# EM-307N AC

STANDARD SERIES

- DESIGN: MODULAR
- DEGREE OF PROTECTION: IP65
- **UV RESISTANCE: YES**
- **READY TO CONNECT: YES**
- **WEIGHT: 3.43 KG**

The connection switchgear 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.

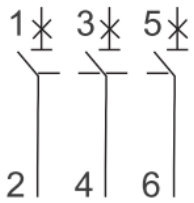
| BASIC PARAMETERS AC SIDE | |
|---|---|
| AC Surge Protector \| Type | Noark \| T1/T2 |
| Overcurrent circuit breaker | Noark B20A 3F |
| Residual current circuit breaker | 1 x 300mA type A |

| ELECTRICAL AND MECHANICAL PARAMETERS OF THE HOUSING | |
|---|---|
| Model | PHS 12 T |
| Number of fields | 12 |
| Dimensions of housing without chokes and MC4 (Length\|Width\|Height) | 144.00 \| 259.00 \| 325.00 |
| 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 | -25ºC – +60ºC |

## 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) |



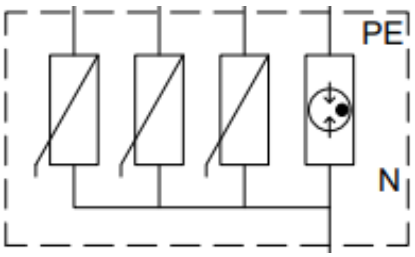

## Overvoltage limiter used AC (SPD)

| | | |
|---|---|---|
| Manufacturer / Model | Noark Ex9UE1+2 12.5 3PN 275 | |
| Connection | L-N/PE | N-PE |
| Made in accordance with | EN 61643-11 | |

# EM-307N AC

STANDARD SERIES

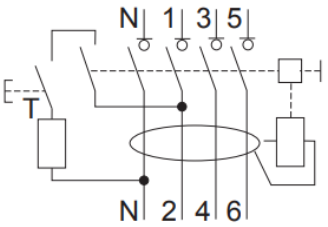
| | | |
|---|---|---|
| Type of delimiter | Typee 1+2 (klasa I+II, B+C, T1+T2) | |
| Making the insert | MOV (Warystor)GDT (Iskiernik) | |
| Rated voltage $U_n$ | 230 V AC | |
| Reference test voltage $U_{REF}$ | 255 V AC | |
| Continuous working voltage $U_c$ | 275 V AC | 255 V AC |
| Frequency f | 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 µs) | 12.5 kA to the pole | 50 kA to the pole |
| Maximum discharge current $I_{max}$ (8/20 µs) | 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 µs) | 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) | |




## Residual current circuit breaker used (RCD)

| | |
|---|---|
| Manufacturer / Model | Noark / Ex9L-N 300mA |
| Made in accordance with | EN 61008 |
| Number of fields | 2 / 4 |
| Characteristic | A |
| Rated operational voltage $U_e$ | 240/415 V AC |

# EM-307N AC

STANDARD SERIES

| | |
|---|---|
| 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 IΔn | 300mA |
| 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 Im $I_m$ | |
| $I_n$ = 40 A | 500 A |
| $I_n$ = 63 A | 630 A |
| Feed direction | Any (top or bottom) |