

R&S®R0129

Antenna Rotator

Accurate and reliable
positioning of large antenna
systems in the azimuth and
elevation/polarization direction



R&S®RO129

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At a glance

The R&S®RO129 antenna rotator is used to position multiple antennas in the azimuth and elevation/polarization direction. To mount antennas on the rotator, two identical flanges are provided at both ends of the elevation/polarization axis.

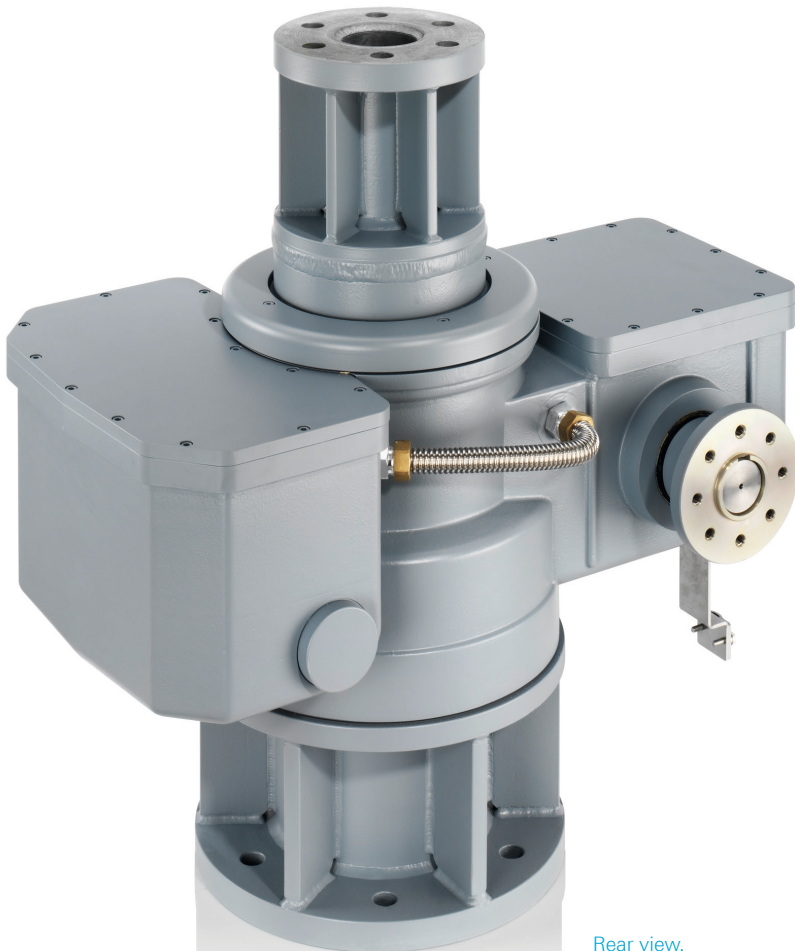
The R&S®RO129 is designed as a moving rotator. The rotator housing, together with the antennas mounted along the elevation/polarization axis, rotates around a fixed mast. This design allows other, fixed antennas (e.g. DF antennas) to be installed above the rotator.

The rotator has a fixed center section, which serves as a mast adapter. The bottom flange of the mast adapter is mounted on a suitable flange at the top of an antenna mast. At the top flange of the mast adapter, another mast section can be mounted in order to install additional, fixed antennas (e.g. DF antennas) above the rotator.

All cables leading to antennas mounted above the rotator are routed through a duct inside the mast adapter.

Key facts

- Accurate positioning of multiple antennas in the azimuth and elevation/polarization direction
- High delivered torque for carrying heavy or multiple antennas



Rear view.

R&S®RO129 Antenna Rotator Benefits and key features

Flexible remote control

The R&S®RO129 antenna rotator is intended exclusively for remote control and does not incorporate any control elements. It is controlled via a watertight MIL connector on its bottom side. The rotator is fully remote-controlled via a control cable either from an R&S®GB127S antenna control unit and an R&S®RD127 rotator control unit or from an R&S®FU129 antenna filter unit.

Easy integration into (existing) monitoring systems

Due to the flexible remote control via either the R&S®GB127S or the R&S®FU129, the R&S®RO129 antenna rotator can be easily integrated into monitoring systems. The R&S®ARGUS monitoring software supports both control units. The rotatable antennas are positioned either interactively via a convenient graphical user interface or fully automatically. As a result, even complex measurement tasks can be performed easily and reliably.

The LAN interface on the R&S®FU129 also allows remote control using other, suitable software products.

The electrical and mechanical interfaces are compatible with those of the AE/AR 1049 rotator. The R&S®RO129 can therefore easily replace existing rotators.

User-definable range of rotation

The range of rotation can be defined separately for the azimuth and the elevation/polarization axis. This is particularly useful when there are obstacles within the rotation range, or when topographical conditions allow only a specific sector to be covered. Robust limit switches integrated in the antenna rotator reliably switch off the drive motors when the end of the rotation range is reached.

Moving rotator concept for use of moving and fixed antennas on a single mast

The R&S®RO129 is designed as a moving rotator, i.e. the rotator and the antennas attached to it rotate around a fixed mast. This concept's big advantage is that additional mast segments and antennas can be installed above the rotator. As the mast itself does not rotate, DF antennas, for example, can be mounted at the mast top, which is the ideal position for direction finding. The moving rotator concept therefore allows moving and fixed antennas to be used simultaneously on a single mast.

Specifications

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Azimuth		
Range of rotation		0° to 420°
Speed of rotation		typ. 2.2°/s (corresponds to approx. 160 s for a 360° rotation)
Maximum delivered torque		typ. 300 Nm
Repeatability		typ. ±0.2°
Maximum bending moment		15 000 Nm at top flange of mast adapter
Maximum axial load		5000 N vertical load on top flange of mast adapter
Power supply for drive motors		28 V DC
Position feedback		linear potentiometer, 1 kΩ
Limit switches		integrated limit switches interrupt the power supply to the drive motors when the end position is reached in both directions of rotation
Elevation/polarization		
Range of rotation		0° to 190°
Speed of rotation		typ. 9°/s (corresponds to approx. 20 s for a 180° rotation)
Maximum delivered torque		typ. 80 Nm
Repeatability		typ. ±0.2°
Maximum bending moment		2000 Nm
Maximum vertical load		500 N (cumulative load applied to both flanges)
Power supply for drive motors		28 V DC
Position feedback		linear potentiometer, 1 kΩ
Limit switches		integrated limit switches interrupt the power supply to the drive motors when the end position is reached in both directions of rotation
Interfaces		
Control interface		MIL connector, 11-contact
Mast adapter, bottom	flange with 6 holes	Ø 22 mm
	pitch circle	Ø 270 mm, 6 × 60°
	flange thickness	25 mm
Mast adapter, top	flange with 6 holes	Ø 22 mm
	pitch circle	Ø 140 mm, 6 × 60°
	flange thickness	25 mm
Elevation/polarization axis	flange with 8 threaded holes	M10
	pitch circle	Ø 100 mm, 8 × 45°
	flange thickness	15 mm
General data		
Operating temperature range		–30 °C to +55 °C
Storage temperature range		–40 °C to +70 °C
Relative humidity		95 % cyclic test, at +25 °C/+55 °C
Degree of protection		IP 65
Power consumption		< 120 W
Dimensions	W × H × D	430 mm × 750 mm × 730 mm (16.93 in × 29.53 in × 28.74 in)
Weight		165 kg (363.76 lb)

Ordering information

Designation	Type	Order No.
Antenna Rotator (moving type)	R&S®RO129	3042.6606.02

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