



## K and S Series Connectors

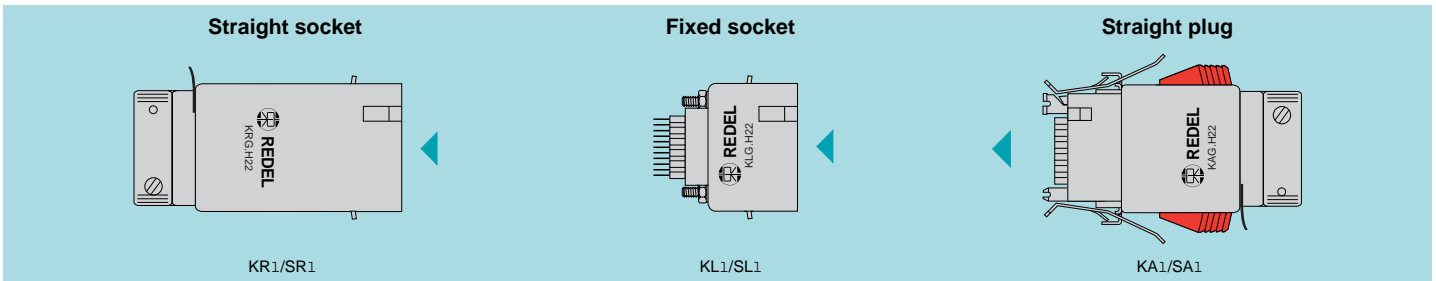


High voltage rectangular connectors of the new K and S series have been specially developed to meet the requirements of the "ATLAS" experimental nuclear research programme at the CERN.

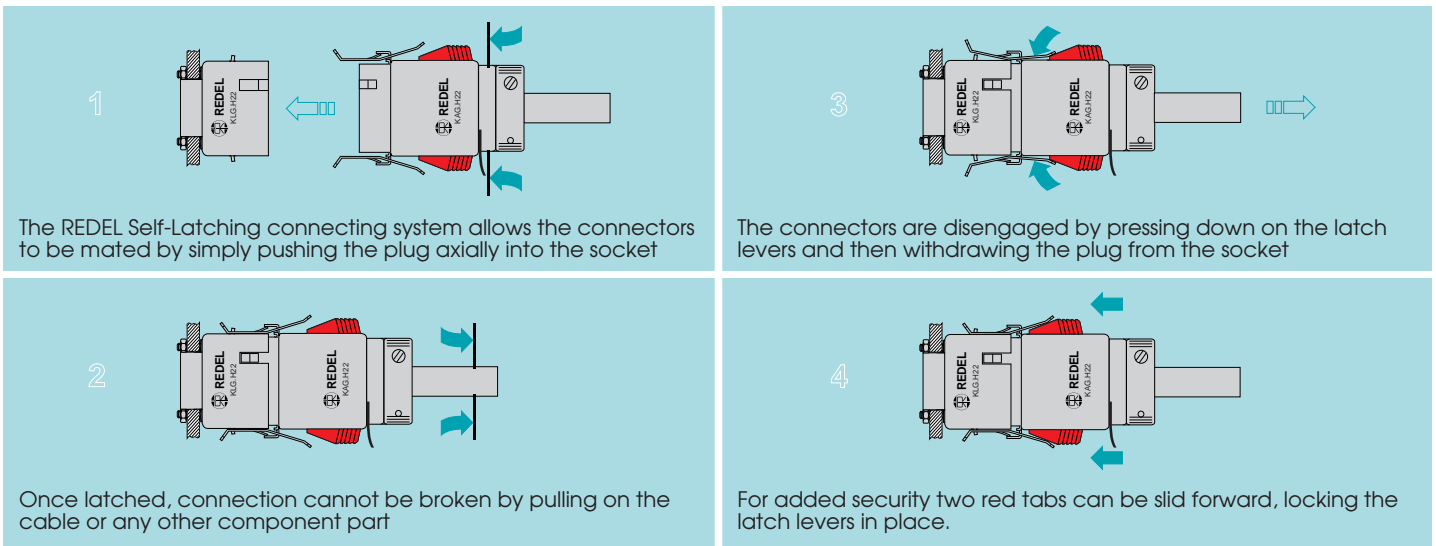
The K series contains 22 miniature HV contacts (12kV d.c. test voltage).

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.

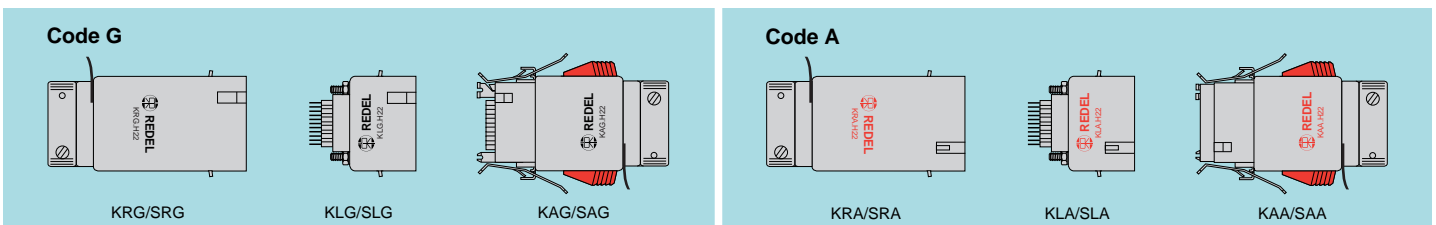
### INTERCONNECTION



### SELF-LATCHING CONNECTING SYSTEM

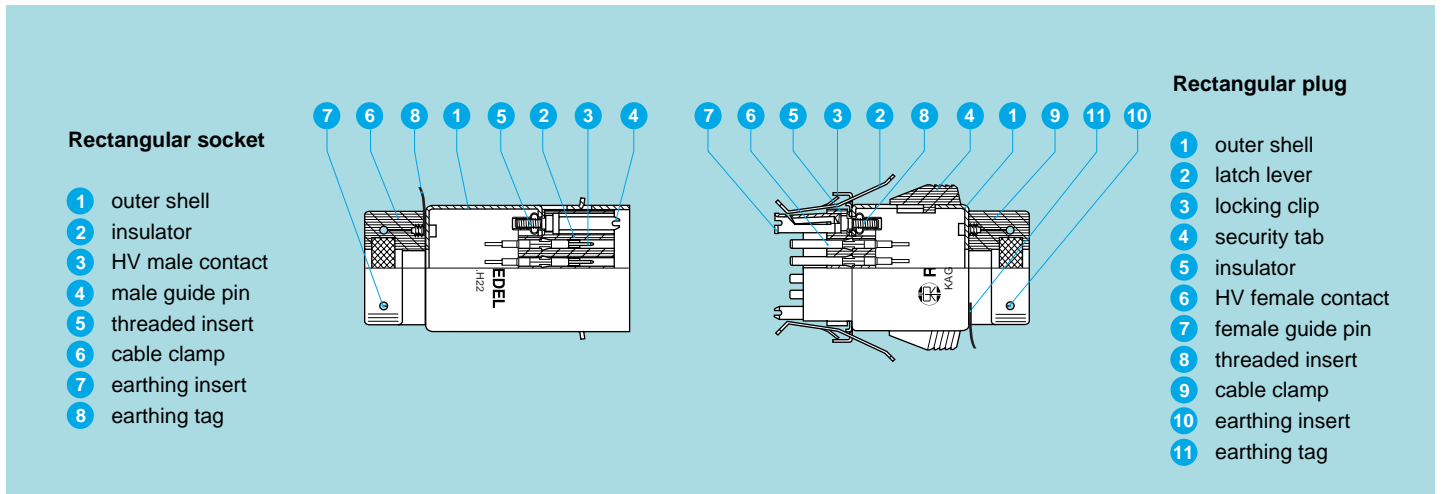


### ALIGNMENT KEY

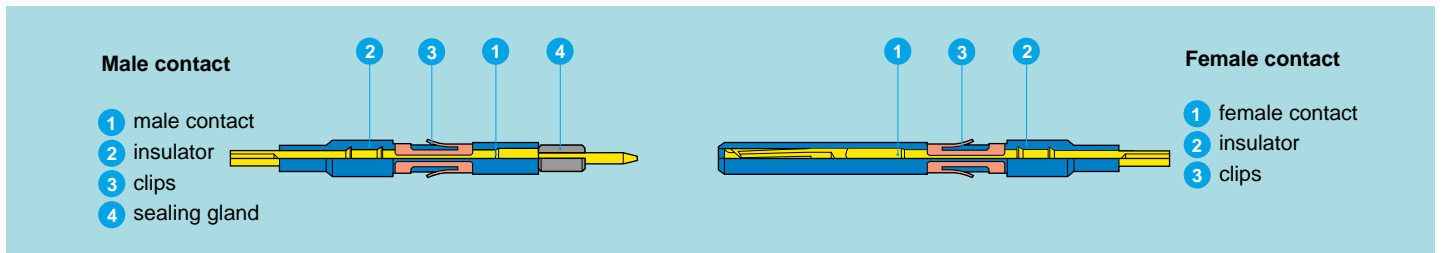


**PART SECTION SHOWING INTERNAL COMPONENTS**

**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 <sup>6</sup> Gy	

**Electrical characteristics**

Characteristic	Value	Standard
Test voltage d.c. <sup>1)</sup>	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 <sup>12</sup> Ω	IEC 60512-2 test 3a

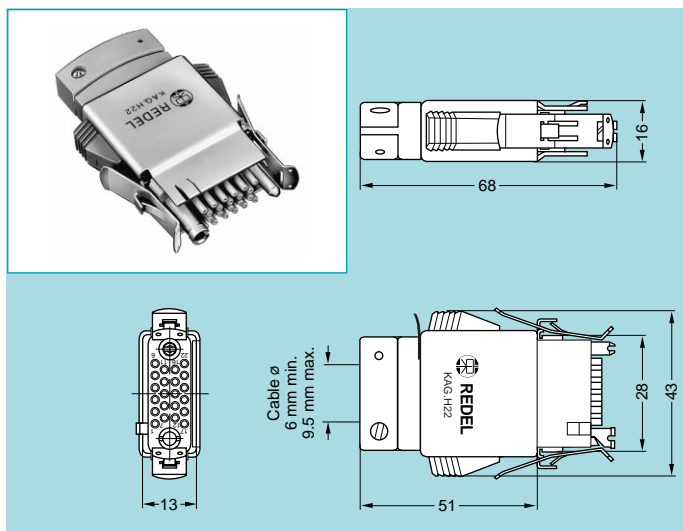
**Note:** <sup>1)</sup> specific assembly instructions shall be respected.  
 9 kV dc apply to the pair KA●/KL● and SA●/SL●.  
 12 kV dc apply to the pair KA●/KR● and SA●/SR●.

**Materials and Treatment – Connector**

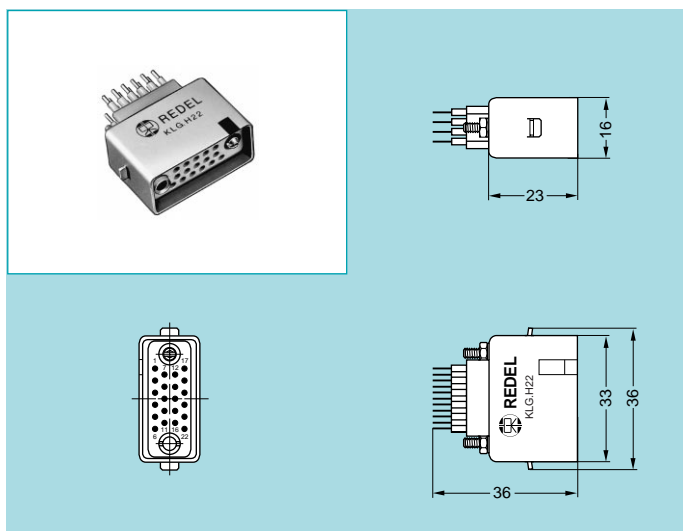
Component	Material (standard)	Surface treatment (µm)
		Ni
Outershell	Aluminium	5
Latching mechanism	Bronze	5
Insulator	PEEK	-
cable clamp	PSU	-
Other met. pieces	Stainless Steel	-
Other plastic pieces	PSU	-

**Contact**

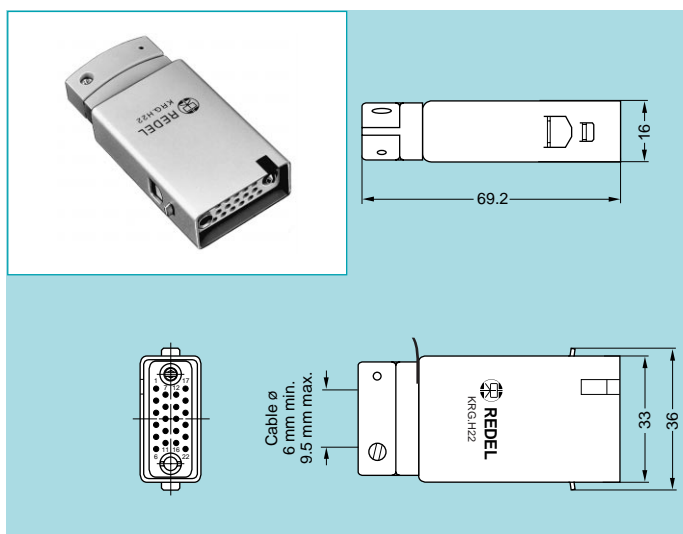
Component	Material (standard)	Surface treatment (µm)		
		Cu	Ni	Au
Male contact	Brass (UNS C38500)	0.5	3	1.0
Female contact	Bronze (UNS C54400)	0.5	3	1.5
Contact clips	Cu-Be (QQ-C-530)	-		
Insulator	PEEK	-		
Sealing gland	Silicone PVMQ	-		

**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

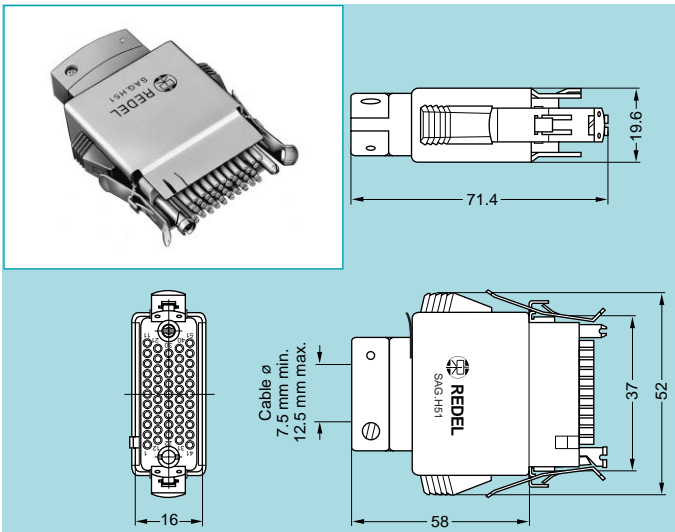

**KL● Fixed socket with key (code G or A), two screw fixing**

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


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

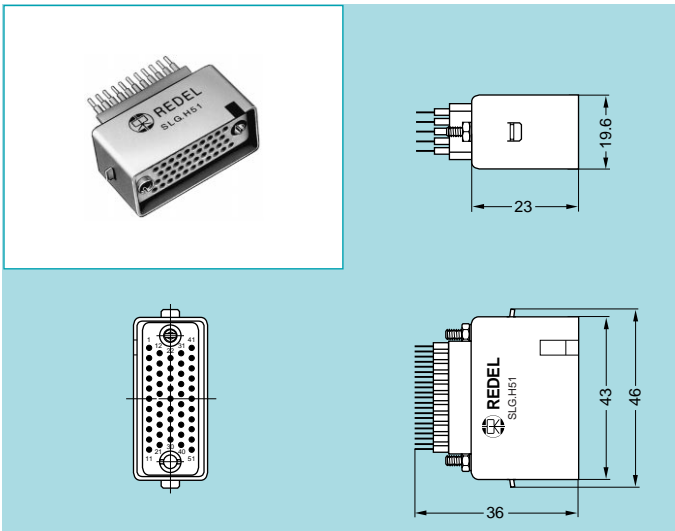
Part Number	Cable Group	Contact Type	Marking
KRG.H22.LLZBG	no contact	male	black
KRA.H22.LLZBG		female	red
KRG.H22.LLAB1G	1	male	black
KRA.H22.LLLB1G		female	red
KRG.H22.LLAB2G	2	male	black
KRA.H22.LLLB2G		female	red

**MODELS S series (51 contacts)**



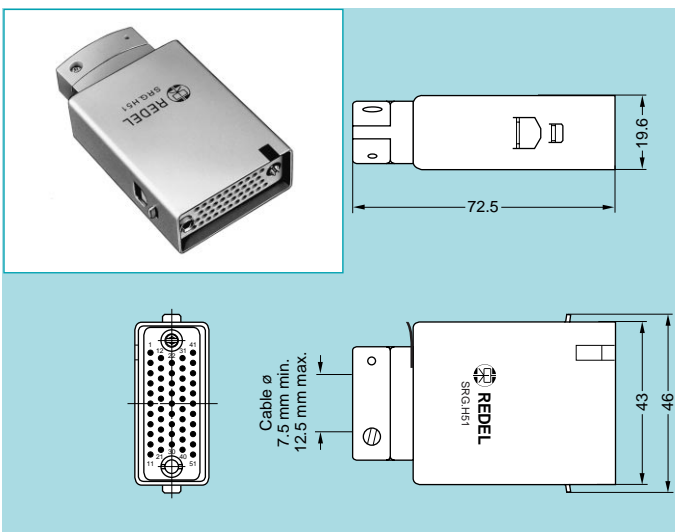
**SA● Straight plug with key (code G or A) and cable collet**

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**

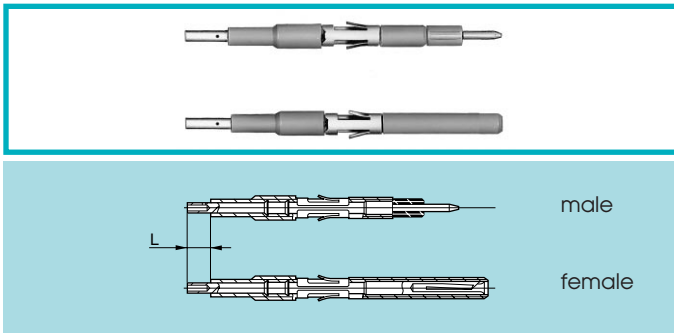
Part Number	Cable Group	Contact Type	Marking
SLG.H51.LLZG	no contact	male	black
SLA.H51.LLZG		female	red
SLG.H51.LLA1G	1	male	black
SLA.H51.LLL1G		female	red
SLG.H51.LLA2G	2	male	black
SLA.H51.LLL2G		female	red



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

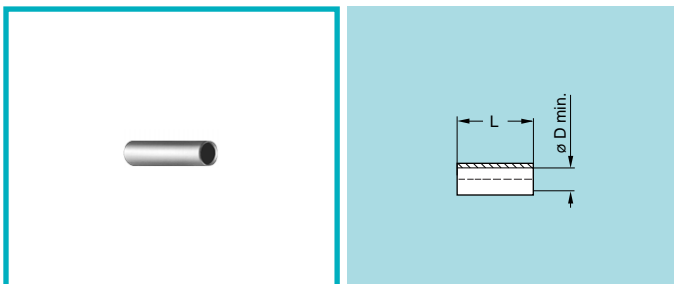
Part Number	Cable Group	Contact Type	Marking
SRG.H51.LLZBG	no contact	male	black
SRA.H51.LLZBG		female	red
SRG.H51.LLAB1G	1	male	black
SRA.H51.LLLB1G		female	red
SRG.H51.LLAB2G	2	male	black
SRA.H51.LLLB2G		female	red

## 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

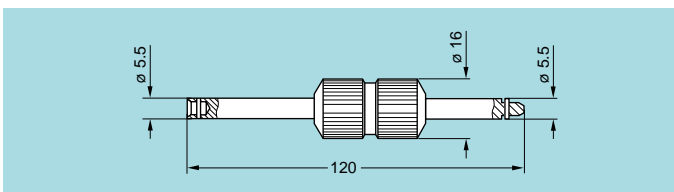
Shall be ordered separately

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

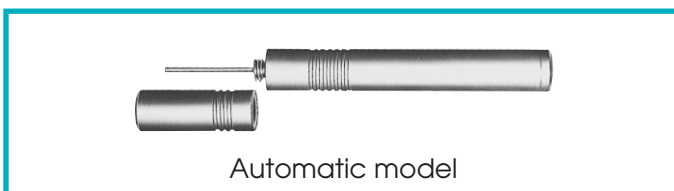
- Material: Polyolefine transparent

## TOOLING



### DCT Assembly tool for guide pins

Part Number
DCT.91.551.0LA



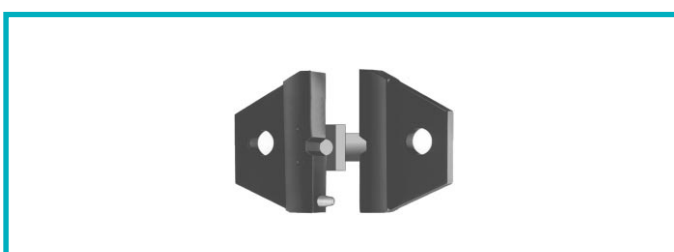
### DCF Extraction tools for HV contacts

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

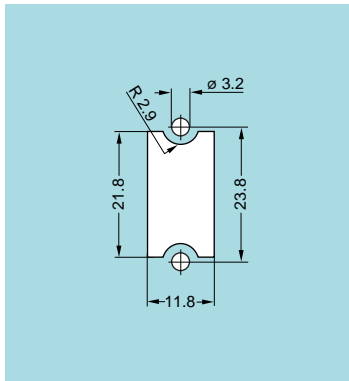


### DPN Dies and positioner

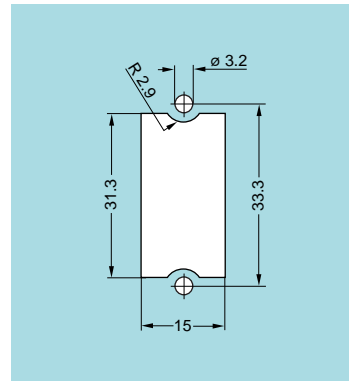
Part Number	Applications	Cable group	Marking on die
DPN.99.005.2K	shield	1-2	DPH.91.005.2K
DPN.99.060.11K	centre contact	1	DPH.91.001.16K
DPN.99.065.11K	centre contact	2	DPK.91.001.16K

- 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 <sup>2</sup>		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 <sup>1)</sup>
KAA-KLG-KRG-SAA-SLG-SRG	female	EGG.3B.665.ZZM	DCE.91.133.BVM	

**Note:** <sup>1)</sup> according to specification MIL-C-22520/7-01

**Termination instructions**

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