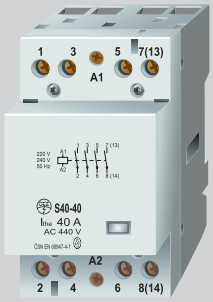
INSTALLATION CONTACTORS



- For switching of electric appliances up to 63 A – electric boilers, direct heating convectors, accumulator stoves, lighting etc.
- Control voltage: 230 V a.c.
- Visual light indication at power up

Installation contactors

Rated current AC1 [A]	Contact sequence [1]	Type	Product code	Weight [kg]	Packing [pcs]
20	10	**S20-10**	11141	0.12	12
	11	**S20-11**	01182	0.12	12
	20	**S20-20**	01181	0.12	12
	02	**S20-02**	11130	0.12	12
25	40	**S25-40**	11422	0.22	6
	31	**S25-31**	11421	0.22	6
	13	**S25-13**	11420	0.22	6
40	40	**S40-40**	11305	0.36	4
	31	**S40-31** [2]	11304	0.36	4
63	40	**S63-40**	11307	0.36	4
	31	**S63-31** [2]	11306	0.36	4

[1] Each digit indicates successively the number of make and break contacts; unused contacts of the main circuit can be used as auxiliary ones

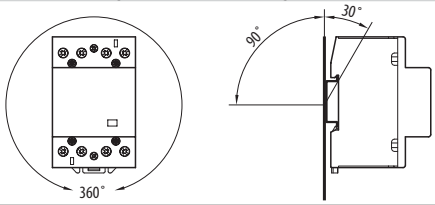
[2] Main circuit 30 and auxiliary circuit 01

Accessories to S25, S40, S63

Auxiliary switch	**SH11**	page 59

INSTALLATION CONTACTORS

Specification

Type				S20	S25	S40	S63
Standards				EN 60947-4-1 EN 60947-5-1	EN 60947-4-1 EN 60947-5-1	EN 60947-4-1 EN 60947-5-1	EN 60947-4-1 EN 60947-5-1
Approval marks							
Main circuit (contact)							
Sequence [1]				10, 11, 20, 02	40, 31, 13	40, 30	40, 30
Rated thermal current			I_{the}	20 A	25 A	40 A	63 A
Rated operating voltage			U_e	250 V a.c.	440 V a.c.	440 V a.c.	440 V a.c.
Rated insulation voltage [2]			U_i	440 V a.c.	440 V a.c.	440 V a.c.	440 V a.c.
Rated operating current	AC-1 / AC-7a		I_e	20 A	25 A	40 A	63 A
	AC-3 / AC-7b		I_e	-	9 A	27 A	30 A
	AC-5a	cosφ=0.5	I_e	10 A	12 A	32 A	52 A
		cosφ=0.9 [3]	I_e	2.3 A	2.3 A	8.5 A	11 A
		duo connection [4]	I_e	16 A	20 A	34 A	54 A
	AC-5b		I_e	6 A	8 A	16 A	23 A
Switched power	AC-1 / AC-7a	230 V a.c.		4.6 kW	-	-	-
		400 C a.c.		-	17 kW	27.5 kW	43 kW
	AC-3 / AC-7b	230 V a.c.		1.1 kW	2.5 kW	8 kW	8.5 kW
		400 C a.c.		-	4 kW	12.5 kW	15 kW
	AC-5a at 230 V a.c.	cosφ=0.5		1.1 kW	1.3 kW	3.4 kW	5.5 kW
		cosφ=0.9 [3]		0.4 kW	0.4 kW	1.6 kW	2.1 kW
		duo connection [4]		3 kW	3.7 kW	6.3 kW	10 kW
	AC-5b at 230 V a.c.			1.3 kW	1.8 kW	3.5 kW	5.1 kW
Frequency of switching	AC-1 / AC-3			300 op. cycles/h	300 op. cycles/h	600 op. cycles/h	600 op. cycles/h
Power losses at I_e on 1pole	AC-1 / AC-7a			2 W	2 W	3 W	7 W
Electrical endurance	AC-1 / AC-7a			100 000 operating cycles	100 000 operating cycles	100 000 operating cycles	100 000 operating cycles
	AC-3 / AC-7b			-	150 000 operating cycles	150 000 operating cycles	150 000 operating cycles
Mechanical endurance				1 000 000 operating cycles	1 000 000 operating cycles	1 000 000 operating cycles	1 000 000 operating cycles
Short-circuit protection	max. backup fuse gG			35 A	35 A	63 A	80 A
Connection [5]	conductor rigid (solid/stranded)			1.5 ÷ 10 mm²	1.5 ÷ 10 mm²	2.5 ÷ 25 mm²	2.5 ÷ 25 mm²
	conductor flexible			1.5 ÷ 6 mm²	1.5 ÷ 6 mm²	2.5 ÷ 16 mm²	2.5 ÷ 16 mm²
	conductor flexible with a terminal			1.5 ÷ 6 mm²	1.5 ÷ 6 mm²	2.5 ÷1 6 mm²	2.5 ÷1 6 mm²
Auxiliary circuit (contact)							
Sequence [1]				-	-	01	01
Rated thermal current at 40 °C			I_{the}	-	-	16 A	16 A
Rated insulation voltage [2]			U_i	-	-	440 V a.c.	440 V a.c.
Rated operating current	AC-15	230 V a.c.	I_e	-	-	12 A	12 A
		400 V a.c.	I_e	-	-	4 A	4 A
Short-circuit protection	max. backup fuse gG			-	-	25 A	25 A
Connection [5]				-	-	see main circuit	see main circuit
Control circuit (coil)							
Rated control voltage			U_e	230 V a.c.	230 V a.c.	230 V a.c.	230 V a.c.
Operating range				85 ÷ 110 % U_e	85 ÷ 110 % U_e	85 ÷ 110 % U_e	85 ÷ 110 % U_e
Power input	at operation			8 VA	16 VA	39 VA	39 VA
	holding			3.2 VA	6.2 VA	7 VA	7 VA
Power losses				1.2 W	2.4 W	2.6 W	2.6 W
Connection [5]	conductor rigid (solid/stranded)			0.75 ÷ 2.5 mm²	0.75 ÷ 2.5 mm²	0.75 ÷ 2.5 mm²	0.75 ÷ 2.5 mm²
	conductor flexible			0.5 ÷ 2.5 mm²	0.5 ÷ 2.5 mm²	0.5 ÷ 2.5 mm²	0.5 ÷ 2.5 mm²
	conductor flexible with a terminal			0.5 ÷ 1.5 mm²	0.5 ÷ 1.5 mm²	0.5 ÷ 1.5 mm²	0.5 ÷ 1.5 mm²
Other data							
Mounting on the rail DIN EN 50 022	width			35 mm	35 mm	35 mm	35 mm
Degree of protection				IP20	IP20	IP20	IP20
Ambient temperature				-40 ÷ 60 °C	-40 ÷ 60 °C	-40 ÷ 60 °C	-40 ÷ 60 °C
Seismic immunity (8 ÷ 50 Hz)				3 g	3 g	3 g	3 g
Operating position							

[1] Each digit indicates successively the number of make and break contacts; unused contacts of the main circuit can be used as auxiliary ones
[2] Valid for networks with earthed neutral point, overvoltage categories I to III, contamination level 3, U_{imp} = 4 kV
[3] Power-factor capacitor improves the power factor, but as a capacitive load increases contact wear substantially
[4] Connection of two fluorescent tubes with one power-factor capacitor
[5] Number of connectable conductors: 1 per terminal

INSTALLATION CONTACTORS

Maximum number of light fittings connected after the contactor at 230 V a.c., 50 Hz

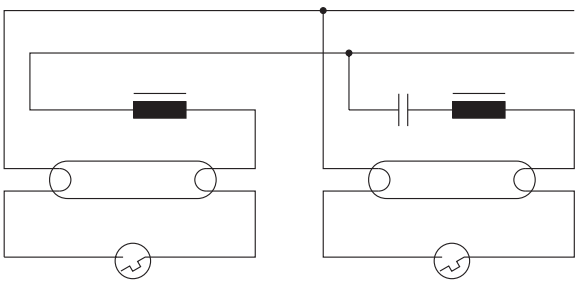
Light fitting type	Power [W]	Current [A]	Capacitor [µF]	Number of light fittings after the contactor [pcs/pole] S20	S25	S40	S63
Light bulbs	60	0.27	-	22	28	58	85
	100	0.45	-	13	17	35	51
	200	0.91	-	7	8	17	25
	300	1.36	-	4	5	11	16
	500	2.27	-	3	3	7	10
	1000	4.50	-	1	1	3	5
Fluorescent tubes	11	0.16	-	60	75	210	310
noncompensated or	18	0.37	2.70	25	30	90	140
compensated in series	24	0.35	2.50	25	30	90	140
	36	0.43	3.40	20	25	70	140
	58	0.67	5.30	14	17	45	70
	65	0.67	5.30	13	16	40	65
	85	0.80	-	11	14	35	60
Fluorescent tubes	11	0.07	-	2 x 100	2 x 110	2 x 220	2 x 250
duo connection	18	0.11	-	2 x 50	2 x 55	2 x 130	2 x 200
	24	0.14	-	2 x 40	2 x 44	2 x 110	2 x 160
	36	0.22	-	2 x 30	2 x 33	2 x 70	2 x 100
	58	0.35	-	2 x 20	2 x 22	2 x 45	2 x 70
	65	0.35	-	2 x 15	2 x 16	2 x 40	2 x 60
	85	0.47	-	2 x 10	2 x 11	2 x 30	2 x 40
Fluorescent tubes	11	0.16	2.00	30	30	100	140
compensated in parallel	18	0.37	2.00	20	20	70	90
	24	0.35	3.00	15	15	55	75
	36	0.43	4.50	10	10	38	51
	58	0.67	7.00	6	6	25	30
	65	0.67	7.00	5	5	24	28
	85	0.80	8.00	4	4	18	23
Fluorescent tubes	18	0.09	-	40	40	100	150
with the electronic ballast	36	0.16	-	20	20	50	75
	58	0.25	-	15	15	30	55
	2 x 18	0.17	-	2 x 20	2 x 20	2 x 50	2 x 60
	2 x 36	0.32	-	2 x 10	2 x 10	2 x 25	2 x 30
	2 x 58	0.49	-	2 x 7	2 x 7	2 x 15	2 x 20
Transformers for halogen lamps	20		-	40	52	110	174
	50		-	20	24	50	80
	75		-	13	16	35	54
	100		-	10	12	27	43
	150		-	7	9	19	29
	200		-	5	5	14	23
	300		-	3	4	9	14
High-pressure mercury discharge lamps	50	0.61	-	16	18	38	55
noncompensated	80	0.80	-	12	14	28	40
	125	1.15	-	8	9	20	28
	250	2.15	-	4	5	11	15
	400	3.25	-	3	4	7	10
	700	5.40	-	1	2	4	6
	1000	7.50	-	1	1	3	4
High-pressure mercury discharge lamps	50	0.28	7.00	7	7	32	46
compensated	80	0.41	8.00	5	5	25	35
	125	0.65	10.00	3	3	16	22
	250	1.22	18.00	2	2	8	12
	400	1.95	25.00	1	1	5	7
	700	3.45	45.00	1	1	3	4
	1000	4.0	60.00	-	-	2	3

INSTALLATION CONTACTORS

Maximum number of light fittings connected after the contactor at 230 V a.c., 50 Hz

Light fitting type		Power [W]	Current [A]	Capacitor [μF]	Number of light fittings after the contactor [pcs/pole] S20	S25	S40	S63
Metal halide discharge lamp		35	0.53	-	22	24	45	65
noncompensated		70	1.00	-	12	14	24	35
		150	1.80	-	6	8	13	18
		250	3.00	-	4	5	8	12
		400	3.50	-	3	4	6	10
		1000	9.50	-	1	1	2	4
		2000	16.50	-	-	-	1	2
	400 V/pole	2000	10.80	-	-	-	1	2
		3500	18.00	-	-	-	-	1
Metal halide discharge lamp		35	0.25	6.00	8	8	38	50
compensated		70	0.45	12.00	4	4	20	28
		150	0.75	20.00	2	2	12	17
		250	1.50	33.00	1	1	7	10
		400	2.10	35.00	1	1	5	7
		1000	5.80	95.00	-	-	2	3
		2000	11.50	148.00	-	-	1	1
	400 V/pole	2000	6.60	58.00	-	-	1	2
		3500	11.60	100.00	-	-	-	1
Metal halide discharge lamp		20	0.10	integrated	9	9	18	20
with the electronic ballast		35	0.20	integrated	6	6	11	13
50 - 125 x $I_{n\ light\ fitting}$ for 0.6 ms		70	0.36	integrated	5	5	10	12
		150	0.70	integrated	4	4	8	10
Low-pressure sodium discharge lamps		35	1.50	-	7	9	22	30
noncompensated		55	1.50	-	7	9	22	30
		90	2.40	-	4	6	13	19
		135	3.50	-	3	4	10	13
		150	3.30	-	3	4	10	13
		180	3.30	-	3	4	10	13
		200	3.30	-	3	4	10	13
Low-pressure sodium discharge lamps		35	0.31	20.00	3	3	12	16
compensated		55	0.42	20.00	2	2	8	14
		90	0.63	30.00	1	1	5	9
		135	0.94	45.00	1	1	3	6
		150	1.00	40.00	1	1	3	6
		180	1.16	40.00	1	1	2	5
		200	1.32	25.00	-	-	2	4
High-pressure sodium discharge lamps		150	1.80	-	5	6	11	22
noncompensated		250	3.00	-	4	5	7	13
		330	3.70	-	3	4	6	10
		400	4.70	-	2	2	5	8
		1000	10.30	-	1	1	2	4
High-pressure sodium discharge lamps		150	0.83	20.00	2	2	7	14
compensated		250	1.50	33.00	1	1	4	8
		330	2.00	40.00	1	1	3	6
		400	2.40	48.00	1	1	2	5
		1000	6.30	106.00	-	-	1	2
High-pressure sodium discharge lamps		20	0.10	integrated	9	9	18	20
with the electronic ballast		35	0.20	integrated	6	6	11	13
50 - 125 x $I_{n\ light\ fitting}$ for 0.6 ms		70	0.36	integrated	5	5	10	12
		150	0.70	integrated	4	4	8	10

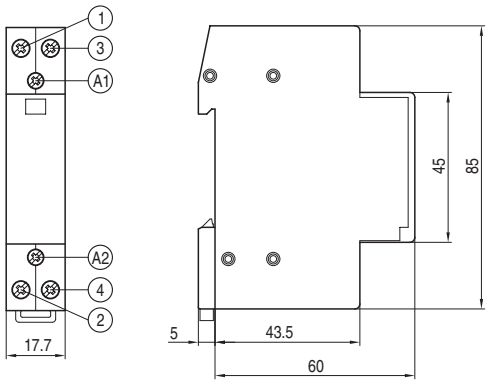
DUO CONNECTION - connection of two fluorescent lamps with one power-factor capacitor (cosφ=1)



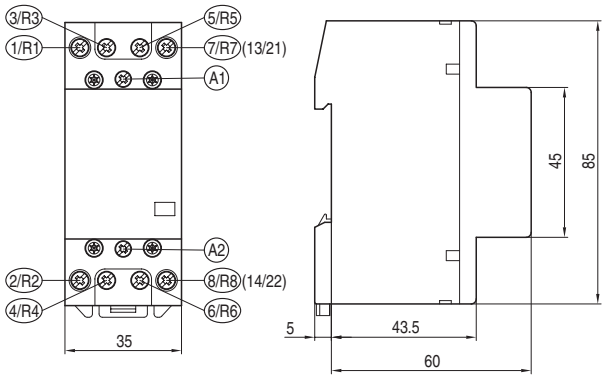
INSTALLATION CONTACTORS

Dimensions

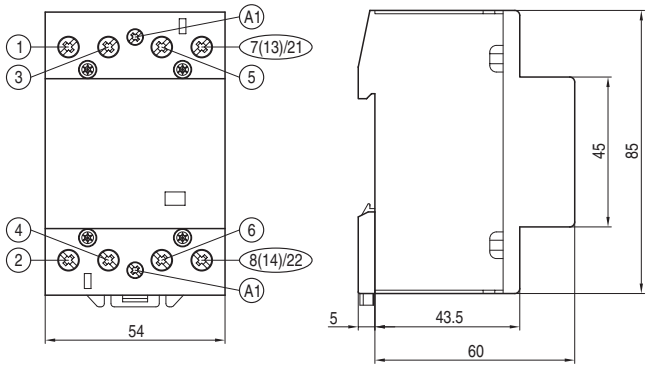
S20



S25

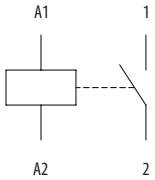


S40, S63

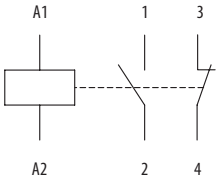


Diagram

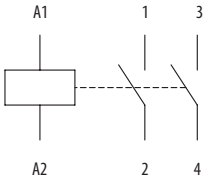
S20-10



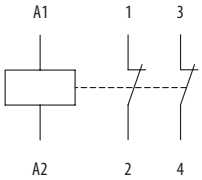
S20-11



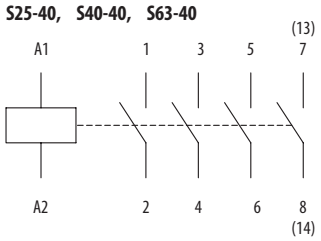
S20-20



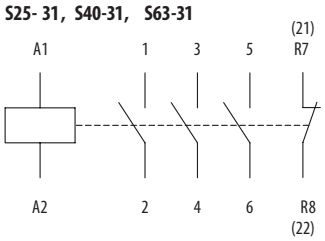
S20-02



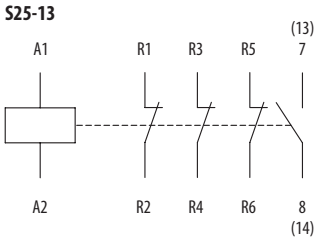
S25-40, S40-40, S63-40



S25- 31, S40-31, S63-31



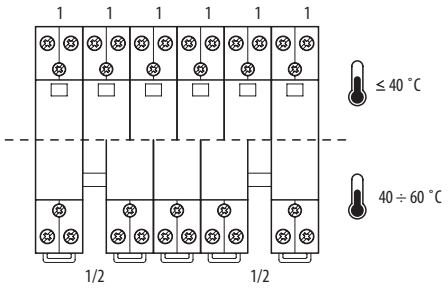
S25-13



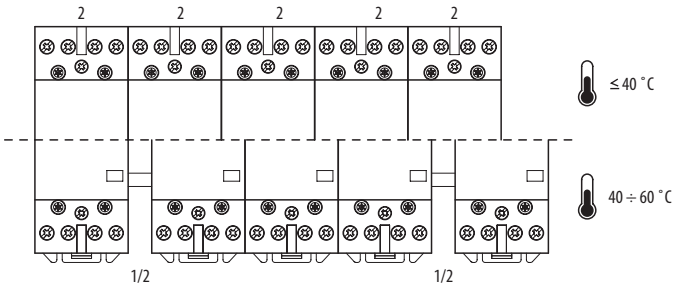
INSTALLATION CONTACTORS

Position of contactors side by side depending on ambient temperature

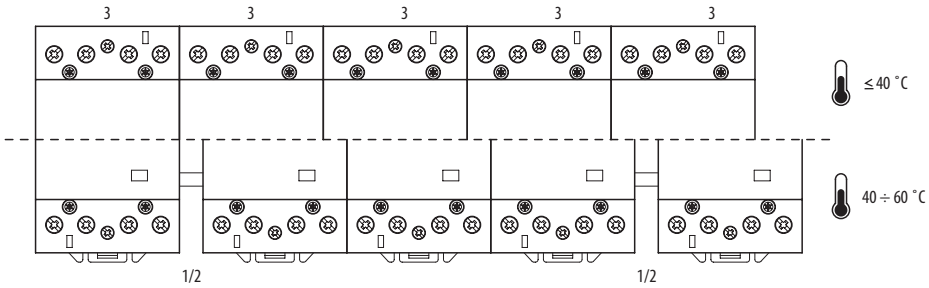
S20



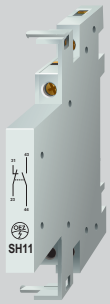
S25



S40, S63



AUXILIARY SWITCH



- Accessories to: S25, S40 and S63
- For signalling of the position of main contacts of installation contactors
- Installation: by means of plastic plates on the right side of installation contactors
- Electric isolation between the contactor and auxiliary switch is provided like between the input and output circuits of a protective transformer
- Width: 9 mm

Auxiliary switch

Rated current/voltage AC15 [A/V]	Type	Contact sequence [1]	Product code	Weight [kg]	Packing [pcs]
3/230	**SH11**	11	11785	0.03	3

[1] Each digit indicates successively the number of make, break and break-make contacts

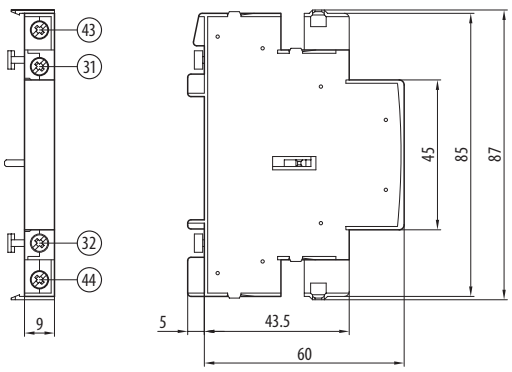
Specification

Type				**SH11**
Contact sequence [1]				11
Rated thermal current	at 40 °C		I_{th}	10 A
	at 60 °C		I_{th}	6 A
Rated operating voltage			U_e	440 V a.c.
Rated insulation voltage [2]			U_i	440 V a.c.
Rated operating current	AC-15	230 V a.c.	I_e	3 A
		400 V a.c.	I_e	2 A
	DC-13	110 V d.c.	I_e	0.4 A
		220 V d.c.	I_e	0.1 A
Frequency of switching	AC-1 / AC-3			600 op. cycles/h
Mechanical endurance				1 000 000 operating cycles
Connection [3]	conductor rigid (solid/stranded)			0.5 ÷ 2.5 mm²
	conductor flexible			0.5 ÷ 2.5 mm²
	conductor flexible with a terminal			0.5 ÷ 1.5 mm²

[1] Each digit indicates successively the number of make and break contacts; unused contacts of the main circuit can be used as auxiliary ones
[2] Valid for networks with earthed neutral point, overvoltage categories I to III, contamination level 3, U_{imp} = 4 kV
[3] Number of connectable conductors: 1 per terminal

Dimensions

SH11



Diagram

SH11