Pietro Fiorentini

MODUS

Dual channel volume converter with data logging capabilities

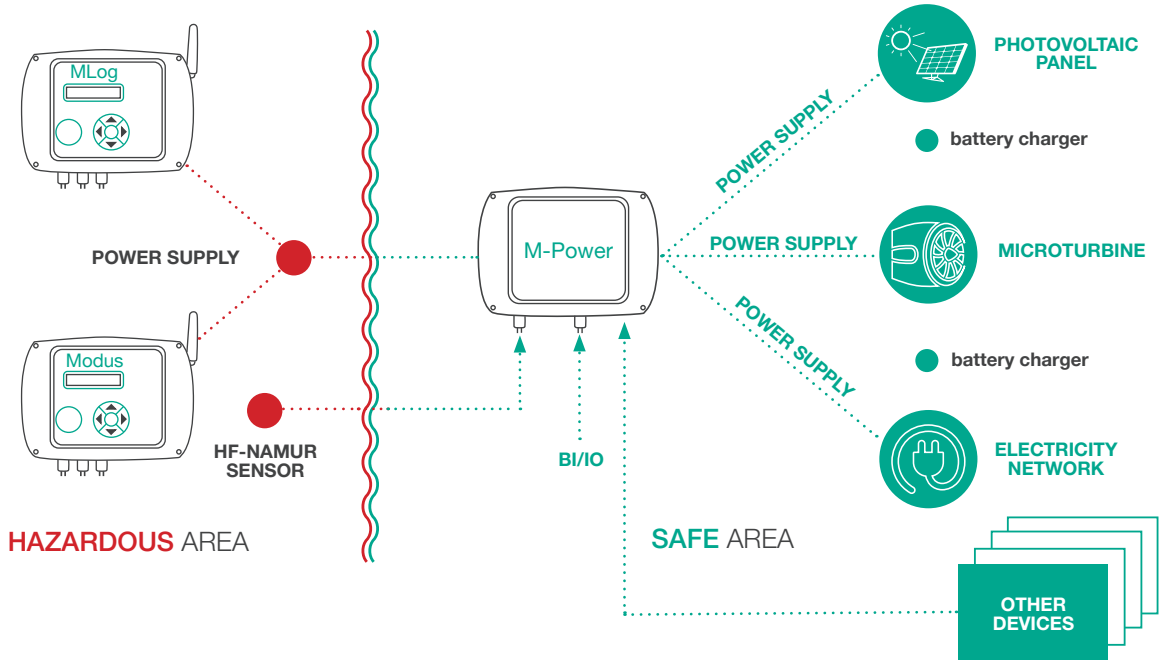
Modus is a MID certified Electronic Volume Converter with integrated communication module suitable to installation in ATEX Zone 0 classified areas

Modus comes with 2 PTZ EVC channels each with: 1 pulse input from the flow meter, 1 input from a pressure sensor and 1 input from a temperature sensor.
The device is designed to be remotely controlled by the centralised data collection system (SCADA/SAC) using communication protocols such as Modbus and UNITS 11291-3 (CTR) protocols.
Modus is a battery operated very Low Power device with a typical battery lifetime of more than 5 years.
For energy demanding application, such as real time “always-on” communications, the device can be powered by the associated intrinsic safety barrier **MPower**.
MPower can then be powered by:

- AC Electricity Mains
- PV panels
- Microturbine systems

Installation and local setup are supported by user friendly local communication software Modus Configurator, for timeless alignment to operational SCADA database.

Modus operates over -25°C to + 60°C temperature range and supports a wide range of field configurations for the best fit to application requirements; whenever supplied by MPower external power supply it can interface NAMUR (IEC 60947-5-6) emitters.



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Technical Characteristics

Measurement channels	2 independent channels structured as follows: • LF volume input up to 3 Hz • Input from piezoresistive absolute pressure sensor with 3 m standard cable, accuracy < 0.25%, standard process connection ¼ G male • PT1000 class A temperature sensor input, 3 m standard cable. The second channel also accepts HF signals up to 5 KHz MID Certification, Annex MI-002, in compliance with EN12405 1:2005+A2:2010 Conversion factor in compliance with EN12405
Z Formulas	UNI-EN-ISO12213-2 (AGA8-DC92) | UNI-EN-ISO12213-3 (SGERG-88) | AGA-NX19
Temperature range	-25 °C ÷ +60 °C
Pressure range	0.8÷2 Bar A | 0.8÷3.5 Bar A | 0.8÷10 Bar A | 1÷20 Bar A | 6÷80 Bar A
Analogue inputs	Also available are: • 1 input from absolute or relative piezoresistive pressure sensor with 3 m cable standard, accuracy < 0.25%, standard process connection ¼ G male • 2 generic inputs 0-5 V
Digital inputs	10 voltage-free contacts
Digital outputs	4 DO Open Collector
Case	IP65 / IP67 polycarbonate enclosure (EN 60529) Dimensions 210 x 150 x 85 mm Weight Kg. 1.6
Environmental conditions	Temperature range: -25 °C ≤ T ≤ +60 ° C Humidity range: 10% - 93% without condensation
Power	With internal battery: Battery life > 5 years with standard communications. External: using the external MPower power supply (ATEX certified).
Local interfaces	Alphanumeric display 2x20, 5 keys Optical port compliant to EN 62056-21 (ZVEI)
Wireless communication	2G GSM/GPRS/SMS
Communication protocols	Modbus RTU, UNITS 11291-3 (CTR)
Atex certification	**Version A**: with integrated modem and battery power supply **Version T**: with integrated modem and external power supply Ⓔx II 1 G Ex ia IIA T3 Tamb = -25°C ÷ +60 °C **Version B**: without modem and with battery power supply Ⓔx II 1 G Ex ia IIB T3 Tamb = -25°C ÷ +60 °C Certificate No. 0425 ATEX 004371-00 X
MID certification	Certificate No. IT-025-21-MI002-NB2213

*** Specifications are subject to change without notice.**

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