	Type	Symbol	Unit	MS25	MST25	MS20	MPE	MSZ25	MS25TR
GENERAL	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					
MAIN CIRCUIT	Terminal capacity: rigid flexible flexible with end sleeve	S	mm^2	1 ... 6 1 ... 4 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, 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
	Themal 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_r < I ≤ 1.2 I_r	1.05 I_r < I ≤ 1.2 I_r	1.05 I_r < I ≤ 1.2 I_r	/	/	1.05 I_r < I ≤ 1.2 I_r
	Operating current of magnetic release (fixed)			14 I_n ± 20 %		14 I_n ± 20 %	14 I_n ± 20 %	14 I_n ± 20 %	20 I_n ± 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:

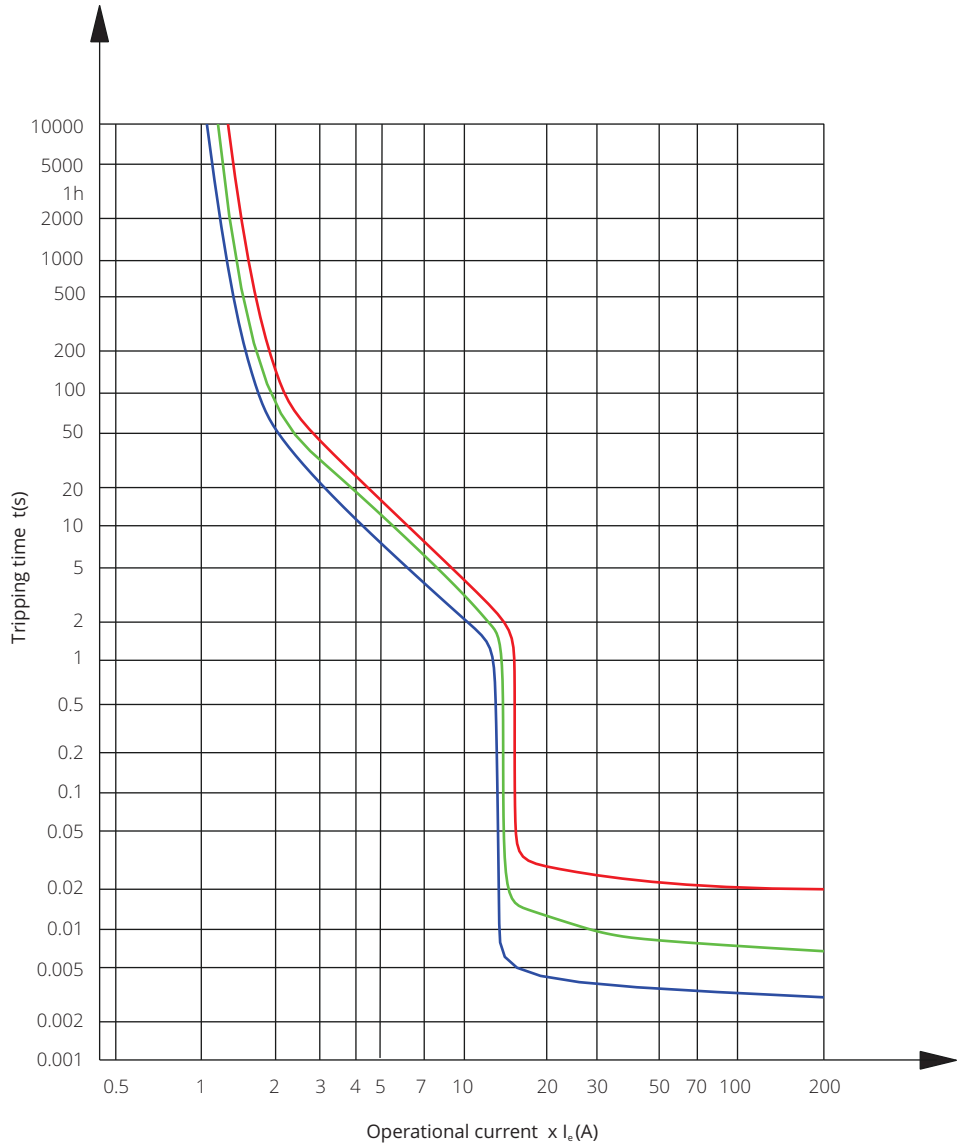
***** Above 2000 m voltages U_i and U_e are reduced by 2% for every 100 m and current I_e by 2% for every 500 m.

****** Maximum number of MPCBs mounted close together: 3

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				
MS25 - 2.5	35	50	50	3	2.5			25	20
MS25 - 4	56	50	50	3	2.5			35	25
MS25 - 6.3	88	50	50	3	2.5			50	35
MS25 - 10	140	50	6	3	2.5		80	50	35
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



SAFETY

Type	Symbol	Unit	MS25	MST25	MS20	MPE	MSZ25	MS25TR
MTTF - Mean time to failure MTTF = 1/λ = B10/(0.1 n_{op})		h	1666					
$MTTF_d$ - Mean time to failure dangerous $MTTF_d = 1/\lambda_d = B10_d/(0.1\ n_{op})$		h	5000					
B10 - Number of operating cycles until 10 % of devices fail		op.	20.000					
$B10_d$ - Number of operating cycles until 10 % of device dangerous $B10_d$ = B10/ratio of dangerous failures		op.	60.000					
λ - Failure rate $\lambda = (0{,}1\ n_{op})/B10$		1/h	6×10^{-4}					
λ - Failure rate dangerous $\lambda_d = (0{,}1\ n_{op})/B10_d$		1/h	2×10^{-4}					
Ratio of dangerous failures		%	33					
n_{op} - Operating cycles (operating cycles/h)		op./h	120					