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## Precise auto-calibration of monitoring devices

Dilution Module – DIM 200

### **Microprocessor controlled gas calibration**

The DIM 200 provides calibration gas at specified concentration levels for precise calibration of monitoring devices. The calibration gas is generated by diluting a source calibration gas with zero gas (e.g. nitrogen or purified air). For high accuracy all gas flows are precisely controlled using digital mass flow controllers. On request, the DIM 200 can supply sample gas, zero gas and span gas at multiple concentration levels.

The menu-driven user interface allows for easy set-up of the DIM 200. The current level, the corresponding dilution factors and all status information will be indicated on a large and back-lighted LCD display.

### **Automated calibration of monitoring devices**

The DIM 200 can be controlled locally or remotely via Modbus RTU protocol. Calibrator setup, control and status monitoring is fully integrated into the AMA System Control Software. This allows for periodic validation and/or calibration of single and combined AMA Online GC Systems as well as other monitoring devices.

## TECHNICAL DATA

### General

Enclosure	19" plug-in case
Height	3 height units
Depth	460 mm
Weight	6 kg
Mounting	designed for cabinet/rack mounting
Ambient temperature	0°C to 40°C
Humidity	5% to 95% relative humidity, non-condensing
EMC	CE-marking, conformity with EMC-guidelines 2004/108/EG

### Instrument supply

Power supply	100 – 240 VAC
Line frequency	50 - 60 Hz
Power consumption	max. 200 W
Supply gases	<ul style="list-style-type: none"><li>• Zero gas (purified air or N<sub>2</sub>), 3 bar</li><li>• Source calibration gas, 3 bar</li><li>• Sample gas</li></ul>
Supply connections	1/8" bulkhead union for calibration gas and sample in/out 1/4" bulkhead union for zero gas and bypass

### Gas flow control

Source calibration gas	Mass flow controller, 2 to 100 sccm/min, accuracy $\pm 0.5\%$ of reading
Zero gas	Mass flow controller, 100 to 5000 sccm/min, accuracy $\pm 0.5\%$ of reading
Dilution range	1 ... 2500
Supplied gases	Digitally controlled solenoid valve to supply either sample gas, zero gas or span/calibration gas at sample out port.

### Operation

Module set-up	Menu driven user interface for set-up and operation
Display	Large and back-lighted LCD display to indicate module status, selected level, names of analytes, concentrations and dilution factors
Data entry	Capacitive touch keys
Operation modes	Local control or remote control via Modbus RTU

### Communication

Communication ports	2 x RS-485 for field bus communication via Modbus RTU
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### Options

Sulfinert® coated calibrator version\* - recommended for calibration/monitoring of hetero-organic compounds, which might interact with metallic surfaces, such as sulfur-organic compounds

\*Sulfinert® is a registered trademark of RESTEK Corp., USA

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