



- DESIGN: MODULAR
- DEGREE OF PROTECTION: IP65
- YEARS OF WARRANTY: 5
- UV RESISTANCE: YES
- READY TO CONNECT: YES
- WEIGHT: 4.80 KG



The connection panel from the Polish manufacturer KENO is intended for supplying power to photovoltaic inverters., Protections against short circuits and overloads., It also ensures protection against the effects and direct 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	3   3
Quantity   Type of DC surge arrester   Type	3   Phoenix   T1/T2
Connection type	Array MC4 Stäubli

#### BASIC PARAMETERS AC SIDE

AC Surge Protector   Type	Noark   T1/T2
Overcurrent circuit breaker	Noark B50A 3F

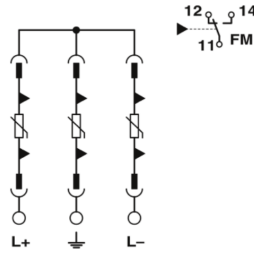
#### ELECTRICAL AND MECHANICAL PARAMETERS OF THE HOUSING

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-T1/T21000DC-PV/2+V
Surge protection	T1 / T2
Idle voltage $U_{OCSTC}$	$\leq 975$ V DC
Maximum discharge current $I_{max}$ (8/20) $\mu$ s	40 kA
Response time $t_A$	$\leq 25$ ns
Testing lightning current (10/350) $\mu$ s, ładunek	2,5 As
Testing lightning current (10/350) $\mu$ s, energia specyficzna	6,25 kJ/ $\Omega$
Test lightning current (10/350) $\mu$ s, wartość szczytowa $I_{imp}$	5 kA
Total current discharged $I_{total}$ (8/20) $\mu$ s	40 kA
Total current discharged $I_{total}$ (10/350) $\mu$ s	5 kA
Insulation resistance $R_{iso}$	$> 5$ G $\Omega$ (by 500 V DC)
Nominal discharge current $I_n$ (8/20) $\mu$ s	15 kA
Rated load current $I_L$	80 A
Long-term operating current $I_{CPV}$	$< 20$ $\mu$ A
Maximum permanent voltage $U_{CPV}$	1170 V DC
Short circuit resistant $I_{SCPV}$	2000 A
Residual voltage $U_{res}$	$\leq 3,5$ kV (by $I_n$ )
-	$\leq 2,9$ kV (by 5 kA)
-	$\leq 3,2$ kV (by 10 kA)
-	$\leq 3,7$ kV (by 20 kA)
-	$\leq 4,1$ kV (by 30 kA)
-	$\leq 4,6$ kV (by 40 kA)
Current of the protective conductor $I_{PE}$	$\leq 20$ $\mu$ A DC
-	$\leq 350$ $\mu$ A AC
Protection level $U_p$	$\leq 3,5$ kV
Power consumption in standby mode $P_C$	$\leq 25$ mVA
Connection configuration	Configuration Y



#### Overcurrent circuit breaker used (MCB) (1)

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)

#### 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/ $\Omega$

Maximum impulse current  $I_{imp}$  (10/350  $\mu$ s)

12.5 kA to the pole

50 kA to the pole

Maximum discharge current  $I_{max}$  (8/20  $\mu$ 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  $\mu$ 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  $U_{REF}$

$\leq 1$  mA

-

Limiter voltage for current 1mA

387 - 473 V

Response time

$\leq 25$  ns

$\leq 100$  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)

