Tylan VC-4900/VC-4900M Vapor Controllers

Designed for the demanding requirements of low vapor pressure liquid delivery

Product Profile

Process Values

Designed specifically to meet the exacting requirements of today's semiconductor and industrial processes, the Tylan VC4900 vapor controllers represent a step forward in the delivery of low vapor pressure liquids. Until now, either a large footprint mass flow controller or a liquid flow controller was needed to deliver these materials to the process environment. The Tylan VC4900 vapor controllers enable the delivery of organometallics such as tetraethoxysilane (TEOS), trimethylphosphate (TMP) and trimethylborate (TMB) with pressure drops as low as 6.7 kPa (50 Torr).

Features

Ultralow pressure drop
Optional remote electronics and heater
Balanced power load
High temperature calibration
Field serviceable
Proven high-performance electronics package
Normally-open or normally-closed solenoid valve
CE marked

Product Features	*Product Benefits*
Ultralow Pressure Drop	The Tylan VC4900 vapor controller incorporates a large diameter Sensor tube, an enlarged valve orifice and a high stroke valve to maximize the conductance of the plumbing. This enables high flows at lower pressure drops than a standard MFC.
Optional Remote Electronics and Heater	At temperatures over 50 °C the electronics should be remoted in order to assure proper performance of the flow controller. The Tylan VC4900 vapor controller is available with a remote electronics option to allow for operation to 100 °C. The Tylan VC4900 vapor controller is calibrated at the operating temperature, minimizing the calibration shift due to a change in am-bient temperature. To prevent condensation of the vaporized liquid in the vapor controller, it should be heated to at least 10 °C hotter than the vaporizer. This can be aided by the external vapor controller heater which is available as an option.
High-Performance Electronics	The Tylan VC4900 vapor controller incorporates Tylan's proven electronics, providing a balanced power load to minimize common mode rejection problems and greatly reduce flow sensitivity to cable lengths and power supply variations. The electronics also offer selectable autozero and reduced ambient temperature coefficients for increased flow stability.

Tylan VC-4900/VC-4900M Vapor controllers - Ordering Information

Performance

Full Scale (N2 equivalent)	10 sccm – 30 slpm
Turndown Ratio	20:1
Step Response Time	≤1.5seconds
Accuracy	± 1.0% full scale
Linearity	± 0.5% full scale
Repeatability	± 0.2% full scale
Pressure Coefficient	Upstream Pressure 50 to 100 Torr 100 to 200 Torr 200 To 800 Torr
Temperature Coefficient	0.05% per °C (zero and span)
Attitude Sensitivity	< 0.25% @ 90° C without autozero

Mechanical

Valve	Normally-closed solenoid
Materials	316L stainless steel, 420 ss, PFA Teflon
Leak through the valve	<2% full scale
Leak Integrity	VC-4900 : 1 x 10^{-9} atm-cc per sec (He) inboard VC-4900M : 1 x 10^{-10} atm-cc per sec (He) inboard
Weight	1.1 Kg (2.5 lb)

Electrical

Supply Voltage	± 12 VDC to ± 18 VDC
Supply Current	110 mA nominal (125 mA max @ ± 18 VDC)
Power Consumption	3.5 watts @ ± 15 volts
Input/Output Signal	0-5 VDC
Option(15pin D sub)	4-20mA DC
Supply Current	130 mA nominal (145 mA max @ ± 18 VDC)

Environmental

Operating Temperature	0 – 50° C (ambient and gas) 0 - 100°C with remote electronics
Humidity	0 – 95% RH, non-condensing
Maximum Inlet Pressure	11.5 bar (150 psig)
Differential Pressure	Customer Specified

Note: In accordance with SEMI Standard E12-91, Standard Temperature is 0° C and Standard Pressure is 760 mm Hg (14.7 psia).

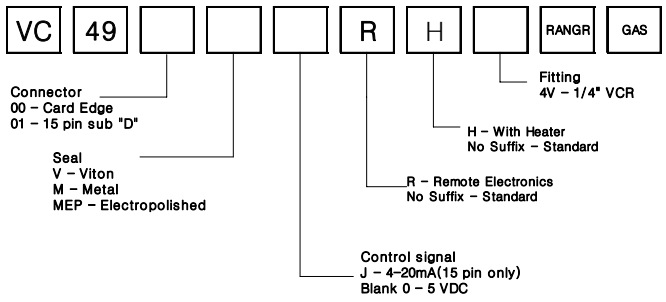
Electrical Connection

	Card Edge	15Pin "D"	9Pin "D"		Card Edge	15Pin "D"	9Pin "D"
+ 15 VDC	4	5		Az INHIBIT	J	3	
COMMON	C	10		VALVE TEST (± 15 VDC)	D	12	
-15 VDC	F	6		VALVE OFF	L	15	
0-5 V Out	3	2		OVERRIDE			
COMMON	2	1		4-20 mA IN		7	
0-5 V IN	A	8		4-20mA OUT		4	
COMMON	8	9		CASE GND	1	14	
V REF	6	11		VALVE VOLTAGE (0-7 VDC)			
PRESS. IN	5	3					
Az STORE	K						

Consult our applications specialists with any questions. * Optional

Kalrez and Viton are trademarks of DuPont dow Elastomers, L.L.C.
Swagelok is a trademark of Crawford Fitting Company.
Teflon is a trademark of E. I. du Pont de Nemours and Company
VCO and VCR are trademarks of Cajon Company

VC-4900/VC-4900M Ordering Information



Dimensions