

HSAF10 S

- Two-stage surge arresters type T3 with high-frequency filters for serial connection.
- Intended for protection of electronic appliances against the effects of switching, induced and residual overvoltage generated in LV power supply systems.
- Contain an improved thermal fuse, which ensures timely disconnection of HSAF* S from the power grid during the MOV's overheating and thus prevents damage to the HSAF* S.
- Installed at the boundaries of LPZ 2 LPZ 3, as close to the device to be protected as possible (no further than 5 m).
- In front of HSAF* S must be installed a lightning current and surge arrester T1 and T2 from HAKEL company.
- **S** indication specifies a version with remote monitoring.

Test class according to EN 61643-11:2012 (IEC 61643-11:2011) T3 System TN-C-S, TN-S Number of poles 2 Rated operating AC voltage U _N 230 V Maximum continuous operating voltage AC U _C 275 V Rated load current I _L 10 A Open circuit voltage of the combination wave generator (IV/N, L/PE) U _{OC} 6 kV Open circuit voltage of the combination wave generator (N/PE) U _{OC} 10 kV Voltage protection level at U _{OC} (L/N) U _P < 0.75 kV Voltage protection level at U _{OC} (M/PE) U _P < 1.5 kV Voltage protection level at U _{OC} (M/PE) U _P < 1.5 kV Nominal discharge current for class II lest (8/20) L/N, L/PE I _n 3 kA Nominal discharge current for class II lest (8/20) N/PE I _n 5 kA Total discharge current for class II lest (8/20) N/PE I _n 5 kA Nominal discharge current for class II lest (8/20) N/PE I _n 3 kA Nominal discharge current for class II lest (8/20) N/PE I _n 3 kA Notal discharge current for class II lest (8/20) N/PE I _n	Туре		HSAF10 S
Number of poles 2 Rated operating AC voltage UN 230 V Maximum continuous operating voltage AC Uc 275 V Rated load current IL 10 A Open circuit voltage of the combination wave generator (L/N, L/PE) Ucc 6 kV Open circuit voltage of the combination wave generator (N/PE) Ucc 10 kV Voltage protection level at Ucc (L/N) Up Coc 10 kV Voltage protection level at Ucc (L/PE) Up Coc 15 kV Voltage protection level at Ucc (L/PE) Up Coc 1.5 kV Nominal discharge current for class II test (8/20) L/N, L/PE In 3 kA Nominal discharge current for class II test (8/20) L/N, L/PE In 5 kA Total discharge current for class II test (8/20) N/PE In 5 kA Asymmetrical attenuation of filter at $f = 0.15 \div 30$ MHz Saymmetrical attenuation of filter at $f = 0.15 \div 30$ MHz Temporary overvoltage test (TOV) for $f_T = 5$ s (L/N) Up Temporary overvoltage test (TOV) for $f_T = 120$ min (L/N) Up Temporary overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temporary Overvoltage test (TOV) for $f_T = 0.2$ s (N/PE) Up Temp	Test class according to EN 61643-11:2012 (IEC 61643-11:2011)		Т3
Rated operating AC voltage $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	System		TN-C-S, TN-S
Maximum continuous operating voltage AC U_{c} 275 V Rated load current I_{L} 10 A Open circuit voltage of the combination wave generator (L/N, L/PE) U_{oc} 6 kV Open circuit voltage of the combination wave generator (N/PE) U_{oc} 10 kV Voltage protection level at U_{oc} (L/N) U_{p} < 0.75 kV Voltage protection level at U_{oc} (L/PE) U_{p} < 1 kV Voltage protection level at U_{oc} (N/PE) U_{p} < 1.5 kV Nominal discharge current for class II test (8/20) L/N, L/PE U_{p} U_{p} < 1.5 kA Nominal discharge current for class II test (8/20) M/PE U_{p} U_{p} < 1.5 kA Total discharge current (8/20) L-N->PE U_{p} U_{p} 6 kA Asymmetrical attenuation of filter at I_{p} = 4 MHz I_{p} 80 dB Asymmetrical attenuation of filter at I_{p} = 0.15 ÷ 30 MHz I_{p} 337 V Temporary overvoltage test (TOV) for I_{p} = 5 s (L/N) I_{p} 1200 V Response time (L/PE, N/PE) I_{p} 1200 N Asymmetrical back-up fuse I_{p} 122 3 Housing material I_{p} 122 3 Rousing material I_{p} 122 3 Polyamid PA6, UL94 V-0	Number of poles		2
Rated load current Rated load current Rated load current Qpen circuit voltage of the combination wave generator (L/N, L/PE) Qpen circuit voltage of the combination wave generator (N/PE) Qpen circuit voltage of the combination wave generator (N/PE) Qpen circuit voltage of the combination wave generator (N/PE) Qpen circuit voltage protection level at U $_{QC}$ (L/N) Qpen circuit voltage protection level at U $_{QC}$ (L/PE) Qpen circuit voltage protection level at U $_{QC}$ (L/PE) Qpen circuit voltage protection level at U $_{QC}$ (L/PE) Qpen circuit voltage protection level at U $_{QC}$ (L/PE) Qpen circuit voltage protection level at U $_{QC}$ (L/PE) Qpen circuit voltage protection level at U $_{QC}$ (L/PE) Qpen circuit voltage protection level at U $_{QC}$ (L/PE) Qpen circuit voltage rurent for class II test (8/20) L/N, L/PE Qpen circuit voltage level (R/PE) Qpen circuit voltage level (R/PE) Qpen circuit voltage voltage level (R/PE) Qpen circuit (L/PE) Qpen circuit voltage level (R/PE) Qpe	Rated operating AC voltage	U_N	230 V
Open circuit voltage of the combination wave generator (L/N, L/PE) U_{oc} 6 kV Open circuit voltage of the combination wave generator (N/PE) U_{oc} 10 kV Voltage protection level at U_{oc} (L/N) U_{p} $< 0.75 \text{ kV}$ Voltage protection level at U_{oc} (L/PE) U_{p} $< 1 \text{ kV}$ Voltage protection level at U_{oc} (L/PE) U_{p} $< 1.5 \text{ kV}$ Nominal discharge current for class II test (8/20) L/N, L/PE I_{n} 3 kA Nominal discharge current for class II test (8/20) N/PE I_{n} 5 kA Total discharge current (8/20) L+N->PE I_{total} 6 kA Asymmetrical attenuation of filter at $f = 4 \text{ MHz}$ 38 dB Asymmetrical attenuation of filter at $f = 0.15 \div 30 \text{ MHz}$ 337 V Temporary overvoltage test (TOV) for $t_{T} = 5 \text{ k}$ (L/N) U_{T} 337 V Temporary overvoltage test (TOV) for $t_{T} = 120 \text{ min}$ (L/N) U_{T} 440 V Temporary overvoltage test (TOV) for $t_{T} = 0.2 \text{ s}$ (N/PE) I_{T}	Maximum continuous operating voltage AC	U _c	275 V
Open circuit voltage of the combination wave generator (N/PE) $ U_{oc} $	Rated load current	IL	10 A
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Open circuit voltage of the combination wave generator (L/N, L/PE)	U _{oc}	6 kV
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Open circuit voltage of the combination wave generator (N/PE)	U _{oc}	10 kV
Voltage protection level at U_{OC} (N/PE) U_p < 1.5 kV Nominal discharge current for class II test (8/20) L/N, L/PE I_n 3 kA Nominal discharge current for class II test (8/20) N/PE I_n 5 kA Total discharge current (8/20) L+N->PE I_{Total} 6 kA Asymmetrical attenuation of filter at $f = 4$ MHz > 80 dB Asymmetrical attenuation of filter at $f = 0.15 \div 30$ MHz > 35 dB Temporary overvoltage test (TOV) for $t_T = 5$ s (L/N) U_T 337 V Temporary overvoltage test (TOV) for $t_T = 120$ min (L/N) U_T 440 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 (L/PE, N/PE) t_A < 100 ns Power dissipation t_A < 100 ns Power dissipation t_A < 10 A gL/gG Residual current t_A Short-circuit current rating at maximum back-up fuse t_A Short-circuit current rating at maximum back-up fuse t_A Polyamid PA6, UL94 V-0	Voltage protection level at U _{OC} (L/N)	U_p	< 0.75 kV
Nominal discharge current for class II test (8/20) L/N, L/PE In 3 kA Nominal discharge current for class II test (8/20) N/PE In 5 kA Total discharge current (8/20) L+N->PE II I_{Total} 6 kA Asymmetrical attenuation of filter at $f = 4$ MHz > 80 dB Asymmetrical attenuation of filter at $f = 0.15 \div 30$ MHz > 35 dB Temporary overvoltage test (TOV) for $I_T = 5$ s (L/N) UT 337 V Temporary overvoltage test (TOV) for $I_T = 120$ min (L/N) UT 440 V Temporary overvoltage test (TOV) for $I_T = 0.2$ s (N/PE) UT 1200 V Response time (L/N) $I_T = 0.2$ s (N/PE) s (N/P	Voltage protection level at U _{OC} (L/PE)	U_p	< 1 kV
Nominal discharge current for class II test (8/20) N/PE	Voltage protection level at U _{oc} (N/PE)	U_p	< 1.5 kV
Total discharge current (8/20) L+N->PE	Nominal discharge current for class II test (8/20) L/N, L/PE	I _n	3 kA
Asymmetrical attenuation of filter at f = 4 MHz $> 80 \text{ dB}$ Asymmetrical attenuation of filter at f = 0.15 \div 30 MHz $> 35 \text{ dB}$ Temporary overvoltage test (TOV) for $t_T = 5 \text{ s}$ (L/N) $U_T = 337 \text{ V}$ Temporary overvoltage test (TOV) for $t_T = 120 \text{ min}$ (L/N) $U_T = 440 \text{ V}$ Temporary overvoltage test (TOV) for $t_T = 0.2 \text{ s}$ (N/PE) $U_T = 120 \text{ V}$ Response time (L/N) $t_A = 25 \text{ ns}$ Response time (L/PE, N/PE) $t_A = 100 \text{ ns}$ Power dissipation $t_A = 100 \text{ ns}$ Power dissipation $t_A = 100 \text{ ns}$ Residual current $t_A = 100 \text{ ns}$ Residual current $t_A = 100 \text{ ns}$ Short-circuit current rating at maximum back-up fuse $t_A = 100 \text{ ms}$ Short-circuit current rating at maximum back-up fuse $t_A = 100 \text{ ms}$ Folyamid PA6, UL94 V-0	Nominal discharge current for class II test (8/20) N/PE	I _n	5 kA
Asymmetrical attenuation of filter at $f = 0.15 \div 30 \text{ MHz}$ $> 35 \text{ dB}$ Temporary overvoltage test (TOV) for $t_T = 5 \text{ s}$ (L/N) U_T 337 V Temporary overvoltage test (TOV) for $t_T = 120 \text{ min}$ (L/N) U_T 440 V Temporary overvoltage test (TOV) for $t_T = 0.2 \text{ s}$ (N/PE) U_T $1 200 \text{ V}$ Response time (L/N) t_A $< 25 \text{ ns}$ Response time (L/PE, N/PE) t_A $< 100 \text{ ns}$ Power dissipation t_A $< 100 \text{ ns}$ Power dissipation t_A	Total discharge current (8/20) L+N->PE	I _{Total}	6 kA
Temporary overvoltage test (TOV) for $t_T = 5$ s (L/N) $U_T = 5$ s (N/PE) s (N/PE) $U_T = 5$ s (N/PE)	Asymmetrical attenuation of filter at f = 4 MHz		> 80 dB
Temporary overvoltage test (TOV) for t_T = 120 min (L/N)	Asymmetrical attenuation of filter at $f = 0.15 \div 30 \text{ MHz}$		> 35 dB
Temporary overvoltage test (TOV) for $t_T = 0.2 \text{ s}$ (N/PE) $ U_T \qquad 1200 \text{ V} $ Response time (L/N) $ t_A \qquad < 25 \text{ ns} $ Response time (L/PE, N/PE) $ t_A \qquad < 100 \text{ ns} $ Power dissipation $ Pz \qquad < 2.2 \text{ W} $ Maximal back-up fuse $ 10 \text{ A gL/gG} $ Residual current $ I_{PE} \qquad \leq 1800 \text{ µA} $ Short-circuit current rating at maximum back-up fuse $ I_{SCCR} \qquad 6 \text{ kA}_{rms} $ Lightning protection zone $ I_{PE} \qquad \qquad 100 \text{ polyamid PA6, UL94 V-0} $	Temporary overvoltage test (TOV) for $t_T = 5 \text{ s (L/N)}$	U _T	337 V
Response time (L/N) $ \begin{array}{cccc} t_A & < 25 \text{ ns} \\ \\ Response time (L/PE, N/PE) & t_A & < 100 \text{ ns} \\ \\ Power dissipation & Pz & < 2.2 \text{ W} \\ \\ Maximal back-up fuse & 10 \text{ A gL/gG} \\ \\ Residual current & I_{PE} & \leq 1 800 \mu\text{A} \\ \\ Short-circuit current rating at maximum back-up fuse & I_{SCCR} & 6 k\text{A}_{rms} \\ \\ Lightning protection zone & LPZ 2-3 \\ \\ Housing material & Polyamid PA6, UL94 V-0 \\ \\ \end{array} $	Temporary overvoltage test (TOV) for $t_T = 120 \text{ min (L/N)}$	U _T	440 V
Response time (L/PE, N/PE) $ \begin{array}{ccccccccccccccccccccccccccccccccccc$	Temporary overvoltage test (TOV) for $t_T = 0.2 \text{ s}$ (N/PE)	U _T	1 200 V
Power dissipation Pz < 2.2 W Maximal back-up fuse 10 A gL/gG Residual current IpE \leq 1 800 μ A Short-circuit current rating at maximum back-up fuse IpE \leq 1 800 μ A Lightning protection zone IpE \leq 1 800 μ A Housing material Polyamid PA6, UL94 V-0	Response time (L/N)	t _A	< 25 ns
Maximal back-up fuse10 A gL/gGResidual currentIPE≤ 1 800 μAShort-circuit current rating at maximum back-up fuseISCCR6 kArmsLightning protection zoneLPZ 2-3Housing materialPolyamid PA6, UL94 V-0	Response time (L/PE, N/PE)	t _A	< 100 ns
Residual current I $_{PE}$ \leq 1 800 μ A Short-circuit current rating at maximum back-up fuse I $_{SCCR}$ 6 kA $_{rms}$ Lightning protection zone LPZ 2-3 Housing material Polyamid PA6, UL94 V-0	Power dissipation	Pz	< 2.2 W
Short-circuit current rating at maximum back-up fuse I _{SCCR} 6 kA _{rms} Lightning protection zone LPZ 2-3 Housing material Polyamid PA6, UL94 V-0	Maximal back-up fuse		10 A gL/gG
Lightning protection zone LPZ 2-3 Housing material Polyamid PA6, UL94 V-0	Residual current	I _{PE}	≤ 1 800 μA
Housing material Polyamid PA6, UL94 V-0	Short-circuit current rating at maximum back-up fuse	I _{sccr}	6 kA _{rms}
·	Lightning protection zone		LPZ 2-3
Degree of protection IP20	Housing material		Polyamid PA6, UL94 V-0
	Degree of protection		IP20

Surge arresters T3 with EMI/RFI filter for AC systems



Operating temperature 9 40 + 55 °C Humidity range RH 5 + 95 % Recommended cross-section of connected conductors S 1.5 mm² Clamp fastening range (solid conductor) 0.2 + 6 mm² Clamp fastening range (stranded conductor) 0.2 + 4 mm² Clamp fastening range (stranded conductor) 0.5 Nm Installation On DIN rail 35 mm Modular width 3 TE Operating position Any Product placement environment Internal Signalling at the device Optic Importance of local signalling TRAULT - red light off Remote signalling Yes Potential free signal contact (S) (recommended cross-section of remote monitoring max. 1 mm²) AC: 250 V / 1.5 A, DC: 250 V / 0.1 A Includes EM/ FEMC filter Yes Veloating three signal contact (S) (recommended cross-section of remote monitoring max. 1 mm²) AC: 250 V / 1.5 A, DC: 250 V / 0.1 A Includes EM/ FEMC filter Yes Designed according to standards IEC 61643-11:2011 Requirements and test methods for SPDs connected to low-voltage power systems IEC 61643-11:2011	Туре		HSAF10 S
Humidity range RH 5 ÷ 95 % Recommended cross-section of connected conductors S 1.5 mm² Clamp fastening range (solid conductor) 0.2 ÷ 6 mm² Clamp fastening range (stranded conductor) 0.2 ÷ 4 mm² Tightening moment 0.5 Nm Installation 0.0 DIN rail 35 mm Modular width 3 TE Operating position Any Product placement environment Internal Signalling at the device Optic Importance of local signalling FAULT - red light on FAULT - r	Operating temperature	9	-40 ÷ 55 °C
Clamp fastening range (solid conductor) 0.2 ÷ 6 mm² Clamp fastening range (stranded conductor) 0.2 ÷ 4 mm² Tightening moment 0,5 Nm Installation On DIM rail 35 mm Modular width 3 TE Operating position Any Product placement environment Internal Signalling at the device Optic Importance of local signaling K. Feet light off FAULT - red light on Remote signalling Yes Potential free signal contact (S) (recommended cross-section of remote monitoring max. 1 mm²) AC: 250 V / 1.5 A, DC: 250 V / 0.1 A Includes EMI / EMC filter Yes Modular design No Lifetime Yes Requirements and test methods for SPDs connected to low-voltage power systems IEC 61643-11:2011 Methods of measurement of the suppression characteristics of passive EMC filtering devices EN 55017:2011 / CISPR 17:2011 Safety of Flammability of Plastic Materials UL 94 Application standards Protection against lightning EIC 62035:2010 Selection and application principles for SPDs connected to low-voltage power systems CLCTS 61643-12:2009		RH	5 ÷ 95 %
Clamp fastening range (stranded conductor) 0.2 ÷ 4 mm² Tightening moment 0,5 Nm Installation On DIN rail 35 mm Modular width 3 TE Operating position Any Product placement environment Internal Signalling at the device Optic Importance of local signaling OK - red light off FAULT - red light on PAULT - red light o	Recommended cross-section of connected conductors	S	1.5 mm ²
Tightening moment 0,5 Nm Installation On DIN rail 35 mm Modular width 3 TE Operating position Any Product placement environment Internal Signalling at the device Optic Importance of local signaling K-red light off FAULT – red light on FAULT – red light on Paul Training FAULT – red light	Clamp fastening range (solid conductor)		0.2 ÷ 6 mm ²
Installation On DIN rail 35 mm Modular width 3 TE Operating position Any Product placement environment Internal Signalling at the device Optic Importance of local signaling OK - red light off FACT - red light on Packaging Ing Remote signalling Yes Potential free signal contact (S) (recommended cross-section of remote monitoring max. 1 mm²) AC: 250 V / 1.5 A, DC: 250 V / 0.1 A Includes EMI / EMC filter Yes Modular design No Includes EMI / EMC filter Yes Modular design Includes EMI / EMC filter Requirements and test methods for SPDs connected to low-voltage power systems IEC 61643-11:2011 Methods of measurement of the suppression characteristics of passive EMC filtering devices EN 55017:2011 / CISPR 17:2011 Safety of Flammability of Plastic Materials UL 94 Application standards IEC 62305:2010 Selection and arection 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	Clamp fastening range (stranded conductor)		0.2 ÷ 4 mm ²
Modular width 3 TE Operating position Any Product placement environment Internal Signalling at the device Optic Importance of local signaling K- red light off Remote signalling Yes Potential free signal contact (S) (recommended cross-section of remote monitoring max. 1 mm²) AC: 250 V/ 1.5 A, DC: 250 V / 0.1 A Includes EMI / EMC filter Yes Modular design No Lifetime > 100 0000 h Designed according to standards Requirements and test methods for SPDs connected to low-voltage power systems IEC 61643-11:2011 Methods of measurement of the suppression characteristics of passive EMC filtering devices EN 55017:2011 / CISPR 17:2011 Safety of Flammability of Plastic Materials UL 94 Application standards IEC 62305:2010 Protection against lightning IEC 62305:2010 Selection and erection of electrical equipment – Switchgear and controlgear H0 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 m 185 g	Tightening moment		0,5 Nm
Operating position Any Product placement environment Internal Signalling at the device Optic Importance of local signaling K- red light off FAULT - red light on FAULT	Installation		On DIN rail 35 mm
Product placement environment Signalling at the device Optic Importance of local signaling OK - red light off FAULT - red light on Yes AC: 250 V / 1.5 A, DC: 250 V / 0.1 A max. 1 mm²) Includes EMI / EMC filter Yes Modular design No Lifetime Solonous Bandards Requirements and test methods for SPDs connected to low-voltage power systems Methods of measurement of the suppression characteristics of passive EMC filtering devices Safety of Flammability of Plastic Materials UL 94 Application standards Protection against lightning Selection and erection of electrical equipment - Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems CLC/TS 61643-11:2001 Selection and application principles for SPDs connected to low-voltage power systems CLC/TS 61643-12:2009 Ordering, packaging and additional dat Mass (including the packaging) m 165 g Mass (including the packaging) m 189 g Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³ ETIM group EXPANCED Customs tariff no. 85968010 EAN code	Modular width		3 TE
Signalling at the device Optic Importance of local signaling OK - red light off FAULT - red light on FA	Operating position		Any
Importance of local signaling	Product placement environment		Internal
Remote signalling Yes Potential free signal contact (S) (recommended cross-section of remote monitoring max. 1 mm²) Includes EMI / EMC filter Modular design Lifetime Sessional to standards Requirements and test methods for SPDs connected to low-voltage power systems Requirements and test methods for SPDs connected to low-voltage power systems Requirements and test methods for SPDs connected to low-voltage power systems Requirements and test methods for SPDs connected to low-voltage power systems Requirements and test methods for SPDs connected to low-voltage power systems Requirement of the suppression characteristics of passive EMC filtering devices Safety of Flammability of Plastic Materials UL 94 Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems CLC/TS 61643-11:2009 Ordering, packaging and additional data Mass (including the packaging) m 165 g Mass (including the packaging) m 189 g Packaging dimensions (H x W x D) Ackaging value V 0.5 dm³ ETIM group ETIM group ETIM group ETIM class Customs tariff no. EAN code 8590681116890	Signalling at the device		Optic
Potential free signal contact (S) (recommended cross-section of remote monitoring max. 1 mm²) Includes EMI / EMC filter Modular design Lifetime Possigned according to standards Requirements and test methods for SPDs connected to low-voltage power systems Methods of measurement of the suppression characteristics of passive EMC filtering devices Safety of Flammability of Plastic Materials Lifetina against lightning Frotection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems Mass Mass Mass (Including the packaging) Mass (including the packaging) Mass (including the packaging) Mass (including the packaging) Mass (including the packaging) Packaging value V 0.5 dm³ EG000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code	Importance of local signaling		
max. 1 mm²) Yes Includes EMI / EMC filter Yes Modular design No Lifetime > 100 000 h Designed according to standards Requirements and test methods for SPDs connected to low-voltage power systems IEC 61643-11:2011 Methods of measurement of the suppression characteristics of passive EMC filtering devices EN 55017:2011 / CISPR 17:2011 Safety of Flammability of Plastic Materials UL 94 Application standards IEC 62305:2010 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 m 165 g Mass (including the packaging) m 189 g Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³ ETIM group EG0000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890	Remote signalling		Yes
Modular design No Lifetime > 100 000 h Designed according to standards Requirements and test methods for SPDs connected to low-voltage power systems IEC 61643-11:2011 Methods of measurement of the suppression characteristics of passive EMC filtering devices EN 55017:2011 / CISPR 17:2011 Safety of Flammability of Plastic Materials UL 94 Application standards IEC 62305:2010 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 m 165 g Mass (including the packaging) m 189 g Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³ ETIM group EG000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890			AC: 250 V / 1.5 A, DC: 250 V / 0.1 A
Lifetime > 100 000 h Designed according to standards Requirements and test methods for SPDs connected to low-voltage power systems IEC 61643-11:2011 Methods of measurement of the suppression characteristics of passive EMC filtering devices 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 165 g Mass (including the packaging) m 189 g Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³ ETIM group EG000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890	Includes EMI / EMC filter		Yes
Designed according to standards Requirements and test methods for SPDs connected to low-voltage power systems IEC 61643-11:2011 Methods of measurement of the suppression characteristics of passive EMC filtering devices EN 55017:2011 / CISPR 17:2011 Safety of Flammability of Plastic Materials UL 94 Application standards IEC 62305:2010 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 (including the packaging) m 165 g Mass (including the packaging) m 189 g Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³ ETIM group EG000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890	Modular design		No
Requirements and test methods for SPDs connected to low-voltage power systems Methods of measurement of the suppression characteristics of passive EMC filtering devices Safety of Flammability of Plastic Materials UL 94 Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems Ordering, packaging and additional data Mass m 165 g Mass (including the packaging) Packaging dimensions (H x W x D) Packaging value V 0.5 dm³ ETIM group EG000021 ETIM class EC000942 Customs tariff no. EAN code	Lifetime		> 100 000 h
Methods of measurement of the suppression characteristics of passive EMC filtering devices Safety of Flammability of Plastic Materials UL 94 Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems Ordering, packaging and additional data Mass m 165 g Mass (including the packaging) Packaging dimensions (H x W x D) Packaging value TIM group EG000021 ETIM class EC000942 Customs tariff no. EN 55017:2011 / CISPR 17:2011 B N 55017:2011 / CISPR 17:2011 CUL 94 BEN 55017:2011 / CISPR 17:2011 BEN 55	Designed according to standards		
devices Safety of Flammability of Plastic Materials Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems CLC/TS 61643-12:2009 Ordering, packaging and additional data Mass m 165 g Mass (including the packaging) m 189 g Packaging dimensions (H x W x D) Packaging value V 0.5 dm³ ETIM group EG000021 ETIM class EC000942 Customs tariff no. 8590681116890	Requirements and test methods for SPDs connected to low-voltage power systems		IEC 61643-11:2011
Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems Ordering, packaging and additional data Mass m 165 g Mass (including the packaging) m 189 g Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³ ETIM group EG000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890			EN 55017:2011 / CISPR 17:2011
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Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems CLC/TS 61643-12:2009 Ordering, packaging and additional data Mass m 165 g Mass (including the packaging) Packaging dimensions (H x W x D) Packaging value V 0.5 dm³ ETIM group ETIM class EC000942 Customs tariff no. EAN code HD 60364-5-53:2022 CLC/TS 61643-12:2009	carety of Filantinability of Filantinability		
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Ordering, packaging and additional data Mass m 165 g Mass (including the packaging) m 189 g Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³ ETIM group EG000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890	Application standards		IEC 62305:2010
Mass (including the packaging) m 165 g Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³ ETIM group EG000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890	Application standards Protection against lightning		
Mass (including the packaging) m 165 g Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³ ETIM group EG000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890	Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear		HD 60364-5-53:2022
Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³ ETIM group EG000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890	Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems		HD 60364-5-53:2022
Packaging value V 0.5 dm³ ETIM group EG000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890	Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems Ordering, packaging and additional data	m	HD 60364-5-53:2022 CLC/TS 61643-12:2009
ETIM group EG000021 ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890	Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems Ordering, packaging and additional data Mass		HD 60364-5-53:2022 CLC/TS 61643-12:2009 165 g
ETIM class EC000942 Customs tariff no. 85363010 EAN code 8590681116890	Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems Ordering, packaging and additional data Mass Mass (including the packaging)		HD 60364-5-53:2022 CLC/TS 61643-12:2009 165 g 189 g
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EAN code 8590681116890	Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems Ordering, packaging and additional data Mass Mass (including the packaging) Packaging dimensions (H x W x D) Packaging value	m	HD 60364-5-53:2022 CLC/TS 61643-12:2009 165 g 189 g 60 x 113 x 73 mm 0.5 dm ³
	Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems Ordering, packaging and additional data Mass Mass (including the packaging) Packaging dimensions (H x W x D) Packaging value ETIM group	m	HD 60364-5-53:2022 CLC/TS 61643-12:2009 165 g 189 g 60 x 113 x 73 mm 0.5 dm³ EG000021
Art. number 30 170	Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems Ordering, packaging and additional data Mass Mass (including the packaging) Packaging dimensions (H x W x D) Packaging value ETIM group ETIM class	m	HD 60364-5-53:2022 CLC/TS 61643-12:2009 165 g 189 g 60 x 113 x 73 mm 0.5 dm³ EG000021 EC000942
	Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems Ordering, packaging and additional data Mass Mass (including the packaging) Packaging dimensions (H x W x D) Packaging value ETIM group ETIM class Customs tariff no.	m	HD 60364-5-53:2022 CLC/TS 61643-12:2009 165 g 189 g 60 x 113 x 73 mm 0.5 dm³ EG000021 EC000942 85363010

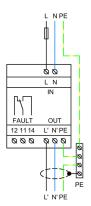


The link in the QR code leads to the online presentation of the **HSAF10 S**. There, in addition to the always up-to-date data sheet, you will also find all diagrams and drawings, declarations of conformity, or 2D or 3D models and other necessary materials. For more information, visit **www.hakel.com**





Application wiring diagram (installation)



Internal diagram

