

## **B25M Vseries**

- Lightning impulse current and surge arresters type T1+T2.
- The products consist of gas discharge tube with high discharge ability.
- Installed at the boundaries of LPZ 0 LPZ 2, in TN-S, TT power supply systems and in a special design also in IT power supply system.
- Balance the potential between the N and PE conductors in 1+1, 3+1 connection modes.
- Ensures zero leakage current through the PE conductor.
- **M** indication specifies a type of construction with removable module.

SystemTN-S, TTMaximum continuous operating voltage AC $U_c$ 255 VImpulse discharge current for class I test (10/350) N/PE $I_{mp}$ 25 kACharge (N/PE)Q12.5 AsSpecific energy for class I test (N/PE) $VIR$ 156 kJ/QNominal discharge current for class II test (8/20) N/PE $I_n$ 30 kAVoltage protection level at $I_{mp}$ $U_p$ <1.3 kVTemporary overvoltage test (TOV) for $t_T = 0.2$ s (N/PE) $U_T$ 1 200 VResponse time (N/PE) $t_a$ <100 nsFollow current interrupt rating $I_n$ 0.1 kA_msLightning protection zoneILPZ 0-1, LPZ 1-2, LPZ 2-3Housing materialPolyamid PA6, UL94 V-0Degree of protectionIP20Operating temperature $9$ $-40 + 70 °C$ Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022S $6 mm^2 (L, N)$ (doesn't apply to , V' connection) for T1I6 md264-5-53:2022S $2.5 mm^2$ Clamp fastening range (solid conductor) $2.5 + 25 mm^2$ $2.5 + 25 mm^2$ Clamp fastening range (solid conductor) $2.5 + 25 mm^2$ $3 mm$ InstallationOn DIN rail 35 mmModular widthITEOperating positionAnySignalling at the device $OK -$ green targetFAULT - red targetRemote signalling $K -$ green targetRemote signalling $K -$ green target $K -$ green target	Туре		B25M Vseries
Aximum continuous operating voltage AC $U_c$ $25 \text{ V}$ Impulse discharge current for class I test (10/350) N/PE $I_{imp}$ $25 \text{ kA}$ Charge (N/PE)Q $12.5 \text{ As}$ Specific energy for class I test (N/PE)W/R $156 \text{ kJ/Q}$ Nominal discharge current for class II test (8/20) N/PE $I_n$ $30 \text{ kA}$ Voltage protection level at $I_{imp}$ $U_p$ < $1.3 \text{ kV}$ Temporary overvoltage test (TOV) for $t_T = 0.2 \text{ s}$ (N/PE) $U_T$ $1200 \text{ V}$ Response time (N/PE) $t_k$ < 100 ns	Test class according to EN 61643-11:2012 (IEC 61643-11:2011)		T1, T2
Impulse discharge current for class I test (10/350) N/PEImp25 kACharge (N/PE)Q12.5 AsSpecific energy for class I test (N/PE)W/R156 k//QNominal discharge current for class II test (8/20) N/PEUp<1.3 kV	System		TN-S, TT
Charge (N/PE)Q12.5 AsSpecific energy for class I test (N/PE)W/R156 kJ/QNominal discharge current for class II test (8/20) N/PEIn30 kAVoltage protection level at ImpUp<1.3 kV	Maximum continuous operating voltage AC	Uc	255 V
NumberWR100 NotesSpecific energy for class I test (N/PE)WR156 kJ/ΩNominal discharge current for class II test (B/20) N/PEIn30 kAVoltage protection level at $I_{imp}$ Up<1.3 kV	Impulse discharge current for class I test (10/350) N/PE	I <sub>imp</sub>	25 kA
Nominal discharge current for class II test (8/20) N/PEIn30 kAVoltage protection level at ImpUp<1.3 kV	Charge (N/PE)	Q	12.5 As
Voltage protection level at $I_{imp}$ Up a< 1.3 kVTemporary overvoltage test (TOV) for $t_T = 0.2 s$ (N/PE)UT T1 200 VResponse time (N/PE)t_A< 100 ns	Specific energy for class I test (N/PE)	W/R	156 kJ/Ω
Temporary overvoltage test (TOV) for $t_T = 0.2 s$ (N/PE) $U_T$ 1 200 VResponse time (N/PE) $t_A$ < 100 ns	Nominal discharge current for class II test (8/20) N/PE	l <sub>n</sub>	30 kA
Response time (N/PE)t_A< 100 nsFollow current interrupt ratingIn0.1 kA,msLightning protection zoneLIPZ 0-1, LPZ 1-2, LPZ 2-3Housing materialPolyamid PA6, UL94 V-0Degree of protection9-40 ÷ 70 °CMinimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022S6 mm² (L, N)(doesn't apply to ,V' connection) for T116 mm² (PE, PEN)16 mm² (PE, PEN)Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022S2.5 mm² (L, N)(doesn't apply to ,V' connection) for T26 mm² (PE, PEN)6 mm² (PE, PEN)Clamp fastening range (solid conductor)2.5 ÷ 35 mm²2.5 mm²Clamp fastening range (stranded conductor)2.5 ÷ 25 mm²2.5 m²Tightening momentModular widthOn DIN rail 35 mmModular widthITEAnyOperating positionAnyOpticImportance of local signalingOK - green target FAULT - red targetRemote signallingMo> 100 000 h	Voltage protection level at I <sub>imp</sub>	Up	< 1.3 kV
Follow current interrupt ratingImm0.1 kArmsLightning protection zoneILPZ 0-1, LPZ 1-2, LPZ 2-3Housing materialPolyamid PA6, UL94 V-0Degree of protectionIP20Operating temperature9-40 ÷ 70 °CMinimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022S(doesn't apply to "V" connection) for T1Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022S(doesn't apply to "V" connection) for T2S(doesn't apply to "V" connection) for T2SClamp fastening range (solid conductor)2.5 ÷ 35 mm²Clamp fastening range (solid conductor)2.5 ÷ 25 mm²Tightening moment4 NmInstallationOn DIN rail 35 mmModular width1 TEOperating positionAnySignalling at the deviceOK - green target FAULT - red targetRemote signallingNoLifetime> 100 000 h	Temporary overvoltage test (TOV) for $t_T = 0.2 \text{ s} (N/PE)$	U <sub>T</sub>	1 200 V
Lightning protection zoneLPZ 0-1, LPZ 1-2, LPZ 2-3Housing materialPolyamid PA6, UL94 V-0Degree of protection9-40 ÷ 70 °COperating temperature9-40 ÷ 70 °CMinimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to ,V" connection) for T1S6 mm² (L, N) 16 mm² (PE, PEN)Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to ,V" connection) for T2S2.5 mm² (L, N) 6 mm² (PE, PEN)Clamp fastening range (solid conductor) Clamp fastening range (stranded conductor)2.5 ÷ 25 mm²2.5 ÷ 25 mm²Tightening moment InstallationOn DIN rail 35 mmModular width1 TEOperating positionManyAnyAnySignalling at the device Importance of local signalingOK – green target FAULT – red targetOK – green target FAULT – red targetRemote signalling> 100 000 h	Response time (N/PE)	t <sub>A</sub>	< 100 ns
Housing materialPolyamid PA6, UL94 V-0Degree of protection9-40 ÷ 70 °COperating temperature9-40 ÷ 70 °CMinimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to ,,V" connection) for T1S6 mm² (L, N) 16 mm² (PE, PEN)Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to ,,V" connection) for T2S2.5 mm² (L, N) 6 mm² (PE, PEN)Clamp fastening range (solid conductor)22.5 ÷ 35 mm²2.5 mm²Clamp fastening range (stranded conductor)2.5 ÷ 25 mm²2.5 mm²Tightening momentM4 NmInstallationOn DIN rail 35 mmModular widthIn TEOperating positionAnySignalling at the deviceOpticImportance of local signalingOK - green target FAULT - red targetRemote signallingMoLifetime> 100 000 h	Follow current interrupt rating	l <sub>fi</sub>	0.1 kA <sub>rms</sub>
Degree of protectionIP20Operating temperature\$-40 ÷ 70 °CMinimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022S6 mm² (L, N) 16 mm² (PE, PEN)(doesn't apply to ",V" connection) for T116 mon² (DE, PEN)52.5 mm² (L, N) 6 mm² (PE, PEN)(doesn't apply to ",V" connection) for T2S2.5 ÷ 35 mm²2.5 mm²(clamp fastening range (solid conductor)2.5 ÷ 35 mm²2.5 ÷ 35 mm²Clamp fastening range (stranded conductor)2.5 ÷ 25 mm²3Tightening momentM4 NmInstallationOn DIN rail 35 mmModular width1 TEOperating positionAnySignalling at the deviceOpticImportance of local signalingOK – green target FAULT – red targetRemote signallingNoLifetime> 100 000 h	Lightning protection zone		LPZ 0-1, LPZ 1-2, LPZ 2-3
Operating temperature9-40 ÷ 70 °CMinimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022S6 mm² (L, N)(doesn't apply to "V" connection) for T116 mm² (PE, PEN)16 mm² (PE, PEN)Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022S2.5 mm² (L, N)(doesn't apply to "V" connection) for T22.5 ÷ 35 mm²2.5 mm² (L, N)Clamp fastening range (solid conductor)2.5 ÷ 35 mm²2.5 mm²Clamp fastening range (stranded conductor)2.5 ÷ 25 mm²3Tightening moment4 Nm4 NmInstallationOn DIN rail 35 mmModular width1 TEOperating positionAnySignalling at the deviceOpticImportance of local signalingOK - green target FAULT - red targetRemote signallingNoLifetime> 100 000 h	Housing material		Polyamid PA6, UL94 V-0
Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to ,,V" connection) for T1S6 mm² (L, N) 16 mm² (PE, PEN)Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to ,,V" connection) for T2S2.5 mm² (L, N) 6 mm² (PE, PEN)Clamp fastening range (solid conductor)2.5 ÷ 35 mm²2.5 ÷ 35 mm²Clamp fastening range (stranded conductor)2.5 ÷ 25 mm²Tightening moment4 NmInstallationOn DIN rail 35 mmModular width1 TEOperating positionAnySignalling at the deviceOpticImportance of local signalingOK - green target FAULT - red targetRemote signalling> 100 000 h	Degree of protection		IP20
(doesn't apply to ,,V" connection) for T116 mm² (PE, PEN)Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to ,,V" connection) for T2S2.5 mm² (L, N) 6 mm² (PE, PEN)Clamp fastening range (solid conductor)2.5 ÷ 35 mm²2.5 ÷ 35 mm²Clamp fastening range (stranded conductor)2.5 ÷ 25 mm²3Tightening moment0n DIN rail 35 mm4 NmInstallation0n DIN rail 35 mm1Modular width11 TEOperating positionAnySignalling at the deviceOpticImportance of local signalingOK - green target FAULT - red targetLifetimeiNo	Operating temperature	θ	-40 ÷ 70 °C
(doesn't apply to "V" connection) for T26 mm² (PE, PEN)Clamp fastening range (solid conductor)2.5 ÷ 35 mm²Clamp fastening range (stranded conductor)2.5 ÷ 25 mm²Tightening moment4 NmInstallationOn DIN rail 35 mmModular width1 TEOperating positionAnySignalling at the deviceOpticImportance of local signalingOK – green target FAULT – red targetRemote signallingNoLifetime> 100 000 h	Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to "V" connection) for T1 $$	S	
Clamp fastening range (stranded conductor) 2.5 ÷ 25 mm²   Tightening moment 4 Nm   Installation On DIN rail 35 mm   Modular width 1 TE   Operating position Any   Signalling at the device Optic   Importance of local signaling OK – green target FAULT – red target   Remote signalling No   Lifetime > 100 000 h	Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to "V" connection) for T2	S	
Tightening moment   4 Nm     Installation   On DIN rail 35 mm     Modular width   1 TE     Operating position   Any     Signalling at the device   Optic     Importance of local signaling   OK – green target FAULT – red target     Remote signalling   No     Lifetime   > 100 000 h	Clamp fastening range (solid conductor)		$2.5 \div 35 \text{ mm}^2$
Installation On DIN rail 35 mm Modular width Operating position Any Signalling at the device Optic Optic Importance of local signaling OK - green target FAULT - red target FAULT - red target Signalling At the device OF Optic Opt	Clamp fastening range (stranded conductor)		$2.5 \div 25 \text{ mm}^2$
Modular width   1 TE     Operating position   Any     Signalling at the device   Optic     Importance of local signaling   OK - green target FAULT - red target     Remote signalling   No     Lifetime   > 100 000 h	Tightening moment		4 Nm
Operating position Any   Signalling at the device Optic   Importance of local signaling OK - green target FAULT - red target   Remote signalling No   Lifetime > 100 000 h	Installation		On DIN rail 35 mm
Signalling at the device Optic   Importance of local signaling OK - green target FAULT - red target   Remote signalling No   Lifetime > 100 000 h	Modular width		1 TE
Importance of local signaling OK - green target FAULT - red target   Remote signalling No   Lifetime > 100 000 h	Operating position		Any
FAULT - red target   Remote signalling   Lifetime   > 100 000 h	Signalling at the device		Optic
Lifetime > 100 000 h	Importance of local signaling		
	Remote signalling		No
Modular design Yes	Lifetime		> 100 000 h
	Modular design		Yes

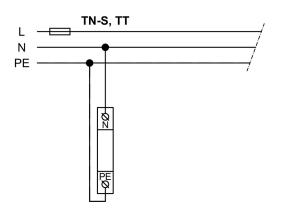


Туре		B25M Vseries
Article number of spare module		16 041
Designed according to standards		
Requirements and test methods for SPDs connected to low-voltage power systems		IEC 61643-11:2011
Safety of Flammability of Plastic Materials		UL 94
Application standards		
Protection against lightning		IEC 62305:2010
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	73 g
Mass (including the packaging)	m	85 g
Packaging dimensions (H x W x D)		25 x 112 x 87 mm
Packaging value	V	0.24 dm <sup>3</sup>
Customs tariff no.		85363010
EAN code		8590681119396
Art. number		16 040
The link in the QR code leads to the online presentation of the B25M Vseries. There, in addition to the always up-to-date data sheet, you will also find all diagrar and drawings, declarations of conformity, or 2D or 3D models and other necessary		



The link in the QR code leads to the online presentation of the B25M Vseries. 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

