

MOTOR PROTECTION SWITCHES



Motor Protection Switches



FMK25
16A / 80A

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EN 60947-4-1
TS EN 60947-4-1
IEC 60947-4-1
CE

Assembly Position : With box IP20 / without box IP55
Altitude : 2000 m (max)
Relative Humidity : %50 (40°C) , %90 (20°C)
Ambient Temperature : between -5°C and +40°C
Pollution Degree : III
Utilization Class : AC3

MOTOR PROTECTION SWITCHES

Federal FMK 25 type switches are designed specially for motor protection and they are ideal in terms of size, easy assembly and performance. They are manufactured in accordance with IEC / EN 60947-4-1 standards and CE. They provide excellent protection in overload and short circuit circumstances.

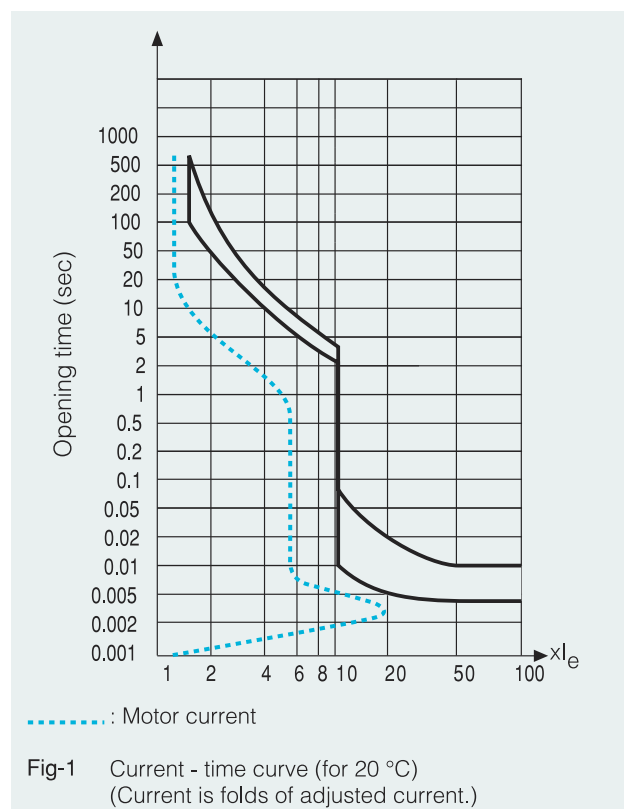
They can be simply and rapidly assembled on 35 mm assembly rail and fixed by using two screws with a special apparatus. FEDERAL FMK 25 type switches are used in protection of electrical motors up to 11 kW (380/400). They meet all the requirements of users thanks to wide variety of accessories.

Motor Protection Switches Selection Table:

Standard motor powers					Thermal adjustment area
1 phase	3 phase				
220 V 230 V 240 V	220 V 230 V 240 V	380 V 400 V 415 V	500 V	600 V 690 V	
kW					
—	—	0,02	—	0,06	0,1...0,16
—	—	0,06	0,06	0,09	0,16...0,25
—	0,06	0,09	0,12	0,18	0,25...0,4
—	0,09	0,12	0,25	0,25	0,4...0,63
0,06...0,09	0,09...0,12	0,18...0,25	0,37	0,37...0,55	0,63...1
0,12	0,18...0,25	0,37...0,55	0,55...0,8	0,75...1,1	1...1,6
0,18...0,25	0,37	0,75...1,1	1,1	1,5	1,6...2,5
0,37	0,55...0,8	1,1...1,5	1,5...2,2	2,2...3	2,5...4
0,55...0,75	1,1...1,5	2,2...2,5	3	4	4...6,3
1,1...1,5	1,5...2,5	3...4	4...5,5	5,5...7,5	6,3...10
2,2	3...4	5...7,5	7,5...9	11	10...16
3	5,5	9	11...12,5	15	16...20
—	5,5...7,5	11...12,5	15	18,5	20...25

Technical Features

General		
Mechanical life	operation	1.000.000
Weight (~)	g	250
Main circuits		
Rated insulation voltage U_i	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Thermal current $I_{thmax} = I_{emax}$	A	25
Electrical life (according to AC3 class)	100.000 operation	
Min. max. tightening torque	Nm	2 ... 3
Min. max. connection sections	mm ²	0,75...4
Auxiliary contact block		
Rated insulation voltage U_i	V	500
Thermal current I_{th}	A	6
Rated operating current I_o	230 V	3,5
(according to AC 15)	400 V	2
	500 V	1,5
Short circuit protection - max	kA	6 (gL, gG)
Min. max connection sections	mm ²	0,75...2,5

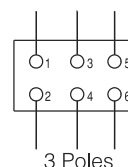
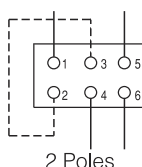
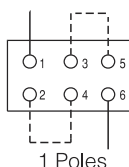


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Type	Current setting range (A)	Mag. trip cur. (A)	Short-circuit breaking capacity $I_{cu} = I_{cs} = I_q$ (kA)				Max. front protection fuse gL, gG (A) (for $I > I_{cu}$)				Order Code
			220-240 V	380-415 V	500 V	660-690 V	230 V	400 V	500 V	690 V	
FMK 25-0,16	0,1...0,16	1,9	100	100	100	100	—	—	—	—	9LA-00000-0016
FMK 25-0,25	0,16...0,25	2,6	100	100	100	100	—	—	—	—	9LA-00000-0025
FMK 25-0,4	0,25...0,4	4,4	100	100	100	100	—	—	—	—	9LA-00000-0040
FMK 25-0,63	0,4...0,63	8	100	100	100	100	—	—	—	—	9LA-00000-0063
FMK 25-1	0,63...1	11	100	100	100	100	—	—	—	—	9LA-00000-0100
FMK 25-1,6	1...1,6	19	100	100	100	100	—	—	—	—	9LA-00000-0160
FMK 25-2,5	1,6...2,5	30	100	100	3	2,5	—	—	25	20	9LA-00000-0250
FMK 25-4	2,5...4	42	100	100	3	2,5	—	—	35	25	9LA-00000-0400
FMK 25-6,3	4...6,3	69	100	100	3	2,5	—	—	50	35	9LA-00000-0630
FMK 25-10	6,3...10	110	100	6	3	2,5	—	80	50	35	9LA-00000-1000
FMK 25-16	10...16	210	6	4	2,5	2	80	80	63	35	9LA-00000-1600
FMK 25-20	16...20	220	6	4	2,5	2	80	80	63	50	9LA-00000-2000
FMK 25-25	20...25	330	6	4	2,5	2	80	80	63	50	9LA-00000-2500

Note : Our products are being calibrated to 40 °C. On request of customer, this value can be changed.

Connection Diagram

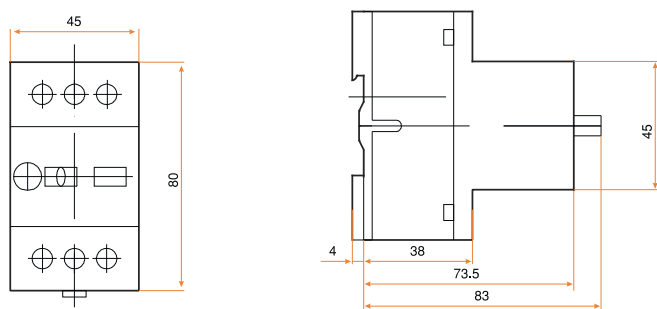


Accessories

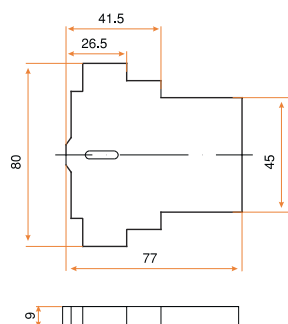
	Accessory name : Auxiliary switch Weight : 35 g		
	Type	Contact position	Order Code
	FMK F-20	2NO	8LA-A0020-0000
	FMK F-10	1NO	8LA-A0010-0000
	FMK F-01	1NC	8LA-A0001-0000
	FMK F-11	1NO+1NC	8LA-A0011-0000
	Accessory name : Under-voltage release Weight : 65 g		
	Type	Operating Voltage (50 Hz)	Order Code
	FMK DGB-24	24 V	8LA-B0000-0024
	FMK DGB-48	48 V	8LA-B0000-0048
	FMK DGB-110	110 V	8LA-B0000-0110
	FMK DGB-220	220 V	8LA-B0000-0220
	FMK DGB-240	240 V	8LA-B0000-0240
	FMK DGB-380	380 V	8LA-B0000-0380
	Accessory name : Shunt release Weight : 65 g		
	Type	Operating Voltage (50 Hz)	Order Code
	FMK A-24	24 V	8LA-C0000-0024
	FMK A-110	110 V	8LA-C0000-0110
	FMK A-220	220 V	8LA-C0000-0220
	FMK A-240	240 V	8LA-C0000-0240
	Accessory name : Emergency stop push-button Weight : 35 g		
	Type	FMK NAT	
	Order code	8LA-D0000-0000	
	Accessory name : Enclosure		
	Weight	240 g	
	Type	FMK 55 ENC	
	Protection degree	IP 55	
	Order code	8LA-E0000-0000	

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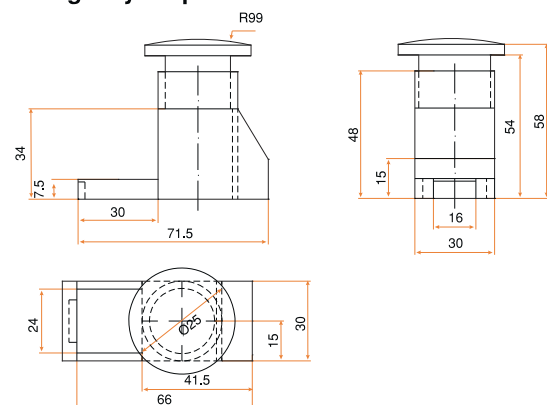
Motor Protection Switch:



Auxiliary Contact:



Emergency Stop Button:



Protective Box:

