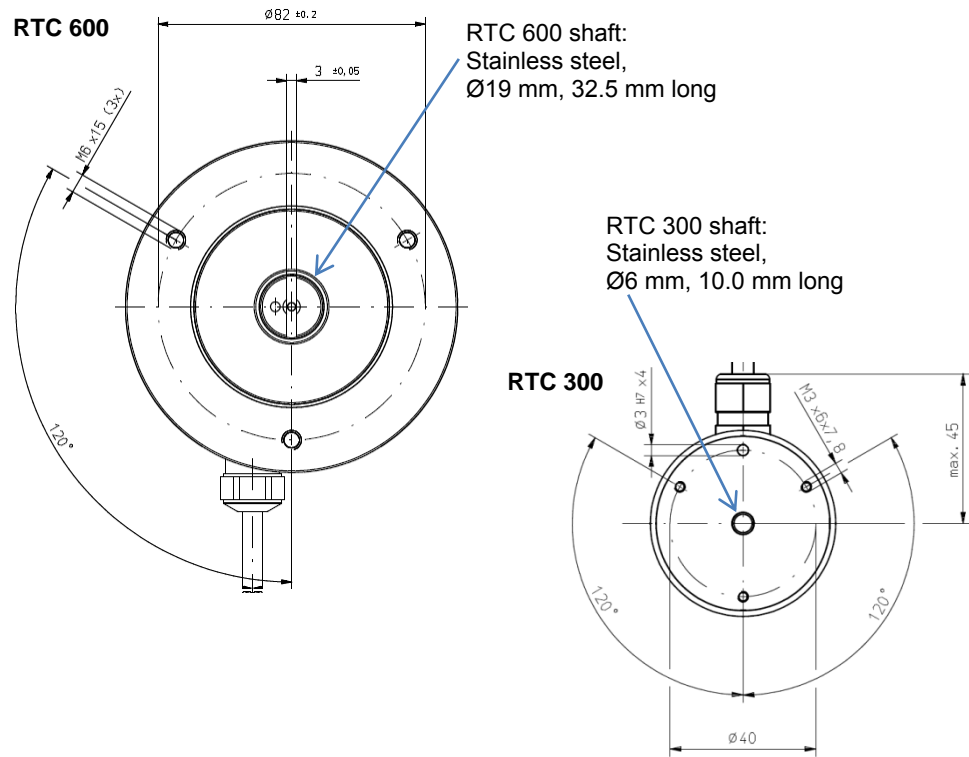


Termination of the CANbus

The CANbus backbone must be terminated in both ends with a 120 Ω resistor. If the RTC is located in one end of the CANbus cable, a 120 Ω resistor must be installed from CAN high to CAN low, for example inside the installation box where the 2 m cable from the RTC is connected to the CANbus backbone.

A 120 Ω resistor is included in the RTC package.

Data sheet, type certificates and other product-related information can be downloaded from www.deif.com.



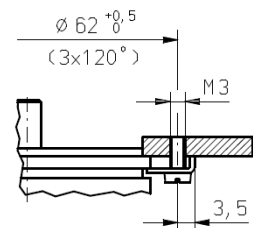
RTC 300/RTC 600 cable

Ø6.5 mm (8 × 0.25 mm²)

Minimum bending radius:

- Fixed installation: 35 mm
- Flexing 70 mm

Mounting the RTC 300
using fixation clip



-power in control



QUICK GUIDE



Rudder/azimuth angle Transmitter CAN, RTC 300/RTC 600 With CAN interface

- Very high measuring accuracy and robust mechanical design
- Compatible with XDi net and CANopen
- Marine/MED approved for rudder and azimuth indicators




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Introduction

The RTC 300 and RTC 600 are angle transmitters with CANbus interface, both supporting CANopen and XDi net. They are electrically alike, but are supplied in different housing sizes.

 **Please note that only two terminations can be installed at a time on a CANbus network.**

Setup and adjusting the RTC

The RTC is a 360 deg. angle measuring device (encoder). It measures the full +/-180 deg. represented by a 16 bit signed value transmitted on the CANbus. The 16 bit data value is placed in bytes 0 and 1 in TPDO1 of the CAN node ID selected for the RTC (COB-ID: 0x180+NodeID).

Default settings:

- 1) Node ID 1 = Angle data is transmitted in TPDO with COBID 0x181.
- 2) Direction is clockwise (CW) - turning the shaft right will increase the measured angle value, turning the shaft left will decrease the angle value.

Changing node ID by wire

The node ID may be changed between 1 and 8, using the four setup wires in the cable.

To change the node ID, follow these steps:

- 1) Remove the 24 V power supply.
- 2) For the node ID, connect the wires marked • in the table below.


Node ID	S1 White	S2 Grey	S3 Pink	S4 Brown	0 V Blue
1	•	-	-	-	•
2	-	•	-	-	•
3	•	•	-	-	•
4	-	-	•	-	•
5	•	-	•	-	•
6	-	•	•	-	•
7	•	•	•	-	•
8	-	-	-	-	•
Normal operation!	•	•	•	•	•

- 3) Make sure that S4, brown wire, is open (not connected).
- 4) Apply 24 V power to the RTC and wait 5 seconds (3 to 30 sec).
- 5) Connect brown wire (S4) to the blue wire (0 V) for 5 seconds (3 to 10 sec).
- 6) Disconnect brown wire for >1 second, the new ID is selected and stored.
- 7) Connect all four setup wires to 0 V (blue), and the RTC will run in normal operation mode.

Zero setting by wire

During normal operation it is possible to change the angular zero position to be the present angle of the shaft by following these steps:

- 1) Set the rudder or azimuth transmitter in the physical zero position.
- 2) Disconnect all four setup wires from 0 V (blue wire).
- 3) Connect the white and the brown wire to 0 V (blue wire) for 5 seconds (3 to 10 sec).
- 4) When both wires (white and brown) are released, the new zero is set.
- 5) Connect all four setup wires to 0 V (blue), and the RTC will run in normal operation mode.

 **Make sure that the 24 V supply is not interrupted during the last steps in the setup procedure where data is stored, as this might damage the RTC.**

Changing direction CW/CCW by wire

During normal operation it is possible to change the measuring direction from CW clockwise (default) to CCW counterclockwise by following these steps:

- 1) Disconnect all four setup wires from 0 V (blue wire).
- 2) Connect the pink and the brown wire to 0 V (blue wire) for 5 seconds (3 to 10 sec).
- 3) When both wires (pink and brown) are released, the encoder is in CCW mode.
- 4) Connect all four setup wires to 0 V (blue), and the RTC will run in normal operation mode.

To change back to CW, use the grey and the brown wire in steps 2 and 3.

Wiring of RTC 300/RTC 600

Wire	Marking	Signal	Remark
Blue	0 V	Supply voltage	18 to 32 V _{dc} at max. 60 mA
Red	24 V _{dc}		
Green	CAN high	CANbus	Remember to terminate the CANbus
Yellow	CAN low		
White	S1	Setup	Setup: See next page Normal operation: All four setup wires must be connected to 0 V (blue)
Grey	S2		
Pink	S3		
Brown	S4		