DATASHEET - NZMB1-A100



Circuit-breaker, 3p, 100A

Part no. NZMB1-A100 Catalog No. 259079

EL-Nummer (Norway) 0004358704





Delivery program			
Product range			Circuit-breaker
Protective function			System and cable protection
Standard/Approval			IEC
Installation type			Fixed
Release system			Thermomagnetic release
Construction size			NZM1
Number of poles			3 pole
Standard equipment			Box terminal
Switching capacity			
400/415 V 50 Hz	I _{cu}	kA	25
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$\boldsymbol{I}_n = \boldsymbol{I}_u$	Α	100
Setting range			
Overload trip			
4	l _r	Α	80 - 100
Short-circuit releases			
Non-delayed	$I_i = I_n x \dots$		6 - 10
Short-circuit releases	I _{rm}	Α	600 - 1000

Technical data

General

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 A	500
between the auxiliary contacts	V A	300
Mounting position		Vertical and 90° in all directions



With XFI earth-fault release: - NZM1, N1, NZM2, N2: vertical and 90° in all directions 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)	Temperature dependency, Derating

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		٧	6000
Rated operational voltage	U _e	V AC	440
Overvoltage category/pollution degree			III/3
Rated insulation voltage	Ui	V	690
Use in unearthed supply systems		V	≦ 440

Switching capacity

G			
Rated short-circuit making capacity	I _{cm}		
240 V	I _{cm}	kA	63
400/415 V	I _{cm}	kA	53
440 V 50/60 Hz	I _{cm}	kA	53
Rated short-circuit breaking capacity $I_{\rm cn}$	I _{cn}		
Icu to IEC/EN 60947 test cycle 0-t-C0	lcu	kA	
240 V 50/60 Hz	I _{cu}	kA	30
400/415 V 50/60 Hz	I _{cu}	kA	25
440 V 50/60 Hz	I _{cu}	kA	25
lcs to IEC/EN 60947 test cycle 0-t-C0-t-C0	lcs	kA	
240 V 50/60 Hz	I _{cs}	kA	30
400/415 V 50/60 Hz	I _{cs}	kA	25
440 V 50/60 Hz	I _{cs}	kA	18.5
			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
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations		20000
Lifespan, electrical			
AC-1			
400 V 50/60 Hz	Operations		7500
415 V 50/60 Hz	Operations		7500
Max. operating frequency		Ops/h	120
Total break time at short-circuit		ms	< 10

Terminal capacity

Terminal Capacity		
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			
1-hole		mm ²	1 x (25 - 95)
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 (10 - 70) ³⁾ 2 x 25
			³⁾ Up to 95 mm² can be connected depending on the cable manufacturer.
Al circular conductor			
Tunnel terminal			
Solid		mm^2	1 x 16
Stranded			
Stranded		mm^2	1 x (25 - 95)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm ²	1 x (10 - 16) 2 x (10 - 16)
Stranded		mm ²	1 x (25 - 35) 2 x (25 - 35)
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			10.5
	min.	mm	12 x 5
Northern Landing	max.	mm	16 x 5
Control cables			1(0.75, 0.5)
		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

Design verification as per IEC/EN 61439

- 1: 11: / / / / / / / / / / / / / / / /			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	100
Equipment heat dissipation, current-dependent	P_{vid}	W	21.9
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 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.

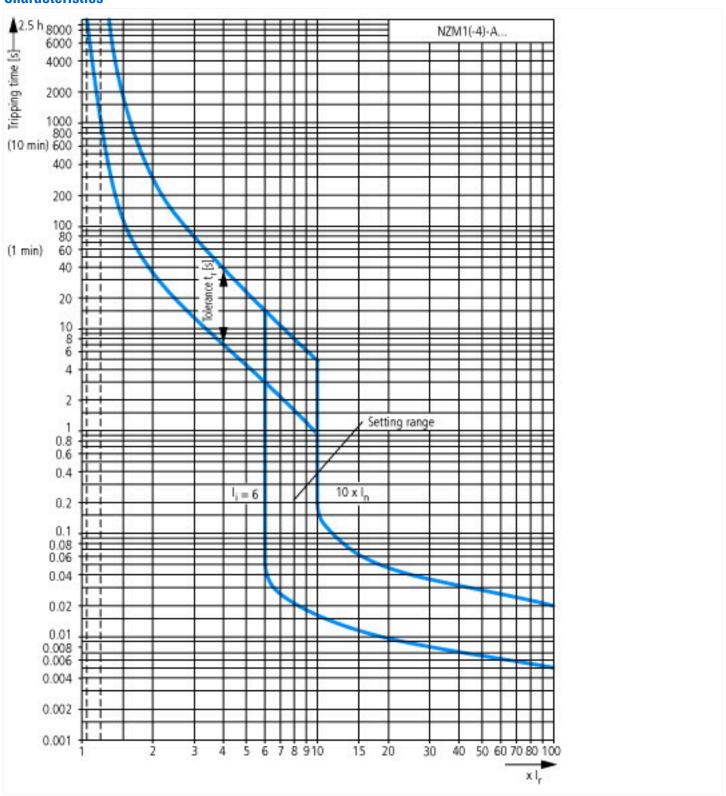
Technical data ETIM 7.0

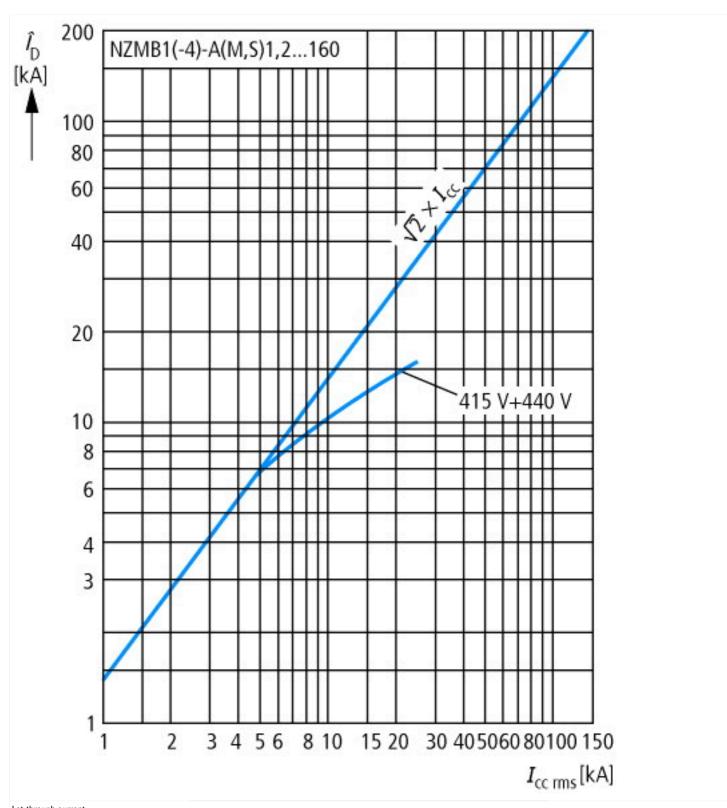
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

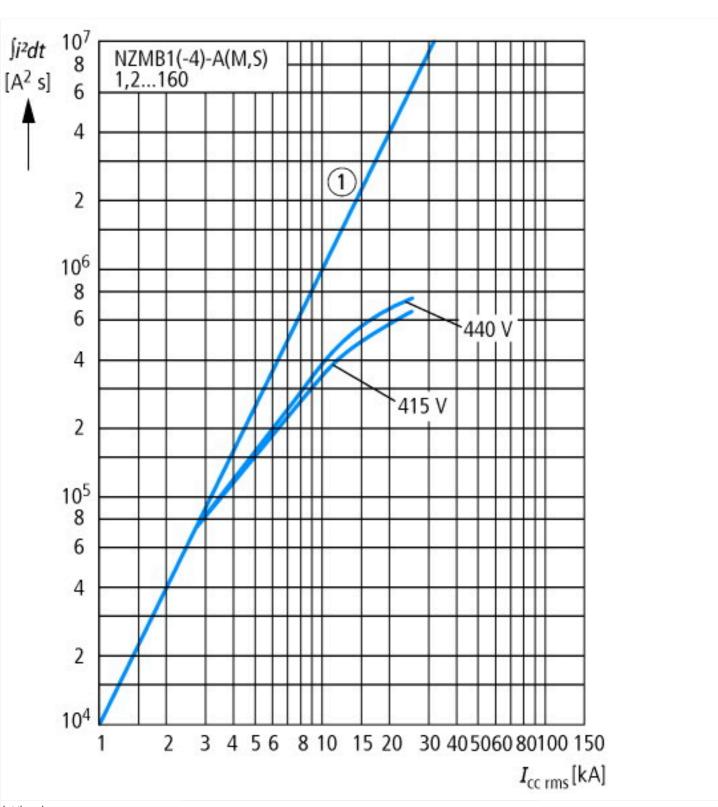
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

Rated voltage V 440 - 440 Rated short-circuit breaking capacity lou at 400 V, 50 Hz	protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])		
Rated short-circuit breaking capacity lcu at 400 V, 50 Hz Overload release current setting A 80 - 100 Adjustment range short-term delayed short-circuit release A 0 - 0 Adjustment range undelayed short-circuit release A 600 - 1000 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 optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact With switched-off indicator With switched-off indicator With under voltage release No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive optional Motor drive optional	Rated permanent current lu	Α	100
Overload release current setting Adjustment range short-term delayed short-circuit release Adjustment range undelayed short-circuit release A 600 - 1000 No No Type of electrical connection of main circuit Parame clamp Built-in device fixed built-in technique No DIN rail (top hat rail) mounting optional Ves No No No Number of auxiliary contacts as normally closed contact O Number of auxiliary contacts as change-over contact Vith switched-off indicator Vith switched-off indicator No No No Number of poles A 600 - 1000 Adjustment range undelayed short-circuit release No	Rated voltage	V	440 - 440
Adjustment range short-term delayed short-circuit release A 600 - 1000 Adjustment range undelayed short-circuit release A 600 - 1000 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 optional Number of auxiliary contacts as normally closed contact O 0 Number of auxiliary contacts as normally open contact O 0 With switched-off indicator With under voltage release Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive optional A 600 - 1000 No Bull-on Boll - 1000 No Boll	Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	25
Adjustment range undelayed short-circuit release A 600 - 1000 Integrated earth fault protection Type of electrical connection of main circuit Device construction Built-in device fixed built-in technique Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional No DIN rail (top hat rail) mounting optional Ves 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 With switched-off indicator With under voltage release No No Number of poles 3 Position of connection for main current circuit Type of control element Complete device with protection unit Yes Motor drive integrated No Motor drive integrated No Motor drive optional	Overload release current setting	Α	80 - 100
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 optional No DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Output of auxiliary contacts as normally open contact Output of auxiliary contacts as change-over contact Output of auxiliary contacts as normally open contact Output of	Adjustment range short-term delayed short-circuit release	Α	0 - 0
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 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 Number of auxiliary contacts as change-over contact No With switched-off indicator With under voltage release No No Number of poles Sa Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive optional Frame clamp Built-in device fixed built-in technique No Rocker lever No No No No No No No No No N	Adjustment range undelayed short-circuit release	Α	600 - 1000
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 Number of auxiliary contacts as change-over 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 under voltage release No No No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated No Motor drive optional	Integrated earth fault protection		No
Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Yes Number of auxiliary contacts as normally closed contact O Number of auxiliary contacts as normally open contact O Number of auxiliary contacts as change-over contact O Number of auxiliary contacts as change-over contact O With switched-off indicator No With under voltage release No No Number of poles Solution of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated No Motor drive optional No Motor drive optional	Type of electrical connection of main circuit		Frame clamp
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 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 under voltage release No Number of poles 3 Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated No Motor drive optional No No	Device construction		Built-in device fixed built-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 Number of auxiliary contacts as change-over contact No With switched-off indicator No With under voltage release No No Number of poles 3 Position of connection for main current circuit Type of control element Complete device with protection unit Wes Motor drive integrated No No Motor drive optional	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 No With switched-off indicator No With under voltage release No No Number of poles 3 Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated No No No No No No No No No N	DIN rail (top hat rail) mounting optional		Yes
Number of auxiliary contacts as change-over contact With switched-off indicator No With under voltage release No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive optional O No No No No No No No No No	Number of auxiliary contacts as normally closed contact		0
With switched-off indicator With under voltage release No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive optional No No No No No No No No No N	Number of auxiliary contacts as normally open contact		0
With under voltage release No Number of poles Solution of connection for main current circuit Type of control element Complete device with protection unit Motor drive optional No	Number of auxiliary contacts as change-over contact		0
Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive optional 3 Rocker lever Rocker lever No No	With switched-off indicator		No
Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive optional Front side Rocker lever Yes No No	With under voltage release		No
Type of control element Complete device with protection unit Motor drive optional Rocker lever Yes No No	Number of poles		3
Complete device with protection unit Yes Motor drive integrated Motor drive optional No	Position of connection for main current circuit		Front side
Motor drive integrated No	Type of control element		Rocker lever
Motor drive optional No	Complete device with protection unit		Yes
	Motor drive integrated		No
Degree of protection (IP)	Motor drive optional		No
	Degree of protection (IP)		IP20

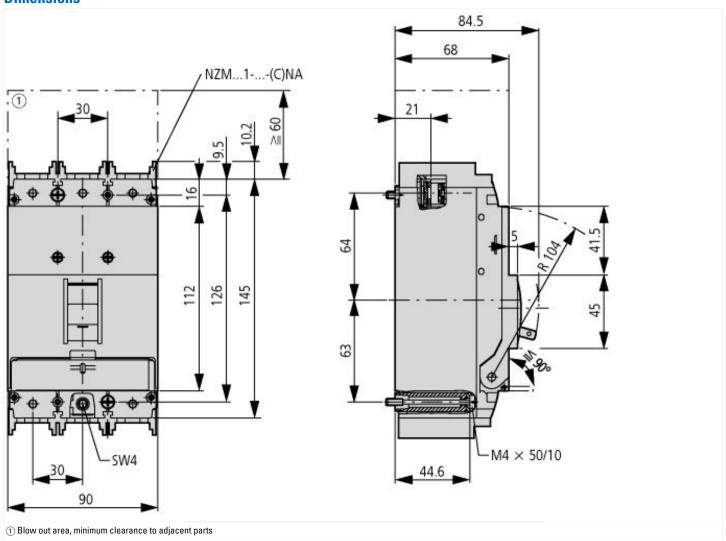
Characteristics

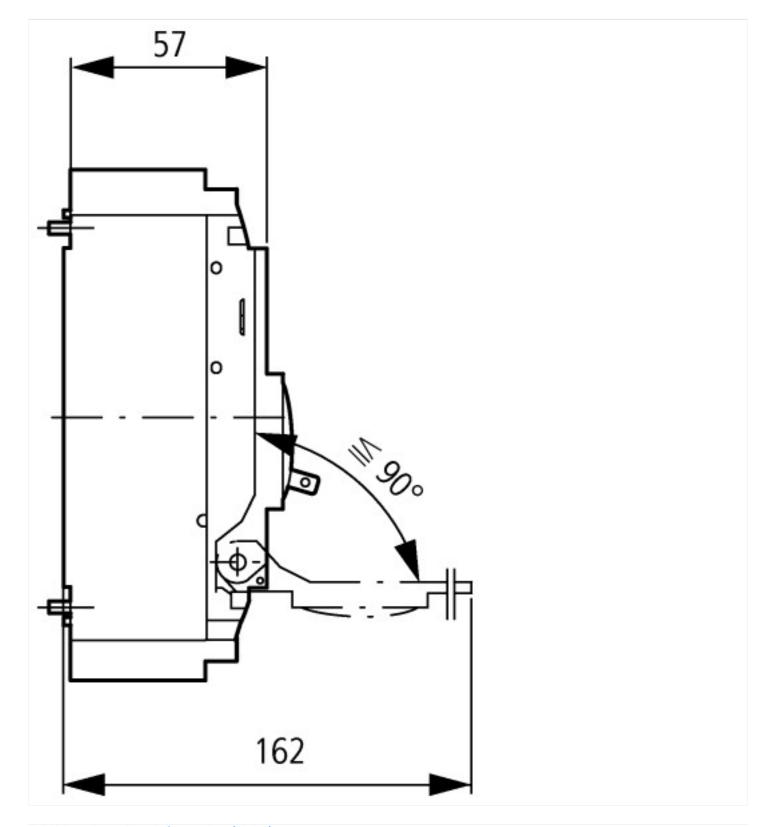






Dimensions





Additional product information (links)

IL01203004Z (AWA1230-1913) Circuit-breaker, Switch-Disconnector			
IL01203004Z (AWA1230-1913) Circuit-breaker, Switch-Disconnector	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL01203004Z2015_11.pdf		
Temperature dependency, Derating	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.172		
CurveSelect characteristics program	http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/CharacteristicsProgram/index.htm		
additional technical information for NZM power switch	ftp://ftp.moeller.net/DOCUMENTATION/PDF/nzm_technic_de_en.pdf		