

## Wiring of the RTA 602

Wire	Type	Signal	Remark
Pink	I in (+ mA)	Current in/out	Min. 7.5 V to max. 35 V <sub>dc</sub> at 4 to 20 mA (Max. range 3.8 to 20.2 mA)
Brown	I out (- mA)		
Green	S1 (Set 1)	Setup	Setup procedure: See previous page Normal operation: <b>All</b> 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

## Driving capability

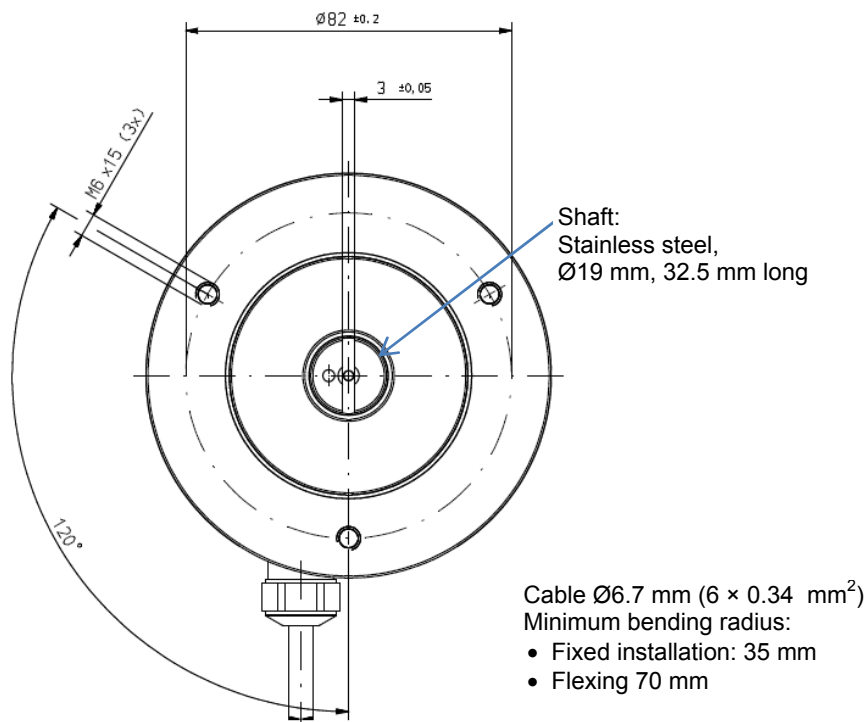
The RTA 602 may drive a 500 Ω load at system supply  $\geq 18$  V<sub>dc</sub> or an 800 Ω load at system supply  $\geq 24$  V<sub>dc</sub>. Be aware that at max. load the supply voltage must never drop below the voltages mentioned for the system to be reliable.

### Example:

In a rudder system supplied by a 24 V<sub>dc</sub> backup battery ( $V_{bat} \geq 20$  V) and a cable voltage drop of max. 2 V at 20 mA, the load can be up to 500 Ω, equal to 10 XL indicators or seven XL indicators and one TRI-2 panorama indicator, all connected in series and driven by the same RTA 602.

Data sheet, type certificates and other product-related information can be downloaded from [www.deif.com](http://www.deif.com).

## RTA 602



-power in control



## QUICK GUIDE



## Rudder/azimuth angle Transmitter Analogue, RTA 602 2-wire 4 to 20 mA interface

- High measuring accuracy and robust mechanical design
- Compatible with the RT-2 rudder transmitter
- Marine/MED approved for rudder and azimuth indicators



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## Introduction

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 deg. = 4 mA, 0 deg. = 12 mA and +45 deg. = 20 mA.

## Zero setting and calibration

The RTA may be set up to measure any angle range from +/-20 to +/-180 deg.

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

[1] Zero angle set (at 12 mA), [2] Min. angle set (at 4 mA) and [3] Max. angle set (at 20 mA), or alternatively ½ angle set: [2] at 8 mA and [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:

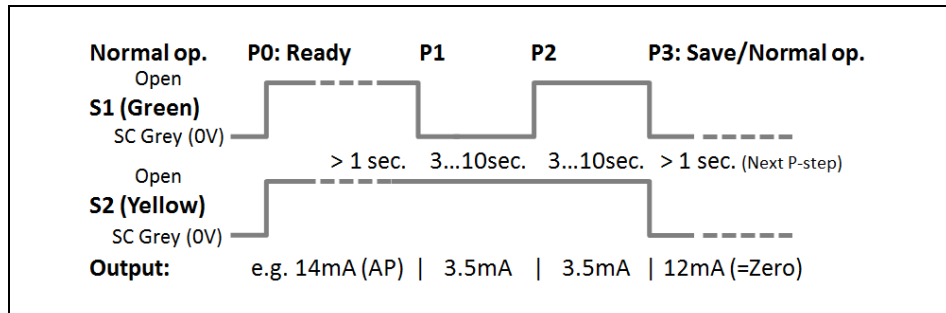
A rudder is physically limited to +/-40 deg. and the rudder indicator scale is +/-45 deg. To calibrate this type of system, use the "½ AngleSet" function (8/16 mA) in steps [2] and [3] above instead. Position the rudder at ½ indication angle, -22.5 deg., and activate the "½ AngleSet" function to set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

## Setup by wire functions

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.

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

The following example shows how to set a new zero point in CW mode:



If the setup sequence or timing is wrong, the RTA 602 will skip setup without making any change and return to normal operation.

In the table below, all setup functions and their setup sequences are described. AP is the actual angle position, and DP is the discontinuity point.

Function	START: P0 Ready Both wires open		After	Note
	Before	>1 sec		
Zero CW		<b>P1 (3 to 10 sec)</b> Green to grey <b>P2 (3 to 10 sec)</b> Both wires open		After zero setting, the min. and max. points are moved to the DP point
Zero CCW		<b>P1 (3 to 10 sec)</b> Yellow to grey <b>P2 (3 to 10 sec)</b> Both wires open		After zero setting, the min. and max. points are moved to the DP point
Min. set		<b>P1 (3 to 10 sec)</b> Both to grey <b>P2 (3 to 10 sec)</b> 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 Opposite in CCW mode
Max. set				
½ min. set		<b>P1 (3 to 10 sec)</b> Both to grey <b>P2 (3 to 10 sec)</b> Green to open (Yellow to grey)		8 mA and 12 mA points are set 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				
	<b>END: P3: Save Both to grey &gt;1 sec</b>		Shift to the new output current value	Go to the top to set up the next function



**Make sure that the power supply is not interrupted during the SAVE steps in the above sequence, as this might damage the RTA 602.**