

With effect from 2<sup>nd</sup> January 2014

# Low Voltage Products Price list

Power and productivity  
for a better world™ 



## ABB low voltage products

ABB is a global leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. ABB in India serves customers in process, manufacturing and consumer industries, utilities, the oil & gas sector and infrastructure markets through a wide manufacturing and marketing network.

ABB, a market leader in low voltage products and applications offers the widest range of high quality products and systems, backed by in-depth application know-how. In putting together its portfolio, ABB has taken care to address not only the core technologies but also systems and services that support customers throughout the life cycle of the product.

ABB's product range serves the diverse needs of customers, offering value for money and high levels of quality and reliability. These products are backed by the technological expertise of ABB's centres of excellence across the globe, each of which excel in a specific range of low voltage products.

ABB's low voltage products offering in India are designed, manufactured and tested in-house in conformance with requirements of the ISO 9000 series. These products conform to the latest IEC standards, EN specifications, national standards such as BS, VDE, etc., in addition to the "CE" mark.

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## ABB's comprehensive range of breakers and switches

The range of ABB breakers and switches ranks amongst the most extensive on the market with a full range of innovative solutions for various applications, helping to optimise resources, reduce energy costs, boost productivity.

- Moulded case circuit breakers
- Air circuit breakers
- HRC fuse & Fuse base
- Switch disconnecter fuse
- Switch disconnectors
- Changeover switches - Manual & Motorized
- Auto transfer switches
- Cam switches
- Cable distribution cabinet - Kabeldon
- Fuse gear - Easyline and Inline (Fuse switch disconnecter)
- Switch disconnecter for DC application
- Photovoltaic MCCBs



## Emax - Low voltage air circuit breakers

- CT (Rogowski coil) range of 400 - 6300A (E1,E2,E3,E4 and E6) with breaking capacity range of 42-150KA
- Configured breakers are now available in E1, E2 and E3 frames
- SACE Emax circuit-breakers and their accessories conform to the international IEC 60947, EN 60947 CEI EN 60947 and IEC 61000 standards and comply with following EC directives "Low Voltage Directive" (LVD) no 73/23 EEC
- "Electromagnetic Compatibility Directive" (EMC) nr. 89/336 EEC
- Complete range of common accessories
- Double insulation
- Same height and depth for the whole range
- Protection releases provide complete set of standard protection function, advanced protection functions, Measurement functions
- Optional modules (measurements, signalling, communication, wireless com) to upgrade the protection releases
- Neutral protection from OFF to 200%
- Interchangeability of releases
- Low voltage switch disconnectors and automatic circuit breakers for direct current applications is available up to 5000A, 1000VDC

Note : Please contact the nearest sales office for the prices



Faults: no problem



Extremely simple



Completely new protection releases



Modularity

# Emax - Low voltage air circuit breakers

Configured breakers		Ordering code for Emax - 3 pole		
		PR121 LI	PR121 LSIG	PR122 LSIG
E1 - Withdrawable fixed part - WFP - HR-HR		1SDA059666R1		
E1 - 50KA -Withdrawable moving part - WMP	800 A Manual	1SDA055712R1	1SDA055714R1	1SDA055717R1
	800 A Electrical	1SYN55500100001	1SYN55500100017	1SYN55500100049
	1000 A Manual	1SDA059214R1	1SDA059222R1	1SDA059234R1
	1000 A Electrical	1SYN55500100002	1SYN55500100018	1SYN55500100050
	1250 A Manual	1SDA055744R1	1SDA055746R1	1SDA055749R1
	1250 A Electrical	1SYN55500100003	1SYN55500100019	1SYN55500100051
	1600 A Manual	1SDA055776R1	1SDA055778R1	1SDA055781R1
	1600 A Electrical	1SYN55500100004	1SYN55500100020	1SYN55500100052

Configured breakers		Ordering code for Emax - 4 pole		
		PR121 LI	PR121 LSIG	PR122 LSIG
E1 - Withdrawable Fixed Part - WFP - HR-HR		1SDA059762R1		
E1 - 50KA -Withdrawable moving part - WMP	800 A Manual	1SDA055720R1	1SDA055722R1	1SDA055725R1
	800 A Electrical	1SYN55500100081	1SYN55500100097	1SYN55500100129
	1000 A Manual	1SDA059216R1	1SDA059224R1	1SDA059236R1
	1000 A Electrical	1SYN55500100082	1SYN55500100098	1SYN55500100130
	1250 A Manual	1SDA055752R1	1SDA055754R1	1SDA055757R1
	1250 A Electrical	1SYN55500100083	1SYN55500100099	1SYN55500100131
	1600 A Manual	1SDA055784R1	1SDA055786R1	1SDA055789R1
	1600 A Electrical	1SYN55500100084	1SYN55500100100	1SYN55500100132

Configured breakers		Ordering code for Emax - 3 Pole		
		PR121 LI	PR121 LSIG	PR122 LSIG
E2 - Withdrawable fixed part - WFP-HR-HR		1SDA059667R1		
E2 - 65KA -Withdrawable moving part - WMP	2000 A Manual	1SDA055936R1	1SDA055938R1	1SDA055941R1
	2000 A Electrical	1SYN55500100008	1SYN55500100024	1SYN55500100056

Configured breakers		Ordering code for Emax - 4 Pole		
		PR121 LI	PR121 LSIG	PR122 LSIG
E2 - Withdrawable fixed part - WFP-HR-HR		1SDA059763R1		
E2 - 65KA -Withdrawable moving part - WMP	2000 A Manual	1SDA055944R1	1SDA055946R1	1SDA055949R1
	2000 A Electrical	1SYN55500100088	1SYN55500100104	1SYN55500100136

Configured breakers		Ordering code for Emax - 3 Pole		
		PR121 LI	PR121 LSIG	PR122 LSIG
E3 - Withdrawable fixed part - WFP - HR-HR		1SDA059669R1		
E3 - 65KA -Withdrawable moving part - WMP	2500 A Manual	1SDA056128R1	1SDA056130R1	1SDA056133R1
	2500 A Electrical	1SYN55500100009	1SYN55500100025	1SYN55500100057
	3200 A Manual	1SDA056160R1	1SDA056162R1	1SDA056165R1
	3200 A Electrical	1SYN55500100010	1SYN55500100026	1SYN55500100058

Configured Breakers		Ordering code for Emax - 4 Pole		
		PR121 LI	PR121 LSIG	PR122 LSIG
E3 - Withdrawable fixed part - WFP - HR-HR		1SDA059765R1		
E3 - 65KA -Withdrawable moving part - WMP	2500 A Manual	1SDA056136R1	1SDA056138R1	1SDA056141R1
	2500 A Electrical	1SYN55500100089	1SYN55500100105	1SYN55500100137
	3200 A Manual	1SDA056168R1	1SDA056170R1	1SDA056173R1
	3200 A Electrical	1SYN55500100090	1SYN55500100106	1SYN55500100138

- Note:
1. Withdrawable fixed parts ( WFP ) and withdrawable moving parts ( WMP ) are to be ordered together for a complete breaker
  2. Electrical drawout breakers mentioned above includes - 240 volts of shunt closing, shunt opening, motor operator and auxillary contacts ( 5NO + 5NC ) mounted on the breaker, for any other voltages please contact our nearest sales office
  3. For other current rating and breaking capacity ACB requirement, please contact our nearest sales office

## Tmax moulded case circuit breakers

Tmax guarantee for reliable performance with smaller foot prints, easy installation and increased safety with double insulation.

The Tmax series are particularly suitable for secondary distribution in AC/DC and provides solution for every application

### Scope:

Tmax series is offered in seven frame sizes with application in industrial, commercial and residential purposes. Available for both AC and DC networks of low voltage application. Tmax is suitable applications in

- Power distribution
- Motor protection application
- Generator application

### Device range:

To meet different requirements, Tmax series is available in the following ranges:

- Automatic circuit breakers for AC & DC
- Automatic circuit breakers for advanced zone selectivity
- Automatic circuit breakers for motor protection

- Switch disconnectors
- Automatic circuit breakers for applications up to 1,150 V for AC and 1,000 V for DC

Available versions are 3P & 4P in fixed (T1 to T7), plug-in(T2 to T5) and withdrawable(T4 to T7).

Tmax circuit breakers are offered with standardized accessories providing flexibility to customers.

Tmax range is available in both thermo magnetic and electronic protection releases

### Specific features:

Tmax is one of best circuit breaker in the industry when performance/size ratio is compared. The specially designed contact system and arc chutes guarantee let-through energy is limited in safe guarding downstream connected equipment.

Tmax circuit breakers offered in 7 frame sizes provides versatile functionality and flexibility to customers in selecting optimal rating based on performance requirement.





# Tmax power distribution circuit breakers

Type	Iu (40° C)[A]	Ue [V]		Category	Release	Icu (380 - 415 V AC) [kA]										
		AC	DC			16	25	36	50	70	85	100	120	150	200	
T1	160	690	500	A	TMD	B	C	N								
T2	160	690	500	A	MA (100 A) TMD MF (12.5 A) PR221DS			N	S	H	L					
T3	250	690	500	A	MA TMD TMG			N	S							
T4	250 320	690 1150	750 1000	A	MA (200 A) TMD (50 A) TMA (250 A) PR221DS PR222DS Ekip M PR223DS/EF			N	S	H		L			V	
T5	400 630	690 1150	750 1000	B (400 A) A (630 A)	TMA (500 A) TMG (500 A) PR221DS PR222DS Ekip M PR223DS/EF			N	S	H		L			V	
T6	630 800 1000	690 1150	750 1000	B (630A - 800 A) A (1000 A)	TMA (800 A) PR221DS PR222DS Ekip M PR223DS/EF			N	S	H		L			V	
T7	800 1000 1250 1600	690		B	PR231/P PR232/P PR331/P PR332/P				S	H		L			V	

## Trip Units

### Thermal magnetic trip units

- MA - Magnetic only trip unit with adjustable magnetic thresholds for motor protection
- TMF - Fixed thermal and fixed magnetic for power distribution
- TMD - Adjustable thermal ( 70-100%of In) and fixed magnetic (10 x In) for power distribution
- TMA - Adjustable thermal ( 70-100% of In) and adjustable magnetic ( 5-10 of In) for power distribution
- TMG - Adjustable thermal ( 70-100% of In) and low fixed magnetic ( 3 x In) for generator protection

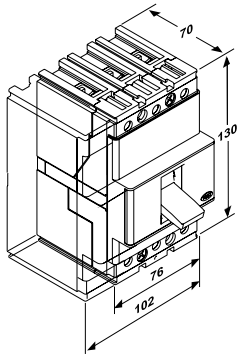
### Microprocessor based electronic trip units

PR221	L = 0.40 - 1 of In	PR222	L = 0.4 - 1 of In	PR231	L = 0.4 - 1 of In	PR331	L = 0.4 - 1 of In
	S = 1 - 10 of In		S = 0.6 - 10 of In		S = 1 - 10 of In		S = 0.6 - 10 of In
	I = 1 - 10 of In		I = 1.5 - 12 of In		I = 1 - 12 of In		I = 1.5 - 15 of In
			G = 0.2 - 1 of In				G = 0.2 - 1 of In

**PR 223 EF** Early fault detection and prevention from T4 - T7. Details on request

# Tmax power distribution circuit breakers

## T1



Breaking Capacity at 415VAC

	Icu	Ics(Icu)
B	16KA	100%
C	25KA	100%
N	36KA	75%



### TMD

In (A)	Poles
16	3
20	
25	
32	
40	
50	
63	
80	
100	
125	
160	
16	4
20	
25	
32	
40	
50	
63	
80	
100	
125	
160	

T1B 160 F FC Cu  
Icu = 16KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA050870R1	5,650
1SDA050871R1	5,650
1SDA050872R1 ■	5,650
1SDA050873R1 ■	5,650
1SDA050874R1 ■	5,650
1SDA050875R1 ■	5,650
1SDA050876R1 ■	5,650
1SDA050877R1 ■	5,650
1SDA050878R1 ■	5,650
1SDA050879R1 ■	7,900
1SDA050880R1 ■	9,200
1SDA050881R1	7,800
1SDA050882R1	7,800
1SDA050883R1	7,800
1SDA050884R1	7,800
1SDA050885R1	7,800
1SDA050886R1	7,800
1SDA050887R1 ■	7,800
1SDA050888R1	7,800
1SDA050889R1 ■	7,800
1SDA050890R1 ■	9,900
1SDA050936R1 ■	13,300

T1C 160 F FC Cu  
Icu = 25KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
-	-
-	-
1SDA050894R1	5,950
1SDA050895R1 ■	5,950
1SDA050896R1 ■	5,950
1SDA050897R1 ■	5,950
1SDA050898R1 ■	5,950
1SDA050899R1 ■	5,950
1SDA050900R1 ■	5,950
1SDA050901R1 ■	9,200
1SDA050902R1 ■	12,250
-	-
-	-
1SDA050905R1	8,650
1SDA050906R1	8,650
1SDA050907R1	8,650
1SDA050908R1	8,650
1SDA050909R1 ■	8,650
1SDA050910R1	8,650
1SDA050911R1 ■	8,650
1SDA050912R1 ■	10,950
1SDA050937R1 ■	14,400

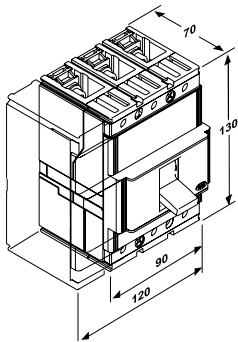
T1N 160 F FC Cu  
Icu = 36KA, Ics = 75%(Icu)

Ordering Code	M.R.P.(₹)
-	-
-	-
-	-
1SDA050917R1 ■	7,500
1SDA050918R1	7,500
1SDA050919R1	7,500
1SDA050920R1 ■	7,500
1SDA050921R1	7,500
1SDA050922R1 ■	7,500
1SDA050923R1 ■	9,900
1SDA050924R1 ■	13,000
-	-
-	-
-	-
1SDA050928R1	9,450
1SDA050929R1	9,450
1SDA050930R1	9,450
1SDA050931R1 ■	9,450
1SDA050932R1	9,450
1SDA050933R1 ■	9,450
1SDA050934R1 ■	12,000
1SDA050938R1 ■	15,750

■ Stock items

# Tmax power distribution circuit breakers

## T2



Breaking Capacity at 415VAC

	Icu	Ics(Icu)
N	36KA	100%
S	50KA	100%
H	70KA	100%



### TMD

In (A)	Poles
1.6	3
2	
2.5	
3.2	
4	
5	
6.3	
8	
10	
12.5	
16	
20	
25	
32	
40	
50	
63	
80	
100	
125	
160	
1.6	4
2	
2.5	
3.2	
4	
5	
6.3	
8	
10	
12.5	
16	
20	
25	
32	
40	
50	
63	
80	
100	
125	
160	

### T2N 160 F F

Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA050940R1	9,700
1SDA050941R1	9,700
1SDA050942R1	9,700
1SDA050943R1	9,700
1SDA050944R1	9,700
1SDA050945R1	9,700
1SDA050946R1	9,700
1SDA050947R1	9,700
1SDA050948R1	9,700
1SDA050949R1	9,700
1SDA050950R1	9,700
1SDA050951R1	9,000
1SDA050952R1 ■	9,000
1SDA050953R1 ■	9,000
1SDA050954R1	9,000
1SDA050955R1	9,000
1SDA050956R1 ■	9,000
1SDA050957R1 ■	9,000
1SDA050958R1 ■	9,000
1SDA050959R1 ■	10,200
1SDA050960R1 ■	13,700
1SDA050962R1	12,400
1SDA050963R1	12,400
1SDA050964R1	12,400
1SDA050965R1	12,400
1SDA050966R1	12,400
1SDA050967R1	12,400
1SDA050968R1	12,400
1SDA050969R1	12,400
1SDA050970R1	12,400
1SDA050971R1	12,400
1SDA050972R1	12,100
1SDA050973R1	12,100
1SDA050974R1	12,100
1SDA050975R1	12,100
1SDA050976R1	12,100
1SDA050977R1	12,100
1SDA050978R1 ■	12,100
1SDA050979R1	12,100
1SDA050980R1 ■	12,100
1SDA051115R1 ■	13,650
1SDA051116R1 ■	16,800

### T2S 160 F F

Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA050984R1	11,850
1SDA050985R1	11,850
1SDA050986R1	11,850
1SDA050987R1	11,850
1SDA050988R1	11,850
1SDA050989R1	11,850
1SDA050990R1	11,850
1SDA050991R1	11,850
1SDA050992R1	11,850
1SDA050993R1	11,850
1SDA050994R1	11,250
1SDA050995R1	11,250
1SDA050996R1 ■	11,250
1SDA050997R1 ■	11,250
1SDA050998R1	11,250
1SDA050999R1	11,250
1SDA051000R1 ■	11,250
1SDA051001R1	11,250
1SDA051002R1 ■	11,250
1SDA051003R1 ■	14,300
1SDA051004R1 ■	17,850
1SDA051006R1	15,300
1SDA051007R1	15,300
1SDA051008R1	15,300
1SDA051009R1	15,300
1SDA051010R1	15,300
1SDA051011R1	15,300
1SDA051012R1	15,300
1SDA051013R1	15,300
1SDA051014R1	15,300
1SDA051015R1	15,300
1SDA051016R1	14,950
1SDA051017R1	14,950
1SDA051018R1	14,950
1SDA051019R1	14,950
1SDA051020R1	14,950
1SDA051021R1	14,950
1SDA051022R1 ■	14,950
1SDA051023R1	14,950
1SDA051024R1 ■	14,950
1SDA051117R1 ■	18,900
1SDA051118R1 ■	22,050

### T2H 160 F F

Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA051028R1	15,900
1SDA051029R1	15,900
1SDA051030R1	15,900
1SDA051031R1	15,900
1SDA051032R1	15,900
1SDA051033R1	15,900
1SDA051034R1	15,900
1SDA051035R1	15,900
1SDA051036R1	15,900
1SDA051037R1	15,900
1SDA051038R1	15,550
1SDA051039R1	15,550
1SDA051040R1	15,550
1SDA051041R1	15,550
1SDA051042R1	15,550
1SDA051043R1	15,550
1SDA051044R1	15,550
1SDA051045R1	15,550
1SDA051046R1	15,550
1SDA051047R1	20,700
1SDA051048R1	24,450
1SDA051050R1	19,700
1SDA051051R1	19,700
1SDA051052R1	19,700
1SDA051053R1	19,700
1SDA051054R1	19,700
1SDA051055R1	19,700
1SDA051056R1	19,700
1SDA051057R1	19,700
1SDA051058R1	19,700
1SDA051059R1	19,700
1SDA051060R1	19,250
1SDA051061R1	19,250
1SDA051062R1	19,250
1SDA051063R1	19,250
1SDA051064R1	19,250
1SDA051065R1	19,250
1SDA051066R1	19,250
1SDA051067R1	19,250
1SDA051068R1	19,250
1SDA051119R1	23,650
1SDA051120R1	29,500

■ Stock items

# Tmax power distribution circuit breakers

## T2

### PR221 DS-LS/I

In (A)	Poles
10	3
25	
63	
100	
160	
10	4
25	
63	
100	
160	

### T2N 160 F F

Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA051123R1	15,800
1SDA051124R1	15,800
1SDA051125R1 ■	15,800
1SDA051126R1 ■	15,800
1SDA051127R1 ■	19,600
1SDA051128R1	20,500
1SDA051129R1	20,500
1SDA051130R1	20,500
1SDA051131R1	20,500
1SDA051613R1	27,000

### T2S 160 F F

Icu = 50KA, Ics = 100%(Icu)

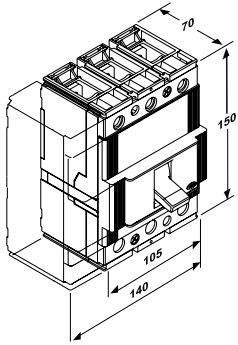
Ordering Code	M.R.P.(₹)
1SDA051133R1	19,000
1SDA051134R1	19,000
1SDA051135R1 ■	19,000
1SDA051136R1 ■	19,000
1SDA051137R1 ■	25,500
1SDA051138R1	24,000
1SDA051139R1	24,000
1SDA051140R1	24,000
1SDA051141R1	24,000
1SDA051614R1	33,500

### T2H 160 F F

Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA051143R1	21,000
1SDA051144R1	21,000
1SDA051145R1	21,000
1SDA051146R1	21,000
1SDA051147R1	28,350
1SDA051148R1	26,600
1SDA051149R1	26,600
1SDA051150R1	26,600
1SDA051151R1	26,600
1SDA051615R1	36,250

## T3



### Breaking Capacity at 415VAC

	Icu	Ics(Icu)
N	36KA	75%
S	50KA	50%



### TMD

In (A)	Poles
200	3
250	
200	4
250	

### T3N 250 F F

Icu = 36KA, Ics = 75%(Icu)

Ordering Code	M.R.P.(₹)
1SDA051246R1 ■	17,200
1SDA051247R1 ■	19,800
1SDA051305R1 ■	22,000
1SDA051306R1 ■	25,000

### T3S 250 F F

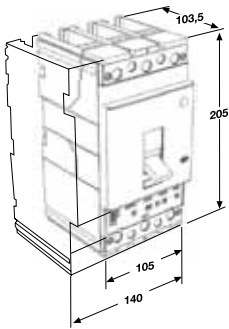
Icu = 50KA, Ics = 50%(Icu)

Ordering Code	M.R.P.(₹)
1SDA051268R1 ■	20,000
1SDA051269R1 ■	23,000
1SDA051309R1 ■	25,500
1SDA051310R1 ■	27,000

■ Stock items

# Tmax power distribution circuit breakers

## T4



Breaking Capacity at 415VAC

	Icu	Ics(Icu)
N	36KA	100%
S	50KA	100%
H	70KA	100%



### T4 250 TMA

In (A)	Poles
80	3
100	
125	
160	
200	
250	4
80	
100	
125	
160	
200	
250	

### T4N 250 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054174R1	19,800
1SDA054175R1	19,800
1SDA054176R1	20,300
1SDA054177R1	20,300
1SDA054178R1 ■	20,300
1SDA054179R1 ■	22,900
1SDA054183R1	25,900
1SDA054184R1	25,900
1SDA054271R1	25,900
1SDA054272R1	25,900
1SDA054273R1 ■	25,900
1SDA054274R1 ■	27,050

### T4S 250 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054192R1	22,900
1SDA054193R1	22,900
1SDA054194R1	23,400
1SDA054195R1	23,400
1SDA054196R1 ■	23,400
1SDA054197R1 ■	25,000
1SDA054201R1	28,600
1SDA054202R1	28,600
1SDA054275R1	29,100
1SDA054276R1	29,100
1SDA054277R1 ■	29,100
1SDA054278R1 ■	30,100

### T4H 250 F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054210R1	27,300
1SDA054211R1	27,300
1SDA054212R1	27,650
1SDA054213R1	27,650
1SDA054214R1	27,650
1SDA054215R1	28,900
1SDA054219R1	35,350
1SDA054220R1	35,350
1SDA054279R1	35,850
1SDA054280R1	35,850
1SDA054281R1	36,400
1SDA054282R1	36,950

### PR221 DS-LS/I

250	3
250	4

1SDA053999R1 ■	26,500
1SDA054011R1 ■	34,500

1SDA054023R1 ■	33,000
1SDA054035R1 ■	38,500

1SDA054047R1	34,500
1SDA054059R1	40,000

### PR222DS/P-LSIG

100	3
160	
250	
100	4
160	
250	

1SDA054006R1 ■	38,000
1SDA054007R1 ■	38,000
1SDA054008R1 ■	38,000
1SDA054018R1	46,000
1SDA054019R1	46,000
1SDA054020R1 ■	46,000

1SDA054030R1 ■	39,500
1SDA054031R1 ■	39,500
1SDA054032R1 ■	39,500
1SDA054042R1	48,500
1SDA054043R1	48,500
1SDA054044R1 ■	48,500

1SDA054054R1	48,000
1SDA054055R1	48,000
1SDA054056R1	48,000
1SDA054066R1	58,000
1SDA054067R1	58,000
1SDA054068R1	58,000

### PR223DS

160	3
250	
160	4
250	

1SDA059491R1	Upon Req.
1SDA059493R1	Upon Req.
1SDA059492R1	Upon Req.
1SDA059494R1	Upon Req.

1SDA059499R1	Upon Req.
1SDA059501R1	Upon Req.
1SDA059500R1	Upon Req.
1SDA059502R1	Upon Req.

1SDA059507R1	Upon Req.
1SDA059509R1	Upon Req.
1SDA059508R1	Upon Req.
1SDA059510R1	Upon Req.

### T4 320 PR221 DS-LS/I

In (A)	Poles
320	3
320	4

### T4N 320 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054117R1 ■	30,500
1SDA054121R1	37,500

### T4S 320 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054125R1 ■	34,000
1SDA054129R1	43,000

### T4H 320 F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054133R1	39,500
1SDA054137R1	49,500

■ Stock items

# Tmax power distribution circuit breakers

## T4

### PR222DS/P-LSIG

In (A)	Poles
320	3
320	4

### T4N 320 F F

Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054120R1 ■	45,000
1SDA054124R1	50,000

### T4S 320 F F

Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054128R1 ■	46,000
1SDA054132R1	52,000

### T4H 320 F F

Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054136R1	55,000
1SDA054140R1	62,000

### PR223DS

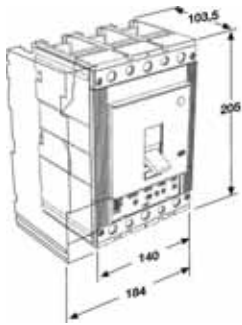
In (A)	Poles
320	3
320	4

1SDA059495R1	Upon Req.
1SDA059496R1	Upon Req.

1SDA059503R1	Upon Req.
1SDA059504R1	Upon Req.

1SDA059511R1	Upon Req.
1SDA059512R1	Upon Req.

## T5



### Breaking capacity at 415VAC

	Icu	Ics(Icu)
N	36KA	100%
S	50KA	100%
H	70KA	100%



### T5 400 TMA

In (A)	Poles
320	3
400	
320	4
400	

### T5N 400 F F

Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054436R1 ■	26,800
1SDA054437R1 ■	26,800
1SDA054477R1	33,400
1SDA054478R1	33,400

### T5S 400 F F

Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054440R1 ■	27,850
1SDA054441R1 ■	27,850
1SDA054479R1	34,650
1SDA054480R1	34,650

### T5H 400 F F

Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054444R1	32,150
1SDA054445R1	32,150
1SDA054481R1	37,300
1SDA054482R1	37,300

### PR221 DS-LS/I

In (A)	Poles
400	3
400	4

1SDA054317R1 ■	31,650
1SDA054325R1 ■	39,300

1SDA054333R1 ■	34,700
1SDA054341R1 ■	44,900

1SDA054349R1	42,000
1SDA054357R1	52,500

### PR222DS/P-LSIG

In (A)	Poles
400	3
400	4

1SDA054323R1 ■	47,000
1SDA054331R1	55,000

1SDA054339R1 ■	49,000
1SDA054347R1	55,000

1SDA054355R1	60,900
1SDA054363R1	68,250

### PR223DS

In (A)	Poles
400	3
400	4

1SDA059531R1	Upon Req.
1SDA059532R1	Upon Req.

1SDA059537R1	Upon Req.
1SDA059538R1	Upon Req.

1SDA059543R1	Upon Req.
1SDA059544R1	Upon Req.

■ Stock items

# Tmax power distribution circuit breakers

## T5 630 TMA

In (A)	Poles
500	3
500	4

## T5N 630 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054456R1 ■	29,950
1SDA054487R1	38,350

## T5S 630 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054461R1 ■	32,550
1SDA054489R1	42,000

## T5H 630 F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054465R1	41,500
1SDA054491R1	50,400

## PR221 DS-LS/I

630	3
630	4

1SDA054396R1 ■	33,700
1SDA054400R1	45,900

1SDA054404R1 ■	37,750
1SDA054408R1	50,000

1SDA054412R1	44,700
1SDA054416R1	58,300

## PR222DS/P-LSIG

630	3
630	4

1SDA054399R1 ■	50,000
1SDA054403R1	58,000

1SDA054407R1 ■	52,000
1SDA054411R1	64,000

1SDA054415R1	63,000
1SDA054419R1	86,100

## PR223DS

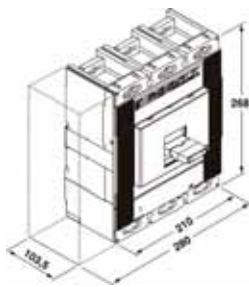
630	3
630	4

1SDA059533R1	Upon Req.
1SDA059534R1	Upon Req.

1SDA059539R1	Upon Req.
1SDA059540R1	Upon Req.

1SDA059545R1	Upon Req.
1SDA059546R1	Upon Req.

## T6



### Breaking Capacity at 415VAC

	Icu	Ics(Icu)
N	36KA	100%
S	50KA	100%
H	70KA	100%



## T6 630 TMA

In (A)	Poles
630	3
630	4

## T6N 630 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060202R1 ■	34,200
1SDA060210R1	41,000

## T6S 630 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060204R1 ■	35,200
1SDA060211R1	45,200

## T6H 630 F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060206R1	43,100
1SDA060212R1	53,600

## T6 800 TMA

In (A)	Poles
800	3
800	4

## T6N 800 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060214R1 ■	45,400
1SDA060222R1	51,300

## T6S 800 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060216R1 ■	47,600
1SDA060223R1	56,200

## T6H 800 F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060218R1	48,600
1SDA060224R1	58,400

■ Stock items

# Tmax power distribution circuit breakers

## PR221 DS-LS/I

In (A)	Poles
800	3
800	4

### T6N 800 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060268R1 ■	54,500
1SDA060273R1	62,200

### T6S 800 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060278R1 ■	61,100
1SDA060283R1	75,900

### T6H 800 F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060289R1	74,800
1SDA060294R1	92,600

## PR222DS/P-LSIG

800	3
800	4

1SDA060271R1 ■	80,900
1SDA060276R1	93,500

1SDA060281R1 ■	84,700
1SDA060286R1	95,700

1SDA060292R1	94,300
1SDA060297R1	1,11,000

## PR223DS

800	3
800	4

1SDA060272R1	Upon Req.
1SDA060277R1	Upon Req.

1SDA060282R1	Upon Req.
1SDA060287R1	Upon Req.

1SDA060293R1	Upon Req.
1SDA060298R1	Upon Req.

## T6 1000

### PR221 DS-LS/I

In (A)	Poles
1000	3
1000	4

### T6N 1000 E F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060537R1	83,600
1SDA060542R1	121,000

### T6S 1000 E F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060547R1	90,200
1SDA060556R1	126,500

### T6H 1000 E F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060561R1	107,800
1SDA060566R1	154,000

## PR222DS/P-LSIG

1000	3
1000	4

1SDA060540R1	110,000
1SDA060545R1	146,300

1SDA060554R1	121,000
1SDA060559R1	154,000

1SDA060564R1	148,500
1SDA060569R1	187,000

## PR223DS

1000	3
1000	4

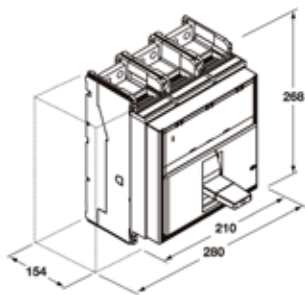
1SDA060541R1	Upon Req.
1SDA060546R1	Upon Req.

1SDA060555R1	Upon Req.
1SDA060560R1	Upon Req.

1SDA060565R1	Upon Req.
1SDA060573R1	Upon Req.

Note: Extended front (EF) terminals are supplied as standard in T6 1000A MCCB

# T7



### Breaking Capacity at 415VAC

	Icu	Ics(Icu)
S	50KA	100%
H	70KA	100%



## T7 1250

### PR231/P LS/I

In (A)	Poles
1250	3
1250	4

### T7S 1250 F F

Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA062866R1	125,000
1SDA062874R1	157,000

### T7H 1250 F F

Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA062898R1	164,400
1SDA062906R1	196,400

## PR331/P LSIG

1250	3
1250	4

1SDA062868R1	160,700
1SDA062876R1	178,500

1SDA062900R1	186,900
1SDA062908R1	220,500

■ Stock items



## Tmax power distribution circuit breakers

### PR332/P LSI G

In (A)	Poles
1250	3
1250	4

T7S 1250 F F  
Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA062871R1	1,67,000
1SDA062879R1	1,90,600

T7H 1250 F F  
Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA062903R1	2,00,100
1SDA062911R1	2,32,100

### T7 1600

#### PR231/P LS/I

In (A)	Poles
1600	3
1600	4

T7S 1600 F F  
Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA062994R1	1,43,900
1SDA063002R1	1,72,800

T7H 1600 F F  
Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA063026R1	1,80,600
1SDA063034R1	2,17,900

### PR331/P LSI G

1600	3
1600	4

1SDA062996R1	1,67,000
1SDA063004R1	1,96,400

1SDA063028R1	2,04,800
1SDA063036R1	2,38,400

### PR332/P LSI G

1600	3
1600	4

1SDA062999R1	1,81,200
1SDA063007R1	2,08,500

1SDA063031R1	2,16,900
1SDA063039R1	2,55,000

Note : For further ratings on generator protection. Please contact our nearest sales office

# Tmax power distribution circuit breakers

## T7

### T7 1250M

#### PR231/P LS/I

In (A)	Poles
1250	3
1250	4

### T7S 1250M F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA062882R1	143,900
1SDA062889R1	170,100

### T7H 1250M F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA062914R1	182,200
1SDA062922R1	219,000

#### PR331/P LSIG

1250	3
1250	4

1SDA062884R1	168,000
1SDA062892R1	195,300

1SDA062916R1	207,400
1SDA062924R1	243,100

#### PR332/P LSIG

1250	3
1250	4

1SDA062887R1	178,500
1SDA062895R1	207,400

1SDA062919R1	217,900
1SDA062927R1	256,200

Note : For Motorizable T7 M frame, please order along with above code, motor operator, shunt opening coil & shunt closing coil of required voltage.

### T7 1600M

#### PR231/P LS/I

In (A)	Poles
1600	3
1600	4

### T7S 1600M F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA063010R1	159,600
1SDA063018R1	192,700

### T7H 1600M F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA063042R1	203,700
1SDA063050R1	243,600

#### PR331/P LSIG

1600	3
1600	4

1SDA063012R1	183,300
1SDA063020R1	216,900

1SDA063044R1	226,300
1SDA063052R1	267,800

#### PR332/P LSIG

1600	3
1600	4

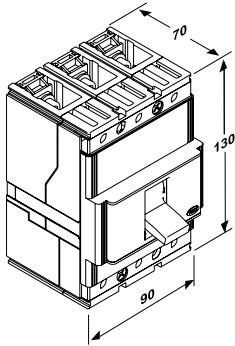
1SDA063015R1	195,300
1SDA063023R1	227,400

1SDA063047R1	238,400
1SDA063055R1	279,900

Note : For Motorizable T7 M frame, please order along with above code, motor operator, shunt opening coil & shunt closing coil of required voltage.

# Tmax motor protection circuit breaker

## T2



Breaking capacity at 415VAC

	Icu	Ics(Icu)
N	36KA	100%
S	50KA	100%
H	70KA	100%



### T2 160 MF

In (A)	Poles
1	3
1.6	
2	
2.5	
3.2	
4	
5	
6.5	
8.5	
11	
12.5	

### T2N 160 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA053110R1	12,000
1SDA053111R1	12,000
1SDA053112R1	12,000
1SDA0531131R1	12,000
1SDA053114R1	12,000
1SDA053115R1	12,000
1SDA053116R1	12,000
1SDA053117R1	12,000
1SDA053118R1	12,000
1SDA053119R1	12,000
1SDA053120R1	12,000

### T2S 160 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA053121R1	13,000
1SDA053122R1	13,000
1SDA053123R1	13,000
1SDA053124R1	13,000
1SDA053125R1	13,000
1SDA053126R1	13,000
1SDA053127R1	13,000
1SDA053128R1	13,000
1SDA053129R1	13,000
1SDA053130R1	13,000
1SDA053131R1	13,000

### T2H 160 F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA053132R1	14,000
1SDA053133R1	14,000
1SDA053134R1	14,000
1SDA053135R1	14,000
1SDA053136R1	14,000
1SDA053137R1	14,000
1SDA053138R1	14,000
1SDA053139R1	14,000
1SDA053140R1	14,000
1SDA053141R1	14,000
1SDA053142R1	14,000

### MA

In (A)	Poles
20	3
32	
52	
80	
100	

Ordering Code	M.R.P.(₹)
1SDA051207R1	12,000
1SDA051208R1	12,000
1SDA051209R1	12,000
1SDA051210R1	12,000
1SDA051211R1	12,000

Ordering Code	M.R.P.(₹)
1SDA051216R1	13,000
1SDA051217R1	13,000
1SDA051218R1	13,000
1SDA051219R1	13,000
1SDA051220R1	13,000

Ordering Code	M.R.P.(₹)
1SDA051224R1	14,000
1SDA051225R1	14,000
1SDA051226R1	14,000
1SDA051226R1	14,000
1SDA051228R1	14,000

### PR221 DS-I

In (A)	Poles
10	3
25	
63	
100	
160	

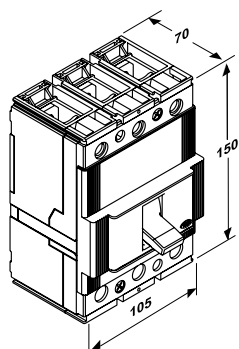
Ordering Code	M.R.P.(₹)
1SDA051163R1	15,800
1SDA051164R1	15,800
1SDA051165R1	15,800
1SDA051166R1	15,800
1SDA051168R1	19,600

Ordering Code	M.R.P.(₹)
1SDA051174R1	19,000
1SDA051175R1	19,000
1SDA051176R1	19,000
1SDA051177R1	19,000
1SDA051178R1	25,500

Ordering Code	M.R.P.(₹)
1SDA051184R1	20,000
1SDA051185R1	20,000
1SDA051186R1	20,000
1SDA051187R1	20,000
1SDA051188R1	27,000

# Tmax motor protection circuit breaker

## T3



Breaking capacity at 415VAC

	Icu	Ics(Icu)
N	36KA	75%
S	50KA	50%



### T3 250 MA

In (A)	Poles
100	3
125	
160	
200	

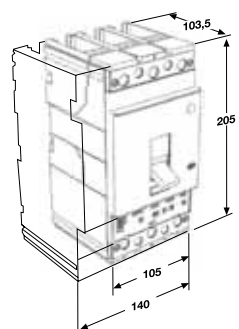
### T3N 250 F F Icu = 36KA, Ics = 75%(Icu)

Ordering Code	M.R.P.(₹)
1SDA051315R1	14,800
1SDA051316R1	14,900
1SDA051317R1	15,900
1SDA051318R1	17,000

### T3S 250 F F Icu = 50KA, Ics = 50%(Icu)

Ordering Code	M.R.P.(₹)
1SDA051320R1	15,400
1SDA051321R1	15,900
1SDA051322R1	16,500
1SDA051323R1	17,500

## T4



Breaking capacity at 415VAC

	Icu	Ics(Icu)
N	36KA	100%
S	50KA	100%



### T4 250 MA

In (A)	Poles
125	3
160	
200	

### T4N 250 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054298R1	24,800
1SDA054299R1	24,800
1SDA054300R1	24,800

### T4S 250 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054304R1	26,000
1SDA054305R1	27,000
1SDA054306R1	28,000

### PR221 DS-I

In (A)	Poles
250	3
320	

### T4N 250 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054002R1	29,700
1SDA054118R1	34,150

### T4S 250 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054026R1	37,000
1SDA054126R1	38,100

### T4H 250 F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054050R1	38,650
1SDA054134R1	44,250

### Ekip M-LRIU

In (A)	Poles
100	3
160	
200	

### T4N 250 F F Icu = 36KA, Ics = 100%(Icu)

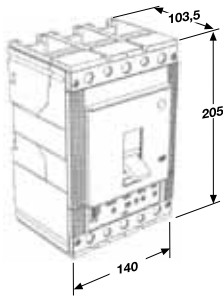
Ordering Code	M.R.P.(₹)
1SDA054522R1	40,400
1SDA054523R1	42,000
1SDA054524R1	43,200

### T4S 250 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054525R1	53,800
1SDA054526R1	54,900
1SDA054527R1	56,000

# Tmax motor protection circuit breaker

## T5



Breaking capacity at 415VAC

	Icu	Ics(Icu)
N	36KA	100%
S	50KA	100%



### T5 400 PR221 DS-I

In (A)	Poles
400	3

### T5N 400 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054319R1	31,650

### T5S 400 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054335R1	34,700

### T5H 400 F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054351R1	42,000

### Ekip M-LRIU

In (A)	Poles
320	3
400	3

### T5N 400 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054551R1	51,000
1SDA054552R1	51,000

### T5S 400 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054553R1	57,200
1SDA054554R1	57,200

### T5 630 PR221 DS-I

In (A)	Poles
630	3

### T5N 630 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054397R1	33,700

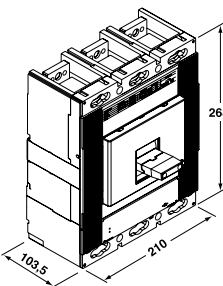
### T5S 630 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054405R1	37,750

### T5H 630 F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA054413R1	44,700

## T6



Breaking capacity at 415VAC

	Icu	Ics(Icu)
N	36KA	100%
S	50KA	100%
H	70KA	100%



### T6 800 PR221 DS-I

In (A)	Poles
800	3

### T6N 800 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060269R1	54,500

### T6S 800 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060279R1	61,100

### T6H 800 F F Icu = 70KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060290R1	74,800

### Ekip M-LRIU

In (A)	Poles
800	3

Ordering Code	M.R.P.(₹)
1SDA060311R1	71,700

Ordering Code	M.R.P.(₹)
1SDA060312R1	78,400

Ordering Code	M.R.P.(₹)
1SDA060313R1	91,900

### T6 1000 PR221 DS-I

In (A)	Poles
1000	3

### T6N 1000 F F Icu = 36KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060538R1	83,600

### T6S 1000 F F Icu = 50KA, Ics = 100%(Icu)

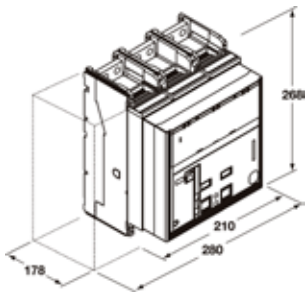
Ordering Code	M.R.P.(₹)
1SDA060548R1	90,200

### T6H 1000 F F Icu = 50KA, Ics = 100%(Icu)

Ordering Code	M.R.P.(₹)
1SDA060562R1	1,04,500

# Tmax motor protection circuit breaker

## T7



### Breaking Capacity at 415VAC

	Icu	Ics
S	50KA	100%
H	70KA	100%



### T7 1250 PR231/P I

In (A)	Poles
1250	3
1250	4

### T7S 1250 F F Icu = 50KA, Ics = 100%

Ordering Code	M.R.P.(₹)
1SDA062865R1	118,700
1SDA062873R1	154,400

### T7H 1250 F F Icu = 70KA, Ics = 100%

Ordering Code	M.R.P.(₹)
1SDA062897R1	163,300
1SDA062905R1	195,300

### T7 1600 PR231/P I

In (A)	Poles
1600	3
1600	4

### T7S 1600 F F Icu = 50KA, Ics = 100%

Ordering Code	M.R.P.(₹)
1SDA062993R1	142,800
1SDA063001R1	171,200

### T7H 1600 F F Icu = 70KA, Ics = 100%

Ordering Code	M.R.P.(₹)
1SDA063025R1	179,600
1SDA063033R1	215,300

### T7 1250M PR231/P I

In (A)	Poles
1250	3
1250	4

### T7S 1250M F F Icu = 50KA, Ics = 100%

Ordering Code	M.R.P.(₹)
1SDA062881R1	133,400
1SDA062889R1	170,100

### T7H 1250M F F Icu = 70KA, Ics = 100%

Ordering Code	M.R.P.(₹)
1SDA062913R1	181,200
1SDA062921R1	217,900

### T7 1600M PR231/P I

In (A)	Poles
1600	3
1600	4

### T7S 1600M F F Icu = 50KA, Ics = 100%

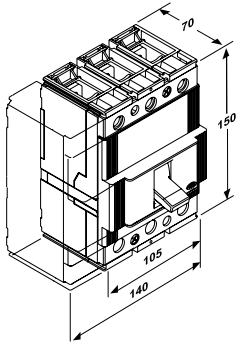
Ordering Code	M.R.P.(₹)
1SDA063009R1	158,600
1SDA063017R1	190,600

### T7H 1600M F F Icu = 70KA, Ics = 100%

Ordering Code	M.R.P.(₹)
1SDA063041R1	202,700
1SDA063049R1	243,100

# Tmax generator protection circuit breaker

## T3



### Breaking Capacity at 415VAC

	Icu	Ics
N	36KA	75%
S	50KA	50%



### T3 TMG

In (A)	Poles
200	3
250	3
200	4
250	4

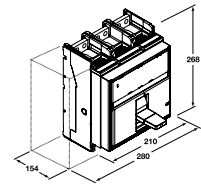
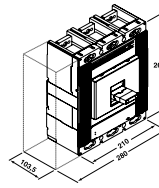
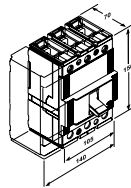
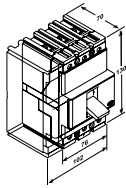
### T3N 250 F F Icu = 36KA, Ics = 75%

Ordering Code	M.R.P.(₹)
1SDA055110R1	16,800
1SDA055111R1	19,500
1SDA055117R1	22,000
1SDA055118R1	25,000

### T3S 250 F F Icu = 50KA, Ics = 50%

Ordering Code	M.R.P.(₹)
1SDA055124R1	20,000
1SDA055125R1	23,000
1SDA055131R1	25,500
1SDA055132R1	27,000

# Tmax switch disconnecter



## T1D - Fixed (F), Icw (1s) = 2,2 kA

### T1D 160 F FC Cu

Poles	In(A)	Ordering Code	M.R.P.(₹)
3	160	1SDA051325R1	7,300
4	160	1SDA051326R1	10,700

## T3D - Fixed (F), Icw (1s) = 3.6 kA

### T3D 250 F F

Poles	In(A)	Ordering Code	M.R.P.(₹)
3	250	1SDA051327R1	17,400
4	250	1SDA051328R1	20,800

## T4D- Fixed (F), Icw (1s) = 3,6 kA

### T4D 250 F F

Poles	In(A)	Ordering Code	M.R.P.(₹)
3	250	1SDA057172R1	19,100
4	250	1SDA057173R1	25,400

### T4D 320 F F

In(A)	Ordering Code	M.R.P.(₹)
320	1SDA054597R1	21,300
320	1SDA054598R1	28,000

## T5D- Fixed (F) , Icw (1s) = 3,6 kA

### T5D 400 F F

Poles	In(A)	Ordering Code	M.R.P.(₹)
3	400	1SDA054599R1	23,000
4	400	1SDA054600R1	29,200

### T5D 500 F F

In(A)	Ordering Code	M.R.P.(₹)
500	1SDA054601R1	28,000
500	1SDA054602R1	35,700

## T6D - Fixed (F), Icw (1s) = 15 kA

### T6D 630 F F

Poles	In(A)	Ordering Code	M.R.P.(₹)
3	630	1SDA060343R1	31,700
4	630	1SDA060344R1	38,100

### T6D 800 F F

In(A)	Ordering Code	M.R.P.(₹)
800	1SDA060345R1	35,000
800	1SDA060346R1	57,200

### T6D 1000 E F

In(A)	Ordering Code	M.R.P.(₹)
1000	1SDA060594R1	61,000
1000	1SDA060595R1	76,200

## T7D- Fixed (F), Icw (1s) = 20 kA

### T7D 1000 F F

Poles	In(A)	Ordering Code	M.R.P.(₹)
3	1000	1SDA062032R1	69,900
4	1000	1SDA062033R1	89,100

### T7D 1250 F F

In(A)	Ordering Code	M.R.P.(₹)
1250	1SDA062036R1	95,200
1250	1SDA062037R1	117,100

### T7D 1600 F F

In(A)	Ordering Code	M.R.P.(₹)
1600	1SDA062040R1	99,200
1600	1SDA062041R1	122,100

## T7D M - Fixed (F), Icw (1s) = 20 kA

### T7D 1000 M F F

Poles	In(A)	Ordering Code	M.R.P.(₹)
3	1000	1SDA062034R1	86,300
4	1000	1SDA062035R1	109,200

### T7D 1250 M F F

In(A)	Ordering Code	M.R.P.(₹)
1250	1SDA062038R1	99,200
1250	1SDA062039R1	122,100

### T7D 1600 M F F

In(A)	Ordering Code	M.R.P.(₹)
1600	1SDA062042R1	109,200
1600	1SDA062043R1	136,100

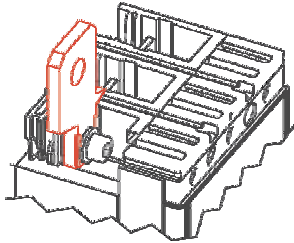


# Tmax accessories

## Accessories for T-Max MCCBs

### Extended Spreaded terminals - ES

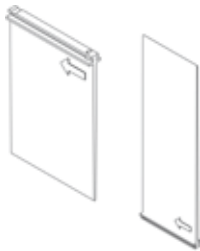
Frame	Description	Ordering code	M.R.P.(₹)
T1	Kit EST1 6pcs	1SYN450201R0001 ■	740
	Kit EST1 8pcs	1SYN450207R0001 ■	840
T2	Kit EST2 6pcs	1SYN450202R0001 ■	1,160
	Kit EST2 8pcs	1SYN450208R0001 ■	1,370
T3	Kit EST3 6pcs	1SYN450203R0001 ■	1,260
	Kit EST3 8pcs	1SYN450209R0001 ■	1,580
T4	Kit EST4 6pcs	1SYN450204R0001 ■	1,580
	Kit EST4 8pcs	1SYN450210R0001	1,890
T5	Kit EST5 6pcs (for 400A)	1SYN450205R0001 ■	2,100
	Kit EST5 8pcs (for 400A)	1SYN450211R0001	2,630
	Kit EST5 6pcs (for 630A)	1SYN450206R0001 ■	2,100
	Kit EST5 8pcs (for 630A)	1SYN450212R0001	2,630



Note: Phase barrier supplied as standard with above spreaders

### Seperators - PB

Frame	Description	Ordering code	M.R.P.(₹)
T1	PB100 4 pcs - Low T1	1SYN850205R0001 ■	580
	PB100 6 pcs - Low T1	1SYN850208R0001	680
T2-T3	PB100 4 pcs - Low T2-T3	1SYN850206R0001 ■	680
	PB100 6 pcs - Low T2-T3	1SYN850209R0001	950
T4-T5	PB100 4 pcs - Low T4, T5	1SYN850207R0001 ■	800
	PB100 6 pcs - Low T4, T5 - 400A	1SYN850210R0001	1,150



Note: For T5 630A please contact the nearest sales office

### Rotary handle operating mechanism

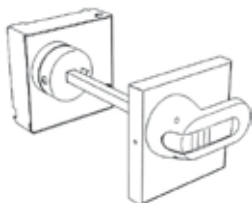
#### Direct - RHD

Frame	Description	Ordering code	M.R.P.(₹)
T1-T2-T3	RHD Normal T1-T2-T3	1SDA051381R1 ■	1,500
	RHD_EM Emergency T1-T2-T3	1SDA051382R1	1,800
T4-T5	RHD Normal for Fixed/Plug-in T4-T5	1SDA054926R1 ■	2,950
	RHD_EM Emergency for Fixed/Plug-in T4-T5	1SDA054927R1	3,250
	RHD Normal for Withdrawable T4-T5	1SDA054928R1	3,375
	RHD_EM Emergency for Withdrawable T4-T5	1SDA055234R1	3,800
T6	RHD Normal for Fixed T6	1SDA060405R1	4,200
	RHD Normal for Withdrawable T6	1SDA060407R1	5,250
	RHD_EM Emergency for Fixed T6	1SDA060406R1	5,250
T7	RHD_EM Emergency for Withdrawable T6	1SDA060408R1	5,800
	RHD Normal for Fixed/Plug-in T7	1SDA062120R1	5,450
	RHD_EM Emergency for Fixed/Withdrawable T7	1SDA062121R1	5,900



#### Transmitted - RHE

Frame	Description	Ordering code	M.R.P.(₹)
T1-T2-T3	RHE_S T1-T2-T3 250MM	1SDA070207R1 ■	1,575
	RHE_EM Emergency T1-T2-T3	1SDA051384R1	3,150
T4-T5	RHE Normal for Fixed/Plug-in T4-T5 250mm	1SDA070447R1 ■	2,750
	RHE_EM Emergency for Fixed/Plug-in T4-T5	1SDA054930R1	5,475
	RHE Normal for Withdrawable T4-T5	1SDA054933R1	4,950
	RHE_EM Emergency for Withdrawable T4-T5	1SDA054934R1	5,400
T6	RHE Normal for Fixed T6	1SDA060409R1 ■	5,475
	RHE Normal for Withdrawable T6	1SDA060411R1	6,300
	RHE_EM Emergency for Fixed T6	1SDA060410R1	6,800
T7	RHE_EM Emergency for Withdrawable T6	1SDA060412R1	6,300
	RHE Normal for Fixed/Plug-in T7	1SDA062122R1	6,625
	RHE_EM Emergency for Fixed/Withdrawable T7	1SDA062123R1	7,875

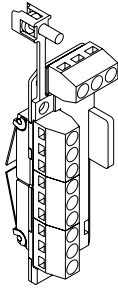


■ Stock items

# Tmax accessories

## Electrical Signals

### Auxiliary Contact - AUX

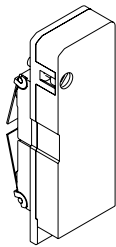


Frame	Description	Ordering code	M.R.P.(₹)
T1...T6(1)	AUX 1Q 1SY 250V AC/DC T1...T6 (1)	1SDA051368R1 ■	1,350
	AUX 3Q 1SY 250V AC/DC T1...T6 (1)	1SDA051369R1 ■	2,200
	AUX 3Q 1SY 24V DC T1...T6 (1)	1SDA054914R1	2,200
T4-T5	AUX-SA 1 S51 T4-T5	1SDA055050R1	1,350
T7M-X1	AUX 2Q 24V DC T7M-X1	1SDA062101R1	1,350
	AUX 2Q 400V AC T7M-X1	1SDA062102R1	1,350
T7	AUX 1Q + 1SY 24V DC T7	1SDA062103R1	2,200
	AUX 1Q + 1SY 400V AC T7	1SDA062104R1	2,200

Note (1): Cannot be used with T2 MCCB fitted with PR221DS trip unit

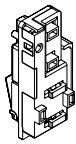
Note: For T7 TM in Withdrawable Version Sliding Contact Blocks for Fixed and moving Part are Necessary

### Auxiliary Contact Cabled-Version - AUX - C



Frame	Description	Ordering code	M.R.P.(₹)
T1-T2-T3 (1)	AUX-C 1Q 1SY 250 V AC/DC T1-T2-T3 (1)	1SDA051370R1	2,000
	AUX-C 3Q 1SY 250 V AC/DC T1-T2-T3 (1)	1SDA051371R1	3,500
	AUX-C 3Q 1SY T1-T2-T3 (1)	1SDA055361R1	2,950
T2	AUX-C 1Q 1SY 1S51 - PR221 T2	1SDA053704R1 ■	2,300
	AUX-C 2Q 1SY - PR221 T2	1SDA055504R1	2,650
T4-T5-T6	AUX-C 1Q 1SY 250V AC/DC C T4-T5-T6	1SDA054910R1	2,000
	AUX-C 1Q 1SY 400V AC C T4-T5-T6	1SDA054912R1	2,750
	AUX-C 2Q 400V AC C T4-T5-T6	1SDA054913R1	3,150
	AUX-C 3Q 1SY 24VDC C T4-T5-T6	1SDA054915R1	2,950
	AUX-C 3Q 1SY 250V AC/DC C T4-T5-T6	1SDA054911R1	3,500

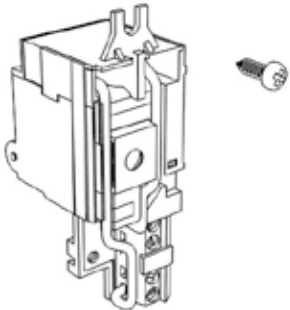
### Cabled Contact in Electronic Version



Frame	Description	Ordering code	M.R.P.(₹)
T4-T5	AUX-E-C 1Q 1SY T4-T5	1SDA054916R1	4,500
T6	AUX-E-C 1Q 1SY T6	1SDA064161R1	5,250

## Opening Release

### Shunt Opening Release - SOR



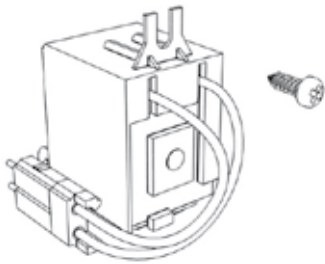
Frame	Description	Ordering code	M.R.P.(₹)
T1-T2-T3	SOR 12V DC T1-T2-T3	1SDA053000R1	1,850
	SOR 24...30V AC/DC T1-T2-T3	1SDA051333R1	1,850
	SOR 48...60V AC/DC T1-T2-T3	1SDA051334R1	1,850
	SOR 110...127V AC-110...125V DC T1-T2-T3	1SDA051335R1	1,850
	SOR 220...240V AC-220...250V DC T1-T2-T3	1SDA051336R1 ■	1,850
	SOR 380...440V AC T1-T2-T3	1SDA051337R1	1,850
T4-T5-T6	SOR 480...525V AC T1-T2-T3	1SDA051338R1	1,850
	SOR 12V DC T4-T5-T6	1SDA054862R1	2,850
	SOR 24V AC/DC T4-T5-T6	1SDA054863R1	2,850
	SOR 48...60V AC/DC T4-T5-T6	1SDA054864R1	2,850
	SOR 110...120V AC-110...125V DC T4-T5-T6	1SDA054865R1	2,850
	SOR 220...240V AC-220...250V DC T4-T5-T6	1SDA054866R1 ■	2,850
T7-T7M-X1	SOR 380...440V AC T4-T5-T6	1SDA054867R1	2,850
	SOR 480...500V AC T4-T5-T6	1SDA054868R1	2,850
	SOR 24V AC/DC T7-T7M-X1	1SDA062065R1	5,575
	SOR 30V AC/DC T7-T7M-X1	1SDA062066R1	5,575
	SOR 48V AC/DC T7-T7M-X1	1SDA062067R1	5,575
	SOR 60V AC/DC T7-T7M-X1	1SDA062068R1	5,575
	SOR 110...120V AC/DC T7-T7M-X1	1SDA062069R1	5,575
	SOR 120...127V AC/DC T7-T7M-X1	1SDA063547R1	5,575
	SOR 220...240V AC/DC T7-T7M-X1	1SDA063548R1 ■	5,575
SOR 240...250V AC/DC T7-T7M-X1	1SDA062070R1	5,575	
SOR 380...400V AC T7-T7M-X1	1SDA062071R1	5,575	
SOR 415...440V AC T7-T7M-X1	1SDA062072R1	5,575	

Note (1): Cannot be used with T2 MCCB fitted with PR221DS trip unit

Note: For T7 TM in Withdrawable Version Sliding Contact Blocks for Fixed and Moving Part are Necessary

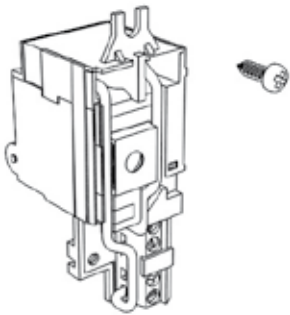
■ Stock items

# Tmax accessories



Shunt Opening Release - SOR - C			
Frame	Description	Ordering code	M.R.P.(₹)
T1-T2-T3	SOR-C 12V DC T1-T2-T3	1SDA053001R1	2,850
	SOR-C 24 ...30V AC/DC T1-T2-T3	1SDA051339R1	2,850
	SOR-C 48...60V AC/DC T1-T2-T3	1SDA051340R1	2,850
	SOR-C 110...127V AC-110...125V DC T1-T2-T3	1SDA051341R1	2,850
	SOR-C 220...240V AC-220...250V DC T1-T2-T3	1SDA051342R1	2,850
	SOR-C 380...440V AC T1-T2-T3	1SDA051343R1	2,850
	SOR-C 480...525V AC T1-T2-T3	1SDA051344R1	2,850
T4-T5-T6	SOR-C 12V DC T4-T5-T6	1SDA054869R1	4,850
	SOR-C 24V AC/DC T4-T5-T6	1SDA054870R1	4,850
	SOR-C 48...60V AC/DC T4-T5-T6	1SDA054871R1	4,850
	SOR-C 110...120V AC-110...125V DC T4-T5-T6	1SDA054872R1	4,850
	SOR-C 220...240V AC-220...250V DC T4-T5-T6	1SDA054873R1	4,850
	SOR 380...440V AC T4-T5-T6	1SDA054875R1	4,850
	SOR 480...500V AC T4-T5-T6	1SDA054868R1	4,850

## Test unit- SOR

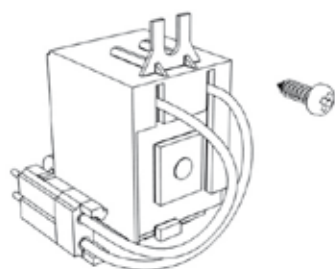


Frame	Description	Ordering code	M.R.P.(₹)
T7-T7M-X1-E1/6	SOR test unit T7-T7M-X1-E1/6	1SDA050228R1	25,200

## Under Voltage Release - UVR

Frames	Description	Ordering code	M.R.P.(₹)
T1-T2-T3	UVR 24...30V AC/DC T1-T2-T3	1SDA051345R1	3,700
	UVR 48V AC/DC T1-T2-T3	1SDA051346R1	3,700
	UVR 60V AC/DC T1-T2-T3	1SDA052333R1	3,700
	UVR 110...127V AC-110...125V DC T1-T2-T3	1SDA051347R1	3,700
	UVR 220...240V AC-220...250V DC T1-T2-T3	1SDA051348R1 ■	3,700
	UVR 380...440V AC T1-T2-T3	1SDA051349R1 ■	3,700
	UVR 480...500V AC T1-T2-T3	1SDA051350R1	3,700
T4-T5-T6	UVR 24V AC/DC T4-T5-T6	1SDA054880R1	6,000
	UVR 48V AC/DC T4-T5-T6	1SDA054881R1	6,000
	UVR 60V AC/DC T4-T5-T6	1SDA054882R1	6,000
	UVR 110...120V AC-110...125V DC T4-T5-T6	1SDA054883R1	6,000
	UVR 220...240V AC-220...250V DC T4-T5-T6	1SDA054884R1 ■	6,000
	UVR 380...440V AC T4-T5-T6	1SDA054885R1 ■	6,000
	UVR 480...500V AC T4-T5-T6	1SDA054886R1	6,000
T7-T7M-X1	UVR 24V AC/DC T7-T7M-X1	1SDA062087R1	7,150
	UVR 30V AC/DC T7-T7M-X1	1SDA062088R1	7,150
	UVR 48V AC/DC T7-T7M-X1	1SDA062089R1	7,150
	UVR 60V AC/DC T7-T7M-X1	1SDA062090R1	7,150
	UVR 110...120V AC/DC T7-T7M-X1	1SDA062091R1	7,150
	UVR 120...127V AC/DC T7-T7M-X1	1SDA063551R1	7,150
	UVR 220...240V AC/DC T7-T7M-X1	1SDA063552R1 ■	7,150
	UVR 240...250V AC/DC T7-T7M-X1	1SDA062092R1	7,150
	UVR 380...400V AC T7-T7M-X1	1SDA062093R1	7,150
UVR 415...440V AC T7-T7M-X1	1SDA062094R1	7,150	

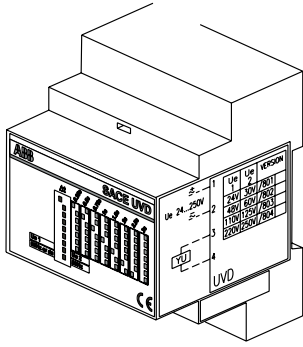
Note: For T7 TM in Withdrable version sliding contact blocks for Fixed and Moving part are necessary



Under Voltage Release C - UVR - C			
Frame	Description	Ordering code	M.R.P.(₹)
T1-T2-T3	UVR-C 24...30 V AC/DC T1-T2-T3	1SDA051351R1	7,150
	UVR-C 48V AC/DC T1-T2-T3	1SDA051352R1	7,150
	UVR-C 110...127V AC-110...125VDC T1-T2-T3	1SDA051353R1	7,150
	UVR-C 220...240V AC-220...250VDC T1-T2-T3	1SDA051354R1	7,150
	UVR-C 380...440V AC T1-T2-T3	1SDA051355R1	7,150
	UVR-C 480...500V AC T1-T2-T3	1SDA051356R1	7,150
	UVR-C 60V AC/DC T1-T2-T3	1SDA052335R1	7,150
T4-T5-T6	UVR-C 24V AC/DC T4-T5-T6	1SDA054887R1	7,800
	UVR-C 48V AC/DC T4-T5-T6	1SDA054888R1	7,800

■ Stock items

# Tmax accessories

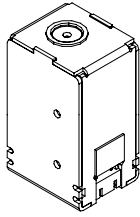


## Time Delay Device for Under Voltage Release- UVD

Frame	Description	Ordering code	M.R.P.(₹)
T1...T6	UVD 24...30V AC/DC T1...T6	1SDA051357R1	30,500
	UVD 48...60V AC/DC T1...T6	1SDA051358R1	30,500
	UVD 110...125V AC/DC T1...T6	1SDA051360R1	30,500
	UVD 220...250V AC/DC T1...T6	1SDA051361R1	30,500
T7-T7M-X1	UVD 24/30V AC/DC E1/6 - T7-T7M-X1	1SDA038316R1	10,000
	UVD 48V AC/DC E1/6 - T7-T7M-X1	1SDA038317R1	10,000
	UVD 60V AC/DC E1/6 - T7-T7M-X1	1SDA038318R1	10,000
	UVD 110...125V AC/DC E1/6 - T7-T7M-X1	1SDA038319R1	10,000
	UVD 220...250V AC/DC E1/6 - T7-T7M-X1	1SDA038320R1	10,000

Note: Order along with relative UV release

## Shunt Closing Release



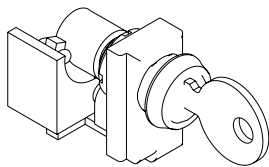
Frame	Description	Ordering code	M.R.P.(₹)
T7M-X1	SCR 24V AC/DC T7M-X1	1SDA062076R1	6,800
	SCR 30V AC/DC T7M-X1	1SDA062077R1	6,800
	SCR 48V AC/DC T7M-X1	1SDA062078R1	6,800
	SCR 60V AC/DC T7M-X1	1SDA062079R1	6,800
	SCR 110...120V AC/DC T7M-X1	1SDA062080R1	6,800
	SCR 120...127V AC/DC T7M-X1	1SDA063549R1	6,800
	SCR 220...240V AC/DC T7M-X1	1SDA063550R1	6,800
	SCR 240...250V AC/DC T7M-X1	1SDA062081R1	6,800
	SCR 380...400V AC T7M-X1	1SDA062082R1	6,800
	SCR 415...440V AC T7M-X1	1SDA062083R1	6,800

Note: For T7 M in withdrawable version sliding blocks for fixed and moving part are necessary

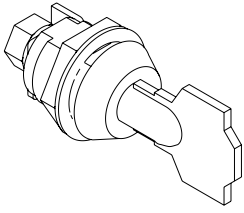
## Key lock

### Key Lock - KLC

Frame	Description	Ordering code	M.R.P.(₹)
KLC for Manual Breaker			
T1	KLC Ronis Same Key T1	1SDA051395R1	1,680
	KLC Same Key T1	1SDA053528R1	1,680
T2	KLC Ronis Same Key T2	1SDA052015R1	1,680
	KLC Same Key T2	1SDA053529R1	1,680
T3	KLC Ronis Same Key T3	1SDA052016R1	1,680
	KLC Same Key T3	1SDA053530R1	1,680
T7	KLC-D Key Lock - Different Key in Open Position T7	1SDA062134R1	2,550
	KLC-S Same Key for Different Groups of Circuit Breakers (N. 20005) T7	1SDA062135R1	2,550
	KLC-S Same Key for Different Groups of Circuit Breakers (N. 20006) T7	1SDA062136R1	2,550
	KLC-S Same Key for Different Groups of Circuit Breakers (N. 20007) T7	1SDA062137R1	2,550
	KLC-S Same Key for Different Groups of Circuit Breakers (N. 20008) T7	1SDA062138R1	2,550
	KLC Arrangement for Ronis Key Lock T7	1SDA062139R1	2,550
	KLC Arrangement for Profalux Key Lock T7	1SDA062140R1	2,950
	KLC-D Different Key in open Position T7M	1SDA062141R1	2,950
T7 M	KLC-S Same Key for Different Groups of Circuit Breakers (N. 20005) T7M	1SDA062142R1	2,750
	KLC-S Same Key for Different Groups of Circuit Breakers (N. 20006) T7M	1SDA062143R1	2,750
	KLC-S Same Key for Different Groups of Circuit Breakers (N. 20007) T7M	1SDA062144R1	2,750
	KLC-S Same Key for Different Groups of Circuit Breakers (N. 20008) T7M	1SDA062145R1	2,750
	KLC Same Key Ronis-Profalux T7M	1SDA062146R1	2,750

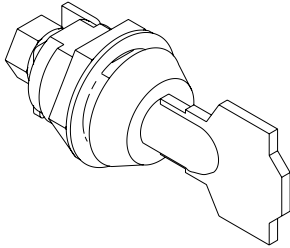


# Tmax accessories



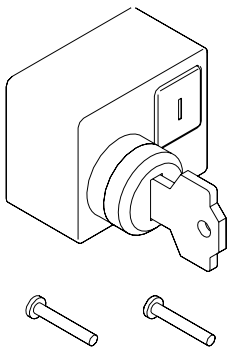
## Key Lock for Rotary Handle - RHL

Frame	Description	Ordering code	M.R.P.(₹)
T1-T2-T3	RHL Different keys in open position for rotary handleT1-T2-T3	1SDA051389R1	850
	RHL Same Keys in open position for rotary handleT1-T2-T3	1SDA051390R1	850
	RHL Different keys in open /closed position for rotary handle T1-T2-T3	1SDA052021R1	850
	RHL Same Keys in open position for rotary handleT1-T2-T3	1SDA060147R1	850
	RHL Same Keys in open position for rotary handleT1-T2-T3	1SDA060148R1	850
	RHL Same Keys in open position for rotary handleT1-T2-T3	1SDA060149R1	850



## Key Lock for Front / Rotary / Fixed Part- KLF

Frame	Description	Ordering code	M.R.P.(₹)
T4-T5	KLF-D Lock for Front / Rotary Handle - Different Key in open PositionT4-T5	1SDA054939R1	2,650
	KLF-S Block for Front / Rotary Handle - Same Key (N. 20005) T4-T5	1SDA054940R1 ■	2,650
	KLF-S Block for Front / Rotary Handle - Same Key (N. 20006) T4-T5	1SDA054941R1	2,650
	KLF-S Block for Front / Rotary Handle - Same Key (N. 20007) T4-T5	1SDA054942R1	2,650
	KLF-S Block for Front / Rotary Handle - Same Key (N. 20008) T4-T5	1SDA054943R1	2,650
T4-T5-T6	KLF-D FP Different Key for Each Circuit Breaker T4-T5-T6	1SDA055230R1	2,650
	KLF-D FP Same Key for Different Groups of Circuit Breaker T4-T5-T6	1SDA055231R1	2,650
	KLF-D Ronis Fixed Part- Lock Type Ronis T4-T5-T6	1SDA055233R1	2,650
T6	KLF-D Different Key in open Position T6	1SDA060658R1	2,650
	KLF-S Same Key for Different Groups of Circuit Breakers (N. 20005) T6	1SDA060659R1 ■	2,650
	KLF-S Same Key for Different Groups of Circuit Breakers (N. 20006) T6	1SDA060660R1	2,650
	KLF-S Same Key for Different Groups of Circuit Breakers (N. 20007) T6	1SDA060661R1	2,650
	KLF-S Same Key for Different Groups of Circuit Breakers (N. 20008) T6	1SDA060662R1	2,650
T7	KLF-D Different Key in open Position T7	1SDA063555R1	2,650
	KLF-S Same Key for Different Groups of Circuit Breakers (N. 20005) T7	1SDA063556R1	2,650
	KLF-S Same Key for Different Groups of Circuit Breakers (N. 20006) T7	1SDA063557R1	2,650
	KLF-S Same Key for Different Groups of Circuit Breakers (N. 20007) T7	1SDA063558R1	2,650
	KLF-S Same Key for Different Groups of Circuit Breakers (N. 20008) T7	1SDA063559R1	2,650
	KLF Arrangment for ronis key lock T7	1SDA063560R1	2,650
	KLF Arrangment for profalux key lock T7	1SDA063561R1	2,650



## Key lock for motor operated- MOL

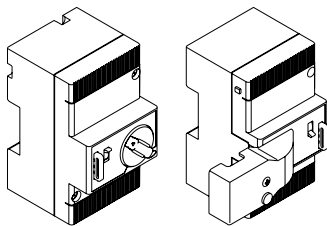
Frame	Description	Ordering code	M.R.P.(₹)
T4-T5	MOL-D - Same Key T4-T5	1SDA054904R1	2,750
	MOL-S - Same Key for Different Groups of Circuit Breakers (N. 20005) T4-T5	1SDA054905R1	2,750
	MOL-S - Same Key for Different Groups of Circuit Breakers (N. 20006) T4-T5	1SDA054906R1	2,750
	MOL-S - Same Key for Different Groups of Circuit Breakers (N. 20007) T4-T5	1SDA054907R1	2,750
	MOL-S - Same Key for Different Groups of Circuit Breakers (N. 20008) T4-T5	1SDA054908R1	2,750
T4-T5-T6	MOL-M - Lock only on manual operation - Same Key T4-T5-T6	1SDA054909R1	2,750
T6	MOL-D - Different key T6	1SDA060611R1	2,750
	MOL-S - Same Key for Different Groups of Circuit Breakers (N. 20005) T6	1SDA060612R1	2,750
	MOL-S - Same Key for Different Groups of Circuit Breakers (N. 20006) T6	1SDA060613R1	2,750
	MOL-S - Same Key for Different Groups of Circuit Breakers (N. 20007) T6	1SDA060614R1	2,750
	MOL-S - Same Key for Different Groups of Circuit Breakers (N. 20008) T6	1SDA060615R1	2,750

## Motor operated

### Solenoid Operator - MOS

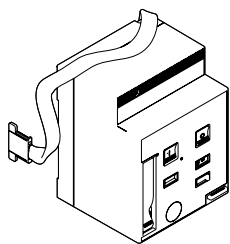
Frame	Description	Ordering code	M.R.P.(₹)
T1-T2-T3	MOS Superinposed 48...60V DC T1-T2-T3	1SDA059596R1	17,300
	MOS Superinposed 110...250V AC-110...250V DC T1-T2-T3	1SDA059597R1 ■	17,300
T1-T2	MOS Side-by-side 48...60V DC T1-T2	1SDA059598R1	21,000
	MOS Side-by-side 110...250V AC-110...250V DC T1-T2	1SDA059599R1	21,000

Note: It is always Fitted with Socket - Plug Connector



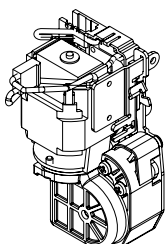
■ Stock items

# Tmax accessories

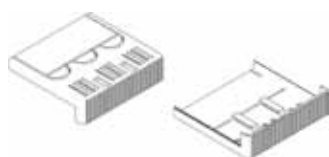


Stored Energy Motor Operator - MOE			
Frame	Description	Ordering code	M.R.P.(₹)
T4-T5	MOE 24 V DC T4-T5	1SDA054894R1	30,500
	MOE 48...60 V DC T4-T5	1SDA054895R1	30,500
	MOE 110...125 V AC / DC T4-T5	1SDA054896R1	28,500
	MOE 220...250 V AC / DC T4-T5	1SDA054897R1 ■	28,500
	MOE 380 V AC T4-T5	1SDA054898R1	28,500
T6	MOE 24 V DC T6	1SDA060395R1	38,500
	MOE 48...60 V DC T6	1SDA060396R1	38,500
	MOE 110...125 V AC/DC T6	1SDA060397R1	35,500
	MOE 220...250 V AC/DC T6	1SDA060398R1	35,500
	MOE 380 V AC T6	1SDA060399R1	35,500

Stored Energy Motor Operator with Electronics - MOE-E			
Frame	Description	Ordering code	M.R.P.(₹)
T4-T5	MOE-E 24 V DC T4-T5	1SDA054899R1	40,500
	MOE-E 48...60 V DC T4-T5	1SDA054900R1	40,500
	MOE-E 110...125 V AC / DC T4-T5	1SDA054901R1	38,500
	MOE-E 220...250 V AC / DC T4-T5	1SDA054902R1	38,500
	MOE-E 380 V AC T4-T5	1SDA054903R1	38,500
T6	MOE-E 24 V DC T6	1SDA060400R1	49,500
	MOE-E 48...60 V DC T6	1SDA060401R1	49,500
	MOE-E 110...125 V AC/DC T6	1SDA060402R1	47,500
	MOE-E 220...250 V AC/DC T6	1SDA060403R1	47,500
	MOE-E 380 V AC T6	1SDA060404R1	47,500



Spring Charging Motor- M			
Frame	Description	Ordering code	M.R.P.(₹)
T7M	M 24...30V AC/DC T7M	1SDA062113R1	38,500
	M 48...60V AC/DC T7M	1SDA062114R1	38,500
	M 100...130V AC/DC T7M	1SDA062115R1	35,700
	M 220...250V AC/DC T7M	1SDA062116R1	35,700
	M 380...415V AC T7M	1SDA062117R1	35,700



Low insulating terminal covers - LTC			
Frame	Description	Ordering code	M.R.P.(₹)
T1	LTC 3p T1	1SDA051421R1	1,600
	LTC 4p T1	1SDA051422R1	1,900
T2	LTC 3p T2	1SDA051423R1	1,600
	LTC 4p T2	1SDA051424R1	1,900
T3	LTC 3p T3	1SDA051425R1	1,700
	LTC 4p T3	1SDA051426R1	2,100
T4	LTC 3p T4	1SDA054966R1	1,900
	LTC 4p T4	1SDA054967R1	2,400
T5	LTC 3p T5	1SDA054968R1	2,200
	LTC 4p T5	1SDA054969R1	2,900
T6	LTC 3p T6	1SDA014038R1	2,400
	LTC 4p T6	1SDA014039R1	3,200
T7-T7M	LTC 3p T7-T7M	1SDA063093R1	3700
	LTC 4p T7-T7M	1SDA063094R1	4800

Dialogue Unit - PR 222/DS-PD			
Frame	Description	Ordering code	M.R.P.(₹)
T4-T5-T6	PR222DS/PD LSI T4-T5-T6	1SDA055066R1	22,500
	PR222DS/PD LSIG T4-T5-T6	1SDA055067R1	26,500

Note : Order X3 connector along with dialogue unit

■ Stock items

## Tmax accessories

X3 Connector			
Frame	Description	Ordering code	M.R.P.(₹)
T4-T5-T6	X3 Connector for fixed circuit-breaker PR222DS or PR223DS	1SDA055059R1	4,500
	X3 Connector for plug-in/withdrawable circuit-breaker	1SDA055061R1	4,500

HMI030			
Frame	Description	Ordering code	M.R.P.(₹)
T4-T5-T6-T7/ E1-E6	HMI030 interface on the front of switchgear	1SDA063143R1	32,000

Measurement Module - VM210			
Frame	Description	Ordering code	M.R.P. (₹)
T4-T5-T6	VM210 T4-T5-T6	1SDA059602R1	25,000

Note : Order X4 connector along with measurement module  
Mounted only with PR223/DS

X4 Connector			
Frame	Description	Ordering code	M.R.P. (₹)
T4-T5-T6	X4 Connector for fixed circuit-breaker	1SDA055060R1	4,500
	X4 Connector for plug-in/withdrawable circuit-breaker	1SDA055062R1	4,500

Interface Module - EP010			
Frame	Description	Ordering code	M.R.P. (₹)
T4-T5-T6	EP010 - Interface Module for PR222/PD	1SDA059469R1	26,000

Note : Converter for Modbus to ASI, DeviceNet & Profibus for MCCB & ACB. Used along with dialogue module

### Residual current releases

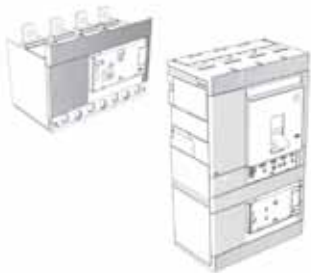
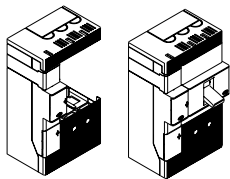
SACE RC22x			
Frame	Description	Ordering code	M.R.P.(₹)
T1	RC221/1 3p Fixed T1	1SDA051398R1	18,000
	RC221/1 4p Fixed T1	1SDA051401R1	21,000
	RC222/1 3p Fixed T1	1SDA051400R1	18,000
	RC222/1 4p Fixed T1	1SDA051402R1	21,000
	RC222/1 Mod200mm 4p Fixed T1	1SDA053869R1	26,000
T2	RC221/2 4p Fixed T2	1SDA051405R1	22,500
	RC222/2 3p Fixed T2	1SDA051404R1	18,500
	RC222/2 4p Fixed T2	1SDA051406R1	22,500
T3	RC221/3 3p Fixed T3	1SDA051407R1	23,000
	RC221/3 4p Fixed T3	1SDA051409R1	30,500
	RC222/3 3p Fixed T3	1SDA051408R1	23,000
T4	RC222/4 4p Fixed T4	1SDA054954R1	38,000
	RC223/4 4p Fixed T4 250	1SDA054956R1	45,000
T5	RC222/5 4p Fixed T5	1SDA054955R1	42,500

Note: The Residual Current Releases for the T2 and T3 Circuit Breakers always Supplied Complete with FC Cu Terminal Kit

### Automatic Transfer Switch - ATS

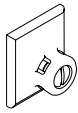
Automatic Transfer Switch			
Frame	Description	Ordering code	M.R.P.(₹)
T3-T7/E1-E6	ATS021	1SDA065523R1 ■	85,000
	ATS022	1SDA065524R1	95,000

Note : ATS will be used along with either two motorized ACB or MCCBs with required interlocking and changeover base plate as per the requirement.



■ Stock items

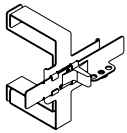
# Tmax accessories



## Mechanical Interlock Between Circuit Breakers - MIF

Frame	Description	Ordering code	M.R.P.(₹)
T1-T2-T3	MIF Mechanical Interlock Between 2 Breakers T1-T2-T3	1SDA051396R1	4,200
	MIF Mechanical Interlock Between 3 Breakers T1-T2-T3	1SDA052165R1	7,600

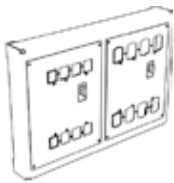
Note: Incompatible with the front accessories (solenoid operator, rotary handle operating mechanism) and with the residual current releases.



## Mechanical Interlock Between Circuit Breakers - MIR - to be used with copper spreaders only

Frame	Description	Ordering code	M.R.P.(₹)
T3	MIR-H Horizontal Mechanical Interlock T3	1SDA063324R1	7,000
	MIR-V Vertical Mechanical Interlock T3	1SDA063325R1	7,000
T4-T5	MIR-HB Horizontal Interlock Frame Unit T4-T5	1SDA054946R1	8,300
	MIR-VB Vertical Interlock Frame Unit T4-T5	1SDA054947R1	8,300
	MIR-P Plate for Interlock Type A T4 (F-P-W) + T4 (F-P-W)	1SDA054948R1	4,700
	MIR-P Plate for Interlock Type B T4 (F-P-W) + T5 400 (F-P-W) or T5 630 (F)	1SDA054949R1	4,700
	MIR-P Plate for Interlock Type C T4 (F-P-W) + T5 630 (P-W)	1SDA054950R1	4,700
	MIR-P Plate for Interlock Type D T5 400 (F-P-W) or T5 630 (F)+T5 400 (F-P-W) or T5 630 (F)	1SDA054951R1	4,700
T4-T5	MIR-P Plate for Interlock Type E T5 400 (F-P-W) or T5 630 (F) + T5 630 (P-W)	1SDA054952R1	4,700
	MIR-P Plate for Interlock Type F T5 630 (P-W) + T5 630 (P-W)	1SDA054953R1	4,700
	MIR-H Horizontal Mechanical Interlock T6	1SDA060685R1	14,900
T6	MIR-V Vertical Mechanical Interlock T6	1SDA060686R1	14,900

Note: For interlocking in T4-T5, Please order both Frame and Plate unit



## Mechanical Interlock with Cables Between 2 Circuit Breakers

Frame	Description	Ordering code	M.R.P.(₹)
T7-T7M	Cable Kit for Interlock T7-T7M	1SDA062127R1	6,200
	Cable Kit for Interlock T7-T7M with E1-6	1SDA064568R1	6,300
	Plate for Interlock T7-T7M Fixed	1SDA062129R1	24,700
	Plate for Interlock T7-T7M withdrawble	1SDA062131R1	24,700

Note: It is Necessary to Order 2 Plate and one Kit of Cables



# Tmax Conversion Kit

## Plug-in and drawout conversion

Frame	Description	Type Code Reference	Ordering code	M.R.P.(₹)
<b>3 - Pole</b>				
T2	Plug In MCCB Kit	KIT MP T2 P 3p KIT CONVERSION	1SDA051411R1	4,200
	T2 3P Fixed Part	T2 P FP 3p F	1SDA051329R1	7,700
T3	Plug In MCCB Kit	KIT MP T3 P 3p KIT CONVERSION	1SDA051413R1	5,300
	T3 3P Fixed Part	T3 P FP 3p F	1SDA051331R1	7,900
T4	Plug In MCCB Kit	KIT MP T4 P 3p	1SDA054839R1	6,100
	T4 3P Fixed Part	T4 P FP 3p EF	1SDA054737R1	8,500
T5	Plug In MCCB Kit	KIT MP T5 400 P 3p	1SDA054843R1	8,000
	T5 3P 400A Fixed Part	T5 400 P FP 3p EF	1SDA054749R1	17,200
T5	Plug In MCCB Kit	KIT MP T5 630 P 3p	1SDA054847R1	9,700
	T5 3P 630A Fixed Part	T5 630 P FP 3p EF	1SDA054762R1	20,500
T4	Draw out MCCB Kit	KIT MP T4 W 3p	1SDA054841R1	9,000
	T4 3P Fixed Part	T4 W FP 3p EF	1SDA054743R1	16,700
T5	Draw out MCCB Kit	KIT MP T5 400 W 3p	1SDA054845R1	12,600
	T5 3P 400A Fixed Part	T5 400 W FP 3p EF	1SDA054755R1	28,500
T5	Draw out MCCB Kit	KIT MP T5 630 W 3p	1SDA054849R1	16,100
	T5 3P 630A Fixed Part	T5 630 W FP 3p EF	1SDA054768R1	34,000
T6	Draw out MCCB Kit	KIT MP T6 630/800 W 3p	1SDA060390R1	16,800
	T6 3P 630-800A Fixed Part	T6 W FP 3p EF	1SDA060384R1	35,500
T7	Draw out MCCB Kit	KIT MP T7-T7M-X1 W 3p	1SDA062162R1	27,400
	T7 3P 1000-1250-1600A	T7-X1 W FP 3p EF-EF	1SDA062045R1	52,500
<b>4 - Pole</b>				
T2	Plug In MCCB Kit	KIT MP T2 P 4p KIT CONVERSION	1SDA051412R1	5,500
	T2 4P Fixed Part	T2 P FP 4p F	1SDA051330R1	10,400
T3	Plug In MCCB Kit	KIT MP T3 P 4p KIT CONVERSION	1SDA051414R1	6,200
	T3 4P Fixed Part	T3 P FP 4p F	1SDA051332R1	10,900
T4	Plug In MCCB Kit	KIT MP T4 P 4p	1SDA054840R1	8,100
	T4 4P Fixed Part	T4 P FP 4p EF	1SDA054740R1	11,300
T5	Plug In MCCB Kit	KIT MP T5 400 P 4p	1SDA054844R1	10,500
	T5 4P 400A Fixed Part	T5 400 P FP 4p EF	1SDA054752R1	22,800
T5	Plug In MCCB Kit	KIT MP T5 630 P 4p	1SDA054848R1	12,900
	T5 4P 630A Fixed Part	T5 630 P FP 4p EF	1SDA054765R1	27,200
T4	Draw out MCCB Kit	KIT MP T4 W 4p	1SDA054842R1	11,900
	T4 4P Fixed Part	T4 W FP 4p EF	1SDA054746R1	22,300
T5	Draw out MCCB Kit	KIT MP T5 400 W 4p	1SDA054846R1	16,700
	T5 4P 400A Fixed Part	T5 400 W FP 4p EF	1SDA054758R1	38,000
T5	Draw out MCCB Kit	KIT MP T5 630 W 4p	1SDA054850R1	19,100
	T5 4P 630A Fixed Part	T5 630 W FP 4p EF	1SDA054771R1	45,400
T6	Draw out MCCB Kit	KIT MP T6 630/800 W 4p	1SDA060391R1	20,600
	T6 4P 630-800A Fixed Part	T6 W FP 4p EF	1SDA060387R1	46,000
T7	Draw out MCCB Kit	KIT MP T7-T7M-X1 W 4p	1SDA062163R1	31,900
	T7 4P 1000-1250-1600A	T7-X1 W FP 4p EF-EF	1SDA062049R1	70,200

# Tmax Conversion Kit

## Accessories:

Connector	ADP 5pin SOR-C /UVR-C T4-T5-T6 P/W	1SDA055173R1	1,800
	ADP 6pin AUX -C T4-T5-T6 P/W	1SDA054922R1	1,400
	ADP 10pin MOE AUE -C T4-T5-T6 P/W	1SDA054924R1	1,800
	ADP 12pin AUX -C T4-T5-T6 P/W	1SDA054923R1	2,300
MOT T7M	LEFT SLIDING CONTAC.MP C.BR.T7-T7M-X1	1SDA062164R1	4,200
	LEFT SLIDING CONTAC.FP C.BR.T7M-X1	1SDA062167R1	6,200
SOR/SCR/UVR/AUX - T7-T7M	RIGHT SLIDING CONTAC.MP C.BR.T7-T7M-X1	1SDA062166R1	4,200
	RIGHT SLIDING CONTAC.FP C.BR.T7M-X1	1SDA062169R1	6,200
Central Block for T7-T7M	Central block - MP T7 - T7M	1SDA062165R1	4,200
	Central block - FP T7 - T7M	1SDA062168R1	6,200

Note: The plug-in version must be composed as follows

- 1) Fixed circuit-breaker
- 2) Conversion kit - moving part of plug-in
- 3) Conversion kit - fixed part of plug-in
- 4) Cabled version of Aux contact, SOR/UVR has to be ordered with suitable ADP connector

Note: The withdrawable version must be composed as follows

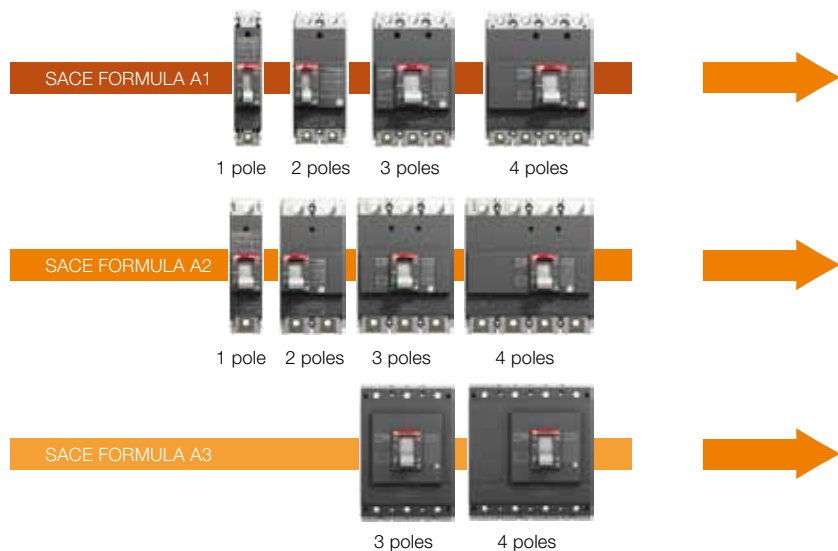
- 1) Fixed circuit-breaker
- 2) Conversion kit - moving part of Withdrawable
- 3) Conversion kit - Fixed part of Withdrawable
- 4) Front for lever operating mechanism or rotary handle or motor operator
- 5) Sliding contacts blocks if the circuit-breaker is automatic or fitted with electrical accessories (only for T7)
- 6) Cabled version of Aux contact, SOR/UVR has to be ordered with suitable ADP connector

# FORMULA moulded case circuit breaker

## New low voltage moulded case circuit breakers up to 630A

### General characteristics

- Conforms to IEC 60947-2
- Fixed thermal magnetic release throughout the range
- Compact dimensions
- Common range of accessories
- Available in 1P, 2P, 3P & 4 pole versions
- Line-load reversibility
- Suitable for DC application till 250Vdc
- Operation voltage till 550VAC, insulation voltage of 690VAC and impulse voltage of 6KV



### FORMULA A1

- Rated current, In 15...125A
- 1, 2, 3, 4 pole versions
- Icu = 10, 18, 25, 36KA

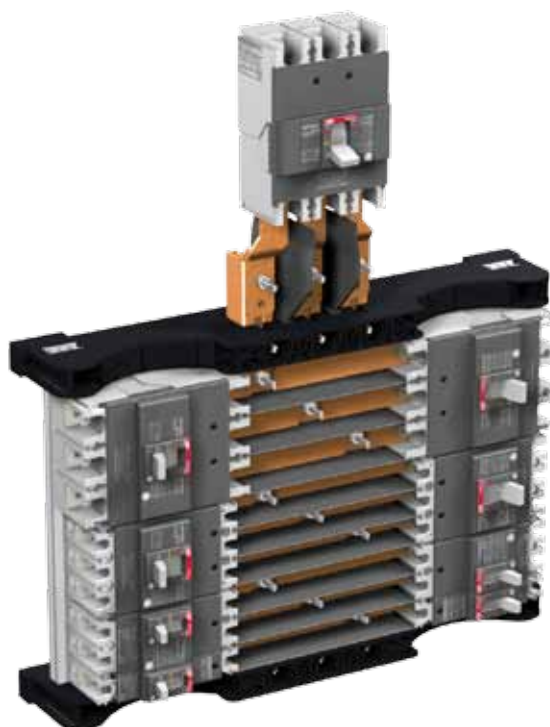
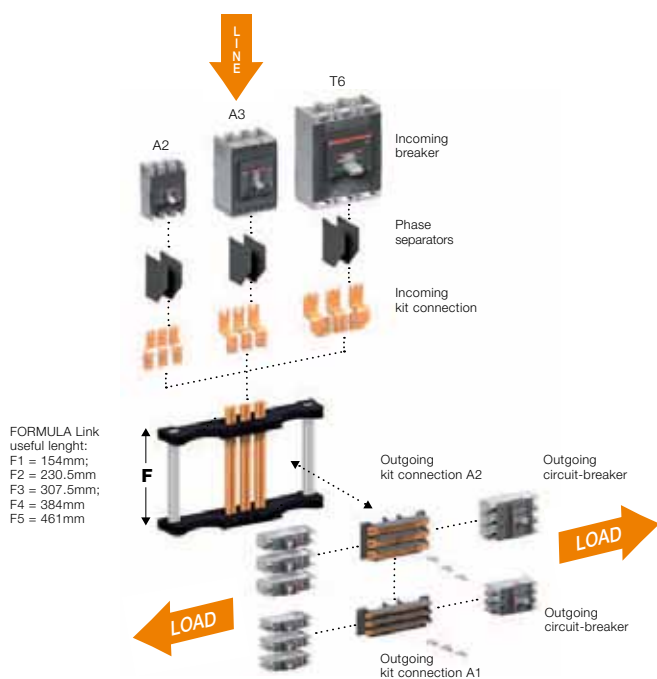
### FORMULA A2

- Rated current, In 125...250A
- 1, 2, 3, 4 pole versions
- Icu = 18, 25, 36KA

### FORMULA A3

- Rated current, In 320...630A
- 3, 4 pole versions
- Icu = 36, 50KA

## FORMULA link system



# Formula moulded case circuit breakers

- FORMULA link in accordance with IEC 60439 Standard
- FORMULA link is a component of a power distribution system which divides the main power supply over different users
- The FORMULA link is characterised on the supply side by a main circuit-breaker which protects the whole distribution system, and on the load side by smaller sized circuit-breakers, dedicated to the individual users
- FORMULA link assembly for total discrimination between upstream and downstream devices

## FORMULA link - Electrical characteristics

FORMULA link frame	[A]	250	400	630/800
Incoming breaker		A2	A3	T6
Outgoing breaker		A1	A1-A2	A1-A2
Rated operational voltage 50/60 Hz	[V]	550AC	550AC	550AC
Rated insulation voltage	[V]	690AC	690AC	690AC
Rated short time withstand current (1s)	[kA]	30	40	40



## Fixed thermal and fixed magnetic MCCB

### A1 125

#### TMF

In(A)	Poles	A1A 125 Icu = 10KA, Ics = 50%(Icu)		A 1B 125 Icu = 18KA, Ics = 50%(Icu)		A 1C 125 Icu = 25KA, Ics = 50%(Icu)		A 1N 125 Icu = 36KA, Ics = 50%(Icu)	
		Ordering Code	M.R.P.(₹)	Ordering Code	M.R.P.(₹)	Ordering Code	M.R.P.(₹)	Ordering Code	M.R.P.(₹)
16	3	1SDA068746R1	1,900	1SDA068747R1	2,550	1SDA068748R1	3,100	1SDA068749R1	3,650
25		1SDA066512R1	1,900	1SDA066699R1	2,550	1SDA066711R1	3,100	1SDA066723R1	3,650
32		1SDA068757R1	1,900	1SDA068758R1 ■	2,550	1SDA068759R1 ■	3,100	1SDA068760R1	3,650
40		1SDA066514R1	1,900	1SDA066701R1	2,550	1SDA066713R1	3,100	1SDA066725R1	3,650
50		1SDA066515R1	1,900	1SDA066702R1	2,550	1SDA066714R1	3,100	1SDA066726R1	3,650
63		1SDA068768R1	1,900	1SDA068769R1 ■	2,550	1SDA068770R1 ■	3,100	1SDA068771R1 ■	3,650
80		1SDA066518R1	1,900	1SDA066705R1	2,550	1SDA066717R1	3,100	1SDA066729R1	3,650
100		1SDA066520R1 ■	1,900	1SDA066707R1 ■	2,550	1SDA066719R1 ■	3,100	1SDA066731R1 ■	3,650
125	1SDA066521R1	2,250	1SDA066708R1	3,250	1SDA066720R1	3,300	1SDA066732R1	3,850	
16	4	1SDA068750R1	2,550	1SDA068751R1	3,250	1SDA068752R1	4,000	1SDA068753R1	4,650
25		1SDA066526R1	2,550	1SDA066735R1	3,250	1SDA066747R1	4,000	1SDA066759R1	4,650
32		1SDA068761R1	2,550	1SDA068762R1	3,250	1SDA068763R1	4,000	1SDA068764R1	4,650
40		1SDA066528R1	2,550	1SDA066737R1	3,250	1SDA066749R1	4,000	1SDA066761R1	4,650
50		1SDA066529R1	2,550	1SDA066738R1	3,250	1SDA066750R1	4,000	1SDA066762R1	4,650
63		1SDA068772R1	2,550	1SDA068773R1	3,250	1SDA068774R1	4,000	1SDA068775R1	4,650
80		1SDA066532R1	2,550	1SDA066741R1	3,250	1SDA066753R1	4,000	1SDA066765R1	4,650
100		1SDA066534R1	2,550	1SDA066743R1	3,250	1SDA066755R1	4,000	1SDA066767R1	4,650
125	1SDA066535R1	2,750	1SDA066744R1	3,450	1SDA066756R1	4,200	1SDA066768R1	5,000	

■ Stock items

# Formula moulded case circuit breakers

## A2 250

### TMF

In(A)	Poles	A2B 250 Icu = 18KA, Ics = 50%(Icu)		A2C 250 Icu = 25KA, Ics = 50%(Icu)		A2N 250 Icu = 36KA, Ics = 50%(Icu)	
		Ordering Code	M.R.P. (₹)	Ordering Code	M.R.P. (₹)	Ordering Code	M.R.P. (₹)
160	3	1SDA066549R1	6,050	1SDA066776R1	6,500	1SDA066782R1	7,400
200		1SDA066551R1 ■	6,050	1SDA066778R1 ■	6,500	1SDA066784R1 ■	7,400
250		1SDA066553R1 ■	6,500	1SDA066780R1 ■	6,950	1SDA066786R1 ■	8,300
160	4	1SDA066555R1	7,700	1SDA066788R1	8,300	1SDA066794R1	9,550
200		1SDA066557R1	7,700	1SDA066790R1	8,300	1SDA066796R1	9,550
250		1SDA066559R1	8,400	1SDA066792R1	9,550	1SDA066798R1	10,550

## A3 400

### TMF

In(A)	Poles	A3N 400 Icu = 36KA, Ics = 50%(Icu)		A3S 400 Icu = 50KA, Ics = 50%(Icu)	
		Ordering Code	M.R.P. (₹)	Ordering Code	M.R.P. (₹)
320	3	1SDA066560R1	upon request	1SDA066562R1	upon request
400		1SDA066561R1	upon request	1SDA066563R1	upon request
320	4	1SDA066568R1	upon request	1SDA066570R1	upon request
400		1SDA066569R1	upon request	1SDA066571R1	upon request

## A3 630

### TMF

In(A)	Poles	A3N 630 Icu = 36KA, Ics = 50%(Icu)		A3S 630 Icu = 50KA, Ics = 50%(Icu)	
		Ordering Code	M.R.P. (₹)	Ordering Code	M.R.P. (₹)
500	3	1SDA066564R1	upon request	1SDA066565R1	upon request
630		1SDA066566R1	upon request	1SDA066567R1	upon request
500	4	1SDA066572R1	upon request	1SDA066573R1	upon request
630		1SDA066574R1	upon request	1SDA066575R1	upon request

## Accessories

Terminals		
Front extended spread terminal - ES		
	6 pieces	8 pieces
A1	Upon request	Upon request
A2	Upon request	Upon request

Rotary handle		
Description	Ordering code	M.R.P. (₹)
RHD - Operating mechanism direct handle	1SDA066154R1	900
RHE - Operating mechanism transmitted handle	1SDA066158R1	1,700

Shunt opening release – SOR-C		
Cabled version		
Description	Ordering code	M.R.P. (₹)
SOR-C 220...240 VAC - 220...250 VDC	1SDA066137R1	1,400
SOR-C 380...440 VAC	1SDA066138R1	1,400

Auxiliary contacts – AUX-C		
Cabled version (numbered cables)		
Description	Ordering code	M.R.P. (₹)
AUX-C 1Q + 1SY 250 VAC/DC	1SDA66149R1	1,200

Undervoltage release – UVR-C		
Cabled version		
Description	Ordering code	M.R.P. (₹)
UVR-C 220...240 VAC - 220...250 VDC	1SDA066146R1	Upon request
UVR-C 380...440 VAC	1SDA066147R1	Upon request

■ Stock items

# Tmax PV: photovoltaic range moulded case switch disconnecter



Tmax PV is the latest T Generation product upto 1600 A / 1100 V DC.

- IEC 60947-3 certification
- 6 different sizes: from the compact T1 (which can be mounted on DIN rail) to the high-performance T7, available in the two versions, with lever operating mechanism and motor operator
- Rated insulation voltage up to 1150 V DC
- Advantages like
  - excellent performance-dimensions
  - vast and complete range of accessories for all requirements
  - complete remote control

Rated current In (A)	Rated Voltage	Description	Ordering Code	Version / Poles	M.R.P. (₹)
160	1100 V DC	T1D/PV 160 4p F FC Cu 1100V DC	1SDA069816R1	Fixed / 4p	Upon Request
200		T3D/PV 200 4p F FC Cu 1100V DC	1SDA069822R1	Fixed / 4p	
250		T4D/PV 250 4p F F 1100V DC	1SDA069823R1	Fixed / 4p	
500		T5D/PV 500 4p F F 1100V DC	1SDA069824R1	Fixed / 4p	
800		T6D/PV 800 4p F F 1100V DC	1SDA069825R1	Fixed / 4p	
1250		T7D/PV 1250 4p F F 1100V DC	1SDA069826R1	Fixed / 4p	
1250M		T7D/PV 1250 4p F F M 1100V DC	1SDA069827R1	Fixed / 4p	
1600		T7D/PV 1600 4p F F 1100V DC	1SDA069828R1	Fixed / 4p	
1600M		T7D/PV 1600 4p F F M 1100V DC	1SDA069829R1	Fixed / 4p	

\*For information please contact our nearest sales office

## DC switch disconnectors for PV application



### OTDC 10...32A

- Modular Design.
- Simple and fast installation
- DIN rail or screw mounted
- Tunnel terminals for easy termination
- Shortcircuit bars are pre-installed as standard.
- Maximum energy efficiency.
- Available in plastic enclosure.



### OTDC 100A....500A

- ABB offers a compact DC switch range that adapts to a wide variety of installation requirement
- These switches achieve 1000 VDC with only two poles
- Carefully designed arc plates and dual magnetic breaking, breaking power is optimized across the entire current range.
- As a result of symmetric pole design, the connections are independent of polarity. The user can make the connections in both ways.
- OTDC is the only DC switch in the market that has visible contacts.
- The mechanism can be located between the poles or on the side of the switch.
- Special four pole versions can be made for double circuit applications
- The operation of the switch is not vulnerable to voltage peaks and it is independent of the user (quick make quick brake).
- The switches are available in direct mounting handle version as well as external door mounted handle version
- The power losses are very low, results in high efficiency.

NEW



### OT630A

- Safe and reliable operation
- Designed for safety
- High performance

Rated current In (A)	Rated Voltage	Description	Ordering Code	M.R.P. (₹)
10	1000 V DC	OTDC16F2	1SCA121454R1001	Upon Request
16		OTDC16F3	1SCA121457R1001	
25		OTDC25F3	1SCA121458R1001	
32		OTDC32F3	1SCA121459R1001	
100		OTDC100E11K	1SCA127730R1001	
160		OTDC160E11K	1SCA127736R1001	
200		OTDC200E11K	1SCA127739R1001	
250		OTDC250E11K	1SCA127742R1001	
315		OTDC315E11K	1SCA131682R1001	
400		OTDC400E11K	1SCA131683R1001	
500		OTDC500E11K	1SCA132134R1001	
630		OT630E33P	1SCA107832R1001	

\*For information please contact our nearest sales office

# Fusegear

Easyline - XLP 1P, 2P, 3P & 4P for both AC and DC application 160...630A



## Advantages

- Easy to install
- Easy to operate
- Sturdy design
- High personal safety
- Wide range of cable terminals and snap-on accessories
- Compact, add-on Electronic Fuse Monitoring (EFM)
- Busbar adapters

## Inline - Vertical fuse switch disconnectors



## Complete range:

- Fuse base rails : 160A – 630A
- Fuse switch disconnectors :160A to 1250A

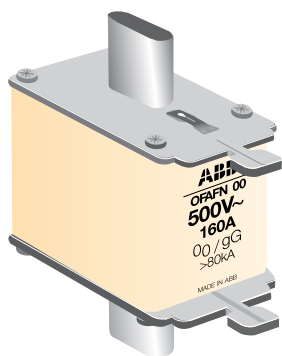
\*For information please contact our nearest sales office



# OFAF HRC fuse links and base, DIN-type

DIN -type fuse links, gG, 500 V, 80 kA

The ordering code includes one fuse link, the delivery batch is according to the column.



Fuse size	Rated current In (A)	Description	Ordering Code	M.R.P. (₹)	Delivery batch [pcs]
000	2	OFAFN000GG2	1SCA107747R1001	280	6
	6	OFAFN000GG6	1SCA107748R1001	280	6
	10	OFAFN000GG10	1SCA107749R1001	280	6
	16	OFAFN000GG16	1SCA107750R1001	280	6
	20	OFAFN000GG20	1SCA107751R1001	280	6
	25	OFAFN000GG25	1SCA107751R1002	280	6
	32	OFAFN000GG32	1SCA107752R1001 ■	280	6
00	63	OFAFN000GG63	1SCA107753R1001 ■	280	6
	6	OFAFN00GG6	1SCA107754R1001	420	6
	10	OFAFN00GG10	1SCA107755R1001	420	6
	16	OFAFN00GG16	1SCA107756R1001	420	6
	20	OFAFN00GG20	1SCA107757R1001	420	6
	25	OFAFN00GG25	1SCA107758R1001	420	6
	32	OFAFN00GG32	1SCA107759R1001	420	6
	50	OFAFN00GG50	1SCA107760R1001	420	6
	63	OFAFN00GG63	1SCA107761R1001	420	6
	80	OFAFN00GG80	1SCA107762R1001	420	6
0	100	OFAFN00GG100	1SCA107763R1001	420	6
	125	OFAFN00GG125	1SCA107764R1001 ■	475	6
	160	OFAFN00GG160	1SCA107765R1001 ■	505	6
	200	OFAFN00GG200	1SCA107766R1001 ■	605	3
1	160	OFAF0H160 <sup>1</sup>	1SCA022627R3170	605	3
	200	OFAF0H200 <sup>1</sup>	1SCA022629R5140 ■	605	3
	32	OFAFN1GG32	1SCA107766R1001	620	6
	50	OFAFN1GG50	1SCA107767R1001	620	6
	63	OFAFN1GG63	1SCA107768R1001	620	6
	80	OFAFN1GG80	1SCA107769R1001	620	6
	100	OFAFN1GG100	1SCA107770R1001	620	6
	125	OFAFN1GG125	1SCA107771R1001	620	6
2	160	OFAFN1GG160	1SCA107772R1001	620	6
	200	OFAFN1GG200	1SCA107773R1001	660	3
	250	OFAFN1GG250	1SCA107774R1001 ■	705	3
	100	OFAFN2GG100	1SCA107775R1001	900	3
	125	OFAFN2GG125	1SCA107776R1001	900	3
3	250	OFAFN2GG250	1SCA107778R1001	900	3
	315	OFAFN2GG315	1SCA107779R1001	915	3
	400	OFAFN2GG400	1SCA107780R1001 ■	915	3
3	315	OFAFN3GG315	1SCA107781R1001	1,460	3
	500	OFAFN3GG500	1SCA107783R1001	1,460	3
	630	OFAFN3GG630	1SCA107784R1001	1,500	3
	800	OFAFN3GG800	1SCA107785R1001	2,100	3

**Note:** Pl contact our nearest sales office

\*For requirement of DIN type 500V 120kA and 690V 80kA.

\*For size 4 / 4A (400-1250A) and size 5(1250, 1600A)

<sup>1</sup>120KA, 500V



## Din type fuse bases

Fuse size	Rated current In (A)	Description	Ordering Code	M.R.P.
00	160	Fuse Base - Din type	1SCA833001R2001 ■	350
1	250		1SCA833001R2002 ■	650
2	400		1SCA833001R2003 ■	1,300
3	630		1SCA833001R2004 ■	1,600

■ Stock items

# OFF HRC fuse links and base, BS-type

## BS -type fuse links, gG, 415 V, 80 kA

The type code includes one fuse link, but the delivery batch is according to the column.



Fuse size	Rated current In [A]	Description	Ordering Code	M.R.P. (₹)	Delivery batch [pcs]
<b>Offset blade tag fuse link</b>					
F1	2	OFFNF1GG2	1SCA107786R1001	62	10
	4	OFFNF1GG4	1SCA107787R1001	62	10
	6	OFFNF1GG6	1SCA107788R1001	62	10
	10	OFFNF1GG10	1SCA107789R1001	62	10
	16	OFFNF1GG16	1SCA107790R1001	62	10
	20	OFFNF1GG20	1SCA107791R1001 ■	62	10
	25	OFFNF1GG25	1SCA107792R1001	65	10
	32	OFFNF1GG32	1SCA107793R1001 ■	65	10
<b>Offset bolted tag fuse link</b>					
A2	6	OFFNA2GG6	1SCA107795R1001	80	10
	10	OFFNA2GG10	1SCA107796R1001	80	10
	16	OFFNA2GG16	1SCA107798R1001	80	10
	20	OFFNA2GG20	1SCA107827R1001	80	10
	25	OFFNA2GG25	1SCA107800R1001	85	10
A3	32	OFFNA2GG32	1SCA107801R1001 ■	85	10
	40	OFFNA3GG40	1SCA107803R1001	120	10
	50	OFFNA3GG50	1SCA107804R1001	120	10
A4	63	OFFNA3GG63	1SCA107805R1001 ■	130	10
	50	OFFNA4GG50	1SCA107806R1001	235	10
	63	OFFNA4GG63	1SCA107807R1001	235	10
	80	OFFNA4GG80	1SCA107808R1001	235	10
	100	OFFNA4GG100	1SCA107809R1001	240	10
	125	OFFNA4GG125	1SCA107810R1001 ■	250	10
<b>Central bolted tag fuse link</b>					
B1	50	OFFNB1GG50	1SCA107811R1001	280	10
	63	OFFNB1GG63	1SCA107812R1001	290	10
	80	OFFNB1GG80	1SCA107813R1001	290	10
	100	OFFNB1GG100	1SCA107814R1001	290	10
B2	125	OFFNB2GG125	1SCA107816R1001	410	10
	160	OFFNB2GG160	1SCA107817R1001	430	5
	200	OFFNB2GG200	1SCA107818R1001 ■	430	5
B3	250	OFFNB3GG250	1SCA107819R1001 ■	620	1
	315	OFFNB3GG315	1SCA107820R1001	650	1
B4	400	OFFNB4GG400	1SCA107822R1001	1,100	1
C1	400	OFFNC1GG400	1SCA107823R1001	1,600	1
C2	500	OFFNC2GG500	1SCA107824R1001	1,900	1
C2	630	OFFNC2GG630	1SCA107825R1001	1,900	1
C3	800	OFFNC3GG800	1SCA107826R1001	2,300	1



## BS type fuse bases

Fuse size	Rated current In [A]	Description	Ordering Code	Unit Rate	Delivery batch [pcs]
F1	20	Control Fuse Base	1SYN833001R2005 ■	120	100
	32		1SYN833001R2009 ■	140	100

■ Stock items

# OESA/OS switch disconnecter fuse, DIN-types

## DIN type

32 - 800A SDF supplied with shaft and IP65 handle

### Mechanism at the end of the switch fuse



Rated current In [A]	Poles	Recommend Fuse size	Description	Ordering code	M.R.P. (₹)
32	3	000 / 00	OESA00-32	1SCA022058R7710	1,900
	TPN		OESA0032N	OESA0032N ■	2,000
	4		OESA 00-32A4	1SCA022067R7610	2,300
63	3	000 / 00	OESA 00-63	1SCA022057R6850	2,700
	TPN		OESA0063N	OESA0063N ■	2,800
	4		OESA 00-63A4	1SCA022057R7740	3,000
100	3	00	OESA00 100	1SCA022025R7830	5,300
	TPN		OESA00100N	OESA00100N	5,500
	4		OESA00100A4	1SCA022043R6760	5,900
125	3	00	OESA 00125	OESA00125 ■	7,100
	TPN		OESA00125N	OESA00125N ■	7,400
	4		OESA00125A4	OESA00125A4	7,900
160	3	00	OESA00-160	1SCA022077R8130 ■	7,600
	TPN		OESA00160N	OESA00160N	8,200
	4		OESA 00-160A4	1SCA022080R7840	9,000
200	3	0	OS200D03P	1SYN022709R9500 ■	9,800
	TPN		OS200D03N3P	1SYN022749R8710 ■	10,100
	4		OS200D04N2P	1SYN022709R9680	11,600
250	3	0-1	OS250D03P	1SYN022719R0090	12,200
	TPN		OS250D03N3P	1SYN022749R9430	12,400
	4		OS250D04N2P	1SYN022719R2380	13,900
315	3	0-2	OS315D03P	1SYN953046P3001	17,700
	TPN		OS315D03N3P	1SYN953047P3001	18,100
	4		OS315D04N2P	1SYN953048P3001	19,500
400	3	0-2	OS400D03P	1SYN022719R0250	18,100
	TPN		OS400D03N3P	1SYN022753R9320 ■	18,400
	4		OS400D04N2P	1SYN022719R2460	20,000
630	3	3	OS630D03P	1SYN022825R2830 ■	30,000
	TPN		OS630D03N3P	1SYN100858R1001 ■	31,000
	4		OS630D04N2P	1SYN022825R4290	33,600
800	3	3	OS800D03P	1SYN022825R4880	32,600
	TPN		OS800D03N3P	1SYN100859R1001	33,100
	4		OS800D04N2P	1SYN022825R5180	36,300

#### Notes:

4<sup>th</sup> pole of all SFU's are 100% rated and are in the switched neutral (SN) version.

Contact our nearest sales office

- For 1250A Switch disconnecter fuse requirement
- For mechanism inbetween poles configuration
- For Motorized Switch disconnecter fuse requirement
- For 2 pole Switch disconnecter fuse
- For 4th pole has fuse protection

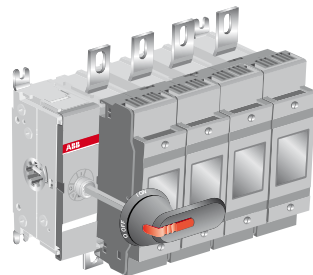
■ Stock items

# OESA/OS switch disconnecter fuse, BS-types

## BS

32 - 800A SDF supplied with shaft and IP65 handle

### Mechanism at the end of the switch fuse



Rated current In [A]	Poles	Recommend Fuse size	Description	Ordering code	M.R.P. (₹)
32	3	A2	OESA32G1	1SCA022057R1540	1,900
	TPN		OESA32G1N	OESA32G1N ■	2,000
	4		OESA32G4	1SCA022059R9040	2,300
63	3	A3	OESA63G1	1SCA022057R0310 ■	2,700
	TPN		OESA63G1N	OESA63G1N ■	2,800
	4		OESA63G4	1SCA022057R1110	3,000
100	3	A4	OESA100G1	1SCA022042R0920 ■	5,300
	TPN		OESA100G1N	OESA100G1N ■	5,500
	4		OESA100G4	1SCA022043R7570	7,200
125	3	A4	OESA125G1	OESA125G1	6,600
	TPN		OESA125G1N	OESA125G1N ■	6,800
	4		OESA125G4	OESA125G4	8,400
160	3	B2	OESA160B3	1SCA022076R9570	7,200
	TPN		OESA160B3N	OESA160B3N	7,400
	4		OESA160B4	1SCA022080R3690	9,100
200	3	B1-B2	OS200B03P	1SYN022709R9330	8,700
	TPN		OS200B03N3P	1SYN022750R0620 ■	9,500
	4		OS200B04N2P	1SYN022709R9410	11,600
250	3	B1-B3	OS250B03P	1SYN022750R6660	11,100
	TPN		OS250B03N3P	1SYN022750R8010 ■	11,600
	4		OS250B04N2P	1SYN022750R7800	14,200
315	3	B1-B4	OS315B03P	1SYN022719R0680	16,100
	TPN		OS315B03N3P	1SYN022753R8940	16,300
	4		OS315B04N2P	1SYN022719R2710	19,300
400	3	B1-B4	OS400B03P	1SYN022719R0840	16,400
	TPN		OS400B03N3P	1SYN022753R9160	16,600
	4		OS400B04N2P	1SYN022719R2890	19,500
630	3	C1-C2	OS630B03P	1SYN022825R5850	28,100
	TPN		OS630B03N3P	1SYN100860R1001	28,400
	4		OS630B04N2P	1SYN022825R6230	32,600
800	3	C1-C3	OS800B03P	1SYN022825R7550	33,600
	TPN		OS800B03N3P	1SYN100861R1001	34,200
	4		OS800B04N2P	1SYN022825R8010	37,800

Note:

4<sup>th</sup> pole of all SFU's are 100% rated and are in the switched neutral (SN) version.

Contact our nearest sales office

- For 1250A Switch disconnecter fuse requirement
- For mechanism inbetween poles configuration
- For Motorized Switch disconnecter fuse requirement
- For 2 pole Switch disconnecter fuse
- For 4th pole has fuse protection

**NEW**

### Fuse covers for OESA switch disconnecter fuse

Frame	Type	Description	Ordering code	M.R.P. (₹)
32...63	DIN	Fuse cover	1SYN833035R2012 ■	50
32...63	BS		1SYN833036R2012 ■	50
100...160	DIN		1SYN833037R2012 ■	60

Note:

Ordering code mentioned above for fuse cover is per piece

■ Stock items

# Accessories for OESA/OS switch disconnecter fuse, 32..800 A

## Phase barriers

Frame	Pole	Height (mm)	Description	Ordering code	M.R.P. (₹)
OS200...400	3	100	PB100 low	1SDA054970R1	600
	4	100	PB100 low	1SDA054971R1	900

## Mechanical interlock mechanism

(Prevents one switch from closing to ON-position, if the other is not in OFF-position)

Frame	Remarks	Shaft distance [mm]	Description	Ordering code	M.R.P. (₹)
OS200-250	Two 3- or 4-pole switches needed	190	OTZW10	1SCA022431R5280	2,500
OS315-800		250	OETLZW14	1SCA022077R3410	6,200
OS315-800		300	OETLZW3	1SCA022049R0380	6,500
OS315-800		500	OETLZW15	1SCA022081R9340	7,200

## Extension ring for OHB\_pistol type handles

Frame	Colour	Description	Ordering Code	M.R.P. (₹)
OS200...1250	Black	OHZX14	1SCA022851R6590	750

## Auxiliary contacts

Frame	Contact function	Description	Ordering Code	M.R.P. (₹)	
OESA 32...160	1NO+1NC	OESAZX 15	OESAZX 15 ■	400	
	2NO+2NC	OESAZX 16	OESAZX 16 ■	775	
OS200...800	1NO	OA1G10	1SCA022353R4970 ■	550	
	1NC	OA3G01	1SCA022456R7410 ■	725	
Screw mounting to the left side of the switch			OEA28	1SCA022714R8810 ■	1,900

Note: OEA 28 has to be order along with 200 & 250A TPN switch only

## Fuse replacement handles

Suitable for DIN fuse link size	Description	Ordering code	M.R.P. (₹)
000,00,0,1,2,3	OFAE506	1SCA128175R1001	2,000

## Fuse monitor

Frame	Rated voltage [Vac]	Description	Ordering code	M.R.P. (₹)
OESA32...160 & OS200...800	100...260	OFS260	1SCA022716R0180	5,850
	380...690	OFS690	1SCA022715R9920	6,300

## Wrapped neutral link

Frame	Description	Ordering Code	M.R.P. (₹)
OESA32...63	OESAZX87	OESAZX 87	350
OESA100	OESAZX 86/1	OESAZX 86 / 1	650
OESA125...160	OESAZX86	OESAZX 86	700
OSA200...250	OXN250	1SCA022752R9950	3,000
OSA315...400	OXN400	1SCA022770R3060	7,500
OSA630...800	OXN800S	1SCA022831R4880	10,000

## Handles

Frame	Description	Ordering code	M.R.P. (₹)
OESA32...63	YASDB51	YASDB 51 ■	600
OESA100...160	YASDB10	YASDB 10 ■	900
OS200...250	OHB80J6	1SCA022381R0240 ■	1,200
OS315...400	OHB145J12	1SCA022381R2110 ■	1,500
OS630...800	OHB175J12	1SCA022381R2450 ■	1,800

## Shaft

Frame	Description	Ordering code	M.R.P. (₹)
OESA/OS32...250	EXP6X210	1SCA022295R6080 ■	300
OS315...400	EXP12X250	1SCA022325R6980 ■	600
OS630...800	EXP12X280	1SCA022137R5140 ■	800

■ Stock items

# OT switch-disconnectors

## Front operated switch-disconnectors

OT 16-3150A switch disconnector supplied with extended shaft and IP 65 pistol type handle



Rated current In [A]	Poles	Description	Ordering code	M.R.P. (₹)
16	3	OT16F3	1SYN104811R1001	2,450
25		OT25F3	1SYN104857R1001	2,550
40		OT40F3	1SYN104902R1001	2,950
63		OT63F3	1SYN105332R1001	3,600
80		OT80F3	1SYN105798R1001	4,200
100		OT100F3	1SYN105004R1001	5,700
125		OT125F3	1SYN105033R1001	6,650
16	4	OT16F4N2	1SYN104829R1001	2,750
25		OT25F4N2	1SYN104886R1001	2,850
40		OT40F4N2	1SYN104932R1001	3,300
63		OT63F4N2	1SYN105365R1001	4,100
80		OT80F4N2	1SYN105413R1001	4,850
100		OT100F4N2	1SYN105018R1001	6,550
125		OT125F4N2	1SYN105051R1001	7,150

Contact our nearest sales office

- For Door mounted switch disconnector
- For different configuration of Shaft and Handle(selector type)
- For 6 & 8pole switch disconnectorrequirement



160	3	OT160E03P	1SCA120514R1001	8,750
200		OT200E03P	1SCA022712R0800	8,850
250		OT250E03P	1SCA022710R0100	10,000
315		OT315E03P	1SCA022718R8510	11,550
400		OT400E03P	1SCA022718R8780	13,650
630		OT630E03P	1SCA022718R8940	21,000
800		OT800E03P	1SCA022718R9410	23,100
1000		OT1000E03P	1SCA022860R5930	49,350
1250		OT1250E03P	1SCA022860R6230	63,000
1600		OT1600E03P	1SCA022860R6580	79,800
2000		OT2000E03P	1SCA108036R1001	97,650#
2500		OT2500E03P	1SCA104972R1001	112,350#
3200		OT3200E03P	1SCA128481R1001	170,000#
4000	OT4000E03P	1SCA12484R1001	210,000#	
160	4	OT160E04P	1SCA120521R1001	10,000
200		OT200E04P	1SCA022713R4930	11,550
250		OT250E04P	1SCA022710R0520	12,600
315		OT315E04P	1SCA022719R1730	13,650
400		OT400E04P	1SCA022719R1810	16,800
630		OT630E04P	1SCA022719R2030	25,200
800		OT800E04P	1SCA022719R2110	28,900
1000		OT1000E04P	1SCA022860R6150	63,000
1250		OT1250E04P	1SCA022860R6310	81,900
1600		OT1600E04P	1SCA022860R6740	103,950
2000		OT2000E04P	1SCA108038R1001	122,850#
2500		OT2500E04P	1SCA105140R1001	147,000#
3200		OT3200E04P	1SCA128482R1001	190,000#
4000	OT4000E04P	1SCA124856R1001	230,000#	

Note:

# Marked products carry list prices

Contact our nearest sales office

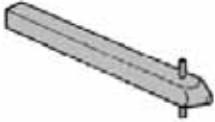
- For requirement of Motorized isolators
- For mechanism inbetween poles configuration
- For switch disconnector with direct mounted handle

# Accessories for OT switch-disconnectors



## Handles

Frame	Description	Ordering code	M.R.P. (₹)
OT16...125	OHB45J6	1SCA022380R8770 ■	800
OT160...250	OHB65J6	1SCA022380R9660	1,000
OT315...400	OHB95J12	1SCA022381R0830	1,200
OT630...800	OHB125J12	1SCA022381R1560	1,400
OT1000...4000	OHB274J12	1SCA022865R9510	4,500



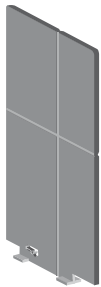
## Shaft

Frame	Description	Ordering code	M.R.P. (₹)
OT16...125	EXP6X170	1SCA108224R1001 ■	280
OT160...250	EXP6X210	1SCA022295R6080	300
OT315...800	EXP12X185	1SCA022325R6710	580
OT1000...4000	EXP12X280	1SCA022137R5140	800



## Auxiliary contact

Frame	Contact function	Description	Ordering code	M.R.P. (₹)
OT16...4000	1NO	OA1G10	1SCA022353R4970 ■	550
OT16...125	1NC	OA1G01	1SCA022353R4890 ■	550
OT160EV...4000	1NC	OA3G01	1SCA022456R7410 ■	725



## Phase barrier

Frame	Poles	Description	Ordering code	M.R.P. (₹)
OT160...OT800	3	PB100 low	1SDA054970R1	600
OT160...OT800	4	PB100 low	1SDA054971R1	900
OT1000...2500	3 & 4	OTB1600/6	1SCA100768R1001	3,950
OT3200...4000	3 & 4	OTB4000/6	1SCA129040R1001	4,000



## Mechanical interlock mechanism

(Prevents one switch from closing to ON-position, if the other is not in OFF-position)

Frame	Shaft distance [mm]	Description	Ordering code	M.R.P. (₹)
OT16...125	100	OTZW24	1SCA022639R5610	2,100
OT160...250	190	OTZW10	1SCA022431R5280	2,500
OT315...400	250	OETLZW14	1SCA022077R3410	6,200
OT315...800	300	OETLZW3	1SCA022049R0380	6,500
OT315...4000	500	OETLZW15	1SCA022081R9340	7,200



## Terminal shrouds snap-on mounting, transparent

For 3-pole switches

Frame	Description	Ordering code	M.R.P. (₹)
OT 16...40F3	OTS40T3	1SCA105317R1001	350
OT63...80F3	OTS63T3	1SCA022353R6750	250
OT 100...125F3	OTS125T3	1SCA022379R9680	500

Note:

for requirement of Terminal shrouds for higher current rating contact our nearest sales office

■ Stock items

# OT manual changeover switches

## Manual changeover switches, I-O-II -operation

Supplied with extended shaft and IP 65 pistol type handle



Rated current In [A]	Poles	Description	Ordering code	M.R.P. (₹)
16	3	OT16F3C	1SYN104816R1001	3,800
25		OT25F3C	1SYN104863R1001	4,800
40		OT40F3C	1SYN104913R1001	5,200
63		OT63F3C	1SYN105338R1001	6,500
80		OT80F3C	1SYN105402R1001	7,350
100		OT100F3C	1SYN105008R1001	10,080
125	4	OT125F3C	1SYN105037R1001	10,500
16		OT16F4C	1SYN104831R1001	4,800
25		OT25F4C	1SYN104877R1001	5,000
40		OT40F4C	1SYN104934R1001	5,500
63		OT63F4C	1SYN105369R1001	7,500
80		OT80F4C	1SYN105418R1001	8,295
100	4	OT100F4C	1SYN105019R1001	11,760
125		OT125F4C	1SYN105054R1001	12,390

Supplied with bridging bars, extended shaft and IP 65 pistol type handle



160	3	OT160E03CP	1SYN022772R6510	13,650
200		OT200E03CP	1SYN022771R7520	14,175
250		OT250E03CP	1SYN022771R3450	16,275
315		OT315E03CP	1SYN022772R6780	19,425
400		OT400E03CP	1SYN022771R8500	25,200
630		OT630E03CP	1SYN022785R6050	38,850
800		OT800E03CP	1SYN022785R6300	47,250
1000		OT1000E03CP	1SYN022872R1680	130,000#
1250		OT1250E03CP	1SYN022872R0790	152,250#
1600		OT1600E03CP	1SYN022872R1840	160,650#
2000		OT2000E03CP	1SYN103908R1001	267,000#
2500		OT2500E03CP	1SYN105615R1001	310,800#
3200	OT3200E03CP	1SYN129156R1001	490,000#	
160	4	OT160E04CP	1SYN022775R9440	16,275
200		OT200E04CP	1SYN022771R7280	16,800
250		OT250E04CP	1SYN022775R4640	17,850
315		OT315E04CP	1SYN022775R7150	22,575
400		OT400E04CP	1SYN022771R8680	27,300
630		OT630E04CP	1SYN022785R6130	46,200
800		OT800E04CP	1SYN022785R6210	52,500
1000		OT1000E04CP	1SYN022872R1500	147,000#
1250		OT1250E04CP	1SYN022872R1250	165,900#
1600		OT1600E04CP	1SYN022872R2310	178,500#
2000		OT2000E04CP	1SYN103912R1001	341,000#
2500		OT2500E04CP	1SYN103906R1001	399,000#
3200	OT3200E04CP	1SYN129158R1001	500,000#	

# Marked products carry list prices

Note:

1. For 6 pole change over
2. For manual bypass switch
3. For manual closed transition
4. For wide phase manual change over



# OT motorized changeover switches

## Changeover switches, motor operation, I-O-II -operation

Supplied with bridging bars and handle



Rated current In [A]	Poles	Description	Ordering code	M.R.P.(₹)
40	3	OTM40F3CMA230V	1SYN120096R1001	32,550
63		OTM63F3CMA230V	1SYN120095R1001	34,125
80		OTM80F3CMA230V	1SYN120093R1001	35,175
100		OTM100F3CMA230V	1SYN120071R1001	36,225
125		OTM125F3CMA230V	1SYN120070R1001	37,275
160		OTM160E3CM230C	1SYN022845R8610	39,375
200		OTM200E3CM230C	1SYN022845R8960	40,425
250		OTM250E3CM230C	1SYN022845R9260	49,350
315		OTM315E3CM230C	1SYN022847R1210	51,450
400		OTM400E3CM230C	1SYN022847R1630	57,750
630		OTM630E3CM230C	1SYN103567R1001	68,250
800		OTM800E3CM230C	1SYN103570R1001	96,600#
1000		OTM1000E3CM230C	1SYN112677R1001	162,750#
1250		OTM1250E3CM230C	1SYN112676R1001	173,250#
1600		OTM1600E3CM230C	1SYN112678R1001	204,750#
2000		OTM2000E3CM230C	1SYN112709R1001	320,250#
2500		OTM2500E3CM230C	1SYN112710R1001	351,750#
40	4	OTM40F4CMA230V	1SYN120102R1001	33,600
63		OTM63F4CMA230V	1SYN120101R1001	34,650
80		OTM80F4CMA230V	1SYN120100R1001	35,700
100		OTM100F4CMA230V	1SYN120098R1001	36,750
125		OTM125F4CMA230V	1SYN120097R1001	37,800
160		OTM160E4CM230C	1SYN022848R1510	39,900
200		OTM200E4CM230C	1SYN022846R1590	40,950
250		OTM250E4CM230C	1SYN022846R1910	50,400
315		OTM315E4CM230C	1SYN022847R2870	52,500
400		OTM400E4CM230C	1SYN022847R3250	65,100
630		OTM630E4CM230C	1SYN022873R1990	75,600#
800		OTM800E4CM230C	1SYN022872R8340	105,000#
1000		OTM1000E4CM230C	1SYN112703R1001	168,000#
1250		OTM1250E4CM230C	1SYN112702R1001	178,500#
1600		OTM1600E4CM230C	1SYN112704R1001	220,500#
2000		OTM2000E4CM230C	1SYN112712R1001	346,500#
2500		OTM2500E4CM230C	1SYN112713R1001	378,000#

# Marked products carry list prices

### Note:

Motor voltage Ue 110-240 V AC/DC (OTM40...125A)

Motor voltage Ue 220-240 V AC (OTM160...2500A)

OMD control units can be purchased separately for their motorized changeover switches in order to build an ATS by themselves. Contact nearest sales office for making selection

Contact our nearest sales office

- For motor voltage Ue 110...125 V AC/DC (160A-2500A)
- For motor voltage Ue = 48V DC (160A-2500A)

NEW



## Basic ATS controller for motorised change over

Frame	Description	Ordering code	M.R.P. (₹)
40...2500A	ODPS230	1SCA122946R1001	16,000

Note: Contact our nearest sales office for more information

# OT automatic transfer switches

## Automatic transfer switches, I - O - II operation

Supplied with bridging bars and handle



### Automatic operation, equipped with OMD300 controller unit

Rated current In [A]	Poles	Description	Ordering code	M.R.P.(₹)
160	4	OTM160E4C3D230C	1SYN106305R1001	99,800
200		OTM200E4C3D230C	1SYN106309R1001	102,900
250		OTM250E4C3D230C	1SYN106313R1001	105,000
315		OTM315E4C3D230C	1SYN106317R1001	115,500
400		OTM400E4C3D230C	1SYN106318R1001	120,800
630		OTM630E4C3D230C	1SYN108726R1001	147,000#
800		OTM800E4C3D230C	1SYN108728R1001	199,500#
1000		OTM1000E4C3D230C	1SYN112852R1001	225,800#
1250		OTM1250E4C3D230C	1SYN112851R1001	252,000#
1600		OTM1600E4C3D230C	1SYN112848R1001	315,000#



### Automatic operation, equipped with OMD800 controller unit with display

Rated current In [A]	Poles	Description	Ordering code	M.R.P.(₹)
160	4	OTM160E4C8D230C	1SYN101020R1001	136,500
200		OTM200E4C8D230C	1SYN101021R1001	147,000
250		OTM250E4C8D230C	1SYN101022R1001	152,300
315		OTM315E4C8D230C	1SYN101063R1001	168,000
400		OTM400E4C8D230C	1SYN101064R1001	189,000
630		OTM630E4C8D230C	1SYN108453R1001	199,500#
800		OTM800E4C8D230C	1SYN108455R1001	210,000#
1000		OTM1000E4C8D230C	1SYN112861R1001	262,500#
1250		OTM1250E4C8D230C	1SYN112864R1001	283,500#
1600		OTM1600E4C8D230C	1SYN112867R1001	315,000#

Note:

- Motor voltage Ue 220-240 V AC

- For 3 pole requirement please contact the nearest sales office

# Marked products carry list prices

# Accessories for changeovers (manual, motorized, ATS) and rotary cam switches

## Shaft



Frame	Description	Ordering code	M.R.P. (₹)
OT16...125F_C	OXF6x170	1SCA108224R1001 ■	280
OT160...250_C	OXF6x161	1SCA022067R1760	260
OT315...400_C	OXF12x166	1SCA022325R7100	440
OT630...3200_C	OXF12x185	1SCA022325R6710	580

## Handle



Frame	Description	Ordering code	M.R.P. (₹)
OT16...125F_C	OHB45J6E311	1SCA022817R2130 ■	1,800
OT160...250_C	OHB65J6E011	1SCA022383R2480	2,000
OT315...400_C	OHB95J12E011	1SCA022621R0760	2,300
OT630...800_C	OHB125J12E011	1SCA022589R3340	2,500
OT1000...3200_C	OHB200J12PE011	1SCA022873R4230	5,500

## Auxiliary contacts



Frame	Contact functions	Installation side	Description	Ordering code	M.R.P. (₹)
OT16...125F_C OTM40...125	1NO	Right	OA1G10	1SCA022353R4970	550
	1NC	Right	OA8G01	1SCA022744R2240	750
	1NO	Left	OA7G10	1SCA022673R1140	750
	1NC	Left	OA1G01	1SCA022353R4890	550
OT160...3200 OTM160...2500	1NO	Right	OA1G10	1SCA022353R4970 ■	550
	1NC	Right	OA3G01	1SCA022456R7410 ■	725

## Phase barriers

3-pole change-overs need 8 barriers and 4-pole change-overs need 12 barriers for full protection.



Frame	Poles	Description	Ordering code	M.R.P. (₹)
OT160...800 OTM160...800	3	PB100 low	1SDA054970R1	600
	4	PB100 low	1SDA054971R1	900

# Rotary cam switches ordering details

Black handle and front plate with position indication are included

## ON - OFF

Function	Rated thermal current	Poles	Description	Ordering code	M.R.P. (₹)
0-1	10A	3	OMA3PB	1SCA022531R4170	1,700
		4	OMA4PB	1SCA022531R4330	2,000
	25A	3	ONA3PB	1SCA022531R5140	2,100
		4	ONA4PB	1SCA022531R5220	2,200
	45A	3	OL40A3PB	1SCA022755R7310	2,300
		4	OL40A4PB	1SCA022755R7490	2,400

## Voltmeter switches

3 Positions, 3 phase -3 wire, without 0-position, step angle 45° L1-L2, L2-L3, L3-L1	10A	2	OMVN3PB	1SCA022558R4470	1,400
	25A	2	ONVN3PB	1SCA022558R4630	2,300
4 Positions, 3 phase -3 wire, with 0-position, step angle 45° 0, L1-L2, L2-L3, L3-L1	10A	2	OMV3PB	1SCA022533R5250	2,100
	25A	2	ONV3PB	1SCA022533R5680	2,600

## Ammeter switches

Door mounted, snap-on mounted handle 0-1-2-3	10A	1	OMAU31PB	1SCA022533R5410	2,600
	25A	1	ONAU31PB	1SCA022533R5840	2,900



■ Stock items

## Kabeldon low voltage switchgear system

Kabeldon low voltage distribution system by ABB is used to build modern systems for various applications, from substations and cable distribution cabinets to distribution boards in industry.



Features of the Kabeldon IP-system are its simplicity and reliability. These are the most important factors when you want to achieve low operating costs and high delivery reliability in a distribution system.

- Busbars of continuously-extruded aluminium sections, insulated with a layer of polyamid.
- The busbar has a touch-proof contact slot. This ensures safety regardless of where on the busbar the switching device will be placed.
- Blade fuses in all of the fuse-switch disconnectors.
- The switching devices can be arranged in any order, regardless of rated current
- All parts, busbars and devices, fulfil IP2X protection in accordance with IEC 60529\*).
- Switching devices 100-1600 A.
- It is easy to add new switching devices to existing distribution boards.
- Switching devices are mounted on and connected to the busbar system in the same operation.
- Switching devices can be connected when the system is live.
- Always voltage-free ("dead") when changing fuses.
- Busbars are available with rated currents from 400 to 1600 A.
- Switching devices, connectors and busbars combine to form a modular system. Each module is 12.5 mm. The modular system makes planning easier.
- The compact design of the switching devices makes them suitable for use in many different types of distribution boards.
- All switching devices have a utilisation category so that they can be used in cable distribution cabinets, substations and other distribution boards.

Note : For more details pl contact the nearest sales office.

## ABB's comprehensive range of LV control products

The range of ABB control products ranks amongst the most extensive on the market with a full range of innovative solutions for protection, start & control, detection, dialogue, measurement, treatment and connection application

The business unit is comprised of 3 main product families :

- Control & Protection
- Electronic Relays
- Connection Devices - Terminal Blocks

### Other products

Our program is already among the most extensive in the market and we are constantly adding new products in order to meet ever changing customer needs.

Quality and reliability are built into every device to ensure total performance satisfaction, even in the most demanding applications.

We offer a very modern and competitive range of contactors, softstarters, starters, limit switches, manual motorstarters, a wide range of electronic relays and overload relays, together with an extended program of pilot devices.

### Our offering

- Contactors - Air break
- Manual motor starters
- Thermal overload relays
- Electronic overload relays
- Soft starters
- Pilot devices - push buttons, pilot lights with integrated LED, emergency stops, selector switches illuminated push buttons.
- Electronic relays and controls
- Timers
- Measuring and monitoring relays
- Power Supplies
- UMC 100
- Signal converters - analog / serial
- Plug in Relays
- Motor controllers - intelligent motors management systems
- Sensors - hall effect current / voltage
- Limit switches
- Terminal blocks - Entrelec
- Pre-wiring system for PLC's - Interfast

# Auxiliary contactor relay

## Standard control relays: AC operated

Control Circuit	No: of Contacts	Contact Configuration		Type Code Reference	Order Code	M.R.P.(₹)
		NO	NC			
AC	4	2	2	N22E **	1SBH141001R□□22 ■	975
	4	3	1	N31E **	1SBH141001R□□31 ■	
	4	4	0	N40E **	1SBH141001R□□40 ■	

Refer coil voltage & codes mentioned below.

## Standard control relays: DC operated

Control Circuit	No: of Contacts	Contact Configuration		Type Code Reference	Order Code	M.R.P.(₹)
		NO	NC			
DC	4	2	2	NL22E **	1SBH143001R□□22 ■	1,500
	4	3	1	NL31E **	1SBH143001R□□31 ■	
	4	4	0	NL40E **	1SBH143001R□□40 ■	

Refer coil voltage & codes mentioned below.

## Standard control relays: AC/DC operated

**NEW**

Control Circuit	No: of Contacts	Contact Configuration		Type Code Reference	Order Code	M.R.P.(₹)
		NO	NC			
AC/DC	4	2	2	NF22E **	1SBH137001R□□22 ■	1,800
	4	3	1	NF31E **	1SBH137001R□□31 ■	
	4	4	0	NF40E **	1SBH137001R□□40 ■	

Refer coil voltage & codes mentioned below.

## Standard control relays: AC/DC operated low consumption

(Allows direct control by PLC output ≥ 24 V DC 500 mA)

**NEW**

Control Circuit	No: of Contacts	Contact Configuration		Type Code Reference	Order Code	M.R.P.(₹)
		NO	NC			
AC/DC	4	2	2	NFZ22E **	1SBH136001R□□22	1,880
	4	3	1	NFZ31E **	1SBH136001R□□31	
	4	4	0	NFZ40E **	1SBH136001R□□40	

Refer coil voltage & codes mentioned below.

## Coil voltages and codes: N range (AC operated)

Voltage V - 50Hz	Voltage V - 60Hz	Code □□
24	24	8 1
110	110 ... 120	8 4
220 ... 230	230 ... 240	8 0
230 ... 240	240 ... 260	8 8
400 ... 415	415 ... 440	8 6

## Coil voltages & codes: NL (DC operated)

V dc	Code □□
24	8 1
48	8 3
110	8 6
220	8 8
240	8 9

Note: For Non standard coil voltage, other than this please contact us for pricing

## Coil voltages and codes: NF range (AC/DC operated)

Voltage V 50/60 Hz	Voltage V DC	Code □□
24...60	20...60	1 1
48...130	48...130	1 2
100...250	100...250	1 3
250...500	250...500	1 4

## Coil voltages and codes: NFZ range (AC/DC operated)

Voltage V 50/60 Hz	Voltage V DC	Code □□
-	12...20	2 0
24...60	20...60	2 1
48...130	48...130	2 2
100...250	100...250	2 3



■ Stock items

# 3 pole contactors : AC operated



## Contactors: 3-pole – AC Operated

AC1 duty Amps	AC3 rating at 415V			Auxiliary Contacts		Type Code	Order Code	M.R.P.(₹)
	Amps	hP	kW					
25	9	5.5	4	1NO	-	A09-30-10 **	1SBL141001R□□10 ■	940
25	9	5.5	4	-	1NC	A09-30-01 **	1SBL141001R□□01 ■	940
27	12	7.5	5.5	1NO	-	A12-30-10 **	1SBL161001R□□10 ■	1,075
27	12	7.5	5.5	-	1NC	A12-30-01 **	1SBL161001R□□01 ■	1,075
30	17	12.5	7.5	1NO	-	A16-30-10 **	1SBL181001R□□10 ■	1,200
30	17	12.5	7.5	-	1NC	A16-30-01 **	1SBL181001R□□01 ■	1,200
45	26	15	11	1NO	-	A26-30-10 **	1SBL241001R□□10 ■	1,735
45	26	15	11	-	1NC	A26-30-01 **	1SBL241001R□□01 ■	1,735
55	32	20	15	1NO	-	A30-30-10 **	1SBL281001R□□10 ■	3,400
55	32	20	15	-	1NC	A30-30-01 **	1SBL281001R□□01 ■	3,400
60	37	30	18.5	1NO	-	A40-30-10 **	1SBL321001R□□10 ■	5,530
60	37	30	18.5	-	1NC	A40-30-01 **	1SBL321001R□□01 ■	5,530
100	50	40	25	-	-	A50-30-00 **	1SBL351001R□□00 ■	6,270
115	65	50	37	-	-	A63-30-00 **	1SBL371001R□□00 ■	8,810
125	75	60	40	-	-	A75-30-00 **	1SBL411001R□□00 ■	11,000
145	96	70	55	1NO	1NC	A95-30-11**	1SFL431001R□□11 ■	13,900
160	110	75	59	1NO	1NC	A110-30-11**	1SFL451001R□□11 ■	17,200
250	145	100	75	1NO	1NC	A145-30-11**	1SFL471001R□□11 ■	22,675
275	185	115	90	1NO	1NC	A185-30-11**	1SFL491001R□□11 ■	27,600
350	210	150	110	1NO	1NC	A210-30-11**	1SFL511001R□□11	30,500
400	260	170	140	1NO	1NC	A260-30-11**	1SFL531001R□□11	36,500
500	300	210	160	1NO	1NC	A300-30-11**	1SFL551001R□□11	42,500
600	370	270	200	1NO	1NC	AF370-30-11-□□ <b>NEW</b>	1SFL607002R□□11	55,000
Refer coil voltage & codes mentioned below for AF370 separately								
600	400	300	220	1NO	1NC	AF400-30-11**	1SFL577001R□□11	59,000
700	460	340	250	1NO	1NC	AF460-30-11**	1SFL597001R□□11	72,800
800	580	470	355	1NO	1NC	AF580-30-11**	1SFL617001R□□11	98,000
1050	750	570	425	1NO	1NC	AF750-30-11**	1SFL637001R□□11	1,50,000

Complete the contactor type code by replacing \*\* with desired coil voltage AF contactors have advanced electronic coil interface with wideband AC/DC coil

### Coil voltages and codes: A 09 ... A 300, range

Voltage V - 50Hz	Voltage V - 60Hz	Code □□
24	24	8 1
110	110 ... 120	8 4
220 ... 230	230 ... 240	8 0
230 ... 240	240 ... 260	8 8
400 ... 415	415 ... 440	8 6

### Coil voltages and codes: AF 370

Voltage V - 50/60Hz	Voltage V d.c.	Code □□
24 ... 60	20 ... 60	1 1
48 ... 130	48 ... 130	1 2
100 ... 250	100 ... 250	1 3
250 ... 500	250 ... 500	1 4

### Coil voltages and codes: AF 400 ... AF 750

Voltage V - 50/60Hz	Voltage V d.c.	Code □□
-	24 ... 60	6 8
48 ... 130	48 ... 130	6 9
100 ... 250	100 ... 250	7 0
250 ... 500	250 ... 500	7 1

( 1 ) The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole

Note: For Non standard coil voltage, other than this please contact us for pricing

■ Stock items

# 4 Pole contactors : AC operated

## Contactors: 4-pole - AC Operated (4 NO Main Contacts)

Rating at 415V AC1 Amps	Main Contact Arrangement		Auxiliary Contacts		Type Code Reference	Order Code	M.R.P.(₹)
25	4NO	-	-	-	A09-40-00 **	1SBL141201R□□00	1,345
30	4NO	-	-	-	A16-40-00 **	1SBL181201R□□00	1,450
45	4NO	-	-	-	A26-40-00 **	1SBL241201R□□00	2,400
70	4NO	-	-	-	A45-40-00**	1SBL331201R□□00	6,500
100	4NO	-	-	-	A50-40-00**	1SBL351201R□□00	9,250
125	4NO	-	-	-	A75-40-00**	1SBL411201R□□00	12,400
200A	4NO	-	1NO	1NC	EK110-40-11 **	SK824440 - □□	26,000
250A	4NO	-	1NO	1NC	EK150-40-11 **	SK824441 - □□	31,000
300A	4NO	-	1NO	1NC	EK175-40-11 **	SK825440 - □□	45,000
350A	4NO	-	1NO	1NC	EK210-40-11 **	SK825441 - □□	51,000
550A	4NO	-	1NO	1NC	EK370-40-11 **	SK827040 - □□	75,000
800A	4NO	-	1NO	1NC	EK550-40-11 **	SK827041 - □□	1,10,000
1000A	4NO	-	1NO	1NC	EK1000-40-11 **	SK827044 - □□	1,52,000

Complete the contactor type code by replacing \*\* with desired coil voltage

## Contactors: 4-pole - AC Operated (2NO+2NC power contacts)

Rating at 415V AC1 Amps	Main Contact Arrangement		Auxiliary Contacts		Type Code Reference	Order Code	M.R.P.(₹)
25	2NO	2NC	-	-	A09-22-00 **	1SBL141501R□□00	1,650
30	2NO	2NC	-	-	A16-22-00 **	1SBL181501R□□00	1,900
45	2NO	2NC	-	-	A26-22-00 **	1SBL241501R□□00	3,000
70	2NO	2NC	-	-	A45-22-00**	1SBL331501R□□00	9,000
125	2NO	2NC	-	-	A75-22-00**	1SBL411501R□□00	14,000

### Coil voltages and codes: A 09 ... A 75 , range

Voltage V - 50Hz	Voltage V - 60Hz	Code □□
24	24	8 1
110	110 ... 120	8 4
220 ... 230	230 ... 240	8 0
230 ... 240	240 ... 260	8 8
400 ... 415	415 ... 440	8 6

### Coil voltages and codes: EK 110 ... EK 1000

Voltage V - 50Hz	Voltage V - 60Hz	Code □□
-	110	A E
110	120	A F
220 ... 230	*	A L
230 ... 240	-	A M
400 ... 415	-	A R

Note: For Non standard coil voltage, other than this please contact us for pricing





## Control relay : Wide band AC / DC operated NEW

### NF Control Relays

#### Wide band AC / DC Operated - with Screw Terminals

#### Description

- **NF contactor** relays include an electronic coil interface accepting a wide control voltage  $U_c \text{ min.} \dots U_c \text{ max.}$  only four coils cover control voltages between 24...500 V 50/60 Hz or 20...500 V DC
- **NF contactor** relays can manage large control voltage variations. One coil (e.g. 100...250 V 50/60 Hz - DC) can be used for different control voltages used worldwide without any coil change.
- **NFZ contactor** relays equipped with a Z coil type allow direct control by 24 V DC 500 mA PLC-output and obtain a reduced holding coil consumption.
- **NF contactor** relays have built-in surge protection and do not require additional surge suppressors.

**Control Relay : Wide band AC/DC operated with low power consumption & inbuilt surge suppressor for order code refer page no. 54**



## 3 Pole contactors : Wide band AC / DC operated

#### Description

- AF09...AF38 contactor include an electronic coil interface accepting a wide control voltage  $U \text{ min.} \dots U \text{ max.}$  c c only four coils cover control voltages between 24...500 V 50/60 Hz or 20...500 V DC
- AF contactor can manage large control voltage variations. One coil (e.g. 100...250 V 50 or 60 Hz - DC) can be used for different control voltages used worldwide without any coil change.
- AF...Z contactor equipped with a Z coil type allow direct control by 24 V DC 500 mA PLC-output and obtain a reduced holding coil consumption.
- AF contactor have built-in surge protection and do not require additional surge suppressors.



# 3 pole contactors AF range : Wide band AC / DC operated



AC1 duty Amps	AC3 rating at 415V			Auxiliary Contacts		Type Code	Order code	M.R.P.(₹)
	Amps	hP	kW					
25	9	5.5	4	1NO	-	AF09-30-10-□□	1SBL137001R□□10	1,795
				1NC	-	AF09-30-01-□□	1SBL137001R□□01	1,795
28	12	7.5	5.5	1NO	-	AF12-30-10-□□	1SBL157001R□□10	1,990
				1NC	-	AF12-30-01-□□	1SBL157001R□□01	1,990
30	18	12.5	7.5	1NO	-	AF16-30-10-□□	1SBL177001R□□10	2,530
				1NC	-	AF16-30-01-□□	1SBL177001R□□01	2,530
45	26	15	11	-	-	AF26-30-00-□□	1SBL237001R□□00	3,200
50	32	20	18	-	-	AF30-30-00-□□	1SBL277001R□□00	6,875
50	38	25	18.5	-	-	AF38-30-00-□□	1SBL297001R□□00	7,900
70	40	30	18.5	-	-	AF40-30-00-□□	1SBL347001R□□00	8,585
100	53	40	22	-	-	AF52-30-00-□□	1SBL367001R□□00	10,775
105	65	50	30	-	-	AF65-30-00-□□	1SBL387001R□□00	12,750
125	80	60	37	-	-	AF80-30-00-□□	1SBL397001R□□00	15,440
130	96	70	45	-	-	AF96-30-00-□□	1SBL407001R□□00	18,825
160	116	75	55	1NO	1NC	AF116-30-11-□□	1SFL427001R□□11	19,625
200	140	100	75	1NO	1NC	AF140-30-11-□□	1SFL447001R□□11	24,500
225	146	100	75	1NO	1NC	AF146-30-11-□□	1SFL467001R□□11	26,685
275	490	120	90	1NO	1NC	AF190-30-11-□□	1SFL487002R□□11	39,080
350	205	150	110	1NO	1NC	AF205-30-11-□□	1SFL527002R□□11	41,960
400	265	175	140	1NO	1NC	AF265-30-11-□□	1SFL547002R□□11	48,500
500	305	215	160	1NO	1NC	AF305-30-11-□□	1SFL587002R□□11	52,000
600	370	270	200	1NO	1NC	AF370-30-11-□□	1SFL607002R□□11	55,000
For AF400...AF750 refer Table B for coil codes								
600	400	300	220	1NO	1NC	AF400-30-11**	1SFL577001R□□11	59,000
700	460	340	250	1NO	1NC	AF460-30-11**	1SFL597001R□□11	72,800
800	580	470	355	1NO	1NC	AF580-30-11**	1SFL617001R□□11	98,000
1050	750	570	425	1NO	1NC	AF750-30-11**	1SFL637001R□□11	1,50,000

Table A

## Coil voltages and codes: New AF range (AC/DC operated)

Voltage V 50/60 Hz	Voltage V DC	Code □□
24...60	20...60	1 1
48...130	48...130	1 2
100...250	100...250	1 3
250...500	250...500	1 4

## Old AF range contactor

AC1 duty Amps	AC3 rating at 415V			Auxiliary Contacts		Type Code	Order code	M.R.P.(₹)
	Amps	hP	kW					
100	50	34	25	-	-	AF50-30-00 **	1SBL357001R□□00	Upon request
115	65	50	37	-	-	AF63-30-00 **	1SBL377001R□□00	
125	75	54	40	-	-	AF75-30-00 **	1SBL417001R□□00	
145	96	60	55	1NO	1NC	AF95-30-11**	1SFL437001R□□11	
160	110	75	59	1NO	1NC	AF110-30-11**	1SFL457001R□□11	
250	145	80	75	1NO	1NC	AF145-30-11**	1SFL477001R□□11	
275	185	100	90	1NO	1NC	AF185-30-11**	1SFL497001R□□11	
350	210	125	110	1NO	1NC	AF210-30-11**	1SFL517001R□□11	
400	260	150	140	1NO	1NC	AF260-30-11**	1SFL537001R□□11	
500	300	190	160	1NO	1NC	AF300-30-11**	1SFL557001R□□11	

Table B

## Coil voltages and codes: Old AF range (AC/DC operated)

Voltage V 50/60 Hz	Voltage V DC	Code □□
-	24...60	6 8
48...130	48...130	6 9
100...250	100...250	7 0
250...500	250...500	7 1

Complete the contactor type code by replacing \*\* with desired coil voltage Contactors with advanced electronic coil interface with wideband AC/DC coil

# 4 pole contactors : Wide band AC / DC operated

## New AF Contactors: 4 pole – AC / DC Operated **NEW**

Rating at 415V AC1 Amps	Main Contact Arrangement		Auxiliary Contacts		Type Code Reference	Order code	M.R.P.(₹)
25	4NO	-	-	-	AF09-40-00-□□	1SBL137201R□□00	Upon request
	2NO	2NC	-	-	AF09-22-00-□□	1SBL137501R□□00	
30	4NO	-	-	-	AF16-40-00-□□	1SBL177201R□□00	
	2NO	2NC	-	-	AF16-22-00-□□	1SBL177501R□□00	
45	4NO	-	-	-	AF26-40-00-□□	1SBL237201R□□00	
	2NO	2NC	-	-	AF26-22-00-□□	1SBL237501R□□00	
55	4NO	-	-	-	AF38-40-00-□□	1SBL297201R□□00	
	2NO	2NC	-	-	AF38-22-00-□□	1SBL297501R□□00	

**Table A**  
Coil voltages and codes: New AF range (AC/DC operated)

Voltage V 50/60 Hz	Voltage V DC	Code □□
24...60	20...60	1 1
48...130	48...130	1 2
100...250	100...250	1 3
250...500	250...500	1 4

## Old AF Contactors: 4 pole – AC / DC Operated

Rating at 415V AC1 Amps	Main Contact Arrangement		Auxiliary Contacts		Type Code Reference	Order code	M.R.P.(₹)
70	4NO	-	-	-	AF45-40-00	1SBL337201R□□00	Upon request
	2NO	2NC	-	-	AF45-22-00	1SBL337501R□□00	
125	4NO	-	-	-	AF75-40-00	1SBL417201R□□00	
	2NO	2NC	-	-	AF75-22-00	1SBL427501R□□00	

**Table B**  
Coil voltages and codes: AF45... AF75

Voltage V - 50/60Hz	Voltage V d.c.	Code □□
-	20 ... 60	72 <sup>(1)</sup>
48 ... 130	48 ... 130	69
100 ... 250	100 ... 250	70

(1) The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.



Note: For Non standard coil voltage, other than this please contact us for pricing

## 3 Pole contactors AL and TAL range: DC operated

**AL.., TAL..** contactors are mainly used for controlling 3-phase motors and more generally for controlling power circuits both ac & dc. These contactors have a low power consumption

for direct control from PLC outputs. Consequently they are perfectly adapted for all applications associated with PLC control.

### AL Contactors



AC 1 duty Amps	AC3 rating at 415V			Auxiliary contacts		Type code reference	Order Code	M.R.P.(₹)
	Amps	hP	kW					
25	21	5	4	1NO	-	AL 9-30-10	1SBL 143 001 R□□10 ■	1,600
25	21	5	4	-	1NC	AL 9-30-01	1SBL 143 001 R□□01 ■	1,600
27	25	7.5	5.5	1NO	-	AL 12-30-10	1SBL 163 001 R□□10 ■	1,750
27	25	7.5	5.5	-	1NC	AL 12-30-01	1SBL 163 001 R□□01 ■	1,750
30	30	10	7.5	1NO	-	AL 16-30-10	1SBL 183 001 R□□10 ■	2,200
30	30	10	7.5	-	1NC	AL 16-30-01	1SBL 183 001 R□□01 ■	2,200
45	40	20	11	1NO	-	AL 26-30-10	1SBL 243 001 R□□10 ■	2,800
45	40	20	11	-	1NC	AL 26-30-01	1SBL 243 001 R□□01 ■	2,800
55	50	25	15	1NO	-	AL 30-30-10	1SBL 283 001 R□□10 ■	6,000
55	50	25	15	-	1NC	AL 30-30-01	1SBL 283 001 R□□01 ■	6,000
60	60	30	18.5	1NO	-	AL 40-30-10	1SBL 323 001 R□□10 ■	7,500
60	60	30	18.5	-	1NC	AL 40-30-01	1SBL 323 001 R□□01 ■	7,500

### TAL Contactors



AC 1 duty Amps	AC3 rating at 415V			Auxiliary contacts		Type code reference	Order Code	M.R.P.(₹)
	Amps	hP	kW					
25	21	5	4	1NO	-	TAL 9-30-10	1SBL 143 061 R□□10	2,080
25	21	5	4	-	1NC	TAL 9-30-01	1SBL 143 061 R□□01	2,080
27	25	7.5	5.5	1NO	-	TAL 12-30-10	1SBL 163 061 R□□10	2,165
27	25	7.5	5.5	-	1NC	TAL 12-30-01	1SBL 163 061 R□□01	2,165
30	30	10	7.5	1NO	-	TAL 16-30-10	1SBL 183 061 R□□10	2,530
30	30	10	7.5	-	1NC	TAL 16-30-01	1SBL 183 061 R□□01	2,530
45	40	20	11	1NO	-	TAL 26-30-10	1SBL 243 061 R□□10	3,575
45	40	20	11	-	1NC	TAL 26-30-01	1SBL 243 061 R□□01	3,575
55	50	25	15	1NO	-	TAL 30-30-10	1SBL 283 061 R□□10	7,700
55	50	25	15	-	1NC	TAL 30-30-01	1SBL 283 061 R□□01	7,700
60	60	30	18.5	1NO	-	TAL 40-30-10	1SBL 323 061 R□□10	8,580
60	60	30	18.5	-	1NC	TAL 40-30-01	1SBL 323 061 R□□01	8,580

### Coil voltages and codes: AL

Voltage □□ V d.c.	Code □□
24	8 1
110	8 6
220	8 8
240	8 9

Other voltages: please consult us.

### Coil voltages and codes: TAL

Voltage □□ V d.c.	Code □□
25...45	5 2
77...143	6 2
90...150	6 6
152...264	6 8

■ Stock items

# Installation contactors

EN/ESB20	EN/ESB24	EN/ESB40	EN/ESB63
<b>Switching heatings and resistors, AC-1 / AC-7a</b>			
Rated operational current I <sub>g</sub> (NO)			
20 A	24 A	40 A	63 A
Rated operational current I <sub>g</sub> (NC)			
20 A	24 A	30 A	30 A
Rated operational power, 1-phase at 230 V			
4 kW	5.3 kW	8.8 kW	13.8 kW
Rated operational power, 3-phase at 400 V			
	16 kW	26 kW	41 kW
<b>Switching motors, AC-3 / AC-7b</b>			
Rated operational current I <sub>g</sub> (NO)			
9 A	9 A	22 A	30 A
Rated operational current I <sub>g</sub> (NC)			
9 A	6 A		
Rated operational power, 1-phase at 230 V			
1.3 kW	2.2 kW	5.5 kW	8 kW
Rated operational power, 3-phase at 400 V			
	4 kW	11 kW	15 kW
<b>Module width</b>			
18 mm	36 mm	54 mm	54 mm



Contacts	Type	Order No.	M.R.P.(₹)
<b>20 A 2-pole (No aux.-contact block possible)</b>			
2NO	ESB 20-20 24 V 50/60 Hz	GHE3 211 102 R0001	1,950
2NO	ESB 20-20 230 V 50/60 Hz	GHE3 211 102 R0006	1,950
2NC	ESB 20-02 24 V 50/60 Hz	GHE3 211 202 R0001	2,150
2NC	ESB 20-02 230 V 50/60 Hz	GHE3 211 202 R0006	2,150
1NO, 1NC	ESB 20-11 24 V 50/60 Hz	GHE3 211 302 R0001	1,950
1NO, 1NC	ESB 20-11 230 V 50/60 Hz	GHE3 211 302 R0006	1,950
<b>24 A 2-pole (1 aux.-contact block possible)</b>			
2NO	ESB 24-20 24 V AC/DC	GHE3 291 402 R0006	1,950
2NO	ESB 24-20 24 V AC/DC	GHE3 291 402 R0001	1,950
<b>24 A 4-pole (1 aux.-contact block possible)</b>			
4NO	ESB 24-40 24 V AC/DC	GHE3 291 102 R0001	2,400
4NO	ESB 24-40 230-240 V AC/DC	GHE3 291 102 R0006	2,400
2NO, 2NC	ESB 24-22 24 V AC/DC	GHE3 291 302 R0001	2,715
2NO, 2NC	ESB 24-22 230-240 V AC/DC	GHE3 291 302 R0006	2,715
<b>40 A 2-/3-/4-pole (1 aux.-contact block possible)</b>			
2NO	ESB 40-20 24 V AC/DC	GHE3 491 402 R0001	4,700
2NO	ESB 40-20 230 V AC/DC	GHE3 491 402 R0006	4,700
3NO	ESB 40-30 24 V AC/DC	GHE3 491 502 R0001	4,725
3NO	ESB 40-30 230 V AC/DC	GHE3 491 502 R0006	4,725
4NO	ESB 40-40 24 V AC/DC	GHE3 491 102 R0001	4,725
4NO	ESB 40-40 230 V AC/DC	GHE3 491 102 R0006	5,050
2NO, 2NC	ESB 40-22 24 V AC/DC	GHE3 491 302 R0001	5,300
2NO, 2NC	ESB 40-22 230 V AC/DC	GHE3 491 302 R0006	5,175
<b>63 A 2-/3-/4-pole (1 aux.-contact block possible)</b>			
2NO	ESB 63-20 24 V AC/DC	GHE3 691 402 R0001	5,300
2NO	ESB 63-20 230 V AC/DC	GHE3 691 402 R0006	5,175
3NO	ESB 63-30 230 V AC/DC	GHE3 691 502 R0006	5,650
4NO	ESB 63-40 24 V AC/DC	GHE3 691 102 R0001	6,250
4NO	ESB 63-40 230 V AC/DC	GHE3 691 102 R0006	6,125

# Installation contactors

## EN-Types - with benefits for service

EN-Types have an integrated 3-position switch for manual and automatic operation.

### Functions:

- Switch in position “AUTO” : standard control
- Switch in position “O” : Supply to coil interrupted
- Switch in position “I” : Manually switched on (a trigger signal at the coil terminal initiates the switch moving into “AUTO” position)



Contacts	Type	Order No.	M.R.P.(₹)
<b>20 A 2-pole ( No aux.-contact block possible )</b>			
2NO	EN 20-20 24 V 50 Hz	GHE3 221 101 R0001	3,525
2NO	EN 20-20 230 V 50 Hz	GHE3 221 101 R0006	3,525
<b>24 A 3-pole ( 1 aux.-contact block possible )</b>			
3NO	EN 24-30 230-240 V AC/DC	GHE3 261 501 R0006	8,825
<b>24 A 4-pole ( 1 aux.-contact block possible )</b>			
4NO	EN 24-40 24 V AC/DC	GHE3 261 101 R0001	9,675
4NO	EN 24-40 230-240 V AC/DC	GHE3 261 101 R0006	9,425
<b>40 A 3-pole ( 1 aux.-contact block possible )</b>			
3NO	EN 40-30 230 V AC/DC	GHE3 421 501 R0006	8,950
<b>40 A 4-pole ( 1 aux.-contact block possible )</b>			
4NO	EN 40-40 24 V AC/DC	GHE3 421 101 R0001	9,075
4NO	EN 40-40 230 V AC/DC	GHE3 421 101 R0006	8,975
<b>Accessories</b>			
2NO	EH 04-20, Aux.-contact block	GHE3 401 321 R0001	960
1NO, 1NC	EH 04-11, Aux.-contact block	GHE3 401 321 R0002	960
distance pcs	ESB-DIS Spacer	GHE3 201 902 R0001	90
Seal	ESBPLK24	GHE3 201 903 R0001	80

# Contactors for special application - capacitors switching

## Contactors for capacitor switching: 3 pole – AC operated:

kVAR Rating at 415V	Peak inrush current	Auxiliary Contacts		Type Code reference	Order Code	M.R.P.(₹)
		NO	NC			
<b>Type UA..RA with in-built damping resistors:</b>						
12.5	Unlimited	1NO	--	UA16-30-10RA **	1SBL181024R□□10 ■	2,300
22	Unlimited	1NO	--	UA26-30-10RA **	1SBL241024R□□10 ■	3,950
30	Unlimited	1NO	--	UA30-30-10RA**	1SBL281024R□□10 ■	4,500
40	Unlimited	--	--	UA50-30-00RA	1SBL351024R□□00	12,800
50	Unlimited	--	--	UA63-30-00RA**	1SBL371024R□□00	13,750
60	Unlimited	--	--	UA75-30-00RA**	1SBL411024R□□00	14,700
70	Unlimited	--	--	UA95-30-00RA**	1SFL431024R□□00	17,250
80	Unlimited	--	--	UA110-30-00RA**	1SFL451024R□□00	18,500

### Type UA..RA with in-built damping resistors

Complete the contactor type code by replacing \*\* with desired coil voltage

Price for UAF 50-30 - 00RA..... UAF110-30-00RA (with wide band electronic coil 100...250V AC/DC) on request

### Coil voltages and codes

#### UA...RA

Voltage V - 50Hz	Voltage V - 60Hz	Code □□
24	24	8 1
110	110 ... 120	8 4
220 ... 230	230 ... 240	8 0
230 ... 240	240 ... 260	8 8
400 ... 415	415 ... 440	8 6



Note: For Non standard coil voltage, other than this please contact us for pricing

## Contactors for DC Circuit Switching: AC/DC operated

Coil	Current Ratings at 440V DC			Type Code reference	Order Code	M.R.P.(₹)
	DC-1	DC-3	DC-5			
AC	100A	85A	50A	GA75-10-00 **	1SBL411025R□□11	26,250
DC	100A	85A	50A	GAE75-10-00 **	1SBL419025R□□11	28,000

Complete the contactor type code by replacing \*\* with desired coil voltage

Coil	Current Ratings at 220V DC		Type Code reference	Order Code	M.R.P.(₹)
	DC-1 L/R 1 ms				
AC/DC	275A		GAF185-10-11	1SFL497025R□□11	Upon request
	450A		GAF300-10-11	1SFL557025R□□11	
	700A		GAF460-10-11	1SFL597025R□□11	
	1050A		GAF750-10-11	1SFL637025R□□11	
	1250A		GAF1250-10-11	1SFL647025R□□11	
	1650A		GAF1650-10-11	1SFL677025R□□11	
	2050A		GAF2050-10-11	1SFL707025R□□11	

DC3, DC5 ratings please refer technical catalog

### Coil voltages and codes:

#### GA 75

Voltage V - 50Hz	Voltage V - 60Hz	Code □□
24	24	8 1
110	110 ... 120	8 4
220 ... 230	230 ... 240	8 0
230 ... 240	240 ... 260	8 8
400 ... 415	415 ... 440	8 6

### Coil voltages and codes:

#### GAE 75

Voltage V d.c.	Code □□
12	8 0
24	8 2
42	8 1
110	8 6
220	8 8
240	8 9

### Coil voltages and codes: GAF range

#### (AC/DC operated)

Voltage V 50/60 Hz	Voltage V DC	Code □□
-	24...60	6 8
48...130	48...130	6 9
100...250	100...250	7 0
250...500	250...500	7 1

■ Stock items

# Mini contactors

## Mini contactors with screw connection: 3 pole - AC operated

AC1 duty Amps	AC3 rating at 415V			Auxiliary Contacts		Type Code Reference	Order Code	Box Packing quantity	M.R.P.(₹)
	Amps	hP	kW						
16A	9	5.5	4	1NO	-	B06-30-10 **	GJ 1211001R□10□ ■	10	950
16A	9	5.5	4	-	1NC	B06-30-01 **	GJL1211001R□01□	10	
20A	12	7.5	5.5	1NO	-	B07-30-10 **	GJL1311001R□10□	10	1,050
20A	12	7.5	5.5	-	1NC	B07-30-01 **	GJL1311001R□01□	10	

Complete the contactor type code by replacing \*\* with desired coil voltage

## Mini contactors with screw connection: 3 pole - DC operated

AC1 duty Amps	AC3 rating at 415V			Auxiliary Contacts		Type Code Reference	Order Code	Box Packing quantity	M.R.P.(₹)
	Amps	hP	kW						
16A	9	5.5	4	1NO	-	BC6-30-10 **	GJL 121 3001 R□10□	10	1,370
16A	9	5.5	4	-	1NC	BC6-30-01 **	GJL 121 3001 R□01□	10	
20A	12	7.5	5.5	1NO	-	BC7-30-10 **	GJL 131 3001 R□10□	10	1,600
20A	12	7.5	5.5	-	1NC	BC7-30-01 **	GJL 131 3001 R□01□	10	

Complete the contactor type code by replacing \*\* with desired coil voltage

## Mini contactor relays with screw connection

Control Circuit	No: of Contacts	Contact Configuration		Type Code Reference	Order Code	Box Packing quantity	M.R.P.(₹)
		NO	NC				
AC	4	2NO	2NC	K6-22Z**	GJH 121 1001 R□22□	10	1,105
		3NO	1NC	K6-31Z **	GJH 121 1001 R□31□	10	
		4NO	-	K6-40E **	GJH 121 1001 R□40□	10	
DC		2NO	2NC	KC6-22Z**	GJH 121 3001 R□22□	10	1,400
		3NO	1NC	KC6-31Z **	GJH 121 3001 R□31□	10	
		4NO	-	KC6-40E **	GJH 121 3001 R□40□	10	

Complete the contactor type code by replacing \*\* with desired coil voltage

## Coil voltage for mini contactors

AC		DC	
40-450Hz	Code number	DC V	Code number
24	0 ... 1	24	0 ... 1
48	0 ... 3	110 ... 125	0 ... 4
110 ... 127	8 ... 4	220 ... 240	0 ... 5
220 ... 240	8 ... 0		
380 ... 415	8 ... 5		



■ Stock items



# Accessories for contactors

## Auxiliary contact block



Description	Mounting on Contactors	Contact Configuration		Type Code Reference	Order Code	M.R.P.(₹)
		NO	NC			
Front mounted single pole add-on blocks	A9...A110 AL9...AL40, TAL9...TAL40 AE45...AE110, TAE45...TAE110 AF45...AF110 N,NL &UA	1NO	-	CA5-10	1SBN010010R1010 ■	165
		-	1NC	CA5-01	1SBN010010R1001 ■	165
Side mounted 2 pole add-on blocks	A9...A75 AL9...AL40, TAL9...TAL40 AE45...AE75, TAE45...TAE75 AF45...AF75 N,NL & UA 16..75	1NO	1NC	CAL5-11	1SBN010020R1011 ■	550
Side mounted 2 pole add-on blocks	A95...A300,AE95... AE110 TAE95...TAE110, AF95...AF110 UA95...UA110, AF145... AF2050	1NO	1NC	CAL18-11	1SFN010720R1011 ■	575
Side mounted 2 pole add-on blocks	A145...A300 AF145...AF2050	1NO	1NC	CAL18-11B	1SFN010720R3311 ■	575
Side mounted 2 pole add-on blocks	<b>NEW</b> AF96...AF370	1NO	1NC	CAL19-11	1SFN010820R1011 ■	575
		1NO	1NC	CAL19-11B	1SFN010820R3311 ■	575
Side mounted 2 pole add-on blocks	AF09...AF38 / NF	1NO	1NC	CAL4-11	1SBN010120R1011 ■	550

\* Please refer technical catalogue for proper selection.

## Auxiliary contact block

Description	Mounting on Contactors	Contact Configuration		Type Code Reference	Order Code	M.R.P.(₹)
		NO	NC			
Front mounted 1 pole add-on blocks	AF09...AF38 / NF	1NO	-	CA4-10	1SBN010110R1010 ■	190
		-	1NC	CA4-01	1SBN010110R1001 ■	190
Front mounted 4 pole add-on blocks	AF09...AF38 / NF	4NO	-	CA4-40E	1SBN010140R1040 ■	800
		3NO	1NC	CA4-31E	1SBN 010140R1031 ■	800
		2NO	2NC	CA4-22E	1SBN 010140R1022 ■	800
		-	4NC	CA4-04E	1SBN 010140R1004 ■	800

## Auxiliary contact blocks for EK Range of contactors:

Description	Mounting on Contactors	Contact Configuration		Type Code Reference	Order Code	M.R.P.(₹)
		NO	NC			
Side mounting Two Pole Auxiliary contact blocks	EK110 . . . .EK1000	1NO	1NC	CAL16-11A	SK829002-A	600
		1NO	1NC	CAL16-11B	SK829002-B	600
		1NO	1NC	CAL16-11C	SK829002-C	600
		1NO	1NC	CAL16-11D	SK829002-D	600

■ Stock items

# Accessories for contactors

## Surge suppressors

Description	For contactor types	Voltage Range	Type Code reference	Order Code	M.R.P.(₹)
For suppression of disturbances caused by switching of DC coils on electronic circuits	EK110.....EK210	24...48V/AC	RC-EH 300/48	SK 829 007-A	3,000
		110...415V/AC	RC-EH 300/415	SK 829 007-B	
	EK370.....EK1000	48...110V/AC	RC-EH 800/110	SK 829 007-C	3,650
		220...600V/AC	RC-EH 800/600	SK 829 007-D	

## Surge suppressors

For contactor types	Voltage Range	Type Code reference	Order Code	M.R.P.(₹)
AL9...AL40, AL9Z...AL16Z AE45...AE110, TAL9...TAL40 TAE45...TAE110 NL/NLZ/TNL	12...32 DC	RT 5/32	1SBN050020R1000	635
	25...65 DC	RT 5/65	1SBN050020R1001	
	50...90 DC	RT 5/90	1SBN050020R1002	
	77...150 DC	RT 5/150	1SBN050020R1003	
	150...264 DC	RT5/264	1SBN050020R1004	
A9...A110, AL9...AL40, AL9Z...AL16Z, AE45...AE110, TAL9...TAL40, TAE45... TAE110, N/NL/NLZ/TNL	24...50V AC/DC	RV 5/50	1SBN050010R1000	635
	50...133V AC/DC	RV 5/133	1SBN050010R1001	
	110...250V AC/DC	RV 5/250	1SBN050010R1002 ■	
	250...440V AC/DC	RV 5/440	1SBN050010R1003	
A9...A40, N	24...50V AC	RC 5-1/50	1SBN050100R1000	635
	50...133V AC	RC 5-1/133	1SBN050100R1001	
	110...250V AC	RC 5-1/250	1SBN050100R1002 ■	
	250...440V AC	RC 5-1/440	1SBN050100R1003	
A45...A110	24...50V AC	RC 5-2/50	1SBN050200R1000	675
	50...133V AC	RC 5-2/133	1SBN050200R1001	
	110...250V AC	RC 5-2/250	1SBN050200R1002 ■	900
	250...440V AC	RC 5-2/440	1SBN050200R1003	
A145...A300	250...440	RC 5-3/440	1SBN050300R1003	1,500

## Mechanical interlocks

For contactor types	Description	Type Code reference	Order Code	M.R.P.(₹)
A9...A40, AL9...AL40,	Horizontal Mechanical Interlock	VM 5-1	1SBN030100R1000 ■	430
A9...A40, AL9...AL40,	Horizontal Mechanical & Electrical Interlock with 2NC contacts	VE 5-1	1SBN030110R1000 ■	675
A45...A75, A95...A110	Horizontal Mechanical & Electrical Interlock with 2NC contacts	VE 5-2	1SBN030210R1000 ■	1,310
A95...A185, A210...A300	Horizontal with 2NC contacts	VM 300H	1SBN034700R1000	2,250
AF400...AF460	Horizontal Mechanical Interlock	VM 300/460H	1SBN035100R1000	3,000
AF400...AF460, AF580...AF1250	Horizontal Mechanical Interlock	VM 750H	1SBN035700R1000	3,250
AF1350...AF1650	Horizontal Mechanical Interlock	VM 1650H	1SBN036503R1000	15,000
EK110...EK150	Horizontal Mechanical Interlock	VH145	SK829071-A	3,850
EK175...EK210	Horizontal Mechanical Interlock	VH300	SK829071-B	4,450
EK370...EK1000	Horizontal Mechanical Interlock	VH800	SK829070-F	Upon request
AF09...AF38	Horizontal Mechanical Interlock	VM 4	1SBN030105T1000	550
AF09...AF38	Horizontal Mechanical & Electrical Interlock	VEM 4	1SBN030111R1000	975
AF40...AF96	Horizontal Mechanical Interlock	VM96-4	1SBN033405TR1000	Upon request
AF116...AF370	Horizontal Mechanical Interlock	VM19	1SBN030300R1000	Upon request

Note: Please refer technical catalogue for proper selection.



■ Stock items

# Spares for contactors

## Spare coils for A range

For contactor types	Type Code Reference	Order Code	M.R.P.(₹)
N, A9....A16, UA16..RA	ZA16 **	1SBN 151 410 R□□06 ■	550
A26..A40;UA26..UA30 RA	ZA40 **	1SBN 152 410 R□□06 ■	625
A45..A75;UA50..UA75 RA	ZA75 **	1SBN 153 510 R□□06 ■	1,900
A95..A110; UA95..UA110 RA	ZA110 **	1SFN 154 310 R□□06 ■	2,450
A145...A185	ZA185 **	1SFN 154 710 R□□06 ■	3,900
A210...A300	ZA300 **	1SFN 155 110 R□□06 ■	4,250

## Spare coils for AF range

For contactor types	Type Code Reference	Order Code	M.R.P.(₹)
AF45...AF75	ZAF75	1SBN 153 570 R□□06 ■	5,250
AF95...AF110	ZAF110	1SFN 153 370 R□□06 ■	9,150
AF145...AF185	ZAF185	1SFN 154 770 R□□06 ■	10,750
AF210,AF260 &AF300	ZAF300	1SFN 155 170 R□□06	13,600
AF400...AF460	ZAF460**	1SFN 155 770 R□□06	15,800
AF580...AF750**	ZAF750**	1SFN 156 170 R□□06	21,150

## Coil voltages & codes

N range, A09....A300, UA....RA		
Voltage V-50 Hz	Voltage V-60 Hz	Code
24	24	81
110	110...120	84
220...230	230...240	80
230...240	240...260	88
400...415	415...440	86

AF45...AF300		
Voltage V-50/60 Hz	Voltage V.dc	Code
	20...60	72
48...130	48...130	69
100...250	100...250	70

AF400...AF750		
Voltage V-50/60 Hz	Voltage V.dc	Code
	24...60	68
48...130	48...130	69
100...250	100...250	70
250...500	250...500	71

## Spare coils for 4 pole contactors AC operated:

Description	For contactor types	Type Code Reference	Order Code	M.R.P.(₹)
Standard AC coils suitable for EK contactors.	EK110.....EK150	KH210 **	SK 825 400 - □□	Upon Request
	EK175.....EK210	KH300 **	SK 826 400 - □□	
	EK370.....EK550	KH800 **	SK 828 100 - □□	

## Coil voltages & codes

EK110....EK210	
Voltage V 40....400 Hz	Code
100...120	EF
220...230	EL
230...240	EM
400...415	ER

EK110....EK1000		
Voltage V-50 Hz	Voltage V-60 Hz	Code
	110	AE
110	120	AF
220...230		AL
230...240		AM
400...415		AR
EK370....EK1000		
110	110-120	EF
220	220-240	EL
220-230	230-255	EM

■ Stock items

# Spares for contactors

## Spare contact sets for 3 pole

Description	For contactor types	Type Code Reference	Order Code	M.R.P.(₹)
Contact set for 3 -pole contactors consisting of 6 fixed contacts, 3 moving contacts, springs and the required screws	A/AF/AE/TAE50	ZL 50	1SBN 163 503 R1000 ■	2,850
	A/AF/AE/TAE63	ZL 63	1SBN 163 703 R1000 ■	3,650
	A/AF/AE/TAE75	ZL 75	1SBN 164 103 R1000 ■	4,650
	A/AF/AE/TAE95	ZL 95	1SFN 164 303 R1000 ■	6,750
	A/AF/AE/TAE110	ZL 110	1SFN 164 503 R1000 ■	7,200
	A/AF145	ZL 145	1SFN 164 703 R1000 ■	8,550
	A/AF185	ZL 185	1SFN 164 903 R1000 ■	11,400
	A/AF210	ZL 210	1SFN 165 103 R1000 ■	13,800
	A/AF260	ZL 260	1SFN 165 303 R1000 ■	18,750
	A/AF300	ZL 300	1SFN 165 503 R1000 ■	19,950
	AF400	ZL 400	1SFN 165 703 R1000	22,650
	AF460	ZL 460	1SFN 165 903 R1000	28,100
	AF 580	ZL 580	1SFN 166 103 R1000	52,050
	AF 750	ZL 750	1SFN 166 303 R1000	61,250
	UA 50	ZLU 50	1SBN 163 502 R1000 ■	2,925
	UA 63	ZLU 63	1SBN 163 702 R1000 ■	4,050
UA 75	ZLU 75	1SBN 164 102 R1000 ■	5,150	

## Spare contact sets for 4 pole contactors

Description	For contactor types	Type Code Reference	Order Code	M.R.P.(₹)
Contact sets for 4-Pole contactors consisting of 8-fixed & 4-moving main contacts ,c/w screws & appropriate pressure springs	EK110	KZK110	SK 824 204-A	10,400
	EK150	KZK150	SK 824 204-B	12,250
	EK175	KZK175	SK 825 204-A	18,250
	EK210	KZK210	SK 825 204-B	25,100
	EK370	KZK370	SK 827 204-A	40,400
	EK550	KZK550	SK 827 204-B	52,000
	EK1000	KZK1000	SK 827 204-F	58,750

KZK370 to KZK1000 include 4-moving arcing contacts

## Spare arc shields: 4 pole contactors

Description	For contactor types	Type Code Reference	Order Code	M.R.P.(₹)
Spare ARC Shield comprising of the contactor top housing with the relevant arc chutes and fixing screws.	EK110	KWK110	5223 351-AH	10,550
	EK150	KWK150	5223 351-AK	12,850
	EK175	KWK175	5223 351-AL	14,450
	EK210	KWK210	5223 351-AM	14,950
	EK370	KWK370	5223 351-Y	19,550
	EK550	KWK550	5223 351-Z	24,450
	EK1000	KWK1000	5223 351-AN	Upon Request

■ Stock items

# DOL and Star Delta starters


## Direct on line starter:

Rating at 415V 50Hz		Contactor Rating	Back - up Fuse rating (A)	Relay Range	Type Code Reference	Order Code	M.R.P.(₹)
HP	kW						
0.25	0.18	16A	4A	T25DU 1.0	MA-0.25 **	1SYN140318R8625	3,075
0.50	0.37	16A	4A	T25DU 1.4	MA-0.50 **	1SYN140318R8605	3,075
0.75	0.52	16A	6A	T25DU 1.8	MA-0.75 **	1SYN140318R8675	3,075
1.00	0.75	16A	6A	T25DU 2.4	MA-1.00 **	1SYN140318R8610	3,075
1.50	1.10	16A	10A	T25DU 3.1	MA-1.50 **	1SYN140318R8615	3,075
2.00	1.50	16A	10A	T25DU 4.0	MA-2.00 **	1SYN140318R8620	3,075
3.00	2.20	16A	16A	T25DU 6.5	MA-3.00 **	1SYN140318R8630	3,075
5.00	3.70	16A	25A	T25DU 8.5	MA-5.00 **	1SYN140318R8650	3,075
7.50	5.50	16A	32A	T25DU 14	MA-7.50 **	1SYN16018R8675	3,075
10.00	7.50	16A	32A	T25DU 19	MA-10.00 **	1SYN180318R8610	3,325

## Fully automatic Star Delta starter:

HP rating at 415V	Contactor Types			Relay Range	Type Code Reference	Order Code	M.R.P.(₹)
	Main	Delta	Star				
12.5	A16	A16	A09	T25DU 14	SDA-12.5 **	1SYN 184 322R86 00	11,500
15	A26	A26	A09	T25DU 14	SDA-15 **	1SYN 242 322R86 00	12,500
20	A26	A26	A12	T25DU 19	SDA- 20 **	1SYN 244 322R86 00	14,500
25	A26	A26	A16	T25DU 25	SDA-25 **	1SYN 246 322R86 00	15,100
30	A30	A30	A16	T25DU 32	SDA-30 **	1SYN 282 322R86 00	18,250
35	A30	A30	A16	T75DU 32	SDA-35 **	1SYN 284 322R86 00	20,250
40	A40	A40	A26	T75DU 42	SDA-40 **	1SYN 322 322R86 00	24,575
50	A50	A50	A26	T75DU 52	SDA-50 **	1SYN 352 342R86 00	29,500
60	A63	A63	A30	T75DU 63	SDA-60 **	1SYN 372 342R86 00	37,950
75	A75	A75	A40	T75DU 63	SDA-75 **	1SYN 412 342R86 00	44,500

Complete the starter type code by replacing the \*\* with the desired coil voltage.

Voltage	Code
	□□
220 ... 230 V coil	3 8
400 ... 415 V coil	8 6

# Manual motor starter



MS116

Breaking Capacity at 415V	Thermal range Amps	Magnetic Tripping Band	Type Code Reference	Order Code	M.R.P.(₹)
<b>MS 116: 3 pole power manual motor starter with rotary knob control protection against overload, short circuit, phase failure</b>					
50kA	0.10.....0.16	9.6.....14.4In	MS116-0.16	1SAM 250 000 R1001	2,650
50kA	0.16.....0.25	9.6.....14.4In	MS116-0.25	1SAM 250 000 R1002	2,650
50kA	0.25.....0.40	9.6.....14.4In	MS116-0.40	1SAM 250 000 R1003	2,650
50kA	0.40.....0.63	9.6.....14.4In	MS116-0.63	1SAM 250 000 R1004 ■	3,030
50kA	0.63.....1.00	9.6.....14.4In	MS116-1.00	1SAM 250 000 R1005 ■	3,030
50kA	1.00.....1.60	9.6.....14.4In	MS116-1.60	1SAM 250 000 R1006 ■	3,040
50kA	1.60.....2.50	9.6.....14.4In	MS116-2.50	1SAM 250 000 R1007 ■	3,040
50kA	2.50.....4.00	9.6.....14.4In	MS116-4.00	1SAM 250 000 R1008 ■	3,075
50kA	4.00.....6.30	9.6.....14.4In	MS116-6.30	1SAM 250 000 R1009 ■	3,075
50kA	6.30.....10.00	9.6.....14.4In	MS116-10.00	1SAM 250 000 R1010 ■	3,175
25kA	8.00.....12.00	9.6.....14.4In	MS116-12	1SAM 250 000 R1012 ■	3,600
16kA	10.....16	9.6.....14.4In	MS116-16	1SAM 250 000 R1011 ■	4,000
10kA	16.....20	12.....18In	MS116-20	1SAM 250 000 R1013 ■	4,300
10kA	20.....25	12.....18In	MS116-25	1SAM 250 000 R1014 ■	4,500
10kA	25.....32	12.....18In	MS116-32	1SAM 250 000 R1015 ■	8,150



MS132

Breaking Capacity at 415V	Thermal range Amps	Magnetic Tripping Band	Type Code Reference	Order Code	M.R.P.(₹)
<b>MS 132: 3 pole power manual motor starter with rotary knob control protection against overload, short circuit, phase failure</b>					
100kA	0,1 - 0,16	1,25.....1,87	MS132-0.16	1SAM350000R1001	3,545
100kA	0,16 - 0,25	1,95.....2,92	MS132-0.25	1SAM350000R1002	3,545
100kA	0,25 - 0,40	3,12.....4,68	MS132-0.40	1SAM350000R1003	3,570
100kA	0,40 - 0,63	4,91.....7,37	MS132-0.63	1SAM350000R1004 ■	3,730
100kA	0,63 - 1,00	9,2.....13,8	MS132-1.00	1SAM350000R1005 ■	3,920
100kA	1,00 - 1,60	14,7.....22,1	MS132-1.60	1SAM350000R1006 ■	4,100
100kA	1,60 - 2,50	23,0.....34,5	MS132-2.50	1SAM350000R1007 ■	4,100
100kA	2,50 - 4,00	40,0.....60,00	MS132-4.00	1SAM350000R1008 ■	4,140
100kA	4,00 - 6,30	63,0.....94,50	MS132-6.30	1SAM350000R1009 ■	4,140
100kA	6,30 - 10,0	120,0.....180,00	MS132-10.00	1SAM350000R1010 ■	4,455
50kA	8,00 - 12,00	144,0.....216,00	MS132-12	1SAM350000R1012 ■	4,455
50kA	10,0 - 16,0	192,0.....288,00	MS132-16	1SAM350000R1011 ■	5,150
50kA	16,0 - 20,0	240,0.....360,00	MS132-20	1SAM350000R1013 ■	5,300
50kA	20,0 - 25,0	300,0.....450,00	MS132-25	1SAM350000R1014 ■	5,750
25kA	25,0 - 32,0	384,0.....576,00	MS132-32	1SAM350000R1015 ■	9,150

Breaking Capacity at 415V	"Rated instantaneous short-circuit current setting Ii A"	"Rated operational current Ie A"	Type Code Reference	Order Code	M.R.P.(₹)
<b>MO 132: 3 Pole Power Manual Motor Starter with Rotary Knob Control magnetic only type : protection against short circuit</b>					
100kA	1.56	0.16	MO132-0.16	1SAM360000R1001	3,400
100kA	2.44	0.25	MO132-0.25	1SAM360000R1002	3,400
100kA	3.9	0.4	MO132-0.4	1SAM360000R1003	3,400
100kA	6.14	0.63	MO132-0.63	1SAM360000R1004	3,600
100kA	11.5	1	MO132-1.0	1SAM360000R1005	3,650
100kA	18.4	1.6	MO132-1.6	1SAM360000R1006	3,650
100kA	28.75	2.5	MO132-2.5	1SAM360000R1007	3,650
50kA	50	4	MO132-4.0	1SAM360000R1008	3,730
50kA	78.75	6.3	MO132-6.3	1SAM360000R1009	3,730
50kA	125	10	MO132-10	1SAM360000R1010	3,900
50kA	150	12	MO132-12	1SAM360000R1011	3,900
50kA	200	16	MO132-16	1SAM360000R1012	3,900
50kA	250	20	MO132-20	1SAM360000R1013	4,350
50kA	313	25	MO132-25	1SAM360000R1014	4,500
50kA	400	32	MO132-32	1SAM360000R1015	9,000

■ Stock items

# Manual motor starter



Breaking Capacity at 415V	Thermal range Amps	Magnetic Tripping Band	Type Code Reference	Order Code	M.R.P.(₹)
<b>MS 450: 3 pole power manual motor starter with rotary knob control protection against overload, short circuit, phase failure</b>					
50kA	28.....40A	12In	MS450-40	1SAM450000R1005	11,125
50kA	36.....45A	12In	MS450-45	1SAM450000R1006	12,040
50kA	40.....50A	12In	MS450-50	1SAM450000R1007	14,050
<b>MS 495: 3 pole power manual motor starter with rotary knob control protection against overload, short circuit, phase failure</b>					
50kA	45.....63A	12In	MS495-63	1SAM550000R1007	15,000
50kA	57....75A	12In	MS495-75	1SAM550000R1008	16,000
50kA	70.....90A	12In	MS495-90	1SAM550000R1009	16,000
50kA	80....100A	12In	MS495-100	1SAM550000R1010	16,130

Price for Magnetic only types MO 325 / MO 496 / MO 450 / MO 495 are available on request

Price for MS 497 3 Pole Manual Motor Starter with 100 kA breaking capacity are available on request

## Accessories for MS116/ MS132/MO132

Accessory	Description	Type Code	Order Code	M.R.P.(₹)
Auxiliary Contact	Lateral attachment Right side,1NO+1NC	HK1-11	1SAM201902R1001 ■	775
	Lateral attachment Right side, 2NO	HK1-20	1SAM201902R1002	
	Lateral attachment Right side,2NC	HK1-02	1SAM201902R1003	
	Lateral attachment front side, 1NO+1NC	HKF1-11	1SAM201901R1001 ■	715
Signalling Contact	Lateral attachment Right side,1NO+1NC	SK1-11	1SAM201903R1001 ■	975
	Lateral attachment Right side, 2NO	SK1-20	1SAM201903R1002	
	Lateral attachment Right side,2NC	SK1-02	1SAM201903R1003	
Shunt trip Release	Lateral attachment left side	AA1**	1SAM201910R1001	2,625
Under voltage release	Lateral attachment left side	UA1**	1SAM201904R1001	2,150
Phase buses for crosswiring MS116	For 2 devices	PS1-2-0	1SAM201906R1002	875
	For 3 devices	PS1-3-0	1SAM201906R1003	1,000
	For 4 devices	PS1-4-0	1SAM201906R1004	1,250
	for 5 devices	PS1-5-0	1SAM201906R1005	1,350
	Power infeed block Flat	S1-M1	1SAM201907R1001	1,150
	Power infeed block High	S1-M2	1SAM201907R1002	1,175
Connecting Link	MS116 and A9/A12/A16	BEA16/116	1SBN081406R1000	410
Connecting Link	MS116 and A26	BEA26/116	1SBN082406R1000	505
Connecting Link	MS132 and AF09...AF16	BEA16/4	1SBN081 306 T1000	355
Connecting Link	MS132 and AF26...AF38	BEA38/4	1SBN082306T2000	420
Mounting plate	MS116 or MS325 + A26	PM26-13	1SBN092406 R1000	990
Door Mounted Handle	MSMN Driver	MSMN Driver	1SAM101923R0002 ■	140
	OXS6X130	Shaft	1SCA101655R1001 ■	360
	MSHD Handle Mechanism	Handle Mechanism	1SAM201920R1001 ■	1,000
	MSAH1	Shaft supporter	1SAM201909R1021 ■	650
Insulating enclosure IP65	Insulating enclosure IP65 with rotary handle. Twist knob Black	IB 116-G	1SAM201911R1000	1,545
	Insulating enclosure IP65 with rotary handle. Twist knob Yellow	IB 116-Y	1SAM201911R1001	1,645

\* coil voltages available are 24V, 110V, 230V, 400V

\*\* coil voltages available are 24V, 120V, 230V, 415V

## Accessories for MS450/495/496/497:

Accessory	Description	Type Code	Order Code	M.R.P.(₹)
Auxiliary Contact front mounting	1NO+1NC	HK4 - 11	1SAM401901R1001 ■	775
	1 C/O	HK4 - W	1SAM401901R1002	775
Auxiliary Contact lateral mounting	1NO+1NC	HKS4-11	1SAM401902R1001 ■	775
	2NO	HKS4 - 20	1SAM401902R1002	775
	2NC	HKS4 - 02	1SAM401902R1003	775
Signalling Contact	1NO+1NC	SK4 - 11	1SAM401904R1001	1,425
Door Mounted Handle	MSMN Driver	MSMN Driver	1SAM101923R0002 ■	140
	OXS6X130	Shaft	1SCA101655R1001 ■	360
	Handle Mechanism	Handle Mechanism	1SAM201920R1001 ■	1,000
Shunt trip release	Lateral mounting- left side	AA4**	1SAM401907R1001	2625
Under voltage release	Lateral mounting- right side	UA4**	1SAM401905R1004	2625

\* coil voltages available are 20-70V, 70-190V, 190-330V,330-500V

\*\* coil voltages available are 24V,110V, 230V,400V

■ Stock items

# Thermal overload relays



## TA25, TA42 and TA75 relays

Relay range in Amps	"Direct mounting on contactors"	"Type Code reference"	Order Code	M.R.P.(₹)
0.1 ... 0.16	"A9...A40 AL9...AL40 TAL9...TAL40 AL9Z...AL16Z"	TA25DU 0.16M	1SAZ 211 201 R2005	1,365
0.1 ... 0.16		TA25DU 0.25M	1SAZ 211 201 R2009	1,365
0.25 ... 0.4		TA25DU 0.4M	1SAZ 211 201 R2013	1,365
0.4 ... 0.63		TA25DU 0.63M	1SAZ 211 201 R2017	1,365
0.63 ... 1.0		TA25DU 1.0M	1SAZ 211 201 R2021	1,365
1.0 ... 1.4		TA25DU 1.4M	1SAZ 211 201 R2023 ■	1,365
1.3 ... 1.8		TA25DU 1.8M	1SAZ 211 201 R2025 ■	1,365
1.7 ... 2.4		TA25DU 2.4M	1SAZ 211 201 R2028 ■	1,365
2.2 ... 3.1		TA25DU 3.1M	1SAZ 211 201 R2031 ■	1,365
2.8 ... 4.0		TA25DU 4.0M	1SAZ 211 201 R2033 ■	1,365
3.5 ... 5.0		TA25DU 5.0M	1SAZ 211 201 R2035 ■	1,365
4.5 ... 6.5		TA25DU 6.5M	1SAZ 211 201 R2038 ■	1,365
6.0 ... 8.5		TA25DU 8.5M	1SAZ 211 201 R2040 ■	1,365
7.5 ... 11.0		TA25DU 11M	1SAZ 211 201 R2043 ■	1,365
10.0 ... 14.0		TA25DU 14M	1SAZ 211 201 R2045 ■	1,365
13.0 ... 19.0		TA25DU 19M	1SAZ 211 201 R2047 ■	1,675
18.0 ... 25.0		TA25DU 25M	1SAZ 211 201 R2051 ■	1,675
24.0 ... 32.0	TA25DU 32M	1SAZ 211 201 R2053 ■	2,350	

### TA42DU

18.0 ... 25.0	"A30,A40, AL30,AL40, TAL30,TAL 40"	TA42DU 25	1SAZ 311 201 R1001	2,720
22.0 ... 32.0		TA42DU 32	1SAZ 311 201 R1002	2,720
29.0 ... 42.0		TA42DU 42	1SAZ 311 201 R1003	2,720

### TA75DU

22 ... 32	A50...A75 AE50...AE75 TAE50...TAE75 AF50...AF75	TA75DU 32	1SAZ 321 201 R1002	3,500
29 ... 42		TA75DU 42	1SAZ 321 201 R1003 ■	4,100
36 ... 52		TA75DU 52	1SAZ 321 201 R1004 ■	4,100
45 ... 63		TA75DU 63	1SAZ 321 201 R1005 ■	4,100
60 ... 80		TA75DU 80	1SAZ 321 201 R1006	4,400

TA25/TA42/TA75/TA80/TA110/TA200 are direct operated relays with trip class 10A

### TA110DU

66 ... 90	A95...A110	TA110DU-90	1SAZ411201R1001	Upon request
80 ... 110	AF95...AF110	TA110DU-110	1SAZ411201R1002	

### TA200DU

66 ... 90	A145...A185 AF145...AF185	TA200DU-90	1SAZ421201R1001	Upon request
80 ... 110		TA200DU-110	1SAZ421201R1002	
100 ... 135		TA200DU-135	1SAZ421201R1003	
110 ... 150		TA200DU-150	1SAZ421201R1004	
130 ... 175		TA200DU-175	1SAZ421201R1005	
150 ... 200		TA200DU-200	1SAZ421201R1006	

### Accessories

Independent Mounting Kit	TA25DU0.16..25A	DB25/25	1SAZ 201108R0001 ■	300
	TA25DU32	DB25/32	1SAZ 201108R0002	1,125
	TA42DU,TA75DU	DB80	1SAZ301110R0001	Upon request
	TA110DU, TA200DU	DB200	1SAZ401110R0001	

■ Stock items



# Thermal overload relays



TF42

## T16 Relays

Relay range in Amps	Direct mounting on contactors	Type Code reference	Order Code	M.R.P.(₹)
0.10 ... 0.13	B6/BC6 B7/BC7 VB6/VBC6 VB7/VBC7 AS/ASL	T16-0.13	1SAZ711201R1005	Upon Request
0.13 ... 0.17		T16-0.17	1SAZ711201R1008	
0.17 ... 0.23		T16-0.23	1SAZ711201R1009	
0.23 ... 0.31		T16-0.31	1SAZ711201R1013	
0.31 ... 0.41		T16-0.41	1SAZ711201R1014	
0.41 ... 0.55		T16-0.55	1SAZ711201R1017	
0.55 ... 0.74		T16-0.74	1SAZ711201R1021	
0.74 ... 1.00		T16-1.0	1SAZ711201R1023	
1.00 ... 1.30		T16-1.3	1SAZ711201R1025	
1.30 ... 1.70		T16-1.7	1SAZ711201R1028	
1.70 ... 2.30		T16-2.3	1SAZ711201R1031	
2.30 ... 3.10		T16-3.1	1SAZ711201R1033	
3.10 ... 4.20		T16-4.2	1SAZ711201R1035	
4.20 ... 5.70		T16-5.7	1SAZ711201R1038	
5.70 ... 7.60		T16-7.6	1SAZ711201R1040	
7.60 ... 10.0		T16-10	1SAZ711201R1043	
10.0 ... 13.0	T16-13	1SAZ711201R1045		
13.0 ... 16.0	T16-16	1SAZ711201R1047		

## TF42 Relays

Relay range in Amps	Direct mounting on contactors	Type Code reference	Order Code	M.R.P.(₹)
0.10 ... 0.13	AF09...AF38	TF42-0.13	1SAZ721201R1005	Upon Request
0.13 ... 0.17		TF42-0.17	1SAZ721201R1008	
0.17 ... 0.23		TF42-0.23	1SAZ721201R1009	
0.23 ... 0.31		TF42-0.31	1SAZ721201R1013	
0.31 ... 0.41		TF42-0.41	1SAZ721201R1014	
0.41 ... 0.55		TF42-0.55	1SAZ721201R1017	
0.55 ... 0.74		TF42-0.74	1SAZ721201R1021	
0.74 ... 1.00		TF42-1.0	1SAZ721201R1023	
1.00 ... 1.30		TF42-1.3	1SAZ721201R1025	
1.30 ... 1.70		TF42-1.7	1SAZ721201R1028	
1.70 ... 2.30		TF42-2.3	1SAZ721201R1031	
2.30 ... 3.10		TF42-3.1	1SAZ721201R1033	
3.10 ... 4.20		TF42-4.2	1SAZ721201R1035	
4.20 ... 5.70		TF42-5.7	1SAZ721201R1038	
5.70 ... 7.60		TF42-7.6	1SAZ721201R1040	
7.60 ... 10.0		TF42-10	1SAZ721201R1043	
10.0 ... 13.0		TF42-13	1SAZ721201R1045	
13.0 ... 16.0		TF42-16	1SAZ721201R1047	
16.0 ... 20.0		TF42-20	1SAZ721201R1049	
20.0 ... 24.0		TF42-24	1SAZ721201R1051	
24.0 ... 29.0	TF42-29	1SAZ721201R1052		
29.0 ... 35.0	TF42-35	1SAZ721201R1053		
35.0 ... 38.0/40.0	TF42-38	1SAZ721201R1055		

# Thermal overload relays



TF42

## TF42 Relays

Relay range in Amps	Direct mounting on contactors	Type Code reference	Order Code	M.R.P.(₹)
22.0...28.0	AF40, AF52, AF65	TF65-28	1SAZ811201R1001	Upon Request
25.0...33.0		TF65-33	1SAZ811201R1002	
30.0...40.0		TF65-40	1SAZ811201R1003	
36.0...47.0		TF65-47	1SAZ811201R1004	
44.0...53.0		TF65-53	1SAZ811201R1005	
50.0...60.0		TF65-60	1SAZ811201R1006	
57.0...67.0		TF65-67	1SAZ811201R1007	
40.0...51.0	AF80, AF96	TF96-51	1SAZ911201R1001	
48.0...60.0		TF96-60	1SAZ911201R1002	
57.0...68.0		TF96-68	1SAZ911201R1003	
65.0...78.0		TF96-78	1SAZ911201R1004	
75.0...87.0		TF96-87	1SAZ911201R1005	
84.0...96.0	AF116, AF140	TF96-96	1SAZ911201R1006	
66...90		TF140DU-90	1SAZ431201R1001	
80...110		TF140DU-110	1SAZ431201R1002	
100...135		TF140DU-135	1SAZ431201R1003	
110...142		TF140DU-142	1SAZ431201R1004	

For AF190 and AF205 use TA200DU OLR

Type	Description	Order Code	M.R.P.(₹)
DB16E	Separate mounting kit	1SAX101110R0001	Upon Request
DB42	Separate mounting kit	1SAZ701902R0001	

## Electronic overload relays and suitable contactors

Suitable for Contactor	A9 ... A40	A30 ... A40	A50 ... A75	A95, A110	A145, A185		
	AL9 ... AL40	AL30 ... AL40	AE50 ... AE75	AE95, AE110	AF145, AF185		
			AF50 ... AF75	AF95, AF110			
<b>EOLR</b>	<b>E16DU</b>	<b>E45DU</b>	<b>E80DU</b>	<b>E140DU</b>	<b>EF205</b>		
Suitable for Contactor	A210 ... A300	AF400,	AF580,	AF1350,			
	AF210 ... AF300	AF460	AF750	AF1650			
<b>EOLR</b>	<b>EF370</b>	<b>E500DU</b>	<b>E800DU</b>	<b>E1250DU</b>			
Suitable for Contactor	AF09 ... AF16	AF26, AF38	AF40, AF52, AF65	AF80, AF96	AF116, AF140, AF146	AF190, AF205	AF265, AF305, AF370
	<b>EOLR</b>	<b>EF19</b>	<b>EF45</b>	<b>EF65</b>	<b>EF96</b>	<b>EF146</b>	<b>EF205</b> <b>EF370</b>
Suitable for Contactor	B6/BC6	VB6/VBC6					
	B7/BC7	VB7/VBC7					
<b>EOLR</b>	<b>E16DU</b>						

# Electronic overload relays class 10, 20, 30



## Electronic overload relays

### Trip Class 10, 20, 30 selectable

Type	Setting Range	Trip Class	Order Code	M.R.P.(₹)
E16DU 0.32	0.1 - 0.32A	Selectable 10E, 20E and 30E	1SAX111001R1101	Upon Request
E16DU 1.0	0.3 - 1.0A		1SAX111001R1102	
E16DU 2.7	0.8 - 2.7A		1SAX111001R1103	
E16DU 6.3	1.9 - 6.3A		1SAX111001R1104 ■	
E16DU 18.9	5.7 - 18.9A		1SAX111001R1105 ■	
E45DU 30	9 - 30A		1SAX211001R1101 ■	
E45DU 45	15 - 45A		1SAX211001R1102 ■	
E80DU 80	27 - 80A		1SAX311001R1101 ■	
E140DU 140	50 - 140A		1SAX321001R1101	
EF205-210	63 - 210A		1SAX511001R1101 ■	
EF370-380	115 - 380A		1SAX521001R1101 ■	
E500DU 500	150 - 500A		1SAX711001R1101	
E800DU 800	250 - 800A		1SAX811001R1101	
E1250DU 375 - 1250 A	375 - 1250A		1SFA739001R1000	
EF19-0.32	0.10...0.32	Selectable 10E, 20E and 30E	1SAX121001R1101	Upon Request
EF19-1.0	0.30...1.00		1SAX121001R1102	
EF19-2.7	0.80...2.70		1SAX121001R1103	
EF19-6.3	1.90...6.30		1SAX121001R1104	
EF19-18.9	5.70...18.9		1SAX121001R1105	
EF45-30	9.00...30.0		1SAX221001R1101	
EF45-45	15.0...45.0		1SAX221001R1102	
EF65-70	25...70		1SAX331001R1101	
EF96-100	36...100		1SAX341001R1101	
EF146-150	54...150		1SAX351001R1101	
EF205-210	63 - 210A		1SAX511001R1101	
EF370-380	115 - 380A		1SAX521001R1101	

### Accessories

Type	Description	Order Code	M.R.P.(₹)
DB16E	Separate mounting kit	1SAX101110R0001	Upon Request
DB19EF	Separate mounting kit - EF19	1SAX101910R1001	
DB45E	Separate mounting kit	1SAX201110R1001	
DB80E	Separate mounting kit	1SAX301110R1001	
DB140E	Separate mounting kit	1SAX301110R1002	

For suitable contactors please refer page no. 74

■ Stock items

# Softstarters

## ABB softstarters - The complete range

ABB offers four different ranges of softstarters to cover every customer need for solutions for motor sizes up to 1800 A. This page describes the main characteristics of the different softstarter ranges

### PSR - The compact range

The PSR softstarter is the most compact of all the softstarter ranges, thereby making it possible to design compact starting equipments. The system concept with Manual Motor Starters and the PSR provides a far more compact starting solution than for instance a star delta starter.

Built-in by-pass reduces the energy loss and makes the connection easier and with only three potentiometers, the set-up couldn't be any easier. Still, the optimized ramping characteristics will ensure a very smooth start and stop for all applications.

### PSE - The efficient range

The PSE softstarter is the world's first compact softstarter with both built-in electronic overload for motor protection and torque control for an excellent control of pumps. The compact design with the most important functionality integrated provides a very efficient starting solution.

The illuminated language neutral display and the four button keypad make it easy to take advantage of all the advanced functionality in the softstarter. The display will also provide all the necessary information both during

### PST(B) - The advanced range

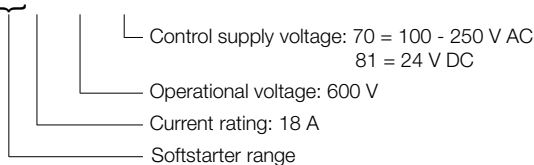
The PST(B) softstarter is the most advanced softstarter in the range with almost all imaginable functionality included. All the advanced protections for the motor, the softstarter and the load ensure a trouble free operation. Pre-warnings even allow problems to be detected before the motor needs to be stopped

The torque control function has been developed and tested together with well known pump manufacturers to ensure the absolutely best possible stop of pumps without water hammering and pressure surges. and there by avoiding unnecessary downtime.

With the full text LCD display in your own language, pre-programmed application settings and event logging, it couldn't be easier to set-up and operate.

By using the ABB FieldBusPlug, you can decide at any time which bus protocol to use. The fieldbus system will allow you to set-up, control and monitor the softstarter.

#### PSR18 - 600 -70



PSR	PSS	PSE	PST(B)	• Standard O Opional - Not available
•	-	•	• 1)	Built-in by-pass
-	•	-	•	Inside delta connection
-	-	•	O	Coated PCBs
-	-	•	•	Display and keypad
-	-	•	•	Torque control
-	O	•	•	Settable current limit function
-	-	•	•	Electronic motor overdoad protection
-	-	-	•	PTC input for motor protection
-	-	-	•	Phase imbalance protection
-	-	-	•	Phase reversal protection
-	-	•	•	Locked rotor protection
-	•	•	•	Thyristor overtemperature protection
-	-	•	•	Underload protection
-	-	-	•	Programmable warning functions
-	-	•	•	Analog output
O	-	O	•	FieldBus communication
-	-	O	•	Event log
-	-	O	O	External keypad

#### Quick guide for selection

Normal start Class 10

Heavy duty start class 30



#### Typical applications

- Bow thruster
- Compressor
- Elevator

- Centrifugal pump
- Conveyor belt (short)
- Escalator

- Centrifugal fan
- Crusher
- Mixer

- Conveyor belt (long)
- Mill
- Stirrer

! If more than 10 starts/h  
Select one size larger than the standard selection

# Softstarters

**PSR - The compact and cost effective solution integrated bypass**

**PSR3 ... PSR105**

**Rated operational voltage Ue, 208-600 V AC**

**Rated control supply voltage, Us, 100 - 240 V AC**



415V Pe kW"	500V Pe kW	IEC Max rated operational Ie A	Type	Order Code	M.R.P
1.5	2.2	3.9	PSR3-600-70	1SFA896 103 R7000	8,600
3	4	6.8	PSR6-600-70	1SFA896 104 R7000 ■	9,400
4	4	9	PSR9-600-70	1SFA896 105 R7000 ■	11,500
5.5	5.5	12	PSR12-600-70	1SFA896 106 R7000 ■	13,750
7.5	7.5	16	PSR16-600-70	1SFA896 107 R7000 ■	15,500
11	15	25	PSR25-600-70	1SFA896 108 R7000 ■	17,800
15	18.5	30	PSR30-600-70	1SFA896 109 R7000	24,500
18.5	22	37	PSR37-600-70	1SFA896 110 R7000	29,500
22	30	45	PSR45-600-70	1SFA896 111 R7000	31,900
30	37	60	PSR60-600-70	1SFA896 112 R7000	44,550
37	45	72	PSR72-600-70	1SFA896 113 R7000	55,250
45	55	85	PSR85-600-70	1SFA896 114 R7000	62,000
55	55	105	PSR105-600-70	1SFA896 115 R7000	68,000

For Rated control supply voltage, Us, 24 V Dc replace R7000 by R8100

**PSE - The efficient range with integrated bypass**

**Normal Starts , Class 10, In-Line**



415V Pe kW	500V Pe kW	IEC Max rated operational Ie A	Type	Order Code	M.R.P
7.5	11	18	PSE18-600-70	1SFA897 101 R7000	36,500
11	15	25	PSE25-600-70	1SFA897 102 R7000	36,700
15	18.5	30	PSE30-600-70	1SFA897 103 R7000	38,900
18.5	22	37	PSE37-600-70	1SFA897 104 R7000	44,660
22	30	45	PSE45-600-70	1SFA897 106 R7000	51,000
30	37	60	PSE60-600-70	1SFA897 106 R7000	59,500
37	45	72	PSE72-600-70	1SFA897 107 R7000	68,000
45	55	85	PSE85-600-70	1SFA897 108 R7000	76,500
55	75	106	PSE105-600-70	1SFA897 109 R7000	78,250
75	90	143	PSE142-600-70	1SFA897 110 R7000	1,10,000
90	110	171	PSE170-600-70	1SFA897 111 R7000 ■	1,20,000
110	132	210	PSE210-600-70	1SFA897 112 R7000 ■	1,30,000
132	160	250	PSE250-600-70	1SFA897 113 R7000 ■	1,45,000
160	200	300	PSE300-600-70	1SFA897 114 R7000 ■	1,58,000
200	250	370	PSE370-600-70	1SFA897 115 R7000 ■	1,70,000

For accessories please consult

■ Stock items

# Softstarters

## Normal starts, class 10, In-Line

### PST30 ... PSTB1050

Rated operational voltage  $U_e$ , 208 - 600 V

Rated control supply voltage,  $U_s$ , 100 - 250 V AC, 50/60 Hz



415V Pe kW	500V Pe kW	690V Pe kW	IEC Max rated operational Ie A	Type*)	Order code**)	M.R.P
15	18.5	-	30	PST30-600-70■	1SFA894 002 R70▼0	Upon Request
18.5	22	-	37	PST37-600-70■	1SFA894 003 R70▼0	
22	15	-	44	PST44-600-70■	1SFA894 004 R70▼0	
25	30	-	50	PST50-600-70■	1SFA894 005 R70▼0	
30	37	-	60	PST60-600-70■	1SFA894 006 R70▼0	
37	45	-	72	PST72-600-70■	1SFA894 007 R70▼0	
45	55	-	85	PST85-600-70■	1SFA894 008 R70▼0	
55	75	-	105	PST105-600-70■	1SFA894 009 R70▼0	
75	90	-	142	PST142-600-70■	1SFA894 010 R70▼0	
90	110	-	175	PST175-600-70■	1SFA894 011 R70▼0	
110	132	-	210	PST210-600-70■	1SFA894 012 R70▼0	
132	160	-	250	PST250-600-70■	1SFA894 013 R70▼0	
160	200	-	300	PST300-600-70■	1SFA894 014 R70▼0	
200	257	-	370	PSTB370-600-70■	1SFA894 015 R70▼0	
250	315	-	470	PSTB470-600-70■	1SFA894 016 R70▼0	
315	400	-	570	PSTB570-600-70■	1SFA894 017 R70▼0	
400	500	-	720	PSTB720-600-70■	1SFA894 018 R70▼0	
450	600	-	840	PSTB840-600-70■	1SFA894 019 R70▼0	
560	730	-	1050	PSTB1050-600-70■	1SFA894 020 R70▼0	

\*) Add code number in Type acc. to: ■ No code letter = Normal | T = Coated PCBs

\*) Add code number in Type acc. to: ▼ 0 = Normal | 2 = Coated PCBs

## PST(B) – The advanced range -Heavy Duty, class 30, In-Line, ordering details

### PST30 ... PSTB1050 / Rated operational voltage $U_e$ , 400 - 690 V e

Rated control supply voltage,  $U_s$ , 100 - 250 V AC, 50/60 Hz



415V Pe kW	500V Pe kW	690V Pe kW	IEC Max rated operational Ie A	Type*)	Order code**)	M.R.P
11	15	18.5	22	PST30-690-70■	1SFA895 002 R70▼0	Upon Request
15	18.5	25	3	PST37-690-70■	1SFA895 003 R70▼0	
18.5	22	30	37	PST44-690-70■	1SFA895 004 R70▼0	
22	25	37	44	PST50-690-70■	1SFA895 005 R70▼0	
25	30	45	50	PST60-690-70■	1SFA895 006 R70▼0	
30	37	55	60	PST72-690-70■	1SFA895 007 R70▼0	
37	45	59	72	PST85-690-70■	1SFA895 008 R70▼0	
45	55	75	85	PST105-690-70■	1SFA895 009 R70▼0	
55	75	90	105	PST142-690-70■	1SFA895 010 R70▼0	
75	90	132	142	PST175-690-70■	1SFA895 011 R70▼0	
90	110	160	175	PST210-690-70■	1SFA895 012 R70▼0	
110	132	184	210	PST250-690-70■	1SFA895 013 R70▼0	
132	160	220	250	PST300-690-70■	1SFA895 014 R70▼0	
160	200	257	300	PSTB370-690-70■	1SFA895 015 R70▼0	
200	257	355	370	PSTB470-690-70■	1SFA895 016 R70▼0	
250	315	450	470	PSTB570-690-70■	1SFA895 017 R70▼0	
315	400	560	570	PSTB720-690-70■	1SFA895 018 R70▼0	
400	500	710	720	PSTB840-690-70■	1SFA895 019 R70▼0	
450	600	800	840	PSTB1050-690-70■	1SFA895 020 R70▼0	

\*) Add code number in Type acc. to: ■ No code letter = Normal | T = Coated PCBs

\*) Add code number in Type acc. to: ▼ 0 = Normal | 2 = Coated PCBs

For accessories please consult

■ Stock items

# Electronic products & relays

## Electronic timer



### ON-delay timers

CT-ERE : 1 c/o contact, 2 LEDs

Type	"Rated control supply voltage"	Time Range	Order code	M.R.P
CT-ERE	"24 V AC/DC, 220-240 V AC"	0.1-10 s	1SVR 550 107 R1100	980
		0.3-30 s	1SVR 550 107 R4100	
		3-300 s	1SVR 550 107 R2100	
		0.3-30 min	1SVR 550 107 R5100	
	110-130 V AC	0.1-10 s	1SVR 550 100 R1100	
		0.3-30 s	1SVR 550 100 R4100	
		3-300 s	1SVR 550 100 R2100	
		0.3-30 min	1SVR 550 100 R5100	

### OFF-delay timers

CT-AHE : 1 c/o contact, 2 LEDs

Type	"Rated control supply voltage"	Time Range	Order code	M.R.P
CT-AHE	"24 V AC/DC, 220-240 V AC"	0.1-10 s	1SVR 550 118 R1100	1,155
		0.3-30 s	1SVR 550 118 R4100	
		3-300 s	1SVR 550 118 R2100	
	110-130 V AC	0.1-10 s	1SVR 550 110 R1100	
		0.3-30 s	1SVR 550 110 R4100	
		3-300 s	1SVR 550 110 R2100	
	200-240 V AC	0.1-10 s	1SVR 550 110 R2100	
		0.3-30 s	1SVR 550 111 R4100	
		3-300 s	1SVR 550 111 R2100	

CT-ARE : without auxiliary voltage, 1 c/o contact, 1 LED

Type	"Rated control supply voltage"	Time Range	Order code	M.R.P
CT-ARE	"24 V AC/DC, 220-240 V AC"	0.1-10 s	1SVR 550 127 R1100	1,610
		0.3-30 s	1SVR 550 127 R4100	
	110-130 V AC	0.1-10 s	1SVR 550 120 R1100	
		0.3-30 s	1SVR 550 120 R4100	

### Multifunction timer

CT-MFE : 6 functions, 8 time ranges (0.05 s - 100 h), 1 c/o contact, 2 LEDs

Type	"Rated control supply voltage"	Time Range	Order code	M.R.P
CT-MFE	24-240 V AC/DC	0.05 s - 100 h	1SVR 550 029 R8100	1,580

# Electronic products & relays

## Electronic timer

### Star Delta timers

**CT-YDE : ON-delayed, OFF-delayed without auxiliary voltage, 1 c/o contact, 2 LEDs**

Type	Rated control supply voltage	Time Range	Order code	M.R.P
CT-YDE	24 V AC/DC, 220 -240V AC	0.1-10 s	1SVR 550 207 R1100	Upon request
		0.3-30 s	1SVR 550 207 R4100	
		3-300 s	1SVR 550 207 R2100	
	110-130V AC	0.1-10 s	1SVR 550 200 R1100	
		0.3-30 s	1SVR 550 200 R4100	
		3-300 s	1SVR 550 200 R2100	



**CT-SDE: ON-delayed with fixed transition time, 1 n/c contact, 1 n/o contact, internally wired, 2 LEDs**

Type	Rated control supply voltage	Time Range	Order code	M.R.P
CT-SDE	24 V AC/DC, 220 -240V AC	0.3-30 s	1SVR 550 217 R4100	1,155
	110-130V AC		1SVR 550 210 R4100	
	380-415V AC		1SVR 550 212 R4100	

**CT-VWE: Impulse-ON, 1 c/o contact**

Type	Rated control supply voltage	Time Range	Order code	M.R.P
CT-VWE	24 V AC/DC, 220-240 V AC	0.1-10 s	1SVR550137R1100	1,060
		0.3-30 s	1SVR550137R4100	
		3-300 s	1SVR550137R2100	
	110-130 V AC	0.1-10 s	1SVR550130R1100	
		0.3-30 s	1SVR550130R4100	
		3-300 s	1SVR550130R2100	

**CT-AWE: Impulse-OFF, 1 c/o contact**

Type	Rated control supply voltage	Time Range	Order code	M.R.P
CT-AWE w/o Aux.	24 V AC/DC	0.05-1 s	1SVR550158R3100	1,775
	110-130 V AC		1SVR550150R3100	
	220-240 V AC		1SVR550151R3100	
CT-AWE with Aux.	24 V AC/DC	0.1-10 s	1SVR550148R1100	
		0.3-30 s	1SVR550148R4100	
		3-300 s	1SVR550148R2100	
	110-130 V AC	0.1-10 s	1SVR550140R1100	
		0.3-30 s	1SVR550140R4100	
		3-300 s	1SVR550140R2100	
220-240 V AC	0.1-10 s	1SVR550141R1100		
	0.3-30 s	1SVR550141R4100		
	3-300 s	1SVR550141R2100		



**CT-EBE: Flasher starting with OFF, 1 c/o contact**

Type	Rated control supply voltage	Time Range	Order code	M.R.P
CT-EBE	24 V AC/DC, 220-240 V AC	0.1-10 s	1SVR550167R1100	1,230
	110-130 V AC		1SVR550160R1100	

**CT-MFS.21: ON-delay (accumulative), OFF-delay without aux., Symmetrical ON-delay and OFF-delay and Impulse-ON, ON/OFF function, pulse former, star-delta changeover with impluse, Flasher starting with OFF, Flasher starting with ON, impluse -OFF, 2 c/o**

Type	Rated control supply voltage	Time Range	Order code	M.R.P
CT-MFS.21	24-240 V AC/DC	10 (0.05 s- 300 h)	1SVR630010R0200	3,225

**CT-ERS.22: ON-delay (accumulative), 2 c/o**

Type	Rated control supply voltage	Time Range	Order code	M.R.P
CT-ERS.22	24-48 V DC, 24-240 V AC	10 (0.05 s- 300 h)	1SVR630100R3300	2,150

## Power supplies



### CP-E range

Type	Rated I/P voltage	Rated O/P Voltage/Current	Order Code	M.R.P
CP-E 5/3.0	100-240 V AC	5 V DC / 3 A	1SVR 427 033 R3000	4,100
CP-E 12/2.5	100-240 V AC	12 V DC / 2.5 A	1SVR 427 032 R1000	4,100
CP-E 12/10.0	115 / 230 V AC auto select	12 V DC / 10 A	1SVR 427 035 R1000	7,300
CP-E 24/0.75	100-240 V AC	24 V DC / 0.75 A	1SVR 427 030 R0000	3,150
CP-E 24/1.25	100-240 V AC	24 V DC / 1.25 A	1SVR 427 031 R0000	3,350
CP-E 24/2.5	100-240 V AC	24 V DC / 2.5 A	1SVR 427 032 R0000	3,550
CP-E 24/5.0	115 / 230 V AC auto select	24 V DC / 5 A	1SVR 427 034 R0000	6,130
CP-E 24/10.0	115 / 230 V AC auto select	24 V DC / 10 A	1SVR 427 035 R0000	9,210
CP-E 24/20.0	115 / 230 V AC	24 V DC / 20 A	1SVR 427 036 R0000	16,325
CP-E 48/0.62	100-240 V AC	48 V DC / 0.625 A	1SVR 427 030 R2000	4,290
CP-E 48/1.25	100-240 V AC	48 V DC / 1.25 A	1SVR 427 031 R2000	5,440
CP-E 48/5.0	115 / 230 V AC auto select	48 V DC / 5 A	1SVR 427 034 R2000	11,030
CP-E 48/10.0	115 / 230 V AC	48 V DC / 10 A	1SVR 427 035 R2000	15,050

Note: Please refer technical Data sheet for DC Voltage input range



### CP-T range

Type	"Rated I/P voltage"	"Rated O/P Voltage/Current"	Order Code	M.R.P
CP-T 24/5.0	340-575 V AC/ 480-820 V DC	24 V DC / 5 A	1SVR 427 054 R0000	Upon request
CP-T 24/10.0	340-575 V AC/ 480-820 V DC	24 V DC / 10 A	1SVR 427 055 R0000	
CP-T 24/20.0	340-575 V AC/ 480-820 V DC	24 V DC / 20 A	1SVR 427 056 R0000	
CP-T 24/40.0	340-575 V AC/ 480-820 V DC	24 V DC / 40 A	1SVR 427 057 R0000	
CP-T 48/5.0	340-575 V AC/ 480-820 V DC	48 V DC / 5 A	1SVR 427 054 R2000	
CP-T 48/10.0	340-575 V AC/ 480-820 V DC	48 V DC / 10 A	1SVR 427 055 R2000	
CP-T 48/20.0	340-575 V AC/ 480-820 V DC	48 V DC / 20 A	1SVR 427 056 R2000	

# ABB's measuring and monitoring relays in a new housing

## Benefits at a glance

### Double-chamber cage connection terminals

#### Easy conversions:

The old range of measuring and monitoring relays is replaced by an identical range of relays with Double-chamber cage connection terminals.

The ordering number just changed in one digit:

1SVRx3 ... changed to 1SVR73...

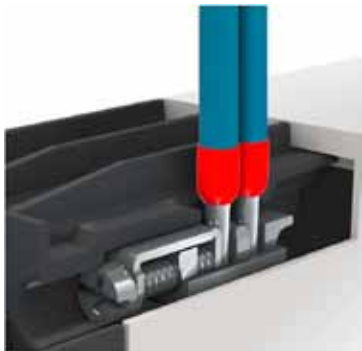
1SVRx3 ... changed to 1SVR75...

And for the type designator we are using one more specifier:

CM-xxS changed to CM-xxS.S

CM-xxN changed to CM-xxN.S

The new range is identically replacing the old range.



### Double-chamber cage connection terminals

Double-chamber cage connection terminals provide connection of rigid or fine-strand wires, with or without wire end ferrules. Potential distribution does not require additional terminals

### Easy Connect Technology

#### New options:

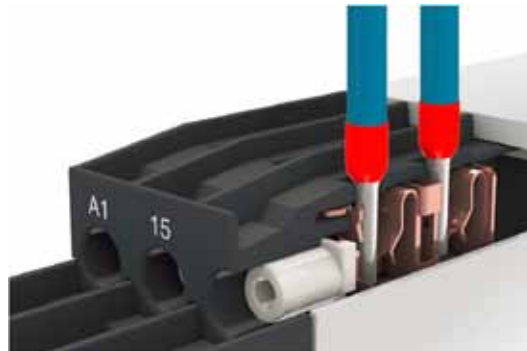
Additionally to the existing well established screw connections a new innovative connection technology can be offered: Easy Connect Technology with push-in terminals.

#### Tool-free wiring

The push-in terminals can be wired with rigid or fine stranded wires with wire end ferrules totally tool-free. The connection direction is exactly the same as the screw version.

#### Higher utility class

The Easy Connect Technology provides excellent vibration resistance with gas tight push-in terminals – the right solution for harsh environment.



### Easy Connect Technology

Tool-free wiring for excellent vibration resistance. Push-in terminals provide connection of rigid or fine-strand wires, with or without wire end ferrules.

# Three phase monitoring relays



## Single and three phase monitoring relays for phase failure detection

Type	Rated control supply voltage = measuring voltage	Order Code	M.R.P
<b>With neutral monitoring</b>			
CM-PBE	3x380-440 V AC, 220-240 V AC	1SVR 550 881 R9400	Upon request
<b>Without neutral monitoring</b>			
CM-PBE	3x380-440 V AC	1SVR 550 882 R9500	Upon request

## Single and three phase monitoring relays for over / undervoltage and phase failure detection

Type	Rated control supply voltage = measuring voltage	Order Code	M.R.P
<b>With neutral monitoring</b>			
CM-PVE	3x320-460 V AC, 185-265 V AC	1SVR 550 870 R9400	Upon request
<b>Without neutral monitoring</b>			
CM-PVE	3x320-460 V AC	1SVR 550 871 R9500	Upon request

## Three phase monitoring relays for phase sequence monitoring and phase failure detection

Type	Rated control supply voltage = measuring voltage	Order Code	M.R.P
CM-PFS	3x200-500 V AC	1SVR 430 824 R9300	1,500

## Three phase monitoring relays for over and undervoltage with adjustable threshold values



Type	Rated control supply voltage = measuring voltage	Order Code	M.R.P
CM-PVS.31P	3x160-300 V AC	1SVR 740 794 R1300	Upon request
CM-PVS.31S		1SVR 730 794 R1300	
CM-PVS.41P		1SVR 740 794 R3300	
CM-PVS.41S	3x300-500 V AC	1SVR 730 794 R3300	

## Three phase monitoring relays for phase unbalance

Type	Rated control supply voltage = measuring voltage	Order Code	M.R.P
CM-PAS.31P	3x160-300 V AC	1SVR740774R1300	Upon request
CM-PAS.31S		1SVR730774R1300	
CM-PAS.41P	3x300-500 V AC	1SVR740774R3300	
CM-PAS.41S		1SVR730774R3300	

## Multifunctional three phase monitoring relays

Type	Rated control supply voltage = measuring voltage	Order Code	M.R.P
<b>With interrupted neutral monitoring</b>			
CM-MPS.11P	3x90-170 V AC	1SVR 740 885 R1300	Upon request
CM-MPS.11S		1SVR 730 885 R1300	
CM-MPS.21P	3x180-280 V AC	1SVR 740 885 R3300	
CM-MPS.21S		1SVR 730 885 R3300	
<b>Without interrupted neutral monitoring</b>			
CM-MPS.31P	3x160-300 V AC	1SVR 740 884 R1300	Upon request
CM-MPS.31S		1SVR 730 884 R1300	
CM-MPS.41P	3x300-500 V AC	1SVR 740 884 R3300	
CM-MPS.41S		1SVR 730 884 R3300	

## Three phase monitoring relays

**Multifunctional three phase monitoring relays, automatic phase sequence correction and separate monitoring of over and undervoltage (window monitoring) configurable**

Type	"Rated control supply voltage = measuring voltage"	Order Code	M.R.P
<b>With interrupted neutral monitoring</b>			
CM-MPS.23P	3x180-280 V AC	1SVR740885R4300	Upon request
CM-MPS.23S		1SVR730885R4300	
<b>Without interrupted neutral monitoring</b>			
CM-MPS.43P	3x300-500 V AC	1SVR740884R4300	Upon request
CM-MPS.43S		1SVR730884R4300	

**Multifunctional three phase monitoring relays, automatic phase sequence correction and separate monitoring of over and undervoltage (window monitoring) configurable**

Type	"Rated control supply voltage = measuring voltage"	Order Code	M.R.P
CM-MPN.52P	3x350-580 V AC	1SVR760487R8300	Upon request
CM-MPN.52S		1SVR750487R8300	
CM-MPN.62P	3x450-720 V AC	1SVR760488R8300	
CM-MPN.62S		1SVR750488R8300	
CM-MPN.72P	3x530-820 V AC	1SVR760489R8300	
CM-MPN.72S		1SVR750489R8300	

**Multifunctional three phase monitoring relays, (phase failure detection, Phase sequence monitoring, overvoltage, undervoltage, Phase unbalance), W/O Neutral monitoring**

Type	Rated control supply voltage	Order code	M.R.P
CM-MPS.41	3x300-500 V AC	1SVR630884R3300	2,575

## Insulation monitors for unearthed supply systems



Type	Nominal voltage Un of the distribution system to be monitored	Rated control supply voltage	Order Code	M.R.P
CM-IWS.1P	0-250 V AC / 0-300 V DC	24-240 V AC/DC	1SVR740660R0100	Upon request
CM-IWS.1S			1SVR730660R0100	
CM-IWS.2P	0-400 V AC	24-240 V AC/DC	1SVR740670R0200	
CM-IWS.2S			1SVR730670R0200	
Type	Nominal voltage Un of the distribution system to be monitored	Rated control supply voltage	Order Code	M.R.P
CM-IWN.1P	0-400 V AC / 0-600 V DC	24-240 V AC/DC	1SVR760660R0200	Upon request
CM-IWN.1S			1SVR750660R0200	
CM-IVN	0-690 V AC / 0-1000 V DC	"Passive device, no control supply voltage needed"	1SVR650669R9400	

## Thermistor motor protection relays

### CM-MSE

Type	Rated control supply voltage	Order code	M.R.P
CM-MSE	24 V AC	1SVR550805R9300	Upon request
	110-130 V AC	1SVR550800R9300	
	220-240 V AC	1SVR550801R9300	

### CM-MSS (1), 1 c/o contact

Type	Rated control supply voltage	Order code	M.R.P
CM-MSS (1)	24 V AC/DC	1SVR430800R9100	Upon request
	220-240 V AC	1SVR430801R1100	

### CM-MSS (2), 2 c/o contact

Type	Rated control supply voltage	Order code	M.R.P
CM-MSS (2)	24 V AC/DC	1SVR430810R9300	Upon request
	24 V AC	1SVR430811R9300	
	110-130 V AC	1SVR430811R0300	
	220-240 V AC	1SVR430811R1300	

# FBP FieldBusPlug

## Motor management, general information

With the Universal Motor Controller UMC100-FBP, ABB provides the optimum solution for integrating motor control into system control. The UMC100-FBP is a flexible, modularly expandable motor management system for low voltage motors with constant rotational speed. Its most important task is avoiding system downtimes through early detection of possible drive problems and reducing the associated downtimes through quick detection of the error cause if a motor stop has occurred.



Universal Motor  
Controller  
UMC100-FBP

### Continued further development

The UMC100-FBP Universal Motor Controller ideally supplements the already proven UMC22-FBP with several additional functions and extensions. It is based on ABB's long-standing experience in the area of motor protection and drive technology.

### Motor management and more

With its predefined control features and the option to optimally adapt the device to different system conditions due to its flexible logic, the UMC100-FBP is very well suited to varied applications. For complex applications with more I/Os or special signals, extension modules are available.



Operating panel  
UMC100 PAN

### High system availability

The UMC100-FBP continuously provides extensive operating, service and diagnostic data of the motor. This enables the operator to detect faults in time or to even prevent these with suitable measures, or to limit their effect. Quick error location and elimination increases system availability.

### Electronic full motor protection

The comprehensive electronic full motor protection is self-sufficient and guarantees full motor protection even if superordinated automation or process control systems or the bus system fail. The high accuracy of the electronic measuring system better utilizes the performance of the motors. The digital technology guarantees high long-term stability of the tripping characteristic and consistent tripping behavior even after many years of use.



I/C expansion modules  
DX111-FBP/DX122-FBP

### Less planning, development and material effort

The UMC100-FBP already convinces during the planning and development phase due to its universal and modular structure. All required protection, monitoring and control features are integrated in one single device, which thus reduces the wiring effort. One single version for all current ranges and field buses simplifies planning and service from systems through to the spares inventory.

### Simple integration in a confined space

Due to its compact design with integrated measuring system, the UMC100-FBP reduces the required floor space. This is important for application in low voltage drawer systems in conditions with limited space, or for conversion of existing systems to a modern motor management system.



I/C expansion modules  
V1150-FBP/V1155-FBP

### Flexible integration into process control

With the FieldBusPlug, the UMC100-FBP can communicate with control systems via the widespread standard fieldbus systems PROFIBUS DP, CANopen, DeviceNet or Modbus. With the FDT interface it is easy to configure the motor management in the process control and adapt it to the process.

# FBP FieldBusPlug

## Motor management, general information



### Customer-specific application

#### Application in industrial plants

In large industrial systems it is quite common that several thousand motors are required to provide the required movement. This in turn requires intelligent devices on site, as well as a continuous connection from the process control and automation level through to the field. For this reason it is particularly important that motors can be easily integrated into system control and monitoring. With the FieldBusPlug system and the new UMC100-FBP motor management system, the best prerequisites are created for this. Intelligent motor management ensures high reliability in the process. The UMC100-FBP motor management system is easy to handle, from planning and implementation through to on-site service.

#### Application of UMC100-FBP Universal Motor Controllers in MCCs

The use of intelligent motor management systems with their coordinated accessories provides many advantages.

- When removing the basic drawer unit from the control cabinet, the bus system remains fully operational. This applies to all FieldBusPlugs. There are no branch lines that could result in malfunctions of the fieldbus.
- Bus addresses are kept

# FBP FieldBusPlug

## Motor management system UMC100-FBP & accessories, ordering data



UMC100-FBP

#### Universal Motor Controller UMC100-FBP

Intelligent motor management system for three-phase with  $I = 0,24 - 63 \text{ A}$  in one single device. Compact housing 8 with integrated bushing-type current transformer for cable cross section up to  $25 \text{ mm}^2$  (max.  $O$  with Insulation  $11 \text{ mm}$ ). Higher currents with additional external current transformer.

Thermal overload protection according to EN/IEC 60947-4-1, selectable trip classes 5E, 10E, 20E, 30E, 40E. (Some functions require the additional use of a voltage expansion module V1150 or V1155)

- |                             |   |  |
|-----------------------------|---|--|
| Motor protection functions  | : | Over-/Underload, Over-/Undercurrent, Over-/Undervoltage, rotor blocking<br>Phase failure / imbalance / sequence<br>Earth fault detection intergrated or with external sensor CEM11<br>Thermistor motor protection  |
| Motor control functions     | : | Easily configurable motor control functions: direct, reverse, star-delta starter, polechanging, overload relay, actuator mode. Additionally free programmable application specific logic with function blocks  |
| Service and diagnostic data | : | Operating hours, number of motor starts and overload trips<br>Motorstatus, faults and warnings, fault history (16 events)<br>Motor current, phase voltages, thermal load, power factor (ccs 0), active power, apparent power, energy, total harmonic distortion (THD). |



# FBP FieldBusPlug

## Motor management system UMC100-FBP & accessories, ordering data

Integrated I/Os: 6 digital inputs, 1 PTC input, 4 digital outputs. Maximum number of I/Os with expansion module: 14 digital inputs, 1 PTC input, 8 digital outputs, 1 analogue output,  
Interface for FieldBusPlug for communication via fieldbus systems,  
Interface for operator panel UMC100-PAN, Bus interface for connection of expansion modules UMC100 requires 24 V DC power supply.

Type	Designation	Nominal motor current	Order code
UMC100-FBP.0	Universal Motor Controller	0.24 - 63 A	1SAJ 520 000 R0101
UMC100-FBP.2	Universal Motor Controller, ATEX	0.24 - 63 A	1SAJ 520 000 R0200



DX111-FBP /  
DX122-FBP

### Expansion modules and accessories for Universal Motor Controller UMC100-FBP

One I/O-expansion-module Dx111 or Dx122 and one voltage-expansion-module V1150 or V1155 can be connected to a UMC100. All expansion modules require 24 V DC power supply

DX111-FBP.0	:	I/O-expansion module with 8 digital inputs 24 V DC, 4 relay outputs, 1 analog output 0/4...20 mA or 0...10 V
DX122-FBP.0	:	I/O-expansion module with 8 digital inputs 110 / 230 V AC, 4 relay outputs, 1 analog output 0/4 - 0 mA or 0 - 10 V
V1150-FBP.0	:	Voltage expansion module for use in grounded networks, 150 - 690 V AC
V1155-FBP.0	:	Voltage expansion module for use in all networks, 150 - 690 V AC Voltage modules for the determination of phase voltages, power factor (cos $\phi$ ), apparent power, energy, total harmonic distortion (THD)



V1150-FBP /  
V1155-FBP

Type	Designation	For use with	Order code
DX111-FBP.0	I/O module for UMC100, 24 V DC digital input and supply voltage	UMC100-FBP	1SAJ 611 000 R0101
DX122-FBP.0	I/O module for UMC100, 110-230 V AC digital input, 24 V DC supply voltage	UMC100-FBP	1SAJ 622 000 R0101
V1150-FBP.0	3 phase Voltage module for grounded networks	UMC100-FBP	1SAJ 650 000 R0100
V1155-FBP.0	3 phase Voltage module for all networks	UMC100-FBP	1SAJ 655 000 R0100
UMCIO-CAB.030	Connection cable UMC100 - I/O module, length 0.30 m	UMC100-FBP	1SAJ 691 000 R0001
IOIO-CAB.030	Connection cable IO-module - IO module, length 0.30 m	UMC100-FBP	1SAJ 692 000 R0001
UMCTB-FBP.0	Terminal set for UMC (spare parts)	UMC22-FBP	1SAJ 929 160 R0001



UMC100-PAN

### Operating panel UMC100-PAN and accessories for Universal Motor Controller UMC100-FBP

Operating, diagnostics and parameter setting panel for Universal Motor Controller UMC100-FBP. Setting of motor and bus parameters. Backlit graphical multilingual display. Assembly directly on UMC100-FBP or on the control cabinet door via extension cable and door mounting set Ip65 (front side)

Type	Designation	For use with	Order code
DX111-FBP.0	Operating panel	UMC100-FBP	1SAJ 611 000 R0101
DX122-FBP.0	3 m ext. cable with door mounting set	UMC100-FBP	1SAJ 622 000 R0101
V1150-FBP.0	0.7 m ext. cable with door mounting set	UMC100-FBP	1SAJ 650 000 R0100
V1155-FBP.0	1.5 m ext. cable with door mounting set	UMC100-FBP	1SAJ 655 000 R0100

## Productivity and safety go hand in hand

**Jokab Safety was acquired by ABB in march 2010. This gives us extra strength and a sales network in 120 countries. Our goal is to become even better at supporting you as a customer through cooperation within ABB Jokab Safety globally and locally.**

The fact that the leading power and automation technology company, ABB, and a leader in machine safety, Jokab Safety, are joining forces means a lot more than just a new organisational chart. ABB has a huge footprint in the industry - from power supply to the control of each individual motor - and has been delivering reliable solutions for decades that boost productivity in the industry. The acquisition of Jokab Safety now means the last building block is in place. We can now offer our customers tailored, turnkey solutions where machine safety is an integral and value-enhancing component.

Since its inception in 1988, Jokab Safety has been adhering to the business concept of developing innovative products and solutions for machine safety. The company has supplied everything from individual safety components to fully installed protection systems for entire production lines and works on a daily basis with the practical application of safety requirements in combination with production requirements. Jokab Safety is also represented on a variety of international standards committees concerned with the safety of machinery which means that we have now added this very valuable experience and knowledge to our offering. Similarly, ABB has always been a pioneer and a representative for its business areas and a powerful voice in professional organisations and committees. All in all, this creates an enormous bank of knowledge and experience that we look forward to sharing with our customers. Productivity and safety are not



contradictory terms. On the contrary, safety solutions that are properly executed and adapted from the beginning will increase productivity. A partner that can deliver integrated and well thought out turnkey solutions enables a production-friendly safety environment. By building up and upgrading safety solutions in existing environments in a smart way, the mode of production will not need to be adapted to meet the requirements that safety sets. Instead, this allows a system that is manufacturing-friendly and that takes into account the business and its productivity objectives.



# Jokab Safety

## Pluto Safety PLC

Pluto, Gateway, Profibus, DeviceNet, CANopen, Ethernet, Safe Encoder, IDFIX, program examples

## Pluto AS-I

Pluto AS-I, Urax

## Pluto Manager

Software for programming of Pluto

## Vital and Tina safety systems

Vital, Tina and Connection examples

## Light Curtains, Light grids, Light beams and Scanner

Focus, Spot, Look, Bjom, Focus Wet, Blanking programmer, Connection examples

## Stop time measurement and machine diagnosis

Smart, Smart manager

## Sensors/Switches

Eden, MKey series, Magne, Dalton, Knox

## Control devices

3-position device JS4D4, Two-handed control unit Safeball

## Emergency stop devices

Inca, Smile, Smile Tina, Line emergency stop

## Contacts rails/Bumpers/Safety mats

## Fencing systems

Quick-Guard, Quick-Guard E, SafeCad, Roller doors

## EC Declaration of Conformity

# Jokab Safetys developments in 80's



Jokab Safetys first safety relay

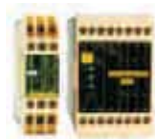


Jokab Safetys first steel fencing system

# Jokab Safetys developments in 90's



Timer reset and first light beam



Smallest safety relays JSBT5 and JSBR4



Stop time measurement



Quick-Guard aluminium fencing system



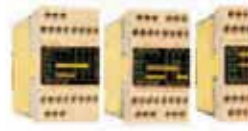
Three-position switch for robots



3-position devices



Safeball - ergonomic control device



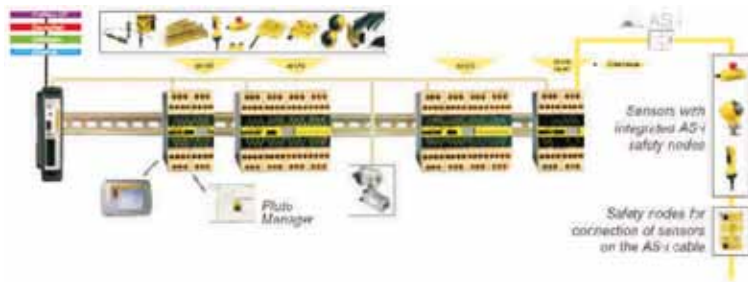
RT series universal relays



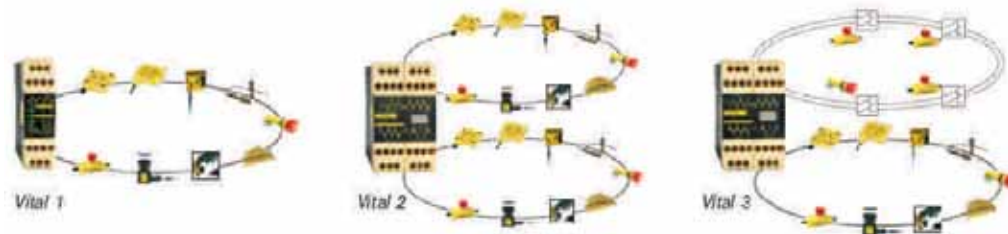
SafeCad for Quick-Guard

# Jokab Safetys developments in 2000

Pluto All-Master safety PLC



Vital with dynamic safety circuits



Non-contact sensor Eden, guard locks, Focus light beam, E-stops Inca and smile, Smart for machine diagnosis and three-position device with hand detection



# The System pro M compact® – DIN Rail Products

## System Pro M

System Pro M is a modular system developed by ABB which, is capable of meeting the requirements of the most modern and up-to-date installations for low voltage applications.

## MCBs

Miniature circuit-breakers.

## RCDs

- Residual current circuit-breakers (RCCBs);
- RCD-blocks;
- Residual current circuit-breakers with overcurrent protection (RCBOs);
- Residual current relays (modular and front panel) with external toroid.

## Auxiliary elements

A whole range of accessories and auxiliary elements.

## SPDs

Surge protective devices.

## Protection devices

In addition to MCBs and RCDs, ABB supplies other modular devices for protection such as fuse holders, fuses, switch disconnectors, insulation monitoring devices etc.

## Command devices

This category includes devices that are operated manually to command the electric system: contactors, latching relays, switch-isolators, switches, pushbuttons etc. Typically they are installed to control lights from several points of the same circuit or to pilot user devices with a high number of operations.

## Load management devices

Overload relays, load management switches, anti black-out lamps, time switches and the other modular devices in this category react automatically to variations of parameters and other events in the system to allow for plant optimisation.

## Measurement devices

The range of devices in this category is very wide, including a great number of auxiliary components and accessories that make installation in switchboards and consumer units practical and economic.

## Other devices

The System pro M compact® range also includes bells, transformers, modular sockets etc.

## Various accessories



## Perfect protection and measuring solutions for power distribution units in modern data centers

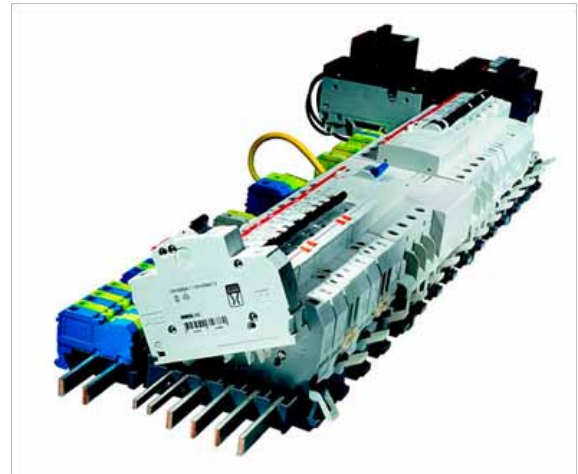
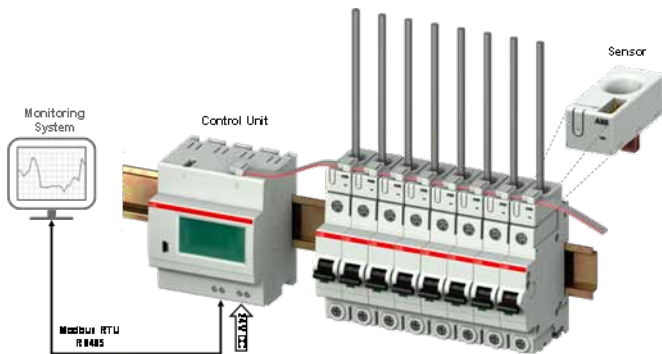
Measurement in power distribution units has never been so compact and perfectly integrated. It is finally possible to monitor the individual circuits of an installation.

The CMS is the perfect solution for areas where high system availability is required. This includes industrial facilities, banks, insurance companies or public buildings such as hospitals or airports, which depend heavily on their electronic systems operating smoothly. Failures here lead to major financial losses. The sensors are the most important part of the system and their compact size is impressive. The sensors can be easily installed anywhere and they do not cause any problems during installation or commissioning.

Whether AC, DC or mixed current, CMS sensors capture all types of current within a measurement range of 0–80 A (TRMS). Even upper sidebands in the signal trace are captured.

Every sensor has its own signal processing microprocessor, meaning measurement data is transmitted digitally via the bus interface to the control unit.

World's first pluggable socket system, SMISSLINE TP ensures that load-free devices and components can be snapped on and off under voltage without the need for additional personal protective equipment to guard against electrical hazards. That opens up completely new prospects for you when it comes to installation, operation and flexibility. The system complies with IEC 60439. Load sharing becomes extremely simple with unique feature of slider to change phases. Plug-in MCB's provides excellent flexibility for maintenance personnel and less downtime in critical application. Pluggable busbar system is also suitable for fixed type of MCB's.



# Modular enclosure solutions for power distribution and motor protection



Features	ArTu
Sheet steel fabrication	In-house ABB
Sheet steel material	Galvanised iron with Aluzinc coating
Construction type	Bolted/Modular/Kit form
Ingress protection	Up to IP65
Painting	By ABB
Configuration software	Yes
Type test Complying to IEC Standards	Yes
Impact test according to IEC 62262	Yes
Glazed doors	Yes
Bus bar supports (Critical element)	Supplied by ABB with same product where type test is done
Feeder rating interchangeability	Due modular and bolted design, site interchangeability is simple



Features	Gemini
Enclosure material	Polycarbonate
Insulation Voltage	1000V AC/ 1500V DC
Insulation class	II
Ingress protection	IP66
Impact test according to IEC 62262	Yes (IK10)
Glazed doors	Opaque/Glazed
Number DIN Modules	24 modules to 216 Modules
Operating temperature	-25°C to 100°C
Glow wire test	750°C

## Earth Leakage Relay

- Frequency filtering ensures increased immunity to High frequency currents and avoid unwanted tripping
- Wide adjustable setting from 30mA to 30A
- Total selectivity in case of insulation fault in the system
- Performs RMS measurement for highest accuracy
- Complies with latest international standards IEC 60947-2 Annex M/IEC 61543

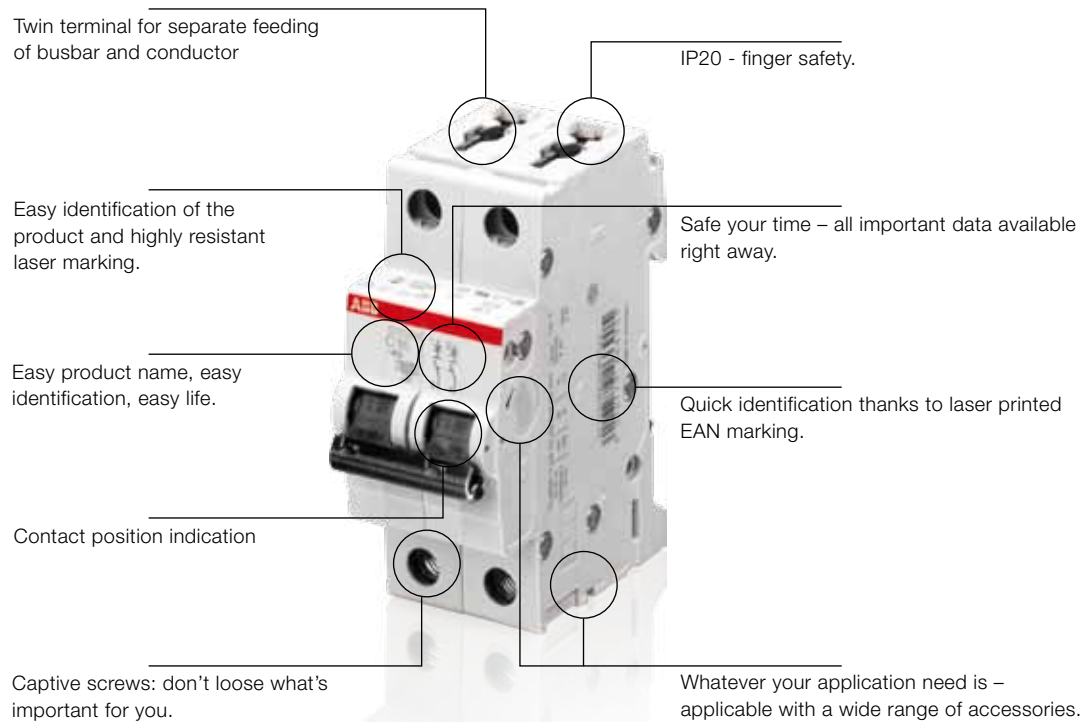
The new range of ELR front panel residual current relays has been tested in combination with MCB's (S200 range) and MCCB's (Tmaxseries) conforming with IEC/EN 60947-2 Annex M.

## Measurement Solutions

ABB offers wide range of Metering solutions for Power measurement applications. Metering solutions offers TRMS measurement parameters. Meters also offers versatile communication options like Modbus, Profibus, M-Bus etc.



# Miniature circuit-breaker (MCB) S200M Series



## Technical Features

Electrical Data	S200 M
Standards	IEC 60947-2, IS/IEC-60898-1
Poles	1P, 2P, 3P, 4P, 1P +N, 3P +N
Tripping Characteristics	B, C, D
Rated Current	0.5A - 63 A
Rated Voltage	1P : 230 / 400 V AC 1P + N : 230 V AC 2...4P : 400 V AC 3P + N : 400 V AC 1P : 60 V DC 2P : 120 V DC
Insulation Voltage	250 V AC (Phase to Ground) 500 V AC (Phase to Phase)
Max Operating Voltage	1P: 253 V AC 2...4P : 440 V AC
Min Operating Voltage	12 V AC
Rated Frequency	50/60 Hz
Rated Short Circuit Capacity	10kA
Energy Limiting Class (B, C upto 40 A)	3
Over Voltage Category	III
Pollution Degree	2
Rated Impulse withstand Voltage	4kV (Test Voltage 6.2kV at Sea Level, 5kV at 2,000 m)
Dielectric Test Voltage	2kV (50/60 Hz, 1 min)
Accessories mountable	Yes
Cross-section of conductor (top / bottom)	35 mm <sup>2</sup>
Terminal	Fail safe bi-directional cylinder - lift terminal
Contact position indication	Marking on toggle (1 ON / 0 OFF), Real CPI (red ON / green OFF)



# S200M - MCBs, C Characteristics - 10 kA



Description	Ordering Code	Current Rating (A)	M.R.P.(₹)	Pack Unit (Pc)
<b>Single pole</b>				
S201M-C 0.5	2CDS271001R0984	0.5	345	12
S201M-C 1	2CDS271001R0014	1	345	12
S201M-C 1.6	2CDS271001R0974	1.6	345	12
S201M-C 2	2CDS271001R0024 ■	2	345	12
S201M-C 3	2CDS271001R0034	3	345	12
S201M-C 4	2CDS271001R0044	4	345	12
S201M-C 6	2CDS271001R0064 ■	6	230	12
S201M-C 8	2CDS271001R0084	8	230	12
S201M-C 10	2CDS271001R0104 ■	10	230	12
S201M-C 16	2CDS271001R0164 ■	16	230	12
S201M-C 20	2CDS271001R0204 ■	20	230	12
S201M-C 25	2CDS271001R0254 ■	25	230	12
S201M-C 32	2CDS271001R0324 ■	32	230	12
S201M-C 40	2CDS271001R0404	40	480	12
S201M-C 50	2CDS271001R0504	50	490	12
S201M-C 63	2CDS271001R0634 ■	63	490	12



<b>Single pole &amp; neutral</b>				
S201M-C 0.5 NA	2CDS271103R0984	0.5	925	6
S201M-C 1 NA	2CDS271103R0014	1	925	6
S201M-C 1.6 NA	2CDS271103R0974	1.6	925	6
S201M-C 2 NA	2CDS271103R0024	2	925	6
S201M-C 3 NA	2CDS271103R0034	3	925	6
S201M-C 4 NA	2CDS271103R0044	4	925	6
S201M-C 6 NA	2CDS271103R0064	6	660	6
S201M-C 8 NA	2CDS271103R0084	8	660	6
S201M-C 10 NA	2CDS271103R0104	10	660	6
S201M-C 16 NA	2CDS271103R0164	16	660	6
S201M-C 20 NA	2CDS271103R0204	20	660	6
S201M-C 25 NA	2CDS271103R0254	25	660	6
S201M-C 32 NA	2CDS271103R0324	32	660	6
S201M-C 40 NA	2CDS271103R0404	40	1,080	6
S201M-C 50 NA	2CDS271103R0504	50	1,090	6
S201M-C 63 NA	2CDS271103R0634	63	1,090	6



<b>Double pole</b>				
S202M-C 0.5	2CDS272001R0984	0.5	940	6
S202M-C 1	2CDS272001R0014	1	940	6
S202M-C 1.6	2CDS272001R0974	1.6	940	6
S202M-C 2	2CDS272001R0024 ■	2	940	6
S202M-C 3	2CDS272001R0034	3	940	6
S202M-C 4	2CDS272001R0044 ■	4	940	6
S202M-C 6	2CDS272001R0064 ■	6	676	6
S202M-C 8	2CDS272001R0084	8	676	6
S202M-C 10	2CDS272001R0104 ■	10	676	6
S202M-C 16	2CDS272001R0164 ■	16	676	6
S202M-C 20	2CDS272001R0204 ■	20	676	6
S202M-C 25	2CDS272001R0254 ■	25	676	6
S202M-C 32	2CDS272001R0324 ■	32	676	6
S202M-C 40	2CDS272001R0404 ■	40	1,090	6
S202M-C 50	2CDS272001R0504	50	1,100	6
S202M-C 63	2CDS272001R0634	63	1,100	6

■ Stock items

# S200M - MCBs, C Characteristics - 10 kA



Description	Ordering Code	Current Rating (A)	M.R.P.(₹)	Pack Unit (Pc)
<b>Triple Pole</b>				
S203M-C 0.5	2CDS273001R0984	0.5	1,430	4
S203M-C 1	2CDS273001R0014	1	1,430	4
S203M-C 1.6	2CDS273001R0974	1.6	1,430	4
S203M-C 2	2CDS273001R0024	2	1,430	4
S203M-C 3	2CDS273001R0034	3	1,430	4
S203M-C 4	2CDS273001R0044	4	1,430	4
S203M-C 6	2CDS273001R0064	6	1,085	4
S203M-C 8	2CDS273001R0084	8	1,085	4
S203M-C 10	2CDS273001R0104	10	1,085	4
S203M-C 16	2CDS273001R0164 ■	16	1,085	4
S203M-C 20	2CDS273001R0204	20	1,085	4
S203M-C 25	2CDS273001R0254	25	1,085	4
S203M-C 32	2CDS273001R0324 ■	32	1,085	4
S203M-C 40	2CDS273001R0404	40	1,650	4
S203M-C 50	2CDS273001R0504	50	1,675	4
S203M-C 63	2CDS273001R0634 ■	63	1,675	4



Description	Ordering Code	Current Rating (A)	M.R.P.(₹)	Pack Unit (Pc)
<b>Triple Pole &amp; Neutral</b>				
S203M-C 0.5 NA	2CDS273103R0984	0.5	1,810	3
S203M-C 1 NA	2CDS273103R0014	1	1,810	3
S203M-C 1.6 NA	2CDS273103R0974	1.6	1,810	3
S203M-C 2 NA	2CDS273103R0024	2	1,810	3
S203M-C 3 NA	2CDS273103R0034	3	1,810	3
S203M-C 4 NA	2CDS273103R0044	4	1,810	3
S203M-C 6 NA	2CDS273103R0064	6	1,440	3
S203M-C 8 NA	2CDS273103R0084	8	1,440	3
S203M-C 10 NA	2CDS273103R0084	10	1,440	3
S203M-C 16 NA	2CDS273103R0084	16	1,440	3
S203M-C 20 NA	2CDS273103R0204	20	1,440	3
S203M-C 25 NA	2CDS273103R0254	25	1,440	3
S203M-C 32 NA	2CDS273103R0324 ■	32	1,440	3
S203M-C 40 NA	2CDS273103R0404 ■	40	2,110	3
S203M-C 50 NA	2CDS273103R0504	50	2,125	3
S203M-C 63 NA	2CDS273103R0634 ■	63	2,125	3



Description	Ordering Code	Current Rating (A)	M.R.P.(₹)	Pack Unit (Pc)
<b>Four Pole</b>				
S204M-C 0.5	2CDS274001R0984	0.5	1,820	3
S204M-C 1	2CDS274001R0014	1	1,820	3
S204M-C 1.6	2CDS274001R0974	1.6	1,820	3
S204M-C 2	2CDS274001R0024	2	1,820	3
S204M-C 3	2CDS274001R0034	3	1,820	3
S204M-C 4	2CDS274001R0044	4	1,820	3
S204M-C 6	2CDS274001R0064	6	1,460	3
S204M-C 8	2CDS274001R0084	8	1,460	3
S204M-C 10	2CDS274001R0104	10	1,460	3
S204M-C 16	2CDS274001R0164	16	1,460	3
S204M-C 20	2CDS274001R0204	20	1,460	3
S204M-C 25	2CDS274001R0254	25	1,460	3
S204M-C 32	2CDS274001R0324 ■	32	1,460	3
S204M-C 40	2CDS274001R0404 ■	40	2,130	3
S204M-C 50	2CDS274001R0504	50	2,150	3
S204M-C 63	2CDS274001R0634 ■	63	2,150	3

■ Stock items

# S200M - MCBs, D Characteristics - 10 kA



Description	Ordering Code	Current Rating (A)	M.R.P.(₹)	Pack Unit (Pc)
<b>Single pole</b>				
S201M-D 0.5	2CDS271001R0981	0.5	375	12
S201M-D 1	2CDS271001R0011	1	375	12
S201M-D 1.6	2CDS271001R0971	1.6	375	12
S201M-D 2	2CDS271001R0021	2	375	12
S201M-D 3	2CDS271001R0031	3	375	12
S201M-D 4	2CDS271001R0041	4	375	12
S201M-D 6	2CDS271001R0061 ■	6	310	12
S201M-D 8	2CDS271001R0081	8	310	12
S201M-D 10	2CDS271001R0101 ■	10	310	12
S201M-D 16	2CDS271001R0161 ■	16	310	12
S201M-D 20	2CDS271001R0201 ■	20	310	12
S201M-D 25	2CDS271001R0251 ■	25	310	12
S201M-D 32	2CDS271001R0321 ■	32	310	12
S201M-D 40	2CDS271001R0401	40	540	12
S201M-D 50	2CDS271001R0501	50	550	12
S201M-D 63	2CDS271001R0631	63	550	12
<b>Double pole</b>				
S202M-D 0.5	2CDS272001R0981	0.5	1,030	6
S202M-D 1	2CDS272001R0011	1	1,030	6
S202M-D 1.6	2CDS272001R0971	1.6	1,030	6
S202M-D 2	2CDS272001R0021	2	1,030	6
S202M-D 3	2CDS272001R0031	3	1,030	6
S202M-D 4	2CDS272001R0041	4	1,030	6
S202M-D 6	2CDS272001R0061	6	745	6
S202M-D 8	2CDS272001R0081	8	745	6
S202M-D 10	2CDS272001R0101	10	745	6
S202M-D 16	2CDS272001R0161 ■	16	745	6
S202M-D 20	2CDS272001R0201	20	745	6
S202M-D 25	2CDS272001R0251	25	745	6
S202M-D 32	2CDS272001R0321 ■	32	745	6
S202M-D 40	2CDS272001R0401 ■	40	1,190	6
S202M-D 50	2CDS272001R0501	50	1,200	6
S202M-D 63	2CDS272001R0631	63	1,200	6

■ Stock items

# S200M - MCBs, D Characteristics - 10 kA



Description	Ordering Code	Current Rating (A)	M.R.P.(₹)	Pack Unit (Pc)
<b>Triple pole</b>				
S203M-D 0.5	2CDS273001R0981	0.5	1,570	4
S203M-D 1	2CDS273001R0011	1	1,570	4
S203M-D 1.6	2CDS273001R0971	1.6	1,570	4
S203M-D 2	2CDS273001R0021	2	1,570	4
S203M-D 3	2CDS273001R0031	3	1,570	4
S203M-D 4	2CDS273001R0041	4	1,570	4
S203M-D 6	2CDS273001R0061	6	1,190	4
S203M-D 8	2CDS273001R0081	8	1,190	4
S203M-D 10	2CDS273001R0101	10	1,190	4
S203M-D 16	2CDS273001R0161	16	1,190	4
S203M-D 20	2CDS273001R0201	20	1,190	4
S203M-D 25	2CDS273001R0251	25	1,190	4
S203M-D 32	2CDS273001R0321	32	1,190	4
S203M-D 40	2CDS273001R0401 ■	40	1,880	4
S203M-D 50	2CDS273001R0501	50	1,900	4
S203M-D 63	2CDS273001R0631 ■	63	1,900	4

<b>Four pole</b>				
S204M-D 0.5	2CDS274001R0981	0.5	1,980	3
S204M-D 1	2CDS274001R0011	1	1,980	3
S204M-D 1.6	2CDS274001R0971	1.6	1,980	3
S204M-D 2	2CDS274001R0021	2	1,980	3
S204M-D 3	2CDS274001R0031	3	1,980	3
S204M-D 4	2CDS274001R0041	4	1,980	3
S204M-D 6	2CDS274001R0061	6	1,590	3
S204M-D 8	2CDS274001R0081	8	1,590	3
S204M-D 10	2CDS274001R0101	10	1,590	3
S204M-D 16	2CDS274001R0161	16	1,590	3
S204M-D 20	2CDS274001R0201	20	1,590	3
S204M-D 25	2CDS274001R0251	25	1,590	3
S204M-D 32	2CDS274001R0321	32	1,590	3
S204M-D 40	2CDS274001R0401 ■	40	2,300	3
S204M-D 50	2CDS274001R0501	50	2,320	3
S204M-D 63	2CDS274001R0631 ■	63	2,320	3

■ Stock items

# Miniature circuit-breaker (MCB) S280 Series



## Features

- Breaking capacity - 6kA
- Tripping characteristics - C curve
- Suitable for -25°C to +55°C ambient temperatures
- Standards : Conforms to IEC60898, IEC60947-2

## S280

Description	Ordering Code	Current Rating (A)	M.R.P.(₹)	Pack Unit (Pc)
<b>Single pole</b>				
S281-C80	GHS2810001R0804	80	2,065	1
S281-C100	GHS2810001R0824	100	2,190	1
<b>Double Pole</b>				
S282-C80	GHS2820001R0804	80	4,035	1
S282-C100	GHS2820001R0824	100	4,125	1
<b>Triple Pole</b>				
S283-C80	GHS2830001R0804	80	5,955	1
S283-C100	GHS2830001R0824	100	6,065	1
<b>Four Pole</b>				
S284-C80	GHS2840001R0804	80	8,135	1
S284-C100	GHS2840001R0824	100	8,170	1

# High Performance MCB

## S800 Series



### Features

- Complies to standards IEC 60947-2 & EN 60898-1
- Compact size : One size up to 125A
- Compact performance : Selective and back-up characteristics
- Does not let go: The interchangeable terminal adapter. Cage terminals or ring lugs
- On the safe side: Operating status display.
- Simple and flexible: Accessories fitted by the customer
- Identical accessories for a broad range of applications

### The S800 range

- S800S (50kA) upto 125A
- S800N (36kA) upto 125A
- S800C (25kA) upto 125A
- S800B (16kA) upto 125A
- S800PV-S (upto 1200V DC & upto 125A)
- S800PV-M (upto 1200V DC & upto 125A)

### S800B - 'C' Curve 16 kA as per IEC 60947-2

Description	Ordering Code	Current Rating (A)	M.R.P.(₹)	Pack Unit (Pc)
<b>Single pole</b>				
S801B-C32	2CCS811001R0324	32	1,950	1
S801B-C40	2CCS811001R0404	40	1,950	1
S801B-C50	2CCS811001R0504	50	2,050	1
S801B-C63	2CCS811001R0634	63	2,050	1
S801B-C80	2CCS811001R0804	80	2,160	1
S801B-C100	2CCS811001R0824	100	2,225	1
S801B-C125	2CCS811001R0844	125	2,350	1
<b>Double Pole</b>				
S802B-C32	2CCS812001R0324	32	3,920	1
S802B-C40	2CCS812001R0404	40	3,920	1
S802B-C50	2CCS812001R0504	50	4,150	1
S802B-C63	2CCS812001R0634	63	4,150	1
S802B-C80	2CCS812001R0804	80	4,380	1
S802B-C100	2CCS812001R0824	100	4,550	1
S802B-C125	2CCS812001R0844	125	4,760	1
<b>Triple Pole</b>				
S803B-C32	2CCS813001R0324	32	5,850	1
S803B-C40	2CCS813001R0404	40	5,850	1
S803B-C50	2CCS813001R0504	50	6,770	1
S803B-C63	2CCS813001R0634	63	6,770	1
S803B-C80	2CCS813001R0804	80	6,620	1
S803B-C100	2CCS813001R0824	100	6,930	1
S803B-C125	2CCS813001R0844	125	7,135	1
<b>Four Pole</b>				
S804B-C32	2CCS814001R0324	32	8,020	1
S804B-C40	2CCS814001R0404	40	8,020	1
S804B-C50	2CCS814001R0504	50	8,600	1
S804B-C63	2CCS814001R0634	63	8,600	1
S804B-C80	2CCS814001R0804	80	9,320	1
S804B-C100	2CCS814001R0824	100	9,410	1
S804B-C125	2CCS814001R0844	125	9,520	1

# Isolators

## SHD Series

Isolator for panel installation onto DIN rail acc. to DIN EN 60715

Mounting depth : 70mm

Mounting width : per pole = 17.5mm = 1 module

Colour : grey, RAL 7035

Colour of switch lever : red RAL 3000®

Captive screws with recessed/slotted head, Pozidrive size 2

Compatibility for Locking device (unauthorized ON/OFF)



Description	Ordering Code	Current Rating (A)	M.R.P.(₹)	Pack Unit (Pc)
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### Single pole

SHD201/16	2CDD271111R0016	16	215	12
SHD201/25	2CDD271111R0025	25	215	12
SHD201/32	2CDD271111R0032	32	215	12
SHD201/40	2CDD271111R0040	40	340	12
SHD201/63	2CDD271111R0063	63	380	12

### Double Pole

SHD202/16	2CDD272111R0016	16	360	6
SHD202/25	2CDD272111R0025	25	375	6
SHD202/32	2CDD272111R0032	32	375	6
SHD202/40	2CDD272111R0040 ■	40	405	6
SHD202/63	2CDD272111R0063 ■	63	535	6

### Triple Pole

SHD203/16	2CDD273111R0016	16	625	4
SHD203/25	2CDD273111R0025	25	635	4
SHD203/32	2CDD273111R0032	32	635	4
SHD203/40	2CDD273111R0040	40	695	4
SHD203/63	2CDD273111R0063	63	810	4

### Four Pole

SHD204/16	2CDD274111R0016	16	710	3
SHD204/25	2CDD274111R0025	25	725	3
SHD204/32	2CDD274111R0032	32	725	3
SHD204/40	2CDD274111R0040 ■	40	895	3
SHD204/63	2CDD274111R0063 ■	63	980	3

## E200 Series

Description	Ordering Code	Current Rating (A)	M.R.P.(₹)	Pack Unit (Pc)
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### Single pole

E201/80	2CDE281001R0080	80	410	1
E201/100	2CDE281001R0100	100	425	1
E201/125	2CDE281001R0125	125	440	1

### Double Pole

E202/80	2CDE282001R0080	80	665	1
E202/100	2CDE282001R0100	100	940	1
E202/125	2CDE282001R0125	125	985	1

### Triple Pole

E203/80	2CDE283001R0080	80	930	1
E203/100	2CDE283001R0100	100	945	1
E203/125	2CDE283001R0125	125	1,040	1

### Four Pole

E204/80	2CDE284001R0080	80	1,230	1
E204/100	2CDE284001R0100	100	1,265	1
E204/125	2CDE284001R0125	125	1,320	1



■ Stock items

# Residual Current Circuit-breaker (RCCBs)



## Features

- Complies to standards IS 12640-1 : 2008 & IEC 61008-1 : 1996.  
F200 RCCB range complies to IEC/EN - 61008.
- Available in two series F360 series and F200 range
- Rated breaking capacity Icn: 6kA for F360 & 10kA for F200 in 2P & 4P
- Available in AC, A & AP-R class to suit different applications
- Suitable for isolation

## F360 Range

Description	Ordering Code	Current Rating (A)	Residual rated current (mA)	M.R.P.(₹)	Pack Unit (Pc)
<b>Two pole</b>					
F362 AC25/.03	16256017L	25A	30mA	2,412	6
F362 AC25/.1	16029115L	25A	100mA	2,499	6
F362 AC25/.3	16256058L	25A	300mA	2,499	6
F362 AC40/.03	16256025L	40A	30mA	2,836	6
F362 AC40/.1	16029123L	40A	100mA	2,944	6
F362 AC40/.3	16256066L	40A	300mA	2,944	6
F362 AC63/.03	16256033L	63A	30mA	3,281	6
F362 AC63/.1	16029131L	63A	100mA	3,450	6
F362 AC63/.3	16256074L	63A	300mA	3,450	6

## Four Pole

F364 AC25/.03	16256223L	25A	30mA	3,178	3
F364 AC25/.1	16029198L	25A	100mA	3,308	3
F364 AC25/.3	16256256L	25A	300mA	3,308	3
F364 AC40/.03	16256231L	40A	30mA	3,249	3
F364 AC40/.1	16029206L	40A	100mA	3,352	3
F364 AC40/.3	16256264L	40A	300mA	3,352	3
F364 AC63/.03	16256249L	63A	30mA	3,754	3
F364 AC63/.1	16029214L	63A	100mA	3,939	3
F364 AC63/.3	16256272L	63A	300mA	3,939	3

- Note:
- F 360 series RCCB will be available upto March 2014.
  - The details of replacement Product and Price will be available in a separate document

## F200 Range

Description	Ordering Code	Current Rating (A)	Residual rated current (mA)	M.R.P.(₹)	Pack Unit (Pc)
<b>Two pole</b>					
F202 AC-80/0,03	2CSF202005R1800	80A	30mA	6,565	6
F202 AC-80/0,1	2CSF202005R2800	80A	100mA	7,250	6
F202 AC-80/0,3	2CSF202005R3800	80A	300mA	7,250	6
F202 AC-100/0,03	2CSF202005R1900	100A	30mA	6,710	6
F202 AC-100/0,1	2CSF202005R2900	100A	100mA	7,425	6
F202 AC-100/0,3	2CSF202005R3900	100A	300mA	7,425	6
<b>Four Pole</b>					
F204 AC-80/0,03	2CSF204005R1800	80A	30mA	7,900	3
F204 AC-80/0,1	2CSF204005R2800	80A	100mA	8,100	3
F204 AC-80/0,3	2CSF204005R3800	80A	300mA	8,420	3
F204 AC-100/0,03	2CSF204005R1900	100A	30mA	8,450	3
F204 AC-100/0,1	2CSF204005R2900	100A	100mA	9,200	3
F204 AC-100/0,3	2CSF204005R3900	100A	300mA	9,200	3
F204 AC-125/0,03	2CSF204001R1950	125A	30mA	11,180	3
F204 AC-125/0,1	2CSF204001R2950	125A	100mA	12,330	3
F204 AC-125/0,3	2CSF204001R3950	125A	300mA	On Request	3



# Residual Current Circuit-breaker with Over current Protection

## RCBO - DS200M series



### Features

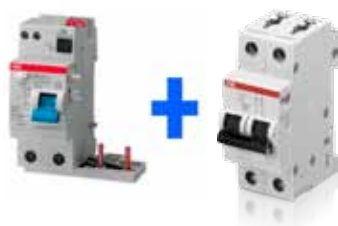
- Complies to standard to IEC/EN 61009
- DS201 available in 4.5kA, 6kA & 10kA breaking capacity.
- Available in AC, A and APR types to meet all protection needs
- B and C characteristics with rated current up to 40 A available on all the versions
- Contact Position Indicator (CPI) to indicate the exact information of the circuit-breaker status
- Equipped with an RFID tag accor. to standard ISO/IEC FCD 15693-3 to authenticate the product.
- Bidirectional cylinder-lift terminals for easier the parallel feed
- Flag indicators - Differential trip indicator - blue  
- Contact position indicator - green / red

Description	Ordering Code	Current Rating (A)	Residual rated current (mA)	M.R.P.(₹)	Pack Unit (Pc)
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### RCBO 10kA AC Type - DS200M

DS201 M C6 AC30	2CSR275040R1064	6	30	3,275	5
DS201 M C6 AC100	2CSR275040R2064	6	100	3,315	5
DS201 M C6 AC300	2CSR275040R3064	6	300	3,375	5
DS201 M C10 AC30	2CSR275040R1104	10	30	3,275	5
DS201 M C10 AC100	2CSR275040R2104	10	100	3,315	5
DS201 M C10 AC300	2CSR275040R3104	10	300	3,375	5
DS201 M C16 AC30	2CSR275040R1164	16	30	3,275	5
DS201 M C16 AC100	2CSR275040R2164	16	100	3,315	5
DS201 M C16 AC300	2CSR275040R3164	16	300	3,375	5
DS201 M C20 AC30	2CSR275040R1204	20	30	3,275	5
DS201 M C20 AC100	2CSR275040R2204	20	100	3,315	5
DS201 M C20 AC300	2CSR275040R3204	20	300	3,375	5
DS201 M C25 AC30	2CSR275040R1254	25	30	3,275	5
DS201 M C25 AC100	2CSR275040R2254	25	100	3,315	5
DS201 M C25 AC300	2CSR275040R3254	25	300	3,375	5
DS201 M C32 AC30	2CSR275040R1324	32	30	3,420	5
DS201 M C32 AC100	2CSR275040R2324	32	100	3,540	5
DS201 M C32 AC300	2CSR275040R3324	32	300	3,520	5
DS201 M C40 AC30	2CSR275040R1404	40	30	3,850	5
DS201 M C40 AC100	2CSR275040R2404	40	100	3,950	5
DS201 M C40 AC300	2CSR275040R3404	40	300	4,100	5

# Residual Current Circuit-breaker with Over current Protection Blocks RCD Blocks - DDA200 series



## DDA - 200 AC type

Function: RCD-block for assembly on site with MCBs S 200M series. Protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30\text{ mA}$ ) contacts.

Standard: IEC/EN 61009 Ann. G

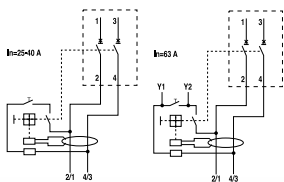


### DDA 200 AC

Description	Ordering Code	Current Rating (A)	Residual rated current (mA)	M.R.P.(₹)	Pack Unit (Pc)
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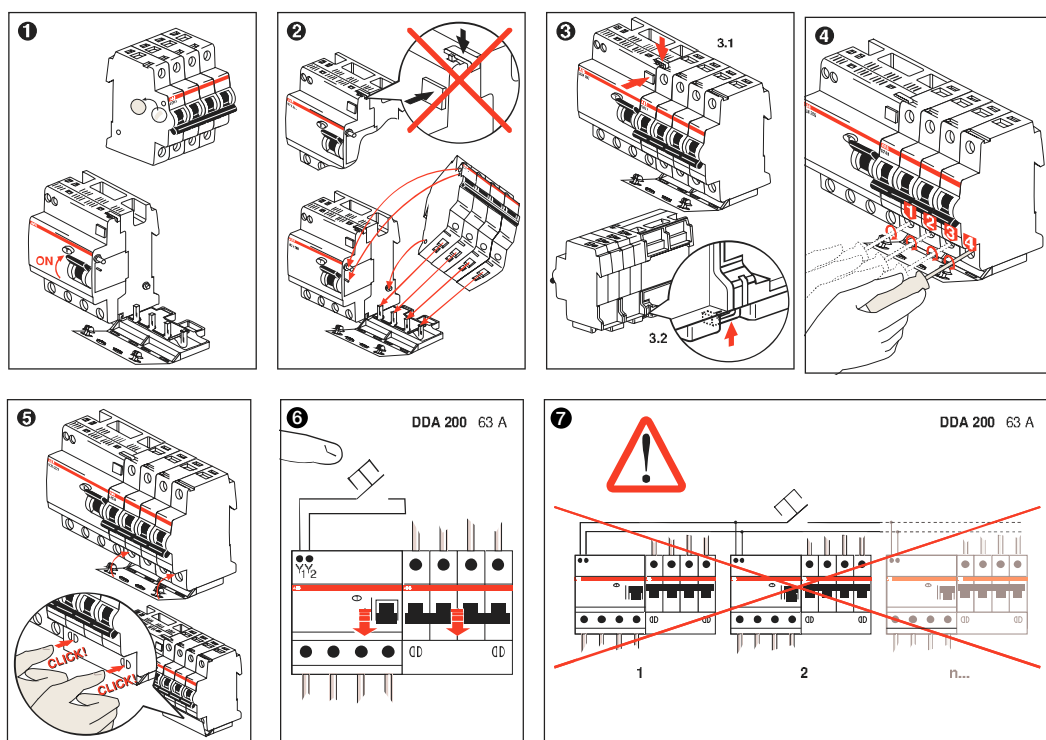
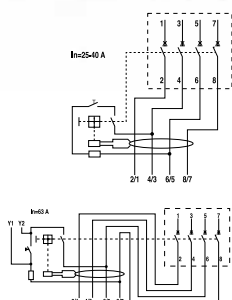
#### Two pole

DDA202 AC-63/0.03	2CSB202001R1630	63	30	2,674	1
DDA202 AC-63/0.1	2CSB202001R2630	63	100	3,298	1
DDA202 AC-63/0.3	2CSB202001R3630	63	300	3,358	1



#### Four pole

DDA204 AC-25/0.03	2CSB204001R1250	25	30	2,550	1
DDA204 AC-40/0.03	2CSB204001R1400	40	30	2,650	1
DDA204 AC-63/0.03	2CSB204001R1630	63	30	2,810	1
DDA204 AC-25/0.1	2CSB204001R2250	25	100	2,820	1
DDA204 AC-40/0.1	2CSB204001R2400	40	100	3,000	1
DDA204 AC-63/0.1	2CSB204001R2630	63	100	3,465	1
DDA204 AC-25/0.3	2CSB204001R3250	25	300	2,905	1
DDA204 AC-40/0.3	2CSB204001R3400	40	300	3,200	1
DDA204 AC-63/0.3	2CSB204001R3630	63	300	3,530	1



## Solution for unwanted tripping - AP-R type (high immunity) RCCB / RCBO

The ABB range of AP-R anti-disturbance residual current circuit-breakers and blocks was designed to overcome the problem of unwanted tripping due to overvoltages of atmospheric or operation origin.

The electronic circuit in these devices can distinguish between temporary leakage caused by disturbances on the mains and permanent leakage due to actual faults, only breaking the circuit in the latter case.

AP-R residual current circuit-breakers and blocks have a slight delay into the tripping time, but this does not compromise the safety limits set by the Standards in force (release time at  $2 I_{\Delta n}=150$  ms).

**Compared with standard type breakers, AP-R residual current breakers are therefore characterised, for any given sensibility, by:**

- Higher residual trip current
- Tripping time delay
- Better resistance to overvoltages, harmonics and impulse disturbances.

Guaranteeing conventional residual current protection, their installation in the electrical circuit therefore allows any unwanted tripping to be avoided in domestic and industrial systems in which service continuity is essential.

This delay makes the AP-R residual current devices especially

suited for installations involving motor starters/variable speed drives, fluorescent lamps or IT/electronic equipment.

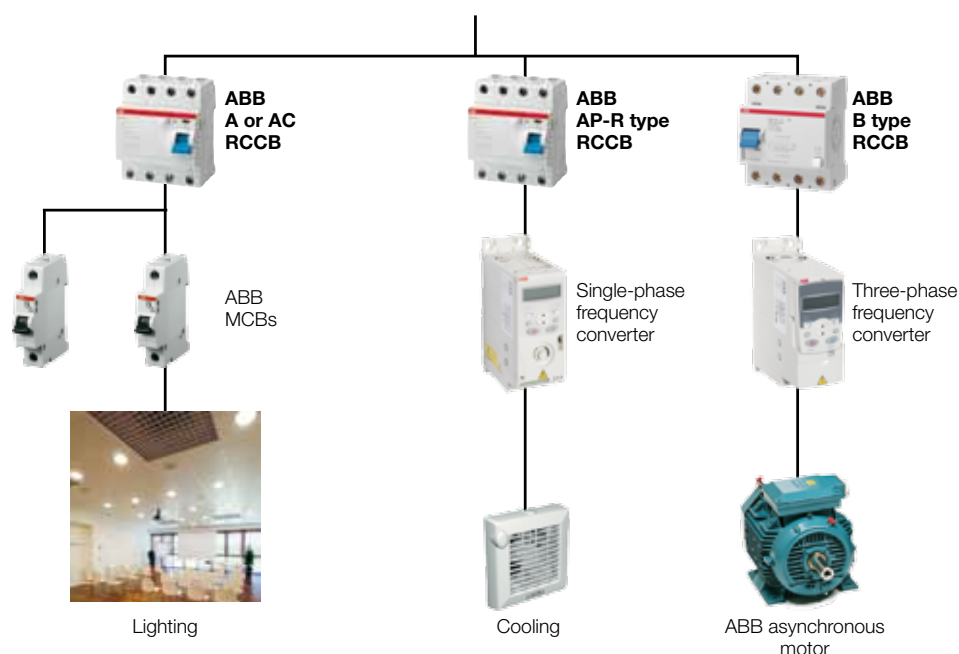
The use of multiple electronic reactors for the supply of fluorescent lamps instead generates permanent leakage currents and inrush currents that can cause nuisance tripping of a standard residual current circuit breaker.

IT system loads and other electronic equipment (e.g. dimmers, computers, inverters) with capacitive input filters connected between the phases and ground can also generate permanent earth leakage currents whose sum may provoke the nuisance tripping of a standard residual current circuit breaker. For these situations, the AP-R breakers allow a greater number of devices to be connected to the installation.

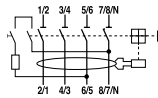
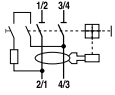
Frequency converters include a rectifier section and an inverter section.

In case of fault within a single-phase frequency converter AP-R type RCDs provide complete protection, because an earth fault occurring downstream the inverter, produces an earth fault current with multi-frequency shape with high amount of harmonics.

While, in case of fault within a three-phase frequency converter, B type RCDs ensure complete protection because in case of insulation fault between the rectifier and the inverter or downstream the inverter we can have a smooth DC earth fault current.



# RCCB - F 200 series: AP-R (high immunity)



Function: protection against the effects of sinusoidal alternating and direct pulsating earth fault currents, providing the best compromise between safety and continuity in the service thanks to the resistance to unwanted trippings; protection against indirect contacts and additional protection against direct ( $I_{\Delta n}=30$  mA) contacts.

**Application:** residential, commercial, industrial. **Standard:** IEC/EN 61008

**Surge current resistance (wave 8/20)=3000 A** **Marking:** according to EN 61008

## RCCB - F 200 series

Description	Ordering Code	Current Rating (A)	Residual rated current (mA)	Packing
<b>Two pole</b>				
F202 A-25/0.03 AP-R	2CSF202401R1250	25	30	6
F202 A-40/0.03 AP-R	2CSF202401R1400	40	30	6
F202 A-63/0.03 AP-R	2CSF202401R1630	63	30	6
F202 A-80/0.03 AP-R	2CSF202401R1800	80	30	6
F202 A-100/0.03 AP-R	2CSF202401R1900	100	30	6
<b>Four pole</b>				
F204 A-25/0.03 AP-R	2CSF204401R1250	25	30	3
F204 A-40/0.03 AP-R	2CSF204401R1400	40	30	3
F204 A-63/0.03 AP-R	2CSF204401R1630	63	30	3
F204 A-80/0.03 AP-R	2CSF204401R1800	80	30	3
F204 A-100/0.03 AP-R	2CSF204401R1900	100	30	3
F204 A-125/0.03 AP-R	2CSF204401R1950	125	30	3

\*Price against Request

## RCBO - DS200 series A APR type

Function: protection against the effects of sinusoidal alternating and direct pulsating earth fault currents, providing an optimal compromise between safety and continuity of service, thanks to the resistance to unwanted tripping; protection against indirect contact and additional protection against direct ( $I_{\Delta n}=30$  mA) contact; protection and isolation of resistive and inductive loads.

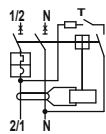
**Application:** residential, commercial, industrial.

**Standard:** IEC/EN 61009

**I<sub>cn</sub>=10 kA**

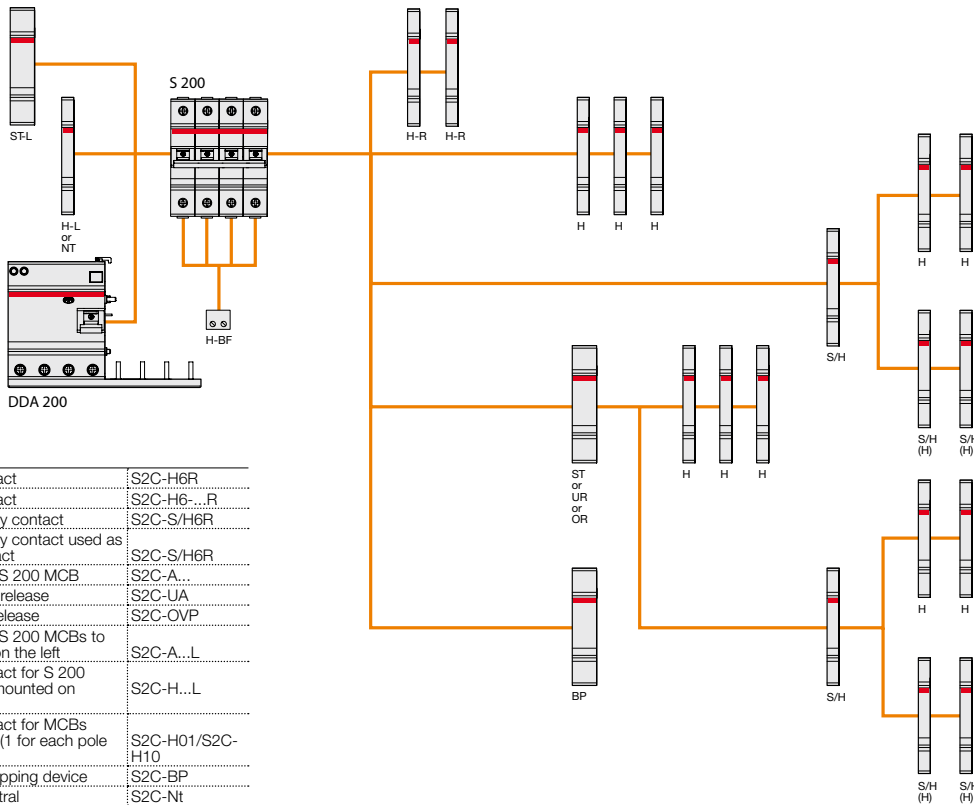
## RCBO - DS200 series A APR type

Description	Ordering Code	Current Rating (A)	Residual rated current (mA)
DS201 M C6 APR30	2CSR275440R1064	6	30
DS201 M C10 APR30	2CSR275440R1104	10	30
DS201 M C13 APR30	2CSR275440R1134	13	30
DS201 M C16 APR30	2CSR275440R1164	16	30
DS201 M C20 APR30	2CSR275440R1204	20	30
DS201 M C25 APR30	2CSR275440R1254	25	30
DS201 M C32 APR30	2CSR275440R1324	32	30
DS201 M C40 APR30	2CSR275440R1404	40	30
DS201 M C6 APR100	2CSR275440R2064	6	100
DS201 M C10 APR100	2CSR275440R2104	10	100
DS201 M C13 APR100	2CSR275440R2134	13	100
DS201 M C16 APR100	2CSR275440R2164	16	100
DS201 M C20 APR100	2CSR275440R2204	20	100
DS201 M C25 APR100	2CSR275440R2254	25	100
DS201 M C32 APR100	2CSR275440R2324	32	100
DS201 M C40 APR100	2CSR275440R2404	40	100
DS201 M C6 APR300	2CSR275440R3064	6	300
DS201 M C10 APR300	2CSR275440R3104	10	300
DS201 M C13 APR300	2CSR275440R3134	13	300
DS201 M C16 APR300	2CSR275440R3164	16	300
DS201 M C20 APR300	2CSR275440R3204	20	300
DS201 M C25 APR300	2CSR275440R3254	25	300
DS201 M C32 APR300	2CSR275440R3324	32	300
DS201 M C40 APR300	2CSR275440R3404	40	300



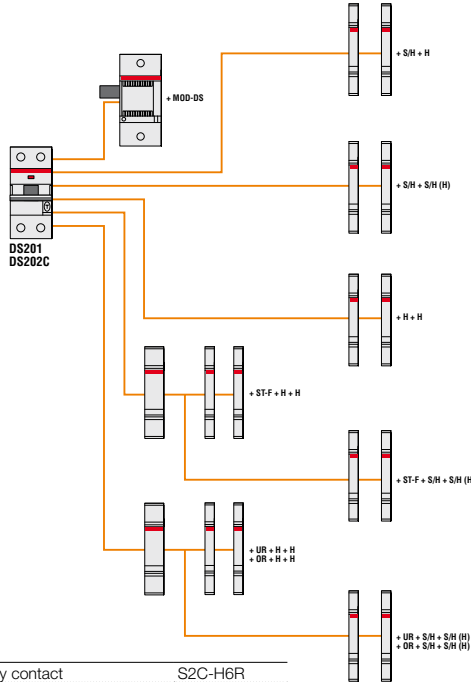
# Auxiliary elements and accessories for MCBs S 200 and RCDs F 200 and DS 200 series

## Combination of auxiliary elements with S 200, DDA 200 + S 200 or DS 200



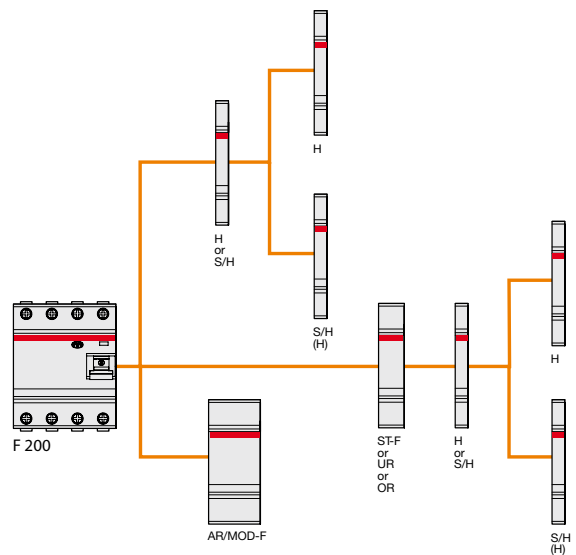
H	Auxiliary contact	S2C-H6R
H-R	Auxiliary contact	S2C-H6-...R
S/H	Signal/Auxiliary contact	S2C-S/H6R
S/H (H)	Signal/Auxiliary contact used as auxiliary contact	S2C-S/H6R
ST	Shunt trip for S 200 MCB	S2C-A...
UR	Undervoltage release	S2C-UA
OR	Overvoltage release	S2C-OVP
ST-L	Shunt trip for S 200 MCBs to be mounted on the left	S2C-A...L
H-L	Auxiliary contact for S 200 MCBs to be mounted on the left	S2C-H...L
H-BF	Auxiliary contact for MCBs bottom fitting (1 for each pole of MCB)	S2C-H01/S2C-H10
BP	Mechanical tripping device	S2C-BP
NT	Switched neutral	S2C-Nt

## Combination of auxiliary elements with DS201, DS202C



H	Auxiliary contact	S2C-H6R
S/H	Signal/Auxiliary contact	S2C-S/H6R
S/H (H)	Signal/Auxiliary contact used as auxiliary contact	S2C-S/H6R
ST-F	Shunt trip for F 200 RCCB	F2C-A
UR	Undervoltage release	S2C-UA
OR	Overvoltage release	S2C-OVP
M O D - DS	Motor operating device	DS2C-CM

## Combination of auxiliary elements with F 200



H	Auxiliary contact	S2C-H6R
S/H	Signal/Auxiliary contact	S2C-S/H6R
S/H (H)	Signal/Auxiliary contact used as auxiliary contact	S2C-S/H6R
UR	Undervoltage release	S2C-UA
OR	Overvoltage release	S2C-OVP
AR	Auto reclosing unit	F2C-ARI
MOD-F	Motor operating device	F2C-CM
ST-F	Shunt trip for F 200 RCCB	F2C-A

# Auxiliary elements for MCBs S 200, RCDs F 200 and DS 200

## Selection tables



S2C-S/H6R

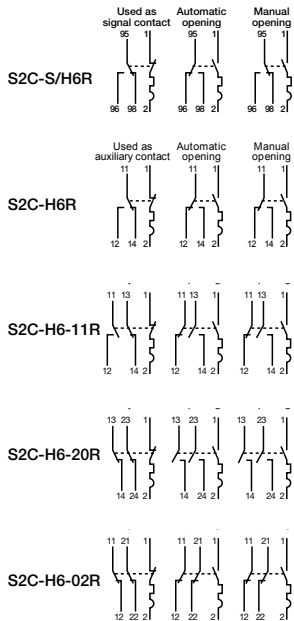
S2C-H6...

### Signal/auxiliary contacts

Function S2C-S/H6R: choice through a selector between indication of the position of the device's contacts and signalling of the fault (overcurrent/short-circuit for MCBs and RCBOs; earth fault for RCCBs and RCBOs). Suitable for MCBs S 200 series, RCCBs F 200 series, RCBOs DS201, DS202C, DS 200 series.

Function S2C-H6R: indication of the position of the device's contacts. Suitable for MCBs S200 series. To be mounted on the left side of the MCBs thanks to the special pin. They are not suitable to be mounted together with RCD-block DDA200.

Function S2C-H6-xxR: indication of the position of the MCB contact. Mounted on the right side. They are not suitable to be mounted together with other right side mounted auxiliary contacts.



Description	Order details	Ordering Code	M.R.P.(₹)	Packing
Auxiliary Contact, 1CO (Right side)	S2C-H6R	2CDS200912R0001	590	1
Auxiliary Contact, 1NO / 1NC (Right side)	S2C-H6-11R	2CDS200946R0001	590	1
Auxiliary Contact, 2NO (Right side)	S2C-H6-20R	2CDS200946R0002	590	1
Auxiliary Contact, 2NC (Right side)	S2C-H6-02R	2CDS200946R0003	590	1
Signal contact / Auxiliary switch, 1CO (Right side)	S2C-S/H6R	2CDS200922R0001	1,040	1

### Auxiliary contacts mounting on the left side

Description	Order details	Ordering Code	M.R.P.(₹)	Packing
Auxiliary Contact, 1NO / 1NC (Left side)	S2C-H11L	2CDS200936R0001	650	1
Auxiliary Contact, 2NO (Left side)	S2C-H20L	2CDS200936R0002	650	1
Auxiliary Contact, 2NC (Left side)	S2C-H02L	2CDS200936R0003	650	1

### Bottom-fitting auxiliary contacts for S 200, S 200 M, S 200 P, S 200 S

Description	Order details	Ordering Code	M.R.P.(₹)	Packing
Bottom fitting Aux contact, 1NC	S2C-H01	2CDS200970R0001	890	1
Bottom fitting Aux contact, 1NO	S2C-H10	2CDS200970R0002	890	1



### Shunt trips

Function: remote opening of the device when a voltage is applied. Suitable for MCBs S 200 series and RCBOs DS 200 series.

Description	Order details	Ordering Code	M.R.P.(₹)	Packing
Shunt Trip, 12...60V AC/DC	S2C-A1	2CDS200909R0001	2,810	1
Shunt Trip, 110...415V AC, 110...250 DC	S2C-A2	2CDS200909R0002	2,810	1

Function: remote opening of the device when a voltage is applied. Suitable for RCCBs F 200 series and RCBOs DS201 and DS202C.

It can be used with MCBs SN201 series by means of SN201-IH interface module.



Description	Order details	Ordering Code	M.R.P.(₹)	Packing
Shunt Trip, 12...60V AC/DC	F2C-A1	2CSS200933R0011	3,225	1
Shunt Trip, 110...415V AC/ 110...250V DC	F2C-A2	2CSS200933R0012	3,225	1

# Auxiliary elements for MCBs S 200, RCDs F 200 and DS 200

## Selection tables

### Undervoltage releases

Function: protection of the load in the event of a voltage drop (between 70% and 35% of its rated value); positive safety (device's tripping when the voltage is disconnected) emergency stop by means of a button. Suitable for MCBs S 200 series, RCCBs F200 series and RCBOs DS201, DS202C, DS 200 series It can be used with MCBs SN201 series by means of SN201-IH interface module.



Description	Order details	Ordering Code	M.R.P.(₹)	Packing
Undervoltage Release, 12V DC	S2C-UA 12 DC	2CSS200911R0001	3,225	1
Undervoltage Release, 24V AC	S2C-UA 24 AC	2CSS200911R0002	3,225	1
Undervoltage Release, 24V DC	S2C-UA 24 DC	2CSS200911R0007	3,225	1
Undervoltage Release, 48V AC	S2C-UA 48 AC	2CSS200911R0003	3,225	1
Undervoltage Release, 48V DC	S2C-UA 48 DC	2CSS200911R0008	3,225	1
Undervoltage Release, 110V AC	S2C-UA 110 AC	2CSS200911R0004	3,225	1
Undervoltage Release, 110V DC	S2C-UA 110 DC	2CSS200911R0009	3,225	1
Undervoltage Release, 230V AC	S2C-UA 230 AC	2CSS200911R0005	3,225	1
Undervoltage Release, 230V DC	S2C-UA 230 DC	2CSS200911R0010	3,225	1
Undervoltage Release, 400V AC	S2C-UA 400 AC	2CSS200911R0006	3,225	1

### Overvoltage releases

Function: monitoring voltage between the neutral and phase; when an overvoltage reaches the threshold value, the OVP device causes the tripping of the associated MCB or RCCB.

Suitable for MCBs of the S200 series up to 63 A, and RCCBs of the F200 series up to 100 A and RCBOs DS201 and DS202C series.



Description	Order details	Product Code	M.R.P.(₹)	Packing
Over Voltage Release (Max tripping : 275 V AC)	S2C-OVP1	2CSS200910R0005	4,032	1
Over Voltage Release (Max tripping : 290 V AC)	S2C-OVP2	2CSS200993R0005	4,032	1

### Hand operated neutral

The hand operated neutral has to be mounted to the left side of the MCB and be snapped on the DIN rail. It is used for measuring duties where the neutral conductor must be in the open position. Due to the special design of the handle - when switching ON the MCB - the neutral will make before the MCB is closed.

The S2C - Nt is not to switch with a tool (screw driver).



Description	Order details	Product Code	M.R.P.(₹)	Packing
Hand operated Neutral (Right side)	S2C-NT	2CDS200918R0001	540	1

### Auxiliary elements for MCBs S800 series

#### Auxiliary contact



Description	Order details	Product Code	M.R.P.(₹)	Packing
Auxiliary contact	S800-AUX	2CCS800900R0011	2,220	1

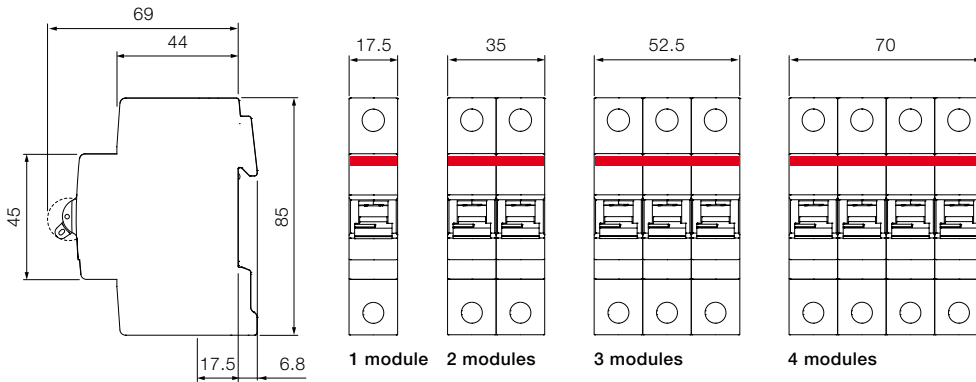
#### Combined auxiliary and signal contact



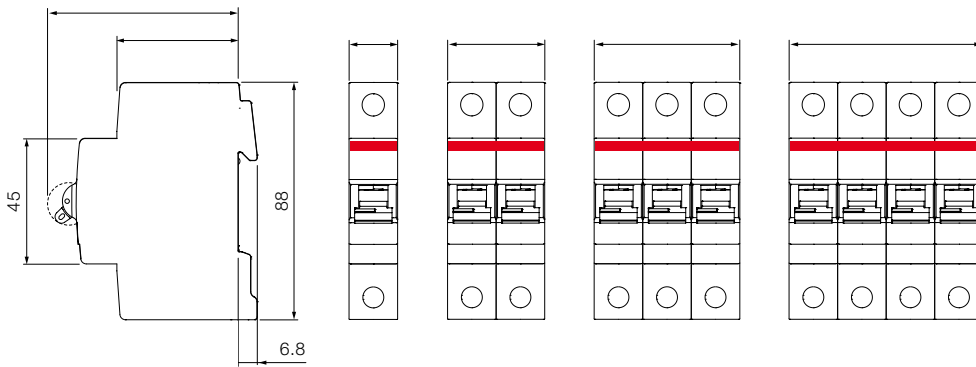
Product Description	Order details	Product Code	M.R.P.(₹)	Packing
Auxiliary/signal contact	S800-AUX/ALT	2CCS800900R0021	2,720	1

# Overall dimensions

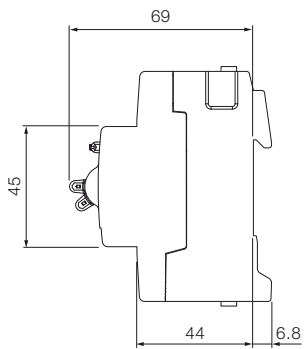
## MCB - (SH200) and Isolator (SHD)



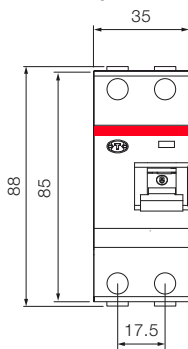
## MCB - (S200)



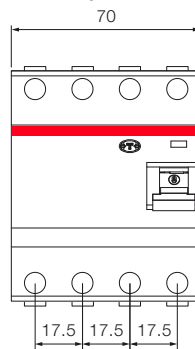
## RCCB - (F200)



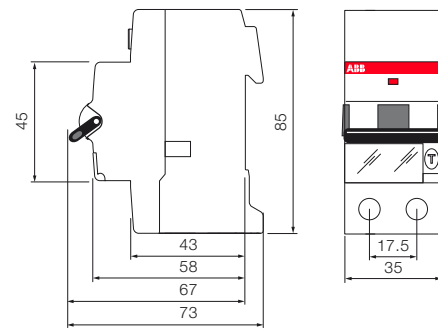
### Two pole



### Four pole



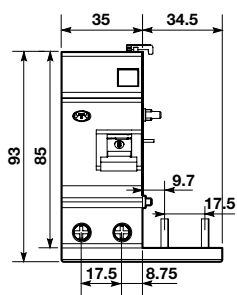
## RCBO (DS200)



## DDA 200

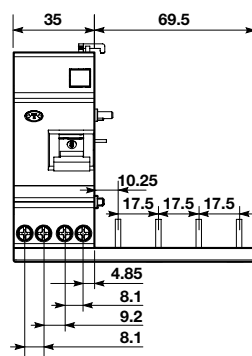
### Two pole

In=25-63 A



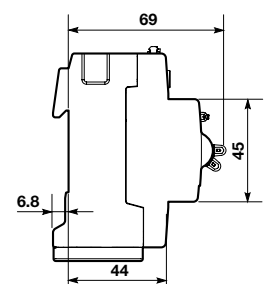
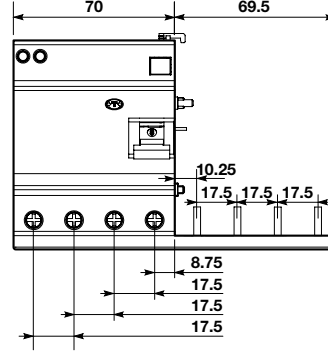
### Four pole

In=25-40 A



### Four pole

In=63 A





# Surge Protection Devices (OVR)



## Type 1 - Spark Gap Type

Type 1 surge protective devices are designed to discharge high current surges without any destruction of the installation. These surge protective devices are characterized by their capacity to withstand impulse current with 10/350  $\mu$ s wave form which simulate natural lightning current.

Type 1 SPDs can be installed at the entrance in the main switch board for a global protection of the electrical installation.

Description	Ordering Code	Operating Voltage (V)	I imp in kA (10/350 $\mu$ s wave)	I max in kA (8/20 $\mu$ s wave)	No of Modules	M.R.P.(₹)
OVR SO 100 400	2CTB815101R9600	275	25	-	4	13,300
OVR T1 3N 25 255-7	2CTB815101R8800	275	25	-	5	24,900
OVR T1+2 3N 7 275 s P	2CTB815502R1000	275	7	70	4	14,200



## Type 2 - Metal Oxide Varistor

Type 2 surge protective devices are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (Up). They are characterized by their capacity to safely discharge current with 8/20  $\mu$ s wave form.

Type 2 SPDs can be installed at the sub-distribution switch board for the protection of electrical installation and equipments.

Description	Ordering Code	Operating Voltage (V)	I max in kA (8/20 $\mu$ s wave)	No of Modules	M.R.P.(₹)
<b>Single pole</b>					
OVR T2 15 275	2CTB804200R0100	275	15	1	2,150
OVR T2 15 275 P	2CTB803851R2400	275	15	1	2,845
OVR T2 40 275	2CTB804201R0100	275	40	1	2,285
OVR T2 40 275 P	2CTB803851R2300	275	40	1	3,040
OVR T2 40 275 P TS	2CTB803851R1700	275	40	1	3,845
OVR T2 40 275 s P	2CTB803851R2000	275	40	1	4,260
OVR T2 40 275 s P TS	2CTB803851R1400	275	40	1	5,300
OVR T2 70 275 s P	2CTB803851R1900	275	70	1	4,565
OVR T2 70 275 s P TS	2CTB803851R1300	275	70	1	5,630

## Single pole + Neutral

OVR T2 1N 15 275 P	2CTB803952R1200	275	15	2	5,965
OVR T2 1N 40 275 P	2CTB803952R1100	275	40	2	6,425
OVR T2 1N 40 275 P TS	2CTB803952R0500	275	40	2	7,290
OVR T2 1N 40 275 s P	2CTB803952R0800	275	40	2	7,495
OVR T2 1N 40 275 s P TS	2CTB803952R0200	275	40	2	8,745
OVR T2 1N 70 275 s P	2CTB803952R0700	275	70	2	7,960
OVR T2 1N 70 275 s P TS	2CTB803952R0100	275	70	2	9,290

## Surge Protection Devices (OVR)



### Three pole + Neutral

OVR T2 3N 15 275 P	2CTB803953R1200	275	15	4	10,470
OVR T2 3N 40 275 P	2CTB803953R1100	275	40	4	11,700
OVR T2 3N 40 275 P TS	2CTB803953R0500	275	40	4	13,980
OVR T2 3N 40 275 s P	2CTB803953R0800	275	40	4	14,840
OVR T2 3N 40 275 s P TS	2CTB803953R0200	275	40	4	18,330
OVR T2 3N 70 275 s P	2CTB803953R0700	275	70	4	15,750
OVR T2 3N 70 275 s P TS	2CTB803953R0100	275	70	4	19,480

### Surge arrester for Data line protection



Description	Ordering Code	Operating Voltage (V)	I max in kA (8/20us wave)	No of Modules	M.R.P.(₹)
OVR TC 06V P	2CTB804820R0000	7	10	1	6,320
OVR TC 12V P	2CTB804820R0100	14	10	1	5,300
OVR TC 24V P	2CTB804820R0200	27	10	1	5,300
OVR TC 48V P	2CTB804820R0300	53	10	1	5,400
OVR TC 200V P	2CTB804820R0400	220	10	1	5,300
OVR TC 200 FR P	2CTB804820R0500	220	10	1	5,300

### Surge arrester for Photovoltaic applications

Description	Ordering Code	Operating Voltage (V)	I max in kA (8/20us wave)	No of Modules	M.R.P.(₹)
OVR PV 40 600 P	2CTB803953R5300	700	40	3	9,500
OVR PV 40 600 P TS	2CTB803953R5400	700	40	3	13,250
OVR PV 40 1000 P	2CTB803953R6400	1120	40	3	9,900
OVR PV 40 1000 P TS	2CTB803953R6500	1120	40	3	13,900

### Time Switches & Indicating Lamps



Description	Ordering Code	M.R.P.(₹)
Electro mechanical, daily programme without battery backup (Analogue type)	At3	3,030
Electro mechanical, daily programme with battery backup (Analogue type)	AT3-R	3,295
Electro mechanical, weekly programme with battery backup 200 hours (Analogue type)	AT3-7R	4,210
Electro mechanical, with battery back up 72 hr (Analogue Type)	AT3-RS	2,850
Digital time switches weekly programme with standby battery (3 years) 1 channel	D1	6,750
Digital time switches weekly programme with standby battery (3 years) 2 channel	D2	9,750
Twilight switch with sensor	TW1 + LS-SP	7,540
Indicator Light (Red)	E219-C	660
Indicator Light (Green)	E219-D	660
Indicator Light (Yellow)	E219-E	660
Indicator Light (Blue)	E219-G	660

## RD3 residual current relays (Din Rail Mountable)



### RD3 residual current relays

The RD3 family of electronic residual current relays provides residual current protection and monitoring functions according to IEC/EN 60947-2:2006 annex M and can be used in conjunction with all S 200 automatic devices and Tmax range moulded case devices up to T5, for industrial installations.

The RD3 residual current relays can provide status indications through two output contacts.

Description	Ordering Code	Operating Voltage	Pack
RD3-48	2CSJ201001R0001	12-48 a.c./d.c.	1
RD3	2CSJ201001R0002	230-400 a.c.	1
RD3M-48	2CSJ202001R0001	12-48 a.c./d.c.	1
RD3M	2CSJ202001R0002	230-400 a.c.	1
RD3P-48	2CSJ203001R0001	12-48 a.c./d.c.	1
RD3P	2CSJ203001R0002	230-400 a.c.	1

\*Price against Request

### Toroidal transformers



Description	Ordering Code	Toroid useful diameter (mm)	Min measurable current (mA)	Max rated current <sup>1</sup> (A)	Max capacity <sup>2</sup> (A)	Pack
TRM	2CSM029000R1211	29 (modular version)	30	65	160	1
TR1	2CSG035100R1211	35	30	75	250	1
TR2	2CSG060100R1211	60	30	85	400	1
TR3	2CSG080100R1211	80	100	160	800	1
TR4	2CSG110100R1211	110	100	250	1,250	1
TR4/A	2CSG110200R1211	110 (openable version)	300	250	1,250	1
TR160	2CSG160100R1211	160	300	400	2,000	1
TR160A	2CSG160200R1211	160 (openable version)	500	400	2,000	1
TR5	2CSG210100R1211	210	300	630	3,200	1
TR5/A	2CSG210200R1211	210 (openable version)	500	630	3,200	1

<sup>1</sup> Shows toroidal transformers selection for use with ELR according to IEC/EN 60947-2 Annex M in combination with MCBs S200 range and MCCBs Tmax range upto T5

<sup>2</sup> Shows the technical features of the toroidal transformers

\*Price against Request

## Earth Leakage relay (Front Panel Mountable)

### ELR front panel residual current relay

Front panel residual current relays are electronic devices used in combination with an external toroidal transformer. They are according to the protection standard IEC/EN 60947-2 Annex-M.

The sensitivity can be set from 0.03 A to 30 A, while the tripping time from 0 to 5 seconds.

Residual current relays are available in versions 48x48 mm, 72x72 mm, and 96x96 mm.

The Fail Safe function is available for versions ELR48P, ELR72P and ELR96P: the contacts switch when there is no auxiliary power.

The ELR96PF version is equipped with Fail Safe function, fault memory LED, and a frequency filter, that ensure continuity of service in the presence of harmonics.

ELR96PD has (in addition to these functions) a digital display for an instantaneous view of the residual current  $I_{\Delta n}$ .



Description	Ordering Code	Operating Voltage	Pack
ELR48P	2CSG252211R1202	110 V a.c./d.c. - 230 V a.c.	1
ELR48V24P	2CSG452211R1202	24-48 V a.c./d.c.	1
ELR72	2CSG252120R1202	110 V a.c./d.c. - 230 V a.c.	1
ELR72V24	2CSG452120R1202	24-48 V a.c./d.c.	1
ELR72P	2CSG152424R1202	110-230-400 V a.c.	1
ELR72V24P	2CSG452424R1202	24-48 V a.c./d.c.	1
ELR96	2CSG152130R1202	110-230-400 V a.c.	1
ELR96V24	2CSG452130R1202	24-48 V a.c./d.c.	1
ELR96P	2CSG152434R1202	110-230-400 V a.c.	1
ELR96V24P	2CSG452434R1202	24-48 V a.c./d.c.	1
ELR96PF	2CSG152435R1202	110-230-400 V a.c.	1
ELR96PD	2CSG152436R1202	110-230-400 V a.c.	1

•Price against Request

## Measurement devices – DMTME multimeters



### DMTME multimeters

The instruments DMTME are digital multimeters that allow the measurement, in TRMS mode, of the principal electrical parameters in three-phase and single-phase 230/400 Vac networks, including the max/min/average detection of the main electrical parameters and the active and reactive energy count. The multiple measured variables are displayed locally on four red 7-segment LED displays providing easy readability and simultaneous display of the measures of the electrical parameters of the phases individually and of the whole network.

The instruments DMTME combine, in a single instrument, the functions of multiple devices: voltmeter, ammeter, power factor meter, wattmeter, varmeter, frequency meter, active and reactive energy meters; it allows remarkable financial savings thanks to the reduction of space taken up in the panel and also of time required for cabling, along with the advantage of providing clear readings on a single device.

The DMTME-I-485, DMTME-I-485-96 and DMTME-I-485-72 models are additionally equipped with two digital relays, fully programmable as either pulse outputs for remote metering of energy consumption, or as alarm outputs. The output relay can be set as NO or NC.

There is also an RS485 port for communicating the measured parameters and alarms over a Modbus network; used in addition to a converter of the CUS series, it allows direct connection to a central PC for remote supervision and control of the electrical network.

All versions come complete with Mini CD containing the instruction manual, technical documentation, Modbus communication protocol and the DMTME-SW tool, intended to be a first-hand PC-based application for the remote visualization of the measures.

### DMTME modular multimeters

TRMS measure of VL-L, VL-N, A, W, Var, VA, kWh, kVar, PF in 230/400 V a.c. lines. Indirect connection through CT .../5 A. Auxiliary supply at 110 V a.c. and 230 V a.c.

Product Description	Product Code	RS485	Program.	Pack
DMTME	2CSM170040R1021	-	-	1
DMTME-I-485	2CSM180050R1021	✓	2	1

### DMTME-96 panel multimeters

Auxiliary supply 230 V a.c. and 110 V a.c.

Product Description	Product Code	RS485	Program.	Dimension	Pack
DMTME-96	2CSG133030R4022	-	-	96x96	1
DMTME-I-485-96	2CSG163030R4022	✓	2	96x96	1

### DMTME-72 panel multimeters

Auxiliary supply 230 V a.c. and 400 V a.c.

Product Description	Product Code	RS485	Program.	Dimension	Pack
DMTME-72	2CSG132030R4022	-	-	72x72	1
DMTME-I-485-72	2CSG162030R4022	✓	2	96x96	1

•Price against Request

# M2M - Network Analyser

## The measure of efficiency



The new M2M network analyser has advanced analysis functions which allow effective measurement of the main single-phase or three-phase electrical parameters: voltage, current, frequency, power factor, active and reactive power, active and reactive energy.

Fitted to low- and medium-voltage electrical panels, the new analyser allows the measurement and analysis in real time of electrical parameters, also verifying the quality of the energy thanks to THD measurement.

M2M also keeps the system's consumption under control, giving figures in CO<sub>2</sub> kg and Euros to ensure more efficient and rational use of energy. Bidirectional metering of energy and power on the 4 quadrants allows both production and consumption of energy to be monitored with a single device. Aside from optimising the use of loads, real time measurement contributes to containing both environmental and budgetary impact.

All information gathered by the analyser can be transmitted quickly to remote locations through specific communication interfaces – RS485, RJ45 or RS232, with the support of numerous protocols including Modbus RTU, Modbus TCP/IP and Profibus DP.

Interaction with the control and supervision systems is possible via different inputs and outputs, all programmable.

### Features

- The importance of control  
Measurement and advanced analysis of electrical parameters
- The value of flexibility  
Versatility in its different applications and completeness of functions
- The advantages of communication  
Intuitive analyser with multiple integrated functions, which communicates also via digital and analogue I/O
- Easy to install
- Ease of use

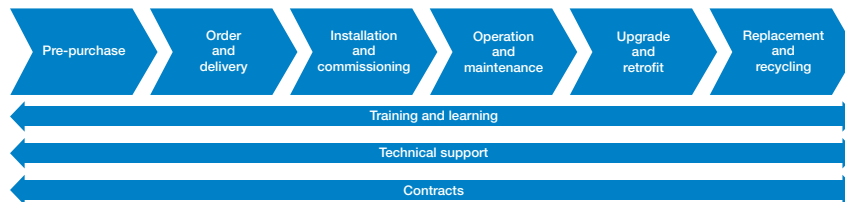
Type	Description	Protocol	Serial port	ABB code
M2M	2 digital outputs programmable as threshold alarms or pulses	-	-	2CSG299883R4052
M2M MODBUS	2 digital outputs programmable as threshold alarms or pulses	Modbus RTU	RS485	2CSG299893R4052
M2M ETHERNET	2 digital outputs programmable as threshold alarms or pulses	Modbus TCP/IP	RJ45	2CSG299903R4052
M2M PROFIBUS	2 digital outputs programmable as threshold alarms or pulses	Profibus	RS232	2CSG299913R4052
M2M ALARM	2 digital outputs programmable as threshold alarms or pulses, 2 programmable relay outputs	Modbus RTU	RS485	2CSG299923R4052
M2M I/O	2 digital outputs programmable as threshold alarms or pulses, 3 digital inputs and 2 analogue outputs	Modbus RTU	RS485	2CSG299933R4052

•Price against Request

# Service Portfolio

Low Voltage Products Division delivers a vast range of services to cover the whole product lifecycle

The services offered by ABB's Low Voltage Products and Systems span the entire value chain, from the moment a customer makes the first enquiry to disposal and recycling of the product. Throughout the value chain, ABB provides training, technical support and customized contracts. All of this is supported by one of the most extensive country sales and service network.



## Installation and commissioning

ABB provides comprehensive installation and commissioning services to achieve a problem-free start up, by following installation and commissioning procedures. The use of service personnel from ABB LP Service ensures that the switchgear is installed in a safe and correct way.

## Operation and maintenance

ABB can guide the customer through a fast and efficient fault finding procedure as well as analyze the operation of the product and the customer's process. From site surveys to preventive, predictive maintenance and reconditioning, ABB has all the options covered to keep its customers' processes operational.

## Upgrade and retrofits

### Upgrades

An existing ABB product can often be upgraded to the latest software or hardware to improve the performance of the application. Existing processes can be economically modernized by upgrading with the latest technology.

### Retrofits

Replacing old LV Switchgear of any make with ABB's latest versions can be done using the ABB special conversion kits which enable quick installation without structural modifications to the original compartment. In addition complete "turnkey" solutions are available. Specific conversion kits have been developed in order to replace old components with new ones that can be found in the latest switchgears.

### Replacement and Recycling

ABB can advise on the best replacement products while ensuring that the existing products are disposed of in a way that meets all local regulations.

## Entire value chain services

The main services available throughout the entire value chain include:

### Training and learning – Hands on

ABB LP Service carries out training programs. Those trainings can be either general or bespoke and have the aim of providing the personnel in charge of management/maintenance with the necessary know-how to achieve an excellent level of operating ability in certain situations. The

manager of an electrical site can find it convenient to have certain maintenance capabilities available within his own team.

The courses mainly cover:

- Operating equipment
- Maintenance principles
- Repairs for small faults

## Technical support

At each stage of the value chain, an ABB expert is available to offer advice to keep the customer's process or plant operational.

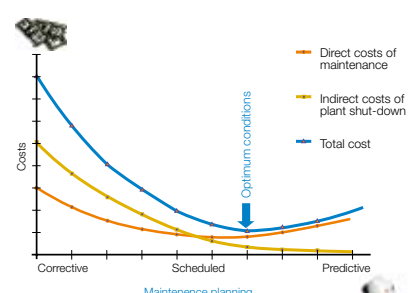
## Spare parts

Availability of original spare parts is essential for fast and efficient maintenance activities. This becomes even more critical when the product was produced some years ago and has components in it which are no longer in production. ABB LP Service is the only one able to supply original and guaranteed spare parts. These can be easily selected and ordered through the authorized channel.

## Maintenance contracts

In addition to the corrective maintenance of a faulty unit, which includes any type of emergency intervention, there is a complete preventive maintenance service package, ensuring those who manage the plant gain considerable advantages in terms of reliability, safety and reduction of costs. Also Customized contracts can be devised between the customer and ABB. Depending on the severity of the intervention needed, it can often be done on-site by our skilled and experienced engineers and is a faster way of resolution. ABB LP Service has an effective service network across the country and dedicated service workshops. For all your service requirements, contact our nearest Sales office.

## Benefits of Maintenance Contracts



# Training Program 2014 – ABB Design Institute

Code	Training Module	Subject covered	Who can benefit
T1	Basics of Circuit protection and IEC/IS Regulations	<ol style="list-style-type: none"> <li>1. Circuit protection understanding</li> <li>2. IEC/IS regulations for circuit protection</li> <li>3. Application examples</li> </ol>	<ol style="list-style-type: none"> <li>1. Design Engineers</li> <li>2. Maintenance engineers</li> <li>3. Site Engineers</li> </ol>
T2	Solution for Final Distribution in an Electrical network/Residual current protection solution for polluted electrical network	<ol style="list-style-type: none"> <li>1. Selection criteria</li> <li>2. Application based control and protection</li> <li>3. understanding different regulations</li> </ol>	<ol style="list-style-type: none"> <li>1. Site electrical engineers from contracting companies</li> <li>2. Design engineers</li> <li>3. Facility engineers</li> </ol>
T3	Switching and Protection solutions for Renewable Energy application - Wind	<ol style="list-style-type: none"> <li>1. Application understanding of electrical distribution in wind power</li> <li>2. Protection philosophy - wind energy application</li> <li>3. Selection criteria of switchgear in wind mill application</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers from wind mill manufacturers</li> <li>2. Maintenance engineers</li> <li>3. Site engineers from EPC contractors</li> </ol>
T4	Switching and Protection solutions for Renewable Energy application - Solar	<ol style="list-style-type: none"> <li>1. Application understanding of electrical distribution in solar power</li> <li>2. Protection philosophy - solar energy application</li> <li>3. Selection criteria of switchgear for DC network and AC network</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers from solar power plant manufacturers</li> <li>2. Maintenance engineers</li> <li>3. Site engineers from EPC contractors</li> </ol>
T5	Understanding application of Lightning and Surge protection	<ol style="list-style-type: none"> <li>1. Effects of surge and lightning protection in buildings and industry</li> <li>2. Understanding remedial methods against surge and lightning protection</li> <li>3. Selection criteria for Lightning and surge protection devices</li> </ol>	<ol style="list-style-type: none"> <li>1. Electrical network design engineers</li> <li>2. Site electrical engineers</li> <li>3. Engineering team from EPC contractors</li> </ol>
T6	Electrical network consideration for Hospitals	<ol style="list-style-type: none"> <li>1. Understanding of Hospital Electrical Distribution</li> <li>2. Safety consideration in electrical distribution in Hospitals</li> <li>3. protection device consideration in Hospitals</li> </ol>	<ol style="list-style-type: none"> <li>1. Electrical design engineers</li> <li>2. Maintenance engineers from Hospitals</li> <li>3. Engineers from EPC contractors</li> </ol>
T7	Electrical network consideration for Data centers	<ol style="list-style-type: none"> <li>1. Understanding of Electrical Distribution in data centers</li> <li>2. Understanding TIER redundancy</li> <li>3. Solution for Data centers</li> </ol>	<ol style="list-style-type: none"> <li>1. Electrical design engineers</li> <li>2. Facility engineers from software industry/Data centers</li> <li>3. Engineers from EPC contractors</li> </ol>
T8	Energy Management solutions and understanding sub-metering application	<ol style="list-style-type: none"> <li>1. Basic understanding of energy management system</li> <li>2. Understanding concept of sub-metering solutions</li> <li>3. Benefits of Energy management systems</li> </ol>	<ol style="list-style-type: none"> <li>1. Electrical design engineers</li> <li>2. Facility managers/Maintenance managers</li> <li>3. Engineers from EPC contractors</li> </ol>
T9	Green Building and Energy efficiency with intelligent building solution(KNX)	<ol style="list-style-type: none"> <li>1. Understanding requirement of Green buildings concepts</li> <li>2. Energy efficiency solutions</li> <li>3. Benefits of intelligent building solutions</li> </ol>	<ol style="list-style-type: none"> <li>1. Architectural engineers</li> <li>2. Design engineers from Developers/Consultants</li> <li>3. Engineers from contractors</li> </ol>
T10	IEC / IS regulation in Low voltage switchgear assembly	<ol style="list-style-type: none"> <li>1. Latest developments in IEC regulation</li> <li>2. Heating in LV installation</li> <li>3. Forms of construction/Testing in accordance IEC 60439</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers</li> <li>2. Engineers from EPC contractors</li> <li>3. Site engineers</li> <li>4. Maintenance engineers</li> </ol>
T11	Type tested enclosures system in LV application	<ol style="list-style-type: none"> <li>1. Understanding TTA(type tested) and Partially TTA solutions</li> <li>2. Understanding supplementary test requirement in Low voltage switchgear</li> <li>3. ABB solutions for LV power distribution</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers</li> <li>2. Maintenance engineers/Facility engineers</li> <li>3. Site engineers</li> </ol>
T12	Application of Circuit Breakers	<ol style="list-style-type: none"> <li>1. Understanding various application requirement in electrical distribution</li> <li>2. Sizing and selection of circuit breakers</li> <li>3. Understanding communication requirements in circuit breakers</li> </ol>	<ol style="list-style-type: none"> <li>1. Engineers from Panel building industry</li> <li>2. Maintenance/Facility engineers</li> <li>3. Design engineers</li> </ol>
T13	Circuit Breakers - Standards and Regulations	<ol style="list-style-type: none"> <li>1. Circuit breaker standards</li> <li>2. General definitions in accordance to regulations</li> <li>3. Understanding testing criteria for circuit breakers</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers</li> <li>2. Engineers from panel building industry</li> <li>3. Engineers from commissioning/site engineers</li> </ol>
T14	Course on Network Design Software of ABB	<ol style="list-style-type: none"> <li>1. Method of short circuit calculations in LV network</li> <li>2. Network calculation understanding in DOC software</li> <li>3. Switchboard configuration through CAT software</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers</li> <li>2. Engineers from EPC contractors</li> <li>3. Maintenance engineers</li> </ol>
T15	Protection Coordination and Selectivity	<ol style="list-style-type: none"> <li>1. Understanding selectivity</li> <li>2. Understanding back up protection</li> <li>3. Coordination of circuit breakers</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers</li> <li>2. Engineers from EPC contractors</li> <li>3. Maintenance engineers</li> </ol>
T16	Circuit Breaker Protection Releases	<ol style="list-style-type: none"> <li>1. Understanding of protection functionalities</li> <li>2. Basics of curves in LV circuit breakers</li> <li>3. Implementation of protection in LV network</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintenance engineers</li> <li>2. Design engineers</li> <li>3. Engineers from panel building industry</li> </ol>
T17	Selection of Circuit Breakers - Application based	<ol style="list-style-type: none"> <li>1. Understanding DC switching consideration</li> <li>2. Suitability of circuit breakers for variable frequency application</li> <li>3. Protection criteria in LV network</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers</li> <li>2. Maintenance engineers</li> <li>3. Facility engineers</li> </ol>
T18	Fuse technology in Power Distribution	<ol style="list-style-type: none"> <li>1. International regulations on Power distribution public areas</li> <li>2. Fuse technology - Advantages</li> <li>3. Utilization categories in switches</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintenance engineers from process industries</li> <li>2. Design engineers</li> <li>3. Engineers from Utility companies</li> </ol>
T19	Motor control & protection	<ol style="list-style-type: none"> <li>1. Motor control philosophy</li> <li>2. Protection criteria in Motor applications</li> <li>3. Innovative solutions in motor control and protection</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers from OEM of Machine tools/Pump manufacturers</li> <li>2. Maintenance engineers</li> <li>3. Engineers from process industries</li> </ol>



# Training Program 2014 – ABB Design Institute

Code	Training Module	Subject covered	Who can benefit
T20	Application of control relays and safety in Machines	<ol style="list-style-type: none"> <li>1. Application of safety and control relays in machines</li> <li>2. Selection criteria for power supplies and sizing of power supplies</li> <li>3. Safety solutions for industries</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers OEM machine manufacturers</li> <li>2. Maintenance engineers from Auto/Paper/Cement/engineering industry</li> </ol>
T21	Intelligent Motor Management solutions	<ol style="list-style-type: none"> <li>1. Concept of Intelligent motor control</li> <li>2. How to improve plant efficiency with intelligent motor managers</li> <li>3. Motor diagnostics</li> </ol>	<ol style="list-style-type: none"> <li>1. Electrical design engineers from process/Consulting sectors</li> <li>2. Engineers from Panel building industry</li> <li>3. Maintenance engineers from process industries</li> </ol>
T22	Efficient motor starting solutions and Software tool demonstration	<ol style="list-style-type: none"> <li>1. Effects of different starting methods of motors on loads</li> <li>2. Motor starting criteria for different applications</li> <li>3. load specific development of load/torque curves through software tools</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers from Pump/Compressor/Crusher/machinery manufacturers</li> <li>2. Engineers from Panel building industry</li> <li>3. Maintenance engineers from process industries/engineering industries</li> </ol>
T23	Criteria of selecting arc proof and safe LV switchboards	<ol style="list-style-type: none"> <li>1. Electrical safety requirement in LV switchgear</li> <li>2. Criteria of selection of LV switchboards</li> <li>3. Safe and reliable LV switchboard design</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintenance engineers from Industry/Hospitality/Hospitals</li> <li>2. Design engineers</li> <li>3. Engineers from panel building industry</li> </ol>
T24	Application specific selection of contactors	<ol style="list-style-type: none"> <li>1. Utilization categories of auxiliary and power contactors</li> <li>2. Selection criteria of contactors based on application</li> <li>3. Innovations in contactor technology</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers</li> <li>2. Maintenance engineers from Industries</li> <li>3. Engineers from Panel building industry</li> </ol>
T25	Method of starting induction motors	<ol style="list-style-type: none"> <li>1. Understanding starting of induction motors</li> <li>2. Selection starting method of induction motors</li> <li>3. Limitations and benefits various methods of starting</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers</li> <li>2. Engineers from panel building industry</li> <li>3. Engineers from OEM's - Pump/Blowers/Compressors</li> <li>4. Maintenance engineers</li> </ol>
T26	Selection for electronic products in industrial automation	<ol style="list-style-type: none"> <li>1. Sensors selection criteria</li> <li>2. Automation products in machines to improve efficiency</li> </ol>	<ol style="list-style-type: none"> <li>1. Design engineers OEM machine manufacturers</li> <li>2. Maintenance engineers from Auto/Paper/Cement/engineering industry</li> </ol>

# Type 2 coordination

## MS 116 MS132 DOL-NS

SCPD type : MMS  
 Rated voltage : 400 V  
 Short circuit current : 50 kA  
 Starting type : DOL-NS  
 Coordination type : IEC Type 2  
 Overload relay : Embedded  
 Frequency : 50-60 Hz

Motor		Manual Motor Starter			Contactor
Rated Power	Rated Current	Type	Instantaneous Tripping Current	Current setting range	Type
[kW]	[A]		[A]	[A]	
0.06	0.2	MS132-0,25	2.44	0.16 - 0.25	A9
0.09	0.3	MS132-0,40	3.9	0.25 - 0.40	A9
0.12	0.44	MS132-0,63	6.14	0.40 - 0.63	A9
0.18	0.6	MS132-0,63	6.14	0.40 - 0.63	A9
0.25	0.85	MS132-1,0	11.5	0.63 - 1.00	A9
0.37	1.1	MS132-1,6	18.4	1.00 - 1.60	A9
0.55	1.5	MS132-1,6	18.4	1.00 - 1.60	A9
0.75	1.9	MS132-2,5	28.75	1.60 - 2.50	A9
1.1	2.7	MS132-4,0	50	2.50 - 4.00	A16
1.5	3.6	MS132-4,0	50	2.50 - 4.00	A16
2.2	4.9	MS132-6,3	78.75	4.00 - 6.30	A26
3	6.5	MS132-10	150	6.30 - 10.00	A26
4	8.5	MS132-10	150	6.30 - 10.00	A26
5.5	11.5	MS132-12	180	8.00 - 12.00	A26
7.5	15.5	MS132-16	240	10.00 - 16.00	A30
11	22	MS132-25	375	20.00 - 25.00	A30
15	29	MS132-32	480	25.00 - 32.00	A30
18.5	35	MS450-40	520	28.00 - 40.00	A40

## MS116 SD - NS

Coordination type : IEC Type 2  
 SCPD type : MMS  
 Rated voltage : 400 V  
 Short circuit current : 50 kA  
 Starting type : SD-NS  
 Overload relay : Embedded  
 Frequency : 50-60 Hz

Rated Power	Rated Current	Type	Instantaneous Tripping Current	Current setting range	Line	Delta	Star
[kW]	[A]		[A]	[A]			
0.06	0.22	MS116-0,25	3	0.16 - 0.25	A9	A9	A9
0.09	0.34	MS116-0,40	4.8	0.25 - 0.40	A9	A9	A9
0.12	0.44	MS116-0,63	7.56	0.40 - 0.63	A9	A9	A9
0.18	0.72	MS116-1,00	12	0.63 - 1.00	A9	A9	A9
0.25	0.83	MS116-1,00	12	0.63 - 1.00	A9	A9	A9
0.37	1.12	MS116-1,60	19.2	1.00 - 1.60	A9	A9	A9
0.55	1.45	MS116-1,60	19.2	1.00 - 1.60	A9	A9	A9
0.75	1.9	MS116-2,50	30	1.60 - 2.50	A9	A9	A9
1.1	2.59	MS116-4,00	48	2.50 - 4.00	A16	A16	A9
1.5	3.45	MS116-4,00	48	2.50 - 4.00	A16	A16	A9
2	4	MS116-6,30	75.6	4.00 - 6.30	A16	A16	A9
2.2	4.8	MS116-6,30	75.6	4.00 - 6.30	A16	A16	A9

# Type 2 coordination

## MCCB DOL-NS EOL

SCPD type : MCCB

Rated voltage : 400 V

Short circuit current : 50 kA

Starting type : DOL-NS

Coordination type : IEC Type 2

Overload relay : EOL

Frequency : 50-60 Hz

Motor		Moulded Case Circuit Breakers		Contactor	Overload Relay	
Rated Power	Rated Current		Instantaneous Tripping Current			Current setting range
[kW]	[A]	Type	[A]	Type	Type	[A]
0.37	1.1	T2S160 MF 1.6	21	A9	E16DU2.7	0.90 - 2.70
0.55	1.5	T2S160 MF 1.6	21	A9	E16DU2.7	0.90 - 2.70
0.75	1.9	T2S160 MF 2	26	A9	E16DU2.7	0.90 - 2.70
1.1	2.7	T2S160 MF 3.2	42	A9	E16DU6.3	2.00 - 6.30
1.5	3.6	T2S160 MF 4	52	A16	E16DU6.3	2.00 - 6.30
2.2	4.9	T2S160 MF 5	65	A26	E16DU6.3	2.00 - 6.30
3	6.5	T2S160 MF 8.5	110	A26	E16DU18.9	5.70 - 18.90
4	8.5	T2S160 MF 11	145	A30	E16DU18.9	5.70 - 18.90
5.5	11.5	T2S160 MF 12.5	163	A30	E16DU18.9	5.70 - 18.90
7.5	15.5	T2S160 MA 20	210	A30	E16DU18.9	5.70 - 18.90
11	22	T2S160 MA 32	288	A30	E45DU45	15.00 - 45.00
15	28.5	T2S160 MA 52	392	A50	E45DU45	15.00 - 45.00
18.5	36	T2S160 MA 52	469	A50	E80DU80	27.00 - 80.00
22	42	T2S160 MA 52	547	A50	E80DU80	27.00 - 80.00
30	56	T2S160 MA 80	840	A63	E80DU80	27.00 - 80.00
37	68	T2S160 MA 80	960	A75	E80DU80	27.00 - 80.00
45	83	T2S160 MA 100	1,200.00	A95	E140DU140	50.00 - 140.00
55	98	T3S250 MA 160	1,440.00	A145	EF205-210	60.00 - 200.00
75	132	T3S250 MA 200	1,800.00	A145	EF205-210	60.00 - 200.00
90	160	T3S250 MA 200	2,400.00	A185	EF205-210	60.00 - 200.00
110	195	T4S320 PR221-I ln320	2,720.00	A210	EF370-380	100.00 - 320.00
132	230	T5S400 PR221-I ln400	3,200.00	A260	EF370-380	100.00 - 320.00
160	280	T5S400 PR221-I ln400	4,000.00	A300	EF370-380	100.00 - 320.00
200	350	T5S630 PR221-I ln630	5,040.00	AF400	E500DU	150.00 - 500.00
250	430	T6S630 PR221-I ln630	6,300.00	AF460	E500DU	150.00 - 500.00
290	520	T6S800 PR221-I ln800	7,200.00	AF580	E800DU	250.00 - 800.00
315	540	T6S800 PR221-I ln800	8,000.00	AF580	E800DU	250.00 - 800.00
355	610	T6S800 PR221-I ln800	8,000.00	AF750	E800DU	250.00 - 800.00

# Type 2 coordination

## MCCB SD-NS

SCPD type : MCCB

Rated voltage : 400 V

Short circuit current : 50 kA

Starting type : SD-NS

Coordination type : IEC Type 2

Overload relay : TOL

Frequency : 50-60 Hz

Motor		Moulded Case Circuit Breakers		Contactor type			Overload Relay	
Rated Power	Rated Current		Instantaneous Tripping Current				Current setting range	
[kW]	[A]	Type	[A]	Line	Delta	Star	Type	[A]
18.5	35	T2S160 MA52	469	A50	A50	A26	TA75DU25	18.00 - 25.00
22	41	T2S160 MA52	547	A50	A50	A26	TA75DU32	22.00 - 32.00
30	55	T2S160 MA80	720	A63	A63	A30	TA75DU42	29.00 - 42.00
37	66	T2S160 MA80	840	A75	A75	A30	TA75DU52	36.00 - 52.00
45	80	T2S160 MA100	1,050.00	A75	A75	A30	TA75DU63	45.00 - 63.00
55	97	T2S160 MA100	1,200.00	A75	A75	A40	TA75DU63	45.00 - 63.00
75	132	T3S250 MA160	1,700.00	A95	A95	A75	TA110DU90	66.00 - 90.00
90	160	T3S250 MA200	2,000.00	A110	A110	A95	TA110DU110	80.00 - 110.00
110	195	T3S250 MA200	2,400.00	A145	A145	A95	TA200DU135	100.00 - 135.00
132	230	T4S320 PR221-I In320	2,880.00	A145	A145	A110	E200DU200	60.00 - 200.00
132	230	T4S320 PR221-I In320	2,880.00	A145	A145	A110	TA200DU175	130.00 - 175.00
160	280	T5S400 PR221-I In400	3,600.00	A185	A185	A145	E200DU200	60.00 - 200.00
160	280	T5S400 PR221-I In400	3,600.00	A185	A185	A145	TA200DU175	130.00 - 175.00
200	350	T5S630 PR221-I In630	4,410.00	A210	A210	A185	E320DU320	100.00 - 320.00
200	350	T5S630 PR221-I In630	4,410.00	A210	A210	A185	TA450DU235	165.00 - 235.00
250	430	T5S630 PR221-I In630	5,670.00	A260	A260	A210	E320DU320	100.00 - 320.00
250	430	T5S630 PR221-I In630	5,670.00	A260	A260	A210	TA450DU310	220.00 - 310.00

# General conditions of sale

## General terms and conditions of sale:

- All prices mentioned in this price list are in Indian rupees(INR)
- Prices are based on Ex-warehouse basis
- Prices indicated are Maximum retail price (maximum recommended selling price) unless otherwise marked(Inclusive of duties and taxes)
- Items marked # are with list prices are inclusive of excise duty/counter veiling duty, However exclusive of all taxes and levies
- Prices are subject to revision without prior notice

Terms of delivery: Ex- warehouse, Nelamangala or any other ABB warehouse in India

## Standard delivery terms

Ex stock or 30 working days

## Address of Nelamangala Warehouse

ABB Limited  
Low Voltage Product Warehouse  
Survey No. 64 & 72/2, Opp. Himalaya Drugs  
Golden Palms Spa & Hotel Road, Dasanapura Hobli  
Heggadadevanapura Village, Bangalore - 562 123  
Tel. : +91 80 2294 8206  
Tel. : +91 80 2294 8608  
Fax : +91 80 2371 7159

## Nelamangala

Survey No: 88/3, 88/4, Basavanhalli,Kasaba Hobli,  
Nelamangala Taluk,Bangalore - 562123, Karnataka, India  
Tel. : +91 80 2294 6618  
Tel. : +91 80 2294 6619  
Fax : +91 80 2294 9999

## Classic Products

Isomax "S" Range of MCCB's  
OETL upto 2500 Amps Load Break Switches  
OESA 200 to 800 Switches

## Warranty Policy:

ABB guarantee the supply according to the law. Upon expiration, the warranty expires even if the devices have not been operated for any reason. In the case of faults, as long as this does not depend on assembly errors by the Customer or third parties, on incorrect use of the materials, lack of or incorrect maintenance, normal wear and tear, faults caused by inexperience or negligence by the purchaser or by transport, by the improper storage of the materials, or failure by the Customer to adopt measures to reduce eventual dysfunction, overload with respect to the contractual limits, by unauthorized intervention, by tampering or action effected by the Customer, to force majeure, ABB will, throughout the warranty period, repair or replace any defective part of supply free of charge, in the shortest possible time, at its premises. Where the repair cannot be executed at ABB premises,

except as otherwise agreed, all the supplementary or relevant expenses shall be borne by the customer.

Repair or replacement will be executed only if the customer has performed all its obligations to that date. The Customer may not suspend performance of the obligations in any case in which this warranty is invoked. The term for the repair or replacement of the faulty supply will be agreed by ABB and the customer. The shipment of any supply claimed to be faulty by the Customer to ABB and subsequently by ABB to the Customer, shall be at the risk and under the responsibility of the customer, who shall arrange adequate insurance coverage. The supply repaired or replaced is shipped at the expense and risk of the customer. Any dispute about a shipment has no effect on the remainder of the supply. The products replaced by ABB become the property of ABB.

Any claim regarding the supply, machinery, plant or components not compliant with the specifications or the contractual documentation must be raised in writing, within a maximum term of 8 days from delivery, when the time limit for action expires. In the case of systems, this term is 60 days from execution of the disputed service when the time limit for action expires.

In the case of latent defects, the terms indicated above run from the date of discovery. Once the warranty period has expired claims are not accepted, even for latent defect. Where the claim is timely and justified, ABB's obligation is limited to replacement of the goods found not in compliance or repetition of execution of the non-compliant service, excluding all rights to the Customer to seek termination of the contract and/or compensation of damages.

With reference to the provision of spare parts, ABB reserves the right to provide materials either from the original supplier or from equivalent supplier.

## Warranty Period:

- 1. Breakers & Switches:** The Warranty period is 12 months from the date of commissioning or 18 months from the date of ABB's invoice, whichever is earlier.
- 2. Control Products:** The Warranty period is 12 months from the date of commissioning or 18 months from the date of ABB's invoice, whichever is earlier.
- 3. Enclosures & Din Rail Components:** The warranty period is 5 years from the date of ABB's invoice if the components are used in ABB's enclosure. If non- ABB enclosure is used, Warranty period is 12 months from the date of commissioning or 18 months from the date of ABB's invoice, whichever is earlier.

## Liability Clause:

The manufacturer shall not be liable for any consequential loss, injury or damages attributable to defect or failure of its products.





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