



Product designation

Motor protection
circuit breaker
SM2R

Product type designation

Electrical features

Number of poles	Nr.	3
Magnetic protection		yes
Thermal protection		yes
Phase failure detection		yes
Rated insulation voltage U_i IEC/EN	V	1000
Rated impulse withstand voltage U_{imp}	kV	6
Rated frequency	Hz	50/60
Thermal trip adjustment range		34...50
Rated current (I_n)	A	50
Magnetic tripping		13 x I_n
Power dissipation per pole		

Operational short-circuit current breaking capacity (I_{cs}) at AC

230V	kA	100
400V	kA	50
440V	kA	27
500V	kA	8
690V	kA	5

Maximum short-circuit current breaking capacity (I_{cu}) at AC

230V	kA	100
400V	kA	50
440V	kA	35
500V	kA	10
690V	kA	5

Tripping class

10A

IEC Utilization category

A

Operations

Mechanical life	cycles	50000
Electrical life	cycles	25000

Mechanical features

Tightening torque for terminals

min	Nm	4.5
max	Nm	4.5
min	lbin	3.3
max	lbin	3.3

Max number of wires simultaneously connectable

Nr. 2

Conductor section

AWG/Kcmil

min	18
max	3

Flexible w/o lug conductor section

	min	mm ²	0.75
	max	mm ²	25
Flexible c/w lug conductor section			
	min	mm ²	0.75
	max	mm ²	25
Flexible with insulated spade lug conductor section			
	min	mm ²	0.75
	max	mm ²	25
Screwdriver			PZ2
Power terminal protection according to IEC/EN 60529			IP20
Cable stripping lenght			
	main circuit	mm	1
Ambient conditions			
Temperature			
Operating temperature			
	min	°C	-20
	max	°C	+70
Storage temperature			
	min	°C	-50
	max	°C	+80
Compensation temperature			
	min	°C	-50
	max	°C	+40
Max altitude		m	3000
Operating position			
	normal		Vertical plan
	allowable		Any
Fixing			Screw / DIN rail
			35mm
Weight		g	1000
UL technical data			
Motor Disconnect			
	at 480V	kA	50
	at 600V	kA	10
	protection		Fuse or CB
Group Motor Installation			
	at 480V	kA	50
	at 600V	kA	10
	protection		Fuse or CB
Tap Conductor Protection			
	at 480Y/277V	kA	50
	at 600Y/347V	kA	10
UL508 / UL 60947-4-1 Manual Self Protected Combination Motor Controller (Type E) Short circuit current			
	at 240V	kA	100
	at 480Y/277V	kA	50
Maximum UL/CSA horsepower ratings single-phase			
	110V-120V	HP	3
	220V-240V	HP	10
Maximum UL/CSA horsepower ratings three-phase, 3-pole			
	200V-208V	HP	15
	220V-240V	HP	15
	440V-480V	HP	30
	550V-600V	HP	40

Technical drawings of the SM2X13 11 circuit breaker, showing front and side views with dimensions in inches and millimeters.

Front View Dimensions:

- Top width: 10 (0.39")
- Top terminal spacing: 17 (0.67")
- Terminal width: 20 (0.79")
- Left side height: 125 (4.92")
- Left side mounting hole spacing: 89 (3.50")
- Right side height: 45 (1.77")
- Right side mounting hole spacing: 75.5 (2.97")
- Right side terminal spacing: 130 (5.12")
- Right side mounting hole spacing: 140 (5.51")
- Bottom width: 9 (0.35")
- Bottom terminal spacing: 30 (1.18")
- Bottom mounting hole spacing: 55 (2.16")
- Bottom terminal width: 18 (0.71")
- Bottom mounting hole spacing: 7.5 (0.29")

Side View Dimensions:

- Top width: 122.1 (4.81")
- Top mounting hole spacing: 102.6 (4.04")
- Top mounting hole spacing: 54.5 (2.14")
- Bottom width: 112.3 (4.42")
- Bottom mounting hole spacing: 126.3 (4.97")
- Bottom mounting hole spacing: 130.3 (5.13")
- Bottom mounting hole spacing: 144.6 (5.69")

Labels:

- SM2X11...
- SM2X12...
- SM2X14...
- SM2X16...
- SM2X13 11
- SM2X12...
- SM2X13 11

The diagram illustrates the proposed converter topology for three-phase and single-phase/DC lines. It is divided into two main sections: 'Three-phase LINE' and 'Single-phase and DC LINE'.

Three-phase LINE: This section shows three input lines labeled L1, L2, and L3. Each line is connected to a thyristor (T1, T2, and T3 respectively) through a three-phase bridge rectifier. The thyristors are connected to a central DC link, which is represented by a shaded rectangular block. The DC link is connected to a load resistor (LOAD) and a capacitor (C).

Single-phase and DC LINE: This section shows two input lines labeled L1 and L2. Each line is connected to a thyristor (T1 and T2 respectively) through a single-phase bridge rectifier. The thyristors are connected to a central DC link, which is represented by a shaded rectangular block. The DC link is connected to a load resistor (LOAD) and a capacitor (C).

Certifications and compliance

Certifications

CSA C22.2 n° 14

IEC/EN 60947-1

IEC/EN 60947-2

IEC/EN 60947-4-1

UL508

Compliance

cULus

EAC

ETIM classification

ETIM 8.0

EC000074 -
Motor protection
circuit-breaker