

## Installation and Service Manual

### PLEASE RETAIN ON BOARD

### Installation of RAI-V

- ▲ Important:** Must not be mounted horizontally.  
Keep uncovered to avoid accidental recalibration.

#### Tools required:

- Screwdrivers –Phillips head
- Side cutting pliers
- Wire strippers
- 86mm hole saw
- Power drill + assortment of drill bits
- Multi meter (DVM)
- Ancillaries such as tape, connecting block, screws, cable ties, cable joiners etc

*Note: The RAI-V should be mounted in a position visible to the steering position and protected from direct rain or salt water.*

- Select a dry position
- For in dash mounting cut an 86mm (3.39”) hole
- Maximum dash thickness = 19mm
- Use included retaining ring to secure rear of the gauge to the dash.
- An optional mounting bracket is included for fitting to existing model RAI-S mounting location or for dashes thicker than 19mm.

### Wiring

#### POWER

- turn off power to the distribution side you will be connecting to
- Connect red wire to + 12 volts DC (Positive)
- Connect black wire to - 12 volts DC (Negative)
- Connect yellow wire to either ignition switch, electronics off/on switch or +12 volts DC (positive).
- Connect Orange wire to instrument illumination switch.

#### SENSOR WIRING - STANDALONE.

- Connect Green wire to Sensor +5V (TMQ sensor RED)
- Connect Brown wire to Sensor signal wire (TMQ Sensor GREEN)

#### SENSOR WIRING WITH AUTOPILOT

When connecting with TMQ autopilot please use the above wiring steps, however do not connect the Green + 5V wire to the TMQ red Sensor wire. Leave not connected and isolated from other wiring.

#### SERIAL CONNECTION. – MULTI-STATION

Multiple RAI-V displays can be linked together to utilize the sensor connection of the first/ master unit via Serial NMEA 0183 data.

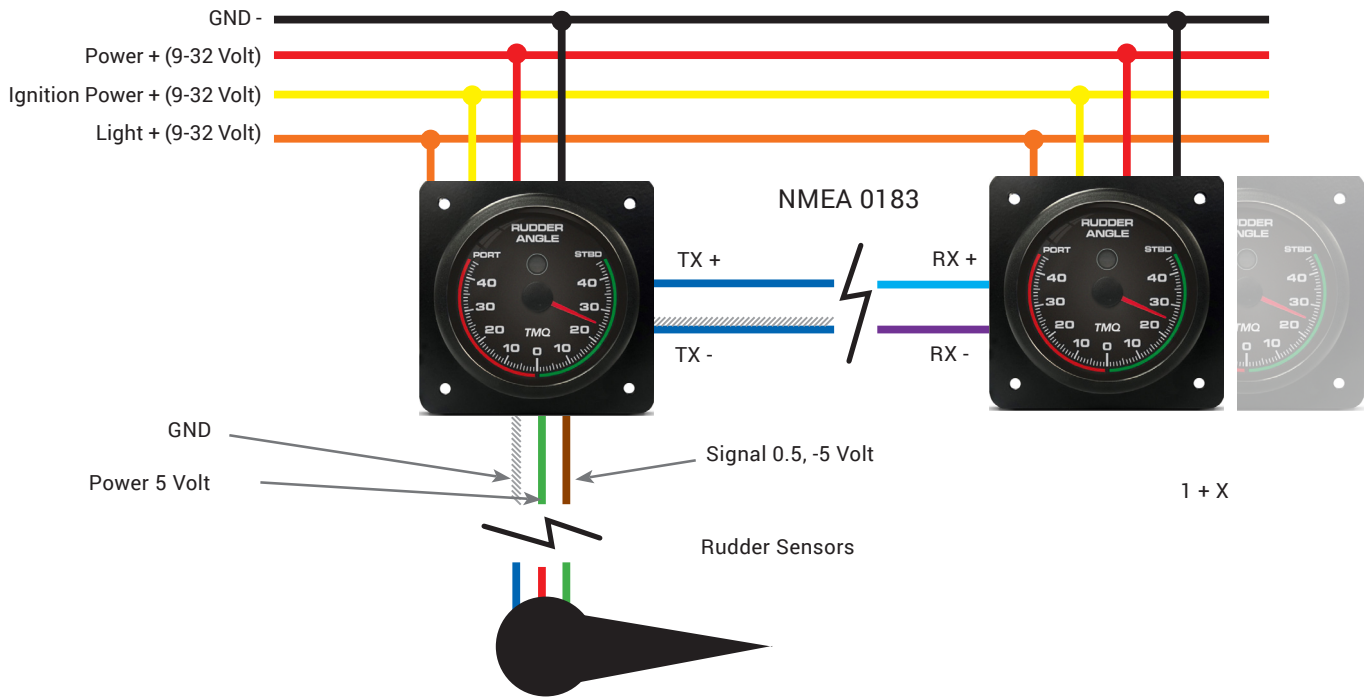
- Connect the Data TX+ Blue wire of the first gauge to the LIGHT BLUE Data RX+ of the second gauge.
- Connect the Data TX- Blue/white wire of the first gauge to the Purple Data RX- wire of the second gauge.
- It is also advised that power to the system be reset / cycled after connection.

### Calibration

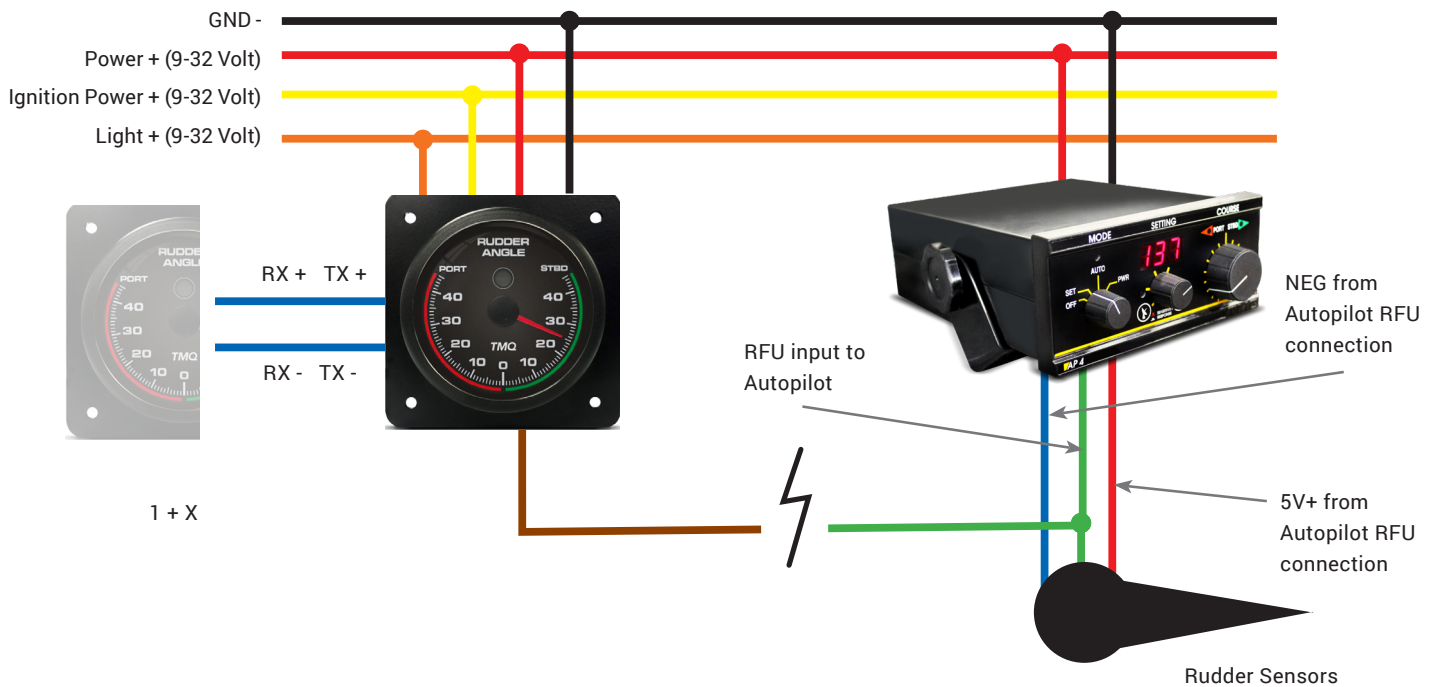
- With your rudder feedback mounted and the RAI-V wired as previously explained.
- Hold your finger for 5 seconds on the Gauge over the circle that is above the centre point.
- The gauge will then start to flash indicating it is in Calibration mode and it will move its needle to 20 degrees starboard,
- You must then move your rudder to 20 degrees Starboard.
- Once the vessels rudder is at 20 degrees starboard, hold your finger on the gauges centre for another 5 seconds.
- The needle will then move to the centre position.
- Copy this movement with your rudder by moving it to the centre.
- Once there, again hold your finger on the gauge for 5 seconds, the needle will then move to 20 degrees Port
- Finally move your rudder to 20 degrees Port and save by holding your finger for 5 seconds.

When the calibration is complete the gauge will stop flashing.

## Stand Alone Operation



## Autopilot Integration



### PIN ALLOCATION FOR INSTALLERS:

|   |                     |            |    |                         |            |
|---|---------------------|------------|----|-------------------------|------------|
| 1 | Positive Main Power | RED        | 8  | Not used                | GREY       |
| 2 | Negative Main Power | BLACK      | 9  | Signal input (0-5 Volt) | BROWN      |
| 3 | Signal GND          | WHITE      | 10 | Power 58 (Illumination) | ORANGE     |
| 4 | 5 Volt output       | GREEN      | 11 | NMEA 0183 RX+           | LIGHT BLUE |
| 5 | NMEA 0183 TX +      | BLUE       | 12 | NMEA 0183 RX-           | PURPLE     |
| 6 | NMEA 0183 TX -      | BLUE WHITE |    |                         |            |
| 7 | Power (Ignition)    | YELLOW     |    |                         |            |