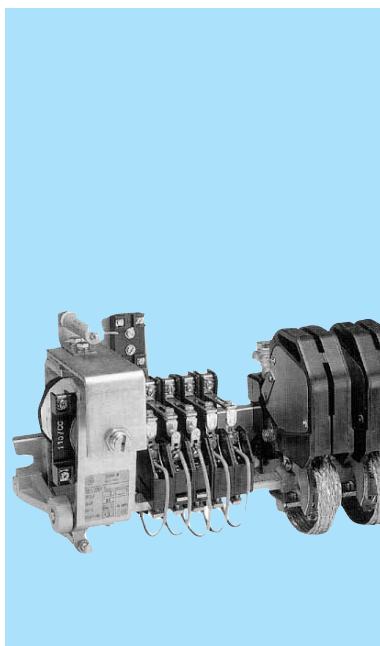




Standards

IEC/EN 60947-1
 IEC/EN 60947-4-1
 IEC/EN 60947-5-1

Standard voltages

Alternating current (V) Dual-frequency coils

	AP	CP	EP	GP
50/60Hz	24	48	110	220

Direct current (V)

	A	B	C	D	E	F	G	H	M	R
Voltage	20	24	40	48	97	110	197	220	230	125

Clapper contactors 40A to 800A (AC-3) / 45A to 1200A (AC-1)

AC and DC control using a bridge rectifier, designed to meet the most recent stringent requirements in terms of reliability, service life and performance.

Main characteristics

- Sliding contact holder, set on self-centering and self-lubricating bronze bushings
- Minutubes made of high-strength, high electrical resistance material
- Individual auxiliary contacts

Construction

Variable composition contactors (the number of main poles and auxiliary contacts may vary), preferably secured on mounts

Control circuit

Solid iron magnetic circuit with coil powered by direct or rectified current, particularly for heavy-duty applications (e.g., cranes, roll mills, reversing winches, etc.).

The coils are sized for intermittent operation. For continuous operation, insert an economy resistor in series with the coil using the respective auxiliary contact.

Main contacts

The sintered main contacts are classified as Type 4/2 for intermittent operation and Type 5/2 for continuous operation.

The 4/2 sintered contact may be used only for heavy-duty operation when the number of switching operations per hour is above 60 and the operating intermittence is equal or less than 60% (cranes, roll mills, etc.).

If used for continuous operation, the contact will overheat.

The 5/2 sintered contact may be used only for normal duty when the number of switching operations per hour is equal to or less than 60% and the operating intermittence is above 60%.

Auxiliary contacts

Individual NO or NC single-break contacts

Possibility to advance or delay contact making or breaking

Special versions

The following items may be supplied upon request:

- Contactors with coils having an operating limit that exceeds the limits required by the standards
- Contactors with an operating voltage up to 3000V (rotary disconnect switches, induction furnaces, etc.)
- Vertical mechanical interlocks ideal for interlocking 3 contactors.

Spare parts and additional components

Order codes	pg. C.53
Coils	pg. C.56
Spare parts	pg. C.57
Dimensional drawings	pg. C.60

Spare parts and additional components for the contactors are listed on page C.91.

Control voltage and normal combinations

Normal rated voltages, shaft spacing and combinations (main and auxiliary poles) have been defined for each switchgear unit, thereby allowing the contactor to be rapidly selected.

AC rated voltages: 24V - 48V - 110V - 220/230V

DC rated voltages: 24V - 48V - 110V - 220/230V

Spacing between standardised shafts and combinations:

See pages C.96 to C.98

Standard center-to-center spacing (mm): 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1000

Main poles

The poles can be constructed as follows, depending on the operating conditions:

Z design (NO)

- For load breaking, with high breaking capacity
- For AC or DC use
- Equipped with magnetic arc-quenching coil. In the case of AC, the poles are normally supplied with an appropriate arc-quenching coil for the maximum rated current of the pole.
- Arc-quenching coils for medium rated currents with respect to the expected peak current are available for DC use upon request, for more effective pole performance (see table on page C.90).

RN design (NC)

- Based on the use of break poles, which are open when the coil is energized and closed when the coil is de-energised.
- For AC or DC use in special circuits where high interrupting capacities are not required.
- This design is intended to be used with contactors R1, R2, R3, R4, R5, R7.

Poles	R1	R2	R3	R4	R5	R6	R7	R8	R9
Z	■	■	■	■	■	■	■	■	■
RN	■	■	■	■	■		■		

Order codes - Clapper contactors

Peak operating current		AC-3 admissible rated powers				Electric endur. Cat. AC3 Switching operations	AC or DC See the following pages C.84 and C.85 on how to complete the catalogue number	Pack.
Resistive loads AC1 A	Motors <440V, 3 ~ 50/60Hz AC3 A	220V 230V kW HP	380V 400V kW HP	415V 440V kW HP	500V kW HP			
45	40	11,5	20	20	20	1 × 10 ⁶	R1...	1
90	90	26	45	45	45	1 × 10 ⁶	R2...	1
125	120	36.5	62	62	73.5	1 × 10 ⁶	R3...	1
250	200	72.5	100	100	120	1 × 10 ⁶	R4...	1
320	320	93	160	160	165	1.2 × 10 ⁶	R5...	1
450	450	130	225	225	300	1.5 × 10 ⁶	R6...	1
630	630	184	315	315	400	1 × 10 ⁶	R7...	1
800	800	232	400	400	500	0.9 × 10 ⁶	R8...	1
1500	-	-	-	-	-	-	R9...	1

Catalogue number structure

1	2	3	4	5	6	7	8	9
Product line	Size	Coil voltage		Resistor	No. NO aux. contacts	No. NC aux. contacts	No. "Z" poles	"Z" poles

Size		1	2
1	Ith		
	Max.	R	1
	500V AC	R	2
2	250V DC	R	3
	250	R	4
	320	R	5
	450	R	6
	630	R	7
	800	R	8
	1200	R	9

Auxiliary contacts		6	7
6	NO NC		
	1	1	
	2	2	
7	3	3	
	4	4	
	5	5	
	6	6	
	1		1
	2		2
	3		3
	4		4

"RN" poles" (NC)		11
"RN" poles	"RN" poles	
0	0	-
1	1	1
2	2	2
3	3	3
4	4	4

Note: The "RN" poles are not available for the R6, R8 and R9 types.

Coil voltage		3	4
3	AC DC		
4	Types R1 ... R7		
	24V	A	P
	48V	C	P
	110V	E	P
	220V	G	P
	20V	A	-
	24V	B	-
	40V	C	-
	48V	D	-
	97V	E	-
	110V	F	-
	197V	G	-
	220V	H	-
	230V	M	-
	125V	R	-
	Types R8 and R9		
	110V	E	P
	220V	G	P
	110V	E	-
	197V	F	-
	220V	G	-
	230V	H	-
	125V	M	-
		R	-

"Z" poles" (N)		8
8	"Z" poles	
	0	-
	1	1
	2	2
	3	3
	4	4

"Z" poles		9
9	Type of pole	
	Z	Z
	No "Z" poles	-

Arc-quenching coil "Z" poles		Standard Upon request		
10	Type	A	B	C
	R1	45A	14A	25A
	R2	90A	45A	-
	R3	125A	75A	-
	R4	200A	50A	130A
	R5	320A	150A	-
	R6	450A	270A	-
	R7	630A	320A	-
	R8	800A	320A	400A
	R9	1200A	-	-

"RN" poles		12
12	Type of pole	
	RN	V
	No "RN" poles	-

Note: The "RN" poles are not available for the R6, R8 and R9 types.

Arc-quenching coil «RN» poles		Standard Upon request		
13	Type	A	B	C
	R1	45A	14A	25A
	R2	90A	45A	-
	R3	125A	75A	-
	R4	200A	50A	130A
	R5	320A	150A	-
	R6	-	-	-
	R7	630A	320A	-
	R8	-	-	-
	R9	-	-	-

Note: The "RN" poles are not available for the R6, R8 and R9 types.

Economy resistor		5
5		
	If required (5/2 contacts)	R
	If not required	-

Type of contacts		14
14	Type	
	4/2	Intermittent op. 4
	5/2	Continuous op. 5

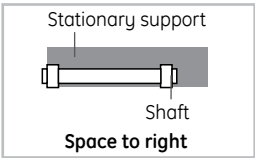
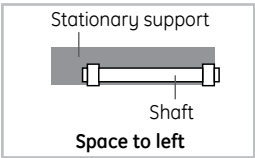
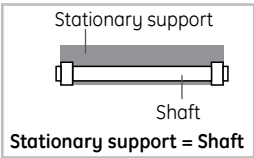
10	11	12	13	14	15	16	17	18
Arc-quenching coil "Z" poles	No. "RN" poles	"RN" poles	Arc-quenching coil "RN" poles	Type of contacts	Stationary support	Space	Shaft	Isolation

15	Stationary support	Contactor type				
		R1 R2 R3	R4 R5	R6 R7 R8	R9	
	Length (mm)					
	150	A	-	-	-	
	200	B	-	-	-	
	250	C	C	-	-	
	300	D	D	-	-	
	350	E	E	E	-	
	400	F	F	F	F	
	450	G	G	G	G	
	500	H	H	H	H	
	600	I	I	I	I	
	700	L	L	L	L	
	800	M	M	M	M	
	900	N	N	N	N	
	1000	O	O	O	O	

17	Shaft (Hstat. sup.)	Contactor type				
		R1 R2 R3	R4 R5	R6 R7 R8	R9	
	Length (mm)					
	150	A	-	-	-	
	200	B	-	-	-	
	250	C	C	-	-	
	300	D	D	-	-	
	350	E	E	E	-	
	400	F	F	F	F	
	450	G	G	G	G	
	500	H	H	H	H	
	600	I	I	I	I	
	700	L	L	L	L	
	800	M	M	M	M	
	900	N	N	N	N	
	1000	O	O	O	O	

18	Isolation		18
		For more isolation	M
		Not required	-

16	Space		16
	No space	Station. sup.=Shaft	-
	Space	Left	S
		Right	-



Order codes

A

B

C

D

E

F

G

H

I

X



Standardised DC or rectified coils

The DC coils are suitable for intermittent operation; for continuous operation, an economy resistor must be used.

The coils for rectified rated voltages 20-40-97-197V obtained from AC power supplies. (before the rectifier). 24-48-110-220V are available upon request. For the contactor of "RN" break poles, contact GE.

Contactor	Voltage VDC	Coil		Economy resistor for continuous operation ± 5%				Single-phase bridge rectifier for AC power		
		Cat. no.	Ref. no.	W	Ω	Cat. no.	Ref. no.	V 50/60Hz	Cat. no.	Ref. no.
R1 R2	20	39012Y20D	244107	4	8,2	RSS13/64TA8,2	204177	24	MSK-B250/220-1,5	209997
	24	39012Y24D	202327		18	RSS13/64TA18	211727	-	-	-
	40	39012Y40D	244106		33	RSS13/64TA33	211728	48	MSK-B250/220-1,5	209997
	48	39012Y48D	244734		68	RSS13/64TA6,8	214869	-	-	-
	97	39012Y97D	202328		220	RSS13/64TA220	212702	110	MSK-B250/220-1,5	209997
	110	39012Y110D	202323		330	RSS13/64TA330	211745	-	-	-
	197	39012Y197D	202325		680	RSS13/64TA680	214580	220	MSK-B250/220-1,5	209997
	220	39012Y220D	202326		1200	RSS13/64TA1200	213034	-	-	-
	230	39012Y230D	211706		1200	RSS13/64TA1200	213034	-	-	-
	125	39012Y125D	202324		330	RSS13/64TA300	211714	-	-	-
R3	20	3903Y20D	215278	4	8,2	RSS13/64TA8,2	204177	24	MSK-B250/220-1,5	209997
	24	3903Y24D	244735		18	RSS13/64TA18	211727	-	-	-
	40	3903Y40D	244088		39	RSS13/64TA39	211730	48	MSK-B250/220-1,5	209997
	48	3903Y48D	212705		47	RSS13/64TA47	211731	-	-	-
	97	3903Y97D	213691		270	RSS13/64TA270	214399	110	MSK-B250/220-1,5	209997
	110	3903Y110D	202437		330	RSS13/64TA330	211745	-	-	-
	197	3903Y197D	214442		820	RSS13/64TA820	214400	220	MSK-B250/220-1,5	209997
	220	3903Y220D	202438		1200	RSS13/64TA1200	213034	-	-	-
	230	3903Y230D	211107		1200	RSS13/64TA1200	213034	-	-	-
	125	3903Y125D	216100		330	RSS13/64TA300	211714	-	-	-
R4	20	3904Y20D	244084	6	8,2	RSS13/64TA8,2	204177	24	MSK-B250/220-1,5	209997
	24	3904Y24D	202483		18	RSS13/64TA18	211727	-	-	-
	40	3904Y40D	244083		33	RSS13/64TA33	211728	48	MSK-B250/220-1,5	209997
	48	3904Y48D	213814		33	RSS13/64TA33	211728	-	-	-
	97	3904Y97D	213601		180	RSS13/64TA180	211744	110	MSK-B250/220-1,5	209997
	110	3904Y110D	202479		180	RSS13/64TA180	211744	-	-	-
	197	3904Y197D	202481		680	RSS13/64TA680	214580	220	MSK-B250/220-1,5	209997
	220	3904Y220D	202482		680	RSS13/64TA680	214580	-	-	-
	230	3904Y230D	211708		680	RSS13/64TA680	214580	-	-	-
	125	3904Y125D	202480		180	RSS13/64TA180	211744	-	-	-
R5	20	3905Y20D	244073	10	6,8	RSS13/64TA6,8	214869	24	SKB-B80/70-4	211716
	24	3905Y24D	244072		10	RSS13/64TA10	211742	-	-	-
	40	3905Y40D	244071		27	RSS13/64TA27	244192	48	MSK-B250/220-1,5	209997
	48	3905Y48D	244736		27	RSS13/64TA27	244192	-	-	-
	97	3905Y97D	202513		120	RSS13/64TA120	243281	110	MSK-B250/220-1,5	209997
	110	3905Y110D	202512		180	RSS13/64TA180	211744	-	-	-
	197	3905Y197D	244074		470	RSS13/64TA470	244191	220	MSK-B250/220-1,5	209997
	220	3905Y220D	212706		680	RSS13/64TA680	214580	-	-	-
	230	3905Y230D	211709		680	RSS13/64TA680	214580	-	-	-
	125	3905Y125D	242260		180	RSS13/64TA180	211744	-	-	-
R6	20	3906Y20D	244065	10	6,8	RSS13/64TA6,8	214869	24	SKB-B80/70-4	211716
	24	3906Y24D	244064		8,2	RSS13/64TA8,2	204177	-	-	-
	40	3906Y40D	244063		27	RSS13/64TA27	244192	48	MSK-B250/220-1,5	209997
	48	3906Y48D	212707		27	RSS13/64TA27	244192	-	-	-
	97	3906Y97D	202533		100	RSS13/64TA100	211744	110	MSK-B250/220-1,5	209997
	110	3906Y110D	202532		180	RSS13/64TA180	211744	-	-	-
	197	3906Y197D	244066		470	RSS13/64TA470	244191	220	MSK-B250/220-1,5	209997
	220	3906Y220D	213612		680	RSS13/64TA680	214580	-	-	-
	230	3906Y230D	211770		680	RSS13/64TA680	214580	-	-	-
	125	3906Y125D	211711		180	RSS13/64TA180	211744	-	-	-
R7	20	3907Y20D	244058	16	5,6	RSS13/64TA5,6	211735	24	SKB-B80/70-4	211716
	24	3907Y24D	244057		5,6	RSS13/64TA5,6	211735	-	-	-
	40	3907Y40D	244056		15	RSS13/64TA15	211737	48	SKB-B80/70-4	211716
	48	3907Y48D	244737		18	RSS13/64TA18	211727	-	-	-
	97	3907Y97D	244738		82	RSS13/64TA82	204177	110	MSK-B250/220-1,5	209997
	110	3907Y110D	202547		100	RSS13/64TA100	211743	-	-	-
	197	3907Y197D	244059		330	RSS13/64TA330	211745	220	MSK-B250/220-1,5	209997
	220	3907Y220D	202548		390	RSS13/64TA390	211746	-	-	-
	230	3907Y230D	211712		1200	RSS13/64TA1200	213034	-	-	-
	125	3907Y125D	211713		330	RSS13/64TA330	211745	-	-	-
R8	97	3908Y97D	212959	16	82	RSS20/165TA82	214081	110	SKB-B250/220-4	212165
	110	3908Y110D	202565		120	RSS20/165TA120	213664	-	-	-
	197	3908Y197D	214066		390	RSS20/165TA390	211748	220	MSK-B250/220-1,5	209997
	220	3908Y220D	202566		470	RSS20/165TA470	211739	-	-	-
R9	97	3909Y97D	214146	140	100	RSS20/165TA100	213663	110	SKB-B30/08	211720
	110	3909Y110D	202572		150	RSS20/165TA150	215004	-	-	-
	197	3909Y197D	204181		390	RSS20/165TA390	211748	220	SKB-B500/445-4	214501
	220	3909Y220D	244739		560	RSS20/165TA560	244987	-	-	-

(1) To insert the resistors, use NC auxiliary contacts in series.

(2) Two 20x165 resistors connected in parallel, each with a resistive value listed in the table.



Spare parts

Contactors	Description	Cat. no.	Ref. no.	Pack (units)
R1	"Z" stationary part with 14A arc-quenching coil and spark suppressor	390/3921PFZCS14	202273	1
	"Z" stationary part with 25A arc-quenching coil and spark suppressor	390/3921PFZCS25	244172	1
	"Z" stationary part with 45A arc-quenching coil and spark suppressor	390/3921PFZCS45	202274	1
	"RN" stationary part with spark suppressor	390/3921PFRN	244173	1
	"Z" moving part (with pressure spring and strap)	390/3921PMZI	202276	1
	"RN" moving part (with pressure spring and strap)	390/3921PMRN	202275	1
	Stationary and moving main contact, type 4/2 (intermittent operation)	390/3921/2FOM4/2	214120	1
	Stationary and moving main contact, type 5/2 (continuous operation)	390/3922FOM5/2	214121	1
	Spark suppressor for "Z" and "RN" poles	390/3921PZ	202277	1
R2	"Z" stationary part with 45A arc-quenching coil and spark suppressor	390/3922PFZCS45	244744	1
	"Z" stationary part with 90A arc-quenching coil and spark suppressor	390/3922PFZCS90	202278	1
	"RN" stationary part with spark suppressor	390/3922PFRN	212709	1
	"Z" moving part (with pressure spring and strap)	390/3922PMZI	202279	1
	"RN" moving part (with pressure spring and strap)	390/3922PMRN	213014	1
	Stationary and moving main contact, type 4/2 (intermittent operation)	390/3921/2FOM4/2	214120	1
	Stationary and moving main contact, type 5/2 (continuous operation)	390/3922FOM5/2	214121	1
	Spark suppressor for "Z" and "RN" poles	390/3922PZ	202280	1
R3	"Z" stationary part with 75A arc-quenching coil and spark suppressor	390/3923PFZCS75	244745	1
	"Z" stationary part with 125A arc-quenching coil and spark suppressor	390/3923PFZCS125	202281	1
	"RN" stationary part with spark suppressor	390/3923PFRN	213986	1
	"Z" moving part (with pressure spring and strap)	390/3923PMZI	202283	1
	"RN" moving part (with pressure spring and strap)	390/3923PMRN	202282	1
	Stationary and moving main contact, type 4/2 (intermittent operation)	390/3923/2FOM4/2	214122	1
	Stationary and moving main contact, type 5/2 (continuous operation)	390/3923FOM5/2	214123	1
	Spark suppressor for "Z" and "RN" poles	390/3923PZ	202284	1
R4	"Z" stationary part with 125A arc-quenching coil and spark suppressor	390/3924PFZCS125	202288	1
	"Z" stationary part with 200A arc-quenching coil and spark suppressor	390/3924PFZCS200	202289	1
	"RN" stationary part with spark suppressor	390/3924PFRN	202287	1
	"Z" moving part (with pressure spring and strap)	390/3924PMZI	202291	1
	"RN" moving part (with pressure spring and strap)	390/3924PMRN	202290	1
	Stationary main contact, type 4/2 (intermittent operation)	390/3924F4	214124	1
	Moving main contact, type 4/2 (intermittent operation)	390/3924M4/2	214126	1
	Stationary main contact, 5/2 type (continuous operation)	390/3924F5/2	204178	1
	Moving main contact, type 5/2 (continuous operation)	390/3924M5/2	214127	1
	Spark suppressor for "Z" and "RN" poles	390/3924PZ	202292	1
R5	"Z" stationary part with 125A arc-quenching coil and spark suppressor	390/3925PFZCS150	213573	1
	"Z" stationary part with 320A arc-quenching coil and spark suppressor	390/3925PFZCS320	202295	1
	"RN" stationary part with spark suppressor	390/3925PFRN	244746	1
	"Z" moving part (with pressure spring and strap)	390/3925PMZI	202298	1
	"RN" moving part (with pressure spring and strap)	390/3925PMRN	202297	1
	Stationary main contact, type 4/2 (intermittent operation)	390/3925F4/2	214128	1
	Moving main contact, type 4/2 (intermittent operation)	390/3925M4/2	214130	1
	Stationary main contact, 5/2 type (continuous operation)	390/3925F5/2	214129	1
	Moving main contact, type 5/2 (continuous operation)	390/3925M5/2	214131	1
	Spark suppressor for "Z" and "RN" poles	390/3925PZ	202299	1
R5	"Z" stationary part with 270A arc-quenching coil and spark suppressor	390/3926PFZCS270	202303	1
	"Z" stationary part with 450A arc-quenching coil and spark suppressor	390/3926PFZCS450	213574	1
	"Z" moving part (with pressure spring and strap)	390/3926PMZI	202304	1
	Stationary main contact, type 4/2 (intermittent operation)	390/3926F4/2	214133	1
	Moving main contact, type 4/2 (intermittent operation)	390/3926M4/2	214135	1
	Stationary main contact, 5/2 type (continuous operation)	390/3926F5/2	214134	1
	Moving main contact, type 5/2 (continuous operation)	390/3926M5/2	214136	1
	Spark suppressor for "Z" and "RN" poles	390/3926PZ	202654	1

Order codes

A

B

C

D

E

F

G

H

I

X



Spare parts (continued)

Contactor	Description	Cat. no.	Ref. no.	Pack (units)
R7	"Z" stationary part with 320A arc-quenching coil and spark suppressor	390/3927PFZCS320	202307	1
	"Z" stationary part with 630A arc-quenching coil and spark suppressor	390/3927PFZCS630	202308	1
	"RN" stationary part with spark suppressor	390/3927PFRN	202306	1
	"Z" moving part (with pressure spring and strap)	390/392PMZI	202310	1
	"RN" moving part (with pressure spring and strap)	390/3927PMRN	202309	1
	Stationary main contact, type 4/2 (intermittent operation)	390/3927F4/2	214137	1
	Moving main contact, type 4/2 (intermittent operation)	390/3927M4/2	214139	1
	Stationary main contact, 5/2 type (continuous operation)	390/3927F5/2	214138	1
	Moving main contact, type 5/2 (continuous operation)	390/3927M5/2	214140	1
	Spark suppressor for "Z" and "RN" poles	390/3927PZ	202311	1
R8	"Z" stationary part with 400A arc-quenching coil and spark suppressor	3908PFZCS400	202555	1
	"Z" stationary part with 800A arc-quenching coil and spark suppressor	3908PFZCS800	202562	1
	"Z" moving part (with pressure spring and strap)	3908PMZ	202563	1
	Stationary main contact, type 4/2 (intermittent operation)	3908F4/2	214144	1
	Moving main contact, type 4/2 (intermittent operation)	3908/9M4/2	214141	1
	Stationary main contact, 5/2 type (continuous operation)	3908F5/2	214145	1
	Moving main contact, type 5/2 (continuous operation)	3908/9M5/2	214142	1
	Spark suppressor for "Z" and "RN" poles	3908PZ	202564	1
R8	"Z" stationary part with 1200A arc-quenching coil and spark suppr.	3909PFZCS120	244983	1
	"Z" moving part (with pressure spring and strap)	3909PMZ	212962	1
	Stationary main contact, type 4/2 (intermittent operation)	3909F4/2	204179	1
	Moving main contact, type 4/2 (intermittent operation)	3908/9M4/2	214141	1
	Stationary main contact, 5/2 type (continuous operation)	3909F5/2	204180	1
	Moving main contact, type 5/2 (continuous operation)	3908/9M5/2	214142	1

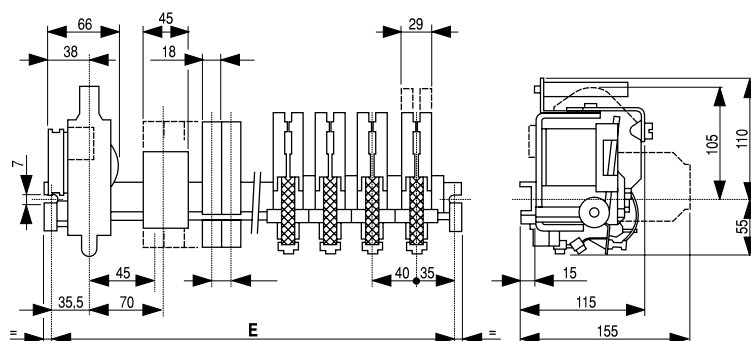
Operating categories

			R1...	R2...	R3...	R4...	R5...	R6...	R7...	R8...	R9...
AC-1	Peak operating current	40°C (A)	45	90	125	250	320	450	630	800	1200
	at ambient temp. of:	55°C (A)	45	90	125	250	320	450	600	750	1200
	(for all rated voltages)	70°C (A)	30	70	100	200	280	360	500	700	950
	Max. operating power	230/220V (kW)	17	30	45	90	114	170	195	240	450
	Resistor III	400/380V (kW)	29	55	75	155	196	310	330	410	750
		440/415V (kW)	32	57	85	180	227	340	330	500	900
		500V (kW)	39	69	102	200	250	390	420	550	1030
	Conductor	(mm²)	10	35	50	120	185	2 x (30x5)	2 x (40x5)	2 x (60x5)	4 x (50x5)
	Operation in % of peak	120 ops/h (%)	100	100	100	100	100	100	100	100	50
	operating current	300 ops/h (%)	50	50	50	50	30	30	20	10	10
AC-3	Peak operating current	Ue = 400V (A)	40	90	110	200	320	450	630	800	-
	Max. operating power	230/220V (kW)	11.5	26	36.5	72.5	93	130	184	232	-
		400/380V (kW)	20	45	62	100	160	225	315	400	-
		440/415V (kW)	20	45	68	100	160	225	315	400	-
		500V (kW)	20	45	72.5	120	165	280	400	500	-
	Use in % of peak	120 ops/h (%)	100	100	100	100	100	100	100	100	-
	operating current	300 ops/h (%)	50	50	50	50	50	50	30	30	-
AC-4	Peak operating current	Ue = 500V (A)	18.5	44	55	110	125	150	165	250	-
	Operating power	230/220V (kW)	4	11	15	33	37	45	50	80	-
	(200,000 switching	(HP)	5.3	14.6	19.9	43.9	49.2	59.8	66.5	106	-
		400/380V (kW)	9	22	28	55	63	80	90	132	-
		(HP)	11.9	29.2	37.2	73.1	83.8	106	119.7	175.5	-
		500V (kW)	11	25	33	75	90	100	110	225	-
		(HP)	14.6	33.2	43.9	99.7	119.7	133	146	299	-
	Peak operating current	H 400V (A)	40	90	110	185	280	420	590	700	-
	Max. operating power	400/380V (kW)	18.5	38	55	90	150	220	300	375	-
	Ue	Series poles	R1...	R2...	R3...	R4...	R5...	R6...	R7...	R8...	R9...
DC1 L/R H 1ms	125V	1	40	85	115	180	300	400	600	700	900
		2	60	90	125	200	320	450	630	750	1000
		3	60	90	125	200	320	450	630	800	1250
		4	60	90	125	200	320	450	630	800	1250
	220V	1	20	75	110	160	275	350	500	600	800
		2	30	90	115	200	300	370	560	650	900
		3	40	90	125	250	320	400	630	750	1000
		4	40	90	125	250	320	450	630	800	1250
	440V	1	-	-	-	-	-	-	-	-	-
		2	-	75	100	200	275	350	500	600	800
		3	20	90	125	250	320	400	600	700	900
		4	20	90	125	250	320	450	630	800	1000
DC3 L/R H 2.5ms	125V	1	30	75	100	170	280	380	550	650	-
		2	40	80	110	200	320	450	630	800	-
		3	45	90	110	200	320	450	630	800	-
		4	45	100	120	220	340	480	-	-	-
	220V	1	-	-	-	-	-	-	-	-	-
		2	15	65	90	155	245	340	460	550	-
		3	20	90	110	200	320	450	630	800	-
		4	25	90	110	200	320	450	630	800	-
	440V	1	-	-	-	-	-	-	-	-	-
		2	-	-	-	-	-	-	-	-	-
		3	10	55	75	120	200	300	400	500	-
		4	13	70	100	160	260	400	550	660	-
DC5 L/R H 15ms	125V	1	27	50	70	90	240	320	400	500	-
		2	35	70	90	150	280	380	450	550	-
		3	40	90	100	200	320	420	500	600	-
		4	40	90	110	200	320	450	500	650	-
	220V	1	-	-	-	-	-	-	-	-	-
		2	13	55	80	140	220	300	410	490	-
		3	18	80	100	180	290	400	560	700	-
		4	22	80	100	180	290	400	560	700	-
	440V	1	-	-	-	-	-	-	-	-	-
		2	-	-	-	-	-	-	-	-	-
		3	9	50	67	100	180	270	360	450	-
		4	11	60	90	130	224	360	480	600	-

Series 390.R

Dimensional drawings

R1..., R2...

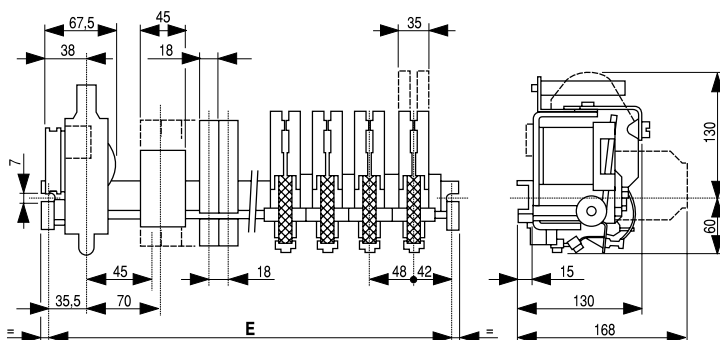


Contact combination

"Z" main pole (1)	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	1	1	1	150
	3	3	3	200
	6	6	4	250
	9	6	4	300
	10	6	4	350
2	10	6	4	400
	1	1	1	200
	4	4	4	250
	7	6	4	300
	9	6	4	350
3	9	6	4	400
	2	2	2	250
	5	5	4	300
	7	6	4	350
	7	6	4	400
4	2	2	2	300
	5	5	4	350
	5	5	4	400

(1) A "RN" pole can be used to replace one of the "Z" poles. To use a higher number of "RN" poles, contact the manufacturer.

R3...

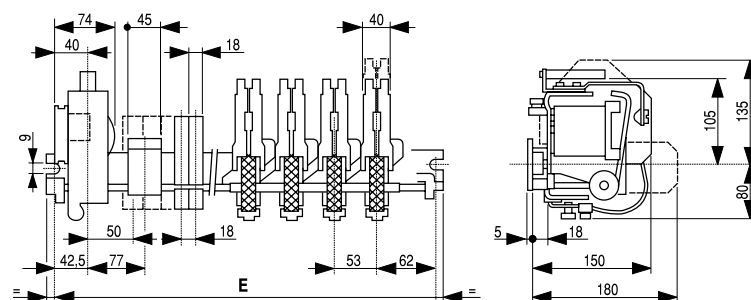


Contact combination

"Z" main pole (1)	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	-	-	-	150
	3	3	3	200
	6	6	4	250
	9	6	4	300
	10	6	4	350
2	10	6	4	400
	-	-	-	200
	3	3	3	250
	6	6	4	300
	8	6	4	350
3	9	6	4	400
	-	-	-	250
	3	3	3	300
	6	6	4	350
	7	6	4	400
4	-	-	-	300
	3	3	3	350
	4	4	4	400

(1) A "RN" pole can be used to replace one of the "Z" poles. To use a higher number of "RN" poles, contact the manufacturer.

R4...

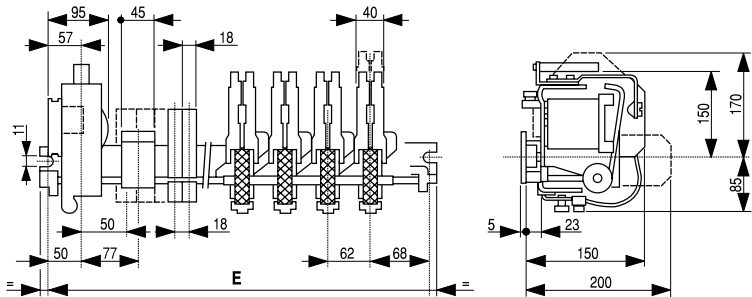


Contact combination

"Z" main pole (1)	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	3	3	3	250
	6	6	4	300
	9	6	4	350
	10	6	4	400
	10	6	4	450
2	-	-	-	250
	3	3	3	300
	6	6	4	350
	9	6	4	400
	10	6	4	450
3	-	-	-	300
	3	3	3	350
	6	6	4	400
	9	6	4	450
	3	3	3	400
4	4	4	3	450

(1) A "RN" pole can be used to replace one of the "Z" poles. To use a higher number of "RN" poles, contact the manufacturer.

R5...

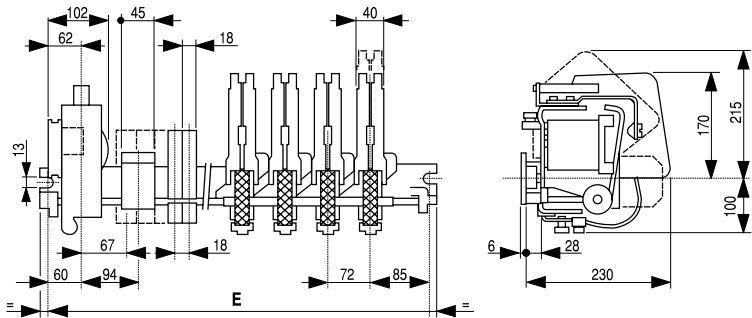


Contact combination

"Z" main pole (1)	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	2	2	2	250
	5	5	4	300
	8	6	4	350
	10	6	4	400
	10	6	4	450
2	10	6	4	500
	2	2	2	300
	4	4	4	350
	7	6	4	400
	10	6	4	450
3	10	6	4	500
	1	-	-	350
	4	4	4	400
	6	6	4	450
	7	6	4	500
4	-	-	-	400
	3	3	3	450
	3	3	3	500

(1) A "RN" pole can be used to replace one of the "Z" poles. To use a higher number of "RN" poles, contact the manufacturer.

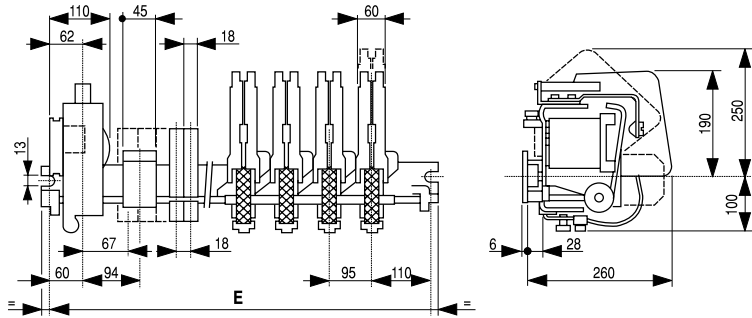
R6...



Contact combination

"Z" main pole	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	5	2	4	350
	8	6	4	400
	10	6	4	450
	10	6	4	500
	10	6	4	600
2	10	6	4	700
	1	1	1	350
	4	4	4	400
	7	6	4	450
	9	6	4	500
3	10	6	4	600
	10	6	4	700
	2	2	2	450
	5	5	4	500
	7	6	4	600
4	7	6	4	700
	1	1	1	500
	2	2	2	600
	2	2	2	700

R7...



Contact combination

"Z" main pole (1)	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	4	4	4	350
	6	6	4	400
	9	6	4	450
	10	6	4	500
	10	6	4	600
2	10	6	4	700
	1	1	1	400
	4	4	4	450
	7	6	4	500
	10	6	4	600
3	10	6	4	700
	1	1	1	500
	7	6	4	600
4	8	6	4	700
	2	2	2	600
	5	5	3	700

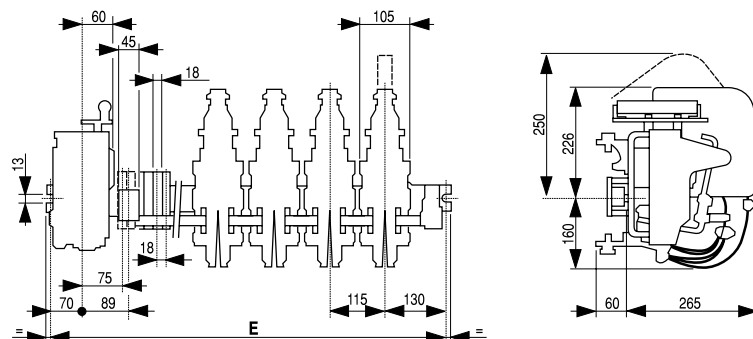
(1) A "RN" pole can be used to replace one of the "Z" poles. To use a higher number of "RN" poles, contact the manufacturer.



Series 390.R

Dimensional drawings

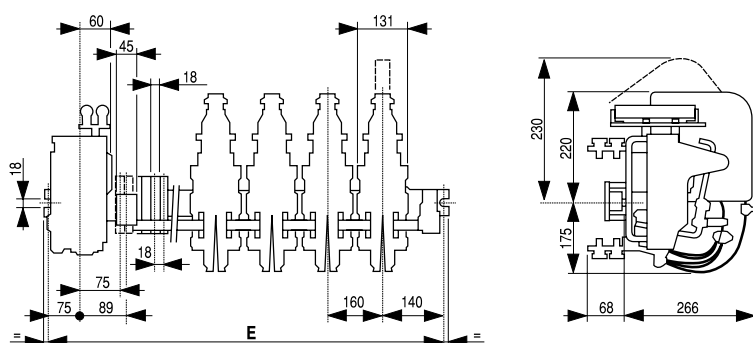
R8...



Contact combination

"Z" main pole	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	1	1	1	350
	4	4	4	400
	6	6	4	450
	9	6	4	500
	10	6	4	600
	10	6	4	700
	10	6	4	800
2	-	-	-	450
	3	3	3	500
	8	6	4	600
	10	6	4	700
3	2	2	2	600
	8	6	4	700
	8	6	4	800
4	1	1	1	700
	4	3	3	800

R9...



Contact combination

"Z" main pole	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	2	2	2	400
	4	4	4	450
	7	6	4	500
	10	6	4	600
	10	6	4	700
	10	6	4	800
	10	6	4	900
2	10	6	4	1000
	4	4	4	600
	9	6	4	700
	10	6	4	800
	10	6	4	900
3	-	-	-	700
	6	6	4	800
	8	6	4	900
4	8	6	4	1000
	3	3	3	900
	4	3	3	1000