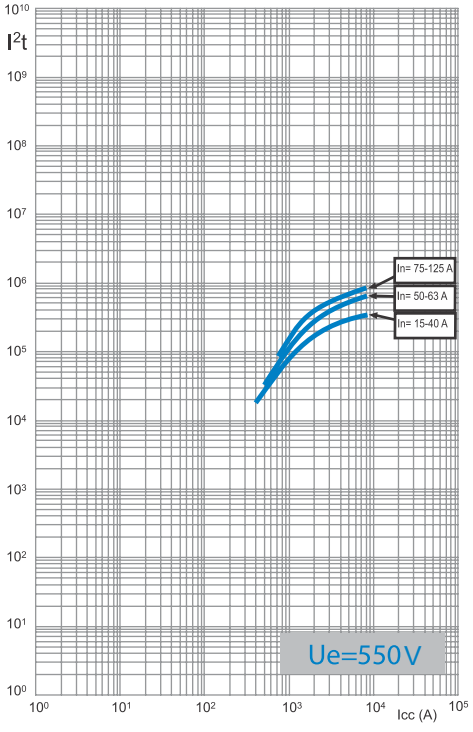
Technical Characteristics - MCCB

Limitations of energy curves

Frame 1 - In (16A - 125A)





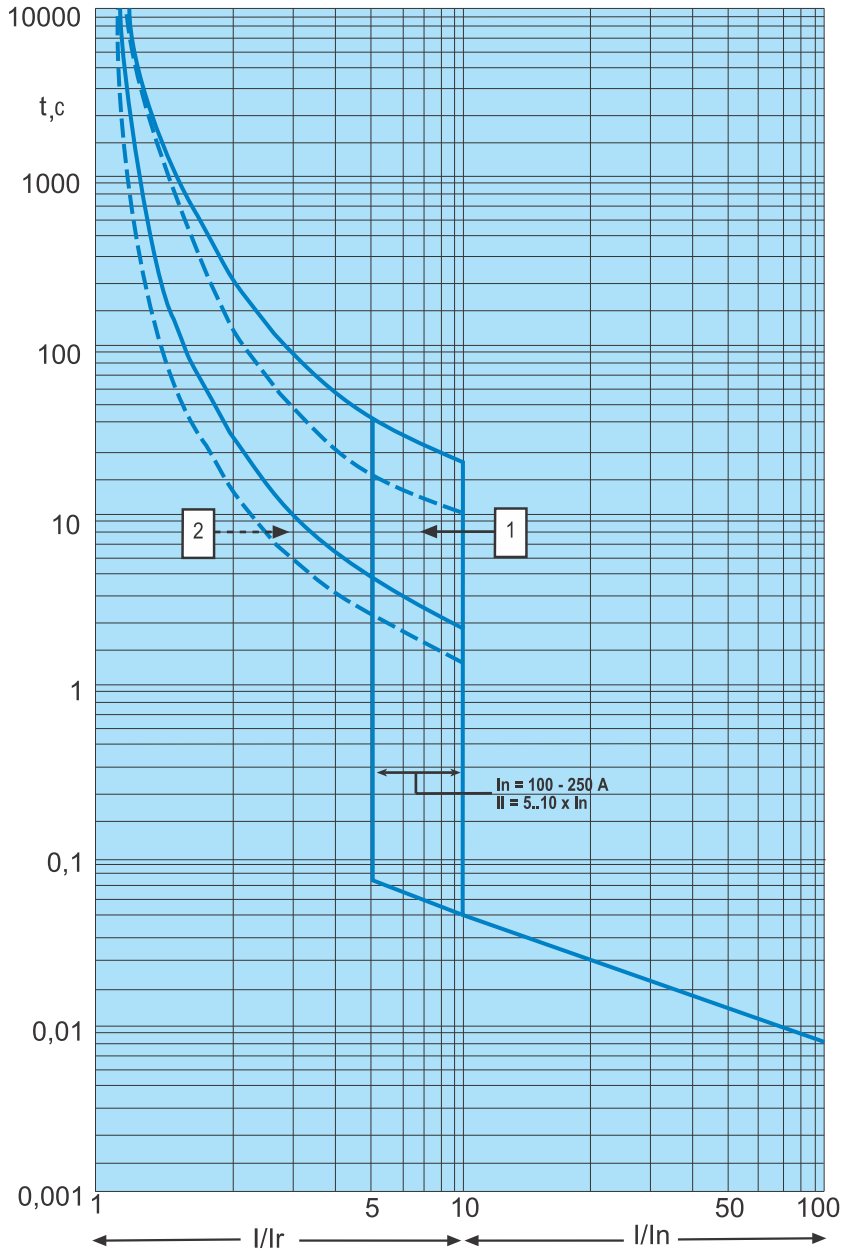


Specific heat (A2s) , ie energy,
released during a short circuit in the conduction
arrestor 1-ohm , depending
from the rms value of the prospective current
short circuit

Technical Characteristics - MCCB

Time current characteristics

Frame 2 - In (160A - 250A)



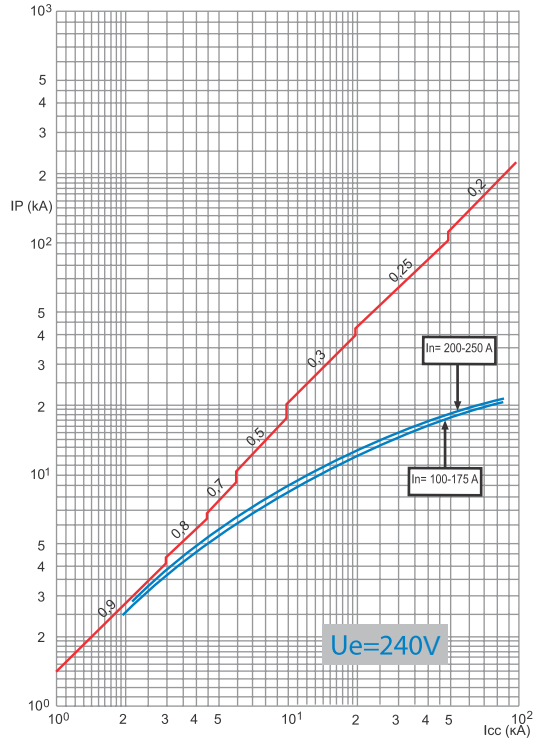
I - load current ;
Ir - the maximum value of the current setpoint thermal release . Rated current breaker depends on the bench current heat release ;
1 - working area of the "hot" state TE Pilaf release (in working condition) ;
2 - area of work from the "cold" state thermal release

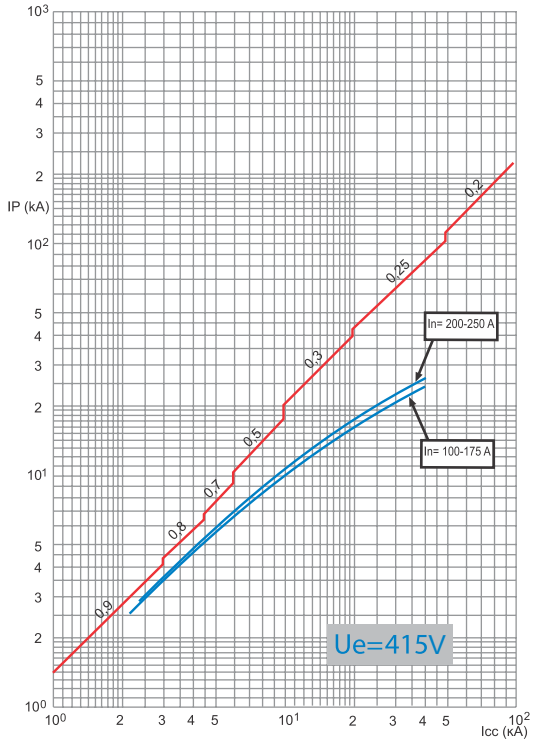
The multiplicity of the load current to the rated current of the circuit breaker

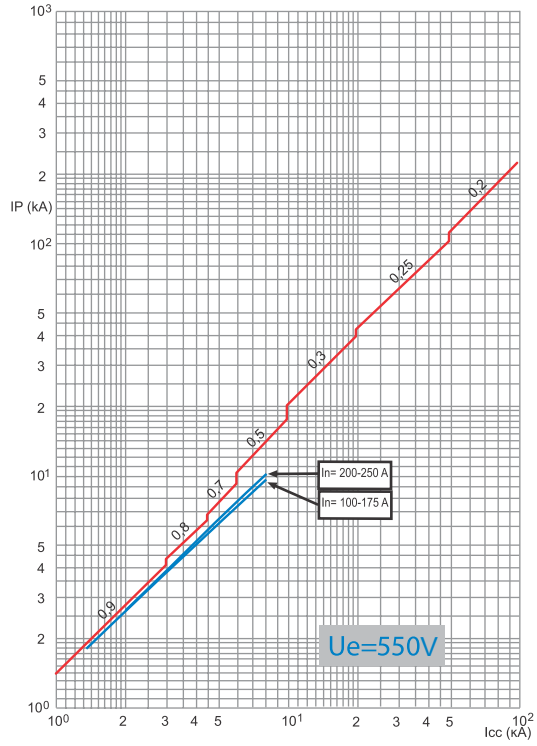
Technical Characteristics - MCCB

Data limitations of current

Frame 2 - In (160A - 250A)





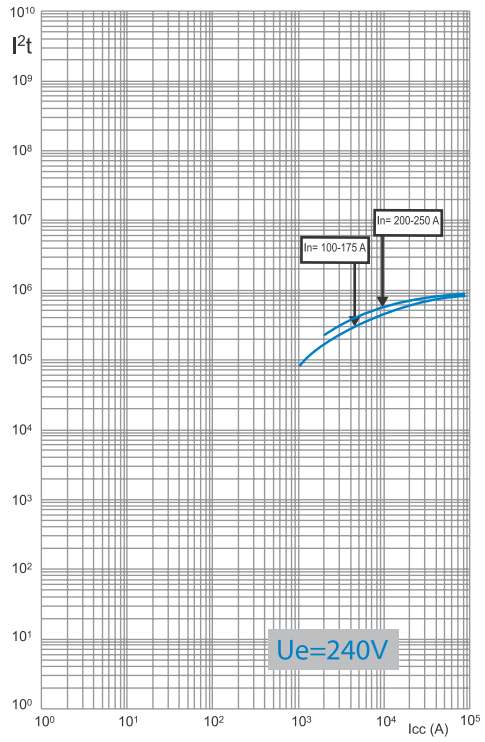


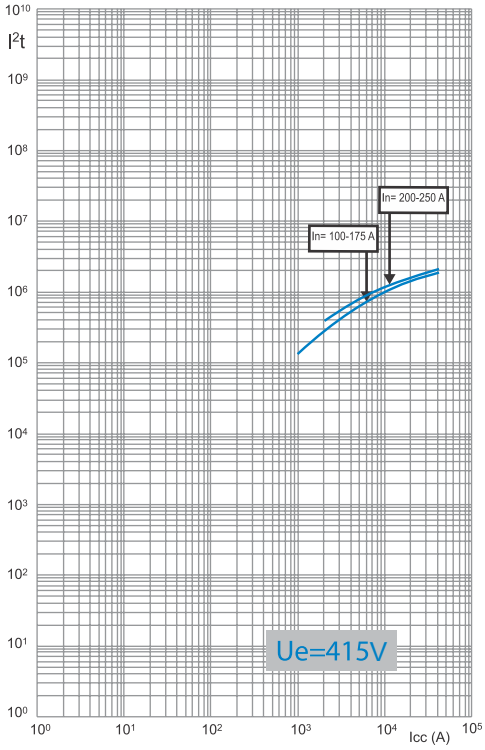
Limited impact the value of a short current circuit (the actual maximum value of) depending on the current values of expected short-circuit current

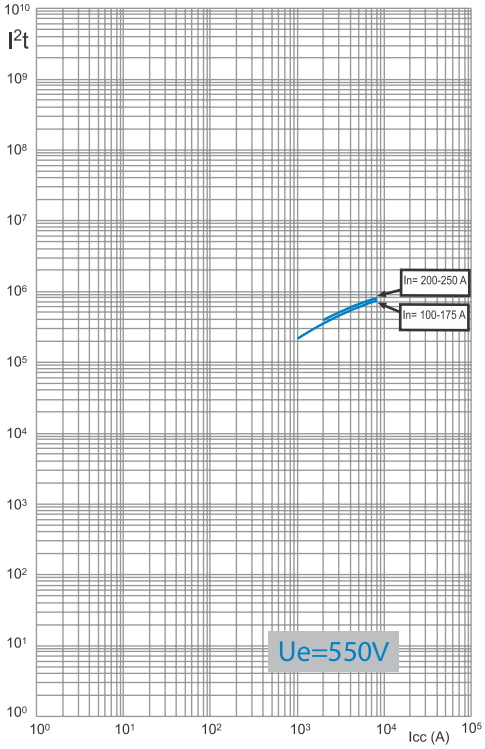
Technical Characteristics - MCCB

Limitations of energy curves

Frame 2 - In (160A - 250A)







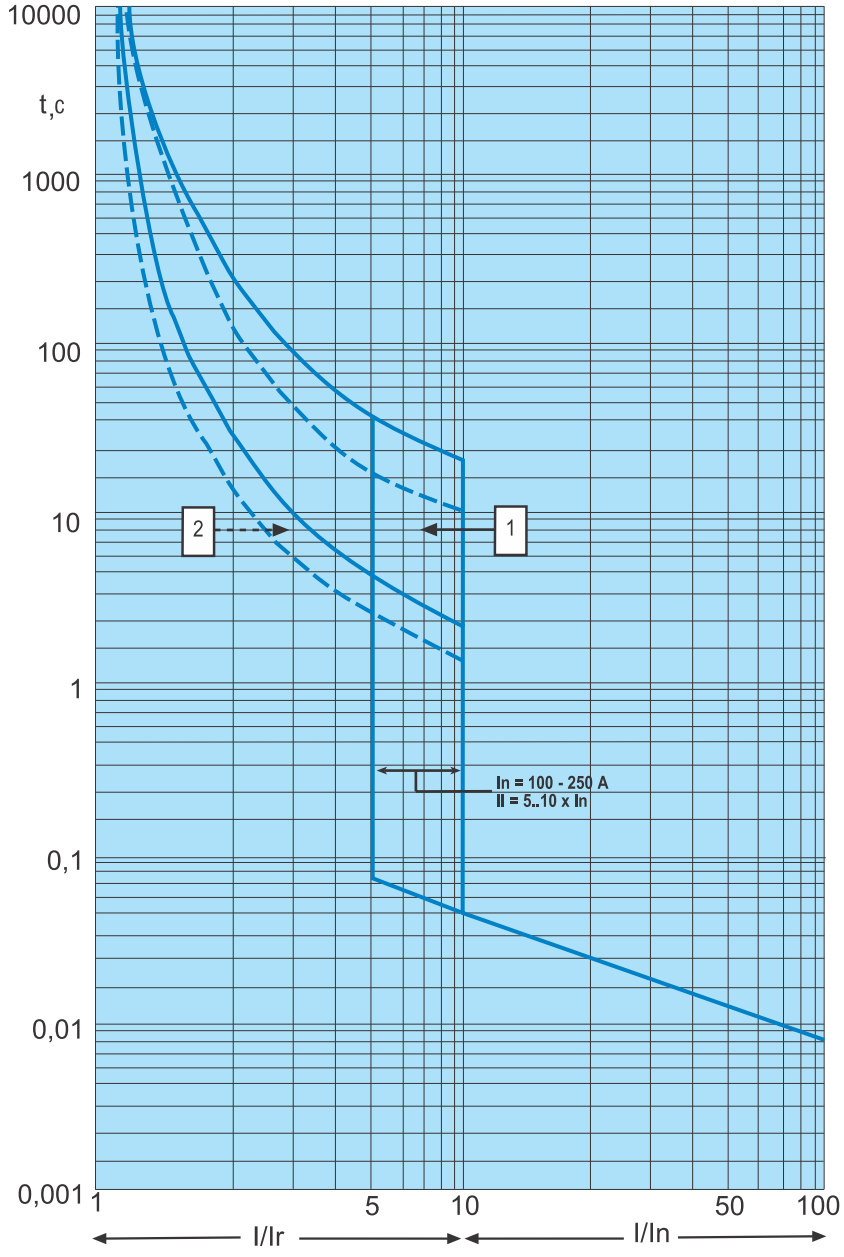
2c

Specific heat (A2s) , ie energy,
released during a short circuit in the conduction
arrestor 1-ohm , depending
from the rms value of the prospective current
short circuit

Technical Characteristics - MCCB

Time current characteristics

Frame 3 - In (16A to 250A)



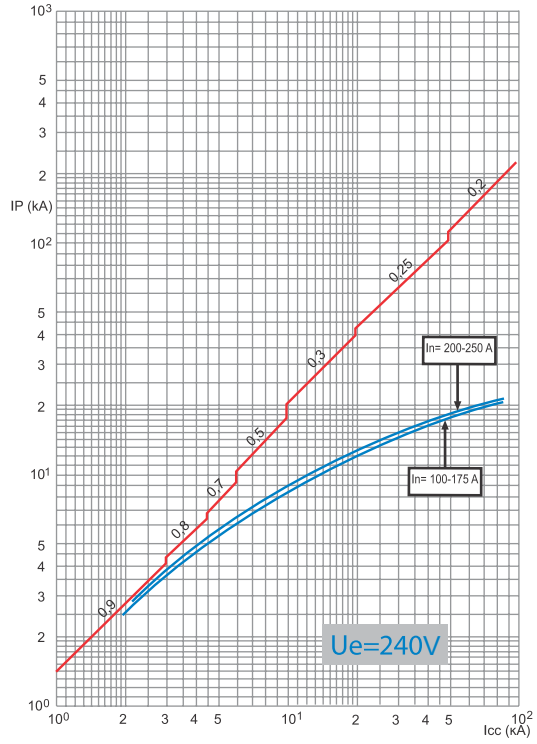
I - load current ;
Ir - the maximum value of the current setpoint thermal release . Rated current breaker depends on the bench current heat release ;
1 - working area of the "hot" state TE Pilaf release (in working condition) ;
2 - area of work from the "cold" state thermal release

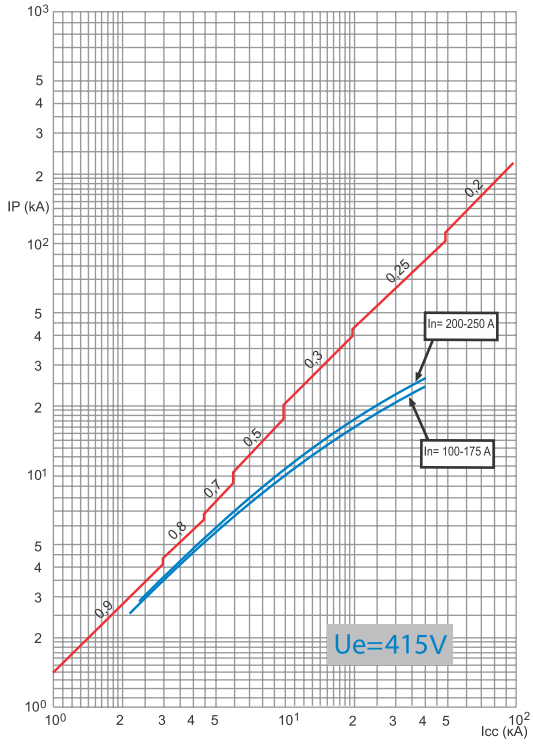
The multiplicity of the load current to the rated current of the circuit breaker

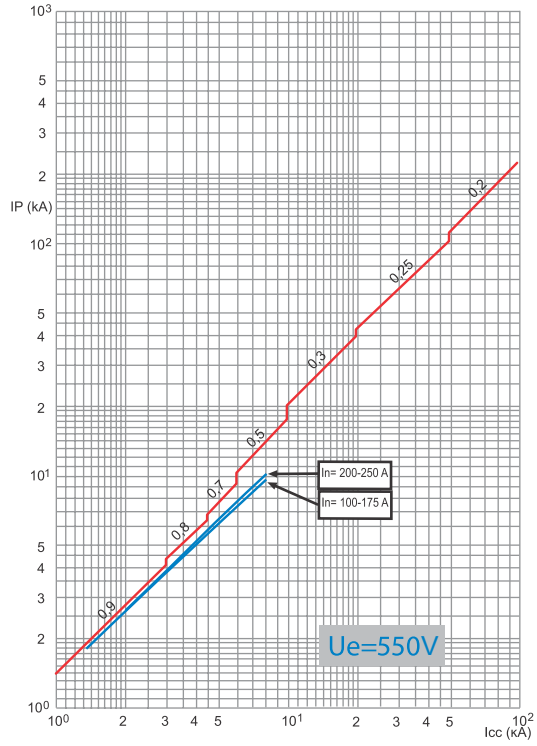
Technical Characteristics - MCCB

Data limitations of current

Frame 3 - In (16A to 250A)





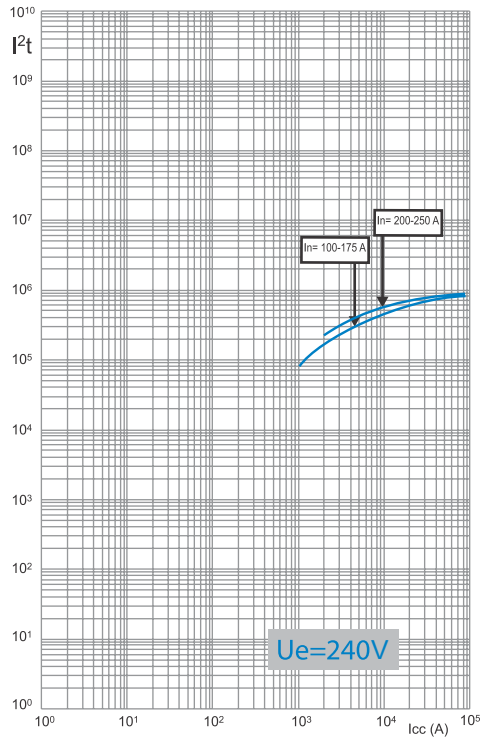


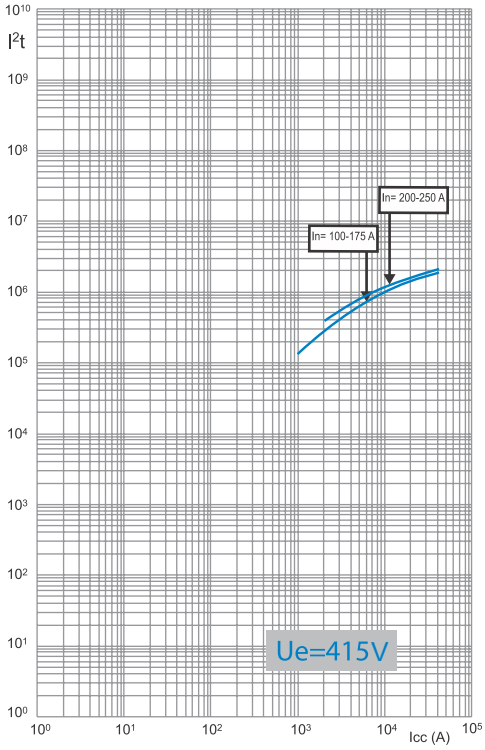
Limited impact the value of a short current circuit (the actual maximum value of) depending on the current values of expected short-circuit current

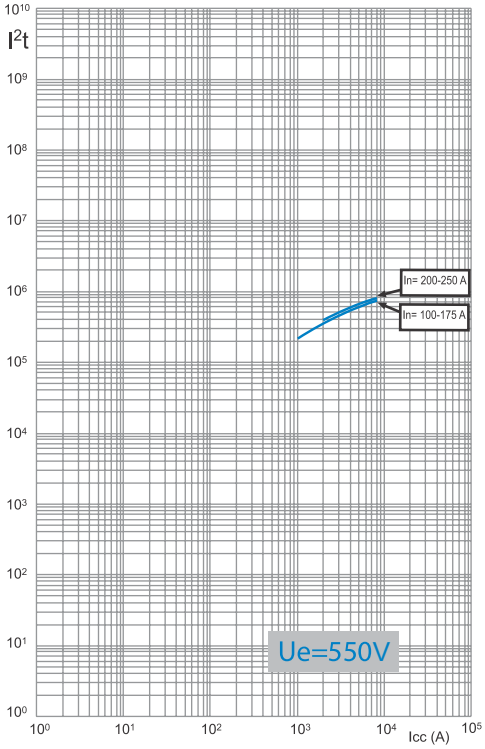
Technical Characteristics - MCCB

Limitations of energy curves

Frame 3 - In (16A to 250A)







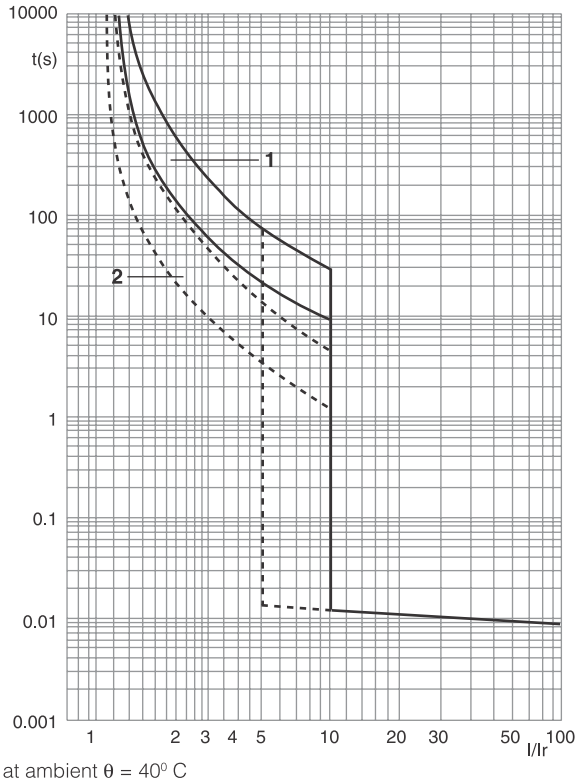
2c

Specific heat (A2s) , ie energy,
released during a short circuit in the conduction
arrestor 1-ohm , depending
from the rms value of the prospective current
short circuit

Technical Characteristics - MCCB

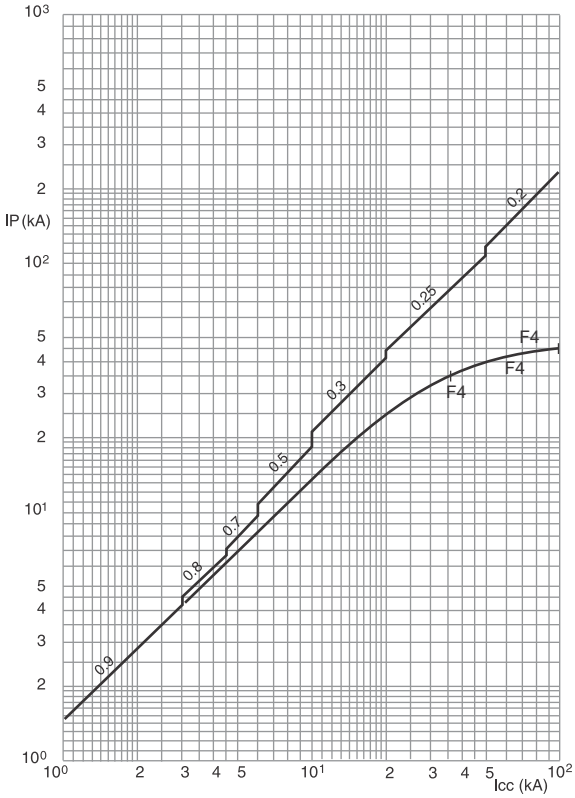
Frame 4 - In (315A - 630A)

Performance data for Frame F4



at ambient θ = 40° C
I = actual current
Ir = max. adjustment current of thermal release
1 = thermal release zone when cold
2 = thermal release zone when hot (in steady state)

Current limitation curves

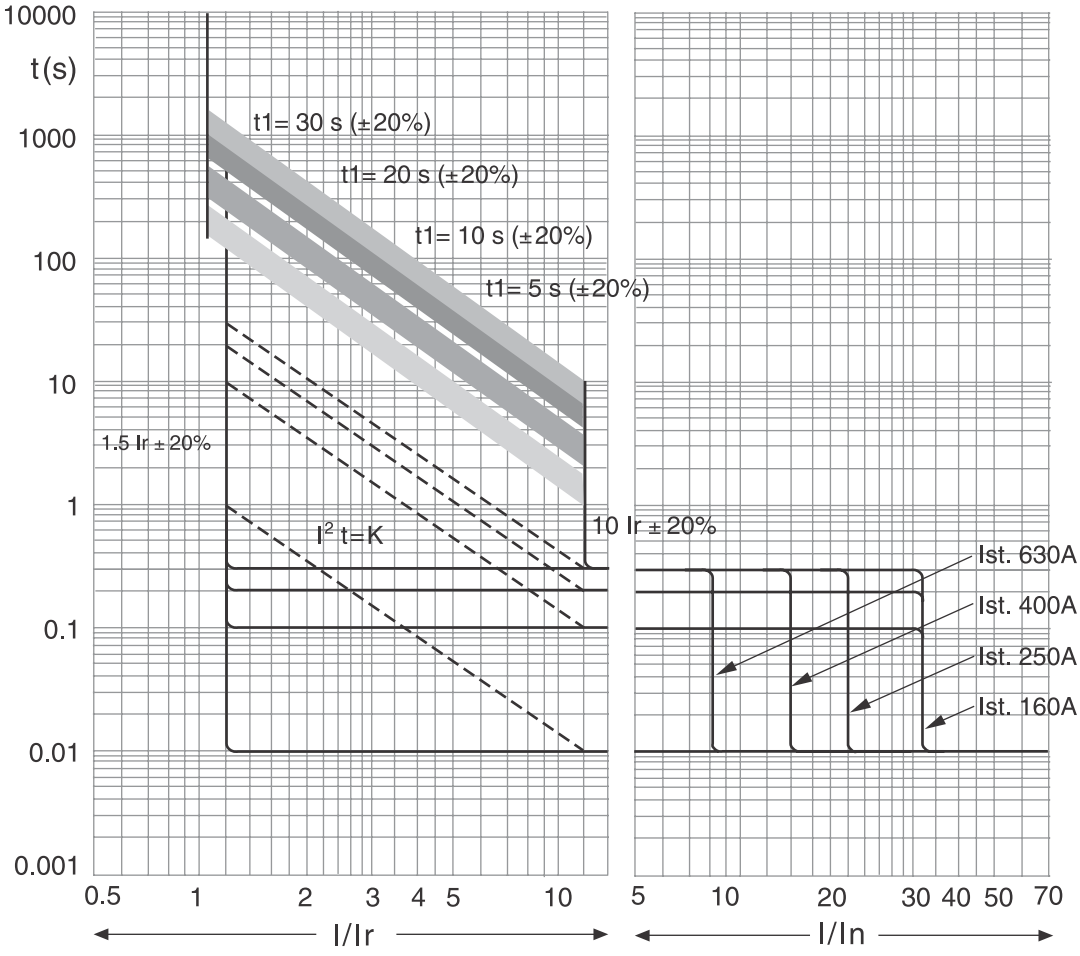


Icc = prospective short-circuit symmetrical current (rms value in kA)
IP = maximum peak value (in kA)

Technical Characteristics - MCCB

Frame 4 - In (315A - 630A)

Performance data for Frame F4 (S_2 - Sg)

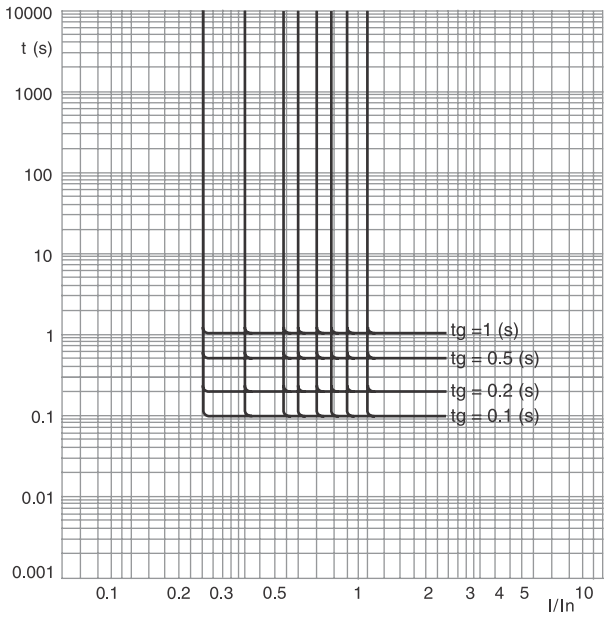


in = nominal current
I = actual current
Ir = max. adjustment current of thermal release

Technical Characteristics - MCCB

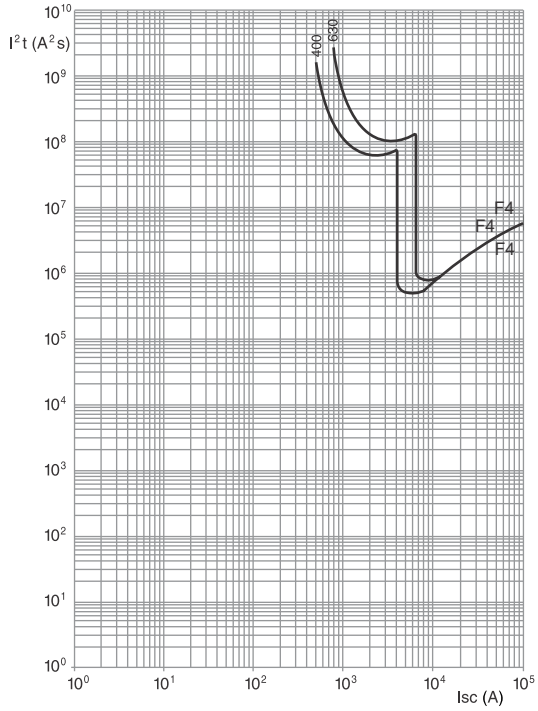
Frame 4 - In (315A - 630A)

Performance data (earth fault) Sg



I = actual current / In = nominal current

Thermal stress limitation curves

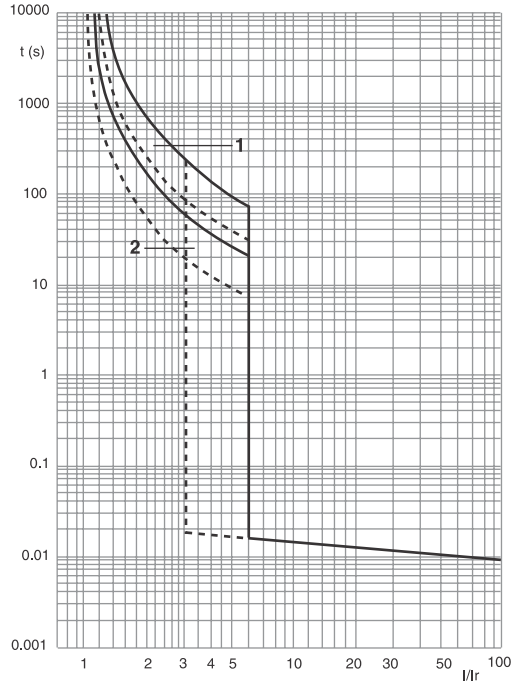


Isc = prospective short-circuit symmetrical current (rms value in A)
I^2t = limited thermal stress (in A^2s)

Technical Characteristics - MCCB

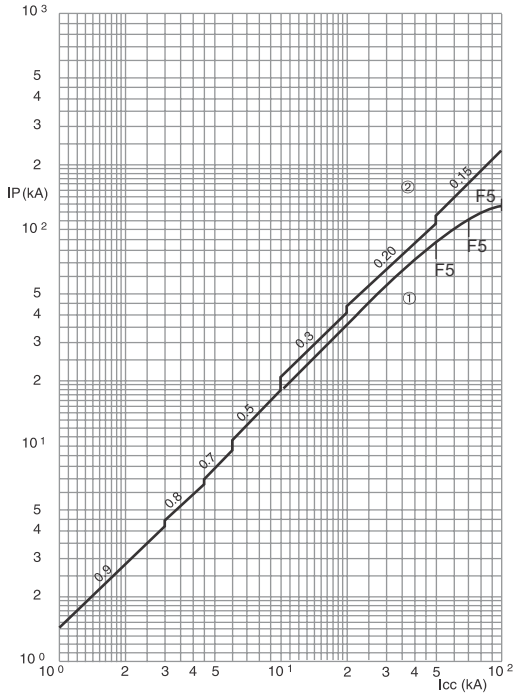
Frame 5 - In (800A - 1250A)

Performance data for Frame F5



at ambient θ = 40° C
I = actual current / Ir = max. adjustment current of thermal release
1 = thermal release zone when cold
2 = thermal release zone when hot (in steady state)

Current limitation curves

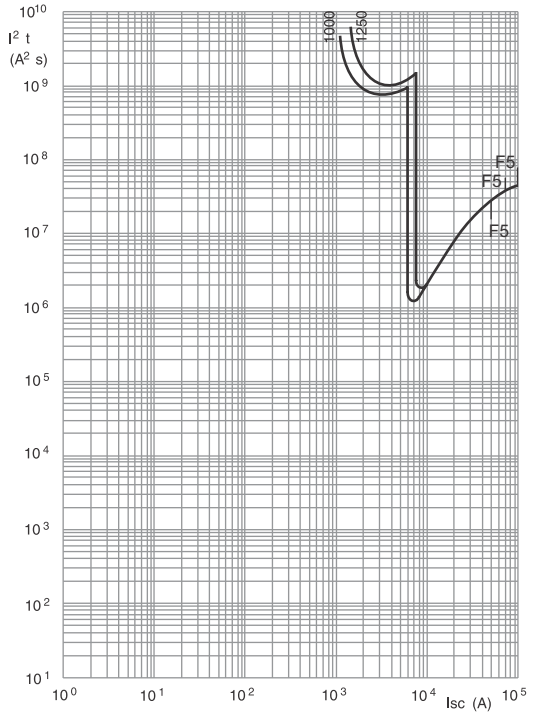


at ambient θ = 40° C
I = actual current
Ir = max. adjustment current of thermal release
1 = thermal release zone when cold
2 = thermal release zone when hot (in steady state)

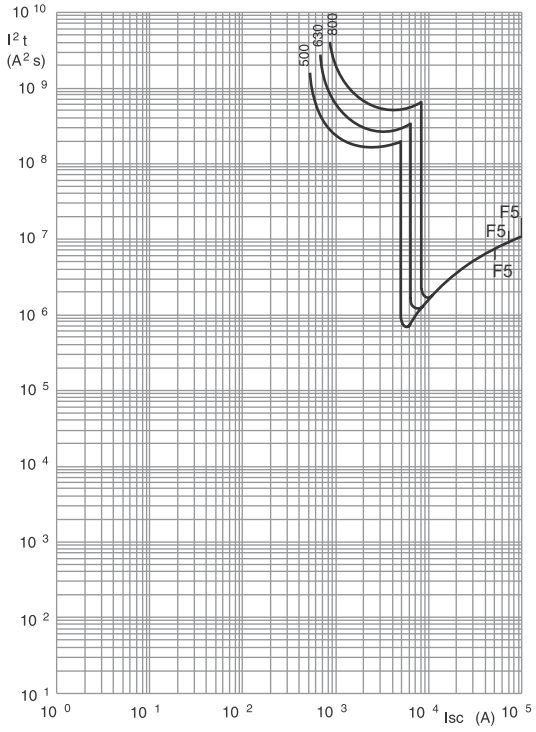
Technical Characteristics - MCCB

Frame 5 - In (800A - 1250A)

Thermal stress limitation curves



Icc = prospective short-circuit symmetrical current (rms value in A)
I^2t = limited thermal stress (in A^2s)



Technical Table

Devices	Optium 1.0 F1									Optium 1.0 F2		
Mounting	On plate											
Breaking capacity												
380/415V	16kA		25kA		25kA					16kA	25kA	36kA
220/240V												
Breaking capacity %Icu	50%		50%		50%					50%	50%	50%
Characteristics of use												
Nominal frequency	50Hz											
Maximum rated operating voltage	Upto 690 V											
Category of use	A											
Thermal magnetic adjustment												
Thermal	FIXED											
Magnetic	FIXED											
Electronic protection adjustment	—											
Maximum cable cross-section												
Rigid cable	2.5 to 16 mm^2				10 to 50 mm^2				35 to 50 mm^2	35 to 150 mm^2		
Flexible cable	2.5 to 10 mm^2				10 to 50 mm^2				35 to 50 mm^2	35 to 120 mm^2		
Copper bar and lug width	17mm				17mm				17mm	25mm		
Tightening torque	3 Nm				6 Nm				6 Nm	13 Nm		
Nominal current at 40 degree												
In (A)	16	25	32	40	50	63	80	100	125	160	200	250
Phase	16	25	32	40	50	63	80	100	125	160	200	250
N	16	25	32	40	50	63	80	100	125	160	200	250
Magnetic threshold	Fixed											
In (A)	16	25	32	40	50	63	80	100	125	160	200	250
Phase	400	400	400	400	500	630	800	1000	1250	1600	2000	2500
N	400	400	400	400	500	630	800	1000	1250	1600	2000	2500
Endurance												
Electrical	8000									8000		
Mechanical	25000									25000		

Technical Table

Devices	Optium 1.0 F3										Optium 1.0 F4			
Mounting	On plate													
Breaking capacity														
380/415V	50kA										36kA		50kA	
220/240V														
Breaking capacity %Icu	50%										50%		50%	
Characteristics of use														
Nominal frequency	50Hz													
Maximum rated operating voltage	Upto 690 V													
Category of use	A													
Thermal magnetic adjustment														
Thermal	FIXED													
Magnetic	FIXED													
Electronic protection adjustment	—													
Maximum cable cross-section														
Rigid cable	2.5 to 150 mm^2										300 mm^2 or 2 x 240 mm^2			
Flexible cable	2.5 to 120 mm^2										240 mm^2 or 2 x 185 mm^2			
Copper bar and lug width											25 mm			
Tightening torque	7 Nm10 Nm										15 Nm			
Nominal current at 40 degree														
In (A)	16	20	25	32	40	50	63	80	100	125	315 to 630 A			
Phase	400	400	400	400	400	500	630	800	1000	1250	320	400	500	630
N	400	400	400	400	400	500	630	800	1000	1250	320	400	500	630
Magnetic threshold	Fixed													
In (A)	16	20	25	32	40	50	63	80	100	125	320	400	500	630
Phase	400	400	400	400	400	500	630	800	1000	1250	320	400	500	630
N	400	400	400	400	400	500	630	800	1000	1250	320	400	500	630
Endurance														
Electrical	8000										8000			
Mechanical	25000										25000			

Technical Table

Devices	Optium 1.0 F5	Optium 2.0 F1		
Mounting	On plate			
Breaking capacity				
380/415V	50kA	16kA	25kA	
220/240V				
Breaking capacity %Icu	50%	100%	100%	
Characteristics of use				
Nominal frequency	50Hz			
Maximum rated operating voltage	Upto 690 V			
Category of use	A			
Thermal magnetic adjustment				
Thermal	FIXED	0.8 to 1 In		
Magnetic	FIXED	5 to 10 In		
Electronic protection adjustment	—			
Maximum cable cross-section				
Rigid cable	2 or 4 x 240 mm^2	2.5 to 16 mm^2	10 to 50 mm^2	35 to 50 mm^2
Flexible cable	2 or 4 x 185 mm^2	2.5 to 10 mm^2	10 to 35 mm^2	35 to 50 mm^2
Copper bar and lug width	50 mm	17mm	17 mm	17 mm
Tightening torque	20 Nm	3 Nm	6 Nm	6 Nm

Nominal current at 40 degree												
In (A)	800 A			16 to 125A								
Phase	500	630	800	16	25	32	40	50	63	80	100	125
N	500	630	800	16	25	32	40	50	63	80	100	125

Magnetic threshold	Fixed			Adjustable
In (A)	500	630	800	
Phase	500	630	800	
N	500	630	800	

Endurance		
Electrical	8000	8000
Mechanical	10000	25000

Technical Table

Devices	Optium 2.0 F2			Optium 2.0 F3		Optium 2.0 F4			Optium 2.0 F5		
Mounting	On plate										
Breaking capacity											
380/415V	16kA	25kA		36kA	50kA	25kA	36kA	50kA	36kA	50kA	
220/240V											
Breaking capacity %Icu	100%	100%		100%	100%	100%	100%	100%	100%	100%	
Characteristics of use											
Nominal frequency	50Hz										
Maximum rated operating voltage	Upto 690 V										
Category of use	A										
Thermal magnetic adjustment											
Thermal	0.8 to 1 In										
Magnetic	5 to 10 In										
Electronic protection adjustment	—										
Maximum cable cross-section											
Rigid cable	35 to 150 mm^2			2.5 to 150 mm^2		300 mm^2 or 2 x 240 mm^2			2 or 4 x 240 mm^2		
Flexible cable	35 to 120 mm^2			2.5 to 120 mm^2		240 mm^2 or 2 x 185 mm^2			2 or 4 x 185 mm^2		
Copper bar and lug width	25 mm			25 mm		32 mm			50 mm		
Tightening torque	13 Nm			7 nm / 10 nm		15 Nm			20 Nm		
Nominal current at 40 degree											
In (A)	160 to 250 A			Refer same as		315 to 630 A			800 to 1250A		
Phase	160	200	250	Optium 1.0 F3		320	400	500	630	800	1000	1250
N	160	200	250			320	400	500	630	800	1000	1250
Magnetic threshold	Adjustable											
In (A)	160	200	250			320	400	500	630	800	1000	1250
Phase	200-400	315-630	500-1000			1600-3200	2000-4000	2500-5000	3150-6300	4000-8000	5000-10000	6250-12500
N	200-400	315-630	500-1000			1600-3200	2000-4000	2500-5000	3150-6300	4000-8000	5000-10000	6250-12500
Endurance												
Electrical	8000			8000		8000			4000		
Mechanical	25000			25000		25000			10000		

Technical Table

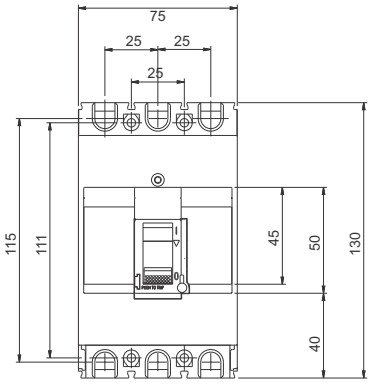
Devices	Optium 2.1 F3		Optium 2.1 F4		Optium 2.1 F5		Optium 2.2 F3		Optium 2.2 F4		Optium 2.2 F5	
Mounting	On plate											
Breaking capacity												
380/415V	36kA	50kA	36kA	50kA	36kA	50kA	36kA	50kA	36kA	50kA	36kA	50kA
220/240V												
Breaking capacity %Icu	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Characteristics of use												
Nominal frequency	50Hz											
Maximum rated operating voltage	Upto 690 V											
Category of use	A		A:In 630A-B:In 200 to 400A		B		A		A:In 630A-B:In 200 to 400A		B	
Thermal magnetic adjustment												
Thermal												
Magnetic												
Electronic protection adjustment	Ir : 0,4 to 1 In Isd : 1,5 to 10 Ir		Ir = 0.4 - 1 x In tr = 3-30 s Isd = 1.5 - 10 Ir tsd (I=K) = 0-500 ms tsd(I2t=K) = 0-500 ms		Ir = 0.4 - 1 x In tr = 3-30 s Isd = 1.5 - 10 Ir tsd (I=K) = 0-500 ms tsd(I2t=K) = 0-500 ms		Ir : 0,4 to 1 In Isd : 1,5 to 10 Ir		Ir = 0.4 - 1 x In tr = 3-30 s Isd = 1.5 - 10 Ir tsd (I=K) = 0-500 ms tsd(I2t=K) = 0-500 ms Ig = 0.2 - 1 x In tg = 0.1 - 1 s		Ir = 0.4 - 1 x In tr = 3-30 s Isd = 1.5 - 10 Ir tsd (I=K) = 0-500 ms tsd(I2t=K) = 0-500 ms Ig = 0.2 - 1 x In tg = 0.1 - 1 s"	
Maximum cable cross-section												
Rigid cable	2.5 to 150 mm^2		300 mm^2 or 2 x 240 mm^2		2 or 4 x 240 mm^2		2.5 to 150 mm^2		300 mm^2 or 2 x 240 mm^2		2 or 4 x 240 mm^2	
Flexible cable	2.5 to 120 mm^2		240 mm^2 or 2 x 185 mm^2		2 or 4 x 185 mm^2		2.5 to 120 mm^2		240 mm^2 or 2 x 185 mm^2		2 or 4 x 185 mm^2	
Copper bar and lug width	25 mm		32 mm		50 mm		25 mm		32 mm		50 mm	
Tightening torque	7Nm /10 Nm		15 Nm		20 Nm		7Nm /10 Nm		15 Nm		20 Nm	
Nominal current at 40 degree												
In (A)	Please refer same as Optium 1.0 F3		400 to 630 A		800 to 1250 A		Please refer same as Optium 1.0 F3		400 to 630 A		800 to 1250 A	
Phase			400 to 630 A		800 to 1250 A				400 to 630 A		800 to 1250 A	
N			0-50-100% of phase value		0-50-100% of phase value				0-50-100% of phase value		0-50-100% of phase value	
Magnetic threshold	Adjustable											
In (A)												
Phase												
N												
Endurance												
Electrical	8000		5000		4000		8000		5000		4000	
Mechanical	25000		20000		10000		25000		20000		10000	

Dimensional Drawings

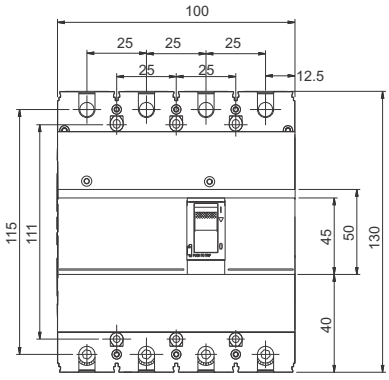
Optium F1

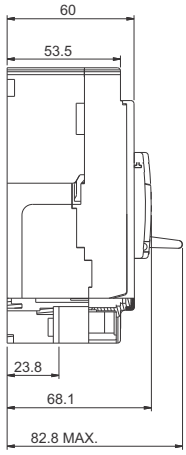
Overall and Mounting Dimensions

3P

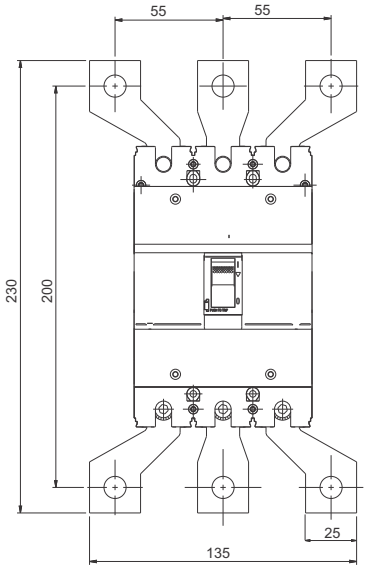


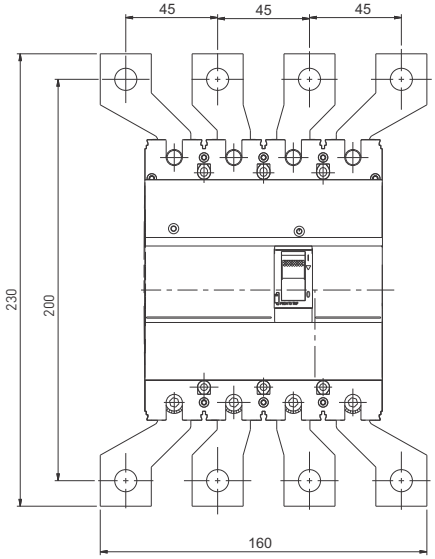
4P





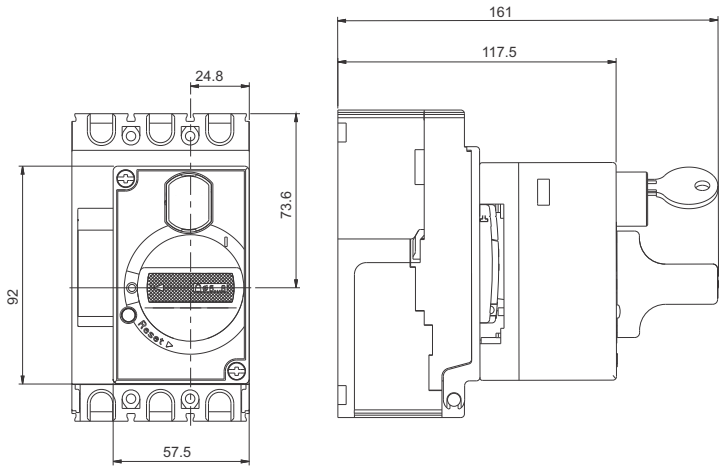
Dimensions with spreader Terminals



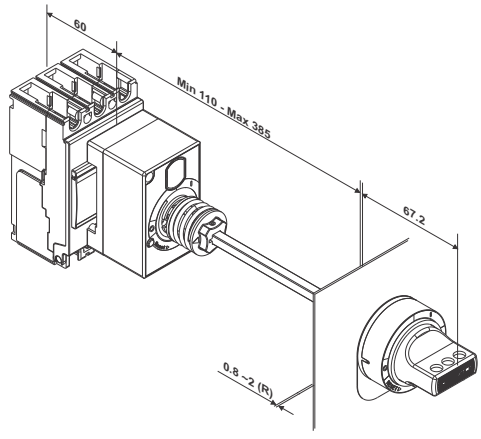


Rating	Spreader Thickness
125A	2.4mm

Dimensions with Rotary Handle-Direct



Dimensions with Rotary Handle-Vari-Depth

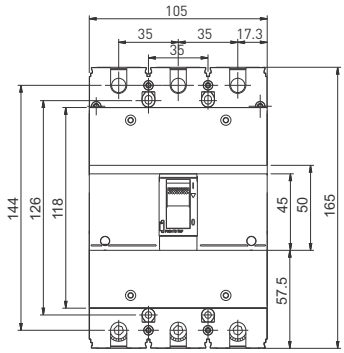


Dimensional Drawings

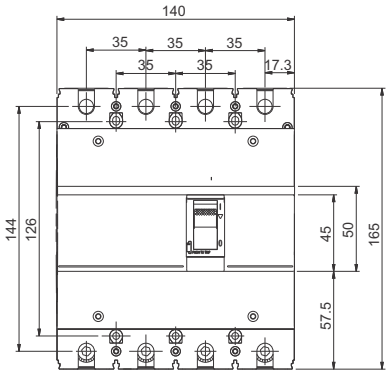
Optium F2

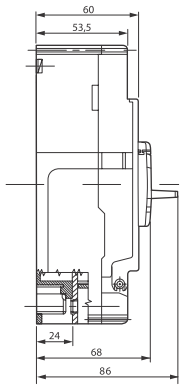
Overall and Mounting Dimensions

3P

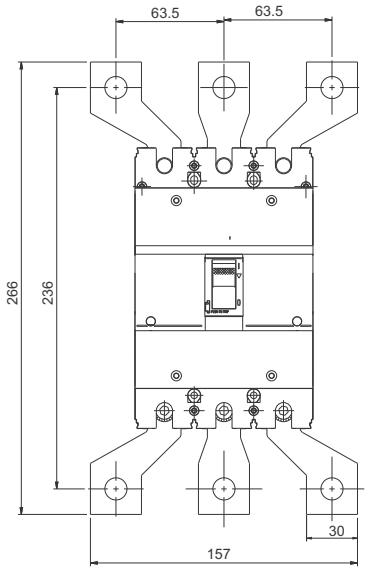


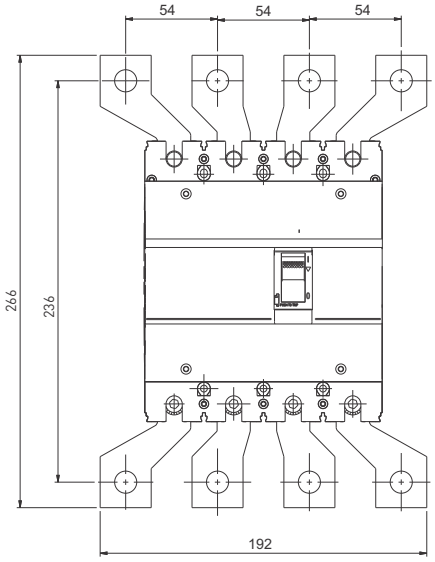
4P





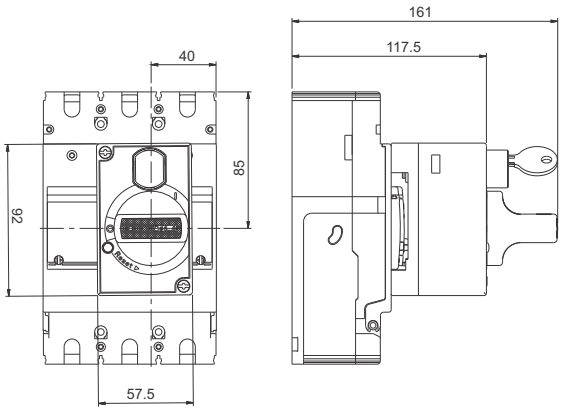
Dimensions with spreader Terminals



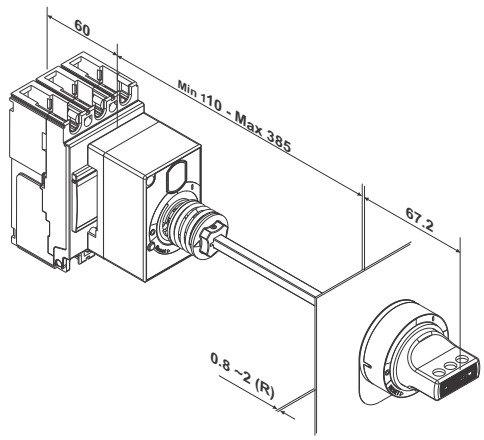


Rating	Spreader Thickness
250A	3.4mm

Dimensions with Rotary Handle-Direct



Dimensions with Rotary Handle-Vari-Depth

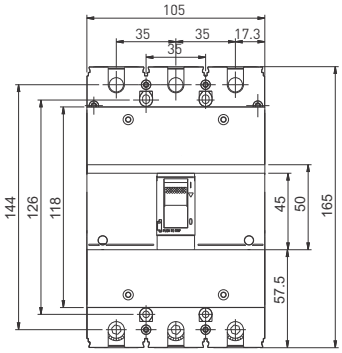


Dimensional Drawings

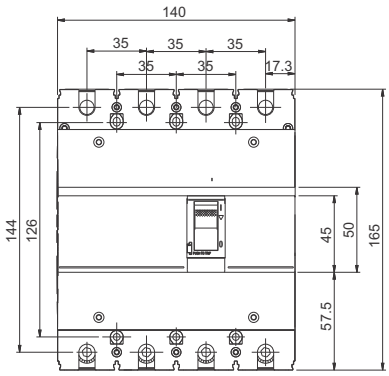
Optium F3

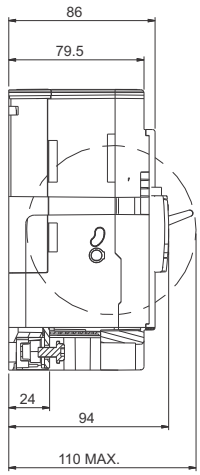
Overall and Mounting Dimensions

3P

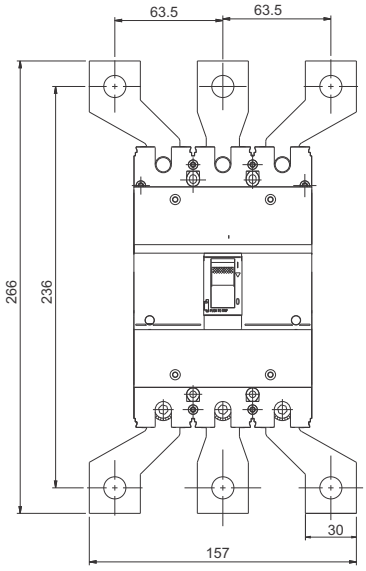


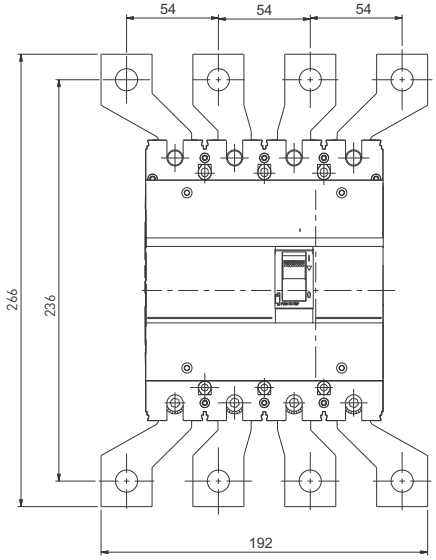
4P





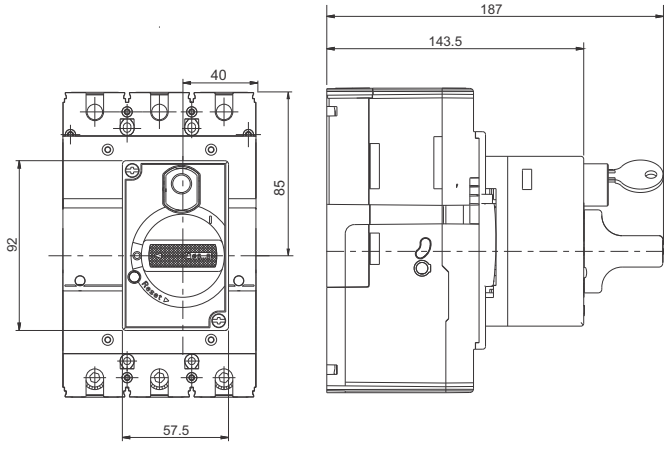
Dimensions with spreader Terminals



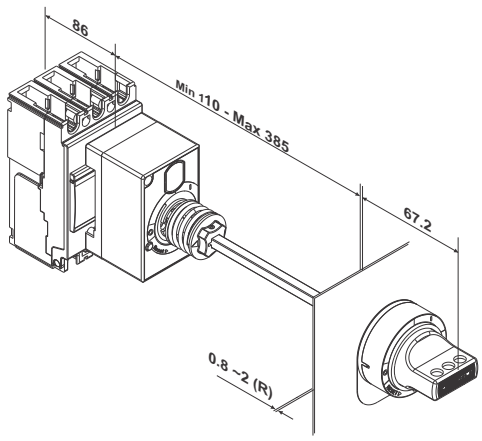


Rating	Spreader Thickness
250A	3.4mm

Dimensions with Rotary Handle-Direct



Dimensions with Rotary Handle-Vari-Depth

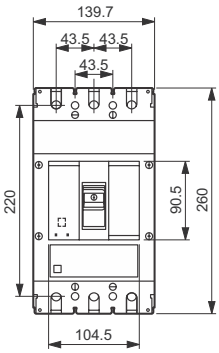


Dimensional Drawings

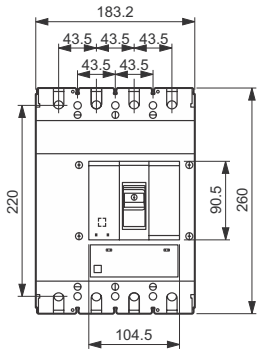
Optium F4

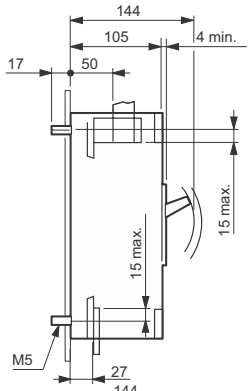
Overall and Mounting Dimensions

3P

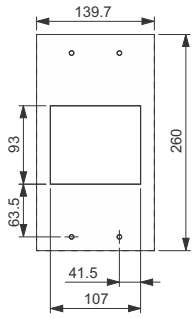


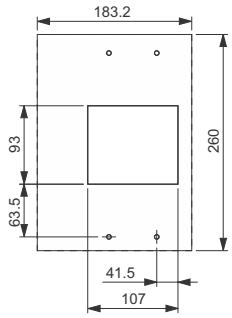
4P

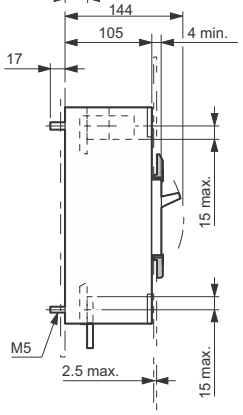




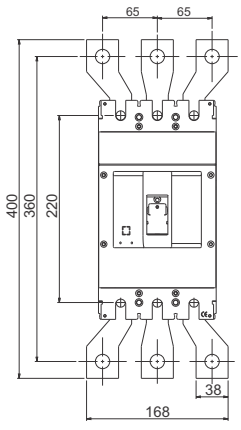
Door Cut

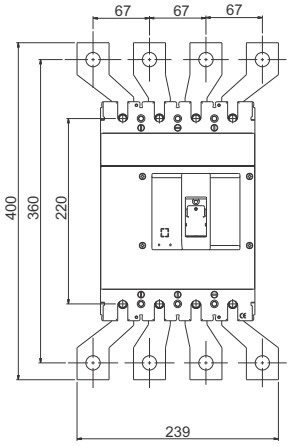






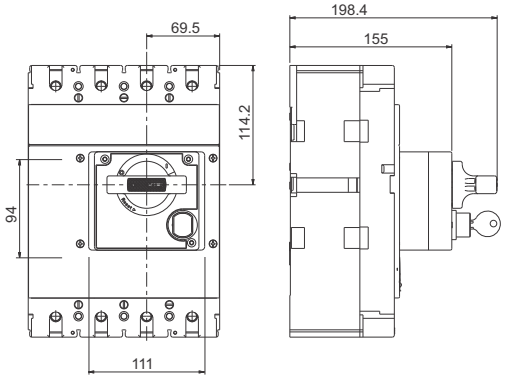
Dimensions with spreader Terminals



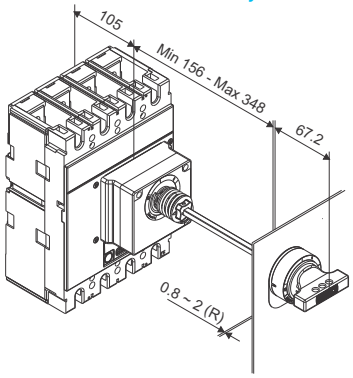


Rating	Spreader Thickness
630A	8mm

Dimensions with Rotary Handle-Direct



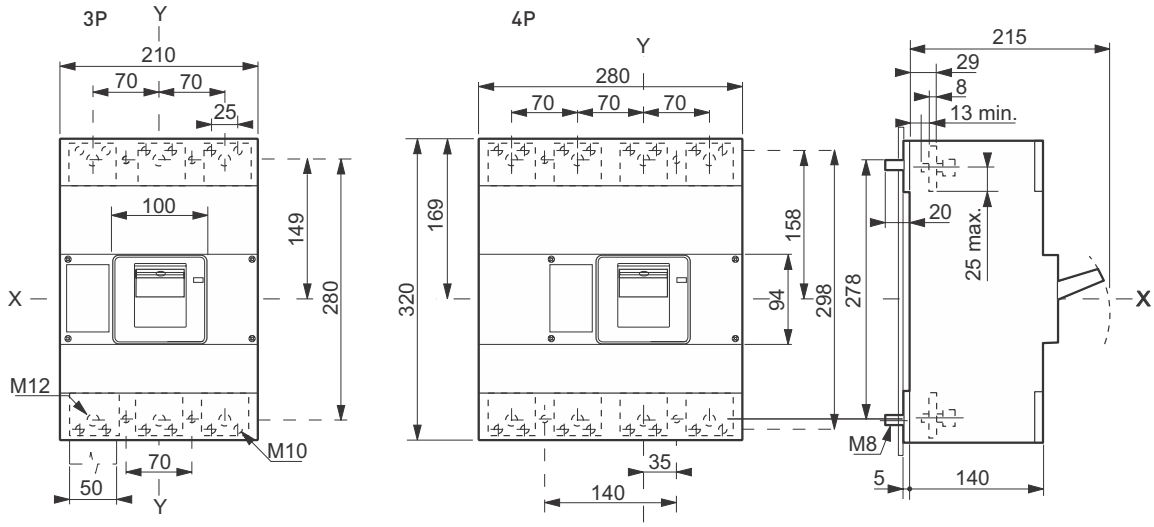
Dimensions with Rotary Handle-Vari-Depth



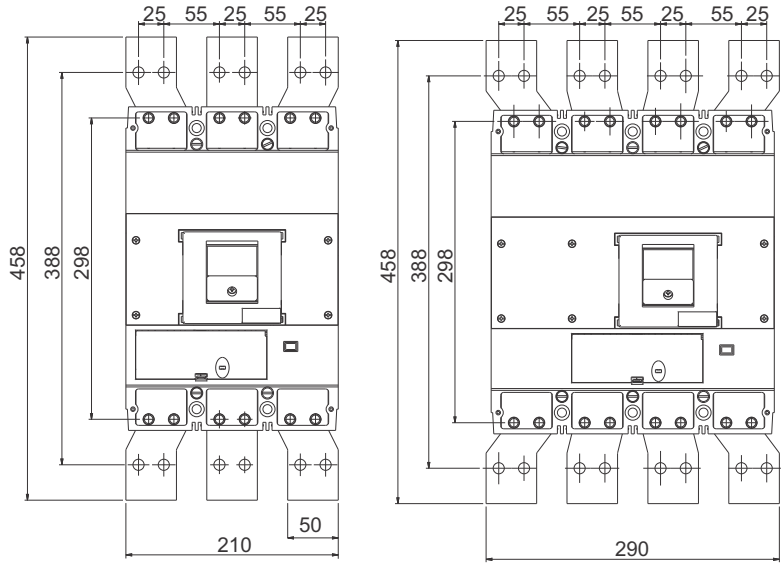
Dimensional Drawings

Optium F5

Overall and Mounting Dimensions

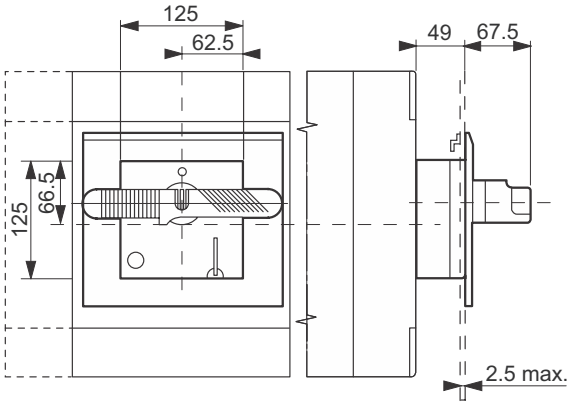


Dimensions with spreader Terminals



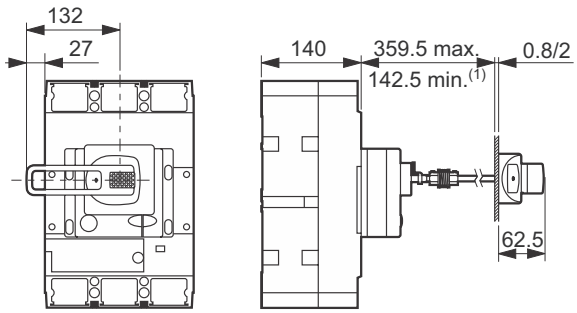
Rating	Spreader Thickness
800/10000A	10mm
1250A	12mm

Dimensions with Rotary Handle-Direct



Dimensions with Rotary Handle-Vari-Depth

Mounting with flexible seal



Optium 1.0 (Fixed TM Range)

- Ics =50% Icu as per IEC 60947-II
- Suitable for isolation
- Class II front face
- Fixed Overload & fixed short circuit setting

Frame	Breaking capacity	Rating	3P	4P
F1	16kA	16	830001	830015
F1	16kA	25	830002	830016
F1	16kA	32	830003	830017
F1	16kA	40	830004	830018
F1	16kA	50	830005	830019
F1	16kA	63	830006	830020
F1	16kA	80	830007	830021
F1	16kA	100	830008	830022
F1	16kA	125	830009	830023

Frame	Breaking capacity	Rating	3P	4P
F1	25kA	16	830031	830045
F1	25kA	25	830032	830046
F1	25kA	32	830033	830047
F1	25kA	40	830034	830048
F1	25kA	50	830035	830049
F1	25kA	63	830036	830050
F1	25kA	80	830037	830051
F1	25kA	100	830038	830052
F1	25kA	125	830039	830053

Frame	Breaking capacity	Rating	3P	4P
F1	36kA	16	830061	830075
F1	36kA	25	830062	830076
F1	36kA	32	830063	830077
F1	36kA	40	830064	830078
F1	36kA	50	830065	830079
F1	36kA	63	830066	830080
F1	36kA	80	830067	830081
F1	36kA	100	830068	830082
F1	36kA	125	830069	830083

Frame	Breaking capacity	Rating	3P	4P
F3	50kA	16	830125	830145
F3	50kA	25	830126	830146
F3	50kA	32	830127	830147
F3	50kA	40	830128	830148
F3	50kA	50	830129	830149
F3	50kA	63	830130	830150
F3	50kA	80	830131	830151
F3	50kA	100	830132	830152
F3	50kA	125	830133	830153

Frame	Breaking capacity	Rating	3P	4P
F2	16kA	160	830090	830095
F2	16kA	200	830091	830096
F2	16kA	250	830092	830097
F2	25kA	160	830100	830105
F2	25kA	200	830101	830106
F2	25kA	250	830102	830107
F2	36kA	160	830110	830115
F2	36kA	200	830111	830116
F2	36kA	250	830112	830117

Frame	Breaking capacity	Rating	3P	4P
F3	50kA	160	830134	830154
F3	50kA	200	830135	830155
F3	50kA	250	830136	830156

Frame	Breaking capacity	Rating	3P	4P
F4	36kA	315	830165	830175
F4	36kA	400	830166	830176
F4	36kA	500	830167	830177
F4	36kA	630	830168	830178

Frame	Breaking capacity	Rating	3P	4P
F4	50kA	315	830185	830195
F4	50kA	400	830186	830196
F4	50kA	500	830187	830197
F4	50kA	630	830188	830198

Frame	Breaking capacity	Rating	3P	4P
F5	50kA	800	830200	830201

Optium 2.0 (Adjustable TM Range)

- Ics =100% Icu as per IEC 60947-II
- Suitable for isolation
- Adjustable Short Circuit Setting Isd =(5 -10)xIn
- Class II front face
- Adjustable Overload Setting Ir =(0.8 to 1.0)xIn

Frame	Breaking capacity	Rating	3P	4P
F1	16kA	25	830222	830236
F1	16kA	32	830223	830237
F1	16kA	40	830224	830238
F1	16kA	50	830225	830239
F1	16kA	63	830226	830240
F1	16kA	80	830227	830241
F1	16kA	100	830228	830242
F1	16kA	125	830229	830243

Frame	Breaking capacity	Rating	3P	4P
F1	25kA	25	830252	830266
F1	25kA	32	830253	830267
F1	25kA	40	830254	830268
F1	25kA	50	830255	830269
F1	25kA	63	830256	830270
F1	25kA	80	830257	830271
F1	25kA	100	830258	830272
F1	25kA	125	830259	830273

Frame	Breaking capacity	Rating	3P	4P
F3	36kA	16	830305	830325
F3	36kA	25	830306	830326
F3	36kA	32	830307	830327
F3	36kA	40	830308	830328
F3	36kA	50	830309	830329
F3	36kA	63	830310	830330
F3	36kA	80	830311	830331
F3	36kA	100	830312	830332
F3	36kA	125	830313	830333

Frame	Breaking capacity	Rating	3P	4P
F3	50kA	16	830345	830365
F3	50kA	25	830346	830366
F3	50kA	32	830347	830367
F3	50kA	40	830348	830368
F3	50kA	50	830349	830369
F3	50kA	63	830350	830370
F3	50kA	80	830351	830371
F3	50kA	100	830352	830372
F3	50kA	125	830353	830373

Frame	Breaking capacity	Rating	3P	4P
F2	16kA	160	830280	830285
F2	16kA	200	830281	830286
F2	16kA	250	830282	830287
F2	25kA	160	830290	830295
F2	25kA	200	830291	830296
F2	25kA	250	830292	830297
F3	36kA	160	830314	830334
F3	36kA	200	830315	830335
F3	36kA	250	830316	830336

Frame	Breaking capacity	Rating	3P	4P
F3	50kA	160	830354	830374
F3	50kA	200	830355	830375
F3	50kA	250	830356	830376

Frame	Breaking capacity	Rating	3P	4P
F4	25kA	315	830385	830387
F4	25kA	400	830386	830388
F4	36kA	315	830390	830395
F4	36kA	400	830391	830396
F4	36kA	500	830392	830397
F4	36kA	630	830393	830398
F4	50kA	315	830400	830405
F4	50kA	400	830401	830406
F4	50kA	500	830402	830407
F4	50kA	630	830403	830408

Frame	Breaking capacity	Rating	3P	4P
F5	36kA	800	830410	830413
F5	36kA	1000	830411	830414
F5	36kA	1250	830412	830415
F5	50kA	800	830416	830419
F5	50kA	1000	830417	830420
F5	50kA	1250	830418	830421

Optium 2.1 (Electronic Range)

- Ics =100% Icu as per IEC 60947-II
- Suitable for isolation
- Adjustable Overload Setting Ir = 0.4 - 1 x In
- Class II front face
- Transparent cover for trip unit as standard
- Adjustable Short circuit Curent Setting Isd = 1.5 – 10 x Ir

Frame	Breaking capacity	Rating	3P	4P
F3	36kA	40	830430	830440
F3	36kA	100	830431	830441
F3	36kA	160	830432	830442
F3	36kA	250	830433	830443
F3	50kA	40	830450	830460
F3	50kA	100	830451	830461
F3	50kA	160	830452	830462
F3	50kA	250	830453	830463

Optium 2.1 (Electronic Range)

- Ics =100% Icu as per IEC 60947-II
- Suitable for isolation
- Adjustable Neutral pole protection –N,N/2 & Off for 4 pole MCCB
- Adjustable Overload Setting Ir = 0.4 - 1 x In ; Tr = 3-30 sec
- Class II front face
- Transparent cover for trip unit as standard
- Innovative front indication LED's(Ready, Overload pre-alarm & Overload)
- Adjustable Short circuit Curent Setting Isd = 1.5 - 10 Ir ; Tsd (I=K) = 0-500 ms; Tsd (I2t=K) = 0-500 ms

Frame	Breaking capacity	Rating	3P	4P
F4	36kA	400	830510	830512
F4	36kA	630	830511	830513
F4	50kA	400	830514	830516
F4	50kA	630	830515	830517

Frame	Breaking capacity	Rating	3P	4P
F5	36kA	800	830540	830542
F5	36kA	1250	830541	830543
F5	50kA	800	830544	830546
F5	50kA	1250	830545	830547

Optium 2.2 (Electronic Range)

- Ics =100% Icu as per IEC 60947-II
- Suitable for isolation
- Adjustable Overload Setting Ir = 0.4 - 1 x In
- Ground fault Setting:- Ig = 0.2 - 1 x In
- Class II front face
- Transparent cover for trip unit as standard
- Adjustable Short circuit Curent Setting Isd = 1.5 – 10 x Ir

Frame	Breaking capacity	Rating	3P	4P
F3	36kA	40	830470	830480
F3	36kA	100	830471	830481
F3	36kA	160	830472	830482
F3	36kA	250	830473	830483
F3	50kA	40	830490	830500
F3	50kA	100	830491	830501
F3	50kA	160	830492	830502
F3	50kA	250	830493	830503

Optium 2.2

- Ics =100% Icu as per IEC 60947-II
- Suitable for isolation
- Adjustable Neutral pole protection –N,N/2 & Off for 4 pole MCCB
- Adjustable Overload Setting Ir = 0.4 - 1 x In ; Tr = 3-30 sec
- Ground fault Setting:- Ig = 0.2 - 1 x In ; Tg = 0.1 - 1 s
- Class II front face
- Transparent cover for trip unit as standard
- Innovative front indication LED's(Ready, Overload pre-alarm & Overload)
- Adjustable Short circuit Curent Setting Isd = 1.5 - 10 Ir ; Tsd (I=K) = 0-500 ms; Tsd (I2t=K) = 0-500 ms

Frame	Breaking capacity	Rating	3P	4P
F4	36kA	400	830520	830522
F4	36kA	630	830521	830523
F4	50kA	400	830524	830526
F4	50kA	630	830525	830527

Frame	Breaking capacity	Rating	3P	4P
F5	36kA	800	830550	830552
F5	36kA	1250	830551	830553
F5	50kA	800	830554	830556
F5	50kA	1250	830555	830557

Optium Accessories

Product	Frame	Cat Ref.
Auxiliary Contact	F1 F2 F3	830691
Auxiliary Contact	F4-F5	830693
Alarm Contact	F1 F2 F3	830692
Alarm Contact	F4-F5	830693
Auxiliary Contact /Alarm Contact	F1 F2 F3	830694

Product	Frame	Cat Ref.
"Shunt trip 24 V AC/DC"	F1 F2 F3	830602
"Shunt trip 110 V AC/DC"	F1 F2 F3	830603
"Shunt trip 230 V AC/DC"	F1 F2 F3	830604
"Shunt trip 415 V AC/DC"	F1 F2 F3	830605
"Shunt trip 24 V AC/DC"	F4 F5	830642
"Shunt trip 110 V AC/DC"	F4 F5	830643
"Shunt trip 230 V AC/DC"	F4 F5	830644
"Shunt trip 415 V AC/DC"	F4 F5	830645

Product	Frame	Cat Ref.
"Undervoltage 24 V DC"	F1 F2 F3	830606
"Undervoltage 110V AC"	F1 F2 F3	830607
"Undervoltage 230V AC"	F1 F2 F3	830608
"Undervoltage 415V AC"	F1 F2 F3	830609
"Undervoltage 24 V DC"	F4 F5	830646
"Undervoltage 110V AC"	F4 F5	830647
"Undervoltage 230V AC"	F4 F5	830648
"Undervoltage 415V AC"	F4 F5	830649

Optium Accessories

Product	Frame	Cat Ref.
Rotary Handle Direct	F1	830611
Rotary Handle vary-Depth	F1	830612
Rotary Handle Direct	F2 F3	830626
Rotary Handle vary-Depth	F2 F3	830627
Rotary Handle Direct	F4	830651
Rotary Handle vary-Depth	F4	830652
Rotary Handle Direct	F5	830671
Rotary Handle vary-Depth	F5	830672

Product	Frame	Cat Ref.
Ronis lock Direct RH	F1 F2 F3	830613
Ronis lock Vary-Depth RH	F1 F2 F3	830614
Ronis lock Vary-Depth RH	F4	830653
Ronis lock Vary-Depth RH	F5	830673

Product	Frame	Cat Ref.
Padlock Off position	F1 F2 F3	830615
Padlock Off position	F4	830654
Padlock Off position	F5	830674

Product	Frame	Cat Ref.
Phase insulators 3P	F1 F2	830616
Phase insulators 3P	F3	830628
Phase insulators 3P	F4	830655
Phase insulators 3P	F5	830675
Phase insulators 4P	F1 F2	830617
Phase insulators 4P	F3	830629
Phase insulators 4P	F4	830656
Phase insulators 4P	F5	830676

Optium Accessories

Product	Frame	Cat Ref.
Terminal cover 3P	F4	830657
Terminal cover 3P	F5	830677
Terminal cover 4P	F4	830658
Terminal cover 4P	F5	830678
Terminal shield 3P	F5	830679
Terminal shield 4P	F5	830680

Product	Frame	Cat Ref.
Spreaders 3P	F1	830618
Spreaders 4P	F1	830619
Spreaders 3P	F2 F3	830632
Spreaders 4P	F2 F3	830633
Spreaders 3P	F4	830659
Spreaders 4P	F4	830660
Spreaders 3P 800/1000A	F5	830681
Spreaders 4P 800/1000A	F5	830682
Spreaders 3P 1250A	F5	830685
Spreaders 4P 1250A	F5	830686

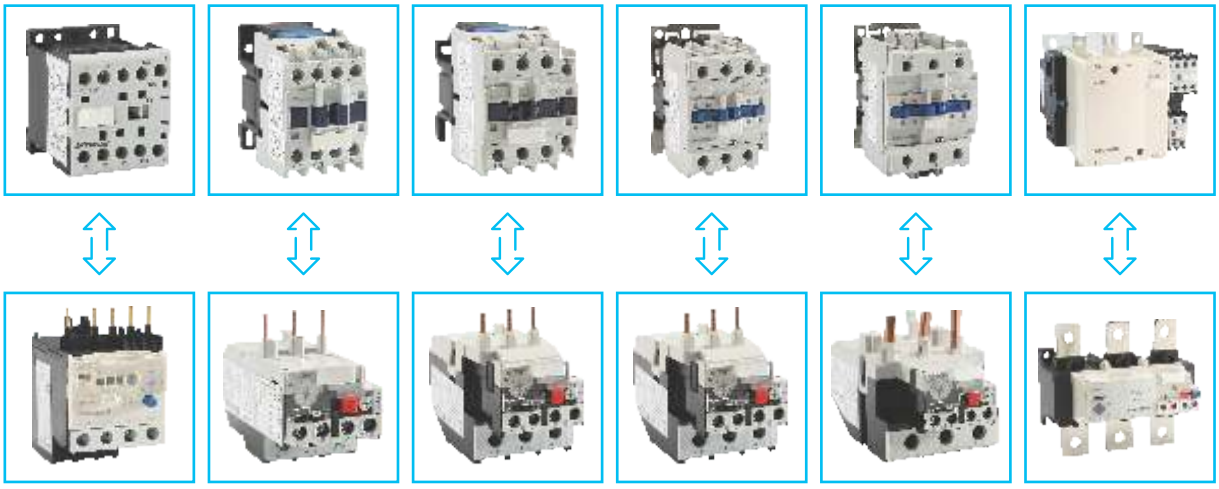
Product	Frame	Cat Ref.
Cages 3P upto 50A	F1	830620
Cages 4P upto 50A	F1	830621
Cages 3P 63 to 100A	F1	830622
Cages 4P 63 to 100A	F1	830623
Cages 3P 125A	F1	830624
Cages 4P 125A	F1	830625
Cages 3P	F2	830630
Cages 4P	F2	830631
Cages 3P	F3	830634
Cages 4P	F3	830635
Cages 3P	F4	830661
Cages 4P	F4	830662
Cages 3P	F5	830683
Cages 4P	F5	830684

Opticon

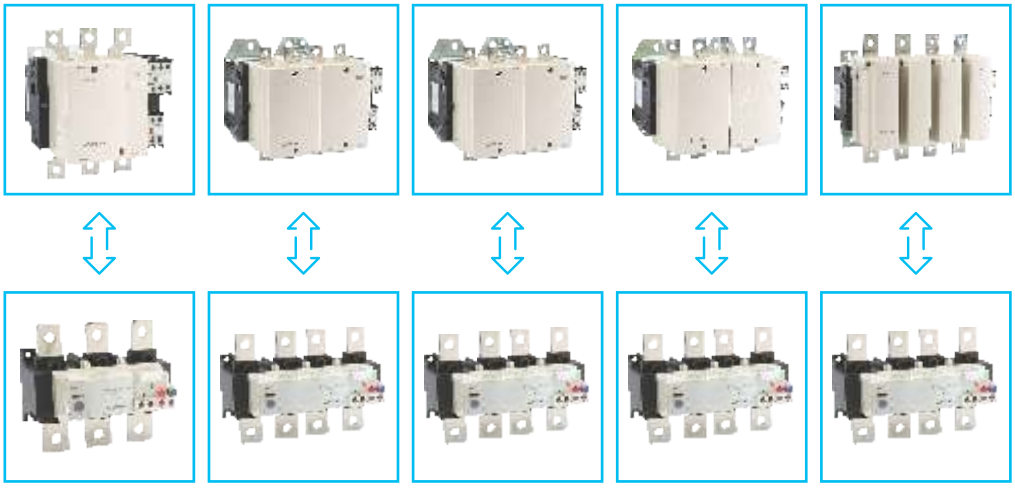
Opticon contactors are user friendly, highly reliable and provide safe switching.
Its modular design with wide range of add-on accessories meets all requirements for control and protection of motors across all sectors.

Contactors Range

OPTICON MINI	OPTICON 18	OPTICON 32	OPTICON 65	OPTICON 95	OPTICON 150
9	9	25	40	80	115
12	12	32	50	95	150
	18		65		



OPTICON 225	OPTICON 330	OPTICON 400	OPTICON 500	OPTICON 630
185	265	400	500	630
225	330			

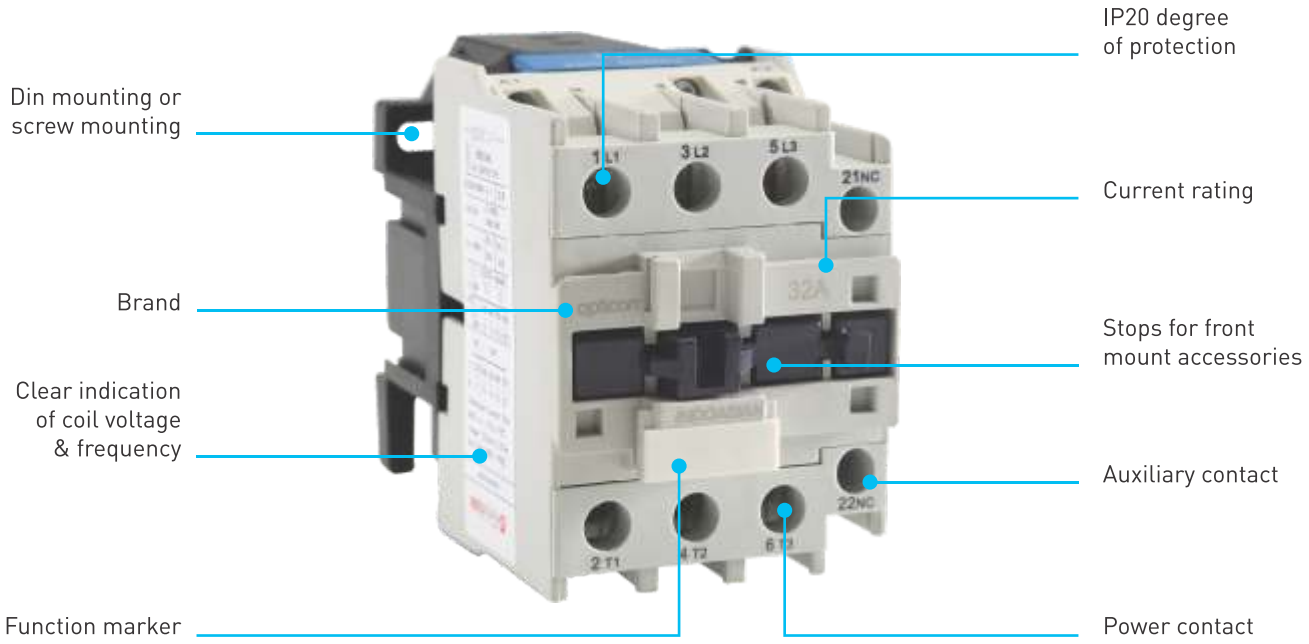


Power Contactor

Features

- Conforms to IEC 60947-4-1
- Complete range available from 9A to 630A
- Entire range is CE certified
- 3-pole & 4-pole contactors
- Utilisation category: AC1, AC3 & AC4
- Low coil consumption
- High mechanical and electrical life
- Complete range of auxiliaries & accessories
- Spares available for entire range

Power Contactor



Accessories

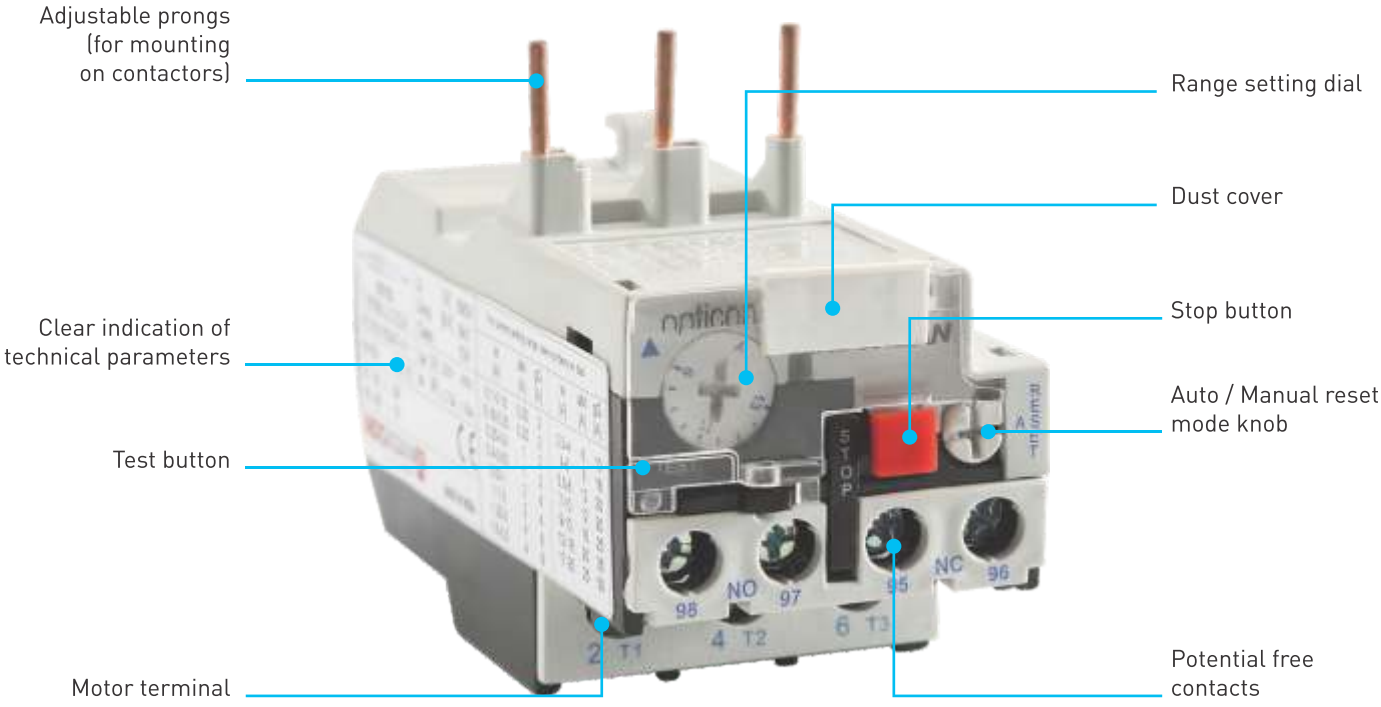
Coil

Add-on Block

Timer Block

Mechanical Interlock

Thermal Overload Relay



Features

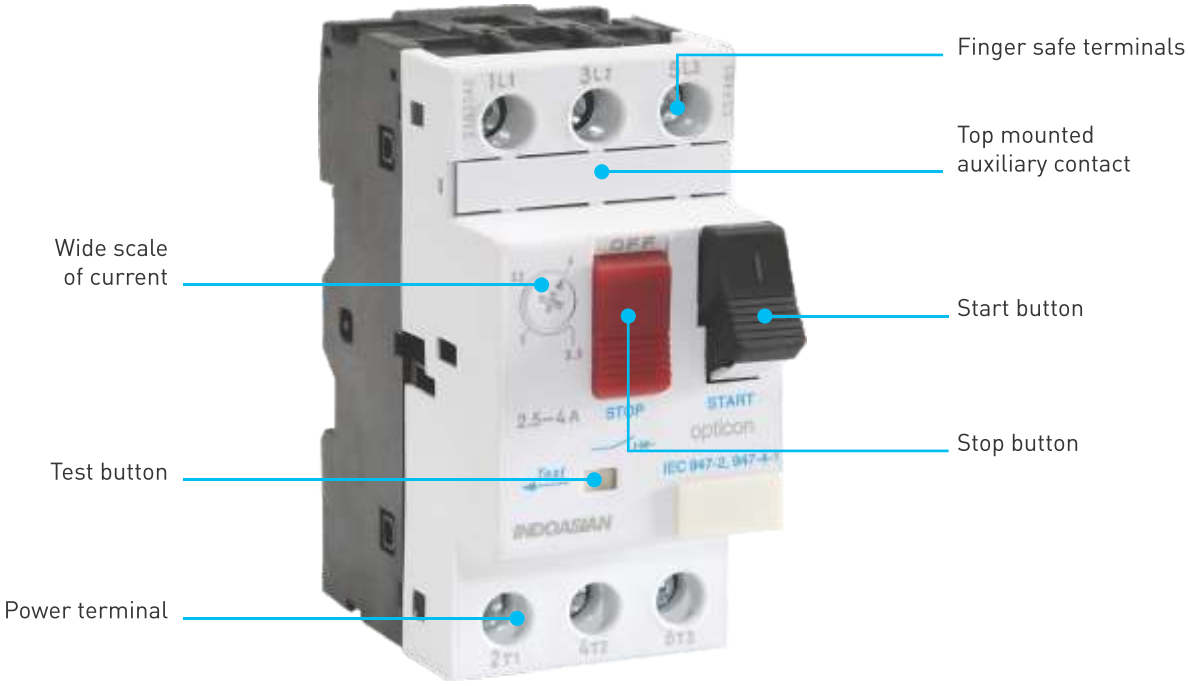
- Conforms to IEC 60947-4-1
- Tripping class 10A
- Rated operational voltage Ue - upto 690V
- Rated insulation voltage Ui - 690V
- Available in 3 frame sizes from 0.1 to 630A
- Ambient temperature compensated up to 55°C
- Built-in single phasing protection
- Manual and auto reset mode
- Front access to START and STOP/RESET buttons
- Direct and independent mounting

Capacitor Duty Contactors

Features

- Conforms to IEC 60947-4-1
- CE certified
- Range from 12kVAR to 50kVAR
- Utilisation category AC-6b
- Current limitation by the inbuilt damping resistors
- Finger safe terminals
- Compact dimensions
- Reduced watt loss during ON condition
- Enhanced equipment life

Motor Protection Circuit Breaker



Features

- Conforms to IEC 60947-4-1
- CE certified
- High breaking capacity upto 100kA
- Compact size and space saving
- Phase failure protection
- Current limiting short circuit protection isolution
- Wide range of accessories
- Available in open excecution and in plastic enclosures

Motor Protection Circuit Breaker (0.16A to 80A)

Upto 32A

Upto 32A

Upto 63A

Upto 80A

OptiMPCB-32S
0.16A ---100kA
14 to 25A--15kA
32A--35kA

OptiMPCB-32S
0.16A ---100kA
14 to 25A--15kA
32A--35kA

OptiMPCB-63S
40A to 63A --35kA

OptiMPCB-80S
80A --35kA

Mini Contactor

Technical Table

CONTACTOR TYPE	AC CONTACTOR		9A		12A	
STANDARD			IEC/EN 60947-4-1			
No. of Poles			3P, 4P			
No. of contacts		Power	3NO	3NO	4NO	2NO+2NC
		Auxiliary	1NO	1NC	-	-
Rated conventional Thermal Current (Ith)		A	20			
Rated operational voltage (Ue)		V	690			
Rated insulation voltage (Ui)		V	690			
Rated impulse withstand voltage (Uimp)		kV	6			
Rated frequency		Hz	50/60			
Rated operational current	AC3 (380V/400V)	A	9		12	
	AC4 (380V/400V)	A	3.5		5	
Rated operational power in AC-3 category	220/230/240V	kW	2.2		3	
	380/400V		4		5.5	
	660/690V		5		5.5	
Rated making capacity		A	110		114	
Rated breaking capacity	380V	A	100		100	
	690V	A	70		70	
Short circuit protection	gG fuse	A	20			
Short circuit withstand (Ir)		kA	1			
Electrical Life	AC3	(X10000)	120		120	
	AC4		2		2	
Mechanical life		in Millions	10			
Operating frequency	AC3 (Electrical)	Cycles/Hr	1200			
	AC4 (Electrical)	Cycles/Hr	300			
	Mechanical	Cycles/Hr	3600			

Thermal Overload Relay - Mini Contactor

Technical Data

- Standard — IEC/EN 60947-4-1
- Number of connecting pin — 5
- Rated operational voltage Ue (V) — up to 690
- Rated insulation voltage Ui (V) — 690
- Rated impulse withstand voltage Uimp (kV) — 6
- Rated current range In (A) — 0.11-0.16,0.16-0.23,0.23-0.36, 0.36-0.54,0.54-0.8,0.8-1.2,1.8-2.6, 2.6-3.7,3.7-5.5,5.5-8,8-11.5,10-14
- Signalling — Trip indicator
- Tightening torque(N·m) — 0.8
- Mounting — Directly under the contactor
- Aux contacts Rated Current
  - AC15 220V — 2.73A
  - AC15 380V — 1.58A
  - DC13 220V — 0.2A

Rated Current (A)	Reference codes
0.1-0.16	851201
0.16-0.25	851202
0.25-0.3	851203
0.3-0.54	851204
0.54-0.8	851205
0.8-1.2	851206
1.8-2.6	851208
2.6-3.7	851209
3.7-5.5	851210
5.5-8	851211
8-11.5	851212
9-13	851213

Accessories

Technical Data

- Number of auxiliary contact: — 2 , 4
- Mounting type: — Front
- Conventional heating current (A) — 10
- Rated operational voltage Ue (V) — Up to 690
- Rated insulation voltage Ui (V) — 690
- Conventional thermal current Ith (A) — 10
- Control Rating — AC-15: 360VA DC-13: 33W

No. of Contacts	Reference codes
2NO	851121
1NO+1NC	851122
2NC	851123
4NO	851124
3NO+1NC	851125
2NO+2NC	851126
1NO+3NC	851127
4NC	851128

Power Contactor (from 9A to 95A)

Technical Table

CONTACTOR TYPE	AC / DC	9A	12A	18A	25A	32A	40A	50A	65A	80A	95A
STANDARD		IEC/EN 60947-4-1									
No. of Poles		3, 4	3, 4	3	3, 4	3	3, 4	3, 4	3, 4	3, 4	3, 4
Rated conventional Thermal Current (Ith)	A	20	25	32	40	50	60	80	80	110	125
Rated operational voltage (Ue)	V	Up to 690									
Rated insulation voltage (Ui)	V	690									
Rated impulse withstand voltage (Uimp)	kV	8									
Rated frequency	Hz	50/60									
Rated operational current — 380V/400V — AC3	A	9	12	18	25	32	40	50	65	80	95
Rated operational current — 380V/400V — AC4	A	3.5	5	7.7	8.5	12	18.5	24	28	37	44
Rated operational current — 660V — AC3	A	6.6	8.9	12	18	21	34	39	42	49	55
Rated operational current — 660V — AC4	A	1.5	2	3.8	4.4	7.5	9	12	14	17.3	21.3
Rated operational current — 440V — AC1	A	20	25	32	40	50	60	80	80	110	125
Rated operational power in AC-3 category — 220/230/240V	kW	2.2	3	4	5.5	7.5	11	15	18.5	22	25
Rated operational power in AC-3 category — 380/400V	kW	4	5.5	7.5	11	15	18.5	22	30	37	45
Rated operational power in AC-3 category — 660/690V	kW	5.5	7.5	10	15	18.5	30	33	33		
Rated making capacity	A	10 X Ie for AC3 or 12 X Ie for AC4									
Rated breaking capacity	A	8 X Ie for AC3 or 10 X Ie for AC4									
Short circuit protection — gG fuse	A	20	25	35	40	63	80	100	125	160	160
Short circuit withstand (Ir)	kA	1	1	3	3	3	3	3	3	5	5
Electrical Life — AC3	(X 1000)	1000	1000	1000	1000	800	800	600	600	600	600
Electrical Life — AC4	(X 1000)	200	200	200	200	200	150	150	150	100	100
Mechanical life	(in Millions)	10	10	10	10	8	8	8	8	6	6
Operating Frequency — AC3	cycles/hr	1200	1200	1200	1200	600	600	600	600	600	600
Operating Frequency — AC4	cycles/hr	300	300	300	300	300	300	300	300	300	300
Operating Frequency — Mechanical	cycles/hr	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
Coil operating range — AC & DC — Pick-up	(85 % - 110 %) Us										
Coil operating range — AC & DC — Drop-out	(20 % - 75 %) Us										
Coil Consumption — AC — Startup	VA	70	70	70	100	100	245	245	245	245	245
Coil Consumption — AC — Holding	VA	8	8	8	10	10	26	26	26	26	26
Coil Consumption — AC — Power	W	1.8~2.8	1.8~2.8	1.8~2.8	3~4	3~4	6~10	6~10	6~10	6~10	6~10
Coil Consumption — DC — Power	W	9	9	11	11	11	20	20	20	20	20

Power Contactor (from 115A to 630A)

Technical Table

CONTACTOR TYPE		AC CONTACTOR	115A	150A	185A	225A	265A	330A	400A	500A	630A
STANDARD			IEC/EN60947-4-1								
No. of Poles			3, 4	3, 4	3, 4	3, 4	3	3	3, 4	3, 4	3, 4
Rated conventional Thermal Current (Ith)		A	25	32	40	50	60	80	80	110	
Rated operational voltage (Ue)		V	1000								
Rated insulation voltage (Ui)		V	1000								
Rated impulse withstand voltage (Uimp)		kV	8								
Rated frequency		Hz	50/60								
Rated operational current	Ac3	A	115	150	185	225	265	330	400	500	630
	Ac1	A	200	250	275	315	350	400	500	700	1000
Rated operational power in AC3 category	220/230/240V	kW	30	40	55	63	75	100	110	147	200
	380/400V	kW	55	75	90	110	132	160	200	250	335
	660/690V	kW	80	100	110	129	160	220	280	355	450
Rated making capacity		A	10 X Ie for Ac3 or 12 X Ie for AC4								
Rated breaking capacity		A	8 X Ie for Ac3 or 10 X Ie for AC4								
Short circuit protection		A	350	350	400	500	450	500	1000	1000	1000
Short circuit withstand current (Ir)		kA	10	10	10	10	10	10	18	30	30
Electrical life	AC3	($X 10^6$)	1.2	1.2	1	1	0.8	0.8	0.8	0.8	0.8
Mechanical life		($X 10^6$)	10	10	6	6	6	6	6	6	6
Operating frequency	Electrical -AC3	Cycles / Hr	1200	1200	600	600	600	600	600	600	600
	Mechanical	Cycles / Hr	3600	3600	3600	3600	3600	3600	3600	3600	3600
Coil operating range	AC & DC	Pick - up	(85 % ~ 110 %) Us								
		Drop - out	(20 % ~ 75 %) Us								

Thermal Overload Relay (for 9A to 95A)

Technical Data

- Standard — IEC/EN 60947-4-1
- Tripping Class — 10A
- Rated operational voltage Ue (V) — up to 690
- Rated insulation voltage Ui (V) — 690
- Rated impulse withstand voltage Uimp (kV) — 6
- Rated current range In (A) — 0.1-25, 23-36, 23-93
- Signalling — Trip indicator
- Mounting — Directly under the contactor
- Aux contacts Rated Current
  - AC15 230V — 2.73A
  - AC15 400V — 1.58A
  - DC13 220V — 0.2A

Rated Current	Reference Code	For Use With Contactors as per AC3 ratings)
0.1-0.16	851151	9A 12A 18A 25A
0.16-0.25	851152	
0.25-0.40	851153	
0.4-0.63	851154	
0.63-1.0	851155	
1.0-1.6	851156	
1.25-2	851157	
1.6-2.5	851158	
2.5-4.0	851159	
4.0-6.0	851160	
5.5-8.0	851161	
7.0-10.0	851162	
9.0-13.0	851163	
12.0-18.0	851164	
17.0-25.0	851165	

Rated Current	Reference Code	For Use With Contactors as per AC3 ratings)
23.0-32.0	851166	32A
28.0-36.0	851167	
23.0-32.0	851168	40A 50A 65A 80A 95A
30.0-40.0	851169	
37.0-50.0	851170	
48.0-65.0	851171	
55.0-70.0	851172	
63.0-80.0	851173	
80.0-93.0	851174	

Thermal Overload Relay (from 30A to 630A)

Technical Data

- Standard — IEC/EN 60947-4-1
- Tripping Class — 10A
- Rated operational voltage Ue (V) — 1000
- Rated insulation voltage Ui (V) — 1000
- Rated impulse withstand voltage Uimp (kV) — 8
- Rated current range In (A) — 30-50, 48-80, 90-150, 200-330,300-500, 380-630

Rated Current	Reference Code	For Use With Contactors as per AC3 ratings)
30-50	851175	115A 150A 185A
48-80	851176	
60-100	851177	
90-150	851179	
200-330	851184	225A 265A 330A 400A 500A
300-500	851186	
380-630	851187	400A 500A 630A

Accessories For Power Contactor

Technical Data

Add-on Auxiliary Blocks

- Standard — IEC/EN 60947-5-1
- Number of Auxiliary Contacts — 2,4
- Mounting Type — Front, Side
- Conventional heating current: — 10A
- Rated operational voltage — Up to 690V
- Rated Insulation voltage — 690V
- Uimp — 6kV
- Operating Frequency: — 50/60Hz
- Control Rating:
  - AC-15 — 360VA
  - DC-13 — 33W
- Short Circuit protection (gG fuse) — 10A

ADD-ON AUXILIARY BLOCKS		
Mounting	**Contact Configuration**	**Ref.Codes**
Front	2NO	851001
Front	1NO+1NC	851002
Front	2NC	851003
Front	4NO	851004
Front	3NO+1NC	851005
Front	2NO+2NC	851006
Front	1NO+3NC	851007
Front	4NC	851008
Side	1NO+1NC	851009

Time Delay Blocks

- Standard — IEC/EN 60947-5-1
- Number of Auxiliary Contacts — 2
- Mounting Type — Front
- Time delay type — Making time delay; Breaking time delay
- Ranges — 0.1-0.3s/0.1-30s/10-180s
- Reset time
  - During time delay period (ms) — 150
  - After time delay period (ms) — 50
- Conventional heating current: — 10A
- Rated operational voltage — Up to 690V
- Rated Insulation voltage — 690V
- Uimp — 6kV
- Operating Frequency: — 50/60Hz

TIME DELAY BLOCKS		
Type of Time Delay	**Time Delay Range**	**Ref. Codes**
On Delay	0.1-3s	851021
On Delay	0.1-30s	851022
On Delay	10-180s	851023
Off Delay	0.1-3s	851024
Off Delay	0.1-30s	851025
Off Delay	10-180s	851026

Control Relay

Technical Table

Contactor Type		Contact Configuration		AC	24V, 48V, 110V, 230V, 415V
		4NO, 3NO+1NC, 2NO+2NC		DC	24V and 48V

Thermal current Ith			A	10
Ue			V	690
Ui			V	690
Uimp			kV	6
Operating limits	AC	Pick-up	V	(75~115) % Us
		Drop-out	V	(20~55) % Us
Coil Consumption		In rush	VA	30 / 4
		Holding	VA	25 / 3.0
Operating limits	DC	Pick-up	V	(75~115) % Us
		Drop-out	V	(10~20) % Us
Coil Consumption		In rush / Holding	W	3.2
Average time Us	AC	Closing NO	ms	12~21
		Opening NC	ms	7~17
	DC	Closing NO	ms	18~25
		Opening NC	ms	11~17
Mechanical Life		In Millions	cycles	20
Operating Frequency			cycles/hr	3600

Capacitor Duty Contactors

Technical Table

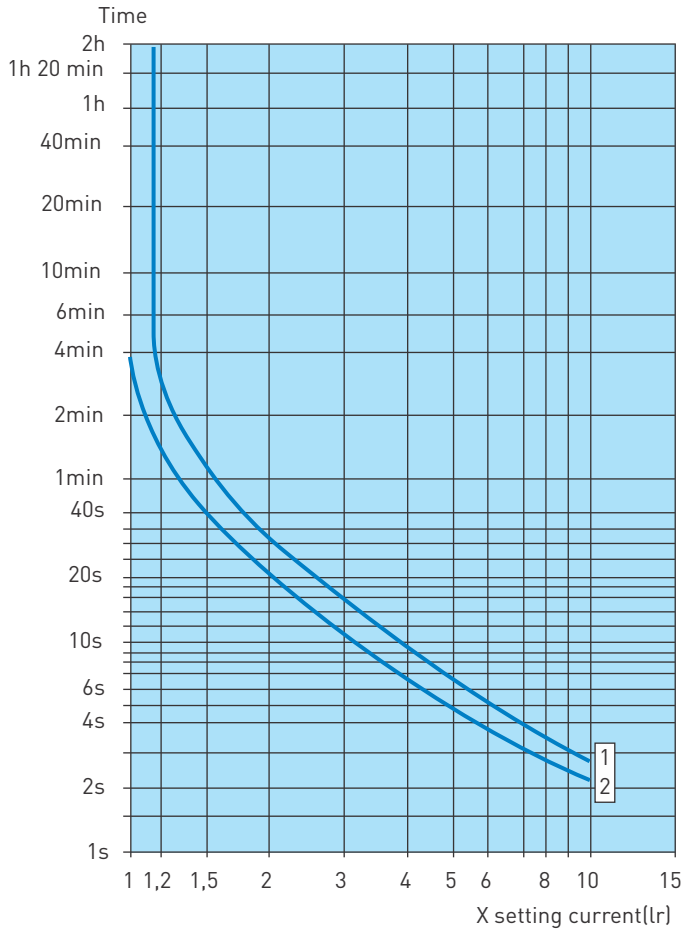
Model			12 kVAr	16 kVAr	20 kVAr	25 kVAr	30 kVAr	37 kVAr	45 kVAr	50kVAr
Standard			IEC/EN60947-4-1							
Rated Current Ie @ 415V		A	17.3	23	29	36	43	53	65	72
Capacity Duty (AC-6b)	220/230V AC	kVAr	6	8.5	10	12	15	22	23	25
	380/415V AC		12	16	20	25	30	37	45	50
	660/690V AC		12	16	20	25	30	37	45	50
Rated Insulation Voltage Ui		V	690							
Rated Operational Voltage Ue		V	690							
Rated Frequency		Hz	50 / 60							
Restrained Surge Capacity			20Ie							
Mechanical Life		(X1000)	3000	3000	3000	1000	1000	1000	800	800
Electrical Life		(X1000)	100	100	100	60	60	60	60	60
Operating Frequency		Cycles/hr	120	120	120	120	120	120	120	120
Operation Range			Pick-up: (85%~110%) Us ; Drop-out: (20%~75%) Us							
Coil Power	Start-Up	VA	70	100	100	245	245	245	245	245
	Holding		8	8.5	8.5	26	26	26	26	26
Auxiliary Contact type			2NO			2NO+1NC				
Tightening Torque		Nm	1.7	2.0	2.5	5	5	5	9	9

Rating	Aux. Contact Configuration	Reference Codes	
		230V AC	415 V AC
12 kVAr	2NO	850804	850805
16 kVAr	2NO	850814	850815
20 kVAr	2NO	850824	850825
25 kVAr	2NO+1NC	850834	850835
30 kVAr	2NO+1NC	850844	850845
37 kVAr	2NO+1NC	850854	850855
45 kVAr	2NO+1NC	850864	850865
50 kVAr	2NO+1NC	850874	

Technical Characterstics
Thermal Overload Relay - Mini Contactor

Tripping Curve

Thermal Overload Relay - Mini Contactor (from 0.11A to 14A)



1 Setting : at lower end of scale

2 Setting : at upper end of scale

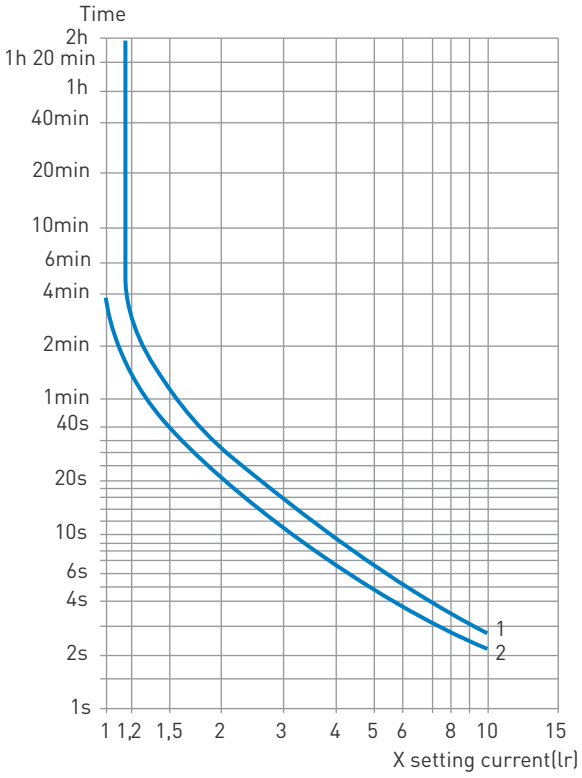
Technical Characteristics - Thermal Overload Relay (for Power Contactors)

Action characterisitics for thermal relay

Average operating time related to multiples of the current setting (Class 10A)

Thermal Overload Relay (from 0.1A to 93A)

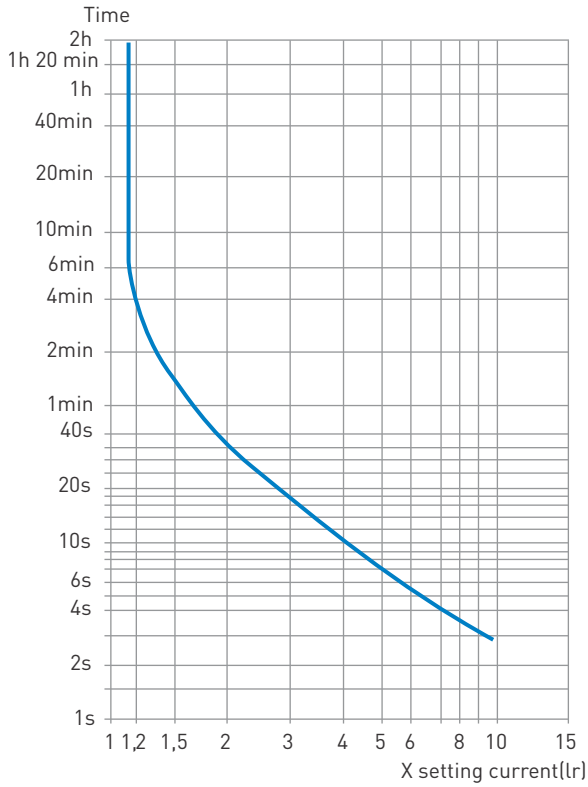
Balanced 3-phase operation, from cold state



1 Setting : at lower end of scale

2 Setting : at upper end of scale

Balanced operation with 2 phases only, from cold state

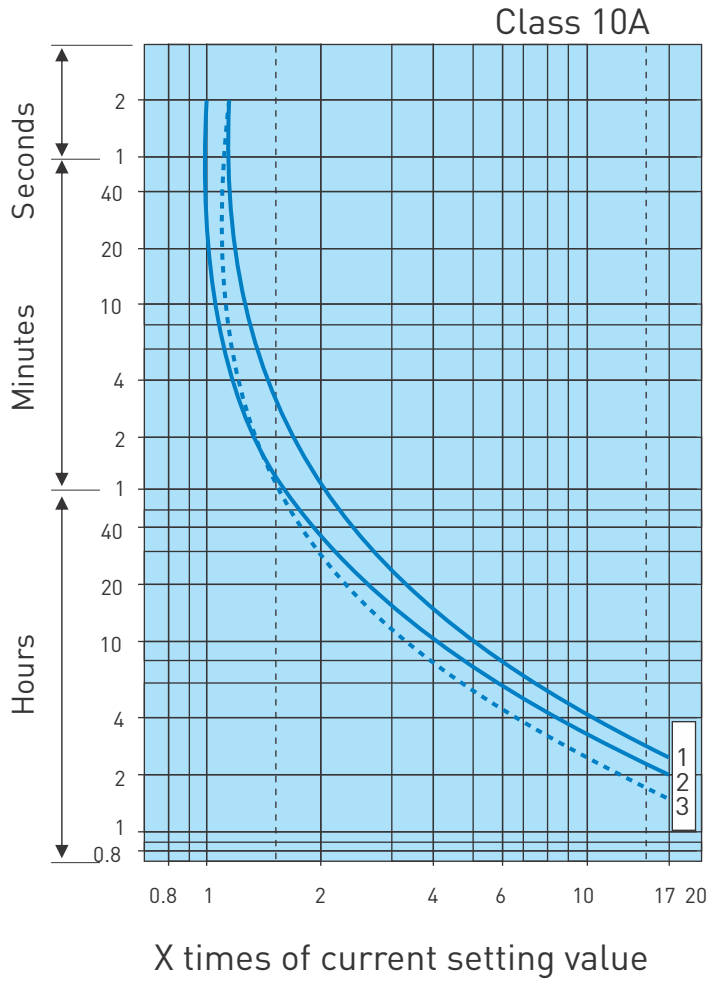


Technical Characteristics
Thermal Overload Relay (for Power Contactors)

Tripping Curve

Thermal Overload Relay (from 0.1A to 93A)

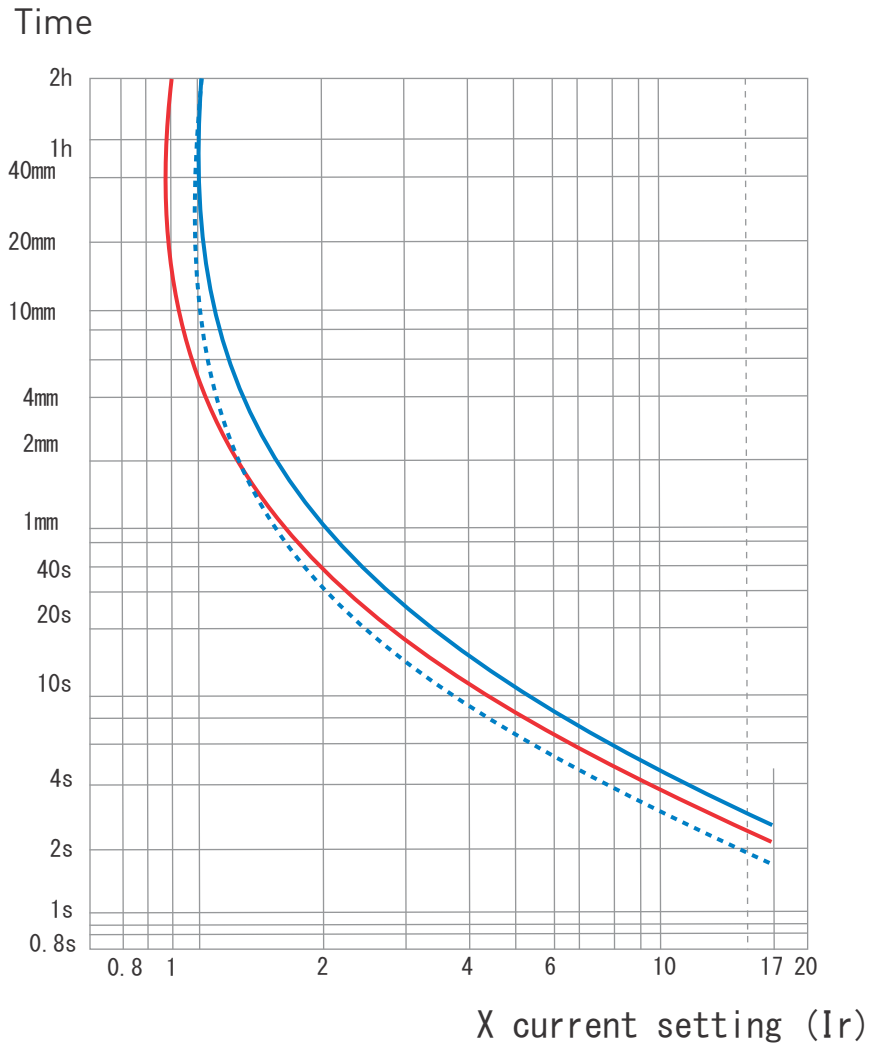
1. Equilibrium running, 3 phase, start from cold state
2. Equilibrium running, 2 phase, start from cold state
3. Equilibrium running, 3 phase, after long period of setting current (hot state)



Technical Characteristics
Thermal Overload Relay (for Power Contactor)

Tripping Curve

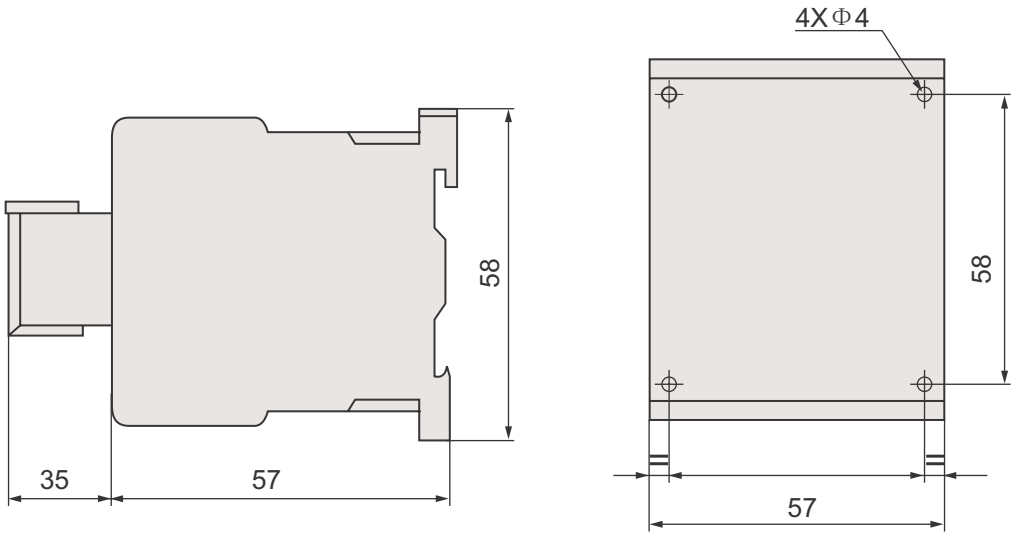
Thermal Overload Relay (from 30A to 630A)



Dimensional Drawings

Mini Contactor

unit in mm



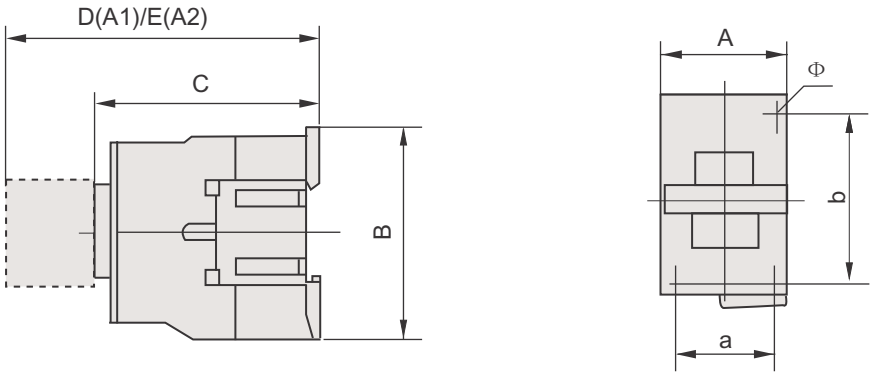
Type	A	B	C	D	E
9A-12A	35	57	58	57	58

Dimensional Drawings

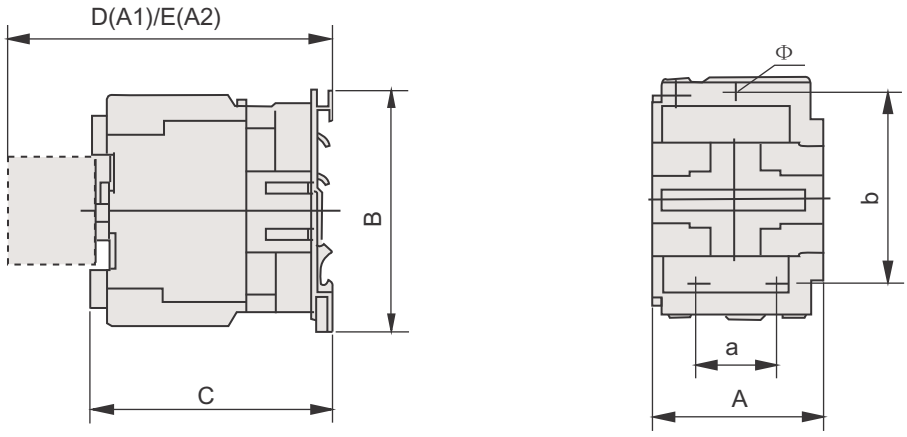
AC Power Contactor (from 9A to 95A)

unit in mm

9A to 32A



40A to 95A



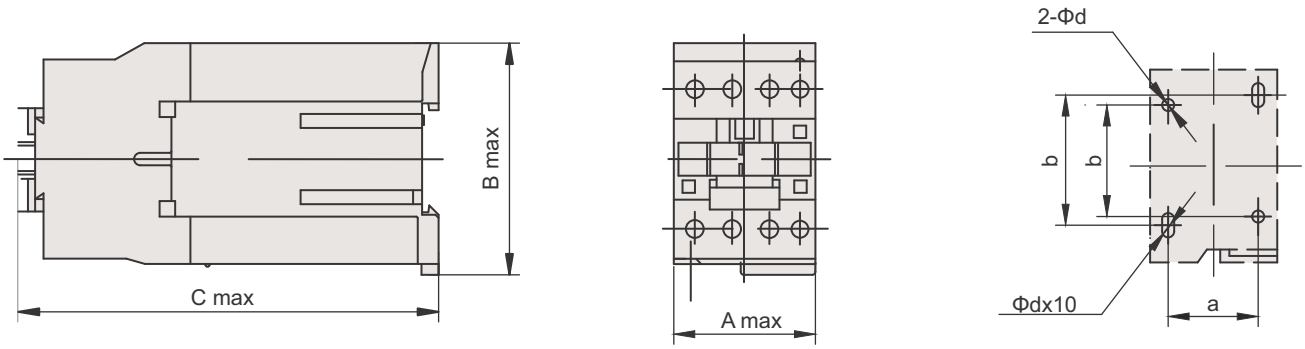
	Type	A max	B max	C max	D max	E max	a	b	Φ
3P	09A~12A	47	76	82	113	133	34/35	50/60	2-Φ4.5
	18A	47	76	87	118	138	34/35	50/60	2-Φ4.5
	25A	57	86	95	126	146	40	48	2-Φ4.5
	32A	57	86	100	131	151	40	48	2-Φ4.5
	40A~65A	77	129	116	145	165	40	100/110	3-Φ6.5
	80A~95A	87	129	127	156	176	40	100/110	3-Φ6.5
4P	09A~12A	47	76	82	113	133	34/35	50/60	2-Φ4.5
	25A	57	86	95	126	146	40	48	2-Φ4.5
	40A~65A	86	129	116/129	145	165	40	100/110	3-Φ6.5
	80A~95A	97	129	127/140	156	176	40	100/110	3-Φ6.5

Dimensional Drawings

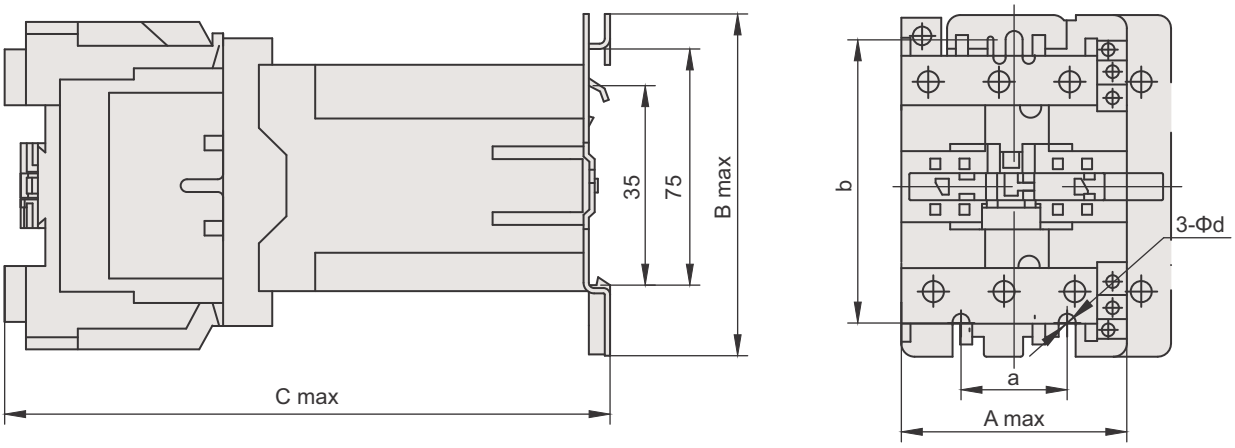
DC Power Contactor (from 9A to 95A)

unit in mm

09A to 32A



40A to 95A

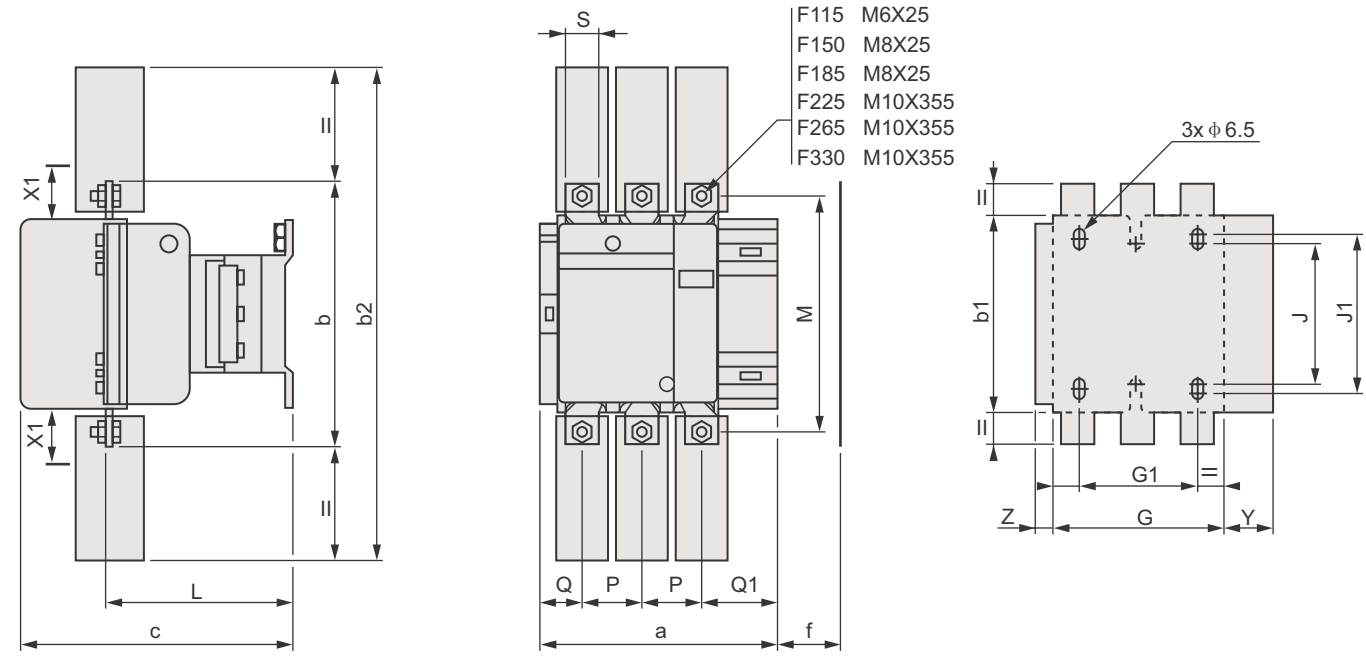


TYPE	Outline dimensions			Installation dimensions		
	A max	B max	C max	a	b	Φ
09A ~ 12A	47	76	115	34/35	50/60	2-Φ4.5
18A	47	76	120	34/35	50/60	2-Φ4.5
25A	57	86	132	40	50/60	2-Φ4.5
32A	57	86	137	40	50/60	2-Φ4.5
40A ~ 65A	77	129	169	40	100/110	3-Φ6.5
80A ~ 95A	87	129	180	40	100/110	3-Φ6.5

Dimensional Drawings

Power Contactor (from 115A to 630A)

115A to 330A



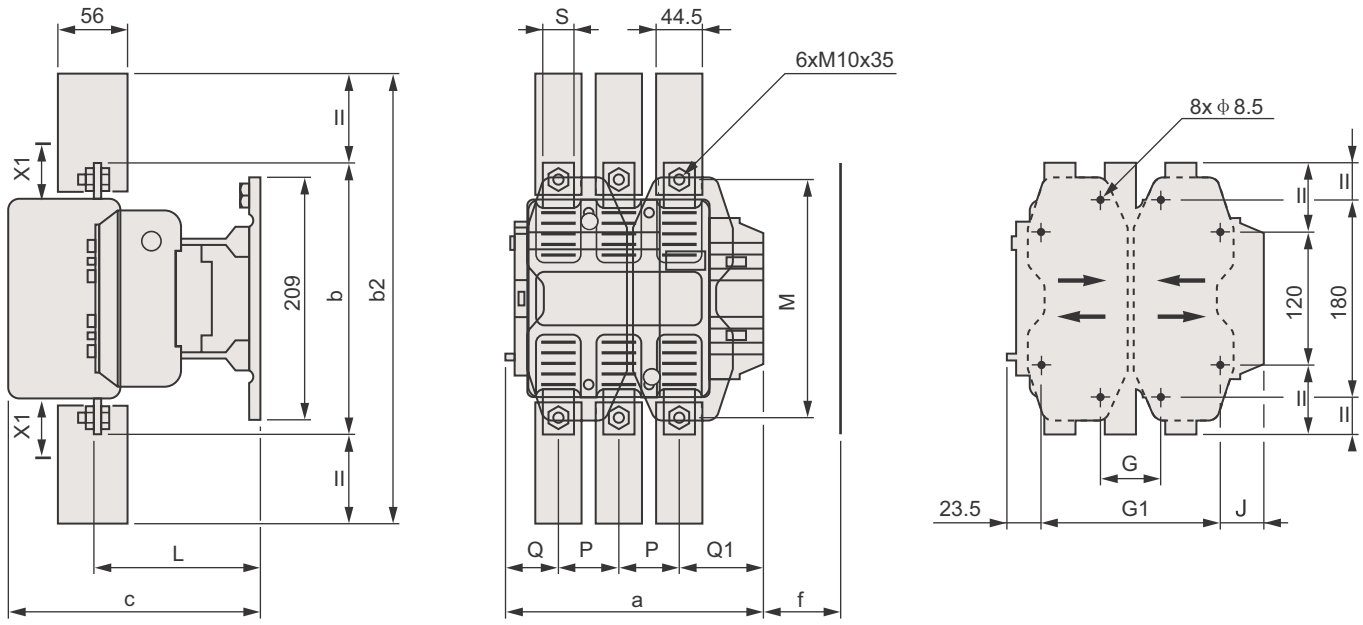
TYPE		a	b	b1	b2	c	f	G	G1	J	J1	L	M	P	Q	Q1	S	1	Y	Z
115A	3P	163.5	162	137	265	171	131	106	80	106	120	107	147	37	29.5	60	20	26	44	13.5
	4P	200.5	162	137	265	171	131	143	80	106	120	107	147	37	29.5	60	20	26	44	13.5
150A	3P	163.5	170	137	301	171	131	106	80	106	120	107	150	40	26	57.5	20	34	44	13.5
	4P	200.5	170	137	301	171	131	143	80	106	120	107	150	40	26	55.5	20	34	44	13.5
185A	3P	168.5	174	137	305	181	130	111	80	106	120	113.5	154	40	29	59.5	20	34	44	13.5
	4P	208.5	174	137	305	181	130	151	80	106	120	113.5	154	40	29	59.5	20	34	44	13.5
225A	3P	168.5	197	137	364	181	130	111	80	106	120	113.5	172	48	21	51.5	25	44.5	44	13.5
	4P	208.5	197	137	364	181	130	151	80	106	120	113.5	172	48	17	47.5	25	44.5	44	13.5
265A	3P	201.5	203	145	375	213	147	142	96	106	120	141	178	48	39	66.5	25	44.5	38	21.5
	4P	244.5	203	145	375	213	147	190	96	106	120	141	178	48	34	66.5	25	44.5	38	21.5
330A	3P	213	206	145	375	219	147	154.5	96	106	120	145	181	48	43	74	25	44.5	38	20.5
	4P	261	206	145	375	219	147	202.5	96	106	120	145	181	48	43	74	25	44.5	38	20.5

f=minimum distance required for coil removal

Dimensional Drawings

Power Contactor (from 115A to 630A)

400A to 500A



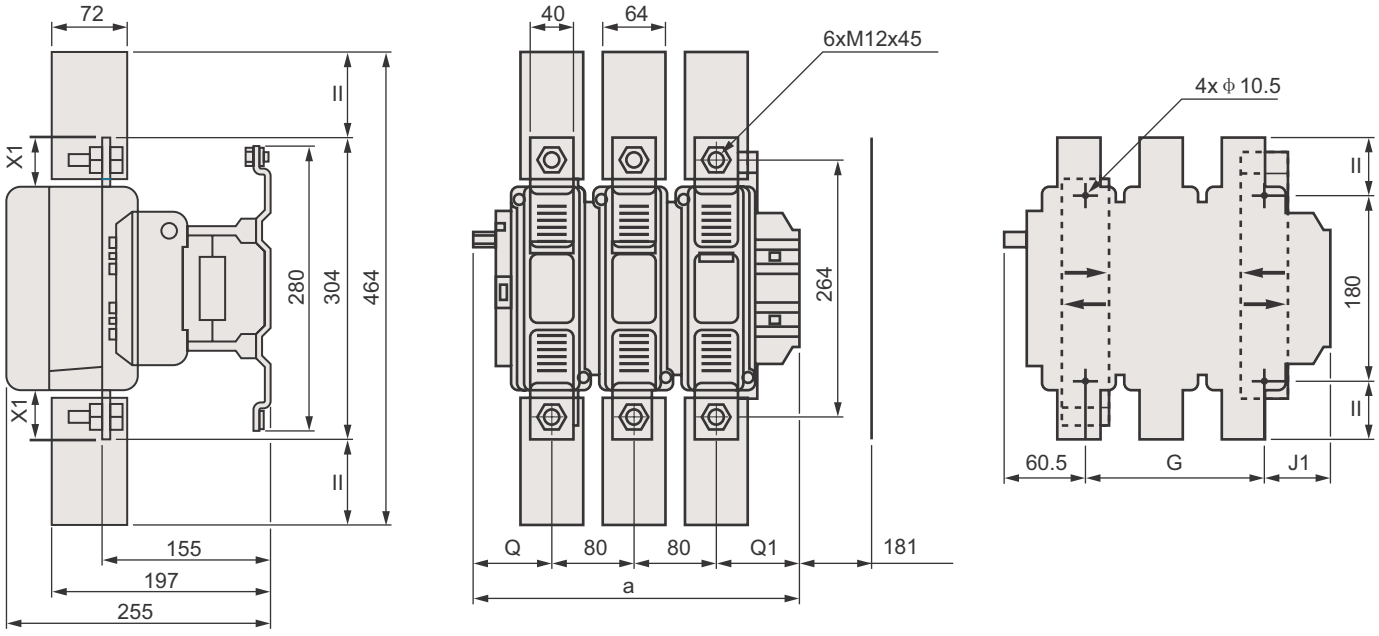
TYPE		a	b	b2	c	f	G*	G min.	G max.	G1*	G1 min.	G1 max.	J	L	M	P	Q	Q1	S
400A	2P	213	206	375	219	119	80	66	102	170	156	192	19.5	145	181	48	69	96	25
	3P	213	206	375	219	119	80	66	102	170	156	192	19.5	145	181	48	43	74	25
	4P	261	206	375	219	119	80	66	150	170	156	240	67.5	145	181	48	43	74	25
500A	2P	233	238	400	232	141	80	66	120	170	156	210	39.5	146	208	55	76	102	30
	3P	233	238	400	232	141	80	66	120	170	156	210	39.5	146	208	55	46	77	30
	4P	288	288	400	232	141	140	66	175	230	156	265	34.5	146	208	55	46	77	30

f=minimum distance required for coil removal

Dimensional Drawings

Power Contactor (from 115A to 630A)

630A

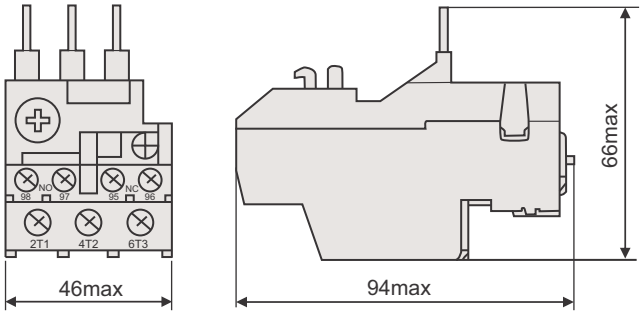


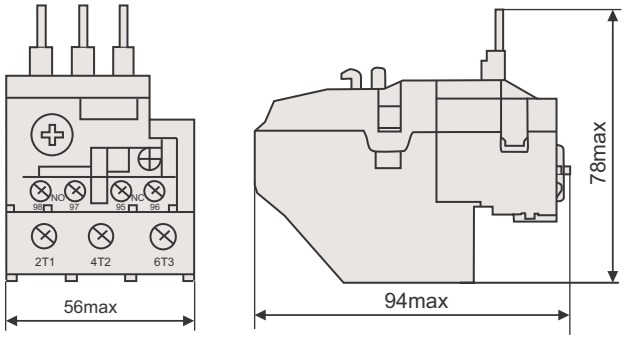
TYPE		a	G	G min.	G max.	J1	Q	Q1
630A	3P	309	180	100	195	68.5	60	89
630A	4P	309	240	150	275	68.5	60	89

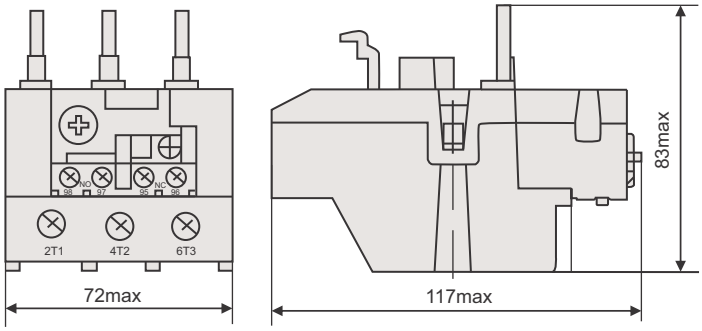
Dimensional Drawings

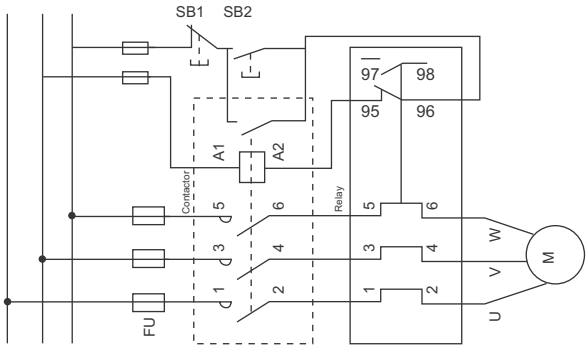
Thermal Overload Relay Upto 93A

unit in mm







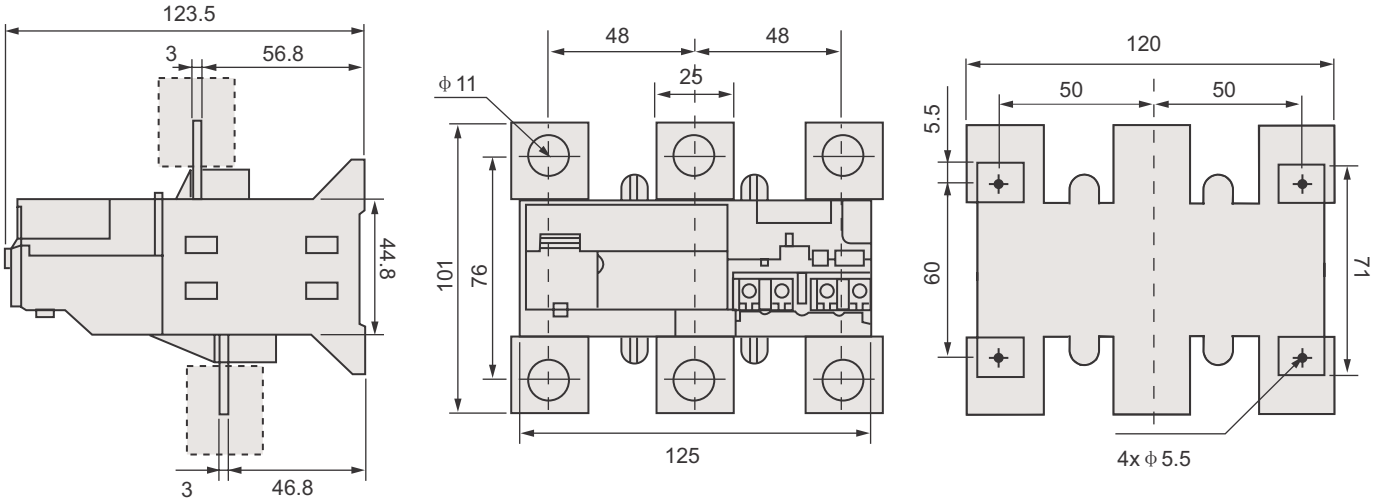


Operating principle diagram of thermal overload relay

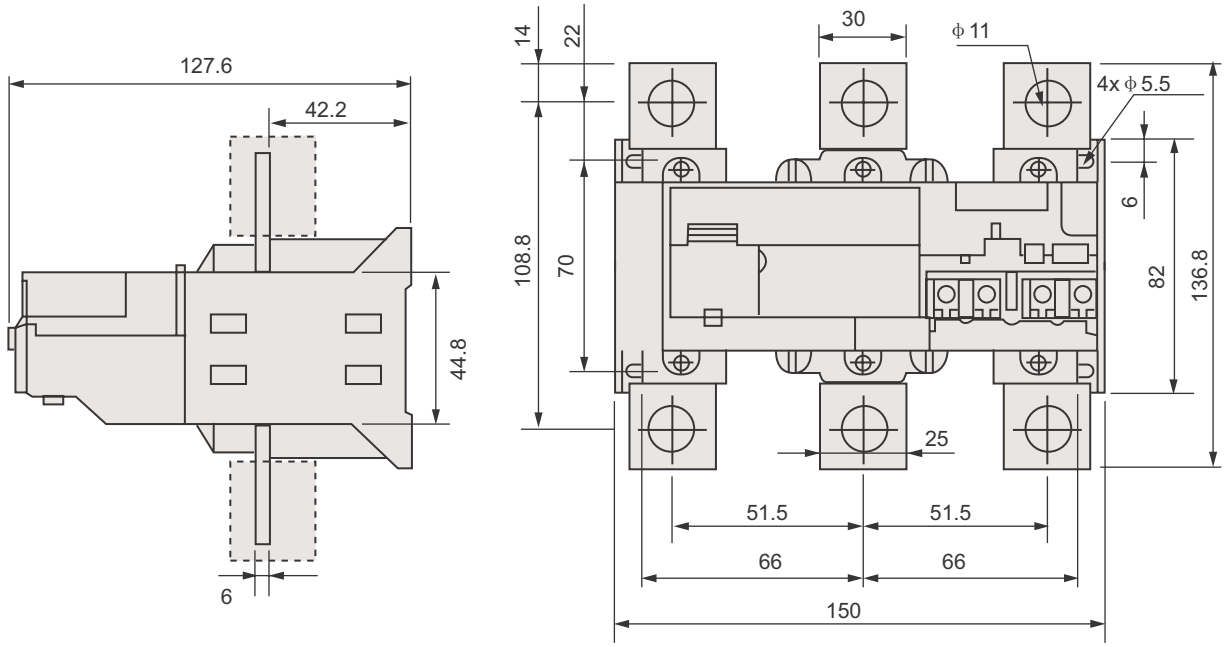
Dimensional Drawings

Thermal Overload Relay (for contactors from 115A to 630A)

30A to 200A

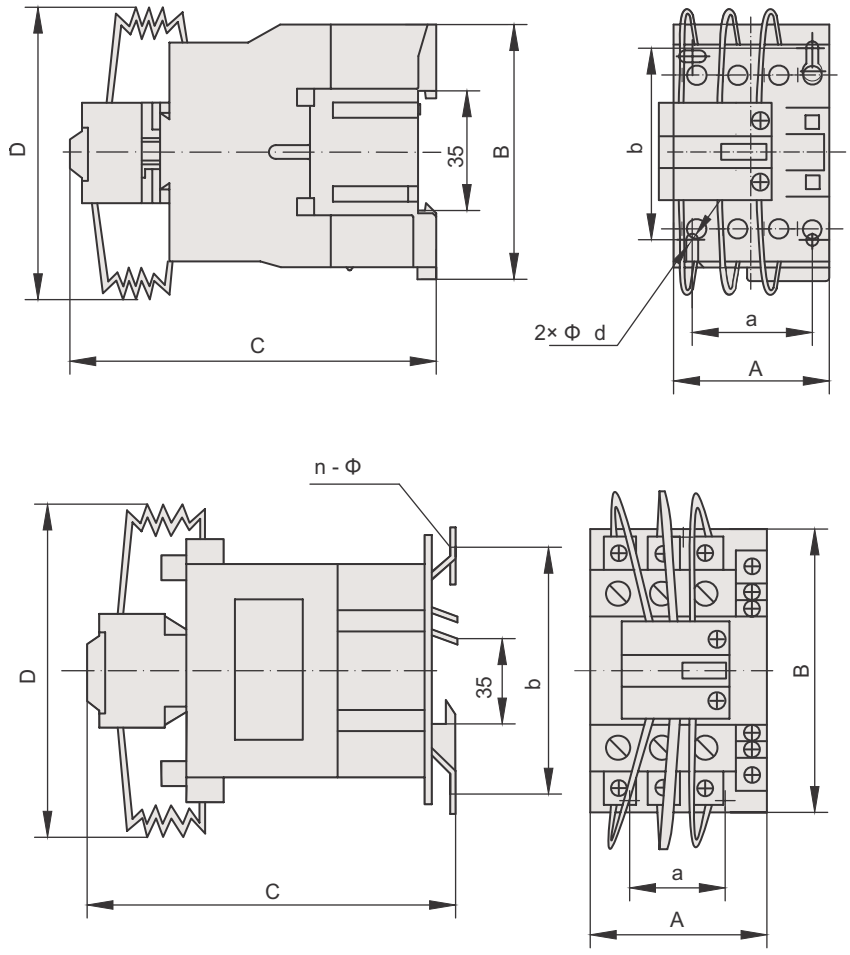


200A to 630A



Dimensional Drawings

Capacitor Duty Contactors



TYPE	Outline dimensions				Installation dimensions		
	A	B	C	D	a	b	c
12kVAr	47	76	124	100	34/35	50/60	2×Φ 4.5
16kVAr	57	86	132	110	40	50/60	2×Φ 4.5
20kVAr	57	86	136	110	40	50/60	2×Φ 4.5
25kVAr	77	129	152	155	40	100/110	3×Φ 6.5
30kVAr	77	129	152	155	40	100/110	3×Φ 6.5
37kVAr	77	129	152	155	40	100/110	3×Φ 6.5
45kVAr	87	129	162	165	40	100/110	3×Φ 6.5
50kVAr	87	129	162	165	40	100/110	3×Φ 6.5

Motor Protection Circuit Breaker - MPCB

Technical Table

Type			Frame 1								
Standard			IEC/EN60947-2, IEC/EN60947-4-1								
Utilization category	According to IEC60947-2		A								
	According to IEC60947-4-1		AC-3								
Rated insulation voltage (Ui)		V	690								
Rated operational voltage (Ue)		V	230 /240, 400/415, 440, 500, 660/690								
Rated Impulse withstand voltage (Uimp)		kV	8								
Rated Range of current Setting		A	0.1-0.16	0.16-0.25	0.25-0.4	0.4-0.63	0.63-1	1-1.6	1.6-2.5	2.5-4	4-6
Rated current of release		A	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6
Rated frequency		Hz	50/60								
Rated ultimate short circuit breaking capacity (Icu)	230/240 V	kA	100	100	100	100	100	100	100	100	100
	400/415 V	kA	100	100	100	100	100	100	100	100	100
	440 V	kA	100	100	100	100	100	100	100	100	100
	660/690 V	kA	100	100	100	100	100	100	3	3	3
Rated Service Short circuit breaking capacity (Ics)	230/240 V	kA	100	100	100	100	100	100	100	100	100
	400/415 V	kA	100	100	100	100	100	100	100	100	100
	440V	kA	100	100	100	100	100	100	100	100	100
	660/690 V	kA	100	100	100	100	100	100	2.25	2.25	2.25
Standard rated power of three phase motor	230/240 V	kW	-	-	-	-	-	-	0.37	0.75	1.1
	400 V	kW	-	-	-	-	-	0.37	0.75	1.5	2.2
	440 V	kW	-	-	-	-	0.37	0.55	1.1	1.5	3
	660/690 V	kW	-	-	-	0.37	0.55	1.1	1.5	3	4
Current setting values for instantaneous release (Ir)		A	1.5	2.5	5	8	13	22.5	33.5	51	78
Electrical life (AC-3)			10000								
Mechanical life			20000								
Tightening Torque		Nm	1.7								

Motor Protection Circuit Breaker - MPCB

Technical Table

Type	Frame 1						Frame 2		

Standard			IEC/EN60947-2, IEC/EN60947-4-1							
Utilization category	According to IEC60947-2		A							
	According to IEC60947-4-1		AC-3							
Rated insulation voltage (Ui)		V	690							
Rated operational voltage (Ue)		V	230 /240, 400/415, 440, 500, 660/690							
Rated Impulse withstand voltage (Uimp)		kV	8							
Rated Range of current Setting		A	6-10	9-14	13-18	17-23	20-25	24-32	25-40	40-63	56-80
Rated current of release		A	10	14	18	23	25	32	40	63	80
Rated frequency		Hz	50/60							
Rated ultimate short circuit breaking capacity (Icu)	230/240 V	kA	100	100	100	50	50	100	100	100	100
	400/415 V	kA	100	15	15	15	15	35	35	35	35
	440 V	kA	100	8	8	6	6	-	25	25	25
	660/690 V	kA	3	3	3	3	3	-	4	4	4
Rated Service Short circuit breaking capacity (Ics)	230/240 V	kA	100	100	100	50	50	75	75	75	75
	400/415 V	kA	100	7.5	7.5	6	6	17.5	17.5	17.5	17.5
	440V	kA	100	4	4	3	3	–	12.5	12.5	12.5
	660/690 V	kA	2.25	2.25	2.25	2.25	2.25	–	2	2	2
Standard rated power of three phase motor	230/240 V	kW	2.2	3	4	5.5	5.5	5.5	11	15	22
	400 V	kW	4	5.5	7.5	11	11	11	18.5	30	40
	440 V	kW	4	7.5	9	11	11	-	22	33	45
	660/690 V	kW	7.5	9	11	15	15	-	33	55	63
Current setting values for instantaneous release (Ir)		A	138	170	223	327	327	327	480	756	960
Electrical life (AC-3)			10000							
Mechanical life			20000							
Tightening Torque		Nm	1.7							

Technical Table - MPCB Accessories

Shunt Release

ITEM CODE	RATED INSULATION VOLTAGE	RANGE OF OPERATION	FREQUENCY	SPECIFICATION
851261	690V	70%~110% Ue	50/60 Hz	110~115V 50Hz
851262		70%~110% Ue		220~240V 50Hz
851263		70%~ 110% Ue		380~400V 50Hz

Under Voltage Release

ITEM CODE	RATED INSULATION VOLTAGE	RANGE OF OPERATION	FREQUENCY	SPECIFICATION
851264	690V	35%~70% Ue	50/60 Hz	110~115V 50Hz
851265		35%~70% Ue		220~240V 50Hz
851266		35%~ 70% Ue		380~400V 50Hz

Auxiliary Contact

ITEM CODE	MOUNTING TYPE	RATED INSULATION VOLTAGE	CONVENTIONAL THERMAL CURRENT (Ith)	AC15 RATING @ 240V (VA)	CONTACT CONFIGURATION
851271	FRONT	250V	2.5A	120	1NO+1NC
851272	FRONT				2NO
851273	SIDE	690V	6A	720	1NO+1NC
851274	SIDE				2NO

Auxiliary Alarm

ITEM CODE	RATED INSULATION VOLTAGE	CONVENTIONAL THERMAL CURRENT (Ith)
851275	690V	6A
851276		6A
851277		6A
851278		6A

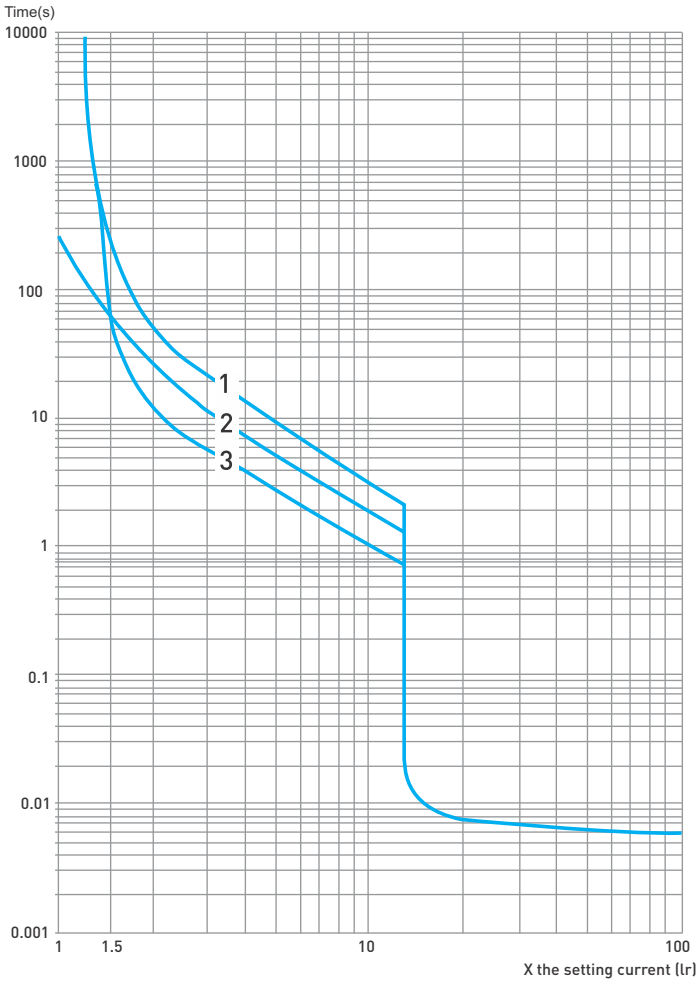
Technical Characteristics - MPCB

Tripping Curve

MPCB from 0.1A to 80A

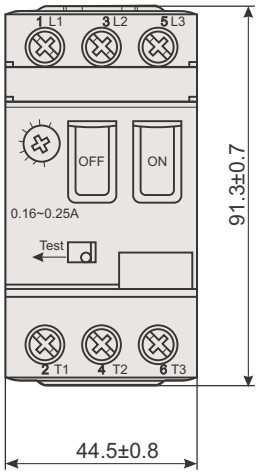
Average operating times at 20°C related to multiples of the setting current

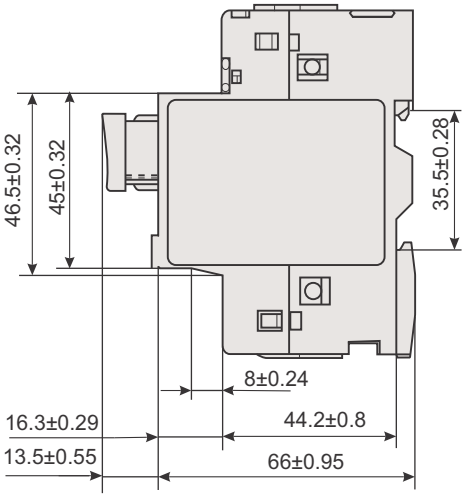
1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state



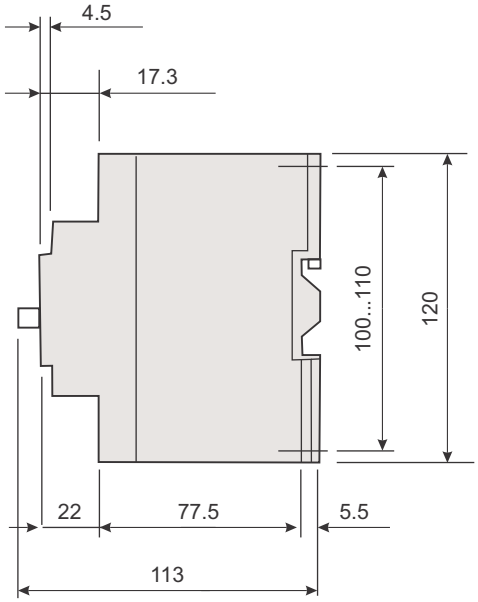
Dimensional Drawings

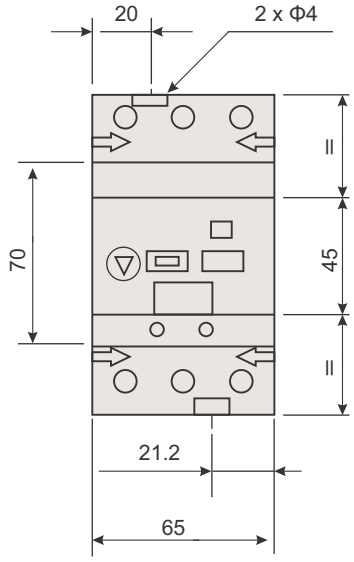
Frame1





Frame 2





Power Contactors

- Conforms to IEC 60947-4-1
- Compact Dimensions saving panel space
- Range from 9A to 630A
- Rated operational voltage upto 690V
- Utilisation category AC1, AC3 & AC4
- Spares available for entire range

Type	Power Contact	Aux Contact	Rating(A) AC-3	Coil Voltage 24V AC	Coil Voltage 24V DC	Coil Voltage 48V AC	Coil Voltage 48V DC	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
3P	3NO	1NO	9	850001	850002	850003	850004	850005	850006	850007
3P	3NO	1NO	12	850011	850012	850013	850014	850015	850016	850017
3P	3NO	1NO	18	850021	850022	850023	850024	850025	850026	850027
3P	3NO	1NO	25	850031	850032	850033	850034	850035	850036	850037
3P	3NO	1NO	32	850041	850042	850043	850044	850045	850046	850047

Type	Power Contact	Aux Contact	Rating(A) AC-3	Coil Voltage 24V AC	Coil Voltage 24V DC	Coil Voltage 48V AC	Coil Voltage 48V DC	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
3P	3NO	1NC	9	850101	850102	850103	850104	850105	850106	850107
3P	3NO	1NC	12	850111	850112	850113	850114	850115	850116	850117
3P	3NO	1NC	18	850121	850122	850123	850124	850125	850126	850127
3P	3NO	1NC	25	850131	850132	850133	850134	850135	850136	850137
3P	3NO	1NC	32	850141	850142	850143	850144	850145	850146	850147

Type	Power Contact	Aux Contact	Rating(A) AC-3	Coil Voltage 24V AC	Coil Voltage 24V DC	Coil Voltage 48V AC	Coil Voltage 48V DC	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
3P	3NO	1NO+1NC	40	850151	850152	850153	850154	850155	850156	850157
3P	3NO	1NO+1NC	50	850161	850162	850163	850164	850165	850166	850167
3P	3NO	1NO+1NC	65	850171	850172	850173	850174	850175	850176	850177
3P	3NO	1NO+1NC	80	850181	850182	850183	850184	850185	850186	850187
3P	3NO	1NO+1NC	95	850191	850192	850193	850194	850195	850196	850197

Type	Power Contact	Aux Contact	Rating(A) AC-3	Coil Voltage 24V AC	Coil Voltage 48V AC	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
3P	3NO	-	115	850201	850203	850205	850206	850207
3P	3NO	-	150	850211	850213	850215	850216	850217
3P	3NO	-	185	850221	850223	850225	850226	850227
3P	3NO	-	225	850231	850233	850235	850236	850237
3P	3NO	-	265	850241	850243	850245	850246	850247
3P	3NO	-	330	850251	850253	850255	850256	850257
3P	3NO	-	400	-	850263	850265	850266	850267
3P	3NO	-	500	-	850273	850275	850276	850277
3P	3NO	-	630	-	850283	850285	850286	850287

Type	Power Contact	Aux Contact	Rating (A) AC1	Rating (A) AC3	Coil Voltage 24V AC	Coil Voltage 24V DC	Coil Voltage 48V AC	Coil Voltage 48V DC	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
4P	4NO	-	20	9	850301	850302	850303	850304	850305	850306	850307
4P	4NO	-	25	12	850311	850312	850313	850314	850315	850316	850317
4P	4NO	-	40	25	850321	850322	850323	850324	850325	850326	850327
4P	4NO	-	60	40	850331	850332	850333	850334	850335	850336	850337
4P	4NO	-	80	50	850341	850342	850343	850344	850345	850346	850347
4P	4NO	-	80	65	850351	850352	850353	850354	850355	850356	850357
4P	4NO	-	110	80	850361	850362	850363	850364	850365	850366	850367
4P	4NO	-	125	95	850371	850372	850373	850374	850375	850376	850377
4P	4NO	-	200	115	850381	-	850383	-	850385	850386	850387
4P	4NO	-	250	150	850391	-	850393	-	850395	850396	850397
4P	4NO	-	275	185	850401	-	850403	-	850405	850406	850407
4P	4NO	-	315	225	850411	-	850413	-	850415	850416	850417
4P	4NO	-	500	400	-	-	850423	-	850425	850426	850427
4P	4NO	-	700	500	-	-	850433	-	850435	850436	850437
4P	4NO	-	1000	630	-	-	850443	-	850445	850446	850447

Type	Power Contact	Aux Contact	Rating (A) AC1	Rating (A) AC3	Coil Voltage 24V AC	Coil Voltage 24V DC	Coil Voltage 48V AC	Coil Voltage 48V DC	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
4P	2NO+2NC	-	20	9	850501	850502	850503	850504	850505	850506	850507
4P	2NO+2NC	-	25	12	850511	850512	850513	850514	850515	850516	850517
4P	2NO+2NC	-	40	25	850521	850522	850523	850524	850525	850526	850527
4P	2NO+2NC	-	60	40	850531	850532	850533	850534	850535	850536	850537
4P	2NO+2NC	-	80	50	850541	850542	850543	850544	850545	850546	850547
4P	2NO+2NC	-	80	65	850551	850552	850553	850554	850555	850556	850557
4P	2NO+2NC	-	110	80	850561	850562	850563	850564	850565	850566	850567
4P	2NO+2NC	-	125	95	850571	850572	850573	850574	850575	850576	850577
4P	4NO	2NO+2NC	200	115	850581	-	850583	-	850585	850586	850587
4P	4NO	2NO+2NC	250	225	850591	-	850593	-	850595	850596	850597
4P	4NO	2NO+2NC	275	150	850601	-	850603	-	850605	850606	850607
4P	4NO	2NO+2NC	315	185	850611	-	850613	-	850615	850616	850617
4P	4NO	2NO+2NC	500	400	-	-	850623	-	850625	850626	850627
4P	4NO	2NO+2NC	700	500	-	-	850633	-	850635	850636	850637
4P	4NO	2NO+2NC	1000	630	-	-	850643	-	850645	850646	850647

Mini Contactors

- Conforms to IEC 60947-4-1
- Utilisation category AC1, AC3 & AC4
- CE Certified
- Rated operational voltage 690V
- Range from 9A to 12A

Type	Power Contact	Aux Contact	Rating(A)	Coil Voltage 24V AC	Coil Voltage 48V AC	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
3P	-	1NO	9	850701	850703	850705	850706	850707
3P	-	1NO	12	850711	850713	850715	850716	850717
3P	-	1NC	9	850721	850723	850725	850726	850727
3P	-	1NC	12	850731	850733	850735	850736	850737
4P	4NO	-	9	-	-	-	850751	850752
4P	2NO+2NC	-	9	-	-	-	850771	850772

Capacitor Duty Contactors

- Conforms to IEC 60947-4-1
- Utilisation category AC-6B
- CE Certified
- Separate termination for damping resistors
- Range from 12kVAR to 50kVAR

Type	Power Contact	Aux Contact	Rating(A)	Coil Voltage 230V AC	Coil Voltage 415V AC
3P	-	2NO	12	850804	850805
3P	-	2NO	16	850814	850815
3P	-	2NO	20	850824	850825
3P	-	2NO+1NC	25	850834	850835
3P	-	2NO+1NC	30	850844	850845
3P	-	2NO+1NC	37	850854	850855
3P	-	2NO+1NC	45	850864	850865
3P	-	2NO+1NC	50	850874	850875

Control Relay

- Conforms to IEC 60947-4-1
- CE Certified
- Rated operational voltage 690V
- Available with AC & DC coil voltage

Type	Power Contact	Aux Contact	Rating(A)	Coil Voltage 24V AC	Coil Voltage 24V DC	Coil Voltage 48V AC	Coil Voltage 48V DC
-	-	4NO	-	850881	850882	850883	850884
-	-	3NO+1NC	-	850891	850892	850893	850894
-	-	2NO+2NC	-	850901	850902	850903	850904

Type	Power Contact	Aux Contact	Rating(A)	Coil Voltage 110V AC	Coil Voltage 230V AC	Coil Voltage 415V AC
-	-	4NO	-	850885	850886	850887
-	-	3NO+1NC	-	850895	850896	850897
-	-	2NO+1NC	-	850905	850906	850907

Accessories

Type	Aux Contact	Rating(A)	Cat Ref.
Add on block for Power contactor - Front Mounted	2 NO	-	851001
Add on block for Power contactor - Front Mounted	1 NO + 1NC	-	851002
Add on block for Power contactor - Front Mounted	2 NC	-	851003
Add on block for Power contactor - Front Mounted	4 NO	-	851004
Add on block for Power contactor - Front Mounted	3 NO + 1 NC	-	851005
Add on block for Power contactor - Front Mounted	2 NO + 2 NC	-	851006
Add on block for Power contactor - Front Mounted	1 NO + 3 NC	-	851007
Add on block for Power contactor - Front Mounted	4 NC	-	851008
Add on block for Power contactor - Side Mounted	1 NO + 1NC	-	851009

Type	Aux Contact	Rating(A)	Cat Ref.
Add on block for Mini contactor - Front Mounted	2 NO	-	851121
Add on block for Mini contactor - Front Mounted	1 NO + 1NC	-	851122
Add on block for Mini contactor - Front Mounted	2 NC	-	851123
Add on block for Mini contactor - Front Mounted	4 NO	-	851124
Add on block for Mini contactor - Front Mounted	3 NO + 1 NC	-	851125
Add on block for Mini contactor - Front Mounted	2 NO + 2 NC	-	851126
Add on block for Mini contactor - Front Mounted	1 NO + 3 NC	-	851127
Add on block for Mini contactor - Front Mounted	4 NC	-	851128

Type	Aux Contact	Rating	Cat Ref.
Mechanical interlock	-	9 A to 32 A	851011
Mechanical interlock	-	40 A to 95 A	851012
Mechanical interlock	-	115 A to 150 A	851013
Mechanical interlock	-	185 A to 225 A	851014
Mechanical interlock	-	265 A to 400 A	851015
Mechanical interlock	-	500 A to 630 A	851016

Type	Aux Contact	Operation	Range	Cat Ref.
Timer blocks	1NO+1NC	On delay	0.1 to 3 sec	851021
Timer blocks	1NO+1NC	On delay	0.1 to 30 sec	851022
Timer blocks	1NO+1NC	On delay	10 to 180 sec	851023
Timer blocks	1NO+1NC	Off delay	0.1 to 3 sec	851024
Timer blocks	1NO+1NC	Off delay	0.1 to 30 sec	851025
Timer blocks	1NO+1NC	Off delay	10 to 180 sec	851026

Type	Voltage	Rating	Cat Ref.
Spare coil	24 V AC	9 to 18 A	851031
Spare coil	24 V AC	25 to 32 A	851032
Spare coil	24 V AC	40 to 95 A	851033
Spare coil	24V AC	115-150A	851034
Spare coil	24V AC	185-225A	851035
Spare coil	24V AC	265-330A	851036
Spare coil	48 V AC	9 to 18 A	851041
Spare coil	48 V AC	25 to 32 A	851042
Spare coil	48 V AC	40 to 95 A	851043
Spare coil	48V AC	115-150A	851044
Spare coil	48V AC	185-225A	851045
Spare coil	48V AC	265-330A	851046
Spare coil	48V AC	400 A	851047
Spare coil	48V AC	500 A	851048
Spare coil	48V AC	630 A	851049
Spare coil	110 V AC	9 to 18 A	851051
Spare coil	110 V AC	25 to 32 A	851052
Spare coil	110 V AC	40 to 95 A	851053
Spare coil	110 V AC	115 to 150 A	851054
Spare coil	110 V AC	185 to 225 A	851055
Spare coil	110 V AC	265 to 330 A	851056
Spare coil	110 V AC	400 A	851057
Spare coil	110 V AC	500 A	851058
Spare coil	110 V AC	630 A	851059

Type	Voltage	Rating	Cat Ref.
Spare coil	240 V AC	9 to 18 A	851061
Spare coil	240 V AC	25 to 32 A	851062
Spare coil	240 V AC	40 to 95 A	851063
Spare coil	240 V AC	115 to 150 A	851064
Spare coil	240 V AC	185 to 225 A	851065
Spare coil	240 V AC	265 to 330 A	851066
Spare coil	240 V AC	400 A	851067
Spare coil	240 V AC	500 A	851068
Spare coil	240 V AC	630 A	851069
Spare coil	415 V AC	9 to 18 A	851071
Spare coil	415 V AC	25 to 32 A	851072
Spare coil	415 V AC	40 to 95 A	851073
Spare coil	415 V AC	115 to 150 A	851074
Spare coil	415 V AC	185 to 225 A	851075
Spare coil	415 V AC	265 to 330 A	851076
Spare coil	415 V AC	400 A	851077
Spare coil	415 V AC	500 A	851078
Spare coil	415 V AC	630 A	851079
Spare coil	24 V DC	9 to 18 A	851081
Spare coil	24 V DC	25 to 32 A	851082
Spare coil	24 V DC	40 to 95 A	851083
Spare coil	48 V DC	9 to 18 A	851091
Spare coil	48 V DC	25 to 32 A	851092
Spare coil	48 V DC	40 to 95 A	851093
Spare coil	24V AC	115-150A	851101
Spare coil	24V AC	185-225A	851102
Spare coil	48V AC	115-150A	851103
Spare coil	48V AC	185-225A	851104
Spare coil	110V AC	115-150A	851105
Spare coil	110V AC	185-225A	851106
Spare coil	230V AC	115-150A	851107
Spare coil	230V AC	185-225A	851108
Spare coil	415V AC	115-150A	851109
Spare coil	415V AC	185-225A	851110

Thermal Overload Relay

- Conforms to IEC 60947-4-1
- Trip class - 10A
- CE Certified
- Direct and independent mounting
- Available range from 0.1A to 630A

Type	Aux Contact	Rating	Cat Ref.
Thermal Overload Relay for Power Contactor	1NO+1NC	0.1-0.16A	851151
Thermal Overload Relay for Power Contactor	1NO+1NC	0.16-0.25A	851152
Thermal Overload Relay for Power Contactor	1NO+1NC	0.25-0.40A	851153
Thermal Overload Relay for Power Contactor	1NO+1NC	0.40-0.63A	851154
Thermal Overload Relay for Power Contactor	1NO+1NC	0.63-1.0A	851155
Thermal Overload Relay for Power Contactor	1NO+1NC	1.0-1.6A	851156
Thermal Overload Relay for Power Contactor	1NO+1NC	1.25-2.0A	851157
Thermal Overload Relay for Power Contactor	1NO+1NC	1.6-2.5A	851158
Thermal Overload Relay for Power Contactor	1NO+1NC	2.5-4.0A	851159
Thermal Overload Relay for Power Contactor	1NO+1NC	4.0-6.0A	851160
Thermal Overload Relay for Power Contactor	1NO+1NC	5.5-8.0A	851161

Type	Aux Contact	Rating	Cat Ref.
Thermal Overload Relay for Power Contactor	1NO+1NC	7.0-10.0A	851162
-Thermal Overload Relay for Power Contactor	1NO+1NC	9.0-13.0A	851163
Thermal Overload Relay for Power Contactor	1NO+1NC	12.0-18.0A	851164
Thermal Overload Relay for Power Contactor	1NO+1NC	17.0-25.0A	851165
Thermal Overload Relay for Power Contactor	1NO+1NC	23.0-32.0A	851166
Thermal Overload Relay for Power Contactor	1NO+1NC	28.0-36.0A	851167
Thermal Overload Relay for Power Contactor	1NO+1NC	23.0-32.0A	851168
Thermal Overload Relay for Power Contactor	1NO+1NC	30.0-40.0A	851169
Thermal Overload Relay for Power Contactor	1NO+1NC	37.0-50.0A	851170
Thermal Overload Relay for Power Contactor	1NO+1NC	48.0-65.0A	851171
Thermal Overload Relay for Power Contactor	1NO+1NC	55.0-70.0A	851172
Thermal Overload Relay for Power Contactor	1NO+1NC	63.0-80.0A	851173
Thermal Overload Relay for Power Contactor	1NO+1NC	80.0-93.0A	851174
Thermal Overload Relay for Power Contactor	1NO+1NC	30-50A	851175
Thermal Overload Relay for Power Contactor	1NO+1NC	48-80A	851176
Thermal Overload Relay for Power Contactor	1NO+1NC	60-100A	851177

Type	Aux Contact	Rating	Cat Ref.
Thermal Overload Relay for Power Contactor	1NO+1NC	90-150A	851179
Thermal Overload Relay for Power Contactor	1NO+1NC	200-330A	851184
Thermal Overload Relay for Power Contactor	1NO+1NC	300-500A	851186
Thermal Overload Relay for Power Contactor	1NO+1NC	380-630A	851187

Type	Aux Contact	Rating	Cat Ref.
Mounting Bracket	-	Relay 25	851190
Mounting Bracket	-	Relay 36	851191
Mounting Bracket	-	Relay 93	851192

Type	Aux Contact	Rating	Cat Ref.
Thermal Overload Relay for Mini Contactor	1NO+1NC	0.1-0.16A	851201
Thermal Overload Relay for Mini Contactor	1NO+1NC	0.16-0.25A	851202
Thermal Overload Relay for Mini Contactor	1NO+1NC	0.25-0.3A	851203
Thermal Overload Relay for Mini Contactor	1NO+1NC	0.3-0.54A	851204

Type	Aux Contact	Rating	Cat Ref.
Thermal Overload Relay for Mini Contactor	1NO+1NC	0.54-0.8A	851205
Thermal Overload Relay for Mini Contactor	1NO+1NC	0.8-1.2A	851206
Thermal Overload Relay for Mini Contactor	1NO+1NC	1.8-2.6A	851208
Thermal Overload Relay for Mini Contactor	1NO+1NC	2.6-3.7A	851209
Thermal Overload Relay for Mini Contactor	1NO+1NC	3.7-5.5A	851210
Thermal Overload Relay for Mini Contactor	1NO+1NC	5.5-8.0A	851211
Thermal Overload Relay for Mini Contactor	1NO+1NC	8.0-11.5A	851212
Thermal Overload Relay for Mini Contactor	1NO+1NC	9.0-13.0A	851213

Motor Protection Circuit Breaker - MPCB

- Conforms to IEC 60947-4-1
- CE Certified
- High breaking capacity upto 100A
- Wide range of accessories

Thermal Protection Adj. Range	Aux Contact	Rating(A)	Cat Ref.
0.1-0.16	-	0.16	851221
0.16-0.25	-	0.25	851222
0.25-0.4	-	0.4	851223
0.4-0.63	-	0.63	851224
0.63-1	-	1	851225
1-1.6	-	1.6	851226
1.6-2.5	-	2.5	851227
2.5-4	-	4	851228
4-6	-	6	851229
6-10	-	10	851230
9-14	-	14	851231
13-18	-	18	851232
17-23	-	23	851233
20-25	-	25	851234
24-32	-	32	851235
25-40	-	40	851236
40-63	-	63	851237
56-80	-	80	851238

Accessories for MPCB

Type	Aux Contact	Rating	Cat Ref.
Shunt trip	-	110 - 115 V AC	851261
Shunt trip	-	220 - 240 V AC	851262
Shunt trip	-	380 - 415 V AC	851263
Undervoltage	-	110 - 115 V AC	851264
Undervoltage	-	220 - 240 V AC	851265
Undervoltage	-	380 - 415 V AC	851266
Auxiliary contact Top	1 NO + 1 NC	-	851271
Auxiliary contact Top	2 NO	-	851272
Auxiliary contact Side (Frame 1)	1 NO + 1 NC	-	851273
Auxiliary contact Side (Frame 1)	2 NO	-	851274
Auxilary Alarm	1 NO + 1NO	-	851275
Auxilary Alarm	1 NO + 1 NC	-	851276
Auxilary Alarm	1NC + 1NO	-	851277
Auxilary Alarm	1 NC + 1 NC	-	851278
Enclosure	-	-	851279
Auxiliary contact side (Frame 2)	1NO + 1 NC		851280
Auxiliary contact side (Frame 2)	1NO + 1 NC		851281

Notes:

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