

Technical data

General

Rated thermal current (I _{th}) at 40°C	25A
Rated insulation voltage (U _i)	690V
Rated operational voltage (U _e)	AC 690V, 40/60Hz
(see application diagram)	DC 220V, with or without earth

Standards

IEC 947-2	IEC 947-4-1	VDE 0660
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Approvals

UL	CSA
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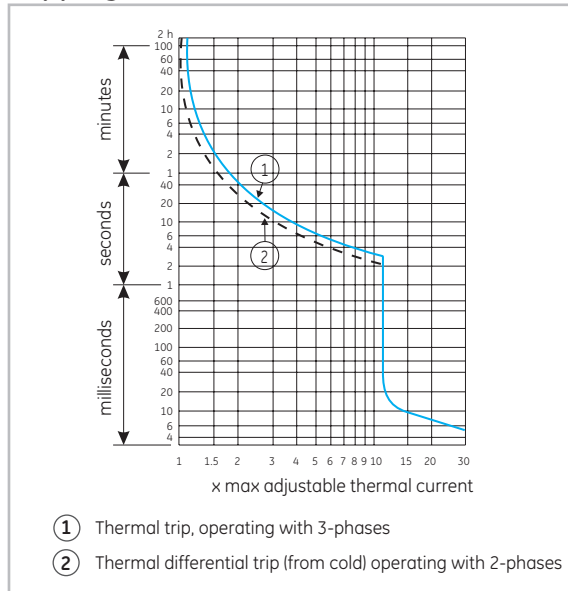
Main circuit

Category	AC3, DC4
Operational frequency limits	40 to 60 Hz
Opening time	aprox. 7 ms
Mechanical endurance	10 ⁵ operations
Electrical endurance category AC3	10 ⁵ operations
Maximum operating rate	40 operations/hour
Total dissipated power at rated thermal current and hot state	6 W

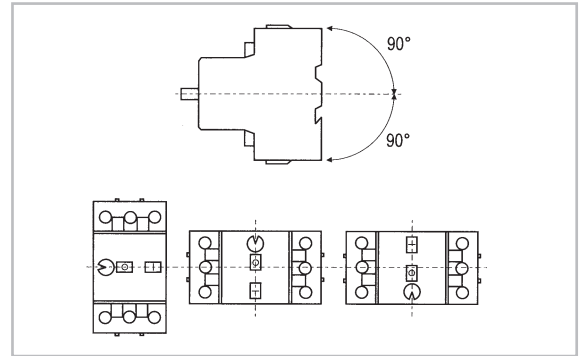
Tripping characteristics

Thermal	
Symmetrical overloads	Class 10 (see curve 1, tripping curves)
Asymmetrical overloads (phase failure)	To IEC 947-4-1 (see curve 2, tripping curves)
Temperature compensation	- 5 to + 40°C
Magnetic	
	12 × I _e (I _e = max. thermal setting value)
Shunt release	
	0.7 - 1.2 U _e 100% ED
Operating voltage limits	
Consumption	AC 1 W
	DC 0.85 - 1.1 U _e 100% ED
Undervoltage release	
Operating voltage limits	0.75 - 0.35 U _e
Breaking voltage limits	2.2 VA
Consumption	1 W
Wiring capacity	
Rigid wire	min. 2 wires of 0,75mm ² max. 2 wires of 6mm ²
Flexible wire	min. 2 wires of 0,75mm ² max. 2 wires of 4mm ²

Tripping curve



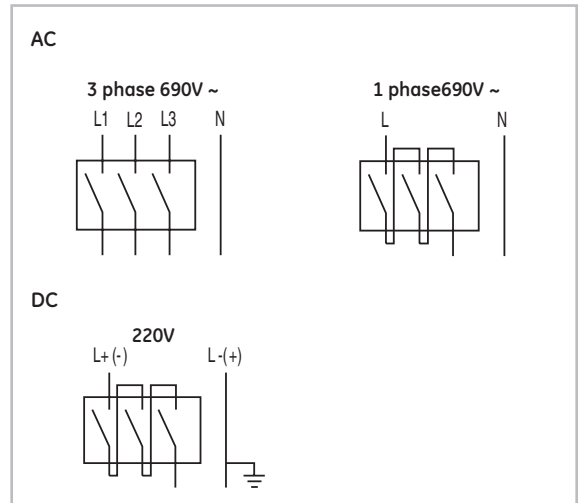
Mounting positions



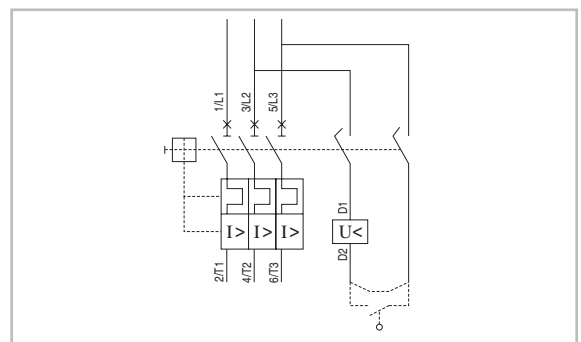
Auxiliary contact blocks

	SFAL			SFAI - SFAK			
Rated insulation voltage (U _i)	500V			500V			
according VDE 0110							
Rated thermal current (I _{th})	6A			6A			
AC-15	U _e	230V	400V	500V	230V	400V	500V
	I _e	3,5A	2A	1A	2A	1A	0,5A
DC-13	U _e	60V	110V	220V	60V	110V	220V
	I _e	1,5A	1A	0,5A	0,7A	0,55A	0,25A
Protective fuse gl	6A			6A			
Wiring capacity,							
Flexible wire	min.	2 × 0.75mm ²			2 × 0.75mm ²		
	max.	2 × 2.5mm ²			2 × 2.5mm ²		
Terminal type	M3.5, Pozidriv, safety flange screws						

Wiring diagram



Application diagram for tooling machines



Short-circuit breaking capacity Icu/Ics according to IEC 947-2

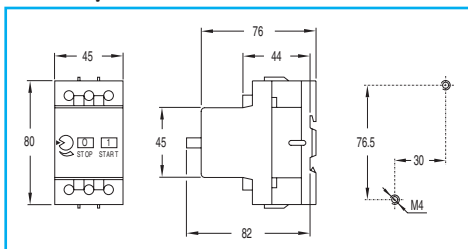
Thermal adjustment (A)	230V AC / 220V DC ⁽¹⁾				400V AC				415V AC				500V AC				690V AC			
	3ph motor AC3 (kW)	Icu (kA)	Ics (kA)	Fuse ⁽²⁾ (A)	3ph motor AC3 (kW)	Icu (kA)	Ics (kA)	Fuse ⁽²⁾ (A)	3ph motor AC3 (kW)	Icu (kA)	Ics (kA)	Fuse ⁽²⁾ (A)	3ph motor AC3 (kW)	Icu (kA)	Ics (kA)	Fuse ⁽²⁾ (A)	3ph motor AC3 (kW)	Icu (kA)	Ics (kA)	Fuse ⁽²⁾ (A)
0.1 - 0.16	-	65	65	(3)	0.02	65	65	(3)	0.02	65	65	(3)	0.04	65	65	(3)	0.06	42	42	(3)
0.16 - 0.25	-	65	65	(3)	0.06	65	65	(3)	0.06	65	65	(3)	0.06	65	65	(3)	0.12	42	42	(3)
0.25 - 0.4	0.06	65	65	(3)	0.09	65	65	(3)	0.12	65	65	(3)	0.12	65	65	(3)	0.18	42	42	(3)
0.4 - 0.63	0.09	65	65	(3)	0.12	65	65	(3)	0.18	65	65	(3)	0.25	65	65	(3)	0.37	42	42	(3)
0.63 - 1	0.12	65	65	(3)	0.25	65	65	(3)	0.25	65	65	(3)	0.37	65	65	(3)	0.75	1	1	20
1 - 1.6	0.25	65	65	(3)	0.55	65	65	(3)	0.55	65	65	(3)	0.75	65	65	(3)	1.1	1	1	20
1.6 - 2.5	0.37	65	65	(3)	0.75	65	65	(3)	0.75	10	5	25	1.1	3	1.5	25	1.5	1	0.5	20
2.5 - 4	0.75	65	65	(3)	1.5	10 (4)	5 (4)	35	1.5	10	5	35	2.2	3	1.5	35	3	1	0.5	25
4 - 6.3	1.1	65	37.5(4)	(3)	2.2	10 (4)	5 (4)	50	2.2	10	5	50	3	3	1.5	50	4	1	0.5	35
6.3 - 10	2.2	10 (4)	5 (4)	80	4	4 (4)	2 (4)	80	4	4	2	80	5.5	3	1.5	50	7.5	1	0.5	35
10 - 16	4	6 (4)	3 (4)	80	7.5	4 (4)	2 (4)	80	7.5	3.5	1.75	80	9	3	1.5	63	11	1	0.5	35
16 - 20	5	6 (4)	3 (4)	80	9	4 (4)	2 (4)	80	9	2.5	1.25	80	11	1.5	0.75	63	15	1	0.5	50
20 - 25	5.5	6 (4)	3 (4)	80	11	4 (4)	2 (4)	80	12.5	2.5	1.25	80	15	1.5	0.75	63	22	1	0.5	50

Icu = Ultimate short-circuit breaking capacity
Ics = Service short-circuit breaking capacity

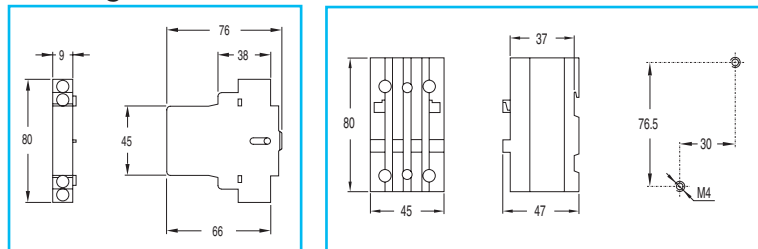
- (1) At 220V, t = 15 ms
- (2) Maximum value of the fuses when the presumed short circuit current is higher than the breaking capacity of the device. Type D, slow or NH type gG/gL.
- (3) No back-up fuse required to the Icu value
- (4) 50 kA in combination with current limiter

Dimensional drawings

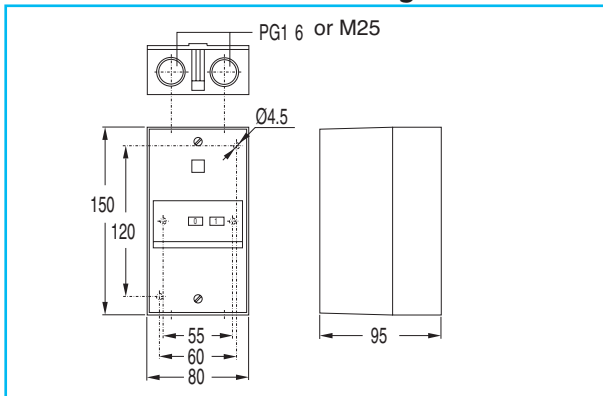
Motor protection circuit breaker



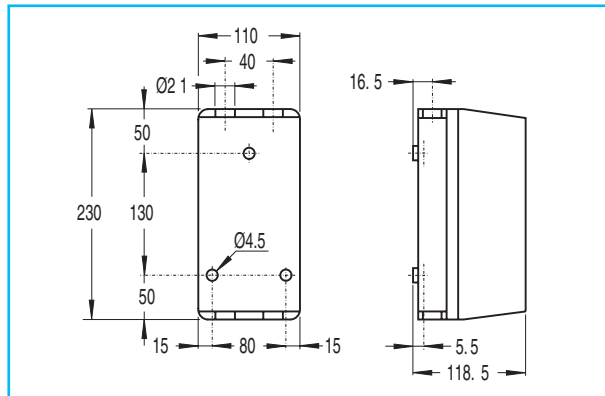
Auxiliary contact block Current limiter



Enclosures: surface mounting



Enclosure to combine with contactor



Enclosures: flush mounting

