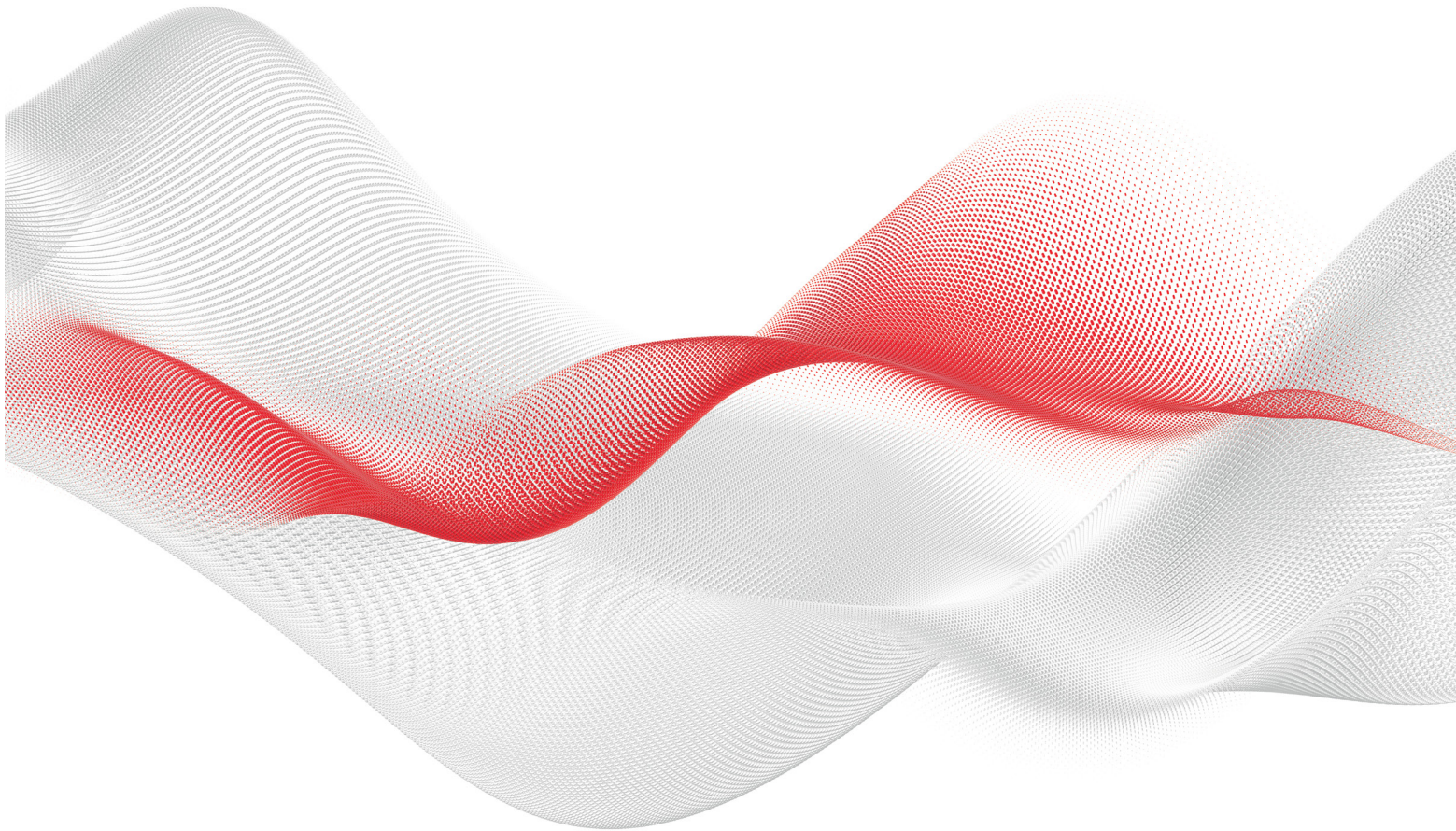




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STOCKING GUIDE

# ABB Electrification

## Mt. Juliet Distribution Center



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more information or assistance



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**To better serve our customers, products featured in this Stocking Guide are stocked and shipped from our state-of-the-art distribution center located in Mt. Juliet, Tennessee.**

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# Table of contents

- 01. Load centers, associated circuit breakers and accessories**
- 02. RV power pedestals**
- 03. Safety switches and AC disconnects**
- 04. Other circuit protection**
- 05. Transformer - low voltage dry type**
- 06. Molded case and miniature circuit breakers**
- 07. Panelboards**
- 08. Surge protection devices**
- 09. Automatic transfer switches**
- 10. NEMA and definite purpose controls**
- 11. Softstarters**
- 12. IEC style contactors, overload relays and manual motor starters**
- 13. Control and protective relays**
- 14. Disconnect switches**
- 15. Operator interface and signaling devices**
- 16. Machine safety**

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# **Load centers, associated circuit breakers and accessories**



## Section 1

# Load centers, associated circuit breakers and accessories

## Table of contents

### PowerMark Gold single phase, three wire, 120/240 VAC load centers

Ordering code construction	1-1
Main lugs factory installed   NEMA 1 indoor enclosure	1-2
Main lugs factory installed   NEMA 3R outdoor enclosure	1-4
Main breaker factory installed   NEMA 1 indoor enclosure	1-5
Main breaker factory installed   NEMA 3R outdoor enclosure	1-6
Accessories	1-14

### PowerMark Plus™ three-phase, four-wire, 208Y/120 VAC load centers

Ordering code construction	1-1
Main lugs factory installed   NEMA 1 indoor enclosure	1-7
Main lugs factory installed   NEMA 3R outdoor enclosure	1-8
Main breaker factory installed   NEMA 1 indoor enclosure	1-8
Main breaker factory installed   NEMA 3R enclosure	1-9
Accessories	1-14

### PowerMark Gold generator panels

Two interlocked main breakers factory installed	1-10
Accessories	1-14

### Meter socket load centers

Bonded neutrals	1-11
Accessories	1-14

### Q-Line residential plug-in circuit breakers

Ordering code construction	1-19
Q-Line	1-20
Special purpose circuit breakers	1-21

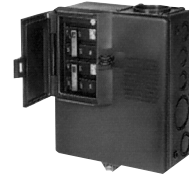
## PowerMark Gold and Plus Load Centers

### Ordering code construction

T	M	42		20	C	CU	B
ABB Identification							Insert for Specials
							G or T = Factory installed ground bar
							B = Bottom feed main breaker
							FL = Factory installed feed-through lugs
							D = Optional door for 6-8 circuit panel. (Doors standard on all units 12 circuits or greater)
							W = White Front
Type							Insert for PowerMark Gold
M = Main breaker							CU = Copper Bus
L = Main lug							42 = Copper Bus Full 42 circuit panel
LM = Convertible							
PL = Main lug (Thermoplastic)							Enclosure Type
							C = Combination surface/flush
Maximum Number 1" Spaces							F = Flush
2, 4, 6...42							S = Surface
							R = Outdoor
Single phase = Omit this field							
4 = 3-phase, 4-wire							Bus Ampere Rating
Load Centers							40 = 40 Amps      20 = 200 Amps
							70 = 70 Amps      22 = 225 Amps
							10 = 100 Amps
							12 = 125 Amps
							15 = 150 Amps

## PowerMark Gold single phase, three wire, 120/240 VAC load centers

Main lugs factory installed



### Indoor (NEMA 1) Enclosure

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Front Type	Feed Type <sup>1</sup>	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
40	2	1	4	1	4	Surface	Top Bottom	1A	14-4	TGK4 (order separately)	TL240SCU
70	2	1	4	1	4	Surface	Top Bottom	1A	6-3	TGK4 (order separately)	TL270SCU
125	4	2	8	3	8	Combination Flush/Surface	Top Bottom	2A	1-2/0	TGL1 (order separately)	TL412C
125	4	2	8	3	8	Combination Flush/Surface	Top Bottom	2A	1-2/0	TGL1 installed	TL412CT
125	4	2	8	3	8	Thermoplastic	Top Bottom	2	1-2/0	TGL1 (order separately)	TPL412C
125	4	2	8	3	8	Thermoplastic	Top Bottom	2	1-2/0	TGL1 installed	TPL412CT
125	6	3	12	4	12	Flush	Top Bottom	3A	6-1	TGL2 (order separately)	TLM612FCU
125	6	3	12	4	12	Flush	Top Bottom	3A	6-1	TGL2 (order separately)	TLM612FCUD
125	6	3	12	4	12	Surface	Top Bottom	3A	6-1	TGL2 (order separately)	TLM612SCU
125	6	3	12	4	12	Surface	Top Bottom	3A	6-1	TGL2 (order separately)	TLM612SCUD
125	6	3	12	4	12	Surface	Top Bottom	3A	6-1	TGL2 installed	TLM612SCUDG
125	8	4	16	8	16	Flush	Top Bottom	3A	6-1	TGL2 (order separately)	TLM812FCU
125	8	4	16	8	16	Flush	Top Bottom	3A	6-1	TGL2 (order separately)	TLM812FCUD
125	8	4	16	8	16	Flush	Top Bottom	3A	6-1	TGL2 (order separately)	TLM812FCUDG
125	8	4	16	8	16	Surface	Top Bottom	3A	6-1	TGL2 (order separately)	TLM812SCU
125	8	4	16	8	16	Surface	Top Bottom	3A	6-1	TGL2 (order separately)	TLM812SCUD
125	8	4	16	8	16	Surface	Top Bottom	3A	6-1	TGL2 installed	TLM812SCUDG
125	14	6	20	8	24	Combination Flush/Surface	Top Bottom	18	6-2/0	Included <sup>10</sup>	TLM1212CCU

Note: TLM units convertible to main breaker

This table continued on next page



## PowerMark Gold single phase, three wire, 120/240 VAC load centers

Main lugs factory installed

### Indoor (NEMA 1) Enclosure (continued)

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Front Type	Feed Type	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
125	16	8	16	6	24	Combination Flush/Surface	Top Bottom	4	6-2/0	TGK12 or TGK24 (order separately)	TLM1612CCU
125	16	8	16	6	24	Combination Flush/Surface	Top Bottom	4	6-2/0	TGK12 and TLK20 installed	TLM1612CCUG
125	24	12	0	0	24	Combination Flush/Surface	Top Bottom	7	6-2/0	TGK24 or TGK32 (order separately)	TLM2412CCU
125	24	12	0	0	24	White Combo Flush/Surface	Top Bottom	7	6-2/0	TGK24 or TGK32 (order separately)	TLM2412CCUW
125	24	12	0	0	24	Combination Flush/Surface	Top Bottom	7	6-2/0	TGK24 and TLK20 installed	TLM2412CCUG
200	16	8	32	14	32	Combination Flush/Surface	Top Bottom	7	6-250	TGK32 (order separately)	TLM1620CCU
200	16	8	32	14	32	Combination Flush/Surface	Top Bottom	7	6-250	TGK32 installed	TLM1620CCUG
200	20	10	40	18	40	Combination Flush/Surface	Top Bottom	8	6-250	TGK32 (order separately)	TLM2020CCU
200	20	10	40	18	40	Combination Flush/Surface	Top Bottom	8	6-250	TGK42 installed	TLM2020CCUG
200	24	12	36	18	42	Combination Flush/Surface	Top Bottom	9	1-3/0 (Cu), 2/0-3/0 (Al)	TGK24 or TGK32 (order separately)	TLM2420C42
200	32	16	20	8	42	Combination Flush/Surface	Top Bottom	11	1-250 (Cu), 2/0-250 (Al)	TGK32 and TLK20 (order separately)	TLM3220C42
200	32	16	16	6	40	Combination Flush/Surface	Top Bottom	11	6-250	TGK32 (order separately)	TLM3220CCU
200	32	16	16	6	40	White Combo Flush/Surface	Top Bottom	11	6-250	TGK32 (order separately)	TLM3220CCUW
200	32	16	16	6	40	Combination Flush/Surface	Top Bottom	11	6-250	TGK32 and TNLK250 installed	TLM3220CCUG
200	32	16	64	30	64	Combination Flush/Surface	Top Bottom	19	6-250	(2) TGK32 and (1) TLK250 installed	TLM3220C64G
200	40	20	0	0	40	Combination Flush/Surface	Top Bottom	13	6-250	TGK42 (order separately)	TLM4020CCU
200	40	20	0	0	40	Combination Flush/Surface	Top Bottom	13	6-250	TGK42 and TNLK250 installed	TLM4020CCUG
200	40	20	80	38	80	Combination Flush/Surface	Top Bottom	20	6-250	(2) TGK32 and (1) TLK250 installed	TLM4020C80G
200	42	20	0	0	42	Combination Flush/Surface	Top Bottom	14	1-300 (Cu), 2/0-300 (Al)	TGK42 (order separately)	TLM4220CCU
225	42	20	0	0	42	Combination Flush/Surface	Top Bottom	14	1-300 (Cu), 2/0-300 (Al)	TGK42 (order separately)	TLM4222CCU
225	42	20	0	0	42	Combination Flush/Surface	Top Bottom	14	1-300 (Cu), 2/0-300 (Al)	TGK42 and TNLK250 installed	TLM4222CCUG

Note: TLM units convertible to main breaker

## PowerMark Gold single phase, three wire, 120/240 VAC load centers

Main lugs factory installed

### Outdoor (NEMA 3R) Enclosure

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Front Type	Feed <sup>1</sup> Type <sup>1</sup>	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
40	2	1	4	1	4	-	Top	R1A	14-4	TGK4 (order separately)	TL240RCU
70	2	1	4	1	4	-	Top	R1A	6-3	TGK4 (order separately)	TL270RCU
125	4	2	8	3	8	-	Top	R1A	1-2/0	TGL1 (order separately)	TL412R1
125	4	2	8	3	8	-	Top	R1A	1-2/0	TGL1 installed	TL412RT1
125	4	2	8	3	8	-	Top	R41	1-2/0	TGL1 (order separately)	TL412R2
125	4	2	8	3	8	Thermoplastic Front	Top	R1	1-2/0	TGL1 (order separately)	TPL412R
125	4	2	8	3	8	Thermoplastic Front	Top	R1	1-2/0	TGL1 installed	TPL412RT
125	6	2	12	4	12	-	Top	R2A	6-1	TGL2 (order separately)	TLM612RCU
125	8	4	16	8	16	-	Top	R2A	6-1	TGL2 (order separately)	TLM812RCU
125	8	4	16	8	16	-	Top	R3A	6-1	TGL2 (order separately)	TLM812RCU2
125	24	12	0	0	24	-	Top Bottom	R4A	6-2/0	TGK24 or TGK32 (order separately)	TLM2412RCU
150	24	12	12	4	30	-	Top Bottom	R6A	1-3/0 (Cu), 2/0-3/0 (Al)	TGK24 or TGK32 (order separately)	TLM2415RCU
200	12	6	24	10	24	-	Top	R5A	6-250	TGK24 (order separately)	TLM1220RCU
200	16	8	32	14	32	-	Top	R5A	6-250	TGK32 (order separately)	TLM1620RCU
200	20	10	40	18	40	-	Top	R6A	6-250	TGK24 or TGK42 (order separately)	TLM2020RCU
200	32	16	16	6	40	-	Top Bottom	R7A	1-250 (Cu), 2/0-250 (Al)	TGK32 (order separately)	TLM3220RCU
200	40	20	0	0	40	-	Top Bottom	R8A	6-250	TGK42 (order separately)	TLM4020RCU
225	42	20	0	0	42	-	Top Bottom	R8A	1-300 (Cu), 2/0-300 (Al)	TGK42 (order separately)	TLM4222RCU

Note: TLM units convertible to main breaker

## PowerMark Gold single phase, three wire, 120/240 VAC load centers

Main breaker factory installed



TM2020CCU

### Indoor (NEMA 1) Enclosure

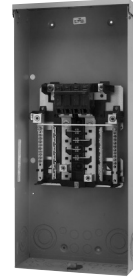
Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Front Type	Feed Type	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
100	12	5	20	8	22	Combination Flush/Surface Front	Top Bottom	18	4-1/0	Included	TM1210CCU
100	24	12	0	0	24	Combination Flush/Surface Front	Top Bottom	7	1-2/0	TGK24 or TGK32; and TLK20 (order separately)	TM2410CCU
100	20	10	0	0	20	Combination Flush/Surface Front	Top Bottom	6	4-1/0	TGK24 (order separately)	TM2010CCU
100	32	16	0	0	32	Combination Flush/Surface Front	Top Bottom	11	4-1/0	TGK32 (order separately)	TM3210CCU
125	12	5	20	8	22	Combination Flush/Surface Front	Top Bottom	18	1-2/0	Included	TM1212CCU
125	24	12	0	0	24	Combination Flush/Surface Front	Top Bottom	7	1-2/0	TGK24 (order separately)	TM2412CCU
125	16	8	16	6	24	Combination Flush/Surface Front	Top Bottom	4	1-2/0	TGK12 or TGK24 (order separately)	TM1612CCU
125	16	8	16	6	24	Combination Flush/Surface Front	Top Bottom	4	1-2/0	TGK24 installed	TM1612CCUG
150	16	8	32	14	32	Combination Flush/Surface Front	Top Bottom	7	1-3/0 (Cu), 2/0-3/0 (Al)	TGK24 or TGK32 (order separately)	TM1615CCU

This table continued on next page



## PowerMark Gold single phase, three wire, 120/240 VAC load centers

Main breaker factory installed



TM820RCUFL

### Indoor (NEMA 1) Enclosure (continued)

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Front Type	Feed Type	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
150	32	16	0	0	32	Combination Flush/Surface	Top Bottom	11	1-3/0 (Cu), 2/0-3/0 (Al)	TGK32 (order separately)	TM3215CCU
150	24	12	36	18	42	Combination Flush/Surface	Top Bottom	9	1-3/0 (Cu), 2/0-3/0 (Al)	TGK24 or TGK32 (order separately)	TM2415C42
150	32	16	20	10	42	Combination Flush/Surface	Top Bottom	11	1-3/0 (Cu), 2/0-3/0 (Al)	TGK32 and TLK20 (order separately)	TM3215C42
200	20	10	40	18	40	Combination Flush/Surface	Top Bottom	8	1-250 (Cu) 2/0-250 (Al)	TGK32 (order separately)	TM2020CCU
200	20	10	40	18	40	Combination Flush/Surface	Top Bottom	8	1-250 (Cu) 2/0-250 (Al)	TGK32 installed	TM2020CCUG
200	32	16	16	6	40	Combination Flush/Surface	Top Bottom	11	1-250 (Cu) 2/0-250 (Al)	TGK32 (order separately)	TM3220CCU
200	40	20	0	0	40	Combination Flush/Surface	Top Bottom	13	1-250 (Cu) 2/0-250 (Al)	TGK42 (order separately)	TM4020CCU
200	32	16	20	8	42	Combination Flush/Surface	Top Bottom	11	1-250 (Cu) 2/0-250 (Al)	TGK32 and TLK20 (order separately)	TM3220C42
200	42	20	0	0	42	Combination Flush/Surface	Top Bottom	14	1-300 (Cu), 2/0-300 (Al)	TGK42 (order separately)	TM4220CCU
200	32	16	64	30	64	Combination Flush/Surface	Top Bottom	19	1-250 (Cu) 2/0-250 (Al)	TGK32 (order separately)	TM3220C64
200	40	20	80	38	80	Combination Flush/Surface	Top Bottom	20	1-250 (Cu) 2/0-250 (Al)	TGK42 (order separately)	TM4020C80
225	42	20	0	0	42	Combination Flush/Surface	Top Bottom	14	1-300 (Cu), 2/0-300 (Al)	TGK42 (order separately)	TM4222CCU

### Outdoor (NEMA 3R) Enclosure

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Feed Type	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
100	12	5	20	8	22	Top	R3A	4-1/0	<sup>5</sup>	TM1210RCU
100	20	10	0	0	30	Top	R4	4-1/0	TGK24 (order separately)	TM2010RCU
125	12	5	20	8	22	Top	R3A	1-2/0	<sup>5</sup>	TM1212RCU
125	24	12	0	0	24	Top	R4	1-2/0	TGK24 (order separately)	TM2412RCU
150	8	4	16	6	16	Top	R5	1-250 (Cu), 2/0-250 (Al)	TGK24 (order separately)	TM815RCUFL
150	16	8	32	14	32	Top	R5	1-3/0 (Cu), 2/0-3/0 (Al)	TGK24 (order separately) TGK32 (order separately)	TM1615RCU
150	32	16	0	0	32	Top	R7	1-3/0 (Cu), 2/0-3/0 (Al)	TGK32 (order separately)	TM3215RCU
200	8	4	16	6	16	Top	R5	1-250 (Cu), 2/0-250 (Al)	TGK24 or TGK32 (order separately)	TM820RCUFL
200	20	10	40	18	40	Top	R6	1-250 (Cu), 2/0-250 (Al)	TGK24 (order separately) TGK42 (order separately)	TM2020RCU
200	24	12	36	18	42	Top Bottom	R39	1-250 (Cu), 2/0-250 (Al)	TGK24 (order separately)	TM2420R42
200	32	16	16	6	40	Top	R7	1-250 (Cu), 2/0-250 (Al)	TGK32 (order separately)	TM3220RCU
200	40	20	0	0	40	Top	R8	1-250 (Cu), 2/0-250 (Al)	TGK42 (order separately)	TM4020RCU
225	8	4	16	6	16	Top	R5	1-250 (Cu), 2/0-250 (Al)	TGK24 (order separately)	TM822RCUFL
225	42	20	0	0	42	Top	R8	1-300 (Cu), 2/0-300 (Al)	TGK42 (order separately)	TM4222RCU

<sup>5</sup> Load center includes a factory installed ground bar and add a lug.

## PowerMark Plus™, four-wire, 208Y/120 VAC load centers

Main lugs factory installed



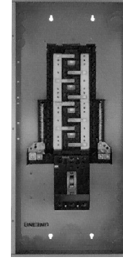
TL18415C

### Indoor (NEMA 1) Enclosure

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	3 Pole, 1" Spaces	Total 1-pole Spaces	Front Type	Feed Type	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
125	12	6	4	12	Combination Flush/Surface Front	Top Bottom	4	6-2/0	TGK12 (order separately) TGK24 (order separately)	TL12412C
150	18	8	6	18	Combination Flush/Surface Front	Top Bottom	7	1-3/0 (Cu), 2/0-3/0 (Al)	TGK24 (order separately) TGK32 (order separately)	TL18415C
150	24	12	8	24	Combination Flush/Surface Front	Top Bottom	7	1-3/0 (Cu), 2/0-3/0 (Al)	TGK24 (order separately) TGK32 (order separately)	TL24415C
200	18	8	6	18	Combination Flush/Surface Front	Top Bottom	8	1-250 (Cu), 2/0-250 (Al)	TGK32 (order separately)	TL18420C
200	30	14	10	30	Combination Flush/Surface Front	Top Bottom	11	1-250 (Cu), 2/0-250 (Al)	TGK32 (order separately)	TL30420C
200	42	20	14	42	Combination Flush/Surface Front	Top Bottom	13	1-250 (Cu), 2/0-250 (Al)	TGK42 (order separately)	TL42420C
225	30	14	10	30	Combination Flush/Surface Front	Top Bottom	15	1-300 (Cu), 2/0-300 (Al)	(2) TGL2 (order separately)	TL30422C
225	42	20	14	42	Combination Flush/Surface Front	Top Bottom	15	1-300 (Cu), 2/0-300 (Al)	(2) TGL2 (order separately)	TL42422C

## PowerMark Plus™, four-wire, 208Y/120 VAC load centers

Main lugs factory installed



TM24420CB

### Outdoor (NEMA 3R) Enclosure

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	3 Pole, 1" Spaces	Total 1-pole Spaces	Feed Type	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
125	12	6	4	12	Top	R3	6-2/0	TGK12 or TGK24 (order separately)	TL12412R
150	18	8	6	18	Top	R4	1-3/0 (Cu), 2/0-3/0 (Al)	TGK24 or TGK32 (order separately)	TL18415R
150	24	12	8	24	Top	R4	1-3/0 (Cu), 2/0-3/0 (Al)	TGK24 or TGK32 (order separately)	TL24415R
200	18	8	6	18	Top	R4	1-250 (Cu), 2/0-250 (Al)	TGK32 (order separately)	TL18420R
200	30	14	10	30	Top	R6	1-250 (Cu), 2/0-250 (Al)	TGK32 (order separately)	TL30420R
200	42	20	14	42	Top	R8	1-250 (Cu), 2/0-250 (Al)	TGK42 (order separately)	TL42420R
225	42	20	14	42	Top	R8	1-300 (Cu), 2/0-300 (Al)	TGK42 (order separately)	TL42422R



## PowerMark Plus™, four-wire, 208Y/120 VAC load centers

Main breaker factory installed



TM42420C

### Indoor (NEMA 1) Enclosure

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	3 Pole, 1" Spaces	Total 1-pole Spaces	Front Type	Feed Type	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
100	12	6	4	12	Combination Flush/Surface Front	Top Bottom	6	6-1/0 (Cu), 4-1/0 (Al)	TGK12 or TGK24 (order separately)	TM12410C
100	18	8	6	18	Combination Flush/Surface Front	Top Bottom	6	6-1/0 (Cu), 4-1/0 (Al)	TGK24 or TGK32 (order separately)	TM18410C
125	30	14	10	30	Combination Flush/Surface Front	Top	11	1-3/0 (Cu), 2/0-3/0 (Al)	TGK32 (order separately)	TM30412C
150	24	12	8	24	Combination Flush/Surface Front	Top	11	1-3/0 (Cu), 2/0-3/0 (Al)	TGK32 (order separately)	TM24415C
150	30	14	10	30	Combination Flush/Surface Front	Top	11	1-3/0 (Cu), 2/0-3/0 (Al)	TGK32 (order separately)	TM30415C
150	42	20	14	42	Combination Flush/Surface Front	Top	13	1-3/0 (Cu), 2/0-3/0 (Al)	TGK42 (order separately)	TM42415C
200	24	12	8	24	Combination Flush/Surface Front	Top	11	1-300 (Cu), 2/0-300 (Al)	TGK32 (order separately)	TM24420C
200	30	14	10	30	Combination Flush/Surface Front	Top	12	1-250 (Cu), 2/0-250 (Al)	TGK32 (order separately)	TM30420C
200	42	20	14	42	Combination Flush/Surface Front	Top	14	1-250 (Cu), 2/0-250 (Al)	TGK42 (order separately)	TM42420C
200	42	20	14	42	Combination Flush/Surface Front	Bottom	14	1-250 (Cu), 2/0-250 (Al)	TGK42 (order separately)	TM42420CB
225	42	20	14	42	Combination Flush/Surface Front	Top	15	1-300 (Cu), 2/0-300 (Al)	(2) TGL2 (order separately)	TM42422C



TM30420R

### Outdoor (NEMA 3R) Enclosure

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	3 Pole, 1" Spaces	Total 1-pole Spaces	Feed Type	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
100	18	8	6	18	Top	R4	6-1/0 (Cu), 4-1/0 (Al)	TGK24 or TGK32 (order separately)	TM18410R
125	30	14	10	30	Top	R7	1-3/0 (Cu), 2/0-3/0 (Al)	TGK32 (order separately)	TM30412R
150	24	12	8	24	Top	R6	1-3/0 (Cu), 2/0-3/0 (Al)	TGK32 (order separately)	TM24415R
200	30	14	10	30	Top	R7	1-250 (Cu), 2/0-250 (Al)	TGK32 (order separately)	TM30420R
200	42	20	14	42	Top	R8	1-250 (Cu), 2/0-250 (Al)	TGK42 (order separately)	TM42420R
225	42	20	14	42	Top	R8	1-300 (Cu), 2/0-300 (Al)	TGK42 (order separately)	TM42422R

## PowerMark Gold generator panels

Two interlocked main breakers factory installed



TM830FCUGEN

### Indoor (NEMA 1) Enclosure

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Front Type	Feed Type	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
60	4	2	8	4	8	Flush Front	Top Bottom	3A	6-1	TGK12 included	TM860FCUGEN
60	4	2	8	4	8	Surface Front	Top Bottom	3A	6-1	TGK12 included	TM860SCUGEN

### Outdoor (NEMA 3R) Enclosure

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Feed Type	Box Number	Main Wire Size (AWG/kcmil) Cu-Al	Equipment Ground Kit	Ordering code
60	4	2	8	4	8	Top	R2A	6-1	TGK12 included	TM860RCUGEN

## Meter socket load centers

Bonded neutrals



TSF4020CSCU



TSM420CSCU

### Ring Type - Farm Panel - Main Breaker

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Enclosure Type	Front Type	Bypass Type	UL Incoming	Agency Certification	Ordering code
200	4	2	8	3	8	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL EUSERC	TSF420CSCU

### Ring Type Feed-Thru - Main Breaker

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Enclosure Type	Front Type	Bypass Type	UL Incoming	Agency Certification	Ordering code
150	4	2	8	3	8	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL	TSM415CSCU
150	8	4	16	6	16	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL	TSM815CSCU
200	4	2	8	3	8	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL	TSM420CSCU
200	8	4	16	6	16	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL	TSM820CSCU
200	8	4	16	6	16	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL	TSM820CSFL



TSM1610CSCU

### Ring Type - Side by Side - Main Breaker - OH/UG

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Enclosure Type	Front Type	Bypass Type	UL Incoming	Agency Certification	Ordering code
125	12	6	24	12	24	Outdoor	Semi-Flush	None	OH/UG	UL/EUSERC	TSM1212CFCU
200	20	10	40	18	40	Outdoor	Semi-Flush	None	OH/UG	UL/EUSERC	TSM2020CFCU
100	16	8	32	14	32	Outdoor	Surface	None	OH/UG	UL/EUSERC	TSM1610CSCU
125	12	6	24	12	24	Outdoor	Surface	None	OH/UG	UL/EUSERC	TSM1212CSCU
200	20	10	40	18	40	Outdoor	Surface	None	OH/UG	UL/EUSERC	TSM2020CSCU

### Meter main - Ring type, field installed mains

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Enclosure Type	Front Type	Bypass Type	UL Incoming	Agency Certification	Ordering code
125	4	2	6	3	6	Outdoor (NEMA 3R)	Surface <sup>2</sup>	None	OH/UG	UL EUSERC	TSL412CSCU

### Meter main - Factory installed mains

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Enclosure Type	Front Type	Bypass Type	UL Incoming	Agency Certification	Ordering code
200	0	0	0	0	0	Outdoor (NEMA 3R)	Surface <sup>2</sup>	None	OH/UG	UL	TM20RMC

## Meter socket load centers

Bonded neutrals



TSMB1212CSCU

### Xcel Energy - Ringless with bypass

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Enclosure Type	Main Type	Front Type	Bypass Type	UL Incoming	Agency Certification	Ordering code
200	4	2	8	3	8	Outdoor (NEMA 3R)	MB	Surface	Horn Bypass	OH/UG	Xcel/UL	TSMR420CSCU
200	20	10	40	18	40	Outdoor (NEMA 3R)	MB	Surface	Horn Bypass	OH/UG	Xcel/UL	TSMR2020CSCU
200	20	10	40	18	40	Outdoor (NEMA 3R)	MB	Surface	Lever Bypass	OH/UG	Xcel/UL	TSMB2020CSCU



TSMR415CSCUGP



TSMR420CSFLFMG

### Georgia Power - Ringless, main breaker

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Enclosure Type	Front Type	Bypass Type	UL Incoming	Agency Certification	Ordering code
150	-	-	-	-	-	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL/GP	TSMR015CSCGP
200	-	-	-	-	-	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL/GP	TSMR020CSCGP
150	4	2	8	3	8	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL/GP	TSMR415CSCUGP
200	4	2	8	3	8	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL/GP	TSMR420CSCUGP

### Florida Meter Group - MSLC ringless, main breaker

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Enclosure Type	Front Type	Bypass Type	UL Incoming	Agency Certification	Ordering code
150	4	2	8	3	8	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL/FMG	TSMR415CSFLFMG
200	4	2	8	3	8	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL/FMG	TSMR420CSFLFMG
150	8	4	16	6	16	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL/FMG	TSMR815CSFLFMG
200	8	4	16	6	16	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL/FMG	TSMR820CSFLFMG
200	20	4	40	18	40	Outdoor (NEMA 3R)	Surface	None	OH/UG	UL/FMG	TSMR2020CSCUFMG

## Meter socket load centers

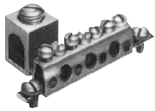
Bonded neutrals

### Class 320 (all product numbers are outdoor NEMA 3R enclosure type)

Main Ampere Rating	1 Pole, 1" Spaces	2 Pole, 1" Spaces	1 Pole, 1/2" Spaces	2 Pole, 1/2" Spaces	Total 1-pole Spaces	Front Type	Bypass Type	UL Incoming	Agency Certification	Secondary Main Factory Installed	Main type	Type of Secondary Main	Ordering code
300	8	4	16	8	16	Semiflush	No	OH/UG	Georgia Power	Yes	Formula A2	Formula A2	TSDR830CFCUGP
400	8	4	16	6	16	Surface	Lever Bypass	UG	UL FMG	No	Formula A2	Formula A2	TSDR840UFCU
400	8	4	16	8	16	Semiflush	No	OH/UG	Georgia Power	Yes	Formula A2	Formula A2	TSDR840CFCUGP

## PowerMark Gold and Plus Load Centers

### Accessories



#### PowerMark Plus™ Equipment Ground Kits

Description	Standard Package Quantity	Ordering code
(4) 14-8Cu/12-8AL, (3) 14-4Cu/6-4AL	20	TGL1
(11) 14-8Cu/12-8AL, (3) 14-4Cu/6-4AL	20	TGL2
(7) 14-8Cu/12-8AL, (3) 14-4Cu/6-4AL, (2) 14-4Cu/12-4AL, (1) 14-2Cu/AL	20	TGL8
(1) 6-2/0Cu/Al Number of Terminals, Equipment Ground Kits	20	TGL20
(3) 10-1/0 Cu/Al Number of Terminals for 400 and 600 Amp	1	TNG3
6) 10-1/0 Cu/Al Number of Terminals for 400 and 600 Amp	1	TNG6

#### PowerMark Gold Equipment Ground and Isolated Ground Bar Kits

Description	Wire Range	Standard Package Quantity	Ordering code
4-hole Ground	(1) 14-4	1	TGK4
8-hole Ground	(1) 14-4	1	TGK8
12-hole Ground	(1) 14-4	1	TGK12
22-hole Ground	(1) 14-4	1	TGK24
32-hole Ground	(1) 14-4	1	TGK32
42-hole Ground	(1) 14-4	1	TGK42



## PowerMark Gold and Plus Load Centers

### Accessories



#### PowerMark Gold Neutral Kits

Description	Wire Range	Standard Package Quantity	Ordering code
PowerMark Gold Neutral Kit - Mounted on top of neutral only	6-2/0	1	TNLK20
PowerMark Gold Neutral Kit - Mounted on top of neutral only	6-250	1	TNLK250



#### PowerMark Gold Neutral/Ground Lug Kits

Mounted on any neutral or ground position by removing the termination screw

Description	Wire Range	Standard Package Quantity	Ordering code
Neutral/Ground Lug Kit	6-2/0	1	TLK20
Neutral/Ground Lug Kit	6-250	1	TLK250



#### Isolated Ground Bus Bars Equipment Ground Kit

Description	Standard Package Quantity	Ordering code
Isolated Ground Bar Kit (order with TGK Equipment Ground Kits)	1	TGKIS



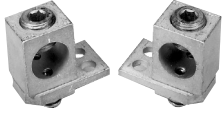
#### Subfeed Lug Kits

Description	Standard Package Quantity	Ordering code
125A 2 Pole Plug-in	1	THLK2125
150A 2 Pole Plug-in - For use with PowerMark Gold only	1	THLK2150
200A 2 Pole Plug-in - For use with PowerMark Gold only	1	THLK2200
225A 3 Pole Plug-in - For use with 3 phase only	1	THLK3225



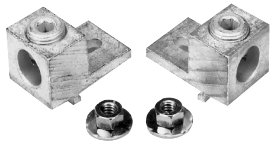
## PowerMark Gold and Plus Load Centers

### Accessories



#### PowerMark Plus™ Main Lug Kits

Description	Wire Range (Cu/Al)	Ordering code
150 Amp PowerMark Plus™ Replacement Main Lug kit	2-3/0	THLK150
200 Amp PowerMark Plus™ Replacement Main Lug kit	1-250	THLK200



#### PowerMark Gold Main Lug Kits

Description	Wire Range (Cu/Al)	Ordering code
125 Amp PowerMark Gold Replacement Main Lug kit	6-2/0	TMLK125
200 Amp PowerMark Gold Replacement Main Lug kit	6-250	TMLK200
225 Amp PowerMark Gold Replacement Main Lug kit	6-300	TMLK225

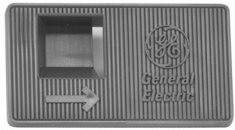
For replacement of main lugs on 125 amp load centers; TLM load centers include main lugs.

#### Front Filler Plates



Description	Standard Package Quantity	Ordering code
1/2" Front Filler Plate	100	TFH
1" Front Filler Plate	50	TQLFP1

Covers 1/2" rectangular breaker knockouts  
Covers 1" rectangular breaker knockouts



#### Door Handle

Description	Standard Package Quantity	Ordering code
Replacement Door Handle Universal	1	TRL22

# PowerMark Gold and Plus Load Centers

## Accessories



THQLRK



THQLRK2



THQLRK1



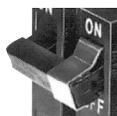
THQLRK3



THQLRK4



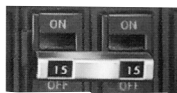
THL103



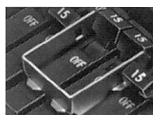
THT1



THT104



THT2



TQHT1



### PowerMark Gold Main Breaker Retainers

- Includes service barriers for use with THQL main
- Main Breaker Retainer Kits are UL listed (Panelboards No. 67)

Description	Breaker Type	Ordering code
For use on PowerMark Plus™ load centers with THQL Breakers 225A max	THQL	THQLRK
For use with 12 - 42 circuit PowerMark Gold load centers with THQL Breakers	THQL	THQLRK1
For use with 6 - 8 circuit PowerMark Gold load centers with THQL Breakers	THQL	THQLRK2
For use with TM/TLM1212CCU Mod 2 current model	THQL	THQLRK3
For use with 6 - 42 circuit PowerMark Gold load centers with THQL Breakers. Similar to THQLRK1 but it does not take up a breaker space.	THQL	THQLRK4

For main lug load centers utilizing a back fed branch breaker as a main

### Handle Locks - Padlocking

Description	Breaker Type	Ordering code
THQP Padlocking Handle Lock	THQP	TQPPL
THQL Padlocking Handle Lock	THQL	THP100
THQL AF, GF, DF Padlocking Handle Lock	THQL AF, DF, GF	THP100E

Snap on handle lock  
Padlock not included

### Handle Locks - Non Padlocking

Description	Breaker Type	Ordering code
THQP Non Padlocking Handle Lock	THQP	TQPL
THQL Non Padlocking Handle Lock	THQL	THL103

Snap on handle lock

### Handle Ties

Description	Breaker Type	Ordering code
Handle Ties for THQP Breakers - Solid Snap-on Trip Indicating	THQP	THT1
Handle Ties for THQP Breakers - For 2 THQPs separated by 2 side-by-side THQPs	THQP	THT2
Snap-on Handle Tie - Trip Indicating	TQB TQC TQL	TQHT1
Snap-on Handle Tie - Solid	TQB TQC TQL	THT104
Multiwire Branch Breaker Handle Tie Kits	TQB TQC TQL	TQ3HTK TQ4HTK

## PowerMark Gold and Plus Load Centers

### Accessories



THQLSB

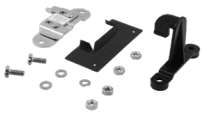


THQMVSBF

Description	Ordering code
THQL Service Barrier	THQLSB
THQMV Service Barrier Flapper	THQMVSBF

#### Load center hardware kits

Description	Standard Package Quantity	Ordering code
Powermark Gold Hardware kit containing 20 front mounting screws	1	THDWRKIT



THQLLX1



THQLLX4



THQLLX8FL

#### Generator Interlock Kit

Description	Standard Package Quantity	Ordering code
Load Center Generator Interlock Kit	1	THQLLX1
MSLC Generator Interlock Kit	1	THQLLX4
MSLC Generator Interlock Kit	1	THQLLX8CU
MSLC Generator Interlock Kit	1	THQLLX8FL



#### Surge Protectors

Description	Ordering code
SurgePro AC 50 kA Panel-Mount Surge Protector	THQLSURGE
SurgePro AC 36 kA Externally Mounted Surge Protector	THOMESURGE

## Q-Line residential plug-in circuit breakers

Ordering code construction

	T	H	QL	1	1*	15	GFTS
ABB Identification							
Interrupting Rating							
H = 10kAIC							
HH = 22kAIC							
X = 65kAIC							
Type							
QL = 1" plug-in							
QP = 1/2" plug-in							
QB = 1" bolt-on							
Poles (1, 2, 3)							
							Ground Fault/Arc Fault Circuit Interrupter
							AF2 = 1- & 2-pole Combination Arc Fault Circuit Interrupter
							GFEP = 1- & 2-pole Ground Fault with Equipment Protection Interrupter-30 mA
							GFT = 1- & 2-pole Ground Fault with Self-Test Feature Interrupter - 5 mA
							DF = 1-pole Dual Function GFCI/AFCI Ground Fault & Combination Arc Fault Circuit Interrupter
							S = Short pig tail
							Ampere Rating
							Voltage
							1 = 120/240V
							2 = 240V

\*Omit character for THQP breakers, which are all 120/240V.

# Q-Line

## Residential plug-in circuit breakers



THQL2140



THQL32015



THQP130



THQP230



THQL1120

120/240 Vac Ampere Rating	10,000AIC			22,000AIC		65,000AIC
	Type THQP 1/2-inch Module	Type THQL 1-inch Module		Type THHQL 1-inch Module		Type TXQL 1-inch Module
	120/240 Vac Ordering code	120/240 Vac Ordering code	240 Vac Ordering code	120/240 Vac Ordering code	240 Vac Ordering code	120/240 Vac Ordering code
<b>Single Pole<sup>1</sup></b>						
15 <sup>2</sup>	THQP115	THQL1115	-	THHQL1115	-	TXQL1115
20 <sup>2</sup>	THQP120	THQL1120	-	THHQL1120	-	TXQL1120
25	THQP125	THQL1125	-	-	-	TXQL1125
30	THQP130	THQL1130	-	THHQL1130	-	TXQL1130
35	-	THQL1135	-	-	-	-
40	THQP140	THQL1140	-	-	-	-
50	THQP150	THQL1150	-	-	-	-
<b>Std. Pkg.</b>	<b>5 cartons of 20</b>	<b>5 cartons of 10</b>		<b>5 cartons of 10</b>		<b>5 cartons of 10</b>
<b>Two-Pole<sup>2</sup>: Incorporates Internal Common Trip Bar</b>						
15	THQP215	THQL2115	-	THHQL2115	-	-
20	THQP220	THQL2120	THQL22020	THHQL2120	-	-
25	THQP225	THQL2125	-	THHQL2125	-	-
30	THQP230	THQL2130	THQL22030	THHQL2130	-	-
35	THQP235	THQL2135	-	THHQL2135	-	-
40	THQP240	THQL2140	THQL22040	THHQL2140	-	-
45	THQP245	THQL2145	-	-	-	-
50	THQP250	THQL2150	THQL22050	THHQL2150	-	-
60	-	THQL2160	THQL22060	THHQL2160	-	-
70	-	THQL2170	-	THHQL2170	-	-
80	-	THQL2180	THQL22080	THHQL2180	-	-
90	-	THQL2190	-	-	-	-
100	-	THQL21100	THQL22100	THHQL21100	-	-
110	-	THQL21110	-	-	-	-
125	-	THQL21125	-	THHQL21125	-	-
<b>Std. Pkg.</b>	<b>5 cartons of 5</b>	<b>5 cartons of 5</b>	<b>5 cartons of 5</b>	<b>5 cartons of 5</b>	<b>5 cartons of 5</b>	<b>5 cartons of 5</b>
<b>Three-Pole: Incorporates Internal Common Trip Bar</b>						
15	-	-	THQL32015	-	-	-
20	-	-	THQL32020	-	THHQL32020	-
25	-	-	THQL32025	-	-	-
30	-	-	THQL32030	-	THHQL32030	-
35	-	-	THQL32035	-	-	-
40	-	-	THQL32040	-	-	-
45	-	-	THQL32045	-	-	-
50	-	-	THQL32050	-	-	-
60	-	-	THQL32060	-	THHQL32060	-
70	-	-	THQL32070	-	-	-
80	-	-	THQL32080	-	-	-
90	-	-	THQL32090	-	THHQL32090	-
100	-	-	THQL32100	-	THHQL32100	-
<b>Std. Pkg.</b>			<b>5 cartons of 3</b>		<b>5 cartons of 3</b>	<b>5 cartons of 3</b>



**Q-Line**

Special purpose circuit breakers



Arc Fault



THQL1115AF2S

**Arc Fault**  
cULus Listed  
Arc-Fault Circuit Interrupters No. 1699

	Ampere Rating	1-Pole, 120/240 Volts ac <sup>1</sup>	1-Pole, 120/240 Volts ac
		Ordering code	Ordering code
		Long Pig Tail	Short Pig Tail
<b>10,000 AIC</b>			
	15	THQL1115AF2	THQL1115AF2S
	20	THQL1120AF2	THQL1120AF2S
<b>22,000 AIC</b>			
	15	THHQL1115AF2	-
	20	THHQL1120AF2	-
<b>Std. Pkg.</b>		<b>10 Cartons of 1</b>	-



THQL1115DF



THQL1115DFS

**Dual Function GFCI/AFCI Ground Fault & Combination Arc Fault Circuit Breaker**  
cULus Listed

	Ampere Rating	1-Pole, 120/240 Volts ac	1-Pole, 120/240 Volts ac
		Ordering code	Ordering code
		Long Pig Tail	Short Pig Tail
<b>10,000 AIC</b>			
	15	THQL1115DF	THQL1115DFS
	20	THQL1120DF	THQL1120DFS
<b>22,000 AIC</b>			
	20	THHQL1120DF	-
<b>Std. Pkg.</b>		<b>10 Cartons of 1</b>	-



THQL2120GFT



THQL1115GFTS

**Ground Fault with Self-Test Feature**  
cULus  
Ground Fault Circuit Interrupters UL943 ed5 (5 milliamperes)

	Ampere Rating	1-Pole, 120 Volts ac	1-Pole, 120 Volts ac	2-Pole, 120/240 Volts ac
		Ordering code	Ordering code	Ordering code
		Long Pig Tail	Short Pig Tail	Long Pig Tail
<b>10,000 AIC</b>				
	15	THQL1115GFT	THQL1115GFTS	THQL2115GFT
	20	THQL1120GFT	THQL1120GFTS	THQL2120GFT
	25	-	-	THQL2125GFT
	30	THQL1130GFT	-	THQL2130GFT
	40	-	-	THQL2140GFT
<b>22,000 AIC</b>				
	20	THHQL1120GFT	-	THHQL2120GFT
<b>Std. Pkg.</b>		<b>10 Cartons of 1</b>	-	-



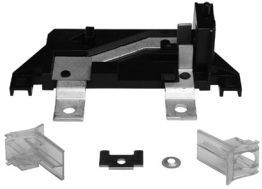
THQL2115GFEP

**Ground Fault with Equipment Protection**  
cULus  
Ground Fault Circuit Interrupters No. 943 30 milliampere ground fault trip level

	Ampere Rating	1-Pole, 120 Volts ac	2-Pole, 120/240 Volts ac
		Ordering code	Ordering code
<b>10,000 AIC</b>			
	20	THQL1120GFEP	THQL2120GFEP
	30	THQL1130GFEP	THQL2130GFEP
<b>Std. Pkg.</b>		<b>10 Cartons of 1</b>	<b>10 Cartons of 1</b>

## Q-Line

Special purpose circuit breakers

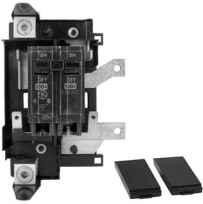


TQMH000

### PowerMark Gold Main Circuit Breaker Kit

For use with 125A PowerMark Gold load Centers; 22kAIC RMS symmetrical.

Description	Ordering code
Main Circuit Breaker Kit - Order appropriate THQL 10kAIC or THHQL 22kAIC breakers separately. Includes service barriers for use with THQL or THHQL main.	TQMH000

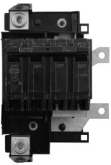


THQMV100E with filler plates

### PowerMark Gold\* Main Circuit Breakers Kits for use in 150A, 200A & 225A Convertible Load Centers UL Listed

- Example - TLMXX20CCU - 200A Convertible Load Center
- Includes mounting base
- Not for use in 125A and below Convertible Load Centers (TLMXX12CCU)
- Main Breaker Conversions for 125A load centers - see footnotes for individual catalog numbers

Description	Ampere Rating	Lug Size	Ordering code
Main Circuit Breaker Kits 22,000 AIC	100	1-300 (cu), 2/0-300	THQMV100E
	125		THQMV125E
	150		THQMV150E
	175		THQMV175E
	200		THQMV200E
	225	THQMV225E	



THQMV200E

**Note:** Wire bending rules affect allowed wire sizes when THQMV breakers are installed in an enclosure. For load centers, the wire range will be on the rating label. In addition, refer to the specifications for the main breaker versions of the load center you are considering to review allowed wire ranges when a TLMXX20 load center is converted to main breaker.

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2

## **RV power pedestals**



# Section 2

## RV power pedestals

Table of contents

<b>RV power pedestals</b>	
Ordering code construction	2-1
RV power pedestals	2-2



## RV power pedestals

### Inventory

#### Unmetered Surface Mount

Amps	Volts	Receptacles	Circuit Protection	Ground Fault Circuit Breaker	Head Type	Lighted	Wire Range Table	Ordering code
100	120/240	30A/20A GFCI	THQL1130, THQL1120	N/A	Single Side	No	1	GE1LU032SS
70	120/240	50A/20A GFCI	THQL2150, THQL1120	N/A	Single Side	No	2	GE1LU502SS
100	120/240	50A/30A/20A GFCI	THQL2150, THQL1130, THQL1120	N/A	Single Side	No	3	GE1LU532SS

#### Ring Type Metered Surface Mount

Amps	Volts	Receptacles	Circuit Protection	Ground Fault Circuit Breaker	Head Type	Lighted	Wire Range Table	Ordering code
100	120/240	30A/20A GFCI	THQL1130, THQL1120	N/A	Single Side	No	2	GE1LM032SS
70	120/240	50A/20A GFCI	THQL2150, THQL1120	N/A	Single Side	No	2	GE1LM502SS
100	120/240	50A/30A/20A GFCI	THQL2150, THQL1130, THQL1120	N/A	Single Side	No	4	GE1LM532SS

#### Unmetered Pad Mount Post

Amps	Volts	Receptacles	Circuit Protection	Ground Fault Circuit Breaker	Head Type	Lighted	Wire Range Table	Ordering code
100	120/240	50A/30A/20A GFCI	THQL2150, THQL1130, THQL1120	N/A	Back-to-Back	No	5	GE1LU532PB
100	120/240	50A/30A/20A GFCI	THQL2150, THQL1130, THQL1120	N/A	Single Side	No	6	GE1LU532PS
100	120/240	50A/30A/20A GFCI	THQL2150, THQL1130, THQL1120	N/A	Single Side	Yes	6	GE1LU532PSL

#### Ring Type Metered Pad Mount Post

Amps	Volts	Receptacles	Circuit Protection	Ground Fault Circuit Breaker	Head Type	Lighted	Wire Range Table	Ordering code
100	120/240	50A/30A/20A GFCI	THQL2150, THQL1130, THQL1120	N/A	Single Side	No	7	GE1LM532PS

#### Unmetered Earth Burial Post

Amps	Volts	Receptacles	Circuit Protection	Ground Fault Circuit Breaker	Head Type	Lighted	Wire Range Table	Ordering code
70	120/240	30A/20A GFCI	THQL1130, THQL1120	N/A	Single Side	No	6	GE1LU032ES
70	120/240	30A/20A GFCI	THQL1130, THQL1120	N/A	Single Side	Yes	6	GE1LU032ESL
100	120/240	50A/30A/20A GFCI	THQL2150, THQL1130, THQL1120	N/A	Back-to-Back	No	5	GE1LU532EB
100	120/240	50A/30A/20A GFCI	THQL2150, THQL1130, THQL1120	N/A	Single Side	No	6	GE1LU532ES

#### Ring Type Metered Earth Burial Post

Amps	Volts	Receptacles	Circuit Protection	Ground Fault Circuit Breaker	Head Type	Lighted	Wire Range Table	Ordering code
100	120/240	30A/20A GFCI	THQL1130, THQL1120	N/A	Single Side	No	7	GE1LM032ES
100	120/240	50A/30A/20A GFCI	THQL2150, THQL1130, THQL1120	N/A	Back-to-Back	No	8	GE1LM532EB
100	120/240	50A/30A/20A GFCI	THQL2150, THQL1130, THQL1120	N/A	Single Side	No	7	GE1LM532ES
100	120/240	50A/30A/20A GFCI	THQL2150, THQL1130, THQL1120	N/A	Single Side	Yes	7	GE1LM532ESL



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3

## **Safety switches and AC disconnects**

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## Section 3

### Safety switches and AC disconnects

#### Table of contents

<b>AC Disconnects</b>	<b>3-1</b>
<hr/>	
<b>Spec Setter* Safety switches</b>	
Ordering code construction	3-2
General duty	3-3
Heavy duty	3-4
Double throw	3-6
Accessories	3-7

## AC disconnects

NEMA type 3R



### Steel disconnects N3R outdoor enclosure

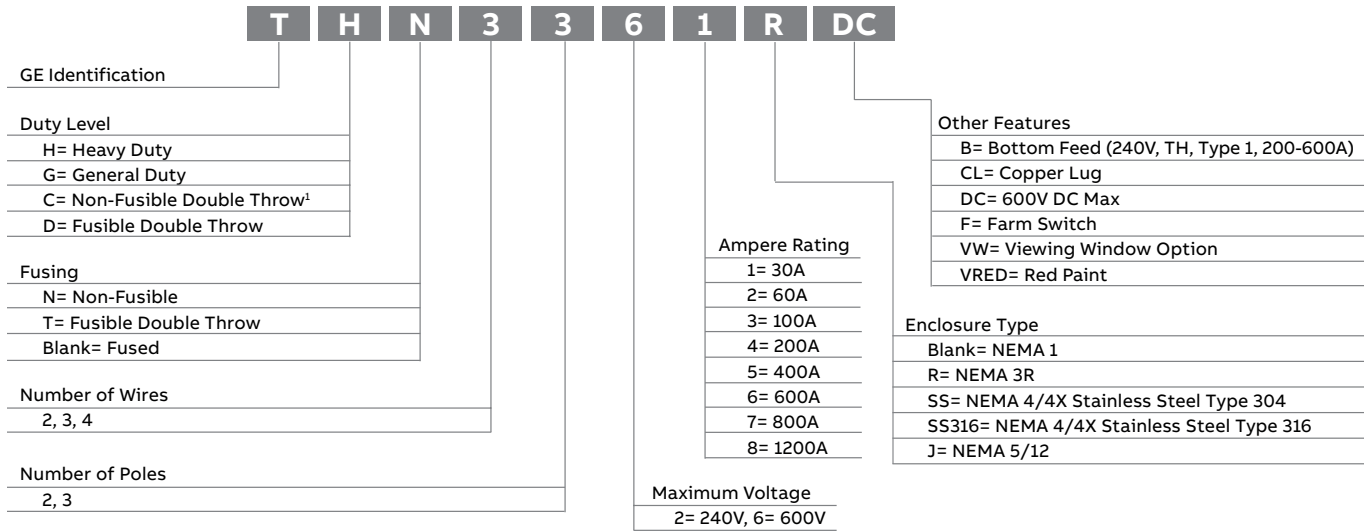
	Amperage Rating	Ordering code	HP Rating	Standard Fuse Class	15A GFCI Outlet	Height	Width	Depth	Standard Package	Ordering code Replacement puller
Fusible										
	30	TF30R	3	H, K1, K5, K9, RK1, RK5	–	7.5	5.19	2.5	6	TF302A
	60	TF60R	10	H, K1, K5, K9, RK1, RK5	–	9.25	5.19	2.5	6	TF602
Non-Fusible										
	60	TFN60R	10	–	Factory Installed	7.5	5.19	2.5	6	TFN652
	60	TFN60RGFR	10	–		7.13	5.5	5.19	6	TFN652
Non-Automatic										
	60	TNA60R1	10	–	Factory Installed	7.5	5.19	2.5	6	–
	60	TNA60RGFR	10	–		7.13	5.5	5.19	6	–

### Plastic disconnects N3R outdoor enclosure

	Amperage Rating	Ordering code	HP Rating	Standard Fuse Class	Removable Closing cap	Height	Width	Depth	Standard Package	Ordering code Replacement puller
Fusible										
	30	TPF30R	3	H, K1, K5, K9, RK1, RK5	Yes	7.0	5.75	3.13	6	TF302A
	60	TPF60R	10	H	Yes	7.0	5.75	3.0	6	TF60
Non-Fusible										
	60	TPN60R	10	–	Yes	8.0	5.0	2.5	6	TFN652
	60	TPN60R1	10	–	No	7.5	5.19	5.19	6	TFN652

# Safety switches

## Ordering code construction



<sup>1</sup> 800A and 1200A non-double throw safety switches also use the C Duty Level nomenclature

Note: This information is provided for interpreting numbers. It should not be used to build product numbers.

### All ABB Spec-Setter safety switches carry the following certifications:

- UL Listed and cUL Listed (UL98 Enclosed Switches/CSA-C22.2 No. 4-04)
- Federal Specification WS-865C
- NEMA Enclosed Safety Switch Standard KS1-2013
- Seismic Certified
- Service Entrance Rated (unless otherwise noted)

### Horsepower rated

All Spec-Setter safety switches are horsepower rated with the following exceptions:

- 800A single throw type TC switches
- 1200A single and double throw type TC and TDT switches

## Safety switches

### General duty



#### Ordering code for general duty switches

			240V			
			Amps	2-pole/3-wire	3-pole/3-wire	3-pole/4-wire
Fused	NEMA 1	30		TG3221	---	TG4321
		60		TG3222	---	TG4322
		100		TG3223	---	TG4323
		200		TG3224	---	TG4324
		400		TG3225	TG3325	TG4325
		600		TG3226	TG3326	TG4326
	NEMA 3R	30		TG3221R	---	TG4321R
		60		TG3222R	---	TG4322R
		100		TG3223R	---	TG4323R
		200		TG3224R	---	TG4324R
		400		TG3225R	TG3325R	TG4325R
		600		TG3226R	TG3326R	---
Non-fusible	NEMA 1	30	---	TGN3321	---	---
		60	---	TGN3322	---	---
		100	---	TGN3323	---	---
		200	---	TGN3324	---	---
		400	---	TGN3325	---	---
		600	---	TGN3326	---	---
	NEMA 3R	30	---	TGN3321R	---	---
		60	---	TGN3322R	---	---
		100	---	TGN3323R	---	---
		200	---	TGN3324R	---	---
		400	---	TGN3325R	---	---
		600	---	TGN3326R	---	---



#### Ordering code for red switches

			240V		
			Amps	2-pole/3-wire	3-pole/4-wire
Fused	NEMA 1	30		TG3221VRED	TG4321VRED
		60		---	TG4322VRED

## Safety switches

Heavy duty



### Ordering code for fused heavy duty switches

	Amps	240V				600V		
		2-pole/2-wire	2-pole/3-wire	3-pole/3-wire	3-pole/4-wire	2-pole/2-wire	3-pole/3-wire	3-pole/4-wire
NEMA 1	30	---	TH3221	---	TH4321	---	TH3361	TH4361
	60	---	TH3222	---	TH4322	---	TH3362	TH4362
	100	---	TH3223	---	TH4323	---	TH3363	TH4363
	200	---	TH3224	---	TH4324	---	TH3364	TH4364
	400	---	TH3225	TH3325	TH4325	---	TH3365	---
	600	---	---	TH3326	TH4326	---	TH3366	---
	800	---	---	---	---	---	TC72367	---
NEMA 5/12	30	---	---	---	---	---	TH3361J	---
	60	---	---	---	---	---	TH3362J	---
	100	---	---	---	---	---	TH3363J	---
	200	---	---	---	---	---	TH3364J	---
	400	---	---	---	---	---	TH3365J	---
NEMA 3R	30	---	TH3221R	---	TH4321R	---	TH3361R	TH4361R
	60	---	TH3222R	---	TH4322R	---	TH3362R	TH4362R
	100	---	TH3223R	---	TH4323R	---	TH3363R	TH4363R
	200	---	TH3224R	---	TH4324R	---	TH3364R	TH4364R
	400	---	TH3225R	TH3325R	---	---	TH3365R	---
	600	---	TH3226R	TH3326R	---	---	TH3366R	---
	800	---	---	---	---	TC72267R	TC72367R	---
NEMA 4/4X, 304	30	TH2221SS	TH3221SS	TH3321SS	TH4321SS	---	TH3361SS	---
	60	TH2222SS	TH3222SS	TH3322SS	TH4322SS	---	TH3362SS	---
	100	---	TH3223SS	---	TH4323SS	---	TH3363SS	---
	200	---	TH3224SS	---	TH4324SS	---	TH3364SS	---
	400	---	---	---	---	---	TH3365SS	---
	600	---	---	---	---	---	TH3366SS	---
NEMA 4/4X, 316	30	---	---	---	---	---	TH3361SS316	---
	60	---	---	---	---	---	TH3362SS316	---
	100	---	---	---	---	---	TH3363SS316	---
	200	---	---	---	---	---	TH3364SS316	---



## Safety switches

### Heavy duty

#### Ordering code for non-fusible heavy duty switches

	Amps	240V		600V	
		3-pole/3-wire		3-pole/3-wire	
NEMA 1	30	THN3321		THN3361	
	60	---		THN3362	
	100	---		THN3363	
	200	---		THN3364	
	400	---		THN3365	
	600	---		THN3366	
	800	---		TC36367	
NEMA 5/12	30	---		THN3361J	
	60	---		THN3362J	
	100	---		THN3363J	
	200	---		THN3364J	
	400	---		THN3365J	
NEMA 3R	30	---		THN3361R	
	60	---		THN3362R	
	100	---		THN3363R	
	200	---		THN3364R	
	400	---		THN3365R	
	600	---		THN3366R	
NEMA 4/4X, 304	30	---		THN3361SS	
	60	---		THN3362SS	
	100	---		THN3363SS	
	200	---		THN3364SS	
	400	---		THN3365SS	
	600	---		THN3366SS	
NEMA 4/4X, 316	30	---		THN3361SS316	
	60	---		THN3362SS316	
	100	---		THN3363SS316	
	200	---		THN3364SS316	

## Safety switches

### Double throw



#### Ordering code for non-fusible double throw safety switches

		240V	600V
Amps		3-pole/3-wire	3-pole/3-wire
NEMA 1	30	TC35321	---
	60	TC35322	TC35362
	100	TC35323	TC35363
	200	TC35324	TC35364
	400	TC35325	TC35365
	600	TC35326	---
NEMA 3R	60	TC35322R	TC35362R
	100	TC35323R	TC35363R
	200	TC35324R	TC35364R
	400	TC35325R	---



#### Ordering code for emergency power transfer switches (non-fusible)

		120/240V	240V
Amps		2-pole/3-wire	3-pole/4-wire
NEMA 3R	100	TC10323R	---
	200	TC10324R	TC10424R

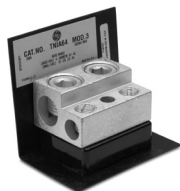


#### Ordering code for interlocked receptacle switches

		Fusible	Non-fusible
Amps		3-pole/3-wire	3-pole/3-wire
NEMA 1	60	TH3362JCH	THN3362JCH

## Accessories

### Ground neutral and line shield kits



TNIA64



THSHLD1

#### NEMA type 1 and 3R enclosures

30–600 amperes: TG and TH

800–1200 amperes: TC (single throw fusible only)

Amperage rating	Ground Kits	Ordering code Neutral kit	System Voltage (Vac)	Fusible/Non-Fusible	Ordering code Line shield kit
30	TGL1	TNI21	240	Either	THSHLD1 <sup>2</sup>
60		TNI62 <sup>1</sup>	600	Either	THSHLD3 <sup>2</sup>
	TNIJA62	600	Fusible		
100	TNG3	TNI63 <sup>1</sup>	600	Non-Fusible	THSHLD4 <sup>2</sup>
200		TNIA63	600	Fusible	
400	TGL6	TNIJ64	240 or 600	Either	THSHLD6 <sup>2</sup>
		TNI65		Either	
		TNI65A		Either	
600		TNI66		Either	
800	–	TNI67		Fusible	–
1200	–	TNI68A		Fusible	–

#### NEMA type 4/4X, 12 enclosures

Heavy duty switches

30–600 amperes: TH

Amperage Rating	Ground Kits	Ordering code Neutral kit	System Voltage (Vac)	Fusible/Non-Fusible	Ordering code Line shield kit
30	TGL1	TNIJ61	240	Fusible	THSHLD1 <sup>2</sup>
30		TNIJ61	600	Either	
60		TNIJ62	600	Fusible	THSHLD3 <sup>2</sup>
60		TNIJA62	600	Non-fusible	
100	TNG3	TNIJ63	240 or 600	Either	THSHLD4 <sup>2</sup>
200		TNIJ64		Either	
400-600	TGL6	TNIJ66		Either	THSHLD6 <sup>2</sup>

<sup>1</sup> Not suitable for type TG switches.

<sup>2</sup> a ccessory only for NEC 2020 230.62 Service entrance compliance on HD Safety switches

## Accessories

### Fusing kits

- General duty: TG
- Heavy duty: TH



#### Class R fusing kit, field installable, general duty, type TG, UL listed

When specifications permit only Class R fuses to be used, these kits may be installed in the safety switch to deter fuses other than Class R from being installed.

- 30–60 A = Fuse clips
- 100–200 A = Rejection pins
- One kit required per two-pole or three-pole switch



Series prefix	Ampere rating	NEMA enclosure type	Ordering code
TG	30	1, 3R	TGRK12
	60	1, 3R	TGRK22
	100	1, 3R	TGRK42
	200	1, 3R	TGRK42



#### Class J fuse field conversion kit, heavy duty, type TH, UL listed

TH switches, 30–400 amperes, 600 volt and 100–400 amperes, 240 volt, may be adapted to accept Class J fuses without a kit by moving the load-block toward the switch base and remounting.

- One kit required per two-pole or three-pole switch

TGRK22 Class R rejection kit

Series prefix	Ampere rating	System voltage (V AC)	Ordering code
TH	600	240 or 600	THJ6
TH	30–400	600	Move load-block
TH	100–400	240	Move load-block



#### Class R fusing kit, field-installable, heavy duty, type TH, UL listed

When specifications permit only Class R fuses to be used, these kits may be installed in the safety switch to deter fuses other than Class R from being installed.

- 30–60 A = Fuse clips
- 100–600 A = Rejection pins
- One kit required per two-pole or three-pole switch



TRK46A Class R rejection kit

Series prefix	Ampere rating	System voltage (V AC)	NEMA enclosure type	Ordering code
TH	30	240	1, 3R, 4/4X, 12	TRK12B
	30	600	1, 3R	TRK16B
	30	600	4/4X, 12	TRK16SA
	60	240	1, 3R, 4/4X, 12	TRK22A
	60	600	1, 3R, 4/4X, 12	TRK26A
	100	240 600	1, 3R	TRK46A
	100	240 600	4/4X, 12	TPBRK36A
	200	240 600	1, 3R, 4/4X, 12	TRK46A
	400	240 600	1, 3R, 4/4X, 12	TRK56A
	600	240 600	1, 3R, 4/4X, 12	TRK66A

## Safety switches accessories

Auxiliary contact kits, replaceable handles and hubs



THAUX64D

### Auxiliary contacts

Switch type	Ampere rating	# of poles	Contacts	Contact ratings	Ordering code
Heavy duty	30	2 3	DPDT	10 A, 125/250 V AC	THAUX21D
				0.30 A, 125V DC	
				0.15 A, 250 V DC	
	30	2 3	SPDT	15 Z, 600 V AC	THAUX61S
				0.50 A, 125 VDC	
				0.25 A, 250V DC	
	60 100 200	2 3	DPDT	15 A, 600 V AC	THAUX64D
				0.50 A, 125 V DC	
				0.25 A, 250V DC	
	400 600	2 3	DPDT	15 A, 600 V AC	THAUX66D
0.50 A, 125 V DC					
0.25 A, 250 V DC					
Type TC	30-600				THAUXDT



THRPLHDL3

### Replacement Handles for HD Switches

Amps. Min	Amps Max.	Max Volts	Steel Type	Description	Ordering Code
30	30	240	-	Handle and Pouch	-
30	30	600	-		-
60	200	600	Steel		THRPLHDL3
30	200	600	-		-
400	600	600	Steel		THRPLHDL6
400	600	600	-		-
-	-	-	-	Handle for HD Switch	THGRIP

The handles above are what's stocked in Mount Juliet, for other handles, refer to [BuyLog](#)

### Universal raintight aluminum hubs

For outdoor enclosures that have removable closing caps.



TC100

Nominal conduit diameter (in.)	Ordering code
¾	TC75
1	TC100
1¼	TC125
1½	TC150
2	TC200
2½	TC250

### Closing cap for universal raintight aluminum hub

#### Ordering code

TCCP

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4

## Other circuit protection

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## Section 4

### Other circuit protection

Table of contents

<b>Ground fault protective devices</b>	
Residual current circuit breaker	4-1
<b>Fuse holders</b>	<b>4-2</b>

## Residual current circuit breakers

### F200 series



#### F202

Type A	Poles	Ampacity	$I\Delta n$	Ordering code
	2	16	10	F202A-16/0.01
	2	25	30	F202A-25/0.03 110V
	2	40	30	F202A-40/0.03 110V
	2	63	30	F202A-63/0.03 110V

#### F204

Type A	Poles	Ampacity	$I\Delta n$	Ordering code
	4	25	30	F204A-25/0.03 110V
	4	40	30	F204A-40/0.03 110V
	4	80	63	F204A-63/0.03 110V



## Fuse Holders

### E90 fuse holders



Class	Poles	Ampacity	Description	Ordering code
CC	1	30		E91/30CC
CC	1	30	with blown-fuse indicator	E91/30CCS
CC	1	30		E91N/30CC
	1	32	Midget	E91/32
	1+N	50	Midget	E91/50
CC	2	30		E92/30CC
CC	2	30	with blown-fuse indicator	E92/30CCS
	2	32	Midget	E92/32
CC	3	30		E93/30CC
CC	3	30	with blown-fuse indicator	E93/30CCS
J	3	30		E93/30J
J	3	30	with blown-fuse indicator	E93/30JS
	3	32	Midget	E93/32
J	3	60		E93/60J
J	3	60	with blown-fuse indicator	E93/60JS
CC	3+N	30		E93N/30CC

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5

## Transformers | Low voltage dry type

## Section 5

### Transformers | Low voltage dry type

#### Table of contents

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**Dry type, encapsulated, enclosed**

Type QL single phase, NEMA 2 enclosure	5-1
Type QL three phase, NEMA 2 enclosure	5-1
Type QMS single phase, NEMA 3R enclosure	5-2
Type QB single phase, NEMA 3R enclosure	5-3

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**Control power, encapsulated core & coil**

Type IP single phase	5-4
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**Servicenter™ mini-unit substations**

Single phase, Indoor/ Outdoor 60 Hz, 115°C	5-6
Three phase, Indoor/ Outdoor 60 Hz, 150°C	5-6

# Transformers

Dry type, encapsulated, enclosed



**QL, single phase, DOE2016 and NRCAN, UL and CUL  
NEMA 2 enclosure, Frequency 60 Hz**

Winding	KVA	Primary Voltage	Secondary Voltage	Temp Rise °C	Ordering code
Aluminum	25	240x480	120/240	150	9T33A2671
Aluminum	37.5	240x480	120/240	150	9T33A2672
Aluminum	50	240x480	120/240	150	9T33A2673
Aluminum	75	240x480	120/240	150	9T33A2674

**QL, three phase, DOE2016, UL,  
NEMA 2 enclosure, Frequency 60 Hz**

Winding	KVA	Primary Voltage	Secondary Voltage	Temp Rise °C	Noise Reduction	Electrostatic Shield	Ordering code
Aluminum	15	480	208Y/120	150			9T10A1001
Aluminum	15	480	208Y/120	115			9T10A1001G31
Aluminum	30	480	208Y/120	150			9T10A1002
Aluminum	30	480	208Y/120	150	-3dB		9T10A1002G02
Aluminum	30	480	208Y/120	150		Yes	9T10A1002G03
Aluminum	30	480	208Y/120	115			9T10A1002G31
Aluminum	45	480	208Y/120	150			9T10A1003
Aluminum	45	480	208Y/120	150	-3dB		9T10A1003G02
Aluminum	45	480	208Y/120	150		Yes	9T10A1003G03
Aluminum	45	480	208Y/120	115			9T10A1003G31
Aluminum	75	480	208Y/120	150			9T10A1004
Aluminum	75	480	208Y/120	150	-3dB		9T10A1004G02
Aluminum	75	480	208Y/120	150		Yes	9T10A1004G03
Aluminum	75	480	208Y/120	115			9T10A1004G31
Aluminum	112.5	480	208Y/120	150			9T10A1005
Aluminum	112.5	480	208Y/120	150		Yes	9T10A1005G03
Aluminum	112.5	480	208Y/120	115			9T10A1005G31
Aluminum	150	480	208Y/120	150			9T10A1006
Aluminum	150	480	208Y/120	150		Yes	9T10A1006G03
Aluminum	150	480	208Y/120	115			9T10A1006G31
Aluminum	225	480	208Y/120	150			9T10A1007
Aluminum	300	480	208Y/120	150			9T10A1008
Aluminum	300	480	208Y/120	150		Yes	9T10A1008G03
Aluminum	500	480	208Y/120	150			9T10A1009
Aluminum	15	480	240/120	150			9T10A1181
Aluminum	30	480	240/120	150			9T10A1182
Aluminum	45	480	240/120	150			9T10A1183
Aluminum	75	480	240/120	150			9T10A1184
Aluminum	30	480	240	150			9T10A1192
Aluminum	75	480	240	150			9T10A1194
Aluminum	75	208	480Y/277	150			9T10A1344
Aluminum	112.5	208	480Y/277	150			9T10A1345
Copper	15	480	208Y/120	150			9T10C1001
Copper	30	480	208Y/120	150			9T10C1002
Copper	30	480	208Y/120	150		Yes	9T10C1002G03
Copper	30	480	208Y/120	115			9T10C1002G31

This table continued on next page

## Transformers

Dry type, encapsulated, enclosed

Winding	KVA	Primary Voltage	Secondary Voltage	Temp Rise °C	Noise Reduction	Electrostatic Shield	Ordering code
Copper	45	480	208Y/120	150			9T10C1003
Copper	45	480	208Y/120	150		Yes	9T10C1003G03
Copper	45	480	208Y/120	115			9T10C1003G31
Copper	45	480	208Y/120	150			9T10C1003G61
Copper	75	480	208Y/120	150			9T10C1004
Copper	75	480	208Y/120	150		Yes	9T10C1004G03
Copper	75	480	208Y/120	115			9T10C1004G31
Copper	112.5	480	208Y/120	150			9T10C1005
Copper	112.5	480	208Y/120	150		Yes	9T10C1005G03
Copper	112.5	480	208Y/120	115			9T10C1005G31
Copper	150	480	208Y/120	150			9T10C1006
Copper	225	480	208Y/120	150			9T10C1007
Copper	300	480	208Y/120	150			9T10C1008
Copper	500	480	208Y/120	150			9T10C1009
Copper	45	480	208Y/120	115		Yes	9T11C1003G33

Many accessories such as rain shields, lug kits and ground kits are also available.



### General purpose encapsulated, Type QMS Single phase, NEMA 3R enclosure

Winding	Primary Voltage	Secondary Voltage	KVA	Temp Rise °C	Frequency Hz	UL	CSA	CE	CUL	Ordering code
Aluminum	240x480	120/240	10	115	60	Y	N	N	Y	9T21B1006G02
Aluminum	480	120/240	5	115	60	Y	N	N	Y	9T21B1007G02
Aluminum	480	120/240	5	115	60	Y	N	N	Y	9T21B1013G02
Aluminum	240x480	120/240	15	115	60	Y	N	N	Y	9T21B9103
Aluminum	240x480	120/240	25	115	60	Y	N	N	Y	9T21B9104
Aluminum	480	120/240	15	115	60	Y	N	N	Y	9T21B9105
Copper	240x480	120/240	10	115	60	Y	N	N	Y	9T21C3321

## Transformers

Dry type, encapsulated, enclosed

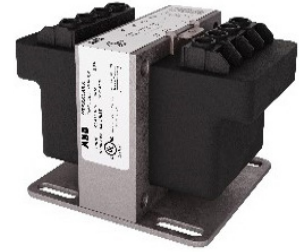


### General purpose encapsulated, Type QB Single phase, NEMA 3R enclosure

Winding	Primary Voltage	Secondary Voltage	KVA	Temp Rise °C	Frequency Hz	UL	CSA	CE	CUL	Ordering code
Copper	240x480	120/240	0.05	55	60	Y	N	N	Y	9T51B0002
Copper	240x480	120/240	0.1	55	60	Y	N	N	Y	9T51B0004
Copper	240x480	120/240	0.75	100	60	Y	N	N	Y	9T51B0009
Copper	120x240	120/240	0.5	100	60	Y	N	N	Y	9T51B0028
Copper	600	120/240	2	100	60	Y	N	N	Y	9T51B0092
Copper	600	120/240	3	100	60	Y	N	N	Y	9T51B0093
Copper	120x240	12/24	0.05	55	60	Y	N	N	Y	9T51B0102
Copper	120x240	12/24	0.1	55	60	Y	N	N	Y	9T51B0104
Copper	120x240	12/24	0.25	80	60	Y	N	N	Y	9T51B0107
Copper	120x240	12/24	0.5	100	60	Y	N	N	Y	9T51B0108
Copper	120x240	12/24	0.75	100	60	Y	N	N	Y	9T51B0109
Copper	120x240	12/24	1	100	60	Y	N	N	Y	9T51B0110
Copper	120x240	12/24	1.5	115	60	Y	N	N	Y	9T51B0111
Copper	120x240	16/32	0.25	80	60	Y	N	N	Y	9T51B0127
Copper	120x240	16/32	0.5	100	60	Y	N	N	Y	9T51B0128
Copper	120x240	16/32	0.75	100	60	Y	N	N	Y	9T51B0129
Copper	120x240	16/32	1	100	60	Y	N	N	Y	9T51B0130
Copper	120x240	16/32	1.5	115	60	Y	N	N	Y	9T51B0131
Copper	120x240	16/32	2	115	60	Y	N	N	Y	9T51B0132
Copper	208	120/240	2	100	60	Y	N	N	Y	9T51B0156
Copper	208	120/240	3	100	60	Y	N	N	Y	9T51B0157
Copper	208	120/240	1	100	60	Y	N	N	Y	9T51B0160
Copper	380/400/416	120/240	1	100	50/60	Y	N	N	Y	9T51B0170
Copper	277	120/240	0.25	80	60	Y	N	N	Y	9T51B0187
Copper	277	120/240	3	115	60	Y	N	N	Y	9T51B0193
Copper	240x480	24/48	0.75	100	60	Y	N	N	Y	9T51B0209
Copper	240x480	24/48	1	100	60	Y	N	N	Y	9T51B0210
Copper	240x480	120/240	0.5	100	50/60	Y	N	N	Y	9T51B0508
Copper	240x480	120/240	3	115	50/60	Y	N	N	Y	9T51B0513
Copper	240x480	120/240	1.5	100	60	Y	N	N	Y	9T51B0811
Copper	208/240	120	3	115	60	Y	N	N	Y	9T51B1815
Copper	230	208	3.9	80	50/60	Y	N	N	Y	9T51B5810

## Transformers

Encapsulated core & coil



Control power, Type IP  
Single phase, fully encapsulated

Winding	Primary Voltage	Secondary Voltage	KVA	Temp Rise °C	Frequency Hz	UL	CSA	CE	CUL	with fusing option	Ordering code
Copper	240x480	24/48	0.3	55	50/60	Y	N	Y	Y		9T58E0168
Copper	230x460	115	0.05	55	60	Y	N	N	Y		9T58K0042
Copper	230x460	115	0.05	55	60	Y	N	N	Y	1/4" FCTB	9T58K0042G09
Copper	240x480	120	0.075	55	60	Y	N	N	Y		9T58K0043
Copper	230x460	115	0.1	55	60	Y	N	N	Y		9T58K0044
Copper	230x460	115	0.1	55	60	Y	N	N	Y	1/4" FCTB	9T58K0044G09
Copper	230x460	115	0.15	55	60	Y	N	N	Y		9T58K0045
Copper	230x460	115	0.15	55	60	Y	N	N	Y	1/4" FCTB	9T58K0045G09
Copper	230x460	115	0.15	55	60	Y	N	N	Y	2 CC Mig	9T58K0045G38
Copper	230x460	115	0.2	80	60	Y	N	N	Y		9T58K0046
Copper	230x460	115	0.25	80	60	Y	N	N	Y		9T58K0047
Copper	230x460	115	0.25	80	60	Y	N	N	Y	1/4" FCTB	9T58K0047G09
Copper	230x460	115	0.3	80	60	Y	N	N	Y		9T58K0048
Copper	230x460	115	0.3	80	60	Y	N	N	Y	1/4" FCTB	9T58K0048G09
Copper	230x460	115	0.375	100	60	Y	N	N	Y		9T58K0049
Copper	230x460	115	0.375	100	60	Y	N	N	Y	2 CC Mig	9T58K0049G38
Copper	230x460	115	0.5	80	60	Y	N	N	Y		9T58K0050
Copper	230x460	115	0.5	80	60	Y	N	N	Y	2 CC Mig	9T58K0050G38
Copper	230x460	115	0.75	80	60	Y	N	N	Y		9T58K0051
Copper	230x460	115	1	80	60	Y	N	N	Y		9T58K0052
Copper	230x460	115	1	80	60	Y	N	N	Y	2 CC Mig	9T58K0052G38
Copper	230x460	115	1.5	100	60	Y	N	N	Y		9T58K0053
Copper	240x480	120	2	100	60	Y	N	N	Y		9T58K0054
Copper	230x460	115	3	115	60	Y	N	N	Y		9T58K0055
Copper	230/460/575	115/95	0.05	55	50/60	Y	N	N	Y		9T58K0062
Copper	230/460/575	115/95	0.1	55	50/60	Y	N	N	Y		9T58K0064
Copper	230/460/575	115/95	0.15	80	50/60	Y	N	N	Y		9T58K0065
Copper	230/460/575	115/95	0.2	100	50/60	Y	N	N	Y		9T58K0066
Copper	230/460/575	115/95	0.25	100	50/60	Y	N	N	Y		9T58K0067
Copper	230/460/575	115/95	0.3	80	50/60	Y	N	N	Y		9T58K0068
Copper	230/460/575	115/95	0.5	115	50/60	Y	N	N	Y		9T58K0070
Copper	230/460/575	115/95	0.75	100	50/60	Y	N	N	Y		9T58K0071
Copper	230/460/575	115/95	1	100	50/60	Y	N	N	Y		9T58K0072
Copper	208/277/380	115/95	0.1	55	50/60	Y	N	N	Y		9T58K0084
Copper	208/277/380	115/95	0.15	80	50/60	Y	N	N	Y		9T58K0085
Copper	208/277/380	115/95	0.2	100	50/60	Y	N	N	Y		9T58K0086
Copper	208/277/380	115/95	0.25	100	50/60	Y	N	N	Y		9T58K0087
Copper	208/277/380	115/95	0.375	80	50/60	Y	N	N	Y	2 CC Mig	9T58K0089G38
Copper	208/277/380	115/95	0.5	115	50/60	Y	N	N	Y		9T58K0090
Copper	480	120	0.06	55	60	Y	N	N	Y	2 CC, 1HK	9T58K0501G30
Copper	480	120	0.3	80	60	Y	N	N	Y	CLO	9T58K0507G37
Copper	240x480	120/240	0.05	55	60	Y	N	N	Y		9T58K1802
Copper	240x480	120/240	0.05	55	60	Y	N	N	Y		9T58K2802
Copper	240x480	120/240	0.075	55	60	Y	N	N	Y		9T58K2803

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# Transformers

Encapsulated core & coil

Winding	Primary Voltage	Secondary Voltage	KVA	Temp Rise °C	Frequency Hz	UL	CSA	CE	CUL	with fusing option	Ordering code
Copper	240x480	120/240	0.1	55	60	Y	N	N	Y		9T58K2804
Copper	240x480	120/240	0.15	55	60	Y	N	N	Y		9T58K2805
Copper	240x480	120/240	0.2	80	60	Y	N	N	Y		9T58K2806
Copper	240x480	120/240	0.25	80	60	Y	N	N	Y		9T58K2807
Copper	240x480	120/240	0.3	100	60	Y	N	N	Y		9T58K2808
Copper	240x480	120/240	0.375	100	60	Y	N	N	Y		9T58K2809
Copper	240x480	120/240	0.5	100	60	Y	N	N	Y		9T58K2810
Copper	240x480	120/240	0.5	100	60	Y	N	N	Y	2 CC Mig	9T58K2810G38
Copper	240x480	120/240	0.75	100	60	Y	N	N	Y		9T58K2811
Copper	240x480	120/240	1	100	60	Y	N	N	Y		9T58K2812
Copper	240x480	120/240	1.5	100	60	Y	N	N	Y		9T58K2813
Copper	240x480	120/240	2	100	60	Y	N	N	Y		9T58K2814
Copper	240x480	120/240	3	100	60	Y	N	N	Y		9T58K2815
Copper	600	120/240	0.1	55	60	Y	N	N	Y		9T58K2824
Copper	600	120/240	0.2	80	60	Y	N	N	Y		9T58K2826
Copper	600	120/240	0.5	80	60	Y	N	N	Y		9T58K2830
Copper	600	120/240	1	115	60	Y	N	N	Y		9T58K2832
Copper	600	120/240	2	100	60	Y	N	N	Y		9T58K2834
Copper	120x240	12/24	0.05	55	60	Y	N	N	Y		9T58K2873
Copper	120x240	12/24	0.1	55	60	Y	N	N	Y		9T58K2875
Copper	120x240	12/24	0.15	55	60	Y	N	N	Y		9T58K2876
Copper	120x240	12/24	0.3	100	60	Y	N	N	Y		9T58K2879
Copper	120x240	120/240	0.5	80	60	Y	N	N	Y		9T58K2913
Copper	240x480	120/240	1	100	50/60	Y	N	N	Y		9T58K2932
Copper	240x480	120/240	3	115	50/60	Y	N	N	Y		9T58K2935
Copper	380/400/416	115/230	0.5	115	50/60	Y	N	N	Y		9T58K2978
Copper	380/400/416	115/230	0.75	100	50/60	Y	N	N	Y		9T58K2979
Copper	380/400/416	115/230	3	115	50/60	Y	N	N	Y		9T58K2983
Copper	240x480	12/24	0.25	80	60	Y	N	N	Y		9T58K3024
Copper	240x480	24	0.1	55	60	Y	N	N	Y	1/4" FCTB	9T58K3027G09
Copper	240x480	24	0.15	55	60	Y	N	N	Y	1/4" FCTB	9T58K3028G09
Copper	240x480	12/24	0.05	55	60	Y	N	N	Y		9T58K3164
Copper	230/400/460/575	115/95/125	0.35	100	50/60	Y	N	N	Y		9T58K3716
Copper	460/575	230	0.165	55	60	Y	N	N	Y		9T58K3921G43
Copper	208/240	12/24	0.15	55	60	Y	N	N	Y		9T58K4052
Copper	240x480	12/24	0.1	55	60	Y	N	N	Y		9T58K4132
Copper	240x480	12/24	0.15	55	60	Y	N	N	Y		9T58K4133
Copper	208/240/480	24	0.2	100	60	Y	N	N	Y		9T58K4183
Copper	120/240	12/24	0.075	55	50/60	Y	N	N	Y		9T58K4350
Copper	208	120	0.05	55	60	Y	N	N	Y	1/4" FCTB	9T58K4500G09
Copper	600	120	0.05	55	60	Y	N	N	Y	1/4" FCTB	9T58K4501G09
Copper	240x480	24	0.05	55	60	Y	N	N	Y	1/4" FCTB	9T58K4503G09
Copper	208	24	0.05	55	60	Y	N	N	Y	1/4" FCTB	9T58K4505G09
Copper	208	120	0.1	55	60	Y	N	N	Y	1/4" FCTB	9T58K4506G09
Copper	600	120	0.25	80	60	Y	N	N	Y	1/4" FCTB	9T58K4510G09
Copper	208	120	0.25	80	60	Y	N	N	Y	1/4" FCTB	9T58K4511G09
Copper	208	120	0.3	100	60	Y	N	N	Y	1/4" FCTB	9T58K4513G09



## Transformers

Servicenter™ mini-unit substations



**Integral transformer and distribution center**  
**Single phase, Indoor/Outdoor 60 Hz, 115 °C Winding Temperature**

Input voltage	Output voltage	kVA	Max Branch spaces 1" THQL, 1-pole	Max Branch spaces 1" THQL, 2-pole	Total 1 Pole spaces	Breaker Rating Primary	Breaker Rating Secondary	Ordering code
480 Volts Delta	120/240 Volts	5	8	4	12	25A	30A	9T21S1050
		7.5	8	4	12	35A	40A	9T21S1070
		10	12	6	16	50A	50A	9T21S1100
		15	12	6	24	60A	70A	9T21S1150
		25	20	10	24	100A	150A	9T21S1250



**Integral transformer and distribution center**  
**Three phase, Indoor/Outdoor, 60 Hz, 150 °C, DOE 2016 efficiency, Aluminium transformer windings**

Input voltage	Output voltage	kVA	Max Branch spaces 1" THQL, 1-pole	Max Branch spaces 1" THQL, 2-pole	Total 1 Pole spaces	Breaker Rating Primary	Breaker Rating Secondary	Ordering code
240 Volts Delta	208Y/120 Volts	15	12	4	12	100A	50A	9T17A0001

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6

## **Molded case and miniature circuit breakers**

## Section 6

### Molded case and miniature circuit breakers

#### Table of contents

##### **UL1077 miniature circuit breakers**

Ordering code construction	6-1
ST200M	6-2
Accessories	6-11

##### **UL489**

Ordering code construction	6-1
SU200M	6-6
S200UDC	6-9
S800U	6-10
Accessories	6-11

##### **Q-Line bolt-on miniature circuit breakers**

Ordering code construction	6-13
240V class	6-14
Cable- Cable-out (lug lug), 240V class	6-17
DIN-Rail mount, 240V class	6-18

##### **SACE® Tmax® XT molded case circuit breakers**

Ordering code construction - XT1 through XT7 2-1	6-19
Main characteristics	6-20
XT1 base breakers	6-21
XT2 base breakers	6-23
XT3 base breakers	6-24
XT4 base breakers	6-25
XT5 base breakers	6-26
Accessories - Terminal kits, insulating kits and phase barriers	6-28
Accessories - Electrical	6-31
Accessories - Manual operators	6-34
Accessories - Handles	6-35
Accessories - Retrofit kits for Spectra bolt-on panelboard and switchboard	6-36

##### **TEY molded case circuit breakers**

Ordering code construction	6-38
Breakers	6-39
Accessories	6-41

##### **Enclosed circuit breakers**

Enclosures	6-37
Breakers	6-37
Ground kits	6-37

## Miniature circuit breakers

### Ordering code construction

<b>S</b>	<b>U</b>	<b>201</b>	<b>M</b>	<b>R</b>	<b>-</b>	<b>K</b>	<b>60</b>
<b>MCB</b>	<b>U = UL 489</b>	<b>Series/no. of poles:</b>	<b>M = 10 kA</b>	<b>R = ring tongue terminal</b>		<b>Trip curve:</b>	<b>Ampacity (A)</b>
		201 = 1-pole		Blank = compression terminal		K	
		202 = 2-pole				C	
		203 = 3-pole				Z	
		204 = 4-pole					
<b>S</b>	<b>T</b>	<b>201</b>	<b>M</b>	<b>-</b>	<b>K</b>	<b>60</b>	<b>NA</b>
<b>MCB</b>	<b>T = UL 1077</b>	<b>Series/no. of poles:</b>	<b>M = 10 kA max.</b>		<b>Trip curve:</b>	<b>Ampacity (A)</b>	<b>NA = switched neutral pole</b>
		201 = 1-pole			B		Blank = none
		202 = 2-pole			C		
		203 = 3-pole			D		
		204 = 4-pole			K		
					Z		
<b>S</b>	<b>201</b>	<b>UDC</b>	<b>-</b>	<b>K</b>	<b>60</b>		
<b>MCB</b>	<b>Series/no. of poles:</b>	<b>U = UL 489</b>		<b>Trip curve:</b>	<b>Ampacity (A)</b>		
	201 = 1-pole	DC = increased		K			
	202 = 2-pole	DC rating		Z			
<b>S</b>	<b>201</b>	<b>MUC</b>	<b>-</b>	<b>K</b>	<b>60</b>		
<b>MCB</b>	<b>Series/no. of poles:</b>	<b>M = 10 kA max.</b>		<b>Trip curve:</b>	<b>Ampacity (A)</b>		
	201 = 1-pole	UC = increased		K			
	202 = 2-pole	DC rating, UL 1077		Z			
	203 = 3-pole			C			
	204 = 4-pole						
<b>S</b>	<b>801</b>	<b>U</b>	<b>-</b>	<b>K</b>	<b>100</b>		
<b>MCB</b>	<b>Series/no. of poles:</b>	<b>U = UL 489</b>		<b>Trip curve:</b>	<b>Ampacity (A)</b>		
	801 = 1-pole	S = UL 1077, high AC rating		B			
	802 = 2-pole	C = UL 1077, high DC rating		C			
	803 = 3-pole			D			
	804 = 4-pole			K			

## Miniature circuit breakers

### ST200M circuit breakers



Trip Curve	Poles	Ampacity	Ordering code
B	1	6	ST201M-B6
		10	ST201M-B10
		13	ST201M-13
		16	ST201M-B16
		20	ST201M-B20
		25	ST201M-B25
		32	ST201M-B32
	2	40	ST201M-B40
		6	ST202M-B6
		10	ST202M-B10
		16	ST202M-B16
		20	ST202M-B20
		25	ST202M-B25
		32	ST202M-B32
3	63	ST202M-B63	
	13	ST203M-B13	
	16	ST203M-B16	
	20	ST203M-B20	
	25	ST203M-B25	
	32	ST203M-B32	
C	1	40	ST203M-B40
		50	ST203M-B50
		63	ST203M-B63
		0.5	ST201M-C0.5
		1	ST201M-C1
		2	ST201M-C2
		3	ST201M-C3
		4	ST201M-C4
		6	ST201M-C6
		8	ST201M-C8
		10	ST201M-C10
13	ST201M-C13		
16	ST201M-C16		
20	ST201M-C20		
25	ST201M-C25		
32	ST201M-C32		
40	ST201M-C40		

Table continues on next page.

## Miniature circuit breakers

### ST200M circuit breakers



Trip Curve	Poles	Ampacity	Ordering code
	2	1	ST202M-C1
		2	ST202M-C2
		3	ST202M-C3
		4	ST202M-C4
		6	ST202M-C6
		8	ST202M-C8
		10	ST202M-C10
		13	ST202M-C13
		16	ST202M-C16
		20	ST202M-C20
		25	ST202M-C25
		32	ST202M-C32
		40	ST202M-C40
50	ST202M-C50		
63	ST202M-C63		
	3	1	ST203M-C1
		2	ST203M-C2
		3	ST203M-C3
		4	ST203M-C4
		6	ST203M-C6
		10	ST203M-C10
		16	ST203M-C16
		20	ST203M-C20
		25	ST203M-C25
		32	ST203M-C32
		40	ST203M-C40
50	ST203M-C50		
63	ST203M-C63		
D	1	1	ST201M-D1
		1.6	ST201M-D1.6
		2	ST201M-D2
		3	ST201M-D3
		4	ST201M-D4
		6	ST201M-D6
		8	ST201M-D8
		10	ST201M-D10
		13	ST201M-D13
		16	ST201M-D16
		20	ST201M-D20
		25	ST201M-D25
		40	ST201M-D40
50	ST201M-D50		

Table continues on next page.

## Miniature circuit breakers

### ST200M circuit breakers



Trip Curve	Poles	Ampacity	Ordering code
	2	1	ST202M-D1
		2	ST202M-D2
		3	ST202M-D3
		4	ST202M-D4
		6	ST202M-D6
		8	ST202M-D8
		10	ST202M-D10
		13	ST202M-D13
		16	ST202M-D16
		20	ST202M-D20
		32	ST202M-D32
		50	ST202M-D50
			3
3	ST203M-D3		
4	ST203M-D4		
6	ST203M-D6		
8	ST203M-D8		
10	ST203M-D10		
16	ST203M-D16		
20	ST203M-D20		
25	ST203M-D25		
32	ST203M-D32		
40	ST203M-D40		
50	ST203M-D50		
63	ST203M-D63		
K	1	0.5	ST201M-K0.5
		1	ST201M-K1
		1.6	ST201M-K1.6
		2	ST201M-K2
		3	ST201M-K3
		4	ST201M-K4
		5	ST201M-K5
		6	ST201M-K6
		8	ST201M-K8
		10	ST201M-K10
		13	ST201M-K13
		15	ST201M-K15
		16	ST201M-K16
		20	ST201M-K20
		25	ST201M-K25
30	ST201M-K30		
32	ST201M-K32		
40	ST201M-K40		
50	ST201M-K50		

Table continues on next page.

## Miniature circuit breakers

### ST200M circuit breakers



Trip Curve	Poles	Ampacity	Ordering code
	2	1	ST202M-K1
		2	ST202M-K2
		3	ST202M-K3
		4	ST202M-K4
		5	ST202M-K5
		6	ST202M-K6
		8	ST202M-K8
		10	ST202M-K10
		13	ST202M-K13
		15	ST202M-K15
		16	ST202M-K16
		20	ST202M-K20
		25	ST202M-K25
		30	ST202M-K30
		32	ST202M-K32
	3	1	ST203M-K1
		2	ST203M-K2
		3	ST203M-K3
		4	ST203M-K4
		5	ST203M-K5
		6	ST203M-K6
		8	ST203M-K8
		10	ST203M-K10
		13	ST203M-K13
		15	ST203M-K15
		16	ST203M-K16
		20	ST203M-K20
		25	ST203M-K25
		30	ST203M-K30
		32	ST203M-K32
40	ST203M-K40		
50	ST203M-K50		
60	ST203M-K60		
63	ST203M-K63		



## Miniature circuit breakers

### SU200M circuit breakers



Trip Curve	Poles	Ampacity	Ordering code
C	1	0.5	SU201M-C0.5
		1	SU201M-C1
		2	SU201M-C2
		3	SU201M-C3
		4	SU201M-C4
		5	SU201M-C5
		6	SU201M-C6
		8	SU201M-C8
		10	SU201M-C10
		13	SU201M-C13
		15	SU201M-C15
		16	SU201M-C16
		20	SU201M-C20
		30	SU201M-C30
		40	SU201M-C40
			2
2	SU202M-C2		
3	SU202M-C3		
4	SU202M-C4		
5	SU202M-C5		
6	SU202M-C6		
8	SU202M-C8		
10	SU202M-C10		
13	SU202M-C13		
15	SU202M-C15		
16	SU202M-C16		
20	SU202M-C20		
25	SU202M-C25		
30	SU202M-C30		
35	SU202M-C35		
40	SU202M-C40		
	3	3	SU203M-C3
		5	SU203M-C5
		6	SU203M-C6
		10	SU203M-C10
		15	SU203M-C15
		16	SU203M-C16
		20	SU203M-C20
		25	SU203M-C25
		30	SU203M-C30
		35	SU203M-C35
40	SU203M-C40		
		50	SU203M-C50

Table continues on next page.

## Miniature circuit breakers

### SU200M circuit breakers



Trip Curve	Poles	Ampacity	Ordering code
K	1	0.5	SU201M-K0.5
		1	SU201M-K1
		1.6	SU201M-K1.6
		2	SU201M-K2
		3	SU201M-K3
		4	SU201M-K4
		5	SU201M-K5
		6	SU201M-K6
		8	SU201M-K8
		10	SU201M-K10
		13	SU201M-K13
		15	SU201M-K15
		16	SU201M-K16
		20	SU201M-K20
		25	SU201M-K25
		30	SU201M-30
		32	SU201M-K32
		40	SU201M-K40
60	SU201M-K60		
	2	0.5	SU202M-K0.5
		1	SU202M-K1
		1.6	SU202M-K1.6
		2	SU202M-K2
		3	SU202M-K3
		4	SU202M-K4
		5	SU202M-K5
		6	SU202M-K6
		8	SU202M-K8
		10	SU202M-K10
		13	SU202M-K13
		15	SU202M-K15
		16	SU202M-K16
		20	SU202M-K20
		25	SU202M-K25
		30	SU202M-K30
		35	SU202M-K35
		40	SU202M-K40
50	SU202M-K50		
60	SU202M-K60		
63	SU202M-K63		

Table continues on next page.

## Miniature circuit breakers

### SU200M circuit breakers



Trip Curve	Poles	Ampacity	Ordering code		
	3	0.5	SU203M-K0.5		
		1	SU203M-K1		
		1.6	SU203M-K1.6		
		2	SU203M-K2		
		3	SU203M-K3		
		4	SU203M-K4		
		5	SU203M-K5		
		6	SU203M-K6		
		8	SU203M-K8		
		10	SU203M-K10		
		13	SU203M-K13		
		15	SU203M-K15		
		16	SU203M-K16		
		20	SU203M-K20		
		25	SU203M-K25		
		30	SU203M-K30		
		32	SU203M-K32		
		35	SU203M-K35		
		40	SU203M-K40		
50	SU203M-K50				
60	SU203M-K60				
63	SU203M-K63				
Z	1	1	SU201M-Z1		
		2	SU201M-Z2		
		3	SU201M-Z3		
		4	SU201M-Z4		
		5	SU201M-Z5		
		6	SU201M-Z6		
		8	SU201M-Z8		
		10	SU201M-Z10		
		15	SU201M-Z15		
		20	SU201M-Z20		
		2		20	SU202M-Z20
				30	SU202M-Z30
				35	SU202M-Z35
50	SU202M-Z50				

## Miniature circuit breakers

### S200UDC circuit breakers



Trip Curve	Poles	Ampacity	Ordering code		
K	1	1	S201UDC-K1		
		2	S201UDC-K2		
		3	S201UDC-K3		
		4	S201UDC-K4		
		5	S201UDC-K5		
		6	S201UDC-K6		
		8	S201UDC-K8		
		10	S201UDC-K10		
		15	S201UDC-K15		
		16	S201UDC-K16		
		20	S201UDC-K20		
		25	S201UDC-K25		
		2	2	1.6	S202UDC-K1.6
				5	S202UDC-K5
				6	S202UDC-K6
10	S202UDC-K10				
15	S202UDC-K15				
20	S202UDC-K20				
50	S202UDC-K50				
Z	1	1	S201UDC-Z1		
		2	S201UDC-Z2		
		3	S201UDC-Z3		
		4	S201UDC-Z4		
		5	S201UDC-Z5		
		6	S201UDC-Z6		
		8	S201UDC-Z8		
		20	S201UDC-Z20		

## Miniature circuit breakers

### S800U circuit breakers



Trip Curve	Poles	Ampacity	Ordering code	
K	1	20	S801U-K20	
		30	S801U-K30	
		100	S801U-K100	
	2	2	30	S802U-K30
			50	S802U-K50
			60	S802U-K60
			80	S802U-K80
			100	S802U-K100
	3	3	30	S803U-K30
			40	S803U-K40
			50	S803U-K50
			60	S803U-K60
70			S803U-K70	
80			S803U-K80	
100			S803U-K100	

## Miniature circuit breakers

### Accessories

#### UL 1077 Accessories for ST200M, S200MUC

Type	Ordering code
Feeder terminal for UL 1077 busbars	AST35/15SP
UL 1077 busbar, 1-phase, 60 pins	PS1/60SP
UL 1077 busbar, 2-phase, 58 pins, 16 mm <sup>2</sup>	PS2/58/16SP
UL 1077 busbar, 2-phase, 58 pins, 10 mm <sup>2</sup>	PS2/58SP
UL 1077 busbar, 3-phase, 60 pins, 16 mm <sup>2</sup>	PS3/60/16SP
UL 1077 busbar, 3-phase, 60 pins, 10 mm <sup>2</sup>	PS3/60SP
End cap for UL 1077 busbar	PSB-END3
End cap for UL 1077 busbar	PS-END
End cap for UL 1077 busbar	PS-END0
End cap for UL 1077 busbar	PS-ENDSP
Shunt trip, UL 1077, Type 1	S2C-A1
Shunt trip, UL 1077, Type 2	S2C-A2
Aux. contact, UL 1077, bottom-mount	S2C-H10
Aux. contact, UL 1077, side-mount left	S2C-H11L
Aux. contact, UL 1077, side-mount right	S2C-H6R
Signal contact, UL 1077	S2C-S/H6R

#### UL 489 Accessories for SU(P)200M, S200UDC

Type	Ordering code
Feeder terminal for cuttable UL 489 busbars	AST 35/58 BP-C
Feeder terminal for non-cuttable UL 489 busbars	AST35/15BP
Tooth cover for cuttable UL 489 busbars	BSK BP-C
Tooth cover for non-cuttable UL 489 busbars	BSK-BP
Cuttable busbar, UL 489, 1-phase, 57 pins	PS 1/57/25 BP-C
Cuttable busbar, UL 489, 2-phase, 56 pins	PS 2/56/25 BP-C
Cuttable busbar, UL 489, 3-phase, 57 pins	PS 3/57/25 BP-C
Non-cuttable UL 489 busbar, 1-phase, 12 pins	PS1/12/16BP
Non-cuttable UL 489 busbar, 1-phase, 18 pins	PS1/18/16BP
Non-cuttable UL 489 busbar, 1-phase, 6 pins	PS1/6/16BP
Non-cuttable UL 489 busbar, 2-phase, 12 pins	PS2/12/16BP
Non-cuttable UL 489 busbar, 2-phase, 18 pins	PS2/18/16BP
Non-cuttable UL 489 busbar, 2-phase, 6 pins	PS2/6/16BP
Non-cuttable UL 489 busbar, 3-phase, 12 pins	PS3/12/16BP
Non-cuttable UL 489 busbar, 3-phase, 18 pins	PS3/18/16BP
Non-cuttable UL 489 busbar, 3-phase, 6 pins	PS3/6/16BP
Shunt trip, UL 489, Type 1	S2C-A1U
Shunt trip, UL 489, Type 2	S2C-A2U
Aux. contact, UL 489	S2C-H6RU
Signal contact, UL 489	S2C-S6RU

Table continues on next page.

## Miniature circuit breakers

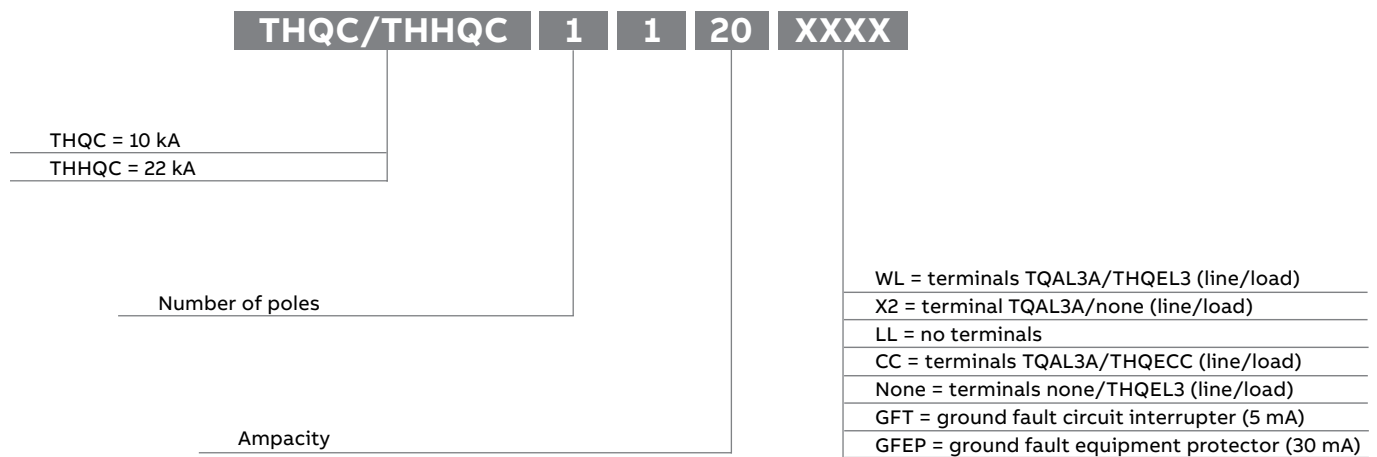
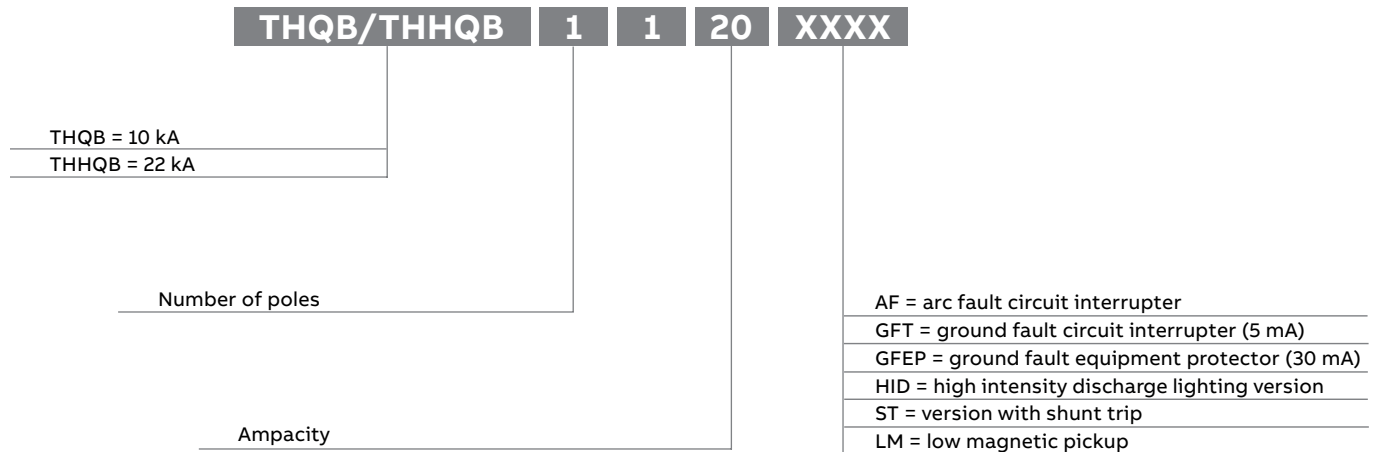
### Accessories

#### Common accessories for UL 489 and UL 1077 MCBs

Type	Ordering code
Rotary handle mechanism for MCBs	S2C-DH
LOTO, integrated	S2C-LOTO-I
LOTO, multipole	S2C-LOTO-M
Locking device	SA1
Locking device	SA2

## Q-Line miniature circuit breakers

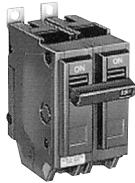
### Ordering code construction





## Q-Line miniature circuit breakers

240V class



THQB2115

### THQB 120/240 Vac

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120/240 Vac Interrupting Rating	Ordering code
1	15	14-8 Cu/12-8 Al	10kA	THQB1115 <sup>2</sup>
1	20	14-8 Cu/12-8 Al	10kA	THQB1120 <sup>2</sup>
1	25	14-8 Cu/12-8 Al	10kA	THQB1125
1	30	14-8 Cu/12-8 Al	10kA	THQB1130
1	35	8-3 Cu/8-3 Al	10kA	THQB1135
1	40	8-3 Cu/8-3 Al	10kA	THQB1140
1	50	8-3 Cu/8-3 Al	10kA	THQB1150
1	60	8-3 Cu/8-3 Al	10kA	THQB1160

### THQB 120/240 Vac, Internal Common Trip

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120/240 Vac Interrupting Rating	Ordering code
2	15	14-8 Cu/12-8 Al	10kA	THQB2115
2	20	14-8 Cu/12-8 Al	10kA	THQB2120
2	25	14-8 Cu/12-8 Al	10kA	THQB2125
2	30	14-8 Cu/12-8 Al	10kA	THQB2130
2	35	8-3 Cu/8-3 Al	10kA	THQB2135
2	40	8-3 Cu/8-3 Al	10kA	THQB2140
2	45	8-3 Cu/8-3 Al	10kA	THQB2145
2	50	8-3 Cu/8-3 Al	10kA	THQB2150
2	60	8-3 Cu/8-3 Al	10kA	THQB2160
2	70	6-1/0 Cu/4-1/0 Al	10kA	THQB2170
2	80	6-1/0 Cu/4-1/0 Al	10kA	THQB2180
2	90	6-1/0 Cu/4-1/0 Al	10kA	THQB2190
2	100	6-1/0 Cu/4-1/0 Al	10kA	THQB21100

### THQB 240 Vac, Internal Common Trip

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	240 Vac Interrupting Rating	Ordering code
2	15	14-8 Cu/12-8 Al	10kA	THQB22015
2	20	14-8 Cu/12-8 Al	10kA	THQB22020
2	30	14-8 Cu/12-8 Al	10kA	THQB22030
3	15	14-8 Cu/12-8 Al	10kA	THQB32015
3	20	14-8 Cu/12-8 Al	10kA	THQB32020
3	25	14-8 Cu/12-8 Al	10kA	THQB32025
3	30	14-8 Cu/12-8 Al	10kA	THQB32030
3	35	8-3 Cu/8-3 Al	10kA	THQB32035
3	40	8-3 Cu/8-3 Al	10kA	THQB32040
3	45	8-3 Cu/8-3 Al	10kA	THQB32045
3	50	8-3 Cu/8-3 Al	10kA	THQB32050
3	60	8-3 Cu/8-3 Al	10kA	THQB32060
3	70	6-1/0 Cu/4-1/0 Al	10kA	THQB32070
3	80	6-1/0 Cu/4-1/0 Al	10kA	THQB32080
3	90	6-1/0 Cu/4-1/0 Al	10kA	THQB32090
3	100	6-1/0 Cu/4-1/0 Al	10kA	THQB32100

### THQB and THQB 120/240 Vac Arc Fault (Single pole)

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120/240 Vac Interrupting Rating	Ordering code
1	20	14-10 Cu/14-10 Al	10kA	THQB1120AF2 <sup>4</sup>

<sup>1</sup>Solid or stranded for 14-10 AWG.

<sup>2</sup>UL listed as SWD (Switching Duty) rated. Suitable for switching 120 Vac fluorescent lighting loads.

<sup>3</sup>Not UL listed.

<sup>4</sup>Combination AFCI compliant with NEC 2008 and later.

UL listed HACR (heating, air conditioning and refrigeration).



THQB1120AF2

## Q-Line miniature circuit breakers

240V class



THQB2120GFT

### THQB, THHQB 120/240 Vac, Ground Fault Circuit Interrupters, Self Testing, cULus

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120/240 Vac Interrupting Rating	Ordering code
1	15	14-8Cu/12-8 Al	10kA	THQB1115GFT
1	20	14-8Cu/12-8 Al	10kA	THQB1120GFT
1	30	14-8Cu/12-8 Al	10kA	THQB1130GFT
2	15	14-8Cu/12-8 Al	10kA	THQB2115GFT
2	20	14-8Cu/12-8 Al	10kA	THQB2120GFT



THQB1115GFEP

### THQB 120 Vac, Ground Fault Circuit Interrupters (30 ma); cULus

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120 Vac Interrupting Rating	Ordering code
1	20	14-8 Cu/12-8 Al	10kA	THQB1120GFEP
1	30	14-8 Cu/12-8 Al	10kA	THQB1130GFEP



THQB2140GFEP

### THQB 120/240 or 208Y/120 Vac, Ground Fault Circuit Interrupters (30 ma); cULus Internal Common Trip

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120 Vac Interrupting Rating	Ordering code
2	20	14-8 Cu/12-8 Al	10kA	THQB2120GFEP
2	40	14-8 Cu/12-8 Al	10kA	THQB2140GFEP



THQB32020ST1

### THQB, THHQB 120/240 Vac, High Intensity Discharge Lighting Loads<sup>2</sup>

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120/240 Vac Interrupting Rating	Ordering code
1	20	14-8 Cu/12-8 Al	10kA	THQB1120HID <sup>3</sup>
1	25	14-8 Cu/12-8 Al	10kA	THQB1125HID

### THQB 120 Vac with Factory Installed 120 Vac Shunt Trip<sup>4</sup>

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120 Vac Interrupting Rating	Ordering code
1	20	14-8 Cu/12-8 Al	10kA	THQB1120ST1

### THQB 120 Vac, Internal Common Trip with Factory Installed 120 Vac Shunt Trip<sup>4</sup>

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120 Vac Interrupting Rating	Ordering code
2	20	14-8 Cu/12-8 Al	10kA	THQB2120ST1
2	30	14-8 Cu/12-8 Al	10kA	THQB2130ST1
3	20	14-8 Cu/12-8 Al	10kA	THQB32020ST1
3	30	14-8 Cu/12-8 Al	10kA	THQB32030ST1
3	40	8-3 Cu/8-3 Al	10kA	THQB32040ST1
3	50	8-3 Cu/8-3 Al	10kA	THQB32050ST1
3	60	8-3 Cu/8-3 Al	10kA	THQB32060ST1
3	70	6-1/0 Cu/4-1/0 Al	10kA	THQB32070ST1
3	90	6-1/0 Cu/4-1/0 Al	10kA	THQB32090ST1
3	100	6-1/0 Cu/4-1/0 Al	10kA	THQB32100ST1

<sup>1</sup>Solid or stranded for 14-10 AWG.

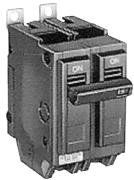
<sup>2</sup>UL listed as HID (high intensity discharge).

<sup>3</sup>UL listed as SWD (switching duty). Suitable for switching 120 Vac fluorescent lighting loads.

<sup>4</sup>20-60 ampere are UL listed as HACR (heating, air conditioning and refrigeration).

## Q-Line miniature circuit breakers

240V class



THHQB2115

### THQB 120 Vac with Switching Neutral Single Thermal Magnetic Pole; Single Nonautomatic Pole

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120 Vac Interrupting Rating	Ordering code
2	20	14-8 Cu/12-8 Al	10kA	THQB21WY20

### THHQB 120/240 Vac

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120/240 Vac Interrupting Rating	Ordering code
1	15	14-8 Cu/12-8 Al	22kA	THHQB1115 <sup>2</sup>
1	20	14-8 Cu/12-8 Al	22kA	THHQB1120 <sup>2</sup>
1	25	14-8 Cu/12-8 Al	22kA	THHQB1125
1	30	14-8 Cu/12-8 Al	22kA	THHQB1130
1	40	8-3 Cu/8-3 Al	22kA	THHQB1140
1	50	8-3 Cu/8-3 Al	22kA	THHQB1150

### THQB/THHQB 120/240 Vac, Low Magnetic Pickup

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120/240 Vac Interrupting Rating	Ordering code
2	20	14-8 Cu/12-8 Al	10 kA	THQB2120LM

### THHQB 120/240 Vac, Internal Common Trip

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120/240 Vac Interrupting Rating	Ordering code
2	15	14-8 Cu/12-8 Al	22kA	THHQB2115
2	20	14-8 Cu/12-8 Al	22kA	THHQB2120
2	25	14-8 Cu/12-8 Al	22kA	THHQB2125
2	30	14-8 Cu/12-8 Al	22kA	THHQB2130
2	35	8-3 Cu/8-3 Al	22kA	THHQB2135
2	40	8-3 Cu/8-3 Al	22kA	THHQB2140
2	50	8-3 Cu/8-3 Al	22kA	THHQB2150
2	60	8-3 Cu/8-3 Al	22kA	THHQB2160
2	80	6-1/0 Cu/4-1/0 Al	22kA	THHQB2180
2	100	6-1/0 Cu/4-1/0 Al	22kA	THHQB21100

### THHQB 120/240 Vac, Internal Common Trip

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	240 Vac Interrupting Rating	Ordering code
2	20	14-8 Cu/12-8 Al	22kA	THHQB22020
2	30	14-8 Cu/12-8 Al	22kA	THHQB22030
3	15	14-8 Cu/12-8 Al	22kA	THHQB32015
3	20	14-8 Cu/12-8 Al	22kA	THHQB32020
3	25	14-8 Cu/12-8 Al	22kA	THHQB32025
3	30	14-8 Cu/12-8 Al	22kA	THHQB32030
3	35	8-3 Cu/8-3 Al	22kA	THHQB32035
3	40	8-3 Cu/8-3 Al	22kA	THHQB32040
3	45	8-3 Cu/8-3 Al	22kA	THHQB32045
3	50	8-3 Cu/8-3 Al	22kA	THHQB32050
3	60	8-3 Cu/8-3 Al	22kA	THHQB32060
3	70	6-1/0 Cu/4-1/0 Al	22kA	THHQB32070
3	80	6-1/0 Cu/4-1/0 Al	22kA	THHQB32080
3	90	6-1/0 Cu/4-1/0 Al	22kA	THHQB32090
3	100	6-1/0 Cu/4-1/0 Al	22kA	THHQB32100

<sup>1</sup>Solid or stranded for 14-10 AWG.

<sup>2</sup>UL listed as SWD (switching duty) rated. Suitable for switching 120 Vac fluorescent lighting loads.  
UL listed HACR (heating, air conditioning and refrigeration).

## Q-Line miniature circuit breakers

Cable-in Cable-out (lug lug), 240V class

### THQC, THHQC 120/240 Vac

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120/240 Vac Interrupting Rating	Product Number <sup>2</sup>	120/240 Vac Interrupting Rating	Ordering code
1	15	14-8 Cu/12-8 Al	10kA	THQC1115WL <sup>3,4</sup>	22kA	THHQC1115WL <sup>3</sup>
1	20	14-8 Cu/12-8 Al	10kA	THQC1120WL <sup>3,4</sup>	22kA	THHQC1120WL <sup>3</sup>
1	30	14-8 Cu/12-8 Al	10kA	THQC1130WL <sup>3</sup>	22kA	THHQC1130WL <sup>3</sup>
1	40	8-3 Cu/8-3 Al	10kA	THQC1140WL <sup>3</sup>	22kA	THHQC1140WL <sup>3</sup>
1	50	8-3 Cu/8-3 Al	10kA	THQC1150WL <sup>3</sup>	–	–
1	60	8-3 Cu/8-3 Al	10kA	THQC1160WL <sup>3</sup>	–	–
1	70	6-1/0 Cu/4-1/0 Al	10kA	THQC1170WL	–	–

### THQC, THHQC 120/240 Vac, Internal Common Trip

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	120/240 Vac Interrupting Rating	Product Number <sup>2</sup>	120/240 Vac Interrupting Rating	Ordering code
2	15	14-8 Cu/12-8 Al	10kA	THQC2115WL <sup>3</sup>	22kA	THHQC2115WL <sup>3</sup>
2	20	14-8 Cu/12-8 Al	10kA	THQC2120WL <sup>3</sup>	22kA	THHQC2120WL <sup>3</sup>
2	25	14-8 Cu/12-8 Al	10kA	THQC2125WL <sup>3</sup>	–	–
2	30	14-8 Cu/12-8 Al	10kA	THQC2130WL <sup>3</sup>	–	–
2	35	8-3 Cu/8-3 Al	10kA	THQC2135WL <sup>3</sup>	–	–
2	40	8-3 Cu/8-3 Al	10kA	THQC2140WL <sup>3</sup>	–	–
2	50	8-3 Cu/8-3 Al	10kA	THQC2150WL <sup>3</sup>	22kA	THHQC2150WL <sup>3</sup>
2	60	8-3 Cu/8-3 Al	10kA	THQC2160WL <sup>3</sup>	22kA	THHQC2160WL <sup>3</sup>
2	70	6-1/0 Cu/4-1/0 Al	10kA	THQC2170WL	–	–
2	80	6-1/0 Cu/4-1/0 Al	10kA	THQC2180WL	–	–
2	90	6-1/0 Cu/4-1/0 Al	10kA	THQC2190WL	22kA	THHQC2190WL
2	100	6-1/0 Cu/4-1/0 Al	10kA	THQC21100WL	22kA	THHQC21100WL

### THQC, THHQC 240 Vac, Internal Common Trip

# of Poles	Ampere Rating	Wire Range <sup>1</sup>	240 Vac Interrupting Rating	Product Number <sup>2</sup>	240 Vac Interrupting Rating	Ordering code
2	20	14-8 Cu/12-8 Al	10kA	THQC22020WL	22kA	THHQC22020WL
2	25	14-8 Cu/12-8 Al	10kA	THQC22025WL	–	–
2	30	14-8 Cu/12-8 Al	10kA	THQC22030WL	22kA	THHQC22030WL
2	40	8-3 Cu/8-3 Al	10kA	THQC22040WL	–	–
2	50	8-3 Cu/8-3 Al	–	–	22kA	THHQC22050WL
2	60	8-3 Cu/8-3 Al	–	–	22kA	THHQC22060WL
2	100	6-1/0 Cu/4-1/0 Al	10kA	THQC22100WL	22kA	THHQC22100WL
3	15	14-8 Cu/12-8 Al	10kA	THQC32015WL	22kA	THHQC32015WL
3	20	14-8 Cu/12-8 Al	10kA	THQC32020WL	22kA	THHQC32020WL
3	25	14-8 Cu/12-8 Al	10kA	THQC32025WL	22kA	THHQC32025WL
3	30	14-8 Cu/12-8 Al	10kA	THQC32030WL	22kA	THHQC32030WL
3	40	8-3 Cu/8-3 Al	10kA	THQC32040WL	22kA	THHQC32040WL
3	50	8-3 Cu/8-3 Al	10kA	THQC32050WL	22kA	THHQC32050WL
3	60	8-3 Cu/8-3 Al	10kA	THQC32060WL	22kA	THHQC32060WL
3	70	6-1/0 Cu/4-1/0 Al	10kA	THQC32070WL	22kA	THHQC32070WL
3	80	6-1/0 Cu/4-1/0 Al	10kA	THQC32080WL	–	–
3	90	6-1/0 Cu/4-1/0 Al	10kA	THQC32090WL	–	–
3	100	6-1/0 Cu/4-1/0 Al	10kA	THQC32100WL	22kA	THHQC32100WL

<sup>1</sup>Solid or stranded for 14-10 AWG.

<sup>2</sup>Use additional suffix "BP" (THQC32020WLBP) for bulk pack of 48 poles. Carton weight 20 lbs. 15-60 ampere breakers only.

<sup>3</sup>Suitable for mounting on standard 35mm DIN Rail. Refer to table on page 6-38 for termination options.

<sup>4</sup>UL listed as SWD (switching duty) rated. Suitable for switching 120 Vac fluorescent lighting loads.

UL listed HACR (heating, air conditioning and refrigeration). Refer to Q-Line accessories listed on pages 6-40 and 6-41.

## Q-Line miniature circuit breakers

Stocked DIN-Rail Mount, 240V class

### Product Features

Multi-terminal Configuration Breakers

- 35 mm DIN rail mounting
- Optional front/rear panel mounting kits—THQCFMK, page 6-40.
- Optional load end terminal for up to (4) 0.25-inch quick connects.

Contact local ABB sales office for ring terminal configurations—not DIN rail compatible.

### THQC, THHQC 120/240 Vac

# of Poles	Ampere Rating	120/240 Vac Interrupting Rating	Ordering code No Lugs	Ordering code Line TQAL3A and Load THQECC
1	15	10kA	THQC1115LL <sup>1</sup>	—
1	20	10kA	THQC1120LL <sup>1</sup>	—
1	60	10kA	THQC1160LL	—
1	20	22kA	THHQC1120LL	THHQC1120CC

15-60A UL Listed HACR (heating, air conditioning and refrigeration)

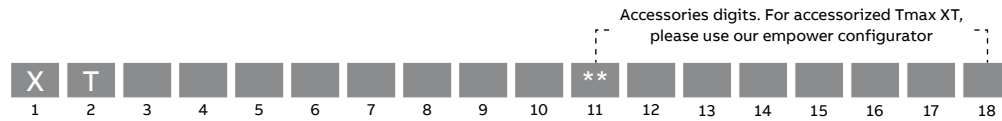
### THQC, THHQC 120/240 Vac, Internal Common Trip

# of Poles	Ampere Rating	120/240 Vac Interrupting Rating	Ordering code No Lugs	Ordering code Line TQAL3A and Load THQECC
2	20	10kA	THQC2120LL <sup>1</sup>	—
2	25	10kA	THQC2125LL	—
2	30	10kA	THQC2130LL	—
2	35	10kA	—	THQC2135CC
2	40	10kA	THQC2140LL	—
2	45	10kA	—	THQC2145CC
2	50	10kA	—	THQC2150CC
2	15	22kA	THHQC2115LL	—
2	60	22kA	THHQC2160LL	—

15-60A UL Listed HACR (heating, air conditioning and refrigeration)

# SACE® Tmax® XT molded case circuit breakers

## Ordering code construction



### 1 & 2 Version

Digit
X T

### 3 Frame

Digit
1 2 3 4 5 6 7

### 4 Interrupting ratings – 480 V AC\*

Digits	XT1	XT2	XT3	XT4	XT5	XT6	XT7
N	25	25	25	25	35	35	–
S	35	35	35	35	50	50	50
H	65	65	–	65	65	65	65
L	–	100	–	100	100	–	100
V	–	150	–	150	150	–	–
X	–	200	–	200	200	–	–

### 5 Standard UL and IEC

Digit	
U	UL 80%
Q	UL 100%
C	UL 80% + CCC
D	UL 100% + CCC
E	IEC only
S	IEC 50 °C

### 6 Number of poles

Digit	
3	3 Poles
4	4 Poles 100%
N	4 Poles 50% (IEC only)

### 7, 8, 9 Frame amps

XT1–4		XT5–7	
Digits	Amps	Digits	Amps
0 1 0	10	2 5 A	250 (XT5)
0 1 5	15	3 0 A	300 (XT5)
0 2 0	20	3 2 A	320 (XT5 IEC <sup>1</sup> )
0 2 5	25	4 0 A	400 (XT5)
0 3 0	30	5 0 B	500 (XT5)
0 3 5	35	6 0 B	600 (XT5)
0 4 0	40	6 0 0	600 (XT6)
0 4 5	45	6 0 C	600 (XT7)
0 5 0	50	6 3 B	630 (XT5 IEC <sup>1</sup> )
0 6 0	60	6 3 0	630 (XT6 IEC <sup>1</sup> )
0 7 0	70	8 0 0	800 (XT6)
0 8 0	80	8 0 C	800 (XT7)
0 9 0	90	1 K 0	1000 (XT6 IEC <sup>1</sup> )
1 0 0	100	1 0 D	1000 (XT7)
1 1 0	110	1 2 E	1200/1250 (XT7)
1 2 5	125	1 6 F	1600 (XT7 IEC <sup>1</sup> )
1 5 0	150		
1 7 5	175		
2 0 0	200		
2 2 5	225		
2 5 0	250		

### 10 Trip unit

Digit		
Power distribution		
A	TMF	Thermal-magnetic
B	TMA	Thermal-magnetic adjustable
E	LS/I*	Ekip DIP
C	LIG	Ekip DIP
F	LSI	Ekip DIP
P	LSI	Ekip Touch
R	LSI	Ekip Touch Measuring
T	LSI	Ekip Hi-Touch
G	LSIG	Ekip DIP
Q	LSIG	Ekip Touch
S	LSIG	Ekip Touch Measuring
U	LSIG	Ekip Hi-Touch
Generator protection		
X	LS/I*	Ekip G DIP
Y	LSIG	Ekip G Touch
Z	LSIG	Ekip G Hi-Touch
Motor protection		
M	MA (MCP)	Magnetic Adjustable
K	I (MCP)	Ekip M DIP
L	LIU (MPCB)	Ekip M DIP
W	LRIU (MPCB)	Ekip M Touch
Molded Case Switch		
D	MCS	–



Reference only. For stocked items, see following pages.

\*\* Must be “Y” for ReliaGear neXT breakers, used in ReliaGear neXT power panelboards and ReliaGear SB switchboards.

<sup>1</sup> IEC only.

This ordering code structure is meant for field identification of a SACE Tmax XT.

\* Selectable either S or I only (use for LI)

## SACE® Tmax® XT MCCBs main characteristics

### SACE Tmax XT range performance

		XT1	XT2	XT3	XT4	XT5	XT6	XT7
Frame size (A)		125	125	225	250	600	800	1200
Poles		3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
Interrupt rating (kA)	240 V AC	50, 65, 100	65, 100, 150, 200	50, 65	65, 100, 150, 200	65, 100, 150, 200	65, 100, 200	65, 100, 200
	480 V AC	25, 35, 65	25, 35, 65, 100, 150, 200	25, 35	25, 35, 65, 100, 150, 200	35, 50, 65, 100, 150, 200	35, 50, 65	50, 65, 100
Dimensions (in.) (W x D x H)	3-poles breaker	3 x 2.75 x 5.12	3.54 x 3.25 x 5.12	4.13 x 2.75 x 5.90	4.13 x 3.25 x 6.3	5.51 x 4.07 x 8.07	8.27 x 4.07 x 10.55	8.27 x 6.57 x 10.55
	Packaging	5.04 x 5.63 x 5.31	5.12 x 5.71 x 8.19	6.10 x 7.48 x 7.48	5.71 x 6.61 x 8.27	9.76 x 11.22 x 9.45	12.01 x 14.57 x 11.22	11.02 x 14.17 x 13.78
Trip units	TMF	✓	✓	✓	✓	-	-	-
	TMA	-	✓	-	✓	-	✓	-
	Ekip DIP	-	✓	-	✓	✓	✓	✓
	Ekip Touch	-	✓	-	✓	✓	-	✓

### SACE Tmax XT range trip units capabilities

#### Thermomagnetic trip units

#### Electronic trip units



Features	TMF	TMA	Ekip DIP (LS/I, LIG, LSI and LSIG)	Ekip Touch, Touch measuring and Hi-Touch (LSI and LSIG)
Overload (L) and Instantaneous (I) protection	✓	✓	✓	✓
Ground fault protection (G)	-	-	X (with LSIG)	X (with LSIG)
Selective short circuit protection (S)	-	-	X (with LS/I <sup>1</sup> , LSI or LSIG)	✓
L protection adjustability (I1)	Fixed	0.7–1 x In*	0.4...1.0 x In Steps of 0.04 (LS/I) or 0.02 (LSI/LSIG)	0.4...1.0 x In Steps of 0.001 x In
S protection adjustability (I2) <sup>2</sup>	-	-	Off, 1...10 x In Steps of 0.5 x In <sup>3</sup>	Off, 0.6...10 x In Steps of 0.1 x In
I protection adjustability (I3) <sup>2</sup>	Fixed	5–10 x In	1...10 x In Steps of 0.5 x In <sup>3</sup>	1.5...10 x In (15 x In for XT7) Steps of 0.1 x In
G protection adjustability (I4) <sup>2</sup>	-	-	Off, 0.2, 0.25, 0.45, 0.55, 0.75, 0.80 and 1 x In	Off, 0.1...1 x In 0.001 x In
Communication	-	-	O	O
Cloud connectivity	-	-	-	O
Bluetooth <sup>4</sup> connectivity	-	-	-	✓
Current measurements	-	-	-	✓
Voltage, power and energy measurements	-	-	-	X (with Ekip Touch measuring)
Voltage, power and energy measurements and protections	-	-	-	X (with Ekip Hi-Touch)
Embedded functions	-	-	-	O
RELT (reduced energy let-through feature)	-	-	-	O
Event recorder, contact wear information and self-diagnosis	-	-	-	✓

#### Legend

- Not a possible feature

✓ Included

O Optional

\* In = Trip unit sensor

<sup>1</sup> Either S or I must be selected during commissioning

<sup>2</sup> Valid for Tmax XT1-6. For Tmax XT7, please refer to Tech Catalog

<sup>3</sup> 4, 5, 6 and 9.5 x In not available

<sup>4</sup> Bluetooth is a trademark of Bluetooth SIG, Inc.

## SACE® Tmax® XT molded case circuit breakers

XT1 base breakers



XT1 125A Fixed (F) - 3 poles - with Cu 1x14-1/0 AWG saddle terminals (A) - UL/CSA

		N	S	H
<b>Interrupting rating @ 480v</b>		<b>25kA</b>	<b>35kA</b>	<b>65kA</b>
<b>In</b>	<b>I<sub>3</sub></b>	<b>Ordering Code</b>	<b>Ordering Code</b>	<b>Ordering Code</b>
<b>Fixed thermal magnetic trip unit (TMF)</b>				
15	500	XT1NU3015AAA000XXX	---	---
20	500	XT1NU3020AAA000XXX	---	---
25	500	XT1NU3025AAA000XXX	---	---
30	500	XT1NU3030AAA000XXX	---	---
30 (100% rated)	500	XT1NQ3030AAA000XXX	---	---
35	500	XT1NU3035AAA000XXX	---	---
40	500	XT1NU3040AAA000XXX	---	---
45	500	XT1NU3045AAA000XXX	---	---
50	500	XT1NU3050AAA000XXX	---	---
60	600	XT1NU3060AAA000XXX	XT1SU3060AAA000XXX	---
70	700	XT1NU3070AAA000XXX	---	---
80	800	XT1NU3080AAA000XXX	---	---
90	900	XT1NU3090AAA000XXX	---	---
100	1000	XT1NU3100AAA000XXX	---	---
100 (100% rated)	1000	XT1NQ3100AAA000XXX	---	---
110	1100	XT1NU3110AAA000XXX	---	---
125	1250	XT1NU3125AAA000XXX	---	---



## SACE® Tmax® XT molded case circuit breakers

### XT1 base breakers



#### XT1 125A Fixed (F) - 3 poles - without lugs (see lugs on page 6-28) - UL/CSA

		N	S	H
Interrupting rating @ 480v		25kA	35kA	65kA
In	I <sub>3</sub>	Ordering Code	Ordering Code	Ordering Code
<b>Fixed thermal magnetic trip unit (TMF)</b>				
15	500	XT1NU3015AFF000XXX	XT1SU3015AFF000XXX	XT1HU3015AFF000XXX
20	500	XT1NU3020AFF000XXX	XT1SU3020AFF000XXX	XT1HU3020AFF000XXX
25	500	XT1NU3025AFF000XXX	XT1SU3025AFF000XXX	XT1HU3025AFF000XXX
30	500	XT1NU3030AFF000XXX	XT1SU3030AFF000XXX	XT1HU3030AFF000XXX
35	500	XT1NU3035AFF000XXX	XT1SU3035AFF000XXX	XT1HU3035AFF000XXX
40	500	XT1NU3040AFF000XXX	XT1SU3040AFF000XXX	XT1HU3040AFF000XXX
45	500	XT1NU3045AFF000XXX	---	XT1HU3045AFF000XXX
50	500	XT1NU3050AFF000XXX	XT1SU3050AFF000XXX	XT1HU3050AFF000XXX
60	600	XT1NU3060AFF000XXX	XT1SU3060AFF000XXX	XT1HU3060AFF000XXX
70	700	XT1NU3070AFF000XXX	XT1SU3070AFF000XXX	XT1HU3070AFF000XXX
70 (100% rated)	700	XT1NQ3070AFF000XXX	---	---
80	800	XT1NU3080AFF000XXX	XT1SU3080AFF000XXX	XT1HU3080AFF000XXX
90	900	XT1NU3090AFF000XXX	XT1SU3090AFF000XXX	XT1HU3090AFF000XXX
100	1000	XT1NU3100AFF000XXX	XT1SU3100AFF000XXX	XT1HU3100AFF000XXX
100 (100% rated)	1000	XT1NQ3100AFF000XXX	XT1SQ3100AFF000XXX	---
110	1100	XT1NU3110AFF000XXX	XT1SU3110AFF000XXX	XT1HU3110AFF000XXX
125	1250	XT1NU3125AFF000XXX	XT1SU3125AFF000XXX	XT1HU3125AFF000XXX
<b>Magnetic trip unit (MCP)</b>				
3	9-33	---	---	XT1HU3003MFF000XXX
7	21-77	---	---	XT1HU3007MFF000XXX
15	45-165	---	---	XT1HU3015MFF000XXX
30	90-330	---	---	XT1HU3030MFF000XXX
50	150-550	---	---	XT1HU3050MFF000XXX
70	210-770	---	---	XT1HU3070MFF000XXX
80	240-880	---	---	XT1HU3080MFF000XXX
100	300-1100	---	---	XT1HU3100MFF000XXX
125	375-1375	---	---	XT1HU3125MFF000XXX
<b>Molded case switch (MCS)</b>				
In		Mag. override		
125	1000	XT1NU3125DFF000XXX	XT1SU3125DFF000XXX	XT1HU3125DFF000XXX

# SACE® Tmax® XT molded case circuit breakers

## XT2 base breakers



XT2 125A - Fixed (F) - 3 poles - without lugs (see lugs on page 6-28) - UL/CSA

	N	S	H	L
<b>Interrupting rating @ 480v</b>	<b>25kA</b>	<b>35kA</b>	<b>65kA</b>	<b>100kA</b>
<b>In</b>	<b>Ordering code</b>	<b>Ordering code</b>	<b>Ordering code</b>	<b>Ordering code</b>
<b>Thermal magnetic fixed (TMF)</b>				
15	XT2NU3015AFF000XXX	XT2SU3015AFF000XXX	XT2HU3015AFF000XXX	XT2LU3015AFF000XXX
20	XT2NU3020AFF000XXX	XT2SU3020AFF000XXX	XT2HU3020AFF000XXX	XT2LU3020AFF000XXX
25	XT2NU3025AFF000XXX	XT2SU3025AFF000XXX	XT2HU3025AFF000XXX	---
30	XT2NU3030AFF000XXX	XT2SU3030AFF000XXX	XT2HU3030AFF000XXX	XT2LU3030AFF000XXX
35	XT2NU3035AFF000XXX	XT2SU3035AFF000XXX	XT2HU3035AFF000XXX	XT2LU3035AFF000XXX
40	XT2NU3040AFF000XXX	XT2SU3040AFF000XXX	XT2HU3040AFF000XXX	XT2LU3040AFF000XXX
50	XT2NU3050AFF000XXX	XT2SU3050AFF000XXX	XT2HU3050AFF000XXX	XT2LU3050AFF000XXX
60	XT2NU3060AFF000XXX	XT2SU3060AFF000XXX	XT2HU3060AFF000XXX	XT2LU3060AFF000XXX
70	XT2NU3070AFF000XXX	XT2SU3070AFF000XXX	XT2HU3070AFF000XXX	XT2LU3070AFF000XXX
<b>Thermal magnetic adjustable (TMA)</b>				
80	XT2NU3080BFF000XXX	XT2SU3080BFF000XXX	XT2HU3080BFF000XXX	XT2LU3080BFF000XXX
90	XT2NU3090BFF000XXX	XT2SU3090BFF000XXX	XT2HU3090BFF000XXX	XT2LU3090BFF000XXX
100	XT2NU3100BFF000XXX	XT2SU3100BFF000XXX	XT2HU3100BFF000XXX	XT2LU3100BFF000XXX
110	---	---	XT2HU3110BFF000XXX	XT2LU3110BFF000XXX
125	XT2NU3125BFF000XXX	XT2SU3125BFF000XXX	XT2HU3125BFF000XXX	XT2LU3125BFF000XXX
<b>Magnetic trip unit (MCP)</b>				
7	---	---	XT2HU3007MFF000XXX	---
15	---	---	XT2HU3015MFF000XXX	---
30	---	---	XT2HU3030MFF000XXX	---
50	---	---	XT2HU3050MFF000XXX	---
70	---	---	XT2HU3070MFF000XXX	---
80	---	---	XT2HU3080MFF000XXX	---
100	---	---	XT2HU3100MFF000XXX	---
125	---	---	XT2HU3125MFF000XXX	---
<b>Ekip Dip LS/I trip unit</b>				
60	XT2NU3060EFF000XXX	XT2SU3060EFF000XXX	XT2HU3060EFF000XXX	---
100	XT2NU3100EFF000XXX	XT2SU3100EFF000XXX	XT2HU3100EFF000XXX	XT2LU3100EFF000XXX
125	XT2NU3125EFF000XXX	XT2SU3125EFF000XXX	XT2HU3125EFF000XXX	---
125 (100% rated)	XT2NQ3125EFF000XXX	XT2SQ3125EFF000XXX	XT2HQ3125EFF000XXX	---
<b>Ekip Dip LSIG trip unit</b>				
25	XT2NU3025GFF000XXX	XT2SU3025GFF000XXX	---	---
60	---	---	XT2HU3060GFF000XXX	---
100	XT2NU3100GFF000XXX	XT2SU3100GFF000XXX	XT2HU3100GFF000XXX	---
125	XT2NU3125GFF000XXX	XT2SU3125GFF000XXX	XT2HU3125GFF000XXX	---
<b>Molded case switch (MCS)</b>				
<b>In</b>				
125	---	---	XT2HU3125DFF000XXX	---

## SACE® Tmax® XT molded case circuit breakers

### XT3 base breakers



#### XT3 225A - Fixed (F) - 3 poles - without lugs (see lugs on page 6-28) - UL/CSA

		N	S
Interrupting rating @ 480v		25kA	35kA
In	I <sub>3</sub>	Ordering Code	Ordering Code
<b>Fixed thermal magnetic trip unit (TMF)</b>			
60	600	XT3NU3060AFF000XXX	---
80	800	XT3NU3080AFF000XXX	---
90	900	XT3NU3090AFF000XXX	---
100	1000	XT3NU3100AFF000XXX	XT3SU3100AFF000XXX
110	1100	XT3NU3110AFF000XXX	XT3SU3110AFF000XXX
125	1250	XT3NU3125AFF000XXX	XT3SU3125AFF000XXX
150	1500	XT3NU3150AFF000XXX	XT3SU3150AFF000XXX
175	1750	XT3NU3175AFF000XXX	XT3SU3175AFF000XXX
200	2000	XT3NU3200AFF000XXX	XT3SU3200AFF000XXX
200 (100% rated)	2000	XT3NQ3200AFF000XXX	---
225	2250	XT3NU3225AFF000XXX	XT3SU3225AFF000XXX
<b>Magnetic trip unit (MCP)</b>			
110	660-1320	---	XT3SU3110MFF000XXX
125	750-1500	---	XT3SU3125MFF000XXX
150	900-1800	---	XT3SU3150MFF000XXX
200	1200-2400	---	XT3SU3200MFF000XXX
<b>Molded case switch (MCS)</b>			
<b>In</b>			
225	2250	XT3NU3225DFF000XXX	XT3SU3225DFF000XXX

# SACE® Tmax® XT molded case circuit breakers

## XT4 base breakers



XT4 250A - Fixed (F) - 3 poles - without lugs (see lugs on page 6-28) - UL/CSA

		N	S	H	L
<b>Interrupting rating @480v</b>		<b>25kA</b>	<b>35kA</b>	<b>65kA</b>	<b>100kA</b>
<b>In</b>	<b>I<sub>3</sub></b>	<b>Ordering code</b>	<b>Ordering code</b>	<b>Ordering code</b>	<b>Ordering code</b>
<b>Thermal magnetic fixed (TMF)</b>					
150	1500	XT4NU3150AFF000XXX	XT4SU3150AFF000XXX	XT4HU3150AFF000XXX	XT4LU3150AFF000XXX
175	1750	XT4NU3175AFF000XXX	XT4SU3175AFF000XXX	XT4HU3175AFF000XXX	XT4LU3175AFF000XXX
200	2000	XT4NU3200AFF000XXX	XT4SU3200AFF000XXX	XT4HU3200AFF000XXX	XT4LU3200AFF000XXX
225	2250	XT4NU3225AFF000XXX	XT4SU3225AFF000XXX	XT4HU3225AFF000XXX	XT4LU3225AFF000XXX
250	2500	XT4NU3250AFF000XXX	XT4SU3250AFF000XXX	XT4HU3250AFF000XXX	XT4LU3250AFF000XXX
250 (100% rated)	2500	XT4NQ3250AFF000XXX	---	XT4HQ3250AFF000XXX	---
<b>Thermal magnetic adjustable (TMA)</b>					
150	750-1500	XT4NU3150BFF000XXX	XT4SU3150BFF000XXX	XT4HU3150BFF000XXX	1
175	875-1750	XT4NU3175BFF000XXX	XT4SU3175BFF000XXX	XT4HU3175BFF000XXX	XT4LU3175BFF000XXX
200	1000-2000	XT4NU3200BFF000XXX	XT4SU3200BFF000XXX	XT4HU3200BFF000XXX	XT4LU3200BFF000XXX
225	1125-2250	XT4NU3225BFF000XXX	XT4SU3225BFF000XXX	XT4HU3225BFF000XXX	XT4LU3225BFF000XXX
250	1250-2500	XT4NU3250BFF000XXX	XT4SU3250BFF000XXX	XT4HU3250BFF000XXX	XT4LU3250BFF000XXX
250	1250-2500	XT4NQ3250BFF000XXX	XT4SQ3250BFF000XXX	XT4HQ3250BFF000XXX	---
<b>Magnetic trip unit (MCP)</b>					
25	75-275	---	---	XT4HU3025MFF000XXX	---
50	150-550	---	---	XT4HU3050MFF000XXX	---
100	500-7000	---	---	XT4HU3100MFF000XXX	---
150	750-1500	---	---	XT4HU3150MFF000XXX	---
175	875-1750	---	---	XT4HU3175MFF000XXX	---
200	1000-2000	---	---	XT4HU3200MFF000XXX	---
250	1250-2500	---	---	XT4HU3250MFF000XXX	---
<b>Ekip Dip LS/I trip unit</b>					
150	---	XT4NU3150EFF000XXX	XT4SU3150EFF000XXX	XT4HU3150EFF000XXX	---
225	---	XT4NU3225EFF000XXX	XT4SU3225EFF000XXX	XT4HU3225EFF000XXX	---
250	---	XT4NU3250EFF000XXX	XT4SU3250EFF000XXX	XT4HU3250EFF000XXX	XT4LU3250EFF000XXX
250 (100% rated)	---	XT4NQ3250EFF000XXX	XT4SQ3250EFF000XXX	XT4HQ3250EFF000XXX	---
<b>Ekip Dip LSIG trip unit</b>					
150	---	XT4NU3150GFF000XXX	---	XT4HU3150GFF000XXX	---
225	---	XT4NU3225GFF000XXX	---	XT4HU3225GFF000XXX	---
250	---	XT4NU3250GFF000XXX	XT4SU3250GFF000XXX	XT4HU3250GFF000XXX	---
<b>Molded case switch (MCS)</b>					
<b>In</b>	<b>Mag. Override</b>				
250	2500	XT4NU3250DFF000XXX	XT4SU3250DFF000XXX	XT4HU3250DFF000XXX	---

## SACE® Tmax® XT molded case circuit breakers

### XT5 base breakers



XT5 400/600A - Fixed (F) - 3poles without lugs (see lugs on page 6-28) - UL

	N	S	H	L
<b>Interrupting rating @ 480Vac</b>	<b>35kA</b>	<b>50kA</b>	<b>65kA</b>	<b>100kA</b>
<b>In</b>	<b>Ordering code</b>	<b>Ordering code</b>	<b>Ordering code</b>	<b>Ordering code</b>
<b>Thermal magnetic adjustable (TMA)</b>				
300	XT5NU330ABFF000XXX	XT5SU330ABFF000XXX	XT5HU330ABFF000XXX	---
400	XT5NU340ABFF000XXX	XT5SU340ABFF000XXX	XT5HU340ABFF000XXX	---
400 100% rated	XT5NQ340ABFF000XXX	---	---	---
600	XT5NU360BBFF000XXX	XT5SU360BBFF000XXX	XT5HU360BBFF000XXX	---
<b>Ekip Dip LS/I trip unit</b>				
300	XT5NU330AEFF000XXX	---	---	---
400	XT5NU340AEFF000XXX	---	XT5HU340AEFF000XXX	---
400 100% rated	XT5NQ340AEFF000XXX	XT5SQ340AEFF000XXX	XT5HQ340AEFF000XXX	---
600	XT5NU360BEFF000XXX	---	XT5HU360BEFF000XXX	---
<b>Ekip Dip LSI trip unit</b>				
400	---	XT5SU340AFF000XXX	XT5HU340AFF000XXX	---
600	---	---	XT5HU360BFFF000XXX	---
<b>Molded case switch (MCS)</b>				
400	---	---	XT5HU340ADFF000XXX	---
600	XT5NU360BFFF000XXX	XT5SU360BFFF000XXX	XT5HU360BDFF000XXX	---
<b>Ekip I trip unit</b>				
400	XT5NU340AKFF000XXX	---	---	XT5LU340AKFF000XXX
500	---	---	---	XT5LU350BKFF000XXX

XT6 800A - Fixed (F) - 3poles without lugs (see lugs on page 6-27) - UL



	N	S	H
<b>Interrupting rating @ 480Vac</b>	<b>35kA</b>	<b>50kA</b>	<b>65kA</b>
<b>In</b>	<b>Ordering code</b>	<b>Ordering code</b>	<b>Ordering code</b>
<b>Thermal magnetic adjustable (TMA)</b>			
600	---	XT6SU3600BFF000XXX	XT6HU3600BFF000XXX
800A	XT6NU3800BFF000XXX	XT6SU3800BFF000XXX	XT6HU3800BFF000XXX
<b>Ekip Dip LS/I trip unit</b>			
600 100% rated	XT6NQ3600EFF000XXX	XT6SQ3600EFF000XXX	---
800	XT6NU3800EFF000XXX	XT6SU3800EFF000XXX	---
800 100% rated	XT6NQ3800EFF000XXX	XT6SQ3800EFF000XXX	XT6HQ3800EFF000XXX
800	---	---	XT6HU3800GFF000XXX
800 (100% rated)	---	---	XT6HQ3800GFF000XXX
<b>Molded case switch (MCS)</b>			
800	---	---	XT6HU3800DFF000XXX

## SACE® Tmax® XT molded case circuit breakers

### XT5 base breakers

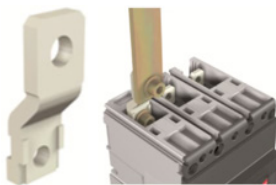


XT7 1200A - Fixed (F) - 3poles without lugs (see lugs on page 6-28) - UL

	S	H	L
<b>Interrupting rating @ 480Vac</b>	<b>35kA</b>	<b>65kA</b>	<b>100KA</b>
<b>In</b>	<b>Ordering code</b>	<b>Ordering code</b>	<b>Ordering code</b>
<b>Ekip Dip LS/I trip unit</b>			
1000 (100% rated)	XT7SQ310DEFF000XXX	---	---
1200	XT7SU312EEFF000XXX	---	---
<b>Ekip Dip LSI trip unit</b>			
800	XT7SU380CFFF000XXX	XT7HU380CFFF000XXX	---
1000	XT7SU310DFFF000XXX	---	---
1200	XT7SU312EFFF000XXX	XT7HU312EFFF000XXX	---
<b>Ekip Dip LSIG trip unit</b>			
1000	---	XT7HU310DGFF000XXX	XT7LU310DGFF000XXX
<b>Ekip M Dip I trip unit</b>			
800	---	---	XT7LU380CKFF000XXX
<b>Molded case switch (MCS)</b>			
1200	---	---	XT7LU312EDFF000XXX

## SACE® Tmax® XT accessories

Terminal kits, insulating kits and phase barriers



extended front terminals



mechanical lug with control tap



multi-cable lug

Terminal kits	Control Tap	Cable type	# cables and wire size	Wire size	Ordering code
XT1				14 12 10 8 6 4 3 2 1 1/0 2/0 3/0 4/0 250 300 350	
Front terminals (terminal nut insert only)					KXT1F-3PC
Front terminals for MCP					KXT1F3PCMCP
Extended front terminals					KXT1EF-3PC
Mechanical lug		Cu/Al	1x 10 - 2/0 AWG	. . . . .	KXT1CUAL1-3PC
Mechanical lug	x	Cu/Al	1x 10 - 2/0 AWG	. . . . .	KXT1CUAL1C-3PC
Mechanical lug		Cu	1x 14 - 1/0 AWG	. . . . .	KXT1CU-3PC
Mechanical lug for MCP		Cu	1x 14 - 1/0 AWG	. . . . .	KXT1CUMCP-3PC
Multi-cable		Cu	6x 14 - 2 AWG	. . . . .	KXT1MC-3PC
XT2				14 12 10 8 6 4 3 2 1 1/0 2/0 3/0 4/0 250 300 350	
Front terminals (terminal nut insert only)					KXT2F-3PC
Mechanical lug		Cu/Al	1x 14 - 1/0 AWG	. . . . .	KXT2CUAL1-3PC
Mechanical lug		Cu/Al	1x 10 - 2/0 AWG	. . . . .	KXT2CUAL2-3PC
Mechanical lug	x	Cu/Al	1x 10 - 2/0 AWG	. . . . .	KXT2CUAL2C-3PC
Multi-cable		Cu	6x 14 - 2 AWG	. . . . .	KXT2MC-3PC
XT3				14 12 10 8 6 4 3 2 1 1/0 2/0 3/0 4/0 250 300 350	
Front terminals (terminal nut insert only)					KXT3F-3PC
Mechanical lug		Cu/Al	1x 14 - 1/0 AWG	. . . . .	KXT3CUAL1-3PC
Mechanical lug	x	Cu/Al	1x 14 - 1/0 AWG	. . . . .	KXT3CUAL1C-3PC
Mechanical lug	x	Cu/Al	1x 4 AWG - 300 kcmil	. . . . .	KXT3CUAL2C-3PC
Multi-cable		Cu	6x 12 - 2 AWG	. . . . .	KXT3MC-3PC
Rear adjustable					KXT3ER-3PC
XT4				14 12 10 8 6 4 3 2 1 1/0 2/0 3/0 4/0 250 300 350	
Front terminals (terminal nut insert only)					KXT4F-3PC
Extended front terminals					KXT4EF-3PC
Extended spread front terminals					KXT4ES-3PC
Mechanical lug		Cu/Al	1x 14 - 1/0 AWG	. . . . .	KXT4CUAL1-3PC
Mechanical lug		Cu/Al	1x 3/0 AWG - 350 kcmil	. . . . .	KXT4CUAL4-3PC
Mechanical lug	x	Cu/Al	1x 14 - 1/0 AWG	. . . . .	KXT4CUAL1C-3PC
Mechanical lug	x	Cu/Al	1x 4 AWG - 300 kcmil	. . . . .	KXT4CUAL2C-3PC
Mechanical lug extended front	x	Cu/Al	1x 3/0 AWG - 350 kcmil	. . . . .	KXT4CUAL3C-3PC
Multi-cable		Cu	6x 12 - 2 AWG	. . . . .	KXT4MC-3PC

## SACE® Tmax® XT accessories

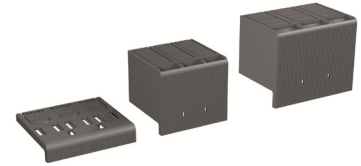
Terminal kits, insulating kits and phase barriers

Terminal kits	Control Tap	Cable type	# cables and wire size	Wire size	Ordering code
XT5			4 3 2 1 1/0 2/0 3/0 4/0 250 300 350 400 500 600 700 750		
Front terminals (terminal nut insert only)					KXT5F-3PC
Extended front terminals					KXT5EF-3PC
Mechanical lug		Cu/Al	1x 350 - 750 kcmil	. . . . .	KXT5CUAL1X750KC-3
Mechanical lug		Cu/Al	2x 2/0 AWG - 500 kcmil	. . . . .	KXT5CUAL2X500K-3PC
Mechanical lug		Cu/Al	2x 500 - 750 kcmil	. . . . .	KXT5CUAL2X750KC-3
Mechanical lug	x	Cu/Al	1x 4 AWG - 350 kcmil	. . . . .	KXT5CUAL350KC-3PC
Mechanical lug	x	Cu/Al	1x 350 - 750 kcmil	. . . . .	KXT5CUAL1X750KCC-3
Mechanical lug	x	Cu/Al	2x 2/0 AWG - 500 kcmil	. . . . .	KXT5CUAL2X500KC-3
Mechanical lug	x	Cu/Al	2x 500 - 750 kcmil	. . . . .	KXT5CUAL2X750KCC-3
XT6			4 3 2 1 1/0 2/0 3/0 4/0 250 300 350 400 500 600 700 750		
Front terminals (terminal nut insert only)					KXT6F-3PC
Extended front terminals					KXT6EF-3PC
Mechanical lug		Cu/Al	2x 250 - 500 kcmil	. . . . .	KXT6CUAL2X500K-3PC
Mechanical lug		Cu/Al	3x 2/0 AWG - 400 kcmil	. . . . .	KXT6CUAL3X400K-3PC
Mechanical lug	x	Cu/Al	2x 250 - 500 kcmil	. . . . .	KXT6CUAL2X500KC-3
Mechanical lug	x	Cu/Al	3x 2/0 AWG - 400 kcmil	. . . . .	KXT6CUAL3X400KC-3
Mechanical lug	x	Cu/Al	2x 500 - 750 kcmil	. . . . .	KXT6CUAL2X750KCC-3
XT7			4 3 2 1 1/0 2/0 3/0 4/0 250 300 350 400 500 600 700 750		
Mechanical lug		Cu/Al	3x 500 - 750 kcmil	. . . . .	KXT7CUAL3X750KC-3
Mechanical lug		Cu/Al	4x 4/0 AWG - 500 kcmil	. . . . .	KXT7CUAL4X500K-3PC



## SACE® Tmax® XT accessories

Terminal kits, insulating kits and phase barriers

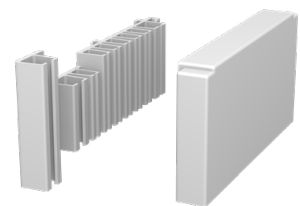


Optional insulating terminal covers	XT1	XT2	XT3	XT4	XT5	XT6	XT7
HTC high terminal covers for front terminals	KXT1HTC-3	KXT2HTC-3	KXT3HTC-3	KXT4HTC-3	KXT5HTC-3	KXT6HTC-3	KXT7HTC2pcs-3
HTC_BS High terminal covers with back shield for extended front terminals	---	---	---	---	KXT5HTCBS-3	---	---

Phase barriers	XT1	XT2	XT3	XT4	XT5	XT6
PB height 25mm/0.98in	KXTBPB25-3	KXTCPB25-3	KXTBPB25-3	KXTCPB25-3	KXT5PB25UL-3	---
PB height 100mm/3.94in	KXTBPB100-3	KXTCPB100-3	KXTBPB100-3	KXTCPB100-3	KXT5PB100UL-3	KXT6PB100UL-3
PB height 200mm/7.87in	KXTBPB200-3	KXTCPB200-3	KXTBPB200-3	KXTCPB200-3	KXT5PB200UL-3	KXT6PB200UL-3
PS – Rear phase separators for FP	---	---	---	---	KXT5PBFP-3	---

	XT1	XT2	XT3	XT4
Din rail adapter	KXT1EDIN-3	KXT2DIN-3	---	KXT4DIN-3

	XT5	XT6
Cable Rack	KXTFACCRCK	KXTFACCRCK



Cable rack instruction sheet

**SACE® Tmax® XT accessories**  
Electrical

**Shunt trip (YO, SOR), pre-wired for fixed breakers**

Voltage DC	Voltage AC	Ordering Code
XT1, XT2, XT3, XT4		
12V	-	KXTASORCFPA
24-30V	24-30V	KXTASORCFPB
110-125V	110-127V	KXTASORCFPD
220-250V	220-240V	KXTASORCFPE
-	480-525V	KXTASORCFPG
XT5, XT6		
12V	-	KXTFYOCFPA
24-60V	24-60V	KXTFYOCFPB
110-250V	110-250V	KXTFYOCFPD



**Undervoltage release (UVR), pre-wired for fixed breakers**

Voltage DC	Voltage AC	Ordering Code
XT1, XT2, XT3, XT4		
24-30V	24-30V	KXTAUVRCFP1
110-125V	110-127V	KXTAUVRCFP4
220-250V	220-240V	KXTAUVRCFP5
-	480-525V	KXTAUVRCFP7
XT5, XT6		
24-30V	24-30V	KXTFYUC1
110-125V	110-127V	KXTFYUC4
220-250V	220-240V	KXTFYUC5
-	480-525V	KXTFYUC7

## SACE® Tmax® XT accessories

### Electrical



Q	SY	S51	S52	XT1	XT2	XT3	XT4	XT5	XT6	XT7
<b># of contacts, 24V DC rated</b>										
1	1							KXT5AUXCDQYFP(1)		
1	1			KXTAAXCDQSYFP	KXTAAXCDQSYFP	KXTAAXCDQSYFP	KXTAAXCDQSYFP	KXTAAXCDQSYFP	KXTAAXCDQSYFP	KXTAAXCDQSYFP
3	1				KXTDAXCD3QSYFP	KXTDAXCD3QSYFP	KXTDAXCD3QSYFP	KXTDAXCD3QSYFP	KXTDAXCD3QSYFP	KXTDAXCD3QSYFP
	1									KXT7AUXDY
	1				KXTCAXDS51FP		KXTCAXDS51FP	KXTCAXDS51FP	KXTCAXDS51FP	KXTCAXDS51FP
	1							KXTFAUXCDS52FP	KXTFAUXCDS52FP	KXT7AUXDS52
<b># of contacts, 250V AC rated</b>										
1	1							KXT5AUXC2QYFP(1)		
1	1			KXTAAXCQSYFP	KXTAAXCQSYFP	KXTAAXCQSYFP	KXTAAXCQSYFP	KXTAAXCQSYFP	KXTAAXCQSYFP	KXTAAXCQSYFP
2	1			KXTAAXC2QSYFP	KXTAAXC2QSYFP	KXTAAXC2QSYFP	KXTAAXC2QSYFP	KXTAAXC2QSYFP	KXTAAXC2QSYFP	KXTAAXC2QSYFP
2	2	1			KXTCAXC2Q2SYS51FP		KXTCAXC2Q2SYS51FP			
3	1				KXTDAXC3QSYFP	KXTDAXC3QSYFP	KXTDAXC3QSYFP	KXTDAXC3QSYFP	KXTDAXC3QSYFP	KXTDAXC3QSYFP
3	2				KXTCAXC3Q2SYFP		KXTCAXC3Q2SYFP			
3				KXT1AXC3QL(1)	KXTCAXC3QL(1)	KXT3AXC3QL(1)	KXTCAXC3QL(1)			
	1				KXTCAXCS51FP		KXTCAXCS51FP	KXTCAXCS51FP	KXTCAXCS51FP	KXTCAXCS51FP
	1							KXTFAUXC2S52FP	KXTFAUXC2S52FP	KXT7AUX2S52
<b># of contacts, 400V AC rated</b>										
1	1				KXTCAXC4QSYFP		KXTCAXC4QSYFP	KXT5AUXC4QYFP		
2					KXTCAXC4Q2FP		KXTCAXC4Q2FP	KXT5AUXC4Q2FP		
	1									KXT7AUX4Y

(1) to be installed on left side of the breaker, consult compatible accessories in technical catalog

- open/closed (Q): indication of the status of the circuit-breaker power contacts;
  - trip (SY): signals that the circuit-breaker is opening due to the intervention of the trip unit, or to the intervention residual current device, or to the opening of undervoltage/shunt opening releases, or to the use of the emergency opening pushbutton of the motor operator, or to the use of the test button;
  - trip unit tripping (S51): indicates that one of the protection functions of the electronic or thermal-magnetic trip unit has tripped. In case of the Tmax XT5 equipped with thermal-magnetic trip unit and residual current device, S51 is activated also by the intervention of the residual current device.
  - YO/YU tripping (S52): indicates that the under voltage or shunt opening release has been activated.
- The signaling depends on the service release used. For Tmax XT6 S52 can be used only with YU and is not available for YO. For Tmax XT5, in case of YO, shunt opening release must be permanently supplied to maintain the S52 signal.



## SACE® Tmax® XT accessories

### Manual operators



Direct Rotary handles	XT1	XT2	XT3	XT4	XT5	XT6	XT7
RHD Standard Direct Handle	KXTBRHDSTFP	KXTCRHDSTFP	KXTBRHDSTFP	KXTCRHDSTFP	KXT5RHDSTFP	KXT6RHDSTFP	---
RHD Emergency Direct Handle	---	KXTCRHDEMFP	---	KXTCRHDEMFP	KXT5RHDEMFP	KXT6RHDEMFP	---
RHS-R Standard Right Side Handle	KXTBRHSRSTFP	KXTCRHSRSTFP	KXTBRHSRSTFP	KXTCRHSRSTFP	---	---	---
RHD Normal direct handle - withdrawable	---	---	---	---	---	---	KXT7RHDSTFW

Rotary operators - through-door	XT1 - XT2 - XT3 - XT4	XT5	XT6	XT7
RHE_MB Metallic base for transmitted handle	KXTMRHESTFP	KXT5MRHESTFP	KXT6MRHESTFP	KXT5MRHESTFP
Standard Pistol Hdl w/reset, 65mm, NEMA 3R,12	OHB65J10B	OHB65J10B	OHB65J10B	OHB65J10B
Emerg. Pistol Hdl w/reset, 65mm, NEMA 3R,12	OHY65J10B	OHY65J10B	OHY65J10B	OHY65J10B
Standard Pistol Hdl w/reset, 65mm, NEMA 4,4X	OHB65L10B	OHB65L10B	OHB65L10B	OHB65L10B
Emerg. Pistol Hdl w/reset, 65mm, NEMA 4, 4X	OHY65L10B	OHY65L10B	OHY65L10B	OHY65L10B
Standard Pistol Hdl w/reset, 125mm, NEMA 3R,12	OHB125J10B	OHB125J10B	OHB125J10B	OHB125J10B
Emerg. Pistol Hdl w/reset, 125mm, NEMA 3R,12	OHY125J10B	OHY125J10B	OHY125J10B	OHY125J10B
Standard Pistol Hdl w/reset, 125mm, NEMA 4,4X	OHB125L10B	OHB125L10B	OHB125L10B	OHB125L10B
Emerg. Pistol Hdl w/reset, 125mm, NEMA 4,4X	OHY125L10B	OHY125L10B	OHY125L10B	OHY125L10B
148mm Pistol Hdl Shaft	EXP10X148	EXP10X148	EXP10X148	EXP10X148
225mm Pistol Hdl Shaft	EXP10X225	EXP10X225	EXP10X225	EXP10X225
500mm Pistol Hdl Shaft	EXP10X500	EXP10X500	EXP10X500	EXP10X500

Flange handles(1)		XT-XT2-XT3-XT4	XT5	XT6	XT7
Mechanism	-	KXTAFLHDLMECH	KXT5FLHDLMECH	KXT6FLHDLMECH	KXT7FLHDLMECH
Handle	NEMA 12/3R	KXTAFLHDL6IN	KXTAFLHDL6IN	KXTAFLHDL6IN	KXTBFLHDL10IN
	NEMA 4/4X	KXTAFLHDL6IN4X	KXTAFLHDL6IN4X	KXTAFLHDL6IN4X	KXTBFLHDL10IN4X
Cable	4ft	SC4L	SC4L	SC4L	SC4H
	6ft	SC6L	SC6L	SC6L	SC6H
	8ft	SC8L	SC8L	SC8L	SC8H
	10ft	SC10L	SC10L	SC10L	SC10H

(1) requires mechanism, handle and cable for complete solution

## SACE® Tmax® XT accessories

### Handles and accessories

Toggle extensions	XT5	XT6	XT7
Toggle extension	KXTJTGLEXT	KXTJTGLEXT	---
Toggle extension - foldable	---	---	KXT7TGLEXT



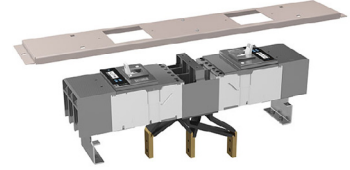
Padlock provisions	XT1	XT2	XT3	XT4	XT5	XT6	XT7
Removable in open position	KXTBPLLREM	---	KXTBPLLREM	---	---	---	---
Fixed	KXTBPLOP	KXTCPLOP	KXTBPLOP	KXTCPLOP	KXT5PLOP	KXT6PLOP	KXT7PLOP
Fixed in open/closed position	KXTBPLOPCL	KXTCPLOPCL	KXTBPLOPCL	KXTCPLOPCL	KXT5PLOPLC	KXT6PLOPLC	---



Operating lever mechanisms and locks	XT1	XT2	XT3	XT4	XT5	XT6	XT7
FLD Front for operating lever mechanism	---	KXTCFLDFP	---	KXTCFLDFP	KXT5FLDFP	KXT6FLDFP	---
FLD Front for operating lever mechanism (withdrawal)	---	---	---	---	KXT5FLDW	KXT6FLDW	---
KLC-A Kirk key lock provision	---	---	---	---	KXTFKLCAKIRK	KXTFKLCAKIRK	---

## SACE® Tmax® XT accessories

### Retrofit kits



Retrofit kit for Spectra bolt-on panelboards and switchboards	Box width range/ X height		Box width range/ X height		Box width range/ X height		Box width range/ X height	
	XT1	XT4	XT5	XT7				
Single mount kit	---	---	SRFB3XT4FPX	27"-44" / 3X	SRFB3XT5MFPX <sup>1</sup>	27"-44" / 4X	SRFB3XT7MFPX	40"-44" / 6X
Dual mount kit	SRFB6XT1FPX	27"-44" / 3X	SRFB6XT1FPX	31"-44" / 3X	SRFB6XT5BFPX <sup>2</sup>	40"-44" / 4X	---	---

<sup>1</sup> 600A

<sup>2</sup> 400A

Maximum of two SACE Tmax XT4, XT5 or XT7 retrofit kits can be installed side by side in an existing Spectra power panelboard installation

Tmax XT5 can only be dual mounted up to 400A

If Kirk provisions are required, replace the „X“ (last digit) with „K“ (example: SRFB6XT1FPX becomes SRFB6XT1FPK)

Kits are only for use with 80% rated breakers

XT7 breaker handle extension included with SRFB3XT7MFPX

XT7 retrofit kit can be used for main or feeder breakers

## Enclosed circuit breakers

### Breakers and accessories

#### NEMA Enclosures (breaker not included)

NEMA rating	Mounting	Formula A2	XT1	XT2	XT3	XT4	XT5	XT6	XT7
1	Flush	A2ENCL250F	XT1ENCL125F	XT2ENCL125F	---	XT4ENCL250F	---	---	---
1	Surface	A2ENCL250S	XT1ENCL125S	XT2ENCL125S	XT3ENCL225S	XT4ENCL250S	XT5ENCL600S	XT6ENCL800S	XT7ENCL1200S
12	Surface	---	XT1ENCL125J	XT2ENCL125J	---	---	---	---	---
3R	Surface	A2ENCL250R	XT1ENCL125R	---	XT3ENCL225R	XT4ENCL250R	XT5ENCL600R	XT6ENCL800R	XT7ENCL1200R
4/4X	Surface	---	XT1ENCL125CS	---	XT3ENCL225CS	XT4ENCL250CS	XT5ENCL600CS	XT6ENCL800CS	---

#### Formula A2 NEMA Enclosed Breakers

Description	Ordering code
NEMA 3R, surface mount, 2 pole 150A Circuit Breaker Factory Installed	A2A250W150ECB
NEMA 3R, surface mount, 2 pole 200A Circuit Breaker Factory Installed	A2A250W200ECB

Formula breaker rated 10kA at 240v

#### Accessories - Ground kits

Description	Ordering Code
70-125A	TGL1
150-400A	TGL1 + TLGL20
600-1200A	TGL6



## TEY molded case circuit breakers

### Ordering code construction



#### Part identifier

TEY = 14kA@227V

TEYF = 18kA@277V

TEYD = 25kA@277V

TEYL = 65kA@277V


#### Poles

1 = 1 Pole

2 = 2 Pole

3 = 3 Pole

#### Mounting suffix

 = Bot-on (14-18kA)

B = Bolt-on (25-65kA)

#### Amps

15 = 15 Amps

20 = 20 Amps

25 = 25 Amps

30 = 30 Amps

35 = 35 Amps

40 = 40 Amps

45 = 45 Amps

50 = 50 Amps

60 = 60 Amps

70 = 70 Amps

80 = 80 Amps

90 = 90 Amps

100 = 100 Amps

110 = 110 Amps

125 = 125 Amps

Note: For available configurations, see the ordering information pages

Reference only. For stocked items, see following pages.

# TEY molded case circuit breakers

## Breakers



TEY/TEYF (UL/cUL File E-11592)			
Ampere	Wire range	Ordering code	Ordering code
Single Pole - Includes Integral Cu/Al Load Lugs		Type TEY 14kA @ 277 Vac	Type TEYF 18kA @ 277 Vac
15	#14-#10	TEY115	---
20	#14-#10	TEY120	TEYF120
25	#14-#10	TEY125	---
30	#14-#10	TEY130	---
35	#10-#4	TEY135	---
40	#10-#4	TEY140	---
45	#10-#4	TEY145	---
50	#10-#4	TEY150	---
60	#10-#4	TEY160	---
100	#4-1/0	TEY1100	---

TEY/TEYF (UL/cUL File E-11592)			
Ampere	Wire range	Ordering code	Ordering code
Two-Pole - Includes Integral Cu/Al Load Lugs		Type TEY 14kA @ 480/ 277 Vac	Type TEYF 18kA @ 480/ 277 Vac
15	#14-#10	TEY215	TEYF215
20	#14-#10	TEY220	TEYF220
25	#14-#10	TEY225	TEYF225
30	#14-#10	TEY230	---
35	#10-#4	TEY235	TEYF235
40	#10-#4	TEY240	TEYF240
45	#10-#4	TEY245	TEYF245
50	#10-#4	TEY250	TEYF250
60	#10-#4	TEY260	TEYF260
70	#4-1/0	TEY270	TEYF270
80	#4-1/0	TEY280	TEYF280
90	#4-1/0	TEY290	TEYF290
100	#4-1/0	TEY2100	TEYF2100

TEY/TEYF (UL/cUL File E-11592)			
Ampere	Wire range	Ordering code	Ordering code
Three-Pole - Includes Integral Cu/Al Load Lugs		Type TEY 14kA @ 480/ 277 Vac	Type TEYF 18kA @ 480/ 277 Vac
15	---	TEY315	TEYF315
20	---	TEY320	TEYF320
25	---	TEY325	TEYF325
30	---	TEY330	TEYF330
35	---	TEY335	TEYF335
40	---	TEY340	TEYF340
45	---	TEY345	---
50	---	TEY350	TEYF350
60	---	TEY360	TEYF360
70	---	TEY370	TEYF370
80	---	TEY380	TEYF380
90	---	TEY390	TEYF390

Table continues on next page.

## TEY molded case circuit breakers

### Breakers



TEY/TEYF (UL/cUL File E-11592)			
Ampere	Wire range	Ordering code	Ordering code
<b>Three-Pole - Includes Integral Cu/Al Load Lugs</b>		<b>Type TEY 14kA @ 480 / 277 Vac</b>	<b>Type TEYF 18kA @ 480 / 277 Vac</b>
100	---	TEY3100	TEYF3100
110	---	---	---
125	---	---	TEYF3125B

TEY/TEYF (UL/cUL File E-11592)				
Ampere	Wire range	Ordering code	Ordering code	Ordering code
<b>Single pole w/lugs Includes integral Cu/Al load lugs</b>		<b>Type TEYD 25kA @ 480 / 277 Vac</b>	<b>Type TEYD 35kA @ 480 / 277 Vac</b>	<b>Type TEYD 65kA @ 480 / 277 Vac</b>
15	#14-#10	TEYD1015B	TEYH1015B	TEYL1015B
20	#14-#10	TEYD1020B	TEYH1020B	TEYL1020B
25	#10-#4	---	---	TEYL1025B
30	#10-#4	TEYD1030B	---	TEYL1030B
40	#10-#4	---	---	TEYL1040B
50	#10-#4	---	---	TEYL1050B

TEY/TEYF (UL/cUL File E-11592)				
Ampere	Wire range	Ordering code	Ordering code	Ordering code
<b>Two pole w/lugs Includes integral Cu/Al load lugs</b>		<b>Type TEYD 25kA @ 480 / 277 Vac</b>	<b>Type TEYD 35kA @ 480 / 277 Vac</b>	<b>Type TEYD 65kA @ 480 / 277 Vac</b>
15	#14-#10	TEYD2015B	---	TEYL2015B
20	#14-#10	TEYD2020B	---	TEYL2020B
30	#10-#4	---	---	TEYL2030B
40	#10-#4	TEYD2040B	---	---
125	#4-2/0	---	---	TEYL2125B

TEY/TEYF (UL/cUL File E-11592)				
Ampere	Wire range	Ordering code	Ordering code	Ordering code
<b>Three w/lugs Includes integral Cu/Al load lugs</b>		<b>Type TEYD 25kA @ 480 / 277 Vac</b>	<b>Type TEYD 35kA @ 480 / 277 Vac</b>	<b>Type TEYD 65kA @ 480 / 277 Vac</b>
15	#14-#10	TEYD3015B	TEYH3015B	TEYL3015B
20	#14-#10	TEYD3020B	TEYH3020B	TEYL3020B
25	#10-#4	TEYD3025B	---	TEYL3025B
30	#10-#4	TEYD3030B	TEYH3030B	TEYL3030B
35	#10-#4	TEYD3035B	---	TEYL3035B
40	#10-#4	TEYD3040B	TEYH3040B	TEYL3040B
45	#10-#4	TEYD3045B	---	TEYL3045B
50	#10-#4	TEYD3050B	---	TEYL3050B
60	#10-#4	TEYD3060B	TEYH3060B	TEYL3060B
70	#4-2/0	TEYD3070B	TEYH3070B	TEYL3070B
80	#4-2/0	---	---	TEYL3080B
90	#4-2/0	TEYD3090B	---	TEYL3090B
100	#4-2/0	TEYD3100B	TEYH3100B	TEYL3100B
110	#4-2/0	---	---	TEYL3110B
125	#4-2/0	TEYD3125B	---	TEYL3125B

## TEY Accessories

### Accessories

Description	Ordering Code
<b>Variable depth operating mechanism/handles</b>	
TEYD/H/L 2-POLE HANDLE TIE	TEYXHT2
TEYD/H/L 3-POLE HANDLE TIE	TEYXHT3
TEYDHL PADLOCKING DEVICE	TEYXPLD1
TEY HANDLE LOCK	TEYLD1
E150 PADLOCK KIT	TEYPLD1
TEYD/H/L 2-POLE HANDLE TIE	TEYXHT2
TEYD/H/L 3-POLE HANDLE TIE	TEYXHT3
TEYDHL PADLOCKING DEVICE	TEYXPLD1

—

7

## Panelboards

## Section 7

# Panelboards

## Table of contents

<b>Lighting panelboards</b>	
Ordering code construction	7-1
Interiors & grounds	7-2
Boxes & fronts	7-3
Main/sub-feed breaker kits, main lug kits and accessories	7-4
Branch breakers for RQ panels	7-5
Branch breakers for RE panels	7-6
<b>Power panelboards</b>	
SuperBox panels	7-7
ReliaGear neXT breakers XT1-XT4	7-8
ReliaGear neXT breakers XT5-XT7	7-9
ReliaGear neXT breakers TEY & Record Plus FB	7-10
ReliaGear neXT breakers Formula A2	7-11
ReliaGear neXT breaker X-spacing	7-12
ReliaGear neXT breaker accessories	7-13



## Lighting panelboards

### Interiors and grounds

Select the interior by panel rating, number of circuits and ampacity. Identify the box/front height for interior selected.

#### Feed-thru copper bus

			Product number <sup>1</sup>	Box/front height (in.)	No. of TGL2 ground bars required <sup>2</sup>
208/120 V AC, 3-Phase	100–250 <sup>3</sup>	30	AQU3302RCXAXT1B4	43.5	3
		42	AQU3422RCXAXT1B4	49.5	4
	400	42	AQU3424RCXAXT1B4	76.5	4
		42	AQU3426RCXAXT1B4	76.5	4
480Y/277 V AC, 3-Phase	100–250 <sup>3</sup>	30	AEU3302RCXAXT1B4	43.5	3
		42	AEU3422RCXAXT1B4	49.5	4
	400	42	AEU3424RCXAXT1B4	76.5	4
		42	AEU3426RCXAXT1B4	76.5	4

<sup>1</sup> See table below for TGL20 ground lug quantities.

<sup>2</sup> For isolated ground, use EGS12. When using the EGS12, 5 and 7 ground lugs (TGL20s) are required for 30 and 42 circuits respectively.

<sup>3</sup> Main bus rating of 250 A for main breaker interiors and 225 A for main lug interiors.

<sup>4</sup> 600 A available as main lug only.

#### TGL20 ground lugs required by panel type

Interior type	100 A–250 A	400 A	600 A
Main lug only	1	1	2
Main lug and sub-feed	2	2	4
Main lug and feed-thru	2	2	4
Main breaker only	1	1	
Main breaker and sub-feed	2	2	
Main breaker and feed-thru	2	2	



## Lighting panelboards

### Boxes and fronts



NEMA 1



NEMA 3R

Select a 20" wide box of correct height based on interior selected on Page 7-2.

Note: Boxes come with blank endwalls.

Box height (in.)	NEMA 1 ordering code	NEMA 3R ordering code
43.5	AB43B	AB433
49.5	AB49B	AB493
76.5	AB76B	AB763



Standard



Door within door



Standard with quarter-turn lock

For NEMA 1 enclosures only, select a front of correct height based on interior selected on Page 7-2 and box selected above.

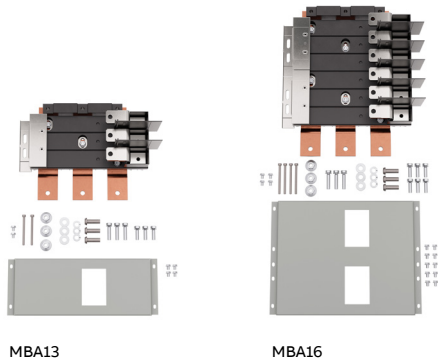
- Standard fronts are equipped with concealed hinges and trim adjusting screws hinges, trim adjusting screws and quarter-turn locks
- Door within door fronts are convenient for easy access to equipment from the front of the panel as it allows access to the gutters without removing the front
- Front hinged to box fronts are similar to door within door fronts for convenient access to gutters, but four screws must be removed to access the outer door

Front height (in.)	Standard	Standard	Door within door	Front hinged to box
	Flush ordering code	Surface ordering code	Surface ordering code	Surface ordering code
43.5	AF43F	AF43S	AF43SP	AF43SD
49.5	AF49F	AF49S	AF49SP	AF49SD
76.5 <sup>1</sup>	AF76FT	AF76ST	AF76SPT	AF76SDT

1) 76.5" fronts include quarter-turn lock, enabling applications with XT5 circuit breakers

## Lighting panelboards

Main/sub-feed breaker kits, main/feed-thru lug kits and accessories



Select the main breaker kit appropriate for your interior type, amp rating and kAIC rating. If a sub-feed breaker is required, repeat the selection process.

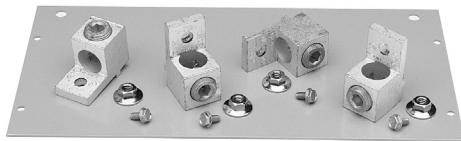
Interior type	Ordering code <sup>(1)</sup>	Rating (amps)	No. of poles	Breaker short circuit rating (kAIC)						
				10	14	22	25	35	50	65
AQU: 208/120 V AC, 3-Phase	MB613	100	3	THQB	–	THHQB	–	–	–	–
	MB616 <sup>(4)</sup>	100	6	(x2) THQB	–	(x2) THHQB	–	–	–	–
	MBA13	225	3	A2A	–	A2N <sup>(2)</sup>	–	–	–	–
	MBA16	400	6	(x2) A2A	–	(x2) A2N <sup>(2)</sup>	–	–	–	–
	MBB33	150	3	–	–	–	–	–	–	XT4N
	MBB33	225	3	–	–	–	–	–	–	XT4N
	MBB36 <sup>(3)</sup>	400	6 <sup>(3)</sup>	–	–	–	–	–	–	(x2) XT4N
AEU: 480Y/277 V AC, 3-Phase	MBM334	400	3	–	–	–	–	–	–	XT5N
	MB423	100	3	–	TEY	–	–	–	–	–
	MB426	100	6	–	(x2) TEY	–	–	–	–	–
	MBC33	125	3	–	–	–	XT1N	XT1S	–	XT1H
	MBB33	150	3	–	–	–	XT4N	XT4S	–	XT4H
	MBB33	225	3	–	–	–	XT4N	XT4S	–	XT4H
	MBB36 <sup>(3)</sup>	400	6 <sup>(3)</sup>	–	–	–	(x2) XT4N	(x2) XT4S	–	(x2) XT4H
	MBM334	400	3	–	–	–	–	XT5N	XT5S	XT5H

<sup>(1)</sup> Breaker not included

<sup>(2)</sup> Actual breaker short circuit rating is 25 kAIC

<sup>(3)</sup> 6 poles of sub-feed applies only to 400 A and 600 A interiors

<sup>(4)</sup> Can use (2) 3-pole devices only, no 2-pole allowed



Select lug kit(s) for main lug and/or feed-thru applications if required.

### Main lug kits

Lug type	Amp rating	Ordering code	Standard		Oversized	200% Neutral
			Wire range	Ordering code	Wire range	Ordering code
Mechanical	225	MLA1	6–350 kcmil	MLA2	1–600 kcmil or (2) 1/0–250 kcmil	NKA
	400	MLA41	2–600 kcmil or (2) 1/0–250 kcmil	MLA62	3/0–800 kcmil	NKA4 <sup>1</sup>
	600	MLA61	(2) 2/0–500 kcmil	MLA62	3/0–800 kcmil	–

<sup>1</sup> For 200% neutral feed-thru, order NKA4FT, (GO-101P). Wire range (2) 2/0–600 kcmil or (4) 4–250 kcmil.

## Lighting panelboards

Branch breakers for RQ panels

THQB and THHQB branch circuit breakers for use with RQ panels (208/120 V AC 3-phase)

Amp rating	10 kAIC			22 kAIC		
	1-pole	2-pole	3-pole	1-pole	2-pole	3-pole
	Ordering code	Ordering code	Ordering code	Ordering code	Ordering code	Ordering code
15	THQB1115 <sup>(1)</sup>	THQB2115 <sup>(1)</sup>	THQB32015	THHQB1115	THHQB2115	THHQB32015
20	THQB1120 <sup>(1,2,3)</sup>	THQB2120 <sup>(1,3)</sup>	THQB32020	THHQB1120 <sup>(1)</sup>	THHQB2120 <sup>(1)</sup>	THHQB32020
25	THQB1125	THQB2125	THQB32025	THHQB1125	THHQB2125	THHQB32025
30	THQB1130 <sup>(1,3)</sup>	THQB2130 <sup>(1,3)</sup>	THQB32030	THHQB1130	THHQB2130 <sup>(1)</sup>	THHQB32030
35	THQB1135	THQB2135	THQB32035	-	THHQB2135	THHQB32035
40	THQB1140	THQB2140 <sup>(3)</sup>	THQB32040	THHQB1140	THHQB2140	THHQB32040
45	-	THQB2145	THQB32045	-	-	THHQB32045
50	THQB1150	THQB2150	THQB32050	THHQB1150	THHQB2150	THHQB32050
60	THQB1160	THQB2160	THQB32060	-	THHQB2160	THHQB32060
70	-	THQB2170	THQB32070	-	-	THHQB32070
80	-	THQB2180	THQB32080	-	THHQB2180	THHQB32080
90	-	THQB2190	THQB32090	-	-	THHQB32090
100	-	THQB21100	THQB32100	-	THHQB21100	THHQB32100

<sup>(1)</sup> For ground fault, add 'GFT' suffix to breaker SKU

<sup>(2)</sup> For AFCI, add 'AF2' suffix to breaker SKU

<sup>(3)</sup> For equipment ground fault, add 'GFEP' suffix to breaker SKU

## Lighting panelboards

Branch breakers for RE panels

TEY and TEYF branch circuit breakers for use with RE panels (480Y/277 V AC 3-phase)

Amp rating	14 kAIC			18 kAIC		
	1-pole	2-pole	3-pole	1-pole	2-pole	3-pole
	Ordering code	Ordering code	Ordering code	Ordering code	Ordering code	Ordering code
15	TEY115	TEY215	TEY315	-	TEYF215	TEYF315
20	TEY120	TEY220	TEY320	TEYF120	TEYF220	TEYF320
25	TEY125	TEY225	TEY325	-	TEYF225	TEYF325
30	TEY130	TEY230	TEY330	-	TEYF230	TEYF330
35	TEY135	TEY235	TEY335	-	TEYF235	TEYF335
40	TEY140	TEY240	TEY340	-	TEYF240	TEYF340
45	TEY145	TEY245	TEY345	-	TEYF245	TEYF345
50	TEY150	TEY250	TEY350	-	TEYF250	TEYF350
60	TEY160	TEY260	TEY360	-	TEYF260	TEYF360
70	-	TEY270	TEY370	-	TEYF270	TEYF370
80	-	TEY280	TEY380	-	TEYF280	TEYF380
90	-	TEY290	TEY390	-	TEYF290	TEYF390
100	-	TEY2100	TEY3100	-	TEYF2100	TEYF3100

# Power panelboards

## SuperBox panels

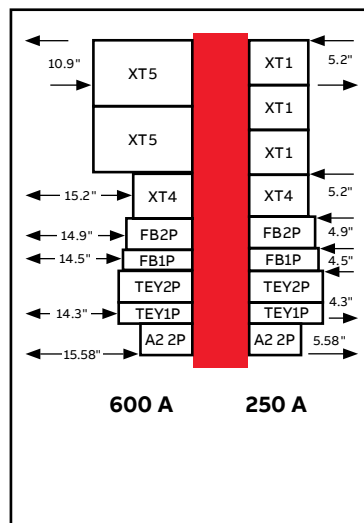
### TEY and TEYF branch circuit breakers for use with RE panels (480Y/277 V AC 3-phase)

Ordering code	Description	Amps	Enclosure type	Main	Dimensions (H x W x D inches)	X-space left	X-space right
RNSB06L6040A	600A MLO NEMA 1 60 x 40 16X no breakers	600 A	NEMA 1	Main lugs (2x #2-600 kcmil)	60 x 40 x 11	12	12
RNSB06B6040A	600A MCB NEMA 1 60 x 40 16X no breakers	600 A	NEMA 1	Main breaker <sup>1</sup>	61 x 40 x 11	16	16
RNSB06L6040R	600A MLO NEMA 3R 60 x 40 16X no breakers	600 A	NEMA 3R	Main lugs (2x #2-600 kcmil)	59 x 40 x 14.5 <sup>2</sup>	12	12
RNSB06B6040R	600A MCB NEMA 3R 60 x 40 16X no breakers	600 A	NEMA 3R	Main breaker <sup>1</sup>	60 x 40 x 14.5 <sup>2</sup>	16	16
RNSB08L7245A	800A MLO NEMA 1 72 x 45 24X no breakers	800 A	NEMA 1	Main lugs (4x #2-600 kcmil)	72 x 45 x 11	20	20
RNSB08B7245A	800A MCB NEMA 1 72 x 45 24X no breakers	800 A	NEMA 1	Main breaker <sup>1</sup>	73 x 45 x 11	24	24
RNSB08L7245R	800A MLO NEMA 3R 72 x 45 24X no breakers	800 A	NEMA 3R	Main lugs (4x #2-600 kcmil)	71 x 45 x 14.5 <sup>2</sup>	20	20
RNSB08B7245R	800A MCB NEMA 3R 72 x 45 24X no breakers	800 A	NEMA 3R	Main breaker <sup>1</sup>	72 x 45 x 14.5 <sup>2</sup>	24	24
RNSB12L8445A	1200A MLO NEMA 1 84 x 45 32X no breakers	1200 A	NEMA 1	Main lugs (4x #2-600 kcmil)	84 x 45 x 11	28	28
RNSB12B8445A	1200A MCB NEMA 1 84 x 45 32X no breakers	1200 A	NEMA 1	Main breaker <sup>1</sup>	85 x 45 x 11	32	32
RNSB12L8445R	1200A MLO NEMA 3R 84 x 45 32X no breakers	1200 A	NEMA 3R	Main lugs (4x #2-600 kcmil)	83 x 45 x 14.5 <sup>2</sup>	28	28
RNSB12B8445R	1200A MCB NEMA 3R 84 x 45 32X no breakers	1200 A	NEMA 3R	Main breaker <sup>1</sup>	84 x 45 x 14.5 <sup>2</sup>	32	32

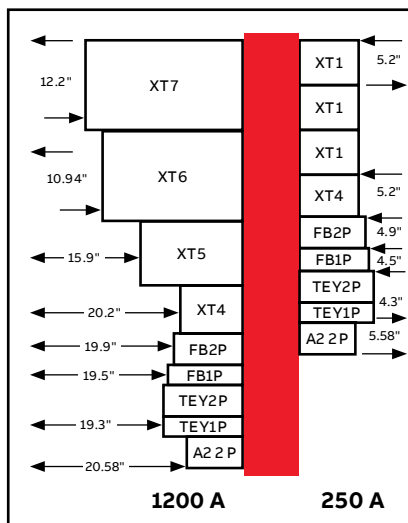
<sup>1</sup> X-space required for main breaker must be accounted for based on specific breaker selected.

<sup>2</sup> Depth does not include 0.9" of hanger bracket.

### Available configurations and wire bend space



40" offset box



45" offset box

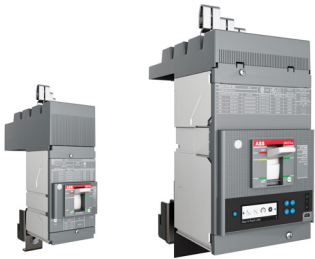
All ReliaGear neXT panelboards are double sided. Wire bending space requirements restrict XT5–XT7 mounting to the left side of the interior.

#### Wire bend space

Breaker	Left mount space (in)	Right mount space (in)
<b>40" offset enclosure</b>		
XT5	10.9	-
XT4	15.2	5.2
XT1	15.2	5.2
FB 1-pole	14.5	4.5
FB 2-pole	14.9	4.9
TEY 1-pole	14.3	4.3
TEY 2-pole	14.3	4.3
A2 2-pole	15.58	5.58
<b>45" offset enclosure</b>		
XT7	12.2	-
XT6	10.94	-
XT5	15.9	-
XT4	20.2	5.2
XT1	20.2	5.2
FB 1-pole	19.5	4.5
FB 2-pole	19.9	4.9
TEY 1-pole	19.3	4.3
TEY 2-pole	19.3	4.3
A2 2-pole	20.58	5.58

## Power panelboards

### ReliaGear neXT XT1-XT4 circuit breakers



ReliaGear neXT XT1-XT4 circuit breakers for main and branch feeder circuits<sup>1,2</sup>

Ordering code	Frame	Int. rating at 480 V AC	Trip unit	Poles	Amps	Load side lugs (AWG or kcmil)
XT1NU3015AYD000XXX	XT1 <sup>3</sup>	N (25 kA)	TMF	3	15	1x #10-2/0
XT1NU3020AYD000XXX	XT1 <sup>3</sup>	N (25 kA)	TMF	3	20	1x #10-2/0
XT1NU3030AYD000XXX	XT1 <sup>3</sup>	N (25 kA)	TMF	3	30	1x #10-2/0
XT1NU3040AYD000XXX	XT1 <sup>3</sup>	N (25 kA)	TMF	3	40	1x #10-2/0
XT1NU3050AYD000XXX	XT1 <sup>3</sup>	N (25 kA)	TMF	3	50	1x #10-2/0
XT1NU3060AYD000XXX	XT1 <sup>3</sup>	N (25 kA)	TMF	3	60	1x #10-2/0
XT1NU3070AYD000XXX	XT1 <sup>3</sup>	N (25 kA)	TMF	3	70	1x #10-2/0
XT1NU3100AYD000XXX	XT1 <sup>3</sup>	N (25 kA)	TMF	3	100	1x #10-2/0
XT1NU3125AYD000XXX	XT1 <sup>3</sup>	N (25 kA)	TMF	3	125	1x #10-2/0
XT1SU3015AYD000XXX	XT1 <sup>3</sup>	S (35 kA)	TMF	3	15	1x #10-2/0
XT1SU3020AYD000XXX	XT1 <sup>3</sup>	S (35 kA)	TMF	3	20	1x #10-2/0
XT1SU3030AYD000XXX	XT1 <sup>3</sup>	S (35 kA)	TMF	3	30	1x #10-2/0
XT1SU3040AYD000XXX	XT1 <sup>3</sup>	S (35 kA)	TMF	3	40	1x #10-2/0
XT1SU3050AYD000XXX	XT1 <sup>3</sup>	S (35 kA)	TMF	3	50	1x #10-2/0
XT1SU3060AYD000XXX	XT1 <sup>3</sup>	S (35 kA)	TMF	3	60	1x #10-2/0
XT1SU3070AYD000XXX	XT1 <sup>3</sup>	S (35 kA)	TMF	3	70	1x #10-2/0
XT1SU3100AYD000XXX	XT1 <sup>3</sup>	S (35 kA)	TMF	3	100	1x #10-2/0
XT1SU3125AYD000XXX	XT1 <sup>3</sup>	S (35 kA)	TMF	3	125	1x #10-2/0
XT1HU3015AYD000XXX	XT1 <sup>3</sup>	H (65 kA)	TMF	3	15	1x #10-2/0
XT1HU3020AYD000XXX	XT1 <sup>3</sup>	H (65 kA)	TMF	3	20	1x #10-2/0
XT1HU3030AYD000XXX	XT1 <sup>3</sup>	H (65 kA)	TMF	3	30	1x #10-2/0
XT1HU3040AYD000XXX	XT1 <sup>3</sup>	H (65 kA)	TMF	3	40	1x #10-2/0
XT1HU3050AYD000XXX	XT1 <sup>3</sup>	H (65 kA)	TMF	3	50	1x #10-2/0
XT1HU3060AYD000XXX	XT1 <sup>3</sup>	H (65 kA)	TMF	3	60	1x #10-2/0
XT1HU3070AYD000XXX	XT1 <sup>3</sup>	H (65 kA)	TMF	3	70	1x #10-2/0
XT1HU3100AYD000XXX	XT1 <sup>3</sup>	H (65 kA)	TMF	3	100	1x #10-2/0
XT1HU3125AYD000XXX	XT1 <sup>3</sup>	H (65 kA)	TMF	3	125	1x #10-2/0
XT4NU3150AY8000XXX	XT4	N (25 kA)	TMF	3	150	1x 3/0-350
XT4NU3175AY8000XXX	XT4	N (25 kA)	TMF	3	175	1x 3/0-350
XT4NU3200AY8000XXX	XT4	N (25 kA)	TMF	3	200	1x 3/0-350
XT4NU3225AY8000XXX	XT4	N (25 kA)	TMF	3	225	1x 3/0-350
XT4NU3250AY8000XXX	XT4	N (25 kA)	TMF	3	250	1x 3/0-350
XT4SU3150AY8000XXX	XT4	S (35 kA)	TMF	3	150	1x 3/0-350
XT4SU3175AY8000XXX	XT4	S (35 kA)	TMF	3	175	1x 3/0-350
XT4SU3200AY8000XXX	XT4	S (35 kA)	TMF	3	200	1x 3/0-350
XT4SU3225AY8000XXX	XT4	S (35 kA)	TMF	3	225	1x 3/0-350
XT4SU3250AY8000XXX	XT4	S (35 kA)	TMF	3	250	1x 3/0-350
XT4HU3150AY8000XXX	XT4	H (65 kA)	TMF	3	150	1x 3/0-350
XT4HU3175AY8000XXX	XT4	H (65 kA)	TMF	3	175	1x 3/0-350
XT4HU3200AY8000XXX	XT4	H (65 kA)	TMF	3	200	1x 3/0-350
XT4HU3225AY8000XXX	XT4	H (65 kA)	TMF	3	225	1x 3/0-350
XT4HU3250AY8000XXX	XT4	H (65 kA)	TMF	3	250	1x 3/0-350

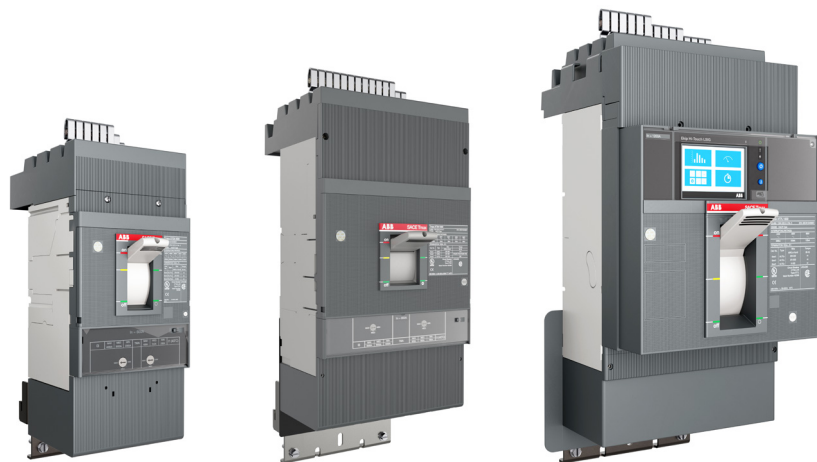
<sup>1</sup>Additional ReliaGear Tmax XT plug-on circuit breakers and accessories are available. Contact your local ABB sales team for more information.

<sup>2</sup>All breakers are standard rated (standard circuit breakers design considers 80% of the rated load). In case a 100% rated breaker is needed, a factory assembled ReliaGear neXT configuration will be required.

<sup>3</sup>Separate mounting rail required. See details in accessories table.

## Power panelboards

### ReliaGear neXT XT5-XT7 circuit breakers



ReliaGear neXT XT5-XT7 circuit breakers for main and branch feeder circuits<sup>1,2,3</sup>

Ordering code	Frame	Int. rating at 480 V	Trip unit	Poles	Amps	Load side lugs (AWG or kcmil)
XT5NU330ABYN000XXX	XT5	N (35 kA)	TMA	3	300	2x 3/0-350
XT5NU340ABYN000XXX	XT5	N (35 kA)	TMA	3	400	2x 3/0-350
XT5NU360BBYN000XXX	XT5	N (35 kA)	TMA	3	600	2x 3/0-350
XT5SU330ABYN000XXX	XT5	S (50 kA)	TMA	3	300	2x 3/0-350
XT5SU340ABYN000XXX	XT5	S (50 kA)	TMA	3	400	2x 3/0-350
XT5SU360BBYN000XXX	XT5	S (50 kA)	TMA	3	600	2x 3/0-350
XT5HU330ABYN000XXX	XT5	H (65 kA)	TMA	3	300	2x 3/0-350
XT5HU340ABYN000XXX	XT5	H (65 kA)	TMA	3	400	2x 3/0-350
XT5HU360BBYN000XXX	XT5	H (65 kA)	TMA	3	600	2x 3/0-350
XT6NU3800BYU000XXX	XT6	N (35 kA)	TMA	3	800	3x 3/0-350
XT6SU3800BYU000XXX	XT6	S (50 kA)	TMA	3	800	3x 3/0-350
XT6HU3800BYU000XXX	XT6	H (65 kA)	TMA	3	800	3x 3/0-350
XT7SU310EEYW000XXX	XT7	S (50 kA)	DIP LS/I	3	1000	4x 4/0-500
XT7SU312EEYW000XXX	XT7	S (50 kA)	DIP LS/I	3	1200	4x 4/0-500
XT7HU310EEYW000XXX	XT7	H (65 kA)	DIP LS/I	3	1000	4x 4/0-500
XT7HU312EEYW000XXX	XT7	H (65 kA)	DIP LS/I	3	1200	4x 4/0-500
XT7SU310EPYW000XXR	XT7	S (50 kA)	Touch LSI	3	1000	4x 4/0-500
XT7SU312EPYW000XXR	XT7	S (50 kA)	Touch LSI	3	1200	4x 4/0-500
XT7HU310EPYW000XXR	XT7	H (65 kA)	Touch LSI	3	1000	4x 4/0-500
XT7HU312EPYW000XXR	XT7	H (65 kA)	Touch LSI	3	1200	4x 4/0-500

<sup>1</sup>Additional ReliaGear Tmax XT plug-on circuit breakers and accessories are available. Contact your local ABB sales team for more information.

<sup>2</sup>All breakers are standard rated (standard circuit breakers design considers 80% of the rated load). In case a 100% rated breaker is needed, a factory assembled ReliaGear neXT configuration will be required.

<sup>3</sup>If 750 kcmil lugs are needed, a factory assembled ReliaGear neXT configuration will be required.

## Power panelboards

### ReliaGear neXT TEY and Record Plus FB circuit breakers



1-pole FB



2-pole FB



1-pole TEY



2-pole TEY

#### ReliaGear neXT TEY and Record Plus FB circuit breakers for branch feeder circuits<sup>1,2</sup>

Ordering code	Frame	Int. rating at 480 V	Trip unit	Poles	Amps	Phase	Load side lugs (AWG or kcmil)
TEYADED0AAXXXXXX	TEY	D (25 kA)	TMF	1	20	A	1x #14-10
TEYADED0BAXXXXXX	TEY	D (25 kA)	TMF	1	20	B	1x #14-10
TEYADED0CAXXXXXX	TEY	D (25 kA)	TMF	1	20	C	1x #14-10
TEYAHED0AAXXXXXX	TEY	H (35 kA)	TMF	1	20	A	1x #14-10
TEYAHED0BAXXXXXX	TEY	H (35 kA)	TMF	1	20	B	1x #14-10
TEYAHED0CAXXXXXX	TEY	H (35 kA)	TMF	1	20	C	1x #14-10
TEYALED0AAXXXXXX	TEY	L (65 kA)	TMF	1	20	A	1x #14-10
TEYALED0BAXXXXXX	TEY	L (65 kA)	TMF	1	20	B	1x #14-10
TEYALED0CAXXXXXX	TEY	L (65 kA)	TMF	1	20	C	1x #14-10
TEYADFDABAXXXXXX	TEY	D (25 kA)	TMF	2	20	AB	1x #14-10
TEYADFHABXXXXXX	TEY	D (25 kA)	TMF	2	40	AB	1x #10-4
TEYADFQABDXXXXXX	TEY	D (25 kA)	TMF	2	100	AB	1x #4-2/0
TEYADFSABDXXXXXX	TEY	D (25 kA)	TMF	2	125	AB	1x #4-2/0
TEYADFBCACXXXXXX	TEY	D (25 kA)	TMF	2	20	BC	1x #14-10
TEYADFHBCBXXXXXX	TEY	D (25 kA)	TMF	2	40	BC	1x #10-4
TEYADFQBDCXXXXXX	TEY	D (25 kA)	TMF	2	100	BC	1x #4-2/0
TEYADFSBCDXXXXXX	TEY	D (25 kA)	TMF	2	125	BC	1x #4-2/0
TEYADFACAXXXXXX	TEY	D (25 kA)	TMF	2	20	AC	1x #14-10
TEYADFHACBXXXXXX	TEY	D (25 kA)	TMF	2	40	AC	1x #10-4
TEYADFQACDXXXXXX	TEY	D (25 kA)	TMF	2	100	AC	1x #4-2/0
TEYADFSACDXXXXXX	TEY	D (25 kA)	TMF	2	125	AC	1x #4-2/0
NEFBV16TE020R2A	FB	V (35 kA) <sup>3</sup>	TMF	1	20	A	1x #14-10
NEFBV16TE020R2B	FB	V (35 kA) <sup>3</sup>	TMF	1	20	B	1x #14-10
NEFBV16TE020R2C	FB	V (35 kA) <sup>3</sup>	TMF	1	20	C	1x #14-10
NEFBN16TE020R2A	FB	N (65 kA) <sup>3</sup>	TMF	1	20	A	1x #14-10
NEFBN16TE020R2B	FB	N (65 kA) <sup>3</sup>	TMF	1	20	B	1x #14-10
NEFBN16TE020R2C	FB	N (65 kA) <sup>3</sup>	TMF	1	20	C	1x #14-10
NEFBH16TE020R2A	FB	H (100 kA) <sup>3</sup>	TMF	1	20	A	1x #14-10
NEFBH16TE020R2B	FB	H (100 kA) <sup>3</sup>	TMF	1	20	B	1x #14-10
NEFBH16TE020R2C	FB	H (100 kA) <sup>3</sup>	TMF	1	20	C	1x #14-10
NEFBV26TE100R2AB	FB	V (35 kA)	TMF	2	100	AB	1x #1-1/0
NEFBV26TE100R2AC	FB	V (35 kA)	TMF	2	100	AC	1x #1-1/0
NEFBV26TE100R2BC	FB	V (35 kA)	TMF	2	100	BC	1x #1-1/0

<sup>1</sup>Additional TEY and FB plug-on circuit breakers and accessories are available. Contact your local ABB sales team for more information.

<sup>2</sup>All breakers are standard rated (standard circuit breakers design considers 80% of the rated load). In case a 100% rated breaker is needed, a factory assembled ReliaGear neXT configuration will be required.

<sup>3</sup>Interrupt rating at 240 V AC.



## Power panelboards

### ReliaGear neXT Formula A2 circuit breakers



2-pole Formula A2

#### ReliaGear neXT Formula A2 circuit breakers for branch feeder circuits<sup>1,2,3</sup>

Ordering code	Frame	Int. rating at 240 V	Trip unit	Poles	Amps	Phase	Cu load side lugs (AWG or kcmil)	Al load side lugs (AWG or kcmil)
A2A2125ABDXXXX	A2	A (10 kA)	TMF	2	125	AB	1x 1-250	1x 2/0-300
A2A2125ACDXXXX	A2	A (10 kA)	TMF	2	125	AC	1x 1-250	1x 2/0-300
A2A2150ABDXXXX	A2	A (10 kA)	TMF	2	150	AB	1x 1-250	1x 2/0-300
A2A2150ACDXXXX	A2	A (10 kA)	TMF	2	150	AC	1x 1-250	1x 2/0-300
A2A2200ABDXXXX	A2	A (10 kA)	TMF	2	200	AB	1x 1-250	1x 2/0-300
A2A2200ACDXXXX	A2	A (10 kA)	TMF	2	200	AC	1x 1-250	1x 2/0-300
A2N2125ABDXXXX	A2	A (10 kA)	TMF	2	125	AB	1x 1-250	1x 2/0-300
A2N2125ACDXXXX	A2	N (25 kA)	TMF	2	125	AC	1x 1-250	1x 2/0-300
A2N2150ABDXXXX	A2	N (25 kA)	TMF	2	150	AB	1x 1-250	1x 2/0-300
A2N2150ACDXXXX	A2	N (25 kA)	TMF	2	150	AC	1x 1-250	1x 2/0-300
A2N2200ABDXXXX	A2	N (25 kA)	TMF	2	200	AB	1x 1-250	1x 2/0-300
A2N2200ACDXXXX	A2	N (25 kA)	TMF	2	200	AC	1x 1-250	1x 2/0-300
A2N2250ABDXXXX	A2	N (25 kA)	TMF	2	250	AB	1x 1-250	—

<sup>1</sup> Additional Formula A2 plug-on circuit breakers are available. Contact your local ABB sales team for more information.

<sup>2</sup> All breakers are standard rated (standard circuit breakers design considers 80% of the rated load). In case a 100% rated breaker is needed, a factory-assembled ReliaGear neXT configuration will be required.

<sup>3</sup> 250 A Formula A2 plug-in breakers with 350 kcmil Al load side lugs available. Contact your local ABB sales team for more information.

## Power panelboards

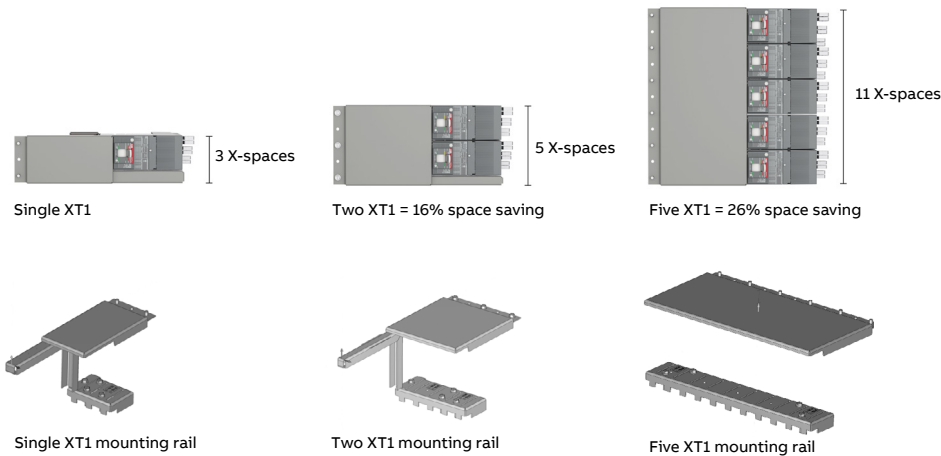
### ReliaGear neXT circuit breaker X-spacing

Each circuit breaker frame has specific requirements for the number of mounting positions (**X-spaces**). Thanks to the optimized dimensions of the XT1, the mounting positions required are lower when two or five breakers are mounted

close to one another. RELTs also require **X-space**, since they are plug-in modules. Refer to the table below and add up the number of **X-spaces** required for each breaker frame.

Frame	Max. ampacity (A)	Poles	X-spaces
Single XT1	125	3	3
Two XT1	125	3	5
Five XT1	125	3	11
XT4	250	3	3
XT5 <sup>1</sup>	600	3	4
XT6	800	3	6
XT7	1200	3	6
FB	100	1	1
FB	100	2	2
TEY	70	1	1
TEY	125	2	2
A2	250	2	2
RELT	–	–	3

<sup>1</sup>Tmax® XT5 with electrical accessories requires 1 (one) additional X-space.



The small footprint of the XT1 allows this panel to offer multiple options to improve circuit breaker density. As you configure and order ReliaGear neXT panelboards, you'll notice that XT1 are grouped in quantities of one, two or five. As part of this feature, unique mounting brackets are required when adding XT1 breaker assemblies. See above for X-space and mounting brackets required. These additional rails are not included with SuperBox configurations and must be ordered as accessories.

#### Order codes for XT1 mounting rails

- SR1XBF for 1 single XT1 breaker
- SR2XBF for 2 adjacent XT1 breakers
- SR5XBF for 5 adjacent XT1 breakers

## Power panelboards

### ReliaGear neXT breaker accessories



Auxiliary contacts



Shunt trip



Fixed padlock



RELT



Mounting rail

Group	Type	Volts AC	XT1	XT4	XT5 <sup>2</sup>	XT6	XT7	TEY	FB	A2
Auxiliary contacts Q = Indication of the status of the circuit breaker SY = Bell alarm	AUX-C 1 Q + 1 SY	250				KXTAAXCQSYFP				
	AUX-C 2 Q + 1 SY	250				KXTAAXC2QSYFP				
	AUX-C 1 Q + 1 SY	24				KXTAAXCDQSYFP				
	AUX-C 3 Q + 1 SY	24				KXTDAXCD3QSYFP				
	AUX 4Q	24					ZE1AUX4D			
	AUX 4Q	400					ZE1AUX4			
	AUX 1 SY	24					ZE1BAD			
	AUX 1 SY	250					ZE1BA			
Shunt trip	Pre-cabled (except for XT7)	24	KXTASORCFPB			KXTFYOCFPD	ZEZSZ			
	Pre-cabled (except for XT7)	110	KXTASORCFPD			KXTFYOCFPD	ZEASE			
	Pre-cabled (except for XT7)	220	KXTASORCFPE				ZEASG			
Undervoltage release	Pre-cabled (except for XT7)	24	KXTAUVRCFP1			KXTFYUC1	ZEUAU			
	Pre-cabled (except for XT7)	110	KXTAUVRCFP4			KXTFYUC4	ZEAEU			
	Pre-cabled (except for XT7)	220	KXTAUVRCFP5			KXTFYUC5	ZE AUG			
Fixed padlock <sup>1</sup>	Open position	-	KXTBPLLOP	KXTCPLLOP	KXT5P LLOP	KXT6P LLOP	KXT7P LLOP			
	Open/closed position	-	KXTB LLOPL	KXTC P LLOPCL	KXT5P LLOPLC	KXT6P LLOPLC		TEYXPLD1	FB1PF	
Removable padlock	Open position: KA2LD	-								KA2LDOR
RELT	RELT kit <sup>4</sup>	120/240					RT04A			
	RELT kit <sup>4</sup>	480					RT04B			
	RELT kit <sup>4</sup>	600					RT04C			
	RELT wire connector	-					CN003			
Mounting rail	1 single Tmax <sup>®</sup> XT1	-	SR1XBF							
	2 adjacent Tmax <sup>®</sup> XT1	-	SR2XBF							
	5 adjacent Tmax <sup>®</sup> XT1	-	SR5XBF							
Blank and fillers	1X blank + filler	-								SR01BF
	1X blank only	-								SR01BB
	2X blank + filler	-								SR02BF
	2X blank only	-								SR02BB
	3X blank + filler	-								SR03BF
	3X blank only	-								SR03BB
	XT1 blank only	-	SRT1BB							

<sup>1</sup> Padlocks are not included in the kit.

<sup>2</sup> Tmax XT5 electrical accessories require 1 (one) extra X-space for installation.

<sup>3</sup> Additional Tmax XT accessories are available. Contact your local ABB sales team for more information.

<sup>4</sup> Requires XT7 equipped with Ekip Touch or above trip unit, 3 X-space factor required.

# Surge protective devices



# Section 8

## Surge protective devices

Table of contents

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<b>Surge protective devices</b>	
DIN-Rail series	8-1

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## Surge protective devices

### DIN-rail series



UL 1449 4th edition

Poles	Voltage	Description	Ordering code	Alt. ordering code
1	120	1-Phase, 2 wire	2CTB802341R0000	OVR T2 15-150 P U
2	1500 DC	2-Phase	2CTB802340R4200	OVR PV 40-1500 H P U
3	277	3-Phase Delta, 4 wire	2CTB802345R2400	OVR T2 3L 40-320PU
3	480	3-Phase Delta, 4 wire	2CTB802345R3400	OVR T2 3L 40-550PU
3	480/277	3-Phase Wye, 5 wire	2CTB802346R2400	OVR T2 3N 40-320PU
3	480/277	3-Phase Wye, 5 wire	2CTB802346R3400	OVR T2 3N 40-550PU



UL 1449 4th edition

Poles	Voltage	Description	Ordering code	Alt. ordering code
1	120	1-Phase, 2 wire	2CTB802341R2100	OVR T2 40-150 P TS U
1	120	1-Phase, 2 wire	2CTB802341R2000	OVR T2 40-150 P U
1	277	1-Phase, 2 wire	2CTB802341R2500	OVR T2 40-320 P TS U
1	347	1-Phase, 2 wire	2CTB802341R2900	OVR T2 40-440 P TS U
1	480	1-Phase, 2 wire	2CTB802341R3300	OVR T2 40-550 P TS U
1	600	1-Phase, 2 wire	2CTB802341R3700	OVR T2 40-660 P TS U
1	400/690	1-Phase	2CTB815101R9300	OVR T1 25 440-50
1	277	1-Phase, 2 wire	2CTB802341R0400	OVR T2 15-320 P U
1	120	1-Phase, 3 wire	2CTB802342R0000	OVR T2 1N 15-150 P U
1	277	1-Phase, 3 wire	2CTB802342R0400	OVR T2 1N 15-320 P U
1	120	1-Phase, 3 wire	2CTB802342R2100	OVR T2 1N 40-150 P TS U
1	277	1-Phase, 3 wire	2CTB802342R2500	OVR T2 1N 40-320 P TS U
1	347	1-Phase, 3 wire	2CTB802342R2900	OVR T2 1N 40-440 P TS U
1	480	1-Phase, 3 wire	2CTB802342R3300	OVR T2 1N4 0-550 P TS U
1	600	1-Phase, 3 wire	2CTB802342R3700	OVR T2 1N 40-660 P TS U
2	240/120	2-Phase, 3 wire	2CTB802343R0000	OVR T2 2L 15-150 P U
2	480/277	2-Phase, 3 wire	2CTB802343R0400	OVR T2 2L 15-320 P U
2	240/120	2-Phase, 3 wire	2CTB802343R2100	OVR T2 2L 40-150 P TS U
2	480/277	2-Phase, 3 wire	2CTB802343R2500	OVR T2 2L 40-320 P TS U
2	480/277	2-Phase, 3 wire	2CTB802343R2400	OVR T2 2L 40-320 P U
2	240/120	2-Phase, 4 wire	2CTB802344R0000	OVR T2 2N 15-150 P U
2	480/277	2-Phase, 4 wire	2CTB802344R0400	OVR T2 2N 15-320 P U
2	240/120	2-Phase, 4 wire	2CTB802344R2100	OVR T2 2N 40-150 P TS U
2	480/277	2-Phase, 4 wire	2CTB802344R2500	OVR T2 2N 40-320 P TS U
2	600/347	2-Phase, 4 wire	2CTB802344R2900	OVR T2 2N 40-440 P TS U
2	480/277	2-Phase, 4 wire	2CTB802344R3300	OVR T2 2N 40-550 P TS U
2	600/347	2-Phase, 4 wire	2CTB802344R3700	OVR T2 2N 40-660 P TS U

Table continues on next page.

## Surge protective devices

### DIN-rail series

#### UL 1449 4th edition

Poles	Voltage	Description	Ordering code	Alt. ordering code
3	120	3-Phase Delta, 4 wire	2CTB802345R0000	OVR T2 3L 15150 P U
3	120	3-Phase Delta, 4 wire	2CTB802345R2100	OVR T2 3L 40-150 P TS U
3	277	3-Phase Delta, 4 wire	2CTB802345R2500	OVR T2 3L 40-320 P TS U
3	347	3-Phase Delta, 4 wire	2CTB802345R2900	OVR T2 3L 40-440 P TS U
3	480	3-Phase Delta, 4 wire	2CTB802345R3300	OVR T2 3L 40-550 P TS U
3	208/120	3-Phase Wye, 5 wire	2CTB802346R0000	OVR T2 3N 15-150 P U
3	480/277	3-Phase Wye, 5 wire	2CTB802346R0400	OVR T2 3N 15-320 P U
3	208/120	3-Phase Wye, 5 wire	2CTB802346R2100	OVR T2 3N 40-150 P TS U
3	480/277	3-Phase Wye, 5 wire	2CTB802346R2500	OVR T2 3N 40-320 P TS U
3	600/347	3-Phase Wye, 5 wire	2CTB802346R2900	OVR T2 3N 40-440 P TS U
3	480/277	3-Phase Wye, 5 wire	2CTB802346R3300	OVR T2 3N 40-550 P TS U
3	600/347	3-Phase Wye, 5 wire	2CTB802346R3700	OVR T2 3N 40-660 P TS U

## Surge protective devices

### PV applications

#### UL 1449 5th Edition



Poles	Voltage	Description	Ordering code	Alt. ordering code
3	1500	1500V Photovoltaic SPD	2CTB802400R1500	OVR PV T2 40-1500 P
3	1500	1500V Photovoltaic SPD with Dry contacts	2CTB802401R1500	OVR PV T2 40-1500 P TS
3	1000	1000V Photovoltaic SPD	2CTB802400R1000	OVR PV T2 40-1000 P
3	1000	1000V Photovoltaic SPD with Dry contacts	2CTB802401R1000	OVR PV T2 40-1000 P TS
3	1000	1000V Photovoltaic Cartridge	2CTB802402R1000	OVR PV T2 40-1000 C
3	1500	1500V Photovoltaic Cartridge	2CTB802402R1500	OVR PV T2 40-1500 C

## Automatic transfer switches





# Section 9

## Automatic transfer switches

Table of contents

<b>TruONE™ ATS</b>	
Ordering code construction	9-1
Switches	9-2
Accessories	9-2

# TruONE™ automatic transfer switch

## Ordering code construction

ABB TruONE automatic transfer switch, open transition, 1000 amperes, UL, 3 phase + Neutral (3ph, 4 wire), Level 4 controls, 200–480 VAC voltage area, bottom entry (sources on bottom, load on top).

OX	A	1000	U	3	S	4	Q		B
<b>ABB Brand</b> OX = ABB TruONE ATS									
<b>ATS type</b> A = Open transition I - II (without stable OFF position for load disconnection) B = Delayed transition I - O - II (with stable OFF position for load disconnection)									<b>Cabling direction</b> Open style, no enclosure B = Bottom entry (sources on bottom, load on top) T = Top entry (sources on the top, load on the bottom)
<b>ATS size</b> UL = 30, 60, 100, 125, 160, 200, 260, 400, 600, 800, 1000, 1200 IEC = 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600									<b>Enclosure rating</b> Blank = (blank) Open style, no enclosure
<b>Standard</b> E = IEC U = UL									<b>Voltage code</b> Q = 200–480 VAC
<b>Phase poles</b> 1 = 1-pole 2 = 2-pole 3 = 3-pole									<b>Controller</b> 2 = Level 2 controls (DIP) 3 = Level 3 controls (LCD) 4 = Level 4 controls (Touch)
									<b>Neutral</b> S = Switched Neutral O = Overlapping Neutral X = None

Controller	Mode of control	Features
Level 2	DIP switch	Standard control with limited options
Level 3	LCD screen	Advanced control with optional module for communication and programmable I/O module
Level 4	Touch screen	Superior control with level 3 features and power measurement & predictive maintenance

## TruONE™ automatic transfer switch

### Switches and accessories



#### TruONE switches

AMP	Poles	Controller	Voltage code	Transition Type	Cabling direction	Ordering Code
30	3	Level 2 controls (DIP)	200-480 VAC	Open	Bottom	OXA30U3X2QB
100	3	Level 3 controls (LCD)	200-480 VAC	Open	Bottom	OXA100U3X3QB
200	2	Level 2 controls (DIP)	200-480 VAC	Open	Bottom	OXA200U2X2QB
200	3	Level 3 controls (LCD)	200-480 VAC	Open	Bottom	OXA200U3X3QB
260	3	Level 4 controls (Touch)	200-480 VAC	Open	Bottom	OXA260U3X4QB
400	3	Level 3 controls (LCD)	200-480 VAC	Open	Bottom	OXA400U3X3QB
400	4	Level 3 controls (LCD)	200-480 VAC	Open	Bottom	OXA400U3S3QB
400	3	Level 4 controls (Touch)	200-480 VAC	Open	Bottom	OXA400U3X4QB
600	3	Level 3 controls (LCD)	200-480 VAC	Open	Bottom	OXA600U3X3QB
600	4	Level 3 controls (LCD)	200-480 VAC	Open	Bottom	OXA600U3S3QB
600	3	Level 4 controls (Touch)	200-480 VAC	Open	Bottom	OXA600U3X4QB
800	3	Level 3 controls (LCD)	200-480 VAC	Open	Bottom	OXA800U3X3QB
800	3	Level 4 controls (Touch)	200-480 VAC	Open	Bottom	OXA800U3X4QB
1000	3	Level 3 controls (LCD)	200-480 VAC	Open	Bottom	OXA1000U3X3QB
1200	3	Level 3 controls (LCD)	200-480 VAC	Open	Bottom	OXA1200U3X3QB
1200	3	Level 4 controls (Touch)	200-480 VAC	Open	Bottom	OXA1200U3X4QB
100	3	Level 3 controls (LCD)	200-480 VAC	Delayed	Bottom	OXB100U3X3QB
400	3	Level 3 controls (LCD)	200-480 VAC	Delayed	Bottom	OXB400U3X3QB
600	3	Level 3 controls (LCD)	200-480 VAC	Delayed	Bottom	OXB600U3X3QB
800	3	Level 3 controls (LCD)	200-480 VAC	Delayed	Bottom	OXB800U3X3QB

#### Accessories

##### Auxiliary power supply module

Suitable for switches	Aux Voltage	Ordering Code
OX30...1600	12-24 Vdc	OXE1

##### Communication modules

Suitable for switches	Protocol	Ordering Code
OX30...1600	EKIP COM DEVICENET	ZEDEVICENET
OX30...1600	EKIP COM HUB	ZEAEKIPHUB
OX30...1600	EKIP COM ETHERNET/IP	ZEAEHRNT
OX30...1600	EKIP COM MODBUS TCP	ZEAMODTCP
OX30...1600	EKIP COM PROFIBUS	ZEAPRFIBUS
OX30...1600	EKIP COM PROFINET	ZEAPRFINET
OX30...1600	EKIP COM MODBUS RS-485	ZEAMOD485

##### Signalling Modules for Level 3 and Level 4 controllers

Suitable for switches	Type	Ordering Code
OX30...1200	TRUONE IO MOD 2I/2O MKG:11,12/11,12	2K-1-OX
OX30...1200	TRUONE IO MOD 2I/2O MKG:21,22/21,22	2K-2-OX
OX30...1200	TRUONE IO MOD 2I/2O MKG:31,32/31,32	2K-3-OX

## TruONE™ automatic transfer switch

### Accessories

<b>Ekip Programming module</b>		
<b>Suitable for switches</b>	<b>Type</b>	<b>Ordering Code</b>
OX30...1600	EKIP Programming	ZEAKEPPGM

<b>Ekip Bluetooth wireless communication unit</b>		
<b>Suitable for switches</b>	<b>Type</b>	<b>Ordering Code</b>
OX30...1600	Ekip Com Bluetooth	ZEABT

<b>Ekip Com Hub</b>		
<b>Suitable for switches</b>	<b>Type</b>	<b>Ordering code</b>
OX30...1600	Ekip Com Hub	ZEAKEIPHUB

<b>Terminal shrouds</b>		
<b>Suitable for switches</b>	<b>Type</b>	<b>Ordering code</b>
OX30....1200	TERM SHROUD TRUONE UL30-200A L 3PC	OXES250G1L/3
OX30....1200	TERM SHROUD TRUONE UL30-200A L 4PC	OXES250G1L/4
OX30....1200	TERM SHROUD TRUONE UL30-200A S 3PC	OXES250G1S/3
OX30....1200	TERM SHROUD TRUONE UL30-200A S 4PC	OXES250G1S/4
OX30....1200	TERM SHROUD TRUONE UL260-600A L 3PC	OXES800G1L/3
OX30....1200	TERM SHROUD TRUONE UL260-600A L 4PC	OXES800G1L/4
OX30....1200	TERM SHROUD TRUONE UL260-600A S 3PC	OXES800G1S/3
OX30....1200	TERM SHROUD TRUONE UL260-600A S 4PC	OXES800G1S/4
OX30....1200	TERM SHROUD TRUONE UL800-1200 L 3PC	OXES1600G1L/3
OX30....1200	TERM SHROUD TRUONE UL800-1200 L 4PC	OXES1600G1L/4

<b>Phase barriers</b>		
<b>Suitable for switches</b>	<b>Type</b>	<b>Ordering code</b>
OX30...1600	30 -1200 Amps, 3 Pole	OXEB1600/4
	30 - 1200 Amps, 4 Pole	OXEB1600/6

<b>Wide blade kit*</b>		
<b>Suitable for switches</b>	<b>Type</b>	<b>Ordering code</b>
OX30....1200	WIDE BLADE KIT TRUONE UL800-1200 3P	OXEW1600/3
OX30....1200	WIDE BLADE KIT TRUONE UL800-1200 4P	OXEW1600/4

<b>HMI Protective cover, IP54, NEMA 3R rated</b>		
<b>Suitable for switches</b>	<b>Type</b>	<b>Ordering code</b>
OX30...1600	TRUONE HMI PROTECT COVER UL30-1200	OXEC21

\* This is required for UL 800-1200 A switches on the LOAD side terminals, when wiring is done with four cables and using mechanical compression lugs

## TruONE™ automatic transfer switch

### Accessories

<b>Auxiliary contacts</b>		
<b>Suitable for switches</b>	<b>Type</b>	<b>Ordering code</b>
OX30....1200	1-NO AUX SW OT/OS	OA1G10
OX30....1200	AUX SWITCH 1NC OS/OT	OA3G01
OX30....1200	1NO AUX SW OT16-125 GOLD	OA1G10AU
OX30....1200	1NC AUX SWITCH OT16-125 GOLD	OA3G01AU

<b>Terminal Lug kits</b>						
<b>Type</b>	<b>Wire Range</b>	<b>Wires per lug</b>	<b>2 lugs kit</b>	<b>3 lugs kit</b>	<b>4 lugs kit</b>	<b>6 lugs kit</b>
OZXA-100	14-2/0 AWG	1		OZXA-100/3P	OZXA-100/4P	OZXA-100
OZXA-24	14-2/0 AWG	1	OZXA-24/2P	OZXA-24/3P	OZXA-24/4P	OZXA-24
OZXA-200	4 AWG - 300kcmil	1		OZXA-200/3	OZXA-200/4	OZXA-200
OZXA-25	6 AWG - 300kcmil	1	OZXA-25/2P	OZXA-25/3P	OZXA-25/4P	OZXA-25
OZXA-400	2 AWG - 600kcmil	1		OZXA-400/3	OZXA-400/4	OZXA-400
OZXA-26	2 AWG - 600kcmil	1	OZXA-26/2P	OZXA-26/3P	OZXA-26/4P	OZXA-26
OZXA-412	1x 4 AWG - 600 MCM or 2x 1/0 AWG - 250 MCM	1 or 2			OZXA-412L/4P	OZXA-412L
OZXA-412L	1x 4 AWG - 600 MCM or 2x 1/0 AWG - 250 MCM	1 or 2	OZXA-412L/2P	OZXA-412L/3P	OZXA-412L/4P	
OZXA-800E	2 AWG - 600kcmil	2		OZXA-800E/3P	OZXA-800E/4P	OZXA-800E
OZXA-800S	2 AWG - 600kcmil	2		OZXA-800S/3P	OZXA-800S/4P	OZXA-800S
OZXA-800L	2 AWG - 600kcmil	2	OZXA-800L/2	OZXA-800L/3	OZXA-800L/4	OZXA-800L
OZXA-30	2 AWG - 600kcmil	2		OZXA-30/3P	OZXA-30/4P	OZXA-30
OZXA-1200	2 AWG - 600kcmil	4		OZXA-1200/3	OZXA-1200/4	OZXA-1200

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10

## **NEMA and definite purpose controls**

## Section 10

# NEMA and definite purpose controls

### Table of contents

<b>Definite purpose contactors</b>	
Contactors and accessories	10-1
<b>NEMA pump panels</b>	
Ordering code construction	10-2
CR341 (FVNR) full voltage non-reversing pump panels	10-3
<b>NEMA Starters</b>	
Enclosed combination starters ordering code construction	10-4
CR300/400 (FVNR) full voltage non-reversing combination starters	10-5
Enclosed non-combination starters ordering code construction	10-6
CR300/400 (FVNR) full voltage non-reversing non-combination starters	10-7
<b>Manual Motor Starters and accessories</b>	
CR101H, CR101Y (FVNR) full voltage non-reversing starters	10-8
Spec-setter (FVNR) full voltage non-reversing manual motor starters	10-10
<b>Overload relays, open components and accessories</b>	
Overload relays	10-11
Open components and accessories	10-12
<b>Lighting contactors</b>	
460 series contactors and accessories	10-13

## Definite purpose contactors

Contactors and accessories



Coil Voltage	Frame Size	2 NO (2P)	3 NO (3P)
		Ordering Code	Ordering Code
24V AC	30A	DP30C2P-F	---
	40A	---	DP40C3P-F
120V AC	20A	DP20C2P-1	---
	30A	DP30C2P-1	DP30C3P-1
	40A	---	DP40C3P-1
	50A	---	DP50C3P-1
	60A	---	DP60C3P-1

### Auxiliary contact block for 3- and 4-pole configurations

Description	Ordering Code
Double "Form C" (1NO + 1NC aux) SPDT	CADP40-20





## NEMA pump panels

CR341 (FVNR) full voltage non-reversing pump panels



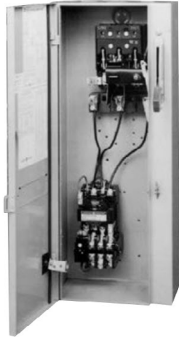
NEMA Size	Disconnect Type	Line Voltage	Disconnect Size	Horse Power	Overload	Ordering Code
Size 1	Fusible	460-480 Vac	30A	10	None	341C044BAA1AA
Size 2	Fusible	460-480 Vac	60A	25	None	341D044CAA1AA
Size 3	Fusible	460-480 Vac	100A	50	Thermal*	341E014DAA1AA
	Fusible	460-480 Vac	100A	50	None	341E044DAA1AA
	Fusible	460-480 Vac	100A	50	Class 10-20-30 electronic	341E0X4DAA1AAL
Size 4	Fusible	460-480 Vac	200A	100	Thermal*	341F014EAC1AA
	Fusible	460-480 Vac	200A	100	None	341F044EAC1AA
	Fusible	460-480 Vac	200A	100	Class 10-20-30 electronic	341FOX4EAC1AAM

\*Thermal overload relays require 1 heater element per phase



## NEMA starters

CR300/400 (FVNR) full voltage non-reversing combination starters

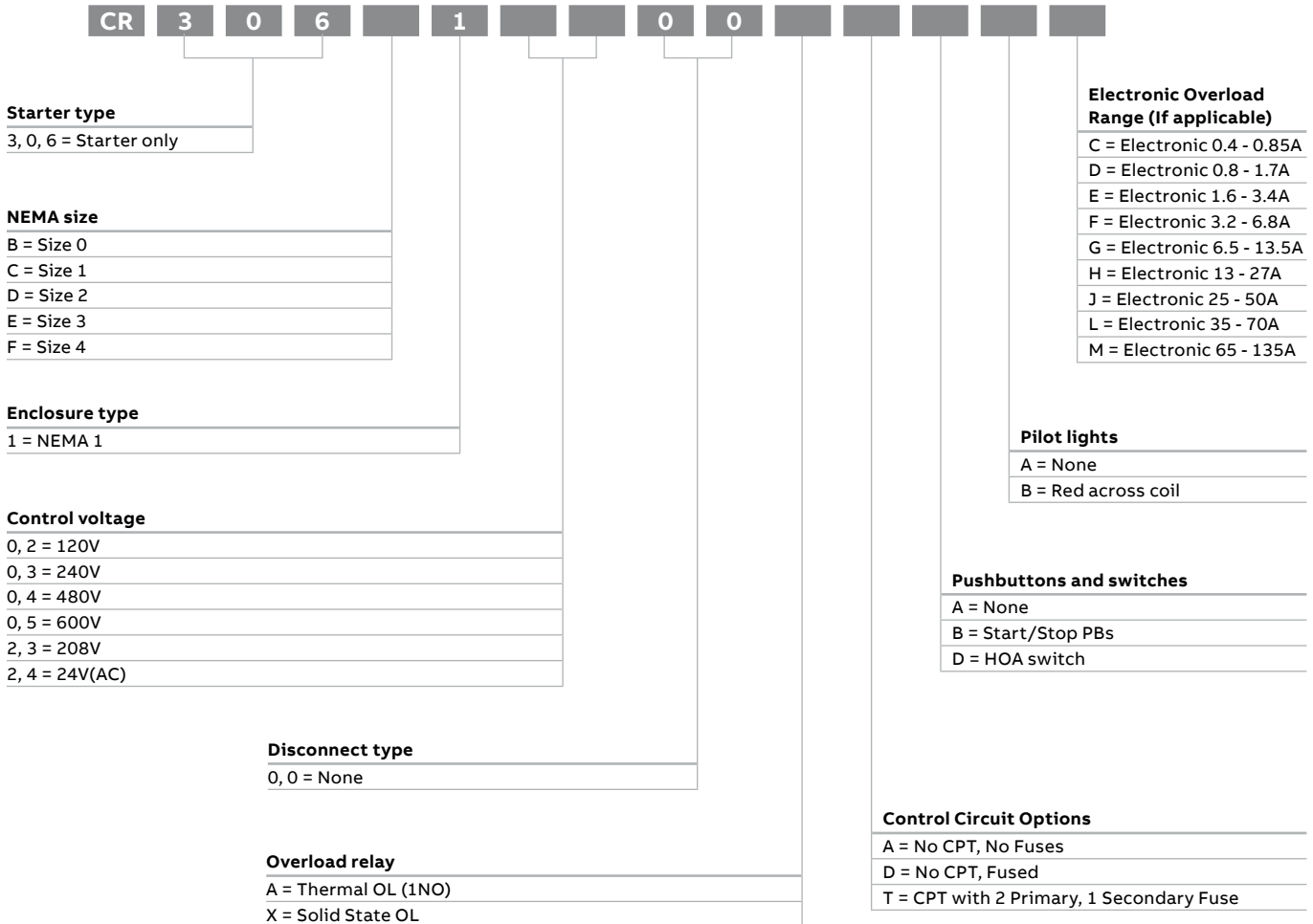


NEMA Size	Disconnect Type	Line Voltage	Disconnect Size	Horse Power	Overload	Ordering Code
Size 0	Non-fused	575-600 Vac	30A	5	Electronic 6.5-13amp	308BT021AGAAAAA
Size 0	Non-fused	575-600 Vac	30A	5	Thermal*	308BT021A4AAAAA
Size 1	Non-fused	575-600 Vac	30A	10	Electronic 13-27amp	308CT021AHAAAAA
Size 1	Non-fused	575-600 Vac	30A	10	Thermal*	308CT021A4AAAAA
Size 2	Non-fused	575-600 Vac	60A	25	Thermal*	408D1021A4AAAAA
Size 2	Non-fused	575-600 Vac	60A	25	Electronic 25-50amp	408D1021AJAAAAA
Size 3	Non-fused	575-600 Vac	100A	50	Thermal*	408E1021A4AAAAA
Size 3	Non-fused	575-600 Vac	100A	50	Electronic 35-70amp	408E1021ALAAAAA
Size 4	Non-fused	575-600 Vac	200A	100	Thermal*	408F1021A4AAAAA
Size 4	Non-fused	575-600 Vac	200A	100	Electronic 65-135amp	408F1021AMAAAAA
Size 0	Fusible	200-208 Vac	30A	3	Thermal*	308BT02RA4AAAAA
Size 0	Fusible	200-208 Vac	30A	3	Electronic 6.5-13amp	308BT02RAGAAAAA
Size 0	Fusible	460-480 Vac	30A	5	Thermal*	308BT02R34AAAAA
Size 0	Fusible	460-480 Vac	30A	5	Electronic 6.5-13amp	308BT02R3GAAAAA
Size 1	Fusible	200-208 Vac	30A	5	Thermal*	308CT02RA4AAAAA
Size 1	Fusible	200-208 Vac	30A	5	Electronic 13-27amp	308CT02RAHAAAAA
Size 1	Fusible	200-208 Vac	60A	7.5	Thermal*	408C102RB4AAAAA
Size 1	Fusible	460-480 Vac	30A	10	Thermal*	308CT02R34AAAAA
Size 1	Fusible	460-480 Vac	30A	10	Electronic 13-27amp	308CT02R3HAAAAA
Size 2	Fusible	200-208 Vac	60A	10	Thermal*	408D102RB4AAAAA
Size 2	Fusible	200-208 Vac	60A	10	Electronic 25-50amp	408D102RJAAAAA
Size 2	Fusible	460-480 Vac	30A	15	Thermal*	308DT02R34AAAAA
Size 2	Fusible	460-480 Vac	30A	15	Electronic 25-50amp	308DT02R3JAAAAA
Size 2	Fusible	460-480 Vac	60A	25	Thermal*	408D102R64AAAAA
Size 2	Fusible	460-480 Vac	60A	25	Electronic 25-50amp	408D102R6JAAAAA
Size 3	Fusible	200-208 Vac	200A	25	Thermal*	408E1F2RD4AAAAA
Size 3	Fusible	200-208 Vac	200A	25	Electronic 35-70amp	408E1F2RDLA AAAA
Size 3	Fusible	460-480 Vac	60A	30	Thermal*	408E102R64AAAAA
Size 3	Fusible	460-480 Vac	60A	30	Electronic 35-70amp	408E102R6LAAAAA
Size 3	Fusible	460-480 Vac	100A	50	Thermal*	408E102R14AAAAA
Size 4	Fusible	460-480 Vac	200A	100	Electronic 65-135amp	408F1F2R2MAAAAA
Size 4	Fusible	460-480 Vac	100A	60	Electronic 65-135amp	408F102R1MAAAAA
Size 4	Fusible	460-480 Vac	100A	60	Thermal*	408F102R14AAAAA
Size 4	Fusible	460-480 Vac	200A	100	Thermal*	408F1F2R24AAAAA
Size 4	Fusible	460-480 Vac	100A	50	Electronic 35-70amp	408E102R1LAAAAA
Size 0	Circuit Breaker	200-208 Vac	15A	3	Electronic 6.5-13amp	307BT02TCGAAAAA
Size 0	Circuit Breaker	200-208 Vac	15A	3	Thermal*	307BT02TC4AAAAA
Size 1	Circuit Breaker	200-208 Vac	25A	5	Thermal*	307CT02TE4AAAAA
Size 1	Circuit Breaker	200-208 Vac	40A	10	Thermal*	307CT02TG4AAAAA
Size 1	Circuit Breaker	200-208 Vac	60A	10	Thermal*	307DT02TJ4AAAAA
Size 1	Circuit Breaker	200-208 Vac	25A	5	Electronic 13-27amp	307CT02TEHAAAAA
Size 1	Circuit Breaker	200-208 Vac	40A	7.5	Electronic 13-27amp	307CT02TGHAAAAA
Size 2	Circuit Breaker	200-208 Vac	60A	10	Electronic 25-50amp	307DT02TJJAAAAA

\*Thermal overloads relays require 1 heater element per phase

# NEMA Starters

Enclosed non-combination starters ordering code construction



## NEMA starters

CR306 (FVNR) full voltage non-reversing non-combination starters



NEMA Size	Line Voltage	Horse Power	Switch Type	Ordering Code
Size 0	460-480 Vac	5	None	306B10200AAAAA
	460-480 Vac	5	HOA	306B10200AADAA
Size 1	460-480 Vac	10	None	306C10200AAAAA
	460-480 Vac	10	HOA	306C10200AADAA
Size 2	460-480 Vac	25	None	306D10200AAAAA
	460-480 Vac	25	HOA	306D10200AADAA
Size 3	460-480 Vac	50	None	306E10200AAAAA
	460-480 Vac	50	HOA	306E10200AADAA
Size 4	460-480 Vac	100	None	306F10200AAAAA
	460-480 Vac	100	HOA	306F10200AADAA

### Non-combination Field Installable Accessories

NEMA Size	Start/Stop PB ordering code	HOA Switch ordering code	On/Off switch ordering code	Red pilot light ordering code
Size 0,1	CR305X120N	CR305X130N	CR305X130P	CR305X150N
Size 2	CR305X220N	CR305X230N	CR305X230D	CR305X250N
Size 3,4	CR305X320B	CR305X330B	CR305X330D	CR305X350B

## Manual motor starters

CR101H, CR101Y (FVNR) full voltage non-reversing manual starters



### Toggle Operated Non-reversing Open\*

Poles	Line Voltage	Horse Power	Ordering Code
1	115/230/277	1/1/0.75	CR101Y
2	115/230/277	1/1/0.75	CR101H

\*For flush or outlet box mounting



### Toggle Operated Non-reversing Enclosed NEMA Type 1

Poles	Line Voltage	Horse Power	Indicating Light	Ordering Code
1	115/230/277	1/1/0.75	No	CR101Y1
2	115/230/277	1/1/0.75	No	CR101H1
1	115/230/277	1/1/0.75	Yes*	CR101Y11
2	115/230/277	1/1/0.75	Yes*	CR101H11

\*Light available at 115/230-volt lamps only



### Lever Operated Non-reversing Enclosed NEMA Type 3/4/12

Poles	Line Voltage	Horse Power	Hubs	Ordering Code
1	115/230/277	1/1/0.75	3/4" hub on one end	CR101H400H
2	115/230/277	1/1/0.75	3/4" hub on one end	CR101Y400H

### CR101H, CR101Y Enclosure Components

Description	Ordering Code
Plate Kit, with lock attachment (lock not included)	CR101X3
Standard Cover (front w/ screws)	CR101X5
Combo plate kit, w/Hand-auto switch & 115/230volt neon light	CR101X11
Combo flush plate and box (back)	CR101X14

## Manual motor starters

CR101H, CR101Y (FVNR) full voltage non-reversing manual starters

### CR101 Heaters

Max motor full load amps	Ordering Code
0.48	CR123H055A
0.53	CR123H061A
0.58	CR123H067A
0.65	CR123H074A
0.71	CR123H082A
0.78	CR123H090A
0.86	CR123H099A
0.95	CR123H108A
1.04	CR123H120A
1.14	CR123H132A
1.25	CR123H144A
1.37	CR123H158A
1.49	CR123H172A
1.63	CR123H188A
1.78	CR123H205A
1.95	CR123H224A
2.13	CR123H245A
2.32	CR123H267A
2.53	CR123H291A
2.76	CR123H317A
3.01	CR123H346A
3.27	CR123H377A
3.56	CR123H410A
3.88	CR123H446A
4.22	CR123H486A
4.6	CR123H529A
5	CR123H575A
5.43	CR123H625A
5.9	CR123H680A
6.41	CR123H739A
6.98	CR123H802A
7.6	CR123H873A
8.25	CR123H950A
8.95	CR123H103B
9.75	CR123H112B
10.6	CR123H122B
11.4	CR123H132B
12.5	CR123H144B
13.6	CR123H157B
14.8	CR123H171B
16	CR123H186B



## Manual motor starters

Spec-Setter (FVNR) full voltage non-reversing manual starters



Toggle Operated Starter Non-reversing Open

Poles	General Duty		Motor HP Rating			Ordering Code
	Amp Rating	System voltage	Horse Power 110 Vac	Horse Power 240 Vac	Horse Power 480 & 600 Vac	
2	30	240	---	2	2	TC2228S
3	30/20/20	240/480/600	3	7.5	15	TC2368S



Toggle Operated Non-reversing Enclosed NEMA Type 1

Poles	General Duty		Motor HP Rating			Ordering Code
	Amp Rating	System voltage	Horse Power 110 Vac	Horse Power 240 Vac	Horse Power 480 & 600 Vac	
2	30	240	---	2	2	TC2228
3	30/20/20	240/480/600	3	7.5	15	TC2368

## Overload relays, open components and accessories

### Overload relays



Replace \* in product number with appropriate digit from Full Load Current Selection Table below.

#### Solid state overload relays, 3 pole, 600 VAC

NEMA Size	Continuous Ampere Rating	Mounting Position	Product Number
1	27	Panel Mount	CR324CX*P
2	45	Panel Mount	CR324DX*P
3, 4	90,135	Panel Mount	CR324FX*P
1	27	for MRO & Replacement	CR324CX*S
2	45	for MRO & Replacement	CR324DX*S
3, 4	90,135	for MRO & Replacement	CR324FX*S <sup>1,2</sup>
5	270	for MRO & Replacement	CR324GX*S <sup>3</sup>

<sup>1</sup>If Product No. digit "K" is selected from Full Load Current Selection Table.

<sup>2</sup>Reset on CR324FX\*S overloads is approximately 1" longer than on equivalent bimetal overloads. For ABB 300-Line enclosures, perform the actions noted below:

<sup>3</sup>CR324GX\*S may be used as replacement for bimetal overload on size 5 starters. Use existing CTs.

<sup>4</sup>CR324HX\*K kit must be used as solid-state replacement for bimetal overloads on size 6, since CT ratio changes, CTs included.

<sup>5</sup>CR324HX\*S may be used as a replacement for existing solid-state overload on size 6. Use existing CTs.

Enclosure Reset Extension Type	Adjustment Required
Threaded Rod (standard)	Cut threaded shaft 1" and adjust for 1/8" gap.
"U" Style, 2 1/8" long	Replace extension with product number 55-51281G005.
"U" Style, 1 1/2" long	Replace extension with product number 55-51281G002.

#### Solid state overload relay options

Item	NEMA Size	Voltage	Product Number
Remote Reset	1-6	120 VAC	CR324XRRM02
Panel Mount Adapter	1	N/A	CR324CXPMMA
	2	N/A	CR324DXPMA

#### Full load current selection table

For continuous rated motors, with a service factor of 1.15 to 1.25, select the heater with maximum motor Amperes equal to or immediately greater than the motor full-load current (provides a maximum of 125 percent protection). For continuous rated motors with no service factor, multiply the full-load current of the motor by 0.90 and use this value to select the heater.

Overload Range for Solid State Starters	NEMA Size	Fuse Max.	Breaker Max.	Insert Digit in Product Number
0.4-0.85	00-1	3	15	C
0.8-1.7	00-1	6	15	D
1.6-3.4	00-1	12	15	E
3.2-6.8	00-1	25	25	F
6.5-13.5	00-1	50	50	G
13-27	00-1	100	100	H
6.5-13.5	2	50	50	G
13-27	2	100	100	H
25-50	2	200	200	J
17-35	3 & 4	125	125	K
35-70	3 & 4	250	250	L
65-135	3 & 4	500	400	M
35-70	5	-	-	N
65-135	5	500	400	P
130-270	5	600	800	Q
130-270	6	1200	800	S
260-540	6	1200	800	T

## Overload relays, open components, and accessories

### Open components and accessories



#### Open contactors

Nema Size	Description	Line Voltage	Amp Rating	Ordering Code
Size 0	Contacteur	115-120 Vac	20A	305B002
Size 1	Contacteur	115-120 Vac	30A	305C002
Size 2	Contacteur	115-120 Vac	50A	305D002
Size 3	Contacteur	115-120 Vac	100A	305E002
Size 4	Contacteur	115-120 Vac	150A	305F002



#### Open starters

Nema Size	Description	Line Voltage	Amp Rating	Overload	Ordering Code
Size 0	Starter	115-120 Vac	18A	Thermal*	306B002
Size 1	Starter	115-120 Vac	27A	Thermal*	306C002
Size 2	Starter	115-120 Vac	45A	Thermal*	306D002
Size 3	Starter	115-120 Vac	90A	Thermal*	306E002
Size 4	Starter	115-120 Vac	135A	Thermal*	306F002

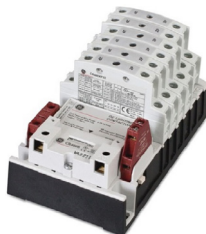
\*Thermal overloads relays require 1 heater element per phase

#### Pump panel, combination starter, non-combination starter, and contactor Field Installable Accessories

NEMA Size	1NO AUX ordering code	1NC AUX ordering code	1NO/1NC AUX ordering code
Size 0,1	CR305X100A	CR305X100B	CR305X100C
Size 2	CR305X200A	CR305X200B	CR305X200C
Size 3,4	CR305X300A	CR305X300B	CR305X300C

# Lighting Contactors

460 series contactors and accessories



**Assembled NEMA 1 enclosed Contactors\***

Coil voltage	Poles (NO)	General use	All voltages & loads	Ordering Code
115-120V 60 Hz/110V 50 Hz	4	600 Vac/30A	See Chart**	CR463L40AJA10A0
115-120V 60 Hz/110V 50 Hz	6	600 Vac/30A	See Chart**	CR463L60AJA10A0
115-120V 60 Hz/110V 50 Hz	8	600 Vac/30A	See Chart**	CR463L80AJA10A0

**Assembled open contactors\***

Coil voltage	Poles (NO)	General use	All voltages & loads	Ordering Code
115-120V 60 Hz/110V 50 Hz	4	600 Vac/30A	See Chart**	CR463L40AJA
115-120V 60 Hz/110V 50 Hz	6	600 Vac/30A	See Chart**	CR463L60AJA
115-120V 60 Hz/110V 50 Hz	8	600 Vac/30A	See Chart**	CR463L80AJA

Stock the below components to quickly build up any configuration  
**Lighting Contactor Components**

Lighting Contactor Components	Ordering Code
12 POLE ELECTRICALLY HELD BASE, 120V COIL	460BJ
12 POLE ELECTRICALLY HELD BASE, 277V COIL	460BN
1 POLE POWER BLOCK**	460XP31
2 POLE POWER BLOCK**	460XP32
1 POLE AUXILIARY CONTACT (Reversible)	460XB1
2 POLE AUXILIARY CONTACT (Reversible)	460XB2
24V60 HZ/20V50HZ COIL	460XCC
115-120V60 HZ/110V50HZ COIL	460XCJ
208V60 HZ COIL	460XCL
277V60 HZ/240V50HZ COIL	460XCN
ENCLOSURE KIT NEMA 1	460XE1B
ENCLOSURE KIT TYPE 12/3R	460XE2B
OVERSIZED ENCLOSURE KIT TYPE 12/3R	460XE2D
RED/GREEN IND LIGHT KIT 120 V	460XLBj
2WIRE CONTROL MODULE KIT 120V	460XMC
3WIRE CONTROL MODULE KIT 120V	460XMN
HOA-ON/OFF/AUTO SS KIT	460XP4

**\*\* Lighting contactor Power Block Ratings chart**

MAXIMUM VOLTS POLES TO LOAD	LOAD TYPE	MAXIMUM AMPS	ABB			UL US LISTED A600			
1 For 1Ø 2 For 1Ø 3 For 3Ø			AC MOTOR STARTING (Break All Lines)	HP	FLA	IND.CONT.EQ			
120 VAC	LED DRIVER / ELECTRONIC BALLAST	10A MAX	1Ø 1 15			Wire Range: #14-8 AWG 75°C Copper Wire Only Torque: 15 lbs-in			
277 VAC	LED DRIVER / ELECTRONIC BALLAST	3A MAX	3Ø 1.5 12						
277 VAC	TUNGSTEN	20A MAX	1Ø 2 12			Position Block on Base for desired NO versus NC operation Power Contact Block for use with CR460 Series Contactor			
347 VAC	BALLAST	30A MAX	3Ø 5 15.2						
600 VAC	GENERAL USE / AC RESISTANCE	30A MAX	1Ø 5 14			IEC/EN 60947-4-1 Ith=30A Ui=600V TORQUE : 3.9 N-m AC-15 A600			
600 VAC			3Ø 10 14						
POLES TO LOAD			AC3			CE			
1 For 1Ø 2 For 1Ø 3 For 3Ø	30 AMP MAX. LOAD		V	230	460			500	600
230 VAC	400 VAC	AC-5b (20A ONLY)	kW	1.5	5.5			5.5	5.5
230 VAC	400 VAC	AC-6a							
600 VAC	600 VAC	AC-1							

—  
**11**

## **Softstarters**

**Section 11**

**Softstarters**

Table of contents

<b>Softstarters</b>	
Open PSR - normal duty	11-1
PSR Accessories	11-2
Open PSE - normal duty	11-3
PSE Accessories	11-4
Open PSTX - normal duty	11-6
PSTX Accessories	11-7
Enclosed PSTX - normal duty	11-9
Enclosed PSTX - extreme duty	11-10

## Softstarters

Open PSR softstarter - Normal duty

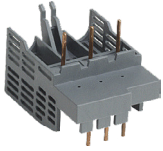


Max Motor Current	Motor Voltage	Control Voltage	In-Line Rating	In-Line Rating	Frame	Dimensions (inches)	Weight (lb)	Ordering code
3.4A	208-600V	24V AC/DC	0.75 HP /240 VAC	2 HP / 480 VAC	A	5.51H x 1.77W x 4.49D	0.99	PSR3-600-11
3.4A	208-600V	120 -240 VAC	0.75 HP /240 VAC	2 HP / 480 VAC	A	5.51H x 1.77W x 4.49D	0.99	PSR3-600-70
6.1A	208-600V	24V AC/DC	1.5 HP /240 VAC	3 HP / 480 VAC	A	5.51H x 1.77W x 4.49D	0.99	PSR6-600-11
6.1A	208-600V	120 -240 VAC	1.5 HP /240 VAC	3 HP / 480 VAC	A	5.51H x 1.77W x 4.49D	0.99	PSR6-600-70
9.0A	208-600V	24V AC/DC	2 HP /240 VAC	5 HP / 480 VAC	A	5.51H x 1.77W x 4.49D	0.99	PSR9-600-11
9.0A	208-600V	120 -240 VAC	2 HP /240 VAC	5 HP / 480 VAC	A	5.51H x 1.77W x 4.49D	0.99	PSR9-600-70
11.0A	208-600V	24V AC/DC	3 HP /240 VAC	7.5 HP / 480 VAC	A	5.51H x 1.77W x 4.49D	0.99	PSR12-600-11
11.0A	208-600V	120 -240 VAC	3 HP /240 VAC	7.5 HP / 480 VAC	A	5.51H x 1.77W x 4.49D	0.99	PSR12-600-70
15.2A	208-600V	24V AC/DC	5 HP /240 VAC	10 HP / 480 VAC	A	5.51H x 1.77W x 4.49D	0.99	PSR16-600-11
15.2A	208-600V	120 -240 VAC	5 HP /240 VAC	10 HP / 480 VAC	A	5.51H x 1.77W x 4.49D	0.99	PSR16-600-70
24.2A	208-600V	24V AC/DC	7.5 HP /240 VAC	15 HP / 480 VAC	B	6.3H x 1.77W x 5.04D	1.43	PSR25-600-11
24.2A	208-600V	120 -240 VAC	7.5 HP /240 VAC	15 HP / 480 VAC	B	6.3H x 1.77W x 5.04D	1.43	PSR25-600-70
28.0A	208-600V	24V AC/DC	10 HP /240 VAC	20 HP / 480 VAC	B	6.3H x 1.77W x 5.04D	1.43	PSR30-600-11
28.0A	208-600V	120 -240 VAC	10 HP /240 VAC	20 HP / 480 VAC	B	6.3H x 1.77W x 5.04D	1.43	PSR30-600-70
34.0A	208-600V	24V AC/DC	10 HP / 240 VAC	25 HP / 480 VAC	C	7.36H x 2.13W x 6.02D	2.2	PSR37-600-11
34.0A	208-600V	120 -240 VAC	10 HP /240 VAC	25 HP / 480 VAC	C	7.36H x 2.13W x 6.02D	2.2	PSR37-600-70
46.2A	208-600V	24V AC/DC	15 HP /240 VAC	30 HP / 480 VAC	C	7.36H x 2.13W x 6.02D	2.2	PSR45-600-11
46.2A	208-600V	120 -240 VAC	15 HP /240 VAC	30 HP / 480 VAC	C	7.36H x 2.13W x 6.02D	2.2	PSR45-600-70
59.4A	208-600V	24V AC/DC	20 HP /240 VAC	40 HP / 480 VAC	D	8.66H x 2.76W x 7.09D	4.85	PSR60-600-11
59.4A	208-600V	120 -240 VAC	20 HP /240 VAC	40 HP / 480 VAC	D	8.66H x 2.76W x 7.09D	4.85	PSR60-600-70
68.0A	208-600V	24V AC/DC	25 HP /240 VAC	50 HP / 480 VAC	D	8.66H x 2.76W x 7.09D	4.85	PSR72-600-11
68.0A	208-600V	120 -240 VAC	25 HP /240 VAC	50 HP / 480 VAC	D	8.66H x 2.76W x 7.09D	4.85	PSR72-600-70
80.0A	208-600V	24V AC/DC	30 HP /240 VAC	60 HP / 480 VAC	D	8.66H x 2.76W x 7.09D	4.85	PSR85-600-11
80.0A	208-600V	120 -240 VAC	30 HP /240 VAC	60 HP / 480 VAC	D	8.66H x 2.76W x 7.09D	4.85	PSR85-600-70
104.0A	208-600V	24V AC/DC	40 HP /240 VAC	75 HP / 480 VAC	D	8.66H x 2.76W x 7.09D	4.85	PSR105-600-11
104.0A	208-600V	120 -240 VAC	40 HP /240 VAC	75 HP / 480 VAC	D	8.66H x 2.76W x 7.09D	4.85	PSR105-600-70

See [catalog](#) for full description

## Softstarters

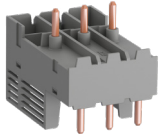
### PSR accessories



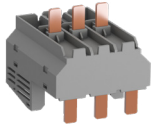
Connection kit  
for PSR3...16



Connection kit  
for PSR25...30



Connection kit  
for PSR37...45



Connection kit  
for PSR60...72



Fan



Terminal enlargements



Fieldbus plug adapter

#### Connection kit

Article	Breaker type	Pkg qty	Net kg	lb	Ordering code
PSR3...16	MS116/132	1	0.03	0.08	PSR16-MS116
PSR25...30	MS132	1	0.03	0.08	PSR30-MS132
PSR37...45	MS165	1	0.05	0.11	PSR45-MS165
PSR60...72	MS165	1	0.05	0.11	PSR60-MS165
PSR60...105	MS495	1	0.03	0.08	PSR105-MS495

#### Fan

Article	Pkg qty	Net kg	lb	Ordering code
PSR3...16	1	0.01	0.02	PSR-FAN3-45A
PSR25...30	1	0.01	0.03	PSR-FAN60-105A

#### Terminal enlargements

Article	Pkg qty	Net kg	lb	Ordering code
PSR60... PSR105	1	0.16	0.35	PSLW-72

Note: Wire range mm<sup>2</sup> 1 x 10...50 mm<sup>2</sup>, 2 x 10...25 mm<sup>2</sup>

#### Fieldbus plug adapter with cable

Article	Pkg qty	Net kg	lb	Ordering code
Fieldbus plug adapter	1	0.05	0.11	PS-FBPA



## Softstarters

Open PSE softstarter - Normal duty



Max Motor Current	Motor Voltage	Control Voltage	In-Line Rating	In-Line Rating	Frame	Dimensions (inches)	Weight (lb)	Ordering code
18.0A	208-600V	120 -250 VAC	5 HP /240 VAC	10 HP / 480 VAC	A	9.64H x 3.54W x 7.20D	5.29	PSE18-600-70
25.0A	208-600V	120 -250 VAC	7.5 HP /240 VAC	15 HP / 480 VAC	A	9.64H x 3.54W x 7.20D	5.29	PSE25-600-70
28.0A	208-600V	120 -250 VAC	10 HP /240 VAC	20 HP / 480 VAC	A	9.64H x 3.54W x 7.20D	5.29	PSE30-600-70
34.0A	208-600V	120 -250 VAC	10 HP /240 VAC	25 HP / 480 VAC	A	9.64H x 3.54W x 7.20D	5.29	PSE37-600-70
42.0A	208-600V	120 -250 VAC	15 HP /240 VAC	30 HP / 480 VAC	A	9.64H x 3.54W x 7.20D	5.29	PSE45-600-70
60.0A	208-600V	120 -250 VAC	20 HP /240 VAC	40 HP / 480 VAC	A	9.64H x 3.54W x 7.20D	5.29	PSE60-600-70
68.0A	208-600V	120 -250 VAC	25 HP /240 VAC	50 HP / 480 VAC	A	9.64H x 3.54W x 7.20D	5.51	PSE72-600-70
80.0A	208-600V	120 -250 VAC	30 HP /240 VAC	60 HP / 480 VAC	A	9.64H x 3.54W x 7.20D	5.51	PSE85-600-70
104.0A	208-600V	120 -250 VAC	40 HP /240 VAC	75 HP / 480 VAC	A	9.64H x 3.54W x 7.20D	5.51	PSE105-600-70
130.0A	208-600V	120 -250 VAC	50 HP /240 VAC	100 HP / 480 VAC	B	11.61H x 5.12W x 8.62D	9.26	PSE142-600-70
169.0A	208-600V	120 -250 VAC	60 HP /240 VAC	125 HP / 480 VAC	B	11.61H x 5.12W x 8.62D	9.26	PSE170-600-70
192.0A	208-600V	120 -250 VAC	75 HP /240 VAC	150 HP / 480 VAC	C	17.13H x 7.48W x 9.31D	27.34	PSE210-600-70-1
248.0A	208-600V	120 -250 VAC	100 HP /240 VAC	200 HP / 480 VAC	C	17.13H x 7.48W x 9.31D	30.64	PSE250-600-70-1
302.0A	208-600V	120 -250 VAC	100 HP /240 VAC	200 HP / 480 VAC	C	17.13H x 7.48W x 9.31D	30.64	PSE300-600-70-1
361.0A	208-600V	120 -250 VAC	150 HP /240 VAC	300 HP / 480 VAC	C	17.13H x 7.48W x 9.31D	30.64	PSE370-600-70-1

See [catalog](#) for full description

## Softstarters

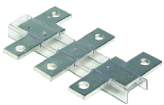
### PSE accessories



Cable connectors for CU & AL cables

#### Cable connectors for Al or Cu building wire

Article	Wire range	No. of cables	Tightening torque in inch-pounds	Pkg qty	Net kg	oz	Previous ordering code	Ordering code
PSE142 ... PSE170	6 ... 300 kcmil	1	300	3	0.163	5.76	ATK185	1SFN074817R1001
PSE210 ... PSE370	4 ... 400 kcmil	1	375	3	0.059	2.08	ATK300	1SFN075417R1001
PSE210 ... PSE370	4 ... 500 kcmil	2	375	3	0.157	5.52	ATK300/2	ATK300/2



Terminal enlargements

#### Terminal enlargements

Article	Dimensions hole $\varnothing$ mm <sup>2</sup>	bar mm <sup>2</sup>	Pkg qty	Net kg	lb	Ordering code
PSE18 ... PSE105	6.5	15 x 3	1	0.07	0.14	LW110
PSE142 ... PSE170	10.5	17.5 x 5	1	0.29	0.64	LW185
PSE210 ... PSE370	10.5	20 x 5	1	0.49	1.08	LW300



Terminal kit

#### Terminal kit

Article	Pkg qty	Net kg	lb	Ordering code
PSE142...PSE170	1	0.34	0.75	PSLE-185
PSE210...370	1	0.30	0.66	PSLE-300



Terminal extension

#### Terminal extension

Article	Pkg qty	Net kg	lb	Ordering code
PSE142 ... PSE170 8.5 17.5 x 5	1	0.25	0.55	LX205
PSE210 ... PSE370 10.5 20 x 5	1	0.35	0.77	LX370

## Softstarters

### PSE accessories



Terminal shrouds

#### Terminal shrouds

Article	Pkg qty	Net kg	lb	Ordering code
PSE18... PSE105, Screw terminals	2	0.07	0.15	LT140-30L
PSE142... PSE170, short for use with cable clamps	2	0.05	0.11	LT185-AC
PSE142... PSE170, long for use with compression lugs	2	0.22	0.49	LT185-AL
PSE210... PSE370, short for use with cable clamps	2	0.09	0.19	LT300-AC
PSE210... PSE370, long for use with compression lugs	2	0.28	0.62	LT300-AL



External keypad

#### External keypad including a 3m cable

Article	Pkg qty	Net kg	lb	Ordering code
PSE18 ... PSE370	1	0.13	0.29	PSEEK



USB cable

#### USB cable for Service Engineer Tool

Article	Pkg qty	Net kg	lb	Ordering code
PSE18 ... PSE370	1	0.10	0.22	PSECA



Fieldbus plug adaptor

#### Fieldbus plug connection, cable included

Article	Pkg qty	Net kg	lb	Ordering code
Fieldbus plug adaptor	1	0.15	0.33	PS-FBPA



Terminal extensions retrofit kit

#### Terminal extensions retrofit kit

Article	Pkg qty	Net kg	lb	Ordering code
Terminal extensions retrofit kit	1	0.45	0.99	LXR370



Modbus adapter

#### Modbus adapter

Article	Pkg qty	Net kg	lb	Ordering code
Modbus adapter	1	0.01	0.02	PS-MBIA

## Softstarters

### Open PSTX softstarter - Normal duty



Max Motor Current	Motor Voltage	Control Voltage	In-Line Rating	In-Line Rating	Frame	Dimensions (inches)	Weight (lb)	Ordering code
28.0A	208-600V	120 -250 VAC	10 HP /240 VAC	20 HP / 480 VAC	A	12.4H x 5.9W x 7.7D	13.45	PSTX30-600-70
34.0A	208-600V	120 -250 VAC	10 HP /240 VAC	25 HP / 480 VAC	A	12.4H x 5.9W x 7.7D	13.45	PSTX37-600-70
42.0A	208-600V	120 -250 VAC	15 HP /240 VAC	30 HP / 480 VAC	A	12.4H x 5.9W x 7.7D	13.45	PSTX45-600-70
60.0A	208-600V	120 -250 VAC	20 HP /240 VAC	40 HP / 480 VAC	A	12.4H x 5.9W x 7.7D	13.45	PSTX60-600-70
68.0A	208-600V	120 -250 VAC	25 HP /240 VAC	50 HP / 480 VAC	A	12.4H x 5.9W x 7.7D	13.45	PSTX72-600-70
80.0A	208-600V	120 -250 VAC	30 HP /240 VAC	60 HP / 480 VAC	A	12.4H x 5.9W x 7.7D	13.45	PSTX85-600-70
104.0A	208-600V	120 -250 VAC	40 HP /240 VAC	75 HP / 480 VAC	A	12.4H x 5.9W x 7.7D	13.45	PSTX105-600-70
140.0A	208-600V	120 -250 VAC	50 HP /240 VAC	100 HP / 480 VAC	B	14.8H x 7.8W x 9.3D	21.16	PSTX142-600-70
169.0A	208-600V	120 -250 VAC	60 HP /240 VAC	125 HP / 480 VAC	B	14.8H x 7.8W x 9.3D	21.16	PSTX170-600-70
192.0A	208-600V	120 -250 VAC	75 HP /240 VAC	150 HP / 480 VAC	C	18.5H x 10.2W x 10.9D	27.99	PSTX210-600-70
248.0A	208-600V	120 -250 VAC	100 HP /240 VAC	200 HP / 480 VAC	C	18.5H x 10.2W x 10.9D	27.99	PSTX250-600-70
302.0A	208-600V	120 -250 VAC	100 HP /240 VAC	250 HP / 480 VAC	C	18.5H x 10.2W x 10.9D	27.99	PSTX300-600-70
361.0A	208-600V	120 -250 VAC	150 HP /240 VAC	300 HP / 480 VAC	C	18.5H x 10.2W x 10.9D	27.99	PSTX370-600-70
480.0A	208-600V	120 -250 VAC	200 HP /240 VAC	400 HP / 480 VAC	D	18.1H x 14.2W x 11.1D	55.12	PSTX470-600-70
590.0A	208-600V	120 -250 VAC	200 HP /240 VAC	500 HP / 480 VAC	D	18.1H x 14.2W x 11.1D	55.12	PSTX570-600-70
720.0A	208-600V	120 -250 VAC	300 HP /240 VAC	600 HP / 480 VAC	E	19.29H x 17.126W x 14.5D	101.85	PSTX720-600-70
840.0A	208-600V	120 -250 VAC	350 HP /240 VAC	700 HP / 480 VAC	E	19.29H x 17.126W x 14.5D	101.85	PSTX840-600-70
1062.0A	208-600V	120 -250 VAC	450 HP /240 VAC	900 HP / 480 VAC	F	20.2H x17.1W x 14.5D	141.54	PSTX1050-600-70
1250.0A	208-600V	120 -250 VAC	500 HP /240 VAC	1000 HP / 480 VAC	F	20.2H x17.1W x 14.5D	141.54	PSTX1250-600-70

See [catalog](#) for full description

## Softstarters

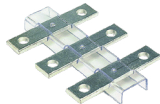
### PSTX accessories



— Cable connectors for Cu and Al cables

#### Cable connectors for Al or Cu building wire

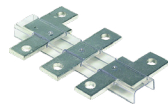
Article	Wire range	No. of cables	Tightening torque in inch-pounds	Pkg qty	Net kg	oz	Previous ordering code	Ordering code
PSTX142 ... PSTX170	6 ... 300 kcmil	1	300	3	0.163	5.76	ATK185	1SFN074817R1001
PSTX210 ... PSTX370	4 ... 400 kcmil	1	375	3	0.059	2.08	ATK300	1SFN075417R1001
PSTX210 ... PSTX370	4 ... 500 kcmil	2	375	3	0.157	5.52	ATK300/2	ATK300/2
PSTX470 ... PSTX570	2/0 ... 500 kcmil	2	375	3	0.345	12.16	ATK580/2	1SFN075717R1002
PSTX470 ... PSTX570	2/0 ... 500 kcmil	3	375	3	1.077	38	ATK750/3	1SFN076117R1003
PSTX720 ... PSTX1050	2/0 ... 500 kcmil	2	375	3	0.345	12.16	ATK580/2	1SFN075717R1002
PSTX720 ... PSTX1050	2/0 ... 500 kcmil	3	375	3	1.077	38	ATK750/3	1SFN076117R1003
PSTX1250								



Terminal extensions

#### Terminal extensions

Article	Dimensions hole ø mm2	bar mm	Pkg qty	NET kg	lb	Ordering code
PSTX142 ... PSTX170	8.5	17.5 x 5	1	0.25	5.55	LX205
PSTX210 ... PSTX370	10.5	20 x 5	1	0.35	0.77	LX370
PSTX470 ... PSTX570	10.5	25 x 5	1	0.50	1.10	LX460
PSTX720 ... PSTX840	13	40 x 6	1	0.85	1.87	LX750



Terminal enlargements

#### Terminal enlargements

Article	Dimensions hole ø mm2	bar mm	Pkg qty	Net kg	lb	Ordering code
PSTX30 ... PSTX105	6.5	15 x 3	1	0.07	0.15	LW110
PSTX142 ... PSTX170	10.5	17.5 x 5	1	0.25	5.55	LW205
PSTX210 ... PSTX370	10.5	20 x 5	1	0.45	0.99	LW370
PSTX470 ... PSTX570	10.5	25 x 5	1	0.73	1.61	LW460
PSTX720 ... PSTX840	13	40 x 6	1	1.23	2.71	LW750



Terminal shrouds

#### Terminal shrouds

Article	Description	Pkg qty	Net kg	lb	Ordering code
PSTX142 ... PSTX170	short for use with cable clamps	2	0.05	0.11	LT205-30C
PSTX142 ... PSTX170	long for use with compression lugs	2	0.22	0.49	LT205-30L
PSTX210 ... PSTX370	short for use with cable clamps	2	0.04	0.08	LT370-30C
PSTX210 ... PSTX370	long for use with compression lugs	2	0.28	0.62	LT370-30L
PSTX210 ... PSTX370	long and deep for use with extending cable clamps, ATK300/2 and QZXB4	2	0.15	0.33	LT370-30D
PSTX470 ... PSTX570	short for use with cable clamps	2	0.10	0.22	LT460-AC
PSTX470 ... PSTX570	long for use with compression lugs	2	0.80	1.76	LT460-AL
PSTX720 ... PSTX1250	short for use with cable clamps	2	0.12	0.27	LT750-AC
PSTX720 ... PSTX1250	long for use with compression lugs	2	0.83	1.82	LT750-AL

## Softstarters

### PSTX accessories



USB cable

#### PSTX USB cable

Article	Pkg qty	Net kg	lb	Ordering code
PSTX USB Cable	1	0.05	0.12	PSCA-1



Fieldbus plug adaptor

#### Fieldbus plug connection, cable included

Article	Pkg qty	Net kg	lb	Ordering code
Fieldbus plug adaptor	1	0.05	0.11	PS-FBPA



- Profibus DP-V1  
- Modbus RTU



DeviceNet



BACnet MS/TP



- BACnet IP  
- EtherCAT  
- EtherNet/IP  
- Modbus TCP  
- Profinet IO

#### Anybus connection accessory for communication protocol suitable for PSTX30 ...PSTX1250

Article	Pkg qty	Net kg	lb	Ordering code
Profibus	1	0.03	0.07	AB-PROFIBUS-1
DeviceNet	1	0.03	0.07	AB-DEVICENET-1
Modbus-RTU	1	0.03	0.07	AB-MODBUS-RTU-1
<b>NEW</b> BACnet IP	1	0.03	0.07	AB-BACNET-IP-2
EtherNet/IP (2-port)	1	0.03	0.07	AB-ETHERNET-IP-2
Modbus/TCP (2-port)	1	0.03	0.07	AB-MODBUS-TCP-2
Profinet (2-port)	1	0.03	0.07	AB-PROFINET-IO-2
<b>NEW</b> BACnet MS/TP	1	0.03	0.07	AB-BACNET-MSTP-1
<b>NEW</b> EtherCAT	1	0.03	0.07	AB-ETHERCAT-IP-2

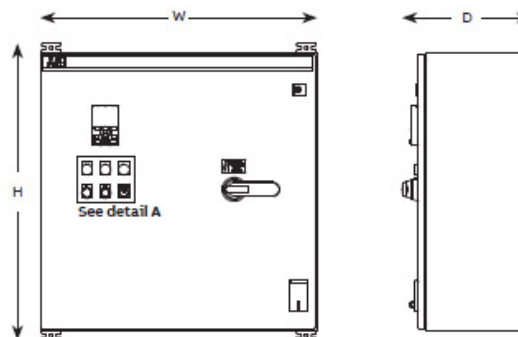
## Softstarters

### Enclosed PSTX softstarter - Normal duty

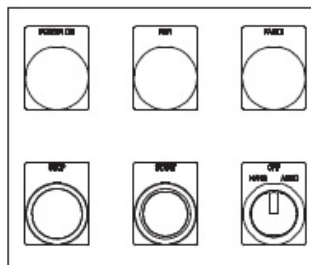


Max Motor Current	Motor Voltage	Control Voltage	Heavy duty HP Class 30 starts	Normal duty HP Class 10 starts	Frame	Dimensions (inches)	SCCR Rating	Weight (lb)	Ordering code
28A	480V	CPT supplied	15 HP / 480 VAC	20 HP / 480 VAC	A	24H x 20W x 12D	65 kA	77	X20-B4-48-ND
68A	480V	CPT supplied	40 HP / 480 VAC	50 HP / 480 VAC	A	24H x 20W x 12D	65 kA	77	X50-B4-48-ND
104A	480V	CPT supplied	50 HP / 480 VAC	75 HP / 480 VAC	A	24H x 20W x 12D	65 kA	78	X75-B4-48-ND
130A	480V	CPT supplied	75 HP / 480 VAC	100 HP / 480 VAC	B	30H x 30W x 12D	65 kA	131	X100-B4-48-ND
169A	480V	CPT supplied	100 HP / 480 VAC	125 HP / 480 VAC	B	30H x 30W x 12D	65 kA	131	X125-B4-48-ND
192A	480V	CPT supplied	125 HP / 480 VAC	150 HP / 480 VAC	C	48H x 36W x 16D	65 kA	280	X150-B4-48-ND
248A	480V	CPT supplied	150 HP / 480 VAC	200 HP / 480 VAC	C	48H x 36W x 16D	65 kA	280	X200-B4-48-ND
302A	480V	CPT supplied	200 HP / 480 VAC	250 HP / 480 VAC	C	48H x 36W x 16D	65 kA	291	X250-B4-48-ND
361A	480V	CPT supplied	250 HP / 480 VAC	300 HP / 480 VAC	C	48H x 36W x 16D	65 kA	300	X300-B4-48-ND
480A	480V	CPT supplied	300 HP / 480 VAC	400 HP / 480 VAC	C	48H x 36W x 16D	65 kA	327	X400-B4-48-ND
590A	480V	CPT supplied	400 HP / 480 VAC	500 HP / 480 VAC	C	48H x 36W x 16D	65 kA	353	X500-B4-48-ND

See [catalog](#) for full description



Detail A



**Typical heavy-duty applications include:**

- Centrifugal fan
- Conveyor belt (long)
- Crusher
- Mill
- Mixer
- Stirrer

**Typical normal-duty applications include:**

- Belt thruster
- Centrifugal pump
- Compressor
- Conveyor belt (short)
- Elevator

**Door-mounted pilot devices include:**

- PSTX keypad
- Hand-off-auto selector switch
- Start and stop pushbuttons
- Power on pilot light
- Run pilot light
- Fault pilot light

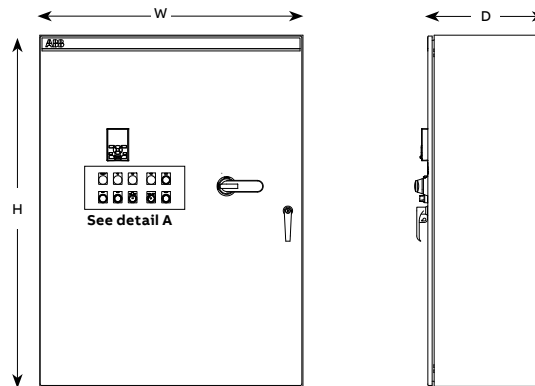
# Softstarters

## Enclosed PSTX softstarter - Extreme duty

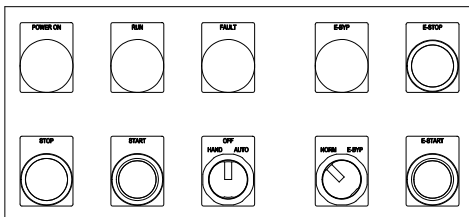


Max Motor Current	Motor Voltage	Control Voltage	Heavy duty HP Class 30 starts	Normal duty HP Class 10 starts	Frame	Dimensions (inches)	Weight (lb)	Ordering code
80A	480V	CPT supplied	50 HP /480 VAC	60 HP /480 VAC	A	24H x 30W x 12D	80	X50-B4-48-XD
130A	480V	CPT supplied	75 HP /480 VAC	100 HP /480 VAC	B	30H x 30W x 12D	143	X75-B4-48-XD
169A	480V	CPT supplied	100 HP /480 VAC	125 HP /480 VAC	B	30H x 30W x 12D	143	X100-B4-48-XD
192A	480V	CPT supplied	125 HP /480 VAC	150 HP /480 VAC	C	48H x 36W x 16D	284	X125-B4-48-XD
248A	480V	CPT supplied	150 HP /480 VAC	200 HP /480 VAC	C	48H x 36W x 16D	284	X150-B4-48-XD
302A	480V	CPT supplied	200 HP /480 VAC	250 HP /480 VAC	C	48H x 36W x 16D	304	X200-B4-48-XD
361A	480V	CPT supplied	250 HP /480 VAC	300 HP /480 VAC	C	48H x 36W x 16D	312	X250-B4-48-XD
480A	480V	CPT supplied	300 HP /480 VAC	400 HP /480 VAC	D	72H x 36W x 24D	601	X300-B4-48-XD
590A	480V	CPT supplied	400 HP /480 VAC	500 HP /480 VAC	D	72H x 36W x 24D	616	X400-B4-48-XD
720A	480V	CPT supplied	500 HP /480 VAC	600 HP /480 VAC	D	72H x 36W x 24D	680	X500-B4-48-XD

See [catalog](#) for full description



Detail A



**Door-mounted pilot devices include:**

- PSTX keypad
- Hand-off-Auto Selector Switch
- Start and Stop Pushbuttons
- Power On Pilot Light
- Run Pilot Light
- Fault Pilot Light
- Normal-E-Bypass Selector Switch
- E-Bypass Start and Stop Pushbuttons
- E-Bypass Pilot Light

**Typical heavy-duty applications include:**

- Centrifugal fan
- Conveyor belt (long)
- Crusher
- Mill
- Mixer
- Stirrer

**Typical normal-duty applications include:**

- Belt thruster
- Centrifugal pump
- Compressor
- Conveyor belt (short)
- Elevator



—  
12

## **IEC style contactors, overload relays and manual motor starters**

## Section 12

# IEC style contactors, overload relays and manual motor starters

## Table of contents

<b>Contactors</b>	
AF contactors ordering code construction	12-1
AF contactors	12-2
AF contactor accessories	12-10
B-Series mini ordering code construction	12-15
B-Series mini	12-16
M-Series mini ordering code construction	12-17
M-Series mini	12-18
<b>Contactor relays</b>	
K-Series	12-19
M-Series mini	12-19
NF Series	12-20
<b>Overload relays</b>	
EF electronic overloads and accessories	12-21
TF thermal overloads	12-22
<b>Starters</b>	
Manual motor starters	12-24
Manual motor starter accessories	12-25
Enclosed direct on-line starters (DRA)	12-28

# AF Contactors

## Ordering code construction

AF S 09 Z - 30 - 10 K - 21

### Rating

09	25 A, 5 HP	190	250 A, 125 HP
12	28 A, 7.5 HP	205	300 A, 150 HP
16	30 A, 10 HP	265	350 A, 200 HP
26	45 A, 15 HP	305	400 A, 250 HP
30	50 A, 20 HP	370	520 A, 300 HP
38	50 A, 25 HP	400	550 A, 350 HP
40	60 A, 30 HP	460	650 A, 400 HP
52	80 A, 40 HP	580	750 A, 500 HP
65	90 A, 50 HP	750	900 A, 600 HP
80	105 A, 60 HP	1250	1210 A
96	115 A, 60 HP	1350	1350 A, 800 HP
116	160 A, 75 HP	1650	1650 A, 900 HP
140	200 A, 100 HP	2050	2100 A
146	200 A, 100 HP	2650	2700 A

UL/CSA general use amperage at 600V AC, HP at 480V 3-phase motor rating

### Type

	Standard
C	AC control application
S	For safety applications
K	Push-In Spring
R	Reversing contactors
Z	Low consumption
ZR	Reversing, low consumption
N	NEMA

### Main contacts

30	3 NO + 0 NC (3-pole)
40	4 NO + 0 NC (4-pole)
22	2 NO + 2 NC (4-pole)

### Auxiliary contacts

00	0 NO + 0 NC
01	0 NO + 1 NC
10	1 NO + 0 NC
11	1 NO + 1 NC
22	2 NO + 2 NC

### Coil voltage

41	24-60 V AC
11	24-60 V AC/20-60 V DC
12	48-130 V AC/DC
13	100-250 V AC/DC
14	250-500 V AC/DC
20	12-20 V DC**
21	20-60 V AC/DC**
22	48-130 V AC/DC**
23	100-250 V AC/DC**
30	24 V DC**
68	20-60 V DC*
69	48-130 V AC/DC*
70	100-250 V AC/DC*
71	250-500 V AC/DC*



For reference only. For stocked items, see following pages.

\*\*low consumption coils  
\*coils for AF400-AF750 only

## AF Contactors

Full voltage non-reversing electronic contactors



		<b>Main Contacts</b>						
		<b>3 NO + 0 NC (30)</b>				<b>4 NO (40)</b>	<b>2 NO + 2 NC (22)</b>	
		<b>Auxiliary contacts</b>						
<b>Coil Voltage</b>	<b>Rating</b>	<b>none (00)</b>	<b>1 NO (10)</b>	<b>1 NC (01)</b>	<b>1 NO + 1 NC (11)</b>	<b>none (00)</b>	<b>none (00)</b>	
24–60 V AC/ 20–60 V DC (11)	25 A, 5 HP (09)	---	AF09-30-10-11	AF09-30-01-11	---	AF09-40-00-11	AF09-22-00-11	
	28 A, 7.5 HP (12)	---	AF12-30-10-11	AF12-30-01-11	---	---	---	
	30 A, 10 HP (16)	---	AF16-30-10-11	AF16-30-01-11	---	AF16-40-00-11	AF16-22-00-11	
	45 A, 15 HP (26)	AF26-30-00-11	---	---	AF26-30-11-11	AF26-40-00-11	AF26-22-00-11	
	50 A, 20 HP (30)	AF30-30-00-11	---	---	---	---	---	
	50 A, 25 HP (38)	AF38-30-00-11	---	---	---	---	---	
	60 A, 30 HP (40)	AF40-30-00-11	---	---	AF40-30-11-11	---	---	
	80 A, 40 HP (52)	AF52-30-00-11	---	---	AF52-30-11-11	---	---	
	90 A, 50 HP (65)	AF65-30-00-11	---	---	AF65-30-11-11	---	---	
	105 A, 60 HP (80)	AF80-30-00-11	---	---	AF80-30-11-11	---	---	
	115 A, 60 HP (96)	AF96-30-00-11	---	---	AF96-30-11-11	---	---	
	160 A, 75 HP (116)	AF116-30-00-11	---	---	AF116-30-11-11	---	---	
	200 A, 100 HP (140)	---	---	---	AF140-30-11-11	---	---	
	200 A, 100 HP (146)	---	---	---	AF146-30-11-11	---	---	
	250 A, 125 HP (190)	---	---	---	AF190-30-11-11	---	---	
	300 A, 150 HP (205)	---	---	---	AF205-30-11-11	---	---	
	350 A, 200 HP (265)	---	---	---	AF265-30-11-11	---	---	
	400 A, 250 HP (305)	---	---	---	AF305-30-11-11	---	---	
	520 A, 300 HP (370)	---	---	---	AF370-30-11-11	---	---	
48–130 V AC/ DC (12)	25 A, 5 HP (09)	---	AF09-30-10-12	AF09-30-01-12	---	---	AF09-22-00-12	
	28 A, 7.5 HP (12)	---	AF12-30-10-12	---	---	---	---	
	30 A, 10 HP (16)	---	AF16-30-10-12	---	---	---	---	
	45 A, 15 HP (26)	AF26-30-00-12	---	---	---	---	---	
	50 A, 20 HP (30)	AF30-30-00-12	---	---	---	---	---	
	50 A, 25 HP (38)	AF38-30-00-12	---	---	---	---	---	
	60 A, 30 HP (40)	AF40-30-00-12	---	---	---	---	---	
	80 A, 40 HP (52)	AF52-30-00-12	---	---	---	---	---	
	90 A, 50 HP (65)	AF65-30-00-12	---	---	---	---	---	
	105 A, 60 HP (80)	AF80-30-00-12	---	---	AF80-30-11-12	---	---	
	115 A, 60 HP (96)	AF96-30-00-12	---	---	---	---	---	
	160 A, 75 HP (116)	---	---	---	AF116-30-11-12	---	---	
	200 A, 100 HP (140)	---	---	---	AF140-30-11-12	---	---	
	200 A, 100 HP (146)	---	---	---	AF146-30-11-12	---	---	
	250 A, 125 HP (190)	---	---	---	AF190-30-11-12	---	---	
300 A, 150 HP (205)	---	---	---	AF205-30-11-12	---	---		

Table continues on next page.

## AF Contactors

Full voltage non-reversing electronic contactors

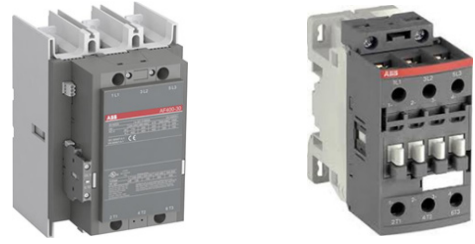


		Main Contacts					
		3 NO + 0 NC (30)			4 NO (40)		2 NO + 2 NC (22)
		Auxiliary contacts					
		none	1 NO	1 NC	1 NO + 1 NC	none	none
Coil Voltage	Rating	(00)	(10)	(01)	(11)	(00)	(00)
48–130 V AC/ DC (12)	350 A, 200 HP (265)	---	---	---	AF265-30-11-12	---	---
	400 A, 250 HP (305)	---	---	---	AF305-30-11-12	---	---
	520 A, 300 HP (370)	---	---	---	AF370-30-11-12	---	---
100–250 V AC/ DC (13)	25 A, 5 HP (09)	---	AF09-30-10-13	AF09-30-01-13	---	AF09-40-00-13	AF09-22-00-13
	28 A, 7.5 HP (12)	---	AF12-30-10-13	AF12-30-01-13	---	---	---
	30 A, 10 HP (16)	---	AF16-30-10-13	AF16-30-01-13	---	AF16-40-00-13	AF16-22-00-13
	45 A, 15 HP (26)	AF26-30-00-13	---	---	AF26-30-11-13	AF26-40-00-13	AF26-22-00-13
	50 A, 20 HP (30)	AF30-30-00-13	---	---	AF30-30-11-13	---	---
	50 A, 25 HP (38)	AF38-30-00-13	---	---	AF38-30-11-13	AF38-40-00-13	AF38-22-00-13
	60 A, 30 HP (40)	AF40-30-00-13	---	---	AF40-30-11-13	AF40-40-00-13	AF40-22-00-13
	80 A, 40 HP (52)	AF52-30-00-13	---	---	AF52-30-11-13	---	---
	90 A, 50 HP (65)	AF65-30-00-13	---	---	AF65-30-11-13	---	---
	105 A, 60 HP (80)	AF80-30-00-13	---	---	AF80-30-11-13	---	---
	115 A, 60 HP (96)	AF96-30-00-13	---	---	AF96-30-11-13	---	---
	160 A, 75 HP (116)	AF116-30-00-13	---	---	AF116-30-11-13	---	---
	200 A, 100 HP (140)	---	---	---	AF140-30-11-13	---	---
	200 A, 100 HP (146)	---	---	---	AF146-30-11-13	---	---
	250 A, 125 HP (190)	AF190-30-00-13	---	---	AF190-30-11-13	---	---
300 A, 150 HP (205)	AF205-30-00-13	---	---	AF205-30-11-13	---	---	
350 A, 200 HP (265)	---	---	---	AF265-30-11-13	---	---	
400 A, 250 HP (305)	---	---	---	AF305-30-11-13	---	---	
520 A, 300 HP (370)	---	---	---	AF370-30-11-13	---	---	
250–500 V AC/ DC (14)	25 A, 5 HP (09)	---	AF09-30-10-14	---	---	AF09-40-00-14	---
	28 A, 7.5 HP (12)	---	AF12-30-10-14	---	---	---	---
	30 A, 10 HP (16)	---	AF16-30-10-14	---	---	AF16-40-00-14	---
	45 A, 15 HP (26)	AF26-30-00-14	---	---	---	AF26-40-00-14	---
	50 A, 20 HP (30)	AF30-30-00-14	---	---	---	---	---
	50 A, 25 HP (38)	AF38-30-00-14	---	---	---	---	---
	60 A, 30 HP (40)	AF40-30-00-14	---	---	AF40-30-11-14	---	---
	80 A, 40 HP (52)	AF52-30-00-14	---	---	AF52-30-11-14	---	---
	90 A, 50 HP (65)	AF65-30-00-14	---	---	AF65-30-11-14	---	---
	105 A, 60 HP (80)	AF80-30-00-14	---	---	AF80-30-11-14	---	---
	115 A, 60 HP (96)	AF96-30-00-14	---	---	AF96-30-11-14	---	---
	160 A, 75 HP (116)	---	---	---	AF116-30-11-14	---	---

Table continues on next page.

## AF Contactors

Full voltage non-reversing electronic contactors



		Main Contacts					
		3 NO + 0 NC (30)				4 NO (40)	2 NO + 2 NC (22)
		Auxiliary contacts					
		none	1 NO	1 NC	1 NO + 1 NC	none	none
Coil Voltage	Rating	(00)	(10)	(01)	(11)	(00)	(00)
250–500 V AC/ DC (14)	200 A, 100 HP (140)	---	---	---	AF140-30-11-14	---	---
	200 A, 100 HP (146)	---	---	---	AF146-30-11-14	---	---
	250 A, 125 HP (190)	---	---	---	AF190-30-11-14	---	---
	300 A, 150 HP (205)	---	---	---	AF205-30-11-14	---	---
	350 A, 200 HP (265)	---	---	---	AF265-30-11-14	---	---
	400 A, 250 HP (305)	---	---	---	AF305-30-11-14	---	---
	520 A, 300 HP (370)	---	---	---	AF370-30-11-14	---	---
20-60 V DC (68)	550 A, 350 HP (400)	---	---	---	AF400-30-11-68	---	---
	650 A, 400 HP (460)	---	---	---	AF460-30-11-68	---	---
	750 A, 500 HP (580)	---	---	---	AF580-30-11-68	---	---
	900 A, 600 HP (750)	---	---	---	AF750-30-11-68	---	---
48–130 V AC/ DC (69)	550 A, 350 HP (400)	---	---	---	AF400-30-11-69	---	---
	650 A, 400 HP (460)	---	---	---	AF460-30-11-69	---	---
100–250 V AC/ DC (70)	550 A, 350 HP (400)	---	---	---	AF400-30-11-70	---	---
	650 A, 400 HP (460)	---	---	---	AF460-30-11-70	---	---
	750 A, 500 HP (580)	---	---	---	AF580-30-11-70	---	---
	900 A, 600 HP (750)	---	---	---	AF750-30-11-70	---	---
	1210 A (1250)	---	---	---	AF1250-30-11-70	---	---
	1350 A, 800 HP (1350)	---	---	---	AF1350-30-11-70	---	---
	1650 A, 900 HP (1650)	---	---	---	AF1650-30-11-70	---	---
	2100 A (2050)	---	---	---	AF2050-30-11-70	---	---
2700 A (2650)	---	---	---	AF2650-30-11-70	---	---	
250 – 500 V AC/DC (71)	550 A, 350 HP (400)	---	---	---	AF400-30-11-71	---	---
	650 A, 400 HP (460)	---	---	---	AF460-30-11-71	---	---

## AF Contactors

Electromagnetic contactors for AC control applications

		Main contacts					
		3 NO + 0 NC (30)			4 NO (40)		2 NO + 2 NC (22)
		Auxiliary contacts					
		none	1 NO	1 NC	1 NO + 1 NC	none	none
Coil Voltage	Rating	(00)	(10)	(01)	(11)	(00)	(00)
24 V AC (81)	25 A, 5 HP (09)	---	AFC09-30-10-81	---	---	---	---
	28 A, 7.5 HP (12)	---	AFC12-30-10-81	---	---	---	---
	30 A, 10 HP (16)	---	AFC16-30-10-81	---	---	---	---
	45 A, 15 HP (26)	---	---	---	---	---	---
	50 A, 20 HP (30)	---	---	---	---	---	---
110-120 V AC (84)	25 A, 5 HP (09)	---	AFC09-30-10-84	AFC09-30-01-84	---	AFC09-40-00-84	AFC09-22-00-84
	28 A, 7.5 HP (12)	---	AFC12-30-10-84	AFC12-30-01-84	---	---	---
	30 A, 10 HP (16)	---	AFC16-30-10-84	AFC16-30-01-84	---	AFC16-40-00-84	AFC16-22-00-84
	45 A, 15 HP (26)	AFC26-30-00-84	---	---	---	AFC26-40-00-84	AFC26-22-00-84
	50 A, 20 HP (30)	AFC30-30-00-84	---	---	---	---	---
	50 A, 25 HP (38)	AFC38-30-00-84	---	---	---	---	---
220-240 V AC (80)	25 A, 5 HP (09)	---	AFC09-30-10-80	---	---	---	---
	28 A, 7.5 HP (12)	---	AFC12-30-10-80	---	---	---	---
	30 A, 10 HP (16)	---	AFC16-30-10-80	---	---	AFC16-40-00-80	---
	45 A, 15 HP (26)	---	---	---	---	---	---
	50 A, 20 HP (30)	---	---	---	---	---	---

## AF Contactors

Push-in (PI) spring and safety application contactors



		<b>Main contacts</b>				
		<b>3 NO + 0 NC (30)</b>				
		<b>Auxiliary contacts</b>				
<b>Coil Voltage</b>	<b>Rating</b>	<b>none (00)</b>	<b>1 NO (10)</b>	<b>1 NC (01)</b>	<b>1 NO + 1 NC (11)</b>	<b>2 NO + 2 NC (22)</b>
<b>Push-In (PI) Spring contactors</b>						
24–60 V AC/	25 A, 5 HP (09)	---	AF09-30-10K-11	AF09-30-01K-11	---	---
20–60 V DC (11)	28 A, 7.5 HP (12)	---	AF12-30-10K-11	AF12-30-01K-11	---	---
	30 A, 10 HP (16)	---	AF16-30-10K-11	AF16-30-01K-11	---	---
	45 A, 15 HP (26)	AF26-30-00K-11	---	---	---	---
	50 A, 20 HP (30)	AF30-30-00K-11	---	---	---	---
	50 A, 25 HP (38)	AF38-30-00K-13	---	---	---	---
100–250 V AC/ DC (13)	25 A, 5 HP (09)	---	AF09-30-10K-13	AF09-30-01K-13	---	---
	28 A, 7.5 HP (12)	---	AF12-30-10K-13	AF12-30-01K-13	---	---
	30 A, 10 HP (16)	---	AF16-30-10K-13	AF16-30-01K-13	---	---
	45 A, 15 HP (26)	AF26-30-00K-13	---	---	---	---
	50 A, 20 HP (30)	AF30-30-00K-11	---	---	---	---
	50 A, 25 HP (38)	AF38-30-00K-13	---	---	---	---
<b>Contactors for safety applications</b>						
24–60 V AC/	25 A, 5 HP (09)	---	---	---	---	AFS09-30-22-11
20–60 V DC (11)	28 A, 7.5 HP (12)	---	---	---	---	AFS12-30-22-11
	30 A, 10 HP (16)	---	---	---	---	AFS16-30-22-11
	45 A, 15 HP (26)	---	---	---	---	AFS26-30-22-11
	50 A, 20 HP (30)	---	---	---	---	AFS30-30-22-11
	50 A, 25 HP (38)	---	---	---	---	AFS38-30-22-11
	80 A, 40 HP (52)	---	---	---	---	AFS52-30-22-11
	90 A, 50 HP (65)	---	---	---	---	AFS65-30-22-11
	105 A, 60 HP (80)	---	---	---	---	AFS80-30-22-11
	115 A, 60 HP (96)	---	---	---	---	AFS96-30-22-11
100–250 V AC/ DC (13)	25 A, 5 HP (09)	---	---	---	---	AFS09-30-22-13
	30 A, 10 HP (16)	---	---	---	---	AFS16-30-22-13
	45 A, 15 HP (26)	---	---	---	---	AFS26-30-22-13
	50 A, 20 HP (30)	---	---	---	---	AFS30-30-22-13
	80 A, 40 HP (52)	---	---	---	---	AFS40-30-22-13
	80 A, 40 HP (52)	---	---	---	---	AFS52-30-22-13
	90 A, 50 HP (65)	---	---	---	---	AFS65-30-22-13
	105 A, 60 HP (80)	---	---	---	---	AFS80-30-22-13
	115 A, 60 HP (96)	---	---	---	---	AFS96-30-22-13
<b>Low consumption for safety applications</b>						
24 V DC (30)	25 A, 5 HP (09)	---	---	---	AFS09Z-30-22-30	---
	28 A, 7.5 HP (12)	---	---	---	AFS12Z-30-22-30	---
	30 A, 10 HP (16)	---	---	---	AFS16Z-30-22-30	---
	45 A, 15 HP (26)	---	---	---	AFS26Z-30-22-30	---
	50 A, 20 HP (30)	---	---	---	AFS30Z-30-22-30	---
	50 A, 25 HP (38)	---	---	---	AFS38Z-30-22-30	---



## AF Contactors

### Reversing contactors



		<b>Main contacts</b>				
		<b>3 NO + 0 NC (30)</b>				
		<b>Auxiliary contacts</b>				
		<b>none</b>	<b>1 NO</b>	<b>1 NC</b>	<b>1 NO + 1 NC</b>	<b>2 NO + 2 NC</b>
<b>Coil Voltage</b>	<b>Rating</b>	<b>(00)</b>	<b>(10)</b>	<b>(01)</b>	<b>(11)</b>	<b>(22)</b>
<b>Reversing contactors</b>						
24–60 V AC/20–60 V DC (11)	25 A, 5 HP (09)	---	---	---	---	AF09R-30-22-11
	28 A, 7.5 HP (12)	---	---	---	---	AF12R-30-22-11
	30 A, 10 HP (16)	---	---	---	---	AF16R-30-22-11
	45 A, 15 HP (26)	---	---	---	---	AF26R-30-22-11
100–250 V AC/ DC (13)	25 A, 5 HP (09)	---	---	---	---	AF09R-30-22-13
	28 A, 7.5 HP (12)	---	---	---	---	AF12R-30-22-13
	30 A, 10 HP (16)	---	---	---	---	AF16R-30-22-13
	45 A, 15 HP (26)	---	---	---	---	AF26R-30-22-13

## AF Contactors

NEMA contactors and bar connections



		<b>Main contacts</b>				
		<b>3 NO + 0 NC (30)</b>				
		<b>Auxiliary contacts</b>				
		<b>none</b>	<b>1 NO</b>	<b>1 NC</b>	<b>1 NO + 1 NC</b>	<b>2 NO + 2 NC</b>
<b>Coil Voltage</b>	<b>Rating</b>	<b>(00)</b>	<b>(10)</b>	<b>(01)</b>	<b>(11)</b>	<b>(22)</b>
<b>NEMA contactors</b>						
100–250 V AC/ DC (13)	NEMA 00 (25 A, 5 HP)	---	AF09N00-30-10-13	---	---	---
	NEMA 0 (28 A, 7.5 HP)	---	AF12N0-30-10-13	---	---	---
	NEMA 1 (45 A, 15 HP)	AF26N1-30-00-13	---	---	AF26N1-30-11-13	---
	NEMA 2 (60 A, 30 HP)	---	---	---	AF40N2-30-11-13	---
	NEMA 3 (105 A, 60 HP)	---	---	---	AF80N3-30-11-13	---
	NEMA 4 (200 A, 100 HP)	---	---	---	AF140N4-30-11-13	---
	NEMA 5 (350 A, 200 HP)	---	---	---	AF265N5-30-11-13	---
100-250 V AC/ DC (70)	NEMA 6 (50 A, 400 HP)	---	---	---	AF460N6-3011-70	---
	NEMA 7 (900 A, 600 HP)	---	---	---	AF750N7-3011-70	---
<b>Bar Connections</b>						
100-250 V AC/ DC (13)	200 A, 100 HP (146)	---	---	---	AF146-30-11B-13	---

## AF Contactors

Low consumption (Z) coil



		<b>Main contacts</b>				
		<b>3 NO + 0 NC (30)</b>			<b>4 NO (40)</b>	
		<b>Auxiliary contacts</b>				
<b>Coil voltage</b>	<b>Rating</b>	<b>n/a (00)</b>	<b>1 NO (10)</b>	<b>1 NC (01)</b>	<b>2 NO + 2 NC (22)</b>	<b>n/a (00)</b>
<b>low consumption - standard</b>						
12-20 V DC (20)	25 A, 5 HP (09)	---	AF09Z-30-10-20	---	---	---
	28 A, 7.5 HP (12)	---	AF12Z-30-10-20	---	---	---
	30 A, 10 HP (16)	---	AF16Z-30-10-20	---	---	---
	45 A, 15 HP (26)	AF26Z-30-00-20	---	---	---	---
	50 A, 20 HP (30)	---	---	---	---	---
	50 A, 25 HP (38)	---	---	---	---	---
20-60 V AC/ DC (21)	25 A, 5 HP (09)	---	AF09Z-30-10-21	AF09Z-30-01-21	AF09Z-22-00-21	AF09Z-40-00-21
	28 A, 7.5 HP (12)	---	AF12Z-30-10-21	AF12Z-30-01-21	---	---
	30 A, 10 HP (16)	---	AF16Z-30-10-21	AF16Z-30-01-21	---	AF16Z-40-00-21
	45 A, 15 HP (26)	AF26Z-30-00-21	---	---	---	AF26Z-40-00-21
	50 A, 20 HP (30)	AF30Z-30-00-21	---	---	---	---
	50 A, 25 HP (38)	AF38Z-30-00-21	---	---	---	AF38Z-40-00-21
48-130 V AC/ DC (22)	25 A, 5 HP (09)	---	AF09Z-30-10-22	---	---	---
100-250 V AC/ DC (23)	25 A, 5 HP (09)	---	AF09Z-30-10-23	---	---	---
	28 A, 7.5 HP (12)	---	AF12Z-30-10-23	---	---	---
	30 A, 10 HP (16)	---	AF16Z-30-10-23	---	---	---
24 V DC (30)	25 A, 5 HP (09)	---	AF09Z-30-10-30	---	---	---
	28 A, 7.5 HP (12)	---	AF12Z-30-10-30	---	---	---
	30 A, 10 HP (16)	---	AF16Z-30-10-30	---	---	---
	45 A, 15 HP (26)	AF26Z-30-00-30	---	---	---	---
	50 A, 20 HP (30)	AF30Z-30-00-30	---	---	---	---
	50 A, 25 HP (38)	AF38Z-30-00-30	---	---	---	---
<b>Low consumption - reversing</b>						
20-60 V AC/DC (21)	25 A, 5 HP (09)	---	---	---	AF09ZR-30-22-21	---
	28 A, 7.5 HP (12)	---	---	---	AF12ZR-30-22-21	---
	30 A, 10 HP (16)	---	---	---	AF16ZR-30-22-21	---

Contact **Technical Support** for additional low consumption information.

## AF Contactors

### Accessories



#### Auxiliary contacts

Contacts	For contactors	Ordering code
<b>Instantaneous auxiliary contact block - front mount</b>		
1 NO	AF09-AF96	CA4-10
1 NC	AF09-AF96	CA4-01
2 NO + 2 NC	AF09-AF16	CA4-22M
3 NO + 1 NC	AF09-AF16	CA4-31M
1 NO + 3 NC	AF09-AF16	CA4-13M
4 NC	AF09-AF16	CA4-04M
2 NO + 2 NC	AF09-AF16	CA4-22U
3 NO + 1 NC	AF09-AF16	CA4-31U
4 NO	AF09-AF16	CA4-40U
2 NO + 2 NC	AF26-AF96	CA4-22E
3 NO + 1 NC	AF26-AF96	CA4-31E
4 NO	AF26-AF96	CA4-40E
4 NC	AF26-AF96	CA4-04E
4 NC	NF	CA4-04N
1 NO + 3 NC	NF	CA4-13N
2 NO + 2 NC	NF	CA4-22N
3 NO + 1 NC	NF	CA4-31N
4 NO	NF	CA4-40N
<b>Auxiliary contact with NO leading and NC lagging contacts - front mount</b>		
1 NO	AF09-AF96	CC4-10
1 NC	AF09-AF96	CC4-01
<b>Instantaneous auxiliary contact block - side mount</b>		
1 NO + 1 NC	AF09-AF96, NF	CAL4-11
1 NO + 1 NC	AF116-AF370	CAL19-11
1 NO + 1 NC	AF116-AF370	CAL19-11B
1 NO + 1 NC	AF400-AF2650	CAL18-11
1 NO + 1 NC	AF400-AF2650	CAL18-11B
<b>Instantaneous auxiliary contact and A1/A2 terminal blocks - front mount</b>		
1 NO + 1 NC	AF09-16	CAT4-11M
1 NO + 1 NC	AF26-AF65	CAT4-11E
<b>Auxiliary contacts for harsh environments</b>		
1 NO	AF116-AF370	CEL19-10
1 NC	AF116-AF370	CEL19-01
1 NO with built-in micro switch IP67	AF400-AF2650	CEL18-10
1 NC with built-in micro switch IP67	AF400-AF2650	CEL18-01
<b>Accessories for Push-In (PI) Spring AF-K contactors</b>		
1 NO Auxiliary contact – Push In Spring	AF09K-AF96K	CA4-10K
1 NC Auxiliary contact – Push In Spring	AF09K-AF96K	CA4-01K
1 NO + 1 NC Auxiliary contact – Push In Spring	AF09K-AF96K	CAL4-11K
Additional coil terminal block	AF09K-AF96K, NF	LDC4K

#### Additional coil terminal block

Description	For contactors	Ordering code
Additional coil terminal block	AF09-AF96, NF	LDC4

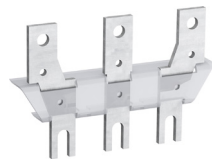
## AF Contactors

### Accessories



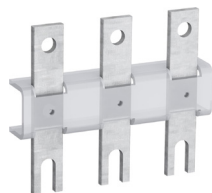
#### Terminal shrouds

For contactors	For use with	Ordering code
AF190, AF205	with cable clamps	LT205-30C
AF190, AF205	with compression lugs	LT205-30L
AF190, AF205	shorting bar between contactor and OL	LT205-30Y
AF265-AF370	with cable clamps	LT370-30C
AF265-AF370	for use with terminal lugs ATK300/2	LT370-30D
AF265-AF370	with compression lugs	LT370-30L
AF400, AF460	with cable clamps	LT460-AC
AF400, AF460	with compression lugs	LT460-AL
AF580, AF750	with cable clamps	LT750-AC
AF580, AF750	with compression lugs	LT750-AL



#### Terminal enlargements

For contactors	Hole dia. mm	Bar mm	Ordering code
AF116-AF146	6.5	13 X 3	LW140
AF190, AF205	10.5	17.5 X 5	LW205
AF265-AF370	10.5	20 X 5	LW370
AF400, AF460	10.5	25 X 5	LW460
AF580, AF750	13	40 X 6	LW750
AF1250	13	50 X 10	LW1250



#### Terminal extension

For contactors	Hole dia. mm	Bar mm	Ordering code
AF116-AF146	6.5	13 X 3	LX140
AF190, AF205	8.5	17.5 X 5	LX205
AF265-AF370	10.5	20 X 5	LX370
AF400, AF460	10.5	25 X 5	LX460
AF580, AF750	13	40 X 6	LX750



#### Terminal connecting strips

For contactors	max. nominal continuous current with 3 parallel poles (A)	Ordering code
AF116-AF146	240	LY140
AF190, AF205	400	LY185
AF265-AF370	670	LY300

#### Connection sockets

For contactors	Type	Ordering code
AF116-AF146	3-pole	LL146-30

Table continues on next page.

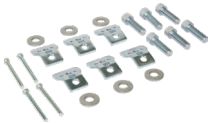
## AF Contactors

### Accessories

#### Terminal lug kits

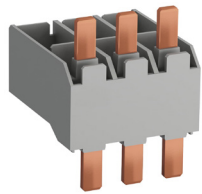
For contactors	Wire size	# lugs per kit	Ordering code
AF190-AF205	4 AWG-300 MCM	3	ATK185
AF265-AF370	4 AWG-400 MCM	3	ATK300
AF265-AF370	4 AWG-500 MCM	3	ATK300/2
AF400-AF580	2/0 AWG-500 MCM	3	ATK580/2
AF580-AF750	2/0 AWG-500 MCM	3	ATK750/3
AF1350	4/0 AWG-500 MCM	3	ATK1350/4
AF1350-AF1650	1/0 AWG-750 MCM	3	ATK1650/4
AF1350-AF1650	1/0 AWG-750 MCM	3	ATK1650/6

#### Spare terminal hardware



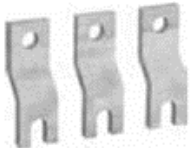
For contactors	Ordering code
AF190, AF205	LE185
AF265-AF370	LE300
AF400-AF580	LE460
AF580, AF750	LE750

#### Connecting links — AF contactor to manual motor starter



Contactors	Manual motor starter	Ordering code
AF09 - AF16	MS116-0.16-MS116-25	BEA16-4
	MS132-0.016-MS132-25	
AF26 - AF38	MS116-0.16-MS116-16	BEA26-4
	MS132-0.16-MS132-10	
	MS116-20-MS116-32	BEA38-4
	MS132-12-MS132-32	
AF40 - AF65	MS165-16-MS165-65	BEA65-4

#### Connection bars — AF contactor to MCCB Vertical assembly



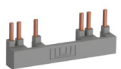
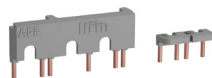
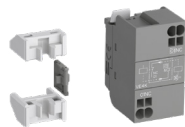
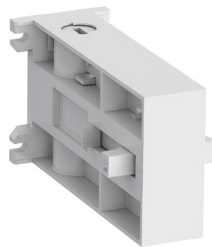
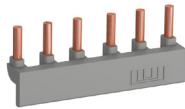
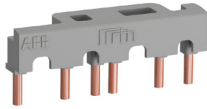
Contactors	MCCB	Ordering code
AF116 - AF146	XT2	BEA140/XT2
AF116 - AF146	XT3	BEA140/XT3
AF116 - AF146	XT4	BEA140/XT4
AF190, AF205	XT4	BEA205/XT4

Table continues on next page.

## AF Contactors

### Accessories

#### Connection set for reversing contactors



For contactors	Ordering Code
AF09-AF16	BER16-4
AF26-AF38	BER38-4
AF40-AF65	BER65-4
AF80-AF96	BER96-4
AF116-AF146	BER140-4
AF190-AF205	BER205-4
AF265-AF370	BER370-4
AF400-AF460	BEM460-30
AF580-AF750	BEM750-30

#### Mechanical interlock units

For contactors	Ordering Code
AF09-AF38	VM4
AF40-AF96	VM96-4
AF116-AF370	VM19
AF116-AF146, AF190, AF205	VM140/190
AF190, AF205, AF265-AF370	VM205/265
AF145-AF300	VM300H
AF400-AF1250	VM750H
AF1350-AF2650	VM1650H

#### Mechanical and electrical interlock set

For contactors	Ordering Code
AF09-AF38	VEM4

#### Phase-to-phase connection sets

For contactors	Ordering Code
AF116-AF146	BEP140-30
AF190-AF205	BEP205-30
AF265-AF370	BEP370-30
AF400-AF460	BES460-30
AF580-AF750	BES750-30

#### Star-delta starting connection sets

For contactors	Ordering Code
AF09-AF16	BEY16-4
AF26-AF38	BEY38-4
AF40-AF65	BEY65-4
AF80-AF96	BEY96-4
AF116-AF146	BEY140-4
AF190-AF205	BEY190-4

Table continues on next page.

## AF Contactors

### Accessories



#### Electronic timers

Time delay range	Delay type	Auxiliary contacts	Model	Ordering code
0.1-1 s	ON-delay	1 NO + 1 NC	AF09-AF96	TEF4-ON
10-100 s	OFF-delay	1 NO + 1 NC	AF09-AF96	TEF4-OFF

#### Interface Relay

For contactors	Ordering Code
AF(Z)09-AF96	AF-RA4



#### Surge suppressors for AFC only

For contactors	Rated	Ordering code
AFC09...AFC38	24...50	RC4-1/50
	50...130	RC4-1/130
	110...260	RC4-1/260
	50...130	RV4-1/130
	110...260	RV4-1/260

RV4: Surge suppressor fitted with varistor circuit

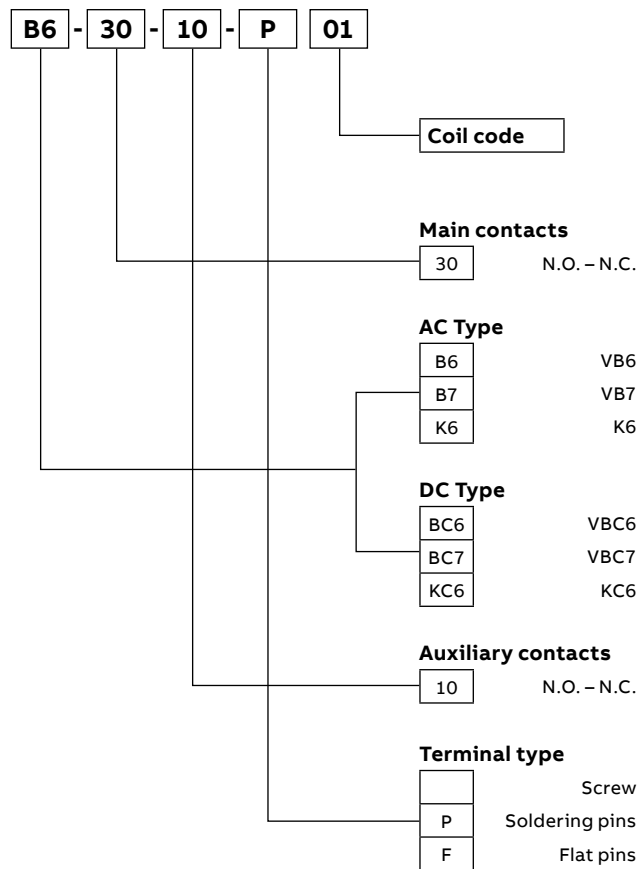
RC4: Surge suppressor fitted with RC circuit

The use of a surge suppressor will modify the operating time of the contactor or contactor relay



## B-Series mini contactors

### Ordering code construction



## Mini contactors

### B-Series



		<b>Main Contacts</b>					
		<b>3 NO + 0 NC (30)</b>			<b>4 NO (40)</b>		<b>2 NO + 2 NC (22)</b>
		<b>Auxiliary contacts</b>					
		<b>none</b>	<b>1 NO</b>	<b>1 NC</b>	<b>1 NO + 1 NC</b>	<b>none</b>	<b>none</b>
<b>AC Control Supply</b>	<b>Rating</b>	<b>(00)</b>	<b>(10)</b>	<b>(01)</b>	<b>(11)</b>	<b>(00)</b>	<b>(00)</b>
<b>Screw Terminals</b>							
24 V AC (01)	20 A, 3 HP	---	B6-30-10-01	---	---	---	---
	20 A, 5 HP	---	B7-30-10-01	B7-30-01-01	---	---	B7-22-00-01
110-127 V AC (84)	20 A, 3 HP	---	B6-30-10-84	---	---	B6-40-00-84	---
	20 A, 5 HP	---	B7-30-10-84	B7-30-01-84	---	---	---
220-240 V AC (80)	20 A, 3 HP	---	B6-30-10-80	---	---	---	B6-22-00-80
	20 A, 5 HP	---	B7-30-10-80	---	---	---	---
<b>Flat Pins</b>							
24 V AC (01)	20 A, 5 HP	---	B7-30-10-F01	---	---	---	---
220-240 V AC (80)	20 A, 5 HP	---	---	---	---	B7-40-00-F-80	---

		<b>DC Control Supply</b>					
		<b>Screw Terminals</b>					
12 V DC (07)	20 A, 3 HP	---	BC6-30-10-07	---	---	---	---
	20 A, 5 HP	---	---	---	---	BC7-40-00-07	---
24 V DC (01)	20 A, 3 HP	---	BC6-30-10-01	BC6-30-01-01	---	BC6-40-00-01	---
	20 A, 5 HP	---	BC7-30-10-01	BC7-30-01-01	---	---	---
<b>Flat Pins</b>							
24 V AC (01)	20 A, 5 HP	---	---	---	---	BC7-40-00-F-01	---
<b>Soldering Pins</b>							
24 V DC (01)	20 A, 3 HP	---	BC6-30-10-P01	---	---	---	---

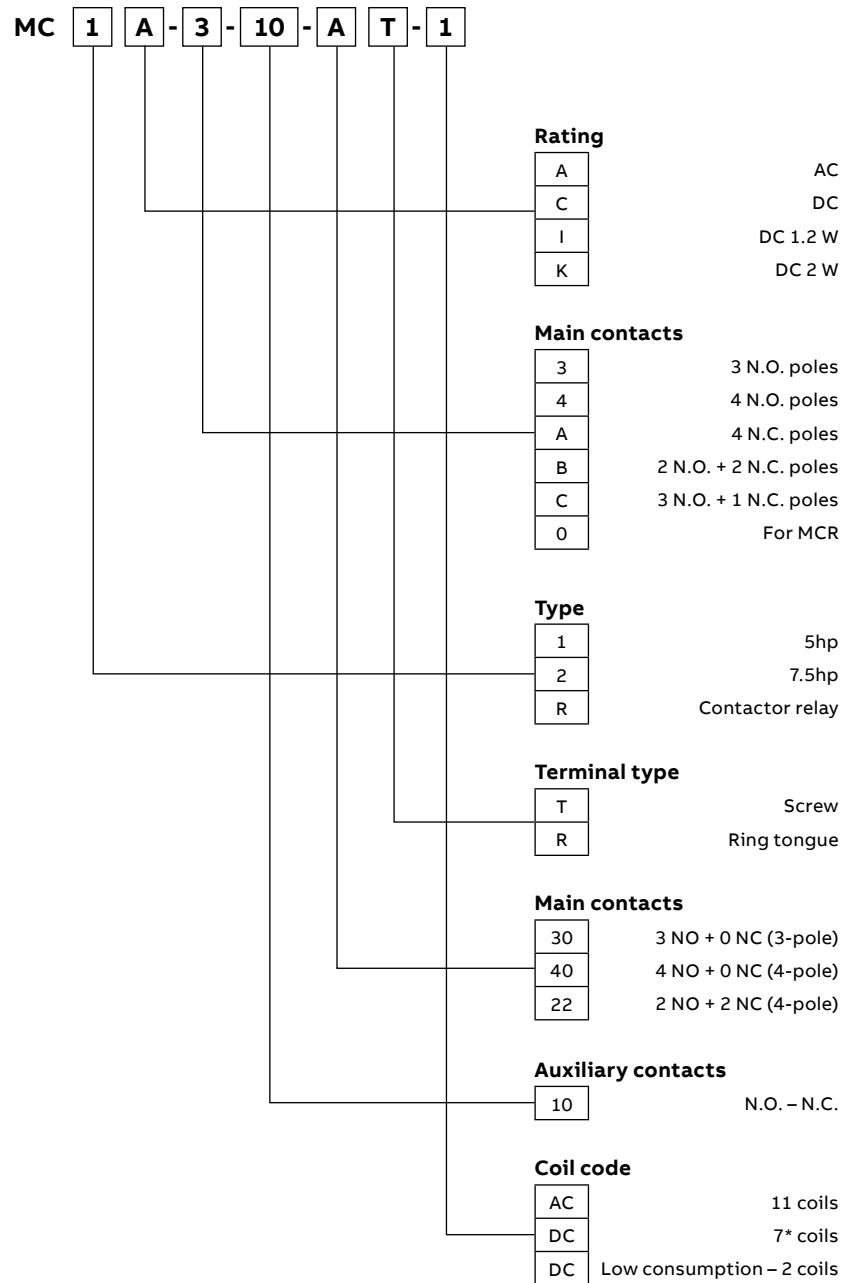
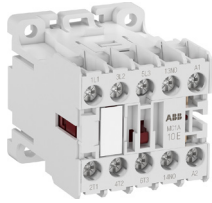


		<b>Reversing AC</b>					
		<b>Screw Terminals</b>					
24 V DC (01)	20 A, 3 HP	---	---	VBC6-30-01-01	---	---	---
	20 A, 5 HP	---	VBC7-30-10-01	VBC7-30-01-01	---	---	---

		<b>Reversing DC</b>					
		<b>Screw Terminals</b>					
110-127 V AC (84)	20 A, 3 HP	---	---	VB6-30-01-84	---	---	---
	20 A, 5 HP	---	VB7-30-10-84	VB7-30-01-84	---	---	---
<b>Soldering Pins</b>							
24 V DC (01)	20 A, 3 HP	---	---	VBC6-30-01-P01	---	---	---

## M-Series mini contactors

### Ordering code construction



## Mini contactors

### M-Series



		Main Contacts					
		3 NO + 0 NC (30)			4 NO (40)		2 NO + 2 NC (22)
		Auxiliary contacts					
		none	1 NO	1 NC	1 NO + 1 NC	none	none
AC Control Supply	Rating	(00)	(10)	(01)	(11)	(00)	(00)
<b>Screw Terminals</b>							
24 V AC	20 A, 5 HP	---	MC1A-3-10-AT-1	MC1A-3-01-AT-1	---	---	---
	20 A, 7.5 HP	---	MC2A-3-10-AT-1	---	---	---	---
110-115 V AC	20 A, 5 HP	---	MC1A-3-10-AT-J	MC1A-3-01-AT-J	---	MC1A-4-00-AT-J	---
	20 A, 7.5 HP	---	MC2A-3-10-AT-J	---	---	---	---
220-240 V AC	20 A, 5 HP	---	---	MC1A-3-01-AT-N	---	---	---
<b>DC Control Supply</b>							
<b>Screw Terminals</b>							
12 V DC	20 A, 5 HP	---	MC1C-3-10-AT-B	---	---	---	---
24 V DC	20 A, 5 HP	---	MC1C-3-10-AT-D	MC1C-3-01-AT-D	---	---	---
<b>Accessories</b>							
Description	Variants			Ordering Code			
Side mounted instant AUX contact block	MC1-MC2			MACL1-10-AT			
Front mounted instant AUX contact block	MC1-MC2 (EN 50012)			MACN2-02-AT			
Front mounted instant AUX contact block	MC1-MC2 (EN 50005)			MARN4-22-AT			
Surge Suppressor	MC1-MC2 (AC)			MPOA-AE2			
Electronic Timers	MC1-MC2			MREB-C10-AC2			

## Mini contactor relays

K-Series, M-Series



### K-Mini contactor stocked control relays

Control voltage type	2 NO + 2 NC (22)	3 NO + 1 NC (31)	4 NO + 0 NC (40)
<b>AC Operated</b>			
24 V AC (01)	K6-22Z-01	K6-31Z-01	---
110-127 V AC (84)	K6-22Z-84	K6-31Z-84	K6-40E-84
<b>DC Operated</b>			
12 V DC (07)	---	---	KC6-40E-07
24 V DC (01)	KC6-22Z-01	---	KC6-40E-01

K6/KC6 4-pole mini-contactor relays are space optimized control products mainly used for control functions or for small loads up to AC-15 4 A / 240 V

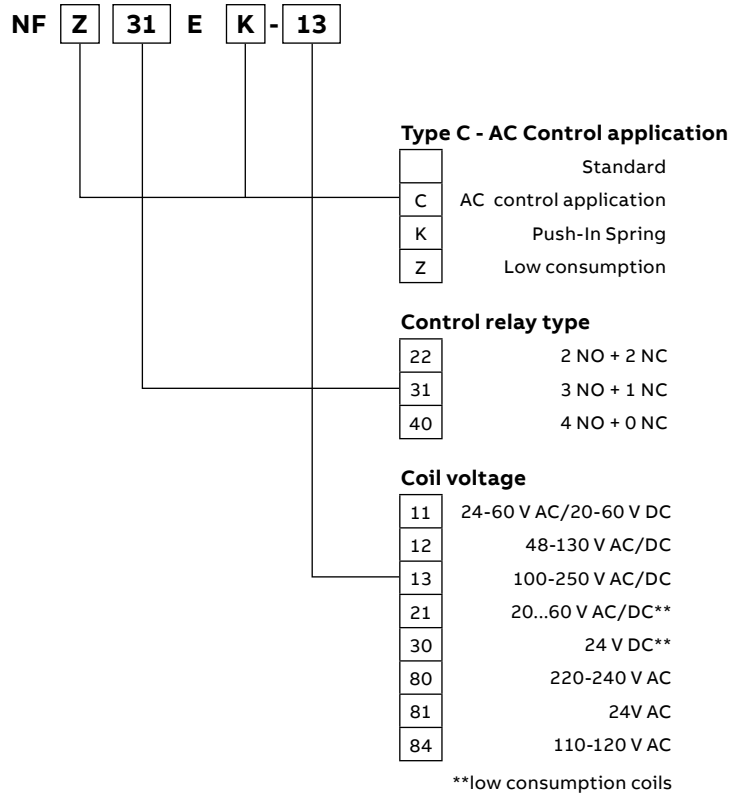
### M-Mini contactor stocked control relays

Control voltage type	2 NO + 2 NC (22)	3 NO + 1 NC (31)	4 NO + 0 NC (40)
<b>AC Operated</b>			
110-115 V AC (J)	MCRA-0-22-AT-J	MCRA-0-31-AT-J	MCRA-0-40-AT-J
<b>DC Operated</b>			
12 V DC (B)	MCRC-0-22-AT-B	---	---
24 V DC (D)	MCRC-0-22-AT-D	MCRC-0-31-AT-D	MCRC-0-40-AT-D
24 V DC (D) - Low Consumption	---	---	MCRK-0-40-AT-D
87-162 V DC (WL)	MCRC-0-22-AT-WL	MCRC-0-31-AT-WL	---

MC mini-contactor relays are space optimized control products mainly used for control functions or for small loads up to AC-15 4 A / 240 V

## Contactor relays

### NF Series



#### Stocked control relays



Control voltage type	Ordering code		
	2 NO + 2 NC	3 NO + 1 NC	4 NO + 0 NC
	-22	-31	-40
Standard	Ordering code		
24-60 V AC/20-60 V DC	NF22E-11	NF31E-11	NF40E-11
48-130 V AC/DC	NF22E-12	NF31E-12	NF40E-12
100-250 V AC/DC	NF22E-13	NF31E-13	NF40E-13
Standard - AFC for AC control	Ordering code		
24 V AC	NFC22E-81	---	---
110-120 V AC	NFC22E-84	NFC31E-84	NFC40E-84
220-240 V AC	NFC22E-80	---	---
Standard - Push In (PI) Spring	Ordering code		
24-60 V AC/20-60 V DC	NF22EK-11	NF31EK-11	NF40EK-11
100-250 V AC/DC	NF22EK-13	NF31EK-13	NF40EK-13
Low consumption	Ordering code		
20-60 V AC/DC	NFZ22E-21	NFZ31E-21	NFZ40E-21
24 V DC	NFZ22E-30	NFZ31E-30	NFZ40E-30
Low consumption - Push In (PI) Spring	Ordering code		
20-60 V AC/DC	NFZ22EK-21	NFZ31EK-21	NFZ40EK-21

NF contactor relays are optimized control products mainly used for control functions up to AC-15 6A / 24-127 V 50/60 Hz

## Overload relays

EF electronic overloads and accessories



### Electronic Overload Ordering Codes

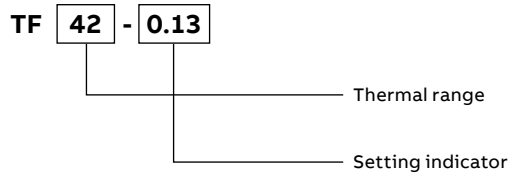
Setting range	Ordering code
0.10–0.32 A	EF19-0.32
0.30–1.00 A	EF19-1.0
0.80–2.70 A	EF19-2.7
1.90–6.30 A	EF19-6.3
5.70–18.9 A	EF19-18.9
9.0–30.0 A	EF45-30
15.0–45.0 A	EF45-45
20.0–56.0 A	EF65-56
25.0–70.0 A	EF65-70
36.0–100 A	EF96-100
54–150 A	EF146-150
63–210 A	EF205-210
115–380 A	EF370-380
150–500 A	EF460
250–800 A	EF750

### Overload accessories for separate/stand-alone mounting

For contactors	Description	Ordering code
EF19	Single mounting kit	DB19EF
EF45	Single mounting kit	DB45EF

## Overload relays

### TF thermal overloads



Thermal overload ordering codes

3 phase hp rating at 480V	0.5-10hp	0.5-25hp	15.50hp	30-75hp	50-100hp	50-150hp
Setting range (A)						
0.10-0.13	---	TF42-0.13	---	---	---	---
0.13-0.17	---	TF42-0.17	---	---	---	---
0.17-0.23	---	TF42-0.23	---	---	---	---
0.23-0.31	---	TF42-0.31	---	---	---	---
0.31-0.41	---	TF42-0.41	---	---	---	---
0.41-0.55	---	TF42-0.55	---	---	---	---
0.55-0.74	---	TF42-0.74	---	---	---	---
0.74-1.00	T16-1.0	TF42-1.0	---	---	---	---
1.00-1.30	T16-1.3	TF42-1.3	---	---	---	---
1.30-1.70	T16-1.7	TF42-1.7	---	---	---	---
1.70-2.30	T16-2.3	TF42-2.3	---	---	---	---
2.30-3.10	T16-3.1	TF42-3.1	---	---	---	---
3.10-4.20	T16-4.2	TF42-4.2	---	---	---	---
4.20-5.70	T16-5.7	TF42-5.7	---	---	---	---
5.70-7.60	T16-7.6	TF42-7.6	---	---	---	---
7.60-10.0	T16-10	TF42-10	---	---	---	---
10.0-13.0	T16-13	TF42-13	---	---	---	---
13.0-16.0	T16-16	TF42-16	---	---	---	---
16.0-20.0	---	TF42-20	---	---	---	---
20.0-24.0	---	TF42-24	---	---	---	---
22.0-28.0	---	---	TF65-28	---	---	---
24.0-29.0	---	TF42-29	---	---	---	---
25.0-33.0	---	---	TF65-33	---	---	---
29.0-35.0	---	TF42-35	---	---	---	---
35.0-40.0	---	TF42-38	---	---	---	---
30-40	---	---	TF65-40	---	---	---
36-47	---	---	TF65-47	---	---	---
40-51	---	---	---	TF96-51	---	---
44-53	---	---	TF65-53	---	---	---
50-60	---	---	TF65-60	TF96-60	---	---
57-67	---	---	TF65-67	---	---	---
57-68	---	---	---	TF96-68	---	---
65-78	---	---	---	TF96-78	---	---
75-87	---	---	---	TF96-87	---	---

Table continues on next page.



## Overload relays

### TF thermal overloads

#### Thermal overload ordering codes continued

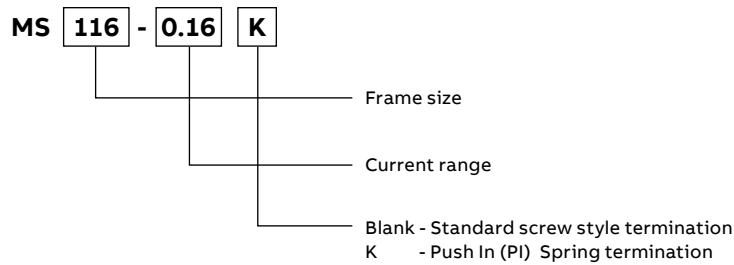
3 phase hp rating at 480V	0.5-10hp	0.5-25hp	15.50hp	30-75hp	50-100hp	50-150hp
<b>Setting range (A)</b>						
66-90	---	---	---	---	TF140DU-90	TA200DU90
84-96	---	---	---	TF96-96	---	---
80-110	---	---	---	---	TF140DU-110	TA200DU110
100-135	---	---	---	---	TF140DU-135	TA200DU135
110-142	---	---	---	---	TF140DU-142	---
110-150	---	---	---	---	---	TA200DU150
130-175	---	---	---	---	---	TA200DU175
150-200	---	---	---	---	---	TA200DU200

#### Overload accessories for separate/stand-alone mounting

For contactors	Description	Ordering code
T16	Single mounting kit	DB16-ABB
TF42	Single mounting kit	DB42
TF65	Single mounting kit	DB65
TF96, EF96	Single mounting kit	DB96
TA200DU	Single mounting kit	DB200

## Starters

### Manual motor starters



#### Electronic overload ordering codes

Setting range in Amps	HP @ 480 V	Screw termination			Push-In Spring
		MS116	MS132	MS165	MS132K
0.10–0.16	---	MS116-0.16	MS132-0.16	---	MS132-0.16K
0.16–0.25	---	MS116-0.25	MS132-0.25	---	MS132-0.25K
0.25–0.40	---	MS116-0.4	MS132-0.4	---	MS132-0.4K
0.40–0.63	---	MS116-0.63	MS132-0.63	---	MS132-0.63K
0.63–1.0	---	MS116-1.0	MS132-1.0	---	MS132-1.0K
1.0–1.6	3/4	MS116-1.6	MS132-1.6	---	MS132-1.6K
1.6–2.5	1	MS116-2.5	MS132-2.5	---	MS132-2.5K
2.5–4	2	MS116-4.0	MS132-4.0	---	MS132-4.0K
4–6.3	3	MS116-6.3	MS132-6.3	---	MS132-6.3K
6.3–10	5	MS116-10	MS132-10	---	MS132-10K
8–12	7.5	MS116-12	MS132-12	---	---
10–16	10	MS116-16	MS132-16	MS165-16	MS132-16K
16–20	10	MS116-20	MS132-20	MS165-20	MS132-20K
20–25	15	MS116-25	MS132-25	MS165-25	MS132-25K
25–32	20	MS116-32	MS132-32	MS165-32	MS132-32K
28–40	30	---	---	---	---
30–42	30	---	---	MS165-42	---
36–50	40	---	---	---	---
40–54	40	---	---	MS165-54	---
45–63	50	---	---	---	---
52–65	50	---	---	MS165-65	---
62–73	60	---	---	MS165-73	---
70–80	75	---	---	MS165-80	---

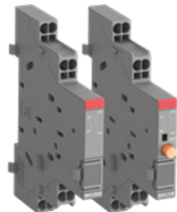
## Starters

### Manual motor starter accessories



#### Auxiliary contacts

Contacts	Type	Models	Ordering code
<b>Auxiliary contacts - front mount</b>			
1 NO + 1 NC	---	MS116, MS132, MS165	HKF1-11
1 NO + 0 NC	---	MS116, MS132, MS165	HKF1-10
2 NO + 0 NC	---	MS116, MS132, MS165	HKF1-20
<b>Auxiliary contacts, Push-in Spring - front mount</b>			
2 NO + 0 NC	---	MS116K, MS132K, MS165K	HKF1-20K
<b>Auxiliary contacts - right mount</b>			
1 NO + 1 NC	---	MS116, MS132, MS165	HK1-11
2 NO + 0 NC	---	MS116, MS132, MS165	HK1-20
0 NO + 2 NC	---	MS116, MS132, MS165	HK1-02
<b>Auxiliary contacts, Push-In Spring - right mount</b>			
1 NO + 1 NC	---	MS116K, MS132K, MS165K	HK1-11K
2 NO + 0 NC	---	MS116K, MS132K, MS165K	HK1-20K
0 NO + 2 NC	---	MS116K, MS132K, MS165K	HK1-02K
<b>Signaling contacts</b>			
1 NO + 1 NC	for tripped alarm	MS116, MS132, MS165	SK1-11
1 NO + 1 NC	for short circuit alarm	MS132, MS165	CK1-11
<b>Signaling contacts, Push-in Spring</b>			
1 NO + 1 NC	for tripped alarm	MS116K, MS132K, MS165K	SK1-11K
2 NO + 0 NC	for tripped alarm	MS116K, MS132K, MS165K	SK1-20K
0 NO + 2 NC	for tripped alarm	MS116K, MS132K, MS165K	SK1-02K



#### Shunt trips - left mount

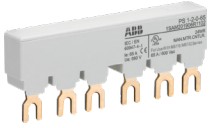
Control voltage 60 Hz	Models	Ordering code
<b>Shunt trips - left mount</b>		
24 V AC	MS116, MS132, MS165	AA1-24
110 V AC	MS116, MS132, MS165	AA1-110
200-240 V AC	MS116, MS132, MS165	AA1-230
<b>Undervoltage releases - left mount</b>		
120 V AC	MS116, MS132, MS165	UA1-120
240 V AC	MS116, MS132, MS165	UA1-230
480 V AC	MS116, MS132, MS165	UA1-415



Table continues on next page.

## Starters

### Manual motor starter accessories



#### Three-phase busbar

Operational current (A)	No. of MMS	No. of lateral aux.	Models	Ordering code
65	2	0	MS116, MS132	PS1-2-0-65
65	3	0	MS116, MS132	PS1-3-0-65
65	4	0	MS116, MS132	PS1-4-0-65
65	5	0	MS116, MS132	PS1-5-0-65
65	2	1	MS116, MS132	PS1-2-1-65
65	3	1	MS116, MS132	PS1-3-1-65
65	4	1	MS116, MS132	PS1-4-1-65
65	5	1	MS116, MS132	PS1-5-1-65
65	2	2	MS116, MS132	PS1-2-2-65
65	3	2	MS116, MS132	PS1-3-2-65
65	4	2	MS116, MS132	PS1-4-2-65
65	5	2	MS116, MS132	PS1-5-2-65
92	3	0	MS116, MS132	PS1-3-0-100
92	4	0	MS116, MS132	PS1-4-0-100
92	5	0	MS116, MS132	PS1-5-0-100
92	3	1	MS116, MS132	PS1-3-1-100
92	4	1	MS116, MS132	PS1-4-1-100
92	5	1	MS116, MS132	PS1-5-1-100
125	3	0	MS165	PS2-2-0-125
125	2	2	MS165	PS2-2-2-125
125	2	0	MS165	PS2-3-0-125
125	3	2	MS165	PS2-3-2-125
125	3	0	MS165	PS2-4-0-125
125	4	2	MS165	PS2-4-2-125



#### Three-phase feeder terminals

Operational current (A)	Mounting form	Models	Ordering code
63	Flat	MS116, MS132	S1-M1-25
63	High	MS116, MS132	S1-M2-25
63	UL/CSA Type E/F	MS116, MS132	S1-M3-25
92	UL/CSA Type E/F	MS116, MS132	S1-M3-35

Table continues on next page.

## Starters

### Manual motor starter accessories

#### General accessories



Description	Models	Ordering code
Protection cover for busbars	MS116, MS132	BS1-3
Protection cover for busbars	MS165	BS2-3
Padlock + two keys	MS116, MS132	SA2
Lock handle	MS116	SA1
Terminal shroud	MS165	KA165
NEMA Type 12 yellow enclosure w/ red handle	MS116, MS132	IB132-Y
NEMA Type 12 grey enclosure with black handle	MS116, MS132	IB132-G
Door mount and handle for NEMA Type 12 yellow/red	MS116, MS132	DMS132-Y
Door mount and handle for NEMA Type 12 grey/black	MS116, MS132	DMS132-G
NEMA type 1, 3R, 12 black handle, IO/On-Off	MS116, MS132, MS165, MS49x	MSHD-LB
NEMA type 1, 3R, 12 yellow handle, IO/On-Off	MS116, MS132, MS165, MS49x	MSHD-LY
NEMA type 1, 3R, 12 black handle, IO/On-Off+trip	MS116, MS132, MS165, MS49x	MSHD-LTB
NEMA type 1, 3R, 12 yellow handle, IO/On-Off+trip	MS116, MS132, MS165, MS49x	MSHD-LTY
Shaft supporter	MS116, MS132, MS165, MS49x	MSAH1

## Starters

Enclosed direct on-line starters



### DRAF UL enclosed direct-on-line starters

HP 3 phase		
440 V - 480 V	Control voltage	Ordering code
5	24-60	DRAF09-11U
7.5	24-60	DRAF12-11U
7.5	100-250	DRAF12-13U
10	24-60	DRAF16-11U
10	100-250	DRAF16-13U

## Control and protective relays

## Section 13

# Control and protective relays

### Table of contents

<b>Limit switches</b>	<b>13-1</b>
<b>Time relays</b>	<b>13-2</b>
<b>Pluggable relays</b>	
CR-P PCB relays	13-3
CR-M miniature relays	13-3
CR-U universal relays	13-4
<b>Slim electromechanical relays</b>	
CR-S	13-5
<b>Boxed electromechanical and solid state relays</b>	
R600	13-5
<b>Power supplies</b>	
CP-S.1 sophisticated	13-6
CP-E economy	13-6
CP-T three-phase	13-6
<b>Measuring and monitoring relays</b>	
CM-Exx and CM-Sxx single-phase	13-7
CM-Px and CM-Pxx three-phase	13-7
CM-CT current transformer	13-7
CM-Ix insulation monitoring	13-8
CM-MSx thermistor motor protection	13-8
CM-TCx temperature monitoring	13-8
CM-ENx liquid level monitoring	13-8



## Limit switches

### Inventory



Casing width	Electrical connection	Casing material	Actuator type	Contact type	Contact block	Ordering code
20mm	Pre-wired	Metal	45mm rubber roller lever	Snap action	1 NC+1NO	LS20M42B11-U02
30mm	1/2" NPT	Plastic	n/a	Slow action	1 NC+1NO	LS35P80D11-S
30mm	1/2" NPT	Plastic	Adj 3mm SS rod lever	Snap action	1 NC+1NO	LS35P71B11
30mm	1/2" NPT	Plastic	18mm plastic roller lever	Snap action	1 NC+1NO	LS35P41B11
30mm	1/2" NPT	Plastic	18mm plastic roller lever	Snap action	2 NC	LS35P41B02-R
30mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS35M51B11
30mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS35P51B11
30mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	2 NC	LS35P51B02
30mm	Pre-wired	Metal	Plain steel plunger	Snap action	1 NC+1NO	LS20M11B11-U03
30mm	1/2" NPT	Plastic	Plain steel plunger	Snap action	1 NC+1NO	LS35P11B11
30mm	1/2" NPT	Plastic	Plastic roller plunger	Snap action	1 NC+1NO	LS35P13B11
30mm	1/2" NPT	Plastic	Plastic roller, steel plunger	Snap action	1 NC+1NO	LS35P31B11
30mm	1/2" NPT	Plastic	Plastic roller, steel plunger	Slow action	1 NC+1NO	LS35P32D11-R
30mm	1/2" NPT	Plastic	Spring rod	Snap action	1 NC+1NO	LS35P91B11
30mm	1/2" NPT	Plastic	Straight key	Snap action	1 NC+1NO	LS35P16B11
40mm	1/2" NPT	Metal	w/out head	Snap action	1 NC+1NO	LS45M00B11
40mm	1/2" NPT	Metal	Adj 3mm SS rod lever	Snap action	1 NC+1NO	LS45M71B11
40mm	1/2" NPT	Plastic	Adj 3mm SS rod lever	Snap action	2 NC+1NO	LS45P71B11
40mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS45M51B11
40mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS45P51B11
40mm	1/2" NPT	Metal	18mm plastic roller lever	Snap action	1 NC+1NO	LS45M41B11
40mm	1/2" NPT	Metal	22mm SS roller	Snap action	1NC + 1NO	LS45M42B11
40mm	1/2" NPT	Metal	Adj 22mm SS ball-bearing roller	Snap action	1 NC+1NO	LS45M53B11
40mm	1/2" NPT	Metal	Adj 45mm rubber roller lever	Snap action	1 NC+1NO	LS45M54B11
40mm	1/2" NPT	Metal	Adj 52mm rubber roller lever	Snap action	1 NC+1NO	LS45M52B11
40mm	1/2" NPT	Metal	Plastic roller plunger	Snap action	1 NC+1NO	LS45M13B11
40mm	1/2" NPT	Metal	Spring rod	Snap action	1 NC+1NO	LS45M91B11
40mm	1/2" NPT	Metal	SS lateral plunger	Snap action	1 NC+1NO	LS45M21B11
60mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS75P41B11
60mm	1/2" NPT	Metal	Pull action w/ring	Snap action	1 NC+1NO	LS75M98B11-A
Yellow free movement IPS footswitch					1 NC+1NO	IPSY1A11

See [catalog](#) for full description

## Time relays

### Inventory



Function	Time ranges	Input voltage	Output contacts	Ordering code
<b>Timer-compact</b>				
Multifunction CT-MFC	(0.05s-100h)	24-48VDC/24-240VAC	1 c/o	1SVR508020R0000
Multifunction CT-MFC	(0.05s-100h)	12-240VAC/DC	2 c/o	1SVR508020R1100
ON-delay CT-ERC	(0.05s-100h)	24-48VDC/24-240VAC	1 c/o	1SVR508100R0000
OFF-delay w/ auxilliary voltage CT-AHC	(0.05s-100h)	24-48VDC/24-240VAC	1 c/o	1SVR508110R0000
<b>Timer-MDRC</b>				
Multifunction CT-MFD.12	(0.05s-100h)	24-240V AC/24-48V DC	1 c/o	1SVR500020R0000
Multifunction CT-MFD.21	(0.05s-100h)	24-240V AC/24-48V DC	2 c/o	1SVR500020R1100
ON-delay CT-ERD.12	(0.05s-100h)	24-240V AC/24-48V DC	1 c/o	1SVR500100R0000
ON-delay CT-ERD.22	(0.05s-100h)	24-240V AC/24-48V DC	2 c/o	1SVR500100R0100
OFF-delay CT-AHD.12	(0.05s-100h)	24-240V AC/24-48V DC	1 c/o	1SVR500110R0000
OFF-delay CT-AHD.22	(0.05s-100h)	24-240V AC/24-48V DC	2 c/o	1SVR500110R0100
Flasher CT-EBD.12	(0.05s-100h)	24-240V AC/24-48V DC	1 c/o	1SVR500150R0000
Pulse generator CT-TGD.12	(0.05s-100h)	24-240V AC/24-48V DC	1 c/o	1SVR500160R0000
<b>Timer-sophisticated</b>				
Multifunction CT-MFS.21S	(0.05s-300h)	24-240VAC/DC	2 c/o	1SVR730010R0200
Multifunction CT-MVS.21S	(0.05s-300h)	24 - 48V DC/24 - 240V AC	2 c/o	1SVR730020R0200
Multifunction CT-MXS.22S	(0.05s-300h)	24 - 48V DC/24 - 240V AC	2 c/o	1SVR730030R3300
Impulse and flasher CT-WBS.22S	(0.05s-300h)	24 - 48V DC/24 - 240V AC	2 c/o	1SVR730040R3300
ON-delay CT-ERS.22S	(0.05s-300h)	24 - 48V DC/24 - 240V AC	2 c/o	1SVR730100R3300
ON-delay CT-ERS.21S	(0.05s-300h)	24 - 48V DC/24 - 240V AC	2 c/o	1SVR730100R0300
OFF-delay CT-ARS.21S	0.05 s to 300 h	24-240VAC/DC	2 c/o	1SVR730120R3300

See [catalog](#) for full description

#### Type selection

	multi-functional	single-functional	multi-functional	single-functional
<b>Timing function</b>	<b>CT-C</b>		<b>CT-S</b>	
☒ ON-delay	CT-MFC, CT-MKC	CT-ERC	CT-MVS, CT-MFS, CT-MBS, CT-WBS	CT-ERS
■ OFF-delay	CT-MFC, CT-MKC, CT-ARC	CT-AHC	CT-MVS, CT-MFS, CT-MBS	CT-APS, CT-AHS, CT-ARS
☒■ ON- and OFF-delay			CT-MVS, CT-MXS, CT-MFS, CT-MBS	
1☒ Impulse-ON	CT-MFC, CT-MKC	CT-VWC	CT-MVS, CT-MFS, CT-MBS, CT-WBS	
1■ Impulse-OFF	CT-MFC, CT-MKC, CT-ARC		CT-MVS, CT-MFS, CT-MBS	
1☒■ Impulse-ON and OFF			CT-MXS	
☒ Flasher starting with ON	CT-MFC, CT-MKC	CT-EBC	CT-MFS, CT-MBS, CT-WBS	
■ Flasher starting with OFF	CT-MFC, CT-MKC	CT-EBC	CT-MFS, CT-MBS, CT-WBS	
☒ Flasher starting with ON or OFF			CT-MVS	
☒☒ Pulse generator starting with ON or OFF		CT-TGC	CT-MXS	
☒☒ Pulse former	CT-MFC, CT-MKC		CT-MVS, CT-MFS, CT-MBS	
△ Star-delta change-over		CT-SDC, CT-SAC		CT-SDS
△☒ Star-delta change-over with impulse			CT-MVS.2x, CT-MFS, CT-MBS	
☒+ ☒☒☒ further functions (depending on device)			CT-MVS, CT-MXS, CT-MFS, CT-MBS, CT-WBS	
Alternating without time delay		CT-PAC		

## Pluggable relays

### PCB and miniature relays

#### Pluggable interface relays

Description	Input Voltage	Output type	Contacts	Output contacts	Output rating	Ordering code
<b>Pcb relays (CR-P)</b>						
Relay	24V DC	Electromechanical	Standard	1 c/o	250V 16A	1SVR405600R1000
Relay	230V AC	Electromechanical	Standard	1 c/o	250V 16A	1SVR405600R3000
Relay	24V AC	Electromechanical	Standard	2 c/o	250V 8A	1SVR405601R0000
Relay	24V DC	Electromechanical	Standard	2 c/o	250V 8A	1SVR405601R1000
Relay	120V AC	Electromechanical	Standard	2 c/o	250V 8A	1SVR405601R2000
Logic socket w/ separation	---	---	---	---	---	1SVR405650R0000
Standard socket 1 or 2 c/o	---	---	---	---	---	1SVR405650R1000
<b>Miniature relays (CR-M)</b>						
Relay w/out LED	24V DC	Electromechanical	Standard	2 c/o	250V 12A	1SVR405611R1000
Relay w/LED	24V DC	Electromechanical	Standard	2 c/o	250V 12A	1SVR405611R1100
Relay w/LED	24V AC	Electromechanical	Standard	2 c/o	250V 12A	1SVR405611R0100
Relay w/LED	110V AC	Electromechanical	Standard	2 c/o	250V 10A	1SVR405611R7100
Relay w/LED	120V AC	Electromechanical	Standard	2 c/o	250V 12A	1SVR405611R2100
Relay w/out LED	24V DC	Electromechanical	Standard	3 c/o	250V 10A	1SVR405612R1000
Relay w/out LED	110V AC	Electromechanical	Standard	3 c/o	250V 10A	1SVR405612R7000
Relay w/out LED	120V AC	Electromechanical	Standard	3 c/o	250V 10A	1SVR405612R2000
Relay w/out LED	24V DC	Electromechanical	Standard	4 c/o	250V 6A	1SVR405613R1000
Relay w/out LED	110V AC	Electromechanical	Standard	4 c/o	250V 6A	1SVR405613R7000
Relay w/out LED	120V AC	Electromechanical	Standard	4 c/o	250V 6A	1SVR405613R2000
Relay w/LED	24V DC	Electromechanical	Standard	4 c/o	250V 6A	1SVR405613R1100
Relay w/LED	24V AC	Electromechanical	Standard	4 c/o	250V 6A	1SVR405613R0100
Relay w/LED	110V AC	Electromechanical	Standard	4 c/o	250V 6A	1SVR405613R7100
Relay w/LED	120V AC	Electromechanical	Standard	4 c/o	250V 6A	1SVR405613R2100
Relay w/LED gold- plated	120V AC	Electromechanical	Gold- plated	4 c/o	250V 6A	1SVR405618R2100

See [catalog](#) for full description

#### Accessories

Description	Input Voltage	Output type	Ordering code
<b>Miniature relays (CR-M) only</b>			
Socket for 2 c/o	---	---	1SVR405651R1000
Socket for 3 c/o	---	---	1SVR405651R2000
Socket for 2 or 4 c/o	---	---	1SVR405651R3000
Logic socket 2 or 4 c/o	---	---	1SVR405651R3100
Holder for CR-M socket	---	---	1SVR405659R1000
Metal holder for CR-M	---	---	1SVR405659R1100
<b>PCB (CR-P) and miniature relays (CR-M)</b>			
Polarity module	6 - 220V DC	A1+, A2-	1SVR405651R0000
Diode/LED/rev/free whl module	6-24V DC	Green, A1+, A2-	1SVR405652R1000



## Pluggable relays

### Universal relays



#### Universal relays

Description	Input voltage	Output type	Contacts	Output	Output rating	Ordering code
Relay w/out LED	24V DC	Electromechanical	Standard	2 c/o	250V 10A	1SVR405621R1000
Relay w/out LED	230V AC	Electromechanical	Standard	2 c/o	250V 10A	1SVR405621R3000
Relay w/LED	110V AC	Electromechanical	Standard	2 c/o	250V 10A	1SVR405621R7100
Relay w/LED	120V AC	Electromechanical	Standard	2 c/o	250V 10A	1SVR405621R2100
Relay w/out LED	120V AC	Electromechanical	Standard	3 c/o	250V 10A	1SVR405622R2000
Relay w/LED	24V DC	Electromechanical	Standard	3 c/o	250V 10A	1SVR405622R1100
Relay w/LED	120V AC	Electromechanical	Standard	3 c/o	250V 10A	1SVR405622R2100
Socket for 2 c/o & module	---	---	---	---	---	1SVR405670R0000
Socket for 3 c/o & module	---	---	---	---	---	1SVR405660R0000
Holder for CR-U socket	---	---	---	---	---	1SVR405669R0000

See [catalog](#) for full description

## Relays

Slim, boxed electromechanical and solid state



### Interface relays

Description	Input voltage	Output type	Contacts	Output	Output rating	Ordering code
<b>Slim (CR-S)</b>						
Pluggable relay	24 V DC	Electromechanical	Standard	1 c/o	250V 6A	1SVR405501R3010
relay + socket, screw	24 V AC/DC	Electromechanical	Standard	1 c/o	250V 6A	1SVR405541R3110
relay + socket, spring	110 V AC/DC	Electromechanical	Standard	1 c/o	250V 6A	1SVR405541R6210
<b>Boxed (R600)</b>						
Interface relay	24 V AC/DC	Electromechanical	Standard	1 c/o	250V 3mA- 6A	1SNA645001R0300
Interface relay	24 V DC	Electromechanical	Standard	1 c/o	250V 10mA- 6A	1SNA645071R0000
Interface relay	115V AC/DC	Electromechanical	Standard	1 c/o	250V 10mA- 6A	1SNA645003R0500
Interface relay, spring	24 V AC/DC	Electromechanical	Standard	1 c/o	250V 10mA- 6A	1SNA645501R0500
Interface relay	5 - 12 V DC	Transistor	Solid state	---	250V 100mA	1SNA645047R0000
Interface relay	5 - 12 V DC	MOS-FET	Solid state	---	250V 2A	1SNA645050R1700
Interface relay	24 V DC	Transistor	Solid state	---	250V 100mA	1SNA645021R2600
Interface relay	24 V DC	MOS-FET	Solid state	---	250V 2A	1SNA645051R0400
Interface relay	24 V DC	Triac	Solid state	---	250V 2A	1SNA645029R0600
Interface relay	24 V DC	Electromechanical	Gold-plated	1 c/o	250V 3mA- 6A	1SNA645072R0000
Interface relay	24 V AC/DC	Electromechanical	Gold-plated	1 c/o	250V 3mA- 6A	1SNA645005R0700
Interface relay	24 V AC/DC	Electromechanical	Gold-plated	2 c/o	250V 1mA - 8A	1SNA645012R2500
Interface relay	115V AC/DC	Electromechanical	Gold-plated	1 c/o	250V 3mA- 6A	1SNA645007R0100
Interface relay	115V AC/DC	Electromechanical	Gold-plated	2 c/o	250V 1mA - 8A	1SNA645041R0200

See [catalog](#) for full description

## Power supplies

Sophisticated, economy and three-phase



Rated input voltage	Output voltage	Output current	Output power	Ordering code
<b>Standard CP-S.1</b>				
100-240 V AC / 100-250 V DC	24V	3A	72W	1SVR320361R1000
100-240 V AC / 100-250 V DC	24V	5A	120W	1SVR320561R1000
100-240 V AC / 100-250 V DC	24V	10A	240W	1SVR320661R1000
100-240 V AC / 100-250 V DC	24V	20A	480W	1SVR320761R1000
100-240 V AC / 100-250 V DC	24V	40A	960W	1SVR320861R1000
<b>Economy CP-E</b>				
100 - 240 V AC	5 V DC	3A	15W	1SVR427033R3000
100 - 240 V AC	12 V DC	2.5A	30W	1SVR427032R1000
115 / 230 V AC	12 V DC	10A	120W	1SVR427035R1000
100 - 240 V AC	24 V DC	0.75 A	18W	1SVR427030R0000
100 - 240 V AC	24 V DC	1.25 A	30W	1SVR427031R0000
100 - 240 V AC	24 V DC	2.5 A	60W	1SVR427032R0000
115 / 230 V AC	24 V DC	5A	120W	1SVR427034R0000
115 / 230 V AC	24 V DC	10A	240W	1SVR427035R0000
115 / 230 V AC	24 V DC	20A	480W	1SVR427036R0000
115 / 230 V AC	48 V DC	10A	480W	1SVR427035R2000
<b>Three-phase CP-T</b>				
3x 400 - 500 V AC	24 V DC	5A	120W	1SVR427054R0000
3x 400 - 500 V AC	24 V DC	10A	240W	1SVR427055R0000
3x 400 - 500 V AC	24 V DC	20A	480W	1SVR427056R0000

See [catalog](#) for full description

## Measuring and monitoring relays

### Inventory



Function	Supply voltage	Measuring range	Output	Ordering code
<b>Single-phase monitoring - CM-E and CM-S</b>				
Single function voltage*	24 - 240 V AC/DC	0.3-15 A	2 c/o	1SVR730760R0500
Single function voltage*	24 - 240 V AC/DC	0.3-15A RMS	2 c/o	1SVR730840R0500
Single function voltage*	24 - 240 V AC/DC	3 - 600 V	2 c/o	1SVR730750R0400
Single function voltage*	24 - 240 V AC/DC	3 - 600 V	2 c/o	1SVR730830R0400
Single function voltage*	24 - 240 V AC/DC	3 - 600 V	2 c/o	1SVR730830R0500
Single function voltage*	110 - 130 V AC	0.3-15A	1 c/o	1SVR730840R0300
Single function voltage*	110 - 130 V AC	0.3-15A RMS	2 c/o	1SVR730841R0500
Single function voltage*	110 - 130 V AC	3-600VRMS	2 c/o	1SVR740831R0400
Single function voltage*	110 - 130 V AC	3mA-1A RMS	1 c/o	1SVR730841R0200
Multifunctional*	24 - 240 V AC/DC	0.3-15A RMS	2 c/o	1SVR730840R0700
<b>Three-phase monitoring CM-M and CP-P</b>				
Multifunctional*	(L-N) 90 - 170 V AC	(L-N) 90 - 170 V AC	2 c/o	1SVR730885R1300
Multifunctional*	(L-L) 160 - 300 V AC	(L-L) 160 - 300 V AC	2 c/o	1SVR730884R1300
Multifunctional*	(L-L) 160 - 300 V AC	(L-L) 160 - 300 V AC	2 c/o	1SVR740774R1300
Multifunctional*	(L-L) 160 - 300 V AC	(L-L) 160 - 300 V AC	2 c/o	1SVR730794R1300
Multifunctional*	(L-L) 300 - 500 V AC	(L-L) 300 - 500 V AC	2 c/o	1SVR730884R3300
Multifunctional*	(L-L) 300 - 500 V AC	(L-L) 300 - 500 V AC	2 c/o	1SVR730774R3300
Multifunctional*	(L-L) 300 - 500 V AC	(L-L) 300 - 500 V AC	2 c/o	1SVR730794R3300
Multifunctional*	(L-L) 350 ... 580 V AC	(L-L) 350 ... 580 V AC	2 x 1 or 1 x 2 c/o	1SVR750487R8300
Multifunctional*	(L-L) 450 ... 720 V AC	(L-L) 450 ... 720 V AC	2 x 1 or 1 x 2 c/o	1SVR750488R8300
Phase sequence*	(L-L) 200 ... 500 V AC	(L-L) 200 ... 500 V AC	2 c/o	1SVR730824R9300
Phase sequence*	(L-L) 208 - 440 V AC	(L-L) 208 - 440 V AC	1 c/o	1SVR550824R9100
<b>Current transformer CM-CT</b>				
Current transformer*	---	75 A	---	1SVR450116R5100
DIN Snap-on fastener for CM-CT*	---	---	---	1SVR450118R1000

\*See [catalog](#) for full description

## Measuring and monitoring relays

### Inventory



Function	Supply voltage	Measuring range	Output	Ordering code
<b>Liquid level monitoring - CM-EN</b>				
Liquid level*	24 - 240 V AC/DC	0.1-1000kOhm	2 c/o	1SVR730850R0300
Liquid level*	110-130VAC/220-240VAC	5-100kOhm	1 c/o	1SVR730850R2100
Liquid level*	110-130VAC/220-240VAC	0.1-1000kOhm	1 c/o	1SVR730850R2200
<b>Temperature monitoring - CM-TC</b>				
Temperature*	24 - 240 V AC/DC	---	2 x 1 or 1 x 2 c/o	1SVR730740R0300
<b>Thermistor motor protection - CM-MS</b>				
Thermistor motor*	110-130 V AC	1 sensor circuit	1 n/o	1SVR550800R9300
Thermistor motor*	24 V AC/DC	---	1 c/o	1SVR730700R0100
Thermistor motor*	24 - 240 V AC/DC	---	2 x 1 c/o	1SVR730712R1300
Thermistor motor*	24 - 240 V AC/DC	---	1 c/o + 1 n/o	1SVR730712R1400
Thermistor motor*	110-130VAC/220-240VAC	---	2 c/o	1SVR730712R2200
Thermistor motor*	24 - 240 V AC/DC	---	1 c/o + 1 n/o	1SVR730720R1400
<b>Insulation monitoring CM-I</b>				
Insulation*	24 - 240 V AC/DC	1 - 100 kΩ	1 c/o	1SVR730660R0100
Insulation*	0-690V AC / 0-1000V DC	1-100 kΩ 2-200 kΩ	1 x 2 c/o or 2 x 1 c/o	1SVR470670R1000

\*See [catalog](#) for full description



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**14**

## **Disconnect switches**

## Section 14

### Disconnect switches

#### Table of contents

<b>Enclosed disconnect switches</b>	<b>14-1</b>
<hr/>	
<b>Non-fusible disconnect switches</b>	
Ordering code construction – OT16...160	14-2
Ordering code construction – OT200-2000	14-3
UL508 and UL98	14-4
Flange handle operated switches	14-5
Accessories for fusible and non-fusible disconnect switches	14-9
<hr/>	
<b>Fusible disconnect switches</b>	
Ordering code construction – OS30	14-6
Ordering code construction – OS60...1200	14-7
UL98 flange handle operated switches	14-8
Accessories for fusible and non-fusible disconnect switches	14-9
Accessories for rotary operated switches	14-10

## Enclosed disconnect switches

### UL508 and UL98



**UL508 non-fusible manual disconnect switches**  
Max voltage (AC): 600Vac

UL amp rating	Enclosure material	NEMA Type	Handle	Handle color	Aux contacts	Ordering code
16	Plastic	3R/12	Selector	Black	-	EOT16U3P3-S
				Red/Yellow	-	EOT16U3P3-S1
		4/4X	Selector	Black	-	EOT16U3P4-P
	Black			1 NO	EOT16U3P4-1P	
	Red/Yellow		-	EOT16U3P4-P1		
	Steel	1	Selector	Black	-	EOT16U3M1-S
3R/12				Pistol	Black	-
Selector		Black	-	EOT16U3M3-S		
Stainless Steel	4/4X	Pistol	Black	-	EOT16U3S4-P	
			3R/12	Selector	Black	-
	Plastic	3R/12	Selector	Black	-	EOT32U3P3-S1
Red/Yellow				-	EOT32U3P3-S1	
4/4X		Pistol	Black	-	EOT32U3P4-P	
	Black		1 NO	EOT32U3P4-1P		
	Pistol	Black	1 NO & 1 NC	EOT32U3P4-5P		
Steel	1	Selector	Black	-	EOT32U3M1-S	
			3R/12	Pistol	Black	-
	Selector	Black	-	EOT32U3M3-S		
Stainless Steel	4/4X	Pistol	Black	-	EOT32U3S4-P	
			Cast Aluminum	7/9	Selector	Grey
	Plastic	4/4X	Pistol	Black	-	EOT45U3P4-P
1				Selector	Black	-
Steel		3R/12	Pistol	Black	-	EOT45U3M3-P
	Selector			Black	-	EOT45U3M3-S
	Stainless Steel	4/4X	Pistol	Black	-	EOT45U3S4-P
4/4X				Pistol	Black	-
		Steel	3R/12		Pistol	Black



**UL98 non-fusible disconnect switches**  
Max voltage (AC): 600Vac

UL amp rating	Enclosure material	NEMA Type	Handle	Handle color	Aux contacts	Ordering code
30	Steel	1	Pistol	Black	-	EOT30U3M1-P
			Pistol	Red/Yellow	-	NF301-3PY6C
		12/3R	Pistol	Black	-	EOT30U3M3-P
			Pistol	Red/Yellow	-	NF303-3PY6C
60	Steel	1	Pistol	Black	-	EOT60U3M1-P
			Pistol	Red/Yellow	-	NF601-3PY6C
		12/3R	Pistol	Black	-	EOT60U3M3-P
			Pistol	Black	-	EOT60U3S4-P
100	Steel	1	Pistol	Black	-	EOT100U3M1-P
			Pistol	Black	-	EOT100U3M3-P
		12/3R	Pistol	Black	-	EOT100U3M3-P
			Pistol	Black	-	EOT100U3S4-P



**UL98 fusible disconnect switches**  
Max voltage (AC): 600Vac

UL amp rating	Enclosure material	NEMA Type	Fuse Type	Handle	Handle color	Ordering code
30	Steel	1	J	Pistol	Red/Yellow	FJ301-3PY6B
			J	Pistol	Black	FJ303-3PB6B
		3R/12	CC	Pistol	Black	FC303-3PB6B
60	Steel	1	J	Pistol	Black	FJ601-3PB6B

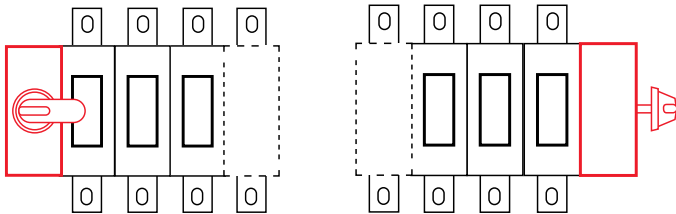
## Non-fusible disconnect switches OT16...160

### Ordering code construction

Understanding the type code keys below will help you quickly identify the correct product for your needs.

OT	16	F	4	N2
<b>ABB Brand</b> OT = ABB switch-disconnector brand				<b>Included accessories</b> N2 = Fourth pole, simultaneous function with the main contacts _ = No accessories included P = Pistol handle + shaft K = Direct mount handle (for base mounting versions only)
<b>Switch size</b> The second letter in the code indicates the ampere rating [A] of the product: 16...160A				<b>Number of poles and placing of the operating mechanism</b> 3 = 3 poles 4 = 4 poles 6 = 6 poles 8 = 8 poles 03 = 3 poles, operating mechanism at the left end of the switch 04 = 4 poles, operating mechanism at the left end of the switch 30 = 3 poles, operating mechanism at the right end of the switch 40 = 4 poles, operating mechanism at the right end of the switch
<b>Operation/Mounting/Certification</b> F = Base and DIN-rail mounting, front operated FT = Door mounting, front operated G = Base and DIN-rail mounting, front and side operated GT = Door mounting, front and side operated FL = Base and DIN-rail mounting, extended terminals on both sides of the switch, front operated FLA = Base and DIN-rail mounting, extended terminals on top side only, front operated FLB = Base and DIN-rail mounting, extended terminals on bottom side only, front operated M, ML = Installation switches for 45mm standard opening, base and DIN-rail mounting, front operated				

### Pole configuration table, OT160G



**Front operated**  
Configuration 03, 04

**Side operated**  
Configuration 30, 40 or 03, 04

# Non-fusible disconnect switches OT200-2000

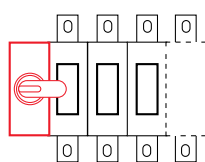
## Ordering code construction

Understanding the type code keys below will help you quickly identify the correct product for your needs.

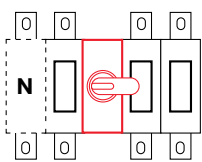
<b>OT</b>	<b>400</b>	<b>U</b>	<b>03</b>	<b>W</b>	<b>P</b>
<b>ABB Brand</b> OT = Non-fusible disconnect switches		<b>Switch size</b> The second letter in the code indicates the ampere rating [A] of the product: 160...4000A		<b>Construction 2</b> K = With direct mount handle P = External handle and metal shaft included	
<b>Operation/Mounting/Certification</b> U = Front operated, base mounting, UL/CSA		<b>Construction 1</b> W = With wide phase distance		<b>Number of poles and placing of the operating mechanism</b> 03 = 3-poles, operating mechanism at the left end of the switch 04 = 4-poles, operating mechanism at the left end of the switch 12 = 3-poles, operating mechanism between the poles 22 = 4-poles, operating mechanism between the poles 30 = 3-poles, operating mechanism at the right end of the switch 40 = 4-poles, operating mechanism at the right end of the switch	

### Pole configuration table

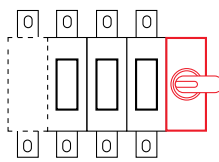
The various placing options of the operating mechanism in relation to the 3 or 4 poles is illustrated below. The operating mechanism may be placed at the end of the switch or between poles.



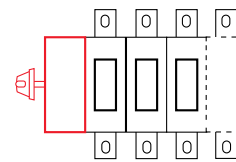
**Front operated**  
Configuration 03, 04



**Front operated**  
Configuration 12, 22



**Front operated**  
Configuration 30, 40



**Side operated**  
Configuration 03, 04

## Non-fusible disconnect switches

UL508 and UL98



UL listing	UL general purpose amp rating	3 Pole ordering code	6 Pole ordering code
<b>Base &amp; DIN rail mounted</b>			
<b>Max voltage (AC): 600Vac</b>			
UL 508	20	OT16F3	---
	30	OT25F3	OT25F6
	30	OT25F3/B50	---
	40	OT40F3	OT40F6
	40	OT40F3/B50	---
	60	OT63F3	OT63F6
	60	OT60F3/B50	---
	80	OT80F3	---
	80	OT80F3/B50	---
UL 98	30	OT30F3	---
	60	OT60F3	---
	60	OT60F3/B25	---
	100	OT100F3	OT100F6
	100	OT100F3/B25	---
	100 <sup>1</sup>	OT160G03	---
	200	OT200U03	---
	400	OT400U03	---
	600	OT600U03	---
800	OT800U03	---	
1200	OT1200U03	---	
<b>Door mounted</b>			
UL508	20	OT16FT3	---
	30	OT25FT3	---
	40	OT40FT3	---
	60	OT63FT3	---
	80	OT80FT3	---
UL98	30	OT30FT3	---
	60	OT60FT3	---
	100	OT100FT3	---
<b>Non-fusible double throw</b>			
UL508	40	OT40F3C	---
	60	OT63F3C	---
	80	OT80F3C	---
	UL98	30	OT30F3C
60		OT60F3C	---
100		OT100F3C	---
200		OT200U30C	---
400		OT400U30C	---
600		OT600U30C	---
800	OT800U30C	---	

<sup>1</sup> UL listed to 100A, UL recognized to 125A

### OTDC DC disconnect switches

UL listing	UL general purpose amp rating 1500Vdc	2 pole ordering code
UL 98B	400	OTDC400UFV11

## Non-fusible disconnect switches

### Flange handle operated switches



#### Flange handle shaft operated non-fusible disconnect Max voltage (AC): 600Vac

UL listing	UL general purpose amp rating	Ordering code
UL98	30	OT30F3-F

#### Flange handle cable operated non-fusible disconnect Max voltage (AC): 600Vac

UL listing	UL general purpose amp rating	Ordering Code
UL98	30	OT30F3
	60	OT60F3
	100	OT100F3
	200	OT200U30
	400	OT400U30-FC
	600	OT600U30-FC
	800	OT800U30-FC
	1200	OT1200U30-FC

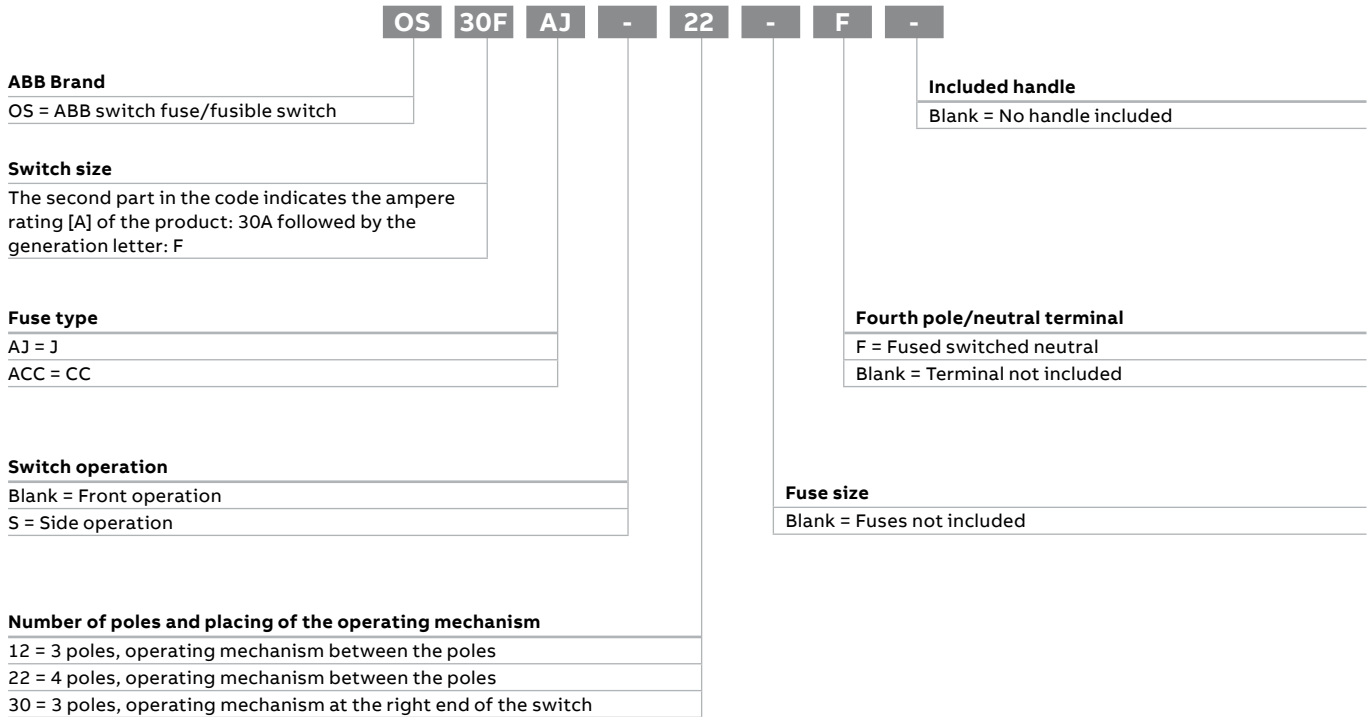
Note: For flange handle and cables selection please check pages [14-12](#) and [14-13](#).

## Fusible disconnect switches OS30

### Ordering code construction

#### Type codes

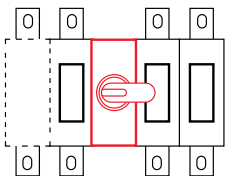
Understanding the type code keys below will help you quickly identify the correct product for your needs. The simple naming system allows you to see the products type, Ampere rating, standard classification and number of poles, all in one glance.



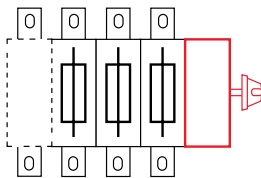
#### Pole configuration table

The various placing options of the operating mechanism in relation to the 3 or 4 poles is illustrated below. The operating mechanism may be placed at the end of the switch or between poles.

Between the poles OS\_12 or 22:



Side operated types OS\_30 or 40 / OS\_03 or 04:





## Fusible disconnect switches OS60...1200

### Ordering code construction

#### Type codes

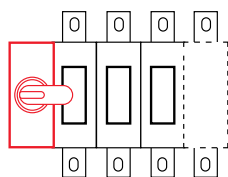
Understanding the type code keys below will help you quickly identify the correct product for your needs. The simple naming system allows you to see the products type, Ampere rating, standard classification and number of poles, all in one glance.

<b>OS</b>	<b>100G</b>	<b>J</b>	<b>-</b>	<b>04</b>	<b>N1</b>	<b>-</b>	<b>-</b>
<b>ABB Brand</b> OS = ABB switch fuse/fusible switch				<b>Included handle</b> Blank = No handle included			
<b>Switch size</b> The second part in the code indicates the ampere rating [A] of the product: 60...1200A possibly followed by generation letter: G							
<b>Fuse type</b> J = J L = L				<b>Terminals for special connection (only IEC)</b> Blank = No special connection			
<b>Switch operation</b> Blank = Front operation S = Side operation				<b>Fourth pole/neutral terminal</b> Blank = Neutral terminal not included N1 = Non-fused switched neutral on the left side F = Fused switched neutral			
<b>Number of poles and placing of the operating mechanism</b> 03 = 3 poles, operating mechanism at the left end of the switch 04 = 4 poles, operating mechanism between the poles 12 = 3 poles, operating mechanism between the poles 22 = 4 poles, operating mechanism between the poles 30 = 3 poles, operating mechanism at the right end of the switch 40 = 4 poles, operating mechanism at the right end of the switch							

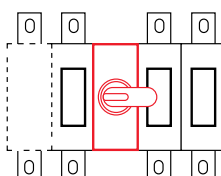
#### Pole configuration table

The various placing options of the operating mechanism in relation to the 3 or 4 poles is illustrated below. The operating mechanism may be placed at the end of the switch or between poles.

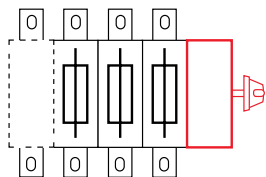
At the end of the switch fuse OS\_03 or 04:



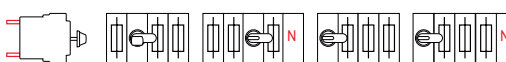
Between the poles OS\_12 or 22:



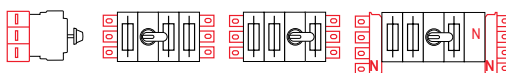
Side operated types OS\_30 or 40 / OS\_03 or 04:



BB-types:



LR-types:



Reference only. For stocked items, see following pages.

## Fusible disconnect switches

### UL98 flange handle operated switches



#### Flange handle shaft operated fusible disconnect Max voltage 600 (AC): 600Vac

UL listing	UL general purpose amp rating	UL Fuse Type	Ordering Code
UL98	30	J	OS30FAJF30

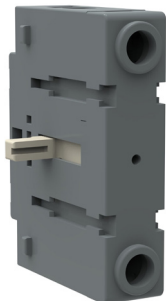
#### Flange handle cable operated fusible disconnect Max voltage 600 (AC): 600Vac

UL listing	UL general purpose amp rating	UL Fuse Type	Ordering Code
UL98	30	CC	OS30FACC12
	30	J	OS30FAJ12
	60	J	OS60GJ12
	60	J	OS60GJ30
	100	J	OS100GJ30
	200	J	OS200J30
	400	J	OS400J30-FC
	600	J	OS600J30-FC
	800	L	OS800L30-FC
	1200	L	OS1200L30-FC

Note: For flange handle and cables selection please check pages [14-12](#) and [14-13](#).

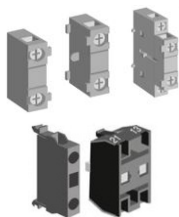
## Fusible and non-fusible disconnect switches

### Accessories



#### 1 - Additional poles for non-fusible

Description	For use on	AC Thermal amp rating	Mounting location	Panel or door mount	Ordering code
<b>Power poles - Fourth Pole simultaneous function with the main contacts</b>					
	OT16-OT25, OT40	40	Left	Panel	OTPS40FPN1
	OT16-OT25, OT40	40	Right	Panel	OTPS40FPN2
	OT16-OT25, OT40	40	Left	Door	OTPS40FDN1
	OT16-OT25, OT40	40	Right	Door	OTPS40FDN2
	OT30, OT60	60		Panel	OTPS60FP
	OT30, OT60	60		Door	OTPS60FD
	OT63-OT80	80		Panel	OTPS80FP
	OT100	100		Panel	OTPS125FP
	OT100	100		Door	OTPS125FD
<b>Terminal poles</b>					
Solid neutral	OT16-OT25, OT40	40		Panel	OTPN40FP
	OT30, OT60	60		Panel	OTPN60FP
	OT63-OT80	80		Panel	OTPN80FP
	OT100	100		Panel	OTPN125FP
Detachable Neutral	OT16-OT25, OT40	40		Panel	OTPE40FP
Ground Terminal	OT16-OT25, OT40	40		Door	OTPE40FD
	OT63-OT80	80		Door	OTPE80FD



#### 2 - Auxiliary contacts Vdc/Vac

Description	For use on	AC Thermal amp rating	Ordering code
<b>Snap-on mounting</b>			
1 N.O.	OS30-1200, OT16-1200, OT16-800_C	10	OA1G10
1 N.C.	OT16-160	10	OA1G01
1 N.C.	OS30-1200, OT200-2000	10	OA3G01
1 N.O. & 1 N.C.	OT16-100	10	OA2G11
1 N.O. & 1 N.C.	OS30	6	OA4B1C
<b>Snap-on mounting for double throw</b>			
1 N.O.	OT16-800_C	10	OA1G10
1 N.O.	OT16-100_C	10	OA7G10
1 N.C.	OT16-100_C	10	OA1G01
1 N.C.	OT200-800_C	10	OA3G01
1 N.O. & 1 N.C.	OT16-100_C	10	OA2G11
<b>Accessories</b>			
Auxiliary contact frame (for OA1G10 and OA3G01)	OS30		OSZ4
Auxiliary contact mounting module (for OA1G10 and OA3G01)	OS200, OT200-400		OEA28

## Fusible and non-fusible disconnect switches

### Accessories for rotary operated switches

#### 3 - Handles



For use on	NEMA Type	IP Rating	Shaft diameter in (mm)	Color	Marking	Order code
<b>Selector handles</b>						
OT16...125F	1	IP54	0.24 (6)	Black	O/I & Off/On	OHBS3AH1
OT16...125F	1	IP54	0.24 (6)	Red/Yellow	O/I & Off/On	OHYS3AH1
OT16...80F	1	IP54	0.24 (6)	Black	O/I & Off/On	OHBS1AH1
OT16...125F	1, 3R, 12	IP65	0.24 (6)	Black	O/I & Off/On	OHBS2AJ1
OT16...125F	1, 3R, 12	IP65	0.24 (6)	Red/Yellow	O/I & Off/On	OHYS2AJ1
OT16...125F	1, 3R, 12	IP65	0.24 (6)	Black	O/I & Off/On	OHBS2AJ
OT16...125F	1, 3R, 12	IP65	0.24 (6)	Red/Yellow	O/I & Off/On	OHYS2AJ
<b>Selector handles with metal hasp</b>						
OT16...125F	1, 3R, 12	IP65	0.24 (6)	Black	O/I & Off/On	OHBS2AJ1EH
<b>Pistol handles</b>						
						<b>Length (mm)</b>
OT16...125F	1, 3R, 12	IP65	0.24 (6)	Black	O/I & Off/On	1.8 (45) OHB45J6
OT200	1, 3R, 12	IP65	0.24 (6)	Black	O/I & Off/On	2.6 (65) OHB65J6
OT200	1, 3R, 12	IP65	0.24 (6)	Black	O/I & Off/On	3.1 (80) OHB80J6
OT16...125F	1, 3R, 12	IP65	0.24 (6)	Red/Yellow	O/I & Off/On	1.8 (45) OHY45J6
OT200	1, 3R, 12	IP65	0.24 (6)	Red/Yellow	O/I & Off/On	2.6 (65) OHY65J6
OT200	1, 3R, 12	IP65	0.24 (6)	Red/Yellow	O/I & Off/On	3.1 (80) OHY80J6
OT16...125F	1, 3R, 12	IP65	0.24 (6)	Grey	O/I	1.8 (45) OHG45J6
OT200	1, 3R, 12	IP65	0.24 (6)	Grey	O/I	2.6 (65) OHG65J6
OT200	1, 3R, 12	IP65	0.24 (6)	Grey	O/I	3.1 (80) OHG80J6
OT16...125F	1, 3R, 12, 4, 4X	IP66	0.24 (6)	Black	O/I & Off/On	1.8 (45) OHB45L6
OT200	1, 3R, 12, 4, 4X	IP66	0.24 (6)	Black	O/I & Off/On	2.6 (65) OHB65L6
OT200	1, 3R, 12, 4, 4X	IP66	0.24 (6)	Black	O/I & Off/On	3.1 (80) OHB80L6
OT16...125F	1, 3R, 12, 4, 4X	IP66	0.24 (6)	Red/Yellow	O/I & Off/On	1.8 (45) OHY45L6
OT200	1, 3R, 12, 4, 4X	IP66	0.24 (6)	Red/Yellow	O/I & Off/On	2.6 (65) OHY65L6
OT200	1, 3R, 12, 4, 4X	IP66	0.24 (6)	Red/Yellow	O/I & Off/On	3.1 (80) OHY80L6
OT200...2000A and OS30...1200A	1, 3R, 12, 4, 4X	IP66	0.24 (6)	Stainless Steel	O/I & Off/On	2.6 (65) OHM65L6
OT400U_ And OTDC400	1, 3R, 12	IP65	0.47 (12)	Black	O/I & Off/On	3.7 (95) OHB95J12
OT600U_ And OTDC400	1, 3R, 12	IP65	0.47 (12)	Black	O/I & Off/On	4.9 (125) OHB125J12
OT600U_ And OS630...800	1, 3R, 12	IP65	0.47 (12)	Black	O/I & Off/On	5.7 (145) OHB145J12
OT800...1200U and OS1200	1, 3R, 12	IP65	0.47 (12)	Black T-Handle	O/I & Off/On	2X 5.9 (150) OHB150J12P
OS630...800	1, 3R, 12	IP65	0.47 (12)	Black	O/I & Off/On	6.9 (175) OHB175J12
OT800...1200U and OS1200	1, 3R, 12	IP65	0.47 (12)	Black T-Handle	O/I & Off/On	2X 7.9 (200) OHB200J12P
OT800...2000U_	1, 3R, 12	IP65	0.47 (12)	Black	O/I & Off/On	10.8(274) OHB274J12
OT600U_ And OS630...800	1, 3R, 12	IP65	0.47 (12)	Red/Yellow	O/I & Off/On	4.9 (125) OHY125J12
OT600U_ And OS630...800	1, 3R, 12	IP65	0.47 (12)	Red/Yellow	O/I & Off/On	5.7 (145) OHY145J12
OS630...800	1, 3R, 12	IP65	0.47 (12)	Red/Yellow	O/I & Off/On	6.9 (175) OHY175J12
OT800...1200U and OS1200	1, 3R, 12	IP65	0.47 (12)	Red/Yellow	O/I & Off/On	10.8 (274) OHY274J12
OT600U_ And OS630...800	1, 3R, 12	IP65	0.24 (6)	Grey	O/I	5.7 (145) OHG145J12
OT600U_ And OS630...800	1, 3R, 12, 4, 4X	IP66	0.47 (12)	Black	O/I & Off/On	4.9 (125) OHB125L12
OT600U_ And OS630...800	1, 3R, 12, 4, 4X	IP66	0.47 (12)	Black	O/I & Off/On	5.7 (145) OHB145L12
OS630...800	1, 3R, 12, 4, 4X	IP66	0.47 (12)	Black	O/I & Off/On	6.9 (175) OHB175L12
OT800...1200U and OS1200	1, 3R, 12, 4, 4X	IP66	0.47 (12)	Black	O/I & Off/On	10.8(274) OHB274L12
OT600U_800 And OS630...800	1, 3R, 12, 4, 4X	IP66	0.47 (12)	Red/Yellow	O/I & Off/On	5.7 (145) OHY145L12
OT600U_800 And OS630...800	1, 3R, 12, 4, 4X	IP66	0.47 (12)	Red/Yellow	O/I & Off/On	6.9 (175) OHY175L12
OT600U_800 And OS630...800	1, 3R, 12, 4, 4X	IP66	0.47 (12)	Stainless Steel	O/I & Off/On	6.9 (175) OHM175L12

## Fusible and non-fusible disconnect switches

### Accessories for rotary operated switches

#### 3 - Handles (continued)



Direct mount handle			
For use on	Color	Shaft	Ordering code
OT16-OT25, OT40	Black	Yes	OHBS12
OT30, OT60, OT100	Black	No	OHBS2
OS30	Black	Yes	OHBS5
OS60-OS100	Black	No	OHB4
OS200	Black	No	OSV200BK
OT200	Black	No	OTV250EK
OS400	Black	No	OSV400BK
OT400	Black	No	OTV400EK

#### Selector handles for door mounted switches



Direct mount handle			
NEMA Type	IP rating	Color	Ordering code
<b>Snap-on mounting - for use on OT16FT3 - OT40FT3</b>			
1	IP54	Black	OHBS3PH
1	IP54	Red/Yellow	OHYS3PH
1, 3R, 12	IP65	Black	OHBS2PJ
1, 3R, 12	IP65	Red/Yellow	OHYS2PJ
<b>Screw mounting - for use on OT16FT3 - OT100FT3. For OT30, OT60, and OT100 use OH__2__only</b>			
1	IP54	Black	OHBS1RH
1	IP54	Black	OHBS3RH
1	IP54	Red/Yellow	OHYS3RH
1, 3R, 12	IP65	Black	OHBS2RJ
1, 3R, 12	IP65	Red/Yellow	OHYS2RJ

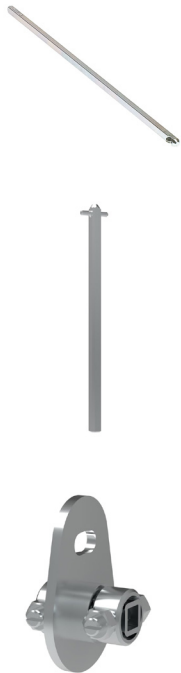
#### 3 Position for double throw switches



For use on	NEMA Type	IP Rating	Shaft diameter in (mm)	Color	Marking	Handle Length in (mm)	Order code
<b>Selector handles</b>							
OT16...125F	1, 3R, 12	IP65	0.24 (6)	Black	I/O/II, ON/OFF/ON		OHBS2AJE011
<b>Pistol handles</b>							
OT16...160	1, 3R, 12	IP65	0.24 (6)	Black	I/O/II, ON/OFF/ON	2.6 (65)	OHBS2AJE011
OT16...160	1, 3R, 12	IP65	0.24 (6)	Black	I/O/II, ON/OFF/ON	3.1 (80)	OHBS2AJE011
OT630-800	1, 3R, 12	IP65	0.47 (12)	Black	I/O/II, ON/OFF/ON	5.7 (145)	OHBS2AJE011
OT160-250	1, 3R, 12, 4, 4X	IP66	0.24 (6)	Black	I/O/II, ON/OFF/ON	2.6 (65)	OHBS2AJE011

## Fusible and non-fusible disconnect switches

### Accessories for rotary operated switches



#### 4 - Shafts

Shaft length in (mm)	Ordering code
<b>Shafts for selector handles - with diameter 0.24 (6)</b>	
2.2 (57)	OXS6X57
3.3 (85)	OXS6X85
3.7 (95)	OXS6X95
4.1 (105)	OXS6X105
4.7 (120)	OXS6X120
5.1 (130)	OXS6X130
5.9 (150)	OXS6X150
7.1 (180)	OXS6X180
9.8 (250)	OXS6X250
13 (330)	OXS6X330

Description	Ordering code
<b>Shaft and handle accessories</b>	
6mm shaft coupler	OESA-ZX167
Shaft support	OETL-ZX58
Shaft Coupler 12mm	OETL-ZX95
Shaft Guide	OHZX10
Adapter	OHZX6
Din Rail Adapter	OSGZD1

Shaft length in (mm)	Ordering code
<b>Shafts for pistol handles - with diameter 0.24 (6)</b>	
2.2 (57)	EXP6X57
3.4 (87)	EXP6X87
5.2 (130)	EXP6X130
5.9 (150)	EXP6X150
6.2 (158)	EXP6X158
6.7 (170)	EXP6X170
6.9 (175)	EXP6X175
7.1 (181)	EXP6X181
8.3 (210)	EXP6X210
10.4 (265)	EXP6X265
11.4 (290)	EXP6X290
14.2 (360)	EXP6X360
15.8 (400)	EXP6X400
16.9 (430)	EXP6X430
19.7 (500)	EXP6X500
27.6 (700)	EXP6X700
<b>Shafts for pistol handles - with diameter 0.47 (12)</b>	
7.3 (185)	EXP12X185
9.8 (250)	EXP12X250
11.0 (280)	EXP12X280
12.8 (325)	EXP12X325
15.6 (395)	EXP12X395
18.3 (465)	EXP12X465
21.1 (535)	EXP12X535
24.6 (625)	EXP12X625

#### 5 - Flange handles

Flange handle, shaft operated for fusible and non-fusible disconnect switches		
NEMA type	Marking	Ordering code
1, 3R, 12	OFF/ON	DSFHN-HS12

Flange handle shafts		
For use with:	Maximum enclosure depth	Ordering code
OS30_ - OS100_	16"	DSFHS-12

Flange handle cable operating mechanism	
For use with:	Ordering code
OT30...100F3	MKCS1
OS30AFJ12, OS30AAFCC12	MKCS2
OS60GJ12	MKCS3
OS60...100GJ30, OS200J30, OT200U30	MKCS4

Table continues on next page.

## Fusible and non-fusible disconnect switches

### Accessories

#### 5 - Flange handles (continued)



##### Flange handle, cable operated

For use with:	NEMA Type	Ordering code
OS30FA_12, OS60...100GJ30, OS200J30	1, 3R, 12	OHF1C12
OT30...100F3, OT200U30	4, 4X	OHF1C4
OS400J30-FC, OT400...600U30-FC	1, 3R, 12	K7FCH
	4, 4X	K7FCH4
OS600J30-FC	1, 3R, 12	K8FCH
	4, 4X	K8FCH4
OS800...1200L30-FC, OT800...1200U30-FC	1, 3R, 12	K9FCH
	4, 4X	K9FCH4

#### 6 - Cables for flange handle disconnect switches



For use with:	Ordering code		
	36 in	48 in	60 in
OS30FA_12, OS60...100GJ30, OS200J30, OT30...100F3, OT200U30	OXC1L36	OXC1L48	OXC1L60
OS400...600J30-FC, OT400...600U30-FC	-	K7C048	K7C060
OS800...1200L30-FC, OT800...1200U30-FC	-	K8C048	K8C060

#### 7 - Terminal shrouds



OTS40T3



OSS160GG1L/3

Description	For Use On	Ordering code
<b>For non-fusible</b>		
(1) 3 pole for use on line or load side	OT16-OT25, OT40	OTS40T3
	OT63-80	OTS63T3
	OT30, OT60, OT100	OTS125T3
(1) 4th pole for use on line or load side	OT16-OT25, OT40	OTS40T1
	OT63-80	OTS63T1
(3) 1 pole long type	OT200	OTS250G1L/3
(3) 1 pole short type	OT200	OTS250G1S/3
(1) 3 pole for use on line or load side	OT400	OTS403
	OT400U30-FC	OTS403-FC
(3) 1 pole long type	OT400	OTS400G1L/3
(3) 1 pole short type	OT400	OTS400G1S/3
(1) 3 pole for use on line or load side	OT600	OTS603
	OT600U30-FC	OTS603-FC
	OT800U30-FC	OTS803-FC
	OT1200U30-FC	OTS1203-FC
<b>For non-fusible</b>		
(3) 1 pole long type	OS100	OSS160GG1L/3
(3) 1 pole short type	OS100	OSS160GG1S/3
(3) 1 pole long type	OS200	OSS200G1L/3
(3) 1 pole short type	OS200	OSS200G1S/3
(3) 1 pole long type	OS400	OSS400G1L/3
(1) 3 pole for use on line or load side	OS400	OSS403
	OS400J30-FC	OSS403-FC

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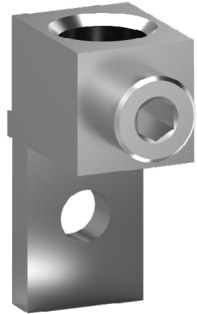
## Fusible and non-fusible disconnect switches

### Accessories



#### 7 - Terminal shrouds

Description	For Use On	Ordering code
<b>For non-fusible</b>		
(1) 3 pole for use on line or load side	OS600	OSS603
	OS600J30-FC	OSS603-FC
(3) 1 pole long type	OS800	OSS800G1L/3
(1) 3 pole for use on line or load side	OS800L30-FC	OSS803-FC
	OS1200L30-FC	OSS1203-FC



#### 8 - Terminal lug kits

For Use On	Wire Size	Wire Type	Lugs/Kit	Ordering code
OS100	#14-2/0	Cu/Al	6	OZXA-24
OT200, OS200	#4 - 300 kcmil	Cu/Al	6	OZXA-200
OT400, OS400	#2 - 600 kcmil	Cu/Al	6	OZXA-400
	(2) #4 - 300 kcmil	Cu/Al	6	OZXA-402
	(6) #14 - 6 AWG	Cu/Al	3	OZXA-406
OT600...800, OS600...800	(2) #2 - 600 kcmil	Cu/Al	6	OZXA-800
OS1200, OT800...2000	(4) #2 - 600 kcmil	Cu/Al	6	OZXA-1200



#### 9 - Other accessories

Description	Ordering Code
Bridge bars OT200U_C	OTZC13
Bridge bars OT400U_C	OTZC23
Bridge bars for OT600U_C	OTZC33
Bridge bars for OT800U_C	OTZC53
Module for auxiliaries or fuse monitor mounting, OS30	OSZ4
Alignment ring	OHZX11
Stainless steel hasp	OHZX12
Stainless steel hasp	OHZX13



#### Performance data of auxiliary contacts

Ue	Ie	Ue	Ie
VAC	A	VDC	A
230	6	24	10
400	4	72	4
415	4	125	2
690	2	250	0.55
		440	0.1



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**15**

## **Operator interface and signaling devices**

## Section 15

# Operator interface and signaling devices

## Table of contents

### 22mm - Modular plastic range

Modular pushbuttons - non-illuminated and illuminated	15-1
Double pushbuttons - non-illuminated and illuminated	15-2
Heavy duty pushbutton	15-2
Modular flush reset pushbutton with shaft	15-2
Emergency stop pushbuttons - non-illuminated and illuminated	15-2
Modular pilot lights	15-2
Modular selector switch	15-3
Complete potentiometer	15-3
Toggle switch	15-3
Joysticks IP67 and IP69K	15-3
Accessories	15-4

### 22mm - Compact range

Compact pushbutton - non-illuminated and illuminated	15-6
Emergency stop pushbuttons - non-illuminated	15-6
Selector switch	15-6
Buzzer	15-7
LED pilot light	15-7
Accessories	15-7

### 22mm - Modular metal range

Modular metal pushbuttons - non-illuminated and illuminated	15-8
Marked pushbuttons	15-8
Mushroom pushbuttons	15-8
Pilot lights	15-9
Accessories	15-10

### 30mm Heavy Duty range

Heavy duty push buttons and pilot lights	15-12
Heavy duty selector switches	15-13
Heavy duty accessories	15-14

## Pilot Devices

Stocked 22mm - Modular plastic range



### Modular pushbuttons, 22mm, Non-Illuminated

Color	Bezel	Ordering code
<b>Momentary flush pushbutton</b>		
red	black plastic	MP1-10R
red	chrome metal	MP1-30R
green	black plastic	MP1-10G
green	chrome metal	MP1-30G
black	black plastic	MP1-10B
black	chrome metal	MP1-30B
clear	black plastic	MP1-10C
blue	black plastic	MP1-10L
white	black plastic	MP1-10W
yellow	black plastic	MP1-10Y
<b>Momentary extended pushbutton</b>		
red	black plastic	MP3-10R
green	black plastic	MP3-10G
black	black plastic	MP3-10B
clear	black plastic	MP3-10C



### Modular pushbuttons, 22mm, Illuminated

Color	Bezel	Ordering code
<b>Momentary flush pushbutton</b>		
red	black plastic	MP1-11R
red	chrome metal	MP1-31R
green	black plastic	MP1-11G
green	chrome metal	MP1-31G
clear	black plastic	MP1-11C
blue	black plastic	MP1-11L
white	black plastic	MP1-11W
yellow	black plastic	MP1-11Y
<b>Maintained flush pushbutton</b>		
red	black plastic	MP2-11R
green	black plastic	MP2-11G
<b>Momentary extended pushbutton</b>		
red	black plastic	MP3-11R
green	black plastic	MP3-11G
white	black plastic	MP3-11W

Table continues on next page.

## Pilot Devices

Stocked 22mm - Modular plastic range



Modular double pushbuttons, 22mm, non-illuminated

Upper button color	Upper button text	Lower button color	Lower button text	Ordering code
<b>Extended lower pushbutton</b>				
green	START	red	STOP	MPD15-11B



Modular double pushbuttons, 22mm, illuminated

Upper button color	Upper button text	Lower button color	Lower button text	Indicator light	Ordering code
<b>Extended lower pushbutton</b>					
green	START	red	STOP	Clear	MPD15-11C



Modular heavy duty pushbutton

Color	Ordering code
Black	KP6-40B



Modular flush reset pushbutton with shaft

Color	Text	Ordering code
Black	RESET	KPR3-104B
Blue	R	KPR3-101L



Emergency stop pushbuttons

Diameter (mm)	Color	Release method	Ordering code
<b>Non-illuminated</b>			
30	Red	Twist release	MPET3-10R
40	Red	Twist release	MPET4-10R
40	Red	Pull release	MPEP4-10R
40	Red	Key release code 71/ronis 455	MPEK4-11R
60	Red	Twist release	MPMT4-10R
<b>Illuminated</b>			
40	Red	Twist release	MPMT3-11R
60	Red	Twist release	MPMT4-11R



Modular pilot lights

Color	Ordering code
clear	ML1-100C
green	ML1-100G
blue	ML1-100L
red	ML1-100R
white	ML1-100W
yellow	ML1-100Y

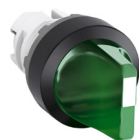
## Pilot Devices

Stocked 22mm - Modular plastic range



### Modular selector switch

Action	Color	Bezel	Illumination	Ordering code
<b>2 position, short handle</b>				
Maintained BC	Black	Black plastic	non-illuminated	M2SS1-10B
Maintained AC	Black	Black plastic	non-illuminated	M2SS2-10B
Maintained AC	Black	Chrome metal	non-illuminated	M2SS2-30B
<b>3 position, short handle</b>				
Maintained ABC	Black	Black plastic	non-illuminated	M3SS1-10B
Maintained ABC	Black	Chrome metal	non-illuminated	M3SS1-30B
Momentary, spring return from A to B and from C to B	Black	Black plastic	non-illuminated	M3SS2-10B
Momentary, spring return from C to B	Black	Black plastic	non-illuminated	M3SS3-10B
Momentary, spring return from A to B	Black	Black plastic	non-illuminated	M3SS7-10B
<b>2 position, long handle</b>				
Maintained BC	Black	Black plastic	non-illuminated	M2SS4-10B
Maintained AC	Black	Black plastic	non-illuminated	M2SS5-10B
<b>3 position, long handle</b>				
Maintained ABC	Black	Black plastic	non-illuminated	M3SS4-10B
<b>2 position, short handle</b>				
Maintained AC	Green	Black plastic	illuminated	M2SS2-11G
Maintained ABC	Green	Black plastic	illuminated	M3SS1-11G
<b>2 position, key release code 71/ronis 455</b>				
Maintained BC (key removed in both positions)	---	Black plastic	non-illuminated	M2SSK1-101
Maintained BC (key removed in position B only)	---	Black plastic	non-illuminated	M2SSK2-101
Momentary, spring return from C to B (removed B only)	---	Black plastic	non-illuminated	M2SSK3-101
<b>3 position, key release code 71/ronis 455</b>				
Maintained ABC (key removed in all positions)	---	Black plastic	non-illuminated	M3SSK1-101
Momentary, spring return from A to B and from C to B (key removed B only)	---	Black plastic	non-illuminated	M3SSK3-101



### Complete potentiometer

Description	Bezel	Ordering code
<b>Black knob with integrated position indication and marking in white</b>		
With resistor 5 kohm	Black plastic	MT-105B
With resistor 5 kohm	Chrome metal	MT-305B
With resistor 10 kohm	Black plastic	MT-110B
With resistor 10 kohm	Chrome metal	MT-310B



### Toggle switch

Description	Bezel	Ordering code
Maintained AC	Black plastic	MTS1-10B
Momentary, spring return from A to B and from C to B	Black plastic	MTS2-10B



### Joysticks IP67 and IP69K

Description	Bezel	Ordering code
2-position momentary	Chrome metal	MJS2-60B
4-position momentary	Chrome metal	MJS6-60B



## Pilot Devices

Stocked 22mm - Modular plastic range accessories



### Holders

Description	Ordering code
3-positions	MCBH-00
5-positions	MCBH5-00



### Contact blocks

Description	Ordering code
<b>Single contact blocks for front mounting</b>	
1 NO	MCB-10
1 NC	MCB-01
1 NO with gold plated contacts	MCB-10G
1 NC with gold plated contacts	MCB-01G
<b>Micro switch contact blocks</b>	
1 NO	MCBL-10
1 NC	MCBL-01
<b>Double contact blocks for front mounting</b>	
2 NO	MCB-20
2 NC	MCB-02
<b>Single contact blocks for back mounting</b>	
1 NO	MCB-10B
1 NC	MCB-01B



LED blocks, 10 mA	Rated voltage	Wave length mm	Luminance mcd	Ordering code
<b>Color</b>				
Red	24V AC/DC	620	250	MLBL-01R
Green	24V AC/DC	520	1500	MLBL-01G
Yellow	24V AC/DC	588	250	MLBL-01Y
Blue	24V AC/DC	468	450	MLBL-01L
White	24V AC/DC	---	600	MLBL-01W
Red	110-130V AC	620	200	MLBL-04R
Green	110-130V AC	520	1200	MLBL-04G
Yellow	110-130V AC	588	250	MLBL-04Y
White	110-130V AC	---	500	MLBL-04W
Red	110-130V DC	620	250	MLBL-05R
Red	230V AC	620	250	MLBL-07R
Green	230V AC	520	1500	MLBL-07G
Yellow	230V AC	588	300	MLBL-07Y

### Specific Accessories for Modular Metal Range

Adapter ring for 30 mm hole to mount P9 22 mm in a 30 mm hole	P9A-RAM32
Locking ring wrench	P9A-CWAF
Shroud for modular emergency stop, yellow	MA1-8053
Shroud for compact emergency stop, yellow	CA1-8053
Protective cover for flush pushbuttons (modular/compact)	KA1-8010



Table continues on next page.

## Pilot Devices

Stocked 22mm - Modular plastic range accessories



<b>Specific Accessories for Modular Metal Range</b>	
Spacer, 1mm thick	SK615516-1
Blanking plug, black (modular/compact)	KA1-8028
Black legend plate holder	KA1-8120
Legend plate without text or symbol	KA1-8121
Legend plate "Start", 22mm	SK615550-44
Legend plate "Emergency stop", 22mm	SK615552-15
Legend plate "Forward", 22mm	SK615552-17
Legend plate "Off", 22mm	SK615552-21
Legend plate "On", 22mm	SK615552-22
Legend plate "Reverse", 22mm	SK615552-28
Legend plate "Run", 22mm	SK615552-29
Legend plate "Stop", 22mm	SK615552-31
Legend plate, black on yellow aluminum, "Emergency stop"	CA6-1026



<b>Empty enclosures in plastic</b>	
1-seat - Grey	MEP1-0
2-seat - Grey	MEP2-0
3-seat - Grey	MEP3-0
4-seat - Grey	MEP4-0
6-seat - Grey	MEP6-0
1-seat - Yellow	MEPY1-0
For emergency stop pushbuttons - Yellow, Compact - IP66,67,69K	CEPY1-0



<b>Empty enclosures in aluminium - Grey color</b>	
1-seat	080SP-1
2-seat	080SP-2
3-seat	080SP-3
4-seat	080SP-4

## Pilot Devices

Stocked 22mm - Compact range

### Compact pushbutton



Color	Contacts	Voltage rating	Bezel	Ordering code
<b>Non-illuminated, momentary flush</b>				
Red	1 NO	---	black plastic	CP1-10R-10
Red	1 NC	---	black plastic	CP1-10R-01
Red	1 NC	---	chrome metal	CP1-30R-01
Red	1 NO + 1 NC	---	black plastic	CP1-10R-11
Green	1 NO	---	black plastic	CP1-10G-10
Green	1 NO	---	chrome metal	CP1-30G-10
Green	1 NO + 1 NC	---	black plastic	CP1-10G-11
Green	2 NO	---	black plastic	CP1-10G-20
Yellow	1 NO	---	black plastic	CP1-10Y-10
Blue	1 NO	---	black plastic	CP1-10L-10
Black	1 NO	---	black plastic	CP1-10B-10
Black	1 NO + 1 NC	---	black plastic	CP1-10B-11
Black	2 NO	---	black plastic	CP1-10B-20
<b>Illuminated, momentary flush</b>				
Red	1 NO	24V AC/DC	black plastic	CP1-11R-10
Green	1 NO	24V AC/DC	black plastic	CP1-11G-10
Green	1 NO	110-130V AC/DC	black plastic	CP1-12G-10



### Compact, non-illuminated emergency stop pushbuttons



Diameter (mm)	Color	Release method	Contacts	Ordering code
30	Red	Twist release	1 NC	CE3T-10R-01
30	Red	Twist release	2 NC	CE3T-10R-02
30	Red	Twist release	1 NO + 1 NC	CE3T-10R-11
40	Red	Pull release	2 NC	CE4P-10R-02
40	Red	Pull release	1 NO + 1 NC	CE4P-10R-11
40	Red	Twist release	1 NC	CE4T-10R-01
40	Red	Twist release	2 NC	CE4T-10R-02
40	Red	Twist release	1 NO + 1 NC	CE4T-10R-11
40	Red	Key release, ronis 455, key 71	2 NC	CE4K1-10R-02
40	Red	Key release, ronis 455, key 71	1 NO + 1 NC	CE4K1-10R-11

### Compact selector switch



Action	Color	Bezel	Contacts	Ordering code
<b>2 position, short handle</b>				
Maintained BC	black	black plastic	1 NO	C2SS1-10B-10
Maintained BC	black	black plastic	1 NO + 1 NC	C2SS1-10B-11
Maintained BC	black	black plastic	2 NO	C2SS1-10B-20
Maintained AC	black	black plastic	1 NO	C2SS2-10B-10
Maintained AC	black	black plastic	1 NO + 1 NC	C2SS2-10B-11
Maintained AC	black	black plastic	2 NO	C2SS2-10B-20
<b>3 position, short handle</b>				
Maintained ABC	black	black plastic	2 NO	C3SS1-10B-20
Momentary, spring return from A to B and C to B	black	black plastic	2 NO	C3SS2-10B-20
Momentary, spring return from A to B and C to B	black	chrome metal	2 NO	C3SS230B-20



## Pilot Devices

Stocked 22mm - Compact range and accessories



### Compact buzzer

Action	Illumination	Color	Voltage rating	Ordering code
Pulsation	non-illuminated	Red	24V AC/DC	CB1-610R
Continuous	illuminated	Black	24V AC/DC	CB1-620B
Continuous	illuminated	Black	110-130V AC	CB1-621B
Pulsation	illuminated	Black	24V AC/DC	CB1-630B
Pulsation	illuminated	Black	110-130V AC	CB1-631B



### Compact LED pilot light

Color	Voltage rating	Ordering code
red	24V AC/DC	CL2-502R
green	24V AC/DC	CL2-502G
clear	24V AC/DC	CL2-502C
blue	24V AC/DC	CL2-502L
yellow	24V AC/DC	CL2-502Y
green	110-130V AC	CL2-513G
red	110-130V AC	CL2-513R
yellow	110-130V AC	CL2-513Y
green	110-130V DC	CL2-515G
red	110-130V DC	CL2-515R
yellow	110-130V DC	CL2-515Y
clear	230V AC	CL2-523C
green	230V AC	CL2-523G
red	230V AC	CL2-523R
yellow	230V AC	CL2-523Y

### Accessories



Description	Ordering code
Chrome metal pushbutton bezel (compact)	KA1-8021
30mm adaptors for 22mm operator, black plastic (modular/compact)	KA1-8029
30mm adaptors for 22mm operator, chrome metal (modular/compact)	KA1-8030
Mounting tool for tightening the locking nut	MA1-8015

## Pilot Devices

Stocked 22mm - Modular metal range

### Modular Metal pushbuttons - 22mm



Description	Ordering code		
<b>Momentary flush pushbutton</b>			
red	P9M-PNRG		
green	P9M-PNVG		
black	P9M-PNNG		
blue	P9M-PNLG		
yellow	P9M-PNGG		
white	P9M-PNBS		
<b>Momentary extended pushbutton</b>			
red	P9M-PNRS		
green	P9M-PNVS		
black	P9M-PNNS		
white	P9M-PNBS		
<b>Momentary flush pushbutton - Illuminated</b>			
red	P9M-PLRGD		
green	P9M-PLVGD		
blue	P9M-PLLGD		
yellow	P9M-PLGGD		
white	P9M-PLBGD		
<b>Momentary extended pushbutton - Illuminated</b>			
red	P9M-PLRSD		
green	P9M-PLVSD		
white	P9M-PLBSD		
orange	P9M-PLASD		
<b>Marked pushbuttons - momentary</b>		<b>Text</b>	
green	START	P9M-PNVG202	
red	STOP	P9M-PNRG201	
blue	R	P9M-PNLG037	
red	O	P9M-PNRG029	
green	I	P9M-PNVG028	
black	I	P9M-PNNG028	
<b>Mushroom pushbuttons - maintained</b>		<b>Operator size</b>	
red	Ø 40 mm	P9M-EM4RN	
green	Ø 40 mm	P9M-EM4VN	
black	Ø 40 mm	P9M-EM4NN	
<b>Mushroom pushbuttons - momentary</b>		<b>Release method</b>	
red	Ø 40 mm	twist release	P9M-ER4RN
<b>Mushroom pushbuttons - maintained with key</b>		<b>Key code</b>	
red	Key code 37	P9M-EC4RN37	
<b>Mushroom pushbuttons - momentary - illuminated</b>		<b>Operator size</b>	
red	Ø 40 mm	-	P9M-EM4RL
<b>Mushroom pushbuttons - maintained - illuminated</b>		<b>Operator size</b>	<b>Release method</b>
red	Ø 40 mm	Pull Release	P9M-ET4RL1

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## Pilot Devices

Stocked 22mm - Modular metal range

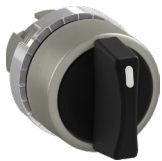


### Pilot lights

	Ordering code
clear	P9M-LID
green	P9M-LVD
blue	P9M-LLD
red	P9M-LRD
white	P9M-LBD
yellow	P9M-LGD
orange	P9M-LAD

## Pilot Devices

Stocked 22mm - Modular metal accessories



### Selector switches

Key-operated 2-position	Ordering code
Maintained BC	P9M-SCI0C01
Momentary BC	P9M-SCI5C01
Key-operated 3-position	
Maintained ABC	P9M-SCZ0T01
Momentary ABC, spring return from A to B and from C to B	P9M-SCZ3C01
2-position	
Maintained AC	P9M-SMD0N
Maintained BC	P9M-SMI0N
Momentary BC, spring return from C to B	P9M-SMI5N
3-position - short handle	
Maintained ABC	P9M-SMZ0N
Momentary ABC, spring return from A to B and from C to B	P9M-SMZ3N
Momentary ABC, spring return from C to B	P9M-SMZ5N

### Contact blocks

Description	Ordering code
Single contact blocks - Faston Terminals	
1 NO	P9B-10FN
1 NC	P9B-01FN
Holders	
3-position	P9A-CFS3
5-position	P9A-CFS5
Single contact blocks for front mounting	
1 NO	P9B-10VN
1 NC	P9B-01VN
Single contact blocks with N.O. early make contacts and N.C. late break contacts	
1 NO	P9B-10VA
1 NC	P9B-01VR
Double contact blocks	
1 NO + 1 NC	P9B-11VN
2 NO	P9B-20VN
2 NC	P9B-02VN
Power Supply block for LED bulbs (BA9S)	
Full voltage - bulb not included IEC: BA9S max 380 V - 2 W UL - CSA: BA9S max 250 V - 2 W	P9P-DNV0
Power Supply block for LED bulbs (BA9S) - Faston Terminals	
Full voltage - bulb not included IEC: BA9S max 380 V - 2 W UL - CSA: BA9S max 250 V - 2 W	P9P-DNFO
Full voltage - bulb not included IEC: BA9S max 380 V - 2 W UL - CSA: BA9S max 250 V - 2 W	P9P-DNF0-AA

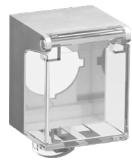


## Pilot Devices

Stocked 22mm - Modular metal accessories

LED blocks for front mounting	Voltage	Ordering code
green	24V AC/DC	P9P-LNVDV
blue	24V AC/DC	P9P-LNVDL
red	24V AC/DC	P9P-LNVDR
white	24V AC/DC	P9P-LNVDB
yellow	24V AC/DC	P9P-LNVDG
green	120V AC	P9P-LNVJV
blue	120V AC	P9P-LNVJL
red	120V AC	P9P-LNVJR
white	120V AC	P9P-LNVJB
yellow	120V AC	P9P-LNVJG
green	230V AC	P9P-LNVNV
blue	230V AC	P9P-LNVNL
red	230V AC	P9P-LNVNR
white	230V AC	P9P-LNVNB
yellow	230V AC	P9P-LNVNG

### Accessories



Protection cover	Ordering code
Protection cover padlockable for standard pushbuttons, illuminated pushbuttons, selector switches, illuminated selector switches	P9A-CRCL



Maintained accessory	Ordering code
Device for standard pushbuttons, illuminated pushbuttons: To be used only with contact blocks P9B01VN, P9B01VR, P9B10VA and P9B01FN	P9A-CDPP

Tools	Ordering code
Locking ring wrench	P9A-CWAF



Adapter ring	Ordering code
Adapter ring for 30 mm hole to mount P9 22 mm in a 30 mm hole	P9A-RAM32

Terminal adapter	Ordering code
PCB adapter for faston contacts	P9A-CA6

Rubber protective caps (IP66) for standard pushbuttons	Ordering code
--	---------------



Flush Pushbuttons	Ordering code
Red	080CP-R
Green	080CP-V
Black	080CP-N
Clear	080CP-T
Extended pushbuttons	Ordering code
Clear	P9A-RCST

## Modular pilot devices

### Heavy duty 30mm



#### Heavy duty 30mm push buttons

Color	Cap type	Contacts	Ordering code
All caps colors included	Extended	1NO+1NC	A3PBE1-6007-91
Green	Extended	1NO+1NC	A3PBE1-600G-91
Red	Extended	1NO+1NC	A3PBE1-600R-91
All caps colors included	Flush	1NO+1NC	A3PBF1-6007-91
Black	Flush	1NO	A3PBF1-600B-10
Green	Flush	1NO+1NC	A3PBF1-600G-91
Blue	Flush	1NO+1NC	A3PBF1-600L-91
Red	Flush	1NO+1NC	A3PBF1-600R-91

#### Heavy duty 30mm illuminated push buttons

Color	Cap type	Lamp voltage	Contacts	Ordering code
Green	Extended	24V AC/DC	1NO+1NC	A3PLE1-6L2G-91
Amber	Extended	24V AC/DC	1NO+1NC	A3PLE1-6L2M-91
Red	Extended	24V AC/DC	1NO+1NC	A3PLE1-6L2R-91
Green	Extended	120V AC/DC	1NO+1NC	A3PLE1-6L4G-91
Blue	Extended	120V AC/DC	1NO+1NC	A3PLE1-6L4L-91
Amber	Extended	120V AC/DC	1NO+1NC	A3PLE1-6L4M-91
Red	Extended	120V AC/DC	1NO+1NC	A3PLE1-6L4R-91
Green	Extended	Transformer 120V AC	1NO+1NC	A3PLE1-6L5G-91
Amber	Extended	Transformer 120V AC	1NO+1NC	A3PLE1-6L5M-91
Red	Extended	Transformer 120V AC	1NO+1NC	A3PLE1-6L5R-91
Green	Extended	Transformer 240V AC	1NO+1NC	A3PLE1-6L6G-11
Amber	Extended	Transformer 240V AC	1NO+1NC	A3PLE1-6L6M-11

#### Heavy duty 30mm pilot lights

Color	Lamp type	Lamp voltage	Ordering code
Green	Full Voltage LED	24V AC/DC	A3L4AA-6L2G
Blue	Full Voltage LED	24V AC/DC	A3L4AA-6L2L
Amber	Full Voltage LED	24V AC/DC	A3L4AA-6L2M
Red	Full Voltage LED	24V AC/DC	A3L4AA-6L2R
White	Full Voltage LED	24V AC/DC	A3L4AA-6L2W
Green	Full Voltage LED	120V AC/DC	A3L4AA-6L4G
Amber	Full Voltage LED	120V AC/DC	A3L4AA-6L4M
Red	Full Voltage LED	120V AC/DC	A3L4AA-6L4R
White	Full Voltage LED	120V AC/DC	A3L4AA-6L4W
Green	Transformer LED	120V AC	A3L4AA-6L5G
Blue	Transformer LED	120V AC	A3L4AA-6L5L
Amber	Transformer LED	120V AC	A3L4AA-6L5M
Red	Transformer LED	120V AC	A3L4AA-6L5R
Green	Transformer LED	240V AC	A3L4AA-6L6G
Red	Transformer LED	240V AC	A3L4AA-6L6R
Red	Transformer LED	480V AC	A3L4AA-6L8R
Green	Full Voltage LED	6-24V AC/ DC	A3L4AA-6LLG
Red	Full Voltage LED	6-24V AC/ DC	A3L4AA-6LLR

## Modular pilot devices

### Heavy duty 30mm

#### Heavy duty 30mm momentary mushroom push buttons

Color	Mushroom size	Contacts	Ordering code
Black	44mm	1NO+1NC	A3PB41-600B-91
Green	44mm	1NO	A3PB41-600G-10
Red	44mm	1NC	A3PB41-600R-01
Red	44mm	1NO	A3PB41-600R-10
Yellow	44mm	1NO	A3PB41-600Y-10

#### Heavy duty 30mm maintained mushroom push buttons

Color	Mushroom Size	Release type	Contacts	Ordering code
Black	44mm	Pull release	1NO+1NC	A3PP42-600B-11
Red	44mm	Pull release	1NO+1NC	A3PP42-600R-11
Red	44mm	Twist release	1NO+1NC	A3PT4R-600R-91

#### Heavy duty 30mm illuminated momentary mushroom push buttons

Color	Mushroom size	Contacts	Ordering code
Red	44mm	1NO	A3PL41-6LBR-10

#### Heavy duty 30mm illuminated maintained mushroom push buttons

Color	Mushroom size	Release type	Lamp voltage	Contacts	Ordering code
Green	44mm	Pull Release	24V AC/DC	1NO+1NC	A3PP42-6L2G-11
Red	44mm	Pull Release	24V AC/DC	1NO+1NC	A3PP42-6L2R-91
Red	44mm	Pull Release	Transformer 120V AC	1NO+1NC	A3PP42-6L5R-91
Red	44mm	Pull Release	120V AC/DC	1NO+1NC	A3PP42-6L4R-91

#### Heavy duty 30mm selector switches

Lever Insert Color	Position	CAM type	Contacts	Ordering code
White	2 Position	A CAM	None	A3SSAA-6AAB-00
White	2 Position	A CAM	1NO+1NC	A3SSAA-6AAB-91
White	3 Position	C CAM	None	A3SSCA-6AAB-00
White	3 Position	C CAM	1NO+1NC	A3SSCA-6AAB-91
White	3 Position	C CAM	None	A3SSCB-6AAB-00

## Modular pilot devices

### Heavy duty 30mm

#### Heavy duty 30mm accessories | Contact Blocks

Description	Contacts	Ordering code
Contact block	1NC	A3XC01
Contact block	1NC LATE BREAK	A3XC0B
Contact block	1NO	A3XC10
Contact block	1NO+1NC	A3XC91
Contact block	1NO EXTRA LATE BREAK	A3XC0N

#### Heavy duty 30mm accessories | Caps

Color	Lamp type	Ordering code
Red	44mm Mushroom Pushbutton	A3XL4NR
Red	60mm Mushroom Pushbutton	A3XL6NR
Clear	Extended Pushbutton	A3XLELC
Green	Extended Pushbutton	A3XLELG
BLue	Extended Pushbutton	A3XLELL
Amber	Extended Pushbutton	A3XLELM
Red	Extended Pushbutton	A3XLELR
White	Extended Pushbutton	A3XLELW
All Caps Colors Included	Extended Pushbutton	A3XLENA
Green	Extended Pushbutton	A3XLENG
Red	Extended Pushbutton	A3XLENR
All Caps Colors Included	Flush Pushbutton	A3XLFNA
Green	Flush Pushbutton	A3XLFNG
Blue	Flush Pushbutton	A3XLFNL
Red	Flush Pushbutton	A3XLFNR
Yellow	Flush Pushbutton	A3XLFNY
Green	Kit Knob and Lens	A3XLKLG
Amber	Kit Knob and Lens	A3XLKLM
Red	Kit Knob and Lens	A3XLKLR
White	Kit Knob and Lens	A3XLKLW
Clear	Illuminated Lens	A3XLLLC
Green	Illuminated Lens	A3XLLLG
Amber	Illuminated Lens	A3XLLLM
Red	Illuminated Lens	A3XLLLR
White	Illuminated Lens	A3XLLLW
Red	44mm Metal Mushroom	A3XLMLR
Red	44mm Illuminated Metal Mushroom	A3XLMNR
Red	44mm Mushroom Twist Release	A3XLTNR

#### Heavy duty 30mm accessories | Lamp module

Color	Voltage	Ordering code
Red	Full Voltage 24V AC/DC	A3XMLLR
Yellow	Full Voltage 24V AC/DC	A3XMLLY
Green	Full Voltage 24-240V AC/DC	A3XM LUG
No Color	Full Voltage 120V AC	A3XMN4N
No Color	Transformer 240V AC	A3XMN6N
No Color	Transformer 277V AC	A3XMN7N
No Color	Transformer 480V AC	A3XMN8N



## Modular pilot devices

### Heavy duty 30mm

#### Heavy duty 30mm accessories | Lamps

Color	Voltage	Ordering code
Green	Full Voltage 24V AC/DC	A3XBL2G
Red	Full Voltage 24V AC/DC	A3XBL2R
Blue	Full Voltage 120V AC/DC	A3XBL4L
Red	Full Voltage 120V AC/DC	A3XBL4R
Yellow	Full Voltage 120V AC/DC	A3XBL4Y
White	Full Voltage 6V AC/DC	A3XBL6W

#### Heavy duty 30mm accessories | Key and boots

Description	Ordering code
501 Spare Key	A3XK501
Black Protective Boot	A3XLP0B
Clear Protective Boot	A3XLP0C

#### Nameplates

Description	Ordering code
STOP (RED)	CR104PXN1RP040
HAND OFF	CR104PXN1BP070
OFF ON	CR104PXN1BP057
START	CR104PXN1BP037

#### Enclosures

Description	Color	Holes	Ordering code
NEMA Type 1, 3, 3R, 12, 13	Painted Sheet Steel	3	CR104PEG13
NEMA Type 1, 3, 3R, 12, 13	Painted Sheet Steel	2	CR104PEG12
NEMA Type 1, 3, 3R, 12, 13	Painted Sheet Steel	1	CR104PEG11

## Machine safety

## Section 16

### Machine safety

#### Table of contents

<b>Safety relays</b>	
Sentry safety relays	16-1
<b>Safety programmable logic controllers</b>	
Safety controllers and accessories	16-3
<b>Safety sensors and emergency stops</b>	
Eden non-contact safety sensors	16-4
Smile and Inca emergency stops and reset buttons	16-4
EStrong Z heavy duty emergency stop	16-4
<b>Safety control devices</b>	
SafeBall two-handed control actuator	16-5
Three position enabling devices (JSHD4)	16-5
<b>Locks, gate boxes and switches</b>	
GKey 4 safety locks	16-6
Magne process locks and accessories	16-6
MKey mechanical safety switches	16-7
Sense non-contact magnetic safety switch	16-7
<b>Optical safety devices</b>	
Orion safety light curtains and accessories	16-8
<b>Rope pull switches</b>	
LineStrong	16-9
<b>Safety accessories</b>	
DYNlink Tina adapters	16-10
Cables and connectors	16-11

## Safety relays

### Sentry safety relays



Sentry with screw and push-in terminals

#### Screw-in connectors

Type	Voltage	Timer	Safety Outputs	Expansion of safe outputs	Manual Reset	Two hand device	Safety Mats, Edges and Bumpers	Dual channel OSSD devices	Dual Channel with NO/NC contacts	Dual Channel with ZNC contacts	Single Channel	Ordering code
BSR10	24 V DC		3 NO + 1 NC	•					1	•		2TLA010040R0000
BSR11	24 V DC		4 NO	•					1	•		2TLA010040R0200
BSR23	24 V DC		4 NO + 1 NC	•					•			2TLA010041R0600
SSR10	24 V DC		3 NO + 1 NC	•	•		•	•	•	•		2TLA010050R0000
SSR20	24 V DC		3 NO + 1 NC		•	•						2TLA010051R0000
SSR32	24 V DC	Off delay 0.5s	2 NO + 2 NO delayed	•			•	•	•	•		2TLA010052R0400
SSR42	24 V DC	Off delay 1.5s	2 NO + 2 NO delayed	•			•	•	•	•		2TLA010053R0400
SSR10M	<sup>3</sup>		3 NO + 1 NC	•	•				•			2TLA010050R0100
SSR20M	<sup>3</sup>		3 NO + 1 NC		•	•						2TLA010051R0100
TSR10	24 V DC	0 - 999s <sup>2</sup>	3 NO + 1 NC	•			•	•	•	•		2TLA010060R0000
TSR20	24 V DC	Off delay 0.5/1.5s	3 NO + 1 NC	•			•	•	•	•		2TLA010061R0000
TSR20M	<sup>3</sup>	Off delay 0.5/1.5s	3 NO + 1 NC	•					•			2TLA010061R0100
USR10	24 V DC	0 - 999s <sup>2</sup>	3 NO + 1 NC		•	•	•	•	•	•	•	2TLA010070R0000
USR22	24 V DC	0 - 999s <sup>2</sup>	2 NO + 2 NO delayed		•	•	•	•	•	•	•	2TLA010070R0400

<sup>1</sup> No monitoring of two-channel fault, i.e max Category 3 without fault exclusion

<sup>2</sup> Off-delay, On-delay, Time bypass or Time reset. Configurable model with display

<sup>3</sup> 85-265 V AC / 120-275 V DC

## Safety relays

### Sentry safety relays

#### Push-in connectors

Type	Voltage	Timer	Safety Outputs	Expansion of safe outputs	Manual Reset	Two hand device	Safety Mats, Edges and Bumpers	Dual channel OSSD devices	Dual Channel with NO/NC contacts	Dual Channel with ZNC contacts	Single Channel	Ordering code
BSR10P	24 V DC		3 NO + 1 NC	•					1	•	2TLA010040R0001	
BSR11P	24 V DC		4 NO	•					1	•	2TLA010040R0201	
BSR23P	24 V DC		4 NO + 1 NC	•					•		2TLA010041R0601	
SSR10P	24 V DC		3 NO + 1 NC	•	•		•	•	•	•	2TLA010050R0001	
SSR20P	24 V DC		3 NO + 1 NC		•	•					2TLA010051R0001	
SSR32P	24 V DC	Off delay 0.5s	2 NO + 2 NO delayed	•			•	•	•	•	2TLA010052R0401	
SSR42P	24 V DC	Off delay 1.5s	2 NO + 2 NO delayed	•			•	•	•	•	2TLA010053R0401	
SSR10MP	<sup>3</sup>		3 NO + 1 NC	•	•				•		2TLA010050R0101	
SSR20MP	<sup>3</sup>		3 NO + 1 NC		•	•					2TLA010051R0101	
TSR10P	24 V DC	0 - 999s <sup>2</sup>	3 NO + 1 NC	•			•	•	•	•	2TLA010060R0001	
TSR20P	24 V DC	Off delay 0.5/1.5s	3 NO + 1 NC	•			•	•	•	•	2TLA010061R0001	
TSR20MP	<sup>3</sup>	Off delay 0.5/1.5s	3 NO + 1 NC	•					•		2TLA010061R0101	
USR10P	24 V DC	0 - 999s <sup>2</sup>	3 NO + 1 NC		•	•	•	•	•	•	2TLA010070R0001	
USR22P	24 V DC	0 - 999s <sup>2</sup>	2 NO + 2 NO delayed		•	•	•	•	•	•	2TLA010070R0401	

<sup>1</sup> No monitoring of two-channel fault, i.e max Category 3 without fault exclusion

<sup>2</sup> Off-delay, On-delay, Time bypass or Time reset. Configurable model with display

<sup>3</sup> 85-265 V AC / 120-275 V DC

## Safety programmable logic controllers

### Safety controllers and accessories



Vital 1

#### Vital safety controller

Type	DYNlink circuits	Maximum DYNlink devices	Safe outputs	Ordering code
VITAL1	1	30	2 NO	2TLA020052R1000



Pluto B46 v2

#### Pluto programmable safety controller

Type	Style	Number of I/O	FailSafe inputs	FailSafe input or non-safe outputs	Safe Outputs	Ordering code
S20 v2	Stand Alone	20	8	8	4	2TLA020070R4700
S46 v2	Stand alone	46	24	16	6	2TLA020070R1800
B20 v2	Safety Bus	20	8	8	4	2TLA020070R4600
B22	Safety Bus	22	14	8	0	2TLA020070R4800
B46 v2	Safety Bus	46	24	16	6	2TLA020070R1700

Note: Pluto programmable safety controller SIL 3/Plc safety rated

#### Pluto Programmable Safety Controller Accessories



Pluto and accessories

Type	Description	Ordering code
GATE-E1P	Gateway for 2-way communication between the Pluto Safety Bus and Ethernet/IP	2TLA020071R9000
IDFIX-R	Identifier, read only. For assigning Pluto an address on the Pluto Safety Bus	2TLA020070R2000
IDFIX-RW	Identifier, read / write. For assigning Pluto an address on the Pluto Safety Bus	2TLA020070R2100
IDFIX-PROG 10k	External memory, 10 kbyte. For projects with only one Pluto, store the PLC program	2TLA020070R2600
Programming Cable USB	Cable for connecting PC, USB port to Pluto for programming with Pluto Manager	2TLA020070R5800

## Safety sensors and emergency stops



Adam DYN Info and  
Eva General code

### Eden non contact safety sensors

Type	Description	Ordering code
Adam DYN Info	M12-5 for single & series applications, for use in DYNlink circuits	2TLA020051R5100
Adam DYN Status	M12-5, StatusBus for use in DYNlink circuits(Use on Pluto Only)	2TLA020051R5200
Eva General Code	All coded the same code	2TLA020046R0800
Eva Unique Code	Unique coding to prevent bypassing	2TLA020046R0900



Smile 11EA Tina



Inca 1 Tina



Smile 41 EWWWP

### Smile and Inca emergency stops and resets buttons

Type	Description	Ordering Code
Smile Tina 11 EA	Emergency stop (red) in an enclosure, 1 x M12 5-pin male connector, for use in DYNlink circuits	2TLA030050R0000
Smile Tina 12 EA	Emergency stop (red) in an enclosure, 1 x M12 5-pin male connector and 1 x M12 5-pin female connector, for use un Dynlink circuits	2TLA030050R0200
Inca 1 Tina	Emergency stop (red) button for panel mounting, 22.5 mm holes, status LED in button, terminal block with screw terminals, for use in Dynlink circuits	2TLA030054R0000
Smile 11 RA	Reset button in an enclosure, 1 button + LED with colored lens covers, 1 x M12 5-pin male connector. For use with Vital/Safety Relays	2TLA030053R0000
Smile 11 RB	Reset button in an enclosure, 1 button + LED with colored lens covers, 1 x M12 5-pin male connector. For use with Pluto	2TLA030053R0100
Smile 41 EWWWP	Smile 41 push-button box with an emergency stop (red), 3 push-buttons and kit of colored lens covers, for use with Pluto	2TLA030057R0100
Smile 11 EA	Emergency stop (red) in an enclosure, 2 x NC, Status LED, 1 x M12 5-pin male connector. For use with Safety Relays	2TLA030051R0000
Smile 12 EA	Emergency stop (red) in an enclosure, 2 x NC, Status LED, 1 x M12 5-pin male connector and 1 x M12 5-pin female connector. For use with Safety Relays	2TLA030051R0200
INCA 1	Emergency stop (red) button for panel mounting, 22.5 mm holes, 2 x NC, Status LED, terminal block with screw terminals . For use with Safety Relays	2TLA030054R0100



EStrong Z with and  
without LED

### EStrong Z Heavy duty emergency stop - Dual channel

Type	Description	Ordering Code
Estrong Z	Emergency Stop with 2 NC/2 NO, 1/2 NPT threads, SS	2TLA050220R1020
Estrong Z	Emergency Stop with 2 NC/2 NO, 1/2 NPT threads, SS, 24VDC LED	2TLA050220R1222
Accessory	1/2 NPT 316 SS Cable Gland	2TLA050040R0001

## Safety control devices



JSTD1 and JSM C5



JSTD25H

### SafeBall two-handed control actuator

Type	Description	Ordering code
JSTD1-A	1 NO and 1 NC independent switches, maximum load of 30 V DC - 2A resistive. IP67 protection, plastic body, 2 meters molded cable	2TLA020007R3000
JSTD1-B	1 NO and 1 NC independent switches, maximum load of 30 V DC - 2A resistive. IP67 protection, plastic body, 0.2 M wires x 4 for direct connection into an enclosure	2TLA020007R3100
JSTD1-E	2 NO independent switches, maximum load of 30 V DC - 2A resistive. IP67 protection, plastic body, 0.2 M wires x 4 for direct connection	2TLA020007R3400
JSTD25H	JSTD25H with JSTD1-B Safeballs pre-wired to a M12 8-pin connector with protective flanges for the Safeballs	2TLA020007R6300
JSMC7	JSM-C7, Suspension shelf for JSTD25 FHK	2TLA020007R1200
JSM-C5	Angled ball joint for installation of a Safeball on a table or a steel housing	2TLA020007R0900

### JSHD4 modular enabling device

#### Step 1 - Select the desired handle from among the 5 standard handles



JSHD4-2

Type	Description	Ordering code
JSHD4-1	Handle, no LEDs, no buttons, cannot use Anti-Tamper Board	2TLA020006R2100
JSHD4-2	Handle with LEDs, front button, and top button	2TLA020006R2200
JSHD4-3	Handle with LEDs	2TLA020006R2300
JSHD4-4	Handle with LEDs and front button	2TLA020006R2400
JSHD4-5	Handle with LEDs and top button	2TLA020006R2500

#### Step 2 - Select the desired "Bottom assembly", double check which options are available for the Handle selected



AA, AJ

AB

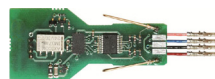
AC, AD

AE

AL

Type	Description	Ordering code
AA	With cable gland, only for use with JSHD4-1	2TLA020005R1000
AB	With Cannon connection	2TLA020005R1100
AC	With M12 connection (5 poles), only for use with JSHD4-1	2TLA020005R1200
AD	With M12 connection (8 poles)	2TLA020005R1300
AE	With M12 connection (8 poles) and emergency stop, only for use with JSHD4-3	2TLA020005R1400
AJ	With cable gland and PCB with 16 screw connections	2TLA020005R1800
AK	with Cannon connection (for replacement of older JSHD4 assemblies)	2TLA020005R1900
AL	Bottom assembly cable gland and 16 screw connections, holder for Eva	2TLA020005R2000

#### Step 3 (optional) - Choose Anti-tamper board, making your three position device cheat protected



Anti-tamper board

Type	Description	Ordering code
Anti Tamper Board	Hand recognition for protection against tampering (cannot be used with JSHD4-1)	2TLA020005R0900

#### Step 4 (optional) - Choose mounting and fastening hardware



JSM55 enabling switch holder

Type	Description	Ordering code
JSM55	Wall Bracket	2TLA040005R0500
JSM5B	JSM5B Wall Bracket for 2 key switches, for ex. MKEY 4/5	2TLA040005R0700
JSM54A	Wall bracket for Adam. Used with AL bottom part that has a holder for Eva	2TLA020205R2800
JSM50G	Bottom Plate for MKEY 4/5	2TLA020205R6300



## Locks, gate boxes and switches



GKEY 4

### Gkey 4 safety locks

Type	Description	Ordering Code
GKEY 4 RU	GKey4 RU Safety lock, 4 positions, die-cast, escape release, manual unlock, 24 VDC	2TLA050304R0002
FHS GHEY 4	FHS Gkey 4 Front handle, sliding incl. mounting plate	2TLA050310R0032
RHS GHEY 4	RHS GKey MKey Rear handle, sliding	2TLA050040R0510
SCS GKEY 4	SCS GKey MKey Spring loaded catch	2TLA050040R0511

Note: Use ABB Compact buttons

### Magne process locks and accessories



Magne 4

Type	Description	Ordering code
Magne 3X	Magne 3X, No Safety Sensor, M12-5	2TLA042022R2700
Magne 4 DYN-Info	Magne 4 with Eden DYNlink, 8 Pin M12 Connector	2TLA042022R3400
Magne 4 OSSD-Info	Magne 4 with Eden OSSD, 8 Pin M12 Connector	2TLA042022R4600
Anchor 32A	Anchor plate	2TLA042023R1300
Anchor 32B	Anchor plate with permanent magnet (30N)	2TLA042023R0400
Anchor 32D	Anchor plate, center mounting	2TLA042023R0410
Anchor 32E	Anchor plate with permanent magnet, center mounting	2TLA042023R0420
JSM D21B	Mounting kit for Magne anchor plate for conventional door	2TLA042023R0500
JSM D24	Mounting kit for Eva for conventional door	2TLA042023R0300
JSM D27	Door handle for JSMD21B	2TLA042023R1000

## Locks, gate boxes and switches



MKEY 4



MKEY 8 and 9

### MKey mechanical safety switches

Type	Description	Ordering Code
MKEY 1	Mechanical Compact safety switch 1/2 NPT threads, 2NC/1NO Angle key	2TLA050021R1100
MKEY 2	Mechanical Compact hinge safety switch 1/2 NPT threads, 2NC/1NO	2TLA050020R1000
MKEY 4	Mechanical Safety Switch 1/2 NPT threads, 2NC /1NO, with standard key	2TLA050001R1100
MKEY 4+	Mechanical Safety Switch 1/2 NPT threads, 2NC /1NO, 40N, with standard key	2TLA050001R1101
MKEY 4	Mechanical Safety Switch 1/2 NPT threads, 2NC /1NO, SS Head, with standard key	2TLA050001R1110
MKEY 8	Mechanical Solenoid Safety Switch, 1/2 NPT threads, 2NC/1NO, 24 V solenoid, die cast, standard key, power to unlock	2TLA050011R1132
MKEY 8M	Mechanical Solenoid Safety Switch, 1/2 NPT threads, 2NC/1NO, 24 V solenoid, die cast, standard key, power to lock	2TLA050013R1132
MKEY 8ER	Mechanical Solenoid Safety Switch, 1/2 NPT threads, 2NC/1NO, 24 V solenoid, die cast, standard key, power to unlock, rear release	2TLA050015R1132
MKEY 8ERZ	Mechanical Solenoid Safety Switch, 1/2 NPT threads, 2NC/1NO, 24 V solenoid, stainless steel, standard key, power to unlock, rear release	2TLA050015R1122
MKEY 9	Mechanical Solenoid Safety Switch, 1/2 NPT threads, 2NC/1NO, 24 V solenoid, plastic, standard key, power to unlock	2TLA050007R1112
MKEY 9M	Mechanical Solenoid Safety Switch, 1/2 NPT threads, 2NC/1NO, 24 V solenoid, plastic, with standard key, power to lock	2TLA050009R1112
Accessory	Mkey 4,5,6,8,9 Flat Actuator	2TLA050040R0220
Accessory	Mkey 4,5,6,8,9 Std. Actuator	2TLA050040R0202
Accessory	Mkey 4,5,6,8,9 Met. Flex Key	2TLA050040R0203

### Sense non-contact magnetic safety switch



Sense 7

Type	Description	Ordering Code
Sense 5Z	Stainless Steel body, 5m cable, 2NC/1NO LED, 24VDC, coded actuator	2TLA050054R5120
Sense 5Z QC	Stainless Steel body, M12 8 pin quick connect, 2NC/1NO LED, 24VDC, coded actuator	2TLA050054R2120
Sense 6	Plastic body, 5m cable, 2NC / 1 NO LED, 24VDC	2TLA050074R5100
Sense 6 QC	Plastic body, M12 8 pin quick connect, 5m cable, 2NC / 1 NO LED, 24VDC	2TLA050074R2100
Sense 7Z	Stainless Steel body, 5m cable, 2NC / 1 NO LED, 24VDC, coded actuator	2TLA050056R5120
Sense 7Z QC	Stainless Steel body, M12 8 pin quick connect, 2NC / 1 NO LED, 24VDC, coded actuator	2TLA050056R2120
Sense 8	Plastic body, 5m cable, 2NC/1NO LED, 24VDC	2TLA050076R5100
Sense 8 QC	Plastic body, M12 8 pin quick connect, 2NC/1NO LED, 24VDC	2TLA050076R2100

## Optical safety devices

### Orion safety light curtains and accessories

#### Orion 1 safety light curtain base model



Orion 1 base

Types	Description	Ordering code
Orion 1-4-14-030-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 300mm/11.8inch height	2TLA022300R0100
Orion 1-4-14-060-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 600mm/23.6inch height	2TLA022300R0300
Orion 1-4-14-090-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 900mm/35.5inch height	2TLA022300R0500
Orion 1-4-30-030-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 300mm/11.8inch height	2TLA022302R0100
Orion 1-4-30-045-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 450mm/17.7inch height	2TLA022302R0200
Orion 1-4-30-060-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 600mm/23.6inch height	2TLA022302R0300
Orion 1-4-30-075-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 750mm/29.5inch height	2TLA022302R0400
Orion 1-4-30-090-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 900mm/35.4inch height	2TLA022302R0500
Orion 1-4-30-120-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1200mm/47.2inch height	2TLA022302R0700

#### Orion 2 safety light grid base model perimeter guarding



Orion 2 base

Type	Description	Ordering code
Orion 2-4-K4-120-B	Light grid (both transmitter and receiver) base model with built in reset and EDM, 4 beam with 300mm beam spacing. 1200mm/47.2inch height	2TLA022304R0300

#### Orion accessories

Type	Description	Ordering code
M12-CT01BA	Transfer cable, for use with Tina 10A and 10C, puts basic model light curtain in auto reset with no EDM	2TLA022315R3000
JSM-ORION03	JSM-03 Rotational bracket for Orion 1 Base	2TLA022310R0100

Note: see page 16-11 for a list of cables available

# Rope pull switches

## LineStrong



LineStrong 1



LineStrong 2



LineStrong 3L



Rope pull kit



Pulley galvanized

### LineStrong rope pull switches

Type	Description	Ordering code
LineStrong 1	Rope pull for up to 50m, 2NC/2NO with 1/2 NPT threads	2TLA050200R1030
LineStrong 1	Rope pull for up to 50m, 2NC/2NO with 1/2 NPT threads, with 24VDC LED	2TLA050200R1232
LineStrong 2	Rope pull for up to 80m, 2NC/2NO with 1/2 NPT threads	2TLA050202R1030
LineStrong 2	Rope pull for up to 80m, 2NC/2NO with 1/2 NPT threads, with 24VDC LED	2TLA050202R1232
LineStrong 3D	Rope pull for up to 200m, 2NC/2NO with 1/2 NPT threads, with 24VDC LED	2TLA050204R1232
LineStrong 3D	Rope pull for up to 200m, 2NC/2NO with 1/2 NPT threads, with 120VAC LED	2TLA050204R1233
LineStrong 3L	Rope pull for up to 100m, 2NC/2NO with 1/2 NPT threads, with 24VDC LED	2TLA050206R1232
LineStrong 3L	Rope pull for up to 100m, 2NC/2NO with 1/2 NPT threads, with 120VAC LED	2TLA050206R1233
LineStrong 3R	Rope pull for up to 100m, 2NC/2NO with 1/2 NPT threads, with 24VDC LED	2TLA050208R1232
LineStrong 3R	Rope pull for up to 100m, 2NC/2NO with 1/2 NPT threads, with 120VAC LED	2TLA050208R1233
Accessory	Emergency Stop Button	2TLA050211R0005
Accessory	10m stainless steel rope pull kit with Allen Key	2TLA050210R0120
Accessory	30m stainless steel rope pull kit with Allen Key	2TLA050210R0420
Accessory	50m stainless steel rope pull kit with Allen Key	2TLA050210R0520
Accessory	10m galvanized steel rope pull kit with Allen Key	2TLA050210R0130
Accessory	30m galvanized steel rope pull kit with Allen Key	2TLA050210R0430
Accessory	50m galvanized steel rope pull kit with Allen Key	2TLA050210R0530
Accessory	Flex Roller eyebolt with adjustment	2TLA858006R1300
Accessory	1/2 NPT Stainless Steel cable gland	2TLA050040R0001
Accessory	Rope tensioner, stainless steel	2TLA050210R4020
Accessory	Rope tensioner, galvanized steel	2TLA050210R4030
Accessory	Pulley galvanized steel	2TLA050210R6030
Accessory	Safety Spring, 220MM, Stainless Steel	2TLA050211R0004
Accessory	500m rope only	2TLA050210R2820

Note: Order Estop buttons for LineStrong 1/2/3 separately

## Safety accessories

### DYNlink Tina adapters

#### DYNlink adapters for dual channel devices



Tina 2A/B



Tina 3A



Tina 7A



Tina 10A/B/C

Type	Description	Type of connection to the DYNlink loop	Type of safety device commonly connected to	Ordering code
Tina 2A	Mounted directly on the device enclosure to an M20 cable entry	Via the device connection	Devices with positive driven force-guided contacts like E-Stop buttons and key switches	2TLA020054R0100
Tina 2B	Placed inside the safety device enclosure			2TLA020054R1100
Tina 3A	Mounted directly on the device enclosure to an M20 cable entry	M12-5 male connector		2TLA020054R0200
Tina 3Aps	Two circuits and with supply voltage for a safety sensor. Connects to an M20 cable entry	M12-5 male connector with extra conductor for the supply of the safety device		2TLA020054R1400
Tina 7A	Mounted on a DIN rail in the electrical cabinet. Note that the connected safety device(s) must be mounted in the same cabinet	Removable terminal blocks		2TLA020054R0700
Tina 10A v2	Adaptation of OSSD to DYNlink. Two M12 connectors	M12-5 male connector	Devices with OSSD outputs like Orion light guards	2TLA020054R1210
Tina 10B v2	Adaptation of OSSD to DYNlink, for local reset, Three M12 connectors	M12-5 male connector		2TLA020054R1310
Tina 10C v2	Adaptation of OSSD to DYNlink with possibility to power the transmitter. Three M12 connectors	M12-5 male connector		2TLA020054R1610

#### Connection blocks for serial connection of DYNlink devices (or devices with Tina adapter)



Tina 4A

Type	Description	Ordering code
Tina 4A	Connection block for the serial connection of up to 4 DYNlink devices with M12-5 connectors	2TLA020054R0300
Tina 8A	Connection block for the serial connection of up to 8 DYNlink devices with M12-5 connectors	2TLA020054R0500
Tina 11A	Connection block for the serial connection of up to 2 DYNlink devices with M12-5 connectors	2TLA020054R1700

#### Tina 1A is used to complete the serial connection on a Tina 4/8A safety port block



Tina 1A

Type	Description	Ordering code
Tina 1A	Tina 1A is a blind plug connected to the unused M12 connectors of the connection blocks Tina 4A and Tina 8A	2TLA020054R0000

## Safety accessories

### Cables and connectors

#### Cables



Type	Description	Ordering Code
M12-C61	6m shielded cable Single Ended with M12 5 pin female connector	2TLA020056R0000
M12-C101	10m shielded cable Single Ended with M12 5 pin female connector	2TLA020056R1000
M12-C201	20m shielded cable Single Ended with M12 5 pin female connector	2TLA020056R1400
M12-C112	1m shielded cable Double Ended with M12 5 pin female connector and M12 5 pin male connector	2TLA020056R2000
M12-C312	3m shielded cable Double Ended with M12 5 pin female connector and M12 5 pin male connector	2TLA020056R2100
M12-C612	6m shielded cable Double Ended with M12 5 pin female connector and M12 5 pin male connector	2TLA020056R2200
M12-C1012	10m shielded cable Double Ended with M12 5 pin female connector and M12 5 pin male connector	2TLA020056R2300
M12-C2012	20m shielded cable Double Ended with M12 5 pin female connector and M12 5 pin male connector	2TLA020056R2400
M12-C63	6m shielded cable Single Ended with M12 8 pin female connector	2TLA020056R3000
M12-C103	10m shielded cable Single Ended with M12 8 pin female connector	2TLA020056R4000
M12-C203	20m shielded cable Single Ended with M12 8 pin female connector	2TLA020056R4100
M12-C134	1m shielded cable Double Ended with M12 8 pin female connector and M12 8 pin male connector	2TLA020056R5000
M12-C334	3m shielded cable Double Ended with M12 8 pin female connector and M12 8 pin male connector	2TLA020056R5100



Field wirable M12 5 pin

#### Field wirable connectors

Type	Description	Ordering Code
M12-C01	Field wirable M12 5 pin female with screw terminals	2TLA020055R1000
M12-C02	Field wirable M12 5 pin male with screw terminals	2TLA020055R1100



5 pin series Y-connector

#### Y-connectors

Type	Description	Ordering Code
M12-3A	5 pin series Y-connector for DYNlink devices	2TLA020055R0000
M12-3S	5 pin series Y-connector that supports DYNlink devices with StatusBus, Pluto Only	2TLA020055R0600



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