



RHO

Elektronik GmbH

THEIA

The Leader in DF

Radio Direction Finder

RT-1000

The compact solution
for ATC and VTS stations

- VHF aviation band
- VHF marine band



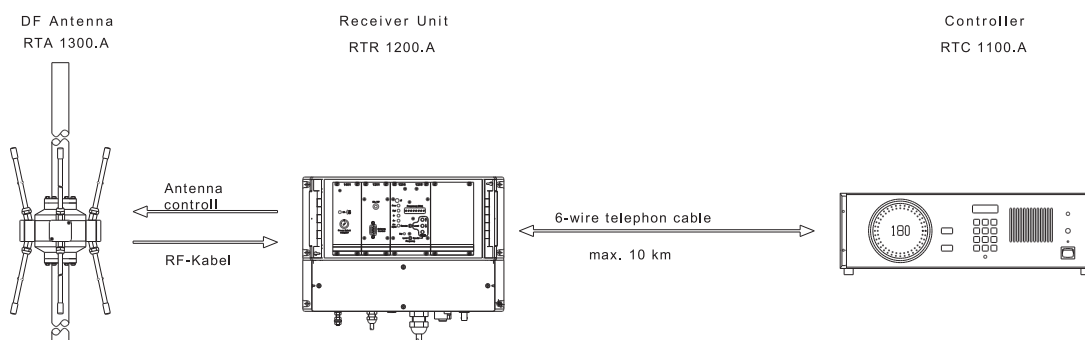
The RT-1000 direction finder system is designed specifically for ATC (air traffic control) and VTS (vessel traffic service) applications and complies with ICAO requirements. The RT-1000, has become the benchmark in its class. Hundred of systems are currently in use worldwide. The RT-1000 is used as an ATC navigation aid that allows

controllers on the ground to transmit QDMs to the pilot or verify position reports received from aircraft. Bearing information can also be integrated into a radar screen, which makes it possible to identify the right targets on the radar display. The RT-1000 is also suitable for stationary VTS applications.

Features

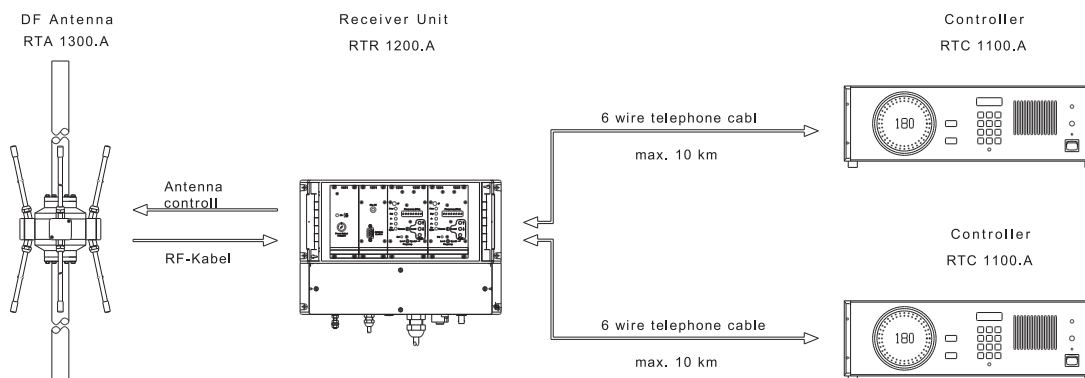
- High-precision Doppler direction finder
- Extremely high rotation frequency for fast signal processing
- Compact antenna system for simple installation
- Antenna location independent of controller workstation
- No infrastructure required for remote operation
- Maintenance-friendly modular construction
- RS-232 interface to permit system integration
- Frequency range:
Aviation band: 118.000 ... 136.975 MHz
Marine band: 156.000 ... 174.000 MHz
- Various scanning modes
- Two or more simultaneous channels optionally available

Installations and Configuration Examples on site



Standard Configuration:

The system operates in "remote mode". The direction finding antenna is installed remotely from the controller, at a location favourable for direction finding. Receiver, demodulator and antenna control module are integrated in the receiver unit located at the antenna position. They are connected to the controller by means of a 6-wire line.



Configuration for 2 simultaneous channel operation:

The DF system is equipped with a 2. receiver module and a additional Controller. This offers 2 independent operator sides.

Technical data

Frequency range air band ¹⁾	118 to 136.975 MHz	
Frequency range marine band ¹⁾	156 to 174.000 MHz	
Operating channels air band	760 (25kHz); 2278 (8.33 kHz) ²⁾ ; 10 preselected	
Channel spacing	8,33 kHz ²⁾ / 25 kHz	
Type of modulation to be detected	A3E, F3E, A2X (ELT modulation)	
System accuracy ³⁾	±2° (±1°) ⁴⁾ RMS (with antenna)	
Sensitivity ⁵⁾	3 µV / m (without antenna amplifier)	
Polarisation	vertical	
Polarisation error	1° (with field vector rotation up to 45°)	
Cone of silence	approx. 35° referred to the vertical	
Power supply	AC DC	115 / 230 V 15 %; 47 to 63 Hz 24 V -10 % / +20 %; automatic switch-over to DC voltage at AC mains failure
Power consumption	Controller unit Receiver unit	max. 15 VA max. 10 VA (52 VA with heater)
Bearing display	Digital Dual compass dial	QDM; QDR; QUJ; QTE; (Resolution 1°; Response time < 0.3 s) QDR; 2 concentric circles of LED points; (Resolution 10°)
Monitoring	Built-in loudspeaker; A3E; 500mW; Line output 600 Ω, balanced, 0 dBm, m = 0.6	
Ground transmitter suppression	with external contact to ground	
Dimensions / Mass	Controller Receiver unit Antenna system	19"-desk-top model 3 UH, prepared for rack installation Dimensions (H x W x D) 132.5 x 448 x 370 mm; 8.1 kg Plastic cabinet for wall mounting (IP 65) Dimensions (H x W x D) 250 x 340 x 285 mm; 6.9 kg Dimensions (Diameter x H) 400 x 1120 mm with lightning rod and mast 400 x 3400 mm Weight antenna complete with mast an lightning rod 10.2 kg
Lateral thrust due to wind with constant wind speed	180 km / h; approx. 195 N (data with lightning rod and mast)	

¹⁾ Depend on the software configuration (Not for configuration B / dependent on the type of receiver).

²⁾ Option (for VHF air band 118 ... 136,975 MHz)

³⁾ For undistorted wave reception and sufficient field strength. Measurement is made with continues vertical polarised signal, without modulation at constant frequency by changing the angle of incidence; in order to exclude site errors, angle variation is done by rotating the DF antenna on a rotator.

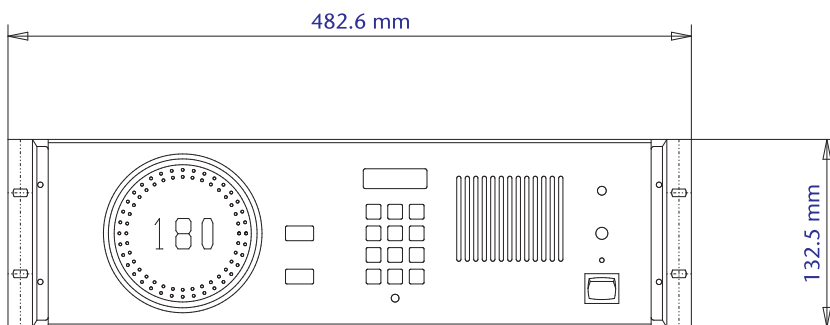
⁴⁾ With Option "bearing precision improvement"

⁵⁾ System sensitivity for 1° bearing fluctuations (cable attenuation of less than 2 dB between antenna and the receiver, received signal vertically polarised).

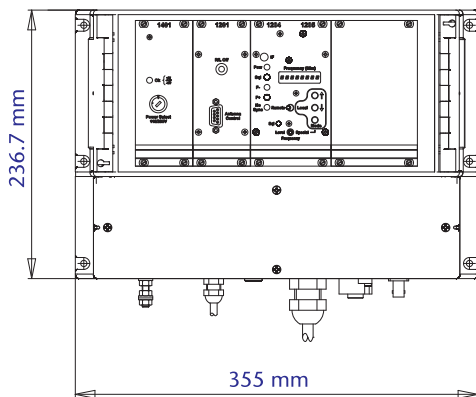
Mechanical characteristics

	Controller Unit	Receiver Unit	Antenna
Weight:	Approx. 8.1 kg	Approx. 6.9 kg	Approx. 10.2 kg
Operating temperature:	-20 °C to +55 °C	-40 °C to +60 °C	-40 °C to +80 °C
Storage temperature:	-40 °C to +60 °C	-40 °C to +60 °C	-40 °C to +60 °C

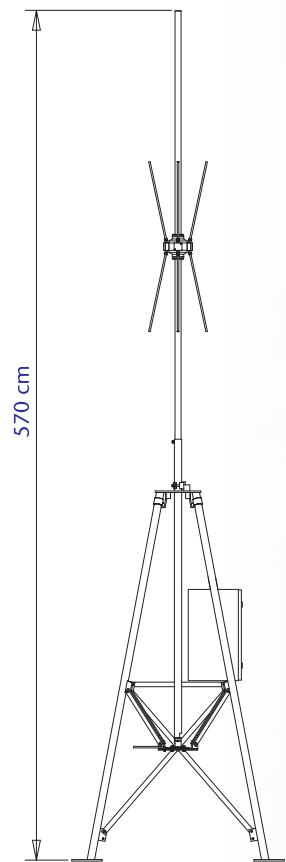
Controller



Receiver Unit



DF Antenna with optional mast



All product specifications subject to change without notice.

RHOTHETA Elektronik GmbH

Dr.-Ingeborg-Haeckel-Str. 2
82418 Murnau
Germany

Tel.: +49 8841 4879 - 0
Fax: +49 8841 4879 - 15

E-Mail: email@rhotheta.de
Internet: www.rhotheta.com

Coordinates (WGS 84):
N 47.6842° / E 11.1982°

RHOTHETA USA, Inc.

475 South 400 East
Huntigton, UT 84528
USA

Tel.: +1 435 578-1270

E-Mail: info@rhothetaUSA.com
Internet: www.rhothetaUSA.com