



VDM300  
Vapor Delivery Module

# DI Water Vapor Delivery Module VDM300

## Vapor Delivery

## High Accuracy Water Vapor Delivery

### Overview

The Brooks VDM300 vapor delivery module is a self contained module for the highly accurate delivery of undiluted, ultra high purity, deionized (DI) water vapor. The power efficient design allows for low temperature, ultra high purity vapor generation without carrier gas. The VDM300 utilizes a proven vapor delivery technique and combines it with advanced digital control and integrated diagnostic features in a small, convenient package.

### Product Description

Designed for advanced strip and post metal etch passivation processes, the VDM300 delivers improved accuracy, wide control range and lower power consumption compared to flash evaporation systems.

Based on proven thermal mass flow measurement techniques, the VDM300 produces vapor in a passivated titanium vessel in a non-super heated vapor stage, reducing the aggressive effects of deionized water, for improved reliability and cleaner operation.

The VDM300 offers both analog (default) and EtherCAT (optional) communication interfaces (selectable at time of order). In addition, it provides user friendly data logging and diagnostic features via an independent Micro USB service port and intuitive graphic user interface.

## Features and Benefits

Features	Benefits
Direct water vapor measurement with superior flow accuracy	Based on proven, reliable thermal mass flow measurement and control technique
Connects directly to the house Deionized Water supply	Highly tolerant of varying water supply pressure
Operates at lower temperatures (non-super heated state)	Improved corrosion resistance
Optimized design for flushing and draining	Ensures cleaner operation

## Product Specifications

Performance Specifications <sup>1</sup>	Description
Full Scale Ranges (H <sub>2</sub> O)	3000 sccm
Turndown Ratio	20:1
Step Response Time	≤ 2 seconds (±2% of setpoint)
Accuracy	±1.0% of setpoint (> 10% full scale); ±0.2% of full scale (5-10% full scale setpoint)
Linearity	±0.5% of full scale
Repeatability	±0.2% of full scale
Temperature Coefficient	0.05% F.S. per °C (zero and span)
Valve Shutdown	<0.5% F.S. (water vapor)

### Electrical

Communication	Analog or EtherCAT
Connections	15-pin D-Sub and dual RJ-45
Input Signals	Flow setpoint (0 to 5 Vdc) Start up/drain
Output Signals	Flow output (0 to 5 Vdc) Ready to use
Power	DC: ±15 Vdc ±5% @ 1.2 amp AC: 230 Vac, 50/60 Hz, 290 watts nominal
Diagnostic Port	Micro USB

### Mechanical

Fittings	See Model Code for list
Weight	Dry: 15lbs Wet: 16lbs
Mounting Orientation	Vertical (inlet down)

### Environmental

Maximum Outlet Pressure	200 Torr
DI Water Supply Pressure	10 to 40 psig (20 psig recommended)
DI Water Quality	UHP: ≥18 mega ohm-cm
N <sub>2</sub> Purge Pressure	10 to 40 psig (20 psig recommended)
Ambient Temperature Range	15°C to 45°C
Humidity	0 to 95% RH, non-condensing

### Certifications

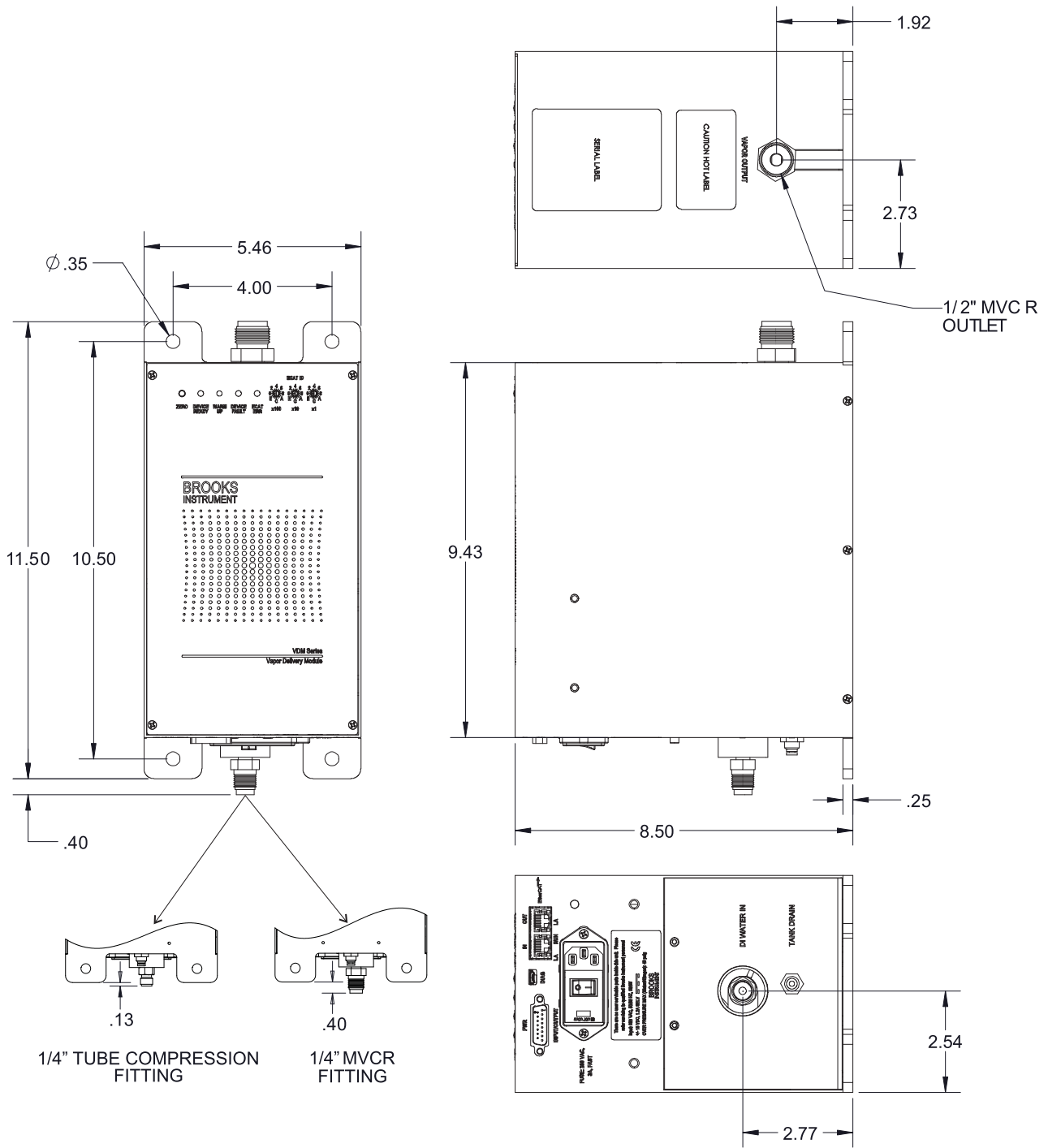
Electromagnetic Compatibility	Fully compliant to Directive 2014/30/EU (EN: 61326-1:2013)
Low Voltage	Fully compliant to Directive 2014/35/EC (EN: 61010-1:2010)
RoHS	Fully compliant to Directive 2011/65/EU
REACH	Fully compliant to Directive EC 1907/2006
SEMI E54.20-1108	Standard for Sensor/Actuator Network Communication for EtherCAT

1. All performance specifications apply only in the ready state, ready light on.

#### Special conditions for safe use:

- A. To ensure full EMC protection the ferrite core included with the device (Würth Electronics Inc Part Number 74271131) must be installed to the control cable.  
B. To ensure full EMC protection a shielded AC power cable and a shielded control cable (<30 m. length) must be supplied by the user.

# Product Dimensions



VDM300 Dimensions

## Model Code

Code	Description	Code	Code Description
I.	Base Model Code	<b>VDM3</b>	Vapor Delivery Module
I.	Fluid	<b>W</b>	DI Water
III.	Flow Range	<b>3000</b>	3000 sccm
IV.	Supply Voltage	<b>A</b>	230 Vac, 50/60 Hz
V.	Fluid Inlet Fitting	<b>1</b>	1/4" VCR Male
		<b>2</b>	1/4" Tube Compression
VI.	Vapor Outlet Fitting	<b>A</b>	3/8-1/2" VCR Male
VII.	Mounting	<b>1</b>	Standard Backplate
VIII.	Pinout Options	<b>L</b>	With Low Level Alarm
		<b>N</b>	Without Low Level Alarm
IX.	Customer Special Request	<b>XXXX</b>	CSR Number

Note: Devices will ship with latest firmware unless otherwise specified.

### Sample Model Code

I	II	III	IV	V	VI	VII	VIII	IX
<b>VDM3</b>	<b>W</b>	<b>3000</b>	<b>A</b>	<b>1</b>	<b>A</b>	<b>1</b>	<b>L</b>	<b>XXXX</b>

## Brooks Service and Support

Brooks is committed to assuring all of our customers receive the ideal flow solution for their application, along with outstanding service and support to back it up. We operate first class repair facilities located around the world to provide rapid response and support. Each location utilizes primary standard calibration equipment to ensure accuracy and reliability for repairs and recalibration and is certified by our local Weights and Measures Authorities and traceable to the relevant International Standards.

Visit [www.BrooksInstrument.com](http://www.BrooksInstrument.com) to locate the service location nearest to you.

### START-UP SERVICE AND IN-SITU CALIBRATION

Brooks Instrument can provide start-up service prior to operation when required. For some process applications, where ISO-9001 Quality Certification is important, it is mandatory to verify and/or (re)calibrate the products periodically. In many cases this service can be provided under in-situ conditions, and the results will be traceable to the relevant international quality standards.

### SEMINARS AND TRAINING

Brooks Instrument can provide seminars and dedicated training to engineers, end users, and maintenance persons.

Please contact your nearest sales representative for more details.

Due to Brooks Instrument's commitment to continuous improvement of our products, all specifications are subject to change without notice.

#### TRADEMARKS

Brooks ..... Brooks Instrument, LLC

All other trademarks are the property of their respective owners.



### Global Headquarters

**Brooks Instrument**  
407 West Vine Street  
Hatfield, PA  
19440-0903 USA

Toll-Free (USA): 888-554-FLOW  
T: 215-362-3500  
F: 215-362-3745

[BrooksAM@BrooksInstrument.com](mailto:BrooksAM@BrooksInstrument.com)

A list of all Brooks Instrument locations and contact details can be found at [www.BrooksInstrument.com](http://www.BrooksInstrument.com)

© Copyright 2017 Brooks Instrument, LLC All rights reserved. Printed in U.S.A.

**BROOKS**<sup>®</sup>  
INSTRUMENT