

**OPEN DISTRIBUTION**

Family	Model name	Ordering code	Gas	Measurement range	Sampling method	Additional measured parameters	Power supply, absolute max limits	OUT1, Open collector	OUT1 configuration	OUT2, analog output	OUT2 configuration	I2C interface	UART interface	ABC	Enclosure	Other features	Specification and status at date	
(by primary application)																		
<b>CO2 Engine -CNT</b>																		
	Intended for container applications, measurement of high concentration and digital communication to the host system																	
	<b>CO2 Engine -CNT</b>	033-9-0004	CO2	0 to 30% vol	Diffusion	-	5 to 14VDC, Note 4	PWM, Note 1	pulse 2 to 1002 msec for 0 to 20% vol	-		Yes, Note 2	Modbus, Note 3		-			
	<b>CO2 Engine -CNT -F</b>	033-9-0005	CO2	0 to 30% vol	Tube in / out	-	5 to 14VDC, Note 4	PWM, Note 1	pulse 2 to 1002 msec for 0 to 20% vol	-		Yes, Note 2	Modbus, Note 3		-			
<b>CO2 Engine -ICB</b>																		
	Intended for bio applications, measurement of high concentration and both analog outputs and digital communication to the host system																	
		<b>CO2 Engine -ICB</b>	033-9-0001	CO2	0 to 30% vol	Diffusion	-	5 to 14VDC, Note 4	PWM, Note 1	pulse 2 to 1002 msec for 0 to 20% vol	0 to 5V	0 to 5V for 0 to 20% vol CO2	Yes, Note 2	Modbus, Note 3		-		
		<b>CO2 Engine -ICB-F</b>	033-9-0006	CO2	0 to 30% vol	Tube in / out	-	5 to 14VDC, Note 4	PWM, Note 1	pulse 2 to 1002 msec for 0 to 20% vol	0 to 5V	0 to 5V for 0 to 20% vol CO2	Yes, Note 2	Modbus, Note 3		-		
		<b>CO2 Engine -ICB -OO1</b>	033-9-0007	CO2	0 to 30% vol	Diffusion	-	5 to 14VDC, Note 4	PWM, Note 1	pulse 2 to 1002 msec for 0 to 20% vol	1 to 4.7V	1 to 4.7V for 0 to 20% vol CO2	Yes, Note 2	Modbus, Note 3		-		
		<b>CO2 Engine -ICB -OO1 -F</b>	033-9-0008	CO2	0 to 30% vol	Tube in / out	-	5 to 14VDC, Note 4	PWM, Note 1	pulse 2 to 1002 msec for 0 to 20% vol	1 to 4.7V	1 to 4.7V for 0 to 20% vol CO2	Yes, Note 2	Modbus, Note 3		-		
		<b>CO2 Engine -ICB -OO2</b>	033-9-0011	CO2	0 to 30% vol	Diffusion	-	5 to 14VDC, Note 4	PWM, Note 1	pulse 2 to 1002 msec for 0 to 20% vol	1 to 4.7V	1 to 4.7V for 0 to 30% vol CO2 0.5V at warm up 4.7V at error detected	Yes, Note 2	Modbus, Note 3	OFF	-	Note 7	
		<b>CO2 Engine -ICB -OO2 -F</b>	033-9-0012	CO2	0 to 30% vol	Tube in / out	-	5 to 14VDC, Note 4	PWM, Note 1	pulse 2 to 1002 msec for 0 to 20% vol	1 to 4.7V	1 to 4.7V for 0 to 30% vol CO2 0.5V at warm up 4.7V at error detected	Yes, Note 2	Modbus, Note 3	OFF	-	Note 7	
		<b>CO2 Engine -ICB -OO3</b>	033-9-0013	CO2	0 to 30% vol	Diffusion	-	5 to 14VDC, Note 4	PWM, Note 1	pulse 2 to 1002 msec for 0 to 20% vol	0 to 5V	0 to 5V for 0 to 10% vol CO2	Yes, Note 2	Modbus, Note 3	OFF	-		
		<b>CO2 Engine -ICB -OO3 -F</b>	033-9-0014	CO2	0 to 30% vol	Tube in / out	-	5 to 14VDC, Note 4	PWM, Note 1	pulse 2 to 1002 msec for 0 to 20% vol	0 to 5V	0 to 5V for 0 to 10% vol CO2	Yes, Note 2	Modbus, Note 3	OFF	-		
<b>CO2 Engine -xLG</b>																		
	Intended for low power applications, battery powered applications, long term logging of environmental parameters																	
		<b>CO2 Engine -BLG</b>	033-9-0002	CO2	0 to 30% vol	Diffusion	RH & T	4.5 to 12VDC, Note 5	-		-		Yes, Note 2	Modbus, Note 3		-		
	<b>CO2 Engine -BLG -F</b>	033-9-0009	CO2	0 to 30% vol	Tube in / out	RH & T	4.5 to 12VDC, Note 5	-		-		Yes, Note 2	Modbus, Note 3		-			
	<b>CO2 Engine -ELG</b>	033-8-0010	CO2	0 to 5000 ppm vol	Diffusion	RH & T	4.5 to 12VDC, Note 5	-		-		Yes, Note 2	Modbus, Note 3		-			

**Accessories:**

OBAG Tube in / out kit    200013    Includes O-ring, 3 screws and tube in / out head

**NOTES:**

- 1 PWM, period 1004 msec, pulse 2 to 1002 msec
- 2 Refer "I2C comm guide 2\_10.pdf" for details
- 3 Refer "Modbus on CO2 Engine and eSense rev2\_00.pdf" for details
- 4 If power supply voltage absolute limits specification says 5 to 14 VDC it means that 5V supply is NOT suitable! Supply 5V has in turn tolerances say +-5% and supply voltage may be under specified limit 5VDC. Sensor is not supposed to operate properly at this condition.
- 5 If power supply voltage absolute limits specification says 4.5 to 12 VDC it means that 12V supply is NOT suitable! Supply 12V has in turn tolerances say +-5% and supply voltage may be over specified limit 12VDC. Sensor is not supposed to operate properly at this condition.
- 6 Suffix explanation: -F -> Flow head, -OO1 -> Custom output option 1 -OO2 -> Custom output option 2 -OO3 -> Custom output option 3
- 7 PCB is covered by conformal coating. Type of coating to be defined (2009-02-25)