



HSA-440/3+1 M S

- Surge arresters type T2+T3 ensure the equipotential bonding and reduce switching, induced and residual overvoltage in LV power supply systems.
- The products consist of varistors with big discharge ability.
- Configurations 1+1 and 3+1 are additionally combined with a gas discharge tube which ensures zero leakage current through the PE conductor.
- Installed at the boundaries of LPZ 1 – LPZ 3 into subsidiary switchboards and control panels.
- If the product contains two PE (or PEN) terminals, it must not be used as a PE (PEN) bridge.
- **M** indication specifies a type of construction with removable module.
- **S** indication specifies a version with remote monitoring.

| Type | HSA-440/3+1 M S | |
|---|-----------------|---|
| Test class according to EN 61643-11:2012 (IEC 61643-11:2011) | | T2, T3 |
| System | | TN-S, TT |
| Number of poles | | 4 |
| Rated operating AC voltage | U_N | 400 V |
| Maximum continuous operating voltage AC | U_C | 440 V |
| Maximum discharge current (8/20) | I_{max} | 40 kA |
| Nominal discharge current for class II test (8/20) | I_n | 15 kA |
| Open circuit voltage of the combination wave generator | U_{OC} | 6 kV |
| Total discharge current (8/20) L1+L2+L3+N->PE | I_{Total} | 50 kA |
| Voltage protection level at I_n (L/N) | U_p | < 1.8 kV |
| Voltage protection level at I_n (N/PE) | U_p | < 1.4 kV |
| Voltage protection level at U_{OC} (L/N) | U_p | < 1.4 kV |
| Impulse discharge current for class I test (10/350) N/PE | I_{imp} | 20 kA |
| Temporary overvoltage test (TOV) for $t_T = 5$ s (L/N) | U_T | 580 V |
| Temporary overvoltage test (TOV) for $t_T = 120$ min (L/N) | U_T | 762 V |
| Temporary overvoltage test (TOV) for $t_T = 0.2$ s (N/PE) | U_T | 1 200 V |
| Response time (L/N) | t_A | < 25 ns |
| Response time (N/PE) | t_A | < 100 ns |
| Maximal back-up fuse | | 160 A gL/gG |
| Residual current | I_{PE} | $\leq 5 \mu A$ |
| Short-circuit current rating at maximum back-up fuse | I_{SCCR} | 60 kA _{rms} |
| Follow current interrupt rating (N/PE) | I_{fi} | 0.1 kA _{rms} |
| Lightning protection zone | | LPZ 1-2, LPZ 2-3 |
| Housing material | | Polyamid PA6, UL94 V-0 |
| Degree of protection | | IP20 |
| Operating temperature | ϑ | -40 ÷ 70 °C |
| Humidity range | RH | 5 ÷ 95 % |
| Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to „V“ connection) for T2 | S | 2.5 mm ² (L, N) 6 mm ² (PE, PEN) |

| Type | | HSA-440/3+1 M S |
|--|---|---|
| Clamp fastening range (solid conductor) | | 1.5 ÷ 25 mm ² |
| Clamp fastening range (stranded conductor) | | 1.5 ÷ 16 mm ² |
| Tightening moment | | 3 Nm |
| Installation | | On DIN rail 35 mm |
| Modular width | | 4 TE |
| Operating position | | Any |
| Product placement environment | | Internal |
| Signalling at the device | | Optic |
| Importance of local signaling | | OK – clear target FAULT – red target |
| Remote signalling | | Yes |
| Potential free signal contact (S) (recommended cross-section of remote monitoring max. 1 mm ²) | | AC: 250 V / 1.5 A, DC: 250 V / 0.1 A |
| Modular design | | Yes |
| Article number of spare module | | 27 194 |
| Lifetime | | > 100 000 h |
| Designed according to standards | | |
| Requirements and test methods for SPDs connected to low-voltage power systems | | IEC 61643-11:2011 |
| Safety of Flammability of Plastic Materials | | UL 94 |
| Application standards | | |
| Protection against lightning | | IEC 62305:2010 |
| Selection and erection of electrical equipment – Switchgear and controlgear | | HD 60364-5-53:2022 |
| Selection and application principles for SPDs connected to low-voltage power systems | | CLC/TS 61643-12:2009 |
| Ordering, packaging and additional data | | |
| Mass | m | 460 g |
| Mass (including the packaging) | m | 488 g |
| Packaging dimensions (H x W x D) | | 74 x 112 x 73 mm |
| Packaging value | V | 0.61 dm ³ |
| ETIM group | | EG000021 |
| ETIM class | | EC000941 |
| Customs tariff no. | | 85363010 |
| EAN code | | 8590681116739 |
| Art. number | | 27 548 |



The link in the QR code leads to the online presentation of the **HSA-440/3+1 M S**. There, in addition to the always up-to-date data sheet, you will also find all diagrams and drawings, declarations of conformity, or 2D or 3D models and other necessary materials. For more information, visit www.hakel.com



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Application wiring diagram (installation)



Internal diagram

