

Circuit-breaker, 3p, 140A, plug-in module

Part no. **NZMH2-ME140-SVE**
113349
EL Number **4357037**
(Norway)

General specifications		
Product name		Eaton Moeller series NZM molded case circuit breaker electronic
Part no.		NZMH2-ME140-SVE
EAN		4015081128846
Product Length/Depth		180 millimetre
Product height		245 millimetre
Product width		105 millimetre
Product weight		2.895 kilogram
Compliances		RoHS conform
Certifications		IEC IEC/EN 60947
Product Tradename		NZM
Product Type		Molded case circuit breaker
Product Sub Type		Electronic
Delivery program		
Application		Use in unearthed supply systems at 690 V
Type		Circuit breaker
Circuit breaker frame type		NZM2
Accessories required		NZM2-XSVS
Number of poles		Three-pole
Amperage Rating		140 A
Release system		Electronic release
Special features		IEC/EN 60947-4-1, IEC/EN 60947-2 The circuit-breaker fulfills all requirements for AC-3 switching category. R.m.s. value measurement and "thermal memory" Adjustable time delay setting to overcome current peaks t_r at $6 \times I_r$ also infinity (without overload releases) All AC-3 rating data applies to direct switching by the circuit-breaker under normal operating conditions. If, for example, a contactor takes over AC-3 switching under normal operating conditions, the full rated uninterrupted current applies to the circuit-breaker, $I_n = I_u$. Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I_{cn}) Rated current = rated uninterrupted current: 140 A
Fitted with:		Thermal protection
Technical Data - Electrical		
Voltage rating		690 V - 690 V
Rated insulation voltage (U_i)		1000 V
Rated impulse withstand voltage (U_{imp}) at auxiliary contacts		6000 V
Rated impulse withstand voltage (U_{imp}) at main contacts		8000 V
Rated operational current		134 A (400 V AC-3) 134 A (690 V AC-3)
Rated short-time withstand current ($t = 0.3$ s)		1.9 kA
Rated short-time withstand current ($t = 1$ s)		1.9 kA
Instantaneous current setting (I_i) - min		140 A
Instantaneous current setting (I_i) - max		1960 A
Overload current setting (I_r) - min		70 A
Overload current setting (I_r) - max		140 A
Short-circuit release non-delayed setting - min		280 A
Short-circuit release non-delayed setting - max		1960 A
Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 230 V, 50/60 Hz		150 kA
Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 400/415 V, 50/60 Hz		130 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz			130 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525 V, 50/60 Hz			37.5 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 690 V, 50/60 Hz			5 kA
Rated short-circuit making capacity Icm at 240 V, 50/60 Hz			330 kA
Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz			330 kA
Rated short-circuit making capacity Icm at 440 V, 50/60 Hz			286 kA
Rated short-circuit making capacity Icm at 525 V, 50/60 Hz			105 kA
Rated short-circuit making capacity Icm at 690 V, 50/60 Hz			40 kA
Rated operating power at AC-3, 230 V			45 kW
Rated operating power at AC-3, 400 V			75 kW
Short-circuit total breaktime			< 10 ms
Electrical connection type of main circuit			Screw connection
Isolation			500 V AC (between auxiliary contacts and main contacts) 300 V AC (between the auxiliary contacts)
Number of operations per hour - max			120
Handle type			Rocker lever
Utilization category			A (IEC/EN 60947-2)
Overvoltage category			III
Pollution degree			3
Lifespan, electrical			10000 operations at 415 V AC-1 5000 operations at 690 V AC-3 10000 operations at 400 V AC-1 6500 operations at 415 V AC-3 6500 operations at 400 V AC-3 7500 operations at 690 V AC-1
Direction of incoming supply			As required
Technical Data - Mechanical			
Mounting Method			Built-in device plug-in technique Plug-in unit
Degree of protection			IP20 (basic degree of protection, in the operating controls area) IP20
Degree of protection (IP), front side			IP66 (with door coupling rotary handle) IP40 (with insulating surround)
Degree of protection (terminations)			IP00 (terminations, phase isolator and strip terminal) IP10 (tunnel terminal)
Protection against direct contact			Finger and back-of-hand proof to VDE 0106 part 100
Shock resistance			20 g (half-sinusoidal shock 20 ms)
Switch off technique			Electronic
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Special features			IEC/EN 60947-4-1, IEC/EN 60947-2 The circuit-breaker fulfills all requirements for AC-3 switching category. R.m.s. value measurement and “thermal memory” Adjustable time delay setting to overcome current peaks I_{tr} at $6 \times I_r$ also infinity (without overload releases) All AC-3 rating data applies to direct switching by the circuit-breaker under normal operating conditions. If, for example, a contactor takes over AC-3 switching under normal operating conditions, the full rated uninterrupted current applies to the circuit-breaker, $I_n = I_u$. Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I_{cn}) Rated current = rated uninterrupted current: 140 A
Lifespan, mechanical			20000 operations
Technical Data - Mechanical - Terminals			
Standard terminals			Screw terminal
Optional terminals			Box terminal. Connection on rear. Tunnel terminal
Terminal capacity (control cable)			0.75 mm ² - 1.5 mm ² (2x) 0.75 mm ² - 2.5 mm ² (1x)
Terminal capacity (aluminum solid conductor/cable)			16 mm ² (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)			25 mm ² - 185 mm ² (1x) at tunnel terminal
Terminal capacity (copper busbar)			Max. 24 mm x 8 mm direct at switch rear-side connection Min. 16 mm x 5 mm direct at switch rear-side connection M8 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)			6 mm ² - 16 mm ² (2x) at box terminal 6 mm ² - 16 mm ² (2x) direct at switch rear-side connection 10 mm ² - 16 mm ² (1x) at box terminal

			16 mm ² (1x) at tunnel terminal 10 mm ² - 16 mm ² (1x) direct at switch rear-side connection
Terminal capacity (copper stranded conductor/cable)			25 mm ² - 185 mm ² (1x) at 1-hole tunnel terminal 25 mm ² - 185 mm ² (1x) at box terminal 25 mm ² - 185 mm ² (1x) direct at switch rear-side connection 25 mm ² - 70 mm ² (2x) direct at switch rear-side connection 25 mm ² - 70 mm ² (2x) at box terminal
Terminal capacity (copper strip)			Min. 2 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 16 mm x 0.8 mm at box terminal Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched) Min. 2 segments of 9 mm x 0.8 mm at box terminal Max. 8 segments of 24 mm x 1 mm (2x) at box terminal
Design verification as per IEC/EN 61439 - technical data			
Rated operational current for specified heat dissipation (I _n)			140 A
Equipment heat dissipation, current-dependent			16.17 W
Ambient operating temperature - min			-25 °C
Ambient operating temperature - max			70 °C
Ambient storage temperature - min			40 °C
Ambient storage temperature - max			70 °C
Design verification as per IEC/EN 61439			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of assemblies			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.
Additional information			
Functions			Motor protection Phase failure sensitive

Technical data ETIM 9.0

Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss13-27-37-04-01 [AGZ529021])			
Overload release current setting		A	70 - 140
Adjustment range undelayed short-circuit release		A	140 - 1960
With thermal overload protection			Yes
Phase failure sensitive			Yes
Switch off technique			Electronic
Rated operating voltage		V	690 - 690
Rated permanent current I _u		A	140
Rated operation power at AC-3, 230 V		kW	45

Rated operation power at AC-3, 400 V		kW	75
Power loss		W	16.17
Type of electrical connection of main circuit			Screw connection
Type of control element			Rocker lever
Device construction			Built-in device plug-in technique
With integrated auxiliary switch			No
With integrated under voltage release			No
Number of poles			3
Rated short-circuit breaking capacity Icu at 400 V, AC		kA	130
Degree of protection (IP)			IP20
Height		mm	245
Width		mm	105
Depth		mm	180