

**Gobius<sup>®</sup> Pro**  
Wireless Tank Monitoring

# Introduction, Gobius Pro Hub

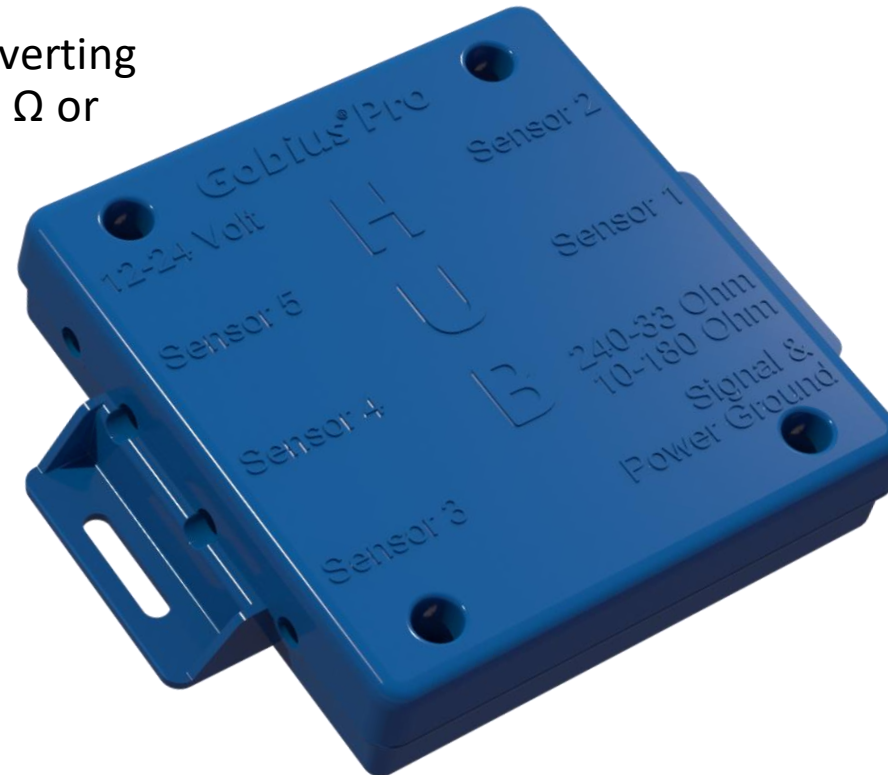
This presentation describes our new Hub for converting Gobius Pro sensors outputs to a standard 10-180  $\Omega$  or 240-33  $\Omega$  transmitter.

The Hub can be used with 1 to 5 sensors.

The Hub can be connected to a standard gauge (KUS/WEMA/VDO etc.) or an electronic unit (NMEA2000 Adapter) that can measure the resistance of the transmitter signal.

The Hub is galvanically isolated.

The Hub and the sensors can be powered with a DC voltage of 12-24 V (max 28.0 V DC).

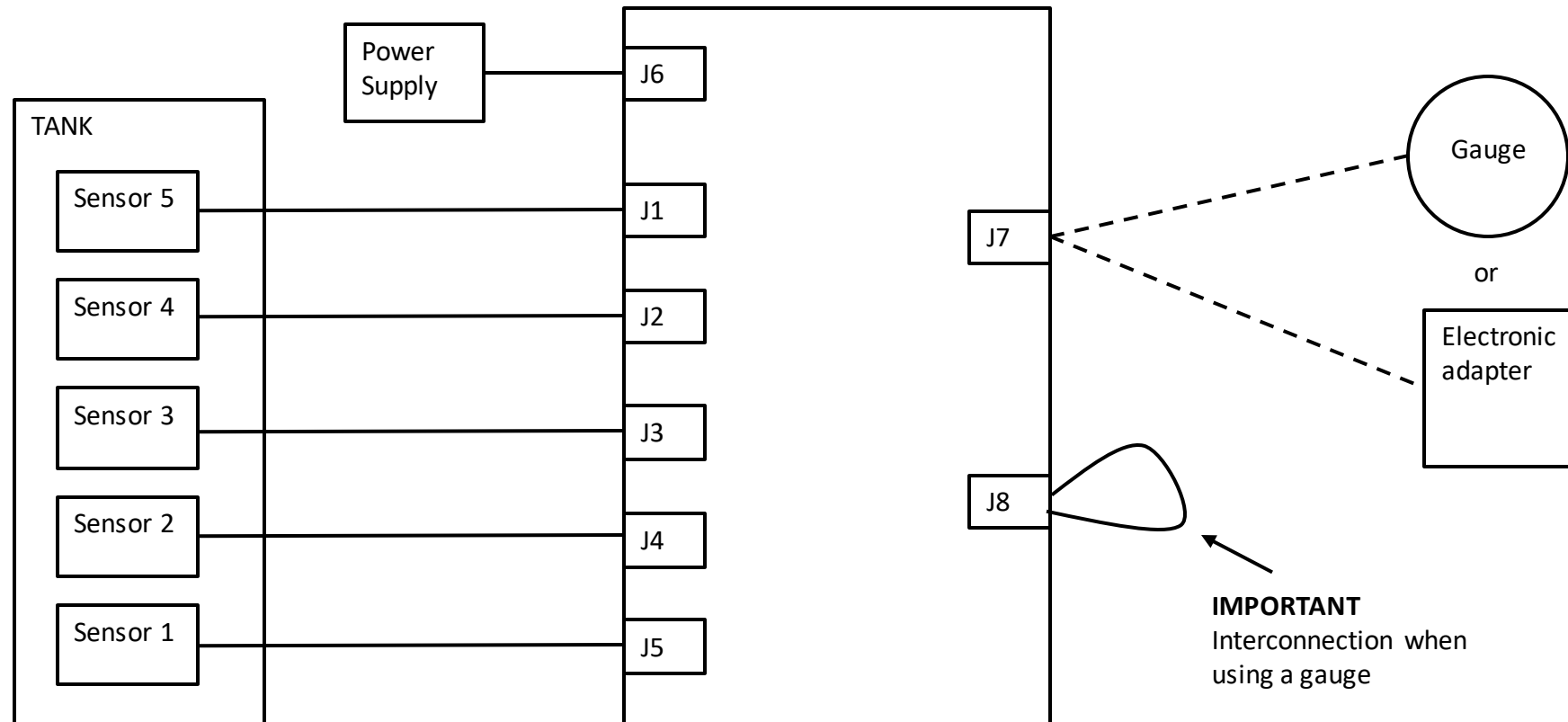




# Installation

- 1 Start with connecting the Hub (J6) to the power
- 2 Connect sensor 1 (lowest sensor) to the Hub, see page 7
- 3 Run the Gobius Guide in your phone
  - Set the Measurement period to "10 Sec"
  - Set the Digital output 1 to "...above..." or "...below...", see page 3, Notes
  - Calibration mode, select "Empty tank" or "Full tank"
- 4 Repeat step 1-3 for sensor 2, 3...
- 5 Connect the gauge to the Hub, see page 8
- 6 Fill or empty the tank...

## Block Diagram

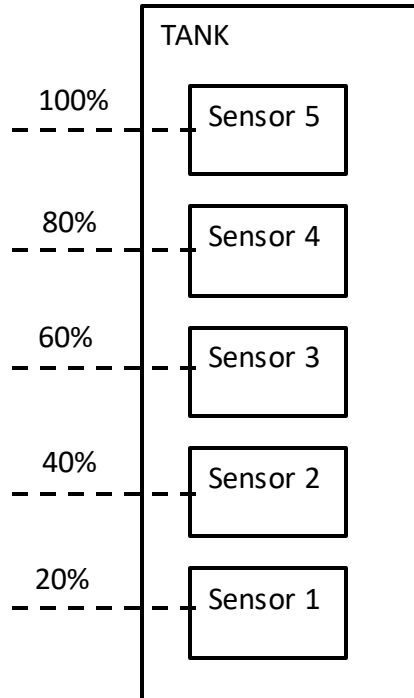


### Notes:

1. Sensor 1 is the most lowest sensor on the tank
2. For 10-180  $\Omega$ , the sensors shall be programmed to activate Digital output 1 when the fluid level is below the sensor
3. For 240-33  $\Omega$ , the sensors shall be programmed to activate Digital output 1 when the fluid level is above the sensor (Digital output 2 is not in use)

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## Example of truth table, 5 sensors 10-180 $\Omega$

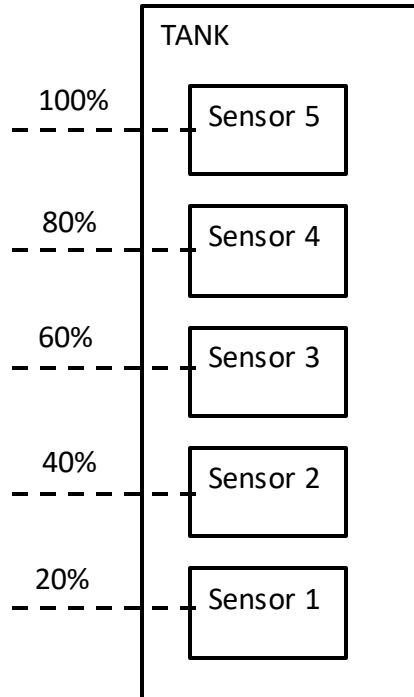


Fluid Level	Sensor #1	Sensor #2	Sensor #3	Sensor #4	Sensor #5	R [ $\Omega$ ]	Displayed fluid level [%]
< 20%	Closed	X	X	X	X	10	0
20-40%	Open	Closed	X	X	X	44	20
40-60%	Open	Open	Closed	X	X	78	40
60-80%	Open	Open	Open	Closed	X	112	60
80-100%	Open	Open	Open	Open	Closed	146	80
> 100%	Open	Open	Open	Open	Open	180	100

X = don't care

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## Example of truth table, 5 sensors 240-33 $\Omega$

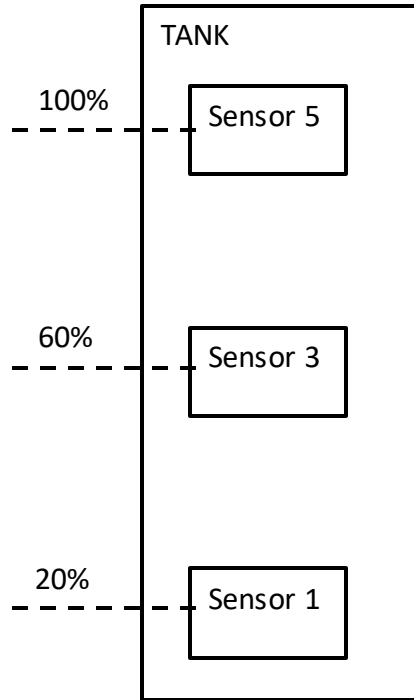


Fluid Level	Sensor #1	Sensor #2	Sensor #3	Sensor #4	Sensor #5	R [ $\Omega$ ]	Displayed fluid level [%]
< 20%	Open	Open	Open	Open	Open	240	0
20-40%	Closed	Open	Open	Open	Open	199	20
40-60%	X	Closed	Open	Open	Open	158	40
60-80%	X	X	Closed	Open	Open	116	60
80-100%	X	X	X	Closed	Open	75	80
> 100%	X	X	X	X	Closed	33	100

X = don't care



## Example of truth table, 3 sensors 10-180 $\Omega$



Fluid Level	Sensor #1	Sensor #3	Sensor #5	R [ $\Omega$ ]	Displayed fluid level [%]
< 20%	Closed	X	X	10	0
20-60%	Open	Closed	X	78	40
60-100%	Open	Open	Closed	146	80
> 100%	Open	Open	Open	180	100

X = don't care



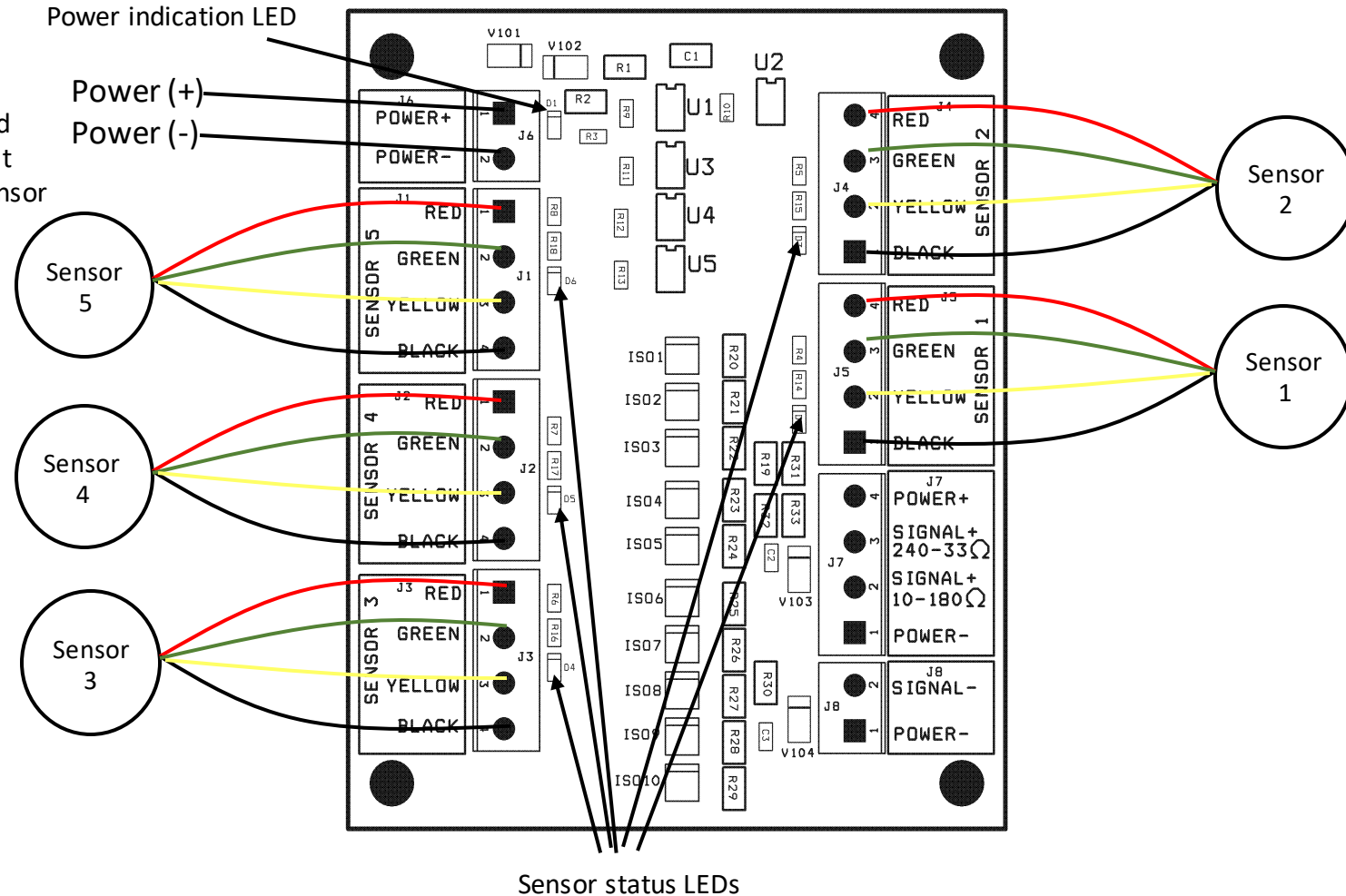
# Power and Sensor Connections

The adapter consists of a circuit board with eight terminal blocks. The circuit board has one status LED for each sensor and one LED that shows that the board is powered.

The input power (12/24 V) is connected to J6.

The sensors are connected to J1-J5 according to the cable colors.

The sensor status LED is lit when the sensor output 1 is activated.



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# Gauge Connections

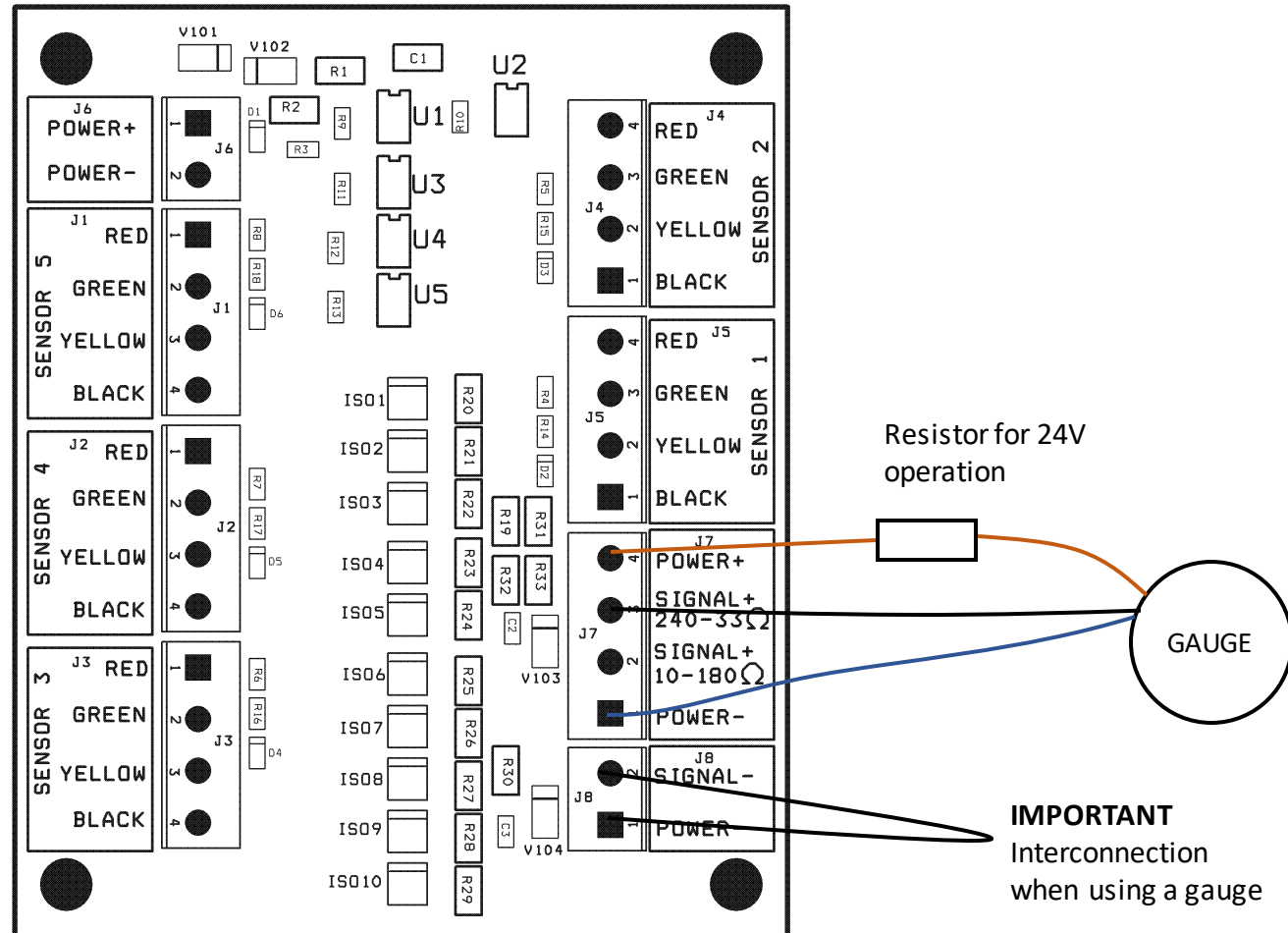
The gauge red lead (plus) shall be connected to terminal block J7 POWER+.

For 24V operation, a resistor shall be used. The value is specified by the gauge vendor.

The gauge blue lead (minus) shall be connected to terminal block J7 POWER-.

The gauge black lead (signal) shall be connected to terminal block J7 SIGNAL+.

SIGNAL- and POWER- **must be** interconnected in terminal block J8





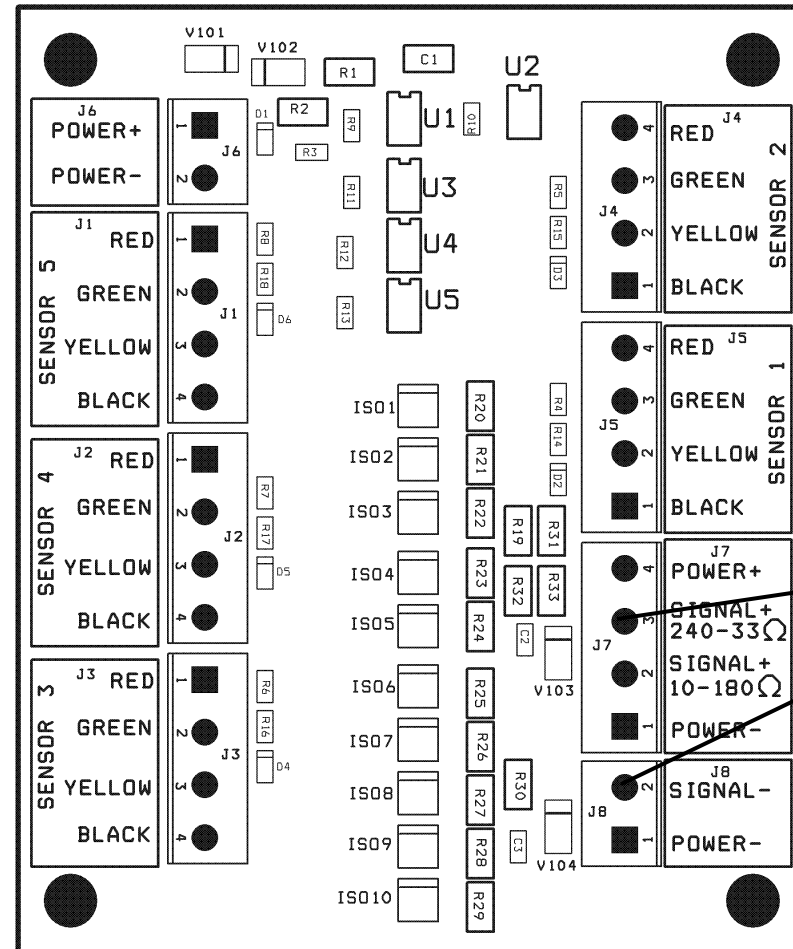
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# The Hub and an Electronic adapter for NMEA 2000 system

The Hub adapter shall be connected between terminal block J7 SIGNAL+ and terminal block J8 SIGNAL-.

Note the polarity.

The signal from the Hub is in this case galvanically isolated from the power in terminal block J6.



**Electronic adapter, like the new Gobius Pro NMEA 2000 Adapter**

TRANSMITTER PLUS

TRANSMITTER MINUS