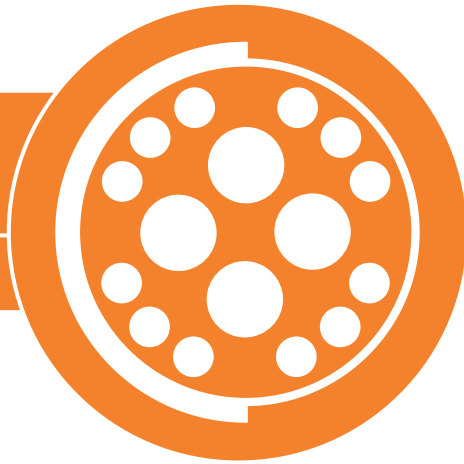


B 11

CHAPTER



FISCHER CORE SERIES **BROADCAST**

THE BEST OF TRIAX | RUGGED FOR OUTDOOR USE | DURABLE

BROADCAST

KEY FEATURES

- Constant quality of transmission
- Fast and easy cable assembly and field maintenance
- HD / SD signal compliant
- Long transmission distance (30% longer than Triax 14)
- 360° EMC shielded



B 11-2 / B 11-32

BROADCAST

BROADCAST



PLUGS



CABLE MOUNTED

- Body styles (SE; SE-SE) B 11-4
- Technical dimensions B 11-6



PANEL MOUNTED

- Body styles (DS; DSQ) B 11-4
- Technical dimensions B 11-8



PANEL MOUNTED WITH CABLE CLAMP

- Body styles (DSR)..... B 11-4
- Technical dimensions B 11-10



PANEL FEEDTHROUGH

- Body styles (DS-K)..... B 11-4
- Technical dimensions B 11-11

FOR ALL BROADCAST

- Cable clamp sets B 11-18
- Accessories B 11-21
- Tooling B 11-24
- Recommended cable B 11-26
- Technical information B 11-28
- Product specifications A-5

This catalog covers our standard connector solutions. For specific requests, including hybrid or custom connectors, please contact your local sales representative.

RECEPTACLES



CABLE MOUNTED

- Body styles (KE; KE-KE) B 11-5
- Technical dimensions B 11-12



PANEL FRONT MOUNTED

- Body styles (DB; DBQ)..... B 11-5
- Technical dimensions B 11-14



PANEL MOUNTED WITH CABLE CLAMP

- Body styles (DKE, DKBE) B 11-5
- Technical dimensions B 11-16



PANEL FEEDTHROUGH

- Body styles (KE-KE)..... B 11-5
- Technical dimensions B 11-17

BROADCAST

PLUGS

BROADCAST

CABLE MOUNTED



BODY STYLES	SE	SE-SE
Locking system	Push-pull	Push-pull
Sealing	IP68	IP50
Design	Standard	In-line adapter

PANEL MOUNTED



BODY STYLES	DS	DSQ	DSR	DS-K
Locking system	Push-pull	Push-pull	Push-pull	Push-pull
Sealing	IP50	IP50	IP50	IP50
Design	Standard	Square flange	Cable mounted	Bulkhead feedthrough

RECEPTACLES

CABLE MOUNTED



BODY STYLES	KE	KE-KE
Sealing	IP68	IP50
Design	Standard	In-line adapter

PANEL FRONT MOUNTED



BODY STYLES	DB	DKE	DBQ
Sealing	IP50	IP68	IP50
Design	Standard	Cable mounted	Square flange

PANEL REAR MOUNTED



BODY STYLES	DKBE	KE-KE
Sealing	IP68	IP50
Design	Cable mounted	Bulkhead feedthrough

BROADCAST

PLUGS

CABLE MOUNTED

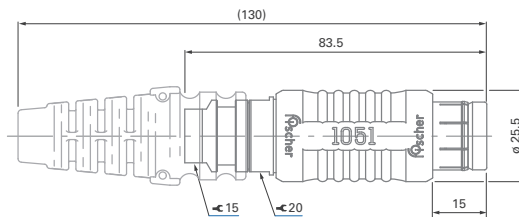
SE

FOR Ø 8.4 TO Ø 11.9 MM CABLES

BROADCAST

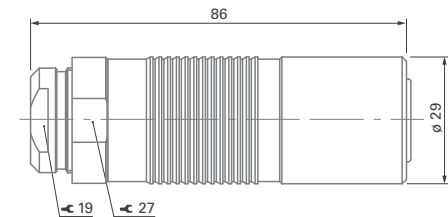


HD Pro+



SE

FOR Ø 12.2 TO Ø 15.2 MM CABLES



Cable plug part number	Cable group ¹⁾	Cable clamp part number ²⁾
SE 1051 A004-9+	1	E3 SE1051.3/A004-9/1.0/4.5/8.7
	2	E3 SE1051.3/A004-9/1.0/4.5/9.4
	2	E3 SE1051.3/A004-9/1.4/4.5/9.4
	3	E3 SE1051.3/A004-9/1.4/6.6/11.3
SE 1051 A004-HD Pro+	3 HD Pro+	E3 SE1051.3/A004 HD Pro/1.75/7.5/11.9

¹⁾ See list of recommended cables on page B11-26.
²⁾ See cable clamp details on page B11-18.

Cable plug part number	Cable group ¹⁾	Cable clamp part number
SE 1051 A004-4 1.4/6.6/12.6	4	Included
SE 1051 A004-4 T1895/13.6	5	
SE 1051 A004-4 2.1Ls/10s/15.2	6	

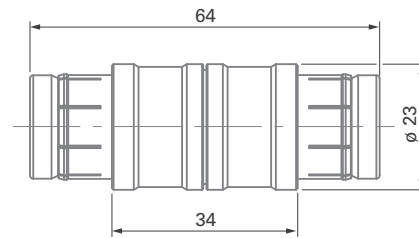
¹⁾ See list of recommended cables on page page B11-26.

PLUGS

IN-LINE
ADAPTER

SE-SE

FOR CONNECTION OF PANEL
OR CABLE RECEPTACLES



Adapter part number	Suitable for
SE-SE 1051 A004	KE, DB and DKE connections

All dimensions and images shown are in millimeters and are for reference only.

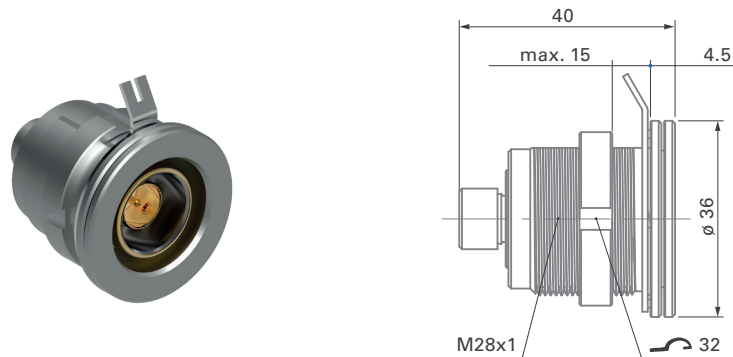
PLUGS

BROADCAST

PANEL MOUNTED

DS

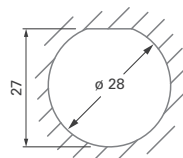
FOR Ø8.5 MM CABLES



Panel plug part number

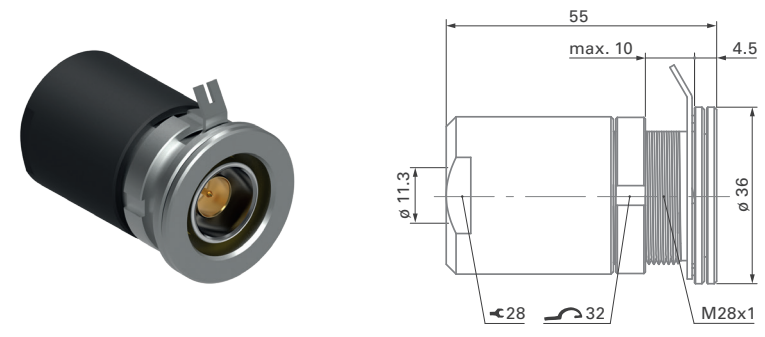
DS 1051 A004-3 1.0/5.0

PANEL CUT-OUT



DS

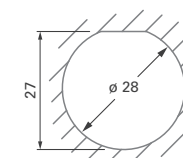
FOR Ø11.3 MM CABLES, WITH CABLE GUIDE



Panel plug part number

DS 1051 A004-3 1.4/6.6

PANEL CUT-OUT

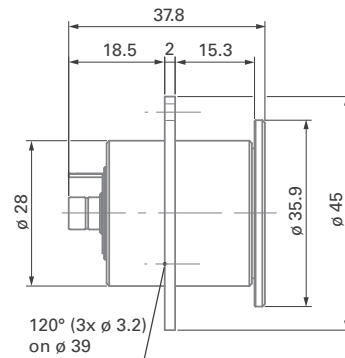


PLUGS

PANEL MOUNTED WITH SMB ADAPTOR

DS

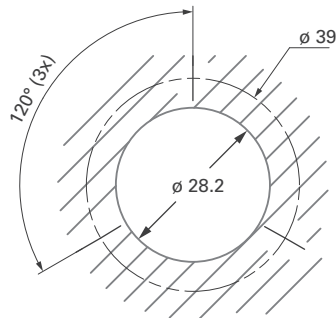
PANEL PLUG WITH 75 Ω SMB MALE PLUG



Panel plug part number

DS 1051 A004-SMB75/M

PANEL CUT-OUT



All dimensions and images shown are in millimeters and are for reference only.

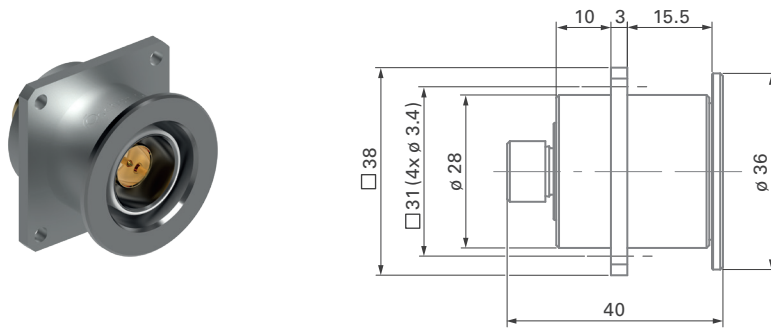
PLUGS

BROADCAST

PANEL MOUNTED

DSQ

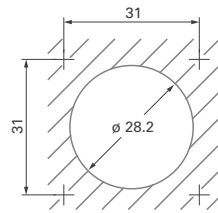
FOR Ø8.5 MM CABLES, WITH SQUARE FLANGE



Panel plug part number

DSQ 1051 A004-3 1.0/5.0

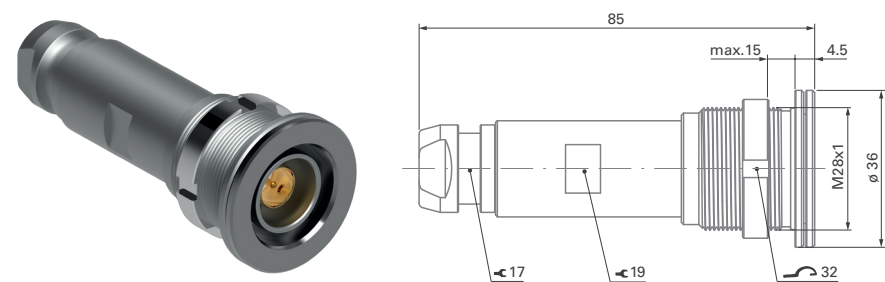
PANEL CUT-OUT




PANEL MOUNTED WITH CABLE CLAMP

DSR

FOR Ø8.5 TO Ø11.9 MM CABLES

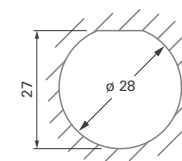


Panel plug part number	Cable group ¹⁾	Cable clamp part number ²⁾
DSR 1051 A004-9+	1	E3 1051.5/A004-9/1.0/4.5/8.7
	2	E3 1051.5/A004-9/1.0/4.5/9.4
	2	E3 1051.5/A004-9/1.4/4.5/9.4
DSR 1051 A004-HD Pro+	3	E3 1051.5/A004-9/1.4/6.6/11.3
	3 	E3 1051.5/A004 HD Pro/1.75/7.5/11.9

¹⁾ See list of recommended cables on page B11-26.

²⁾ See cable clamp details on page B11-20.

PANEL CUT-OUT

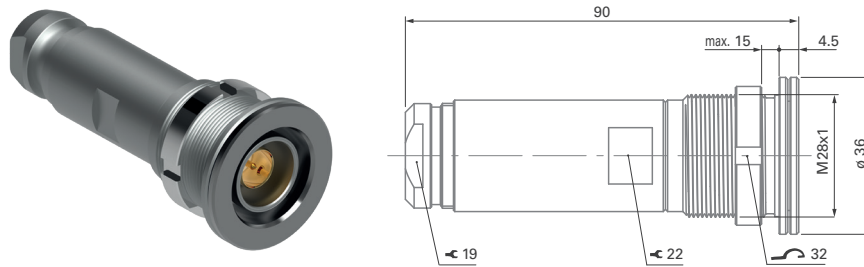


PLUGS

PANEL
MOUNTED WITH CABLE CLAMP

DSR

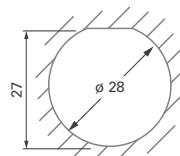
FOR Ø 12.2 TO Ø 15.2 MM CABLES



Panel plug part number	Cable group ¹⁾	Cable clamp part number
DSR 1051 A004-4 1.4/6.6/12.6	4	Included
DSR 1051 A004-4 T1895/13.6	5	
DSR 1051 A004-4 2.1Ls/10s/15.2	6	

¹⁾ See list of recommended cables on page B11-26.

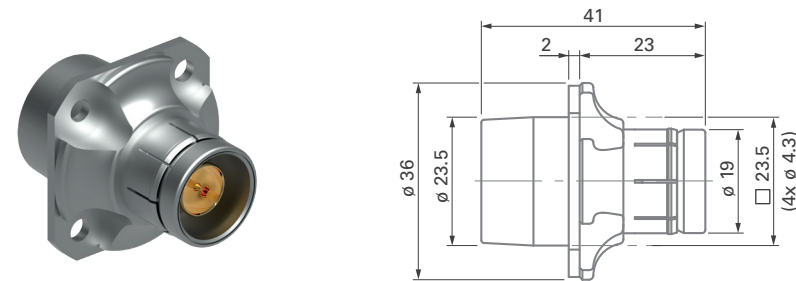
PANEL CUT-OUT



PANEL
FEEDTHROUGH

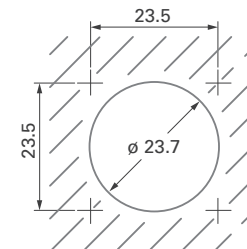
DS-K

FOR CONNECTION OF CABLE PLUGS AND CABLE RECEPTACLES



Feedthrough part number	Suitable for
DS-K 1051 A004	SE with KE connections

PANEL CUT-OUT



RECEPTACLES

CABLE MOUNTED

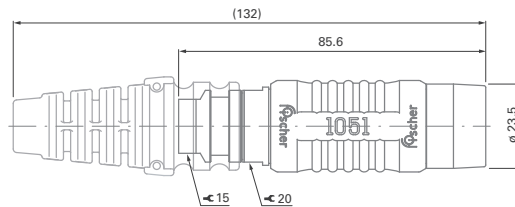
KE

FOR Ø8.4 TO Ø11.9 MM CABLES

BROADCAST

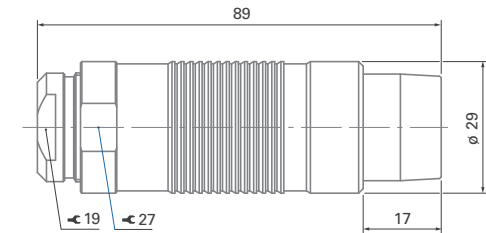
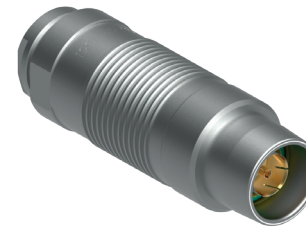


HD Pro+



KE

FOR Ø12.2 TO Ø15.2 MM CABLES



Cable receptacle part number	Cable group ¹⁾	Cable clamp part number ²⁾
KE 1051 A004-9+	1	E3 KE1051.4/A004-9/1.0/4.5/8.7
	2	E3 KE1051.4/A004-9/1.0/4.5/9.4
	2	E3 KE1051.4/A004-9/1.4/4.5/9.4
	3	E3 KE1051.4/A004-9/1.4/6.6/11.3
KE 1051 A004-HD Pro+	3 HD Pro+	E3 KE1051.4/A004-HD Pro/1.75/7.5/11.9

¹⁾ See list of recommended cables on page B11-26.

²⁾ See cable clamp details on page B11-19.

Cable receptacle part number	Cable group ¹⁾	Cable clamp part number
KE 1051 A004-4 1.4/6.6/12.6	4	Included
KE 1051 A004-4 T1895/13.6	5	
KE 1051 A004-4 2.1Ls/10s/15.2	6	

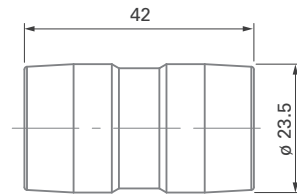
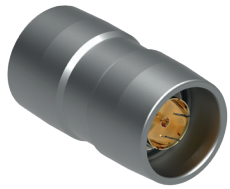
¹⁾ See list of recommended cables on page B11-26.

RECEPTACLES

IN-LINE ADAPTER

KE-KE

FOR CONNECTION OF CABLE OR PANEL PLUGS



Adapter part number	Suitable for
KE-KE 1051 A004	SE, DS and DSR connections

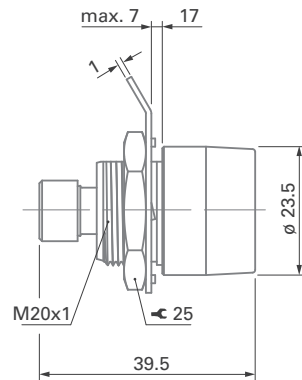
RECEPTACLES

BROADCAST

PANEL FRONT MOUNTED

DB

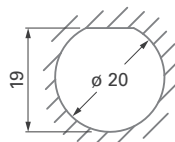
FOR Ø8.5 MM CABLES



Receptacle part number

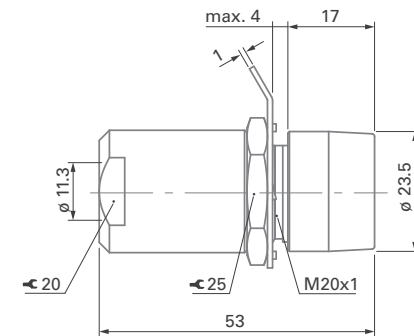
DB 1051 A004-3 1.0/5.0

PANEL CUT-OUT



DB

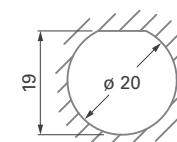
FOR Ø11.3 MM CABLES, WITH CABLE GUIDE



Receptacle part number

DB 1051 A004-3 1.4/6.6

PANEL CUT-OUT

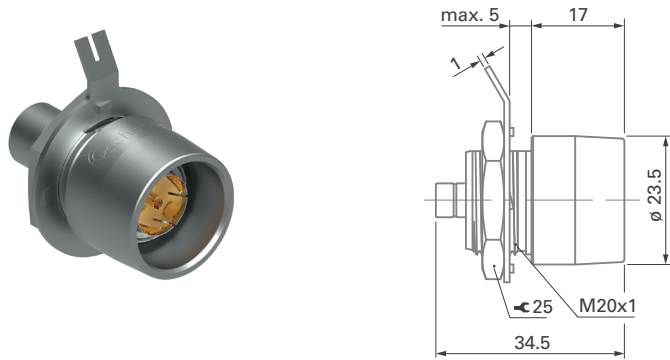


RECEPTACLES

PANEL MOUNTED WITH SMB ADAPTER

DB

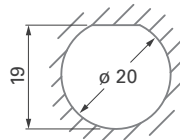
PANEL RECEPTACLE WITH 75 Ω SMB MALE PLUG



Panel receptacle part number

DB 1051 A004-SMB75/M

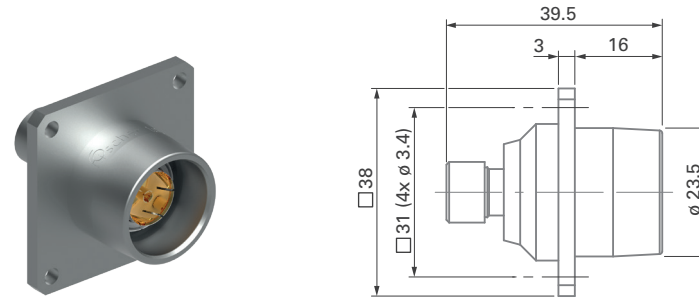
PANEL CUT-OUT



PANEL FRONT MOUNTED

DBQ

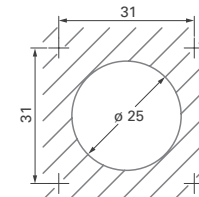
FOR Ø8.5 MM CABLES, WITH SQUARE FLANGE



Receptacle part number

DBQ 1051 A004-3 1.0/5.0

PANEL CUT-OUT



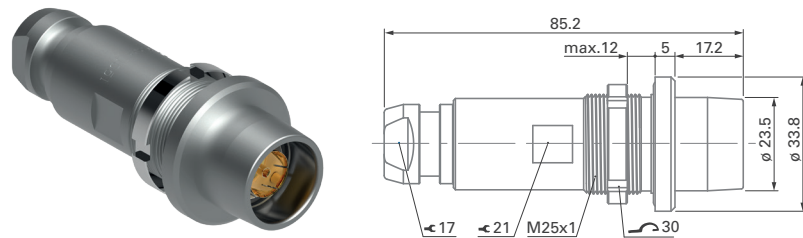
RECEPTACLES

BROADCAST

PANEL MOUNTED WITH CABLE CLAMP

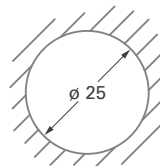
DKE

FOR Ø8.4 TO Ø11.9 MM CABLES



Receptacle part number	Cable group ¹⁾	Cable clamp part number ²⁾
DKE 1051 A004-9+	1	E3 1051.5/A004-9/1.0/4.5/8.7
	2	E3 1051.5/A004-9/1.0/4.5/9.4
	2	E3 1051.5/A004-9/1.4/4.5/9.4
	3	E3 1051.5/A004-9/1.4/6.6/11.3
DKE 1051 A004-HD Pro+	3	E3 1051.5/A004 HD Pro/1.75/7.5/11.9

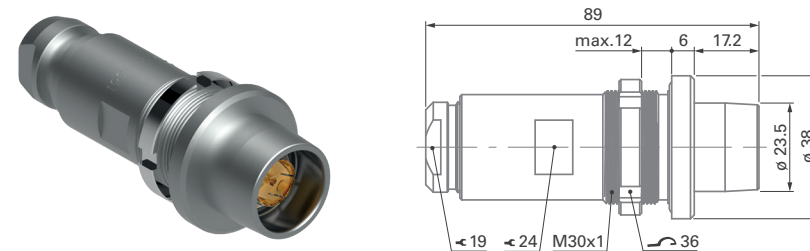
PANEL CUT-OUT



PANEL MOUNTED WITH CABLE CLAMP

DKE

FOR Ø12.2 TO Ø15.2 MM CABLES

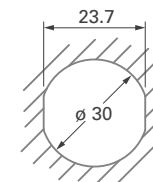


Receptacle part number	Cable group ¹⁾	Cable clamp part number ²⁾
DKE 1051 A004-4 1.4/6.6/12.6	4	Included
DKE 1051 A004-4 T1895/13.6	5	
DKE 1051 A004-4 2.1Ls/10s/15.2	6	

¹⁾ See list of recommended cables on page B11-26.

²⁾ See cable clamp details on page B11-20.

PANEL CUT-OUT

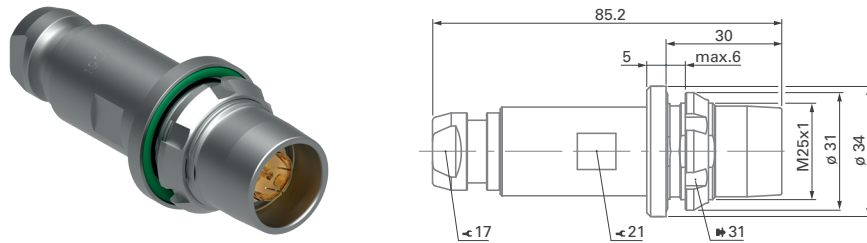


RECEPTACLES

PANEL
MOUNTED WITH CABLE CLAMP

DKBE

FOR Ø 8.4 TO Ø 11.9 MM CABLES

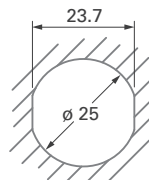


Receptacle part number	Cable group ¹⁾	Cable clamp part number ²⁾
DKBE 1051 A004-9+	1	E3 1051.5/A004-9/1.0/4.5/8.7
	2	E3 1051.5/A004-9/1.0/4.5/9.4
	2	E3 1051.5/A004-9/1.4/4.5/9.4
	3	E3 1051.5/A004-9/1.4/6.6/11.3
DKBE 1051 A004-HD Pro+	3 HD Pro+	E3 1051.5/A004 HD Pro/1.75/7.5/11.9

¹⁾ See list of recommended cables on page B11-26.

²⁾ See cable clamp details on page B11-20.

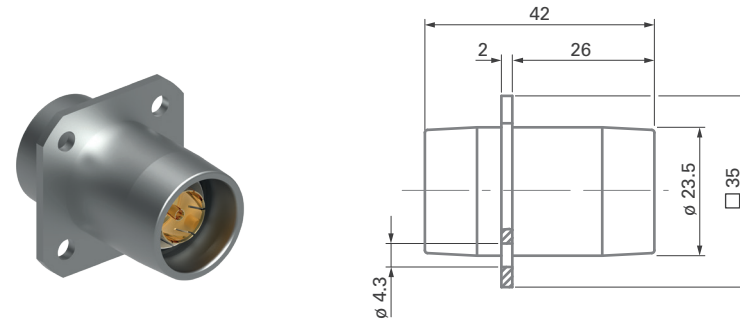
PANEL CUT-OUT



PANEL
FEEDTHROUGH

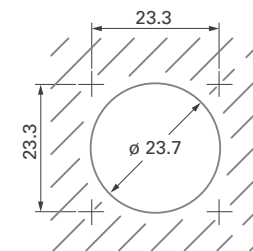
KE-KE

FOR CONNECTION OF CABLE PLUGS



Feedthrough part number	Suitable for
KE-KE 1051 A004-8	SE connections

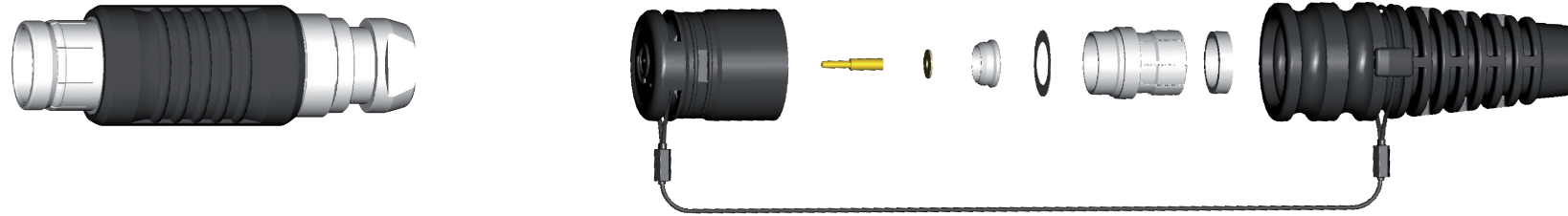
PANEL CUT-OUT



FOR SE MODELS

BROADCAST

Cable clamp set



Plug cap is included with the cable clamp set

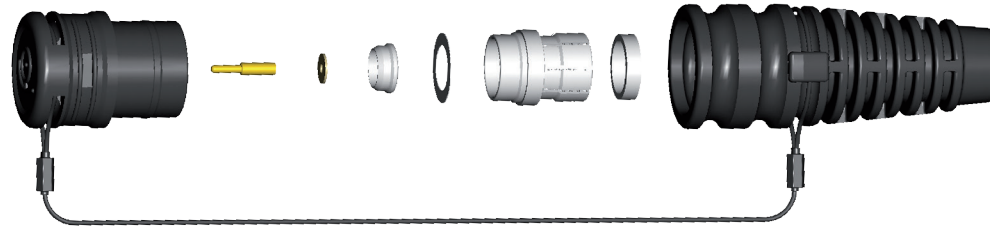
	Cable diameters (mm)	Cable clamp part number ¹⁾
SE 1051 A004-9+	1.0 / 4.5 / 8.7	E3 SE1051.3/A004-9/1.0/4.5/8.7
	1.0 / 4.5 / 9.4	E3 SE1051.3/A004-9/1.0/4.5/9.4
	1.4 / 4.5 / 9.4	E3 SE1051.3/A004-9/1.4/4.5/9.4
	1.4 / 6.6 / 11.3	E3 SE1051.3/A004-9/1.4/6.6/11.3
SE 1051 A004-HD Pro*	1.75 / 7.5 / 11.9 HD Pro+	E3 SE1051.3/A004-HD Pro/1.75/7.5/11.9

¹⁾ See list of recommended cables on page B11-26.

FOR KE MODELS



Cable clamp set



Cable receptacle cap is included with the cable clamp set

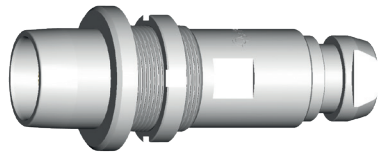
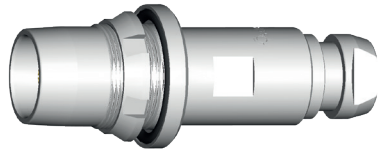
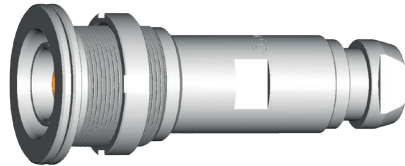
Cable diameters (mm)	Cable clamp part number ¹⁾
1.0 / 4.5 / 8.7	E3 KE1051.4/A004-9/1.0/4.5/8.7
1.0 / 4.5 / 9.4	E3 KE1051.4/A004-9/1.0/4.5/9.4
1.4 / 4.5 / 9.4	E3 KE1051.4/A004-9/1.4/4.5/9.4
1.4 / 6.6 / 11.3	E3 KE1051.4/A004-9/1.4/6.6/11.3
1.75 / 7.5 / 11.9 HD Pro+	E3 KE1051.4/A004 HD Pro/1.75/7.5/11.9



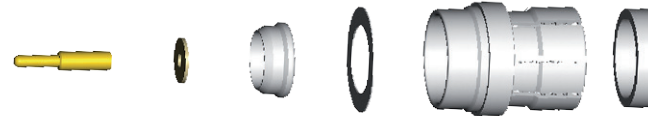
¹⁾ See list of recommended cables on page B11-26.


FOR DSR, DKBE AND DKE MODELS

BROADCAST




Cable clamp set




Cable diameters (mm)	Cable clamp part number ¹⁾
1.0 / 4.5 / 8.7	E3 1051.5/A004-9/1.0/4.5/8.7
1.0 / 4.5 / 9.4	E3 1051.5/A004-9/1.0/4.5/9.4
1.4 / 4.5 / 9.4	E3 1051.5/A004-9/1.4/4.5/9.4
1.4 / 6.6 / 11.3	E3 1051.5/A004-9/1.4/6.6/11.3
1.75 / 7.5 / 11.9 	E3 1051.5/A004-HD Pro/1.75/7.5/11.9






DSR 1051 A004-9+
DKBE 1051 A004-9+
DKE 1051 A004-9+



DSR 1051 A004-HD Pro+
DKBE 1051 A004-HD Pro+
DKE 1051 A004-HD Pro+

¹⁾ See list of recommended cables on page B11-26.

FOR A004-9 & HD PRO+MODELS

	Description	Part number	Suitable for
	Protective sleeve	1051.1569	All SE, KE
	Plug cap	1051.1576	All SE, DS, DSR
	Receptacle cap	1051.1577	All KE, DKE, DKBE, DB

BROADCAST

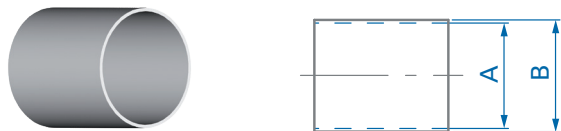
COMBINED SLEEVE & CAP FOR A004-4 MODELS

	Description	Part number	Suitable for
	Protective sleeve	1051.875	SE 1051 A004-4 1.4/6.6/12.6 SE 1051 A004-4 T1895/13.6
	Protective sleeve	1051.874	SE 1051 A004-4 2.1Ls/10s/15.2
	Protective sleeve	1051.876	KE 1051 A004-4 1.4/6.6/12.6 KE 1051 A004-4 T1895/13.6
	Protective sleeve	1051.877	KE 1051 A004-4 2.1Ls/10s/15.2

All dimensions and images shown are in millimeters and are for reference only.

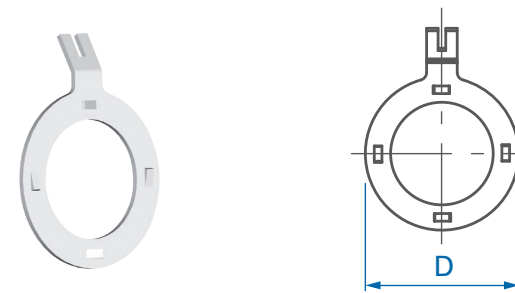
SPARE PARTS

CRIMP FERRULES



Part number	A	B	Suitable for
1051.910	11.8	12.5	SE 1051 A004-4 T1895/13.6
			KE 1051 A004-4 T1895/13.6
			DKE 1051 A004-4 T1895/13.6
			DSR 1051 A004-4 T1895/13.6
			DSR 1051 A004-4 2.1Ls/10s/15.2
1051.922	14.3	15.5	SE 1051 A004-4 2.1Ls/10s/15.2
			KE 1051 A004-4 2.1Ls/10s/15.2
			DKE 1051 A004-4 2.1Ls/10s/15.2

SOLDER LUG WITH FORKS



Part number	D	Suitable for
1051.311	30	DB
1051.615	34	DS

SPARE PARTS

CRIMP AND/OR SOLDER CONTACTS

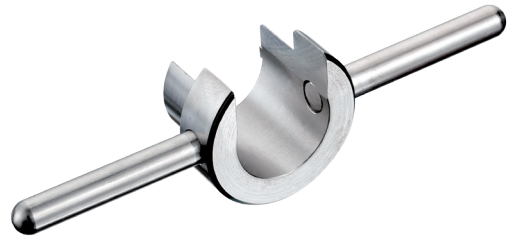


Part number	D	Suitable for
1051.900	1.0	A004-x 1.0/xx/xx
1051.905	1.5	A004-x 1.4/xx/xx
1051.919	1.8	A004-x HD Pro+
1051.906	2.5	A004-4T1895 A004-4 2.1Ls

All dimensions and images shown are in millimeters and are for reference only.

BROADCAST



SPANNER FOR INNER THREADED RING



Part number	Suitable for
TQ00.002	All body styles -4


HOOK SPANNER FOR SLOTTED NUTS



Part number	Suitable for
TX00.105	 30-32 DS + DSR + DKE -9 + DKE HD-Pro+
TX00.106	 34-36 DKE -4

NUT DRIVER



Part number	Suitable for
TQ00.005	 31 DKBE

CONTACT CRIMP TOOL



Part number	Description
TX00.242	Buchanan 615708

CRIMP TOOL



Part number	Description
TX00.245	Daniels HX4 (M 22520/5-01)

CONTACT CRIMP TOOL POSITIONER



Part number	Suitable for
TX00.315	All connectors corresponding to cable groups 1 to 4 ¹⁾
TX00.317	All connectors corresponding to cable groups 5 to 6 ¹⁾


¹⁾ See list of recommended cables on page B11-26.

CRIMP TOOL DIES



Part number	Hexagon width	Description
TX00.270	10.9	Daniels Y178 (M 22520/5-61)
TX00.271	13.51	Daniels Y151 (M 22520/5-27)

RECOMMENDED TRIAXIAL CAMERA CABLES 75 Ω

	Cable			Cable diameters ¹⁾ [mm]			Recommended connectors ²⁾	Recommended clamp set
	Brand	Type	Reference	Core	Dielectric	Ext.		
1	Bedeia	Standard 8 (PUR)	–	1.0	4.5	8.5	All body styles 1051 A004-9+ DS+DB+DSQ+DBQ 1051 A004-3 1.0/5.0	E3 1051.1/A004-9/1.0/4.5/8.7 N/A
	Bedeia	Superflex 8 (TPE flex)	–	1.0	4.5	8.6		
	Belden	Triax 8	7783A	1.0	4.5	8.4		
	Draka	Triax 8 (PVC)	CT2765700	1.0	4.5	8.4		
	Draka	Triflex 8 (PUR)	CT2767900	1.0	4.5	8.4		
	Intercond	8.5mm (PVC or PUR)	RX 75/55	1.0	4.7	8.5		
	Fujikura	4.8/1.0 EFTXF	–	1.0	4.8	8.6		
	Hirakawa	TRIAx 4.8/1.0-TUFRET	3118-250	1.0	4.8	8.8		
2	Belden	–	9267, 1857A	0.8	3.7	9.2	All body styles 1051 A004-9+ DS+DB+DSQ+DBQ 1051 A004-3 1.0/5.0	E3 1051.1/A004-9/1.0/4.5/9.4 E3 1051.1/A004-9/1.4/4.5/9.4 N/A
	Draka	Triax 8 (FRNC) Reinforced	CT2853203	1.0	4.5	9.0		
3	Belden	Triax 11	7784AS	1.4	6.5	11.2	All body styles 1051 A004-9+ DS+DB 1051 A004-3 1.4/6.6	E3 1051.1/A004-9/1.4/6.6/11.3 N/A
	Intercond	11.0mm (PVC or PUR)	RX 75/56	1.4	6.5	11.0		
	Bedeia	Standard 11 (PUR)	–	1.4	6.5	11.0		
	Bedeia	Superflex 11 (TPE flex)	–	1.4	6.0	11.3		
	Draka	Triax 11 (PVC)	CT2766400	1.4	6.5	11.0		
	Draka	Triflex 11 (PUR)	CT2768100	1.4	6.5	11.0		
	Draka		CT 2768700	1.75	7.5	11.9		

RECOMMENDED TRIAXIAL CAMERA CABLES 75 Ω

	Cable			Cable diameters ¹⁾ [mm]			Recommended connectors ²⁾	Recommended clamp set
	Brand	Type	Reference	Core	Dielectric	Ext.		
4	Draka	Triax 11/1 (PU) Reinforced	CT2767101	1.4	6.5	12.2	SE+KE+DSR+DKE 1051 A004-4 1.4/6.6/12.6	Included
							DS+DB 1051 A004-3 1.4/6.6	N/A
5	Belden	–	9192, 9232	1.6	8.0	13.2	SE+KE+DSR+DKE 1051 A004-4T1895/13.6	Included
6	Belden	Triax 14	7785A	2.2	9.7	14.5	SE+KE+DSR+DKE 1051 A004-4 2.1Ls/10s/15.2	Included
	Intercond	14.0mm (PVC or PUR)	RX 75/57	2.2	9.7	14.0		
	Draka	Triax 14 (PVC)	CT2766700	2.2	9.7	14.4		
	Draka	Triax 14 (PUR)	CT2767000	2.2	9.7	14.5		
	Bedeia	Standard 14 (PUR)	–	2.2	9.7	14.4		
	Bedeia	Superflex 14 (TPE flex)	–	2.2	9.7	14.5		
	Fujikura	9.6/2.22 EFTXF	–	2.2	9.6	14.5		
Hirakawa	TRIAX-1/2.22-TUFRET	3118-290	2.2	9.6	14.5			

¹⁾ The cable dimensions listed are reference only, sizes may vary according to production batch.

²⁾ Connector types for other cables not listed are by request.

Please note that there are many additional cables in the marketplace that can be matched with Fischer Connectors.

Please contact your local sales representative for assistance with cables not listed above.

MECHANICAL & ENVIRONMENTAL DATA

Parameter	Values	Norm
Mating cycles	5000	
Temperature range - 1051 A004-3 - 1051 A004-4 - 1051 A004-9	-55°C to + 135°C -55°C to + 135°C -40°C to + 85°C	
Vibration	10 to 2000 Hz, 1.5 mm or 20 g, no discontinuity > 1 µs	EIA-364-28, Test cond. IV (MIL-STD-1344, Method 2005 superseded)
Protection level SE, KE, DKE	IP68 when mated or with fitted sealing caps 2 m/24 h	IEC 60529
Corrosion, salt spray	96 h with 5% salt solution at 35°C	IEC 60068-2-11, Test Ka MIL-STD-202, Method 101, cond. A

MATERIAL & SURFACE TREATMENTS

Part	Materials	Finish
Housings - 1051 A004-3 - 1051 A004-4 - 1051 A004-9	Brass Brass Brass, Steel, PA	Chrome over Nickel Chrome over Nickel Nickel
Housing accessories	Brass	Nickel
Inner contact	Bronze	Gold over Nickel
Crimp contact	Brass	Gold over Nickel
Outer contact	Brass	Gold over Nickel
Ground contact	Brass	Nickel
Insulators - 1051 A004-3 - 1051 A004-4 - 1051 A004-9	PTFE, PCTFE, PP-H PTFE, PCTFE, PP-H POM, PP-H, PEI	- - -
Washers	PEEK, PET	-
O-ring seals	NBR, NBR Low Temp	-
Cable seal and protections	TPE	-

ELECTRICAL DATA

Parameter	Values	Norm
Nominal impedance	75 Ω	
Test voltage at sea level (mated) - Center to outer contact - Outer to ground contact	1.7 kVAC 1.0 kVAC	IEC 60512-4-1, Test 4a, Method c
Current rating per contact	14 A	IEC 60512-5-2, Test 5b
Contact resistance - Center contact - Outer contact - Ground contact	<3 m Ω <0.5 m Ω <5 m Ω	IEC 60512-2-1, Test 2a IEC 60512-2-2, Test 2b
Insulation resistance	> 10 ¹⁰ Ω	IEC 60512-3-1, Test 3a
VSWR (Voltage Standing Wave Ratio) - 0 to 250 MHz - 250 to 1300 MHz	< 1.05 < 1.2	