VESCOM NG

1. INTRODUCTION

1.1 VESCOM NG is an electronic device for converting and processing gas volumes of type 2, i.e. with external temperature and pressure transducers and separate computer.

It is associated to:

- a metric meter with LF or HF pulse emitter (**volumetric model**);

- a primary diaphragm element with differential pressure transmitters (**venturi model**).

Provides measurement of gas volumes in cubic meters (m^3) at the basic (reference) conditions +15°C e 1.01325 bar.

In the volumetric version, VESCOM NG has obtained the Certification from a Notified Body for the recognition of Conformity to the MID Directive n ° 2014/32 / EU concerning measuring instruments.

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2. TECHNICAL SPECIFICATIONS

2.1 Gas calculation

Two different flow rate calculation:
- Volumetric: ISO 12405-1
- Venturi Type: ISO 5167 / AGA 3

Three algorithms for the calculation of compressibility:
- ISO 12213-2 (AGA 8)
- ISO 12213-3 (SGERG 88)
- AGA NX 19

Density calculation:
- ISO 6976

2.2 Inputs

- 6 4-20 mA analog inputs with 16-bit A/D converter.
- 1 resistive input for 4 wires PT100 sensor
- 1 frequency input for LF meter (2 Hz max).
- 1 frequency input for HF meter (10 KHz max).
- 1 frequency input for HF densitometer (10 KHz max).
- 4 digital inputs to manage battery and/or valves status alarms.
- 2 inputs with HART protocol for the signal acquisition of both P and T transmitters

2.3 Serial Ports

- 2 RS232/RS485 for ultrasonic meter and gas chromatograph.
- 1 RS232 for service.
- 1 RS232 for GSM modem.
- 1 RS422/RS485/Ethernet with RTU MODBUS protocol for communication with DCS.
- 1 RS232 for printer.

2.4 Outputs

- 4 insulated analog 4-20 mA output with 16 bit A/D converter.
- 4 SPDT digital relay outputs.
- 2 pulse outputs for the repetition of the measured volumes.
- 1 USB port in DEVICE configuration
- 1 USB port in HOST configuration with support for DOS (FAT 16/32) files.
- 1 ethernet port for LAN connection via TCP/IP protocol.

2.5 Display

Monochromatic LCD 5.7” with LED backlight.

QVGA resolution (320x240 pixel)

2.6 Environmental specifications

- Operating temperature: -10°C / +45°C.
- Storage Temperature: -20°C / + 50°C.
- Protection Class: IP55.

2.7 Power Supply

- Main voltage 230Vac (24 Vdc in rack version).
- Backup Battery 12V 10Ah for an autonomy of at least 12 hours

3. REMOTE READING AND CONTROL

VESCOM NG meets all requirements of UNI 9167 and it is already equipped with CTE communication protocol (upgradable with future developments), according to UNI TS 11291:2009.
The remote reading of VESCOM NG is possible via an external GSM modem.
It is possible to connect VESCOM NG to a LAN.
See Operation Manual for further details

4. USER INTERFACE

A large LCD display grant users to visualize information concerning calculated data and operating parameters.
A keypad (with 27 buttons) includes a numerical keypad and buttons to directly access all functions and/or most important data visualization.
On the left hand side, a cap with a seal hide a button that enables modification of system parameters. There is also a service RS232 port, Ethernet connector, USB device connector and a USB host connector.

5. INSTALLATION

VESCOM NG contains “linked equipment [Ex ia]” and must be installed in a safe area, in compliance with the installation and maintenance requirements applicable to area that have to be protected from the risk of external explosion originating from the presence of gas (EN 60079-14, EN 60079-17 or other national standards).

The linked equipment (diode safety barriers with separated ATEX certification) are used to interface INTRINSECALLY SAFE sensors installed in the field (hazardous area).

Dedicated barriers are used for each sensor.

VESCOM NG should be installed in an environment protected from weather effects and away from possible high electrical tensions, or magnetic fields.

Electric and querying connections must always guarantee an accurate precision and stable voltage, reducing electrical interference, by shielding any connection and an effective grounding.

VESCOM NG is supplied in a rack 19” version, wall mounting or alternatively flood-standing enclosure

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