# DATASHEET - NZMS2-PX63-SVE



NZM2 PXR25 circuit breaker - integrated energy measurement class 1, 63A, 3p, Screw terminal, plug-in technology



Part no. Catalog No. NZMS2-PX63-SVE 192170

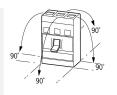
Similar to	illustration

## **Delivery program**

Product range     Force Versame     Circuic broaker       Product range     Systems, table, selectivity and generator protection       Bandard Approval     Ice     Fuelowinits       Ratalation type     Electronic release     Electronic release       Rotecon size     Solver land protection and delayed and non-delayed short-circuit protection     Solver land protection and delayed and non-delayed short-circuit protection       Rotecon size     Solver land protection and delayed and non-delayed short-circuit protection     Solver land protection and delayed and non-delayed short-circuit protection       Number of poles     Solver land protection and delayed and non-delayed short-circuit protective     Solver land protection and delayed and non-delayed short-circuit protective       Number of poles     Solver land protection and delayed and non-delayed short-circuit protective     Solver land protection and delayed and non-delayed short-circuit protective       Number of poles     Solver land protection and delayed and non-delayed short-circuit protective     Solver land protection and delayed short-circuit protective       Number of poles     Solver land short denator short delayed short-circuit protective     Solver land short denator short delayed short-circuit protective       Number of poles     Solver land short denator short delayed short-circuit protective     Solver land short denator short delayed short-circuit protective       Number of poles     Solver land short denator short delayed short-circuit protective     Solver land short denator short d				
Sundrard/Approval     File     File       Installation type     Plug-in units       Release system     Electronic release       Construction size     NZM2       Description     Solver and protection and belayed and non-delayed short-circuit protective advice advice action with Power Xpert Protection with Power Xpert Protection with Power Xpert Protection on the system assurement, r.m.s. value measurement, and "thermal memory" Manager Storage advice action on the system advice and non-delayed short-circuit protective advice action on the power Xpert Protection and belayed and non-delayed short-circuit produce or CAM       Number of poles     Image: Storage advice a	Product range			Circuit-breaker
Instant     Image: sector	Protective function			Systems, cable, selectivity and generator protection
Release system     Electronic release       Construction size     VZM2       Description     Silverical optication and delayed and non-delayed short-circuit protective or delayed short-circuit releases       Non-delayed     V     V       Non-delayed     V     V       Non-delayed     I     V       Non-delayed     I     I       Non-delayed     I     I	Standard/Approval			IEC
Contruction size       ZM2         Description       Sive for the second protection and delayed and non-delayed short-circuit protective disas 1 energy measurement, r.m.s. value measurement, and thermal memory Variable or configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager software for configuration and test function with Power Xper Protection Variager Software for configuration and test function with Power Xper Protection Variager Software for configuration and test function with Power Xper Protection Variager Software for configuration and test function Variager Software for configuration Advection Variager Software for configuratin Advection Variager Software for configurati	Installation type			Plug-in units
Description     Is verified protection and delayed and non-delayed short-circuit protective divice div	Release system			Electronic release
Number of poles     Image: Specific device and the measurement, r.m., value measurement, and thermal memory and test function with Power Xpert Protection Manager software interface for configuration and test function with Power Xpert Protection Manager software interface module in equipment supplied. Optionally communication-capable with internal Module or CAM       Number of poles     3 pole       Standard equipment     Image: Specific device module in equipment supplied. Optionally communication-capable with internal Module or CAM       Switching capacity     Image: Specific device	Construction size			NZM2
Standard equipment     Icrow connection       Switching capacity     Icu     Kald       40/415 V 50 HZ     Icu     Kald       Rated current = rated uninterrupted current     Icu     Kald       Rated current = rated uninterrupted current     Icu     Kald       Nor-delayed     Icu     Kald     Galental State       Interview     Icu     Icu     Kald       Interview     Icu     Icu     Kald       Interview     Icu     Icu     Kald       Interview     Icu     Icu     Icu       Interview     Icu     Icu     Icu       Interviewe     Icu     Icu <td< td=""><td>Description</td><td></td><td></td><td>device 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 Interface module in equipment supplied.</td></td<>	Description			device 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 Interface module in equipment supplied.
Switching capacity 400/415 V 50 Hz A Lou KA 70 Rated current = rated uninterrupted current Rated current = rated uninterrupted current Rated current = rated uninterrupted current I a = lu A I I	Number of poles			3 pole
400/415 V 50 HzIcuKA7Rated current = rated uninterrupted currentIn = IuA6Rated current = rated uninterrupted currentIn = IuA6Setting rangeIn = IuAFOverload tripIn = IuASShort-circuit releasesIn = IuIn = IuIn = IuNon-delayedIn = IuIn = IuIn = IuNon-delayedIn = IuIn = IuIuIn = IuIuIuIuIn = IuIuIuIuIn = IuIuIuIuIn = IuIuIuIuIn = IuIuIuIuIuIuIuIuIuIuIuI	Standard equipment			Screw connection
Non-delayedNon-delayedIn IIn 	Switching capacity			
Rated current = rated uninterrupted current     In = Iu     Amount	400/415 V 50 Hz	I <sub>cu</sub>	kA	70
Setting range     Image: Participation of the set o	Rated current = rated uninterrupted current			
Overload trip     In     A     25-63       Short-circuit releases     In     In     In       Non-delayed     In     In     In       Image: Instant of the second	Rated current = rated uninterrupted current	$I_n = I_u$	Α	63
$I_r \qquad A \qquad 25-63$ Short-circuit releases $I_r \qquad I_r \qquad$	Setting range			
Short-circuit releases   Image: Non-delayed   Image: Non-delayed     Ima	Overload trip			
Non-delayed $I_i = I_n \times$ $2-18$	L	I <sub>r</sub>	A	25 - 63
Delayed I <sub>sd</sub> = I <sub>r</sub> x 2 – 10	Non-delayed	$I_i = I_n \mathbf{x} \dots$		2 – 18
	Delayed	$I_{sd} = I_r \times \dots$		2 - 10

### **Technical data**

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

Aated short-time withstand current t = 0.3 s 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	I <sub>cw</sub> I <sub>cw</sub> Operations	kA kA	1.9 1.9 A 20000
t = 0.3 s t = 1 s Jtilization category to IEC/EN 60947-2 ifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release) ifespan, electrical	l <sub>cw</sub>		1.9 A
t = 0.3 s t = 1 s Jtilization category to IEC/EN 60947-2 ifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	l <sub>cw</sub>		1.9 A
t = 0.3 s t = 1 s Jtilization category to IEC/EN 60947-2	l <sub>cw</sub>		1.9 A
t = 0.3 s t = 1 s			1.9
t = 0.3 s			
		۲A	10
			location exceed the switching capacity of the circuit-breaker.
			Maximum back-up fuse, if the expected short-circuit currents at the installation
690 V 50/60 Hz	I <sub>cs</sub>	kA	6
525 V 50/60 Hz	I <sub>cs</sub>	kA	36
440 V 50/60 Hz	I <sub>cs</sub>	kA	65
400/415 V 50/60 Hz	I <sub>cs</sub>	kA	70
240 V 50/60 Hz	I <sub>cs</sub>	kA	100
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	lcs	kA	
690 V 50/60 Hz	I <sub>cu</sub>	kA	20
525 V 50/60 Hz	I <sub>cu</sub>	kA	36
440 V 50/60 Hz	I <sub>cu</sub>	kA	65
400/415 V 50/60 Hz	I <sub>cu</sub>	kA	70
240 V 50/60 Hz	I <sub>cu</sub>	kA	100
Icu to IEC/EN 60947 test cycle O-t-CO	lcu	kA	
Rated short-circuit breaking capacity I <sub>cn</sub>	I <sub>cn</sub>		
690 V 50/60 H	lc	kA	40
525 V 50/60 Hz	I <sub>cm</sub>	kA	80
440 V 50/60 Hz	I <sub>cm</sub>	kA	143
400/415 V	I <sub>cm</sub>	kA	154
240 V	I <sub>cm</sub>	kA	220
Rated short-circuit making capacity	I <sub>cm</sub>	1.0	200
witching capacity	1		
Jse in unearthed supply systems		V	≦ 690
Rated insulation voltage	Ui	V	690
Overvoltage category/pollution degree			11/3
Rated operational voltage	U <sub>e</sub>	V AC	690
Auxiliary contacts		V	6000
Main contacts		V	8000
Rated surge voltage invariability	U <sub>imp</sub>	M	2000
Rated current = rated uninterrupted current	I <sub>n</sub> = I <sub>u</sub>	A	63
ircuit-breakers			
Other technical data (sheet catalogue)			Temperature dependency, Derating
Terminations			Tunnel terminal: IP10 Phase isolator and strip terminal: IP00
Terminations			With door coupling rotary handle: IP66
Enclosures			With insulating surround: IP40
Device			In the operating controls area: IP20 (basic degree of protection)
Degree of protection			
Direction of incoming supply			as required
			- NZM2, N(S)2, NZM3, N(S)3, NZM4, N(S)4: vertical and 90° in all directions

415 V 50/60 Hz	Operations		10000
690 V 50/60 Hz	Operations		7500
Max. operating frequency	oporations	Ops/h	120
Total break time at short-circuit		ms	< 10
Terminal capacity		1113	
Standard equipment			Screw connection
Accessories required			NZM2-XSVS
Optional accessories			Box terminal Tunnel terminal connection on rear
Round copper conductor			
Box terminal			
Solid		mm <sup>2</sup>	1 x (10 - 16) 2 x (6 - 16)
Stranded		mm <sup>2</sup>	1 x (25 - 185) 2 x (25 - 70)
Tunnel terminal			
Solid		mm <sup>2</sup>	1 x 16
Stranded			
1-hole		mm <sup>2</sup>	1 x (25 - 185)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm <sup>2</sup>	1 x (10 - 16) 2 x (6 - 16)
Stranded		mm <sup>2</sup>	1 x (25 - 185) 2 x (25 - 70)
Al circular conductor			
Tunnel terminal			
Solid		mm <sup>2</sup>	1 x 16
Stranded			
Stranded		mm <sup>2</sup>	1 x (25 - 185)
Cu strip (number of segments x width x segment thickness)			
Box terminal			
	min.	mm	2×9×0.8
	max.	mm	10 x 16 x 0.8 (2x) 8 x 15.5 x 0,8
Bolt terminal and rear-side connection			
Flat copper strip, with holes	min.	mm	2 x 16 x 0.8
Flat copper strip, with holes	max.	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			
	min.	mm	16 x 5
	max.	mm	24 x 8
Control cables			
		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	А	63
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	3.27
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.

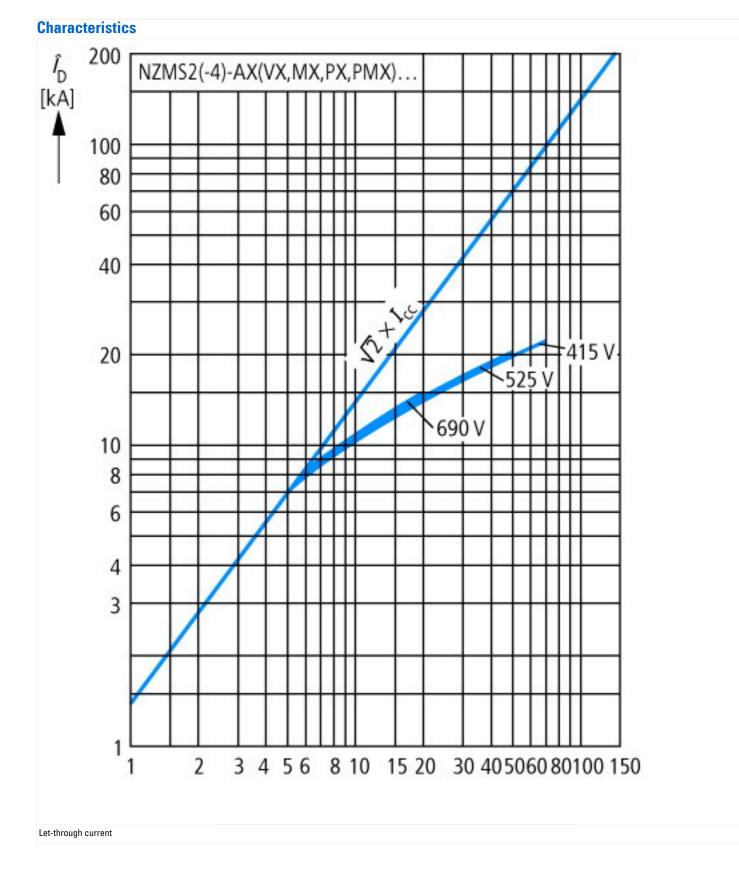
10.2.2.1 Varification of thermal stability of analoguroa	Mosto the product standard's requirements
10.2.3.1 Verification of thermal stability of enclosures	Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat	Meets the product standard's 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 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.

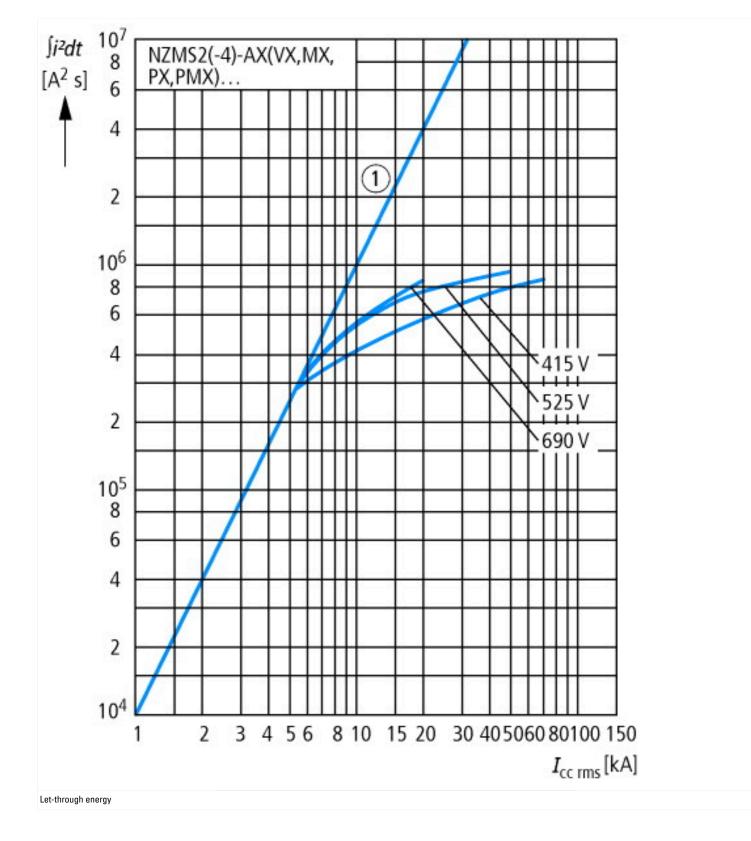
## **Technical data ETIM 6.0**

Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation prot. (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@ss8.1-27-37-04-09 [AJZ716010])

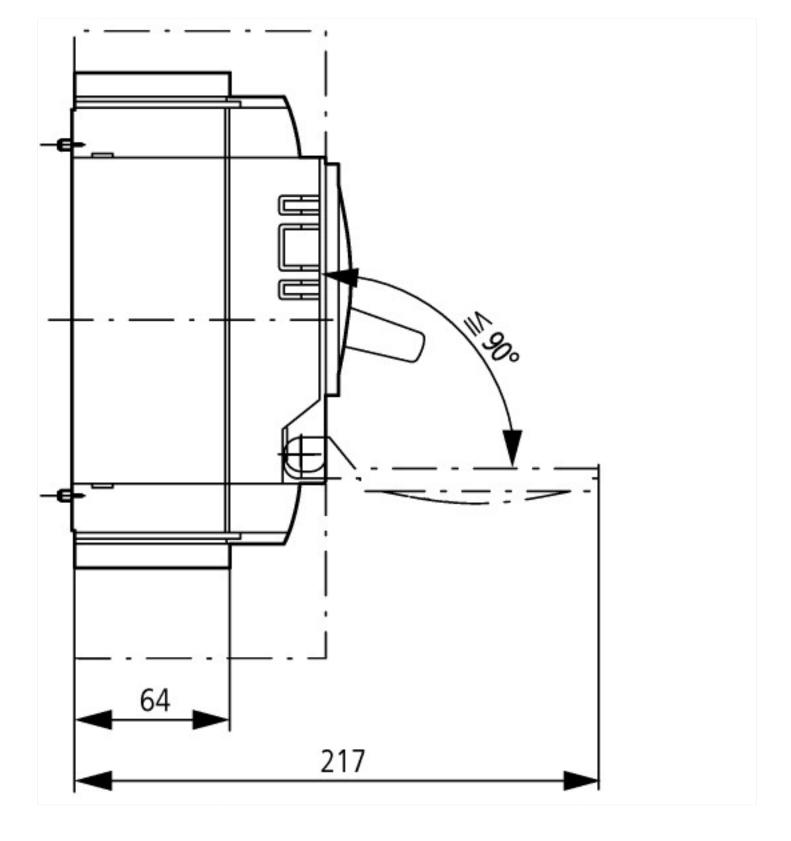
protection (eci@\$\$8.1-27-37-04-09 [AJZ/16010])		
Rated permanent current lu	А	63
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	70
Overload release current setting	А	25 - 63
Adjustment range short-term delayed short-circuit release	А	2 - 10
Adjustment range undelayed short-circuit release	А	2 - 18
Integrated earth fault protection		No
Type of electrical connection of main circuit		Other
Device construction		Built-in device plug-in technique
Suitable for DIN rail (top hat rail) mounting		No
DIN rail (top hat rail) mounting optional		No
Number of auxiliary contacts as normally closed contact		0
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as change-over contact		0
Switched-off indicator available		No
With under voltage release		No
Number of poles		3
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

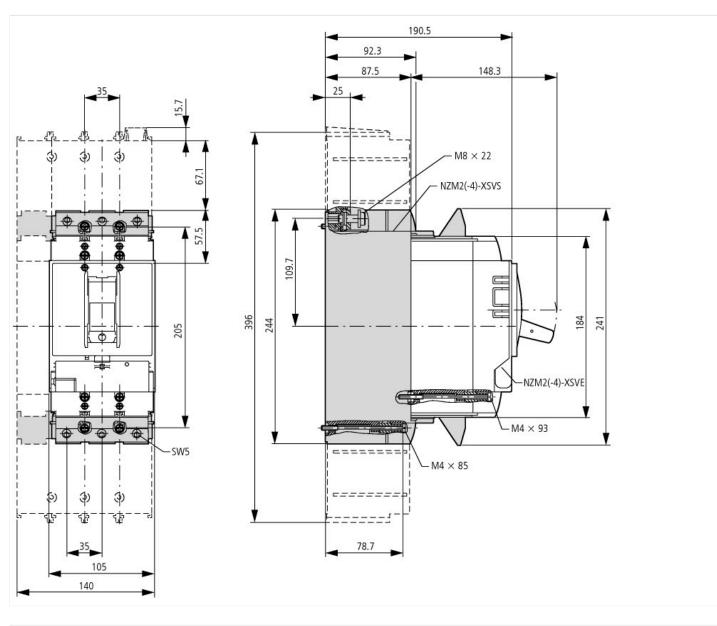




## Dimensions







### Additional product information (links)

IL012099ZU NZM2-PXR circuit-breaker, basic device, NZM2-PXR Circuit-Breaker, basic unit

 IL012099ZU NZM2-PXR circuit-breaker, basic
 https://es-assets.eaton.com/DOCUMENTATION/AWA\_INSTRUCTIONS/IL012099ZU2019\_03.pdf

 Temperature dependency, Derating
 http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.172

 additional technical information for NZM
 https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm\_technic\_de\_en.pdf