

## 4. TÜV Approved Equipment

TÜV is an independent private inspection institute which developed from the former "Boiler Inspection Association" established in 1870 and is given authorization by the government. Its basic mission is "to protect human beings and property from damaging influence by technical facilities and fuels."

Today the institute has laboratories in 11 states in Germany and has expanded its duties to include high-pressure equipment, automobiles and drivers, various industrial equipment and facilities, energy related equipment, and environmental safety. For electrical equipment, it performs inspection and certification based on VDE and IEC standards.

TÜV approval is equally effective, wherever it may be obtained.

Fuji Electric's products are approved for safety by TÜV Rheinland, a TÜV laboratory in Rheinland state.



### ■ Contactors and Starters

#### ● AC operated magnetic contactors

Series	Type Magnetic contactor	Thermal overload relay	Specification			TÜV license No.	EN/IEC/ others		
			3-phase squirrel-cage motor capacity (AC3) <sup>1</sup>		Continuous current [A]			Auxiliary contact arrangement	
		200-240V		380-440V					
NEW SC Series	SC-03, 03Y <sup>2</sup>	TR-0N/3, TK-0N	2.5kW 11A	4kW 9A	20	1NO, 1NC	EN60947-4-1 IEC60947-4-1		
	SC-0, 0Y <sup>2</sup>	TR-0NY/3, TK-0NY	3.5kW 13A	5.5kW 12A					
	SC-05, 05Y <sup>2</sup>					2NO, 1NO+1NC, 2NC			
	SC-4-0 <sup>2</sup>	TR-5-1N/3, TK-5-1N	4.5kW 18A	7.5kW 16A	25	1NO, 1NC			
	SC-4-1 <sup>2</sup>		5.5kW 22A	11kW 22A	32				
	SC-5-1, 5-1Y <sup>2</sup>	TR-5-1NY/3, TK-5-1NY				2NO, 1NO+1NC, 2NC	R9151514		
NEO SC Series	SC-N1 <sup>2</sup>	TR-N2/3, TK-N2	7.5kW 32A	15kW 32A	50	2NO+2NC (Can be expanded up to 4NO+4NC)	R9950397		
	SC-N2 <sup>2</sup>		11kW 40A	18.5kW 40A	60				
	SC-N2S <sup>2</sup>	TR-N3/3, TK-N3	15kW 50A	22kW 50A	80				
	SC-N3 <sup>2</sup>		18.5kW 65A	30kW 65A	100				
	SC-N4 <sup>2</sup>	TR-N5/3, TK-N5	22kW 80A	40kW 80A	135				
	SC-N5 <sup>2</sup>		30kW 105A	55kW 105A	150				
	SC-N6 <sup>2</sup>	TR-N6/3, TK-N6	37kW 125A	60kW 125A					
	SC-N7 <sup>2</sup>	TR-N7/3, TK-N7	45kW 150A	75kW 150A	200				R9950561
	SC-N8 <sup>2</sup>	TR-N8/3, TK-N8	55kW 180A	90kW 180A	260				
	SC-N10 <sup>2</sup>	TR-N10/3, TK-N10	65kW 220A	110kW 220A					
	SC-N11 <sup>2</sup>	TR-N12/3, TK-12N	90kW 300A	160kW 300A	350				
	SC-N12 <sup>2</sup>		120kW 400A	220kW 400A	450				
	SC-N14	TR-N14/3, TK-14N	180kW 600A	315kW 600A	660				R2051091
	SC-N16	-	220kW 800A	440kW 800A	880				

<sup>1</sup> Shows rated value under IEC standard.

<sup>2</sup> Magnetic contactors are provided with "Positively driven contact". (Conformity with the TÜV standard has been approved.)

● DC operated magnetic contactor

Series	Type		Specification				TUV license No.	EN/IEC/ others
	Magnetic contactor	Thermal overload relay	3-phase squirrel-cage motor capacity (AC3) <sup>*1</sup>		Continuous current [A]	Auxiliary contact arrangement		
			200-240V	380-440V				
NEW SC Series	SC03/G, 03Y/G	TR-0N/3, TK-0N	2.5kW 11A	4kW 9A	20	1NO, 1NC	R9151532	EN60947-4-1 IEC60947-4-1
	SC-0/G, 0Y/G	TR-0NY/3, TK-0NY	3.5kW 13A	5.5kW 12A				
	SC-05/G, 05Y/G					2NO, 1NO+1NC, 2NC	R9151531	
	SC-4-0/G	TR-5-1N/3, TK-5-1N	4.5kW 18A	7.5kW 16A	25	1NO, 1NC	R9051276	
	SC-4-1/G	TR-5-1NY/3, TK-5-1NY	5.5kW 22A	11kW 22A	32	2NO, 1NO+1NC, 2NC	R9151533	
SC-5-1/G, 5-1Y/G								
NEO SC Series	SC-N1/G	TR-N2/3, TK-N2	7.5kW 32A	15kW 32A	50	2NO+2NC (Can be expanded up to 4NO+4NC)	R9950696	
	SC-N2/G		11kW 40A	18.5kW 40A	60			
	SC-N2S/G	TR-N3/3, TK-N3	15kW 50A	22kW 50A	80			
	SC-N3/G		18.5kW 65A	30kW 65A	100			

<sup>\*1</sup> Shows rated value under IEC standards.

Note 1: SC-N5 to SC-N16 types and SC-N4/SE types are AC/DC operable, conform to EN60947-4-1 and IEC60947-4-1, and TÜV approved.

● SC-M series

- AC operated non-reversing magnetic contactors

Series	Type	Specification						License No.	EN/IEC/others
		3-phase squirrel-cage motor				Continuous current [A]	Auxiliary contact arrangement		
		200-240V	380-440V	500V	600-690V				
SC-M Series	SC-M01	1.5kW 6A	2.2kW 6A	3kW 5A	3kW 3.5A	20	1NO, 1NC	R2018010	EN60947-4-1 IEC60947-4-1
	SC-M02	3kW 9A	4kW 9A	4kW 6.5A	4kW 5A	20	1NO, 1NC		

- DC operated non-reversing magnetic contactors

Series	Type	Specification						License No.	EN/IEC/others
		3-phase squirrel-cage motor				Continuous current [A]	Auxiliary contact arrangement		
		200-240V	380-440V	500V	600-690V				
SC-M Series	SC-M01/G	1.5kW 6A	2.2kW 6A	3kW 5A	3kW 3.5A	20	1NO, 1NC	R2018010	EN60947-4-1 IEC60947-4-1
	SC-M01/G1	1.5kW 6A	2.2kW 6A	3kW 5A	3kW 3.5A	20	1NO, 1NC		
	SC-M01/G2	1.5kW 6A	2.2kW 6A	3kW 5A	3kW 3.5A	20	1NO, 1NC		
	SC-M02/G	3kW 9A	4kW 9A	4kW 6.5A	4kW 5A	20	1NO, 1NC		
	SC-M02/G1	3kW 9A	4kW 9A	4kW 6.5A	4kW 5A	20	1NO, 1NC		
	SC-M02/G2	3kW 9A	4kW 9A	4kW 6.5A	4kW 5A	20	1NO, 1NC		

- AC operated reversing magnetic contactors

Series	Type	Specification						License No.	EN/IEC/others
		3-phase squirrel-cage motor				Continuous current [A]	Auxiliary contact arrangement		
		200-240V	380-440V	500V	600-690V				
SC-M Series	SC-M01RM	1.5kW 6A	2.2kW 6A	3kW 5A	3kW 3.5A	20	1NO, 1NC	R2018010	EN60947-4-1 IEC60947-4-1
	SC-M02RM	3kW 9A	4kW 9A	4kW 6.5A	4kW 5A	20	1NO, 1NC		

- DC operated reversing magnetic contactors

Series	Type	Specification						License No.	EN/IEC/others
		3-phase squirrel-cage motor				Continuous current [A]	Auxiliary contact arrangement		
		200-240V	380-440V	500V	600-690V				
SC-M Series	SC-M01/GRM	1.5kW 6A	2.2kW 6A	3kW 5A	3kW 3.5A	20	1NO, 1NC	R2018010	EN60947-4-1 IEC60947-4-1
	SC-M01/G1RM	1.5kW 6A	2.2kW 6A	3kW 5A	3kW 3.5A	20	1NO, 1NC		
	SC-M01/G2RM	1.5kW 6A	2.2kW 6A	3kW 5A	3kW 3.5A	20	1NO, 1NC		
	SC-M02/GRM	3kW 9A	4kW 9A	4kW 6.5A	4kW 5A	20	1NO, 1NC		
	SC-M02/G1RM	3kW 9A	4kW 9A	4kW 6.5A	4kW 5A	20	1NO, 1NC		
	SC-M02/G2RM	3kW 9A	4kW 9A	4kW 6.5A	4kW 5A	20	1NO, 1NC		

- 2E thermal overload relays

Series	Type	No. of heat elements	Power consumption [VA/poles]	Auxiliary contact arrangement	AC-15	DC-13	Continuous current [A]	License No.	EN/IEC/others
TK-M Series	TK-M0	3	2.3	1NC	220V 3A 440V 2A 5550V 0.6A	48V 0.2A 110V 0.2A 220V 0.1A	6	R2018010	EN60947-4-1 IEC60947-4-1

- Auxiliary contact blocks (applicable to SC-M Series)

Type	Auxiliary contact arrangement	Mounting	Operational current [A]				Continuous current [A]	License No.	EN/IEC/others
			Ind. load						
			100-120V	200-220V	380-440V	500-600V			
SZ-MA40	4NO	Front mounting	6 (1.2) <sup>*1</sup>	6 (0.6) <sup>*2</sup>	3	1	16	R2018010	EN60947-4-1 IEC60947-4-1
SZ-MA31	3NO+1NC								
SZ-MA22	2NO+2NC								
SZ-MA13	1NO+3NC								
SZ-MA04	4NC								
SZ-MA20	2NO								
SZ-MA11	1NO+1NC								
SZ-MA02	2NC	Side mounting							
SZ-MAS10	1NO								
SZ-MAS01	1NC								

\*1 The value in parentheses ( ) indicates the rating at DC-13 (coil rating: 110VDC).

\*2 The value in parentheses ( ) indicates the rating at DC-13 (coil rating: 220VDC).

● SC-E Series

- AC operated non-reversing magnetic contactors

Series	Type	Specification					License No.	EN/IEC/others
		3-phase squirrel-cage motor				Continuous current [A]		
		200-240V	380-440V	500-550V	600-690V			
SC-E Series	SC-E02	2.2kW 9A	4kW 9A	4kW 7A	4kW 5A	20	R50013402	EN60947-4-1 IEC60947-4-1
	SC-E03	3kW 12A	5.5kW 12A	5.5kW 9A	5.5kW 7A	20		
	SC-E04	4kW 18A	7.5kW 18A	7.5kW 13A	7.5kW 9A	20		
	SC-E05	5.5kW 25A	11kW 25A	11kW 17A	7.5kW 9A	32		
	SC-E1	7.5kW 32A	15kW 24A	15kW 24A	11kW 15A	50		
	SC-E2	11kW 40A	18.5kW 40A	18.5kW 29A	15kW 19A	60		
	SC-E2S	15kW 50A	22kW 50A	25kW 38A	22kW 26A	65		
	SC-E3	18.5kW 68A	30kW 65A	37kW 60A	30kW 38A	100		
	SC-E4	22kW 80A	40kW 80A	37kW 60A	37kW 44A	105		
	SC-E5	30kW 105A	55kW 105A	55kW 85A	55kW 64A	150		
SC-E6	37kW 125A	60kW 125A	60kW 90A	60kW 72A	150			
SC-E7	45kW 150A	75kW 150A	75kW 120A	90kW 103A	200			

- DC operated non-reversing magnetic contactors

Series	Type	Specification					License No.	EN/IEC/others
		3-phase squirrel-cage motor				Continuous current [A]		
		200-240V	380-440V	500-550V	600-690V			
SC-E Series	SC-E02/G	2.2kW 9A	4kW 9A	4kW 7A	4kW 5A	20	R50013402	EN60947-4-1 IEC60947-4-1
	SC-E03/G	3kW 12A	5.5kW 12A	5.5kW 9A	5.5kW 7A	20		
	SC-E04/G	4kW 18A	7.5kW 18A	7.5kW 13A	7.5kW 9A	20		
	SC-E05/G	5.5kW 25A	11kW 25A	11kW 17A	7.5kW 9A	32		
	SC-E1/G	7.5kW 32A	15kW 24A	15kW 24A	11kW 15A	50		
	SC-E2/G	11kW 40A	18.5kW 40A	18.5kW 29A	15kW 19A	60		
	SC-E2S/G	15kW 50A	22kW 50A	25kW 38A	22kW 26A	65		
	SC-E3/G	18.5kW 68A	30kW 65A	37kW 60A	30kW 38A	100		
	SC-E4/G	22kW 80A	40kW 80A	37kW 60A	37kW 44A	105		
	SC-E5	30kW 105A	55kW 105A	55kW 85A	55kW 64A	150		
SC-E6	37kW 125A	60kW 125A	60kW 90A	60kW 72A	150			
SC-E7	45kW 150A	75kW 150A	75kW 120A	90kW 103A	200			

- 2E thermal overload relays

Series	Type	Applicable magnetic contactor types	Power consumption [VA/poles]	Auxiliary contact arrangement	AC voltage (AC-15)	DC voltage (DC-13)	Continuous current [A]	License No.	EN/IEC/others
TK-E Series	TK-E02	SC-E02, E03, E04, E05	1.8	1NO+1NC	24V 3A (0.3A) 120V 2.5A (0.3A) 440V 1A (0.3A) 600V 0.6A (0.3A)	24V 1.1A (0.3A) 120V 0.6A 240V 0.14A	5	R2150072	EN60947-4-1 IEC60947-4-11
	TK-E2	SC-E1, E2, E2S	3.8	1NO+1NC	24V 3A (0.5A) 120V 2.5A (0.5A)	24V 1.1A (0.3A) 120V 0.6A	5		
	TK-E3	SC-E3, E4	6.6	1NO+1NC	440V 1A (0.5A) 600V 0.6A (0.5A)	240V 0.14A	5		
	TK-E5	SC-E5	6.6	1NO+1NC			5		
	TK-E6	SC-E6, E7	8	1NO+1NC			5		

- DC operated magnetic contactors (control circuit: 24VDC/1.2W)

Series	Type	Motor capacity [kW]		Operational current [A]				Continuous current [A]	License No.	EN/IEC/others
		3-phase squirrel-cage (AC-3)		3-phase squirrel-cage (AC-3)		Resistive load (AC-1)				
		200-240V	380-440V	200-240V	380-440V	200-240V	380-440V			
SC-M Series	SC-M01/G1	1	2	6	6	20	20	20	R2018010	EN60947-4-1
	SC-M02/G1	1.7	3.4	9	9	20	20	20		

- DC operated magnetic contactors (control circuit: 24VDC/2W)

Series	Type	Motor capacity [kW]		Operational current [A]				Continuous current [A]	License No.	EN/IEC/others
		3-phase squirrel-cage (AC-3)		3-phase squirrel-cage (AC-3)		Resistive load (AC-1)				
		200-240V	380-440V	200-240V	380-440V	200-240V	380-440V			
SC-M Series	SC-M01/G2	1	2	6	6	20	20	20	R2018010	EN60947-4-1
	SC-M02/G2	1.7	3.4	9	9	20	20	20		

- 2E thermal overload relay (Trip class 10A)

Applicable magnetic contactor	Type	License No.	EN/IEC/others
SC-□	TK-M0	R2018010	EN60947-4-1

- Auxiliary contact block for magnetic contactor

Type	License No.	EN/IEC/others
SZ-MA□	R2018010	EN60947-4-1

● SC-E Series non-reversing magnetic contactors

- AC operated magnetic contactors

Series	Type	Motor capacity [kW]		Operational current [A]				Continuous current [A]	License No.	EN/IEC/others
		3-phase squirrel-cage (AC-3)		3-phase squirrel-cage (AC-3)		Resistive load (AC-1)				
		220-240V	380-440V	220-240V	380-440V	220-240V	380-440V			
SC-E Series	SC-E02	2.2	4	9	9	20	20	20	R50013402	EN60947-4-1
	SC-E03	3	5.5	12	12	20	20	20		
	SC-E04	4	7.5	18	18	25	25	25		
	SC-E05	5.5	11	25	25	32	32	32	R2150072	EN60947-4-1
	SC-E1	7.5	15	32	32	50	50	50		
	SC-E2	11	18.5	40	40	60	60	60		
	SC-E2S	15	22	50	50	65	65	65		
	SC-E3	18.5	30	68	65	100	100	100		
	SC-E4	22	40	80	80	105	105	105		
	SC-E5	30	55	105	105	150	150	150		
	SC-E6	37	60	125	125	150	150	150		
	SC-E7	45	75	150	150	200	200	200		

- DC operated magnetic contactors

Series	Type	Motor capacity [kW]		Operational current [A]				Continuous current [A]	License No.	EN/IEC/others
		3-phase squirrel-cage (AC-3)		3-phase squirrel-cage (AC-3)		Resistive load (AC-1)				
		220-240V	380-440V	220-240V	380-440V	220-240V	380-440V			
SC-E Series	SC-E02/G	2.2	4	9	9	20	20	20	R50013402	EN60947-4-1
	SC-E03/G	3	5.5	12	12	20	20	20		
	SC-E04/G	4	7.5	18	18	25	25	25		
	SC-E05/G	5.5	11	25	25	32	32	32	R2150072	EN60947-4-1
	SC-E1/G	7.5	15	32	32	50	50	50		
	SC-E2/G	11	18.5	40	40	60	60	60		
	SC-E2S/G	15	22	50	50	65	65	65		
	SC-E3/G	18.5	30	68	65	100	100	100		
	SC-E4/G	22	40	80	80	105	105	105		
	SC-E5	30	55	105	105	150	150	150		
	SC-E6	37	60	125	125	150	150	150		
	SC-E7	45	75	150	150	200	200	200		

- Thermal overload relays

Series	Type	Applicable magnetic contactor	License No.	EN/IEC/others
TK Series	TK-E02	SC-E02, E03, E04, E05	R50013402	EN60947-4-1
	TK-E2	SC-E1, E2, E2S	R2150072	EN60947-4-1
	TK-E3	SC-E3, E4		
	TK-E5	SC-E5		
	TK-E6	SC-E6, E7		

● SJ series DC operated high-sensitivity contactor

Type	Specification				TÜV license No.	EN/IEC/others
Magnetic contactor	3-phase squirrel-cage motor capacity (AC3) *1		Continuous current [A]	Auxiliary contact arrangement		
	200-240V	380-440V				
SJ-0AG	2.2kW 8.7A	-	15	1NO, 1NC	R9151519	EN60947-4-1 IEC947-4-1
SJ-0G	2.2kW 8.7A	2.2kW 5A	15	1NO, 1NC		
SJ-1SG	4.5kW 18A	4kW 9A	25	2NO, 1NO+1NC	R9351099	

\*1 Shows rated value under IEC standard.

Note: SJ-0G/UL and SJ-1SG/UL types also conform to EN60947-4-1, IEC947-4-1, and TÜV approved.

● FC series magnetic contactor

Type		Rated capacity [kW]		Rated operating current [A]		Continuous current [A]	License No.	EN/IEC/others
		3-phase squirrel-cage motor (AC3)		3-phase squirrel-cage motor (AC3)				
		200-240V	380-440V	200-240V	380-440V			
FC Series	FC-0	3	2.5	12	6	20	J9950193	EN60947-1 EN60947-4-1 EN60947-5-1
	FC-0S	3.5	4.5	15	10	20		
	FC-1	5.5	5.5	20	13	30		
	FC-1S	7.5	7.5	27	18	30		
	FC-2S	11	11	40	20	45		
	FC-3	15	18.5	52	40	60		
	FC-4	18.5	30	65	65	80		

■ Solid-state Contactors

● 3-pole Solid-state Contactors

Type	Specification			TÜV license No.	EN/IEC/ others
	No. of main circuit elements	Voltage	Continuous current [A]		
SS03 □	2,3	100-240 V AC	3	R9351114	IEC60947-4-2
SS08 □			8	J9750657	
SS20 □			20		
SS30 □			30		
SS40 □			40		
SS50 □			50		
SS80 □			80		
SS120 □			120	J9750659	
SS30 □ H		200-480 V AC	30		
SS50 □ H			50		
SS80 □ H			80		
SS120 □ H			120		

● Single-pole Solid-state Contactors

Type	Specification			TÜV license No.	EN/IEC/ others	
	No. of main circuit elements	Voltage	Continuous current [A]			
SS101- □ - □	1	100-240 V AC	10	R9351484	IEC60947-4-2	
SS201- □ - □			20	R9351485		
SS301- □ - □			30			
SS401- □ - □			40			
SS501- □ - □			50			
SS701-1Z-A3			70			R9351486
SS701-1Z-A4						T9451031
SS701-3Z-D3			100	R9351486		
SS1001-1Z-A3				T9451031		
SS1001-1Z-A4			150	R9351487		
SS1001-3Z-D3				T9451030		
SS1501-1Z-A3			200	R9351487		
SS1501-1Z-A4				T9451030		
SS2001-1Z-A3			200-480 V AC	70		R9351488
SS2001-1Z-A4						T9451029
SS701H-1Z-A3				100		R9351488
SS701H-1Z-A4						T9451029
SS701H-3Z-D3				150		R9351489
SS1001H-1Z-A3		T9451034				
SS1001H-1Z-A4		200		R9351489		
SS1001H-3Z-D3				T9451034		

■ Molded Case Circuit Breakers

Series	Type	Current [A]	Poles	Voltage [V]		Interrupting capacity [kA]							TUV license No.	EN/IEC/ others
				AC	DC	AC						DC		
						230 V	400 V	440 V	500 V	600 V	250 V			
α-TWIN E Series	EA32AC□-CE	3, 5, 10, 15, 20, 30	2	500	-	Icu/lcs	2.5/2	1.5/1	1.5/1	-	-	-	R50004300	EN60947-2 IEC60947-2
	EA33AC□-CE		3											
	EA52AC□-CE	5, 10, 15, 20, 30, 40, 50	2	500	-	Icu/lcs	2.5/2	1.5/1	1.5/1	-	-	-		
	EA53AC□-CE		3											
	EA52C□-CE	5, 10, 15, 20, 30, 40, 50	2	690	250*	Icu/lcs	5/3	2.5/2	2.5/2	1.5/1	-	2.5/2*		
	EA53C□-CE		3											
	EA62C□-CE	60	2	690	250*	Icu/lcs	5/3	2.5/2	2.5/2	1.5/1	-	2.5/2*		
	EA63C□-CE		3											
	EA103AC□-CE	60, 75, 100	3	500	-	Icu/lcs	5/3	1.5/1	-	-	-	-		
	EA102C□-CE	50, 60, 75, 100	2	690	250*	Icu/lcs	25/13	10/5	10/5	10/3	-	5/3*		
	EA103C□-CE		3											
	EA202C□-CE	125,150,175,200,225	2	690	250*	Icu/lcs	35/18	18/5	2.5/2	1.5/1	-	10/5		
	EA203C□-CE		3											
	EA402C□-CE	250,300,350,400	2	690	250*	Icu/lcs	35/18	25/13	25/13	18/9	-	20/10		
EA403C□-CE		3												
EA603C□-CE	500,600	3	690	250*	Icu/lcs	50/25	35/18	35/18	22/11	-	20/10			
EA803C□-CE	700,800	3	690	250*	Icu/lcs	50/25	35/18	35/18	22/11	-	20/10			
α-TWIN S Series	SA32C□-CE	3, 5, 10, 15, 20, 30	2	690	250*	Icu/lcs	5/3	5/3	2.5/2	1.5/1	-	2.5/2*	R50004300	
	SA33C□-CE		3											
	SA52C□-CE	5, 10, 15, 20, 30, 40, 50	2	690	250*	Icu/lcs	10/5	7.5/4	7.5/4	5/3	2.5/2	5/3*		
	SA53C□-CE		3											
	SA52RC□-CE	10, 15, 20, 30, 40, 50	2	690	250*	Icu/lcs	25/13	10/5	10/5	7.5/4	5/3	5/3*		
	SA53RC□-CE		3											
	SA62C□-CE	60	2	690	250*	Icu/lcs	10/5	7.5/4	7.5/4	5/3	2.5/2	5/3*		
	SA63C□-CE		3											
	SA62RC□-CE	60	2	690	250*	Icu/lcs	25/13	10/5	10/5	7.5/4	5/3	5/3*		
	SA63RC□-CE		3											
	SA102C□-CE	15, 20, 30,40,50,60,75,100	2	690	250*	Icu/lcs	50/25	30/8	25/7	15/4	-	15/8		
	SA103C□-CE		3											
	SA102RC□-CE	15, 20, 30,40,50,60,75,100	2	690	250*	Icu/lcs	100/50	50/13	50/13	30/8	-	40/20		
	SA103RC□-CE		3											
	SA202C□-CE	125,150,175,200,225	2	690	250*	Icu/lcs	50/25	30/8	25/7	15/4	-	15/8		
	SA203C□-CE		3											
	SA202RC□-CE	125,150,175,200,225	2	690	250*	Icu/lcs	100/50	50/13	50/13	30/8	-	40/20		
	SA203RC□-CE		3											
	SA402C□-CE	250,300,350,400	2	690	250*	Icu/lcs	50/25	35/18	35/18	22/11	-	20/10		
	SA403C□-CE		3											
SA402RC□-CE	250,300,350,400	2	690	250*	Icu/lcs	85/43	50/25	50/25	35/18	30/15	40/20			
SA403RC□-CE		3												
SA603RC□-CE	500,600	3	690	250*	Icu/lcs	85/43	50/25	50/25	35/18	30/15	40/20			
SA803RC□-CE	700,800	3	690	250*	Icu/lcs	85/43	50/25	50/25	35/18	30/15	40/20			
α-TWIN EA-UL SA-UL Series	EA102CUL	50,60,75,100	2	690	250*	Icu/lcs	25/13	10/5	10/15	10/3	-	5/3*	R50004300	
	EA103CUL		3											
	SA52RCUL	10,15,20,	2	690	250*	Icu/lcs	25/13	10/5	10/5	7.5/4	5/3	5/3*		
	SA53RCUL	30,40,50	3											
	SA102CUL	15,20,30,40,50,	2	690	250*	Icu/lcs	50/25	30/8	25/7	15/4	-	15/8		
	SA103CUL	60,75,100	3											
	SA202CUL	125,150,175,	2	690	250*	Icu/lcs	50/25	30/8	25/7	15/4	-	15/8		
	SA203CUL	200,225	3											
	SA402CUL	250,300,350,	2	690	250*	Icu/lcs	50/25	35/18	35/18	22/11	-	20/10		
	SA403CUL	400	3											
	SA603CUL	500,600	3	690	250*	Icu/lcs	85/43	50/25	50/25	35/18	30/15	40/20		
SA803CUL	700,800	3	690	250*	Icu/lcs	85/43	50/25	50/25	35/18	30/15	40/20			

Notes 1: To order TUV approved product, add "TUV" following the corresponding type code.

2: For applicable DC voltage products marked \*, add "Main circuit voltage" following the corresponding type code.  
Main circuit voltage: LV = □VDC

## ■ Earth Leakage Circuit Breakers

Series	Type	Current [A]	Poles	Voltage[V] AC	Interrupting capacity [kA]	Sensitivity current [mA]					TÜV license No.	EN/IEC/ others
						AC						
						100V	120V	230V	240V	415V		
α-TWIN E Series	EG32AC□-CE	5, 10, 15, 20, 30	2	100-230 common	lcu/lcs	2.5/2		2.5/2			15,30,100	R50004303 EN60947-2 IEC60947-2
	EG33AC□-CE		3									
	EG33C□-CE	5, 10, 15, 20, 30	3	100-230-440 common		5/3		2.5/2		1.5/1	15,30,100	
	EG52AC□-CE	5, 10, 15, 20, 30, 40, 50	2	100-230 common	lcu/lcs	2.5/2		2.5/2		-	15,30,100	
	EG53AC□-CE		3									
	EG53C□-CE	5, 10, 15, 20, 30, 40, 50	3	100-230-440 common	lcu/lcs	5/3		5/3		2.5/2	15,30,100/200	
	EG63C□-CE	60	3	100-230-440 common	lcu/lcs	5/3		5/3		2.5/2	15,30,100/200	
	EG103AC□-CE	60, 75, 100	3	100-230 common	lcu/lcs	5/3		5/3		-	30,100/200	
	EG102C□-CE	50, 60, 75, 100	2	100-230 common	lcu/lcs	10/5		10/5		-	30,100/200	
	EG103C□-CE		3	100-230-440 common		25/13		25/13		10/5	30,100/200/500	
EG203C□-CE	125,150,175,200,225	3	100-230-440 common	lcu/lcs	35/18		35/18		15/4	30,100/200/500	R50033866	
EG403C□-CE	250,300,350,400	3	100-230-440 common	lcu/lcs	35/18		35/18		25/13	30,100/200/500	R50033874	
α-TWIN S Series	SG33C□-CE	3, 5, 10, 15, 20, 30	3	100-230-440 common	lcu/lcs	5/3		5/3		2.5/2	30,100/200/500	R50004303 R50033872 R50033736 R50033871 R50033874
	SG53C□-CE	5, 10, 15, 20, 30, 40, 50	3	100-230-440 common	lcu/lcs	10/5		10/5		7.5/4	30,100/200/500	
	SG53RC□-CE	10, 15, 20, 30, 40, 50	3	100-230-440 common	lcu/lcs	25/13		25/13		10/5	30,100/200/500	
	SG63C□-CE	60	3	100-230-440 common	lcu/lcs	10/5		10/5		7.5/4	30,100/200/500	
	SG63RC□-CE	60	3	100-230-440 common	lcu/lcs	25/13		25/13		10/5	30,100/200/500	
	SG103C□-CE	15,20,30,40,50,60,75,100	3	100-230-440 common	lcu/lcs	50/25		50/25		25/7	30,100/200/500	
	SG103RC□-CE	15,20,30,40,50,60,75,100	3	100-230-440 common	lcu/lcs	100/50		100/50		50/13	30,100/200/500	
	SG203C□-CE	125,150,175,200,225	3	100-230-440 common	lcu/lcs	50/25		50/25		25/7	30,100/200/500	
	SG203RC□-CE	125,150,175,200,225	3	100-230-440 common	lcu/lcs	100/50		100/50		50/13	30,100/200/500	
	SG403C□-CE	250,300,350,400	3	100-230-440 common	lcu/lcs	50/25		50/25		35/18	30,100/200/500	
α-TWIN EG-UL SG-UL Series	EG102CUL	60,75,80,90,100	2	100-230 common	lcu/lcs	10/5		10/5		-	30,100/200	R50004303 R50033736 R50033871 R50033874
	EG103CUL		3	100-230-440 common		25/13		25/13		10/5	30,100/200/500	
	SG53RCUL	3,5,10,15,20,30,40,50	3	100-230-440 common	lcu/lcs	25/13		25/13		10/5	30,100/200/500	
	SG103CUL	32,40,50,60,75,100	3	100-230-440 common	lcu/lcs	50/25		50/25		25/7	30,100/200/500	
	SG203CUL	125,150,175,200,225	3	100-230-440 common	lcu/lcs	50/25		50/25		25/7	30,100/200/500	
	SG403CUL	250,300,350,400	3	100-230-440 common	lcu/lcs	50/25		50/25		35/18	30,100/200/500	

Notes 1: IEC60947-2 conforming ELBs are for export only. To order them, add "IEC60947-2" following the corresponding type code.

2: To order TÜV approved product, add "TÜV" following the corresponding type code.

## ■ Manual Motor Starters

- 32AF standard breaking capacity, rocker handle types

Type	Capacity of 3-phase standard motor and total load current <sup>1</sup>				Current I <sub>n</sub> [A] <sup>2</sup>	Thermal current setting range le [A]	Instantaneous trip current [A]	Rated breaking capacity I <sub>cu</sub> [kA]		TÜV license No.	EN/IEC/ others
	200-240V AC		380-440V AC					240V AC	415V AC		
	Capacity [kw]	Current [A]	Capacity [kw]	Current [A]							
BM3RSB-P16	-	-	0.02	(0.1)	0.16	0.1-0.16	2.1	100	100	R2050628 EN60947-1 EN60947-2 EN60947-4-1	
BM3RSB-P25	0.03	0.24	0.06	0.21	0.25	0.16-0.25	3.3				
BM3RSB-P40	0.06	0.37	0.1	0.34	0.4	0.25-0.4	5.2				
BM3RSB-P63	0.06	0.37	0.12	0.41	0.63	0.4-0.63	8.2				
BM3RSB-001	0.1	0.68	0.2	0.7	1	0.63-1	13				
BM3RSB-1P6	0.2	1.3	0.4	1.2	1.6	1-1.6	20.8				
BM3RSB-2P5	0.4	2.3	0.75	1.8	2.5	1.6-2.5	32.5				
BM3RSB-004	0.75	3.6	1.5	3.1	4	2.5-4	52				
BM3RSB-6P3	1.5	6.1	2.2	4.6	6.3	4-6.3	81.9				
BM3RSB-010	2.2	9.2	3.7	7.5	10	6.3-10	130				
BM3RSB-013	2.2	9.2	5.5	11	13	9-13	169				
BM3RSB-016	3.7	15	7.5	15	16	11-16	208				
BM3RSB-020	3.7	15	7.5	15	20	14-20	260	50	25		
BM3RSB-025	5.5	22.5	11	21	25	19-25	325				
BM3RSB-032	7.5	29	15	28	32	24-32	416				

<sup>1</sup> Motor full-load currents are based on FUJI's standard type totally enclosed induction motors.

<sup>2</sup> Maximum thermal current setting value.

- 32AF high breaking capacity, rocker handle types

Type	Capacity of 3-phase standard motor and total load current <sup>1</sup>				Current In [A] <sup>2</sup>	Thermal current setting range le [A]	Instantaneous trip current [A]	Rated breaking capacity Icu [kA]		TÜV license No.	EN/IEC/ others		
	200-240V AC		380-440V AC					240V AC	145V AC				
	Capacity [kw]	Current [A]	Capacity [kw]	Current [A]									
BM3RSB-P16	-	-	0.02	(0.1)	0.16	0.1-0.16	2.1	100	R2050628	EN60947-1 EN60947-2 EN60947-4-1			
BM3RSB-P25	0.03	0.24	0.06	0.21	0.25	0.16-0.25	3.3						
BM3RSB-P40	0.06	0.37	0.1	0.34	0.4	0.25-0.4	5.2						
BM3RSB-P63	0.06	0.37	0.12	0.41	0.63	0.4-0.63	8.2						
BM3RSB-001	0.1	0.68	0.2	0.7	1	0.63-1	13						
BM3RSB-1P6	0.2	1.3	0.4	1.2	1.6	1-1.6	20.8						
BM3RSB-2P5	0.4	2.3	0.75	1.8	2.5	1.6-2.5	32.5						
BM3RSB-004	0.75	3.6	1.5	3.1	4	2.5-4	52						
BM3RSB-6P3	1.5	6.1	2.2	4.6	6.3	4-6.3	81.9						
BM3RSB-010	2.2	9.2	3.7	7.5	10	6.3-10	130						
BM3RSB-013	2.2	9.2	5.5	11	13	9-13	169						
BM3RSB-016	3.7	15	7.5	15	16	11-16	208						
BM3RSB-020	3.7	15	7.5	15	20	14-20	260						
BM3RSB-025	5.5	22.5	11	21	25	19-25	325						
BM3RSB-032	7.5	29	15	28	32	24-32	416						
											50		
											25		
								50					

<sup>1</sup> Motor full-load currents are based on FUJI's standard type totally-enclosed induction motors.

<sup>2</sup> Maximum thermal current setting value.

- 32AF high breaking capacity, rotary handle types

Type	Capacity of 3-phase standard motor and total load current <sup>1</sup>				Current In [A] <sup>2</sup>	Thermal current setting range le [A]	Instantaneous trip current [A]	Rated breaking capacity Icu [kA]		TÜV license No.	EN/IEC/ others		
	200-240V AC		380-440V AC					240V AC	145V AC				
	Capacity [kw]	Current [A]	Capacity [kw]	Current [A]									
BM3RHB-P16	-	-	0.02	(0.1)	0.16	0.1-0.16	2.1	100	R2050628	EN60947-1 EN60947-2 EN60947-4-1			
BM3RHB-P25	0.03	0.24	0.06	0.21	0.25	0.16-0.25	3.3						
BM3RHB-P40	0.06	0.37	0.1	0.34	0.4	0.25-0.4	5.2						
BM3RHB-P63	0.06	0.37	0.12	0.41	0.63	0.4-0.63	8.2						
BM3RHB-001	0.1	0.68	0.2	0.7	1	0.63-1	13						
BM3RHB-1P6	0.2	1.3	0.4	1.2	1.6	1-1.6	20.8						
BM3RHB-2P5	0.4	2.3	0.75	1.8	2.5	1.6-2.5	32.5						
BM3RHB-004	0.75	3.6	1.5	3.1	4	2.5-4	52						
BM3RHB-6P3	1.5	6.1	2.2	4.6	6.3	4-6.3	81.9						
BM3RHB-010	2.2	9.2	3.7	7.5	10	6.3-10	130						
BM3RHB-013	2.2	9.2	5.5	11	13	9-13	169						
BM3RHB-016	3.7	15	7.5	15	16	11-16	208						
BM3RHB-020	3.7	15	7.5	15	20	14-20	260						
BM3RHB-025	5.5	22.5	11	21	25	19-25	325						
BM3RHB-032	7.5	29	15	28	32	24-32	416						
											50		

<sup>1</sup> Motor full-load currents are based on FUJI's standard type totally-enclosed induction motors.

<sup>2</sup> Maximum thermal current setting value.

- 63AF standard breaking capacity, rotary handle types

Type	Capacity of 3-phase standard motor and total load current <sup>1</sup>				Current In [A] <sup>2</sup>	Thermal current setting range le [A]	Instantaneous trip current [A]	Rated breaking capacity Icu [kA]		TÜV license No.	EN/IEC/ others
	200-240V AC		380-440V AC					240V AC	415V AC		
	Capacity [kw]	Current [A]	Capacity [kw]	Current [A]							
BM3VSB-010	2.2	9.2	3.7	7.5	10	6.3-10	130	100	R2050628	EN60947-1 EN60947-2 EN60947-4-1	
BM3VSB-013	2.2	9.2	5.5	11	13	9-13	169				
BM3VSB-016	3.7	15	7.5	15	16	11-16	208				
BM3VSB-020	3.7	15	7.5	15	20	14-20	260	50			
BM3VSB-025	5.5	22.5	11	21	25	19-25	325				
BM3VSB-032	7.5	29	15	28	32	24-32	416				
BM3VSB-040	7.5	29	18.5	34	40	28-40	520				
BM3VSB-050	11	42	22	39	50	35-50	650				
BM3VSB-063	15	55	30	54	63	45-63	819				

<sup>1</sup> Motor full-load currents are based on FUJI's standard type totally-enclosed induction motors.

<sup>2</sup> Maximum thermal current setting value.

- 63AF high breaking capacity, rotary handle types

Type	Capacity of 3-phase standard motor and total load current <sup>1</sup>				Current In [A] <sup>2</sup>	Thermal current setting range le [A]	Instantaneous trip current [A]	Rated breaking capacity Icu [kA]		TÜV license No.	EN/IEC/ others
	200-240V AC		380-440V AC					240V AC	415V AC		
	Capacity [kw]	Current [A]	Capacity [kw]	Current [A]							
BM3VHB-010	2.2	9.2	3.7	7.5	10	6.3-10	130	100	R2050628	EN60947-1 EN60947-2 EN60947-4-1	
BM3VHB-013	2.2	9.2	5.5	11	13	9-13	169				
BM3VHB-016	3.7	15	7.5	15	16	11-16	208				
BM3VHB-020	3.7	15	7.5	15	20	14-20	260				
BM3VHB-025	5.5	22.5	11	21	25	19-25	325				
BM3VHB-032	7.5	29	15	28	32	24-32	416				
BM3VHB-040	7.5	29	18.5	34	40	28-40	520				
BM3VHB-050	11	42	22	39	50	35-50	650				
BM3VHB-063	15	55	30	54	63	45-63	819				
											50

<sup>1</sup> Motor full-load currents are based on FUJI's standard type totally-enclosed induction motors.

<sup>2</sup> Maximum thermal current setting value.

- Adjustable Rated Current Type, Applicable to Round Solderless Terminals

Type	Capacity of 3-phase standard motor and total load current <sup>1</sup>				Current In [A] <sup>2</sup>	Thermal current setting range le [A]	Instantaneous trip current [A]	Rated breaking capacity Icu [kA]		TUV license No.	EN/IEC/ others
	200-240V AC		380-440V AC					240V AC	145V AC		
	Capacity [kw]	Current [A]	Capacity [kw]	Current [A]							
BM3RSR-P16	—	—	0.02	0.1	0.16	0.1-0.16	2.1	100	100	R2050628	IEC60947-1 IEC60947-2 IEC60947-4-1
BM3RSR-P25	0.03	0.24	0.06	0.21	0.25	0.16-0.25	3.3				
BM3RSR-P40	0.06	0.37	0.1	0.34	0.4	0.25-0.4	5.2				
BM3RSR-P63	0.06	0.37	0.12	0.41	0.63	0.4-0.63	8.2				
BM3RSR-001	0.1	0.68	0.2	0.7	1	0.63-1	13				
BM3RSR-1P6	0.2	1.3	0.4	1.2	1.6	1-1.6	20.8				
BM3RSR-2P5	0.4	2.3	0.75	1.8	2.5	1.6-2.5	32.5				
BM3RSR-004	0.75	3.6	1.5	3.1	4	2.5-4	52				
BM3RSR-6P3	1.5	6.1	2.2	4.8	6.3	4-6.3	81.9				
BM3RSR-010	2.2	9.2	3.7	7.5	10	6.3-10	130				
BM3RSR-013	2.2	9.2	5.5	11	13	9-13	169				
BM3RSR-016	3.7	15	7.5	15	16	11-16	208				
BM3RSR-020	3.7	15	7.5	15	20	14-20	260				
BM3RSR-025	5.5	22.5	11	21	25	19-25	325				
BM3RSR-032	7.5	29	15	28	32	24-32	416				
BM3RHR-P16	—	—	0.02	0.1	0.16	0.1-0.16	2.1	100	100		
BM3RHR-P25	0.03	0.24	0.06	0.21	0.25	0.16-0.25	3.3				
BM3RHR-P40	0.06	0.37	0.1	0.34	0.4	0.25-0.4	5.2				
BM3RHR-P63	0.06	0.37	0.12	0.41	0.63	0.4-0.63	8.2				
BM3RHR-001	0.1	0.68	0.2	0.7	1	0.63-1	13				
BM3RHR-1P6	0.2	1.3	0.4	1.2	1.6	1-1.6	20.8				
BM3RHR-2P5	0.4	2.3	0.75	1.8	2.5	1.6-2.5	32.5				
BM3RHR-004	0.75	3.6	1.5	3.1	4	2.5-4	52				
BM3RHR-6P3	1.5	6.1	2.2	4.6	6.3	4-6.3	81.9				
BM3RHR-010	2.2	9.2	3.7	7.5	10	6.3-10	130				
BM3RHR-013	2.2	9.2	5.5	11	13	9-13	169				
BM3RHR-016	3.7	15	7.5	15	16	11-16	208				
BM3RHR-020	3.7	15	7.5	15	20	14-20	260				
BM3RHR-025	5.5	22.5	11	21	25	19-25	325				
BM3RHR-032	7.5	29	15	28	32	24-32	416				

<sup>1</sup> Motor full-load currents are based on FUJI's standard type totally-enclosed induction motors.

<sup>2</sup> Maximum thermal current setting value.

■ Circuit Protector

Series	Type	Voltage [V]	Current [A]	Interrupting capacity	Internal Circuit	TUV license No.	EN/IEC/ others
F T	CP31F, CP31T	AC250V, DC65V	0.1~30A	2500A	Series type	R9650230	IEC60934
	CP32F, CP32T	AC250V, DC125V					
	CP33F, CP33T	AC250V					
P	CP31P	AC250V, DC65V	0.3~25A	1000A	Series type	R9750278	IEC60934
	CP32P						
	CP33P						
B	CP51B	AC250V, DC65V	0.3~50A	AC : 1500A DC : 1000A	Series type	R9750278	IEC60934
	CP52B						
	CP53B						
V	CP31V	AC50V, DC65V	0.05~30A	AC250V : 1000A AC125V : 1500A DC : 1000A	Series type Shunt type Retay type (current tripping) Switch type	R50064785	EN60934
	CP32V						
	CP33V						
	CP34V						

■ Super-rapid Fuses

● CR2L, 2LS series

Type	Voltage	Current [A]	Interrupting capacity	TUV license No.	EN/IEC/ others
CR2LS-10/UL	250V AC 350V DC	10	10kA (pf0.8)10kA (Time constant = 2.0ms)	J9551364	IEC60269-4
CR2LS-20/UL		20			
CR2LS-30/UL		30			
CR2LS-50/UL		50			
CR2LS-75/UL		75			
CR2LS-100/UL		100			
CR2L-150/UL		150			
CR2L-200/UL		200			
CR2L-260/UL		250			
CR2L-300		300			
CR2L-350/UL		350			

● CR6L series

Type	Voltage	Current [A]	Interrupting capacity	TUV license No.	EN/IEC/ others
CR6L-50/UL	600V AC 590V DC	50	AC: 10kA (pf0.8) DC: 8kA (Time constant = 2.0ms)	J9551363	IEC60269-4
CR6L-75/UL		75			
CR6L-100/UL		100			
CR6L-150/UL		150			
CR6L-200/UL		200			
CR6L-300/UL		300			

## ■ Pushbuttons, Selector Switches, Pilot Lights, Buzzers

### ● Command switches <AH164/AH165/AH165-2/AH225/AG225/AH16P/AH16P-2/AH22P Series>

Type	Model	Rating				TÜV license No.	EN/IEC/ others
		Withstand voltage [V]	Continuous current [A]	Voltage [V]	Operational current [A] <sup>1)</sup>		
AH164 AH165 AH165-2 AH225 AG225 AH16P AH16P-2 AH22P	(Illuminated) pushbutton switches <sup>2)</sup> <Except AH165-V, V1>	250V AC/DC	5	240V AC	0.3	R9250087	EN60947-5-1
	Pushbutton switches <For AH165-V, V1> Selector switches <For AH165-JM, RJM> (Illuminated) selector switches <Except AH165-JM,RJM> Pilot lights <sup>2)</sup>			24V DC	0.7		
				240V AC	0.3		
				24V DC	0.7		
AH165	Emergency stop pushbutton switches	250V AC/DC	5	240V AC	0.3	R9950093	EN60947-5-1 EN60947-5-5
				24V DC	0.7		
AH164-TX2 AH165-X	Buzzers	60V AC/DC	-	-	-	J9950092	EN60947-5-1

<sup>1)</sup> Rated operational current is AC-15 in the case of AC and DC-13 in the case of DC.

<sup>2)</sup> The AH164/165 illuminated type with spot LED or two-color LED has not been approved.

### ● Command switches <AR22/DR22/AR30/DR30/AM22/DM22/AG28/DG28 Series>

#### a. Illuminated pushbutton switches

Bezel	Operator	Type								TÜV license No.	EN/IEC/ others
		AR22		AR30		AM22		AG28			
		Momentary	Alternate	Momentary	Alternate	Momentary	Alternate	Momentary	Alternate		
Round bezel	Flush round head	AR22F0L	AR22F5L	-	-	AM22F0L	AM22F5L	-	-	R9551062	EN60947-5-1
	Extended round head	AR22E0L	AR22E5L	AR30E0L	AR30E5L	AM22E0L	AM22E5L	-	-		
	Mushroom head (40mm dia.)	AR22M0L	AR22M5L	-	-	AM22M0L	AM22M5L	-	-		
	Mushroom head (29mm dia.)	AR22M4L	AR22M9L	-	-	AM22M4L	AM22M9L	-	-		
	Extended with transparent full guard (24mm dia.)	AR22G4L	AR22G9L	AR30G4L	AR30G9L	AM22G4L	AM22G9L	-	-		
	Extended with full guard (24mm dia.)	AR22G1L	AR22G6L	AR30G3L	AR30G8L	-	-	-	-		
	Extended with transparent full guard (24mm dia. with openings)	AR22G2L	AR22G7L	AR30G2L	AR30G7L	AM22G2L	AM22G7L	-	-		
	Push-locked, turn-reset (40mm dia. with white arrow)	AR22V5L (Returning method: turn-reset)		AR30V5L (Returning method: turn-reset)		-	-	-	-		
	Push-pull	-	-	AR30Q7L (Returning method: automatic-return)		-	-	-	-		
Square bezel	Flush square head	AR22F0M	AR22F5M	-	-	-	-	AG28F0M	AG28F5M		
	Extended square head	AR22E0M	AR22E5M	-	-	-	-	-	-		
	With full guard ring	-	-	-	-	-	-	AG28G2M	AG28G7M		
	Flush round head	AR22F0P	AR22F5P	-	-	-	-	-	-		
	Extended round head	AR22E0P	AR22E5P	-	-	-	-	-	-		
	Mushroom head (29mm dia.)	AR22M4P	-	-	-	-	-	-	-		

**b. Pushbutton switches**

Bezel	Operator	Type								TÜV license No.	EN/IEC/ others
		AR22		AR30		AM22		AG28			
		Momentary	Alternate	Momentary	Alternate	Momentary	Alternate	Momentary	Alternate		
Round bezel	Flush round head	AR22F0R	AR22F5R	AR30F0R	AR30F5R	AM22F0R	AM22F5R	-	-	R9551062	EN60947-5-1
	Extended round head	AR22E0R	AR22E5R	AR30E0R	AR30E5R	AM22E0R	AM22E5R	-	-		
	Mushroom head (40mm dia.)	AR22M0R	AR22M5R	AR30M0R	AR30M5R	AM22M0R	AM22M5R	-	-		
	Mushroom head (29mm dia.)	AR22M4R	AR22M9R	AR30M4R	-	AM22M4R	-	-	-		
	Extended with full guard (24mm dia.)	AR22G3R	AR22G8R	-	-	AM22G3R	AM22G8R	-	-		
	Flush with full guard (24mm dia.)	AR22G2R	AR22G7R	-	-	-	-	-	-		
	Extended with full guard (24mm dia.)	-	-	AR30G1R	AR30G6R	-	-	-	-		
	Mushroom head with full guard (40mm dia.)	AR22M3R	-	AR30M3R	-	AM22M3R	AM22M8R	-	-		
	Extended with half guard	AR22G0R	AR22G5R	AR30G0R	AR30G5R	-	-	-	-		
	Pin lock	-	-	AR30GPR	-	-	-	-	-		
	Giant head	-	-	AR30B0R	-	-	-	-	-		
	Pushbutton with selector ring (2-position)	AR22S1R, S2R, S3R, S6R	-	AR30S1R, S2R, S3R, S6R	-	-	-	-	-		
	Push, turn-lock	-	-	AR30N0R	-	-	-	-	-		
	Pushbutton with emergency operating cap	-	-	AR30FVR	-	-	-	-	-		
	Mushroom head with full guard (35mm dia. metal nut)	-	-	AR30GSR	-	-	-	-	-		
	Giant head with full guard	-	-	AR30B2R	-	-	-	-	-		
	Giant head with full guard	-	-	AR30B3R	-	-	-	-	-		
Giant head with guard	-	-	AR30B1R	-	-	-	-	-			
Push-lock, turn-reset (40mm dia. with white arrow)	AR22V5R (Returning method: turn-reset)	-	AR30V5R (Returning method: turn-reset)	-	-	-	-	-			
Square bezel	Flush square head	AR22F0S	AR22F5S	-	-	-	-	AG28F0S	AG28F5S		
	Extended square head	AR22E0S	AR22E5S	-	-	-	-	-	-		
	Flush with full guard	-	-	-	-	-	-	AG28G2S	AG28G7S		
	Flush round head	AR22F0Y	AR22F5Y	-	-	-	-	-	-		
	Extended round head	AR22E0Y	AR22E5Y	-	-	-	-	-	-		
	Mushroom head (29mm dia.)	AR22M4Y	-	-	-	-	-	-	-		
	Pushbutton with selector ring (2-position, 24mm dia.)	-	-	-	-	-	-	AG28S2Y	-		

**c. Emergency stop pushbutton switches**

Bezel	Operator	Type						TÜV license No.	EN/IEC/ others
		AR22		AR30		AM22			
		Non-illuminated	illuminated	Non-illuminated	illuminated	Non-illuminated	illuminated		
Round bezel	Push-lock, turn-reset (29mm dia.) (with white arrow)	AR22V0R	AR22V0L	AR30V0R	AR30V0L	AM22V0E	AM22V0F	R50028146	EN60947-5-1 EN60947-5-5
	Push-lock, turn-reset (40mm dia.)	AR22V2R AR22V3R	AR22V2L	AR30V2R	AR30V2L	-	-		
	Push-lock, turn-reset (29mm dia.) (with white arrow)	AR22VSR	AR22VSL	-	-	AM22VSE	AM22VSF		
	Push-lock, turn-reset (40mm dia.)	AR22V4R	-	-	-	-	-		
	Key-release push-lock, turn reset (40mm dia.)	AR22V7R	-	-	-	-	-		
	Push-lock, pull-reset (35mm dia.)	AR22Q2R	-	AR30Q2R	-	-	-		
	Push-lock, turn-reset (40mm dia.) (transparent in all colors, with white arrow)	-	AR22VDL	-	AR30VDL	-	AM22VDF		
	Push-lock, turn-reset (40mm dia.) (transparent in all colors)	-	AR22VAL	-	-	-	-		
	Push-lock, turn-reset (65mm dia.) (with white arrow)	-	-	AR30V1R	-	-	-		
Unibody push-lock, turn-reset (40mm dia.) (with white arrow)	AR22VGE	AR22VGF	-	-	-	-	R50028137	EN60947-5-1 EN60947-5-5	

**d. Pilot lights**

Bezel	Lens	Type				TÜV license No.	EN/IEC/ others
		DR22	DR30	DM22	DG28		
Round bezel	Dome	DR22D0L	DR30D0L	DM22D0L	-	R9551061	EN60947-5-1
	Extended round	DR22E3L	DR30E3L	DM22E3L	-		
	Faceted	DR22K0L	DR30K0L	DM22K0L	-		
	Dimmer dome (24mm dia.)	-	DR30D1L	-	-		
Square bezel	Flush square	DR22F3M	-	-	DG28F3M		
	Flush square (transparent lens)	DR22F4M	-	-	-		
	Flush square (12mm high frame)	DR22F5M	-	-	-		
	Extended square	DR22E3M	-	-	-		
	Flush rectangular (24x31)	DR22E3N	-	-	-		
	Flush square (transparent lens)	-	DR30F4M <sup>*1</sup>	-	-		
	Flush rectangular (36x30) (transparent lens)	-	DR30F4N <sup>*1</sup>	-	-		
	Flush square large type (transparent lens)	-	DR30M4M <sup>*1</sup>	-	-		
	Extended round	DR22E3P	-	-	-		

Note1: With resistor unit and resistor type: Not approved.

\*1 LED 12VAC type: Not approved.

**e. Selector/illuminated selector switches**

Bezel	Operator	Type								TÜV license No.	EN/IEC/ others
		AR22		AR30		AM22		AG28			
		Non-illuminated	illuminated	Non-illuminated	illuminated	Non-illuminated	illuminated	Non-illuminated	illuminated		
Round bezel	Knob	AR22PR, PCR	AR22PL	AR30PR, PCR	AR30PL	AM22PR, PCR	AM22PL	-	-	R9551060	EN60947-5-1
	Lever	AR22WR, WCR	-	AR30WR, WCR	-	AM22WR, WCR	-	-	-		
	Cylindrical knob	AR22RR, RCR	-	-	-	-	-	-	-		
	Key	AR22JR, JCR	-	AR30JR, JCR	-	AM22JR, JCR	-	-	-		
	Key (long durability)	AR22JAR	-	AR30JAR	-	-	-	-	-		
	Lever	-	-	AR30HR	-	-	-	-	-		
Square bezel	Knob	AR22PY, PCY	AR22PP	-	-	-	-	AG28PY	AG28PP		
	Lever	AR22WY, WCY	-	-	-	-	-	-	-		
	Cylindrical knob	AR22RY, RCY	-	-	-	-	-	-	-		
	Key	AR22JY, JCY	-	-	-	-	-	-	-		

**f. Joy stick selector switches (Lever switches)**

Bezel	Handle	Type				TÜV license No.	EN/IEC/ others
		AR22		AR30			
		Manual return	Automatic return	Manual return	Automatic return		
Round bezel	Ball type (without lock)	AR22A0□	AR22A5□	AR30A0□	AR30A5□	R2050803	EN60947-5-1
	Ball type (with lock)	AR22A1□	AR22A6□	AR30A1□	AR30A6□		
	Rubber cap type (without lock)	AR22A2□	AR22A7□	AR30A2□	AR30A7□		

**g. Buzzers**

Bezel	Sound	Type		TÜV license No.	EN/IEC/ others
		DR22	DR30		
Round bezel	Electronic sound (IP54)	DR22B8	DR30B8	J9950091	EN60947-5-1

Notes 1: 6V AC, 110V DC types: Not approved

## ■ Cam Switches

Type	Operational current [A]							Withstand voltage [V]	Continuous current [A]	TÜV license No.	EN/IEC/ others											
	AC-15				DC-13																	
	110V	220V	440V	550V	24V	110V	220V															
RC310-1/9423	7.5	7.5	2.5	1.5	5	1.3	0.45	600	10	R9551381	EN60947-5-1											
RC310-1A3																						
RC310-1A30																						
RC310-1/9409																						
RC310-1/0205																						
RC310F-1V																						
RC310F-1V0																						
RC310F-1/9424																						
RC310F-1/0289																						
RC310-1□/E2 (with pilot light)												-	-	-	-	15mA	-	-	-	-	-	-
AK22-1□												3	3	1.3	1	1	0.5	0.2	600	10	R9551382	
AK22-1□J												7.5	7.5	2.5	1.5	5	1.3	0.45	600	10	R9551381	
RC310x-1□																						
RC310-1□																						
RC310-1□J2																						
RC310-1□J1																						
RC310-1□T																						
RC310F-1A2																						
RC310F-1A20																						
RC310F-A9423																						
RC310F-1A3																						
RC310F-A130																						
RC310F-1/9409																						
RC310F-1/0205																						
RC310F-1A2																						
RC310F-1A20																						

## ■ Control Relays

### ● Main body

Type	Contact arrangement	Load voltage	Resistive load	Inductive load	Continuous current	TÜV license No.	EN/IEC/ others
HH52□ HH52□W	2(NO+NC) single contact, bifurcated contact	120V AC	5A	1.5A	5A	R9251339	EN60950 IEC60255-1-00 IEC60255-0-20
		240V AC	5A				
		30V DC	5A	2A (15ms)			
		120V DC	0.3A	0.2A (15ms)			
HH52□U	2(NO+NC) high-capacity single contact	120V AC	7A	1.5A	7A	R9251340	
		240V AC	7A				
		30V DC	7A	2A (15ms)			
		120V DC	0.3A	0.2A (15ms)			
HH53□	3(NO+NC) single contact	120V AC	5A	1.5A	5A	R9251340	
		240V AC	5A				
		30V DC	5A	2A (15ms)			
		120V DC	0.3A	0.2A (15ms)			
HH54□	4(NO+NC) single contact	120V AC	3A	1A	3A	R9251341	
		240V AC	3A				
		30V DC	3A	2A (15ms)			
		120V DC	0.3A	0.2A (15ms)			
HH54□U	4(NO+NC) high-capacity single contact	120V AC	5A	1A	5A	R9251341	
		240V AC	5A				
		30V DC	5A	2A (15ms)			
		120V DC	0.3A	0.2A (15ms)			
HH54□W	4(NO+NC) bifurcated contact	120V AC	3A	1A	3A	R9251341	
		240V AC	3A				
		30V DC	3A	2A (15ms)			
		120V DC	0.2A	0.2A (15ms)			
HH62□	2(NO+NC) single contact	120V AC	10A	1.5A	10A	R9251342	
		240V AC	10A				
		30V DC	8A	2A (15ms)			
		120V DC	0.3A	0.2A (15ms)			
RB104 RB105	1NO bifurcated contact	120V AC	-	1A	5A	R9551729	IEC60255-0-20 IEC60255-1-00
		240V AC	5A	-			
		30V DC	5A	2A (15ms)			
		120V DC	0.5A	0.2A (15ms)			
RS4N RS6N RS16	4-pole 6-pole 16-pole	120V AC	-	1A	5A (RS4N) 2A (RS6N, 16)	R9551729	
		240V AC	5A (6N, 16: 2A)	-			
		30V DC	5A (6N, 16: 2A)	2A (15ms)			
		120V DC	0.5A	0.2A (15ms)			

● Sockets

Type	Specification	Application	TÜV license No.	EN/IEC/others
TP58	Solder terminal	HH52	T9251612	IEC60255-1-00 IEC60255-0-20
TP58B	PC board			
TP58R2	Wire wrap			
TP58X2	Rail mounting (M3.5)			
TP58X1	Rail mounting (M3)	HH53		
TP511	Solder terminal			
TP511B	PC board			
TP511R2	Wire wrap			
TP511X2	Rail mounting (M3.5)	HH54		
TP514	Solder terminal			
TP514B	PC board			
TP514R2	Wire wrap			
TP514X2	Rail mounting (M3.5)	HH62		
TP514X1	Rail mounting (M3)			
TP68	Solder terminal			
TP68B	PC board			
TP68R	Wire wrap			
TP68X2	Rail mounting (M3.5)			

■ Timers

Type	Control output	TÜV license No.	EN/IEC/others
MS4SM	Contact rating: 5A, 250V AC (resistive load)	R50007315	EN61812-1
MS4SA		R50006667	
MS4SC	Contact rating: 5A, 240V AC (resistive load)	R50004818	
ST7P-2	Contact rating: 3A, 240V AC (resistive load)		
ST7P-4			

■ Terminal Blocks

● Block terminal

Type <sup>*1</sup>	Withstand voltage [V]	Connecting wire size [AWG/mm <sup>2</sup> ]	TÜV license No.	EN/IEC/others	
AYBN01□-□	600	18 to 14/0.75 to 2.5 (1.5) <sup>*1</sup>	R9551135	EN60947-7-1 IEC60947-7-1	
AYBN02□-□		16 to 10/1.5 to 6 (4) <sup>*1</sup>			
AYBN04□-□		16 to 6/1.5 to 16 (10) <sup>*1</sup>			
AYBN06□-□		14 to 4/2.5 to 25 (16) <sup>*1</sup>			
AYBN10□-5		14 to 2/2.5 to 35			
AYBN20□-5		10 to 00/6 to 70			
AYBN40□-5		6 to 350/16 to 185			
AYBN601-5		000 to 600/95 to 300			
AYBS02□-□		16 to 10/1.5 to 6 (4) <sup>*1</sup>			R9551168
AYBS04□-□		16 to 6/1.5 to 16 (10) <sup>*1</sup>			
AYBS06□-□		14 to 4/2.5 to 25 (16) <sup>*1</sup>			
TC2-□B		18 to 14/0.75 to 2.5 (1.5) <sup>*1</sup>			
TC5-□B		14 to 10/2.5 to 6 (4) <sup>*1</sup>			
TD2-010B		18 to 14/0.75 to 2.5 (1.5) <sup>*1</sup>			
TD5-010B		14 to 10/2.5 to 6 (4) <sup>*1</sup>			
TS5-S		16 to 10/1.5 to 6			
TS14-S		16 to 6/1.5 to 16			
TS22-S		14 to 4/2.5 to 25			

Note: When ordering, specify "TÜV approved" products.

<sup>\*1</sup> Parenthesized values mean the maximum rating for straight wiring

● Combination terminal block

Type	Withstand voltage [V]	Rated current [A]	Connecting wire size	TÜV license No.
LT2F-010	600	15	20-16AWG-Cu	R9551141
LT2F-020		22	20-14AWG-Cu	R9551142
LT2F-030		30	18-12AWG-Cu	R9551143
LT2F-040		40	18-10AWG-Cu	R9551144
LT2F-080		75	12-6AWG-Cu	R9551158
LT2F-020W		22	20-14AWG-Cu	R9551145
LT2K-010		15	20-16AWG-Cu	R9551154
LT2K-020		20	20-14AWG-Cu	R9551156
LT2K-010W		15	20-16AWG-Cu	R9551157
LT2E-020		22	20-14AWG-Cu	R9551146
LT2E-030		30	18-12AWG-Cu	R9551147
LT2E-040		40	18-10AWG-Cu	R9551148
LT2E-080		75	12-6AWG-Cu	R9551159
LT2E-090		95	10-4AWG-Cu	R9551160
LT2E-150		160	6-2/0AWG-Cu	R9551161
LT2E-200		660	200	2-250AWG-Cu
LT2E-300	300		1/0-300AWG-Cu	R9551163
LT2E-400	400		3/0-500AWG-Cu	R9551164
LT2E-600	600		250-600AWG-Cu	R9551165

● Relaying connector terminal block

Type	Withstand voltage [V]	Rated current [A]	Connecting wire size	TÜV license No.
LP5W-20H2	125	1	22-16AWG-Cu	R50010895
LP5W-20H4				
LP5W-20H5				
LP5W-24H1				
LP5W-26H2				
LP5W-26H4				
LP5W-26H5				
LP5W-34H2				
LP5W-34H4				
LP5W-34H5				
LP5W-40H1				
LP5W-40H2				
LP5W-40H4				
LP5W-40H5				
LP5W-50H2				
LP5W-50H4				
LP5W-50H5				