



Cal-MAT™ 4040 Series Computerized Gas Dilution System



Description

The Matheson Cal-MAT™ 4040 Series is a computerized gas dilution system that automatically generates precise gas standards for rapid multi-point calibration of analyzers. The gas mixes can be used to generate precise gas calibration standards, create gaseous atmospheres, or produce gas mixes for analytical research or production purposes. The Cal-MAT™ 4040 can produce gas concentrations from percent to ppb levels for single or multi-point calibration.

The system consists of two components, the 4040 Series instrument and the user's personal computer. The user interface is a Microsoft Windows application that communicates with the Cal-MAT™ system via an RS-232 serial interface.

The Cal-MAT™ 4040 consists of a single chassis supporting up to four mass flow controllers. Two mass flow controllers are standard; additional mass flow controllers may be ordered as options.

Features

- Broad range of dilution ratios (up to 1,000:1) allows the user to significantly reduce the number of cylinders needed to perform compliance tests
- Modular design allows for additional circuits to be added, increasing system flexibility
- Internally stored mass flow controller calibration tables improve accuracy
- User definable cylinder library allows for easy selection of frequently used gas cylinders.
- Each cylinder may contain an unlimited number of component gases, with automatic K-factor calculation

Software

The Windows based software for the Cal-MAT™ 4040 offers four basic modes of operation:

- Concentration Mode: Allows the user to create a blend by entering the target gas concentrations for each source gas cylinder and the desired total output flow for the mix.
- Divider Mode: Allows the user to operate the instrument as an automated ten step gas divider
- Flow Mode: Allows the user to specify the flow rate of each gas cylinder
- Program Mode: Provides the ability to program the instrument for unattended operation. Programs can be recalled and run in any sequence, at various times/dates.

Specifications

Accuracy:	From 10-100% of full scale flow
Concentration:	±1%
Flow:	±1%
Repeatability:	±1%
Warm-up Time:	30 minutes
Inlets:	1/4" Swagelok
Outlet:	1/4" Swagelok
Operating Pressures at Inlets	
Minimum:	10 psig (69 kPa)
Recommended:	25 psig (173 kPa)
Maximum:	75 psig (518 kPa)
Wetted Surfaces	
Tubing:	Electropolished 316 stainless steel
Mass Flow Controllers:	Stainless steel
Seals:	Viton
Operating Temperatures:	32-122°F (0-50°C)
Dimensions (W x H x D):	17" x 4-1/4" x 20" (43 cm x 11 cm x 51 cm)
Electrical:	110 to 240 VAC, 50/60 Hz
Electronics:	12 Bit A/D and D/A conversion RS-232 serial interface
Software:	Instrument control software (supplied on 3-1/2" floppy disks)
PC Requirements:	IBM PC or compatible (486-33 or higher) Microsoft Windows 3.1 (or higher) 8 MB RAM 10 MB hard disk space 3-1/2" floppy drive RS-232 communication port
Shipping Weight:	18 lbs with 2 mass flow controllers 23 lbs with 4 mass flow controllers

Ordering Information

Please contact Matheson Technical Services for ordering assistance.