

FLUKE®

Calibration

MFC-CB™

Control Box for MFCs and MFMs

Technical Data



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 RS-232 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.

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 RS-232 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 on an independent sense line measurement at the device being set.

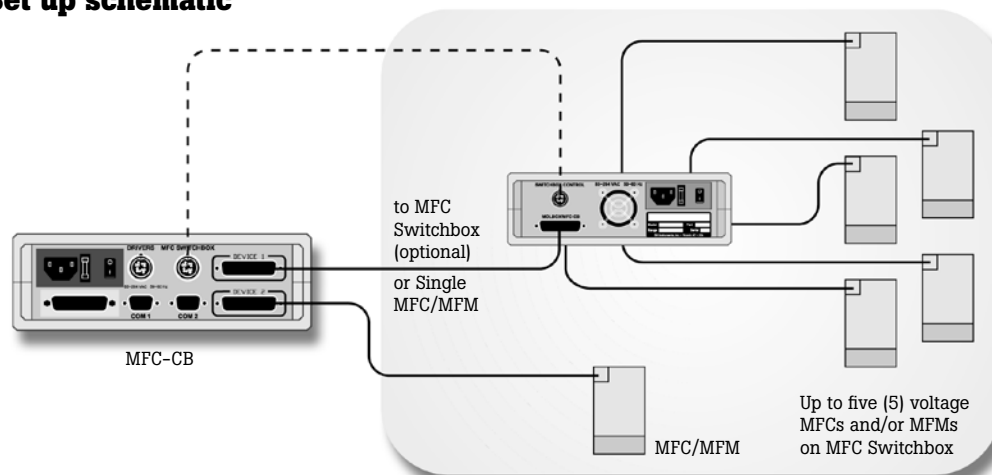
MFC-CB uses MFC profiles as a convenient way to support advanced features. MFC profiles specify electrical signal and flow range allowing MFC-CB to support set point entry and measurement display in electrical, % FS or flow units. In addition, two units of measure can be displayed simultaneously and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

See the molbloc/molboxGas Flow Standards catalog for information on DHI's complete line of gas flow calibration instrumentation.

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 RS-232 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

Set up schematic



General specifications

Power requirements	100 V to 240 V ac, 50 Hz to 60 Hz, 38 VA max. consumption	
Power supply output	± 15 V dc @ 1 Amp max, 0.5 Amp per channel	
Weight	2 kg (4.4 lb)	
Dimensions (W x H x D)	22.5 cm x 7.5 cm x 20.0 cm (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 dc to 6 V dc	
Current range	4 mA to 20 mA	
	Resolution	Uncertainty
Voltage output	0.1 mV dc	± 0.015 % FS
Voltage measurement	0.1 mV dc	± 0.015 % FS
Current Output	0.4 µA	± 0.025 % FS
Current Measurement	0.4 µA	± 0.025 % FS

Ordering information

Model

MFC-CB, MFC Control Box

Includes

(2) MFC/MFM connection cable kits
Calibration cable
Power cord
Operation and maintenance manual
Calibration report

Accessories

Valve Driver Option

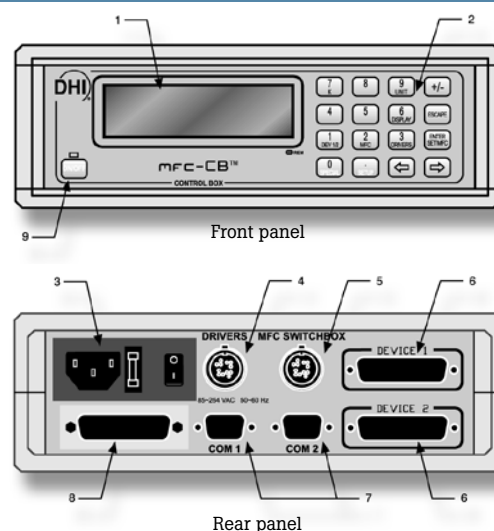
Rack Mount Kit, RPM3/molbox RFM

MFC Switchbox, for molbox1/MFC-CB

Cable, MFC (standard edge connect)

Cable, MFC (w/connect kit)

Cable, RS-232, 9 pin, 6 ft



1. Display
2. Keypad
3. Electrical power connector (IEC60320) and ON/OFF switch
4. Valve driver option
5. MFC Switchbox control connection
6. 25 pin D-sub connector to MFC/MFM (2 channels)
7. RS232 (COM1, COM2) interfaces
8. IEEE-488 interface
9. Soft ON/OFF switch

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