

EXU.0036.xx DEMS Sensor Series DATASHEET



The **DEMS Sensor Range** from EX Solutio Engineering has been designed to meet the toughest conditions (certified **Ex ia I**) in the Mining and Commercial Industries. The blue powder coated IP54 mild steel enclosure offers a durable design whilst ensuring the Sensor Heads can operate at maximum

efficiency. The **DEMS Sensor Range** is available as a **UNO, DUO and QUATRO** unit where the name implies to the number of Sensing Heads that are available incorporating Gas and Airflow measurements on a single unit.



The design is based on a small form factor packed with the most features to provide seamless integration to existing and 3rd party systems. The unit can handle a wide Input Voltage Range, various signalling outputs and alarm levels that makes this detector versatile for any application. Output Signals and Audio Visual Alarms levels can be customised to Customer requirements.

The **DEMS Uno / Duo / Quatro** Sensor supports various gas detection technologies that are well suited for a multitude of applications, these include **Electro-Chemical, Pellistor and Infra-Red (VOC support coming soon)**. Each of these technologies having their own pros and cons in their related fields such as lifespans, response times and resistance to environmental changes. Ask Ex Solutio Representative to discuss the best detector to use for your application. The units supports either 1 or 2 or 3 QRS (Quick Release System) Sensor Head ports as the following are available and configure to user's requirement:

- 2 Electro-Chemical QRS heads
- 1 Pellistor QRS head
- 2 Infra-Red QRS heads



Airflow is available either on the **DEMS Airflow** (compact unit with no LCD read out) or on the **DEMS Quatro** (aka Quad Flow) units. The range is rated 0-15m/s.



Gas Type	Gas Range	Response Time (T90)	Shelf Life (months)	Ordering Suffix
CH4	0-5% LEL, IR 0-5% LEL, IR 0-100% v/v	< 30/20/20s	N/A	CH405, IR-CH405, IR-CH4100
CO	0-*(250 / 500 / 1000 / 5000 / 20000) ppm	< 30s	6	CO*
NH3	0 - *(100 / 500) ppm	< 40s / 90s	(4wks)	NH3*
O2	1 - 25%	< 15s	6	O2
HCN	0 - 100 ppm	< 120s	6	HCN100
H2S	0 - 200 ppm	< 30s	6	H2S200
HCL	0 - 200 ppm	< 200s	6	HCL200
ETO	0 - 100 ppm	< 200s	6	ETO100
NO2	0 - *(20 / 50 / 500) ppm	< 60/30/60s	6	NO2*
COCL2	0 - 1 ppm	< 120s	7	COCL2
SO2	0 - *(50 / 100 / 2000) ppm	< 35/40/30s	6	SO2*
CO2	0 - 5%	< 20s	N/A	IR-CO205

The table shows the most common gases used in the Gas detection industry. The unit supports a vast number of chemistry, please ask Ex Solutio representative on your requirement.

DEMS Sensor Features & Combinations

- Wide Voltage Input Range 6-30Vdc (Low power Consumption)
- Communications via MODBUS RTU (RS485)
 - Ex Solutio MODBUS Mapping for full diagnostics
 - MODBUS Map can be restructured to suite client's current system
- Dual 4-20mA / 0.4-2.0V output (Quad Analogue output pending)
- Voltage Free micro-Relay Contacts (SPDT) (Not available on Quad Analogue output version)
- Separate Audio and Visual control for various alarm level indication
- Large Display to show all readings (20 Characters by 4 lines).
 - Backlight Flashes on activated Alarms.
 - Access to Calibration menus to allow for onsite calibration
- Infra-Red link for handheld terminal to access the unit remotely
- Quick Coupling Plug for easy unit replacement.
- Quick Release Sensor head system for fast turnaround time on repairs and head changes
- Optional Ambient Temperature and Barometric Pressure also available

I.S. Parameters

MASC M16-0610X

Ui = 16.1Vdc li = 3A
Ci = Neg. li = Neg.

Mark Scheme

Permit No.: EXI-40MR

Operating Parameters

Vin = 6-30Vdc I = 150mA(max)
P = 2.4W (@16v)

(Power Consumption depends on Gas Sensor Head chosen).

Accessories

- Calibration kits available which include Regulator + 0.5m Pipe + Sensor Hood
- Calibration Gases available at 5% Tolerance of the required value. Please call to confirm Gas range
- Calibration Gas carry bags available for 2 and 3 Bottles
- QRS Sensor heads are available as a stand-alone option

Ordering Part Numbers

EXU.0036.01.* – DEMS Uno Sensor (Any 1 Gas type Sensor Head can be used)

Example for a 500ppm CO sensor >>> EXU.0036.01.CO500

EXU.0036.02.* – DEMS Duo Sensor (Any 2 Gas type Sensor Heads can be used)

Example for a 250ppm CO + 100ppm SO2 sensor >>> EXU.0036.02.CO250.SO2100

EXU.0036.04.* – DEMS Quad Sensor (Any 3 Gas Sensor Heads can be used and includes an Air Flow detector 15m/s)

Example for a 5% CH4 + 250ppm CO + 100ppm SO2 sensor >>> EXU.0036.04.CH405.CO250.SO2100

...Please Call for custom options...

(Due to the numerous combinations available it would be too large to list all of them here)

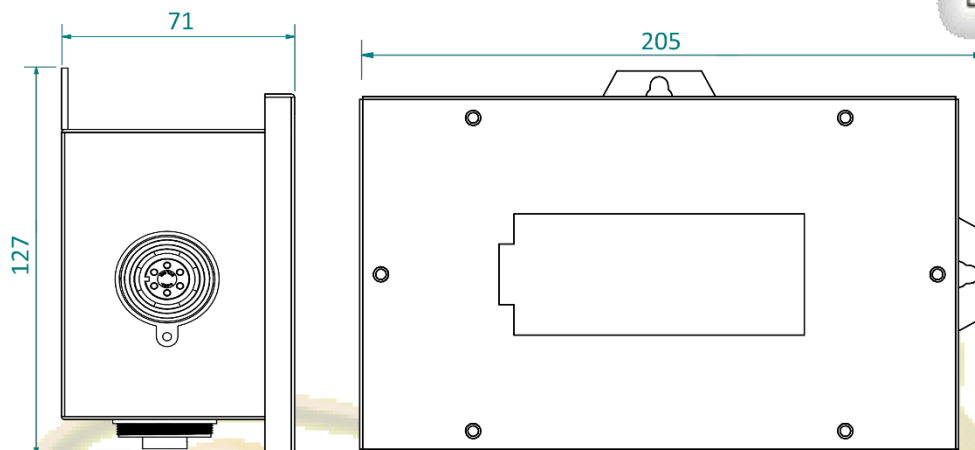
EXS.0021.02.* – QRS Sensor Head (use Ordering Suffix for required Gas)

EXU.0026.01 – DEMS Airflow Sensor (0-15m/s)

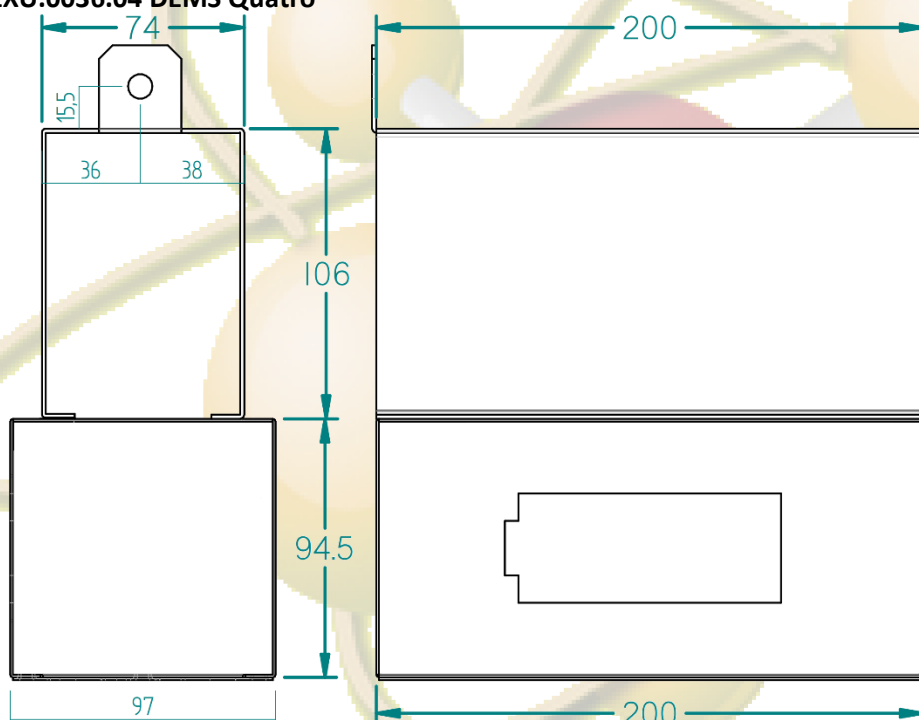


Enclosure Dimensions

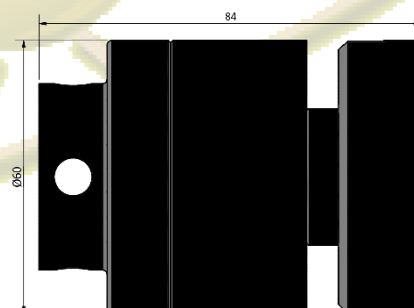
EXU.0036.01 DEMS Uno / Duo



EXU.0036.04 DEMS Quatro



EXS.0021.02 QRS Sensor Head (84xΦ60)



EXU.0026.01 DEMS Airflow

