



## DigiLSU V3 datasheet

### KIT CONTENT

(can be sold separately).

- One LSU 4.9 sensor (cable length: 0.90m)
- One DigiLSU V3 controller (length 0.60m)
- One pre-wired loom with JST connector and wire ended cable. (cable length: 1.5m)



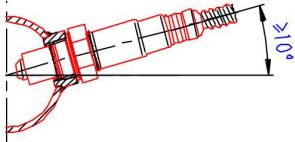
### TIPS FOR LAMBDA SENSOR INSTALLATION

The sensor should not be placed at the exit of the cylinder head because the excessive temperature of the gases can damage it (T max. 950 °C).

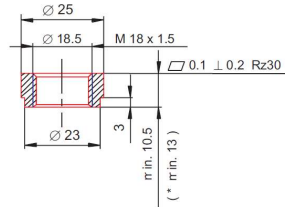
- Nor is advisable to mount the sensor near the exhaust exit because the pumping of gas lets enter the outer oxygen and receive the measurement.

- Positioning the probe at a minimum angle as shown in Figure posterior to not collect water from the condensation of the steam generated by the fuel combustion.

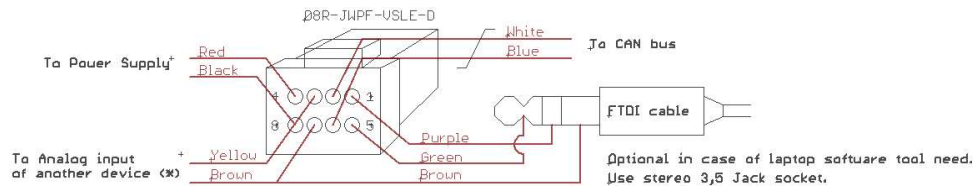
- Never leave a probe mounted in an exhaust pipe if it is not being used. Combustion residues accumulated in the sensitive part could prevent proper operation of the sensor



Typical racor to be welded in exhaust if necessary.



### CONNECTION OF DigiLSU V3



\* : if analog output is not use, AGND must also connected to GND.

- Red : power supply
- Black : power GND
- Yellow : Analog output
- Brown : Analog GND
- White : CAN high
- Blue : CAN low
- Purple : TX
- Green : RX

Do not connect yellow wire on 12V under threat of destruction of the analog output.  
Do not connect the black wire to the analog ground but to the power ground.

The brown wire must be connected to the analog ground of external device. Make sure that this external device have internally connection between AGND and GND.



### ANALOG OUTPUT LINEARISATION

Linéarisation of the analog output at  
- exhaust pressure (P3) = 1013mB  
- H / C = 2 (for the scale A / F)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Richness	1,755	1,500	1,450	1,400	1,350	1,300	1,250	1,200	1,150	1,100	1,050	1,000	0,950	0,900	0,850	0,800
Lambda	0,570	0,667	0,690	0,714	0,741	0,769	0,800	0,833	0,870	0,909	0,952	1,000	1,053	1,111	1,176	1,250
A/F	8,4	9,8	10,1	10,5	10,9	11,3	11,8	12,3	12,8	13,4	14,0	14,7	15,5	16,3	17,3	18,4
O2 (=f(Ri,C,H))	-14,1%	-9,51%	-8,58%	-7,65%	-6,72%	-5,78%	-4,83%	-3,88%	-2,92%	-1,95%	-0,98%	0,00%	0,98%	1,98%	2,97%	3,98%
Vout (mV) (@P3)	4	693	850	1014	1185	1360	1540	1725	1914	2107	2303	2500	2592	2686	2781	2879

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Richness	0,750	0,700	0,650	0,600	0,550	0,500	0,450	0,400	0,350	0,300	0,250	0,200	0,150	0,100	0,050	0,001
Lambda	1,333	1,429	1,538	1,667	1,818	2,000	2,222	2,500	2,857	3,333	4,000	5,000	6,667	10,000	20,000	1000,0
A/F	19,6	21,0	22,6	24,5	26,7	29,4	32,7	36,8	42,0	49,0	58,8	73,5	98,1	147,1	294,2	14709
O2 (=f(Ri,C,H))	4,99%	6,01%	7,03%	8,06%	9,10%	10,15%	11,20%	12,26%	13,33%	14,40%	15,49%	16,57%	17,67%	18,78%	19,89%	20,99%
Vout (mV) (@P3)	2978	3079	3183	3288	3395	3504	3616	3729	3844	3961	4080	4201	4324	4449	4576	4702

### CHARACTERISTICS

Power supply: from 9V to 18V

Consumption: maxi 2A on cold sensor

Measurement range: air to 1.55 richness

Offset: +/-10mV

Gain precision: +/-1%

Output resistance: 220 ohms

Maximum temperature use: 85°C

Sensor heating temperature: regulated to 780°C (can drift with sensor aging)

Total length: 60cm

Weight: 75g

IP: IP65

Mating Connector: JST 08R-JWPF-VSLE-D, mating terminals: SWPR-001T-P025

### DESCRIPTION OF THE BLINKING LED

The LED is inside of the case and Molex connector transparency is used as control.

- Intermittency of 1.5 s: sensor preheating phase.
- Intermittency of 0.7 s: normal operation.
- Intermittency of 0.2 s, the measure cannot be done (too cold sensor, regulation impossible, battery voltage too low).
- Intermittency of 0.1 s: electrical problem found (2500mV incorrect virtual ground, short circuit or open circuit of heating sensor).

### ADVICES

Do not use leaded gasoline.

Excessive consumption of oil by the engine decreases the life expectancy of the sensor.

Do not use a fuse higher than à 5A (recommended value: 3A).

Do not wash with high pressure washer or not put direct high pressure spray on connectors.

Software tool is new version regard DigiLSU V2 and not compatible. Take care to run the good version regard the DigiLSU version used.

For further information see the corresponding web page on [www.THQtronic.com](http://www.THQtronic.com)