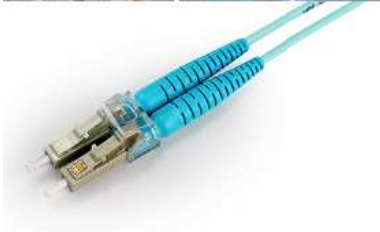




# ENGINE CONNECTORS

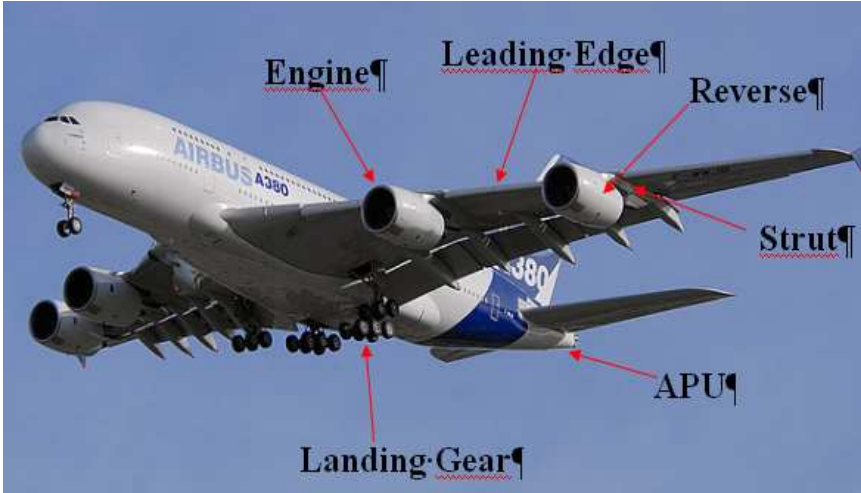


---

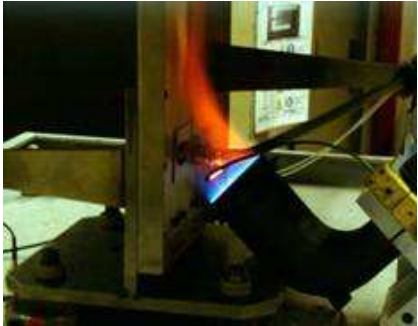
EVERY CONNECTION COUNTS

# 45 YEARS OF EXPERIENCE

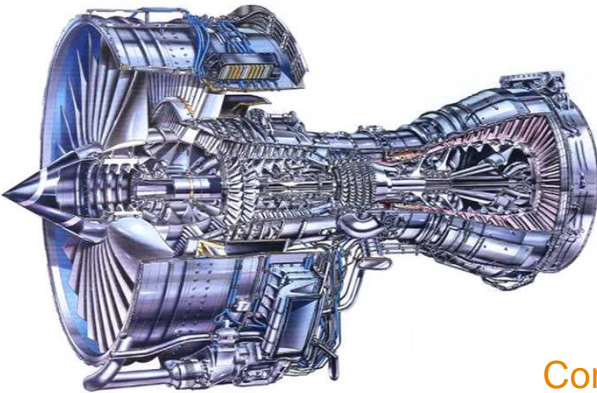
## High Performance Connectors for Critical Environment



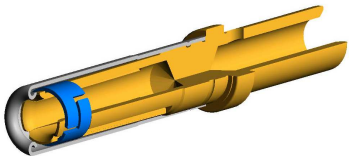
Temperature  
Up to 350°C / 662°F



Fire



Corrosion



Vibrations

# 45 YEARS OF EXPERIENCE

## OLD PRODUCTS

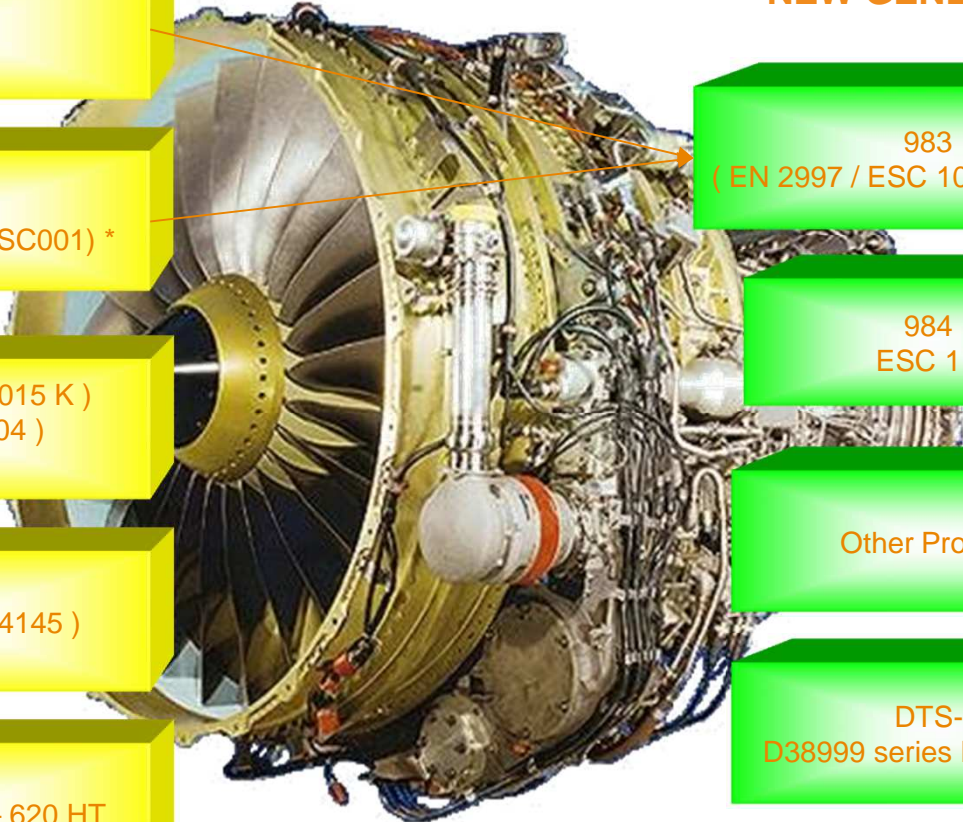
DBA 3x

83730  
(83723-III -T) ( ESC001 ) \*

991 ( Issue of 5015 K )  
992 ( ESC004 )  
993

9 DFR ( NFL 54145 )

54111 – 54115 – 620 HT



## NEW GENERATION

983  
( EN 2997 / ESC 10\* / BACC 63 )

ESC15\*

984  
ESC 11\*

ESC16\*

Other Products

DTS-K  
D38999 series III class K/S

# A COMPLETE RANGE OF PRODUCTS



983

(EN 2997- ESC10 - BACC 63)



NRG band contacts  
(ESC34)



983-15  
(EN2997 - ESC15)



984  
(ESC11)



992 (ESC004) -993



DTS K (38999-K)



DTS L (38999-L)



984-16  
(ESC16)

## EN2997 (983) & 984

### EN2997 / 983 classes K, KE, S & SE

(S : With grounding spring fingers)

Qualified : EN2997 – ESC10 (SBAC) – BACC63 (Boeing)

Main characteristics : - Fire resistant (20 minutes)

- 500 hours salt spray

- 1,500 hours of thermal shocks (+200°C / +260°C) / (+392°F / +500°F)

- High vibration (tested up to 100 g sine)



### 984 classes K, KE, S & SE

Qualified : ESC11 (Rolls-Royce)

Main characteristics : same as 983 + 100% scoop-proof



## EN2997 / 983 WITH SIZE 22 CONTACTS

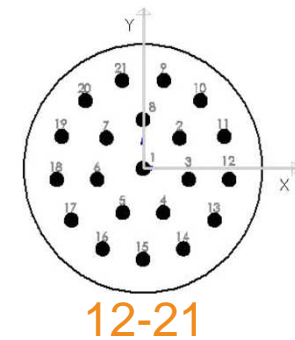
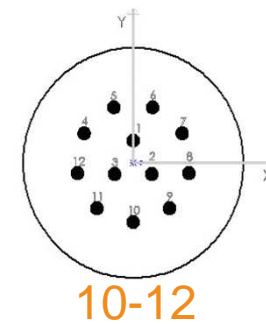
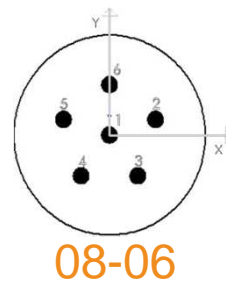
The smallest and most dense EN2997 layouts are currently : 08-03, 10-06, 12-12, 14-15 & 16-24 (all with size 20 contacts)

Because 50 to 80% of connectors on engines are sizes 8, 10 and 12, **3 new inserts with size 22 contacts have been developed by DEUTSCH**

The aim is to increase the number of contacts without changing the shell size or to allow the decrease in shell size without changing the number of contacts



→ WEIGHT SAVING



**NEW**

# EN2997 / 983 WITH SIZE 22 CONTACTS

## WEIGHT SAVING EXPECTED

Stainless steel components

Shell size	Receptacle *	Plug	Total	Weight saving	New layout	Current layout
8	19 g	31 g	50 g	0 g	08-06	08-03
10	28 g	44 g	72 g	22 g	10-12	10-06
12	39 g	57 g	96 g	24 g	12-21	12-12
14	51 g	72 g	123 g	27 g		14-15
16	62 g	82 g	144 g	48 g **		16-24

\* : Square flange

\*\* : Compared to shell size 12

The above figures only show the weight saved on one pair of connectors (plug and receptacle) and do not take into account the additional induced weight saved by using smaller back-shells and smaller metallic braid

**NEW**

# EN2997 / 983 WITH SIZE 22 CONTACTS

## ASD-CERT

Certification of Aerospace Standard Products

Rue Montoyer, 10  
1000 Brussels  
BELGIUM

Tel: +32 2 775 8126  
Fax: +32 2 775 8131

### PRODUCT QUALIFICATION / QUALIFICATION DE PRODUIT / ERZEUGNISQUALIFIKATION

CERTIFICATE NO. PQ251  
N° DE CERTIFICAT  
ZERTIFIKAT NR.

This is to certify that the manufacturer / Ceci certifie que le fabricant / Hiermit wird bescheinigt, dass der  
Hersteller:

COMPANY NAME : Connecteurs Electriques Deutsch  
NOM DE SOCIETE : 17, Rue Lavoisier ZI N°2 BP117  
FIRMA : 27091 EVREUX Cedex  
France

PLACE OF MANUFACTURE : As above  
LIEU DE FABRICATION :  
HERSTELLUNGORT :

has met the requirements of EN9133 in respect of the following standards:  
a satisfait les exigences de l'EN9133 en ce qui concerne les normes suivantes:  
die Forderungen der EN9133 erfüllt unter Berücksichtigung der folgenden Normen:

Applicable Standard Norme applicable Zutreffende Norm	Products Produits Erzeugnisse	Report No. Issue Date ASD-CERT Mandated Body
EN2997-001	EN2997-003, -004, -008, -014, -015 and -016 for Size 22 contacts For the Class see Appendix for the Qualified part number list	Report N°169 for Deutsch_ACP003 Form2 - June 1_2012/05/24 Christian Mazelle - SNECMA

This certificate is valid until / Ce certificat est valable jusqu'au / Dieses Zertifikat ist gültig bis

February 2016

except if cancelled in the meantime / sauf si annulé entre-temps / sofern zwischenzeitlich nicht widerrufen

DATE :  
DATE : 08/02/2013  
DATUM :

PLACE :  
A : Brussels, Belgium  
ORT :

SIGNATURE :  
SIGNATURE :  
UNTERSCHRIFT : Thierry Grenot, Secretary General, +33 1 47 69 70 18



EN2997-003, -004, -008, -014, -015 and -016  
for Size 22 contacts  
For the Class see Appendix for the Qualified  
part number list



# EN2997 / ESC 15 & 984-16 / ESC 16

## Non scoop-proof connectors

EN2997  
ESC10



EN2997  
ESC15



## 100% scoop-proof solutions

984  
ESC11



984-16  
ESC16



## EN2997 / ESC 15 & 984-16 / ESC 16

### EN2997 / ESC15 Connectors Specificity

#### High Performance Connectors for engines

- Fully intermateable with ESC10/EN2997 connectors
  - 1- Same interface dimensions
  - 2- Same arrangements
- ESC 34 contacts : NRG band contacts to improve performances facing to higher vibration level

#### Solution with integrated backshell

- Space saving
- Weight saving
- Designed for "Close Harnesses" technology

Gluing area for the shrink boot

### 984-16 / ESC16 Connectors

#### Fully intermateable with ESC11 connectors

- 1- Same interface dimensions
- 2- Same arrangements
- 3- 100% scoop-proof

Crimping area for the shielding



## DTS-K & DTS-S (MIL-DTL-38999 / EN3645)

### DTS classes K & S

(K : passivated & S : nickel plated)



Qualified : QPL-38999 for layouts with contacts size 12, 16, 20 & 22

Will be EN3645 as soon as the specification will be published

- DSCC (now DLA Land & Maritime) approved and QPL listed

Main characteristics : - Fire resistant (20 minutes),

- 1,000 hours at + 200°C / 392°F max

- 500 hours salt spray and high vibration

## DTS-L (MIL-DTL-38999)

### DTS classes L

(L : nickel plated)



**NEW**

LOW COST VERSION of the DTS-S : Ideal for Land Vehicles & Landing Gears where the firewall condition is not mandatory

Qualified : **QPL-38999 listed** for layouts with contacts size 8, 12, 16, 20 & 22

- Main characteristics :
- Stainless steel with nickel plating
  - 1,000 hours at + 200°C/392°F max
  - 500 hours salt spray
  - Vibration to the MIL-DTL-38999
  - Non Firewall



## NRG BAND CONTACTS

Contacts rated 260°C / 500°F max for use in EN2997 and MIL-DTL-83723 connectors  
These contacts are **the new standard for Rolls-Royce : ESC34**

Contacts rated 200°C / 392°F max for use in MIL-DTL-38999 connectors. These contacts are **QPL qualified M39029/56**

Socket contacts available for size 20, 16 and 12  
(Technology not applicable to size 22)



MIL type



4-tine construction to enhance contact resistance stability

A girdle to secure the movement of the pin contact during vibration



EN type

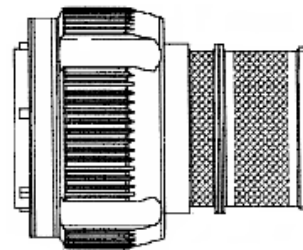
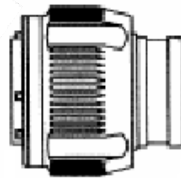
Thermocouple versions (Kn and Kp) also available

## DTS-K ROLL BACK VERSION

After ESC15 and ESC16, DEUTSCH is always proposing new solutions.

### The DTS-K Roll Back Version

- Advantages :
- No need for backshell ( reduced cost of harness)
  - Two different designs available
  - Space and weight saving
  - Less parts to order



## 992 - 993

These connectors are conform to MIL-DTL-5015.

Almost all inserts with contacts size 16 (no size 20)

**993 Class K** : Especially when very high temperature  
**+350°C / 662°F max** is required

- Ceramic inserts
- No elastomer
- Fire resistant
- 3,000 mating/unmating operations

**992 Class KA** : max temperature +260°C / 500°F

Qualified : ESC004 (Rolls-Royce)



## BACKSHELLS

- Backshells designed according to customer's specification
- Special coatings available to avoid cable chafing (up to +350°C / 662°F)



- EN3660 elbowed or straight backshells with opened chamber designed for EN2997 connectors
- Elbowed or straight backshells for MIL-DTL-38999 connectors with closed or opened chamber





# FIREWALL FEEDTHROUGHS

## Stainless Steel Version



## Titanium Version

**THANK YOU**