DATASHEET - NZMH2-PX40-TZ-SVE



NZM2 PXR25 circuit breaker - integrated energy measurement class 1, 40A, 3p, Screw terminal, earth-fault protection and zone selectivity, plugin technology



Part no. NZMH2-PX40-TZ-SVE Catalog No. 192197

Similar to illustration

Delivery program			
Product range			Circuit-breaker
Protective function			Systems, cable, selectivity and generator protection Earth-fault protection Zone selectivity
Standard/Approval			IEC
Installation type			Plug-in units
Release system			Electronic release
Construction size			NZM2
Description			LSIG overload protection and delayed and non-delayed short-circuit protective device, earth-fault protection Class 1 energy measurement, r.m.s. value measurement, and "thermal memory" USB interface for configuration and test function with Power Xpert Protection Manager software Zone selectivity ZSI Interface module in equipment supplied. Optionally communication-capable with internal Modbus RTU module or CAM
Number of poles			3 pole
Standard equipment			Screw connection
Switching capacity			
400/415 V 50 Hz	I _{cu}	kA	150
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	Α	40
Setting range			
Overload trip			
中	I _r	Α	20 - 40
Short-circuit releases			
Non-delayed	$I_i = I_n \times \dots$		2 – 18
Delayed X >	$I_{sd} = I_r x \dots$		2 – 10
Setting range of earth fault release min.	Ig = Inx		20
Setting range of earth fault release max.	Ig = Inx		40

Technical data

Genera

General		
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			Vertical and 90° in all directions With XFI earth-fault release: - NZM1, N1, NZM2, N2: vertical and 90° in all directions with plug-in unit - NZM1, N1, NZM2, N2: vertical, 90° right/left with withdrawable unit: - NZM3, N3: vertical, 90° right/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: IP66
Terminations			Tunnel terminal: IP10 Phase isolator and strip terminal: IP00
Other technical data (sheet catalogue)			Weight Temperature dependency, Derating Effective power loss
Circuit-breakers			
Rated current = rated uninterrupted current	$I_n = I_u$	Α	40
Rated surge voltage invariability	U _{imp}		
Main contacts		V	8000
Auxiliary contacts		V	6000
Rated operational voltage	U _e	V AC	690
Overvoltage category/pollution degree			III/3
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	330
400/415 V	I _{cm}	kA	330
440 V 50/60 Hz	I _{cm}	kA	286
525 V 50/60 Hz	I _{cm}	kA	105
690 V 50/60 H	Ic	kA	40
Rated short-circuit breaking capacity I _{cn}	I _{cn}		
Icu to IEC/EN 60947 test cycle 0-t-C0	lcu	kA	
240 V 50/60 Hz	I _{cu}	kA	150
400/415 V 50/60 Hz	Icu	kA	150
440 V 50/60 Hz	I _{cu}	kA	130
525 V 50/60 Hz	I _{cu}	kA	50
690 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	150
400/415 V 50/60 Hz	I _{cs}	kA	150
440 V 50/60 Hz	I _{cs}	kA	130
525 V 50/60 Hz	I _{cs}	kA	37.5
690 V 50/60 Hz	I _{cs}	kA	5
	-03		Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.
Rated short-time withstand current			

t = 1 s Utilization category to IEC/EN 60947-2 Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release) Lifespan, electrical AC-1 400 V 50/60 Hz 415 V 50/60 Hz	cw Operations Operations Operations Operations Operations		1.9 A 20000 10000
Utilization category to IEC/EN 60947-2 Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release) Lifespan, electrical AC-1 400 V 50/60 Hz 415 V 50/60 Hz 690 V 50/60 Hz Max. operating frequency Total break time at short-circuit Terminal capacity Standard equipment Accessories required	Operations Operations Operations		20000
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415 V 50/60 Hz 690 V 50/60 Hz Max. operating frequency Total break time at short-circuit Terminal capacity Standard equipment Accessories required	Operations		10000
690 V 50/60 Hz Max. operating frequency Total break time at short-circuit Terminal capacity Standard equipment Accessories required	•		
Max. operating frequency Total break time at short-circuit Terminal capacity Standard equipment Accessories required	Operations		10000
Total break time at short-circuit Terminal capacity Standard equipment Accessories required			7500
Terminal capacity Standard equipment Accessories required		Ops/h	120
Standard equipment Accessories required		ms	< 10
Accessories required			
			Screw connection
Ontional accessories			NZM2-XSVS
Optional accessories			Box terminal Tunnel terminal connection on rear
Round copper conductor			
Box terminal			
Solid			1 x (10 - 16) 2 x (6 - 16)
Stranded			1 x (25 - 185) 2 x (25 - 70)
Tunnel terminal			
Solid		mm ²	1 x 16
Stranded			
1-hole		mm ²	1 x (25 - 185)
Bolt terminal and rear-side connection		mm	
Direct on the switch			
Solid		2	1 x (10 - 16)
Solid			2 x (6 - 16)
Stranded			1 x (25 - 185) 2 x (25 - 70)
Al circular conductor			
Tunnel terminal			
Solid		mm ²	1 x 16
Stranded			
Stranded		mm^2	1 x (25 - 185)
Cu strip (number of segments x width x segment thickness)			
Box terminal			
n	min.	mm	2 x 9 x 0.8
п	nax.		10 x 16 x 0.8 (2x) 8 x 15.5 x 0,8
Bolt terminal and rear-side connection			
	min.	mm	2 x 16 x 0.8
	nax.	mm	10 x 24 x 0.8
Copper busbar (width x thickness)	mm		
Bolt terminal and rear-side connection			
Screw connection			M8
Direct on the switch			
			16 x 5
	пах.	mm	24 x 8
Control cables			1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

Design verification as per IEC/EN 61439

Tooling and the coordinate of	Technical data for design verification				
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provide heat dissipation data for the devices. 10.11 Short-circuit rating Is the panel builder's responsibility. The specifications for the switchgear mus observed.	Rated operational current for specified heat dissipation	In	Α	40
Operating ambient temperature max. 10.2 Strength of materials and parts 10.2.2 Corrosion resistance 10.2.3.1 Verification of thermal stability of enclosures 10.2.3.2 Verification of resistance of insulating materials to normal heat and fire due to internal electric effects 10.2.4 Resistance to ultra-violet (UV) radiation 10.2.5 Lifting 10.2.5 Lifting 10.2.6 Mechanical impact 10.2.7 Inscriptions 10.3 Degree of protection of ASSEMBLIES 10.3 Degree of protection of ASSEMBLIES 10.4 Clearances and creepage distances 10.5 Protection against electric shock 10.6 Incorporation of switching devices and components 10.7 Internal electrical circuits and connections 10.8 Connections for external conductors 10.9 Insulation properties 10.9 Power-frequency electric strength 10.9 Insulation properties 10.9 Power-frequency electric strength 10.10 Temperature rise 10.11 Short-circuit rating 10.12 Electromagnetic compatibility 10.12 Electromagnetic compatibility 10.12 Electromagnetic compatibility 10.10 Electromagnetic compatibility 10.12 Electromagnetic compatibility	Equipment heat dissipation, current-dependent	P _{vid}	W	1.32
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	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. $\label{eq:constraint}$
10.13 Mechanical function The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.	10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 8.0

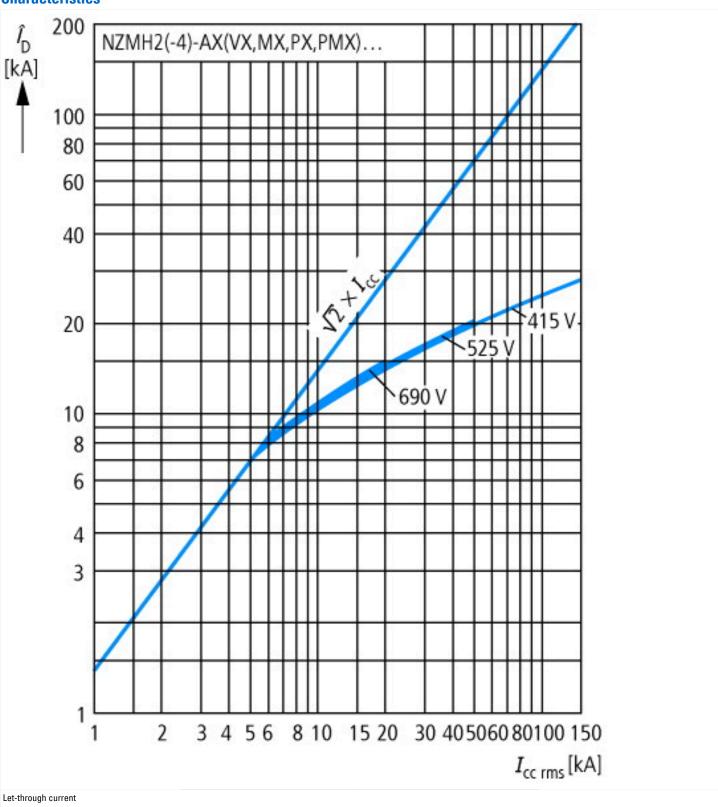
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

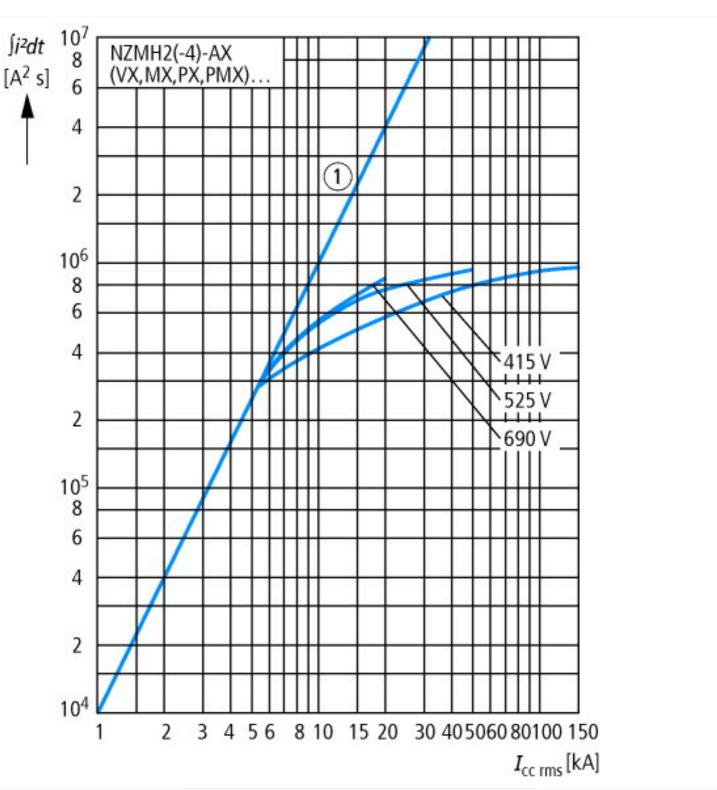
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

Rated voltage Rated voltage Rated short-circuit breaking capacity Icu at 400 V, 50 Hz Rated short-circuit breaking capacity Icu at 400 V, 50 Hz Rated short-circuit breaking capacity Icu at 400 V, 50 Hz Adjustment range short-term delayed short-circuit release Adjustment range undelayed short-circuit release ADJUstment range undel			
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz Overload release current setting Adjustment range short-term delayed short-circuit release Adjustment range undelayed short-circuit release Adjustment range undelayed short-circuit release A 2 - 18 Integrated earth fault protection Type of electrical connection of main circuit Device construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact With switched-off indicator With integrated under voltage release Number of poles Position of connection for main current circuit RA 20 - 40 20 - 40 20 - 40 20 - 18 20 - 18 20 - 18 20 - 18 20 - 18 20 - 18 20 - 10 20	Rated permanent current lu	А	40
Overload release current setting Adjustment range short-term delayed short-circuit release Adjustment range undelayed short-circuit release Adjustment range undelayed short-circuit release Adjustment range undelayed short-circuit release ADJUSTMENT SAME SAME SAME SAME SAME SAME SAME SAME	Rated voltage	V	690 - 690
Adjustment range short-term delayed short-circuit release Adjustment range undelayed s	Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	150
Adjustment range undelayed short-circuit release A 2 - 18 Integrated earth fault protection Yes Type of electrical connection of main circuit Device construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact O Number of auxiliary contacts as change-over contact O With switched-off indicator With integrated under voltage release Number of poles Position of connection for main current circuit A 2 - 18 Yes Yes Other Duther Device construction Built-in device plug-in technique No No O O O O O O O O O O O O O	Overload release current setting	Α	20 - 40
Integrated earth fault protection Type of electrical connection of main circuit Other Device construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Outher Number of auxiliary contacts as normally open contact Outher Number of auxiliary contacts as change-over contact Outher No With switched-off indicator With integrated under voltage release Number of poles Position of connection for main current circuit Connection at separate chassis part	Adjustment range short-term delayed short-circuit release	Α	2 - 10
Type of electrical connection of main circuit Device construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional No No No Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact No With switched-off indicator No With integrated under voltage release No Number of poles Position of connection for main current circuit Connection at separate chassis part	Adjustment range undelayed short-circuit release	Α	2 - 18
Device construction Built-in device plug-in technique No No DIN rail (top hat rail) mounting optional No Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact No With switched-off indicator No With integrated under voltage release No Number of poles Position of connection for main current circuit Connection at separate chassis part	Integrated earth fault protection		Yes
Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional No Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Output Number of auxiliary contacts as change-over contact Output No With switched-off indicator No With integrated under voltage release No No Number of poles Output Out	Type of electrical connection of main circuit		Other
DIN rail (top hat rail) mounting optional No Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact No With switched-off indicator With integrated under voltage release No Number of poles Position of connection for main current circuit No Connection at separate chassis part	Device construction		Built-in device plug-in technique
Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact No With switched-off indicator With integrated under voltage release No Number of poles Position of connection for main current circuit Connection at separate chassis part	Suitable for DIN rail (top hat rail) mounting		No
Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact With switched-off indicator With integrated under voltage release No Number of poles Position of connection for main current circuit O Connection at separate chassis part	DIN rail (top hat rail) mounting optional		No
Number of auxiliary contacts as change-over contact With switched-off indicator No With integrated under voltage release No Number of poles Position of connection for main current circuit Connection at separate chassis part	Number of auxiliary contacts as normally closed contact		0
With switched-off indicator With integrated under voltage release No Number of poles Position of connection for main current circuit No Connection at separate chassis part	Number of auxiliary contacts as normally open contact		0
With integrated under voltage release No Number of poles 3 Position of connection for main current circuit Connection at separate chassis part	Number of auxiliary contacts as change-over contact		0
Number of poles 3 Position of connection for main current circuit Connection at separate chassis part	With switched-off indicator		No
Position of connection for main current circuit Connection at separate chassis part	With integrated under voltage release		No
	Number of poles		3
Type of control element Rocker lever	Position of connection for main current circuit		Connection at separate chassis part
	Type of control element		Rocker lever

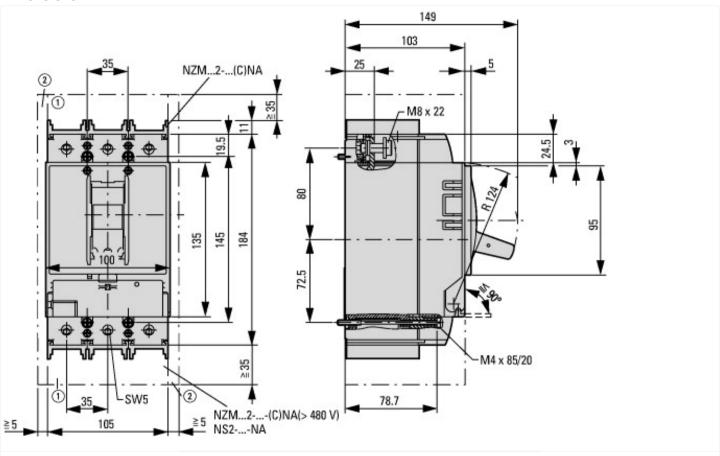
Complete device with protection unit	Yes
Motor drive integrated	No
Motor drive optional	Yes
Degree of protection (IP)	IP20

Characteristics

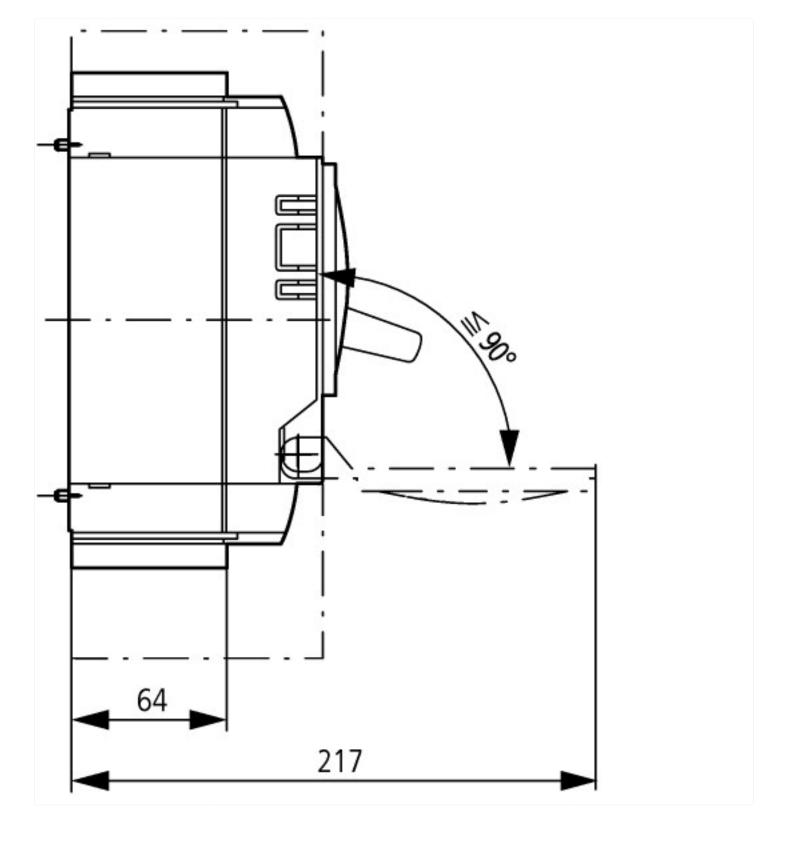


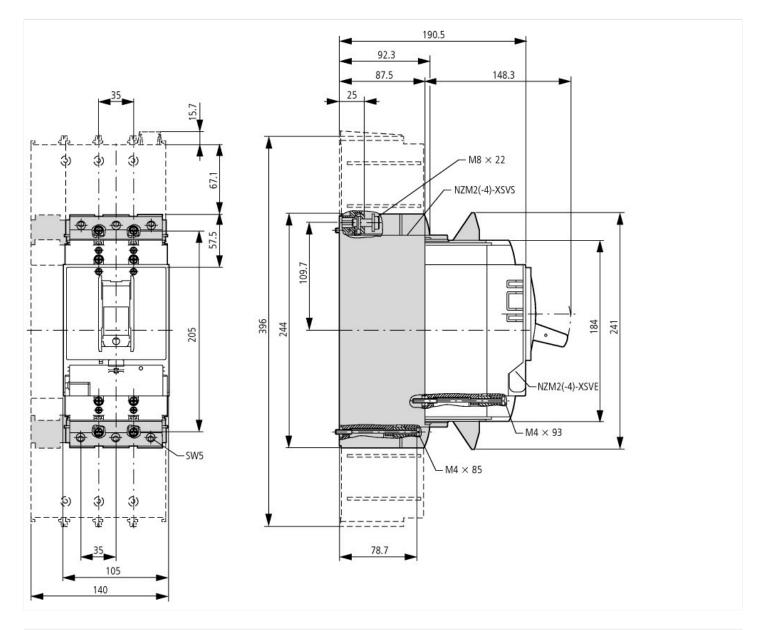


Dimensions



Blow out area, minimum clearance to adjacent parts
 Minimum clearance to adjacent parts





Additional product information (links)

Additional product informat	iion (iiiko)
IL012099ZU NZM2-PXR circuit-breaker, basic device, NZM2-PXR Circuit-Breaker, basic unit	
IL012099ZU NZM2-PXR circuit-breaker, basic device, NZM2-PXR Circuit-Breaker, basic unit	https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL012099ZU2019_03.pdf
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
additional technical information for NZM power switch	https://es-assets.eaton.com/D0CUMENTATION/PDF/nzm_technic_de_en.pdf