



HEAD acoustics Remote-operated Turntable HRT I

Description

HRT I consists of a rotating unit with a high-precision step motor and a controller for PC-connection. It can be operated manually or via PC software. HRT I allows to rotate a multitude of devices and measurement equipment in arbitrary test setups. The sturdy combination bearing of the drive unit is capable of withstanding the resulting axial and radial forces.

For ease-of-use, HRT I has a removable cover at the center of its rotary plate to pass cabling directly through the turntable. 24 threaded mounting holes accept fittings to hold the DUT in place. For large devices, the plate (43 cm) can be extended with the optionally available turntable extension plate TEP-100 with 100 cm diameter and its own 24 mounting holes. To ensure safe operation, TEP-100 is delivered with

an additional external emergency stop push-button.

HRT I can be operated via buttons on the front, with control software (ACQUA or supplied software tool RC-HRT I) or fully automated through the programming languages MATLAB or Python (in conjunction with control software). For communication, HRT I uses the industry-standard protocol RS485 via a D-Sub 9 connector and two supplied cables. CAB II.10 is a ten meter D-Sub 9 extension cable, CUD III actively converts from D-Sub 9 to USB at the controlling PC.

The front-side buttons cover the basic functions of HRT I – resetting the absolute reference position to zero as well as clockwise and counter-clockwise rotation. They are ideal for quick operation, e.g. to verify unobstructed movement of



Exemplary measurement configuration with smart speaker on HRT I, HMS II.3 and labCORE

DATA SHEET

HRT I (Code 6498)

HEAD acoustics Remote-operated Turntable

Overview

HRT I is a high-precision remote-operated turntable developed by HEAD acoustics. It allows orientation-dependent acoustic measurements by rotating the device under test to user-specified angles in the measurement field. Its operation can be fully automated via the HEAD acoustics communication analysis system ACQUA, MATLAB or Python™ (in conjunction with control software). HRT I also operates manually via front-side buttons and with the supplied software tool RC-HRT I.

The sturdy design of the turntable ensures its load-bearing capacity of up to 50 kg. A maximum rotation torque of 28 Nm allows highly precise orientation of the measurement object. In idle mode, the turntable emits no noise to ensure a quiet environment for acoustic measurements.

Key Features

- Rotating unit with high-precision step motor
- 360° rotation with 0.1° step width
- Sturdy mechanical design
- LCD display with switchable mode (-180° to +180° or 0° to 360°)
- No noise emission in measurement position, low noise emission during rotation
- Buttons for manual control
- Automated configuration and control via ACQUA or RC-HRT I software tool via USB-to-RS485 cable (> 10 m cable length possible)
- Two side-mounted handles for easy transportation

Applications

Manual or automated rotation of

- Telecommunication devices
- Televisions (with central pedestal)
- (Video-) conferencing devices
- Electroacoustic devices such as
 - Microphones
 - Loudspeakers
- HMS II.x with or without
 - Torso box HTB VI
 - Arbitrary accessories (e.g. HHP IV)



HRT I with extension plate TEP-100 and the external emergency stop push-button (delivered with TEP-100)

the DUT and its cables. Software operation adds further ways of control such as user-selected angular step increments (in both directions), rotating directly to a user-selected angle (in both directions), setting the rotation speed, the type of acceleration and deceleration and counting the total number of revolutions.

When a test case contains many repetitive steps (e.g. clockwise rotation by 10° after each measurement run), the measurement and turntable operation can be combined in an appropriate control program to fully automate the process.

In case of an emergency, rotation can be stopped at any time by the emergency stop button on the front panel (or the external emergency stop push-button of TEP-100).

General Requirements

Software

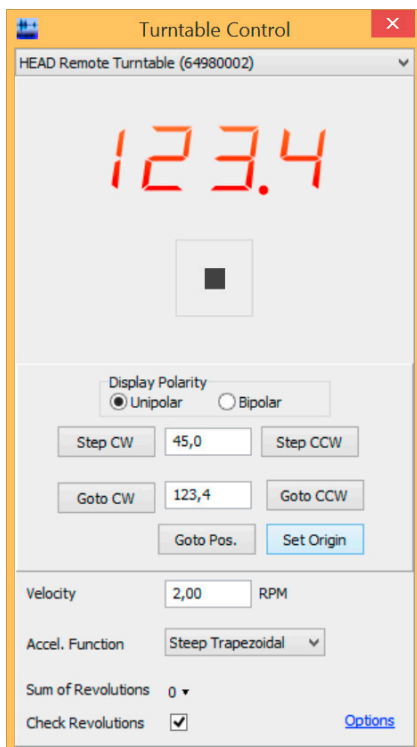
- **ACQUA (Code 6810 etc.)**, Full-license or Compact (version 3.5.210 or later), including corresponding system components (cf. ACQUA data sheet)
- or
- **RC-HRT I**, stand-alone software tool

Options

- **TEP-100 (Code 6499)**, Turntable Expansion Plate (100 cm, incl. Emergency Stop Push-button)

Delivery items

- **HRT I (Code 6498)**, HEAD acoustics Remote-operated Turntable
- **RC-HRT I**, Remote Configuration Software for HRT I
- **CUD III (Code 6092)**, Adapter USB <> D-SUB 9-pin for Control HRT I (Connection to ACQUA PC)
- **CAB II.10 (Code 6093-10)**, Cable D-SUB 9-pin, 10 m (RS485 Connection HRT I <> ACQUA PC)
- **Power supply**
- **Manual**



Turntable control window

Technical Data

Rotary plate

Maximum load capacity	50 kg
Maximum rotation torque	28 Nm
Plate diameter	430 mm
Central hole diameter	90 mm (removable cover plate)

Operation

Rotation velocity	0 – 2 rpm
Angle reproducibility	±0.02°
Unit's moment of tilt	20 Nm

Interfaces

Communication	D-Sub 9 (HRT I) <> USB (PC), RS485
Power supply	LEMO 4-pin, 24 V, 60 W

Environmental conditions

Operating temperature range	0°C – 65 °C, 32°F – 149°F
Storage temperature range	-40°C – 80°C, -40°F – 176°F
Humidity	20% – 80% relative humidity (non-condensing environment)

Dimensions

Overall dimensions (W x H x D)	approx. 450 x 450 x 88 – 123 mm (height is adjustable)
Weight	approx. 19 kg