#### electric MOTOR PROTECTION CIRCUIT BREAKER TYPE E, IEC BREAKING CAPACITY ICU 100KA AT 400V, 0.1...0.16A **ENERGY AND AUTOMATION**



Product designation			Motor protection circuit breaker
Product type designation			SM1R
Electrical features			
Number of poles		Nr.	3
Magnetic protection			yes
Thermal protection			yes
Phase failure detection			yes
Rated insulation voltage Ui IEC/EN		V	690
Rated impulse withstand voltage Uimp		kV	6
Rated frequency		Hz	50/60
Thermal trip adjustment range			0.10.16
Rated current (In)		Α	0.16
Magnetic tripping			10 x ln
Power dissipation per pole			
	min	W	0.81
	max	W	2.07
Operational short-circuit current breaking capacity (Ics) at AC			
	230V	kA	100
	400V	kA	100
	440V	kA	100
	500V	kA	100
	690V	kA	100
Maximum short-circuit current breaking capacity (Icu) at AC			
	230V	kA	100
	400V	kA	100
	440V	kA	100
	500V	kA	100
	690V	kA	100
Tripping class			10A
IEC Utilization category			Α
Operations			
Mechanical life		cycles	100000
Electrical life		cycles	100000
Mechanical features			
Tightening torque for terminals			
	min	Nm	2.5
	max	Nm	3
	min	lbin	22
	max	Ibin	26.5
Max number of wires simultaneously connectable		Nr.	2
Conductor section			
AWG/Kcmil			
AWG/Kcmil	min		16 8

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	Flexible w/o lug conductor section		
	min	mm²	1
	max	mm²	10
	Flexible c/w lug conductor section		
	min	mm²	1
	max	mm²	10
	Flexible with insulated spade lug conductor section		
	min	mm²	1
	max	mm²	10
Screwdriver			PH2
	tion according to IEC/EN 60529		IP20 on front
Cable stripping lenght			
A 1.0 A 100	main circuit	mm	12
Ambient conditions			
Temperature			
	Operating temperature	° <b>C</b>	00
	min	°C	-20
	Storage temperature	°C	+60
	Storage temperature	°C	-50
	min	°C	-50 +80
	Compensation temperature max	C	+00
	Compensation temperature min	°C	-20
	max	°C	+50
Max altitude	Пил	m	3000
Operating position		•••	
operating position			
	normal		Vertical plan
	normal allowable		Vertical plan Anv
Fixing	normal allowable		Any Screw / DIN rail
		q	Any Screw / DIN rail 35mm
Fixing Weight UL technical data		g	Any Screw / DIN rail
Weight UL technical data		g	Any Screw / DIN rail 35mm
Weight		g	Any Screw / DIN rail 35mm
Weight UL technical data	allowable		Any Screw / DIN rail 35mm 320
Weight UL technical data	allowable at 480V	kA	Any Screw / DIN rail 35mm 320
Weight UL technical data	allowable  at 480V at 600V protection	kA	Any Screw / DIN rail 35mm 320 50 50
Weight UL technical data Motor Disconnect	allowable  at 480V at 600V protection	kA	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB
Weight UL technical data Motor Disconnect	at 480V at 600V protection on at 480V at 600V	kA kA	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB
Weight UL technical data Motor Disconnect  Group Motor Installation	at 480V at 600V protection  at 480V at 600V protection  at 480V at 600V protection	kA kA	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB
Weight UL technical data Motor Disconnect	at 480V at 600V protection on at 480V at 600V protection on protection at 480V at 600V protection tion	kA kA	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB  50 Fuse or CB
Weight UL technical data Motor Disconnect  Group Motor Installation	at 480V at 600V protection  at 480V at 600V protection  at 480V at 600V protection  tion	kA kA kA kA	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB  50 Fuse or CB
Weight UL technical data Motor Disconnect  Group Motor Installation  Tap Conductor Protect	at 480V at 600V protection  at 480V at 600V protection  at 480V at 600V protection  tion  at 480Y/277V at 600Y/347V	kA kA kA kA	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB  50 Fuse or CB
Weight UL technical data Motor Disconnect  Group Motor Installation  Tap Conductor Protect	at 480V at 600V protection on at 480V at 600V protection on at 480V at 600V protection tion at 480Y/277V at 600Y/347V Manual Self Protected Combination Motor Controller (Type E) Short of	kA kA kA kA kA	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB  50 Fuse or CB  50 50 Fuse or CB
Weight UL technical data Motor Disconnect  Group Motor Installation  Tap Conductor Protect	at 480V at 600V protection on at 480V at 600V protection at 480V at 600V protection tion at 480Y/277V at 600Y/347V  Manual Self Protected Combination Motor Controller (Type E) Short of at 240V	kA kA kA kA sircuit cui	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB  50 Fuse or CB  50 Fuse or CB
Weight UL technical data Motor Disconnect  Group Motor Installation  Tap Conductor Protect	at 480V at 600V protection on at 480V at 600V protection at 480V at 600V protection tion at 480Y/277V at 600Y/347V  Manual Self Protected Combination Motor Controller (Type E) Short of at 240V at 480Y/277V	kA kA kA kA circuit cu	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB  50 50 Fuse or CB
Weight UL technical data Motor Disconnect  Group Motor Installation  Tap Conductor Protect  UL508 / UL 60947-4-1	at 480V at 600V protection on at 480V at 600V protection  at 480V at 600V protection  at 480V at 600V protection  tion at 480Y/277V at 600Y/347V  Manual Self Protected Combination Motor Controller (Type E) Short of at 240V at 480Y/277V at 600Y/347V	kA kA kA kA sircuit cui	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB  50 Fuse or CB  50 Fuse or CB
Weight UL technical data Motor Disconnect  Group Motor Installation  Tap Conductor Protect  UL508 / UL 60947-4-1	at 480V at 600V protection on at 480V at 600V protection tion at 480Y/277V at 600Y/347V  Manual Self Protected Combination Motor Controller (Type E) Short of at 240V at 480Y/277V at 600Y/347V sepower ratings single-phase	kA kA kA kA circuit cur kA kA	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB  50 50 Fuse or CB
Weight UL technical data Motor Disconnect  Group Motor Installation  Tap Conductor Protect  UL508 / UL 60947-4-1	at 480V at 600V protection on  at 480V at 600V protection  at 480V at 600V protection  tion  at 480Y/277V at 600Y/347V  Manual Self Protected Combination Motor Controller (Type E) Short of at 240V at 480Y/277V at 600Y/347V  sepower ratings single-phase	kA kA kA kA circuit cu kA kA kA	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB  50 50 Fuse or CB
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Weight UL technical data Motor Disconnect  Group Motor Installation  Tap Conductor Protect  UL508 / UL 60947-4-1	at 480V at 600V protection on  at 480V at 600V protection  at 480V at 600V protection  at 480V/277V at 600Y/347V  Manual Self Protected Combination Motor Controller (Type E) Short of at 240V at 480Y/277V at 600Y/347V  Sepower ratings single-phase  110V-120V 220V-240V  sepower ratings three-phase, 3-pole	kA kA kA kA circuit cu kA kA HP	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB  50 50 Fuse or CB
Weight UL technical data Motor Disconnect  Group Motor Installation  Tap Conductor Protect  UL508 / UL 60947-4-1	at 480V at 600V protection on at 480V at 600V protection on at 480V at 600V protection on at 480Y/277V at 600Y/347V  Manual Self Protected Combination Motor Controller (Type E) Short of at 240V at 480Y/277V at 600Y/347V sepower ratings single-phase 110V-120V 220V-240V	kA kA kA kA circuit cu kA kA kA	Any Screw / DIN rail 35mm 320  50 50 Fuse or CB  50 50 Fuse or CB

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440V-480V HP

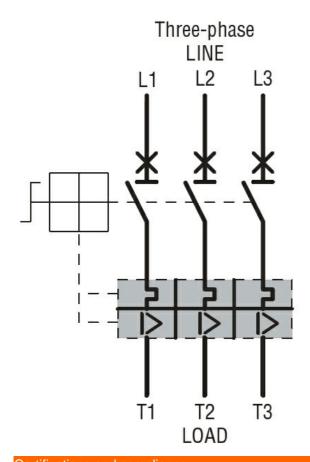
550V-600V HP

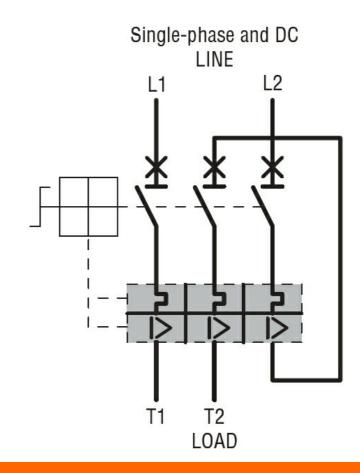
### Dimensions 80.8 (3.18") -9 (0.35"D 96.6 (3.92") 90 (3.54") 90 (3.54") 0 49 (1.93") 5.5 <del>-</del> (0.22") - 44.8-(1.76") SM1X14... 74.5 (2.93) SM1X15... SM1X16... -85.6 (3.37") SM1X12... SM1X13...

#### Wiring diagrams

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#### 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