

System for the return of natural gas from the distribution to the transport network

Main sections

- Gas inlet (upstream omega).
 - Pressure: 4 bar(g).
 - Flow rate: 750 stmc/h.
- Activated carbon filter system with bypass capability.
- Section of analysis.
- Measurement section (based on type B 9167:2020).
- Input in compressor:
 - Suction pressure: 4 bar(g).
 - Compression pressure: >75 bar(g).
- Technical measure, not fiscal.
- Snam network entry.

Notes

- Snam network input analysis skid normally provided by Snam, not covered by this proposal.
- Compressor included in the proposal.
- To be assessed jointly:
 - After-sales service level.
 - Supply of consumables.



Plant Layout



Main components

Quality group

- n° 1 Gas chromatograph CHROMEX 400
 - Miniature, micro TCD detection technology

Automated devices for automatic remote management

- PCL Control
- Two-way valve complete with actuator

Tax measurement group - medium pressure

- n°1 Rotoid volumetric meter, MID approved,
- n°2 Volume converter type 2, two-channel, MID approved POT
- n°3 Backup data logger, IMP-8FC + ALIMP-8

Compression system

- Volumetric compressor with three cylinders not lubricated
- Power consumption: 140 kW
- Complete with remote control and control panel and cooling skid
- Outdoor installation, outside cab

Technical measurement group - high pressure

- n°1 Rotoid volumetric meter, MID approved
- n°1 Backup data logger, IMP-8FC + ALIMP-8

APIX / REGAS

REGAS
TBD

DRESSER or FMG
IGS DATAFLOW
D&D Electronic

SAFE

DRESSER or FMG
D&D Electronic

Compression system

Compression system

- Volumetric compressor with three cylinders not lubricated
- Suction pressure: 4 bar(g)
- Exhaust pressure: 76 bar(g)
- Capacity: 750 stmc/h
- Power consumption: about 140 kW
- Complete with remote control and control panel and cooling skid
- Outdoor installation, outside the cabin



Regulatory context: UNI 11885:2022

UNI 11885:2022 "Functional characteristics of gas chromatographs with a thermoconductivity installed on a network of gas transportation and distribution".

UNI 11885 establishes the characteristics functional gas chromatographs with a thermoconductivity installed on a network of gas transportation and distribution in such a way able to determine, in such a way as to cyclic, automatic and pre-set frequencies, the composition of: **natural gas** and/or, **biomethane** and/or, a **mixture of spiked natural gas hydrogen** and/or a **biomethane mixture where appropriate, hydrogen supplementation.**



Chromex 400H custom

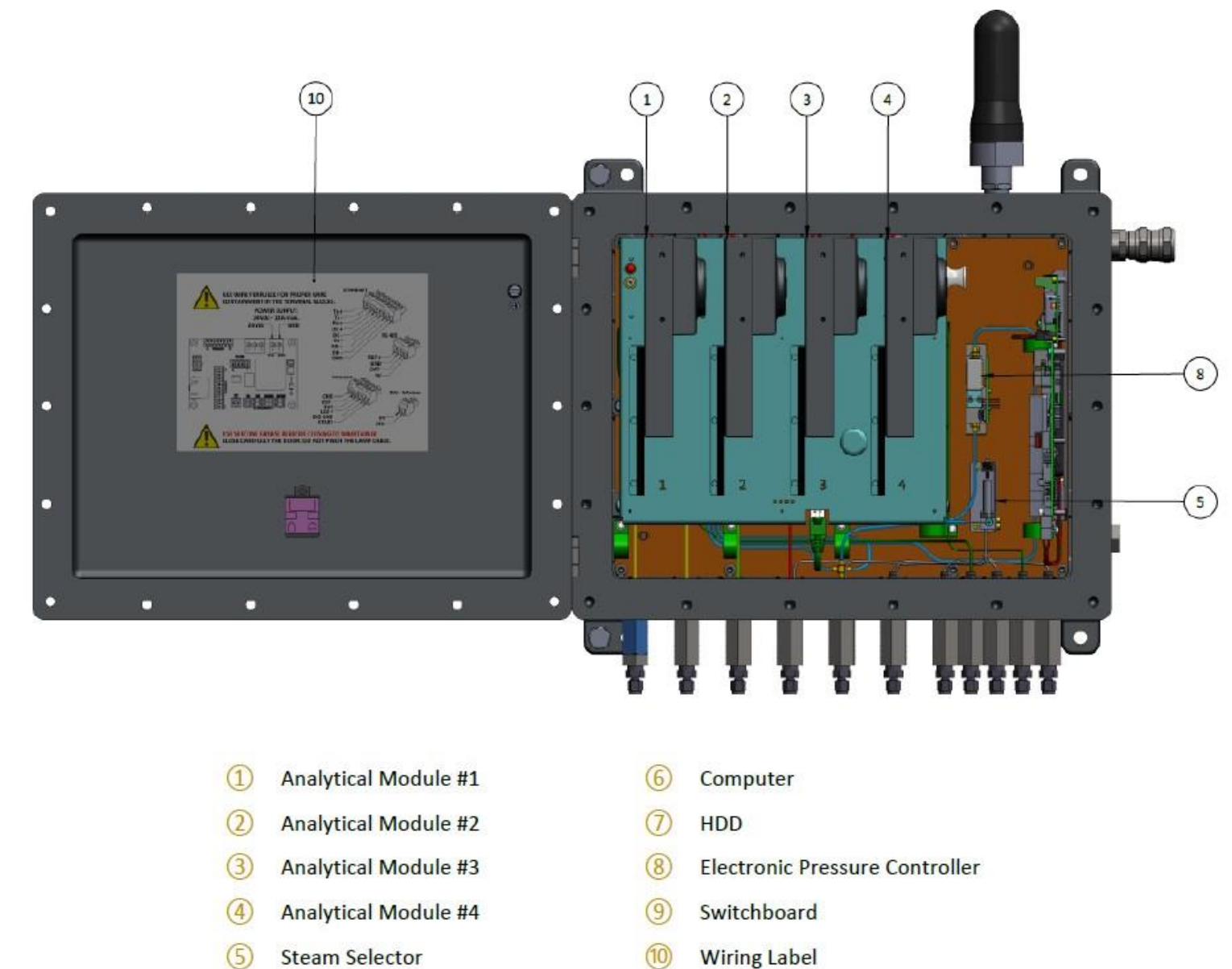
Chromex 400 is based on micro-TCD technology (a thermal conductivity), internationally patented.

- Chromex is a modular and versatile multifunctional device that incorporates **plug & miniature gas chromatography columns play** (which greatly reduce the size of system footprint)
- Chromex incorporates **up to 4 analytical modules** for alkanes, alkenes, methane, ethane, propane, iso-butane, n-butane, iso-pentane, n-pentane, hexanes and above, anhydride for the determination of PCS, analysis of concentrations of hydrogen (up to 25%), H₂S, COS, nitrogen and oxygen.
- **ATEX** 2014/34/EU certificate - zone 1 gas + H₂.



Chromex: advantages

- Certificate for PCS / HHV measurements of natural gas and biomethane (with specific configuration) according to **OIML R140 Class A / WELLMEC / ISO6976**.
- Analysis of different compounds according to the **UNI/TS** standard **11537:2019**, **UNI 9167** and resolution **512/2021/R/Gas**
- Hydrogen ready gas chromatograph up to 25% H2
- GC technology that ensures the highest performance and reduced analysis time (one measurement every 5 minutes) -> frequent and accurate measurements
- **GRETA** consolidated technology base (350+ installations)
- Maximum reliability and minimum maintenance costs
- Extremely optimised energy and gas carrier consumption = OPEX reduced to a minimum
- Limited emissions

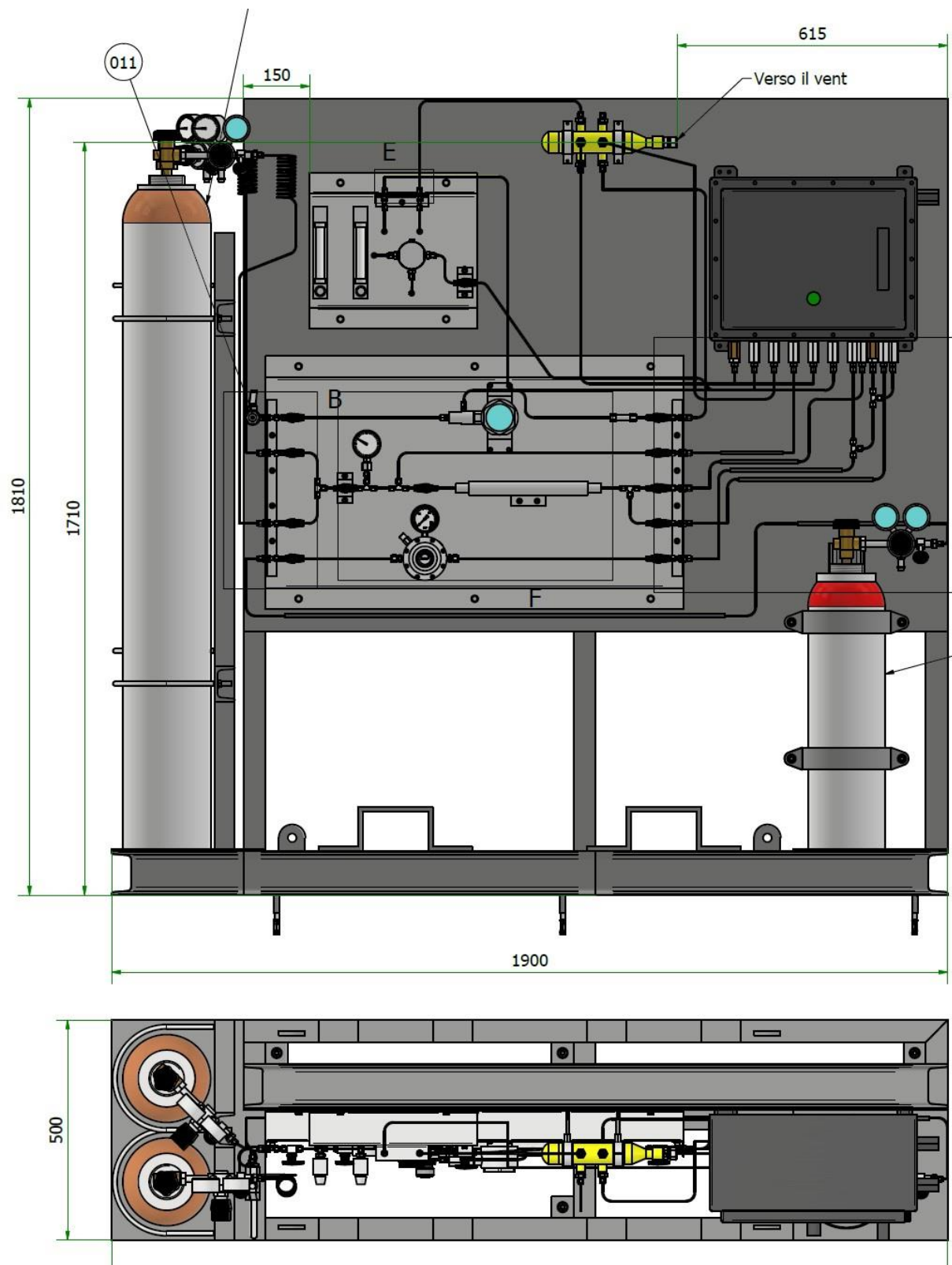
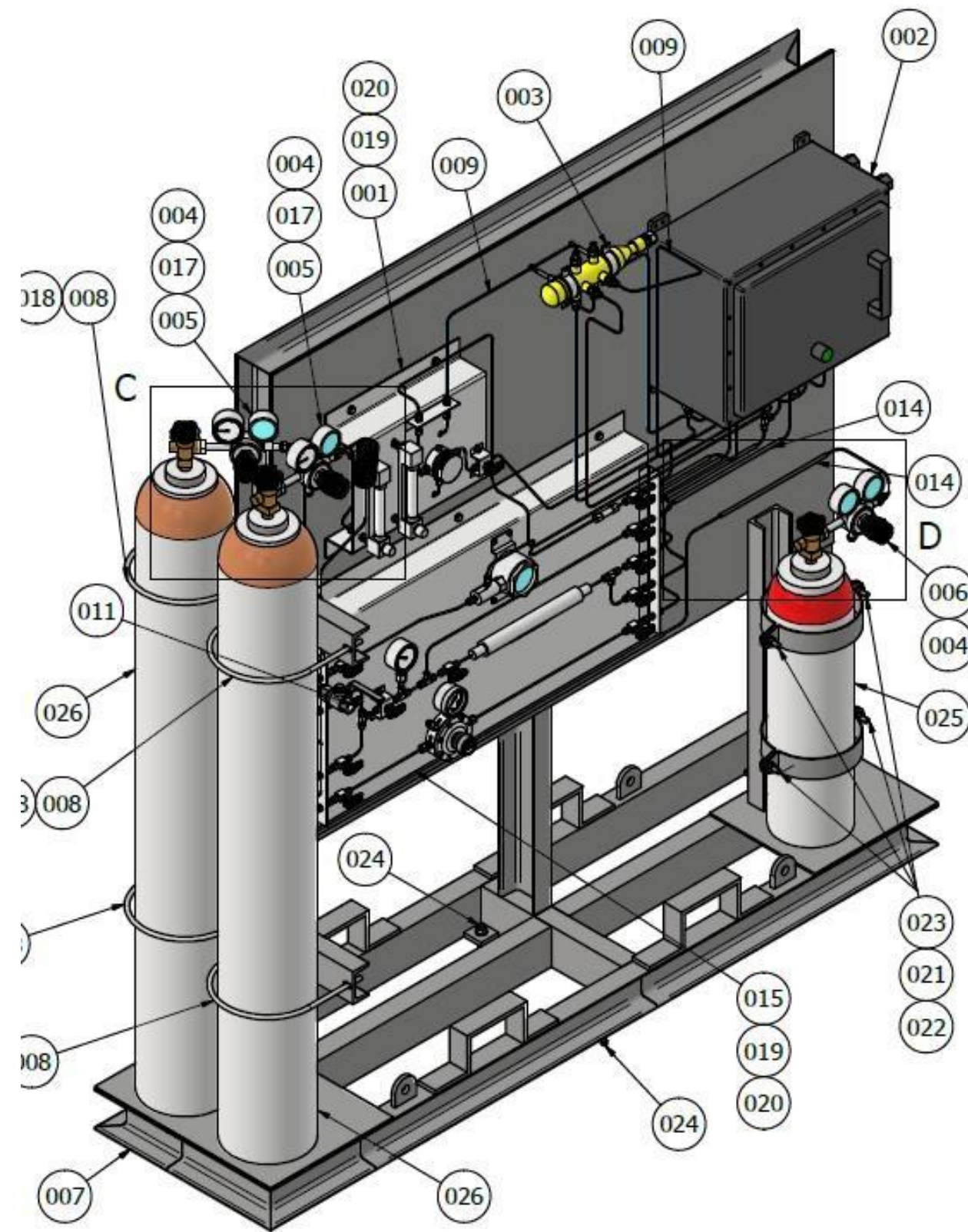


Chromex Configuration PCS + H2 custom



System configuration	Functionality
ChromEx 400 w/o WiFi [RAK303952]	Higher Calorific Power, Lower Calorific Power, Wobbe Index, Relative Density, Compressibility factor
MK10-TCD-2μL-PPU10-PPU1-F2 [MOD302674]	N ₂ +O ₂ , CH ₄ ,CO ₂ concentration
MK10-TCD-20μL-PPU10-PPU1-F2 [MOD302678]	H ₂ S, COS concentration
MK10-TCD-2μL-MS5A15-PPU5-R2 [MOD303795]	O ₂ , N ₂ concentration

Analysis skid with Chromex 400



Other Regas' products

INGRID 2.0

Odorization
automatic
evolved



REGASPHERE

Digital platform for
the management of
a multi-gas network

BIO-REMI

Input cabins of
biomethane on a
network gas



PLEXOR

Smart
maintenance of
REMI cabins



HYCON
Plug & play solution
for the production of
green hydrogen



EMMA 2.0

Advanced
management pre-
heating



GRETA

Online CG analysis of
odorant



Installations, stations
and thermal power
plants for the gas
treatment

