

UK Technical Data 07 - HS Contactor Selection

Switching of lamps

Lamp Type	Power W	Current A	Capacitors µF	Max. lamps per pole at 230V 50Hz and max. 60°C			
				HS20..	HS25..	HS40..	HS63..
Incandescent lamps	60	0,27	-	36	50	92	129
	100	0,45	-	21	30	55	77
	200	0,91	-	10	15	27	38
	300	1,36	-	7	10	19	26
	500	2,27	-	4	6	11	16
	1000	4,5	-	2	3	6	8
Fluorescent lamps uncompensated or serial compensated	11	0,16	1,3	60	75	210	310
	18	0,37	2,7	25	30	90	140
	24	0,35	2,5	25	30	90	140
	36	0,43	3,4	20	25	70	140
	58	0,67	5,3	14	17	45	70
	65	0,67	5,3	13	16	40	65
Fluorescent lamps dual-connection	85	0,8	5,3	11	14	35	60
	11	0,07	-	2 x 100	2 x 110	2 x 220	2 x 250
	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
Fluorescent lamps parallel compensated	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
	11	0,09	2	33	43	67	107
	18	0,13	2	25	32	50	80
	24	0,16	3	25	32	50	80
	36	0,27	4	22	32	50	80
Fluorescent lamps with electronic fluorescent lamp ballast	58	0,45	7	14	18	36	46
	65	0,5	7	14	18	36	46
	85	0,6	8	12	16	33	44
	18	0,09	-	40	40	100	150
	36	0,16	-	20	20	52	75
	58	0,25	-	15	15	30	55
Transformers for metal halid low voltage lamps	80	0,4	-	7	10	20	30
	2 x 18	0,17	-	20	20	50	60
	2 x 28	0,25	-	15	15	37	45
	2 x 36	0,32	-	10	10	25	30
	2 x 58	0,49	-	7	7	15	20
	2 x 80	0,7	-	4	4	8	10
Mercury-vapour lamps (high-pressure lamps), uncompensated e. g. HQL, HPL	20	0,09	-	40	52	110	174
	50	0,22	-	20	24	50	80
	75	0,33	-	13	16	35	54
	100	0,43	-	10	12	27	43
	150	0,65	-	7	9	19	29
	200	0,87	-	5	5	14	23
Mercury-vapour lamps (high-pressure lamps), compensated e. g. HQL, HPL	300	1,3	-	3	4	9	14
	50	0,61	-	16	21	38	55
	80	0,8	-	12	16	29	40
	125	1,15	-	8	11	20	28
	250	2,15	-	4	6	11	15
	400	3,25	-	3	4	7	10
Mercury-vapour lamps (high-pressure lamps), compensated e. g. HQL, HPL	700	5,4	-	1	2	4	6
	1000	7,5	-	1	1	3	4
	50	0,28	7	14	18	36	50
	80	0,41	8	12	16	31	44
	125	0,65	10	10	13	25	35
	250	1,22	18	5	7	14	19
Mercury-vapour lamps (high-pressure lamps), compensated e. g. HQL, HPL	400	1,95	25	4	5	10	14
	700	3,45	45	2	3	6	8
	1000	4,8	60	1	2	4	6

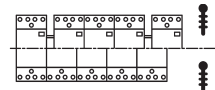
Switching of lamps

Lamp Type	Power W	Current A	Capacitors µF	Max. lamps per pole at 230V 50Hz and max. 60°C				
				HS20..	HS25..	HS40..	HS63..	
Metal halide lamps uncompensated e. g. HQI, HPI, CDM	35	0,53	-	22	24	57	65	
	70	1	-	12	14	30	35	
	150	1,8	-	6	8	17	18	
	250	3	-	4	5	10	12	
	400	3,5	-	3	4	8	10	
	1000	9,5	-	1	1	3	4	
	2000	16,5	-	-	-	2	2	
	400V per pole	2000	10,5	-	-	2	2	
		3500	18	-	-	1	1	
	Metal halide lamps compensated e. g. HQI, HPI, CDM	35	0,25	6	16	21	42	58
70		0,45	12	8	11	21	29	
150		0,75	20	5	7	13	18	
250		1,5	33	3	4	9	11	
400		2,1	35	2	4	9	10	
1000		5,8	95	1	1	3	4	
2000		11,5	148	-	-	2	2	
400V per pole		2000	6,6	58	-	-	3	4
		3500	11,6	100	-	-	2	3
Metal halide lamps with electronic fluorescent with electronic fluorescent lamp ballast (e. g.: PCI) 50-125 x I _{n lamp} for 0,6ms		20	0,1	integrated	9	9	18	20
	28	0,15	integrated	-	-	-	18	
	35	0,2	integrated	6	6	11	13	
	70	0,36	integrated	5	5	10	12	
	150	0,7	integrated	4	4	8	10	
Sodium-vapour lamps (low pressure lamps), uncompensated	35	1,5	-	7	9	22	30	
	55	1,5	-	7	9	22	30	
	90	2,4	-	4	6	13	19	
	135	3,3	-	3	4	10	14	
	150	3,3	-	3	4	10	14	
	180	3,3	-	3	4	10	14	
	200	3,3	-	3	4	10	14	
Sodium-vapour lamps (low pressure lamps), compensated	35	0,31	20	5	6	15	18	
	55	0,42	20	5	6	15	18	
	90	0,63	30	3	4	10	12	
	135	0,94	45	2	3	7	8	
	150	1	40	2	3	8	9	
	180	1,16	40	2	3	8	9	
	200	1,32	25	-	-	10	12	
Sodium-vapour lamps (high pressure lamps), uncompensated	150	1,8	-	5	8	17	22	
	250	3	-	4	5	10	13	
	330	3,7	-	3	4	8	10	
	400	4,7	-	2	3	6	8	
	1000	10,3	-	1	1	3	4	
Sodium-vapour lamps (high pressure lamps), compensated	150	0,83	20	5	7	20	25	
	250	1,5	33	3	4	12	15	
	330	2	40	2	3	10	13	
	400	2,4	48	2	2	8	12	
	1000	6,3	106	1	1	4	6	
Sodium-vapour lamps (high pressure lamps) with serial electronic (e. g.: PCI) 50-125 x I _{n lamp} for 0,6ms	20	0,1	integrated	9	9	18	20	
	35	0,2	integrated	6	6	11	13	
	70	0,36	integrated	5	5	10	12	
	150	0,7	integrated	4	4	8	10	
LED-Lamps consider the inrush current of the lamp ballast and the cosφ of the lamp	max. inrush current of contactor [A]			195A	233A	424A	565A	
	$\frac{\text{inrush current of contactor}}{\text{inrush current of lamp/EVG}} =$			max. lamps per pole at 230V 50Hz and max. 60°C (I _{n,LED} ≤ I _n)				

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Data according to IEC60 947-4-1, IEC 60947-5-1, VDE 0660-5-1

Type		2-pole				4-pole			Aux.
		HS20	HS25	HS40	HS63	HS25	HS40	HS63	HSH11
Main Contacts ^{4) 5) 6)}									
Rated insulation voltage U_i ¹⁾	V~	440	440	440	440	440	440	440	440
Rated operation voltage U_e	V~	440	440	440	440	440	440	440	440
Frequency of operations z AC1, AC3	1/h	300	300	600	600	300	600	600	600
Mechanical life	S x 10 ⁶	1	1	1	1	1	1	1	1
Utilization category AC1 / AC7a									
Switching of resistive load									
Rated operational current I_e (=I _{th}) open	A	20	25	40	63	25	40	63	-
Contact life	S x 10 ⁶	0,1	0,1	0,1	0,1	0,1	0,1	0,1	-
Minimum Switch Voltage	V/mA	24/100	24/100	24/100	24/100	24/100	24/100	24/100	17/5
Short time current ^{10s-current}	A	72	72	216	240	72	216	240	-
Power loss per pole at I _e /AC1	W	2	3	3	7	2	3	7	0,5
Utilization category AC2 and AC3 / AC7b									
Switching of three-phase motors									
Rated operational current I_e	A	-	-	-	-	9	27	30	-
Rated operational power of three-phase motors		-	-	-	-	2,2	7,5	8	-
50-60Hz		-	-	-	-	2,5	8	8,5	-
		-	-	-	-	4	12,5	15	-
2-pole motors		-	-	-	-	-	-	-	-
		1,1 ²⁾	1,3	2,6	5	-	-	-	-
Contact life	S x 10 ⁶	0,15	0,15	0,15	0,15	0,15	0,15	0,15	-
Power consumption of coils									
AC operated									
	inrush VA	7 - 9	7 - 9	20 - 25	20 - 25	20 - 25	33 - 45	33 - 45	-
	sealed VA	2,2 - 4,2	2,2 - 4,2	4 - 6	4 - 6	4 - 6	6 - 8	6 - 8	-
	W	0,8 - 1,6	0,8 - 1,6	1,5 - 2,5	1,5 - 2,5	1,5 - 2,5	2,6	2,6	-
AC and DC-operated	W	2 - 3	2 - 3	-	-	3 - 4	-	-	-
Operation range of coils									
in multiples of control voltage U_s (-40° - +40°C)		0,85 - 1,1	0,85 - 1,1	0,85 - 1,1	0,85 - 1,1	0,85 - 1,1	0,85 - 1,1	0,85 - 1,1	-
Noise level (operation) acc. to EN ISO 3744									
from front, distance 0,5 m	dB	16	16	8	8	8	< 4	< 4	-
Type		HS20	HS25 (2p.)	HS25 (4p.)		HS40 (2p./4p.)	HS63 (2p./4p.)	HSH11	
Maximum ambient temperature									
Operation									
	open °C								40 - 60°C
	enclosed °C								
Storage	°C								≤ 40°C
Short circuit protection									
max. fuse Coordination-type "1"gL (gG)	A	35	35	35		63	80	-	
Rated short circuit current	"I _m " kA	3	3	3		3	3	-	
	"I _q " kA	3	3	10		10	10	-	
Switching time at control voltage $U_s \pm 10\%$									
	make time ms	7 - 16	7 - 16	9 - 15		11 - 15	11 - 15	-	
	release time ms	6 - 12	6 - 12	4 - 8		6 - 13	6 - 13	-	
	arc duration ms	10 - 15	10 - 15	10 - 15		10 - 15	10 - 15	-	
Cable cross-sections									
Main connector									
	solid or stranded mm ²	1,5 - 10	1,5 - 10	1,5 - 10		2,5 - 25	2,5 - 25	0,5 - 2,5 ³⁾	
	flexible mm ²	1,5 - 6	1,5 - 6	1,5 - 6		2,5 - 16	2,5 - 16	0,5 - 2,5 ³⁾	
	flexible with multicore cable end mm ²	1,5 - 6	1,5 - 6	1,5 - 6		2,5 - 16	2,5 - 16	0,5 - 1,5	
Clamps per pole		1	1	1		1	1	2	
Magnetic coil									
	solid or stranded mm ²	0,75 - 2,5	0,75 - 2,5	0,75 - 2,5		0,75 - 2,5	0,75 - 2,5	-	
	flexible mm ²	0,5 - 2,5	0,5 - 2,5	0,5 - 2,5		0,5 - 2,5	0,5 - 2,5	-	
	flexible with multicore cable end mm ²	0,5 - 1,5	0,5 - 2,5	0,5 - 1,5		0,5 - 1,5	0,5 - 1,5	-	
Clamps per pole		1	1	1		1	1	-	
Auxiliary Contacts ^{4) 5) 6)}									
Rated insulation voltage U_i ¹⁾	V AC	-	-	440		440	440	440	
Thermal rated current I_{th}	40°C A	-	-	25		40	63	10	
Ambient temperature	60°C A	-	-	25		40	63	6	



1) Suitable for: earthed-neutral systems, overvoltage category I to III, pollution degree 3 (standard-industry): $U_{imp} = 4kV$.

2) AC7b motor 2-pole 230V 1,1kW

3) Maximum cable cross-section with prepared conductor

4) Rated frequency 50/60Hz

5) Max. occ. switching overvoltage <4kV

6) Duty cycle: 100%

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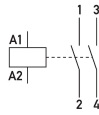
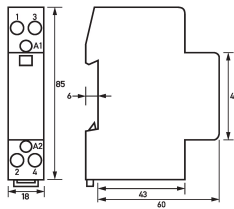
Data according to IEC60 947-4-1, IEC 60947-5-1, VDE 0660-5-1

Type	HS20	R25 (2p.)	R25 (4p.)	HS40	HS63	HS11
Utilization category AC15						
Rated operational current I_e	220-240V A	-	3	3	3	3
	380-415V A	-	2	2	2	2
	440V A	-	1,6	1,6	1,6	1,6
Utilization category DC13						
Rated operational current I_e	24-60V A	-	2	2	2	2
per pole	110V A	-	0,4	0,4	0,4	0,4
	220V A	-	0,1	0,1	0,1	0,1
Short circuit protection (control circuit) short-circuit current 1kA, contact welding not accepted max. fuse size gL (gG) A						
	-	-	10	10	10	10

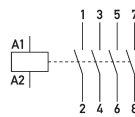
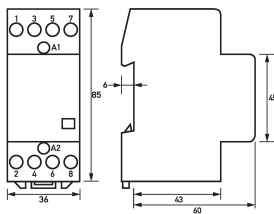
Dimensions

Wiring example

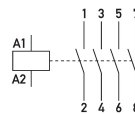
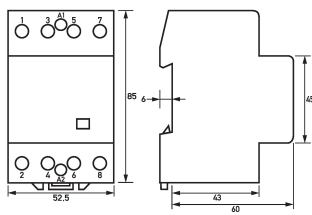
HS20 - 2 pole



HS25 - 4 pole



HS40 - 4 pole



HS63 - 4 pole

