

MOTOR PROTECTION CIRCUIT BREAKERS - MS25

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Type	Symbol	Unit	MS25	MST25	MS20	MPE	MSZ25	MS25TR
Use			motor protection		single-phase consumer	single-phase AC motors with built-in thermal switch	short-circuit protection	transformer protection
Standards			IEC/EN 60947-4-1, IEC/EN 60947-2, IEC/EN 60204, UL 60947, CSA 22.2 No. 14		IEC/EN 60947-2, IEC/EN 60947-4-1	IEC/EN 60947-2, IEC/EN 60947-4-1	IEC/EN 60947-2	IEC/EN 60947-2
Approvals			CE, UL, EAC		CE, EAC	CE	CE	CE
Climatic class			Constant damp heat acc. to IEC 60068-2-78 Cyclic damp heat acc. to IEC 60068-2-30					
Degree of protection			IP20, after terminals covering IP40					
Mounting			35 mm DIN rail (EN 60715)					
Mounting position			any					
Ambient temperature		°C	-25 ... +60					
Storage temperature		°C	-25 ... +70					
Temperature range of thermal compensation		°C	-5 ... +40					
Maximum altitude (MSL) *		m	2000					
Mechanical endurance		op. c.	100.000					
Electrical endurance		op. c.	100.000 (AC-3), 20.000 (DC-5)		100.000 (AC-3)		100.000 (AC-3), 20.000 (DC-5)	
Trip class acc. to IEC 60947-4-1			10A	10A	10A	10A	/	10A
Utilization category acc. to IEC 60947-4-1			AC-3, DC-5	AC-3, DC-5	AC-3, DC-5	AC-3	AC-3, DC-5	AC-3, DC-5
Utilization category acc. to IEC 60947-2			A					
Max. switching frequency		op. c./h	25					
Shock resistance acc. to IEC 68-2-27		g	20					
Vibration resistance acc. to IEC 68-2-6		g	5 (at f= 5 ... 150 Hz)					
Overvoltage category			III					
Pollution degree			3					
Rated insulation voltage	U_i	V	690	400	690	250	400	690
Rated impulse withstand voltage	U_{imp}	kV	6					
Weight		g	252					
Terminal capacity: rigid	S	mm ²	1 ... 6					
flexible			1 ... 4					
flexible with end sleeve			0.75 ... 4					
Conductor insulation stripping length		mm	10					
Screw			M3					
Screw type			PZ2, with self-lifting clamp protected from falling out					
Tightening torque		Nm	1,8					
Nominal current	I_n	A	0,16, 0,25, 0,4, 0,63, 1, 1,6, 2,5, 4, 6,3, 10, 16, 20, 25	0,4, 0,63, 1, 1,6, 2,5, 4, 6,3, 10, 16, 20, 25	0,16, 0,25, 0,4, 0,63, 1, 1,6, 2,5, 4, 6,3, 10, 16, 20, 25	0,4 ... 10	0,16, 0,25	2,5, 4, 6,3, 10, 16, 20, 25
Current setting	I_T	A	0,1-0,16, 0,16-0,25, 0,25-0,4, 0,4-0,63, 0,63-1, 1-1,6, 1,6-2,5, 2,5-4, 4-6,3, 6,3-10, 10-16, 16-20, 20-25	0,25-0,4, 0,4-0,63, 0,63-1, 1-1,6, 1,6-2,5, 2,5-4, 4-6,3, 6,3-10, 10-16, 16-20, 20-25	0,1-0,16, 0,16-0,25, 0,25-0,4, 0,4-0,63, 0,63-1, 1-1,6, 1,6-2,5, 2,5-4, 4-6,3, 6,3-10, 10-16, 16-20, 20-25	fixed	fixed	2,5, 4, 6,3, 6,3-10, 10-16, 16, 20, 20-25
Nominal current range	I_n	A	0,16 ... 25	0,4 ... 25	0,16 ... 20	0,4 ... 10	0,16 ... 0,25	2,5 ... 25
Nominal frequency	f	Hz	50/60					
Max. operational voltage	U_e	V	690	400	690	250	400	690
Thermal current	I_{th}	A	25**	25**	20**	10	0,25	25
Max. motor current AC-3		A	25	25	20	/	/	/
Max. motor current DC-5 (max. 250 V DC, all poles in series)		A	25	25	20	0,25	0,25	25
Number of all poles			3	3	1	1	3	3
Number of protected poles			3	3	1	1	3	3
Contact gap (per pole)		mm	9,5					
Release type			thermal-magnetic	thermal	thermal-magnetic	thermal-magnetic	thermal	thermal-magnetic
Operating current of thermal overload release			$1,05 I_n < I \leq 1,2 I_n$	$1,05 I_n < I \leq 1,2 I_n$	$1,05 I_n < I \leq 1,2 I_n$	/	/	$1,05 I_n < I \leq 1,2 I_n$
Operating current of magnetic release (fixed)			$14 I_n \pm 20 \%$	$14 I_n \pm 20 \%$	$14 I_n \pm 20 \%$	$14 I_n \pm 20 \%$	$14 I_n \pm 20 \%$	$20 I_n \pm 20 \%$
Sensitivity to phase failure			yes	yes	/	/	/	yes
Power dissipation at I_n (all poles)		W	6 ... 7,5	6 ... 7,5	4 ... 5	2 ... 2,5	≈ 0,5	6 ... 7,5

NOTE:

* Above 2000 m voltages U_i and U_e are reduced by 2% for every 100 m and current I_n by 2% for every 500 m.

** Maximum number of MPCBs mounted close together: 3

TECHNICAL DATA

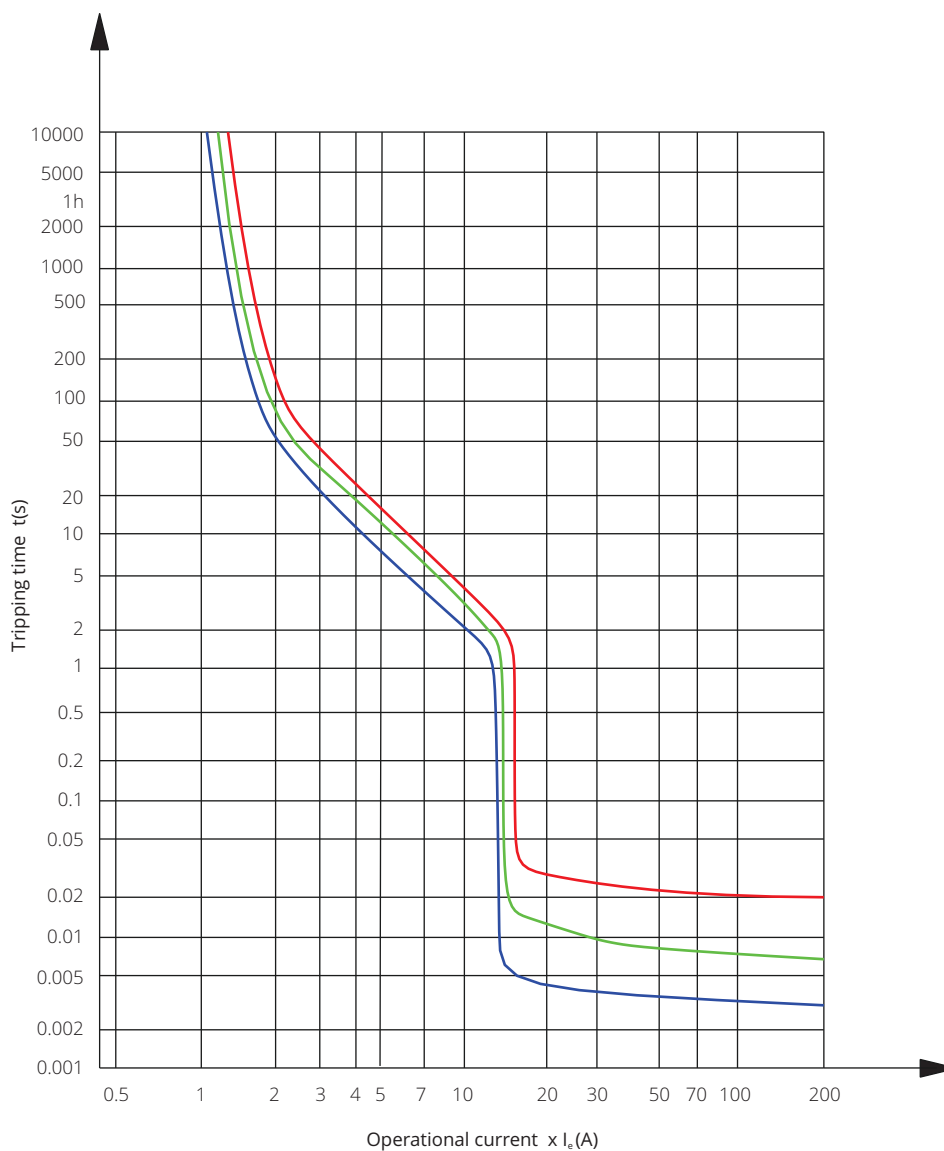
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MS25 motor protection switches, rated ultimate and service short-circuit breaking capacity I_{cu} and I_{cs} and max. back-up fuses if short circuit current I_{cp} exceeds I_{cu}

Type	Operating current of short-circuit release (A)	Rated ultimate short-circuit breaking capacity I_{cu} , I_{cs} (kA)				Max. back-up fuse, if $I_{cp} > I_{cu}$ (gL) (kA)			
		230 V I_{cu}	400 V I_{cu}	500 V I_{cu}	690 V I_{cu}	230 V	400 V	500 V	690 V
MS25 - 0.16	2.2	50	50	50	50	No back-up fuse required			
MS25 - 0.25	3.5	50	50	50	50				
MS25 - 0.4	6	50	50	50	50				
MS25 - 0.63	9	50	50	50	50				
MS25 - 1	14	50	50	50	50				
MS25 - 1.6	23	50	50	50	50	25 20 35 25 50 35 80 50 35			
MS25 - 2.5	35	50	50	3	2.5				
MS25 - 4	56	50	50	3	2.5				
MS25 - 6.3	88	50	50	3	2.5				
MS25 - 10	140	50	6	3	2.5				
MS25 - 16	224	10	6	2.5	2	80	80	63	35
MS25 - 20	280	10	6	2.5	2	80	80	63	50
MS25 - 25	350	10	6	2.5	2	80	80	63	50
MS25 - 32	450	10	6	2.5	2	80	80	63	50

Tripping characteristics



TECHNICAL DATA