

# 1 Motor protection circuit breakers

## Technical characteristics

TYPE		SM1P...	SM1R...	SM2R...	SM3R...	
Rated insulation voltage $U_i$	V	690		1000		
Rated impulse withstand voltage	kV	6				
Rated frequency: 50/60Hz						
Maximum rated current	A	40	40	63	100	
Number of adjustment ranges	No.	16	16	2	3	
Total power dissipation at maximum current	W	5...15	5...15	7.1...20	10...38	
Magnetic tripping	A	$13 \times I_n$ ①	$13 \times I_n$	$13 \times I_n$	$13 \times I_n$	
Mechanical life	cycles	100,000	100,000	50,000	50,000	
Electrical life (Ie max AC3)	cycles	100,000	100,000	25,000	25,000	
Terminal tightening torque	Nm	2.5...3	2.5...3	4.5	6	
	lbft	1.8...2.2	1.8...2.2	40	53	
	Tool	PH2	PH2	PZ2	Allen 4mm	
Conductor section minimum and maximum (1 or 2 wires)	AWG	No.	16...8	16...8	18...3	10...1/0
Flexible without lug	mm <sup>2</sup>		1...10	1...10	0.75...25	10...50
<b>AMBIENT CONDITIONS</b>						
Temperature	operating	°C	-20...+60 ②	-20...+60 ②	-20...+70 ②	-20...+70 ②
	storage	°C	-50...+80	-50...+80	-50...+80	-50...+80
	compensation	°C	-20...+50	-20...+50	-5...+40	-5...+40
Maximum altitude	m	3000				
Mounting position		Any				
Fixing		On 35mm DIN rail or screw via accessory		On 35mm DIN rail or screw		

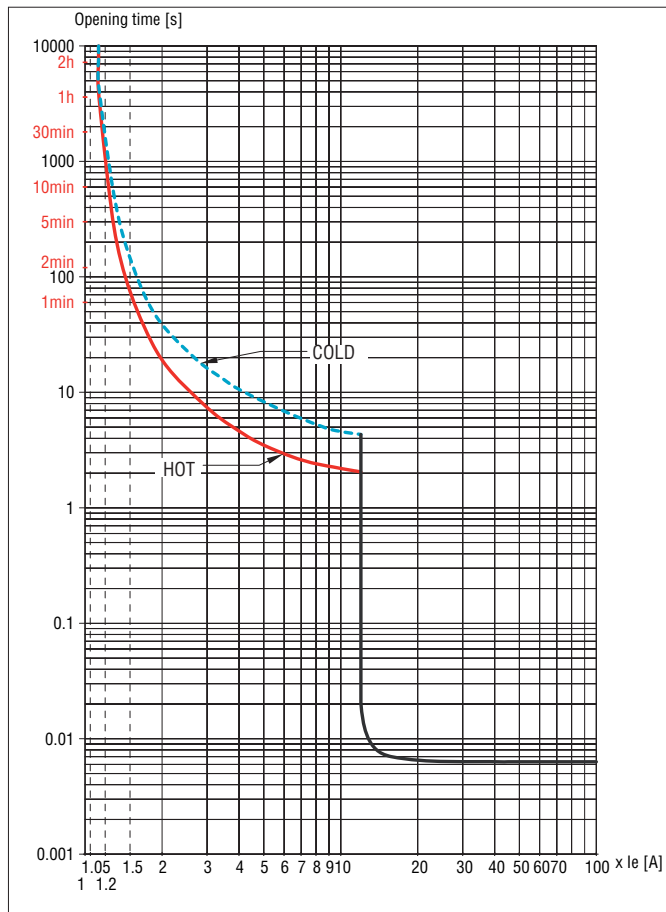
E.g. PH = Phillips; PZ = Pozidriv; Allen is metric type.

① SM1PF00 20 has a single 0.2A thermal adjustment and magnetic tripping at  $6 \times I_n$  (1.2A).

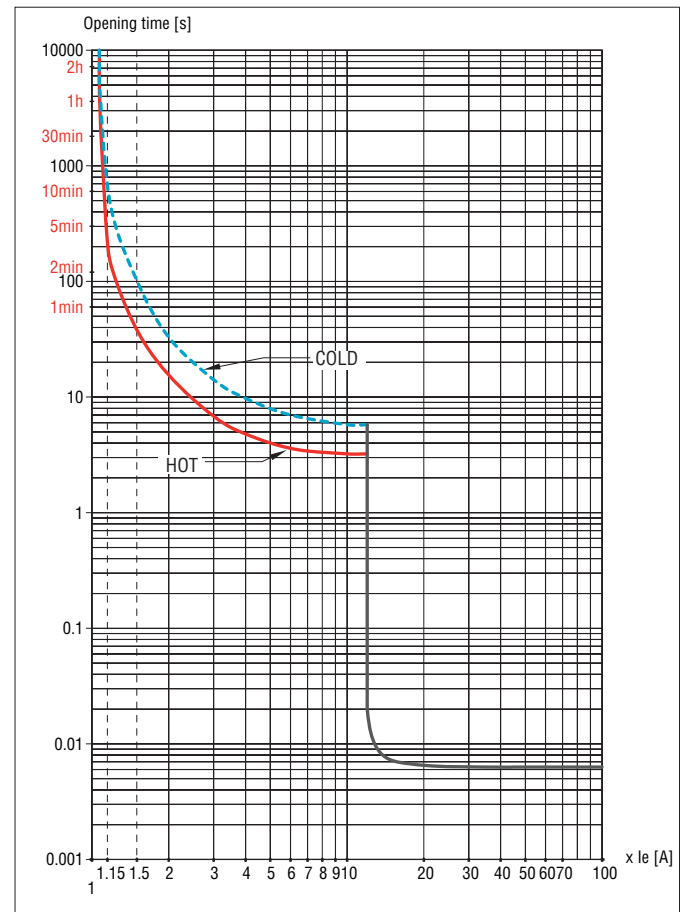
② When fitting more than one breaker side by side, without leaving space between each to consent free air circulation on the breaker sides, and have simultaneous operation, the thermal trip adjuster must be positioned at a value 15% higher than the rated motor current.

### THERMAL TRIPPING CURVE (AVERAGE TIMES)

Three-phase balanced operation



Two-phase operation (phase failure/single phasing)



Tripping times can have a  $\pm 20\%$  deviation with respect to the average tripping curve value above.