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MICRO-ZDM

Compact Electronic Volume Corrector for Diaphragm Type Meters

RECOGNISED
CE-302

KEY FEATURES

- **Approved for legal metrology. EN 12405 and MID compliant**
- **Software compliant to Welmec 7.2**
- **Certified for use in hazardous locations**
- **Suitable for diaphragm type meters, compact, protected design**
- **Designed for G4-G25 size meters. Can fit any meter make/model**
- **Very high accuracy pressure and temperature sensors**
- **Ultra low long term drift**
- **Built-in precision barometric pressue sensor**
- **Optical pulse detection. Tamper proof.**
- **Provides information for identifying meter sizing issues**
- **Helps identify high peak value issues within network**
- **Scheduled periodic reporting via the GPRS interface**
- **Configurable cryout function via GPRS or SMS**
- **Remote monitoring, configuration, diagnostics, firmware update**
- **Large hourly, daily, monthly archiving capacity**
- **Alarm and event logging**
- **Built-in optical communication interface**
- **Nano power consumption. 10 years typical battery life**
- **Graphics LCD**
- **RTC with synchronization and daylight saving support**
- **Maintenance free, protected design. No exposed cables or tubes**
- **Easy to use configuration and programming software**

MICRO-ZDM is a compact volume corrector and smart metering unit specially designed to meet the new metering requirements of gas distribution utilities for their domestic and commercial segments.

It defines a new standard for ease of use while delivering unmatched performance and flexibility.

MICRO-ZDM incorporates wide range of features for reliable metering and information flow to achieve fast, efficient and cost effective network operation and management.

Approved for Legal Metrology

MICRO-ZDM has been approved by NMI Netherlands for legal gas metering as per the EN 12405 standard. This involves a complete set of stringent test procedures to verify that the product performs its functions and maintains performance under severe environmental conditions.

Instrument software is also compliant to Welmec 7 Issue 5 of the MID 2004/22/EC/2011 and includes extensions L, S, T, and I.

Identify Meter Sizing Issues

MICRO-ZDM monitors flow on real time basis, compiles and archives consumption information. This information is later used by distribution management systems to determine oversized and undersized meters to enable distribution utilities to undergo efficient meter replacement campaigns.

Identify High Peak Values in Network

Identify the point of time, duration and frequency at which the hourly consumption volume spike/peak occurs and also the value of these peaks, based on threshold values.

Broad Range of Calculations

Calculations can include volume, density, heating value, compressibility, energy and mass as per the AGA 8, NX19, GERG, ISO 6976, and AGA 5 standards.

Extensive Remote Communication Features

MICRO-ZDM offers comprehensive features for modern, Internet based remote access via GPRS networks. All configuration, reporting, monitoring and diagnostics facilities are also available remotely via designated communication channels, to form a modern supervisory distribution management system which requires very low number of visits to remote stations and fewer personnel for network operations and maintenance.

MICRO-ZDM supports multiple, simultaneous TCP connections. This means number of host systems in different locations may access a remote instrument without influencing each other. This allows concurrent operation of multiple remote monitoring systems in different nature, such as utility SCADA systems, distribution management systems, and other legal monitoring systems belonging to upper level government organizations.

MICRO-ZDM can be configured to establish automatic and simultaneous connections with number of remote locations for periodic reporting and information exchange. It can transfer complete measured, calculated and archived data sets accumulated between reporting periods, and execute tasks scheduled and associated by system administrators or other utility personnel.

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BASIC SPECIFICATIONS

POWER

Primary (EVCD) battery	3.6V certified battery, 10 years min. under the specified operating conditions
GPRS/GSM battery	Primary battery

GENERAL

Ambient temperature	-30˚C...+70˚C operating, -25˚C...+70˚C classification accord. to MID 2004/22/EC
Relative humidity	95% non-condensing
Dimensions	158H x 143W x 41D mm
Weight	0.3 kg
Housing	IP54 ABS
Display	64 x 128 graphics LCD
Keyboard	1 front panel optical key
Mechanical environment class	M2
Electromagnetic environment class	E2

CERTIFICATES AND APPROVALS

Measurements and calculations	NMI EN12405-A2, MID 2004/22/EC (T11547)
Safety	KIWA ATEX II 1 G Ex ia IIC T3 Ga (KIWA 19ATE0056 X)
CE	IEC 61000-4-2 (ESD), IEC 61000-4-3 (EM), IEC 61000-4-4 (EFT), IEC 61000-4-5 (Surge), IEC 61000-4-6 (Conducted), IEC 61000-6-4 (Emission)

COMMUNICATIONS

GPRS/GSM option board (P3)	QUAD band GSM/GPRS, TCP/IP client or server (up to 4 concurrent TCP connections)
Antenna	2.4 dBi internal antenna standard.
SIM card holder	Internal micro SIM
Optical interface	Full duplex, 9600 bps, 8 bits, 1 stop bit, no parity

SENSORS

Pressure

Measuring range	10...2000 mbara (0.15PSI...29.0PSI), 700...1400 mbara classification accord. to MID 2004/22/EC
Absolute accuracy	≤ 1 mbar (-20˚C...+85˚C), 3 mbar max (-30˚C...+70˚C) (MID 2004/22/EC)
Relative accuracy	± 0.1 mbar (700 mbar...1000 mbar)
Long term stability	± 1 mbar / year
Response time	≤ 17 msec
Operating temperature range	-40˚C...+85˚C

Temperature

Measuring range	-40˚C...+85˚C
Absolute accuracy	≤ 0.1 ˚C (-20˚C...+70˚C) with 2nd order compensation
Long term stability	≤ 0.01 ˚C / year
Response time	< 2 sec
Repeatability	< 0.01 ˚C RMS

Volume

Type	Optical sensor, triple color sensing, 2Hz max.
Pulse verification	Yes
Magnetic tamper detection	Magnet proof

TAMPER DETECTION

Front cover	Yes

Note: Some of the features may be omitted in some product variants.