



K and S Series Connectors

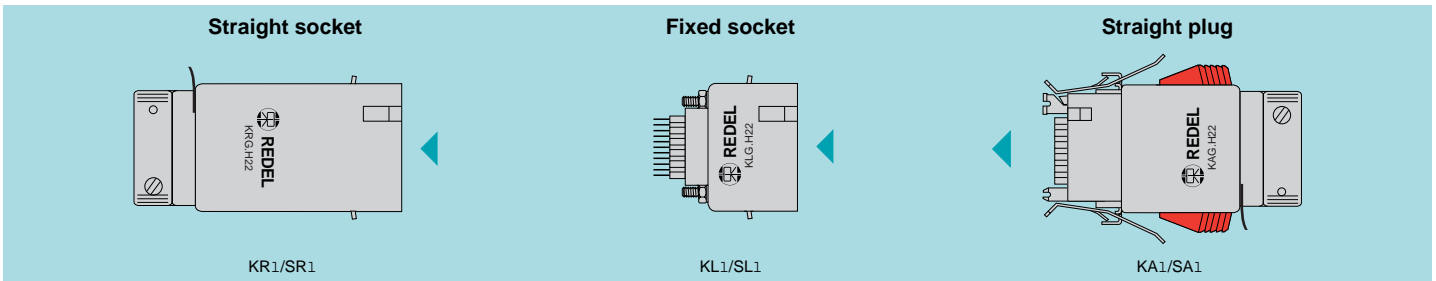


High voltage rectangular connectors of the new K and S series have been specially developed to meet the requirements of the "ATLAS" experimental nuclear research programme at the CERN.

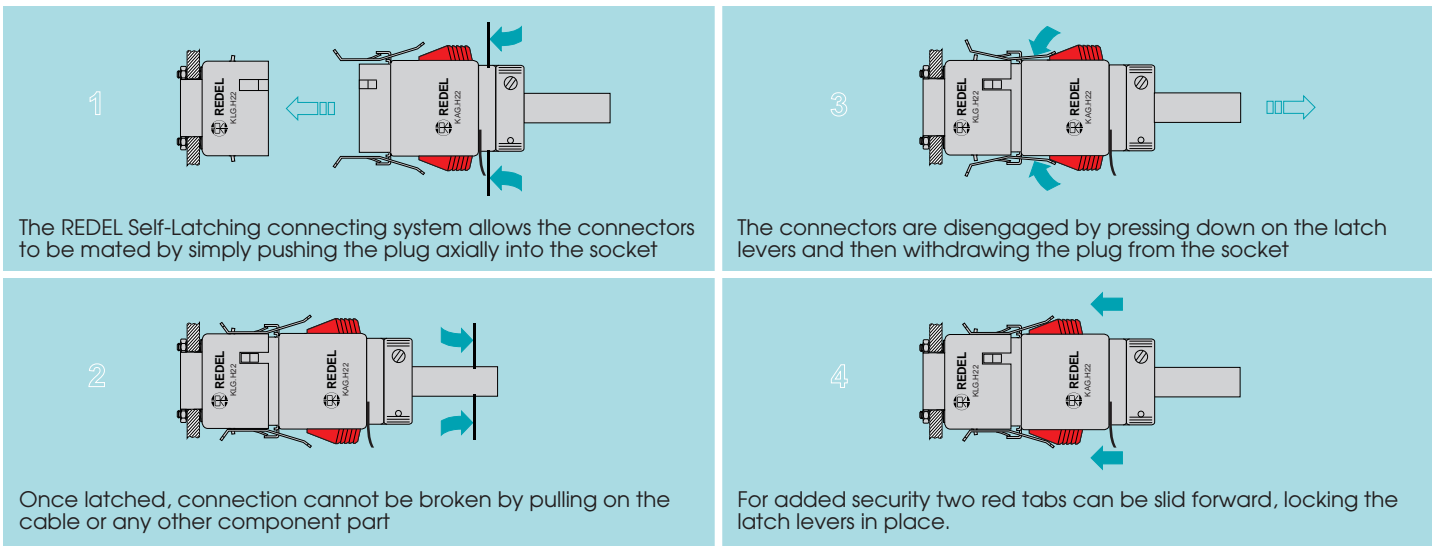
The K series contains 22 miniature HV contacts (12kV d.c. test voltage).

The S series contains 51 miniature HV contacts (12kV d.c. test voltage). These crimp contacts are removable from the shell and are inserted in a PEEK insulator. The mating is assured by guide pins and sleeves. Two red sliding tabs secure the connection by locking a pair of levers to a bracket mounted on the housing. The rectangular design of these connectors makes them ideal for applications where space saving is critical; for example on narrow panels.

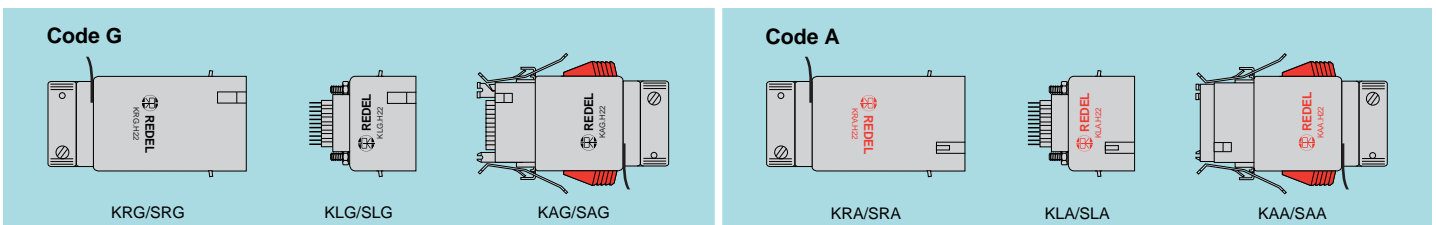
INTERCONNECTION



SELF-LATCHING CONNECTING SYSTEM

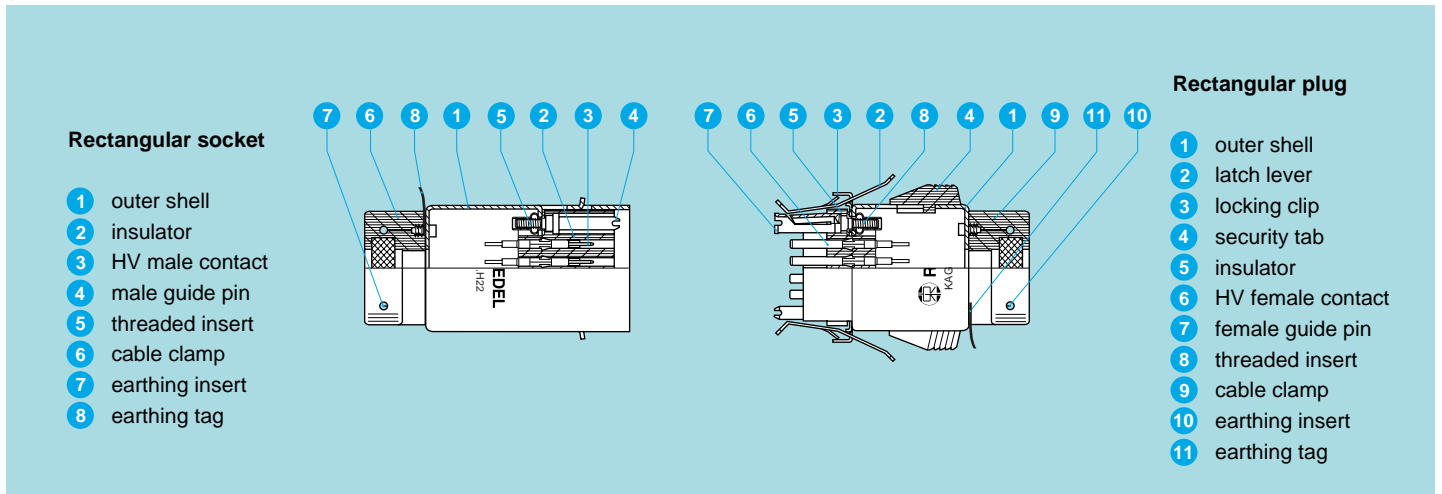


ALIGNMENT KEY

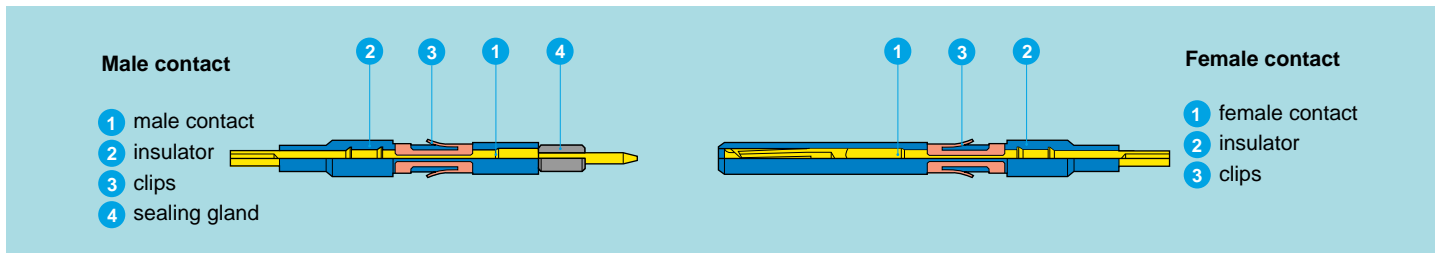


PART SECTION SHOWING INTERNAL COMPONENTS

Connector



HV Contact



TECHNICAL CHARACTERISTICS

Mechanical and climatical

Characteristic	Value	Standard
Contact retention force	40 N	IEC 60512-8 test 15a
Working temperature	-20 °C to +125°C	
Mechanical life	> 100 cycles	IEC 60512-5 test 9a
Climatic class	20/125/21	IEC 60068-1
Radiation resistance	> 10 ⁶ Gy	

Electrical characteristics

Characteristic	Value	Standard
Test voltage d.c. ¹⁾	9/12 kV (1 min.)	IEC 60512-2 test 4a
Rated current	4 A	IEC 60512-3 test 5a
Contact resistance	≤ 8 mΩ	IEC 60512-2 test 2a
Screen resistance	≤ 150 mΩ	IEC 60512-2 test 2f
Insulation resistance	≥ 10 ¹² Ω	IEC 60512-2 test 3a

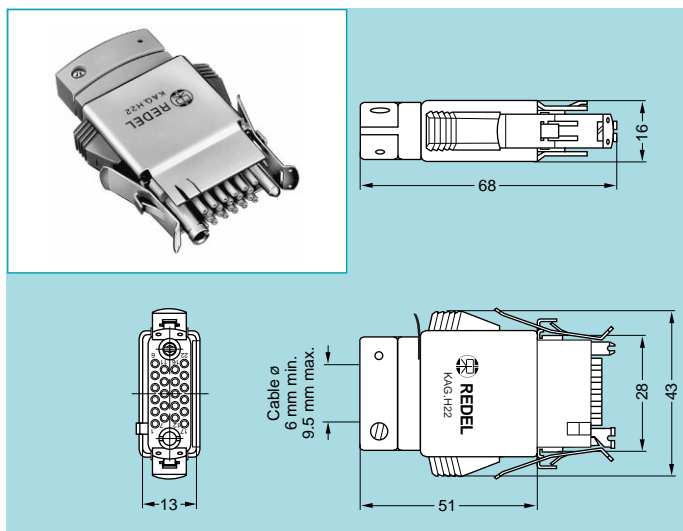
Note: ¹⁾ specific assembly instructions shall be respected.
 9 kV dc apply to the pair KA●/KL● and SA●/SL●.
 12 kV dc apply to the pair KA●/KR● and SA●/SR●.

Materials and Treatment – Connector

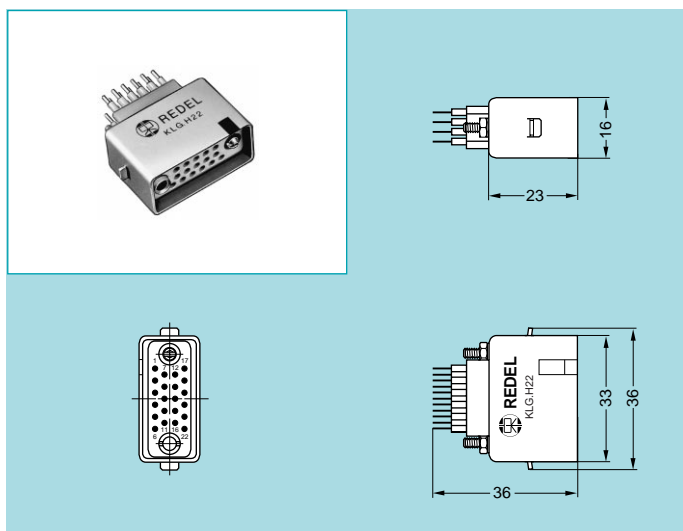
Component	Material (standard)	Surface treatment (µm)
		Ni
Outershell	Aluminium	5
Latching mechanism	Bronze	5
Insulator	PEEK	-
cable clamp	PSU	-
Other met. pieces	Stainless Steel	-
Other plastic pieces	PSU	-

Contact

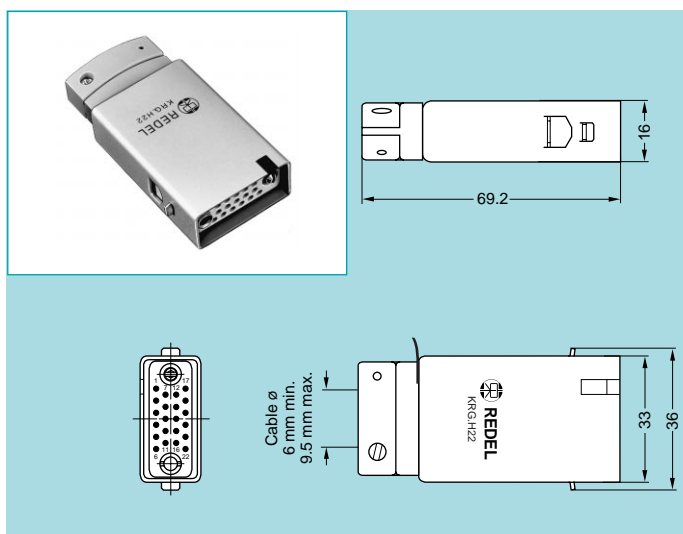
Component	Material (standard)	Surface treatment (µm)		
		Cu	Ni	Au
Male contact	Brass (UNS C38500)	0.5	3	1.0
Female contact	Bronze (UNS C54400)	0.5	3	1.5
Contact clips	Cu-Be (QQ-C-530)	-		
Insulator	PEEK	-		
Sealing gland	Silicone PVMQ	-		

MODELS K series (22 contacts)

KA● Straight plug with key (code G or A) and cable collet

Part Number	Cable Group	Contact Type	Marking
KAG.H22.LLZBG	no contact	female	black
KAA.H22.LLZBG		male	red
KAG.H22.LLLB1G	1	female	black
KAA.H22.LLAB1G		male	red
KAG.H22.LLLB2G	2	female	black
KAA.H22.LLAB2G		male	red

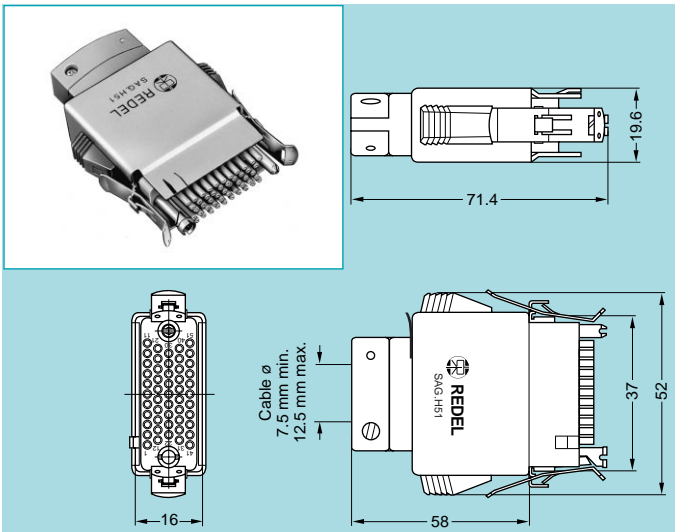

KL● Fixed socket with key (code G or A), two screw fixing

Part Number	Cable Group	Contact Type	Marking
KLG.H22.LLZG	no contact	male	black
KLA.H22.LLZG		female	red
KLG.H22.LLA1G	1	male	black
KLA.H22.LLL1G		female	red
KLG.H22.LLA2G	2	male	black
KLA.H22.LLL2G		female	red


KR● Straight socket with key (code G or A) and cable collet

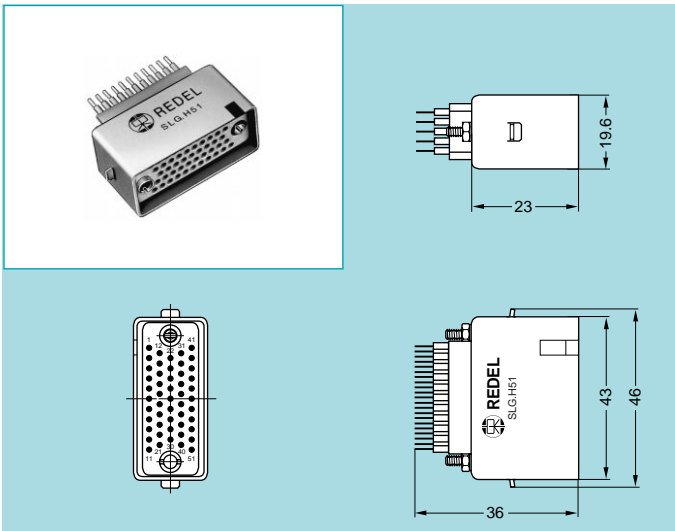
Part Number	Cable Group	Contact Type	Marking
KRG.H22.LLZBG	no contact	male	black
KRA.H22.LLZBG		female	red
KRG.H22.LLAB1G	1	male	black
KRA.H22.LLLB1G		female	red
KRG.H22.LLAB2G	2	male	black
KRA.H22.LLLB2G		female	red

MODELS S series (51 contacts)



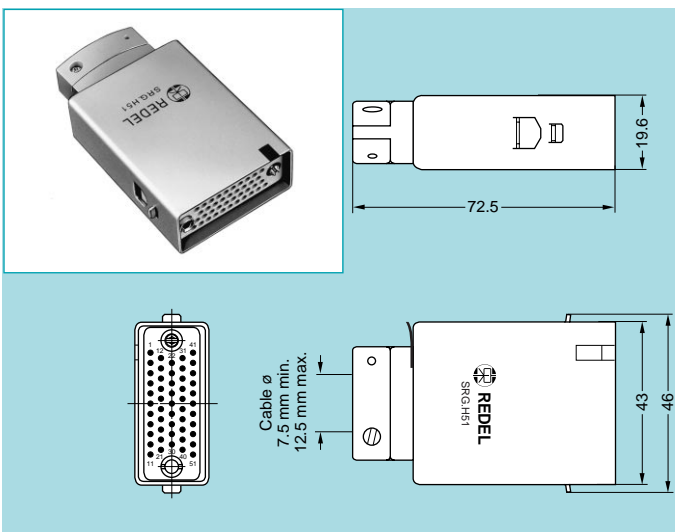
SA● Straight plug with key (code G or A) and cable collet

Part Number	Cable Group	Contact Type	Marking
SAG.H51.LLZBG	no contact	female	black
SAA.H51.LLZBG		male	red
SAG.H51.LLLB1G	1	female	black
SAA.H51.LLAB1G		male	red
SAG.H51.LLLB2G	2	female	black
SAA.H51.LLAB2G		male	red



SL● Fixed socket with key (code G or A), two screw fixing

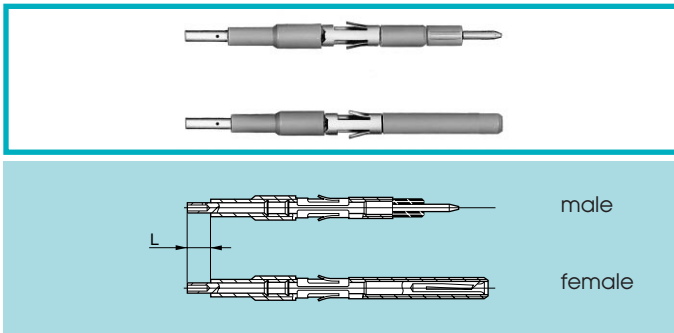
Part Number	Cable Group	Contact Type	Marking
SLG.H51.LLZG	no contact	male	black
SLA.H51.LLZG		female	red
SLG.H51.LLA1G	1	male	black
SLA.H51.LLL1G		female	red
SLG.H51.LLA2G	2	male	black
SLA.H51.LLL2G		female	red



SR● Straight socket with key (code G or A) and cable collet

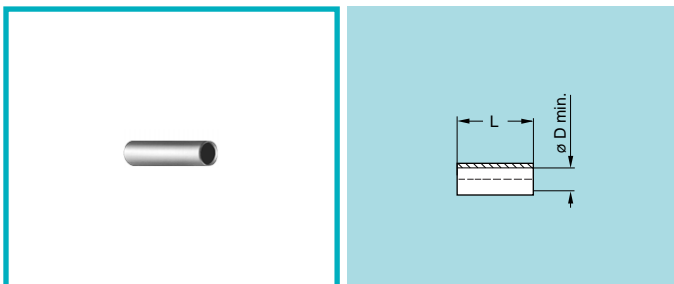
Part Number	Cable Group	Contact Type	Marking
SRG.H51.LLZBG	no contact	male	black
SRA.H51.LLZBG		female	red
SRG.H51.LLAB1G	1	male	black
SRA.H51.LLLB1G		female	red
SRG.H51.LLAB2G	2	male	black
SRA.H51.LLLB2G		female	red

ACCESSORIES



FFA-ERA High Voltage Contacts

Contact Part Number		Cable group	L (mm)
Male contact	Female contact		
FFA.05.403.ZLA1	ERA.05.403.ZLL1	1	4
FFA.05.403.ZLA2	ERA.05.403.ZLL2	2	6



GMA Heatshrink tube

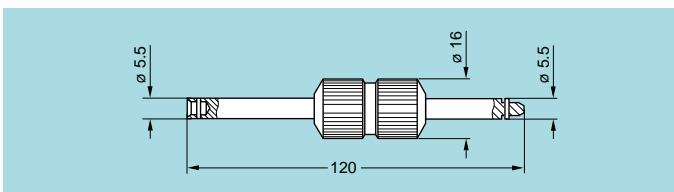
Shall be ordered separately

Part number	Cable group	Supplier		øD	L
		Name	Product reference		
GMA.30.010.ST	1	RAYCHEM®	RNF 3000 3/1	3.0	13
GMA.15.010.ST	2	RAYCHEM®	RNF 3000 1.5/0.5	1.5	9

Note: for cable group 2, the two heatshrink tubes are necessary

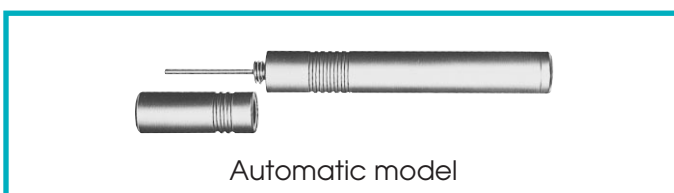
- Material: Polyolefine transparent

TOOLING



DCT Assembly tool for guide pins

Part Number
DCT.91.551.0LA



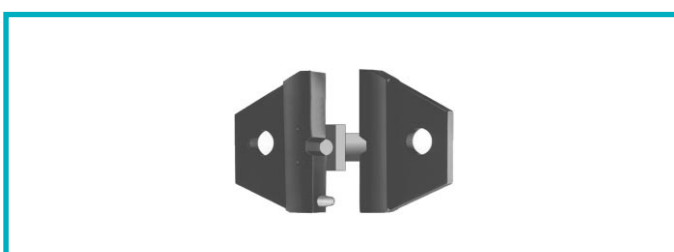
DCF Extraction tools for HV contacts

Part Number
DCF.91.133.5LT



DPH Crimping tool with die and positioner

Part Number	Applications	Cable group	Marking on die
DPH.99.005.2K	shield	1-2	DPH.91.005.2K
DPH.99.060.11K	centre contact	1	DPH.91.001.16K
DPH.99.065.11K	centre contact	2	DPK.91.001.16K

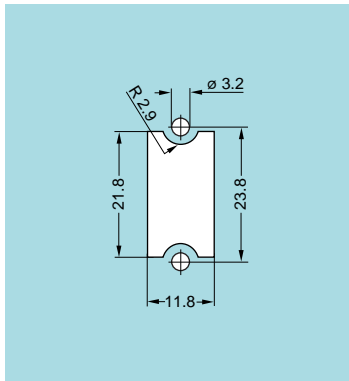


DPN Dies and positioner

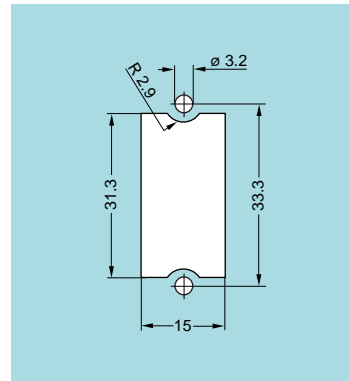
Part Number	Applications	Cable group	Marking on die
DPN.99.005.2K	shield	1-2	DPH.91.005.2K
DPN.99.060.11K	centre contact	1	DPH.91.001.16K
DPN.99.065.11K	centre contact	2	DPK.91.001.16K

- Dies material: Blackened steel

PANEL CUT-OUT



K series



S series

RECOMMENDED CABLES

Cable group	Manufacturer Part Number	CERN Type	Type/Nb. of conductor	Construction and dimensions								
				Conductor			Dielectric		Screen	Sheath		Corona screen
				Constr.	Mat.	∅	Mat.	∅	Mat.	Mat.	∅	
1	SILISOL CEPMB - 56x0.12 mm ²		Multi/56	7x0.15	CuSn	0.45	PE	1.5	CuSn + Alu	Silic	14.5	no
1	ABBNK - 45/94	HTC 50-1-1	Mono/1	7x0.17	CuSn	0.51	PE solid	1.5	CuSn 16x4x0.1	Polyolefine	3.3	yes
2	HABIA 31789-004-001	HFI 150 mini coax	Mono/1	Mono	Cu	0.16	HFI 150	0.5	Drain 2x0.1 + Alu polyester	HFI 150	1.15	no

EARTHING CONTACT

Usually, some H.V. contacts are used to connect earthing from the cable shield to the instrument panel. For such earthing connection it is also possible to use L.V. crimp contacts. With a crimp barrel of 1,4 mm, these contacts can be used with wires AWG 18-20.

Connector models	Contact type	Contact part number	Positioner part number	Crimp tool part number
KAG-KLA-KRA-SAG-SLA-SRA	male	FGG.2B.565.ZZC	DCE.91.132.BVC	DPC.91.701.V ¹⁾
KAA-KLG-KRG-SAA-SLG-SRG	female	EGG.3B.665.ZZM	DCE.91.133.BVM	

Note: ¹⁾ according to specification MIL-C-22520/7-01

Termination instructions

Refer to 05 series (page 6 & 7) for each individual H.V. contacts