

Vaisala Radiosonde RS92-D



The Vaisala Radiosonde RS92-D.

Features/Benefits

- World's highest level of PTU measurement
- Stable transmission
- ETSI compliant
- Excellent data availability during sounding
- Sonde prepared via cable or telemetry - no paper tape
- Frequency set electronically
- Humidity sensor reconditioning for improved measurement performance
- Available with a dry-cell battery
- Each radiosonde packed in a hermetic metal foil bag for long-term protection in storage

The RS92-D

The Vaisala Radiosonde RS92-D transmits data digitally. It has the world's highest level of PTU measurement performance.

Easy operation

The sounding system reads the calibration coefficients stored in the radiosonde memory via a cable or a telemetry link. The humidity sensors can be reconditioned to remove any chemical contaminants to ensure excellent humidity measurement accuracy. The radiosonde transmitter frequency can be set electronically.

Digital data transmission

The benefits of digital data transmission of the RS92-D are excellent data availability during

a sounding and detection of telemetry errors.

It also consumes less power than an analog transmitter, and more channels are available in the meteorological frequency band.

ETSI compliant

The RS92-D is fully compliant with the European ETSI standard for digital radiosondes operating in the 1680 MHz band, EN 302 454.

CAL-4 calibrated

The RS92-D's PTU sensors are calibrated in the CAL-4 calibration machine. Designed by Vaisala and built in-house, CAL-4 is the world's most advanced calibration machine for mass production of PTU sensors.

Technical data

Meteorological sensors

TEMPERATURE SENSOR

Type	capacitive wire
Measurement range	-90 ... +60 °C
Response time (63.2%, 6 m/s flow)	
1000 hPa	< 0.4 s
100 hPa	< 1 s
10 hPa	< 2.5 s
Resolution	0.1 °C
Accuracy	
Total uncertainty in sounding*	0.5 °C
Repeatability in calibration**	0.15 °C
Reproducibility in sounding***	
1080 - 100 hPa	0.2 °C
100 - 20 hPa	0.3 °C
20 - 3 hPa	0.5 °C

HUMIDITY SENSOR

Type	thin-film capacitor, heated twin sensor
Measurement range	0 ... 100 %RH
Response time	
6 m/s, 1000 hPa, +20 °C	< 0.5 s
6 m/s, 1000 hPa, -40 °C	< 20 s
Resolution	1 %RH
Accuracy	
Total uncertainty in sounding*	5 %RH
Repeatability in calibration**	2 %RH
Reproducibility in sounding***	2 %RH

PRESSURE SENSOR

Type	silicon
Measurement range	1080 ... 3 hPa
Resolution	0.1 hPa
Accuracy	
Total uncertainty in sounding*	
1080 - 100 hPa	1 hPa
100 - 3 hPa	0.6 hPa
Repeatability in calibration**	
1080 - 100 hPa	0.4 hPa
100 - 3 hPa	0.3 hPa
Reproducibility in sounding***	
1080 - 100 hPa	0.5 hPa
100 - 3 hPa	0.3 hPa

Dimensions and weight

Dimensions	220 x 80 x 75 mm
Weight	
with lithium battery (RS92-DL)	Typically 150 g
with alkaline battery (RS92-DD)	Typically 270 - 280 g

(weight does not include rigging, unwinder, parachute, etc.)

Battery

Order codes with different battery types:

RS92-DL	lithium, 9V nominal
RS92-DD	alkaline (dry-cell), 9V nominal
Operating time	135 min

Telemetry

Compatibility	with Vaisala Radiotheodolite RT20 systems
Transmitter type	Synthesized
Frequency band	1680 MHz
Tuning range	1668,6 - 1689,8 MHz
Emission bandwidth	According to EN 302 454
Output power	200 mW, typical
Modulation	GFSK
Measurement cycle	1 s

* 2-sigma (k=2) confidence level (95.5 %), cumulative uncertainty including:

- Repeatability
- Long-term stability
- Effects due to measurement conditions
- Dynamic effect (such as response time)
- Effects due to measurement electronics

For humidity T > -60 °C

For pressure T < 35 °C

** Standard deviation of differences between two successive, repeated calibrations, k=2 confidence level.

*** Standard deviation of differences in twin soundings.

Note: The pressure, temperature and humidity performance specifications given above are valid only when the Vaisala Ground Check Set GC25 is used to perform the ground check, including reconditioning of the humidity sensor.

VAISALA

For more information, visit www.vaisala.com or contact us at sales@vaisala.com

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