

SURGE PROTECTION

Spark gaps: TC100A and TC500A

Document No.: 14-104-R1

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German Cathodic Protection

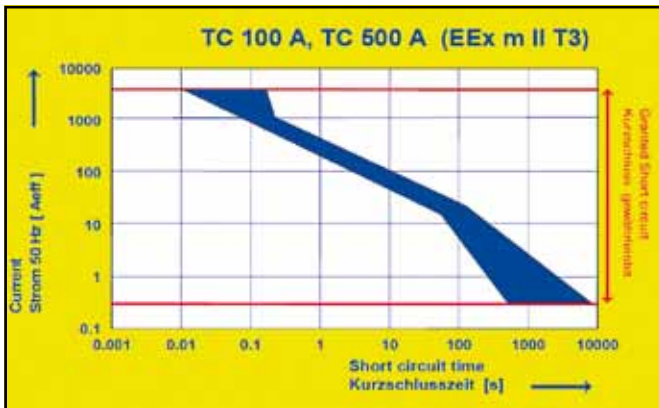


ATEX approved protection class Ex II 2G EEx m II T3 Lightning protection equipotential bonding in Ex-zone



- high quality industrial ceramics
- filled with inert gas, hermetically sealed
- no radioactivity!
- Extremely low spark-over voltage
- high impulse current resistance 100 kA
- robust highly reliable and robust
- stable functioning, long service life
- Fail-safe characteristics

Fail-safe characteristics



Description

ATEX approved Ex-protected Isolating Spark Gaps type TC100A, TC500A are hermetically sealed, heavy duty metal/ceramic spark gaps filled with inert gas, Ex-proof encapsulated with stainless steel/Araldite. Fail-safe execution.

Application

For use in Ex-zones, where a special high protection against dangerous lightning and surge voltage influences is required. Especially used for equipotential bonding in cathodic corrosion systems on gas and oil pipelines, in the petrochemical industry etc. To protect against dangerous spark-over on isolation flanges and isolation parts in pipeline systems; for equipotential bonding of separate grounded systems in case of lightning strikes. TC 500 A used where high voltages are induced.

Accessories

Cable connection kit:

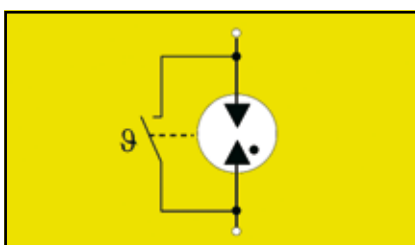
K1/300 (300 mm), Total length with K1 = 445 mm

K1/600 (600 mm), Total length with K2 = 745 mm

Other cable length on request



Symbol



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German Cathodic Protection**Technical data**

Protection class / approvals	Zündschutzart Ex II 2G EEx m II T3 EN 50014, EN 50028, ASEV 93.1 2325 U European patent EP 0 603 428 B1	ZELM 02 ATEX 0095X (28.06.2002) 1. Ergänzung (30.03.2004) PTB Teilbescheinigung Ex-96.D.2004 U (29.01.1996) ASEV Zulassung/approval No. 94.10 11 36 U SEV 00.0084, Prüfbericht SEV 94.1 01136.01 SK certificate P/01463/101/1/97		
Terms in accordance with: CENELEC / BTTF 62-2 / DIN 48810 / DIN 0845		TC 100 A	TC 500 A	
Nominal DC spark-over voltage at 100V/s	V_{sdc}	[V DC]	100V + 20%	500V + 15%
Nominal DC spark-over voltage at 50Hz	V_{sac}	[V AC]	70V + 20%	350V + 15%
Impulse spark-over voltage, typical value	V_{si}	1kV/ μ s [V DC]	650	950
Impulse spark-over voltage, max. value	V_{si}	1kV/ μ s [V DC]	950	1300
3 x impulse discharge surge current (10/350 μ s) + long term current (acc. to CENELEC / BTTF 62-2)	I_{imp+} (i_{sb})	[kA]/[As]/[MJ/ Ω] + [A]/[s]/[As]	75 kA / 38 As / 1,45 MJ/ Ω plus 150 A / 0,5 s / 75 As	
20 x impulse discharge surge current (10/45 μ s) + mains half wave (acc. to DIN 48810)	I_{imp+} (i_{sb})	[kA]/[As]/[MJ/ Ω]	60 kA / 10 As / 0.1 MJ/ Ω	
10 x nominal impulse discharge surge current (8/20 μ s)	I_n (i_{diN})	[kA]	100	
5 x nominal alternating discharge current, 1s / 3min break	(i_{daN})	[A _{rms}]/[s]	100 / 1	
1 x nominal alternating discharge current (max.)	(i_{daN})	[A _{rms}]/[s]	200 / 0.5	
1 x alternating discharge current max. load 50 Hz	(i_{damax})	[A _{rms}]/[s]	4000 / 0.25	
Spark gap extinguishing conditions	(V_{ex} / i_{ext})	[A _{rms}]/[s]	<70 V / <20 A	<230 V / <100 A
Insulation resistance at 10 V or 100 V	R_{is}	[G Ω]	<1	
Capacitance at 1 kHz	C	[pF]	20	20
Climatic category, relative humidity/ambient protection	DIN IEC 60068 - 1		40/90/21, 10%.....95% rh IP 67	
Operating / storage temperature range	[°C]		- 40 °C.....+70 °C	
Connections			M10 bolt/nut ...stainless steel	
Net weight / pc	[g]		approx. 700	
Protection category			IP 67	
Measurements (\varnothing x L)	[mm]		approx. 50 x 127 (160)	
Remark: After a long period of storage in darkness, GDT-spark gaps may show a first measured value of DC or AC spark-over voltage that exceeds tolerance levels. However, this is not important when assessing isolating spark gaps.				

Ordering information

Connection kit*: K1/300 (300 cm)	Art. no.:	49 51 08
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Type name	TC 100 A	TC 500 A
Art. no.:	48 78 30	48 78 50
	complete with connection Kit K1/300:	
Art. no.:	49 51 07	49 51 05