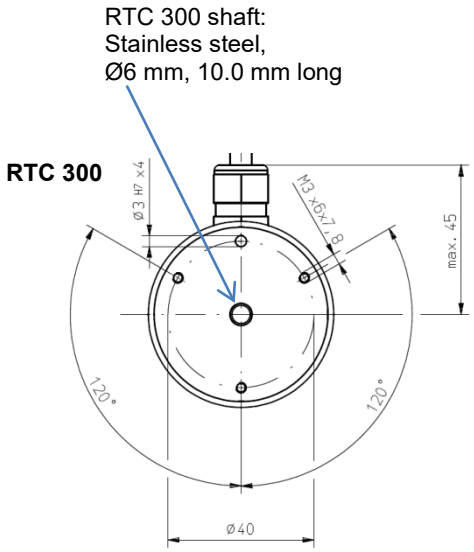
Termination of the CANbus

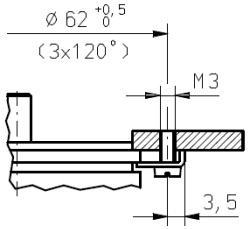
The CANbus backbone must be terminated in both ends with a 120 Ω resistor. If the RTC is located in one end of the CANbus cable, a 120 Ω resistor must be installed from CAN high to CAN low, for example inside the installation box where the 2 m cable from the RTC is connected to the CANbus backbone.

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.



Mounting the RTC 300 using fixation clip



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QUICK GUIDE

Rudder/azimuth angle Transmitter CAN, RTC 300

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 is an angle transmitters with CANbus interface, supporting CANopen and XDi net.

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

Set up and adjust the RTC

The RTC is a 360° angle measuring device (encoder). It measures the full ±180° 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 (COB-ID: 0x180+NodeID).

Default settings:
1) Node ID 1 = Angle data is transmitted in TPDO with COBID 0x181.
2) Direction is clockwise (CW). To increase the measured angle value, turn the shaft to the right. To decrease the measured value, turn the shaft to the left.

Change the node ID with wires

You can change the node ID using the four setup wires inside the cable. You can change the ID to a number between 1 and 8.

To change the node ID, follow these steps:

1) Remove the 24 V power supply.
2) For the selected node ID, connect the wires marked with a • 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) is open (not connected).
4) Apply 24 V power to the RTC and wait 5 seconds (3 to 30 sec).
5) Connect S4 (brown) to 0 V (blue) for 5 seconds (3 to 10 sec).
6) Disconnect S4 (brown) for more than 1 second. The new ID is now selected and stored.
7) Connect all four setup wires to 0 V (blue). The RTC runs in normal operation mode.

Set the zero value with wires

During normal operation, it is possible to change the angular zero position to be the new angle of the shaft.

1) Set the rudder or azimuth transmitter in the physical zero position.
2) Disconnect all four setup wires from 0 V (blue).
3) Connect S1 (white) and S4 (brown) to 0 V (blue wire) for 5 seconds (3 to 10 sec).
4) When S1 (white) and S4 (brown) are released, the new zero is set.
5) Connect all four setup wires to 0 V (blue). The RTC runs in normal operation mode.

Make sure that the 24 V supply is not interrupted during the last steps in the setup procedure when data is stored. This might damage the RTC.

Change the direction CW/CCW with wires

During normal operation, it is possible to change the measuring direction from CW clockwise (default) to CCW counterclockwise.

1) Disconnect all four setup wires from 0 V (blue).
2) Connect S3 (pink) and S4 (brown) to 0 V (blue) for 5 seconds (3 to 10 sec).
3) When S3 (pink) and S4 (brown) are released, the encoder is in CCW mode.
4) Connect all four setup wires to 0 V (blue). The RTC runs in normal operation mode.

Use S2 (grey) and S4 (brown) to change back to CW. See steps 2 and 3.

RTC 300 wiring

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		