

Circuit-breaker, 3p, 100A, motor protection

Part no. NZMH1-M100 Article no. 115454



Similar to illustration

Accordance of the control of the con	Delivery program			
Standard/Approvel Installation type Release system	Product range			Circuit-breaker
Standard/Approval Anstallation type Anstallation	Protective function			Motor protection
Fixed Alease system				IE3 ✓
Release system Construction size Construction sensitivity Construction size Construction sensitivity Construction size Construction size Construction sensitivity Construction size Construction sensitivity Construction size Construction sensitivity Construction size Construction sensitivity Construction sensitiv	Standard/Approval			IEC
Construction size Description With phase-failure sensitivity Tripping class 1/LeC/EN 80947-2 The circuit-breaker fulfills all requirements for AC-3 switching category. Number of poles Standard equipment Switching capacity 40/0415 V 50 Hz Addred current = rated uninterrupted current Adverture to a construction of the current are rated uninterrupted current Fig. 1/LeC/EN 80947-2 The circuit-breaker fulfills all requirements for AC-3 switching category. Adverture to a construction of the current are rated uninterrupted current In = l_0	Installation type			Fixed
Description Descr	Release system			Thermomagnetic release
Tipping class 10 A IEC/EN 60947-2 The circuit-breaker fulfills all requirements for AC-3 switching category. Number of poles Standard equipment Switching capacity 400/415 V 50 Hz Abated current = rated uninterrupted current Angle Current =	Construction size			NZM1
Number of poles Standard equipment Switching capacity 400/415 V 50 Hz 400/415 V 50 Hz Rated current = rated uninterrupted current Verload trip Verload trip Non-delayed	Description			Tripping class 10 A
Standard equipment Switching capacity 400/415 V 50 Hz 400/415 V 50 Hz 400/415 V 50 Hz All atted current = rated uninterrupted current In = Iu A 100 Setting range Overload trip Ir A 80 - 100 Short-circuit releases In = Iu A 80 - 100 Non-delayed In = Iu A 90 - 100 Non-delayed In = Iu				
Non-delayed	Number of poles			
400/415 V 50 Hz Rated current = rated uninterrupted current Retting range Overload trip Ir A 80 - 100 Roughout releases Ir A 80 - 100 Roughout releases Ir A B - 100 Roughout releases Roughout releases Roughout releases Ir A B - 100 Roughout releases Roughout relea				Box terminal
Rated current = rated uninterrupted current In = Iu A 100 Overload trip Ir A 80 - 100 Short-circuit releases Non-delayed Non-delayed Non-delayed Motor rating AC-3 50/60 Hz 380 V 400 V Motor rating AC-3 50/60 Hz 400 V Realed operational current AC-3 50/60 Hz Realed operational current AC-3 50/60 Hz	Switching capacity			
Setting range Iv A 80 - 100 Short-circuit releases Iv A 80 - 100 Non-delayed Iv Iv 8 - 12.5 Motor rating AC-3 50/60 Hz 8 - 12.5 8 - 12.5 Motor rating AC-3 50/60 Hz W 45 Motor rating AC-3 50/60 Hz W 45 Rated operational current AC-3 50/60 Hz P kW 45	400/415 V 50 Hz	I _{cu}	kA	81
Overload trip Ir A 80 - 100 Short-circuit releases Non-delayed Non-delayed Notor rating AC-3 50/60 Hz 380 V 400 V Motor rating AC-3 50/60 Hz 400 V Reated operational current AC-3 50/60 Hz	Rated current = rated uninterrupted current	$\boldsymbol{I}_n = \boldsymbol{I}_u$	Α	100
I	Setting range			
Short-circuit releases Non-delayed I _i = I _n x Motor rating AC-3 50/60 Hz 380 V 400 V Motor rating AC-3 50/60 Hz 400 V P kW 45 Rated operational current AC-3 50/60 Hz	Overload trip			
Non-delayed I _i = I _n x 8 - 12.5 Motor rating AC-3 50/60 Hz 380 V 400 V	中	I _r	А	80 - 100
Motor rating AC-3 50/60 Hz 380 V 400 V P kW 45 Motor rating AC-3 50/60 Hz 400 V P kW 45 Rated operational current AC-3 50/60 Hz	1			
380 V 400 V P kW 45 Motor rating AC-3 50/60 Hz 400 V P kW 45 Rated operational current AC-3 50/60 Hz		$I_i = I_n \times \dots$		8 - 12.5
Motor rating AC-3 50/60 Hz 400 V Rated operational current AC-3 50/60 Hz 400 V P kW 45	Motor rating AC-3 50/60 Hz			
400 V P kW 45 Rated operational current AC-3 50/60 Hz	380 V 400 V	Р	kW	45
400 V P kW 45 Rated operational current AC-3 50/60 Hz	Motor rating AC-3 50/60 Hz			
	400 V	Р	kW	45
	Rated operational current AC-3 50/60 Hz			
	•	l _o	Α	99

Technical data

General

delieral		
Standards		IEC/EN 60947
Protection against direct contact		Finger and back of hand proof to VDE 0106 Part 100
Climatic proofing		Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature		
Ambient temperature, storage	°C	- 40 - + 70
Operation	°C	-25 - +70

Mechanical shock resistance (10 ms half-sinusoidal shock) according to IEC 60068-2-27		g	20 (half-sinusoidal shock 20 ms)	
Safe isolation to EN 61140				
Between auxiliary contacts and main contacts		V AC	500	
between the auxiliary contacts		V AC	300	
Mounting position			90' 90'	With residual-current release XFI: - NZM1, N1, NZM2, N2: vertical and 90° in all directions with plug-in adapter elements - NZM1, N1, NZM2, N2: vertical, 90° right/left with withdrawable unit: - NZM3, N3: vertical, 90° left - NZM4, N4: vertical with remote operator: - NZM2, N(S)2, NZM3, N(S)3, NZM4, N(S)4: vertical and 90° in all directions
Direction of incoming supply			as required	
Degree of protection				
Device			In the operating controls area: IP20	(basic degree of protection)
Enclosures			With insulating surround: IP40	-
			With door coupling rotary handle: IF	266
Terminations			Tunnel terminal: IP10 Phase isolator and strip terminal: IP	00
Other technical data (sheet catalogue)			Weight Temperature dependency, Derating Effective power loss	
Circuit-breakers				
Rated current = rated uninterrupted current	$I_n = I_u$	Α	100	
Rated surge voltage invariability	U_{imp}			
Main contacts		V	6000	
Auxiliary contacts		V	6000	
Rated operational voltage	U _e	V AC	690	
Overvoltage category/pollution degree			release NZMN(H)1(2)(3)-A to 500 For rated operating voltage switching	ng via 3 contacts: ous release response value: NZM1: 1.25, NZM2:
Rated insulation voltage	Ui	V	690	
Use in unearthed supply systems		V	≤ ₆₉₀	
Switching capacity				
Rated short-circuit making capacity	I _{cm}			
240 V	I _{cm}	kA	220	
400/415 V	I _{cm}	kA	220	
440 V 50/60 Hz	I _{cm}	kA	74	
525 V 50/60 Hz	I _{cm}	kA	40	
690 V 50/60 H	Ic	kA	17	

Rated short-circuit breaking capacity I _{cn}	I _{cn}		
Icu to IEC/EN 60947 test cycle 0-t-C0	Icu	kA	
240 V 50/60 Hz		kA	100
	I _{cu}		
400/415 V 50/60 Hz	I _{cu}	kA	81
440 V 50/60 Hz	I _{cu}	kA	35
525 V 50/60 Hz	I _{cu}	kA	20
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	lcs	kA	
240 V 50/60 Hz	I _{cs}	kA	100
400/415 V 50/60 Hz	I _{cs}	kA	50
440 V 50/60 Hz	I _{cs}	kA	35
525 V 50/60 Hz	I _{cs}	kA	10
690 V 50/60 Hz	I _{cs}	kA	7.5
500 V DC	I _{cs}	kA	30
			Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.
Utilization category to IEC/EN 60947-2			A
Rated making and breaking capacity			
Rated operational current	I _e	Α	
AC-1			
380 V 400 V	I _e	Α	100
415 V	I _e	Α	100
690 V	l _e	Α	100
AC3			
380 V 400 V	I _e	Α	81
415 V	I _e	A	81
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations	^	20000
Lifespan, electrical	Operations		20000
AC-1			
400 V 50/60 Hz	Operations		10000
415 V 50/60 Hz	Operations		10000
690 V 50/60 Hz	Operations		7500
AC3			
400 V 50/60 Hz	Operations		7500
415 V 50/60 Hz	Operations		7500
690 V 50/60 Hz	Operations		5000
Max. operating frequency		Ops/h	120
Total downtime in a short-circuit		ms	<10
Terminal capacity		0	
Standard equipment			Box terminal
Optional accessories			Screw connection Tunnel terminal connection on rear
Round copper conductor			
Box terminal			
Solid		mm ²	1 x (10 - 16) 2 x (6 - 16)
Stranded		mm ²	1 x (10 - 70) ³⁾ 2 x (6-25)
			³⁾ Up to 95 mm² can be connected depending on the cable manufacturer.
Tunnel terminal			
Solid		mm ²	1 x 16
Stranded		mm ²	
Stranded			1 x (25 - 95)
		mm ²	I A (43 - 33)
Bolt terminal and rear-side connection			
Direct on the switch			

Solid		mm ²	1 x (10 - 16) 2 x (6 - 16)
Stranded		mm ²	1 x (25 - 70) ³⁾ 2 x 25
			³⁾ Up to 95 mm² can be connected depending on the cable manufacturer.
Al conductors, Cu cable			
Solid		mm ²	1 x 16
Stranded		mm^2	
Stranded		mm ²	1 x (25 - 95)
Cu strip (number of segments x width x segment thickness)			
Box terminal			
	min.	mm	2 x 9 x 0.8
	max.	mm	9 x 9 x 0.8
Copper busbar (width x thickness)	mm		
Bolt terminal and rear-side connection			
Screw connection			M6
Direct on the switch			
	min.	mm	12 x 5
	max.	mm	16 x 5

Design verification as per IEC/EN 61439

besign verification as per 120/214 01435			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	100
Equipment heat dissipation, current-dependent	P _{vid}	W	23.85
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties			
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 switch gear must be observed. $\label{eq:constraint}$
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switch gear must be observed. $\label{eq:specification}$
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

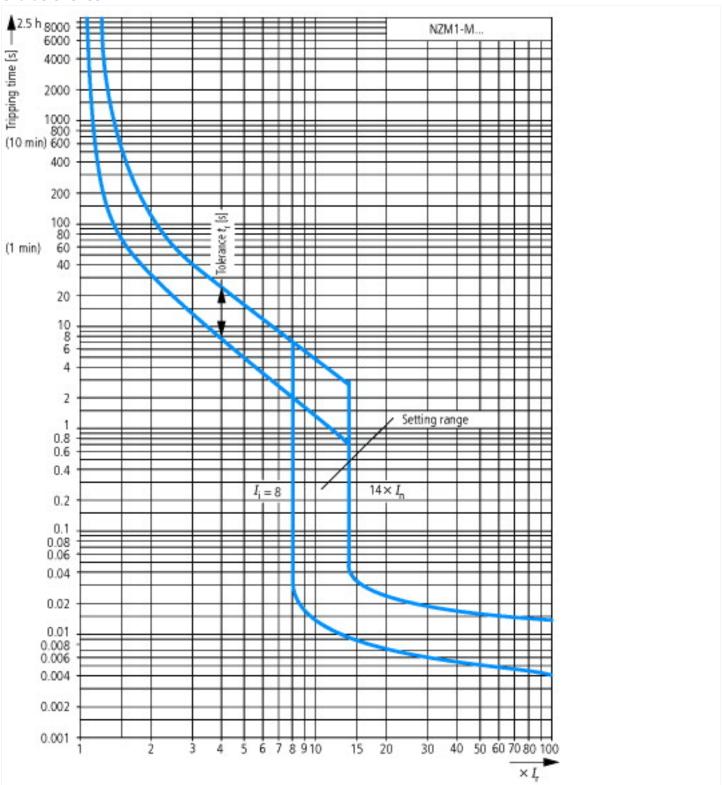
Technical data ETIM 6.0

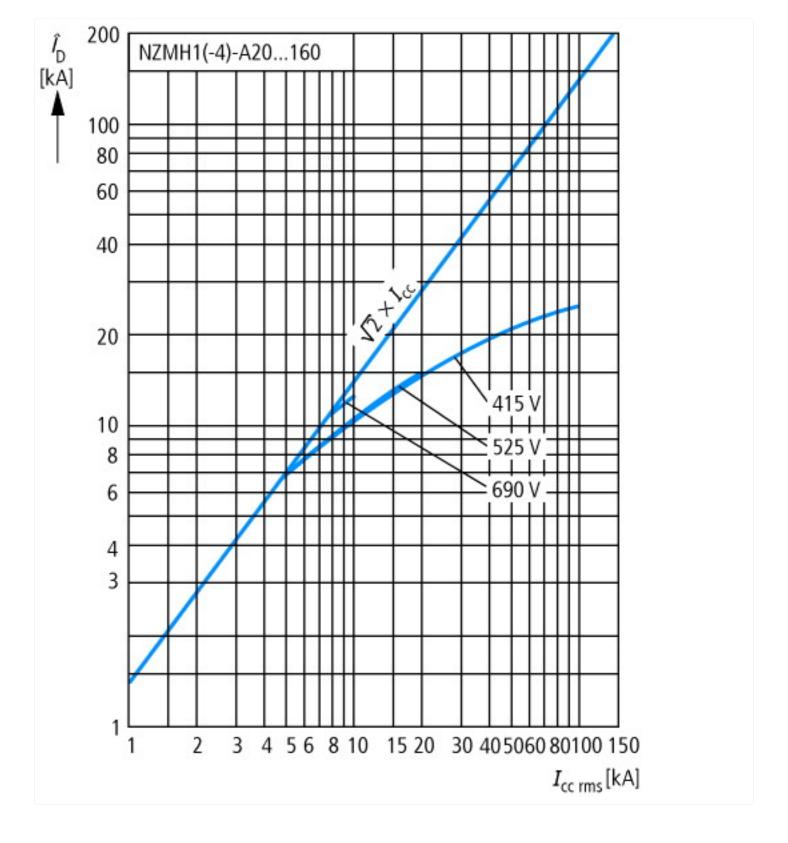
Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss8.1-27-37-04-01

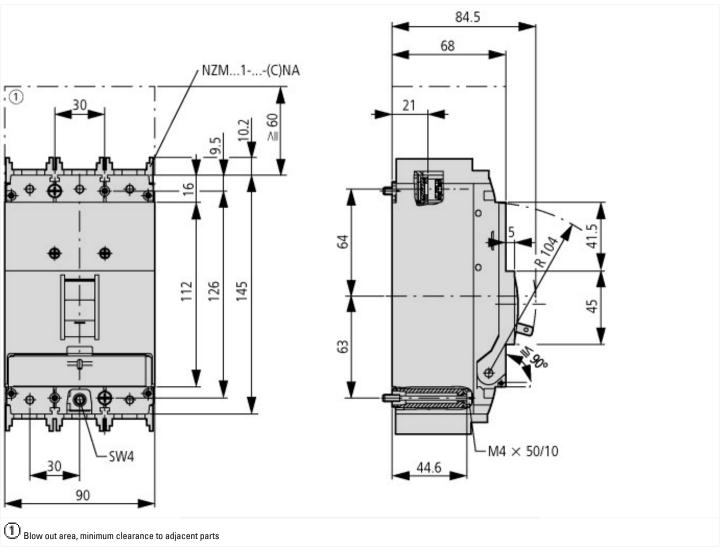
Adjustment range undelayed short-circuit release A B00 - 1250 Thermal protection No Phase failure sensitive Switch off technique Rated operating voltage Rated operating power at AC-3, 230 V Rated operation power at AC-3, 400 V Rype of electrical connection of main circuit Rype of control element Device construction With integrated auxiliary switch With integrated dunder voltage release Number of poles Rated short-circuit breaking capacity lcu at 400 V, AC Degree of protection (IP) Height With the short of t	[AGZ529013])		and (20 C) harfy motor protocolor oroan around (65 e566). 27 67 67 6
Thermal protection Phase failure sensitive Switch off technique Rated operating voltage Rated operating voltage Rated operating power at AC-3, 230 V Rated operation power at AC-3, 240 V Reted operation power at AC-3, 400 V Rype of electrical connection of main circuit Rype of control element Device construction With integrated auxiliary switch With integrated under voltage release No	Overload release current setting	Α	80 - 100
Phase failure sensitive Switch off technique Rated operating voltage Rated operating power at AC-3, 230 V Rated operation power at AC-3, 230 V Rated operation power at AC-3, 400 V Rated operation power at AC-3, 400 V Rype of electrical connection of main circuit Rype of control element Device construction With integrated auxiliary switch With integrated under voltage release Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height With the service of the service o	Adjustment range undelayed short-circuit release	Α	800 - 1250
Switch off technique Rated operating voltage Rated permanent current lu Rated operating power at AC-3, 230 V Rated operation power at AC-3, 230 V Rated operation power at AC-3, 400 V Rated operation power at AC-3, 400 V Rype of electrical connection of main circuit Rype of control element Device construction With integrated auxiliary switch With integrated under voltage release Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height With the same and the same	Thermal protection		No
Rated perating voltage Rated permanent current lu Rated permanent current lu Rated permanent current lu Rated permanent current lu Rated peration power at AC-3, 230 V Rated peration power at AC-3, 400 V Rype of electrical connection of main circuit Rype of control element Device construction With integrated auxiliary switch With integrated under voltage release No Number of poles Rated short-circuit breaking capacity lcu at 400 V, AC Degree of protection (IP) Height With Main and Main	Phase failure sensitive		Yes
Rated permanent current lu Rated operation power at AC-3, 230 V Rated operation power at AC-3, 230 V Rated operation power at AC-3, 400 V Rype of electrical connection of main circuit Rype of control element Device construction With integrated auxiliary switch With integrated under voltage release Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height With Integrated	Switch off technique		Thermomagnetic
Rated operation power at AC-3, 230 V Rated operation power at AC-3, 400 V Rated operation power at AC-3, 400 V Rype of electrical connection of main circuit Type of control element Device construction With integrated auxiliary switch With integrated under voltage release No Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height With Integrated	Rated operating voltage	V	690 - 690
Rated operation power at AC-3, 400 V Type of electrical connection of main circuit Type of control element Device construction With integrated auxiliary switch With integrated under voltage release No Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height With Main and Main a	Rated permanent current lu	Α	100
Type of electrical connection of main circuit Type of control element Device construction With integrated auxiliary switch With integrated under voltage release No Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height Width Midth Rocker lever Built-in device fixed built-in technique No No 10 10 10 10 10 10 10 10 10 1	Rated operation power at AC-3, 230 V	kW	30
Type of control element Device construction With integrated auxiliary switch With integrated under voltage release No Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height Width Rocker lever Built-in device fixed built-in technique No	Rated operation power at AC-3, 400 V	kW	55
Device construction With integrated auxiliary switch With integrated under voltage release With integrated under voltage release No Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height Midth Midth Built-in device fixed built-in technique No No No No 10 Pol Pol Pol Pol Pol Pol Pol Po	Type of electrical connection of main circuit		-
With integrated auxiliary switch With integrated under voltage release No Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height Midth No Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Rated short-circuit breaking	Type of control element		Rocker lever
With integrated under voltage release No Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height Midth Midth No 100 IP20 IP20 Midth Midth Midth Midth No 100 IP20 IP20 IP20 IP30	Device construction		Built-in device fixed built-in technique
Number of poles Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height Midth Midth 3 100 IP20 IP20 Mmm 90	With integrated auxiliary switch		No
Rated short-circuit breaking capacity Icu at 400 V, AC Degree of protection (IP) Height Midth Midth Rated short-circuit breaking capacity Icu at 400 V, AC RATED SHORT S	With integrated under voltage release		No
Degree of protection (IP) IP20 Height mm 145 Width mm 90	Number of poles		3
Height mm 145 Width mm 90	Rated short-circuit breaking capacity Icu at 400 V, AC	kA	100
Width 90	Degree of protection (IP)		IP20
	Height	mm	145
Depth mm 88	Width	mm	90
	Depth	mm	88

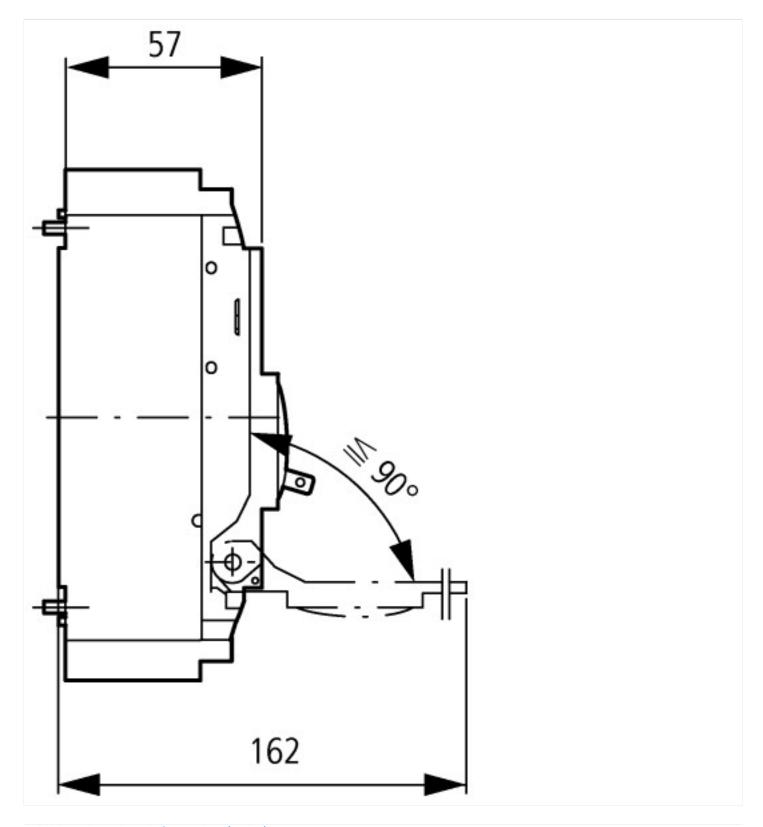
Characteristics





Dimensions





Additional product information (links)

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Weight	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.171
Temperature dependency, Derating	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.172
Effective power loss	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.174