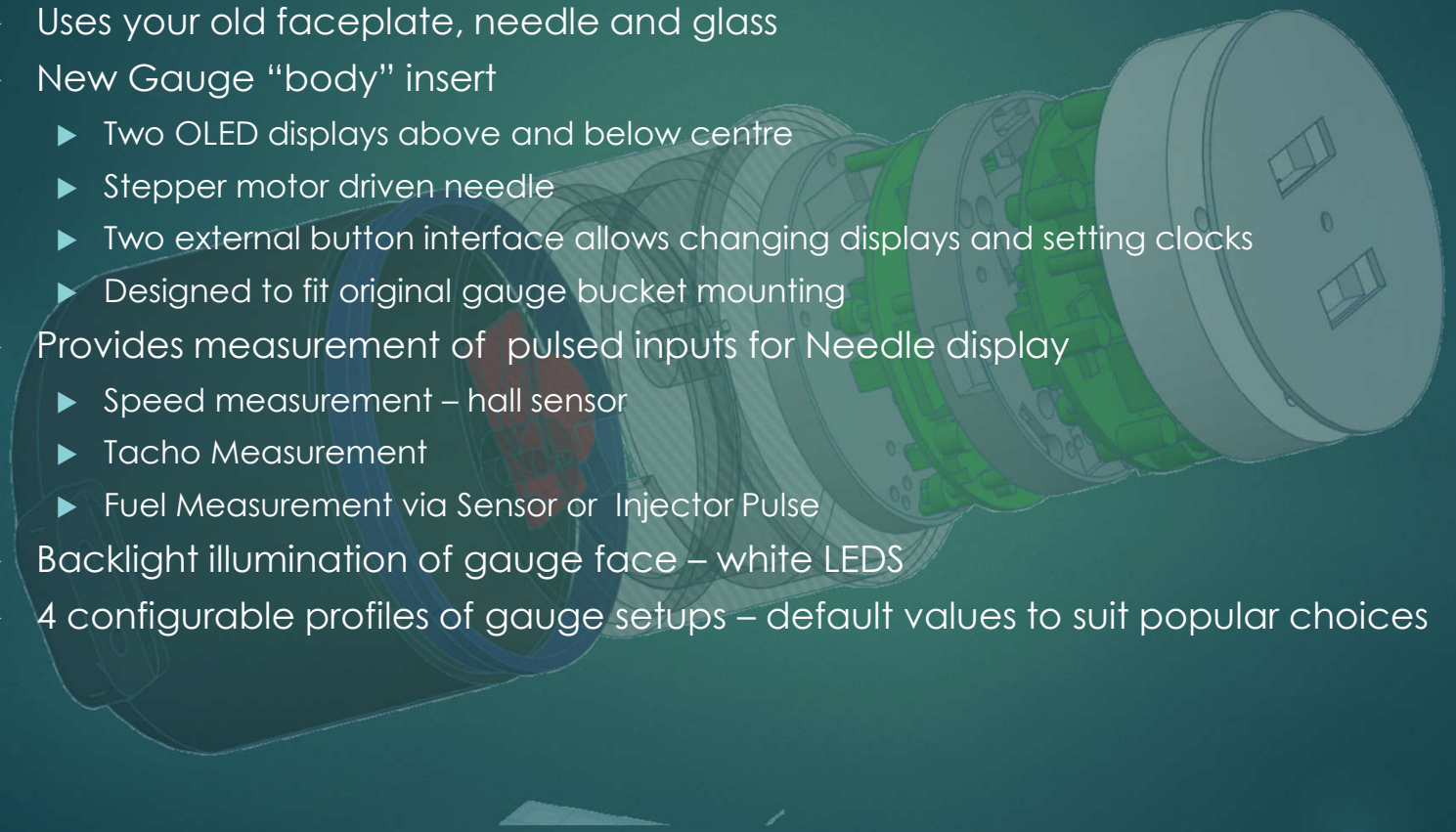
Rae-San Dash Meter

MODERN ELECTRONIC DASH INSERTS

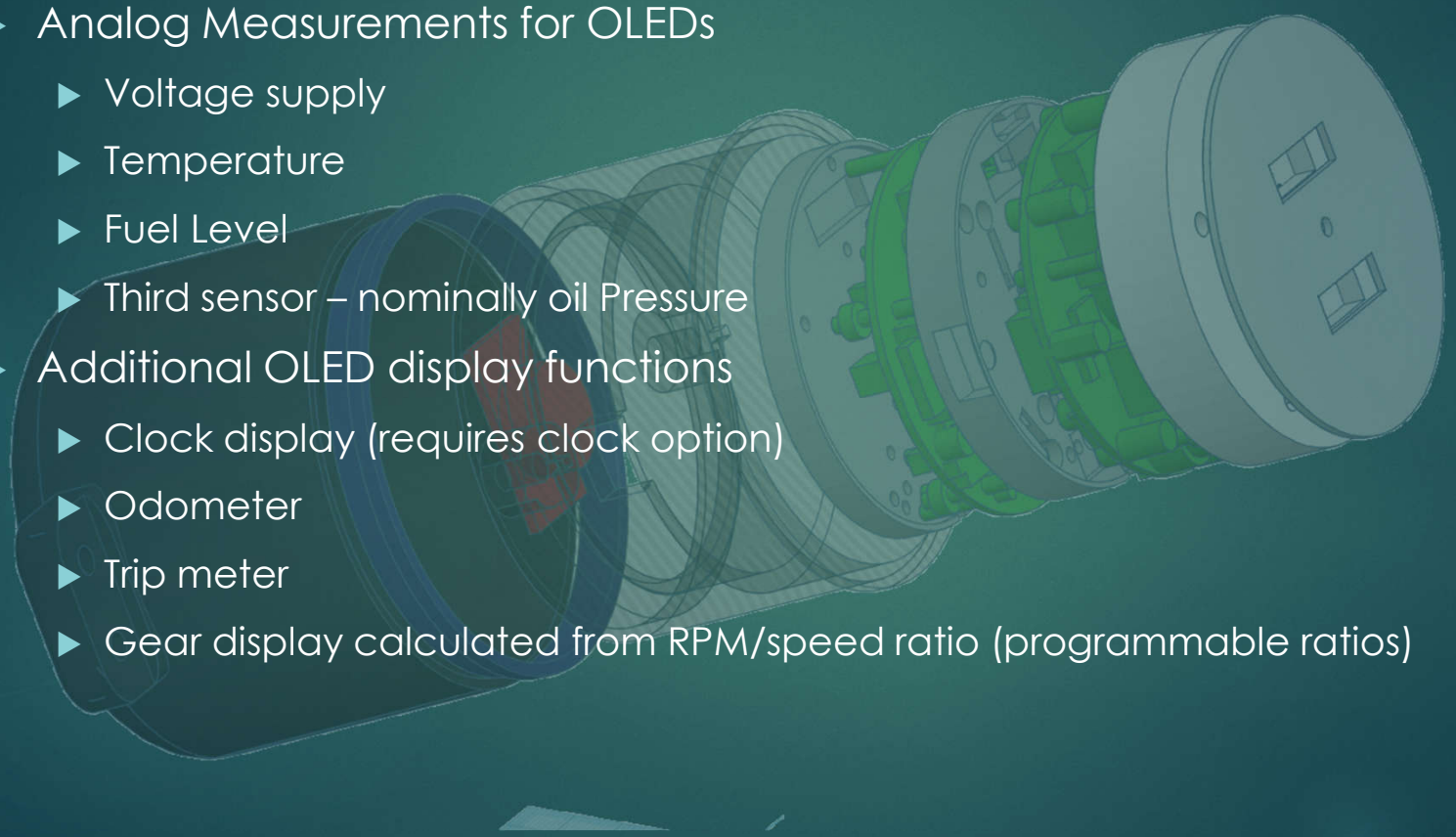
Dash Meter - Overview

- Available in a variety of Sizes
- Uses your old faceplate, needle and glass
- New Gauge "body" insert
  - Two OLED displays above and below centre
  - Stepper motor driven needle
  - Two external button interface allows changing displays and setting clocks
  - Designed to fit original gauge bucket mounting
- Provides measurement of pulsed inputs for Needle display
  - Speed measurement – hall sensor
  - Tacho Measurement
  - Fuel Measurement via Sensor or Injector Pulse
- Backlight illumination of gauge face – white LEDS
- 4 configurable profiles of gauge setups – default values to suit popular choices



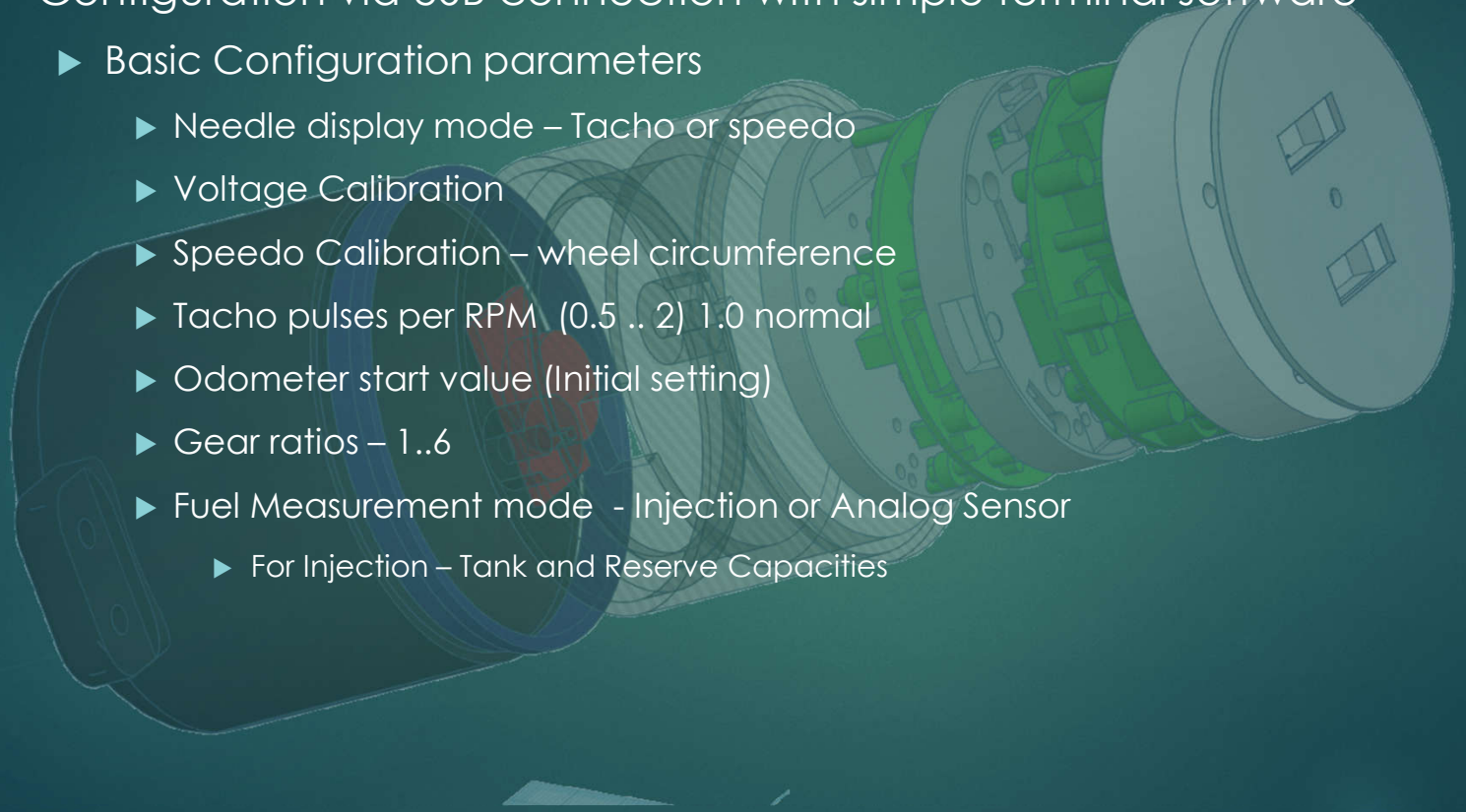
Dash Meter - Overview

- Analog Measurements for OLEDs
  - Voltage supply
  - Temperature
  - Fuel Level
  - Third sensor – nominally oil Pressure
- Additional OLED display functions
  - Clock display (requires clock option)
  - Odometer
  - Trip meter
  - Gear display calculated from RPM/speed ratio (programmable ratios)



Dash Meter – Setup

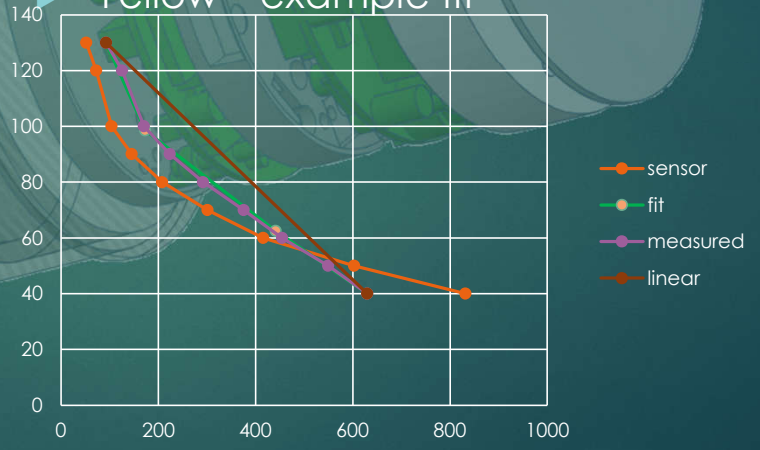
- Configuration via USB connection with simple terminal software
  - Basic Configuration parameters
    - Needle display mode – Tacho or speedo
    - Voltage Calibration
    - Speedo Calibration – wheel circumference
    - Tacho pulses per RPM (0.5 .. 2) 1.0 normal
    - Odometer start value (Initial setting)
    - Gear ratios – 1..6
    - Fuel Measurement mode - Injection or Analog Sensor
      - For Injection – Tank and Reserve Capacities



Dash Meter – Setup

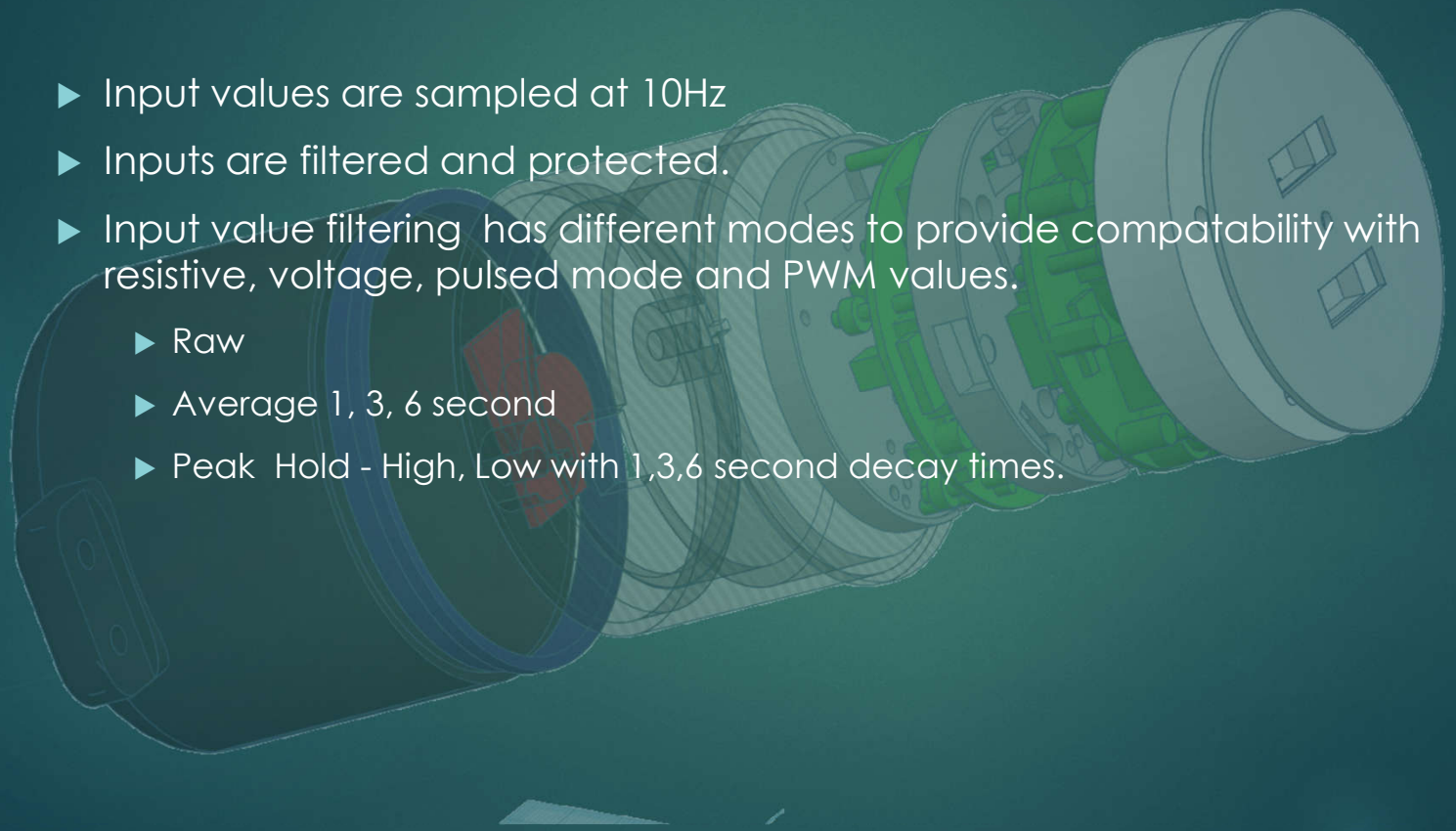
- Input parameters
  - Input ADC range – low .. High
  - Output Value range
    - TACHO – SPEEDO – outputs are needle angles
    - Analog inputs – outputs are display percentage – 0 .. 100 percent
  - 2 break points on each to allow correction of non linear sensors
  - 2 Break points allow for mapping of uneven spacing marks on gauge face
- Configuration mode is interactive – as parameters are changed – live display / needle shows the setting as well

- Orange Raw sensor curve (temp)
- Pink – Sensor fed by 100 Ohm
- Brown – straight linear approximation
- Yellow – example fit



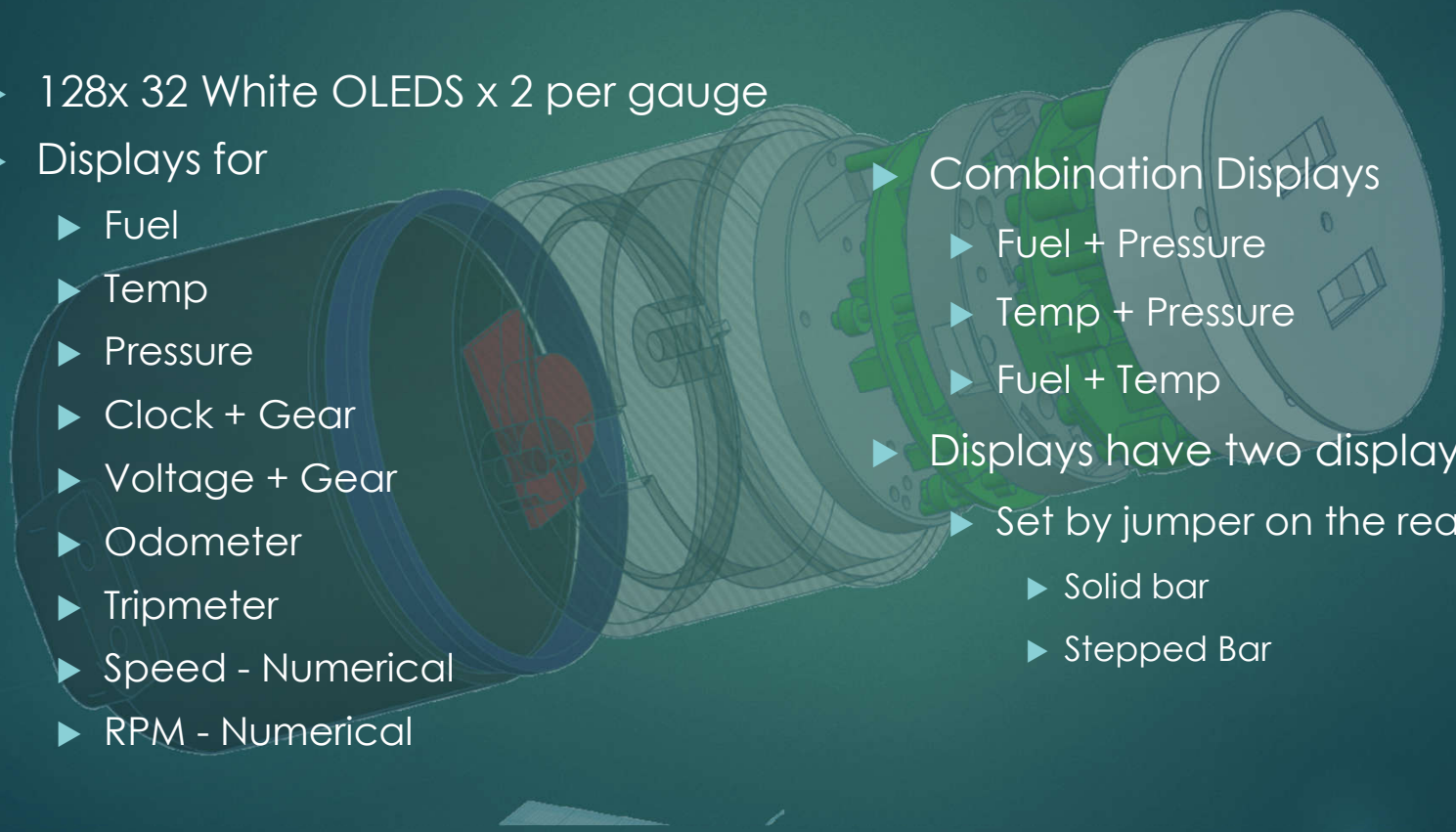
Dash Meter – Setup 2

- Input values are sampled at 10Hz
- Inputs are filtered and protected.
- Input value filtering has different modes to provide compatability with resistive, voltage, pulsed mode and PWM values.
  - Raw
  - Average 1, 3, 6 second
  - Peak Hold - High, Low with 1,3,6 second decay times.



Dash Meter - Displays

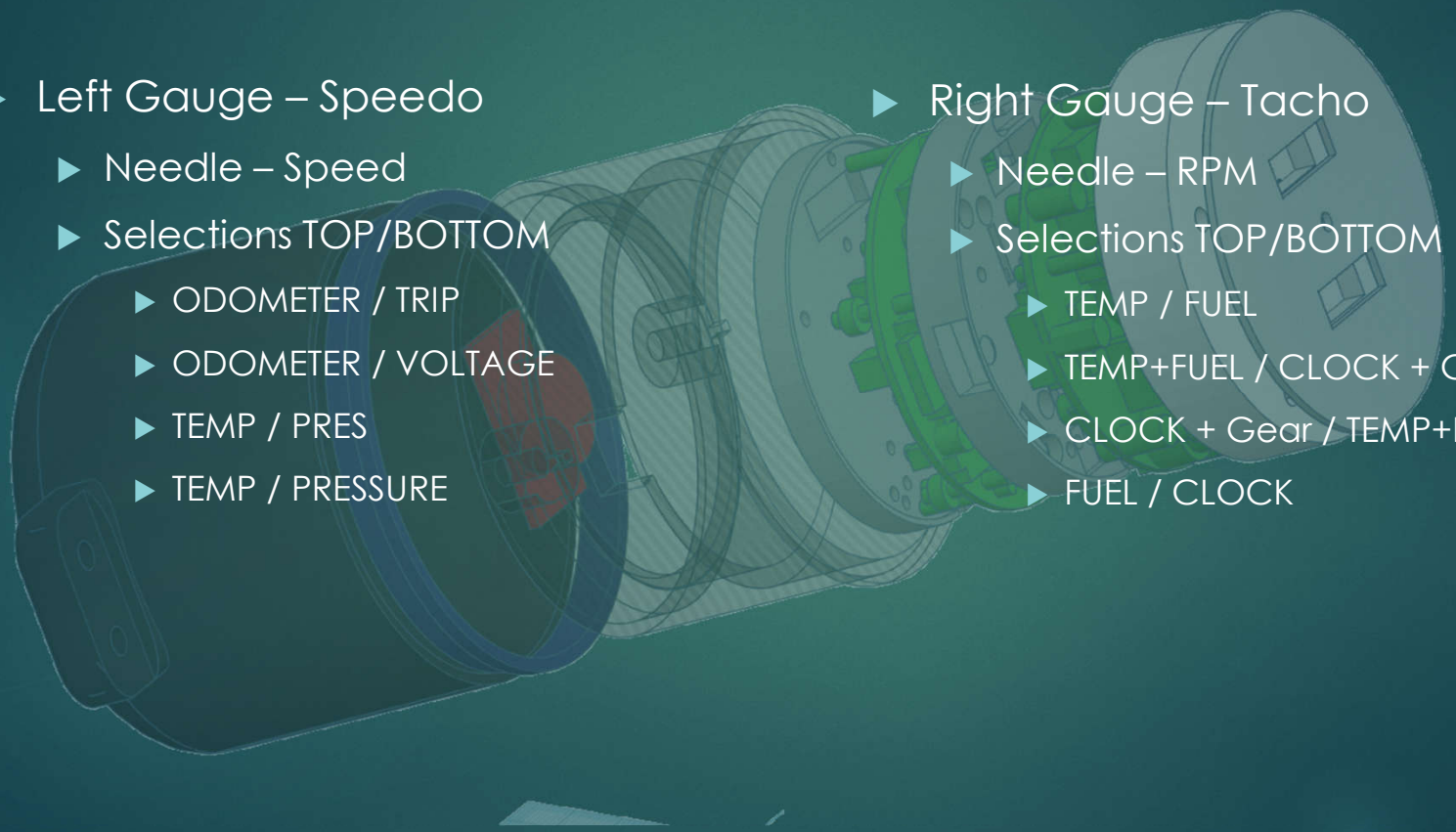
- 128x 32 White OLEDS x 2 per gauge
- Displays for
  - Fuel
  - Temp
  - Pressure
  - Clock + Gear
  - Voltage + Gear
  - Odometer
  - Tripmeter
  - Speed - Numerical
  - RPM - Numerical
- Combination Displays
  - Fuel + Pressure
  - Temp + Pressure
  - Fuel + Temp
- Displays have two display modes –
  - Set by jumper on the rear
    - Solid bar
    - Stepped Bar



Dash Meter – Displays 2

- 4 user configurable display combinations – cycled by button push.
- Dual Gauge and Single Gauge setups possible
- All displays available to both OLEDS.
  - FUEL Injection Pulse Fuel Measurement adds displays for
    - Distance to Empty
    - Avg Fuel Economy

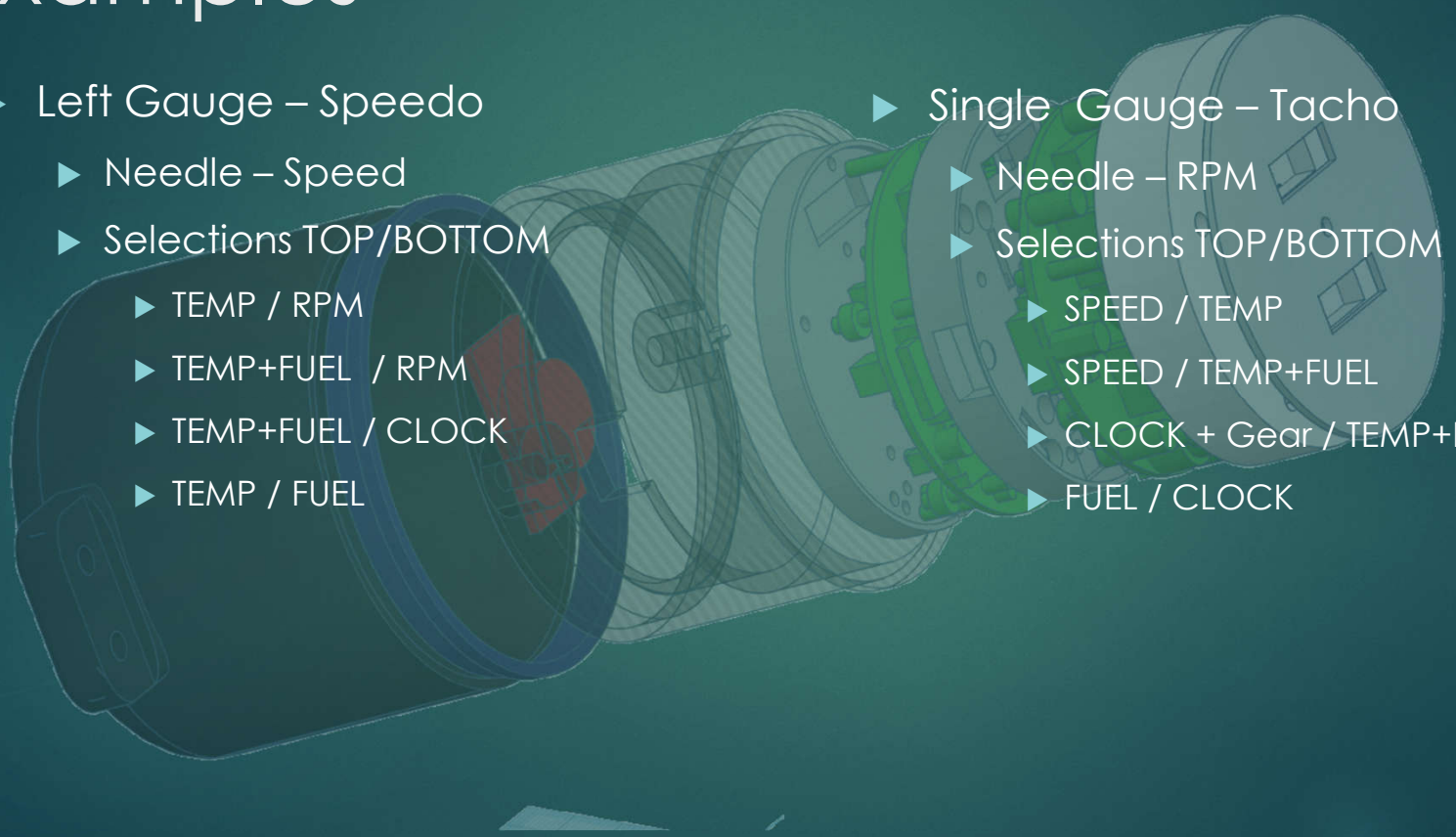
Dash Meter – Dual Gauge example



- Left Gauge – Speedo
  - Needle – Speed
  - Selections TOP/BOTTOM
    - ODOMETER / TRIP
    - ODOMETER / VOLTAGE
    - TEMP / PRES
    - TEMP / PRESSURE
- Right Gauge – Tacho
  - Needle – RPM
  - Selections TOP/BOTTOM
    - TEMP / FUEL
    - TEMP+FUEL / CLOCK + Gear
    - CLOCK + Gear / TEMP+PRESSURE
    - FUEL / CLOCK

Dash Meter – Single Gauge examples

- Left Gauge – Speedo
  - Needle – Speed
  - Selections TOP/BOTTOM
    - TEMP / RPM
    - TEMP+FUEL / RPM
    - TEMP+FUEL / CLOCK
    - TEMP / FUEL
- Single Gauge – Tacho
  - Needle – RPM
  - Selections TOP/BOTTOM
    - SPEED / TEMP
    - SPEED / TEMP+FUEL
    - CLOCK + Gear / TEMP+PRESSURE
    - FUEL / CLOCK

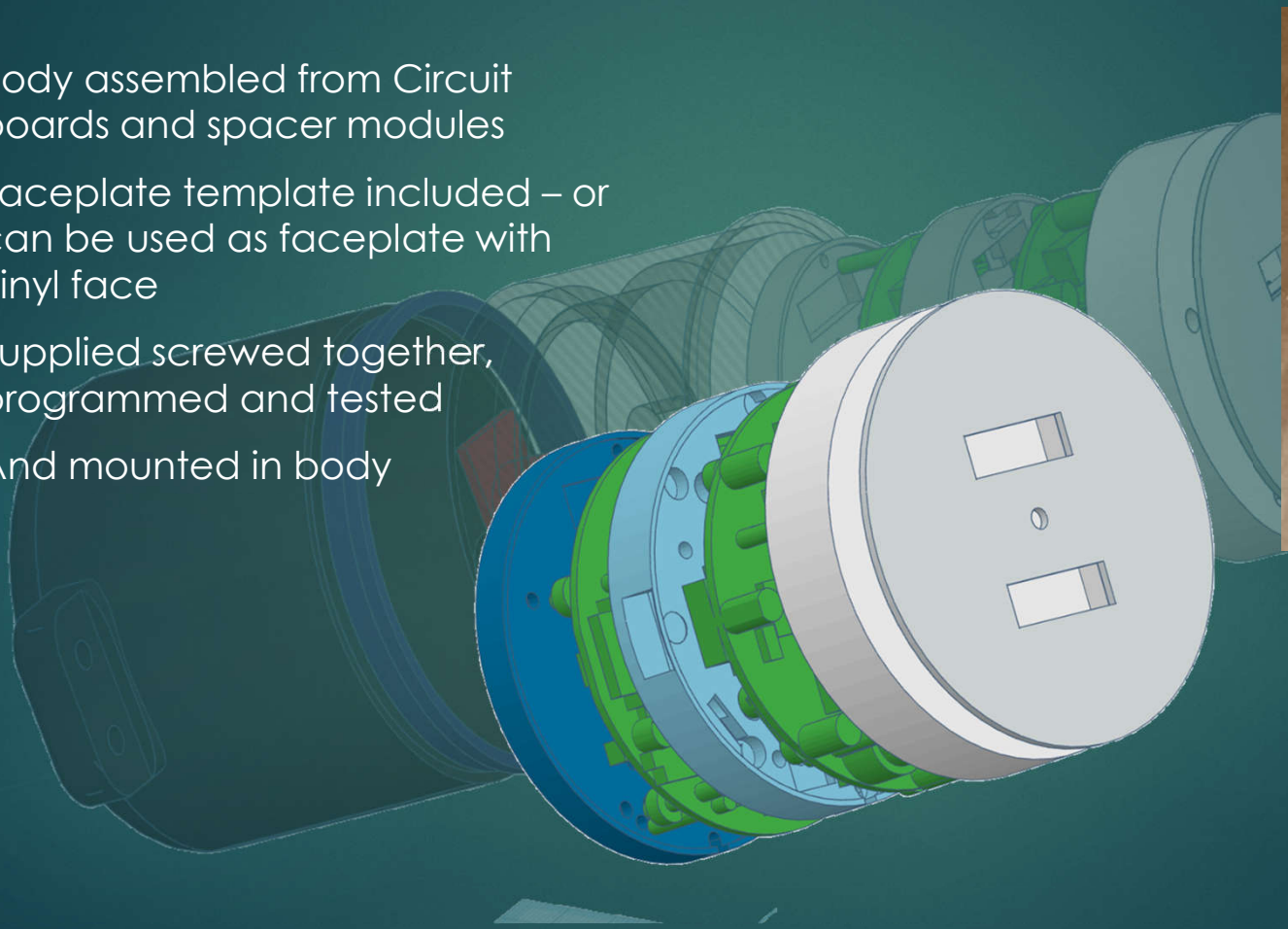


Dash Meters – Optional extras

- 3d Printed PETG gauge buckets available to match
- Turn around service – send glass , faceplate and needles – get back assembled preconfigured gauge(s)
- Optional PETG Dash consoles in a variety of designs planned to be available
  - Can be designed to order to match existing dash shapes
- Pressure sensor kit available (piezo sensor)
- Capacitive Sensing Fuel Level Meter to be available soon.

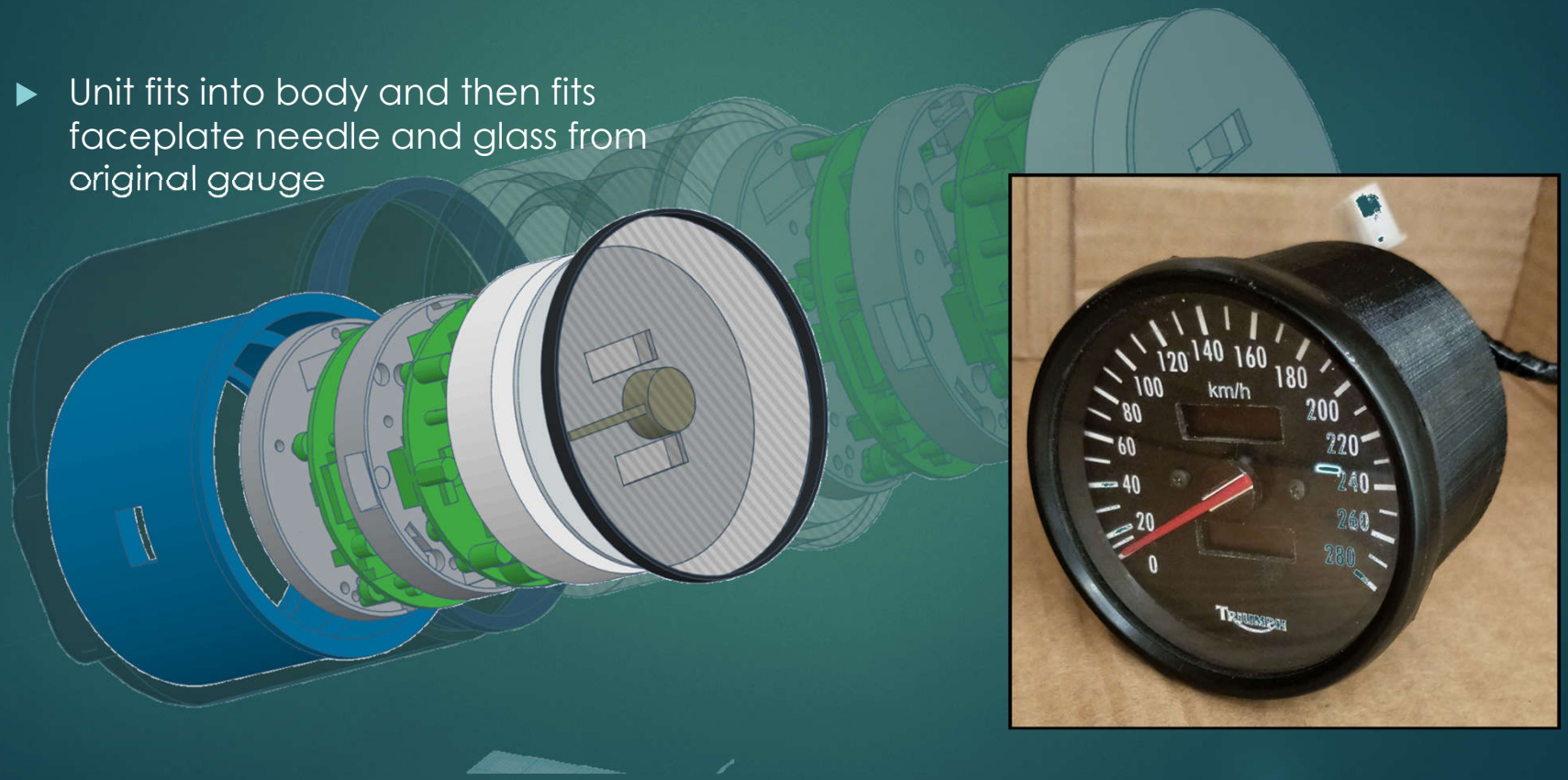
Dash Meter

- Body assembled from Circuit boards and spacer modules
- Faceplate template included – or can be used as faceplate with vinyl face
- Supplied screwed together, programmed and tested
- And mounted in body



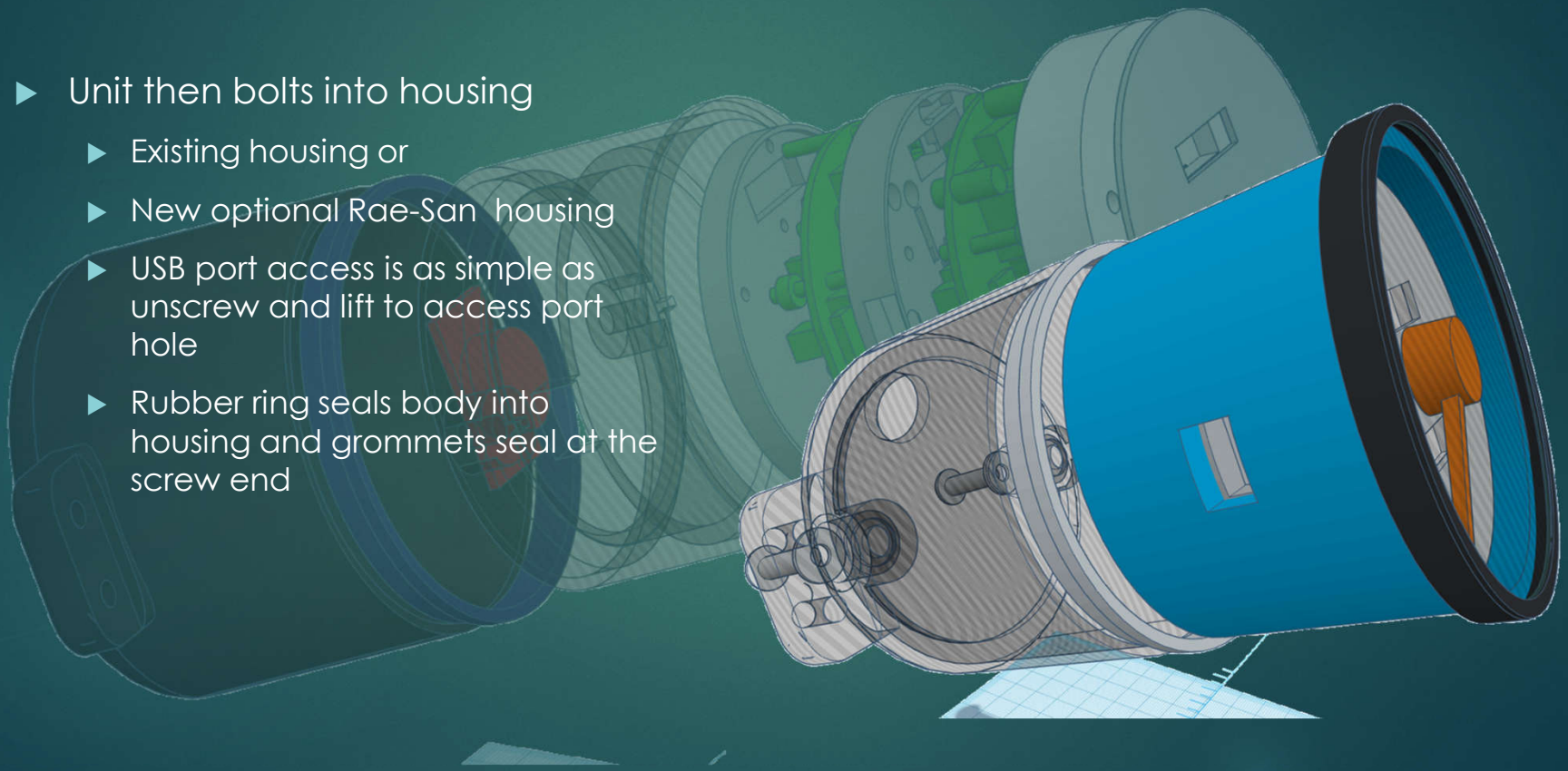
Dash Meter

- Unit fits into body and then fits faceplate needle and glass from original gauge



Dash Meter

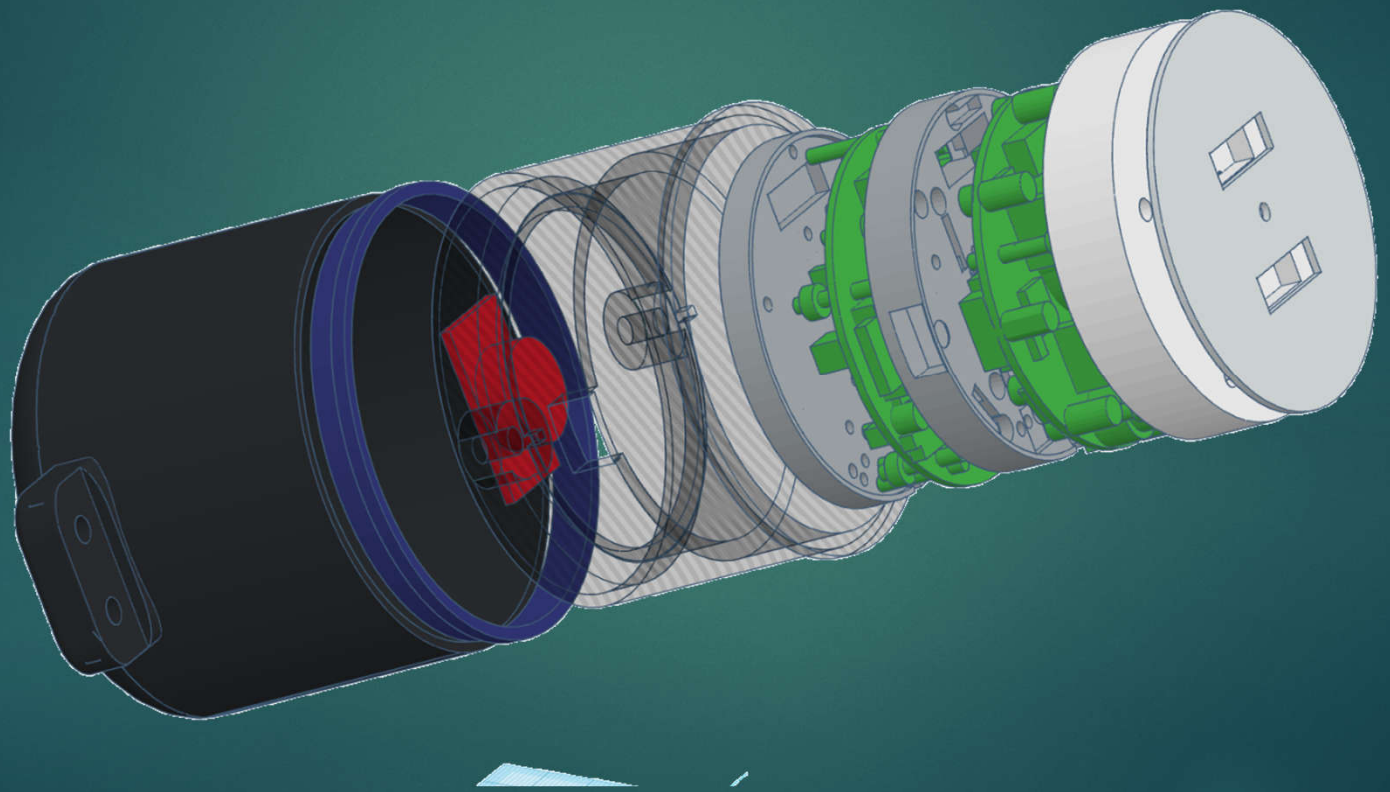
- Unit then bolts into housing
  - Existing housing or
  - New optional Rae-San housing
  - USB port access is as simple as unscrew and lift to access port hole
  - Rubber ring seals body into housing and grommets seal at the screw end



Dash Meter

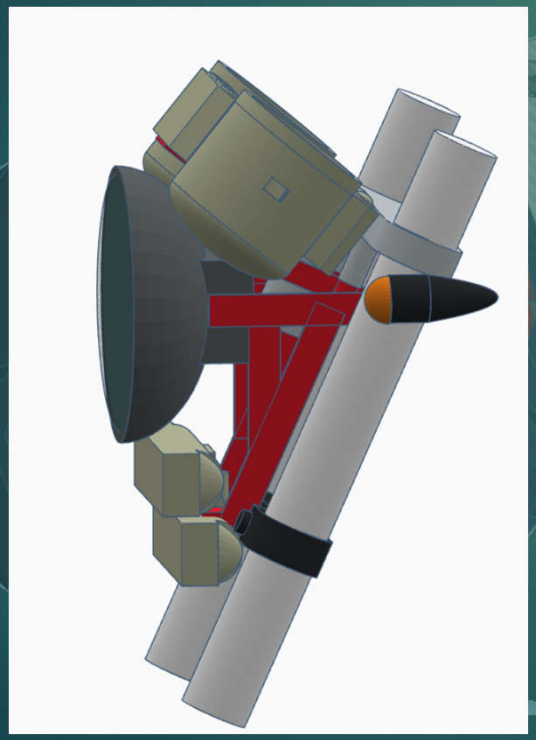
- Complete unit in original or new housing read to be mounted

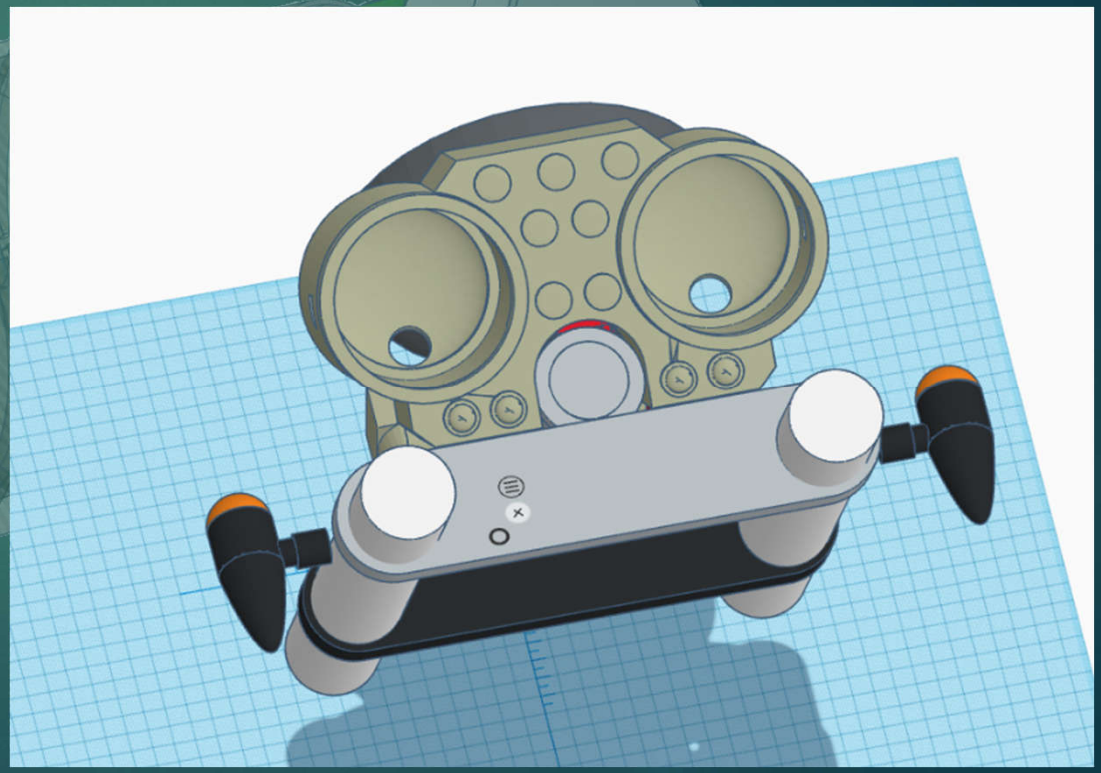
Dash Meter – exploded without glass or needle



Dash Meter – example Dash – 955i Sprint ST naked

- Example Complete Dash





Dash Meter – example Dash – 955i Sprint ST naked

- And the real one