

ROOTS® Micro Corrector - MC2

The smallest, lightest gas volume corrector available on the market today!

Models PTZ + Log, P + Log and T + Log



ROOTS® Micro Corrector, Model PTZ + Log, ID Mount Version

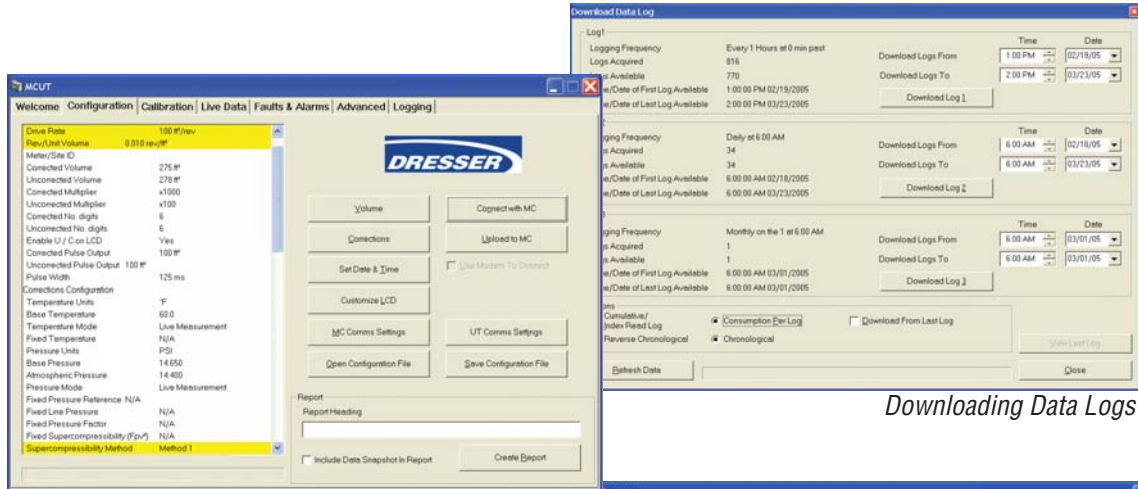
This second generation Micro Corrector has the enhancements customers have been asking for. Using the proven MC platform, features were added that make it the easiest corrector to use. Functions were added that enhance data logging and lower operation and maintenance costs, while retaining the great features introduced in the original product.

The ROOTS® Micro Corrector, Model MC2, can function as an instrument drive (ID) or wall mount corrector. As a wall mount model, it can also function as an economical pressure and/or temperature recorder. It's the only low cost corrector rated for Division I hazardous locations.

Features include:

- **Automatic Bi-Directional Index Drive Capability** is a feature that automatically senses the rotation of the Instrument Drive meter it is mounted on. This patented mechanism is unique to the ROOTS® Micro Corrector. No need to physically change the gearing inside the ID housing! Stock one unit for either clockwise or counterclockwise rotation.
- **1 to 3 Data Logs** provide for years of historical information and are configurable in increments from 1 minute to 1 month.
- **Audit Log** maintains a record of configuration and calibration changes.

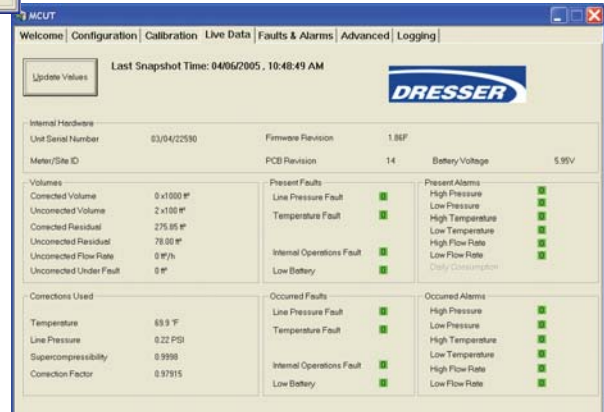
- **Alarm and Fault** activity is displayed in the Data Log and Audit Log reports.
- **E²PROM** provides non-volatile storage of recorded data and corrector configuration, regardless of battery condition.
- **MS Excel[®] Formatted Reports** allow easy manipulation and sharing of information.
- **Simple User Terminal Software** allows for easy configuration, calibration and data downloads.



Configuring the MC2

Downloading Data Logs

- **Live Data Screen** allows you to query the corrector either serially or via a modem to see the current conditions at the meter site, including a real time display of the corrector's battery pack voltage.



Live Data Screen

Available Pressure Transducers:

Micro Correctors with pressure fitted transducers are available with either gauge or absolute pressure transducers in the following ranges:

- 0-30 PSI (0-2 bar) Gauge and Absolute
- 0-180 PSI (0-12 bar) Gauge and Absolute
- 0-350 PSI (0-24 bar) Gauge
- 0-435 PSI (0-30 bar) Absolute only
- 0-1000 PSI (0-70 bar) Absolute only

Temperature Probes:

Two different temperature probes are available, either of which can be fitted with a 5 or 10 foot long armored cable. The smaller 2" probe can be installed in the differential tap of the rotary meter or in small diameter pipe. For large diameter piping, an 8-1/4" probe is also available.

PERFORMANCE

Resolution:

Volume: 0.01 ft³ (0.01 m³)

Pressure: 0.01 psi (1 mbar)

Temperature: 0.1° F (0.1° C)

Supercompressibility (Fpv²): 0.0001

Correction Factor: 0.00001

Accuracy -40° F to 140° F (-40° C to 60° C):

Pressure: ±0.25% reading

Temperature: ±0.9° F (0.5° C)

MC2-PTZ: ±0.5% corrected volume

MC2-P: ±0.35% corrected volume

MC2-T: ±0.25% corrected volume

Long Term Stability:

Pressure: 0.1% FS/yr non-cumulative

Temperature: 0.3° F (0.2° C)/yr
non-cumulative

E²PROM DATA LOG MEMORY:

Time-stamped Entries: up to 3756 (depending on the number of Parameters logged)

Parameters: Corr Vol, Uncorr Vol, Fault Vol, P, T, Avg Rate, Peak Rate, Corr Factor

BATTERY:

Sealed Pack: 5-years nominal life

Low Battery Reserve: 2-months minimum

INPUTS:

Volume:

Instrument Drive: Universal ID CW or CCW rotation, compatible with rotary, turbine and diaphragm meters.

Wall Mount: Form-A switch, mechanical reed or semiconductor, compatible with all ROOTS low frequency pulsers.

Pressure: Proprietary semiconductor strain gauge

Temperature: ITS-90 Platinum 100Ω RTD
α=0.00385

LCD DISPLAY:

18 user selectable parameters

PULSE OUTPUTS:

Corrected, Uncorrected, and Alarm & Fault:

Loop Voltage: 5-15 Vdc

Loop Current: 10 mA maximum

Pulse Width: 125, 187, or 312 mS

Switch off Resistance: > 2 Mohms

Switch on Resistance: <10 ohms

Isolation: 2,500 Vdc

ENVIRONMENT:

Operating Temperature:

-40° F to 140° F (-40° C to 60° C)

Storage Temperature: -58° F to 176° F
(-50° C to 80° C)

Humidity: Up to 95% sustained outdoor exposure

ENCLOSURE:

NEMA 4X (IP66)

INTRINSIC SAFETY

(includes Sealed Battery Pack):

Class-I, Division-1, Group D:

CSA Approval No. 1224451

Zone 0: EEX ia IIC T4 Tamb = -40° C to 60° C

Class-I, Division-1, Group A, B, C, D: BAS98ATEX 1083

ELECTROMAGNETIC/RADIO FREQUENCY IMMUNITY:

FCC Class B: Meets EMI/RFI immunity at 10 V/m, 0.1 to 1,000 MHz

EN50081-1 and EN5088-2

Other:

ISO-9001, CE Mark



Other Available Micro Corrector Model - IMCW2

Ordering:

The MC2 can be ordered as either:

- An instrument drive mount version corrector.
- A wall or pipe mount version corrector.

For P and PTZ versions:

- Optional piping kits are available for convenient connection of external pressure connections.
We offer piping kits with various lengths of stainless steel tubing and two different pressure ratings.

Pressure Piping Kits - approved for use to 350 psi G

| Part Number | Length of SS Tubing |
|-------------|---------------------|
| 051416-320 | 32" |
| 051416-420 | 84" |
| 051416-520 | 120" |

Pressure Piping Kits - approved for use to 1480 psi G

| Part Number | Length of SS Tubing |
|-------------|---------------------|
| 051416-310 | 32" |
| 051416-410 | 84" |
| 051416-510 | 120" |

- Temperature probes are available with 5 foot or 10 foot long armored cables, and in 2 inch or 8-1/4 inch insertion lengths.
- Thermowells available in sizes 1/4-NPT x 2, 1-NPT x 2, 1-NPT x 4, and 1-NPT x 6. All dimensions are in inches.

For T versions:

- Temperature probes are available with 5 foot or 10 foot long armored cables, and with 2 inch or 8-1/2 inch insertion lengths.
- Thermowells available in sizes 1/4-NPT x 2, 1-NPT x 2, 1-NPT x 4, and 1-NPT x 6. All dimensions are in inches.

A variety of pulse output connectors are available:

- One metal 6-pin Mil-Spec twist lock connector.
- One plastic cable-gland connector.

The MC2 will be shipped with a factory standard configuration unless the customer specifies otherwise. Please consult your customer service representative for a copy of our customer configuration worksheet.

A Sealed Battery Pack is included and will provide a nominal 5-years of reliable corrector operation.

New users will want to order the User Terminal Software and one or more communication cables to allow for local configuration, calibration, and data log retrieval. The cables are available in 6, 25, and 50 ft. lengths.

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