

# Rate-of-Turn Gyro



# Rate-of-Turn Gyro

The rate gyro is an aid for steering and manoeuvring of seagoing vessels.

The gyro element is a component of the well-proven Anschütz gyro technology and thus a guarantee for reliability, precision and long life; developed for round-the-clock operation.

The use of the most modern microprocessor technology for internal process and signal treatment makes the rate-of-turn indicator an intelligent, selfmonitoring sensor which can be integrated very flexibly into sophisticated navigation systems. The operator- and indicator unit with either 30°/min, 100°/min or 300°/min scale can be supplied for flush mounting or with a casing and tiltable bracket for desktop mounting.

## Your Benefit<sup>®</sup>

- Robust, reliable sensor based on a professional gyro system
- Simple installation on board
- Operating surface of the operator- and indicator unit in modern soft key technique
- Microprocessor-controlled data processing and -output
- Galvanic separation from ship's mains with protection against reversal of poles
- Variable outputs for radar, riverpilot and RoT- and data processing periphery
- Integrated monitoring, test- and damping functions
- Ready for installation, free of maintenance
- Future application assured by fulfilment of the following rules:
  - BSH: Type approval rules for rate-of-turn indicator equipment
  - IMO: Resolution A.526 (13)

RoT repeater KPLQ 144  
30°/min



RoT repeater  
100°/min



Rate Gyro



## Areas of application

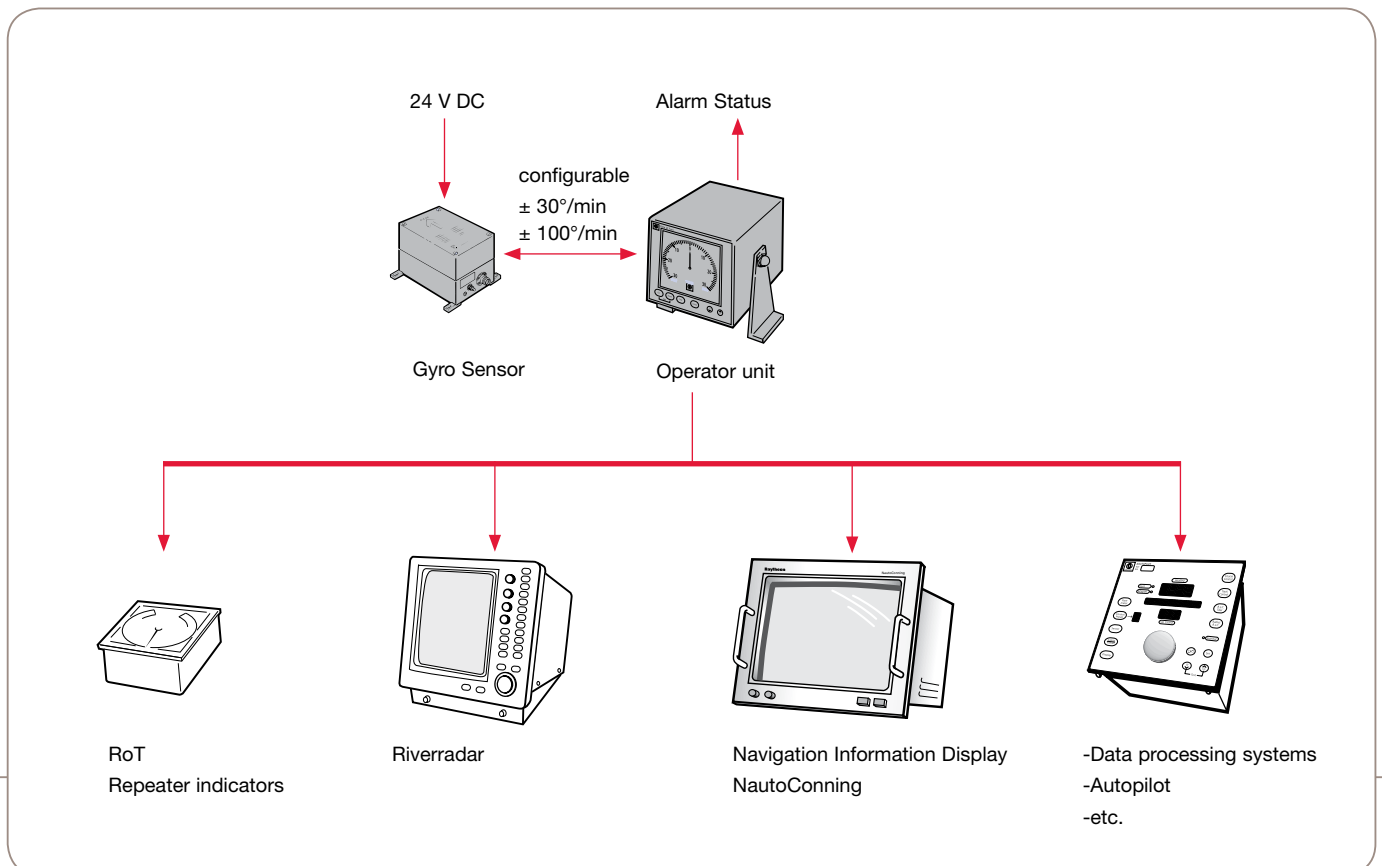
The rate-of-turn indicator has the task of assisting radar navigation by measuring and indicating the swing (rate of turn) of the ship to port and starboard.

In conjunction with course-keeping devices (autopilot) the rate gyro, as sensor system, provides the turning rate reference.

On seagoing ships, the rate-of-turn indicator serves primarily as a navigating support for sensing and indicating swing.

For seagoing vessels of 50,000 grt and more, an RoT indicator is required equipment.

- Correction link for doppler log equipment
- Control of fin stabilizers
- Rudder roll stabilizing
- Vessels of 50,000 grt and more (IMO rules)
- Special applications (e.g. stabilizing gyro)



## Technical Data

### Precision

Response sensitivity 0.1°/min  
Resolution 0.3°/min

### Connection voltage/power consumption

24 V DC ( $\pm 20\%$ ) / 800 mA, max. 1200 mA  
approx. 160 sec, equipment input is protected against reversal of poles and separated from mains by DC/DC-converter

### General data

Permissible ambient temperature

operation  $-15^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$   
storage  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$

Ready for operation

less than 160 sec

### Turn rate signal outputs

Analog actual value

$\pm 30/50/100/180/300^{\circ}/\text{min} =$   
 $\pm 10\text{ V DC}$   
and/or  $20\text{mV}/\text{degree}/\text{min}$   
10 mA per output

(e.g 5 displays with 2 mA per instrument)

Serial actual value

IEC 1162-1  
RS 232/NMEA 0183 Version 2.1

### Damping device

Damping time constant

0, 3, 5 or 10 sec (selectable)

### Alarm-/Operating indication

Internal alarms

power failure, revolutions of gyro

Alarm outputs

dedicated contact

Internal indications

ready, alarm

Test function

internal equipment test

### Type of protection acc. to DIN

Rate gyro

IP 65

Operator units

IP 23 after desk mounting  
IP 23 with casing

### Environmental influences, EMC

Acc. to IEC Publication 945  
Marine Navigational Equipment  
General Requirements  
BSH Rules

### Weight

Indicator and control unit

1.5 kg

3.5 kg with casing

Rate gyro

2.3 kg

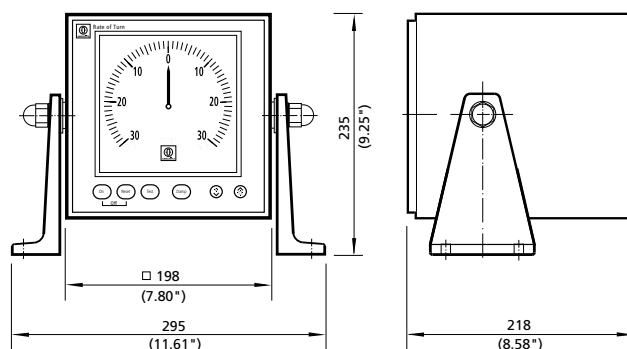
### Abbreviations

ARCS – Admiralty Raster Chart Service

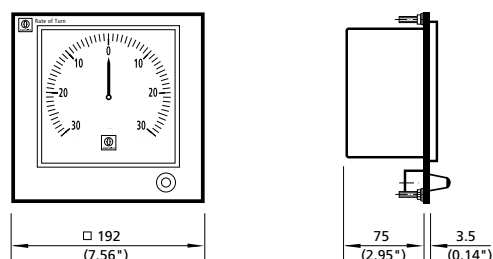
CCTV – Closed Circuit Tele Vision

PRF – Pulse Repetition Frequency

### Indicator and control unit



### Repeater indicator unit for desk mounting



### Rate gyro

