STARTYPE MAROC

INGÉNIERIE GAZ, ÉNERGIE & FLUIDES INDUSTRIELS

Des solutions énergétiques conçues pour l’industrie.

Engineering • Procurement • Construction
Commissioning • Maintenance

LNG • Natural Gas • SNG • CNG • LPG
Industrial Utilities

DU CONCEPT À L’EXPLOITATION

STARTYPE accompagne les industriels au Maroc et en Afrique dans la conception, la fourniture, la réalisation, la mise en service et la maintenance d’installations gaz et fluides industriels.

Une approche intégrée. Un interlocuteur unique.

Together, let’s transform energy.

Nos solutions gaz & énergie

DE L'ÉTUDE À L'EXPLOITATION

Une réponse à chaque étape du projet

Études, fourniture, installation, essais et maintenance, avec une coordination technique adaptée à vos besoins.

Ingénierie & conception

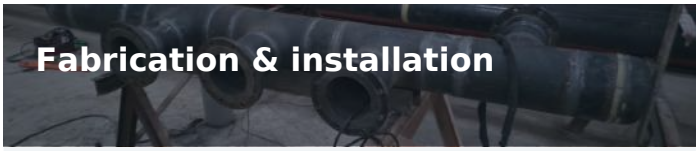
- Faisabilité, dimensionnement et notes de calcul
- P&ID, implantation, isométriques et sélection des équipements
- Coordination technique et dossiers de projet

LNG • SNG • CNG • LPG

- Stockage, vaporisation, détente et régulation
- Intégration LNG et skids SNG air-propane ; solutions CNG et LPG
- Raccordements, essais et mise en service

Chaufferies & combustion

- Chaudières vapeur, eau chaude et fluide thermique
- Brûleurs GN / LPG / SNG et équipements auxiliaires
- Installation, réglage combustion et service après-vente



Fabrication & installation

- Tuyauteries acier, inox et PEHD selon application
- Préfabrication, montage et soudage qualifié
- Contrôles qualité, épreuves, étanchéité et inertage

Sécurité gaz & ATEX

- Détection fixe, centrales et capteurs adaptés aux zones ATEX
- Recherche de fuites et analyse des risques
- Alarmes, ESD, asservissements et étalonnage

Maintenance & assistance

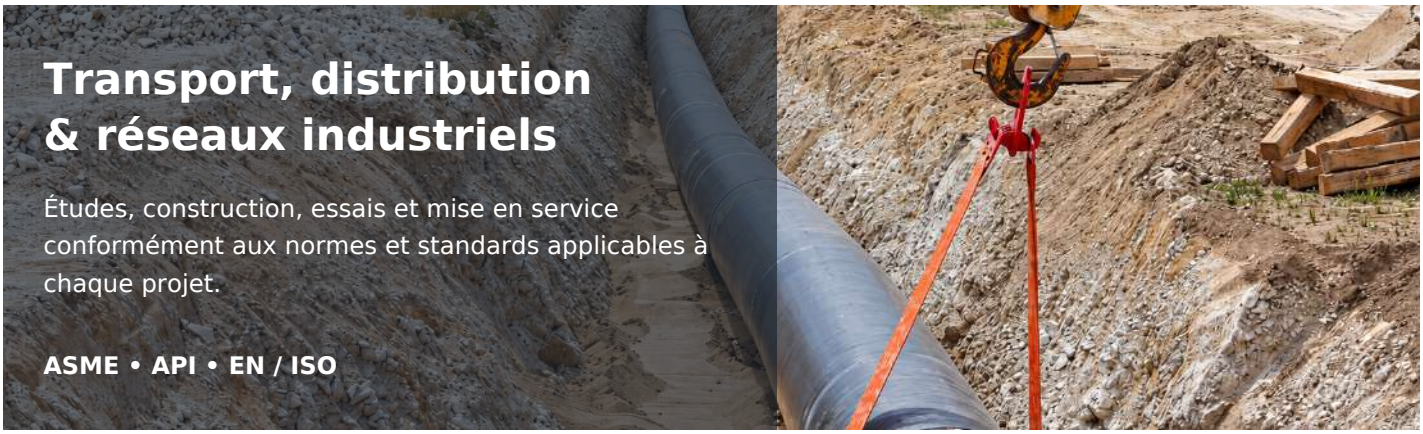
- Maintenance préventive, corrective et inspections
- Révision de la détente, des vannes et de l'instrumentation
- Assistance technique et pièces de rechange

+15 ANS D'EXPÉRIENCE TERRAIN DE NOS ÉQUIPES

Une expérience acquise sur des projets industriels et gaziers majeurs au Maroc.
Sécurité • Expertise terrain • Exécution • Réactivité

Pipelines & construction métallique

PIPELINES GAZ



Transport, distribution & réseaux industriels

Études, construction, essais et mise en service conformément aux normes et standards applicables à chaque projet.

ASME • API • EN / ISO

ÉTUDES & CONSTRUCTION

- Tracé et dimensionnement acier / PEHD
- Soudage qualifié, électrofusion et contrôles CND
- Anticorrosion et protection cathodique

DÉTENTE & MISE EN SERVICE

- Postes gaz, skids de comptage et manifolds
- Épreuves hydrauliques / pneumatiques selon procédure
- Séchage, inertage, mise en gaz et As-Built

STRUCTURES MÉTALLIQUES INDUSTRIELLES

Conception, fabrication & montage sur site

Structures industrielles, charpentes et supports : de l'étude à la réalisation, avec traitement anticorrosion et finition.

Engineering • Fabrication • Erection

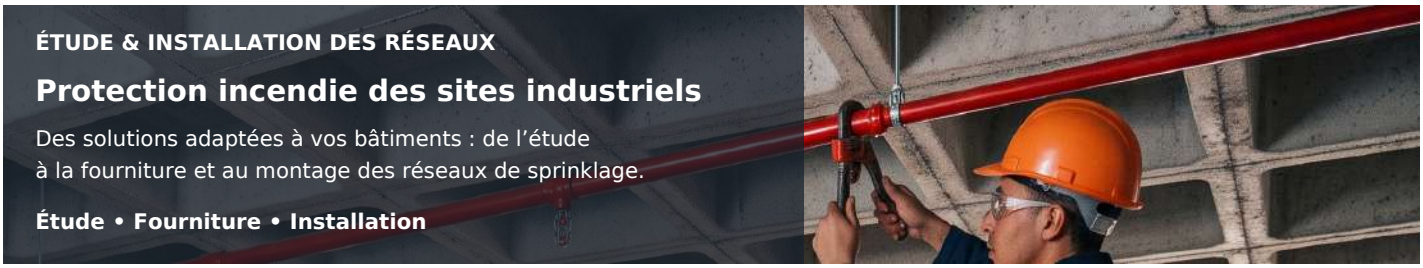
CHARPENTES & BÂTIMENTS

- Structures, hangars et extensions industrielles
- Fabrication en atelier
- Levage, montage et finition sur site

PIPE-RACKS & SUPPORTAGE

- Pipe-racks et supports de tuyauterie
- Passerelles, plateformes et escaliers
- Structures supports de skids et équipements

Systèmes de sprinklage



ÉTUDE & CONCEPTION

Analyse, dimensionnement et plans
Sélection des équipements

FOURNITURE & INSTALLATION

Tuyauteries, supports et sprinklers
Robinetterie, montage et raccordement

ESSAIS & MISE EN SERVICE

Étanchéité, fonctionnement et réglages
Dossier de fin de travaux

MAINTENANCE & SUIVI

Inspections et maintenance préventive
Interventions et remplacement de pièces

Base logistique & accessoires gaz

ROBINETTERIE & COMPOSANTS POUR RÉSEAUX GAZ

VANNES INDUSTRIELLES

Vannes à boisseau sphérique et papillon
Commande manuelle ou motorisée

BRIDES & RACCORDS

Brides, coudes, tés et réductions
Composants selon ASME / EN

TUBES ACIER & PEHD

Acier API 5L / ASTM selon application
PE100 gaz pour réseaux enterrés

SÉCURITÉ & RÉGULATION

Clapets, soupapes et filtres gaz
Régulateurs et organes de protection

PEHD & ÉLECTROFUSION

Manchons, coudes, tés et selles
Transitions PEHD / acier

JOINTS & VISSERIE

Joints spiralés et haute température
Goujons, écrous et kits d'isolation

Sélection selon le fluide, la pression, la température et les exigences du projet.

Disponibilité et certificats selon références.

Une expertise au service de l’industrie

Des interventions dans des environnements industriels exigeants

Gaz & énergie • Céramique • Automobile • Métallurgie • Agroalimentaire

CLIENTS & RÉFÉRENCES

AFRIQUIA · VIVO ENERGY · TotalEnergies · Roca

Super Cerame · CristalCérame · Dicastal · CNOO

COSUMAR · Extralait · GPC PAPIER ET CARTON · iglo

INDUVER PROTEX · LAFARGE Holcim · MAGHREB STEEL · OCP

PSA GROUPE · Setexam THE AGAR SPECIALISTS · SOMALEV CRANES & LOGISTICS · Sonasid

PARTENAIRES TECHNOLOGIQUES

UESTCO ENERGY SYSTEMS

Partenaire local pour les solutions SNG air-propane.

KARF&SCOOT

Représentation de solutions de détection gaz au Maroc et en Afrique.

EXPÉRIENCE PROFESSIONNELLE DE NOS ÉQUIPES

Circle Oil Maroc Limited · SDX ENERGY

CIRCLE OIL & SDX ENERGY

Expérience acquise sur des projets de gaz naturel du bassin du Gharb. Ces références concernent le parcours des collaborateurs et ne désignent pas des partenaires actuels de STARTYPE.

SÉCURITÉ • QUALITÉ • CONFORMITÉ • PERFORMANCE

POURQUOI STARTYPE ?

La maîtrise technique.
La proximité terrain.
Un interlocuteur unique.

One partner. From concept to operation.

ENGINEERING • PROCUREMENT • CONSTRUCTION
COMMISSIONING • MAINTENANCE

Ingénierie & pilotage
Études, conception et coordination

Expertise terrain & HSE
Équipes expérimentées et sécurité

Solutions intégrées
Fourniture, installation et essais

Maintenance & assistance
Accompagnement durant l'exploitation

Solutions gaz & énergie
LNG, GN, SNG, CNG et LPG

Pipelines & tuyauteries
Acier, inox et PEHD selon application

Construction métallique
Charpentes, pipe-racks et supports

Logistique de proximité
Base et approvisionnement à Kénitra

STARTYPE MAROC — Certifiée ISO 9001 & ISO 14001
Management de la qualité • Management environnemental

CONTACTEZ-NOUS

Un projet gaz, énergie ou fluides industriels ? Parlons de vos besoins.

STARTYPE MAROC

Siège & bureaux
240 Boulevard Mohamed V, Bureaux n°48 & n°49
Kénitra - Maroc

Base logistique
Zone Industrielle, Kénitra - Maroc

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www.startype.net

SCANNEZ POUR DÉCOUVRIR NOS SOLUTIONS

STAR TYPE

LPG
AIR
BLENDER SYSTEMS

QMTP
SERIES

Designed & Manufactured by
uestco

LPG & Natural Gas

Can LPG Be Used in Natural Gas Equipment?

While the calorific value of natural gas (methane) (heat energy resulting from combustion) is 890 kJ/mol, the calorific value of LPG (propane) is 2220 kJ/mol.

LPG is usually found as a mixture of propane and butane gases, while natural gas is methane and ethane mixture. LPG is heavier than air, while natural gas is lighter than air. At the same temperature and same volume, LPG is about three times heavier than natural gas. In the combustion reaction of natural gas, two oxygen molecules are required for one methane molecule. In the LPG combustion reaction, five oxygen molecules are required for one propane molecule.

An industrial equipment designed to run on natural gas is fed with LPG. The fuel-air mixture will not reach the required values and complete combustion will not occur. Incompletely combusted LPG will cause the emission of carbon monoxide, which is highly toxic, and the formation of soot.

What is Natural Gas Backup System with SNG (Synthetic Natural Gas)?

In systems where the primary energy source is natural gas, the most preferred Backup System is SNG energy system, which is ready for use in case of an urgent need of SNG, which can be used as a substitute for natural gas, is obtained directly from the LPG/Air mixer module.

LPG/Air Mixer, Propane/Air Mixer or SNG (Synthetic Natural Gas) system is a system that creates a gas with almost the same characteristics as Natural Gas, thus providing an ideal alternative to Natural Gas. LPG or Propane in the liquid phase is converted to gas and mixed with air at a preset rate. This resulting mixture is directly compatible with Natural Gas and can be used in almost all types of equipment without making any changes to the existing equipment.

It can replace Natural Gas in applications. Such systems can also be connected directly to Natural Gas pipelines. This makes it easier to operate the burners without changing the settings, therefore avoids long and costly transitions and guarantees an uninterrupted energy supply.

LPG/Air Mixer (LPG Blender) What Does It Do?

The creation of SNG in natural gas backup systems is carried out in the LPG/Air Mixer unit. To obtain an alternative fuel to natural gas, LPG and air must be mixed in the right proportions. The correct LPG air mixture ratio is obtained by capturing a value close to the Wobbe Index of the natural gas used by the customer.

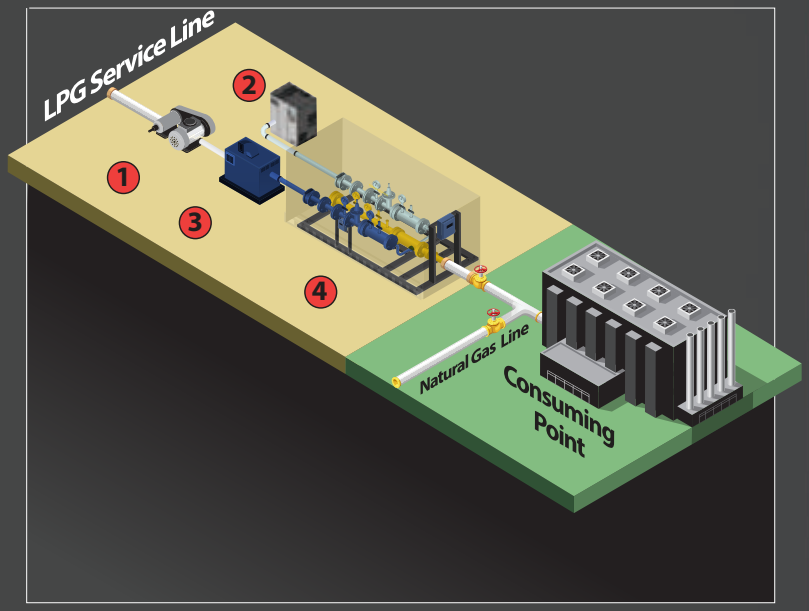
Substitution of Fuels and the Wobbe Index

In order for fuels to be substituted, their combustion characteristics must be very similar. In the equipments, parameters such as, fuel flow rate, level of combustion heat energy, the air level required for complete combustion of the fuel shall be precisely adjusted according to the relevant fuel. Some fuels can be used interchangeably by making minor adjustments on the burners. In some cases, these adjustments may not be enough to run the burners, or it would not be practical to make one-by-one adjustments in facilities with lots of burners.

Without changing the equipment settings, it is possible to use an alternative fuel via bringing the combustion characteristics of both fuels very close to each other. The most reliable reference that gives an about the combustion characteristic of a fuel, and therefore its substitutability, is the Wobbe Index, which is proposed by an Italian scientist Wobbe. This index is calculated by dividing the combustion energy provided by the unit amount of fuel by the square root of the specific gravity of the fuel.

Fuels with the same or very close Wobbe indices can be used interchangeably without modifying the combustion equipment.

What is SNG Backup System?



Contents of an SNG Backup System

SNG backup systems consist of four main modules: an LPG transfer pump, an LPG vaporizer, an air compressor, and an LPG/Air mixer (blender).

1 LPG Pump

The transfer pump is used to send liquid fuel from the tank to the vaporizer.

2 Vaporizer

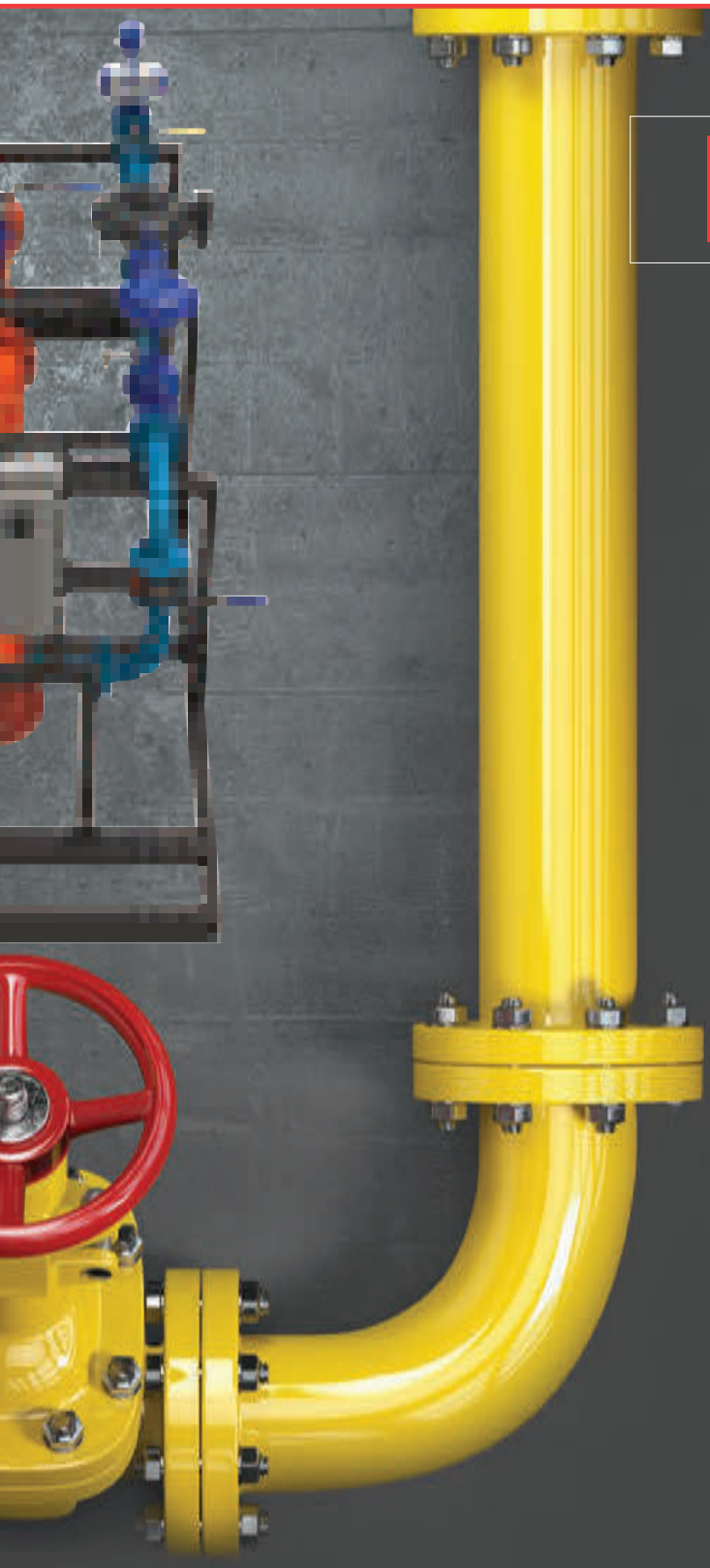
Vaporizers convert liquid fuel to the gas phase. There are various types of vaporizers, including hot water types, electrical types, and types that use LPG to carry out evaporation by burning some of the fuel.

3 Air Compressor

The air compressor provides the dry air required by the system at the desired pressure.

4 LPG / Air Blender

The LPG/Air mixer module produces SNG, which can be used as a natural gas substitute by mixing LPG vapor and air at the desired ratios.



What is SNG Backup System?

Benefits of SNG Backup System

- Provides uninterrupted energy supply to strategic points and helps the customers to avoid costly production breaks.
- Freedom in terms of energy supply.
- Quick installation and little maintenance requirement.
- No need for setting changes in most burning devices.
- LPG, which is an alternative fuel source, is easy to supply and store.

- Provides uninterrupted energy supply to strategic points and helps the customers to avoid costly production breaks.
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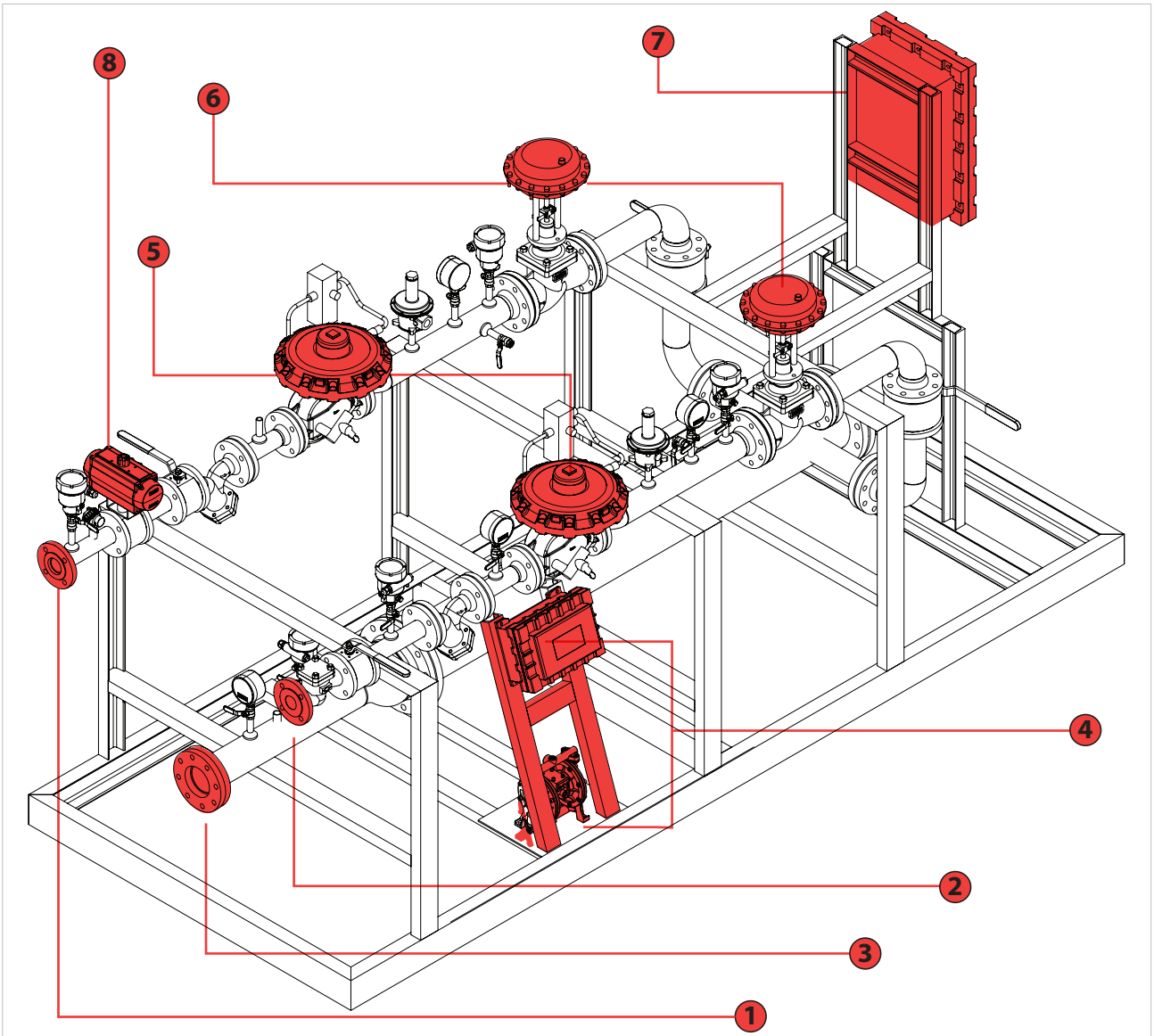
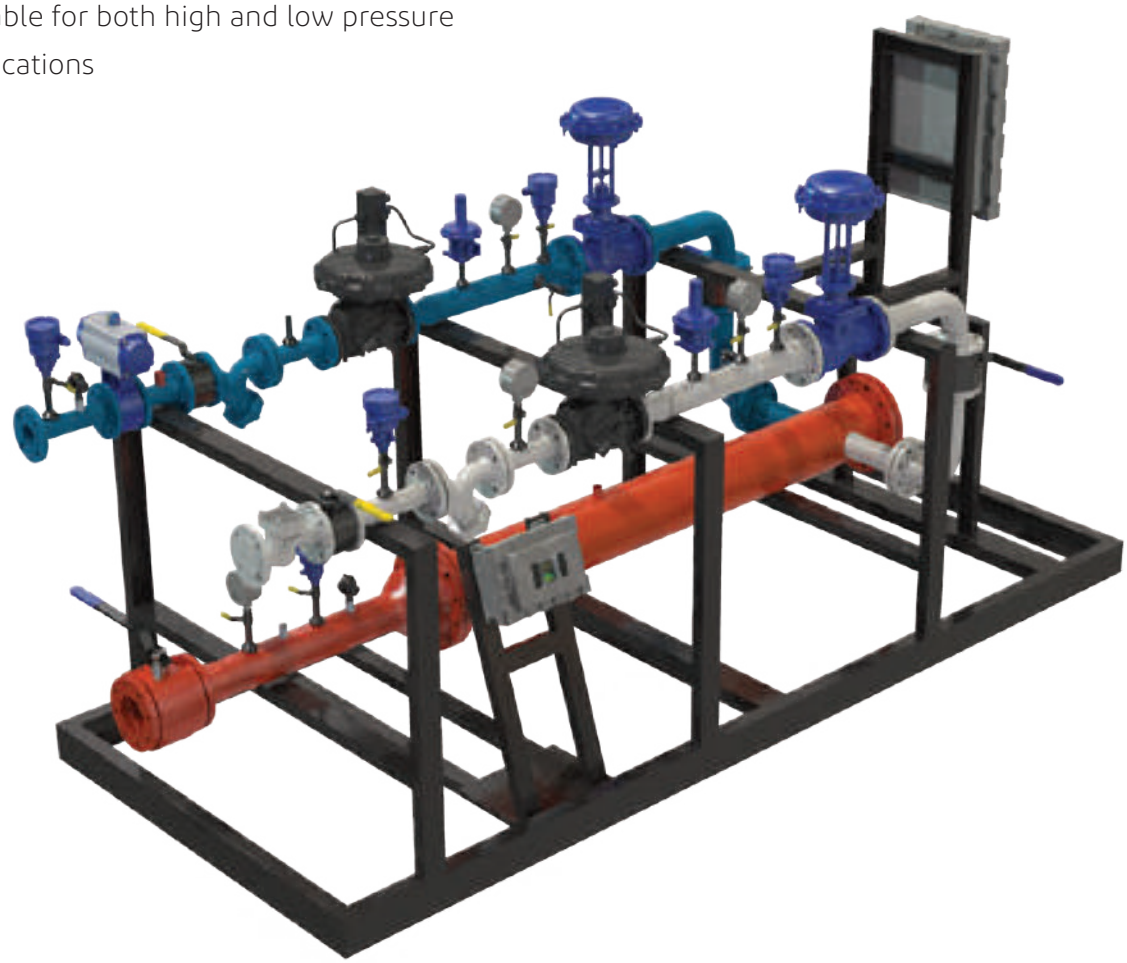
QMTP Series LPG/Air Blender Overview

1. Inlet port of LPG coming from the evaporator with a certain temperature and pressure value
2. Air inlet port coming from the air compressor with a certain dryness and pressure value
3. SNG (Synthetic Natural Gas) service line outlet flange
4. Mixture measurement/analysis station
5. LPG and air regulators
6. LPG and air flow control valves
7. Exproof automation and control panel
8. Emergency shutoff valve (ESD)



QMTP Series LPG/Air Blender Overview

- Compliant with PED & ATEX 2014/34/EU
- Capacity up to 11,000 kg/h
- Compatible with all LPG compositions
- Plug and play installation, easy commissioning
- Fully automatic design with built-in control panel
- State-of-the-art robust and reliable electromechanical design
- Easy operation, long service life
- Suitable for both high and low pressure applications
- Output gas feedback system for adjusting the LPG/Air ratio
- Optional adjustable LPG/Air mixing ratio
- Skid-mounted single unit construction, easy transport and placement
- Automatic valve fault detection
- Keeping daily and monthly data records
- No manual adjustment required, the system automatically adjusts the mixing ratio
- Remote control and telemetry



TECHNICAL INFORMATION

DEVICE TYPE	QMTP Series LPG / Air Mixer	**INLET PRESSURE (LPG)**	4 to 6 barg
GAS MIXTURE OUTPUT CAPACITY	500 to 11000 kg/h	**INLET PRESSURE (AIR)**	4 to 8 barg
AMBIENT TEMPERATURE	-20°C / +60°C	**OUTPUT PRESSURE (SNG)**	0.1 to 3 barg
GAS INLET DIAMETER	DN 25 to DN150	**DESIGN CODE and COMPLIANCE**	EN&ASME Compliant Design
GAS OUTLET DIAMETER	DN 25 to DN300		ATEX, PED Compliant
FLANGE CLASS	PN16 – PN40	**SUPPORTED LPG TYPES**	All LPG Compositions
STRUCTURE	Steel Chassis Skid Mounted		

We Direct Your Energy!

UESTCO Energy Systems Ltd. is an established engineering company with 16 years of valuable experience in the design, engineering, and commissioning of small-scale LNG plants to LNG vehicle refueling stations.

With a strong presence in Turkey and Europe, UESTCO has an impressive portfolio of over 3000 successfully completed projects. Amongst our proprietary production products, we provide specialized solutions such as LNG Regasification Skid, LCNG Vehicle Filling Skid, LNG Pressure Reducer Skid, and LPG Air Mixer Skid, which are utilized in our projects.

Additionally, our company has developed and commissioned a container-sized repositionable LNG vehicle refueling station known as Modulo. This innovative station incorporates a new generation smart LNG dispenser, which was also developed by UESTCO.

uestco

LNG REGAS

REGASIFICATION SKID SYSTEMS

Compact LNG Regasification Skid

NEW GENERATION LNG DISPENSER

LNG DISPENSER

State-of-the-Art Solution for LNG Refueling!

modulo

LNG READY MODULO

Plug&Play LNG Refueling Station

STARTYPE

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Technology for Safety

KARF & SCOOT

Karf&Scoot Product Catalog

Flammable-Explosive-Toxic Gas and Flame Detection Solutions for Industrial Environments

Karf&Scoot

Technology for Safety

Karf&Scoot was created with the mission to set a new standard in industrial safety. Reflecting UESTCO Energy Systems' passion for innovation, our company uses technology as a tool to protect human life by preventing loss of life and accidents.

Wide Product Range

Embracing the principle of 'Technology for Safety', Karf&Scoot offers a wide range of products, from fixed and portable gas detectors to flame detection systems. We develop comprehensive solutions for the safety of flammable, toxic and asphyxiating gases as well as oxygen levels.

References

Leading Partners Have Used Our Solutions

Air Liquide · AKKiM SEALANTS & ADHESIVES · arçelik · ETİ SODA

aselsan · beypiliç · Coca-Cola · ETİ BAKIR

International Power and Security Solutions

As Karf&Scoot, we have become a global force in industrial safety with partners in more than 20 countries and safety solutions in more than 1000 facilities. By participating in global events, we keep up with the latest technologies and offer our customers the most up-to-date solutions.

Customer Oriented Solutions

Our success is based on providing fast and flexible solutions by focusing on customer needs. We offer security solutions in Turkey and around the world with production and product reliability in accordance with international standards.

roketsan

TGE Gas Engineering

TURKISH TECHNIC

iPRAGAZ

HABAŞ

Tersan SHIPYARD

METEKSAN

ODTÜ METU

GDSFX Series

Fixed Gas Detectors

Superior Safety With GDSFX Gas Detectors

The GDSFX series is the world's most versatile gas detector with the most diverse sensor technology support and the most different gas/vapor detection options. In addition, it covers a wide range of applications by incorporating all premium segment product features. The design of the GDSFX model gas detectors has been meticulously engineered into the product, taking into account many different demanding industrial applications and needs.

Design and Specifications

Backed by a 3-year transmitter warranty, the GDSFX Series offers superior quality and a durable user experience. In addition, it has advanced features such as automatic calibration, advanced data logging and calibration notification system. ATEX and IECEX certified, this series meets the highest international safety standards for explosive atmospheres (SIL2 compliant version is in the certification process).

Advanced Warning System

The warning system on the product warns the user of danger, malfunction or maintenance with the display and surrounding LED lights. Thanks to its high-resolution TFT LCD display, GDSFX Series devices are easy to operate even in the most challenging lighting conditions. This high-end solution supports a wide range of applications with a user-friendly design and is equipped with advanced features such as automatic calibration

Compatibility and Options

Supporting more than 6 different sensor technologies, the GDSFX Series can detect more than 500 different gases and vapors. Standard Modbus, Analog and adjustable Relay outputs provide easy integration with existing systems. Some optional features include; stainless steel outer casing, sampling adapter, IP66 protection hood, stainless steel outdoor installation roof and spare sensor heads.

Technical Specifications

General Specifications	
Body	Aluminum (Optional: SUS 304)
Screen	TFT LCD Graphics
Buttons	Magnetic Control Pen (x1 included)
Inputs-Outputs	
Operating Voltage	18~30V DC, 24V DC Nominal
Communication	RS485, Modbus RTU
Analog Output	4-20 mA
Relay Outputs	1st Alarm, 2nd Alarm and Fault Relays
Sensor Types	
Catalytic (Pellistor)	Flammable and Explosive Gases
Infrared	Flammable, Explosive Gases, CO_2 and Refrigerant Gases
Electrochemical	Toxic and Asphyxiating Gases
PID	Toxic and Flammable VOC Gases
MPS	Methane, Hydrocarbon, and Refrigerant Gases
Operating Conditions and Mechanical Details	
Temperature	-20 ~ +60°C
Humidity	≤95% RH
Pressure	86-106 kPa
IP Class	IP65 (Can be upgraded to IP66 with optional protective cap)
Cable Glands	M20 x 1.5 exproof cable gland
Weight	2.55 kg
Mounting Apparatus	Included in the box
Complience and Warranty	
ATEX Class	II 2G Ex db IIC T6 Gb
Compliance with ATEX and IECEx Standards	EN IEC 60079-0:2018 EN 60079-0:2017 EN 60079-1:2014
Warranty	3 Years Transmitter Guarantee (Excluding Sensors)

Accessories

Stainless Steel Main Body
Stainless Steel Mechanical Cover
IP 66 Cable Gland
Calibration Adapter
Extended Sensor Cable (Max. 40 meters)

Target Gases

Catalytic Sensors:

Flammable Gases: H2, CH4, C3H8, and hydrocarbon group

Methane	CH_4	Petrol Vapors	
Propane	C_3H_8	Ethylene	C_2H_4
n-Butane	C_4H_{10}	Acetylene	C_2H_2
n-Pentane	C_5H_{12}	Acetic Acid	$C_2H_4O_2$
n-Hexane	C_6H_{14}	Butyl Acetate	$C_6H_{12}O_2$
n-Heptane	C_7H_{16}	Cyclohexane	C_6H_{12}
n-Octane	C_8H_{18}	Cyclopentane	C_5H_{10}
Methanol	CH_4O	Iso-Butane	C_4H_{10}
Ethanol	C_2H_6O	Iso-Butanol	$C_4H_{10}O$
Iso-Propanol	C_3H_8O	Iso-Octane	C_8H_{18}
Acetone	C_3H_6O	Iso-Pentane	C_5H_{12}
MEK	C_4H_8O	n-Propanol	C_3H_8O
Toluene	C_7H_8	Styrene	C_8H_8
Ethyl Acetate	$C_4H_8O_2$	Propylene	C_3H_6
Hydogen	H_2	Ksilen	C_8H_{10}

Resolution : 0.5% LEL, Repeatability: T90 : 13.5s, T50 : 6.5s

Infrared Sensors:

Carbon dioxide, flammable and refrigerent gases:

CO_2, CH_4, C3H8, hydrocarbon and R gases

Electrochemical Sensors:

Toxic Gases and Oxygen

Carbon monoxide	CO	Arsine	AsH_3
Chlorine	Cl_2	Diborane	B_2H_6
Hydrogen sulphide	H_2S	Fluorine	F_2
Ammonia	NH_3	Germane	GeH_4
Sulfur dioxide	SO_2	Hydrazine	N_2H_4
Oxygen	O_2	Hydrogen fluoride	HF
Formaldehyde	CH_2O	Hydrogen selenide	SeH_2
Nitrogen monoxide	NO	Ozone	O_3
Nitrogen dioxide	NO_2	Phosgene	$COCl_2$
THT	THT	Phosphine	PH_3
Chlorine Dioxide	ClO_2	Silane	SiH_4
Hydrochloric Acid	HCl	TBM	TBM
Hydrogen Cyanide	HCN	TEOS	TEOS

PID Sensors:

More than 500 toxic and flammable VOCs vapor/gas.
Please contact for detailed list.

MPS Sensors:

Methane, Hydrocarbons, Refrigerants Gases

Please contact us for gases not included in this list.

GD2G Series

Fixed Gas Detectors

Optimum Ex-proof Gas Detection Solution

The GD2G Series gas detectors offer an optimum solution for the detection of flammable-explosive, toxic and refrigerant gases in explosive environments. With industry-standard 4-20mA analog and digital contact relay outputs, they can be easily integrated into any control panel.

Industrial Design

The GD2G Series gas detectors are designed to operate under the most challenging conditions. Utilizing high-grade industrial-quality sensors, this series offers an optimum gas detection solution with its compact design.

Easy Commissioning

With built-in ex-proof cable glands and standard connection points, installation is simple. The sensors, fully factory-tested and calibrated, are ready for detection immediately after installation.

Accurate Detection with Multiple Alarm Levels

It uses high-quality sensors with sharp sensitivity levels that provide alerts at low and high alarm thresholds of 20–50% LEL. Additionally, it offers both analog and digital fault outputs to notify you in case of a malfunction or maintenance requirement. Regular calibration is recommended to ensure consistently accurate detection.

Technical Specifications

General Specifications	
Body	Aluminum
Weight	1 kg
Cable Glands	M20 exproof cable gland
Inputs and Outputs	
Operating Voltage	14~30V DC, 24V DC Nominal
Analog Output	4-20 mA
Relay Outputs	1st Alarm, 2nd Alarm and Fault Relays
Sensor Types	
Catalytic Pelistor	Flammable and Explosive Gases
Infrared NDIR	Flammable, Explosive Gases, CO_2 and Refrigerant Gases
Electrochemical	Toxic and Asphyxiating Gases
Operating Conditions and Mechanical Details	
Temperature	-20 ~ +60°C
Humidity	≤95% RH
Pressure	86-106 kPa
IP Class	IP65 (Can be upgraded to IP66 with optional protective cap)
Complience	
ATEX	II 2G Ex db IIC T6 Gb
IECEx	Ex db IIC T6 Gb
Accessories	
Stainless Steel Outdoor Cover Extra Glands IP66 Upgrade Cap Calibration Cap	
Model Options	
GD420: 4-20mA Analog Signal Output Model GD485: Modbus RS485 Signal Output Model	

Target Gases

Catalytic Sensors:

Flammable Gases: H2, CH4, C3H8, and hydrocarbon group

Methane	CH_4	Petrol Vapors	
Propane	C_3H_8	Ethylene	C_2H_4
n-Butane	C_4H_{10}	Acetylene	C_2H_2
n-Pentane	C_5H_{12}	Acetic Acid	$C_2H_4O_2$
n-Hexane	C_6H_{14}	Butyl Acetate	$C_6H_{12}O_2$
n-Heptane	C_7H_{16}	Cyclohexane	C_6H_{12}
n-Octane	C_8H_{18}	Cyclopentane	C_5H_{10}
Methanol	CH_4O	Iso-Butane	C_4H_{10}
Ethanol	C_2H_6O	Iso-Butanol	$C_4H_{10}O$
Iso-Propanol	C_3H_8O	Iso-Octane	C_8H_{18}
Acetone	C_3H_6O	Iso-Pentane	C_5H_{12}
MEK	C_4H_8O	n-Propanol	C_3H_8O
Toluene	C_7H_8	Styrene	C_8H_8
Ethyl Acetate	$C_4H_8O_2$	Propylene	C_3H_6
Hydogen	H_2	Ksilen	C_8H_{10}

Resolution : 0.5% LEL, T90 : 13.5s, T50 : 6.5s

Infrared Sensors:

Carbon dioxide, flammable and refrigerent gases:

CO_2, CH_4, C3H8, hydrocarbon and R gases

SF6	R-410
SF6	R-417a
R-1233zd	R-422d
R-1234yf	R-448a
R-1234ze	R-449a
R-125	R-450a
R-134a	R-452b
R-143a	R-454a
R-22	R-454b
R-227ea	R-454c
R-32	R-455a
R-404a	R-507
R-407a	R-513a
R-407f	Ethylene

Electrochemical Sensors:

Toxic and Asphyxiating Gases; CO, NH_3, H_2S, O_2, H_2.

Please contact us for gases not included in this list.

GDP F5

Portable Multi-Gas Detectors

Your Needs,

Our Expertise

The GDP-F5 portable gas detector offers superior protection, even in challenging working conditions, thanks to its advanced sensor technology that can detect five different gases simultaneously. Its high-sensitivity sensors quickly detect dangerous gas levels and alert the user with audible, visual, and vibrating warnings, ensuring maximum safety. The real-time, detailed notification screen allows operators to easily monitor gas concentrations.

Engineered for Harsh Industrial Environments

Built with durability in mind, the GDP-F5 is designed to perform reliably even under the toughest conditions. With its IP67 protection rating, it withstands water, dust, and impact with ease. The rugged, shock-absorbing housing ensures added safety against drops and heavy use, making it ideal for demanding workplaces. For challenging or confined spaces, the optional air sampling pump provides accurate and consistent gas detection. Powered by a long-life lithium battery, the GDP-F5 delivers all-day operation, keeping users protected without interruptions.

User-Friendly Experience and Long-Lasting Performance

Thanks to its ergonomic design and practicality, the GDP-F5 is the ideal solution for professionals working in the field. Its lightweight, portable design ensures a comfortable experience, even during prolonged use. Thanks to its large, clear display, all gas values can be easily monitored, enabling quick intervention in critical situations. The GDP-F5's powerful performance and durable construction deliver a reliable gas detection experience under any conditions, elevating workplace safety to the highest level.

Technical Specifications

General Features	
Dimensions	146x77x43mm
Weight	350g (diffusion type) 450g (optional pump type)
Humidity	5 ~ 95% RH (non-condensing)
Display	TFT LCD display (2 inches)
IP Rating	IP67
Controls	3 Buttons
Alarm	Visual Alarm (Red, Yellow, Green LED), Vibration Alarm, Audible Alarm (90dB @30cm)
User Options	Adjustable alarm levels, Calibration and gas test interval adjustment, Reset and gas calibration, Data download, Software update
Battery	Lithium Battery, Up to 20 Hours of Use, 6 Hours of Charging
Wireless Connection	Bluetooth
Event Logs	500 Alarm Events, 6,000 Data Records
Compliance	ATEX (ia)
Ex Marking	II 1G Ex ia op is IIC T4 Ga I M1 Ex ia op is I Ma
Warranty	2 years (excluding sensors)

Detected Gases (Default Configuration)		
Sensor 1:	Electrochemical	CO
Sensor 2:	Electrochemical	O2
Sensor 3:	Catalytic	Combustible Gases (LEL)
Sensor 4:	Electrochemical	H2S
Optional Sensors		
Sensor 1:	Electrochemical	CO + H2S
Sensor 3:	Infrared	Combustible Gases (LEL)
Sensor 3:	PID	VOC
Sensor 4:	Electrochemical	NH3
Sensor 4:	Electrochemical	Cl2
Sensor 4:	Electrochemical	NO2
Sensor 4:	Electrochemical	SO2
Sensor 4:	Electrochemical	HCN
Sensor 4:	Electrochemical	HCl
Sensor 4:	Electrochemical	H2

BELLMINI™ Series

Portable Single Gas Detectors

Easier, Stronger, and Better for Your Safety

The BELLMINI™ portable single gas detector is designed to always offer the best protection with safety at the forefront. Powerful LED lights, buzzer and vibrating alarms provide fast and effective warning of oxygen deficiency or toxic gases. The clear 1.6” wide LCD display accurately displays measured values in real time, while the low power design ensures 2 years of uninterrupted use without battery replacement.

Reliability and Durability

With its high-performance sensor technology and advanced signal processing capabilities, the BELLMINI™ single gas detector has the option to reliably detects more than 18 different gases, even in harsh environments. IP68 water and dust resistance ensures the detector is safe to use even in the harshest conditions. Designed with ultra-low power consumption, BELLMINI™ offers users long-lasting reassurance, operating for more than 2 years without the need for battery replacement. The powerful and large LCD screen provides a clear and accurate display of gas levels in real time.

Ease of Use and Easy Connectivity

The user-friendly one-button and compact design makes BELLMINI™ easy to use in any situation. Lightweight and small form factor, makes it comfortable to wear even for long periods of time. It can also connect to BELLCONNECT™ quickly and effortlessly via NFC and BLE technologies. This makes device pairing and management simpler and faster, saving time and providing ease of use. The BELLCONNECT™ app enables userfriendly setting changes, calibration and data management.

Technical Specifications

General Specifications	
Size	66x69x24mm (excluding clip) 66x69x41mm (with clip)
Weight	105g (with clip)
Humidity	5 - 95% RH (non-condensing)
Display	FSTN LCD display (1.6 inch)
IP Class	IP68
Alarm	Visual Alarm (LEDs) Vibration Alarm Audible Alarm (Buzzer; 100dB@10cm)
	(Buzzer; 100dB@10cm): Low, High, TWA, STEL
User Options	Adjustable alarm set points, Alarm Lockout On/Off, Setting the calibration and gas test interval, Zeroing and gas calibration, Data download, Software update
Self-Test	Sensor and circuit failure test
Battery	Lithium Battery Size 2/3 AA 3.6V: 24months
Wireless Connection	Bluetooth Low Energy(BLE)
Connectivity	Near Field Communication(NFC) BELLCONNECT™ App, Cloud connection Easy close-range connectivity
Event Logs	200 Alarm events, 5,000 Data logs
Complience	ATEX: Ex II 1G Ex ia IIC T4 Ga IECEx: Ex ia IIC T4 Ga KCs: Ex ia IIC T4
Warranty	2 years (excluding sensor)

Deteted Gases			
Gas	Detection Range	Resolution	Temperature
O2	0-30%Vol	0.1%Vol	-30°C to 50°C
O2 lead free	0-30%Vol	0.1%Vol	-40°C to 60°C
CO	0-1000 ppm	1 ppm	-40°C to 60°C
CO-H	0-500 ppm	1 ppm	-30°C to 50°C
CO-E	0-2000 ppm	1 ppm	-40°C to 60°C
H2S	0-100 ppm	0.1 ppm	-30°C to 50°C
H2	0-1000 ppm	1 ppm	-30°C to 50°C
SO2	0-20 ppm	0.1 ppm	-30°C to 50°C
Cl2	0-50 ppm	0.1 ppm	-20°C to 50°C
HCl	0-15 ppm	0.1 ppm	-30°C to 50°C
HCN	0-100 ppm	0.1 ppm	-30°C to 50°C
PH3	0-20 ppm	0.1 ppm	-30°C to 50°C
ETO	0-100 ppm	0.1 ppm	-20°C to 50°C
O3	0-5 ppm	0.01 ppm	-20°C to 50°C
NO	0-250 ppm	1 ppm	-30°C to 50°C
NO2	0-30 ppm	0.1 ppm	-30°C to 50°C
NH3	0-100 ppm	1 ppm	-40°C to 50°C
NH3-E	0-1000 ppm	1 ppm	-40°C to 50°C

GD4R Series

Safe Area Gas Detectors

CE EN 50194

EN Certified LPG and Natural Gas Leak Detection

GD4R Flammable Gas Detector is designed by professionals to detect and monitor LPG and Natural Gas leaks in industrial kitchens, office environments or residential areas. Made in accordance with EN 50194 product performance standards, the product is constantly alert to possible gas leaks and provides early warning of potential fire or explosion risks. It has three notification lights indicating normal operation, sensor failure and alarm conditions. The practical and safe test button allows users to easily verify the functionality of the detector at any time.

Powerful Audible Alarm

With its high sound power of 85db, it guarantees that you are aware of the fire-explosion danger in case of a possible alarm.

Relay Outputs

Thanks to its digital relay outputs, it can turn on and off the electrical devices you want without the need for an external control panel. For example, in the event of an alarm, you can automatically shut off your natural gas connection with a solenoid valve.

Reliable Catalytic Sensor

It features a long-lasting and industrial replaceable sensor capable of detecting in the 0-100%LEL range with 1% accuracy. Compared to semiconductor sensors, catalytic sensors are longer lasting and more stable.

Technical Specifications

Specifications	
Power Consumption	2.5W
Sensor Type	Catalytic (Pellistor)
Detected Gas	Methane or LPG
Operating Temperature	-10 ~ +50°C
Storage Temperature	-10 ~ +60°C
Relative Humidity	≤ 95% RH
Supply Voltage	12V DC veya 110-230V~ 50-60Hz ±10%
Alarm Sound Level	85dB at 1 meter
Protection Class	IP42
Body Material	ABS V0 Ex-proof
Sensor Lifespan	7 years
Weigh	315 gr

GDMP Series

Gas and Flame Monitoring Control Panels

Robust Gas and Flame Monitoring Solution

The GDMP Series Control Panels are designed for comprehensive monitoring and management of fire and gas detection systems. GDMP can be easily integrated into existing infrastructures via Modbus and relay outputs.

Reliability and Durability

Designed for demanding industrial applications, these panels are robust and reliable. With IP65-rated protection against water and dust and an aluminium enclosure, they offer long-lasting durability. They are built to withstand the harsh conditions typically encountered in industrial environments and provide long-term, consistent performance.

Integrated Monitoring

The GDMP Series offers an all-in-one solution for monitoring flame and gas detection with 2 digital relay inputs and up to 8 analog signal inputs. Providing a complete view of the safety situation in a single interface, this integration ensures that all aspects of fire and gas safety are covered.

User Friendly Interface

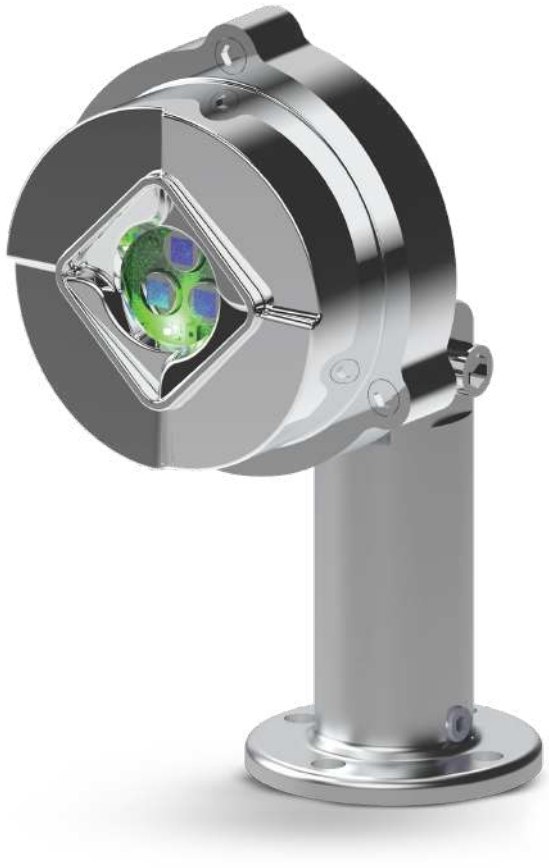
Equipped with intuitive displays, these panels provide clear and understandable information. This user-friendly approach allows operators to easily understand and respond to alarms and system status.

Technical Specifications

General Specifications	
Body	Aluminum
Display	LCD
Interface Control	Via buttons
Range Selection	Customizable depending on the sensor range
Datalog	Via USB
Input - Output	
Operating Voltage	220V AC Nominal
Digital Inputs	2 channels
Analog Inputs	2, 4 ve 8 channels
Communication	RS485, Modbus RTU Output
Relay Outputs	24V DC 2 relay outputs
Operating Conditions and Mechanical Details	
Operating Temperature	-20 ~ +60°C
Humidity	≤95% RH
Pressure	86-106 kPa
IP Class	IP65
Warranty	2 Years

FDX 3IR Series

Flame Detectors



Superior Detection, Maximum Safety

Equipped with IR3 technology, the FDX 3IR Industrial Flame Detector accurately detects hydrocarbon fires through its triple (multi-spectrum) infrared sensor design. Operating within a spectral sensitivity range of 3.91 – 5.0 µm, it effectively filters out false alarm sources such as sunlight, welding operations, and hot objects, providing high-performance protection in both indoor and outdoor environments. With excellent false alarm immunity and fast response time, it maximizes fire safety for your facility.

Superior Performance for Continuous Protection

With a 24 VDC operating voltage and dry contact relay output, it easily integrates into all systems, providing fast and reliable signaling in the event of a fire. Certified with ATEX and IECEx, the device is safely usable in hazardous areas with explosion risks. Thanks to its IP67 protection rating, it operates smoothly in temperatures ranging from -40°C to +60°C, ensuring continuous safety in harsh industrial environments. It meets high safety standards and keeps your facility protected at all times.

Technical Specifications

General Specifications	
Sensor Structure	IR3 (Triple, Multi-Spectrum Flame Detector)
Spectral Range	3.91 - 5.0 µm
Application Area	Indoor/Outdoor
Applications	Hydrocarbon Fires
Mechanical Specifications	
Body	Stainless Steel SUS304
Weight	1.1 kg
Dimentions	83 x 88.5 x 54.3 mm (W x L x H)
Cable Entry	M20
Mounting Bracket	İncluded
Wall Mounting	M6 x 4
Vertical Adjustment Angle	0 - 120°
Detection Glass	Sapphire Glass
Connection Specifications	
Supply Voltage	24 VDC nominal (18-30 VDC)
Power Consumption	10.4 mA@24 VDC
Relays	Alarm Relay (NO/COM)
Connection Specifications	
Operating Temperature	-40 ~ +60°C
Relative Humidity	≤95% RH
IP Class	IP67
Complience	
ATEX, IECEx, FM 3260, EN 5410	
Accessories	
Wall Mount Bracket Ex-proof Cable Gland	

HT2000 Infrared Sensors

Gas Detection

Superior Stability, Reliable Performance with HT2000 Infrared Gas Sensors

Our next-generation 32 mm NDIR CH_4 sensor delivers superior resolution, enhanced stability, and minimal humidity sensitivity thanks to its long optical path design. With advanced signal stability and excellent cross-sensitivity performance, it is an ideal solution for gas detector and transmitter applications.

Individually calibrated and rigorously tested for safe operation in harsh industrial environments, our sensor meets high safety standards with SIL2, ATEX, and IECEx certifications.

Advanced Technology with Easy Integration

The HT2000 features a microprocessor-based internal signal processing platform and provides linear, temperature-compensated analog and digital outputs (I^2C, UART). It can be easily integrated into your detector and transmitter designs without requiring specialized expertise in IR technology.

Thanks to its compact stainless steel housing and standard industrial pin configuration, it fits seamlessly into existing designs. With a wide operating temperature range (-40°C to +60°C), fast response time, and a 5-year service life, our sensor provides a reliable and proven foundation for your gas detection solutions.

Technical Specifications

General Specifications	
Sensor Type	NDIR
Target Gas	Methane CH_4
Detection Range	0 - 100% LEL
Repeatability	±2%
Accuracy	±1%
Response Time	T_{90} ≤ 30 s
Operating Lifetime	5 Years
Mechanical Specifications	
Body	Stainless Steel
Weight	60 g
Dimentions	31.5 x 31.5 x 8.6 mm (W x L x H) (Pin Lenght: 4.5 mm)
Electrical Specifications	
Supply Voltage	3.5 - 5.5 VDC
Current	110 - 120 mA
Warm-up Time	60 s
Signal Output	Analog (0.4 - 2.0 V), I2C, UART
Enviromental Specifications	
Operating Temperture	-40 ~ +60°C
Storage Temperature	-40 ~ +85°C
Relative Humidity	0 - 95% RH (Non-condensing)
Complience	
ATEX, IECEx, SIL2	

GDSMP Series

Sampling Panels

Accurate Gas Detection in the Most Challenging Conditions

The GDSMP Series Sampling Panels are designed to be optimized for efficient and accurate gas sampling in industrial environments. These panels are specialized for single or multi-gas analysis and are ideal for demanding industrial applications where precise gas monitoring is critical.

Superior Solution and Quality

This product family, featuring a fully stainless steel and compact design, is equipped with top-tier industrial components. As a standard feature, it includes temperature, pressure, and relative humidity sensors, industrial filters, advanced air compressor-supported filtration systems, along with other components that can be adapted to meet specific application requirements. In addition to a measurement display, these systems operate with a standard PLC, offering full control over the sampling process while meeting all necessary data requirements of the application.

Versatile Gas Sampling

The GDSMP Series, capable of detecting single or multiple gas types, is developed for gas detection in the most demanding industrial environments. Whether for routine monitoring or specialized analyses, the GDSMP Series provides reliable and precise sampling solutions in conditions involving high temperature, humidity, pressure, or dense gas concentrations..

Ease of Maintenance and Use

Designed with a user-friendly approach, these panels offer easy operation and maintenance. This user-centric design helps reduce operational errors and simplifies maintenance procedures.

Technical Specifications

General Specifications	
System Pressure Range	100 - 300 mbar
Temperature	-20 ~ +60°C
Flow Rate	0.4-1.0 l/min.
System Operating Temperature	0 ~ +50°C
Oil Filtration	Yes
Custom Filtration Size	Yes, up to 1 micron
Liquid Removal	Yes
Filtration Efficiency	99,8%+
Outputs	
PLC: Modbus, Contact Relays	
GDSFX Outputs: Analog Output, Contact Relays, Modbus RS485	
Compatible GDSFX Models	
Catalytic Pellistor	Flammable and Explosive Gases
Infrared	Flammable and Explosive Gases
Electrochemical	Toxic and Asphyxiant Gases
PID	Toxic and Flammable VOC Gases
MPS	Methane, Hydrocarbon, and Refrigerant Gases

Accessories and Spare Parts

Ex-proof Cable Gland

Specially designed cable glands for use in potentially explosive atmospheres. They ensure cables are securely and hermetically sealed, preserving the integrity of the enclosure. Two ex-proof glands are supplied with each product.

Stainless Steel Outdoor Protective Hood

Designed to protect the device from harsh outdoor conditions. Made of stainless steel, it offers corrosion resistance, durability, and long service life.

Splash Protection Cap (IP66)

An accessory designed to provide additional protection against water. The IP66 rating indicates that the cap is “dust-tight” and resistant to high-pressure water jets from any direction. It is ideal for environments where the device may be exposed to such conditions and enhances the functionality and reliability of gas detection systems.

Calibration Cap

A tool used during the calibration process of detectors. It helps deliver test gases to the sensor precisely and safely.

Magnetic Control Pen

Allows device operation through the glass panel without cutting power or opening the front cover in potentially explosive environments. Enables safe interaction while the device is running.

Karf&Scoot
Technology for Safety

R&D

Developing technologies that define safety in the field is our core mission. Karf & Scoot ranks among the top 250 companies in Turkey that allocate the highest resources to R&D. In our modern laboratories, our engineers work on new algorithms, materials, and production techniques for a wide range of industrial safety products—from gas and flame detectors to gas monitoring panels and precision sensors. In doing so, we deliver solutions that shape the future of the industry in both local and global markets.

QUALITY

We do not view quality as a “checkbox to be ticked after the product is finished,” but as a culture embedded in every step of the process. This culture begins with incoming inspection of critical subcomponents and continues through supplier audits, in-process measurement and calibration, fully traceable production records, and 100% functional testing. Before reaching the field, our gas and flame detectors, gas sensors, and gas monitoring panels also undergo environmental stress testing. Thanks to this culture, we deliver industrial safety products that offer consistent performance and can be operated with confidence from day one to the last.

INTERNATIONAL STANDARDS

Holding internationally recognized certifications is not merely a “label” for us — it is a testament to the promise we make to our customers. ISO 9001, IECEx, and other quality management systems govern our entire workflow, from design to after-sales support. Meanwhile, our products are certified with CE, ATEX, IECEx, EN 50194, and FM approvals, allowing them to be safely used in industrial environments subject to various regulations. These certifications make the Karf & Scoot brand a trusted choice for professionals around the world who prioritize safety and quality.

KARF & SCOOT

Technology for Safety

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