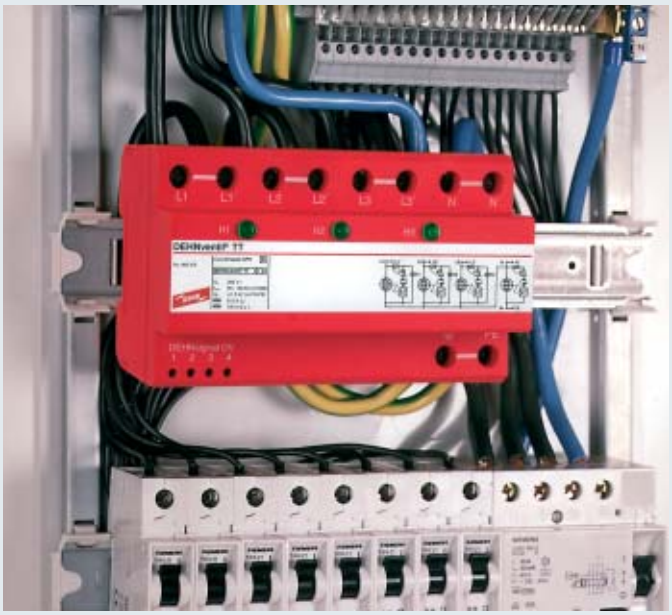
COMBINED SPDs – TYPE 1

SPD Type 1 according to EN 61643-11;
Classification B according to E DIN VDE 0675-6;
SPD Class I according to IEC 61643-1;

Multipole Combined Lightning Current and Surge Arrester



For protection of low voltage consumer's installations against surges, even at direct lightning strikes. For use according to the lightning protection zones concept at boundaries 0_A – 2.

- Prewired combined spark gap based arrester
- Max. follow current limitation thanks to RADAX Flow technology
- No tripping of 32/35 A gL/gG fuses up to short circuit currents of 50 kA_{rms}
- Lightning current discharge capacity up to 100 kA (10/350)
- Allows protection of terminal equipment
- Provides max. system availability
- Replaces up to 12 components of a conventional application

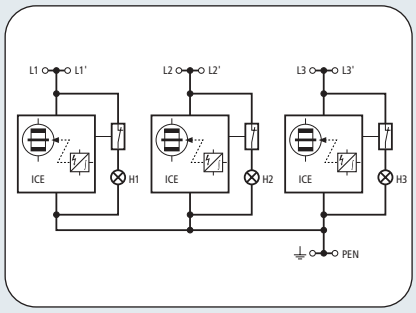
DV TNC 255: Combined lightning current and surge arrester for TN-C systems
DV TNS 255: Combined lightning current and surge arrester for TN(C)-S systems
DV TT 255: Combined lightning current and surge arrester for TT systems

The multipole combined lightning current and surge arresters of the DEHNventil TNC ... / ... TNS / ... TT product family offer an "all-in-one solution", i.e. lightning equipotential bonding and surge protection in one device.
Energy coordination with downstream Red/Line surge protective devices in low voltage consumer's installations is ensured without additional cable lengths or decoupling inductances.
In compact electrical installations and a short distance between DEHNventil and the consumers (≤ 5 m), DEHNventil devices alone can protect the terminal equipment.
Especially the small dimension of the combined arresters allows multiple possibilities for the installation of switchgears or distribution boards.

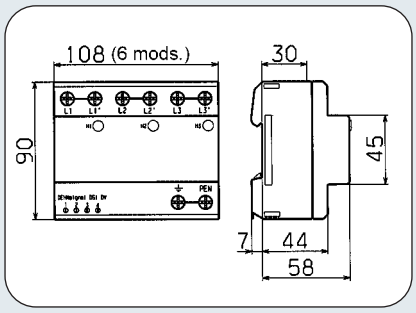
Using encapsulated non-exhausting creepage discharge spark gaps, no additional safety distances need to be observed.
For expanded electrical installations, additional surge protective devices have to be provided in downstream distribution boards and directly upstream of the terminal equipment, according to the proceeding in the lightning protection zones concept.

Accessory Part:
DEHNsignal Remote Signalling Module

Using the double terminals of DEHNventil devices, which are suitable for all types of conductors, allows a serial connection up to nominal currents of 125 A in a space- and cost-saving way, as preferred by standard IEC 60364-5-53. The multifunctional terminal is suitable for simultaneous connection of conductors and busbars. This allows an easy wiring with other DIN rail mounted devices.
For connection with further DIN rail mounted devices, busbars type MVS 3 8 6 and MVS 4 11 8 can be used.
DEHNventil devices can be chosen easily upon the system configuration of the existing low voltage consumer's installation in connection with the type description of the devices.
A high availability of the electrical consumer's installation to be protected is achieved by the patented RADAX Flow technology for follow current limitation and follow current extinction. Even at great short circuit currents up to 50 kA_{rms} , arising mains follow currents are reduced considerably to ensure the selectivity to small fuse values (e.g. 32 A gL/gG), i.e. upstream fuses do not trip upon arising mains follow currents.
For indicating the presence of the three line-to-line voltages and readiness for operation of DEHNventil on site, the devices have an integrated visual indication of the operating voltage for each outer conductor. Furthermore, the readiness for operation of the device and the existence of operating voltages can be signalised to a superior control system via the remote signalling module DEHNsignal.



Basic circuit diagram DV TNC 255



Dimension drawing DV TNC 255

DV TNC 255: Combined lightning current and surge arrester for TN-C systems

	DV TNC 255
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1	Class I
Classification according to E DIN VDE 0675-6	B
Nominal ac voltage U_N	230 / 400 V
Max. continuous ac voltage U_C	255 V
Lightning impulse current (10/350) [L1+L2+L3-PEN] I_{imp}	75 kA
Lightning impulse current (10/350) [L-PEN] I_{imp}	25 kA
Nominal discharge current (8/20) I_n	25 / 75 kA
Voltage protection level U_P	≤ 1.5 kV
Follow current extinguishing capability ac I_{fi}	50 kA_{rms}
Follow current extinction/Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)
Response time t_A	≤ 100 ns
Max. backup fuse (L) up to I_K = 50 kA_{rms}	315 A gL/gG
Max. backup fuse (L) at I_K > 50 kA_{rms}	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG
TOV voltage U_T	335 V / 5 sec.
Operating temperature range (parallel wiring) T_{UP}	-40°C...+80°C
Operating temperature range (through-wiring) T_{US}	-40°C...+60°C
Operation indicator	green light
Cross-sectional area (L1, L1', L2, L2', L3, L3', PEN, ⏚) min.	10 mm^2 solid / flexible
Cross-sectional area (L1, L2, L3, PEN) max.	50 mm^2 stranded / 35 mm^2 flexible
Cross-sectional area (L1', L2', L3', ⏚) max.	35 mm^2 stranded / 25 mm^2 flexible
Mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	red thermoplastic, UL 94 V-0
Degree of protection	IP 20
Dimension	6 mods., DIN 43880
Approvals, Certifications	KEMA, VDE

Ordering information	
Type	DV TNC 255
Part No.	900 373
Packing unit	1 pc(s)

Accessory Part for DEHNventil® TNC / ... TNS / ... TT

DEHNsignal DV

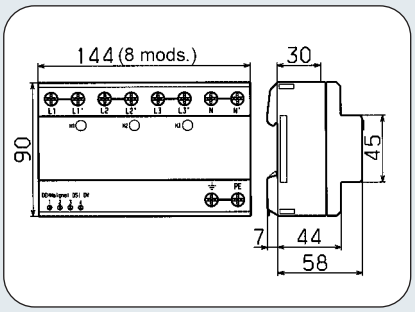
DSI DV: Remote signalling module for

– multipole SPDs with 4-wire interface "DSI DV" (e.g. DEHNventil TNC / ... TNS / ... TT)

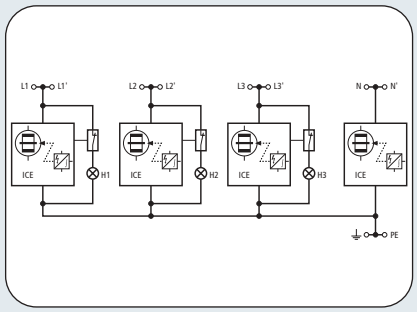
– single-pole SPDs with single-wire interface "DSI DV" in TN-S and TT systems (e.g. DEHNbloc Maxi)

Type	PU pc(s)	Part No.
DSI DV	1	910 620

DEHNventil® TNC / ... TNS / ... TT
DEHNventil TNS



Dimension drawing DV TNS 255



Basic circuit diagram DV TNS 255

DV TNS 255: Combined lightning current and surge arrester for TN(C)-S systems

	DV TNS 255
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1	Class I
Classification according to E DIN VDE 0675-6	B
Nominal ac voltage U_N	230 / 400 V
Max. continuous ac voltage U_C	255 V
Lightning impulse current (10/350) [L1+L2+L3+N-PE] I_{imp}	100 kA
Lightning impulse current (10/350) [L,N-PE] I_{imp}	25 kA
Nominal discharge current (8/20) I_n	25 / 100 kA
Voltage protection level [L-PE] U_P	≤ 1.5 kV
Voltage protection level [N-PE] U_P	≤ 1.5 kV
Follow current extinguishing capability ac I_{fi}	50 kA_{rms}
Follow current extinction/Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)
Response time t_A	≤ 100 ns
Max. backup fuse (L) up to I_K = 50 kA_{rms}	315 A gL/gG
Max. backup fuse (L) at I_K > 50 kA_{rms}	200 A gL/gG
Max. backup fuse (L-L´)	125 A gL/gG
TOV voltage [L-N] U_T	335 V / 5 sec.
Operating temperature range (parallel wiring) T_{UP}	-40°C...+80°C
Operating temperature range (through-wiring) T_{US}	-40°C...+60°C
Operation indicator	green light
Cross-sectional area (L1, L1´, L2, L2´, L3, L3´, N, N´, PE, ⏚) min.	10 mm^2 solid / flexible
Cross-sectional area (L1, L2, L3, N, PE) max.	50 mm^2 stranded / 35 mm^2 flexible
Cross-sectional area (L1´, L2´, L3´, N´, ⏚) max.	35 mm^2 stranded / 25 mm^2 flexible
Mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	red thermoplastic, UL 94 V-0
Degree of protection	IP 20
Dimension	8 mods., DIN 43880
Approvals, Certifications	KEMA, VDE

Ordering information	
Type	DV TNS 255
Part No.	900 374
Packing unit	1 pc(s)

Accessory Part for DEHNventil® TNC / ... TNS / ... TT

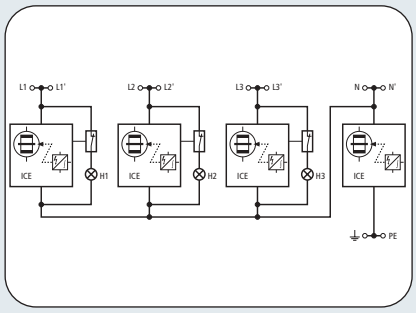
DEHNsignal DV

DSI DV: Remote signalling module for

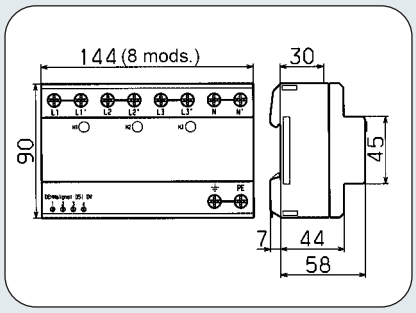
– multipole SPDs with 4-wire interface "DSI DV" (e.g. DEHNventil TNC / ... TNS / ... TT)

– single-pole SPDs with single-wire interface "DSI DV" in TN-S and TT systems (e.g. DEHNbloc Maxi)

Type	PU pc(s)	Part No.
DSI DV	1	910 620



Basic circuit diagram DV TT 255



Dimension drawing DV TT 255

DV TT 255: Combined lightning current and surge arrester for TT- and TN(C)-S systems

	DV TT 255
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1	Class I
Classification according to E DIN VDE 0675-6	B
Nominal ac voltage U_N	230 / 400 V
Max. continuous ac voltage U_C	255 V
Lightning impulse current (10/350) [L1+L2+L3+N-PE] I_{imp}	100 kA
Lightning impulse current (10/350) [L-N] I_{imp}	25 kA
Lightning impulse current (10/350) [N-PE] I_{imp}	100 kA
Nominal discharge current (8/20) I_n	25 / 100 kA
Voltage protection level [L-N] U_P	≤ 1.5 kV
Voltage protection level [N-PE] U_P	≤ 1.5 kV
Follow current extinguishing capability [L-N] ac I_{fi}	50 kA_{rms}
Follow current extinguishing capability [N-PE] ac I_{fi}	100 A_{rms}
Follow current extinction/Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)
Response time t_A	≤ 100 ns
Max. backup fuse (L) up to I_K = 50 kA_{rms}	315 A gL/gG
Max. backup fuse (L) at I_K > 50 kA_{rms}	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG
TOV voltage [L-N] U_T	335 V / 5 sec.
TOV voltage [N-PE] U_T	1200 V / 200 ms
Operating temperature range (parallel wiring) T_{UP}	-40°C...+80°C
Operating temperature range (through-wiring) T_{US}	-40°C...+60°C
Operation indicator	green light
Cross-sectional area (L1, L1', L2, L2', L3, L3', N, N', PE, ⏚) min.	10 mm^2 solid / flexible
Cross-sectional area (L1, L2, L3, N, PE) max.	50 mm^2 stranded / 35 mm^2 flexible
Cross-sectional area (L1', L2', L3', N', ⏚) max.	35 mm^2 stranded / 25 mm^2 flexible
Mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	red thermoplastic, UL 94 V-0
Degree of protection	IP 20
Dimension	8 mods., DIN 43880
Approvals, Certifications	KEMA, VDE

Ordering information	
Type	DV TT 255
Part No.	900 375
Packing unit	1 pc(s)

Accessory Part for DEHNventil® TNC / ... TNS / ... TT

DEHNsignal DV

DSI DV: Remote signalling module for

– multipole SPDs with 4-wire interface "DSI DV" (e.g. DEHNventil TNC / ... TNS / ... TT)

– single-pole SPDs with single-wire interface "DSI DV" in TN-S and TT systems (e.g. DEHNbloc Maxi)

Type	PU pc(s)	Part No.
DSI DV	1	910 620