Gas detectors






● - inbuilt
○ - option

	E2608	E2610	E2611	E2613	E2615	E2618
Analog outputs	●		●		●	●
Relay outputs	●	●	●	●		
RS485 Modbus RTU	●		●			●
Acoustic alarm		●	●			
Visual alarm		●		●		
Enclosure protection class	IP65	IP20	IP20	IP65	IP20 or IP65	IP65
Enclosure material	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic
Duct mount version	○					○
Remote probe version	○					○
Power supply 90 ... 230 VAC	○	○	○			
Detection of two gases						
ATEX Zones 2 and 22 (ATEX/ IECEx certification for zones 1 and 21 is pending)						
LCD indicator						
Condensation prevention module	○		○			○
Self test button		●				
Detected gases (ask for more gases)	NH3, CO2, CO, Cl2, C2H4, C2H4O (ETO), HFC, H2S, CH4, NO, NO2, N2O, O2, O3, SO2, VOC, LEL	CO, HFC, VOC, LEL	CH4, HFC, VOC, LEL	CO, HFC, LEL	CO, H2S, NO2, LEL	NH3, CO2, CO, Cl2, C2H4, C2H4O (ETO), HFC, H2S, CH4, NO, NO2, N2O, O2, O3, SO2, VOC, LEL

Gas detectors






● - inbuilt
○ - option

	E2630	E2632	E2638	E2648	E2660	E2670
Analog outputs			●	●	●	●
Relay outputs	●	●	○	○	○	○
RS485 Modbus RTU			●	●	●	●
Acoustic alarm	●	●	○			
Visual alarm	●	●	○			
Enclosure protection class	IP65	IP65	IP65	IP66	IP65	IP65
Enclosure material	ABS Plastic	ABS Plastic	ABS Plastic	Aluminium	ABS Plastic	Aluminium
Duct mount version						
Remote probe version			○	○		
Power supply 90 ... 230 VAC	○	○	○	○	○	○
Detection of two gases		●			●	
ATEX Zones 2 and 22 (ATEX/ IECEx certification for zones 1 and 21 is pending)						●
LCD indicator			○			
Condensation prevention module			○	○	○	○
Self test button	●	●	○			
Detected gases (ask for more gases)	CO, HFC, NO2, VOC, LEL	CO-CH4	NH3, CO2, CO, Cl2, C2H4, C2H4O (ETO), HFC, H2S, CH4, NO, NO2, N2O, O2, O3, SO2, SF6 VOC, LEL	NH3, CO2, CO, Cl2, C2H4, C2H4O (ETO), HFC, H2S, CH4, NO, NO2, N2O, O2, O3, SO2, VOC, LEL	CO-CO2, CO-NO, CO-NO2, CO-LPG, CO2-O2	NH3, CO2, CO, Cl2, C2H4, C2H4O (ETO), HFC, H2S, CH4, NO, NO2, N2O, O2, O3, SO2, VOC, LEL

APPLICATIONS

UNDERGROUND CAR PARKS

Accumulation of toxic and explosive automobile exhaust gases is the main problem in underground car parks. Essential requirement of the safety system is LPG, CO, NO2 and CO2 potential high concentrations measurement, depending on the country.

Evikon MCI gas detectors solve this challenging task by participating in ventilation and alarm control.

What should be measured?	Typical measurement ranges	Recommended products		
Carbon Monoxide (CO)	0...200 ppm 0...300 ppm 0...1 000 ppm	E2608-CO E2610-CO E2615-CO E2618-CO	E2630-CO E2638-CO E2648-CO	E2660-CO-NO2 E2660-CO-CO2 E2660-CO-LPG
Nitrogen Dioxide (NO2)	0...20 ppm	E2608-NO2 E2615-NO2 E2618-NO2	E2630-NO2 E2638-NO2	E2648-NO2 E2660-CO-NO2
Carbon Dioxide (CO2)	0...10 000 ppm	E2608-CO2 E2618-CO2 E2638-CO2	E2648-CO2 E2660-CO-CO2	
LPG	0...100% LEL	E2608-LEL E2610-LEL E2611-LEL	E2615-LEL E2630-LEL E2638-LEL	E2648-LEL E2660-CO-LPG
Absolute Humidity (AH)		E2218 E2228		

DATA CENTERS

Security and reliability of data are among the top priorities of any facility. Responsibility for processing, storing and distributing information generally falls on data centers, where the necessary environment should be maintained to minimize disruption of computer systems functionality.

Data center equipment is energy-intensive and therefore requires excess heat to be removed. This in turn implies maintenance of certain and stable temperature and relative humidity levels. Changing of these conditions may affect equipment lifetime, resulting in data corruption and expensive downtime. Therefore, installation of temperature and humidity transmitters is essential to continuously control these variables and optimize operation of air conditioning system.

What should be measured?	Recommended products
Relative Humidity (RH) and Ambient Temperature	E2218 E2228

The key to the smooth operation of data centers is also the main power source like batteries, which are constantly being charged. The most popular choice in this application are lead-acid batteries, whose by-product of the charging process is Hydrogen (H2) gas. Hydrogen is formed in the battery as a result of a chemical reaction and can reach explosive concentrations (lower explosive limit) if leaked. That is why essential requirement for the safety system of data centers is H2 detection to activate ventilation or alarms in time.

Evikon MCI offers reliable H2 gas detectors as well as temperature & humidity transmitters to ensure accurate measurements and keep the plant safe.

What should be measured?	Typical measurement ranges	Recommended products
Hydrogen (H_2)	0...100% LEL	E2608-LEL E2610-LEL E2611-LEL E2615-LEL E2618-LEL E2630-LEL E2638-LEL E2648-LEL

BATTERY CHARGING ROOMS

Electric forklifts, industrial trucks, stackers and pallet carts: all of this is lead-acid batteries powered and consequently needs recharging. For this reason, battery charging rooms are an important part of large industrial warehouses, logistics or distribution centers and production facilities.

If recharged, several types of secondary batteries, such as lead-acid, give off Hydrogen (H2) - a very reactive, flammable and explosive gas. As such, ventilation of a battery charging room is critical to maintain the concentration below the lower explosive limit (LEL). The presence of Hydrogen gas detectors is required in order to avoid high concentrations and timely take safety measures.

What should be measured?	Typical measurement ranges	Recommended products
Hydrogen (H_2)	0...100% LEL	E2608-LEL E2610-LEL E2611-LEL E2615-LEL E2618-LEL E2630-LEL E2638-LEL E2648-LEL

The correct operation and increase in life-time of the secondary batteries also require proper temperature and humidity, which can be achieved by using special measurement instruments.

Evikon MCI offers instruments for reliable measurement of temperature, relative humidity and detection of H2.

What should be measured?	Recommended products
Relative Humidity (RH) and Ambient Temperature	E2218 E2228 ET701 ET711 ET721

BOILER ROOMS

Boiler malfunction can lead to leakage of expensive gas fuel, and consequently to the accumulation of dangerous gases in an enclosed space. It is important to early detect most typical gases for this application like Natural gas and Liquefied petroleum gas (LPG) for timely safety measures.

Natural gas (70 - 98% of Methane) and LPG (minimum 75% of Propane) are combustible and toxic. High concentrations of these gases can cause health problems as well as an explosion hazard. Therefore, any leaks must be detected early for safety measures to be taken.

What should be measured?	Typical measurement ranges	Recommended products
Methane (CH_4)	0...100% LEL	E2608-CH4 E2610-LEL E2611-LEL E2618-CH4 E2630-LEL E2632-CO-CH4 E2638-CH4 E2648-CH4

Poisonous product of incomplete combustion of gas fuel is Carbon Monoxide (CO) as well. It can accumulate in a room as a result of poor ventilation. CO is odorless, colorless and tasteless so it's impossible to detect its presence without monitoring equipment. Exceeding the permissible concentrations is potentially dangerous for employees. Maximum allowable short term Carbon Monoxide concentration in enclosed spaces is 150 ppm.

We offer a wide range of gas detectors for CO and combustible gases with diverse functionality: analog and digital outputs, two SPDT relays, as well as buzzer and LED options.

What should be measured?	Typical measurement ranges	Recommended products
LPG	0...100% LEL	E2608-LEL E2610-LEL E2611-LEL E2630-LEL E2638-LEL E2648-LEL
Carbon Monoxide (CO)	0...1 000 ppm	E2610-CO E2618-CO E2630-CO E2632-CO-CH4 E2638-CO E2648-CO

ENERGY STORAGE

All over the world, measures are being taken to effectively save energy in order to conserve resources and reduce environmental pollution. One of the solutions is battery energy storage systems (BESS). They collect excess energy from power plants or the electrical grid and then release it providing electricity when needed.

There are variable battery chemistries available today in such systems including lead-acid and lithium-Ion.

Uninterrupted operation of BESS requires creation of correct environmental conditions in spaces they are located, namely maintaining a certain temperature and relative humidity levels.

What should be measured?	Recommended products
Relative Humidity (RH) and Ambient Temperature	E2218 E2228

Energy storages based on lead-acid batteries are considered to be among one of the most common in this area. Since the batteries work on the principle of recharging, they emit Hydrogen (H2) - flammable and explosive gas. The presence of an H2 measurement instrument is required in order to continually control dangerous gas levels as well as timely take safety measures.

The second most popular choice are lithium-ion batteries. It is worth noting that when such batteries overheat, they release Carbon Monoxide (CO). Equipping the energy storage room with CO sensors contributes to the proper operation of the ventilation system in order to avoid high concentrations of gas and incorrect operation of equipment.

Evikon MCI offers instruments for reliable measurement of H2, CO, temperature and relative humidity.

What should be measured?	Typical measurement ranges	Recommended products	
Hydrogen (H_2)	0...100% LEL	E2608-LEL E2610-LEL E2611-LEL E2615-LEL	E2618-LEL E2630-LEL E2638-LEL E2648-LEL
Carbon Monoxide (CO)	0...1 000 ppm	E2608-CO E2610-CO E2615-CO E2618-CO	E2630-CO E2638-CO E2648-CO

AIR CONDITIONING

HydroFluoroCarbons (HFCs / “freons”) and HydroFluoroOlefins (HFOs) are widespread refrigerant gases in the market today. They are most commonly found in air conditioners, heat pumps and chillers.

Mainly used refrigerants in air conditioning include R-134A, R-407A,R-410A, R-417A, R-417B, R-507. These HFCs are not toxic as well as non-flammable under normal environment conditions (A1 safety classification). However they have high global warming potential (GWP), therefore HFCs / freons based refrigeration systems must comply with EU F-Gas Regulation (preventing emissions into the atmosphere).

Separately it is worth noting R-32, R-1234yf and R-1234ze refrigerants (or so-called HFOs), as they are included in the A2L safety group. The refrigerants of this classification are flammable, that means precautions must be taken to prevent accidental build-up of refrigerant, particularly during charging of systems.

Gas detection allows not only to comply with all regulations, but also to ensure people safety, reduce emissions, prevent the loss of expensive refrigerants and minimize costs of facility.

With Evikon MCI’s gas detectors you can measure both frequently used refrigerants and more exotic mixtures.

What should be measured?	Typical measurement ranges	Recommended products
Fluorinated refrigerants (HFC, HFO)	0...50% LFL 0...1 000 ppm	E2608-HFC E2610-HFC E2611-HFC E2618-HFC E2630-HFC E2638-HFC E2648-HFC

REFRIGERATION

Modern demands for environmental protection, international and local safety requirements, desire of enterprises to efficiently use resources and reduce manufacturing costs are forcing the Cooling and Refrigeration market to adapt and look for innovative solutions.

Evikon MCI's instruments with diverse functionality can be your trusted allies for accurate detection of potential refrigerants leaks at low temperature and high relative humidity. Our gas detectors and transmitters are able to correctly operate in extreme conditions during the entire declared lifetime through specifically developed heating technology. We provide products for detection of HFCs as well as Ammonia, Propane and Carbon Dioxide in industrial and commercial refrigeration applications.

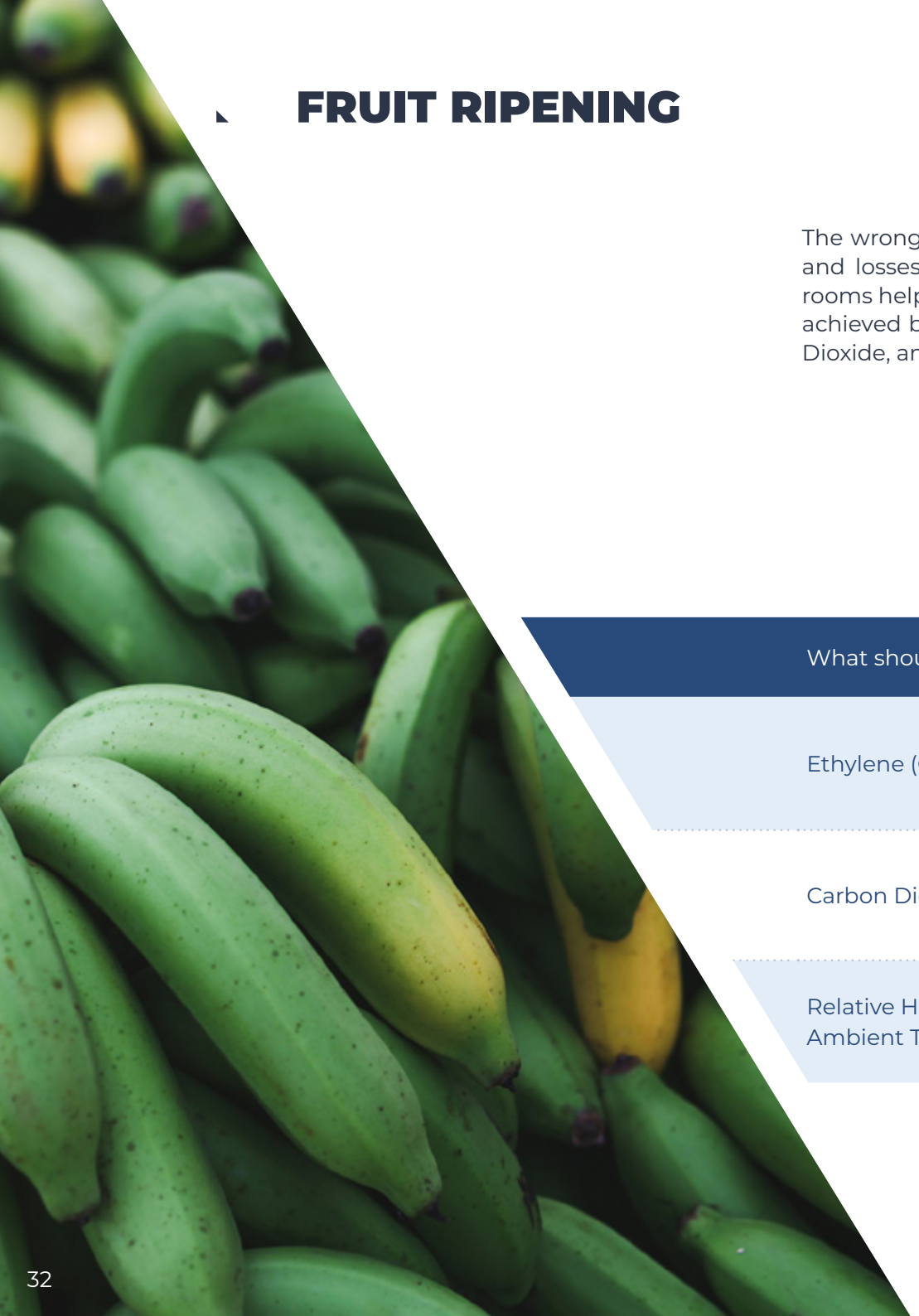
What should be measured?	Typical measurement ranges	Recommended products	
Fluorinated refrigerants (HFC)	0...1 000 ppm 0...2 500 ppm	E2608-HFC E2618-HFC E2630-HFC	E2638-HFC E2648-HFC
Ammonia (NH3)	0...100 ppm 0...100% LEL	E2608-NH3-E E2608-NH3-P E2618-NH3-E E2618-NH3-P E2638-NH3-E	E2638-NH3-P E2648-NH3-E E2648-NH3-P E2670-NH3-E E2670-NH3-P
Propane (C3H8)	0...100% LEL	E2608-LEL E2618-LEL E2638-LEL	E2648-LEL E2670-LEL
Carbon Dioxide (CO_2)	0...10 000 ppm 0...50 000 ppm	E2608-LEL E2618-LEL	E2638-LEL E2648-LEL

Refrigerants we can measure

Code											
R-10	R-111	R-125	R-141a	R-213	R-225bb	R-233	R-235da	R-244cc	R-252ec	R-271	R-401b
R-11	R-112	R-E125	R-141b	R-214	R-225ca	R-233ca	R-235fa	R-244da	R-253	R-271b	R-401c
R-12	R-112a	R-130	R-141B2	R-215	R-225cb	R-233cb	R-236cb	R-244db	R-253ba	R-271d	R-402a
R-12B1	R-113	R-130a	R-142a	R-216	R-225cc	R-233cc	R-236ea	R-244ea	R-253bb	R-271fb	R-402b
R-12B2	R-113a	R-131	R-142b	R-216ca	R-225da	R-234	R-236fa	R-244eb	R-253ca	R-272	R-403a
R-13	R-114	R-131a	R-143	R-217	R-225ea	R-234aa	R-FE-36	R-244ec	R-253cb	R-281	R-403b
R-13B1	R-114a	R-131b	R-143a	R-217ba	R-225eb	R-234ab	R-236me	R-244fa	R-253ea	R-290	R-404a
R-13I1	R-114B2	R-132	R-143m	R-218	R-226	R-234ba	R-241	R-244fb	R-253eb	R-C316	R-405a
R-14	R-115	R-132a	R-E143a	R-221	R-226ba	R-234bb	R-242	R-245ca	R-253ec	R-C317	R-406a
R-20	R-116	R-132b	R-150	R-222	R-226ca	R-234bc	R-243	R-245cb	R-253fa	R-C318	R-406b
R-21	R-120	R-132c	R-150a	R-222c	R-226cb	R-234ca	R-243ca	R-245ea	R-253fb	R-3-1-10	R-407a
R-22	R-121	R-132bB2	R-151	R-223	R-226da	R-234cb	R-243cb	R-245eb	R-253fc	R-329ccb	R-407b
R-22B1	R-121a	R-133	R-151a	R-223ca	R-226ea	R-234cc	R-243cc	R-245fa	R-254cb	R-338eea	R-407c
R-23	R-122	R-133a	R-152	R-223cb	R-227ca	R-234cd	R-243da	R-245mc	R-254pc	R-347ccd	R-407d
R-30	R-122a	R-133b	R-152a	R-224	R-227ea	R-234da	R-243ea	R-245mf	R-261	R-347mcc	R-407e
R-31	R-122b	R-134	R-160	R-224ca	R-227ca2	R-234fa	R-243ec	R-245qc	R-261ba	R-347mmy	R-407f
R-32	R-123	R-134a	R-161	R-224cb	R-227me	R-234fb	R-244	R-251	R-262	R-365mfc	R-408a
R-40	R-123a	R-E134	R-170	R-224cc	R-231	R-235	R-244ba	R-252	R-262ca	R-4-1-12	R-409a
R-41	R-123b	R-140	R-E170	R-225	R-232	R-235ca	R-244bb	R-252ca	R-262fa	R-5-1-14	R-409b
R-50	R-124	R-140a	R-211	R-225aa	R-232ca	R-235cb	R-244ca	R-252cb	R-262fb	R-400	R-410a
R-110	R-124a	R-141	R-212	R-225ba	R-232cb	R-235cc	R-244cb	R-252dc	R-263	R-401a	R-410b

Refrigerants we can measure

Code											
R-411a	R-417a	R-422d	R-432a	R-439a	R-454b	R-501	R-510a	R-611	R-732	R-1130	R-1234ze
R-411b	R-417b	R-423a	R-433a	R-440a	R-454c	R-502	R-511a	R-630	R-740	R-1132a	R-1270
R-411c	R-418a	R-424a	R-433a	R-441a	R-455a	R-503	R-513a	R-631	R-744	R-1140	R-1336mzz-E
R-412a	R-419a	R-425a	R-433a	R-447a	R-456a	R-504	R-514a	R-702	R-744a	R-1141	R-1336mzz-Z
R-413a	R-420a	R-426a	R-434a	R-448a	R-457a	R-505	R-515b	R-704	R-764	R-1150	
R-414a	R-421a	R-427a	R-435a	R-449a	R-458a	R-506	R-600	R-717	R-784	R-1216	
R-414b	R-421b	R-428a	R-436a	R-450a	R-459a	R-507a	R-600a	R-718	R-1112a	R-1218	
R-415a	R-422a	R-429a	R-436b	R-452a	R-466a	R-508a	R-601	R-720	R-1113	R-1224yd	
R-415b	R-422b	R-430a	R-437a	R-452b	R-471a	R-508b	R-601a	R-728	R-1114	R-1233zd	
R-416a	R-422c	R-431a	R-438a	R-454a	R-500	R-509a	R-610	R-729	R-1120	R-1234yf	



FRUIT RIPENING

The wrong approach to fruits and vegetables ripening can lead to poor product quality and losses. Provision and maintenance of narrowly defined environments in ripening rooms help products remain ripe and fresh before they reach a shop counter. This can be achieved by using Evikon MCI´s products for reliable measurement of Ethylene, Carbon Dioxide, ambient temperature and relative humidity.

What should be measured?	Typical measurement ranges	Recommended products
Ethylene (C_2H_4)	0...10 ppm 0...200 ppm 0...1 500 ppm	E2608-C2H4 E2618-C2H4 E2638-C2H4
Carbon Dioxide (CO2)	0...10 000 ppm	E2608-CO2 E2618-CO2 E2638-CO2
Relative Humidity (RH) and Ambient Temperature		E2218 E2228

CONTROLLED ATMOSPHERE

Shelf life of fruits and vegetables can be reduced due to the influence of certain environmental conditions in storage rooms. Controlled atmosphere creation is a good solution to ensure supply of quality products and extend their useful life. This process implies control of Ethylene, Carbon Dioxide, Oxygen, ambient temperature and relative humidity.

What should be measured?	Typical measurement ranges	Recommended products
Ethylene (C_2H_4)	0...10 ppm	E2608-C2H4 E2618-C2H4 E2638-C2H4
Carbon Dioxide (CO_2)		E2608-CO2 E2618-CO2 E2638-CO2
Oxygen (O_2)	0...25% O2	E2608-O2 E2618-O2 E2638-O2
Relative Humidity (RH) and Ambient Temperature		E2218 E2228

INDUSTRIAL KITCHENS

Industrial kitchen is an enterprise that produces food for public consumption. For cooking such kitchens use explosive gases like Natural gas and Liquefied petroleum gas (LPG), which can be supplied through a gas pipeline or from cylinders.

Natural gas (70 - 98% of Methane) and LPG (minimum 75% of Propane) are combustible gases. In order to prevent explosive concentrations (lower explosive limit) due to leakage they must be detected to ensure building safety.

The potential sources of leaks are from damaged pipelines, leaky gas cylinders, faulty valves or burner leakage.

We offer many models of gas detectors with different functionality depending on the requirements of your project both for the detection of LPG and Natural gas.

What should be measured?	Typical measurement ranges	Recommended products	
Methane	0...100% LEL	E2608-CH4 E2615-LEL E2618-CH4	E2630-LEL E2638-CH4 E2648-CH4
LPG	0...100% LEL	E2608-LEL E2615-LEL E2618-LEL	E2630-LEL E2638-LEL E2648-LEL

GREENHOUSES

Being one of the photosynthesis elements, Carbon Dioxide automatically becomes an integral part of the plant's growth. That is why the “CO2 fumigation” approach has become widespread in this sector. It involves the artificial maintenance of certain CO2 concentrations in greenhouses, which contributes to higher yields as well as higher product quality.

However, it should be borne in mind that too high Carbon Dioxide levels adversely affect plants, slowing down their growth. For correct dosing and process optimization, it is important to control CO2 level by installing gas detectors.

What should be measured?	Typical measurement ranges	Recommended products
Carbon Dioxide (CO_2)	0...10 000 ppm	E2608-CO2 E2618-CO2 E2638-CO2 E2648-CO2

Besides fumigation, temperature and humidity are also important factors that affect plant growth and health. Depending on plant type, greenhouses maintain temperatures 24 - 32 °C and a relative humidity 80 - 95%. Exceeding these ranges can negatively affect crop quality, so temperature and humidity levels must be constantly controlled using measuring equipment.

And while greenhouse climates are favorable for plant growth, they are often a problem for detectors and transmitters. Increased temperature, high relative humidity, fertilizer vapors - all this can cause incorrect readings and shorten the life of measurement instruments. Evikon MCI solves this problem with a protected enclosure and a built-in heating element, which helps the products to work in environmental conditions with relative humidity up to 100%.

What should be measured?	Recommended products
Relative Humidity (RH) and Ambient Temperature	E2218 E2228

WASTEWATER TREATMENT

Treatment of wastewater from municipal, industrial and agricultural facilities is necessary to transform them into a state suitable for discharge into water bodies, or for further use in closed water supply systems.

The treatment process is accompanied by the presence of a number of inert, toxic and explosive gases, the dangerous levels of which must be controlled by gas detectors for the safety of plant personnel and environment.

Depending on the process and stage of wastewater treatment, the following gases should be detected:

Methane (CH4): a flammable gas that forms during the initial stages of treatment (mainly sludge decomposition) and can accumulate near storage tanks and settling basins.

What should be measured?	Typical measurement ranges	Recommended products
Methane (CH_4)	0...100% LEL (other concentrations on request)	E2608-CH4 E2618-CH4 E2638-CH4 E2648-CH4 E2670-CH4
Hydrogen Sulfide (H2S)	0...100 ppm 0...2 000 ppm	E2608-H2S E2618-H2S E2638-H2S E2648-H2S

Hydrogen Sulfide (H2S): a highly toxic gas that accumulates near tanks and settling basins. H2S may initially be present in water, or it may be formed as a result of treatment processes.

Chlorine (Cl2), Ozone (O3), Sulfur Dioxide (SO2), Ammonia (NH3): toxic gases that are used at the stage of water disinfection (removal of unpleasant odors and tastes).

Oxygen (O2): as a result of chemical and organic processes, the gases released can displace O2, resulting in its deficiency. Therefore, the level of Oxygen must be constantly maintained at a level safe for people (not lower than 20.9%).

What should be measured?	Typical measurement ranges	Recommended products	
Chlorine (Cl_2)	0...10 ppm	E2608-Cl2 E2618-Cl2	E2638-Cl2 E2648-Cl2
Ozone (O3)	0...1 ppm 0...5 ppm	E2608-O3 E2618-O3	E2638-O3 E2648-O3
Sulfur Dioxide (SO2)	0...50 ppm 0...2 000 ppm	E2608-SO2 E2618-SO2	E2638-SO2 E2648-SO2
Ammonia (NH3)	0...100 ppm 0...300 ppm 0...1 000 ppm	E2608-NH3 E2618-NH3	E2638-NH3 E2648-NH3
Oxygen (O2)	0...25% vol.	E2608-O2 E2618-O2	E2638-O2 E2648-O2

Terms and abbreviations

PPM	Parts per million. It is a unit of measure indicating the number of gas particles per million air particles, 1 ppm = 1/1000000 = 0.0001% = 0.001‰.
LEL	Lower Explosive Limit. The lowest concentration (percentage) of a gas or a vapor in air capable of producing a flash of fire in the presence of an ignition source (arc, flame, heat).
TWA	Time-weighted average concentration for up to an 8-hour workday during a 40-hour workweek.
STEL	15-minute TWA exposure that should not be exceeded at any time during a workday.
IDLH	Immediately dangerous to life or health. Exposure that is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment.
RH	Relative Humidity is the actual amount of water vapor present in relation to the capacity that the air has at a particular temperature.
AH	Absolute Humidity is the total mass of water vapor present in a given volume or mass of air, regardless of temperature.

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