

Civil Direction Finders

The location of persons in distress needs to be quickly and accurately determined in order to maximise the chances of a successful rescue, regardless of the prevailing conditions or the theatre of operation.

The 938 Series of civil Direction Finders (DF) provide a range of integrated DF solutions for bus-controlled and stand-alone direction finding systems. 938 DFs include an integral synthesised receiver covering the frequency range 88 MHz - 470 MHz, together with 5 Guard Receivers to monitor pre-defined distress frequencies. Bearings may be taken on all 6 receivers simultaneously. Data decoding is provided for COSPAS-SARSAT messages and for marine DSC messages on the associated Guard Receivers. There is also the option to output On Top Position Indication (OTPI).

The receivers may be tuned in in 1 kHz steps across the following frequency ranges:

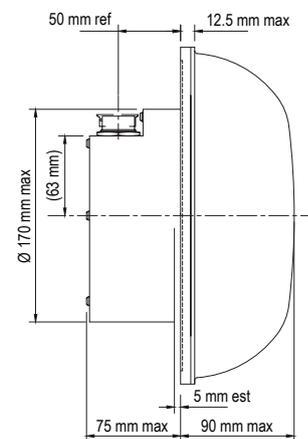
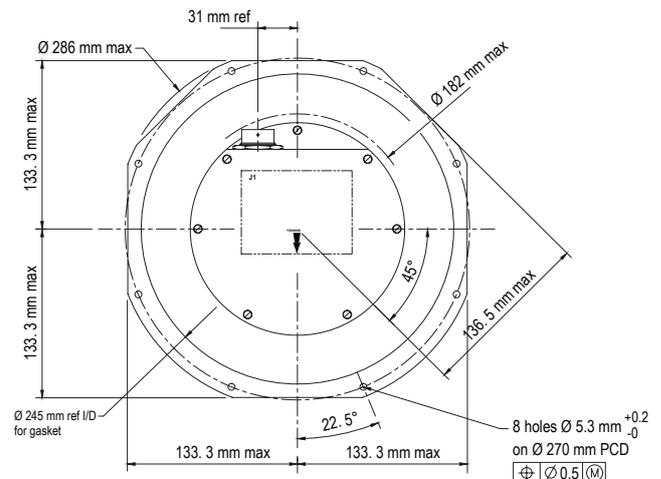
The VHF, Maritime and UHF Guard Receivers have a Main channel and an associated

Receiver	Band	Frequency Range (MHz)
Main	VHF/UHF	88.000 – 470.000
Guard RX0	VHF	120.000 – 130.000
Guard RX1	Maritime	150.000 – 160.000
Guard RX2	UHF	240.000 – 250.000
Guard RX3	COSPAS-SARSAT	Main channel preset to 406.048 (see text opposite)
Guard RX4	GMDSS DSC	156.525 (CH70)

Auxiliary channel. The Main channels are pre-programmed, while the Auxiliary channels can be programmed by the Customer. Such an arrangement allows distress monitoring to take place on the Main frequencies and training to be carried out on selectable Auxiliary frequencies.



The GMDSS DSC Guard Receiver is pre-programmed to the VHF DSC Channel 70. The system may be programmed to monitor and



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report Distress Alerts, All-Ships Calls, Selective Calls and either Distress or Urgency categories. Full reporting of the vessels MMSI, Nature of Distress and GPS coordinates is made available to the user.

The COSPAS/SARSAT Guard Receiver embodies a unique technique that enables it to receive and decode SARSAT message data over the full range of standard frequencies from 406.025 MHz to 406.070 MHz without the need for scanning or operator intervention. The Auxiliary channel can be tuned to cover frequencies down to 399 MHz, or up to 406.10 MHz, if required. This enables the DF to cover all channels currently listed by the COSPAS/SARSAT organisation (C/S T.012 Issue 1 – Rev 9 October 2013). The COSPAS/SARSAT decoded messages are reported on the control bus, for display on the controller. The HEX ID of the beacon, together with any GPS position data is reported for display. In addition, the latitude and longitude data of the most recently decoded beacon is output on the ARINC429 bus.

ELECTRICAL

Frequency	88 MHz - 470 MHz
Primary Power	18.0 to 31.5 V dc, 1.5 A max (750 mA typical at 28 V)
Operational Performance Accuracy:	Better than 5 rms (dependent on installation)

MECHANICAL

Dimensions (LxWxH)	286 x 286 x 90 mm (maximum)
Weight	3.4 (maximum)
Mounting	PVXT7W-16-26UP2N

ENVIRONMENTAL

Mounting Attitude	In line with airframe, normal or inverted
Mounting Method	Rigid
Temperature Altitude	EUROCAE ED-14G/RTCA DO-160G Sect 4, Cat B3, 7620 m
Temperature Variation	EUROCAE ED-14G/RTCA DO-160G Sect 5, Cat A External
Vibration	EUROCAE ED-14G/RTCA DO-160G Sect 8, Cat S, Curve L modified Fixed Wing Curve U2 Helicopter
Shock	EUROCAE ED-14G/RTCA DO-160G Sect 7 Normal operation: Paragraph 7.2.1 (6 g) Crash Condition: Paragraph 7.3.1 (20 g) Sustained: Paragraph 7.3.3 (20 g) (Acceleration)
Humidity	EUROCAE ED-14G/RTCA DO-160G Sect 6, Cat C External
Waterproofness	EUROCAE ED-14C/RTCA DO-160G Sect 10, Cat R
Fluids Susceptibility	EUROCAE ED-14G/RTCA DO-160G Sect. 11, Cat. F
Magnetic Effect	EUROCAE ED-14G/RTCA DO-160G Sect 15, Cat Z
Power Input	EUROCAE ED-14G/RTCA DO-160G, Sect 16, Cat BX (28 V)
Salt Spray	RTCA/DO160C, Section 14, Category X
Voltage Spike	EUROCAE ED-14G/RTCA DO-160G, Sect 17, Cat B
AF Conducted Susceptibility - Power Inputs	EUROCAE ED-14G/RTCA DO-160G, Sect 18, Cat B
Induced Signal Susceptibility	EUROCAE ED-14G/RTCA DO-160G, Sect 19, Cat AC
RF Susceptibility (Radiated and Conducted)	EUROCAE ED-14G/RTCA DO-160G, Sect 20, Cat S
Emission of Radio Frequency	EUROCAE ED-14G/RTCA DO-160G, Sect 21, Cat B
Antenna Type	Modified annular slot with a cardioid receiving pattern

