FIXED SYSTEMS

BESAFE

Dual channel gas detector for battery energy storage

Detecting hydrogen, carbon monoxide and methane released during thermal runaway, enabling fast, reliable safety response.

BESafe is a dual-sensor fixed-point gas detector for safe-area installations, monitoring two gases simultaneously from a single compact transmitter. On-board display, alarms and relays make it a standalone controller and detector in one unit, removing the need for a separate control panel. Hot-swappable smart sensors are calibrated offline and fitted on site, and can be mounted remotely on upto 15m of cable to reach confined or inaccessible positions.

FEATURES & BENEFITS

DUAL SENSOR
Two sensors in one transmitter monitor two gases simultaneously - a CO and H_2 pair for battery rooms, or any combination from the sensor range - halving the number of devices to install and maintain.

PRE-CALIBRATED HOT-SWAP SENSORS
Sensor modules can be pre-calibrated, then exchanged by hand in seconds with no detector downtime.

A growing range of sensor options covers flammable, toxic, oxygen and carbon dioxide detection, so a single BESafe can be configured for the gases present at each location.
A high-definition OLED display shows both channels at once, and a built-in 85 dB sounder with tri-colour status indicators alerts personnel locally without a control panel. Two 4–20 mA outputs, three configurable relays and RS-485 Modbus RTU make BESafe suitable for any application.

STANDALONE DETECTOR
On-board OLED display, 85 dB sounder, status LEDs and three relays act on alarms locally, so no separate control panel is required.

REMOTE SENSOR
An optional cable assembly of up to 15m places the sensor at floor level for heavier-than-air gases, or in confined spaces, while the transmitter stays accessible.

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APPLICATIONS

Developed for battery energy storage, where BESafe detects the hydrogen, carbon monoxide and methane released during thermal runaway. The expanded sensor range extends the same dual-sensor platform to toxic, oxygen-deficiency and carbon dioxide monitoring across process and facilities applications.

BATTERY AND ENERGY STORAGE
Energy storage sites, battery rooms and backup power - H_2, CO, CH_4

BATTERY AND EV MANUFACTURING
Production, warehousing, EV assembly and parking - H_2, CO, CO_2

FOOD, BEVERAGE AND AGRICULTURE
Breweries, processing and livestock facilities - CO_2, O_2

DATA CENTRES
Battery backup, UPS rooms, generator rooms and fuel storage areas - H_2, CO, CH_4

LABORATORIES
Controlled environments and research facilities - O_2, CO_2, CO

WATER AND WASTE WATER TREATMENT
Wet wells, digesters and pumping stations - H_2S, CH_4, O_2, SO_2

SENSOR OPTIONS

Any two sensors may be fitted to one transmitter. Catalytic, electrochemical and infra-red gas sensors are supported on the same transmitter.

EASY INSTALLATION AND MAINTENANCE

SENSOR FUNCTIONAL TEST
A tube connected to the sensor module gassing port allows response to be verified without direct access to the sensor and without interrupting operation.

SENSOR LIFE INDICATOR
Service life is tracked continuously and end of life signalled, so replacement is planned rather than reactive.

ENVIRONMENTAL COMPENSATION
A built-in ambient sensor compensates readings for temperature and humidity, maintaining accuracy as conditions change.

GAS	RANGES AVAILABLE	SENSOR TYPE	TEMPERATURE RANGE	HUMIDITY RANGE
Methane (CH_4)	0–25% LEL, 0–100% LEL	Catalytic	-20°C to +60°C	0 to 95% RH
Hydrogen (H_2)	0–25% LEL, 0–100%LEL	Catalytic	-20°C to +60°C	0 to 95% RH
Carbon Monoxide (CO)	0–50 ppm, 0–100ppm, 0–200 ppm, 0–500 ppm, 0–1000 ppm	Electrochemical	-10°C to +50°C	15 to 90% RH
Hydrogen Sulphide(H_2S)	0–25 ppm, 0–100 ppm	Electrochemical	-30°C to +50°C	15 to 90% RH
Oxygen (O_2)	0–25% Vol	Electrochemical	-20°C to +50°C	15 to 99% RH
Sulphur Dioxide (SO_2)	0–100 ppm	Electrochemical	-30°C to +50°C	15 to 99% RH
Carbon Dioxide (CO_2)	0–5000 ppm, 0–5% Vol	Infra-red	-20°C to +50°C	0 to 95% RH

Further sensor options are in development. Contact Crowcon for applications not listed.

SPECIFICATIONS

DEVICE SPECIFICATIONS	
SIZE	175 x 150 x 55 mm (transmitter); 33.5 mm sensor depth
WEIGHT	Base: 550 g | Adapter: 169 g | Sensor tray: 65 g each
ENCLOSURE MATERIAL	Polycarbonate
INGRESS PROTECTION	IP65
CABLE ENTRY	M20 knock-out entry; cable ID 4 mm, OD 6 mm
POWER	10 to 30V DC, 24V DC nominal 150 mA (3.6W @ 24V DC), 5W max; inrush <1.7A
DISPLAY	128 x 64 OLED, both channels shown simultaneously
ELECTRICAL OUTPUT	2 x 4–20 mA current source RS-485 Modbus RTU
RELAY OUTPUT	SPDT relay for signal circuits, 1A at 24V DC Alarm 1, Alarm 2, Fault
AUDIO VISUAL OUTPUT	Sounder: 85 dB @ 3 m LED: Power (green), Fault (yellow), Alarm (red)
OPERATING TEMPERATURE	-40°C to +75°C Refer to the sensor options table for sensor operating temperature
OPERATING HUMIDITY	0 to 99% RH (non-condensing) Operating humidity range may vary for specific sensors
ATMOSPHERIC PRESSURE	90 to 110 kPa
DATA LOGGING	3000 data logs
STANDARDS & APPROVALS	CE, ETL, RoHS UL 2075 (CO & CH4 sensors), UL 61010-1, EN 61010-1, EN50270
WARRANTY	2 years on transmitter and sensors

Disclaimer
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