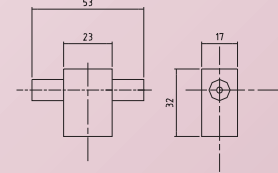
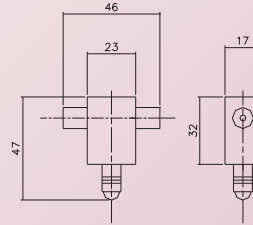
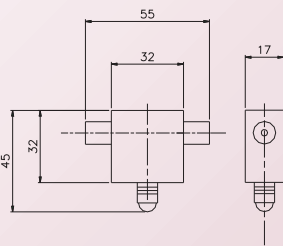
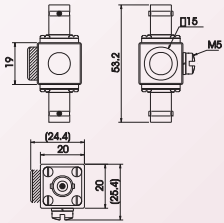


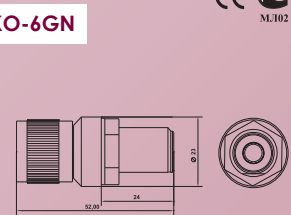
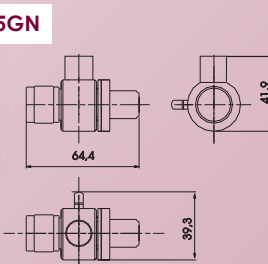
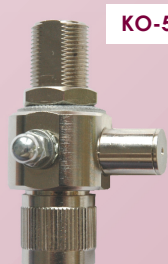
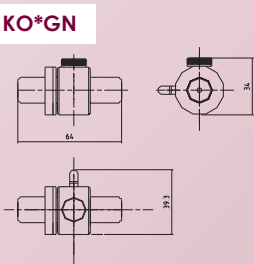
COAXIAL PROTECTION



KO* is an innovated coaxial high-frequency protection range designed for protection of equipment connected to an aerial system by means of coaxial cables. Special gas discharge tubes with maximum discharge current $I_{max} (8/20) = 10\text{kA}$ (or 20 kA in case of KO-5GN) ensure a reliable protection of the receiving and transmitting systems even against a lightning stroke nearby. Hakel company offers a wide range of coaxial protectors for various connector types and transmission power grades enabling usage in many applications. These coaxial protectors are recommended for use in the Lightning Protection Zones Concept at the boundaries of LPZ 0_{A(B)} -1 and higher according to EN 62305.



Technical data		KO-1G	KO-2G	KO-1P	KO-2P	KO-9P	KO-10P
Connector type		BNC	BNC	BNC	BNC	F	TV
Max. continuous operating voltage	U_c	72 V	200 V	72 V	200 V	72 V	72 V
Nominal current	I_N	2,5 A	2,5 A	2,5 A	2,5 A	0,5 A	0,5 A
D1 Max. lightning impulse current (10/350)	I_{imp}	2 kA	2 kA	2 kA	2 kA	2 kA	2 kA
C2 Max. discharge current (8/20)	I_{max}	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
C2 Nominal discharge current (8/20)	I_n	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
Voltage protection level at 1kV/μs	U_p	500 V	600 V	500 V	600 V	500 V	500 V
Frequency range		0-1 GHz	0-1 GHz	0-1 GHz	0-1 GHz	0-2 GHz	0-1 GHz
Max. transmission power capacity		50 W	400 W	50 W	400 W	50 W	50 W
Insertion loss		< 0,2 dB	< 0,2 dB	< 0,2 dB	< 0,2 dB	< 0,5 dB	< 1,2 dB
Return loss		> 20 dB	> 20 dB	> 20 dB	> 20 dB	> 20 dB	> 20 dB
Characteristic impedance		50 Ω	50 Ω	50 Ω	50 Ω	75 Ω	75 Ω
Category tested acc. to IEC 61643:21-2000		A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1
Article number		55 001	55 002	55 007	55 015	55 016	55 017



Technical data		KO-3GN (F/F)	KO-3GN (F/M)	KO-4GN (F/F)	KO-4GN (F/M)	KO-5GN (F/F)	KO-5GN (F/M)	KO-6GN (F/M)
Connector type		N	N	N	N	N	N	N
Max. continuous operating voltage	U_c	72 V	72 V	200 V	200 V	-	-	135 V
Nominal current	I_N	5 A	5 A	5 A	5 A	-	-	5 A
D1 Max. lightning impulse current (10/350)	I_{imp}	2 kA	2 kA	2 kA	2 kA	5 kA	5 kA	1 kA
C2 Max. discharge current (8/20)	I_{max}	10 kA	10 kA	10 kA	10 kA	20 kA	20 kA	10 kA
C2 Nominal discharge current (8/20)	I_n	5 kA	5 kA	5 kA	5 kA	10 kA	10 kA	5 kA
Voltage protection level at 1kV/μs	U_p	500 V	500 V	600 V	600 V	<2 V	<2 V	< 500 V
Frequency range		0-3 GHz	0-3 GHz	0-3 GHz	0-3 GHz	5-5.4 GHz	5-5.4 GHz	0-5.8 GHz
Max. transmission power capacity		50 W	50 W	400 W	400 W	200 W	200 W	50 W
Insertion loss		< 1,5 dB	< 1,5 dB	< 1,5 dB	< 1,5 dB	< 0,2 dB	< 0,2 dB	< 0,2 dB
Return loss		> 20 dB	> 20 dB	> 20 dB	> 20 dB	> 20 dB	> 20 dB	> 20 dB
Characteristic impedance		50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
Category tested acc. to IEC 61643:21-2000		A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1
Article number		55 018	55 019	55 020	55 021	55 024	55 025	55 026



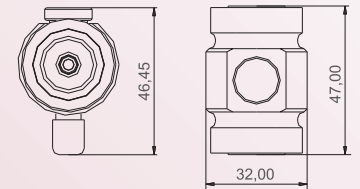
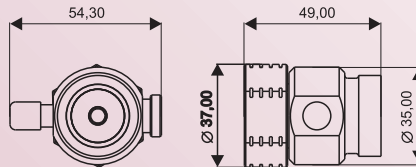
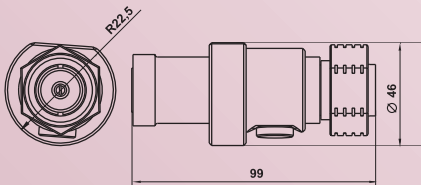
KO-7/16-R



KO-7/16 FM



KO-7/16 FF



KO-7/16 is an innovated coaxial high-frequency protection range designed for protection of equipment connected to an aerial system by means of coaxial cables. Special gas discharge tubes with maximum discharge current $I_{max} (8/20) = 10\text{kA}$ (or 20 kA in case of KO-7/16-R) ensure a reliable protection of the receiving and transmitting systems even against a lightning stroke nearby. This range is produced with 7/16" connector type for various transmission power grades enabling usage in many applications. They are recommended for use in the Lightning Protection Zones Concept at the boundaries of LPZ $0_{A(B)}$ -1 and higher according to EN 62305.



Technical data		KO-7/16-R (F/M)	KO-7/16 (F/M)	KO-7/16 (F/F)
Connector type		7/16"	7/16"	7/16"
Max. continuous operating voltage	U_C	600 V	350 V	350 V
Nominal current	I_N	12 A	5 A	5 A
D1 Max. lightning impulse current (10/350)	I_{imp}	3 kA	2 kA	2 kA
C2 Max. discharge current (8/20)	I_{max}	20 kA	10 kA	10 kA
C2 Nominal discharge current (8/20)	I_n	10 kA	5 kA	5 kA
Voltage protection level at 1kV/ μs	U_p	950 V	850 V	850 V
Frequency range		0-2,6 Ghz	0-2,6 Ghz	0-2,6 Ghz
Max. transmission power capacity		900 W	400 W	400 W
Insertion loss		< 0,2 dB	< 0,5 dB	< 0,5 dB
Return loss		> 20 dB	> 15 dB	> 15 dB
Characteristic impedance		50 Ω	50 Ω	50 Ω
Category tested acc. to IEC 61643:21-2000		A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1
Weight		510 g	175 g	165 g
Article number		55 034	55 033	55 032

