

# MFC-CB™

## Control Box for MFCs and MFMs



### PURPOSE / APPLICATIONS

MFC-CB is a compact and versatile, stand alone unit for setting and reading analog mass flow controllers (MFC) and mass flow meters (MFM). Its front panel keypad and display make it suitable for manual, bench top operation. It also integrates into automated, computer controlled systems using its RS232 or IEEE-488 interface.

MFC-CB is the standard analog voltage and current setting and measuring component in **DHI** molbox RFM™ flow calibration systems. It can also be useful as a stand alone device in a variety of measurement and test systems that use analog MFCs or MFMs.

### DESCRIPTION

MFC-CB is a stand alone control unit for setting and reading voltage and current to and from MFCs and MFMs on two channels simultaneously. An optional MFC Switchbox allows switching between up to five devices on each channel that can all be continuously powered.

A 4 x 4 keypad and 2 x 20 character display support local operation. Standard RS232 and IEEE-488 interfaces allow remote communication. An additional RS232 interface (COM2), is available for pass through communications to another device.

Current measurements are made by dropping the voltage over a precision 250 ohm resistor.

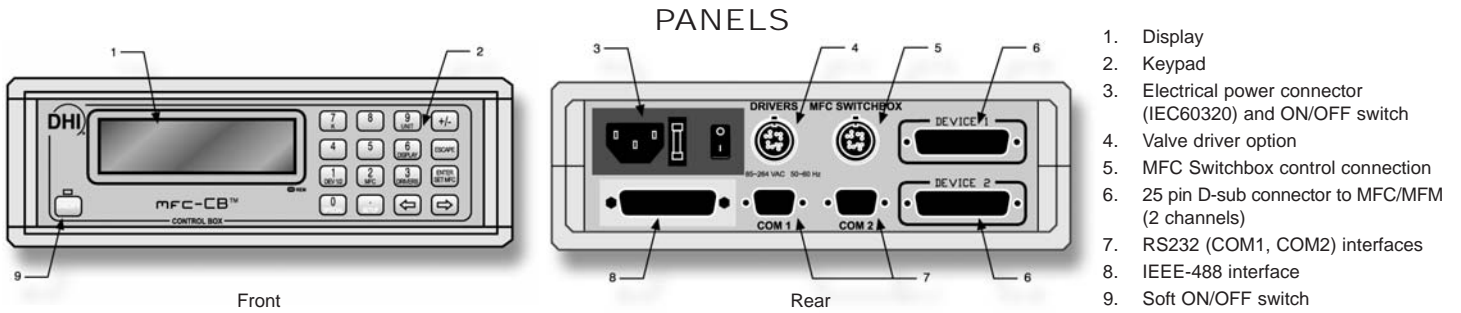
The set point output is automatically corrected based

### FEATURES

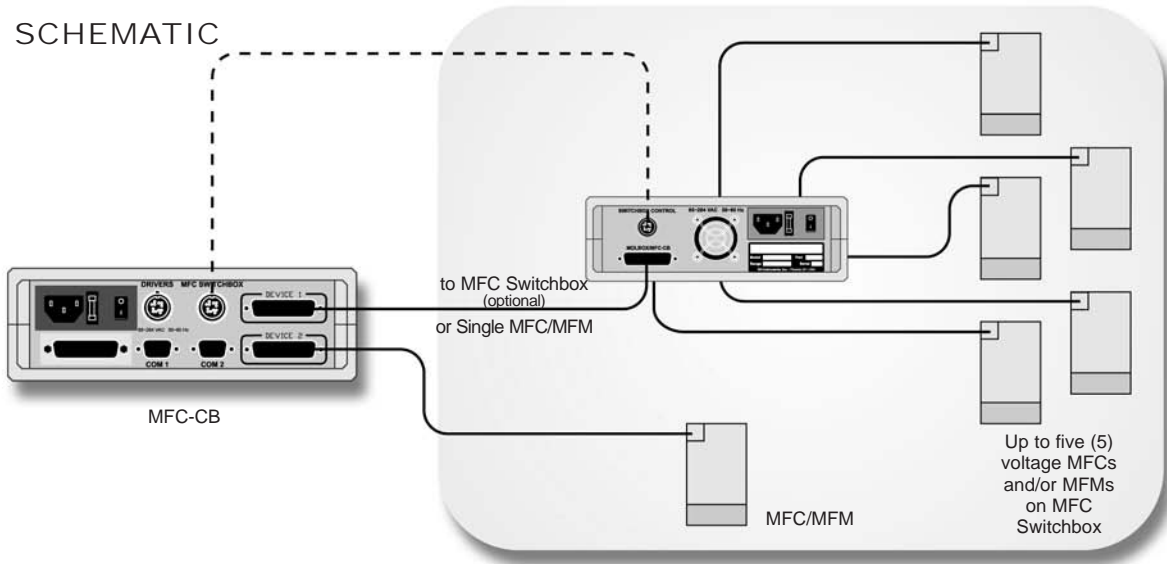
- Set and read 0 to 5 V or 4 to 20 mA on two (2) channels simultaneously
- Complete front panel local control and remote operation via RS232 and IEEE-488 interfaces
- Includes advanced features such as two (2) channel sum, difference and ratio
- Displays in V, mA, % FS and flow units
- Handles gas conversion (K) factors automatically
- Switch each channel between five (5) channels using an MFC Switchbox™
- Common look, feel and protocol with other **DHI** molbloc/molbox™ flow products
- Compatible with COMPASS® for molbox software to set up automated molbloc/molbox based flow systems

on an independent sense line measurement at the device being set.

MFC-CB uses MFC profiles as a convenient way to support advanced features. MFC profiles specify electrical signal and flow range allowing MFC-CB to support set point entry and measurement display in electrical, % FS or flow units. In addition, two units of measure can be displayed simultaneously and the sum, difference and ratio of the two control channels can be determined. MFC gas conversion factors can also be entered and applied automatically.



## SET UP SCHEMATIC



## SPECIFICATIONS

- Power Requirements:** 100 to 240 VAC, 50 to 60 Hz  
38 VA max. consumption
- Power Supply Output:** ± 15 VDC @ 1 Amp max, 0.5 Amp per channel
- Weight:** 2 kg (4.4 lb)
- Dimensions:** 22.5 cm W x 7.5 cm H x 20.0 cm D  
(8.85 in x 2.95 in x 7.87 in)
- MFC Connectors:** (2) 25 pin female DSUB metal case socket
- Valve Driver Option:** (8) 12 V outputs
- Voltage Range:** 0 to 6 VDC
- Current Range:** 4 to 20 mA
- |                             | <u>Resolution</u> | <u>Uncertainty</u> |
|-----------------------------|-------------------|--------------------|
| <b>Voltage Output:</b>      | 0.1 mVDC          | ± 0.015 % FS       |
| <b>Voltage Measurement:</b> | 0.1 mVDC          | ± 0.015 % FS       |
| <b>Current Output:</b>      | 0.4 µA            | ± 0.025 % FS       |
| <b>Current Measurement:</b> | 0.4 µA            | ± 0.025 % FS       |

## ORDERING INFORMATION

MFC-CB is delivered complete with:

- (2) MFC/MFM connection cable kits
- Calibration cable
- Power cord
- Operation and Maintenance Manual
- Calibration Report

**Product Designation:** MFC-CB, MFC Control Box

**Part Number:** 401710

## OPTIONAL ACCESSORIES

Valve Driver Option	P/N 401382
Rack Mount Kit, RPM3/molbox RFM	P/N 401465
MFC Switchbox, for molbox1/MFC-CB	P/N 401346
Cable, MFC (Standard Edge Connect)	P/N 102533
Cable, MFC (w/Connect Kit)	P/N 401230
Cable, RS232, 9 pin, 6 ft	P/N 100847

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Due to a policy of continual product improvement, product specifications, descriptions and features are subject to change without notice.

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