

BECKER SAR

SEARCH AND RESCUE



BECKER SAR – DF-517 Direction Finder

■ BECKER AVIONICS has been a world leader for SAR products for over 40 years.

Over 27 different countries have successfully purchased BECKER SAR equipments for both military and civilian applications.

These same countries have purchased the BECKER Homing System designated as SAR DF-517.

This Direction Finding System fulfils all SAR requirements existing now and will continue to fulfil all requirements up until 2010.

The BECKER SAR DF-517 system constantly exceeds customer acquisition and range requirements. e.g., at an altitude of 10000 feet the SAR DF-517 constantly captures transmitting SAR beacons giving very accurate direction and range to that transmitting beacon at over 100 km to the SAR aircraft.

This capture has been confirmed and demonstrated using, 121.5 MHz or 156.8 MHz or 243 MHz and 406 MHz frequencies.

The capture of all emergency frequencies in accordance with international COSPAS – SARSAT regulations and requirements and all emergency beacons globally is achieved by the BECKER SAR DF-517.

The SAR DF-517 is able to capture the 406 MHz pulse generated by an emergency beacon. The digital pulse lasts for only 450 milliseconds and is generated every 50 seconds. This time frame is too short to allow capture of the signal using conventional Direction Finder systems.

The SAR DF-517 automatically scans for all other emergency frequencies between the 406 MHz pulses.

The SAR DF-517 can also be used for training purposes set to 406.025 MHz.

The receiver and antenna are contained in one hermetically sealed unit designed to be fitted to helicopters or fixed wing aircraft.

There is a separate antenna receiver RT-500-M that is specifically designed for ships and land based transport systems, that has identical performance to the aircraft system dependant on the height of the mounting structure.

A separate control and display unit is fitted as the operator.

The system has also been independently proven as being fully capable of isolating individual beacon transmissions within a small search area with tremendous accuracy when a number of beacons are active in that area, e.g., multi crewed aircraft with 2-15 crew members aboard all equipped with Locator beacons.

The SAR DF-517 system also operates with the BECKER integrated or mobile moving map displays. The survivor is indicated on the map as a target and the SAR crew are given the TRACK to fly to the survivors position indicated position. ■

BECKER AVIONIC SYSTEMS

Technical Data

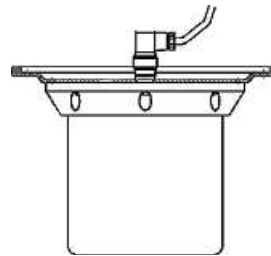
Electrical characteristics

- Method of bearing: Doppler-principle (frequency of rotation 3 kHz, cw / ccw)
- Accuracy: $\pm 5^\circ$ RMS
- Sensitivity: $< 5 \mu\text{V/m}$ (Depending on working frequency)
- Receiver frequency: VHF 121.500 MHz;
123.100 MHz;
156.8 MHz (Maritime band; Channel 16)
UHF 243.000 MHz;
243.500 MHz or
245.100 MHz
406.025 MHz +
406.028 MHz
other frequencies on request
- Modulation type: A3E, F3E, A2X (ELT-modulation);
DF is largely independent on modulation kind
- Polarisation: Vertical
- Polarisation error: $\leq 5^\circ$ at 60° vectorial field rotation
- Cone of confusion: Approx. 30° measured to the vertical
- Signal Capture Time: ≤ 50 ms (at sufficient signal strength)

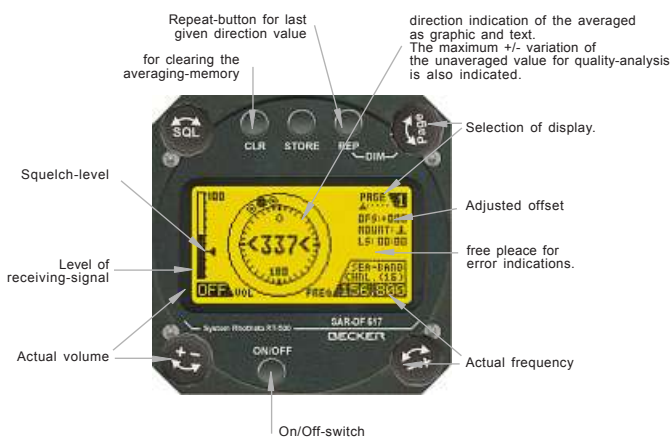
- Operating voltage: 12 V-32 DC
- Current consumption: 400 mA

Mechanical characteristics

- Temperature range:
 - Display unit: operating: $-20^\circ\text{C} \dots +60^\circ\text{C}$
storage: $-30^\circ\text{C} \dots +80^\circ\text{C}$
 - Antenna unit: operating: $-40^\circ\text{C} \dots +60^\circ\text{C}$
storage: $-55^\circ\text{C} \dots +80^\circ\text{C}$
- Weights:
 - Display unit: approx. 250 g
0.551 lbs
 - DF antenna: approx. 2000 g
4.41 lbs
- Dimensions:
 - Display and control unit: 82 x 82 x 35 mm (W x H x D)
3.23" x 3.23" x 1.38"
 - DF antenna: Diam. 270 x Length 185 mm
10.6" x 7.29"



Direction finder antenna with receiver unit



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