# THERMAL PROCESSING


**Application:**

- Glass Industry
- Thermal Processing

## MDV systems for surface-mix burners

Made in Germany

Product of WITT

www.wittgas.com

GOV

let's Be One


**MDV gas metering systems for the flexible production and flow control of fuel gases, oxygen or air; especially designed for surface-mix burners.**

**Benefits**

- the flexible arrangement of metering valves (2 or 3 gases) provides the flexibility to meet the gas supply requirements of various types of processing machinery
- subsequent changes of machine parameters, e.g. capacities or number of burners, can be easily accomplished because of the modular design
- all parameters can be adjusted with the burners in sight due to the installation of the metering valves close to the burners
- the perfect repeatability of the parameter setting senables the initial setting of the burners before actually starting the process. This results in reduced set-up times as well as in minimised cost of rejects during start-up.
- low assembly cost due to very convenient assembly of mixing and metering valves without any additional pipe work, brackets or housings
- integrated WITT safety technology to prevent dangerous flashbacks or back burns into the gas supply system protecting life and equipment

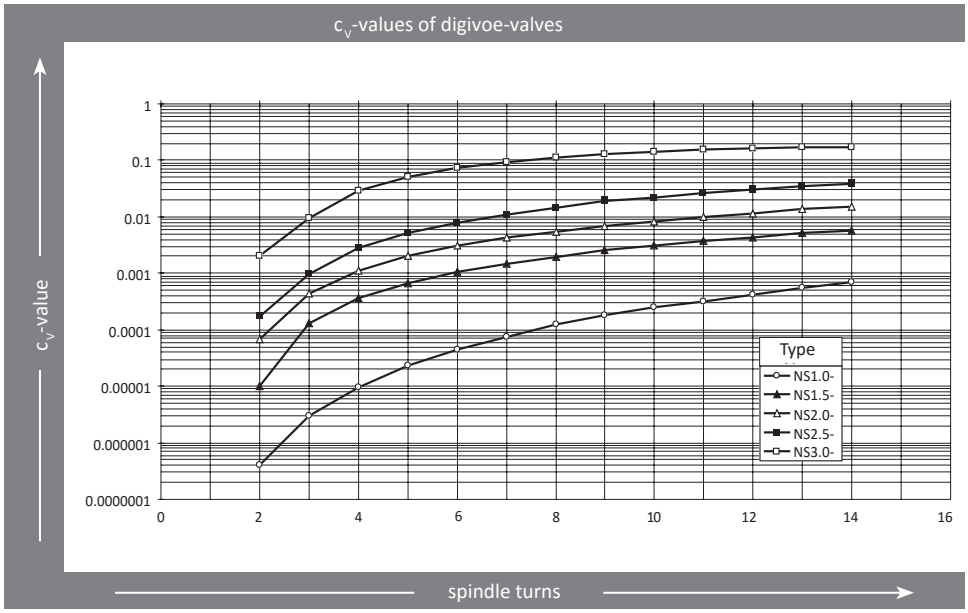
**Please indicate the individual gases as well as number and capacities of the required burners when ordering!**

ViVANGAS
Control and Safety
Solution - Engineering- Equipment

| | |
|---|---|
| **Type** | MDV Systems for Surface-Mix Burners |
| **Gases** | fuel gases such as natural gas, methane, propane, hydrogen,acetylene with oxygen and/or air |
| **Mixing range** | dependent on the gases |
| **Gas inlet pressures** | 0.3 to max. 10 bar |
| **Gas outlet pressures** | dependent on the back pressure of the burners |
| **Flow capacity (air)** | approx. 10 NI/min to 1,000NI/min<br>(other quantities on request) |
| **Repeatability** | better ±1% abs. |
| **Gas connections** | dependent on valve block size |
| **Material** | aluminium, brass, stainless steel |
| **Weight** | dependent on number of valves |
| **Dimensions (HxWxD)** | dependent on number of valves |
| **Shut-off valves** | solenoid valves,24 V DC or 230 V AC |
| **Approvals** | Company certified according to ISO 9001<br>CE-marked according to:<br>- EMC 2004/108/EC<br>- Low Voltage Directive 2006/95/EC |

## FLOW CALCULATION OF DIGIVOE-VALVES

### Characteristic curve

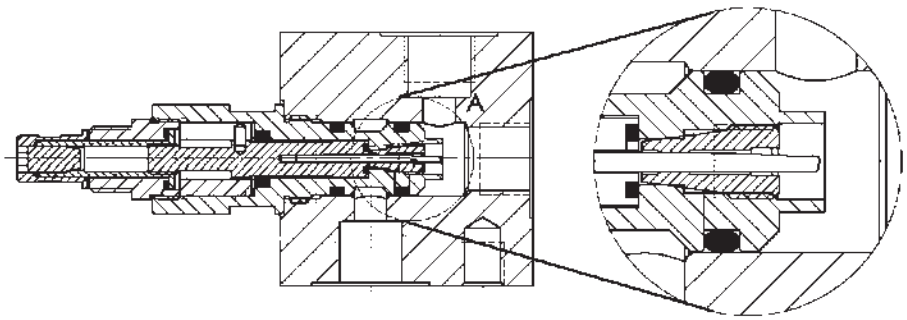



### Formulas

| Pressure drop | **Gas flow in $Nm^3/h$** |
|---|---|
| $\Delta P < \frac{Pv}{2}$ | $Qn = \frac{Cv \cdot 514}{\sqrt{\frac{\rho n \cdot \vartheta n}{\Delta P \cdot Ph}}}$ |
| $\Delta P > \frac{Pv}{2}$ | $Qn = \frac{Cv \cdot 257 \cdot Pv}{\sqrt{\rho n \cdot \vartheta n}}$ |

| Symbol | Description | Unit |
|---|---|---|
| Qn | **Gas flow** | $Nm^3/h$ |
| Kv | **Flow coefficient from curve** | $Nm^3/h$ |
| ΔP | Pressure drop = Pv-Ph | bar |
| Pv | Inlet pressure | bar absolute |
| Ph | Outlet pressure | bar absolute |
| ρn | Density at norm conditions: 0 °Celsius, 1013 hPa | $Kg/Nm^3$ |
| ϑn | Gas temperature upstream the valve | Kelvin |

### Sectional drawing



## Gas control equipment

- Gas mixing systems
- Gas metering systems
- Gas analysers
- Leak detection systems
- Gas pressure vessels
- Engineering of customised systems

## Gas safety equipment

- Flashback arrestors
- Non-return valves
- Quick COUPLINGS
- Safety valves
- Stainless steel devices
- Gas filters
- Pressure regulators
- Lance holders
- Ball valves
- Automatic hose reels
- Test equipment
- Accessories
- Customised safety devices

# ViVANGAS

Level 28-01, Integra Tower, The Intermark
348 Jalan Tun Razak, 50400 Kuala Lumpur.

Phone: +603-2775 9754-6
Fax: +603-2182 9797

letstalk@ViVANGAS.com
www.ViVANGAS.com