DEUTSCH FDBA/HDBA Series Standard UTE 93422

HE302, HE303, NFL54130 and EN3646

Rugged Bayonet Connector Designed for Aerospace and Harsh Environment

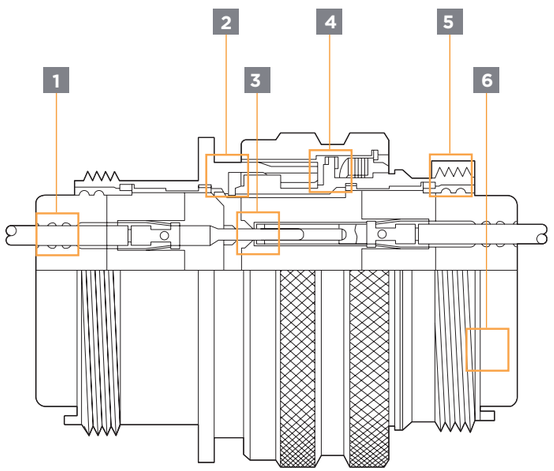
CONTENTS

Introduction	04
Synoptic	05
Technical Characteristics	06
Part Numbering System	08
Key Orientation	10
Arrangements	11
Receptacles	12
Hermetic Receptacles	20
Plugs	22
Mating and Unmating Dimensions	25
Protective Covers	26
Accessories	27
Dummy Receptacle for Plugs	27
Panel Seal	28
Contacts	29

FDBA/HDBA Series Standard UTE 93422

HE302, HE303, NFL54130 and EN3646

Introduction



1. Triple wire sealing.
2. Interfacial seal ensured by compression of insert and static/dynamic seal.
3. Contacts individual sealing at coupling stage by compression of elastomer conical risers on hard insert.
4. Anti-friction washers for constant mating force.
5. Insert to shell sealing with potting.
6. Connector rear part fitted with a teeth anti-rotation system assuming an effective tightening and clamping.

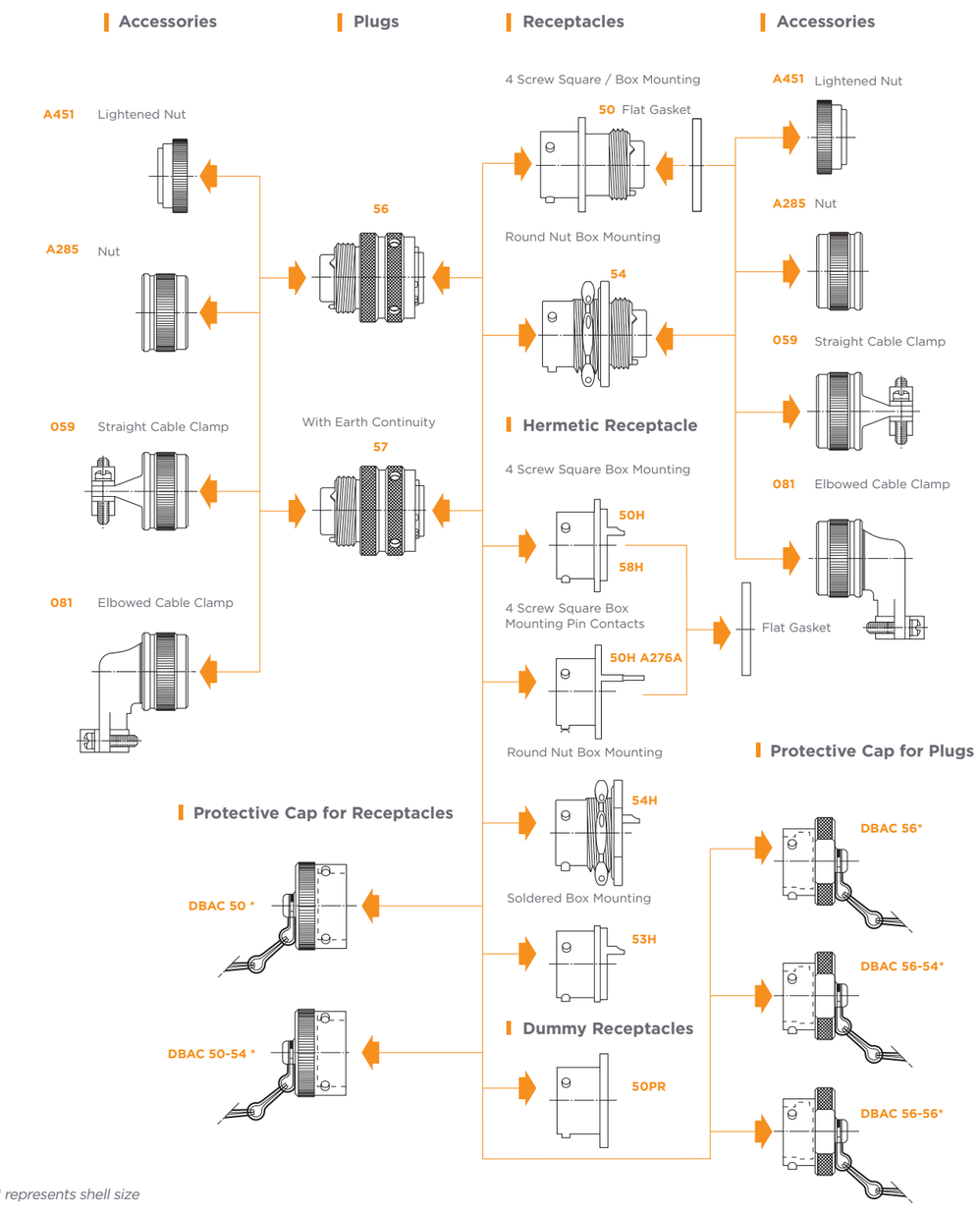
1. Bayonet coupling
2. Black Anodize, Nickel or Cadmium plated Aluminium shells. Hermetics are Nickel plated steel. Other plating options are available based on request.
3. Silicone elastomer and thermosetting resin insert. Silicone elastomer and sintered glass for hermetic.
4. RoHS (Restriction of Hazardous Substances)/REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) Compliant Black EN plating version option available in Aluminium shell.
5. Gain in weight (25%) and overall dimension (23%) compared to NAS 1599 connectors. Gain in weight (50%) for aluminium hermetic version compared to steel and stainless steel hermetic version.
6. Crimping contacts size 20, 16 and 12.
7. Solder contacts hermetic shells.
8. Contacts for printed circuit available in sealed and hermetic shells.
9. Back silicone insert on each wire to accept the new generation of aeronautic cables.
10. 9 sizes of shells and 27 arrangements available.

TE Components . . . TE Technology . . . TE Know-how . . .

AMP | AGASTAT | CII | HARTMAN | KILOVAC | MICRODOT | NANONICS | POLAMCO | Raychem SEACON | Rochester | DEUTSCH

Empower Engineers to Solve Problems, Moving the World Forward.

Synoptic



** represents shell size*

Technical Characteristics

MECHANICAL

- **Shell:**
  Material: Sealed version: Aluminium alloy
  Hermetic version: Stainless Steel
  Plating: Black Anodize, Nickel, Cadmium or REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals)/RoHS (Restriction of Hazardous Substances) Compliant Black EN.

- **Insert:**
  Material: Sealed version: Thermosetting, elastomer
  Hermetic version: Sintered glass insert

- **Fluid Resistance:** (in accordance with BES/SST/ELC/321/Prod. and MIL-C-26482). Skydrol oil, JP5 fuel, Engine Oils and Hydraulic Fluids

- **Pressure Resistance:**
  Hermetic version: Up to 70 bars. Consult us for other pressure requirements

- **Contacts:**
  Material and Plating: Sealed version: Copper alloy – Gold over nickel
  Hermetic version: Ferrous alloy - Gold over nickel -
  Solder type $^{+1.3}_{-0}$
  Contact Retention: Sealed version $^{+1.3}_{-0}$
  - Size 20 - 9 $^{+1.3}_{-0}$ daN
  - Size 16 - 11 daN
  - Size 12 - 11 daN

- **Vibrations:** In accordance with MIL-STD 202 method 204, condition B

- **Physical Shocks:**
  Sealed Version: 100g 11 ms in the 3 axes
  Hermetic Version: 50g in the 3 axes

- **Durability:** 500 full coupling and uncoupling cycles

- **Shielding:** 5mΩ (FDBA 57 version)

ENVIRONMENTAL CONDITIONS

- **Service Temperature:** – 55°C to + 200°C

- **Thermal Shocks:**
  Sealed and Steel/Stainless Steel and Hermetic Version: 10 cycles from – 55°C to + 200°C
  Aluminium Hermetic Version: 10 cycles from – 55°C to + 200°C
  1 cycle 10 H/200°C

- **Sealing:**
  Sealed Version: (in accordance with MIL-C-26482).
  Maximum leackage ≤ 16 cm^3/h under 2.1 bars

- **Air Leackage:**
  Hermetic Version: ≤ 1.10–6 mbar.l/s under 1 bar vaccum.

- **Salt Spray:**
  Hermetic Version: Nickel - 48 hours
  Black Anodized-96 Hrs
  Stainless Steel/Cadmium-500 hrs

ELECTRICAL

- **Withstanding Voltage:**
  At sea level:
  - Service 1 - 1500 V eff. 50Hz
  - Service 2 - 2300 V eff. 50Hz

- **Service Voltage:**
  Sealed Version:
  - Service 1 - 500 V eff. 50Hz
  - Service 2 - 750 V eff. 50Hz
  Hermetic Version: 500 V eff. 50 Hz

- **Insulation Resistance:**
  Sealed Version: ≤ to 5000 MΩ to 25°C and 60% HR
  Hermetic Version: ≥ to 5000 MΩ to 25°C and 60% HR

- **Contacts Maximum Current:**
  Sealed and Aluminium Hermetic Version:
  - Size 20 : 7.5 A max.
  - Size 16 : 13 A max.
  - Size 12 : 23 A max.
  Stainless Steel and Steel Hermetic Version:
  - Size 20 : 5 A max.
  - Size 16 : 10 A max.
  - Size 12 : 17 A max.

- **Contact Resistance:**
  Sealed and Aluminium Hermetic Version:
  - Size 20 : 3 mΩ under max intensity
  - Size 16 : 2 mΩ under max intensity
  - Size 12 : 1.5 mΩ under max intensity
  Stainless Steel and Steel Hermetic Version:
  - Size 20 : 21 mΩ under max intensity
  - Size 16 : 14 mΩ under max intensity
  - Size 12 : 11 mΩ under max intensity

- **Allowed Wires Section:**
  Sealed Version:
  - Size 20 : 0.21 to 0.60 mm^2
  - Size 16 : 0.60 to 1.34 mm^2
  - Size 12 : 1.91 to 3.18 mm^2
  Hermetic Version:
  - Size 20 : 0.21 to 0.93 mm^2
  - Size 16 : 0.60 to 0.91 mm^2
  - Size 12 : 1.91 to 3.18 mm^2

- **Diameter Over Insulation Sheath:**
  Sealed Version:
  - Size 20 : 0.71 to 2.11 mm
  - Size 16 : 1.20 to 2.62 mm
  - Size 12 : 1.93 to 4.01 mm

Part Numbering System

DEUTSCH PART NUMBERING SYSTEM

Example of order : FDBA / HDBA *4 H ** - ** P N - K ***

CONNECTOR TYPE

	Standard and hermetic
	Aluminium hermetic version

VERSION

5	Standard
6	Stainless steel nickel plating
7	Passivated stainless steel

SHELL TYPE

*0	Square flange receptacle
*3	Solder receptacle. hermetic only
*4	Jam-nut mounting receptacle
*6	Plug
*7	Plug with RFI (RADIO FREQUENCY INTERFERENCE) fingers
*8	Large square flange. hermetic only
*	Stainless steel. consult us

VERSION

H	Hermetic
Without index	Sealed

SHELL SIZE

08-10-12-14-16-18-20-22-24

ARRANGEMENTS

(See page 7)

CONTACT TYPE

P	Male contact
S	Female contact

INSERT CLOCKING POSITION

N	Normal
W-X-Y-Z	Others

INDEX

Connector evolution

SPECIAL MODIFICATIONS

059	Straight cable clamp
081	Elbowed Cable Clamp
090	Delivery without contact
A246	Size 20 contact in accordance with ASNE
A499	Nickel version connector
A838	Olive drab cadmium
B246	Hybrid arrangement size 20 & 16. in accordance with ASNE
A377	PC tail connector

For other PC tail options, consult TE Connectivity representative

EN3646 PART NUMBERING SYSTEM

Example of order : EN3646 * * 10 - 06 - M N

CONNECTOR TYPE

CONNECTOR MODEL

A	Black anodized aluminium
RS	Nickel-plated aluminium alloy. plug with grounding-spring-system Screening ring
WS	with grounding-spring-system screening ring
Y	Hermetic receptacle. in passivated stainless steel

SHELL TYPE

0	Sealed or hermetic square flange receptacle
6	Plug
7	Sealed or hermetic Jam nut mounting receptacle

SHELL SIZE

08-10-12-14-16-18-20-22-24

ARRANGEMENTS

(See page 10)

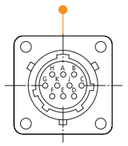
CONTACT TYPE

M	Male standard contact
F	Female standard contact
A	Male contact undelivered
B	Female contact undelivered
C	Special male contact size 20
D	Special female contact size 20

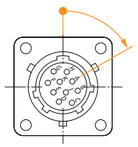
INSERT CLOCKING POSITION

N	Normal
W-X-Y-Z	Others

Male front face view



Normal clocking position



Normal clocking position

Key Orientation

Clocking position is normal when the insert vertical axis is intermingled with the shell keyway axis. An unkeying can be performed between 2 connectors of same layout by angular displacement of one of the inserts in its shell.

This insert rotation is made in the clockwise for pin layouts and in the counter clockwise for socket layouts. Angular displacements on the hereafter table give clocking positions W - X - Y - or Z (see table).

Arrangements	Clocking position in degrees				Contacts sizes				Service Voltage (see page 7)
	W	X	Y	Z	20	16	12	8	
8-3A / 8-98	60	210	-	-	3	-	-	-	1
8-33	90	-	-	-	3	-	-	-	1
8 E1*	-	-	-	-	-	-	-	1	
10-6	90	-	-	-	6	-	-	-	1
12-3	-	-	180	-	-	3	-	-	2
12-8	90	112	203	292	8	-	-	-	1
12-10	60	155	270	295	10	-	-	-	1
14-4	45	-	-	-	-	-	4	-	1
14-5	40	92	184	273	-	5	-	-	2
14-12	43	90	-	-	8	4	-	-	1
14-15	17	110	155	234	14	1	-	-	1
14-19	30	165	315	-	19	-	-	-	1
16-8	54	152	180	331	-	8	-	-	2
16-21	-	-	-	-	16	5	-	-	1
16-26	60	-	275	338	26	-	-	-	1
18-11	62	119	241	340	-	11	-	-	1
18-32	85	138	222	265	32	-	-	-	1
20-16	238	318	333	347	-	16	-	-	2
20-39	63	144	252	333	37	2	-	-	1
20-41	45	126	225	-	41	-	-	-	1
22-12	-	-	-	6	-	-	12	-	1
22-21	16	135	175	349	-	21	-	-	2
22-41	39	135	264	-	27	14	-	-	1
22-55	30	142	226	314	55	-	-	-	1
24-19	30	165	315	-	-	-	19	-	2
24-31	90	225	255	-	-	31	-	-	1
24-61	90	180	270	324	61	-	-	-	1

** 8 E1 arrangement used only with coax, twinax, triax, quadrax, and optical contacts.*

Arrangements

MALE INSERT VIEWED FROM FRONT FACE.

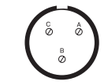
8-3A/8-98
3 contacts size 20

8-33
3 contacts size 20

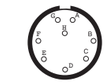
8 E1
1 contact Quadrax

10-6
6 contacts size 20

12-3
3 contacts size 16

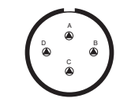


12-8
8 contacts size 20

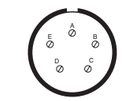


12-10
10 contacts size 20

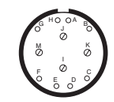
14-4
4 contacts size 12



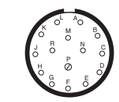
14-5
5 contacts size 16



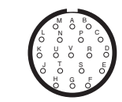
14-12
8 contacts size 20
4 contacts size 16



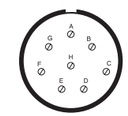
14-15
14 contacts size 20
1 contacts size 16



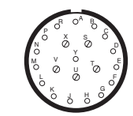
14-19
19 contacts size 20



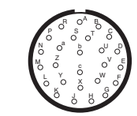
16-8
8 contacts size 16



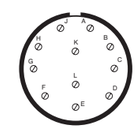
16-21
16 contacts size 20
5 contacts size 16



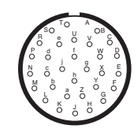
16-26
26 contacts size 20



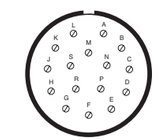
18-11
11 contacts size 16



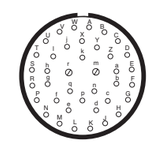
18-32
32 contacts size 20



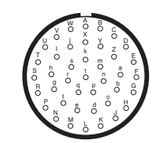
20-16
16 contacts size 16



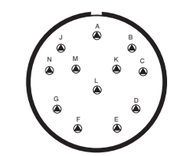
20-39
37 contacts size 20
2 contacts size 16



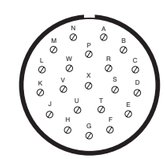
20-41
41 contacts size 20



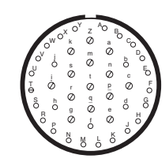
22-12
12 contacts size 12



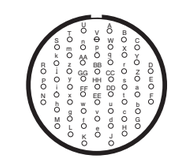
22-21
21 contacts size 16



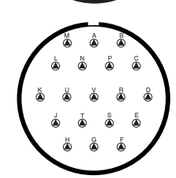
22-41
27 contacts size 20
14 contacts size 16



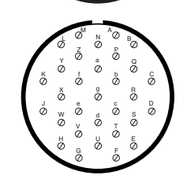
22-55
55 contacts size 20



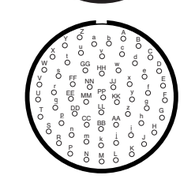
24-19
19 contacts size 12



24-31
31 contacts size 16

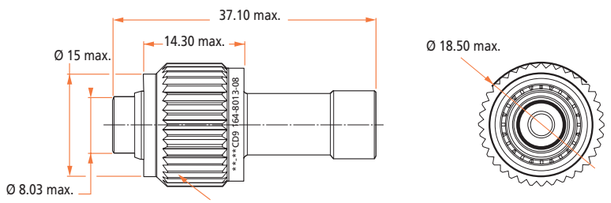


24-61
61 contacts size 20



Receptacles

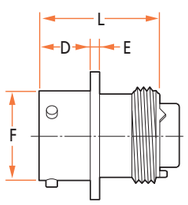
Rear Accessory 164-8013- for Receptacle FDBA 50-8 E1 PN 090**



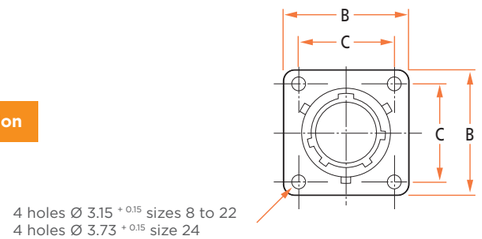
tightening torque : 0.10 mdaN max.

SQUARE FLANGE

Without Nut FDBA 50



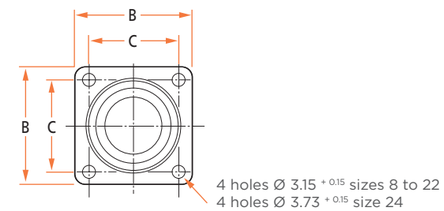
Sealed version

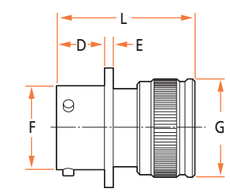


Size	08	10	12	14	16	18	20	22	24
B max.	21.00	24.25	26.60	29.00	31.30	33.70	36.85	39.95	43.15
C ± 0.1	15.08	18.26	20.62	23.02	24.58	26.98	29.36	31.76	34.92
D ± 0.15	11.13	11.13	11.13	11.13	11.13	11.13	14.85	14.85	15.70
E max.	1.45	1.45	1.45	1.45	1.45	1.45	2.25	2.25	2.25
F max.	12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
L max.	25.50	25.50	25.50	25.50	25.50	25.50	27.95	27.95	27.95

Dimensions in mm

With Nut FDBA 50--A285**

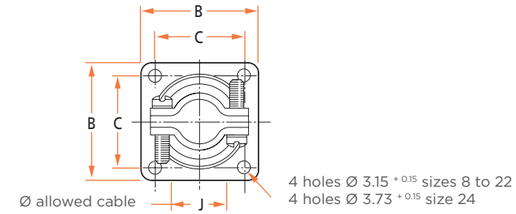


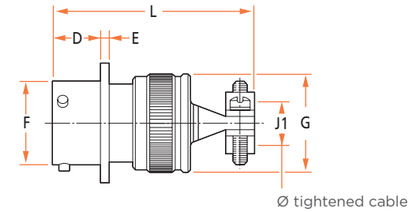


Size	08	10	12	14	16	18	20	22	24
B max.	21.00	24.25	26.60	29.00	31.30	33.70	36.85	39.95	43.15
C ± 0.1	15.08	18.26	20.62	23.02	24.58	26.98	29.36	31.76	34.92
D ± 0.15	11.13	11.13	11.13	11.13	11.13	11.13	14.85	14.85	15.70
E max.	1.45	1.45	1.45	1.45	1.45	1.45	2.25	2.25	2.25
F max.	12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
G max.	15.65	18.65	21.80	25.00	28.25	30.95	34.15	37.30	40.45
L max.	31.45	31.45	31.45	31.45	31.45	31.45	33.85	33.85	33.85
Max. rear accessory tightening torque	0.35 daN	0.40 daN	0.50 daN	0.60 daN	0.65 daN	0.70 daN	0.75 daN	0.80 daN	0.90 daN

Dimensions in mm

With Straight Cable Clamp FDBA 50- 059**

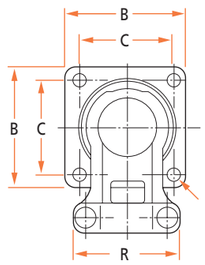




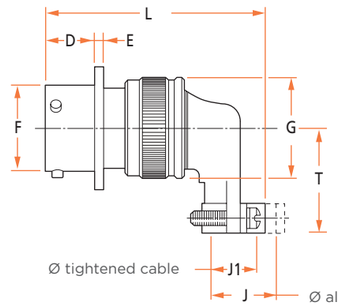
Size	08	10	12	14	16	18	20	22	24
B max.	21.00	24.25	26.60	29.00	31.30	33.70	36.85	39.95	43.15
C ± 0.1	15.08	18.26	20.62	23.02	24.58	26.98	29.36	31.76	34.92
D ± 0.15	11.13	11.13	11.13	11.13	11.13	11.13	14.85	14.85	15.70
E max.	1.45	1.45	1.45	1.45	1.45	1.45	2.25	2.25	2.25
F max.	12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
G max.	15.65	18.65	21.80	25.00	28.25	30.95	34.15	37.30	40.45
J1 max.	5.15	7.25	10.55	12.05	15.85	17.95	21.05	24.25	27.45
J max.	6.80	7.95	12.75	14.60	17.80	19.80	23.00	26.10	28.80
L max.	40.40	40.40	40.40	46.40	46.40	46.40	48.85	48.85	48.85
Max. rear accessory tightening torque	0.35 daN	0.40 daN	0.50 daN	0.60 daN	0.65 daN	0.70 daN	0.75 daN	0.80 daN	0.90 daN

Dimensions in mm

With Elbowed Cable Clamp FDBA 50-** 081



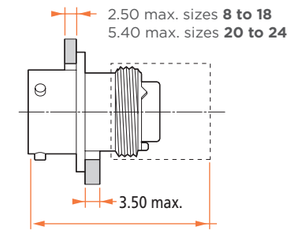
4 holes Ø 3.15 $^{+0.15}$ sizes 8 to 22
4 holes Ø 3.73 $^{+0.15}$ size 24



Size	08	10	12	14	16	18	20	22	24
B max.	21.00	24.25	26.60	29.00	31.30	33.70	36.85	39.95	43.15
C ± 0.1	15.08	18.26	20.62	23.02	24.58	26.98	29.36	31.76	34.92
D ± 0.15	11.13	11.13	11.13	11.13	11.13	11.13	14.85	14.85	15.70
E max.	1.45	1.45	1.45	1.45	1.45	1.45	2.25	2.25	2.25
F max.	12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
G max.	15.65	18.65	21.80	25.00	28.25	30.95	34.15	37.30	40.45
J1 max.	5.15	7.25	10.55	12.05	15.85	17.95	21.05	24.25	27.45
J max.	6.80	7.95	12.75	14.60	17.80	19.80	23.00	26.10	28.80
L max.	43.80	46.15	49.60	51.85	55.25	58.70	64.50	67.60	70.70
R max.	17.40	20.20	23.60	25.50	29.70	32.60	36.00	39.20	42.80
T max.	20.70	22.00	23.80	25.30	26.80	28.30	29.90	31.60	33.20
Max. rear accessory tightening torque	0.35 daN	0.40 daN	0.50 daN	0.60 daN	0.65 daN	0.70 daN	0.75 daN	0.80 daN	0.90 daN

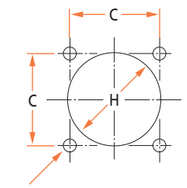
Dimensions in mm

Mounting Styles



Overall (as per accessory)

Panel cutout



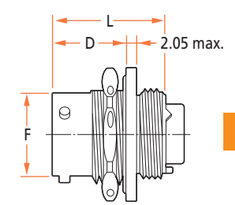
4 holes Ø 3.15 ± 0.15 sizes 8 to 22
4 holes Ø 3.73 ± 0.15 size 24

Size	08	10	12	14	16	18	20	22	24
C ± 0.1	15.08	18.26	20.62	23.02	24.58	26.98	29.36	31.76	34.92
H +0 / -0.2	16.05	19.00	22.25	25.40	28.60	31.75	34.90	38.10	41.30

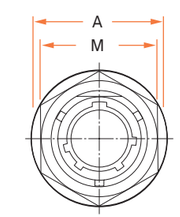
Dimensions in mm

SINGLE HOLE MOUNTING

Without Nut FDBA 54



Sealed version



Size	08	10	12	14	16	18	20	22	24
A max.	23.30	26.60	30.40	33.80	37.00	40.15	45.20	48.35	51.55
D ± 0.1	11.13	11.13	11.13	11.13	11.13	11.13	14.85	14.85	15.70
F max.	12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
L max.	25.50	25.50	25.50	25.50	25.50	25.50	27.95	27.95	27.95
M max.	19.20	22.37	27.12	30.30	33.47	36.67	39.82	43.02	46.17
Max. rear accessory tightening torque	0.75 daN	1 daN	1.30 daN	1.50 daN	1.80 daN	2.10 daN	2.30 daN	2.60 daN	2.90 daN

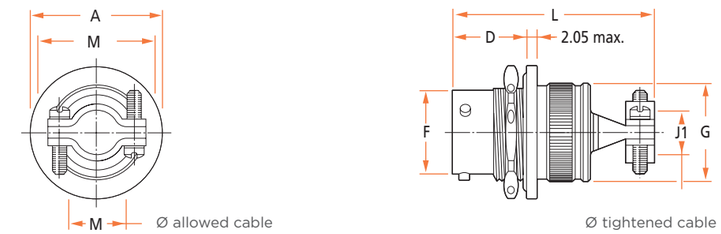
Dimensions in mm

With Nut FDBA 54-**-A285

Size	08	10	12	14	16	18	20	22	24
A max.	23.30	26.60	30.40	33.80	37.00	40.15	45.20	48.35	51.55
D ± 0.1	11.13	11.13	11.13	11.13	11.13	11.13	14.85	14.85	15.70
F max.	12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
G max.	15.65	18.65	21.80	25.00	28.25	30.95	34.15	37.30	40.45
L max.	31.45	31.45	31.45	31.45	31.45	31.45	33.85	33.85	33.85
M max.	19.20	22.37	27.12	30.30	33.47	36.67	39.82	43.02	46.17
Max. lightened nut jam nut mounting tightening torque	0.75 daN	1 daN	1.30 daN	1.50 daN	1.80 daN	2.10 daN	2.30 daN	2.60 daN	2.90 daN
Max. rear accessory tightening torque	0.35 daN	0.40 daN	0.50 daN	0.60 daN	0.65 daN	0.70 daN	0.75 daN	0.80 daN	0.90 daN

Dimensions in mm

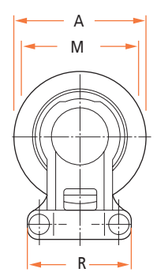
With Straight Cable Clamp FDBA 54-** 059

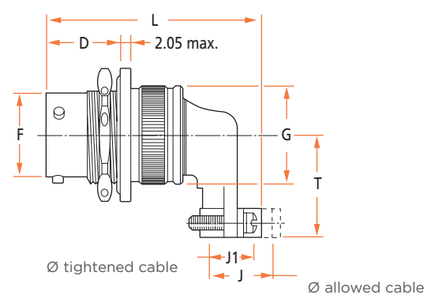


Size	08	10	12	14	16	18	20	22	24
A max.	23.30	26.60	30.40	33.80	37.00	40.15	45.20	48.35	51.55
D ± 0.1	11.13	11.13	11.13	11.13	11.13	11.13	14.85	14.85	15.70
F max.	12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
G max.	15.65	18.65	21.80	25.00	28.25	30.95	34.15	37.30	40.45
J1 max.	5.15	7.25	10.55	12.05	15.85	17.95	21.05	24.25	27.45
L max.	40.40	40.40	40.40	46.40	46.40	46.40	48.85	48.85	48.85
M max.	19.20	22.37	27.12	30.30	33.47	36.67	39.82	43.02	46.17
Max. lightened nut jam nut mounting tightening torque	0.75 daN	1 daN	1.30 daN	1.50 daN	1.80 daN	2.10 daN	2.30 daN	2.60 daN	2.90 daN
Max. rear accessory tightening torque	0.35 daN	0.40 daN	0.50 daN	0.60 daN	0.65 daN	0.70 daN	0.75 daN	0.80 daN	0.90 daN

Dimensions in mm

With Elbowed Cable Clamp FDBA 54-** 081

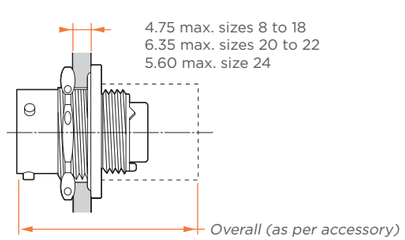


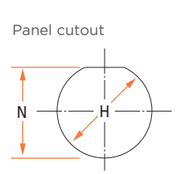


Size	08	10	12	14	16	18	20	22	24
A max.	23.30	26.60	30.40	33.80	37.00	40.15	45.20	48.35	51.55
D ± 0.1	11.13	11.13	11.13	11.13	11.13	11.13	14.85	14.85	15.70
F max.	12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
G max.	15.65	18.65	21.80	25.00	28.25	30.95	34.15	37.30	40.45
J1 max.	5.15	7.25	10.55	12.05	15.85	17.95	21.05	24.25	27.45
J max.	6.80	7.95	12.75	14.60	17.80	19.80	23.00	26.10	28.80
L max.	43.80	46.15	49.60	51.85	55.25	58.70	64.50	67.60	70.70
R max.	17.40	20.20	23.60	25.50	29.70	32.60	36.00	39.20	42.80
T max.	20.70	22.00	23.80	25.30	26.80	28.30	29.90	31.60	33.20
Max. lightened nut jam nut mounting tightening torque	0.75 daN	1 daN	1.30 daN	1.50 daN	1.80 daN	2.10 daN	2.30 daN	2.60 daN	2.90 daN
Max. rear accessory tightening torque	0.35 daN	0.40 daN	0.50 daN	0.60 daN	0.65 daN	0.70 daN	0.75 daN	0.80 daN	0.90 daN

Dimensions in mm

Mounting Styles

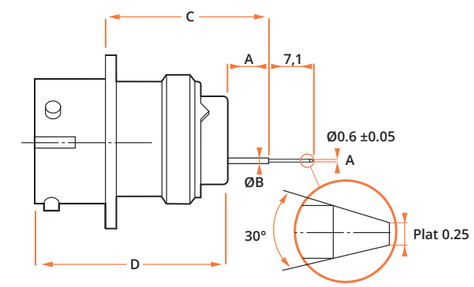




Size	08	10	12	14	16	18	20	22	24
H +0 / -0.2	14.70	17.85	22.60	25.75	28.95	32.10	35.30	38.45	41.65
N +0 / -0.2	13.85	17.05	21.15	24.30	27.45	30.65	33.80	37.00	40.15

Dimensions in mm

FDBA 50-**-A377 / FDBA 54-**-A377



Size	08 - 18	20 - 22	24
A	8.51 ±0.8	7.42 ±0.45	7.42 ±0.45
C	26.75 ±0.8	24.58 ±0.45	23.76 ±0.46
D	29.36 ±0.3	32.01 ±0.3	32.01 ±0.3

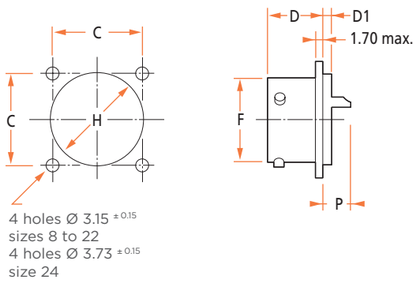
	Size	#20	#16
Contacts	ØB	1.2	1.5
	ref. PIN	006 0063 20	006 0063 16
	ref. SOCKET	006 0064 20	006 0064 16

Dimensions in mm

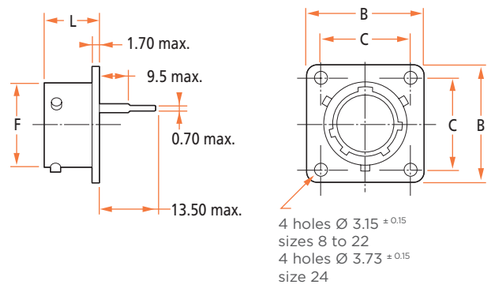
Hermetic Receptacles

SQUARE FLANGE

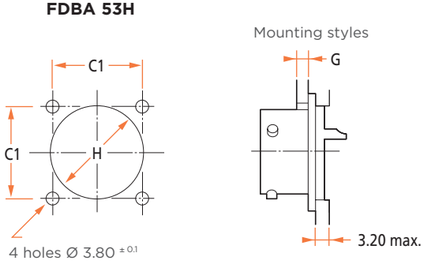
FDBA 50H



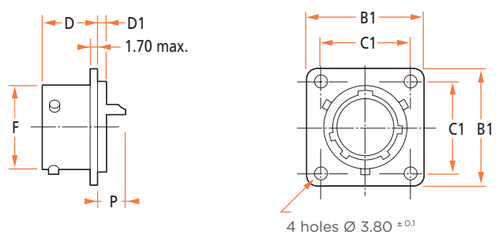
FDBA 50H-**-A276A



FDBA 53H



FDBA 53H-**-A276A

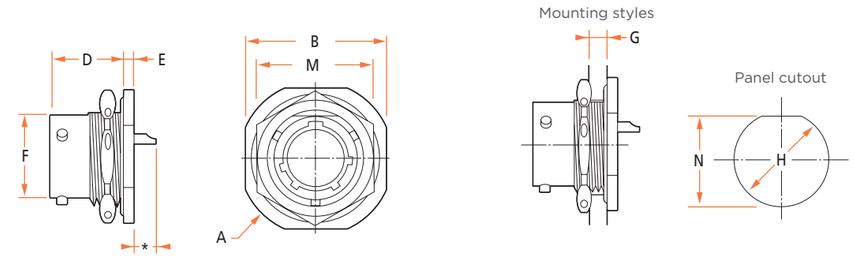


Size		08	10	12	14	16	18	20	22	24
B max.		21.00	24.25	26.60	29.00	31.30	33.70	36.85	39.95	43.15
B1 max.		26.50	29.10	32.25	34.65	37.00	39.05	43.00	44.95	48.15
C ± 0.1		15.08	18.26	20.62	23.02	24.58	26.98	29.36	31.76	34.92
C1 ± 0.1		18.10	20.62	23.82	26.18	28.57	30.55	32.94	34.92	38.10
D ± 0.15		12.65	12.65	12.62	12.65	12.65	12.65	14.09	14.09	14.93
D1 max.		1.55	1.55	1.55	1.55	1.55	1.55	2.25	2.25	2.25
F max.		12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
G max.		2.50	2.50	2.50	2.50	2.50	2.50	5.40	5.40	5.40
H +0 / -0.2		16.05	19.00	22.25	25.40	28.60	31.75	34.90	38.10	41.30
L max.		13.75	13.75	13.75	13.75	13.75	13.75	15.35	15.35	15.35
P max. Sizes	20	6.85	6.85	6.85	6.85	6.85	6.85	7.10	7.10	6.25
	16	8.95	8.95	8.95	8.95	8.95	8.95	9.20	9.20	8.35

Dimensions in mm

SINGLE HOLE MOUNTING

FDBA 54H



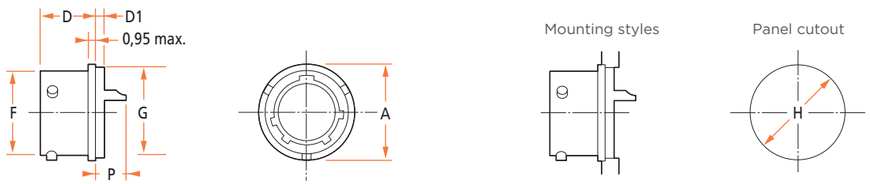
* The contacts size 20 are sunked in the shell.
* The contacts size 16 can stick out of 1.35 max.

Size	08	10	12	14	16	18	20	22	24
A max.	27.30	30.50	35.30	38.40	41.60	44.80	49.60	52.70	55.90
B max.	24.00	27.20	32.00	35.10	38.30	41.50	46.20	49.40	52.60
D ± 0.15	17.81	17.81	17.81	17.81	17.81	17.81	22.58	22.58	23.67
E max.	2.50	2.50	2.50	2.50	2.50	2.50	3.30	3.30	3.30
F max.	12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
G max.	3.17	3.17	3.17	3.17	3.17	3.17	6.35	6.35	6.35
H +0.2 / -0	14.40	17.58	22.45	25.52	28.70	31.87	35.05	38.22	41.40
M max.	19.20	22.37	27.12	30.30	33.47	36.67	39.82	43.02	46.17
N +0.2 / -0	13.48	16.66	20.80	23.95	27.10	30.27	33.45	36.62	39.80
Max. lightened nut jam nut mounting tightening torque	0.75 daN	1 daN	1.30 daN	1.50 daN	1.80 daN	2.10 daN	2.30 daN	2.60 daN	2.90 daN

Dimensions in mm

SOLDER FLANGE

FDBA 53H

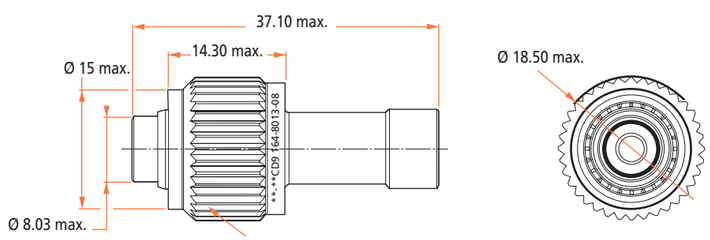


Size		08	10	12	14	16	18	20	22	24
A max.		16.10	19.25	21.65	24.85	28.00	31.15	33.55	36.70	39.90
D ± 0.5		11.50	11.50	11.50	11.50	11.50	11.50	13.11	13.11	13.95
D1 max.		2.60	2.60	2.60	2.60	2.60	2.60	3.35	3.35	3.35
F max.		12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
G max.		14.35	17.15	19.90	23.10	26.25	29.45	31.80	35.00	38.15
H +0.2 / -0		14.75	17.55	20.30	23.50	26.65	29.85	32.20	35.40	38.55
P max. Sizes	20	7.95	7.95	7.95	7.95	7.95	7.95	8.20	8.20	7.35
	16	10.00	10.00	10.00	10.00	10.00	10.00	10.30	10.30	9.50

Dimensions in mm

Plugs

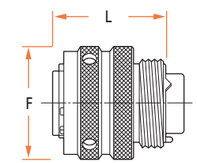
Rear Accessory 164-8013-** for Plug FDBA 56-8 E1 SN 090



Tightening torque : 0.10 mdaN max.

Without Nut FDBA 56 / FDBA 57-**-A499

Shell type 57 with RFI fingers must be ordered in accordance with part numbering system with the modification A499 (nickel version connector).



Sealed version

Size	08	10	12	14	16	18	20	22	24
F max.	17.75	21.05	24.60	28.05	31.10	34.40	37.65	40.90	44.10
L max.	25.55	25.55	25.55	25.55	25.55	25.55	27.10	27.10	27.10

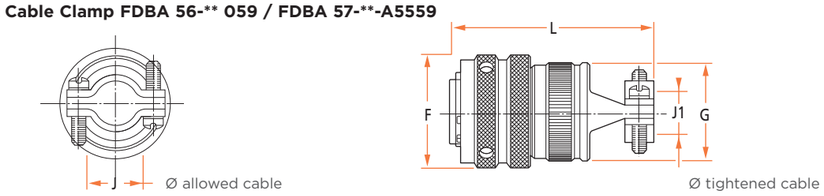
Dimensions in mm

With Nut FDBA 56-**-A285 / FDBA 57-**-A5787

Size	08	10	12	14	16	18	20	22	24
F max.	17.75	21.05	24.60	28.05	31.10	34.40	37.65	40.90	44.10
G max.	15.65	18.65	21.80	25.00	28.25	30.95	34.15	37.30	40.45
L max.	31.45	31.45	31.45	31.45	31.45	31.45	33.00	33.00	33.00
Max. rear accessory tightening torque	0.35 daN	0.40 daN	0.50 daN	0.60 daN	0.65 daN	0.70 daN	0.75 daN	0.80 daN	0.90 daN

Dimensions in mm

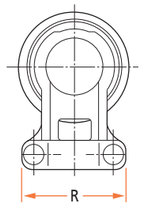
With Straight Cable Clamp FDBA 56-** 059 / FDBA 57-**-A5559

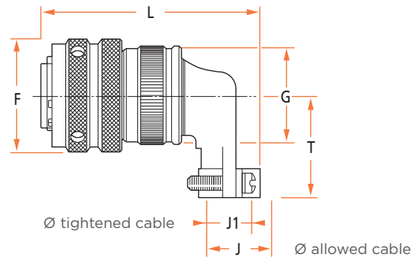


Size	08	10	12	14	16	18	20	22	24
F max.	17.75	21.05	24.60	28.05	31.10	34.40	37.65	40.90	44.10
G max.	15.65	18.65	21.80	25.00	28.25	30.95	34.15	37.30	40.45
J1 max.	5.15	7.25	10.55	12.05	15.85	17.95	21.05	24.25	27.45
J max.	6.80	7.95	12.75	14.60	17.80	19.80	23.00	26.10	28.80
L max.	40.40	40.40	40.40	46.40	46.40	46.40	47.95	47.95	47.95
Max. rear accessory tightening torque	0.35 daN	0.40 daN	0.50 daN	0.60 daN	0.65 daN	0.70 daN	0.75 daN	0.80 daN	0.90 daN

Dimensions in mm

With Elbowed Cable Clamp FDBA 56- 059 / FDBA 57-**-A5560**





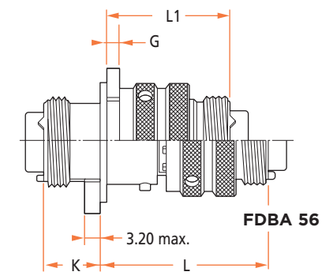
Size	08	10	12	14	16	18	20	22	24
F max.	17.75	21.05	24.60	28.05	31.10	34.40	37.65	40.90	44.10
G max.	15.65	18.65	21.80	25.00	28.25	30.95	34.15	37.30	40.45
J1 max.	5.15	7.25	10.55	12.05	15.85	17.95	21.05	24.25	27.45
J max.	6.80	7.95	12.75	14.60	17.80	19.80	23.00	26.10	28.80
L max.	43.85	46.20	49.65	51.90	55.30	58.75	63.65	66.975	69.85
R max.	17.40	20.20	23.60	25.50	29.70	32.60	36.00	39.20	42.80
T max.	20.70	22.00	23.80	25.30	26.80	28.30	29.90	31.60	33.20
Max. rear accessory tightening torque	0.35 daN	0.40 daN	0.50 daN	0.60 daN	0.65 daN	0.70 daN	0.75 daN	0.80 daN	0.90 daN

Dimensions in mm

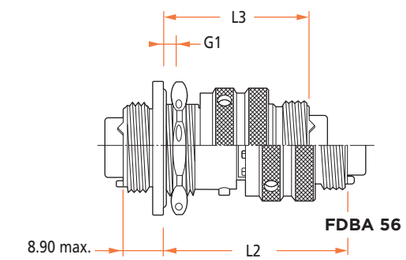
Mating and Unmating Dimensions

Square Flange

FDBA 50



FDBA 54



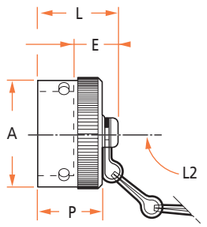
Size	08 - 18	20 - 22	24
K max.	13.30	11.15	10.30
L max.	38.25	44.30	45.15
L1 max.	28.65	32.30	33.15
L2 max.	42.45	46.35	46.35
L3 max.	34.20	36.55	36.55
G max.	2.50	5.40	5.40
G1 max.	4.75	6.35	5.60

Dimensions in mm

Protective Covers

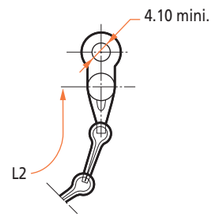
For Receptacles

Overall length after mating



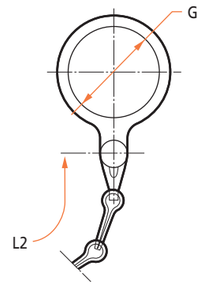
Note : For nylon wire option instead of chain, add MOD A190 at the end of the reference

DBAC 50**



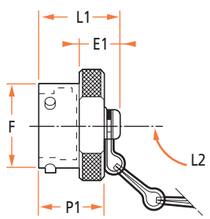
For receptable mounting on square flange receptable

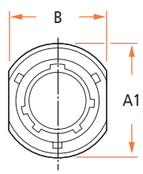
DBAC 50-54**



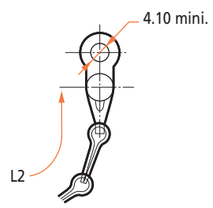
For receptacle mounting on single hole mounting

For Plugs

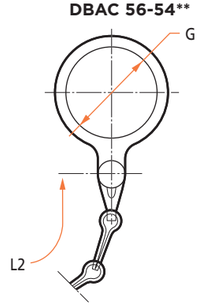




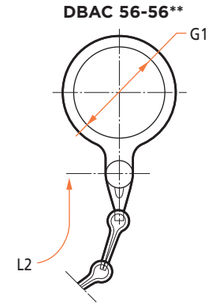
DBAC 56**



DBAC 56-54**



DBAC 56-56**



For plug attached to cable clamp

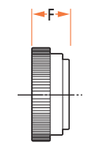
For plug mounting on single hole mounting

Size	08	10	12	14	16	18	20	22	24
A max.	16.60	19.70	24.60	27.80	30.90	34.10	37.30	40.50	44.10
A1 max.	18.30	21.50	25.40	28.60	31.80	34.90	38.10	41.30	44.50
B max.	16.10	18.10	22.10	24.10	27.10	30.10	33.10	36.10	41.10
E max.	10.15	10.15	10.15	10.15	10.15	10.15	10.15	10.15	10.30
E1 max.	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	10.45
F max.	12.03	15.01	19.07	22.24	25.42	28.60	31.77	34.94	38.12
G mini	14.60	17.70	22.50	25.70	28.90	32.00	35.20	38.40	41.60
G1 max.	12.45	15.70	18.85	22.10	25.50	27.35	30.40	33.30	36.80
L max.	17.85	17.85	17.85	17.85	17.85	17.85	17.85	17.85	18.85
L1 max.	18.65	18.65	18.65	18.65	18.65	18.65	20.25	20.25	20.10
L2 max.	79.00	79.00	95.00	95.00	95.00	95.00	111.00	111.00	111.00
P max.	14.20	14.20	14.20	14.20	14.20	14.20	14.20	14.20	15.20
P1 max.	14.40	14.40	14.40	14.40	14.40	14.40	16.00	16.00	16.80

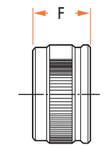
Dimensions in mm

** reference to the shell size of the connector

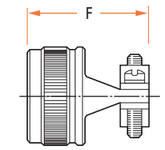
Accessories



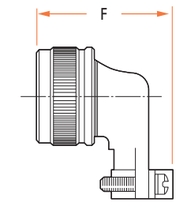
Lightened backshell



Standard backshell



Straight cable clamp

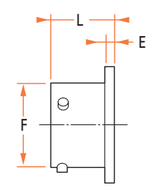


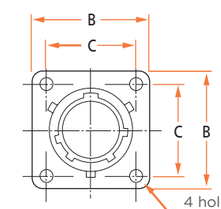
Elbowed cable clamp

Size	Part number	F max.	Part number	F max.	Part number	F max.	Part number	F max.
08	004-0003-08	7.10	006-0909-08	14.00	006-0910-08	22.25	006-0908-08	25.70
10	004-0003-10	7.10	006-0909-10	14.00	006-0910-10	22.25	006-0908-10	28.05
12	004-0003-12	7.10	006-0909-12	14.00	006-0910-12	28.25	006-0908-12	31.50
14	004-0003-14	7.10	006-0909-14	14.00	006-0910-14	28.25	006-0908-14	33.75
16	004-0003-16	7.10	006-0909-16	14.00	006-0910-16	28.25	006-0908-16	37.15
18	004-0003-18	7.10	006-0909-18	14.00	006-0910-18	28.25	006-0908-18	40.60
20	004-0003-20	7.10	006-0909-20	14.00	006-0910-20	28.25	006-0908-20	43.95
22	004-0003-22	7.10	006-0909-22	14.00	006-0910-22	28.25	006-0908-22	47.05
24	004-0003-24	7.10	006-0909-24	14.00	006-0910-24	28.25	006-0908-24	50.55

Dimensions in mm

Dummy Receptacle for Plugs





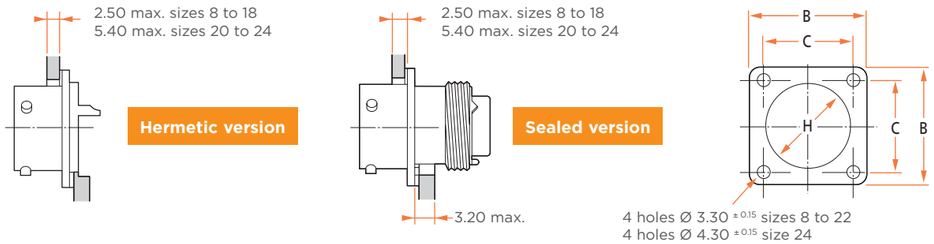
4 holes Ø 3.15 ±0.15 sizes 8 to 22
4 holes Ø 3.73 ±0.15 size 24

Size	Part number	B max.	C ± 0.1	E max.	F max.	L max.
8	DBA 50 PR 8	21.00	15.08	1.95	12.03	14.70
10	DBA 50 PR 10	24.20	18.26	1.95	15.01	14.70
12	DBA 50 PR 12	26.55	20.62	1.95	19.07	14.70
14	DBA 50 PR 14	28.95	23.02	1.95	22.24	14.70
16	DBA 50 PR 16	31.30	24.58	1.95	25.42	14.70
18	DBA 50 PR 18	33.70	26.98	1.95	28.60	14.70
20	DBA 50 PR 20	36.85	29.36	2.55	31.77	17.20
22	DBA 50 PR 22	39.95	31.76	2.55	34.94	17.20
24	DBA 50 PR 24	43.15	34.92	2.55	38.12	17.20

Dimensions in mm

Panel Seal

For Square Flange Receptacle



Front flange mounting Hermetic version sealed version						Rear flange mounting			
						For hermetic version	For sealed version		
Size	**Part number**	**H max.**	**B max.**	**C ± 0.1**	**H max.**	**Part number**	**H max.**	**Part number**	**Size**
08	108-0003-08 B756	12.50	21.10	15.10	14.90	108-0005-08 B756	13.20	108-0001-08 B756	08
10	108-0003-10 B756	15.40	24.30	18.30	17.50	108-0005-10 B756	16.40	108-0001-10 B756	10
12	108-0001-12 B756	19.50	26.70	20.60	20.30	108-0005-12 B756	19.50	108-0001-12 B756	12
14	108-0001-14 B756	22.70	29.10	23.00	23.50	108-0005-14 B756	22.70	108-0001-14 B756	14
16	108-0001-16 B756	25.90	31.30	24.60	26.70	108-0005-16 B756	25.90	108-0001-16 B756	16
18	108-0003-18 B756	29.10	33.70	27.00	29.90	108-0005-18 B756	27.50	108-0001-18 B756	18
20	108-0003-20 B756	32.30	36.90	29.40	32.30	108-0003-20 B756	30.60	108-0001-20 B756	20
22	108-0003-22 B756	35.40	40.10	31.75	35.40	108-0003-22 B756	33.50	108-0001-22 B756	22
24	108-0003-24 B756	38.60	43.30	34.90	38.60	108-0003-24 B756	37.00	108-0001-24 B756	24

Dimensions in mm

The panel seal gasket is not supplied along with the connector by default

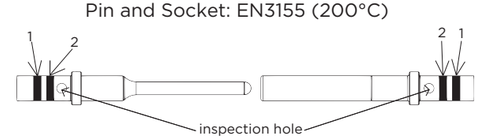
Contacts

EN3155 COLOR CODING

Band 1 defines the conductor section, and band 2 defines the active area size.
If the conductor section and the active area have the same size, then the contact can be identified by a single color band.

Contacts references containing an “A” suffix indicate a “selective gold plating” for temperatures up to 200°C (i.e.006-0937-20 A).

Color Coding
Pin and Socket: EN3155 (200°C)



Color Coding
Pin and Socket: EN3155 (Thermocouple)

Contact material :

By default our contacts are manufactured in copper alloy.
Type K Contacts are defined as below :
Kp = 90% nickel and 10% chromium ;
Kn = 95 % nickel, 2% aluminium and 3 % others

Size	24	23	22	20	16	12	10	8	4	0		
Band 1	black	purple	green	red	blue	yellow	white	red	blue	yellow		
AWG	26-30	24-28	22-26	22-28	20-24	18-22	18-24	16-20	14-18	14-20	12-14	10-12
Band 2	white	grey	green	black	red	purple	brown	blue	orange	white	yellow	brown

SIGNAL AND POWER CONTACTS

Active area / Mating Size	Part No.	Former Syst. Part No.	MIL Ref.	EN Ref.	Type	Color Bands		Marking yellow or black	Contact Material	Barrel
						AS39029	EN3155			
20	**006-0937-20 A**	004-0139-20	-	EN3155-018M2020	P	-	Red	-	-	standard
	006-0912-20 A	004-0140-20		EN3155-019F2020	S	-				
20	006-0044-20 A*	004-0141-20	-	EN3155-018M2018	P	-	Brown-Red	-	-	enlarged
	006-0055-20 A*	004-0142-20		EN3155-018F2018	S	-				
20	006-0972-20 A	0641-24-2059C	-	-	P	-	Black-Red	-	-	reduced
	006-0973-20 A	0603-21-2059C			S					
20	006-1060-20	-	-	-	P	-	-	-	Co	enlarged
	006-1062-20	-			S	-				
20	025-0404-20	-	-	-	P	-	Purple-Red	Yellow	Kp	enlarged
	025-0405-20	-			S	-	Purple-Red	-		
20	025-0402-20	-	-	-	P	-	Purple-Red	Black	Kn	enlarged
	025-0403-20	-			S	-	Purple-Red	-		
20	025-0406-20	-	-	-	P	-	Purple-Red	-	Co	enlarged
	025-0407-20	-			S					
16	**006-0937-16 A**	004-0139-16	-	EN3155-018M1616	P	-	Blue-Blue	-	-	standard
	006-0912-16 A	004-0140-16		EN3155-019F1616	S					
16	006-1102-16 A	004-0141-16	-	EN3155-018M1614	P	-	White-Blue	-	-	enlarged
	006-1104-16 A	004-0142-16		EN3155-019F1614	S	-				
16	006-1168-16 A	109026-16A	-	-	P	-	Red-Blue	-	-	reduced
	006-1169-16 A	109027-16A			S	-				
16	025-0870-16	-	-	-	P	-	White-Blue	-	-	reduced
	025-0871-16	-			S	-				
12	**006-0937-12 A**	004-0139-12	-	EN3155-018M1212	P	-	Yellow	-	-	standard
	006-0912-12 A	004-0140-12		EN3155-019F1212	S	-				
12	006-1157-12 A	109028 A	-	-	P	-	Blue-Yellow	-	-	reduced
	006-1159-12 A	109029 A			S	-				

Standard Contacts Supplied With Connector.

* Contacts supplied with mod A246 and B246 (in accordance with ASNE 052/053/054).

QUADRAX CONTACTS

Crimping contacts			Tools	
Part number	**Type**	**Size**	**For contacts**	**For body**
187-0108-08	P	8	M22520/2-01-K709	M22520/5-01 / M22520/5-45B
187-0109-08	S	8	M22520/2-01-K709	M22520/5-01 / M22520/5-45B

Wire Range		Sealing plug	Crimp Tool		Positioner		Insertion/Extraction Tool
AWG	mm²	Ref.	Part No.	MIL Part No.	Part No.	MIL Part No.	
20-24	0.25 - 0.6	006-0893-20 (red)	057-0461-11	M22520/1-01	057-0462-21	M22520/1-02	M15570-20 006-0902-20
18-24	0.25 - 1	006-0893-20 (red)	057-0461-11	M22520/1-01	057-0462-21	M22520/1-02	M15570-20 006-0902-20
26-30	0.055 - 0.15	006-0893-20 (red)	057-0463-12	M22520/2-01	057-0464-32	M22520/2-02	M15570-20 006-0902-20
20-24	0.25 - 0.6	006-0893-16 (blue)	057-0461-11	M22520/1-01	057-0462-21	M22520/1-02	M15570-20 006-0902-20
18-22	0.4 - 1	006-0893-20 (red)	057-0461-11	M22520/1-01	057-0462-21	M22520/1-02	M15570-20 006-0902-20
18-22	0.4 - 1	006-0893-20 (red)	057-0461-11	M22520/1-01	057-0462-21	M22520/1-02	M15570-20 006-0902-20
18-22	0.4 - 1	006-0893-20 (red)	057-0461-11	M22520/1-01	057-0462-21	M22520/1-02	M15570-20 006-0902-20
16-20	0.6 - 1.2	006-0893-16 (blue)	057-0461-11	M22520/1-01	057-0462-21	M22520/1-02	M15570-16 006-0902-16
14-18	1 - 2	006-0893-16 (blue)	057-0461-11	M22520/1-01	057-0462-21	M22520/1-02	M15570-16 006-0902-16
20-24	0.25 - 0.6	006-0893-16 (blue)	057-0461-11	M22520/1-01	057-0462-21	M22520/1-02	M15570-16 006-0902-16
26-30	0.055 - 0.15	006-0893-16 (blue)	057-0463-12	M22520/2-01	057-0464-32	M22520/2-02	M15570-16 006-0902-16
12-16	1.2 - 3	006-0892-12 (yellow)	057-0461-11	M22520/1-01	057-0462-21	M22520/1-02	M15570-12 006-0902-12
16-20	0.6 - 1.2	006-0892-12 (yellow)	057-0461-11	M22520/1-01	057-0462-21	M22520/1-02	M15570-12 006-0902-12

LET'S CONNECT

We make it easy to connect with our experts and are ready to provide all the support you need. Just call your local support number or visit www.te.com/industrial to chat with a Product Information Specialist.

Technical Support

te.com/support-center

North America	+1 800 522 6752	Asia Pacific	+86 400 820 6015
North America (Toll)	+1 717 986 7777	Japan	044 844 8180
EMEA/South Africa	+800 0440 5100	Australia	+61 2 9554 2695
EMEA (Toll)	+31 73 624 6999	New Zealand	+64 (0) 9 634 4580
India (Toll-Free)	+800 440 5100		

www.te.com/fdba

AMP, AGASTAT, CII, HARTMAN, KILOVAC, MICRODOT, NANONICS, POLAMCO, Raychem SEACON, Rochester, DEUTSCH, TE Connectivity and the TE connectivity (logo) are trademarks of the TE Connectivity Ltd. family of companies. Other products. logos. and company names mentioned herein may be trademarks of their respective owners.

While TE has made every reasonable effort to ensure the accuracy of the information herein. nothing herein constitutes any guarantee that such information is error-free. or any other representation. warranty or guarantee that the information is accurate. correct. reliable or current. The TE entity issuing this publication reserves the right to make any adjustments to the information contained herein at any time without notice. All implied warranties regarding the information contained herein. including. but not limited to. any implied warranties of merchantability or fitness for a particular purpose are expressly disclaimed. The dimensions herein are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice.

Consult TE for the latest dimensions and design specifications.

© 2019 TE Connectivity Ltd. family of companies All Rights Reserved.

2356672-1 06/19 Original