

100 W MF RADIOBEACONS NON/A1A - NON/A2A

The RBT 9300 NDB's have been developed in order to meet the operational needs of the Civil Aviation regarding landing procedures. The equipment is compliant with I.C.A.O. requirements.

The RBT 9300 equipment, associated with the "Umbrella" or "Daisy" terminal capacity antenna, constitute a low-cost simple installation, "Locator" type.

Its performances are quite interesting since even at a very low altitude, significant carriers are obtained.

We developed the study of this radiobeacon in order to hit the following targets :

- high performances and utmost reliability,
- fast, simple installation and easy setting into service,
- easy maintenance.

The NDB is synthesized, step 100 Hz. The output power is adjustable up to 100 W carrier on 50 ohms. Keyers are integrated in the transmitters. The identification signal may be transmitted in NON/A1A or NON/A2A. The equipment configuration (frequency - mode - code) is stored in EEPROM and can easily be modified from the change-over unit. Transmitter EBT 9300, specially developed for RBT 9300 NDB's, can operate without being associated to the change-over unit BRB 9300 (single configuration).

The RBT 9300 equipment is composed of :

- 2 transmitters EBT 9300,
- 1 automatic change-over unit BRB 9300,
- 1 charger/power supply unit, single or dual (option),
- 1 18 U or 36 U rack designed to receive the equipment above.





EBT 9300 - GENERAL CHARACTERISTICS

- **Power supply voltage :**
48 V d.c. (typical)
- **Frequency range :**
200-535 kHz (100 Hz step)
- **Output power :**
Adjustable up to 100W (400W peak) on 50 ohms load.
The power stage is constituted of 4 "Mosfet" transistors installed in "H", "D" class.
- **Consumption for 100W carrier :**
< 3,5A (carrier non keyed)
- **Modulation mode :**
NON/A1A - NON/A2A
- **Modulation frequency in NON/A2A:**
1020 Hz \pm 50 Hz, 400 Hz \pm 25 Hz
- **Distortion :**
< 5% at 95% of modulation
- **Harmonic frequency:**
 - < -45 dBc at the transmitter output
 - < -65 dBc after antenna
- **Spurious frequency :**
< -45 dB compared with the carrier
- **Code signal programming :**
Up to 3 letters
- **Keying cycle :**
20 s in NON/A1A, 10 s in NON/A2A
Dot duration : 120 ms. Possibility of indicating standby transmitter and power supply on battery between 2 code signals
- **Operating temperature :**
-20°C to +55°C
- **Storage temperature :**
-40°C to +70°C
- **Presentation :**
Drawer unit for 19" standard rack, 2 units high



BRB 9300 - GENERAL CHARACTERISTICS

The change-over unit BRB 9300 has been specially designed for RBT 9300 radiobeacon; it insures the following functions :

- Programming of the transmitters by means of LCD's and 3 control keys (frequency - code - mode).
- Checking of the operation, with changing onto the standby transmitter in case of failure of the normal transmitter.
- Display of the functioning parameters of the radiobeacon.
- Transmission of telemonitoring information.

Its characteristics are the following :

- **Programming of the frequency :**
200-535 kHz (100 Hz step)
- **Maximum admissible power:**
100 W carrier (400 W peak)
- **Power supply :**
48 V d.c. (typical)
- **Code signal programming :**
Up to 3 letters
- **Modulation mode programming :**
NON/A1A - NON/A2A
- **Programming of AF frequency :**
400 Hz or 1020 Hz (NON/A2A)
- **Display of the parameters :**
Supply voltage, direct power, reflected power, modulation rate in A2A, RF frequency, transmission type, modulation frequency, code signal
- **Change-over criteria :**
 - NON/A1A mode :
carrier reduction of more than 3dB, absence of keying
 - NON/A2A mode :
carrier reduction of more than 3dB, modulation rate reduction of more than 4dB, absence of keying
- **Telemonitoring :**
The change-over unit has a RS232 serial port for telemonitoring. The telemonitoring system is optional and permits to transmit the following information :
 - programming parameters,
 - power supply voltage,
 - direct power,
 - reflected power,
 - transmitter switched on standby,
 - absence of mains,
 - limit stop information (for tuning unit),
 - external informations.
- **Telesignalling :**
Station on stanby. Good operation of the change-over unit
- **Dummy antenna :**
A 50-ohm load is incorporated in the change-over unit, in order to enable the adjustment of the transmitters
- **Operating temperature :**
-20°C to +55°C
- **Storage temperature :**
-40°C to +70°C
- **Presentation :**
Drawer unit for 19" standard rack, 2 units high

RBT 9300

SINGLE/DUAL POWER SUPPLY CHARGER (optional)

The power supply unit 48 V 25A is associated with an assembly of leadproof batteries with a minimum capacity of 85 Ah.

INPUT SPECIFICATIONS :

- **Input voltage :**
230 V a.c.
- **Input voltage :**
180-264 V a.c.
- **Frequency range :**
45-65 Hz
- **Input protection :**
 - protection against input rejection,
 - limitation of riging current,
 - protection against overload,
 - protection against overvoltage.

OUTPUT SPECIFICATIONS :

- **Nominal power :**
54 V at 25°C
- **Adjustment :**
39.5 to 56.7 V d.c.
- **Nominal current :**
25 A
- **Limitation :**
27 A
- **Short-circuit protection**
- **Operating temperature :**
-10°C to +45°C
- **Storage temperature :**
-40°C to +85°C
- **Presentation :**
Drawer unit, 6 units height

AERIALS ASSOCIATED WITH THE NDB RBT 9300

Aerials, associated with the NDB RBT 9300, include :

- "Umbrella" antenna and the automatic tuning device DAA 9400 (see specific documentation),
- "Daisy" antenna and the automatic tuning unit UAA 9400 (see specific documentation).

NOTE

In the case of a site with an aerial already installed, the automatic tuning device DAA 9400 T may be associated with the existing pylons and T antennas.

MAINTENANCE TOOL

In the absence of a change-over unit, the programmer PGM 9200 (see specific documentation) permits the configuration of the transmitters and the display of the measures.



RBT 9300

OPTIONAL EQUIPMENT

The optional equipment include :

- the telecontrol system TSV 9400 *
- the control receivers RCB 9200 P and RCB 9200 B *
- the transmitter selection control PSE 9300 *
- the VHF remote control unit TLC 9200 *

* See specific documentations

TELERAD NDB's (see specific documentations)

- **RBA 9300 T** * :
50/100 W VHF solar energy/remote controlled
- **RBM 9300** * :
100 W transportable
- **RBT 9300 P** * :
100 W offshore installation
- **RBT 9300-24** * :
50 W NON A1/A-NON A2/A
24V power supply
- **RBT 9400** * :
200 W NON/A1A - NON/A2A

* See specific documentations



SIMPLE 100 W NDB