## 3. Wiring of the RTA 602

| Wire | Type | Signal | Notes |
|---|---|---|---|
| Pink | I in (+ mA) | Current in/out | Minimum 7.5 to 35 V DC at 4 to 20 mA (Max. range 3.8 to 20.2 mA) |
| Brown | I out (- mA) | | |
| Green | S1 (Set 1) | Setup | See the setup procedure in this quick guide.<br>Normal operation: All three setup wires must be connected together. |
| Yellow | S2 (Set 2) | | |
| Grey | SC (Set Common) | | |
| White | Not used | Not used | This wire is cut off. |

### Load driving capability

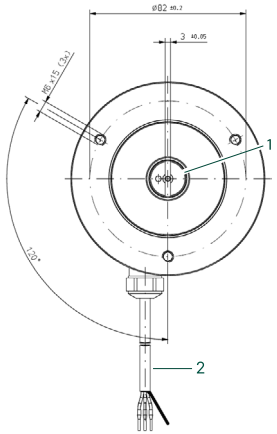
The RTA 602 may drive a 500 Ω load with a system supply ≥ 18 V DC or an 800 Ω load with a system supply of ≥24 V DC. In either case, at maximum load, the supply voltage must never fall below the voltage level stated, otherwise the system will be unreliable.

**Example**

A rudder system with a 24 V DC power supply, backup battery (≥ 18 V DC) and a cable voltage drop of max. 2 V at 20 mA:

The load can be up to 500 Ω, the equivalent of 10 XL indicators or 7 XL indicators and 1 TRI-2 panorama indicator, all connected in series and driven by the same RTA 602.

**NOTE** Download the data sheet, type certificates and other product information at www.deif.com/products/rta-rtc/




1. Stainless steel shaft.
Diameter: 19 mm. Length: 32.5 mm

2. Cable.
Dimensions: Ø6.7 mm (6 x 0.34 mm$^2$)
Minimum bending radius:

- Fixed installation: 35 mm
- Flexing cable: 70 mm

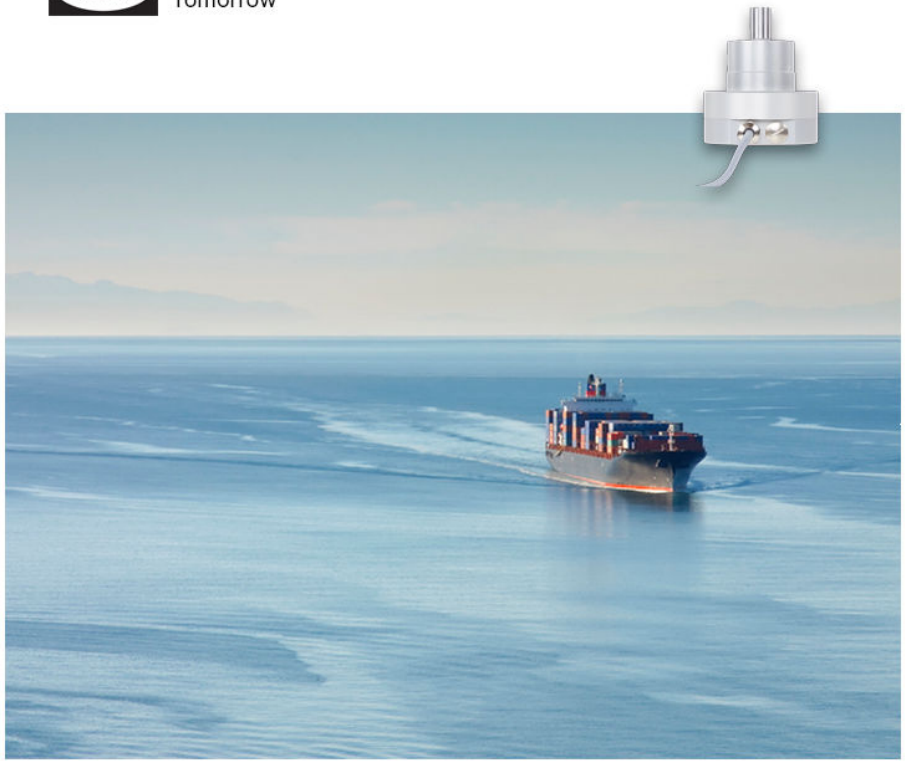
# RTA 602

4189350051C

Rudder/azimuth angle analogue transmitter

**Quick guide**

DEIF Improve Tomorrow



# 1. General and calibration

RTA 602 angle transmitters with analogue 2-wire 4 to 20 mA interface are electrically and mechanically compatible with the RT-2 rudder transmitter.

### Default setting

CW: -45 degrees = 4 mA, 0 degrees= 12 mA and +45 degrees = 20 mA.

### Zero setting and calibration

If the rudder transmitter needs zero setting and calibration after installation, the following setup steps must be performed:

- Step 1: Set the zero angle (at 12 mA)
- Step 2: Set the min. angle (at 4 mA)
- Step 3. Set the max. angle (at 20 mA), or alternatively ½ angle set: [step 2] at 8 mA and [step 3] at 16 mA.

In some rudder installations it may not be possible to physically position the rudder at the indicator's min. (4 mA) and max. (20 mA) scale positions.

### Example setup

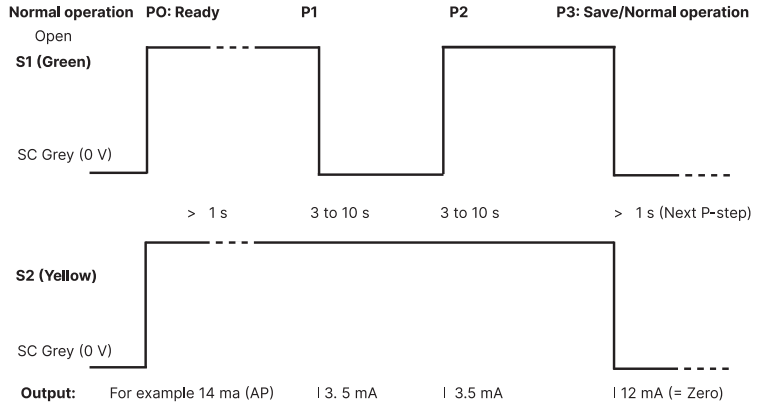
A rudder is physically limited to +/-40 degrees. The rudder indicator scale is +/-45 degrees. To calibrate this type of system, use the "½ AngleSet" function (8/16 mA) in step 2 and step 3. Position the rudder at ½ indication angle, -22.5 degrees, and activate the "½ AngleSet" function to set the 8 mA point and do the same for +22.5 degreees to set the 16 mA point.

### Set up by wire function

Each setup by wire function consists of the following time sequence procedure: Start: P0 Ready for setup; P1, P2, P3: Save - normal operation. To do the setup of a function, the green (S1) and yellow (S2) wires are connected to the grey (SC) wire in different combinations.

**NOTE** In setup mode (P1 and P2), the output current will be 3.5 mA.

**How to set a new zero point in CW mode:**

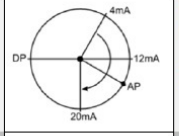
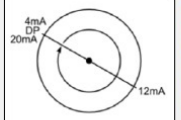
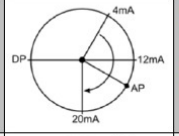
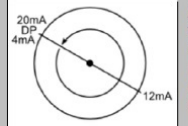
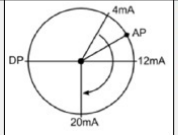
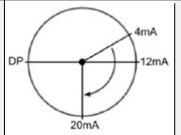
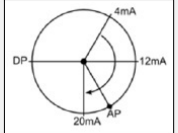
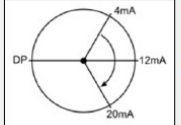
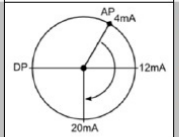
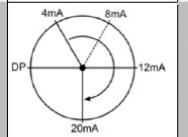
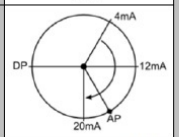
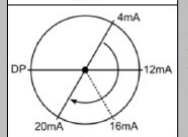



**NOTE** If the setup sequence is incorrect, the RTA 602 will skip the setup without making any changes and return to normal operation.



# 2. Setup functions and sequences table

All setup functions and sequences are described. AP is the actual angle position. DP is the discontinuity point.

| Function | START: | P0 Ready Both wires open >1 sec | | Note |
|---|---|---|---|---|
| | Before | | After | |
| Zero CW |  | **P1** (3 to 10 sec) Green to grey<br>**P2** (3 to 10 sec) Both wires open |  | After zero setting, the min. and max. points are moved to the DP point |
| Zero CCW |  | **P1** (3 to 10 sec) Yellow to grey<br>**P2** (3 to 10 sec) Both wires open |  | After zero setting, the min. and max. points are moved to the DP point |
| Min. set |  | **P1** (3 to 10 sec) Both to grey<br>**P2** (3 to 10 sec) Both wires open |  | In CW mode, the 4 mA point is always positioned to the left of the 12 mA point (angle zero), and the 20 mA point is to the right<br>Opposite in CCW mode |
| Max. set |  | |  | |
| ½ min. set |  | **P1** (3 to 10 sec) Both to grey<br>**P2** (3 to 10 sec) Green to open (Yellow to grey) |  | 8 mA and 12 mA points are set<br>The set angle must not exceed +/-90 deg. of the 0 point. If this limit is exceeded, setup will be skipped without any change |
| ½ max. set |  | |  | |
| | END: | **P3: Save** Both to grey >1 sec | Shift to the new output current value | Go to the top to set up the next function |

**NOTICE**

**Power supply interruption**

Interruption of the power supply during SAVE steps of setup sequences can result in damage to the RTA 602. Avoid interruption of the power supply during SAVE steps.