

## **Overview**

Cell Guard is a CAN based sensor that can measure absolute pressure, air temperature, Volatile Organic Compounds (VOCs), H<sub>2</sub> (Hydrogen), absolute air water content, relative humidity, dew point temperature and 3 axis acceleration.

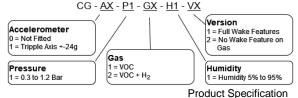
The configurable CAN bus speed and address along with the supplied CAN DBC file allows easy integration into almost any battery system to detect early failures due to cell venting or formation of moisture within a battery pack. The unit features a low power mode in which it monitors the environment but does not transmit on CAN unless a threshold is reached at which point it reverts to normal mode. It also features a low side drive function pin capable of 500mA that can be triggered if a wake signal is generated.

The 5-pin automotive rated Molex Nano-Fit Power connector, small size and mass allows easy interface into most vehicles and energy storage systems. The unit is developed in accordance with ISO26262 and has been tested to automotive standards which include: ISO7637-2 2011, ISO 16750- 2 2012 and ISO 16750-4 2010.

	D	0.34-1.3	D	Connert		
-	Range	0.3 to 1.2	Bar	Connector		
Pressure Sensor	Resolution	0.0001	Bar	MF (family)	Molex (Nano Fit)	
	Accuracy (0.3 to 1.1 Bar)	0.0005	Bar	On Unit	1053131205	
	Max Update Rate	50	Hz	Mating	1053071205 1053001200 (24-26 AWG) 1053002200 (20-	
Air Temperature [1]	Range	-40 to 125	°C	Crimp	22 AWG) 1053002200 (24-26 AWG) 22 AWG)	
	Resolution	1	°C	Pin Outs	Γ	
	Accuracy	+-1 (+-2 at 24VDC)	°C	Pin No.	Function	
	Max Update Rate	5	Hz	1	Ground	
Volatile Organic Compounds (VOC's)	Range	0 to 65535	Raw	2	Supply Voltage	
		0 to 6553.5	ppm	3	CAN Low	
	Accuracy (Worse Case)	15 [2]	%	4	CAN High	
	Max Update Rate	1 (Response Time: τ(63) <1s)	Hz	5	SW Configured Function [9]	
Hydrogen [11]	Range	0 to 20% Vol. concentration	%			
	Resolution	0.002	%			
	Accuracy	0.4 vol% + 10% m.v.	%			
	Max Update Rate	1 (Response Time: τ(63) <1s)	Hz			
Absolute Humidity [3]	Range	0 - 35000	mg/m <sup>3</sup>			
	Resolution	70	mg/m3	[1] Air Temperature accuracy is dependent on installation, heat from the sensor itself can affect this		
	Accuracy (Worse Case)	5	%FSS			
	Max Update Rate	5	Hz	<ul> <li>[2] % of meas. value, sensor drift is 1.3% of measured value per year of operation, 90% of the sensors will be within the typical accuracy tolerance, stated accuracy is valid up to 100ppm</li> <li>[3] Humidity accuracy valid from 0 to 80 deg C IC temperature and 5 to 95% RH</li> </ul>		
Dew Point	Range	0-100	°C			
	Resolution	0.5	°C			
	Accuracy (Worse Case)	+-3	°C			
	Max Update Rate	5	Hz	[4] Not fitted as standard – optional extra		
Relative Humidity [3]	Range	0-100	%	[5] For the VOC the stated accuracy is achievable between -10 and 50		
	Resolution	0.5	%	degrees C. Nominal max temperature range is -20 to 55 degrees C for maximum life, absolute max for sensor die temperature is 70 degrees C (air		
	Accuracy (Worse Case)	3	%	temp can be greate	er)	
	Max Update Rate	5	Hz	[6] The default settings are 500kbps and start address 778 (0x30A), the unit		
Accelerometer [4]	Range	-24 to +24	g	has no CAN termination		
	Resolution	0.01	g	[7] The unit uses 4 CAN address which are in consecutive order from address that the unit is set to		
	Accuracy (Worse Case)	0.1	g			
	Max Update Rate	200	Hz		n is protected to transients up to 40VDC but is not current ure load is not above 500mA	
Environment	Operating temperature [5]	-20 to +70 (VOC) or -40 to +85 (H2)	°C	[9] The function of this pin is assigned when configuring the unit please refer to the manual		
Mass		15	grams	[10]Only the range	of 9-16V has been tested to ISO standards. Outside of this	
Mass		15	grams	range is not tested	to ISO standards.	
Dimensions	Height x Width x Length	11.5 x 55 x 63	mm	[11] Not fitted as s	tandard – optional extra	
	Baud Rates [6]	1000, 500, 250, 125	kbps			
CAN	Address Range [7]	1 (0x01) to 2042 (0x7FA). Default = 0x30A	decimal (Hex)			
Power	Voltage Range	9 to 32[10]	VDC			
	Current (low power)	35mA (7.5 mA) (VOC) 24mA (0.75mA) (H2)	mA @ 12V			
Power – LSD Wake Pin	Voltage Range [8]	9 to 32	V			
	Current	500	mA			
	Туре	Low Side Drive	NA			

## Part Number Ordering Details

Default Part Number: CGA0P1G1H1V1



## METIS

