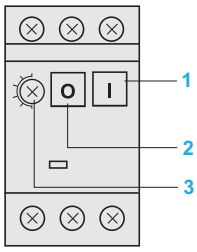
Protection components
Thermal-magnetic motor circuit-breakers GZ1E

Presentation



GZ1 E motor circuit-breakers are 3-pole thermal-magnetic circuit-breakers specifically designed for the control and protection of motors, conforming to standards IEC 60947-2 and IEC 60947-4-1.

Connection
These circuit-breakers are designed for connection by screw clamp terminals. This technique ensures secure, permanent and durable clamping that is resistant to harsh environments, vibration and impact and is even more effective when conductors without cable ends are used. Each connection can take two independent conductors.

Pushbutton control.
Energisation is controlled manually by operating the Start button “I” 1.
De-energisation is controlled manually by operating the Stop button “O” 2, or automatically by the thermal-magnetic protection elements or by a voltage trip attachment.

Protection of motors and personnel
Motor protection is provided by the thermal-magnetic protection elements incorporated in the motor circuit-breaker.
The magnetic elements (short-circuit protection) have a non-adjustable tripping threshold, which is equal to about 13 times the maximum setting current of the thermal trips.
The thermal elements (overload protection) include automatic compensation for ambient temperature variations.
The rated operational current of the motor is displayed by means of a graduated knob 3.
Personnel protection is also provided. All live parts are protected against direct finger contact.
GZ1 E motor circuit-breakers are easily installed in any confi guration thanks to their universal fi xing arrangement: screw fi xing or clip-on mounting on symmetrical, asymmetrical or combination rails.

Environment

Circuit-breaker type			**GZ1 E**	
Conforming to standards			IEC 60947-2, IEC 60947-4	
Protective treatment			“TH”	
Degree of protection			In **GV2 MC01** enclosure: IP 41 In **GV2 MC02** enclosure: IP 55	
Ambient air temperature	Storage	**°C**	- 40…+ 80	
	Operation		- 20…+ 60	
Flame resistance	Conforming to IEC 60695-2-1	**°C**	960	
Maximum operating altitude		**m**	2000	
Cabling Number of conductors and c.s.a.			**Min.**	**Max.**
	Solid cable	**mm²**	2 x 1	2 x 6
	Flexible cable without cable end	**mm²**	2 x 1.5	2 x 6
	Flexible cable with cable end	**mm²**	2 x 1	2 x 4
Suitable for isolation	Conforming to IEC 60947-1 § 7-1-6		Yes	
Tightening torque		**N.m**	1,7	
Rated operational voltage (Ue)	Conforming to IEC 60947-2	**V**	690	
Rated insulation voltage (Ui)	Conforming to IEC 60947-2	**V**	690	
Rated operational frequency	Conforming to IEC 60947-2	**Hz**	50/60	
Rated impulse withstand voltage (U imp)	Conforming to IEC 60947-2	**kV**	6	
Total power dissipated per pole		**W**	2.5	
Mechanical durability (C.O.: closing, opening)		**C.O.**	100 000	
Electrical durability	For AC-3 duty	**CF.O.**	100 000	
Duty class (maximum operating rate)		**C.O./h**	25	

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GZ1 E

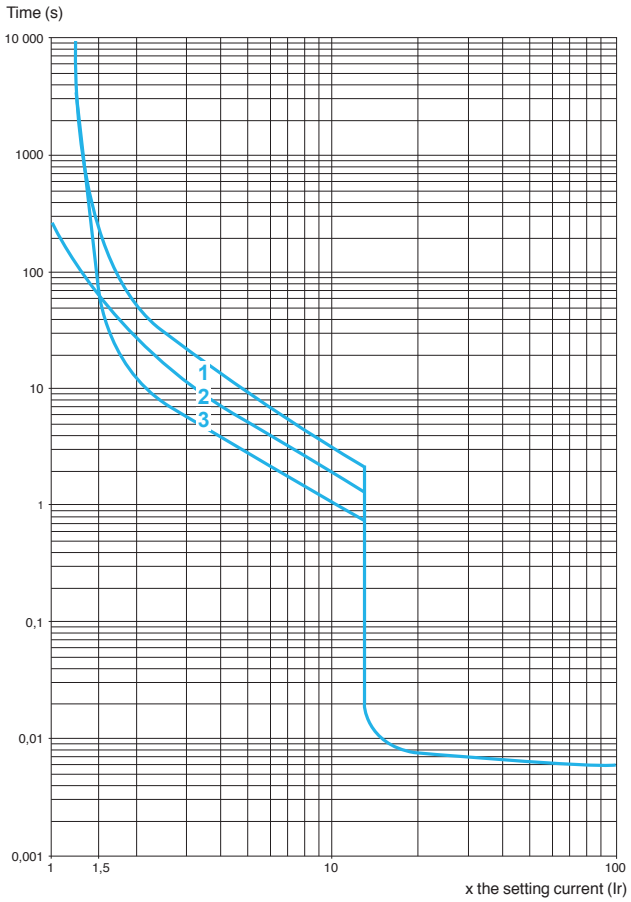
Breaking capacity

Circuit-breaker type				GZ1 E								
				01 to 06	07	08	10	14	16	20	21	22 to 32
Rating			A	0.1 to 1.6	2,5	4	6.3	10	14	18	23	25 to 32
Breaking capacity	230/240 V	Icu	kA	★	★	★	★	★	★	★	30	30
conforming to IEC 60947-2		Ics % (1)		★	★	★	★	★	★	★	100	100
	400/415 V	Icu	kA	★	★	★	★	★	10	10	10	10
		Ics % (1)		★	★	★	★	★	50	50	40	40
	440 V	Icu	kA	★	★	★	30	10	6	6	5	5
		Ics % (1)		★	★	★	100	100	50	50	50	50
	500 V	Icu	kA	★	★	★	30	8	5	5	3	3
		Ics % (1)		★	★	★	100	100	75	75	75	75
	690 V	Icu	kA	★	2	2	2	2	2	2	2	2
		Ics % (1)		★	75	75	75	75	75	75	75	75

★ > 100 kA.
(1) As % of Icu.

Tripping curves

Average operating times at 20 °C related to multiples of the setting current



1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state

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CPB100407

GZ1 E

Motor circuit-breakers

Pushbutton control

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3					Setting range of thermal trips	Magnetic tripping current Id ± 20 %	Reference	Weight
230 V	400 V	440 V	500 V	690 V				
kW	kW	kW	kW	kW	A	A		kg
–	–	–	–	–	0.1…0.16	1.5	**GZ1 E01**	0.260
–	–	–	–	–	0.16…0.25	2.4	**GZ1 E02**	0.260
–	–	–	–	–	0.25…0.40	5	**GZ1 E03**	0.260
–	–	–	–	0.37	0.40…0.63	8	**GZ1 E04**	0.260
–	–	–	0.37	0.55	0.63…10	13	**GZ1 E05**	0.260
–	0.37	0.55	0.75	1.1	1…1.6	22.5	**GZ1 E06**	0.260
0.37	0.75	1.1	1.1	1.5	1.6…2.5	33.5	**GZ1 E07**	0.260
0.75	1.5	1.5	2.2	3	2.5…4	51	**GZ1 E08**	0.260
1.1	2.2	3	3.7	4	4…6.3	78	**GZ1 E10**	0.260
2.2	4	4	5.5	7.5	6…10	138	**GZ1 E14**	0.260
–	5.5	5.5	9	11	9…14	170	**GZ1 E16**	0.260
4	7.5	9	10	15	13…18	223	**GZ1 E20**	0.260
5.5	9	11	11	18.5	17…23	327	**GZ1 E21**	0.260
5.,5	11	11	15	22	20…25	327	**GZ1 E22**	0.260
7.5	15	15	18.5	22	24…32	416	**GZ1 E32**	0.260

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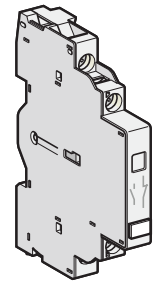
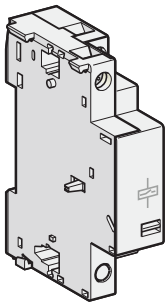


GZ1 AN11



GZ1 AS115

Contact blocks

Instantaneous auxiliary contacts

Mounting	Maximum number	Type of contacts	Sold in lots of	Unit reference	Weight kg
Side	2	N/O + N/C	1	**GZ1 AN11**	0.050
LH side		N/O + N/O	1	**GZ1 AN20**	0.050

Electric trips

Montage	Type	Tension		Reference	Weight kg
Side (1 block on RH side of circuit-breaker)	Undervoltage trip	110…115 V	50 Hz	**GZ1 AU115**	0.105
		220…240 V	50 Hz	**GZ1 AU225**	0.105
		380…400 V	50 Hz	**GZ1 AU385**	0.105
	Shunt trip	110…115 V	50 Hz	**GZ1 AS115**	0.105
		220…240 V	50 Hz	**GZ1 AS225**	0.105

Mounting accessory

Description	Application	Sold in lots of	Unit reference	Weight kg
Adapter plate	For screw fixing of a GZ1 E	10	**GV2 AF02**	0.021