





## HDT1/6B

- Designed for the protection of data and communication lines against longitudinal and transverse surge effects.
- Pluggable version.
- No interruption of communication bus when the module is removed.
- One pair or two pairs lines.

- Contains both 1st and 2nd stage of protection.
- The HDT\*/\*C range, in addition, contains a gas discharge tube between the PE and SH (shield) terminals for their galvanic isolation.
- Suitable for use in industrial applications, especially in low-voltage ESS, FDAS systems and also in measurement and control systems.

Testing category according to IEC 61643-21:2000 and EN 61643-21:2001   C1, C2, C3, D1     Number of pairs   1     Connector type   Screw terminals     Rated operating DC voltage   U <sub>c</sub> 7.2 V     Maximum continuous operating voltage DC   U <sub>c</sub> 7.2 V     Rated load current   It,   0.5 A     C1 Voltage protection level at I, (line/PE)   U <sub>p</sub> <180 V     C1 Nornial discharge current (8/20)   It,   1 KA     C2 Voltage protection level at I, (line/PE)   U <sub>p</sub> <30 V     C2 Voltage protection level at I, (line/PE)   U <sub>p</sub> <350 V     C2 Voltage protection level at I, (line/PE)   U <sub>p</sub> <15 V     C3 Voltage protection level at I, KI/µs (line/PE)   U <sub>p</sub> <15 V     C3 Voltage protection level at I kV/µs (line/PE)   U <sub>p</sub> <10 V     C3 Voltage protection level at I kV/µs (line/PE)   U <sub>p</sub> <10 V     C3 Voltage protection level at I kV/µs (line/PE)   U <sub>p</sub> <10 V     C3 Voltage protection level at I kV/µs (line/PE)   U <sub>p</sub> <10 V     C3 Voltage protection level at I kV/µs (line/PE)   U <sub>p</sub> <10 V     C3 Voltage protection level at I kV/µs (line/PE)   U <sub>p</sub> <10 V <th>Туре</th> <th></th> <th>HDT1/6B</th>	Туре		HDT1/6B
Connector typeScrew terminalsRated operating DC voltageUURated operating DC voltageU $C$ Maximum continuous operating voltage DCU $C$ Rated load currentU $0$ C1 Voltage protection level at I, (line/PE)U $0$ C1 Voltage protection level at I, (line/Ine)U $0$ C1 Voltage protection level at I, (line/Ine)U $0$ C2 Voltage protection level at I, (line/Ine)U $0$ C2 Voltage protection level at I, (line/Ine)U $0$ C2 Voltage protection level at I, (line/Ine)U $0$ C3 Voltage protection level at I, (Vine/Ine)U $0$ C3 Voltage protection level at I, Klys (line/IE)U $0$ C3 Voltage protection level at I, Klys (line/IE)U $0$ C3 Voltage protection level at I, Klys (line/IE)U $0$ C3 Voltage protection level at I, Klys (line/IE)U $0$ C3 Voltage protection level at I, Klys (line/IE)U $0$ C3 Voltage protection level at I, Klys (line/IE)U $0$ C3 Voltage protection level at I, Klys (line/IE)U $0$ C3 Voltage protection level at I, Klys (line/IE)U $0$ D1 Tral impulse discharge current (10/350)In $1$ Saries impedance per lineC $1$ $1$ Par	Testing category according to IEC 61643-21:2000 and EN 61643-21:2001		C1, C2, C3, D1
Rated operating DC voltageUN $0 + 6$ VMaximum continuous operating voltage DCUc $7.2$ VRated load currentIL $0.5$ AC1 Voltage protection level at In (line/PE)Up<180 V	Number of pairs		1
Maximum continuous operating voltage DCUc7.2 VRated load currentl_L0.5 AC1 Voltage protection level at l_ (line/PE)Up<180 V	Connector type		Screw terminals
Rated load currentI. $0.5 A$ C1 Voltage protection level at I., (line/PE) $U_p$ < 180 V	Rated operating DC voltage	U <sub>N</sub>	0 ÷ 6 V
C1 Voltage protection level at In (line/PE)Up< 180 VC1 Voltage protection level at In (line/line)Up< 30 V	Maximum continuous operating voltage DC	U <sub>c</sub>	7.2 V
C1 Voltage protection level at In (line/line)Up< 30 VC1 Nominal discharge current (8/20)In1 kAC2 Voltage protection level at In (line/PE)Up< 350 V	Rated load current	IL I	0.5 A
C1 Nominal discharge current (8/20)I, N1 kAC2 Voltage protection level at I, (line/PE)Up<350 V	C1 Voltage protection level at I <sub>n</sub> (line/PE)	Up	< 180 V
C2 Voltage protection level at $l_n$ (line//E)Up< 350 VC2 Voltage protection level at $l_n$ (line//E)Up< 40 V	C1 Voltage protection level at In (line/line)	Up	< 30 V
C2 Voltage protection level at ln (line/line)Up< 40 VC2 Nominal discharge current (8/20)In15 kAC3 Voltage protection level at 1 kV/µs (line/PE)Up< 15 V	C1 Nominal discharge current (8/20)	I <sub>n</sub>	1 kA
C2 Nominal discharge current (8/20)I_n15 kAC3 Voltage protection level at 1 kV/µs (line/PE)Up<15 V	C2 Voltage protection level at In (line/PE)	Up	< 350 V
C3 Voltage protection level at 1 kV/µs (line/PE)Up<15 VC3 Voltage protection level at 1 kV/µs (line/line)Up<10 V	C2 Voltage protection level at In (line/line)	Up	< 40 V
C3 Voltage protection level at 1 kV/µs (line/line)Up< 10 VD1 Impulse discharge current (10/350) line/PEImp2.5 kAD1 Total impulse discharge current (10/350)I Total5 kAResponse timet_A< 30 ns	C2 Nominal discharge current (8/20)	I <sub>n</sub>	15 kA
D1 Impulse discharge current (10/350) line/PEImpulse discharge current (10/350)Impulse current (10/350)Impulse current (10/350)Impulse current (	C3 Voltage protection level at 1 kV/µs (line/PE)	Up	< 15 V
InterfaceImpD1 Total impulse discharge current (10/350)I Total5 kAResponse timet A<30 ns	C3 Voltage protection level at 1 kV/µs (line/line)	Up	< 10 V
Response timet_A< 30 nsData rateImage: Constraint of the second se	D1 Impulse discharge current (10/350) line/PE	l <sub>imp</sub>	2.5 kA
Data raten1 Mbit/sBandwidthB0÷1 MHzSeries impedance per lineC1.8 ΩParasitic capacitanceC<1.5 nF	D1 Total impulse discharge current (10/350)	I <sub>Total</sub>	5 kA
BandwidthB0 ÷ 1 MHzBeries impedance per lineB0 ÷ 1 MHzSeries impedance per lineC1.8 ΩParasitic capacitanceC<1.5 nF	Response time	t <sub>A</sub>	< 30 ns
Series impedance per line1.8 ΩParasitic capacitanceC<1.5 nF	Data rate		1 Mbit/s
Parasitic capacitanceC< 1.5 nFLightning protection zoneILPZ 1-2, LPZ 2-3Housing materialPolyamid PA6, UL94 V-0Degree of protectionIIP20Operating temperatureA-40 ÷ 55 °CClamp fastening range (solid conductor)I0.2 ÷ 1.5 mm²Tightening momentI0,5 NmInstallationIOn DIN rail 35 mmModular widthI1 TE	Bandwidth	В	0 ÷ 1 MHz
Lightning protection zoneLPZ 1-2, LPZ 2-3Housing materialPolyamid PA6, UL94 V-0Degree of protectionIP20Operating temperatureϑClamp fastening range (solid conductor)ITightening moment0,2 ÷ 1.5 mm²InstallationIModular widthI	Series impedance per line		1.8 Ω
Housing materialPolyamid PA6, UL94 V-0Degree of protectionIP20Operating temperatureϑ-40 ÷ 55 °CClamp fastening range (solid conductor)0.2 ÷ 1.5 mm²Tightening moment0,5 NmInstallationOn DIN rail 35 mmModular width1 TE	Parasitic capacitance	С	< 1.5 nF
Degree of protectionIP20Operating temperatureθ-40 ÷ 55 °CClamp fastening range (solid conductor)00.2 ÷ 1.5 mm²Tightening moment0,5 NmInstallation0On DIN rail 35 mmModular width1 TE	Lightning protection zone		LPZ 1-2, LPZ 2-3
Operating temperature9-40 ÷ 55 °CClamp fastening range (solid conductor)0.2 ÷ 1.5 mm²Tightening moment0,5 NmInstallationModular widthModular width1 TE	Housing material		Polyamid PA6, UL94 V-0
Clamp fastening range (solid conductor) $0.2 \div 1.5 \text{ mm}^2$ Tightening moment $0,5 \text{ Nm}$ InstallationOn DIN rail 35 mmModular width1 TE	Degree of protection		IP20
Tightening moment0,5 NmInstallationOn DIN rail 35 mmModular width1 TE	Operating temperature	e	-40 ÷ 55 °C
Installation On DIN rail 35 mm   Modular width 1 TE	Clamp fastening range (solid conductor)		$0.2 \div 1.5 \text{ mm}^2$
Modular width 1 TE	Tightening moment		0,5 Nm
	Installation		On DIN rail 35 mm
Operating position Any	Modular width		1 TE
	Operating position		Any

## Surge protection for data and information signal transmission



Туре		HDT1/6B
Remote signalling		No
Modular design		Yes
Article number of spare module		56 002/M
Lifetime		> 100 000 h
Designed according to standards		
Requirements and test methods for SPDs connected to telecommunications and signalling networks		IEC 61643-21:2000
Safety of Flammability of Plastic Materials		UL 94
Application standards		
Protection against lightning		IEC 62305:2010
Ordering, packaging and additional data		
Mass	m	69 g
Mass (including the packaging)	m	80 g
Packaging dimensions (H x W x D)		26 x 98 x 73 mm
Packaging value	V	0.19 dm <sup>3</sup>
ETIM group		EG000021
ETIM class		EC000943
Customs tariff no.		85363010
EAN code		8590681166574
Art. number		56 002



**The link in the QR code** leads to the online presentation of the **HDT1/6B**. 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** 



## Internal diagram

