

Ozone Sounding with the Vaisala Radiosonde RS92

- **Reliable and accurate ozone measurement for synoptic sounding/ atmospheric research**
- **Sharp vertical resolution and a fast sampling rate**
- **An ozone interface kit is available for your desired combination of analog or digital RS92 radiosonde and ozone sensor**

The Vaisala Radiosonde RS92-based ozone sounding set-up comprises an ozone sensor connected via an ozone interface to an analog or digital Vaisala Radiosonde RS92. The combination measures pressure, temperature, humidity and geopotential height as well as the vertical distribution of atmospheric ozone up to 3 hPa. Winds are measured using communications VLF, Loran-C or GPS navigation signals. All the Vaisala Radiosonde RS92 wind measurement options are available for ozone sounding.

OZONE SENSORS

Three ozone sensors are available: Science Pump Corporation model ECC-6A, EN-SCI Corporation model Z (ECC-type sensors) and MAST Corporation model 730-10 (Brewer-Mast type sensor). The Science Pump Corporation model ECC-6A ozone sensor is the most widely used in the world today. An ozone interface kit is available for your desired combination of analog or digital RS92 radiosonde and ozone sensor.

The Science Pump Corporation ECC-6A and EN-SCI Corporation model Z ozone sensors measure ozone using the principle of iodide redox reaction to release electrons. The MAST Corporation ozone sensor, model 730-10 (Brewer-Mast type), offers modest and unspecified performance in comparison to the ECC-type sensors. The Science Pump Corporation ECC-6A ozone sensor is the most commonly used in the world today.

AVAILABLE OZONE INTERFACE KITS

The RSA921 and RSA922 ozone interface kits are used with digital RS92 radiosondes. These kits are built around the Vaisala Digital Interface OIF92, which has two channels dedicated to the ozone sensor current



and temperature, and two additional voltage measurement channels for other purposes. Analog ozone interface kits are available for analog RS92 models. The ozone interface kits include other items needed for ozone sounding.

GROUND EQUIPMENT

RS92-based ozone sounding is done with the Vaisala DigiCORA® Sounding System MW21 (and older MW versions) or the Vaisala Sounding Processor PP21 and the METGRAPH® sounding software module. These sounding systems offer many useful ozone sounding preparation, ozone data processing and ozone data messaging features. System maintenance can be performed by Vaisala under the terms of a Vaisala Service Contract. Economical leasing and rental agreements are available.

OZONE INTERFACE INTERFACE KIT FOR USE WITH...

OIF92 digital interface	RSA921	Digital RS92 radiosondes and Science Pump Corporation model ECC-6A or EN-SCI Corporation model Z ozone sensors
OIF92 digital interface	RSA922	Digital RS92 radiosondes and MAST Corporation model 730-10 (Brewer-Mast type sensor)
OIF11 analog interface	RSA111	E-type analog RS92 radiosondes and Science Pump Corporation model ECC6A or EN-SCI Corporation model Z ozone sensors
OIF11+ OIA11 analog interface	RSA112	E-type analog RS92 radiosondes and MAST Corporation model 730-10 (Brewer-Mast type sensor)

TECHNICAL INFORMATION

OZONE SENSORS

The technical specifications for the ozone sensors available through Vaisala are given by the respective manufacturers. They have been used up to an altitude of 40 km or 3 hPa. The measurement time is limited to 2-3 hours due to evaporation of the sensor liquids. The temperature inside the styrofoam ozone sounding box must be above 0°C. For more information on the accuracy of a particular ozone sensor, please contact Vaisala or the ozone sensor manufacturer directly.

SCIENCE PUMP CORPORATION MODEL ECC-6A OZONE SENSOR

Dimensions	191 x 191 x 254 mm including weather-proof styrofoam flight box
Weight	600 g incl. battery
Operating temperature range	0° to 40°C (inside styrofoam ozone sounding box)
Operating pressure range	Sea-level to 3 hPa
Storage, shelf life, warranty	Two-year warranty from day of delivery



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OZONE INTERFACES

Manufactured by Vaisala, the RF-protected ozone interfaces fit into the casing of the ozone sensor. For more detailed information, please refer to the ozone interface kit brochures.

ACCESSORIES AND CONSUMABLE ITEMS

Vaisala offers all the accessories and spare parts needed for ozone sounding. A start-up kit is available which contains everything you need to introduce ozone sounding to your upper-air sounding program. Please refer to the ozone sounding accessories brochure for more information.

DIGITAL/ANALOG RS92 MODELS FOR OZONE SOUNDING

Digital RS92 models are provided with an interface connector for ozone sounding as standard. The analog RS92-KLE and RS92-KE models for ozone sounding include a connection wire for interfacing and a high-capacity battery.

Dimensions	55 x 90 x 147 mm (excl. antenna)
Weight	280 g (ready to launch)

OZONE SOUNDING TRAINING

Vaisala offers comprehensive training in ozone sounding. Please contact your Vaisala representative for more information.

All specifications subject to change without notice.

Ref. B210438EN-A

