

AIR/FUEL (Wideband) DIGITAL

Part No: SG41292
2 inch-52mm

v20240521

Installation Instructions

Important notes before installing:

- Installing this product to your vehicle may require an adaptor. SAAS offer a large range of adaptors and installation parts; please check with your SAAS dealer for available adaptors.
- SAAS Muscle series gauges are designed for **12volt** systems **ONLY!**
- All installation work should be done by a qualified professional to avoid damage to this product.
- SAAS **RECOMMENDS** all products be tested prior to installation. This will save time and speed up the troubleshooting process if you encounter any issues.

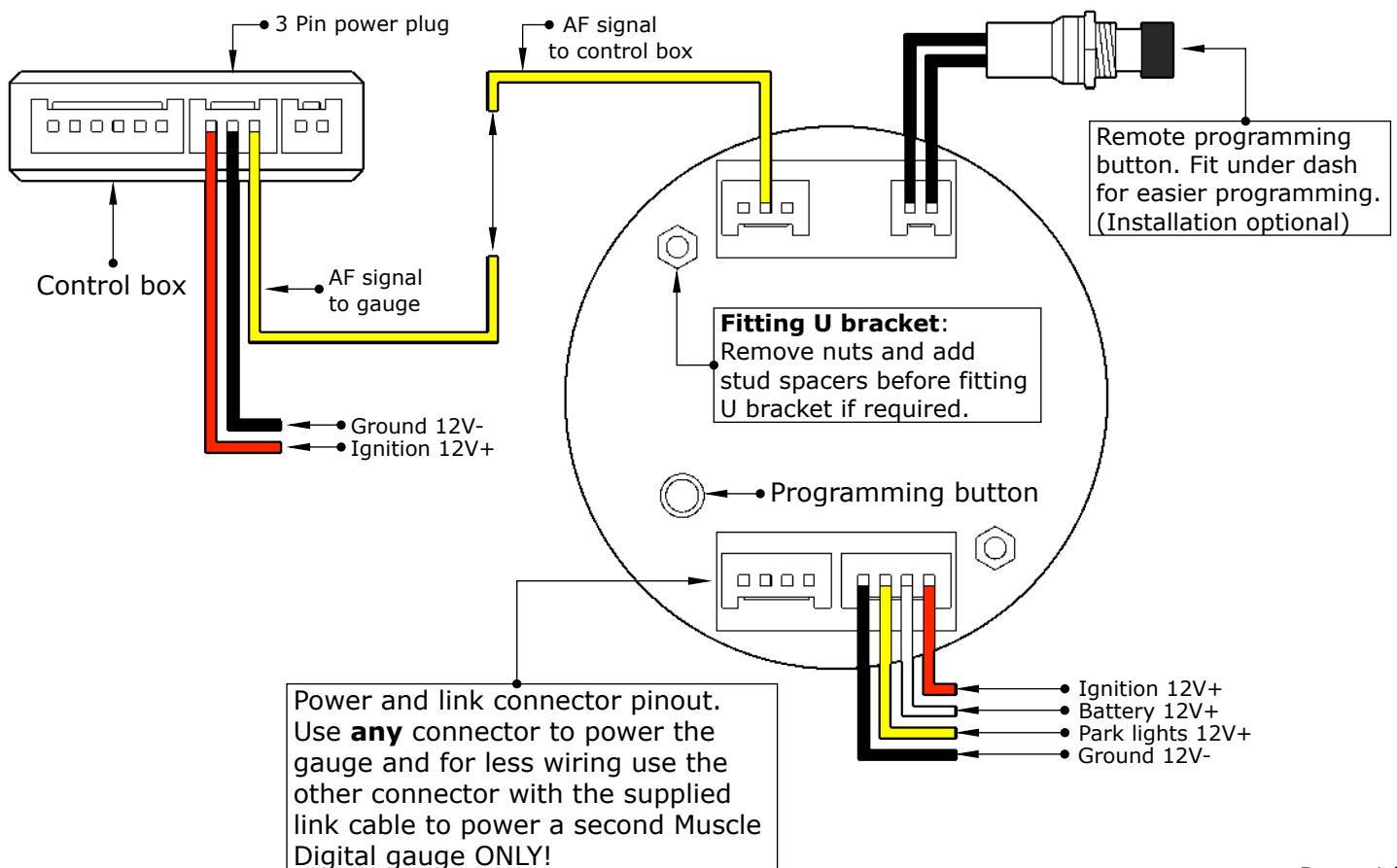
- **BEFORE** installing, please check our website (shopsaas.com) for the latest fitting instructions. If the top left corner (v) number is different to website, please use instructions from website.

Wiring Guide:

Wire colour	Wire Function	Wire Connection Location
Black	Ground 12V-	Vehicle body
Yellow	Park lights 12V+	Park light circuit (do NOT connect to a dimmer)
White	Battery 12V+	Ignition harness / Fuse box
Red	Ignition 12V+	Ignition harness / Fuse box

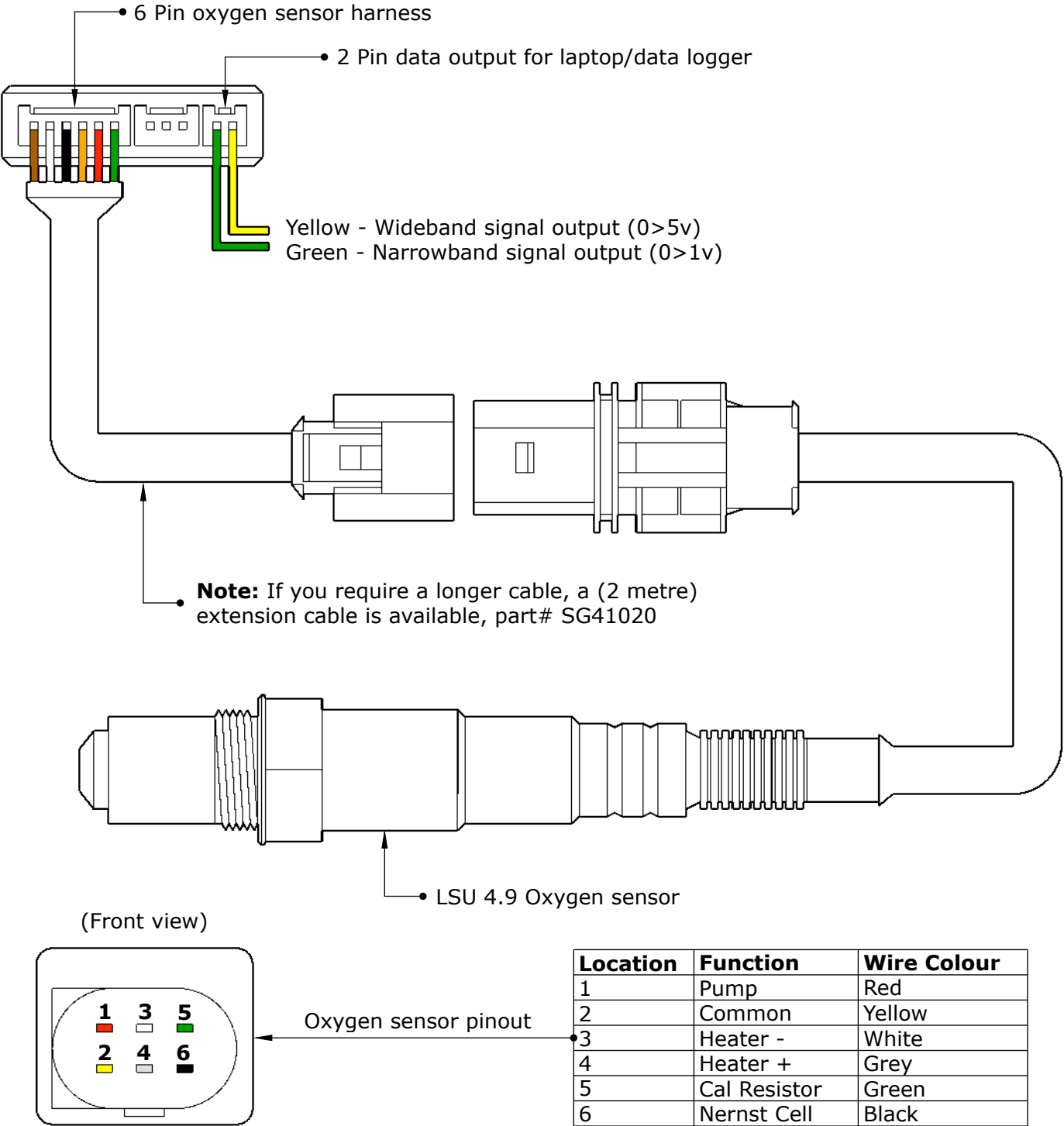
Wiring Diagram

Typical Layout #1



Wiring Diagram

Typical Layout #2



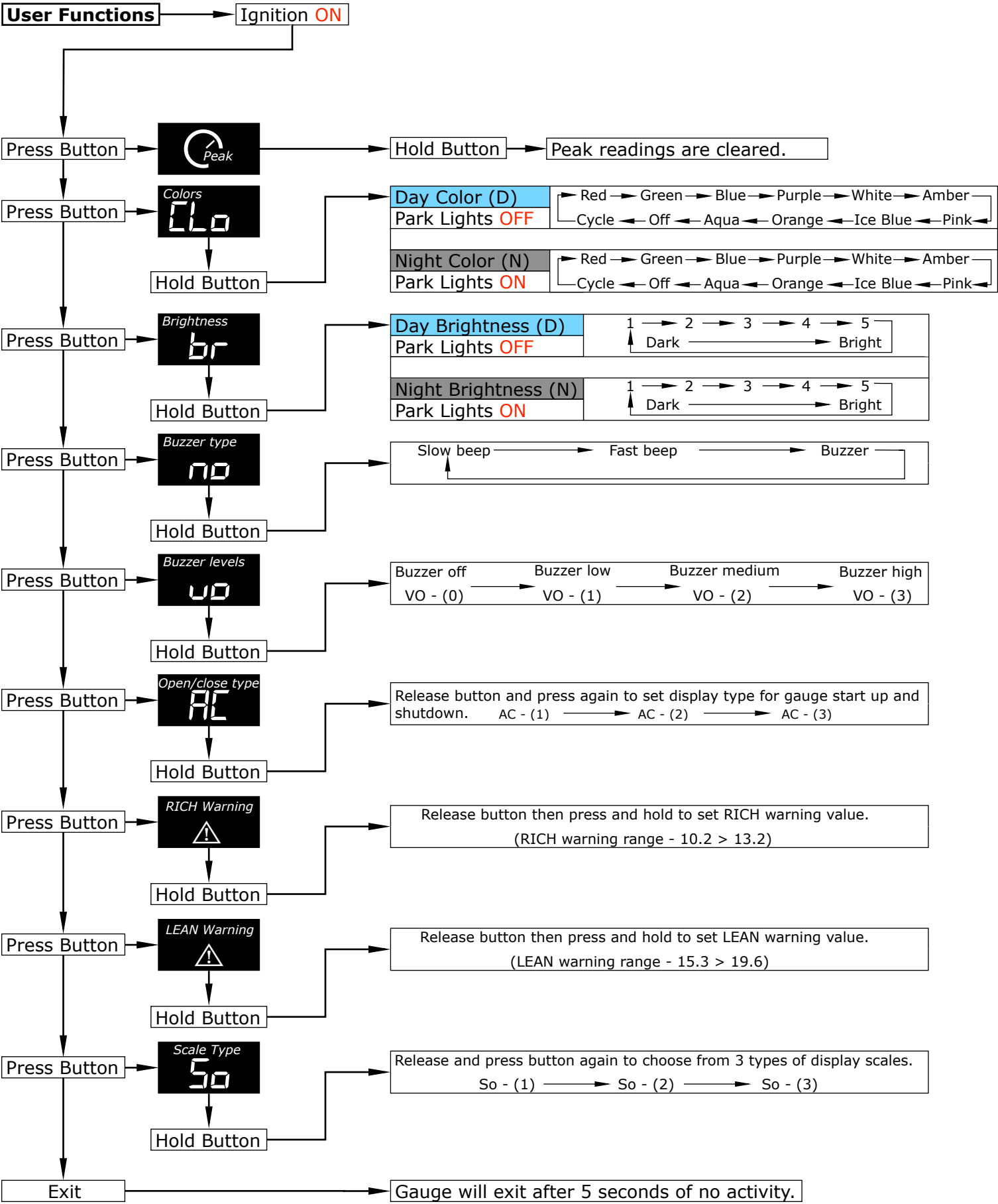
Factory Voltage Setting:

- **Note:** Before operating the vehicle, please check that the factory sensor voltage is set to "A5u".
- **To change voltage setting:** Press and hold the program button for 3 seconds, the display will show "A5u" or "A1u", release button and press again to change setting, gauge will exit setting after 5 seconds of no activity.

For further assistance email: tech@saasautomotive.com.au

User Functions:

Note: Use the remote programming button or the button on the back of the gauge to set the below functions.



Oxygen Sensor Installation:

- Recommended sensor locations:

Note: The information below is to be used as a **guide** only! The mounting location for oxygen sensors will vary from vehicle to vehicle. Turbo and non turbo engines will have different mounting locations and how the vehicle is used will also need to be considered. We **strongly** advise you consult with a performance mechanic for the best mounting location for your application.

As a guide, oxygen sensors should be a minimum of 150mm after the last exhaust port and no more than 900mm from the last exhaust port **before** the catalytic converter.

Turbo vehicles: The oxygen sensor should be mounted 900mm downstream from the closest exhaust port.

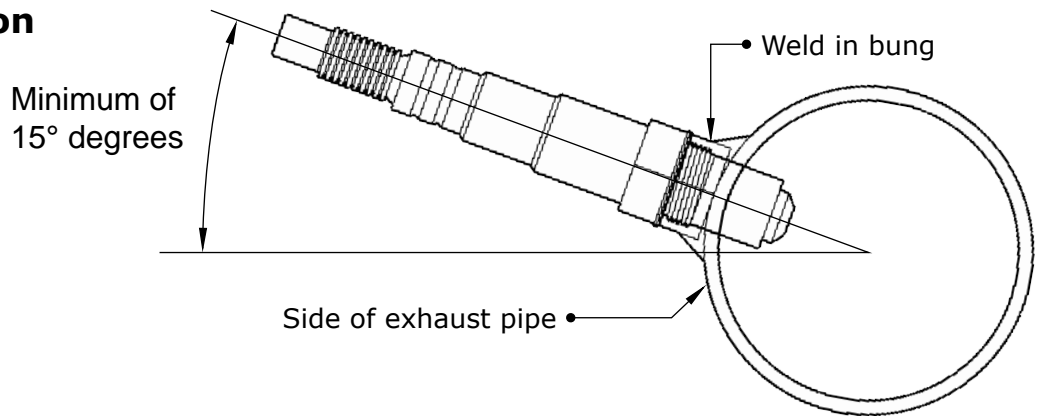
Non turbo vehicles: The oxygen sensor should be mounted 150mm to 900mm downstream from the closest exhaust pipe.

- Sensor installation:

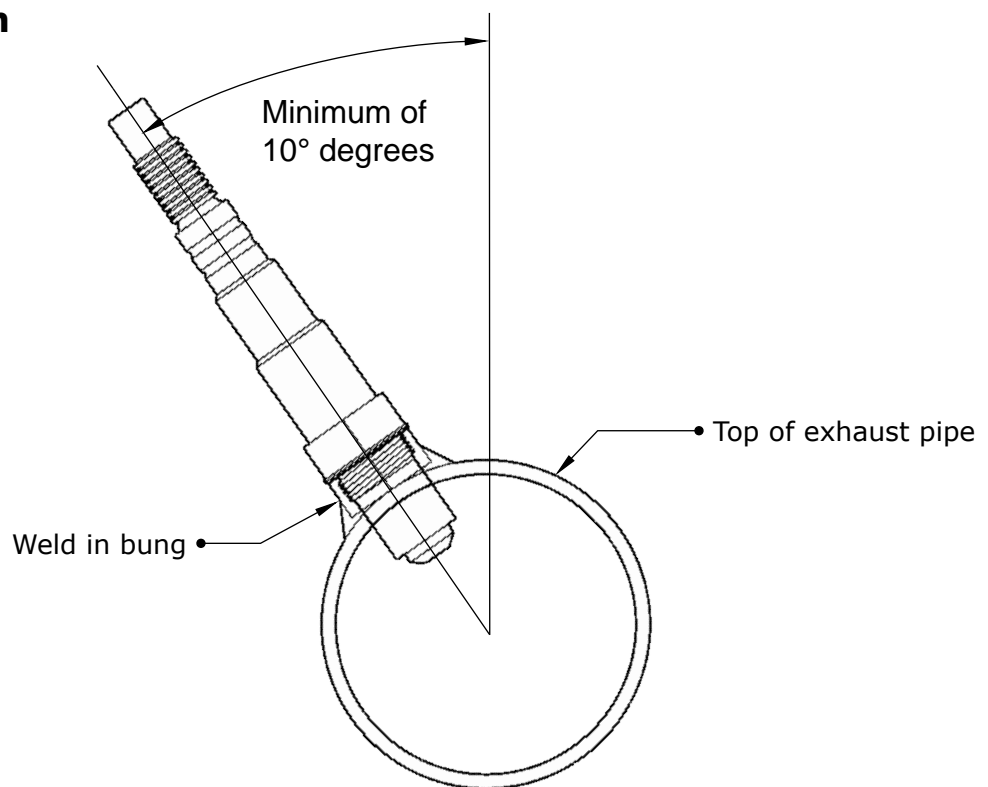
Oxygen sensors **must** be mounted at a certain angle to prevent the collection of liquid inside the sensor element during warm up. Before installing the LSU 4.9 oxygen sensor, the supplied weld in bung (M18 x 1.5mm) must be mounted to the exhaust pipe in one of the positions shown below.

Note: We highly recommend using anti-seize on the threads for easy sensor removal.

Side Installation



Top Installation



WARNING! PLEASE READ BELOW!

- WARNING!

Oxygen sensors **MUST** be replaced after every dyno run! This is not covered under warranty!

Oxygen sensors must **NOT** be installed if they have been dropped! This is not covered under warranty!

Gauge Display Functions:

- How to read a Wideband AFR gauge:

Please note that oxygen sensors will not read correctly until the vehicle has reached its normal operating temperature. See table below for gauge range and perimeters.

AFR Quality	AFR Value
RICH:	10 - 12.9 AFR
OPTIMAL:	13 - 17.9 AFR
LEAN:	18 - 20 AFR

- AFR display warnings:

- LEAN WARNING: The gauge display will flash its current colour when the signal is lean

- RICH WARNING: The gauge display will flash its current colour when the signal is rich

Oxygen Sensor FAQ's:

- What causes oxygen sensors to fail?

The list below shows some of the most common causes of sensor failure, contamination being the most common:

- very rich fuel mixture
- oil blow-by in older engines
- burnt engine coolant from a leaking gasket
- worn out piston rings
- high temperatures from extended runs or incorrect sensor placement
- low quality fuel / contaminated fuel
- not performing regular vehicle maintenance

- How long do oxygen sensors last?

The life span of an oxygen sensor is determined by vehicle application, vehicle setup and how the vehicle is used.

- Can fuel additives damage oxygen sensors?

Some fuel additives can damage sensors, only use fuel additives that are labeled "oxygen sensor safe".

- Can you clean oxygen sensors?

Oxygen sensors should never be cleaned, only replaced.

- When should you replace oxygen sensors?

Most manufactures recommend replacing oxygen sensors after 20,000 kilometres. The vehicle application and how the vehicle is used will determine when to change the sensor. Ask your performance mechanic / tuning shop for sensor replacement intervals.

- Can you test oxygen sensors?

Continuity and voltage tests can done with a multimeter but are not always accurate. If you suspect a problem with your oxygen sensor, you should replace it. See troubleshooting for more info.

For further assistance email: tech@saasautomotive.com.au

Troubleshooting:

Please note: If you are having problems with the installation of this product, please do not contact your retailer or SAAS until you have read **ALL** the troubleshooting notes below.

Problem	Possible Cause	Solution
-gauge beeps but no display	-incorrect wiring -display is set to (OFF)	-refer to fitting instructions -press button to change backlight colour
-gauge not reading	-bad sensor connection -damaged sensor	-check connectors on gauge and sensor -replace oxygen sensor
-gauge reads (- - -)	-oxygen sensor not plugged in -damaged sensor	-plug oxygen sensor in -replace oxygen sensor
-gauge flashes randomly	-warning function activated	-check air/fuel mixtures

Additional Troubleshooting Notes/Tips:

- How to test a Saas LSU 4.9 wideband oxygen sensor:

- Testing the sensor: Using a multimeter, unplug the sensor and check for resistance across pins 1 and 5, if there's no resistance replace sensor, if there is resistance, plug sensor back in and check for resistance at the control box end, if there's no resistance coming from the sensor, check the cable for damage.

- Testing the heater element: (Caution! The oxygen sensor will get HOT for this test)
The sensor must be out of the exhaust and at room temperature, power up the gauge, sensor will start to heat up in a few minutes, if it fails to heat, unplug sensor and using a multimeter check for resistance across the grey and white wires, if there is no resistance replace sensor.

Although continuity and voltage tests can be done with a multimeter, in some cases they are not always accurate. If you suspect a problem with your oxygen sensor, you should replace it. Oxygen sensors that have traveled more than 15,000 kilometres should be replaced regardless.

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Contents:

In The Box	Qty	Notes	Part No.
AFR wideband gauge	1		
AFR wideband controller	1		SG41011
LSU 4.9 oxygen sensor	1		SG41018
Oxygen sensor weld in bung	1		SGA1012
Oxygen sensor to control box cable	1		
Control box 2 pin data cable	1	Sold as a set of 4 cables	SG4100
Control box 3 pin power cable	1		
Gauge 4 pin power cable	1		
Gauge 3 pin signal cable	1		
Gauge 4 pin link cable	1		SG9101
Remote programming button	1		SG4106
Mounting U bracket with studs, nuts and washers	1	(M4x0.7 thread)	SG61005
Fitting instructions	1		

GAUGE INFORMATION

Specifications

Gauge operating range	10 > 20
Gauge operating voltage	8v > 18v
Gauge current draw	2 Amp (max)
Oxygen sensor type	LSU 4.9 wideband sensor
Oxygen sensor thread size	M18 x 1.5
Oxygen sensor cable length	1 metre
Oxygen sensor control box cable length	4 metre
Control box 3 pin power cable length	2 metre
Control box 2 pin data cable length	2 metre
Gauge lighting type	10 colour LED with 5 levels of brightness
Gauge lighting colours	red - green - blue - purple - white - amber - pink - ice blue - orange - aqua - OFF - cycle mode
Gauge power cable length	1 metre (4 pin)
Gauge signal wire cable length	1 metre (3 pin)
Gauge link cable length	300mm (4 pin)
Gauge programming button cable length	1 metre (2 pin)
Mounting depth required for gauge	45mm (minimum)
Total depth of gauge	50mm (including bezel)
Mounting hole size for gauge	52mm

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Warranty Terms & Conditions:

SAAS Automotive Pty Ltd warrants this product against defects in factory workmanship and materials for a period of twelve (**12**) months from the date of original purchase. This warranty applies to the first retail purchaser, is non-transferable and covers only where the product has been subjected to normal use or service. Provision of this warranty shall not apply to any SAAS Automotive product that has been used for a purpose for which it is not designed, or which has been altered in any way that would be detrimental to the performance or life of the product, or misapplication, misuse, negligence or accident. Warranty claims to the manufacturer must be transportation prepaid and accompanied with dated proof of purchase. On any part or product found to be defective after examination by SAAS Automotive Pty Ltd, SAAS Automotive Pty Ltd will only repair or replace the merchandise through the original selling dealer or on a direct basis. SAAS Automotive Pty Ltd assumes no responsibility for diagnosis, removal and/or installation labour, loss of vehicle use, loss of time, inconvenience or any other consequential expenses. The warranties herein are in lieu of any other expressed or implied warranties, including any implied warranty of suitability, and any other obligation on the part of SAAS Automotive Pty Ltd, or the selling dealer.

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