



- DESIGN: MODULAR
- DEGREE OF PROTECTION: IP65
- YEARS OF WARRANTY: 5
- UV RESISTANCE: YES
- READY TO CONNECT: YES
- WEIGHT: 3.500 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   Dehn   T2     |
| Connection type                             | Array MC4 Stäubli |

#### BASIC PARAMETERS AC SIDE

|                                  |                  |
|----------------------------------|------------------|
| AC Surge Protector   Type        | Dehn   T2        |
| Overcurrent circuit breaker      | Noark B16A 3F    |
| Residual current circuit breaker | 1 x 100mA type A |

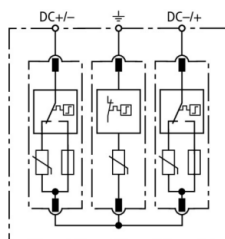
#### ELECTRICAL AND MECHANICAL PARAMETERS OF THE HOUSING

|                                                                       |                          |
|-----------------------------------------------------------------------|--------------------------|
| Model                                                                 | PHS 24 T                 |
| Number of fields                                                      | 24                       |
| Dimensions of housing without chokes and MC4<br>(Length Width Height) | 144.00   259.00   319.00 |
| 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)

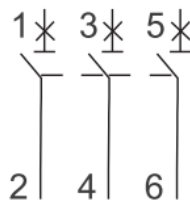
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|---------------------------------------------------------------------------|------------------------|
| Manufacturer / Model                                                      | Dehn DG M YPV SCI 1000 |
| Made in accordance with                                                   | PN-EN 50539-11         |
| Surge protection                                                          | T2                     |
| Maximum PV voltage ( $U_{CPV}$ )                                          | 1000V                  |
| Short-circuit withstand ( $I_{SCPV}$ )                                    | 10 kA                  |
| Total discharge current (8/20 $\mu$ s) ( $I_{total}$ )                    | 40 kA                  |
| Nominal discharge current (8/20 $\mu$ s) [(DC+/DC-) --> PE] ( $I_n$ )     | 12,5 kA                |
| Maximum discharge current (8/20 $\mu$ s) [(DC+/DC-) --> PE] ( $I_{max}$ ) | 25 kA                  |
| Voltage protection level ( $U_p$ )                                        | $\leq 4$ kV            |
| Voltage protection level by 5 kA ( $U_p$ )                                | $\leq 3,5$ kV          |
| Response time ( $t_A$ )                                                   | $\leq 25$ ns           |
| Working temperature range (TU)                                            | -40°C ... +80°C        |
| Operation / failure indicator                                             | green / red            |



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

|                                 |                              |
|---------------------------------|------------------------------|
| Manufacturer / Model            | Noark / Ex9BN 3P B16         |
| Rated current                   | 16A; 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)

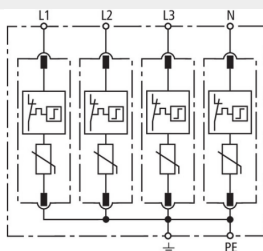
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|-------------------------------------------------------------|----------------------------|
| Manufacturer / Model                                        | Dehn DG M TN 275           |
| Surge arrester according to PN-EN 61643-11                  | Type 2 / klasa II          |
| Energy coordination with the terminal device ( $\leq 10$ m) | Type 2 + Type 3            |
| Rated voltage AC ( $U_n$ )                                  | 230 / 400 V (50 / 60 Hz)   |
| The greatest voltage of permanent work AC ( $U_c$ )         | 275 V (50 / 60 Hz)         |
| Nominal discharge current (8/20 $\mu$ s) ( $I_n$ )          | 20 kA                      |
| Maximum discharge current (8/20 $\mu$ s) ( $I_{max}$ )      | 40 kA                      |
| Voltage protection level [L-PE]/[N-PE] ( $U_p$ )            | $\leq 1,5$ / $\leq 1,5$ kV |
| Voltage protection level [L-PE] / [N-PE] by 5 kA ( $U_p$ )  | $\leq 1$ / $\leq 1$ kV     |
| Response time ( $t_A$ )                                     | $\leq 25$ ns               |
| Maximum fuse protection                                     | 125 A gG                   |
| Short-circuit withstand at maximum fuse ( $I_{SCCR}$ )      | 50 kArms                   |

Occasional surges (TOV) ( $U_t$ ) – characteristic

335 V / 5 s – durable

Occasional surges (TOV) ( $U_t$ ) – characteristic

440 V / 120 min – safe damage



#### 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 test 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

$I_n = 63 \text{ A}$

630 A

Feed direction

Any (top or bottom)

