Series 3401 lightning EMP protectors

Gas discharge tube (GDT) technology up to 1.0 GHz

Description

HUBER+SUHNER gas discharge tube protectors make the best of the traditional spark gap protection principle for general applications in electronics and adapt it perfectly to RF coaxial line applications. At their heart are specially designed gas discharge tubes. The available product range of gas discharge tubes enables a selection according to the RF transmission power with an optimum protection performance.
A very important feature of the GDT protectors is the possibility to DC/AC power outdoor equipment via coaxial cable.

Series 3401 products can be used broadband from DC up to 1000 MHz.
They are generally designed as coaxial feed-throughs which allow the customer to build up a protected area according to the recommended and well-proven protection zone principle of IEC 62305.
HUBER+SUHNER GDT protectors are designed such that the gas discharge tubes can be easily exchanged for new operation conditions or replaced in the case of a necessary service.

Features

- Broadband DC up to 1 GHz
- DC transmission
- Gas discharge tube replaceable
- Easy maintenance
- SEMPER™ self-extinguishing functionality optional (see page 113)

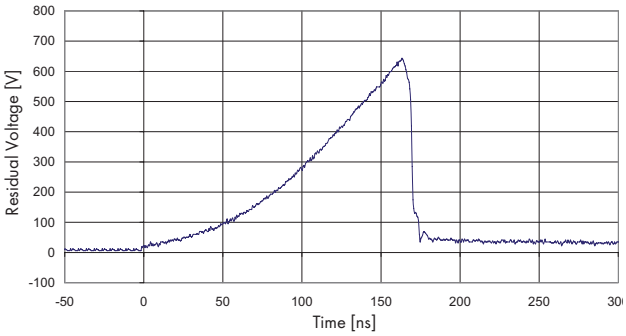
Specifications

Electrical data	Requirements
RF:	
Impedance	50 or 75 Ω
Frequency range	DC – 1000 MHz
RL*	20 dB min.
IL*	0.2 dB max.
RF power transmission	according to selected gas discharge tube – refer to page 134
Protection:	
Surge current handling capability	30 kA once and 20 kA multiple (8/20 µs test pulse) 8 kA (10/350 µs test pulse)
Residual pulse voltage and energy	for typical values refer to the following diagram

* With 230 V gas discharge tube (9071.99.0547)

Typical residual pulse for series 3401*,
test pulse acc. to IEC 61000-4-5
1.2/50 µs 4 kV; 8/20 µs 2 kA:

Residual pulse voltage: typ. 650 V
Residual pulse energy: typ. 350 µJ



* With 230 V gas discharge tube (9071.99.0547)

Mechanical data	Requirements
Coupling nut torque force	according to IEC/MIL (refer to page 30)
Durability (matings)	500 min.
Bulkhead mounting torque force: Mounting hole diameter 19 mm/ 3/4" max. Larger than 19 mm	 20 Nm (14.7 ft-lb) min. / 25 Nm (18.4 ft-lb) max. 35 Nm (25.8 ft-lb) min. / 44 Nm (32.3 ft-lb) max.

Environmental data	Requirements/test conditions
Operation temperature range	- 40 °C...+ 85 °C/ - 40 °F...+ 185 °F
Waterproof degree (IEC 60529)	according to shown product specification, data refer to the coupled state
Temperature shock	MIL-STD-202, Meth. 107, Cond. B
Moisture resistance	MIL-STD-202, Meth. 106
Vibration	MIL-STD-202, Meth. 204, Cond. D

The product is designed to meet the cited test procedures. Any additional or different requirements arising from specific applications or environmental conditions not covered by the test specifications mentioned above are subject to request and need to be confirmed by the single product detail specification.

We recommend additional taping for long term outdoor applications in any case.

Material data Component part	Material	Plating
Housings	brass	SUCOPLATE®
Male contacts	brass	gold or silver plating
Female contacts	CuBe2	gold or silver plating
Insulators	PTFE	
Gaskets	elastomer rubber	

Series 3401

Coaxial, characteristic impedance 50 Ω

Gas discharge tube normally to be selected and ordered separately – refer to page 134 - 137

H+S type	Frequency range (MHz)	Connectors Unprotected/protected side* If bulkhead mount version, side of bulkhead marked «b».	Mounting/ grounding MH - hole for «b» M - screw	RL min.	IL max.	Water-proof	Weight	Figure
3401.00.0022	DC-1000	N(f)-SMA(f), b	MH12	20 dB	0.2 dB	IP66	95 g	Fig. 1
3401.01.A	DC-300	BNC(f)-BNC(f), b	MH12	26 dB	0.1 dB	IP20	75 g	Fig. 2
	300-1000			19 dB	0.1 dB			
3401.01.C	DC-300	BNC(m)-BNC(f), b	MH12	26 dB	0.1 dB	IP20	90 g	Fig. 3
	300-1000			19 dB	0.1 dB			
3401.17.0033	DC-1000	N(f)-N(f), b	MH12, M8	20 dB	0.2 dB	IP65	230 g	Fig. 4
3401.17.0048-EX**	DC - 1000	N-jack/N-jack	MH12	24 dB	0.1 dB	IP65	87 g	Fig. 5
3401.17.A	DC-1000	N(f)-N(f), b	MH12	26 dB	0.1 dB	IP65	87 g	Fig. 6
3401.17.C	DC-1000	N(m)-N(f), b	MH12	26 dB	0.1 dB	IP65	90 g	Fig. 7
3401.26.A	DC-300	TNC(f)-TNC(f), b	MH12	26 dB	0.1 dB	IP64	77 g	Fig. 8
	300-1000			19 dB	0.1 dB			
3401.26.C	DC-300	TNC(m)-TNC(f), b	MH12	26 dB	0.1 dB	IP20	90 g	Fig. 9
	300-1000			19 dB	0.1 dB			
3401.26.0012-EX**	DC - 1000	TNC(f)/TNC(f)	MH12	19 dB	0.1 dB	IP64	77 g	Fig. 10

* Recommendation only, reverse installation possible without any impact on performance

** SEMPER™ type, GDT unit included – for detailed information see page 113

All mounting holes are shown on pages 34 – 35.

All dimensions in mm

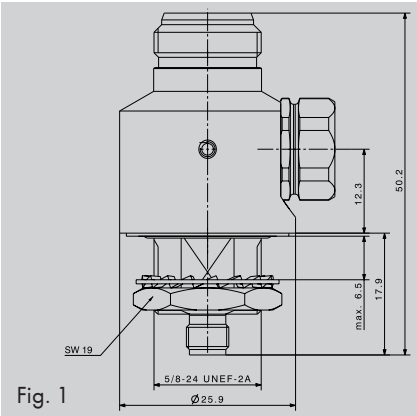


Fig. 1

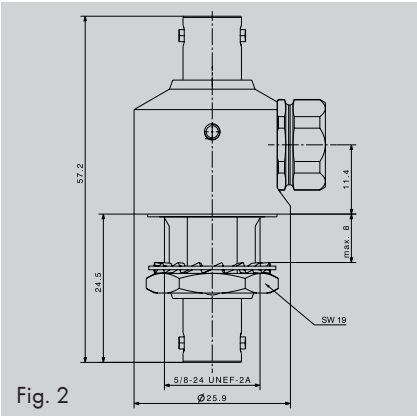


Fig. 2

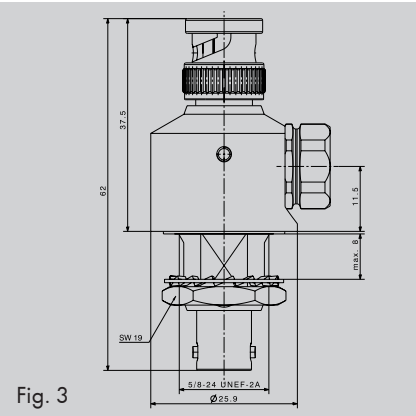


Fig. 3

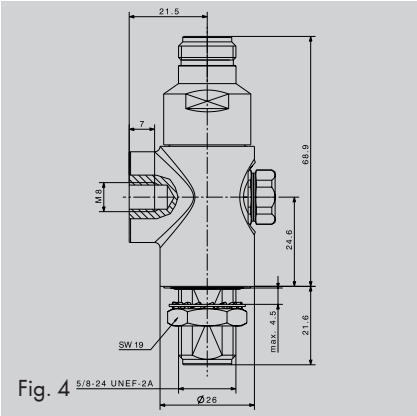


Fig. 4

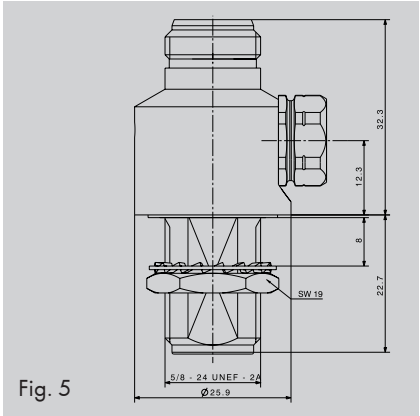


Fig. 5

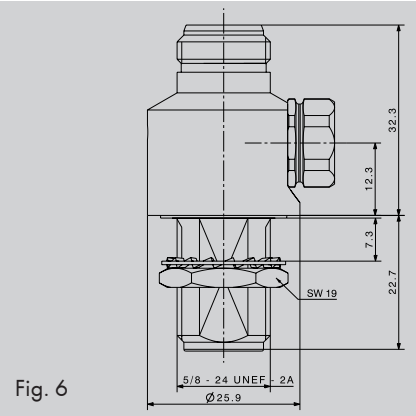


Fig. 6

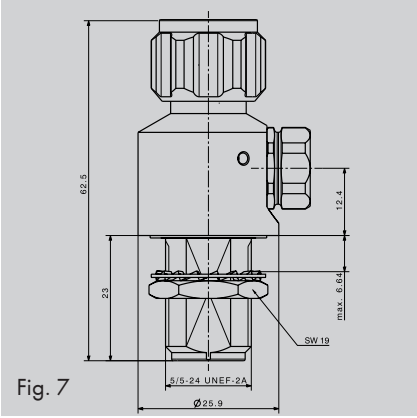


Fig. 7

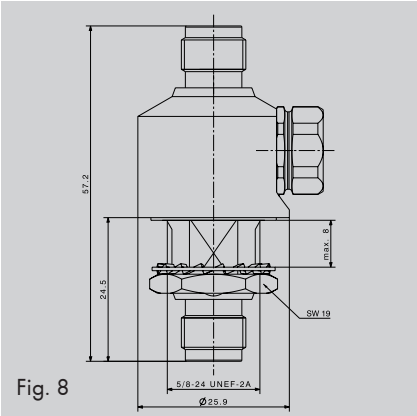


Fig. 8

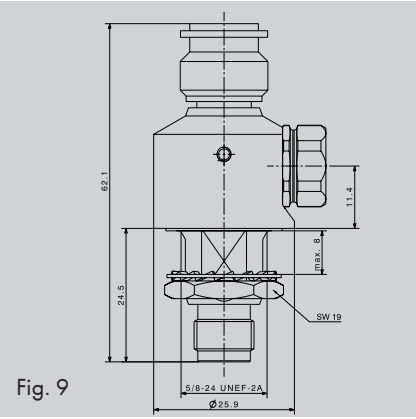


Fig. 9

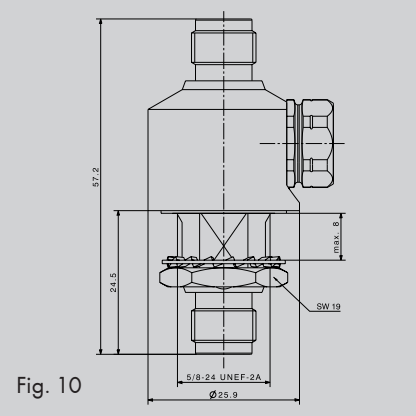


Fig. 10

All mounting holes are shown on pages 34 – 35.

Series 3401

Coaxial, characteristic impedance 75 Ω

Gas discharge tube normally to be selected and ordered separately – refer to page 134 - 137

H+S type	Frequency range (MHz)	Connectors Unprotected/protected side* If bulkhead mount version, side of bulkhead marked «b».	Mounting/ grounding MH - hole for «b» M - screw	RL min.	IL max.	Water-proof	Weight	Figure
3401.02.A	DC–400	BNC(f)-BNC(f), b	MH 12	20 dB	0.1 dB	IP20	79 g	Fig. 1
	400-1000			15 dB	0.2 dB			
3401.18.A	DC-500	N(f)-N(f), b	MH12	20.8 dB	0.1 dB	IP65	92 g	Fig. 2
3401.99.0020**	DC-1000	F(f)-F(f), b	MH 12	–	0.2 dB	IP65	73 g	Fig. 3

* Recommendation only, reverse installation possible without any impact on performance

** Gas discharge tube included (230 V, 9071.99.0547)

All dimensions in mm

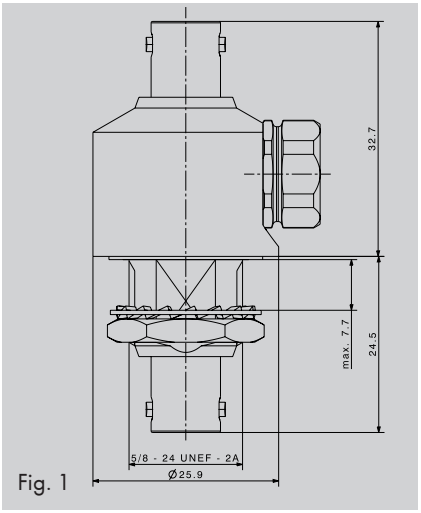


Fig. 1

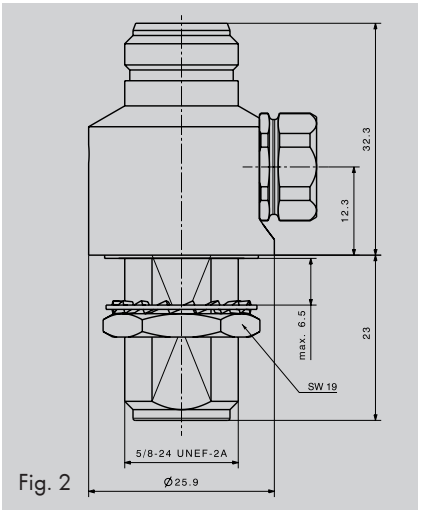


Fig. 2

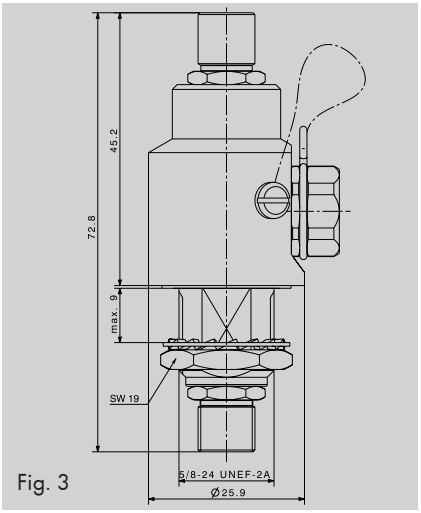


Fig. 3

All mounting holes are shown on pages 34 – 35.

Series 3401

Triaxial, characteristic impedance 50 Ω

Gas discharge tube normally to be selected and ordered separately – refer to page 134 - 137

H+S type	Frequency range (MHz)	Connectors Unprotected/protected side* If bulkhead mount version, side of bulkhead marked «b».	Mounting/ grounding MH - hole for «b» M - screw	RL min.	IL max.	Water-proof	Weight	Figure
3401.17.L	DC–1000	N(f)-N(f), b	MH74	20 dB	0.1 dB	IP20	330 g	Fig. 1

* Recommendation only, reverse installation possible without any impact on performance

All dimensions in mm

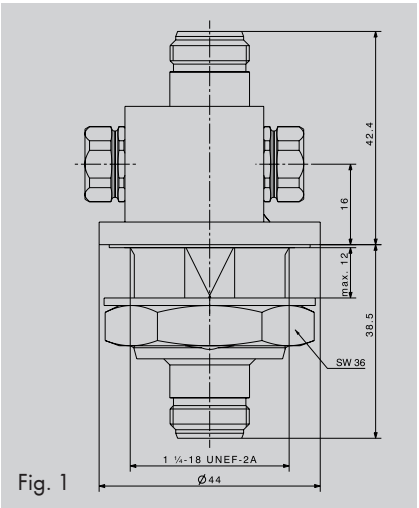
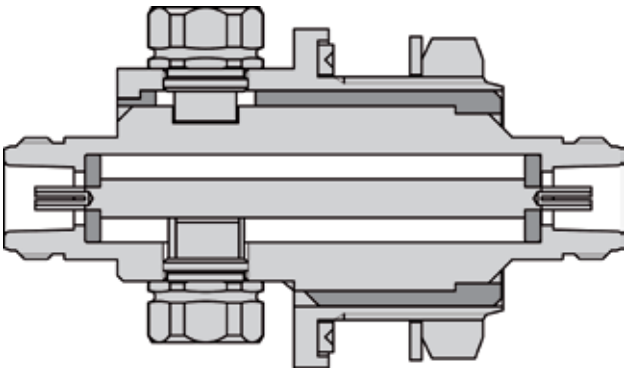


Fig. 1

Triaxial structure illustration



All mounting holes are shown on pages 34 – 35.