



- DESIGN: MODULAR
- DEGREE OF PROTECTION: IP65
- YEARS OF WARRANTY: 5
- UV RESISTANCE: YES
- READY TO CONNECT: YES
- WEIGHT: 3.700 KG



The connection panel from the Polish manufacturer KENO is intended for supplying power to photovoltaic inverters., protects against the effects of short circuits and overloads, It also ensures protection against the effects on the alternating and direct current sides. The distribution board should be used in grounded and isolated photovoltaic installations. 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 DC SIDE

Number of inputs PV string outputs	1 1
Quantity Type of DC surge arrester Type	1 Phoenix T2
Connection type	Array MC4 Stäubli

BASIC PARAMETERS AC SIDE

AC Surge Protector Type	Noark T2
Overcurrent circuit breaker	Noark B20A 3F
Residual current circuit breaker	1 x 100mA type A

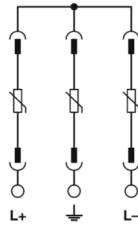
ELECTRICAL AND MECHANICAL PARAMETERS OF THE HOUSING

Model	PHS 24 T
Number of fields	24
Dimensions of housing without chokes and MC4 (Length Width Height)	120.00 128.00 201.00
Design in accordance with	EN 60670-1, EN 62208
Level of security	IP65

Protection class	II
Rated insulation voltage U_i	400 V AC, 1500 V DC
The incandescent rod test	650°C
Impact resistance	IK08
UV resistance	YES
Recyclable plastic	bezhalogenowy
Working temperature	-25°C - +60°C

DC surge arrester used (SPD)

Manufacturer / Model	Phoenix / VAL-MS 1000DC-PV/2+V
Surge protection	T2
Idle voltage U_{OCSTC}	≤ 975 V DC
Maximum discharge current I_{max} (8/20) μ s	40 kA
Response time t_A	≤ 25 ns
Total current discharged I_{total} (8/20) μ s	40 kA
Insulation resistance R_{iso}	> 5 G Ω (by 500 V DC)
Nominal discharge current I_n (8/20) μ s	15 kA
Rated load current I_L	80 A
Long-term operating current I_{CPV}	< 20 μ A
Maximum permanent voltage U_{CPV}	1170 V DC
Short circuit resistant I_{SCPV}	2000 A
Residual voltage U_{res}	$\leq 3,7$ kV (by I_n)
-	$\leq 3,1$ kV (by 5 kA)
-	$\leq 3,5$ kV (by 10 kA)
-	≤ 4 kV (by 20 kA)
-	$\leq 4,6$ kV (by 30 kA)
-	≤ 5 kV (by 40 kA)
Current of the protective conductor I_{PE}	≤ 20 μ A DC
-	≤ 250 μ A AC
Protection level U_p	$\leq 3,7$ kV
Power consumption in standby mode P_C	≤ 25 mVA
Connection configuration	Configuration Y



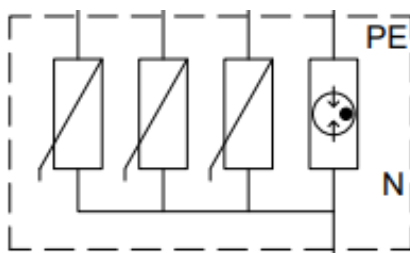
Overcurrent circuit breaker used (MCB) (1)

Manufacturer / Model	Noark / Ex9BN 3P B20
Rated current	20A; 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)

Overvoltage limiter used AC (SPD)

Manufacturer / Model	Noark Ex9UE2 20 3PN 275	
Connection	L-N/PE	N-PE
Made in accordance with	EN 61643-11	
Type of delimiter	Typee 2 (klasa II, C, T2)	

Making the insert	MOV (Warystor)	GDT (Iskiernik)
Rated voltage U_n	230 / 400 V AC	
Reference test voltage U_{REF}	255 V AC	
Continuous working voltage U_c	275 V AC	255 V AC
Frequency f	50/60 Hz	
Nominal discharge current I_n (8/20 μ s)	20 kA to the pole	40 kA to the pole
Maximum impulse current I_{imp} (10/350 μ s)	-	12 kA to the pole
Maximum discharge current I_{max} (8/20 μ s)	40 kA to the pole	
Voltage protection level U_p for electricity I_n	1.4 kV	1.5 kV
Voltage protection level U_p for electricity I_{max}	2 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
Occasional surges U_t (paused)	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	125 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)	



Residual current circuit breaker used (RCD)

Manufacturer / Model	Noark / Ex9L-N 100mA
Made in accordance with	EN 61008
Number of fields	2 / 4
Characteristic	A
Rated operational voltage U_e	240/415 V AC
Rated current	40 / 63 A
Minimum voltage for the RCD function	Independence from tension

Voltage range for text button	150 — 440 V
Frequency f	50 Hz
Rated voltage of the insulation U_i	500 V
Conditional rated short-circuit current I_{nc}	6 kA
Rated residual current $I_{\Delta n}$	100mA
Tenderness	sensitive to residual sinusoidal current, rectified pulsed and smooth, high frequency (1 kHz)
Response time	immediate
Rated impulse withstand voltage U_{imp}	6 kV
Shock resistance	3000 A
Mechanical durability	20 000 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)

