



- DESIGN: MODULAR
- DEGREE OF PROTECTION: IP66
- YEARS OF WARRANTY: 5
- UV RESISTANCE: YES
- READY TO CONNECT: YES
- WEIGHT: 15.500 KG



The connection switchgear from Polish producer KENO is designed to power photovoltaic inverters in grounded and isolated photovoltaic installations. It realizes protection against the effects of short circuits and overloads, as well as protection against the effects of direct and indirect discharges on the AC side. Due to the high degree of IP protection, outdoor installation is possible. The design of the switchgear is intended for surface mounting. Depending on the equipment, switchboards can perform various functions.

BASIC PARAMETERS AC SIDE

AC Surge Protector Type	Noark T1/T2
Overcurrent circuit breaker (1)	Noark B63A 3F
Overcurrent circuit breaker (2)	Noark B50A 3F
Overcurrent circuit breaker (3)	Noark B6A 1F
Residual current circuit breaker	1 x 30mA type B
FR switch disconnecter	100A

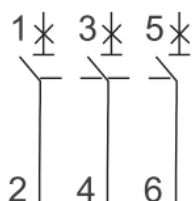
ELECTRICAL AND MECHANICAL PARAMETERS OF THE HOUSING

Model	BF-IP66 84
The number of modules	84
Dimensions of housing without chokes and MC4 (Length Width Height)	300.00 500.00 700.00
Design in accordance with	EN/IEC 62208, EN/IEC 61439-1-4, Dyrektywa RoHS 2011/65/EU Dyrektywa Niskonapięciowa 2006/95/EC (do 1500 VDC)
Level of security	IP66
Protection class	II
Rated insulation voltage U_i	1000 V AC, 1500 V DC

The incandescent rod test	960°C
Impact resistance	IK10 +35°C / IK08 -25°C
UV resistance	UL 508
Flammability class	UL 94-5VA / UL 94-V0
NEMA standard	NEMA 4, 4X, 12, 13
Temperature °C (short-term)	-40 ... 120°C
Temperature °C (continuous work)	-40 ... 80°C
Temperature °F (short-term)	-40 ... 250°F
Temperature °F (continuous work)	-40 ... 175°F

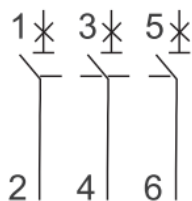
Overcurrent circuit breaker used (MCB) (1)

Manufacturer / Model	Noark / Ex9BN 3P B63
Rated current	63A; 3-F
Rated operational voltage U_e	230/415 V AC
-	72 V DC to the pole (1P, 2P)
-	48 V DC to the pole (3P, 4P)
Minimum voltage	12 V AC/DC
Rated impulse withstand voltage U_{imp} in accordance with IEC 60898-1	6 kV
Rated impulse withstand voltage U_{imp} in accordance with IEC 60947-2	6 kV
Rated short-circuit breaking capacity I_{cn} in accordance with IEC 60898-1	6 kA
Rated short-circuit breaking capacity I_{cn} in accordance with IEC 60947-2	10 kA
Rated voltage of the insulation U_i	690 V AC
Number of poles	3
Frequency	50/60 Hz
Characteristic	B
Design in accordance with	IEC/EN 60898-1, IEC/EN 60947-2
Mechanical durability	20 000 connections
Electrical durability	10 000 connections
Energy limitation class	3
Category of use	A
Feed direction	Any (top or bottom)



Overcurrent circuit breaker used (MCB) (2)

Manufacturer / Model	Noark / Ex9BN 3P B50
Rated current	50A; 3-F
Rated operational voltage U_e	230/415 V AC
-	72 V DC to the pole (1P, 2P)
-	48 V DC to the pole (3P, 4P)
Minimum voltage	12 V AC/DC
Rated impulse withstand voltage U_{imp} in accordance with IEC 60898-1	6 kV
Rated impulse withstand voltage U_{imp} in accordance with IEC 60947-2	6 kV
Rated short-circuit breaking capacity I_{cn} in accordance with IEC 60898-1	6 kA
Rated short-circuit breaking capacity I_{cn} in accordance with IEC 60947-2	10 kA
Rated voltage of the insulation U_i	690 V AC
Number of poles	3
Frequency	50/60 Hz
Characteristic	B
Design in accordance with	IEC/EN 60898-1, IEC/EN 60947-2
Mechanical durability	20 000 connections
Electrical durability	10 000 connections
Energy limitation class	3
Category of use	A
Feed direction	Any (top or bottom)



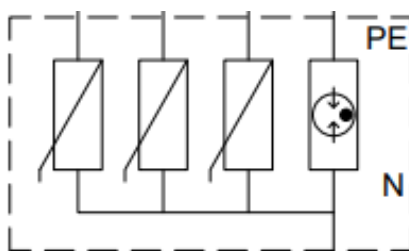
Overcurrent circuit breaker used (MCB) (3)

Manufacturer / Model	Noark / Ex9BN 1P B6
Rated current	6A; 1-F
Rated operational voltage U_e	230/415 V AC
-	72 V DC to the pole (1P, 2P)
-	48 V DC to the pole (3P, 4P)
Minimum voltage	12 V AC/DC
Rated impulse withstand voltage U_{imp} in accordance with IEC 60898-1	6 kV
Rated impulse withstand voltage U_{imp} in accordance with IEC 60947-2	6 kV
Rated short-circuit breaking capacity I_{cn} in accordance with IEC 60898-1	6 kA
Rated short-circuit breaking capacity I_{cn} in accordance with IEC 60947-2	10 kA
Rated voltage of the insulation U_i	690 V AC
Number of poles	1
Frequency	50/60 Hz
Characteristic	B
Design in accordance with	IEC/EN 60898-1, IEC/EN 60947-2
Mechanical durability	20 000 connections
Electrical durability	10 000 connections
Energy limitation class	3
Category of use	A
Feed direction	Any (top or bottom)

Overvoltage limiter used AC (SPD)

Manufacturer / Model	Noark Ex9UE1+2 12.5 3PN 275	
Connection	L-N/PE	N-PE
Made in accordance with	EN 61643-11	
Type of delimiter	Typee 1+2 (klasa I+II, B+C, T1+T2)	
Making the insert	MOV (Warystor)GDT (Iskiernik)	
Rated voltage U_n	230 V AC	
Reference test voltage U_{REF}	255 V AC	
Continuous working voltage U_c	275 V AC	255 V AC
Frequency f	25 kA to the pole	50 kA to the pole
Specific energy W/R	156.25 kJ/Ω	

Maximum impulse current I_{imp} (10/350 μ s)	12.5 kA to the pole	50 kA to the pole
Maximum discharge current I_{max} (8/20 μ s)	50 kA to the pole	
Voltage protection level U_p for electricity I_n	1.5 kV	1.5 kV
Voltage protection level U_p for electricity I_{max}	1.8 kV	1.5 kV
Voltage protection level U_p dla 5 kA (8/20 μ s)	1 kV	-
N-PE Follow current extinguishing capability I_{fi}	-	100 A
5 s	335 V	335 V
200 ms	335 V	1200 V
Residual current I_{PE} by U_{REF}	≤ 1 mA	-
Limiter voltage for current 1mA	387 - 473 V	
Response time	≤ 25 ns	≤ 100 ns
Maximum fuse protection	160 A gG	-
Ability to withstand short-circuit current	50kA	-
Short-circuit withstand I_{SCCR}	10kA	-
Current factor k	1kA	-
Type of system LV	TN-S, TT (3+1)	



Switch disconnecter used

Model	Ex9I125 0P 100A
Design in accordance with	IEC/EN 60947-3
Rated operational voltage U_e	230/400 V AC
Frequency	50/60 Hz
Rated current I_e AC-22A 230/400 V AC	100
Number of poles	0
Category of use	AC-22A
Rated voltage of the insulation U_i	500 V
Rated impulse withstand voltage U_{imp}	6 kV
Rated short-time withstand current I_{cw} , 1s	12 x I_e
Rated short-circuit making current I_{cm} (wartość szczytowa)	2500 A
Maximum fuse protection	160 A gG

Mechanical durability 20 000 connections

Electrical durability 4 000 connections

Residual current circuit breaker used (RCD)

Model Ex9LB63 30mA

Made in accordance with IEC/EN 61008-1, IEC/EN 62423

Number of fields 2 / 4

Characteristic B

Rated operational voltage U_e 400/415 V AC

Minimum voltage for the RCD function od 85 V AC

Voltage range for test button 150 — 440 V AC

Frequency f 50 Hz

Conditional rated short-circuit current I_{nc} 10 kA

Rated residual current Δn 30mA

Tenderness sensitive to residual sinusoidal current, rectified pulsed and smooth, high frequency (1 kHz)

Rated impulse withstand voltage U_{imp} 4 kV

Rated voltage of the insulation U_i 500 V

Shock resistance 3000 A

Mechanical durability 10 000 connections

Electrical durability 4 000 connections

Maximum fuse protection against overload

$I_n = 40$ A 32 A gG

$I_n = 63$ A 50 A gG

Maximum fuse protection against short-circuit effects

$I_n = 40$ A 63 A gG

$I_n = 63$ A 63 A gG

Rated making and breaking capacity I_m I_m

$I_n = 40$ A 500 A

$I_n = 63$ A 630 A

Feed direction Any (top or bottom)

