



DATA SUPPORT

CROSS REFERENCE LIST

Stock No.	Manu. Part No.
243-9747	GC1610B5
243-9753	GC1610M5
243-9775	GC1620B5
243-9781	GC1620M5
243-9797	GC1611B5
243-9804	GC1611M5
243-9810	GC2520M5
243-9832	GC2530M5
243-9848	GC2540M5
243-9854	GC4030M5
243-9860	GC4040M5
243-9876	GC6330M5
243-9882	GC6340M5
243-9898	GAC0521
243-9905	GAC0531
243-9911	GAC0511
243-9927	GAP21
243-9933	GAP23
243-9949	GAC5
243-9955	GA1C7
243-9961	GA1C6
243-9977	GW254
243-9999	GW632
244-0006	GW634
244-0012	GF1610U7
244-0028	GF1620B7
244-0034	GF1620F7
244-0040	GF1620U7
244-0056	GF1611B7
244-0062	GF1611F7
244-0078	GF1611U7

Modular equipment

Cross reference table

Old references	Functions	Supply voltage	New references
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Standard contactors, type GC

GC1M62	1"O" + 1"F"	220/240V	GC1611M5
GC (1 ou 3) M12	1"F"	220/240V	GC2510M5
GC (1 ou 3) B22	2"F"	24V	GC2520B5
GC (1 ou 3) M22	2"F"	220/240V	GC2520M5
GC1M92	2"O"	220/240V	GC2502M5
GC (1 ou 3) M32	3"F"	220/240V	GC2530M5
GC1M52	3"F" + 1"O"	220/240V	GC2530M5 + GAC-0511
GC1B42	4"F"	24V	GC2540B5
GC (1 ou 3) M42	4"F"	220/240V	GC2540M5
GC1M22Z	2"F" + 2"O"	220/240V	GC2522M5
GC1M72	4"O"	220/240V	GC2504M5
GC (1 ou 3) M24	2"F"	220/240V	GC4020M5
GC (1 ou 3) M34	3"F"	220/240V	GC4030M5
GC (1 ou 3) M44	4"F"	220/240V	GC4040M5
GC1M74	4"O"	220/240V	GC4004M5
GC1M26	2"F"	220/240V	GC6320M5
GC1M56	3"F" + 1"O"	220/240V	GC6330M5 + GAC- 0511
GC1M46	4"F"	220/240V	GC6340M5
GC1M26Z	2"F" + 2"O"	220/240V	GC6322M5
GC1M76	4"O"	220/240V	GC6304M5

"Dual tariff " contactors, type GY

GY1M62	1"F" + 1"O"	220/240V	GY1611M5
GY (1 ou 3) M22	2"F"	220/240V	GY2520M5
GY (1 ou 3) M32	3"F"	220/240V	GY2530M5
GY (1 ou 3) M42	4"F"	220/240V	GY2540M5
GY (1 ou 3) M24	2"F"	220/240V	GY4020M5
GY (1 ou 3) M34	3"F"	220/240V	GY4030M5
GY (1 ou 3) M44	4"F"	220/240V	GY4040M5
GY1M26	2"F"	220/240V	GY6320M5
GY1M46	4"F"	220/240V	GY6340M5

Impulse relays

GF1B12	1"F"	24V	GF1610B7
GF1F12	1"F"	110V	GF1610F7
GF1M12	1"F"	220V	GF1610M7
GF1U12	1"F"	230/240V	GF1610U7
GF1B62	1"F" + 1"O"	24V	GF1611B7
GF1M62	1"F" + 1"O"	220V	GF1611M7
GF1U62	1"F" + 1"O"	230/240V	GF1611U7
GF1B22	2"F"	24V	GF1620B7
GF1M22	2"F"	220V	GF1620M7
GF1U22	2"F"	230/240V	GF1620U7

Modular equipment

Standard contactors, type GC

Presentation and standards



GC-25

Presentation

Designed for use in modular panels and enclosures, these contactors feature :

- **Easy installation**
 - quick clip-on fixing onto 35 mm omega rail
 - easy connection by means of ready-to-tighten captive, pozidrive screw terminals.
- **Compact size**

All units have a common depth of 60 mm and width in modules of 17.5 mm (width of one module : 17.5 mm).
- **User safety**
 - use of materials conforming to strictest fire safety standards,
 - live parts protected against direct finger contact,
 - completely safe operation,
 - state indication on front face.

Standards

This new range of modular contactors has been designed taking into account the requirements of **new international standard IEC 1095**.

This standard is specific to :

"Electromagnetic contactors for domestic and similar use".

It has very strict requirements, meeting the expectations of users, with regard to the safety of equipment and persons in "premises and areas accessible to the public".

Conformity with this standard makes it possible to obtain the following quality labels without the need for additional tests: NF-USE, VDE, CEBEC.

Applications

Modular contactors are designed for switching all single-phase, 3-phase or 4-phase resistive loads up to 100 A.

Power switching

The new range of contactors has multiple applications in industrial, agricultural and commercial premises, hospitals and the home, i.e. wherever switching of a specific supply is required :

- lighting,
- heating,
- ventilation,
- motorised shutters or gates.

Modular equipment

Standard contactors, type GC

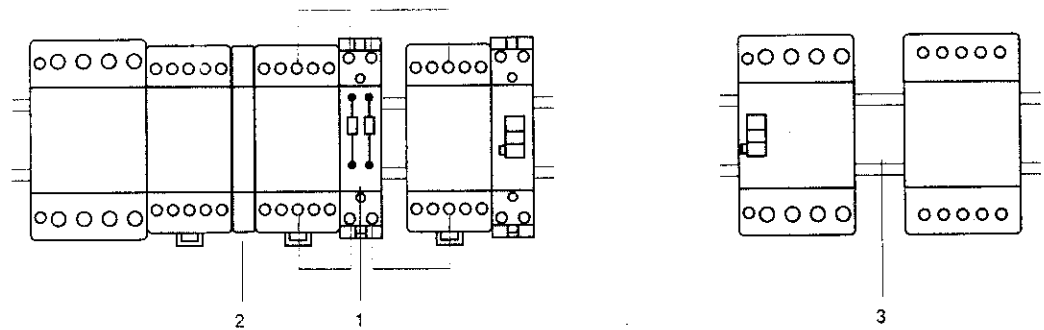
Setting-up precautions

Setting-up precautions

The contactor controls must be bounce free. If not, connect a coil suppression block (GAP-21, 22 or 23) across the coil terminals ≤ 250 V (ref. 1).

When several contactors which operate at the same time are mounted side by side, a GAC-5 ventilation 1/2 module must be fitted every 2 contactors (ref. 2).

It is advisable to mount electronic units at the bottom of the modular panel and to separate them from electromechanical units by a space equal to one module (ref. 3) or by 2 ventilation modules GAC-5.



Derating of contactors mounted in a modular enclosure if the temperature within the enclosure is $> 40^{\circ}\text{C}$

40 °C	50 °C	60 °C (1)	Contactor rating
16 A	14 A	13 A	16 A
25 A	22 A	20 A	25 A
40 A	36 A	32 A	40 A
63 A	57 A	50 A	63 A
100 A	87 A	80 A	100 A

(1) Ventilation 1/2 module must be fitted

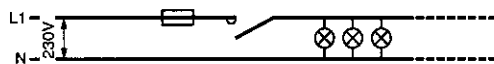
Modular equipment

Modular contactors

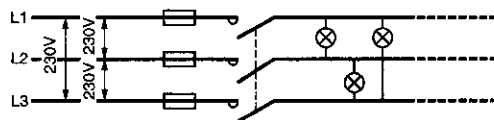
Contactor selection for lighting circuits

Lighting (Maximum number of lamps depending on the power of each unit)

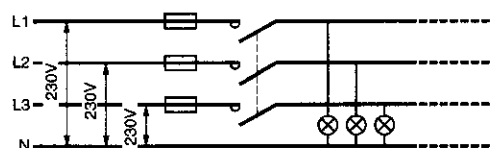
Presentation of installations according to type of supply:
Single-phase circuit, 230 V



3-phase circuit, 230 V



3-phase circuit, 400 V (with neutral)



The maximum number of lamps which can be operated per phase is equal to the number of lamps in the "single-phase 230 V" table divided by $\sqrt{3}$.

The maximum number of lamps which can be operated per phase is equal to the total number of lamps in the "single-phase 230 V" table.

Contactor rating indicated below for a single-phase 230 V circuit (single-pole).

Fluorescent lamps with starter

Single fitting	Non corrected					With parallel correction					Contactor rating
P in W	20	40	50	80	110	20	40	58	80	110	—
I in A	0.39	0.43	0.70	0.80	1.2	0.19	0.29	0.46	0.57	0.79	—
C in μF	—	—	—	—	—	5	5	7	7	16	—
Maximum number of lamps	22	20	13	10	7	15	15	10	10	5	16 A
	30	28	17	15	10	20	20	15	15	7	25 A
	70	60	35	30	20	40	40	30	30	14	40 A
	100	90	56	48	32	60	60	43	43	20	63 A
Twin fitting	Non corrected					With series correction					Contactor rating
P in W	2 x 18	2 x 36	2 x 58	2 x 80	2 x 140	2 x 18	2 x 36	2 x 58	2 x 80	2 x 140	—
I in A	0.44	0.82	1.34	1.64	2.2	0.26	0.48	0.78	0.96	1.3	—
C in μF	—	—	—	—	—	3.5	4.5	7	9	18	—
Maximum number of lamps	20	11	7	5	4	30	17	10	9	6	16 A
	30	16	10	8	6	46	25	16	13	10	25 A
	50	26	16	13	10	80	43	27	22	16	40 A
	75	42	25	21	16	123	67	42	34	25	63 A

High pressure mercury vapour lamps

High pressure mercury vapor lamps														Contactor rating
	Non corrected						With parallel correction							
P in W	50	80	125	250	400	700	50	80	125	250	400	700	1000	—
I _b in A	0.6	0.8	1.15	2.15	3.25	5.4	0.35	0.50	0.7	1.5	2.4	4	5.7	—
C in μ F	—	—	—	—	—	—	7	8	10	18	25	40	60	—
Maximum number of lamps	15	10	8	4	2	1	10	9	9	4	3	2	—	16 A
	20	15	10	6	4	2	15	13	10	6	4	2	1	25 A
	34	27	20	10	6	4	28	25	20	11	8	5	3	40 A
	53	40	28	15	10	6	43	38	30	17	12	7	5	63 A

I_b : value of current drawn by each lamp at its rated operational voltage.

C : unit capacitance for each lamp.

I_b and C correspond to values normally quoted by lamp manufacturers

Modular equipment

Modular contactors

Contactor selection for lighting circuits

Lighting (maximum number of lamps depending on the power of each unit)

Contactor rating indicated below for a single-phase 230 V circuit (single-pole).

Low pressure sodium vapour lamps

	Non corrected						With parallel correction						Contactor rating
P in W	18	35	55	90	135	180	18	35	55	90	135	180	—
I _b in A	0.35	1.4	1.4	2.1	3.1	3.1	0.35	0.6	0.6	0.9	0.9	0.9	—
C in µF	—	—	—	—	—	—	5	20	20	26	45	40	—
Maximum number of lamps	18	4	5	3	2	2	14	3	3	2	1	1	16 A
	34	9	9	6	4	4	21	5	5	4	2	2	25 A
	57	14	14	9	6	6	40	10	10	8	4	5	40 A
	91	24	24	19	10	10	60	15	15	11	6	7	63 A

High pressure sodium vapour lamps

	Non corrected					With parallel correction					Contactor rating
P in W	70	150	250	400	1000	70	150	250	400	1000	—
I _b in A	1	1.8	3	4.4	10.3	0.6	0.7	1.5	2.5	6	—
C in µF	—	—	—	—	—	12	12	32	25	45	—
Maximum number of lamps	8	4	2	1	—	6	6	2	2	1	16 A
	12	7	4	3	1	9	9	3	4	2	25 A
	20	13	8	5	2	18	18	6	8	4	40 A
	32	18	11	8	3	25	25	9	12	6	63 A

Metal iodine or halogen vapour lamps

	Non corrected						With parallel correction						Contactor rating
P in W	35	70	150	250	400	1000	39	70	150	250	400	1000	2000
I _b in A	0.3	0.5	1	1.5	2.5	6	0.3	0.5	1	1.5	2.5	6	5.5
C in µF	—	—	—	—	—	—	6	12	20	32	45	85	60
Maximum number of lamps	27	16	8	5	3	1	12	6	4	3	2	—	1
	40	24	12	8	5	2	18	9	6	4	3	1	2
	68	42	20	14	8	4	31	16	10	7	5	3	3
	106	64	32	21	13	5	50	25	15	10	7	4	5

Incandescent and halogen lamps

								Contactor rating
P in W	60	75	100	150	200	300	500 1000	—
I _b in A	0.26	0.32	0.44	0.65	0.87	1.30	2.17 4.4	—
Maximum number of lamps	30	25	19	12	10	7	4 2	16 A
	45	38	28	18	14	10	6 3	25 A
	85	70	50	35	26	18	10 6	40 A
	125	100	73	50	37	25	15 8	63 A

Halogen lamps used with transformer

					Contactor rating
P in W	60	80	105	150	—
I _b in A	0.26	0.35	0.45	0.65	—
Maximum number of lamps	9	8	6	4	16 A
	14	12	9	6	25 A
	27	23	18	13	40 A
	40	35	27	19	63 A

I_b : value of current drawn by each lamp at its rated operational voltage.

C : unit capacitance for each lamp.

I_b and C correspond to values normally quoted by lamp manufacturers.

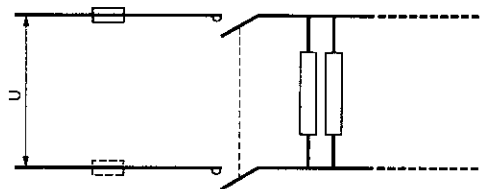
Modular equipment

Modular contactors

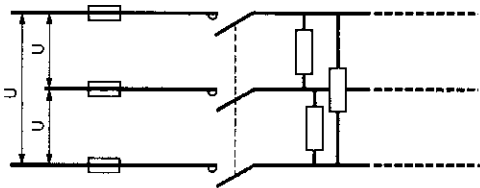
Selection for heating circuits

Heating (AC-7a)

Single-phase, 2-pole switching



3-phase switching



Heating by resistive elements or by infra-red radiators, convectors or radiators, heating ducts, industrial furnaces. The current peak between the hot and cold states must not exceed 2 to 3 In at the moment of switch-on.

Maximum power in kW according to electrical durability

Electrical durability in operating cycles	100 x 10 ³	150 x 10 ³	200 x 10 ³	500 x 10 ³	10 ⁶	Contactor rating
Single-phase switching 230 V (2-pole)	3.5	3	2.2	1	0.8	16 A
	5.4	4.6	3.5	1.6	1.2	25 A
	8.6	7.4	5.6	2.6	1.9	40 A
	13.6	11.6	8.8	4	3	63 A
	21.6	18.4	14	6.4	4.8	100 A
3-phase switching 400 V (3-pole)	10	9	6.5	3.2	2.2	16 A
	16	14	10	5	3.5	25 A
	26	22	17	7.5	6	40 A
	41	35	26.5	12	9	63 A
	64.8	55.2	42	19.2	14.4	100 A

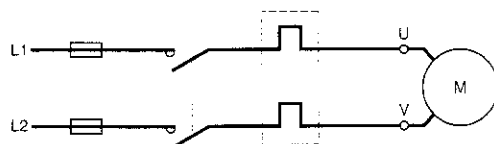
Modular equipment

Modular contactors

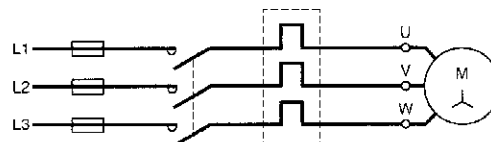
Selection for motor control

Motor control (AC-7b)

Single-phase circuit, 230 V



3-phase circuit, 400 V



Maximum power in kW

230 V single-phase capacitor motor (2-pole)	400 V 3-phase motor	Contactor rating (Ith)
0.55	2.2	16 A
1.1	4	25 A
2.2	7.5	40 A
4	11	63 A

Modular equipment

Standard contactors, type GC

Characteristics

Type			GC16	GC25	GC40	GC63	GC100	
Environment								
Rated insulation voltage (Ui)	Conforming to IEC 1095	V	500					
	Conforming to VDE 0110	V	500					
Rated impulse withstand voltage (Uimp)		kV	4 in enclosure					
Conforming to standards			IEC 1095, VDE 0660 and IEC 947-5 for auxiliary contacts					
Approvals			NF- USE, VDE, CEBEC, ÖVE					
Degree of protection	Conforming to VDE 0106		Protection against direct finger contact (IP 20 open, IP 40 in enclosure)					
Protective treatment	Standard version		"TC"					
Ambient air temperature around the device	Storage	°C	- 40...+ 70					
	Operation	°C	- 5...+ 50 (0.85...1.1 Uc)					
Maximum operating altitude	Without derating	m	3000					
Operating positions	Without derating		± 30° in relation to normal vertical mounting position					
Shock resistance 1/2 sine wave = 10 ms	Contact open		10 gn					
	Contact closed		15 gn					
Vibration resistance 5...300 Hz	Contact open		2 gn					
	Contact closed		3 gn					
Flame resistance			Conforming to IEC 1095					
Opacity and toxicity of fumes			Conforming to NF F 16-101 and 16-102					
Pole characteristics								
Number of poles			2, 3 or 4					
Rated operational current (Ie) (Ue ≤ 440 V)	In AC-7a (heating)	A	16	25	40	63	100	
	In AC-7b (motor control)	A	5	8.5	15	25	—	
Rated operational voltage (Ue)	Up to	V	250 two-pole contactors, 415 three and four-pole contactors					
Frequency limits	Of the operational current	Hz	400					
Conventional thermal current (Ith)	θ ≤ 50 °C	A	16	25	40	63	100	
Rated making and breaking capacity	Conforming to IEC 1095 (AC-7b) I rms 400 V 3-phase	A	40	68	120	200	—	
Permissible short time rating with no current flow for the previous 15 minutes and with θ ≤ 40 °C	For 10 s	A	128	200	320	504	800	
	For 30 s	A	40	62	100	157	250	
Short-circuit protection by fuse or circuit breaker U ≤ 440 V	gl fuse	A	16	25	40	63	100	
	Circuit breaker I ² t (at 3 kA rms prospective)	230 V	A ² s	5000	10000	16000	18000	—
		400 V	A ² s	9000	14000	17500	20000	—
Average impedance per pole	At Ith and 50 Hz	mΩ	2.5	2.5	2	2	1	
Power dissipated per pole	For the above operational currents	W	0.65	1.6	3.2	8	10	
Maximum cabling c.s.a.								
Flexible cable without cable end	1 conductor	mm ²	6	6	25	25	35	
	2 conductors	mm ²	4	4	16	16	—	
Flexible cable with cable end	1 conductor	mm ²	6	6	16	16	35	
	2 conductors	mm ²	1.5	1.5	4	4	—	
Solid cable without cable end	1 conductor	mm ²	6	6	25	25	35	
	2 conductors	mm ²	4	4	6	6	10	
Tightening torque	Power circuit connections	N.m	1.4	1.4	3.5	3.5	5	

Modular equipment

Standard contactors, type GC

Characteristics

Type	GC16, GC25 single or 2-pole	GC16, GC25 3 or 4-pole GC40, GC63 2-pole	GC40, GC63 3 or 4-pole GC100 2-pole	GC100 4-pole
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Control circuit characteristics

Rated control circuit voltage (U _c)	50 or 60 Hz	V	12...240 V, for other voltages, please consult your Regional Sales Office
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Control voltage limits ($\theta \leq 50^\circ\text{C}$)

50 Hz coils	Operational	0.85...1.1 U _c
	Drop out	0.2...0.75 U _c

Average coil consumption at 20 °C and at U_c

~ 50 Hz	Inrush	VA	15	34	53	106
	Sealed	VA	3.8	4.6	6.5	13

Maximum heat dissipation	50/60 Hz	W	1.3	1.6	2.1	4.2
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Operating times (1)	Closing "C"	ms	10...30
	Opening "O"	ms	10...25

Mechanical durability	In operating cycles	10 ⁶
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Maximum operating rate at ambient temperature $\leq 50^\circ\text{C}$	In operating cycles per hour	300
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Maximum cabling c.s.a.

Flexible cable without cable end	1 or 2 conductors	mm ²	2.5
Flexible cable with cable end	1 conductor	mm ²	2.5
	2 conductors	mm ²	1.5
Solid cable without cable end	1 or 2 conductors	mm ²	1.5

Tightening torque	N.m	1.4
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Instantaneous auxiliary contact characteristics

Rated operational voltage (U _e)	Up to	V	250
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Rated insulation voltage (U _i)	Conforming to IEC 947-5	V	500
	Conforming to VDE 0110	V	500

Conventional thermal current (I _{th})	For ambient $\theta \leq 50^\circ\text{C}$	A	5
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Mechanical durability	Operating cycles	10 ⁶
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Maximum cabling c.s.a.	Flexible or solid conductor	mm ²	2.5
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Tightening torque	N.m	1.4
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Modular equipment

Standard contactors, type GC

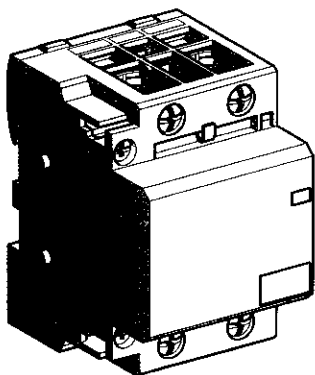
References



GC-2520



GC-4040



GC-10020

Maximum current rating category AC-1	Number of poles		Number of 17.5 mm modules	Basic reference. Complete with code indicating control circuit voltage (2)	Usual voltages	Weight
						
A						kg
16	1	—	1	GC-1610●●	B5 M5	0.110
	2	—	1	GC-1620●●	B5 M5	0.110
	4	—	2	GC-1640●●	B5 M5	0.230
	1	1	1	GC-1611●●	B5 M5	0.110
	2	2	2	GC-1622●●	B5 M5	0.230
25	1	—	1	GC-2510●●	B5 M5	0.110
	2	—	1	GC-2520●●	B5 M5	0.110
	3	—	2	GC-2530●●	B5 M5	0.230
	4	—	2	GC-2540●●	B5 M5	0.230
	1	1	1	GC-2511●●	B5 M5	0.110
	2	2	2	GC-2522●●	B5 M5	0.230
	—	2	1	GC-2502●●	B5 M5	0.110
	—	4	2	GC-2504●●	B5 M5	0.230
40	2	—	2	GC-4020●●	B5 M5	0.230
	3	—	3	GC-4030●●	B5 M5	0.350
	4	—	3	GC-4040●●	B5 M5	0.390
	1	1	2	GC-4011●●	B5 M5	0.230
	2	2	3	GC-4022●●	B5 M5	0.390
	—	2	2	GC-4002●●	B5 M5	0.230
	—	4	3	GC-4004●●	B5 M5	0.390
63	2	—	2	GC-6320●●	B5 M5	0.340
	3	—	3	GC-6330●●	B5 M5	0.390
	4	—	3	GC-6340●●	B5 M5	0.390
	1	1	2	GC-6311●●	B5 M5	0.340
	2	2	3	GC-6322●●	B5 M5	0.390
	—	2	2	GC-6302●●	B5 M5	0.340
	—	4	3	GC-6304●●	B5 M5	0.390
100	2	—	3	GC-10020●●▲	B5 M5	0.680
	4	—	6	GC-10040●●▲	B5 M5	0.780

(2) Standard control circuit voltages (variable delivery times, please consult your Regional Sales Office).

Volts	12	24	48	110	220/240
50 Hz	J5	B5	E5	F5	M5
60 Hz	J6	B6	E6	F6	M6

Modular equipment

Standard contactors, type GC

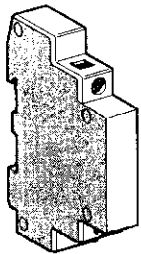
References

Instantaneous auxiliary contact blocks

Number of contacts	Number of poles			Reference	Weight kg
					
2	1	1	-	GAC-0521	0.016
	-	2	-	GAC-0531	0.016
	-	-	1	GAC-0511	0.016



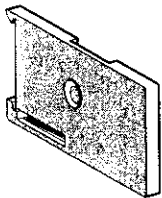
GAC-05●●



GAP-2●

Accessories

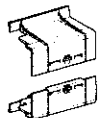
Description	For use on contactor	Number of modules	Operational voltage in V	Unit reference	Weight kg
Coil suppression block comprising 2 RC circuits	-	1	12...48	GAP-21	0.090
	-	1	48...127	GAP-22	0.090
	-	1	220...240	GAP-23	0.090
Ventilation 1/2 module clips onto rail	-	1/2	-	GAC-5	0.015
Cover plates	-	1/2	-	GA1-C7	0.001
	-	1	-	GA1-C6	0.001
Sealable terminal covers (1 top part + 1 bottom part) (Sold per ten)	16 or 25 A 3 or 4 contacts	2	-	GW-254	0.040
	40 or 63 A 2 contacts	2	-	GW-632	0.040
	40 or 63 A 3 or 4 contacts	3	-	GW-634	0.050



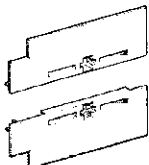
GAC-5



GA1-C●



GW-254



GW-63●

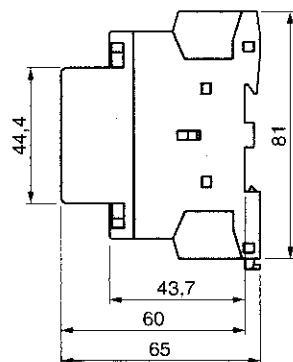
Modular equipment

Standard contactors, type GC

Dimensions

Contactors

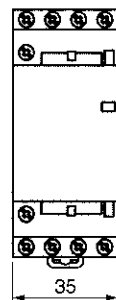
Common side view



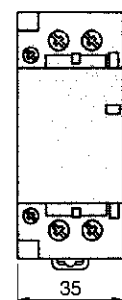
GC-1610, 1611, 1620
GC-2502, 2510, 2511, 2520
1 module



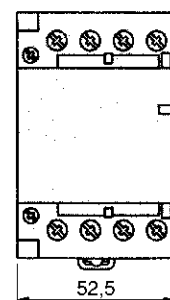
GC-1622, 1640
GC-2504, 2522, 2530, 2540
2 modules



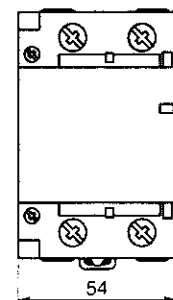
GC-4002, 4011, 4020
GC-6302, 6311, 6320
2 modules



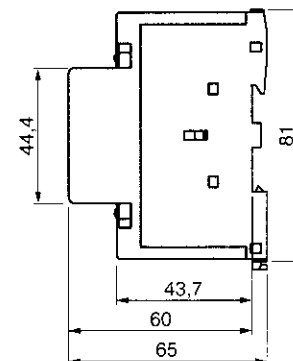
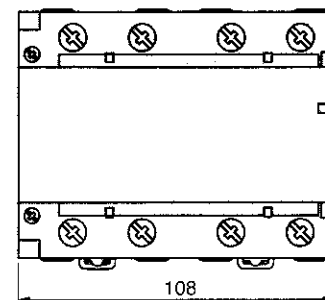
GC-4004, 4022, 4030, 4040
GC-6304, 6322, 6330, 6340
3 modules



GC-10020
3 modules



GC-10040
6 modules



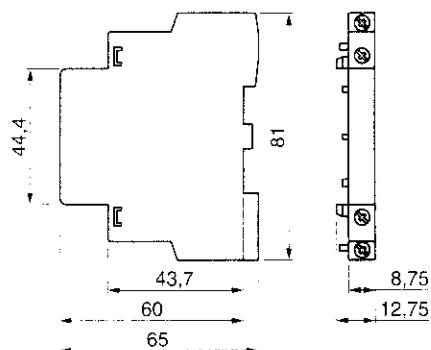
Modular equipment

Standard contactors, type GC

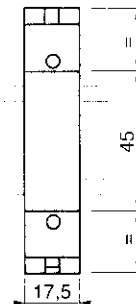
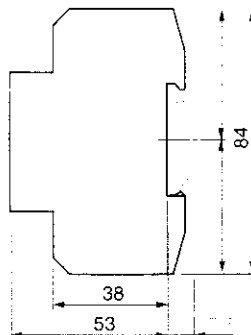
Dimensions, schemes

Dimensions

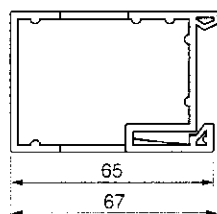
Auxiliary contacts
GAC-0511, 0531 and 0521



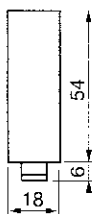
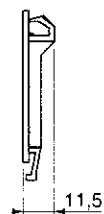
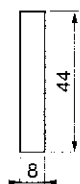
Coil suppression blocks
GAP-21, 22 and 23



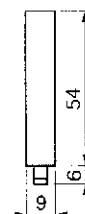
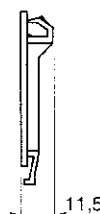
Clip-on ventilation module
GAC-5



Cover plates
GA1-C6

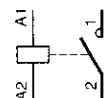


GA1-C7

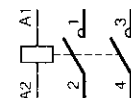


Schemes

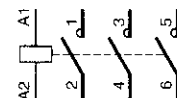
Contactors
GC-●●10



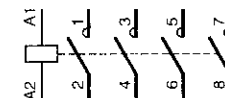
GC-●●20



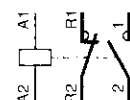
GC-●●30



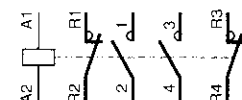
GC-●●40



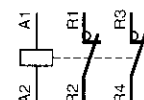
GC-●●11



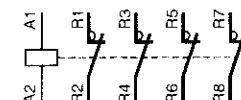
GC-●●22



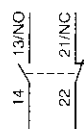
GC-●●02



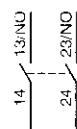
GC-●●04



Auxiliary contacts
GAC-0521



GAC-0531



GAC-0511

