







# Modular Contactors and Switches

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# Modular Contactors

Rated Current AC1 at	Heating Power		Wiring Diagram	Type	coil voltage	Pack pcs.	Weight kg/pc.
	1 AC	3 AC					
400V A	230V kW	400V kW		24 230 24VM 230VM ↓	24V 50/60Hz 220-240V 50Hz 24V 50/60Hz, 24V DC 220-240V 50Hz, 220V DC		

## One- Two-pole 1 module (17,5mm)



20	4,6	-	A1 1   A2 2	R20-10 24	12	0,12
20	4,6	-	A1 1   A2 2	R20-10 230	12	0,12
20	4,6	-	A1 1   3   A2 2   4	R20-20 24	12	0,12
20	4,6	-	A1 1   3   A2 2   4	R20-20 230	12	0,12
20	4,6	-	A1 1   R3   A2 2   R4	R20-11 24	12	0,12
20	4,6	-	A1 1   R3   A2 2   R4	R20-11 230	12	0,12
20	4,6	-	A1 R1   R3   A2 R2   R4	R20-02 24	12	0,12
20	4,6	-	A1 R1   R3   A2 R2   R4	R20-02 230	12	0,12
25	5,5	-	A1 1   3   A2 2   4	R25-20 24	12	0,14
25	5,5	-	A1 1   3   A2 2   4	R25-20 230	12	0,14
25	5,5	-	A1 1   R3   A2 2   R4	R25-11 24	12	0,14
25	5,5	-	A1 1   R3   A2 2   R4	R25-11 230	12	0,14
25	5,5	-	A1 R1   R3   A2 R2   R4	R25-02 24	12	0,14
25	5,5	-	A1 R1   R3   A2 R2   R4	R25-02 230	12	0,14

## Four-pole 2 modules (35mm) <sup>1)</sup>



25	5,7	17	A1 1   3   5   7   (13) A2 2   4   6   8   (14)	R25-40 24	6	0,22
25	5,7	17	A1 1   3   5   7   (13) A2 2   4   6   8   (14)	R25-40 230	6	0,22
25	5,7	17	A1 1   3   5   R7   (21) A2 2   4   6   R8   (22)	R25-31 24	6	0,22
25	5,7	17	A1 1   3   5   R7   (21) A2 2   4   6   R8   (22)	R25-31 230	6	0,22
25	5,7	17	A1 R1   R3   R5   7   (13) A2 R2   R4   R6   8   (14)	R25-13 24	6	0,22
25	5,7	17	A1 R1   R3   R5   7   (13) A2 R2   R4   R6   8   (14)	R25-13 230	6	0,22
25	5,7	-	A1 1   R3   R5   7   A2 2   R4   R6   8	R25-22 24	6	0,22
25	5,7	-	A1 1   R3   R5   7   A2 2   R4   R6   8	R25-22 230	6	0,22
25	5,7	17	A1 R1   R3   R5   R7   A2 R2   R4   R6   R8	R25-04 24	6	0,22
25	5,7	17	A1 R1   R3   R5   R7   A2 R2   R4   R6   R8	R25-04 230	6	0,22

## Four-pole 2 modules (35mm) AC/DC operated <sup>1)</sup>



25	5,7	17	A1 1   3   5   7   (13) A2 2   4   6   8   (14)	R25-40 24VM	6	0,22
25	5,7	17	A1 1   3   5   7   (13) A2 2   4   6   8   (14)	R25-40 230VM	6	0,22
25	5,7	17	A1 1   3   5   R7   (21) A2 2   4   6   R8   (22)	R25-31 24VM	6	0,22
25	5,7	17	A1 1   3   5   R7   (21) A2 2   4   6   R8   (22)	R25-31 230VM	6	0,22
25	5,7	17	A1 R1   R3   R5   7   (13) A2 R2   R4   R6   8   (14)	R25-13 24VM	6	0,22
25	5,7	17	A1 R1   R3   R5   7   (13) A2 R2   R4   R6   8   (14)	R25-13 230VM	6	0,22
25	5,7	-	A1 1   R3   R5   7   A2 2   R4   R6   8	R25-22 24VM	6	0,22
25	5,7	-	A1 1   R3   R5   7   A2 2   R4   R6   8	R25-22 230VM	6	0,22
25	5,7	17	A1 R1   R3   R5   R7   A2 R2   R4   R6   R8	R25-04 24VM	6	0,22
25	5,7	17	A1 R1   R3   R5   R7   A2 R2   R4   R6   R8	R25-04 230VM	6	0,22

## Four-pole, width 45mm, sealable, AC/DC operated



20	4,6	13,8	A1 1   3   5   7   (13) A2 2   4   6   8   (14)	K1R40 230	10	0,21
20	4,6	13,8	A1 1   3   5   R7   (21) A2 2   4   6   R8   (22)	K1R31 230	10	0,21

1) Sealable with Sealing Cover (see page 3)

## Modular Contactors

Rated Current AC1 400V A	Heating Power AC1 at		Wiring Diagram	Type	coil voltage 24V 50/60Hz 220-240V 50Hz	Pack pcs.	Weight kg/pc.
	1 AC	3 AC					
40	230V	400V		24 230 ↓			

### Four-pole 3 modules (52,5mm) <sup>1)</sup>



40	9	27,5		R40-40 24	4	0,36
40	9	27,5		R40-40 230	4	0,36
40	9	27,5		R40-31 24	4	0,36
40	9	27,5		R40-31 230	4	0,36
40	9	-		R40-22 24	4	0,36
40	9	-		R40-22 230	4	0,36
40	9	27,5		R40-04 24	4	0,36
40	9	27,5		R40-04 230	4	0,36
63	14,3	43		R63-40 24	4	0,36
63	14,3	43		R63-40 230	4	0,36
63	14,3	43		R63-31 24	4	0,36
63	14,3	43		R63-31 230	4	0,36
63	14,3	-		R63-22 24	4	0,36
63	14,3	-		R63-22 230	4	0,36
63	14,3	43		R63-04 24	4	0,36
63	14,3	43		R63-04 230	4	0,36



## Auxiliary Contact Block ½ module (8,8mm) for contactor R25, R40, R63 (max. 1pc.)



Rated Operational Current AC15 230V A	AC15 AC1		Wiring Diagram	Type	Pack pcs.	Weight kg/pc.
	400V	690V				
3	2	10		RH11	3	0,026

## Accessories



Description	for contactors	Type	Pack pcs.	Weight kg/pc.
RC-unit for 12V to 250V AC 220nF / 100 Ohm	2x R20.. to R63..	RC-R 230	1	0,05
Spacing piece ½ module (8,8mm) for ambient temperature >40°C	R20.. to R63..	P730	10	0,012
Sealing cover	R25..	P721	10	0,002
	R40.., R63..	P690	10	0,003

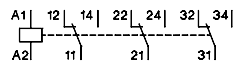
1) Sealable with Sealing Cover (see page 3)

# Day- Night Reloading Contactors

## Compact Module, for separate tariff counters



2 Modules (35mm)



400V  
I<sub>th</sub> A

25

Typ

R25-TN 230

VPE    Gewicht  
Stk.    kg/Stk.

1    0,22

2 Switch positions:

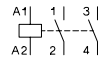
**Day** (Reloading, contact 11-14 ... closed, remains in position Night, until the next occurs)

**Night** (Basis operation) contact 11-12 ... closed

## Contacteur Module, for double tariff counters



1 Module (17,5mm)



25

R25-TN20 230

1    0,13

4 Switch position:

**Day** (Reloading, contact 1-2 ... closed, remains in position Night, until the next occurs)

**Night** (automatic operation, contact 1-2 ... only at night closed)

**On** (Permanently On)

**Off** (permanently Off)

## Switch Module



1 Module (17,5mm)



25

RH25-20

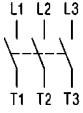
1    0,13

## Safety Switches and Switch Disconnectors

AC21 690V A	AC23 3x400V kW	Escutch. Wiring Diagram Plate	Type	Pack pcs.	Weight kg/pc.
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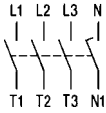
### Main Switches Emergency-Stop, 3-pole with padlock device

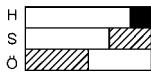


20	7,5	48x45	L1 L2 L3	LTS20 SMAHN1 A3	1	0,15
25	10	48x45		LTS25 SMAHN1 A3	1	0,15
32	12,5	48x45		LTS32 SMAHN1 A3	1	0,15
40	16	48x45		LTS40 SMAHN1 A3	1	0,15
63	22	48x45	T1 T2 T3	LTS63 SMAHN1 A3	1	0,18
80	22	48x45		LTS80 SMAHN1 A3	1	0,18
85	30	78x45		LTS85 SMAHN1 A3	1	0,37
100	37	78x45		LTS100 SMAHN1 A3	1	0,37
125	45	78x45		LTS125 SMAHN1 A3	1	0,37

### Main Switches Emergency-Stop, 4-pole with padlock device

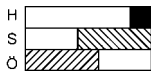


20	7,5	48x45	L1 L2 L3 N	LTS20 SMAHN1 A4	1	0,16
25	10	48x45		LTS25 SMAHN1 A4	1	0,16
32	12,5	48x45		LTS32 SMAHN1 A4	1	0,16
40	16	48x45		LTS40 SMAHN1 A4	1	0,16
63	22	48x45	T1 T2 T3 N1	LTS63 SMAHN1 A4	1	0,21
80	22	48x45		LTS80 SMAHN1 A4	1	0,21
85	30	78x45		LTS85 SMAHN1 A4	1	0,42
100	37	78x45		LTS100 SMAHN1 A4	1	0,42
125	45	78x45		LTS125 SMAHN1 A4	1	0,42



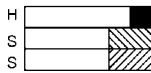
#### Aux. contact block 1NO + 1NC (max. 1pc.)

for LTS20... LTS125...		LH11	1	0,02
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#### Aux. contact block 1NO + 1NC overlapping (max. 1pc.)

for LTS20... LTS125...		LH11X	1	0,02
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#### Aux. contact block 2NO (max. 1pc.)

for LTS20... LTS125...		LH20V/02E	1	0,02
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#### 4<sup>th</sup> Pole for switches 3-pole

for LTS63 ... , LTS80 ...		N80V	1	0,04
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 Number of padlocks

# Control Switches for Installation Boards, Depth 60mm

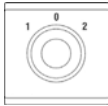


	AC21 I <sub>th</sub> A	Motor 3x400V kW	Wiring Diagram	Type	Pack pcs.	Weight kg/pc.
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## On-Off-Switches

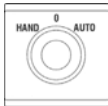
1-pole	20A	-		M10H SMA A1	1	0,10
2-pole	20A	-		M10H SMA A2	1	0,11
3-pole	20A	5,5kW		M10H SMA A3	1	0,12
4-pole	20A	5,5kW		M10H SMA A4	1	0,13

## Changeover Switches



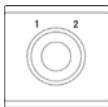
1-pole	20A	-		M10H SMA U1	1	0,11
2-pole	20A	-		M10H SMA U2	1	0,13
3-pole	20A	5,5kW		M10H SMA U3	1	0,15

## Changeover Switches



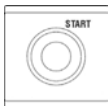
1-pole	20A	-		M10H SMA U1+009	1	0,11
2-pole	20A	-		M10H SMA U2+009	1	0,13

## Changeover Switches without 0



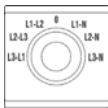
1-pole	20A	-		M10H SMA W1	1	0,11
2-pole	20A	-		M10H SMA W2	1	0,13

## Start Switch



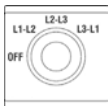
1-pole	20A	-		M10H SMA SE	1	0,10
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## Voltmeter Selector Switch 3 line and 3 phase voltages



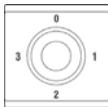
	20A	-		M10H SMA V1	1	0,15
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## Voltmeter Selector Switch 3 line voltages



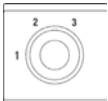
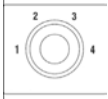
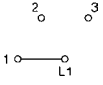
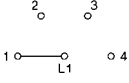
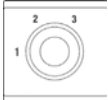
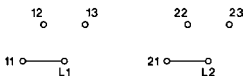
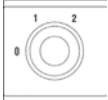
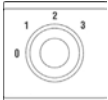
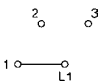
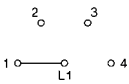



	20A	-		M10H SMA V3	1	0,15
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## Ammeter Selector Switch



1-pole	20A	-		M10H SMA M31	1	0,15
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# Control Switches for Installation Boards, Depth 60mm

	AC21 $I_{th}$ A	Motor 3x400V kW	Wiring Diagram	Type	Pack pcs.	Weight kg/pc.
<b>Step Switches 1-pole without 0</b>						
 	3 Steps	20A -		M10H SMA ST31	1	0,10
	4 Steps	20A		M10H SMA ST41	1	0,12
<b>Step Switches 2-pole without 0</b>						
	3 Steps	20A -		M10H SMA ST32	1	0,11
<b>Step Switches 1-pole with 0</b>						
 	2 Steps	20A -		M10H SMA ST021	1	0,11
	3 Steps	20A -		M10H SMA ST031	1	0,13
<b>On-Off-Switches keyoperated Lock Willenhal FT101</b>						
	1-pole	20A -		M10H SMA A1+SA	1	0,11
	2-pole	20A -		M10H SMA A2+SA	1	0,13

# Modular Contactors

## Switching of lamps

Lamp Type	Power W	Current A	Capacitors μF	Max. lamps per pole at 230V 50Hz and max. 60°C				
				R20..	R25..	R40..	R63..	K1R
<b>Incandescent lamps</b>	60	0,27	-	22	50	92	129	28
	100	0,45	-	13	30	55	77	17
	200	0,91	-	10	15	27	38	8
	300	1,36	-	4	10	19	26	5
	500	2,27	-	3	6	11	16	3
	1000	4,5	-	1	3	6	8	1
<b>Fluorescent lamps</b> uncompensated or serial compensated	11	0,16	1,3	60	75	210	310	60
	18	0,37	2,7	25	30	90	140	25
	24	0,35	2,5	25	30	90	140	25
	36	0,43	3,4	20	25	70	140	20
	58	0,67	5,3	14	17	45	70	14
	65	0,67	5,3	13	16	40	65	13
	85	0,8	5,3	11	14	35	60	11
<b>Fluorescent lamps</b> dual-connection	11	0,07	-	2 x 100	2 x 110	2 x 220	2 x 250	2 x 100
	18	0,11	-	2 x 50	2 x 55	2 x 130	2 x 200	2 x 50
	24	0,14	-	2 x 40	2 x 44	2 x 110	2 x 160	2 x 40
	36	0,22	-	2 x 30	2 x 33	2 x 70	2 x 100	2 x 30
	58	0,35	-	2 x 20	2 x 22	2 x 45	2 x 70	2 x 20
	65	0,35	-	2 x 15	2 x 16	2 x 40	2 x 60	2 x 15
	85	0,47	-	2 x 10	2 x 11	2 x 30	2 x 40	2 x 10
<b>Fluorescent lamps</b> parallel compensated	11	0,09	2,0	30	43	67	107	30
	18	0,13	2	20	32	50	80	20
	24	0,16	3	15	32	50	80	15
	36	0,27	4	10	32	50	80	10
	58	0,45	7	6	18	36	46	6
	65	0,5	7	5	18	36	46	5
	85	0,6	8	4	16	33	44	4
<b>Fluorescent lamps</b> with electronic fluorescent lamp ballast	18	0,09	-	40	40	100	150	40
	36	0,16	-	20	20	52	75	20
	58	0,25	-	15	15	30	55	15
	2 x 18	0,17	-	2 x 20	2 x 20	2 x 50	2 x 60	2 x 20
	2 x 36	0,32	-	2 x 10	2 x 10	2 x 25	2 x 30	2 x 10
	2 x 58	0,49	-	2 x 7	2 x 7	2 x 15	2 x 20	2 x 7
<b>Transformers</b> for metal halid low voltage lamps	20	0,09	-	40	52	110	174	40
	50	0,22	-	20	24	50	80	20
	75	0,33	-	13	16	35	54	13
	100	0,43	-	10	12	27	43	10
	150	0,65	-	7	9	19	29	7
	200	0,87	-	5	5	14	23	5
	300	1,30	-	3	4	9	14	3
<b>Mercury-vapour lamps</b> (high-pressure lamps), uncompensated e. g. HQL, HPL	50	0,61	-	16	21	38	55	16
	80	0,8	-	12	16	29	40	12
	125	1,15	-	8	11	20	28	8
	250	2,15	-	4	6	11	15	4
	400	3,25	-	3	4	7	10	3
	700	5,4	-	1	2	4	6	1
	1000	7,5	-	1	1	3	4	1
<b>Mercury-vapour lamps</b> (high-pressure lamps), compensated e. g. HQL, HPL	50	0,28	7	7	18	36	50	7
	80	0,41	8	5	16	31	44	5
	125	0,65	10	3	13	25	35	3
	250	1,22	18	2	7	14	19	2
	400	1,95	25	1	5	10	14	1
	700	3,45	45	1	3	6	8	1
	1000	4,8	60	-	2	4	6	-

# Modular Contactors

## Switching of lamps

Lamp Type	Power W	Current A	Capacitors mF	Max. lamps per pole at 230V 50Hz and max. 60°C					
				R20..	R25..	R40..	R63..	K1R	
<b>Metal halide lamps</b> uncompensated e. g. HQI, HPI, CDM	35	0,53	-	22	24	57	65	22	
	70	1	-	12	14	30	35	12	
	150	1,8	-	6	8	17	18	6	
	250	3	-	4	5	10	12	4	
	400	3,5	-	3	4	8	10	3	
	1000	9,5	-	1	1	3	4	1	
	2000	16,5	-	-	-	2	2	-	
	400V per pole	2000	10,5	-	-	2	2	-	
		3500	18	-	-	1	1	-	
	<b>Metal halide lamps</b> compensated e. g. HQI, HPI, CDM	35	0,25	6	8	21	42	58	8
70		0,45	12	4	11	21	29	4	
150		0,75	20	2	7	13	18	2	
250		1,5	33	1	4	9	11	1	
400		2,1	35	1	4	9	10	1	
1000		5,8	95	-	1	3	4	-	
2000		11,5	148	-	-	2	2	-	
400V per pole		2000	6,6	58	-	-	3	4	-
		3500	11,6	100	-	-	2	3	-
<b>Metal halide lamps</b> with electronic fluorescent lamp ballast (e. g.: PCI) 50-125 x I <sub>n lamp</sub> for 0,6ms		20	0,1	integrated	9	9	18	20	9
	35	0,2	integrated	6	6	11	13	6	
	70	0,36	integrated	5	5	10	12	5	
	150	0,7	integrated	4	4	8	10	4	
<b>Sodium-vapour lamps</b> (low pressure lamps), uncompensated	35	1,5	-	7	9	22	30	7	
	55	1,5	-	7	9	22	30	7	
	90	2,4	-	4	6	13	19	4	
	135	3,3	-	3	4	10	14	3	
	150	3,3	-	3	4	10	14	3	
	180	3,3	-	3	4	10	14	3	
	200	3,3	-	3	4	10	14	3	
	Sodium-vapour lamps (low pressure lamps), compensated	35	0,31	20	3	6	15	18	3
		55	0,42	20	2	6	15	18	2
		90	0,63	30	1	4	10	12	1
	135	0,94	45	1	3	7	8	1	
	150	1	40	1	3	8	9	1	
	180	1,16	40	1	3	8	9	1	
	200	1,32	25	-	-	10	12	-	
<b>Sodium-vapour lamps</b> (high pressure lamps), uncompensated	150	1,8	-	5	8	15	22	5	
	250	3	-	4	5	10	13	4	
	330	3,7	-	3	4	8	10	3	
	400	4,7	-	2	3	6	8	2	
	1000	10,3	-	1	1	3	4	1	
	<b>Sodium-vapour lamps</b> (high pressure lamps), compensated	150	0,83	20	2	7	20	25	2
250		1,5	33	1	4	12	15	1	
330		2	40	1	3	10	13	1	
400		2,4	48	1	2	8	12	1	
1000		6,3	106	-	1	4	6	-	
<b>Sodium-vapour lamps</b> (high pressure lamps) with serial electronic (e. g.: PCI) 50-125 x I <sub>n lamp</sub> for 0,6ms	20	0,1	integrated	9	9	18	20	9	
	35	0,2	integrated	6	6	11	13	6	
	70	0,36	integrated	5	5	10	12	5	
	150	0,7	integrated	4	4	8	10	4	

# Modular Contactors

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

Type		R20	R25 (2p.)	R25 (4p.)	R25-..VM	R40	R63	K1R	RH11
<b>Main Contacts</b> <sup>5) 6) 7)</sup>									
<b>Rated insulation voltage</b> $U_i$	V~	<b>440<sup>2)</sup></b>	<b>440<sup>2)</sup></b>	<b>440<sup>2)</sup></b>	<b>440<sup>2)</sup></b>	<b>440<sup>2)</sup></b>	<b>440<sup>2)</sup></b>	<b>690<sup>1)</sup></b>	<b>440<sup>2)</sup></b>
Rated operation voltage $U_e$	V~	440	440	440	440	440	440	690	440
<b>Frequency of operations</b> zAC1, AC3	1/h	300	300	300	300	600	600	600	600
<b>Mechanical</b>	S x 10 <sup>6</sup>	1	1	1	1	1	1	5	1
<b>Utilization category AC1</b>									
Rated operational current $I_e$ (= $I_m$ ) open	A	20	25	25	25	40	63	20	-
<b>Contact life</b>	S x 10 <sup>6</sup>	0,1	0,1	0,1	0,1	0,1	0,1	0,2	-
<b>Minimum Switch Voltage</b>	V/mA	24/100	24/100	24/100	24/100	24/100	24/100	24/100	17/5
<b>Short time current</b> 10s-current	A	72	72	72	72	216	240	96	-
<b>Power loss</b> per pole at $I_e$ /AC1	W	2	3	2	2	3	7	1	0,5
<b>Utilization category AC3</b>									
<b>Switching of three-phase motors</b>									
Rated operational current $I_e$	A	-	-	9	9	27	30	12	-
Rated operational power of three-phase motors	220V kW	-	-	2,2	2,2	7,5	8	3	-
50-60Hz	230-240V kW	1,1 <sup>4)</sup>	1,3 <sup>4)</sup>	2,5	2,5	8	8,5	3	-
	380-415V kW	-	-	4	4	12,5	15	4	-
<b>Contact life</b>	S x 10 <sup>6</sup>	-	-	0,15	0,15	0,15	0,15	0,9	-
<b>Power consumption of coils</b>									
AC operated	inrush VA	7 - 9	7 - 9	20 - 25	3 - 4	33 - 45	33 - 45	3 - 3,5	-
	sealed VA	2,2 - 4,2	2,2 - 4,2	4 - 6	3 - 4	6 - 8	6 - 8	3 - 3,5	-
	W	0,8 - 1,6	0,8 - 1,6	1,5 - 2,5	3 - 4	2,6	2,6	3 - 3,5	-
AC and DC-operated	W	-	-	-	3 - 4	-	-	3 - 3,5	-
<b>Operation range of coils</b>									
in multiples of control voltage $U_s$ (-40°C to +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	-
<b>Short circuit protection</b>									
max. fuse Coordination-type "1"gL (gG)	A	35	35	35	35	63	80	35	-
Rated short circuit current	"r" kA	3	3	3	3	3	3	1	-
	"Iq" kA	3	3	10	10	10	10	1	-
<b>Switching time</b> at control voltage $U_s \pm 10\%$									
make time	ms	7 - 16	7 - 16	9 - 15	17 - 24	11 - 15	11 - 15	15 - 19	-
release time	ms	6 - 12	6 - 12	4 - 8	17 - 23	6 - 13	6 - 13	8 - 25	-
arc duration	ms	10 - 15	10 - 15	10 - 15	10 - 15	10 - 15	10 - 15	10 - 15	-
<b>Cable cross-sections</b>									
Main connector	solid or stranded mm <sup>2</sup>	1,5 - 10	1,5 - 10	1,5 - 10	1,5 - 10	2,5 - 25	2,5 - 25	0,5 - 2,5 <sup>3)</sup>	0,5 - 2,5 <sup>3)</sup>
	flexible mm <sup>2</sup>	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	2,5 - 16	2,5 - 16	0,5 - 2,5 <sup>3)</sup>	0,5 - 2,5 <sup>3)</sup>
	flexible with multicore cable end mm <sup>2</sup>	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	2,5 - 16	2,5 - 16	0,5 - 1,5	0,5 - 1,5
Clamps per pole		1	1	1	1	1	1	2	2
Magnetic coil	solid or stranded mm <sup>2</sup>	0,75 - 2,5	0,75 - 2,5	0,75 - 2,5	0,75 - 2,5	0,75 - 2,5	0,75 - 2,5	0,5 - 2,5 <sup>3)</sup>	-
	flexible mm <sup>2</sup>	0,5 - 2,5	0,5 - 2,5	0,5 - 2,5	0,5 - 2,5	0,5 - 2,5	0,5 - 2,5	0,5 - 2,5 <sup>3)</sup>	-
	flexible with multicore cable end mm <sup>2</sup>	0,5 - 1,5	0,5 - 2,5	0,5 - 1,5	0,5 - 1,5	0,5 - 1,5	0,5 - 1,5	0,5 - 1,5	-
Clamps per pole		1	1	1	1	1	1	2	-
<b>Auxiliary Contacts</b> <sup>5) 6) 7)</sup>									
<b>Rated insulation voltage</b> $U_i$ <sup>1)</sup>	V AC	-	-	-	-	-	-	-	440 <sup>2)</sup>
<b>Thermal rated current</b> $I_m$	40°C A	-	-	-	-	-	-	-	10
Ambient temperature	60°C A	-	-	-	-	-	-	-	6
<b>Utilization category AC15</b>									
Rated operational current $I_e$	220-240V A	-	-	-	-	-	-	-	3
	380-415V A	-	-	-	-	-	-	-	2
	440V A	-	-	-	-	-	-	-	1,6
<b>Utilization category DC13</b>									
Rated operational current $I_e$	24-60V A	-	-	-	-	-	-	-	2
	110V A	-	-	-	-	-	-	-	0,4
per pole	220V A	-	-	-	-	-	-	-	0,1
<b>Short circuit protection</b>									
short-circuit current 1kA, contact welding not accepted		-	-	-	-	-	-	-	10
max. fuse size	gL (gG) A	-	-	-	-	-	-	-	10

1) Suitable for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry):  $U_{imp} = 8kV$ .

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

3) Maximum cable cross-section with prepared conductor 4) AC7b motor 2-pole 230V 1,1kW

5) Rated frequency 50/60Hz

6) Max. occ. switching overvoltage <4kV

7) Duty cycle: 100%

# Switch Disconnectors, Switches

Technical Data according to IEC 947-3, IEC 947-5-1, VDE 0660, EN 60947-3, EN 60947-5-1

Type	LTS20	LTS25	LTS32	LTS40	LTS63	LTS80	LTS85	LTS100	LTS125	M10H	
<b>Main contacts</b>											
Rated thermal current $I_{th}$ open	A	20	25	32	40	63	80	85	100	125	20
Rated thermal current $I_{the}$ enclosed	A	20	25	32	40	63	80	85	100	110	20
Rated insulation voltage $U_i$ <sup>1)</sup>	V	690	690	690	690	690	690	1000 <sup>5)</sup>	1000 <sup>5)</sup>	1000 <sup>5)</sup>	690
Rated operational current $I_e$ AC21A	A	20	25	32	40	63	80	85	100	125	20
Making capacity $I_{eff}$ 3x380-440V	A	160	190	220	300	370	440	600	725	850	160
Breaking capacity 3x220-240V	A	160	180	200	250	330	380	480	580	680	160
	A	160	180	200	250	330	380	480	580	680	160
	A	80	110	140	170	190	220	250	330	420	80
Breaking capacity 3x380-440V	A	160	180	200	250	330	380	480	580	680	160
	A	160	180	200	250	330	380	480	580	680	160
	A	80	110	140	170	190	220	250	330	420	80
Breaking capacity 3x660-690V	A	80	110	140	170	190	220	250	330	420	80
	A	80	110	140	170	190	220	250	330	420	80
	A	80	110	140	170	190	220	250	330	420	80
Disconnection property performed up to	V	690	690	690	690	690	690	1000	1000	1000	690
Motor Switch AC3 3x400V	A	12	16	23	30	37	37	45	60	72	12
Motor Switch AC3 3x220-240V	kW	3	4	5,5	7,5	11	11	15	18,5	22	3
Direct switching of single motors 3x380-440V	kW	5,5	7,5	11	15	18,5	18,5	22	30	37	5,5
	kW	5,5	7,5	11	15	18,5	18,5	22	30	37	5,5
	kW	5,5	7,5	11	15	18,5	18,5	22	30	37	5,5
Direct switching of single motors 3x660-690V	kW	5,5	7,5	11	15	18,5	18,5	22	30	37	5,5
	kW	5,5	7,5	11	15	18,5	18,5	22	30	37	5,5
	kW	5,5	7,5	11	15	18,5	18,5	22	30	37	5,5
Main Switch AC23 3x400V	A	16	20	25	32	45	45	60	72	85	15
Motor Switch, AC23A, 3x220-240V	kW	4	5,5	7,5	9	15	15	18,5	22	30	4
Main Switch, AC23B, 3x380-440V	kW	7,5	10	12,5	16	22	22	30	37	45	7,5
Safety Switch 3x660-690V	kW	5,5	7,5	11	15	18,5	18,5	22	30	37	7,5
Rated conditional short-circuit current	kA <sub>eff</sub>	10	10	10	10	10	10	10	10	10	10
Max. fuse size gL (gG)	A	25	35	40	50	63	80	80	100	125	20
Mechanical life	x10 <sup>3</sup>	200	200	200	200	100	100	100	100	100	200
Rated short-time withstand current (1sec. current)	A	250	300	400	500	600	850	1000	1200	1500	250
<b>Maximum cable cross sections</b>											
solid	mm <sup>2</sup>	10	10	10	10	25	25	50	50	50	2,5
	AWG	8	8	8	8	4	4	0	0	0	12
flexible (+ multicore cable end)	mm <sup>2</sup>	6	6	6	6	16	16	35	35	35	2,5
	AWG	10	10	10	10	6	6	2	2	2	14
Size of terminal screw		M3,5	M3,5	M3,5	M3,5	M5	M5	M6	M6	M6	M3,5
Tightening torque	Nm	0,8-1,7	0,8-1,7	0,8-1,7	0,8-1,7	2-4	2-4	3,5-4,5	3,5-4,5	3,5-4,5	0,8-1,4
	lb.inch	7-15	7-15	7-15	7-15	18-35	18-35	31-40	31-40	31-40	7-15
<b>Auxiliary contacts</b>											
Rated insulation voltage $U_i$ <sup>1)</sup>	V	690	690	690	690	690	690	690	690	690	-
Rated thermal current $I_{th}$ , $I_{the}$	A	10	10	10	10	10	10	10	10	10	-
Switching capacity AC15 220-240V	A	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	-
	A	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	-
Switching capacity AC15 380-440V	A	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	-
	A	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	-
Rated conditional short-circuit current	kA <sub>eff</sub>	3	3	3	3	3	3	3	3	3	-
Max. short circuit protection gL (gG)	A	10	10	10	10	10	10	10	10	10	-
<b>Maximum cable cross sections</b>											
solid	mm <sup>2</sup>	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	-
	AWG	12	12	12	12	12	12	12	12	12	-
flexible (+ multicore cable end)	mm <sup>2</sup>	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	-
	AWG	14	14	14	14	14	14	14	14	14	-

## Data according to UL und cUL

Type	LTS20	LTS25	LTS32	LTS40	LTS63	LTS80	LTS85	LTS100	LTS125	M10H	
Rated voltage	V	600	600	600	600	600	600	600	600	600	
Ampere-Rating "General use"	A	20	25	32	40	63	80	80	100	125	
DOL-Rating 3-phase	110-120V	HP	1	1,5	2	2	3	5	7,5	10	15
	220-240V	HP	3	5	5	5	10	10	20	25	30
	440-480V	HP	7,5	10	10	10	20	20	40	50	60
	550-600V	HP	10	10	15	15	25	25	50	60	60
DOL-Rating 1-phase	110-120V	HP	1	1	1	1	2	3	5	7,5	0,5
	200-208V	HP	1	2	2	2	3	3	7,5	10	1
	220-240V	HP	2	2	3	3	5	5	10	15	1,5
Fuse size (RK5) 5kA / 600V	Manual Motor Controller	A	40	50	50	70	90	110	200	250	300
	Motor Disconnect	A	40	50	50	50	70	70	-	-	-

1) suitable for: earthed-neutral systems, overvoltage category I to III, pollution degree 3 (standard-industry):  $U_{imp} = 6kV$ . Data for other conditions on request

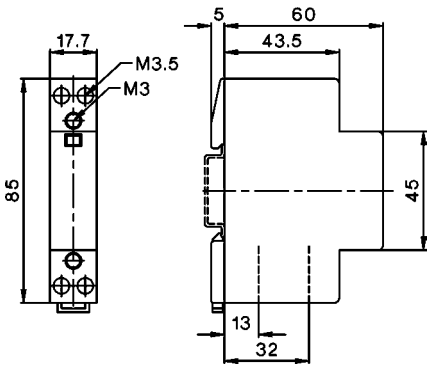
2) the values after the slash are valid for switches 6-pole or more 3) Suitable for no load applications(AC20A) above 690V

4) Fuse RK1 / 10kA / 600V

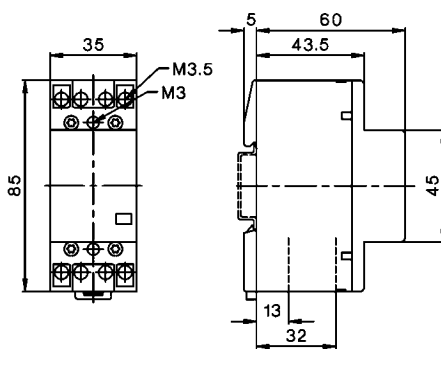
5)  $U_{imp} = 8kV$

# Dimensions

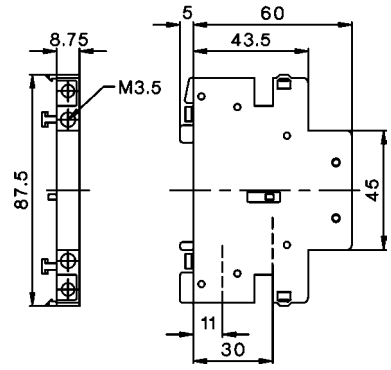
R20-..., R25-... (2-pole)  
RC-R 230



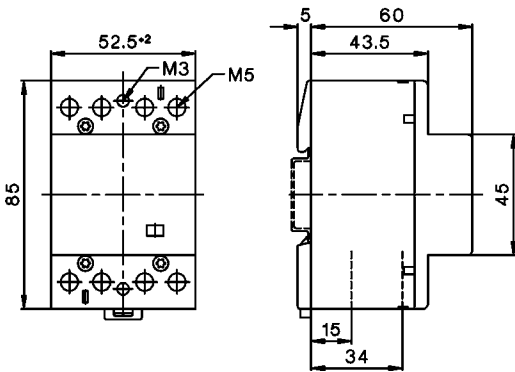
R25-... (4-pole)



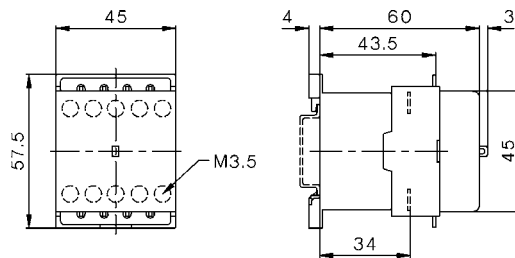
Aux. contact block  
RH11



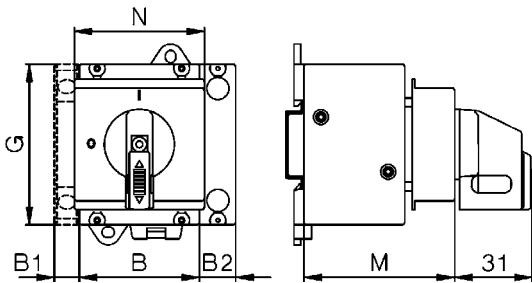
R40-...  
R63-...



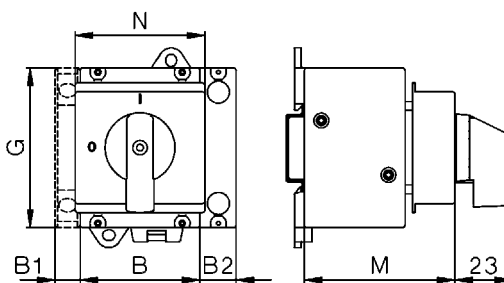
K1R..



Main Switch LT.. SMAHN..  
LTS20 - LTS125



Switch Disconnecter LT.. SMA..  
LTS20 - LTS125



Type	3-pole		4-pole	aux.	4.Pole	G	M	N
	A	B	B	contact	PE			
				B1	B2			
LTS20 to LTS40	-	48	48	10	-	54	60	52
LTS63, LTS80	-	48	62,5	10	14,5	54	60	52
LTS85 to LTS125	-	78	78	10	-	85	70	78

Control Switch M10H SMA..

