

GARW IC7



USER MANUAL



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Overview

The Garw IC7 instrument cluster is a 7inch diagonal display unit designed to display vehicle information real-time

The IC7 provides all the standard driver information expected along with tell-tale lamps and warning symbols

All the data is collected via a wide range of inputs, configurable to your vehicles requirements

Features

Up to 6 screens possible at one time all configured in vehicle with individual settings for high/low warnings, units(KM/MPH, Celsius/Fahrenheit etc.) ,colour scheme, rpm limit warning, shift indicator

Uploading of new graphics via USB

Wi-Fi connectivity for smartphone interface to change parameters read battery and fuel level (additional features planned)

Customisable boot logo

Interfaces

7 x active low (warning lamps, trip reset)

6 x active high (tell-tale lamps for lights, turn signals)

4 x Analogue resistive inputs (for ntc temp sensors, fuel sensors)

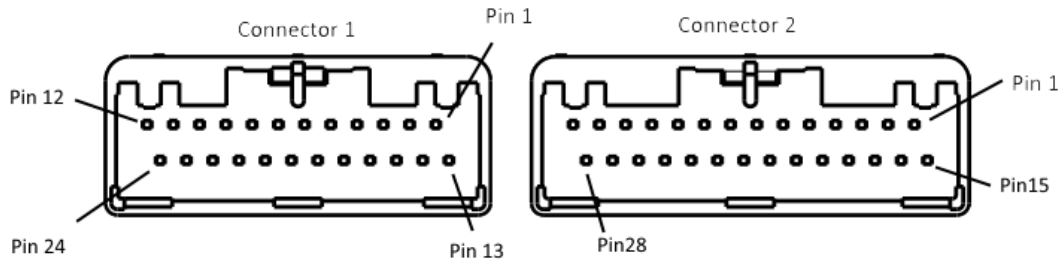
1x Can bus

2 x Frequency inputs (1 hall, 1 hall or VR)

1 x Door switch input for booting IC7 when opening the door

2 x USB expansion for Wi-Fi, Camera, USB Drive

Pinouts



Connector 1

- | | |
|----------------------------|-------------------------|
| 1. Analogue 4 | 13. Active low input 2 |
| 2. Battery Ground | 14. Frequency 1 Hall |
| 3. Battery 12V | 15. Active low input 3 |
| 4. Active low input 1 | 16. Active low input 4 |
| 5. Ignition | 17. Frequency 2 Hall |
| 6. Pass through connection | 18. Active high input 5 |
| 7. CAN1 high | 19. CAN1 low |
| 8. Active high input 1 | 20. Analog 6 |
| 9. Active high input 2 | 21. Active low input 5 |
| 10. Frequency 2 VR | 22. Active high input 6 |
| 11. Active high input 3 | 23. Door switch |
| 12. Active high input 4 | 24. Active low input 7 |

Connector2

- | | |
|-------------------------------|-----------------------------------|
| 1. Active low input Down | 15. USB 5V |
| 2. Active low input Up | 16. USB Ground |
| 3. Active low input Right | 17. USB2 - |
| 4. Active low input Left | 18. USB2 + |
| 5. Active low input Lap timer | 19. USB Ground |
| 6. Open Drain Output 1 | 20. USB1 - |
| 7. Open Drain Output 2 | 21. USB1 + |
| 8. Open Drain Output 3 | 22. USB 5V |
| 9. Open Drain Output 4 | 23. USB Ground |
| 10. Ground | 24. NC |
| 11. CAN2 high | 25. NC |
| 12. CAN2 low | 26. Analogue 8 |
| 13. RS232 TX | 27. Analogue 7 |
| 14. RS232 RX | 28. Pass through from Connector 1 |

Smart App

The GarwIC7 instrument cluster is configured via a smart device app
Available for Android and iOS

Search app stores for GARWICX

First step is to connect to the IC7 Wi-Fi network

1. Insert the Wi-Fi adapter into any USB socket and then ensure the IC7 is off by turning off ignition, close the door and wait 1 minute.

The next time the dash is powered the Wi-Fi adapter will be initialised

2. Once initialised the Wi-Fi adapter should blink steadily and a new network called “Garw” should be available

3. Connect to this network with your smart device using the password garwicxX

4. Launch the app , when successfully connected the app will display the battery level and fuel level of your vehicle

The settings of the IC7 are accessed and modified using the directional arrows on the app.

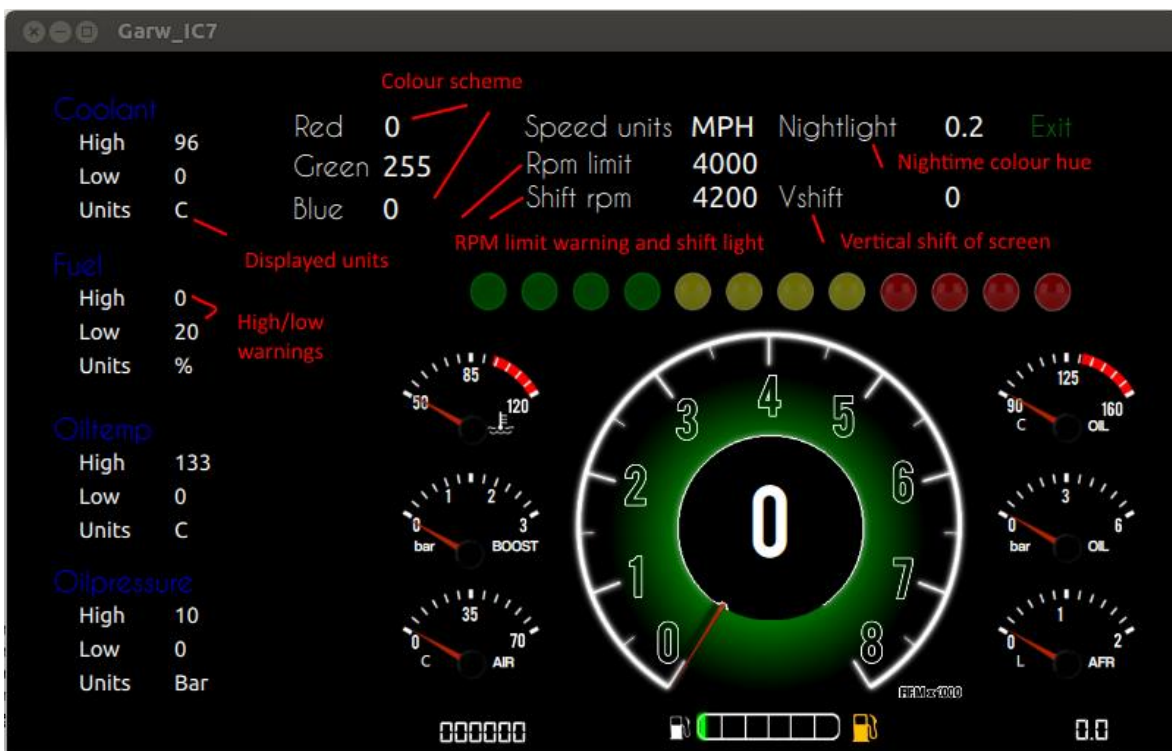
Screen settings

Each driving screen has its own settings which are access by pressing the up arrow on the app

These settings allow changes to be made for low and high warnings, local units for temperature and speed, colour scheme.

Left and right arrow to move between parameters

Up and down arrows to change or increment/decrement the parameter



*Not all parameters are active on all screens

Nightlight: - When set this applies a colour overlay for night time driving.
Active when vehicle light are on

VShift:- Moves the screen position up/down to help visibility

Colour scheme: - depending on screen the colours of various elements can be set with RGB values

System settings

Configuration of the IC7 is done through the system settings

Press and hold left or right arrow until the system settings appear

Left and right arrow to move between parameters

Up and down arrows to change or increment/decrement the parameter

Move between screens by highlighting “NEXT” in the top right of the screen and pressing up/down for next/previous screen

Each page covers various aspects of the IC7 and allows global parameters to be configured

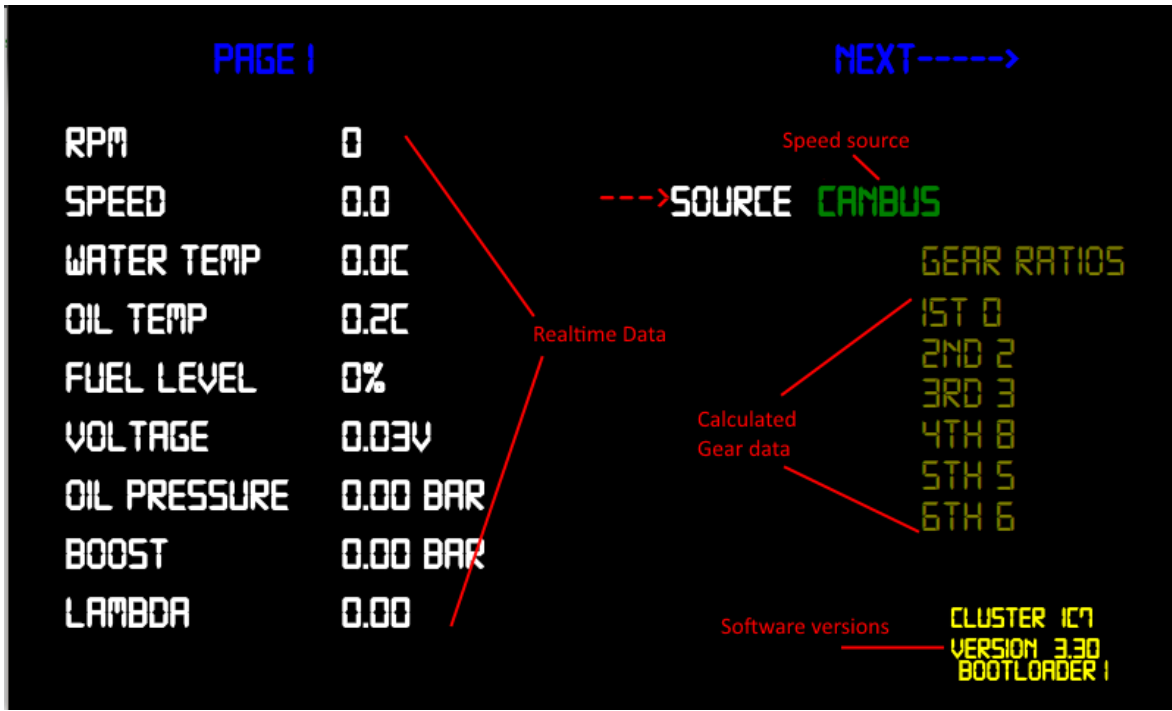
There are 4 pages available in Basic view

Page 1: Real time data, Calculated gear, Software updating

Page 2: Reserved

Page 3: Driving screens configuration

Page 4: Vehicle configuration



Description

Realtime Data: - displays current values

Speed Source: - switch between can or gps speed

Calculated gear data:-

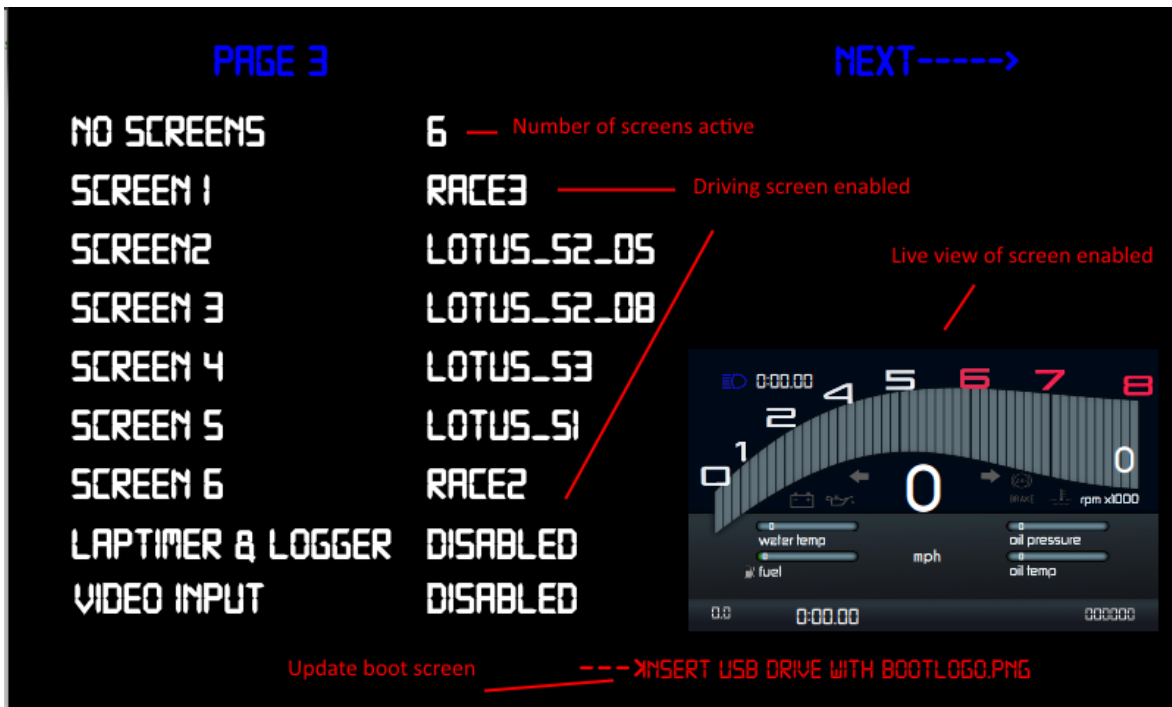
Calibration values for the current gear indicator displayed on some driving screens, when 1st gear is set to 0 calculated gear function is disabled

The value represents rpm/speed (kmh)

Software versions: - displays product name and current software versions installed

Page 2

Reserved



Description

Number of screens active: - Total number of screens enabled for switching during driving

Driving screen enabled: - Displays each name allocated to that position

Laptimer & logger: - enable/disable (in future release)

Video input: - enable/disable video input

Live view: - displays live the screen selected during configuration of screens 1-6

Update boot screen:- insert USB drive with .png image file named “bootlogo.png” and trigger update by pressing “UP”



Description

Change configuration: - loads one of the pre-configured configurations

Save configuration: - Saves changes to the configuration

Basic/Advanced view: - Switches between basic view (shown above) and advanced view

Advanced menus

In advanced view custom configurations are possible for all data channels

Additional pages are accessible once in advanced view for the following functions

1. Manual configuration of data channels by mapping input feeds to data channels with custom scaling and offset
2. Mapping of inputs to tell tales and warning lamps
3. Odometer correction
4. Custom sensor calibration

Page 4 Advanced view

PAGE 4

Data channel	Source of data	Source of data	Canbus ID	Scaling	Offset
DATA	SOURCE	SOURCE	CANID	SCALE	OFFSET
RPM	CANI_2	CANI_3	400	1.00	0.00
SPEED	CANI_0	CANI_1	400	256.00	0.00
WATER	CANI_5	0	400	1.62	-40.00
OILT	NTC7	SENSOR1	0	1.00	0.00
OILP	NTC8	SENSOR2	0	1.00	0.00
FUEL	CANI_4	0	400	2.55	0.00

INC AMOUNT 10 --> **MAINBEAM** Increment value

CONFIGURE CANBUS CANI_SPEED 1000 **LOTUS ELISE S2 '05**

CANID EID 0 Canbus extended ID CANI_SPEED 500 Can bus speed **ADVANCED VIEW**

SAVE

Description

Page 5 Advanced view

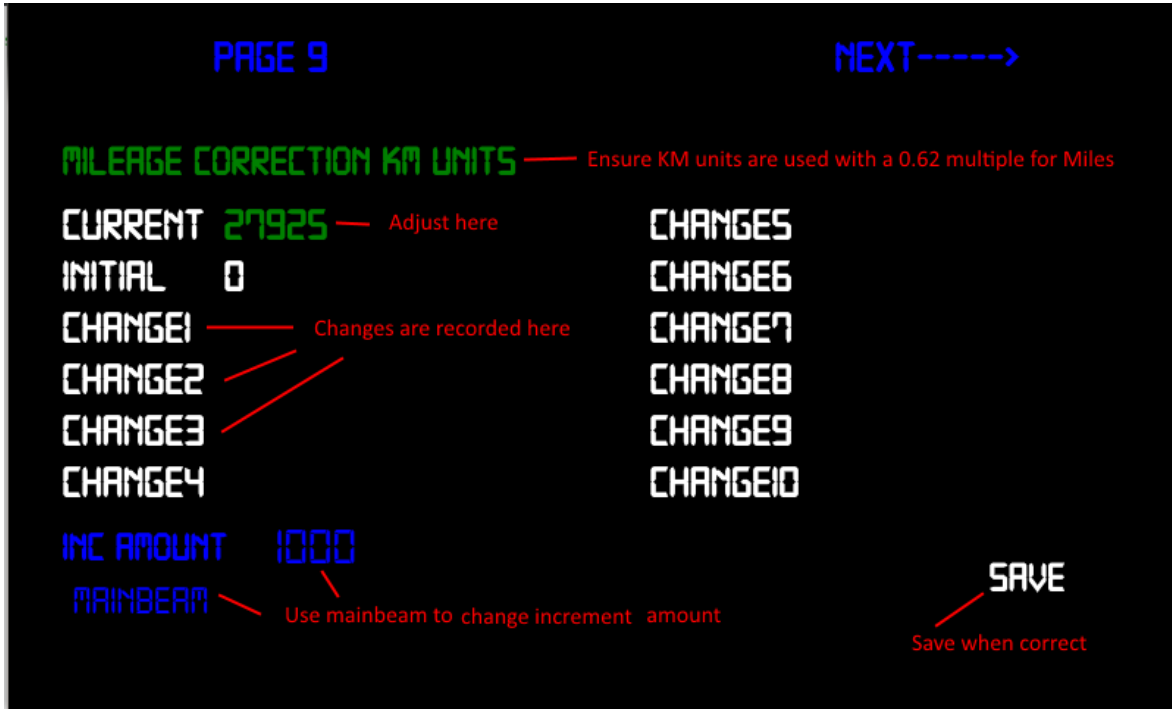
Page 6 Advanced view

Page 7 Advanced view

Page 8 Advanced view

Page 9 Advanced view

Odometer correction



Adjust the current value and when sure save your changes

Ensure the value is entered in Kilometres (mileage x 0.62)

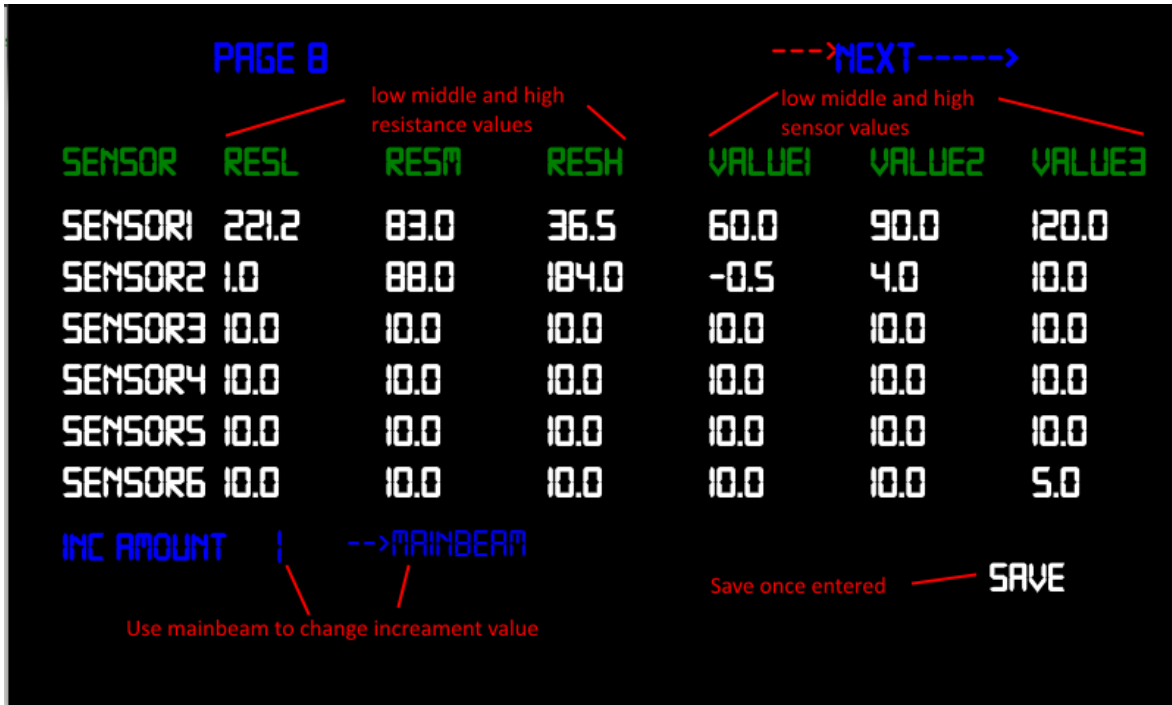
All changes are recorded for future reference

To speed up the kilometres input use your vehicles mainbeam flash to change the increment amount 1,10,100,1000 steps at a time

Configuring oil temperature and pressure sensors

To add additional sensors for oil temperature and pressure custom calibration data is entered into the system settings

The technical data for the sensors is needed to enter the correct temp/pressure vs resistance



Enter the calibration data for your oil temp and pressure sensors

Use Celsius for temp and Bar for pressure

C	OHMS
50	322.8
66	179.5
80	112.5
100	62.2
110	48.1
120	36.5
130	28.9
140	23.1
150	18.6

bar	ohm
0	10
2	51
4	86
6	122
8	152
10	180

Once this data is entered highlight "SAVE" in the bottom right and push up,

Then go to the page below and set the oil temperature and pressure to the sensor calibrated above, ensure the correct NTC is chosen

NTC7 for Analogue 7 input, NTC8 for Analogue 8 input, remember to "SAVE" before exiting,



Your screen may look a little different but the same would apply,

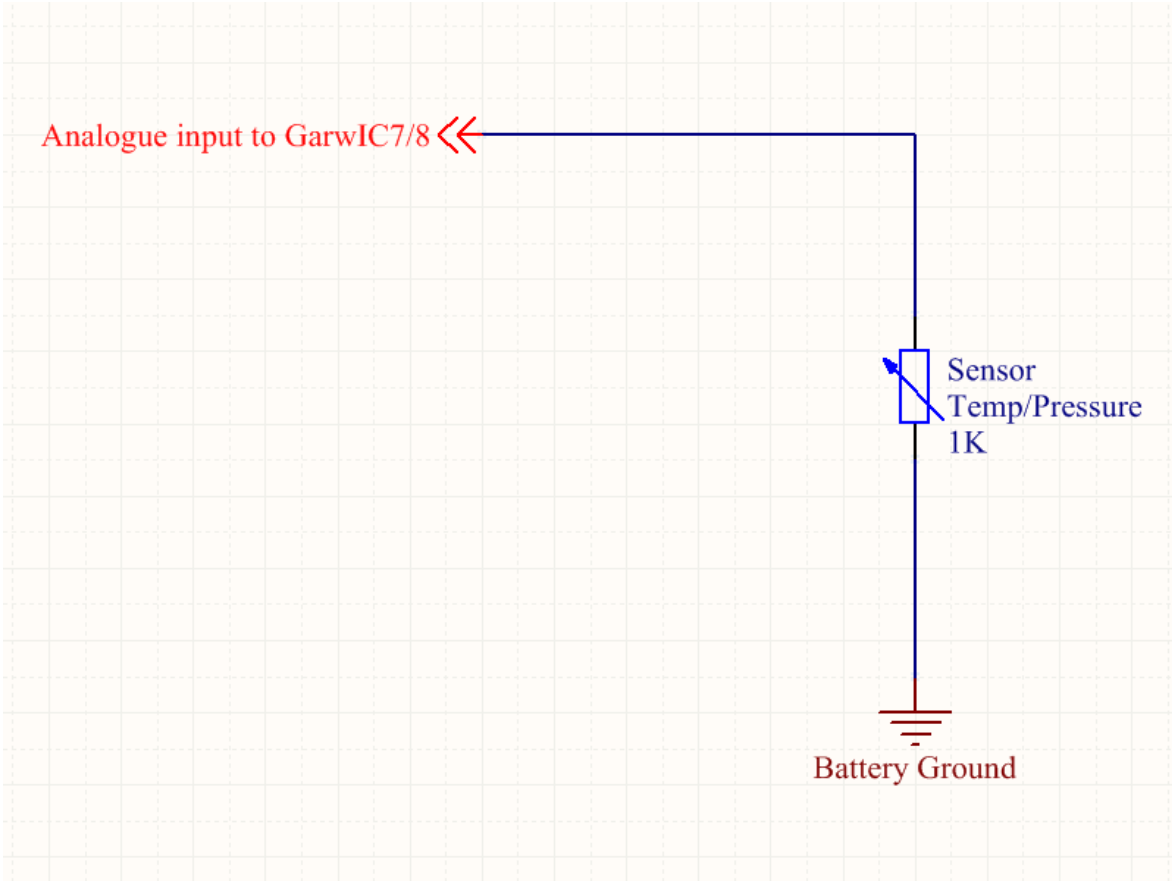
If your oil pressure reading is erratic when ignition is off, set the bottom value for 1 Ohm resistance

**It's important to use gauge type sensors and not engine management type

Gauge type will have a resistance range 0-300

Engine management type which exceeds 1000 Ohms will not function correctly**

Connection diagram for Analogue inputs



Analogue pin details on page 4