RD-12 Sub-Miniature Fibre Optic Connector

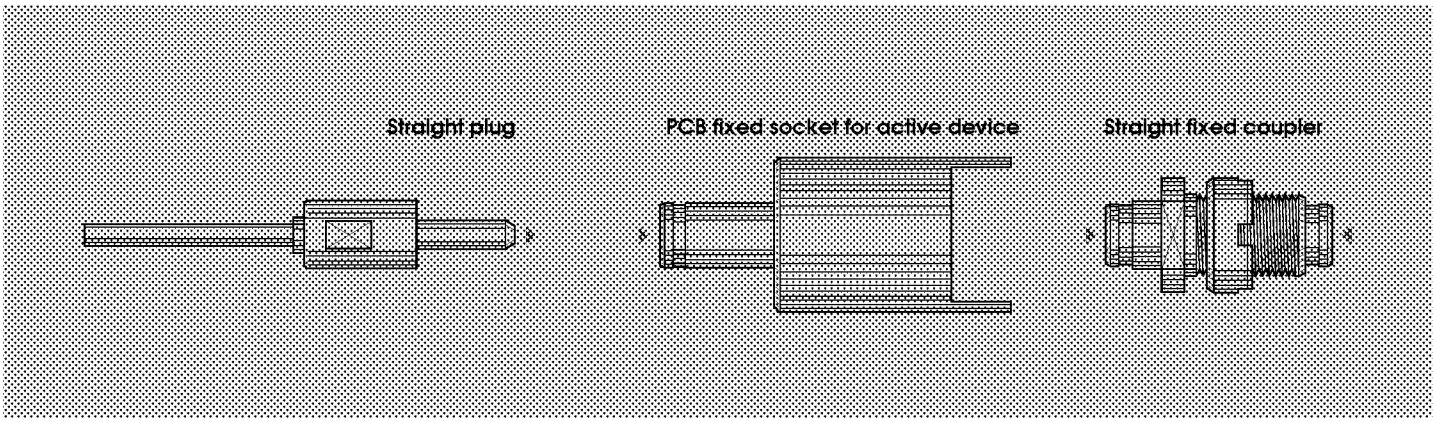
INTRODUCTION

The REDEL RD-12 is an extremely small fibre optic connector which is ideal for use in very confined areas. It uses materials which are compatible with radioactive environments and its low mass makes it an ideal choice in the fields of avionics and particle physics.

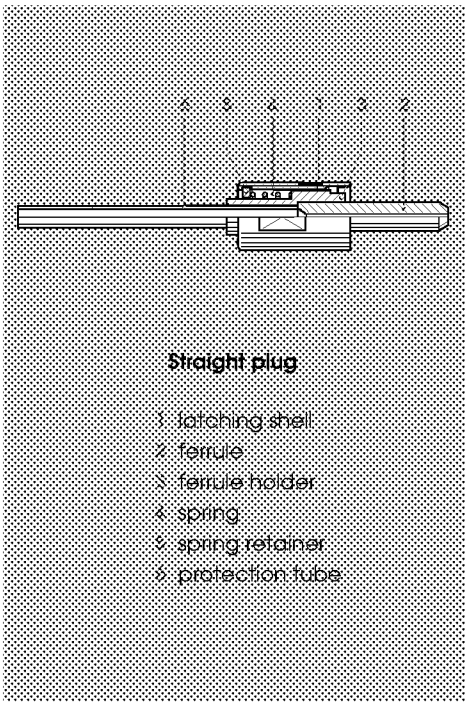
Features

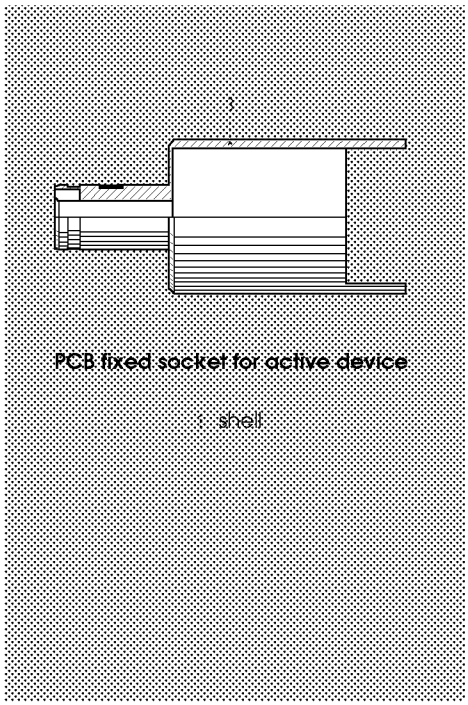
- Sub-miniature size
- Low mass
- Push-Pull snap-on fastening system
- Compatible with TO18 transmitter/emitter components
- Very low insertion loss for both multimode and singlemode
- Fully floating ferrule
- Simple termination

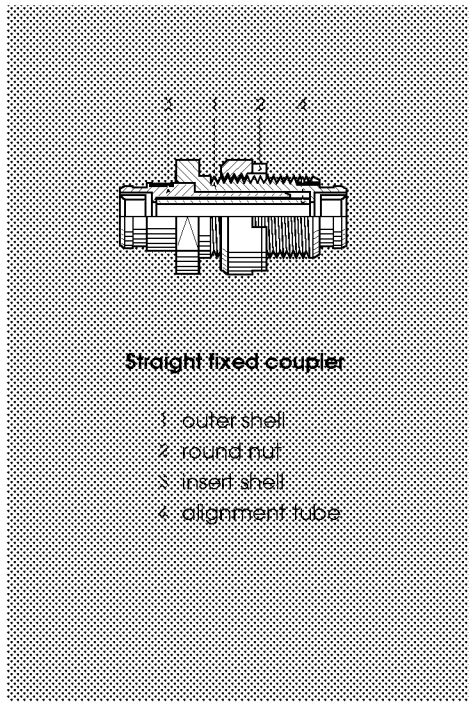
INTERCONNECTION



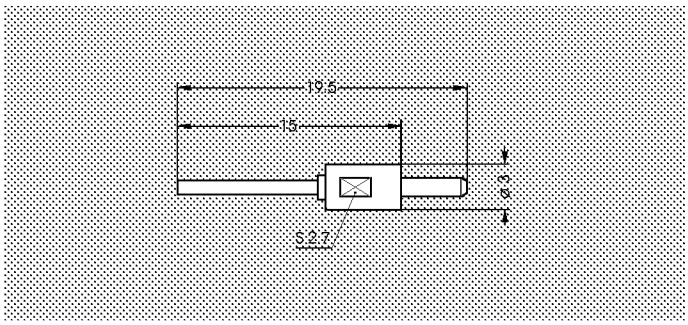
PART SECTION SHOWING INTERNAL COMPONENT





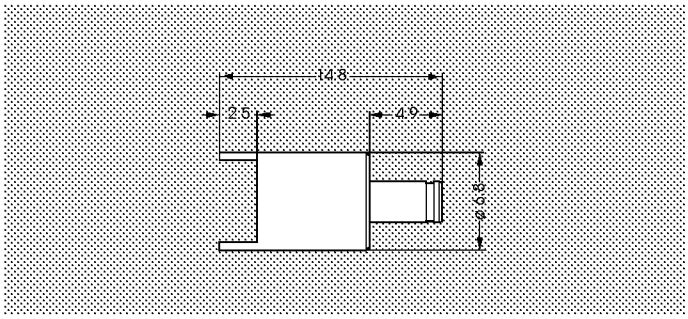


MODELS



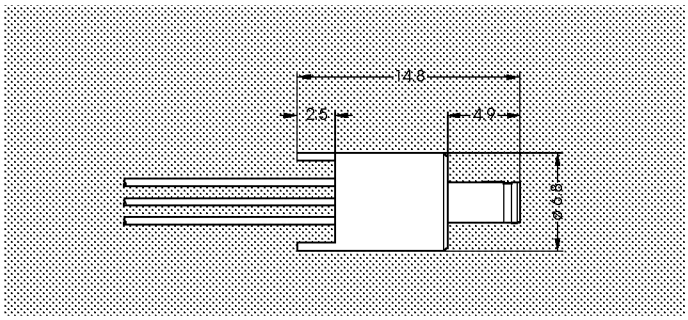
DTZ Straight plug

Part Number	Fibre type	Ferrule hole ø	Weight (g)
DTZ FBA AC T06	9/125 singlemode	126	< 0.2
DTZ FBB AC T06	50/125 multimode	128	< 0.2
DTZ FBB AC T06	62.5/125 multimode	128	< 0.2
DTZ FBD AC T06	100/140 multimode	144	< 0.2
DTZ FGD AC T06	200/280 multimode	285	< 0.2



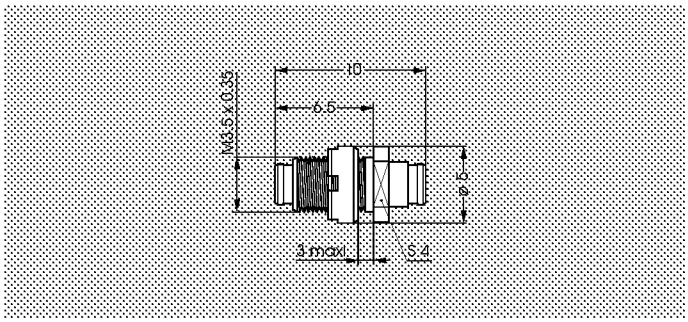
DLZ PCB Fixed socket for active device

Part Number	Weight (g)
DLZ 099 S	1.8



DLZ PCB Fixed socket fitted with Honeywell DT 200-42F active device

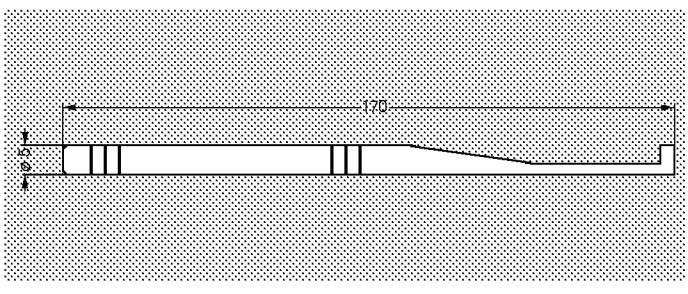
Part Number	Weight (g)
DLZ 060 S	2.0



DWZ Straight fixed coupler

Part Number	Weight (g)
DWZ F99 SA	< 0.7

ACCESSORY



DCC Insertion/extraction tool

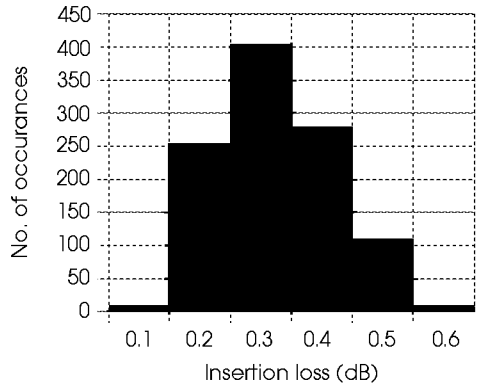
Part Number	Weight (g)
DCC 01 S17 0L	22.5

Note:
This tool also serves as a spanner for the round nut on the coupler.

TECHNICAL CHARACTERISTICS

Optical Performance

Multimode insertion loss



Std Deviation = 0.09 dB
Mean = 0.27 dB
Fibre = 50/125 µm

Materials and Treatment

Component	Material (Standard)	Surface treatment	
		Cu	Ni
Plug shell	PEEK	without treatment	
Coupler outer shell	St. steel (AISI 303)	without treatment	
Socket shell	ARCAP	without treatment	
Ferrule and sleeve	Ceramic	without treatment	
Ferrule holder	St. steel (AISI 303)	without treatment	
Round nut	St. steel (AISI 303)	without treatment	
Spring	Stainless steel	without treatment	

Mechanical Performance

Characteristic	Value	Change in insertion loss	Notes
Endurance	< 30 cycles	< 0.15 dB	
Shock	100 g, 10-50 ms	< 0.30 dB	
Vibration	According to document No. DO 160C figure 8-4. Curve "V" Standard sinusoidal vibration test curves for equipment installed in helecopters.	< 0.15 dB	
Vibration	According to Boeing Specification D200Z001 "Gaussian random vibration test" 5 hours per axis category C.	< 0.15 dB	

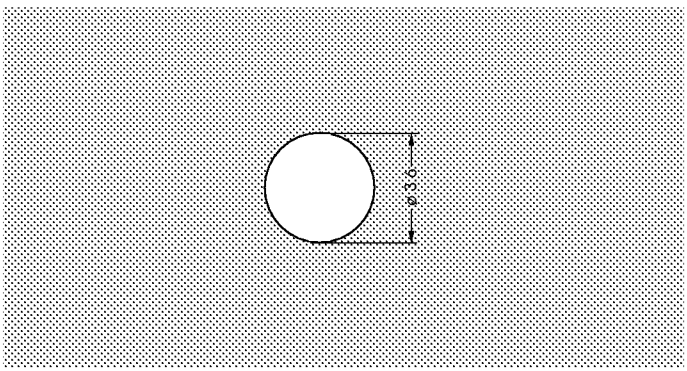
Environmental Performance

Characteristic	Value	Change in insertion loss [1]	Notes
Life test	100 hrs @ -55°C	< 0.20 dB	
Life test	1000 hrs @ 125 °C	< 0.15 dB	
Temperature cycling	-55 to +90°C	< 0.20 dB	25 cycles
Humidity	Up to 95% at 60°C	<0.20 dB	

Note: [1] the insertion loss variations were measured during the entire environmental and mechanical tests respectively.

PANEL CUT-OUT

Coupler Panel Cut-out



PCB Drilling pattern