

*valvario®*



VAS, VCS



EAC

PL

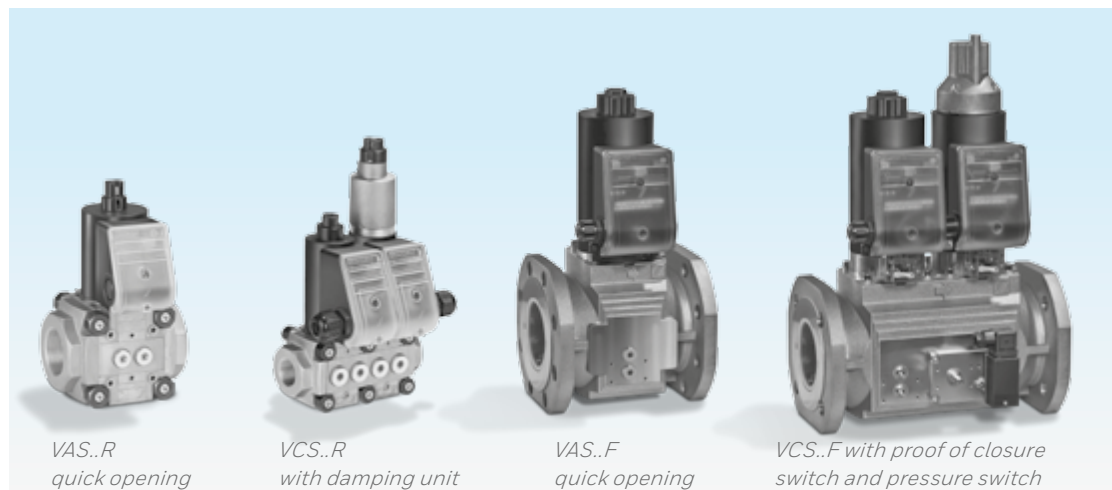
SL

CE



## Solenoid valves for gas VAS, Double solenoid valves VCS

- Suitable for a max. inlet pressure of 500 mbar (7 psig)
- Easy installation into a system
- Compact design saves space
- No extra valve required owing to integrated flow adjustment
- Check indication by blue LED
- Proof of closure switch with integrated visual position indicator
- Suitable for high-duty cycling



*The modular design principle allows the individual components of the VAS, VCS Series to be easily assembled: e.g. quick opening, slow opening, with proof of closure switch and visual position indicator, slow opening with attached pressure switch.*

## Application

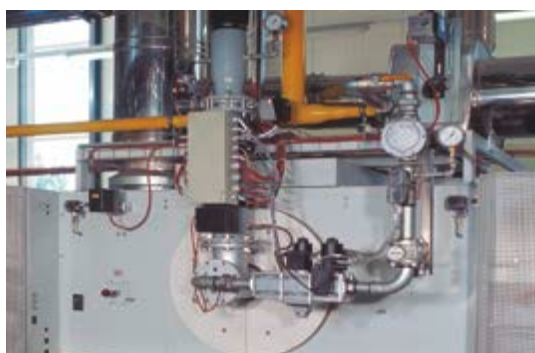
Solenoid valves for gas VAS and double solenoid valves VCS for safeguarding and controlling the air and gas supply to gas burners and gas appliances. For use in gas control and safety systems in all sectors of the iron, steel, glass and ceramics industries, also in commercial heat generation, such as the packaging, paper and foodstuffs industries.



*Ceramics industry*

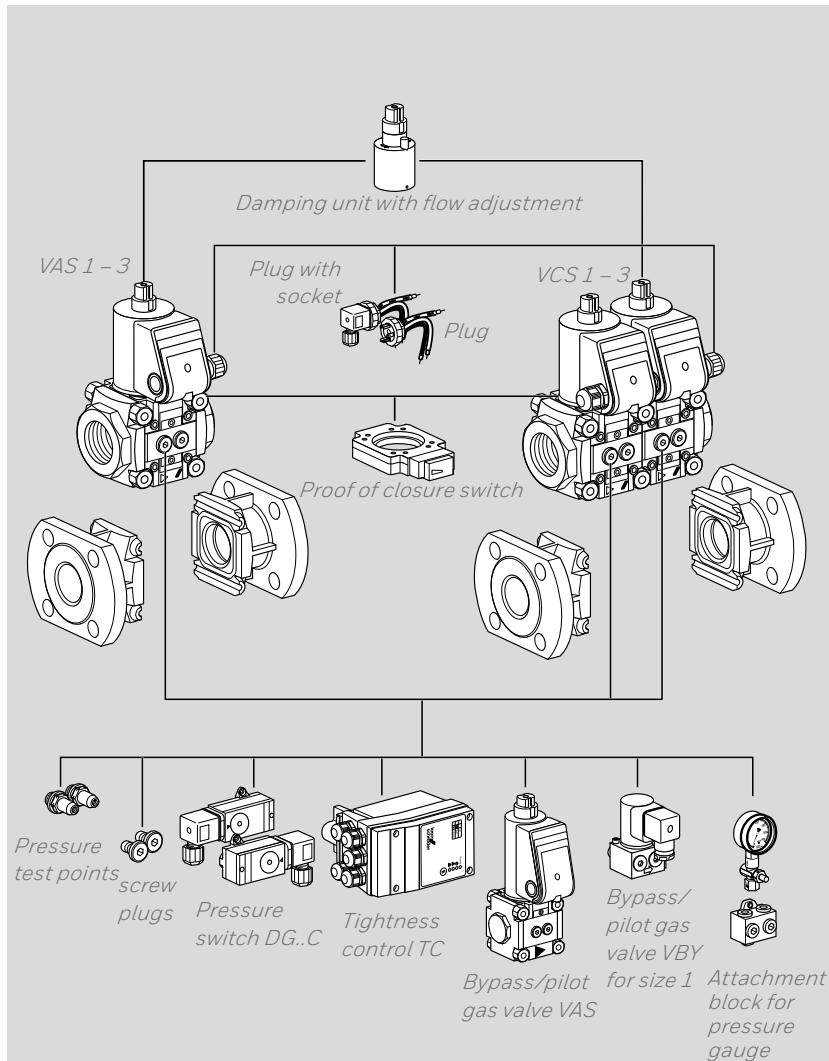


*Aluminium industry:  
curing oven for  
wheel rims*



*Foodstuffs industry:  
baking oven*

## Examples of application

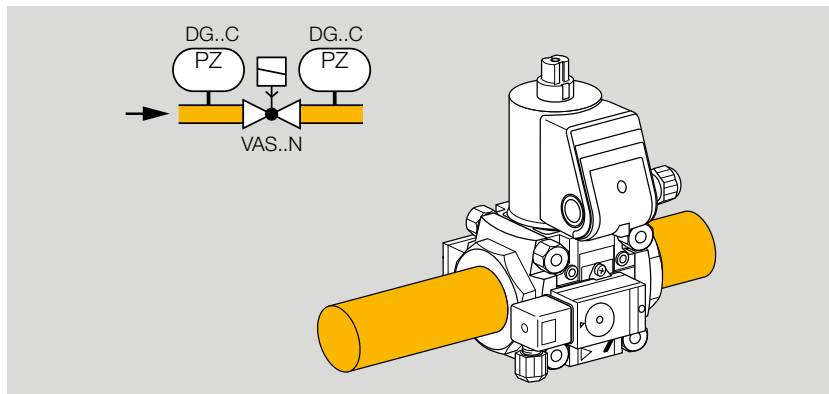


### Solenoid valve for gas VAS 1 – 3, double solenoid valve VCS 1 – 3

Threaded flange for pipe connections (Rp or NPT) from DN 10 to 65, flanged connection for sizes 2 and 3 for pipe connections (ISO or ANSI) DN 40 and 50.

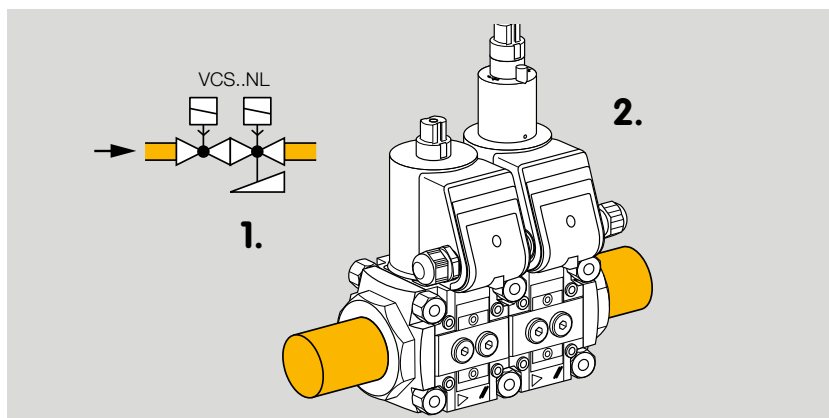
Modularly configurable with:

- Damping unit
- Proof of closure switch
- Plug (with or without socket)
- Pressure test points
- Screw plugs
- Pressure switch DG..C for inlet and/or outlet pressure
- Tightness control TC
- Bypass/pilot gas valve
- Attachment block for the connection of a pressure gauge, for example.



### Gas solenoid valve with inlet and outlet pressure switch

VAS..N, quick opening, pressure switch DG..C for inlet pressure  $p_u$  and outlet pressure  $p_d$

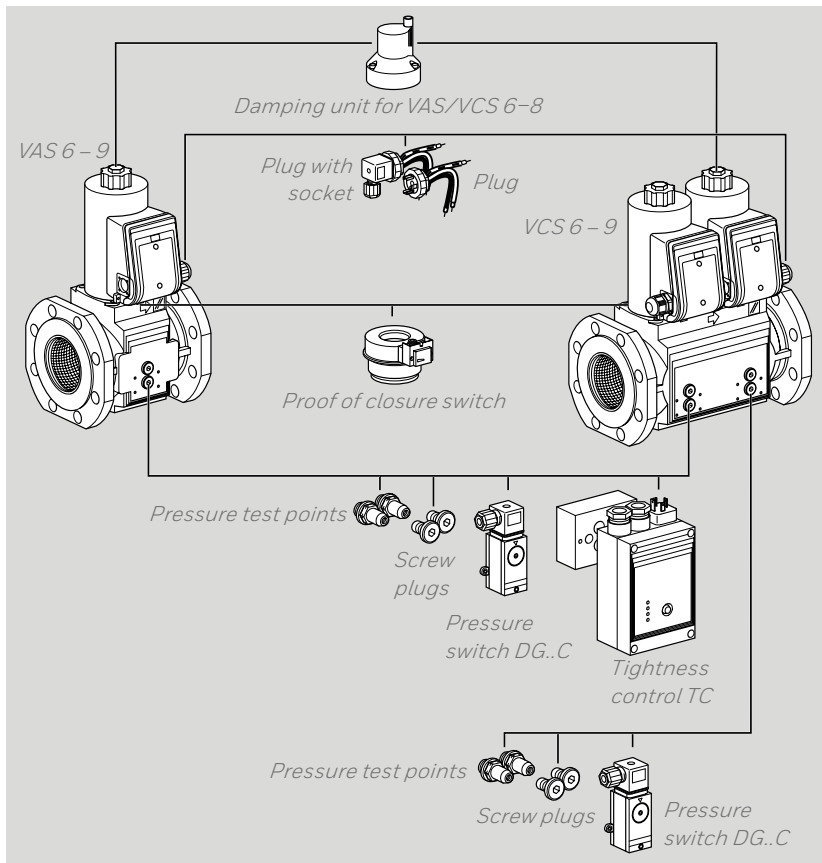


### Double solenoid valve VCS with damping unit

VCS..NL,

**1<sup>st</sup>** valve: quick opening, quick closing, with flow adjustment

**2<sup>nd</sup>** valve: slow opening, quick closing



### Solenoid valve for gas VAS 6 – 9, double solenoid valve VCS 6 – 8

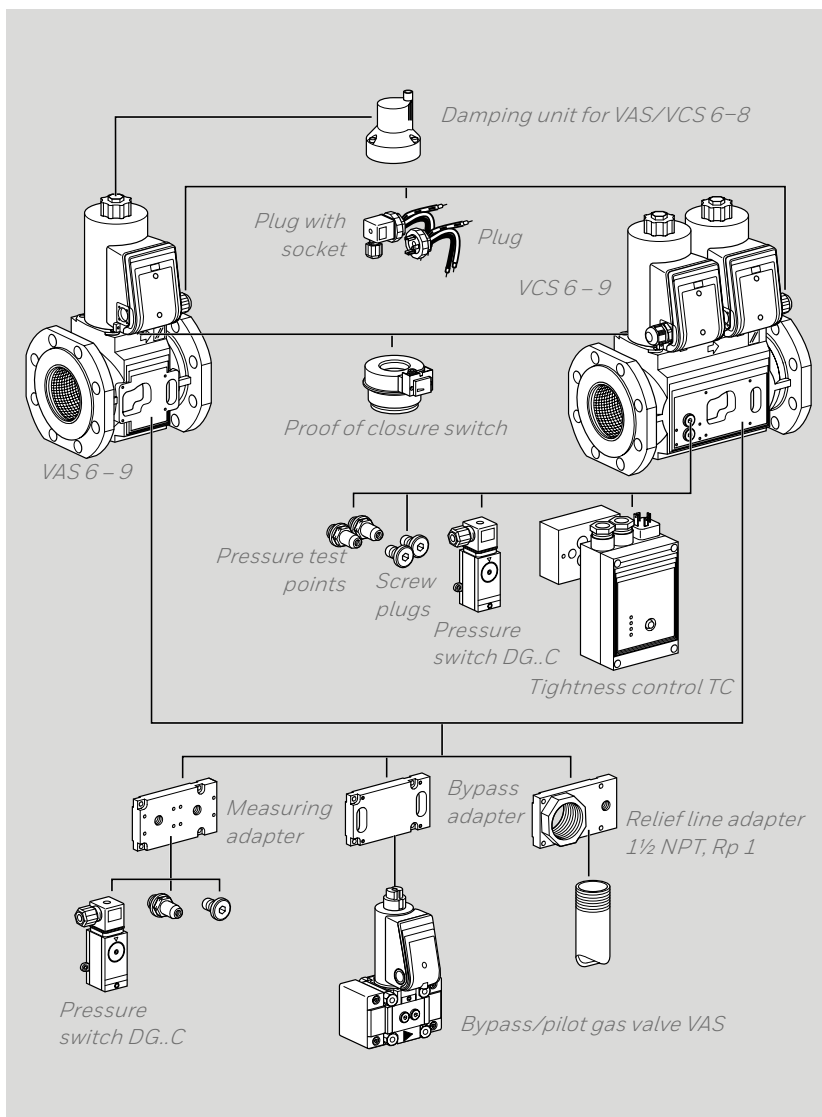
Gas solenoid valve and double solenoid valve with flanged connection (ISO or ANSI) for pipe connections from DN 65 to 125.

Modularly configurable with:

- Damping unit for VAS/VCS 6 – 8
- Proof of closure switch
- Plug
- Plug with socket

VCS 6 – 9 with threaded connections for:

- Screw plugs
- Pressure test points
- Pressure switch DG..C for inlet/interspace pressure
- Tightness control TC



### Solenoid valve for gas VAS 6 – 9, double solenoid valve VCS 6 – 9 with connection for adapter plates

Gas solenoid valve and double solenoid valve with flanged connection (ISO or ANSI) for pipe connections from DN 65 to 125.

Modularly configurable with:

- Damping unit for VAS/VCS 6 – 8
- Proof of closure switch
- Plug
- Plug with socket

With adapter plates, expandable with:

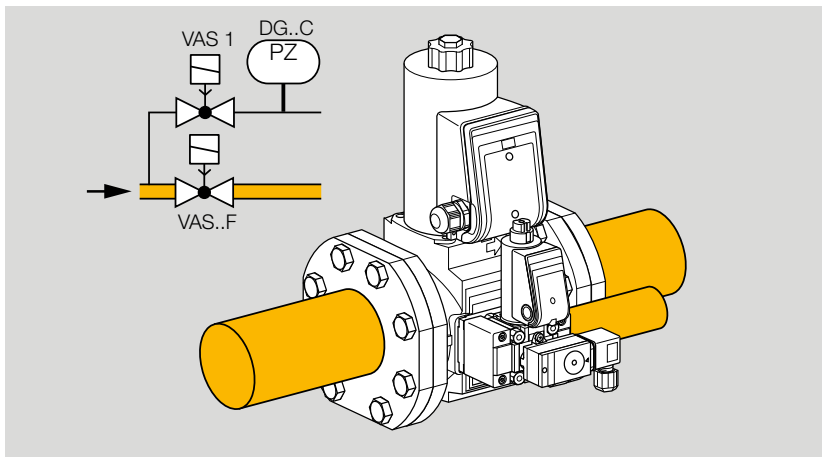
- Pressure switch DG..C  
VAS 6 – 9: for inlet/outlet pressure  
VCS 6 – 9: for interspace/outlet pressure
- Pressure test points
- Screw plug
- Bypass or pilot gas valve VAS

### VCS 6 – 9

With two threaded connections for:

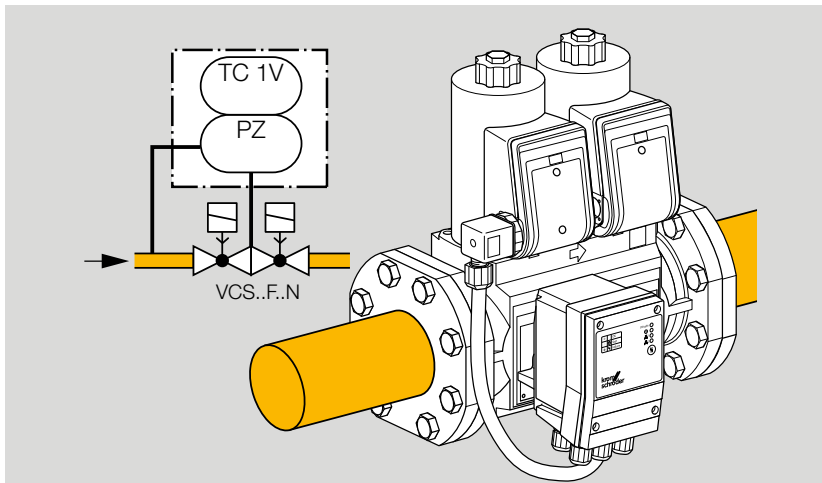
- Screw plugs
- Pressure test points
- Pressure switch DG..C for inlet/interspace pressure
- Tightness control TC

Expandable with relief line adapter (1 1/2 NPT, Rp 1) for relief line.



## Gas solenoid valve with pilot gas valve and pressure switch

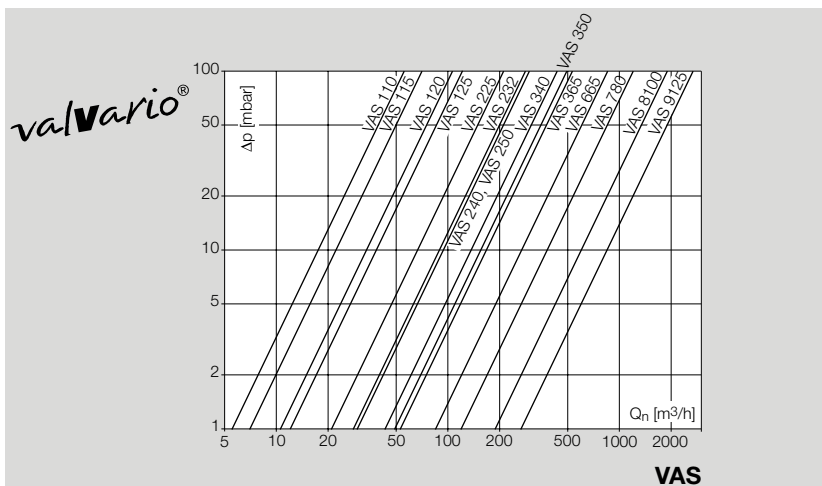
VAS..F..N: quick opening, quick closing, VAS 1 as pilot gas valve with pressure switch DG..C.



## Double solenoid valve with tightness control

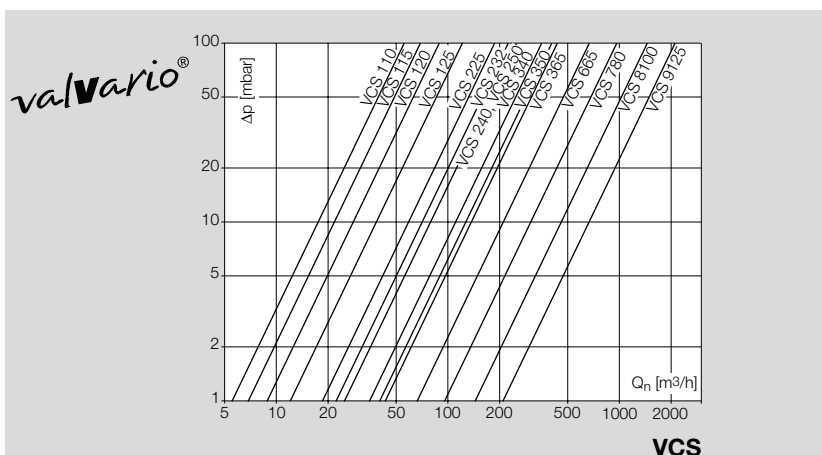
VCS..F..N: quick opening, quick closing valves, tightness control TC 116V.

## Flow rate



## VAS

Gas type: natural gas



## VCS

Gas type: natural gas

Replacement possibilities

Solenoid valve for gas VG is to be replaced by VAS.

Type code VAS 1 – 3

Code	Description
VAS	Gas solenoid valve
1 – 3	Size
T	T-product
– -0 10 – 65	No inlet and outlet flange Blind flange Nominal inlet and outlet diameter
R N F	Rp internal thread NPT internal thread ISO flange
/N /L	Quick opening, quick closing Slow opening, quick closing
K P Q Y W	Mains voltage: 24 V DC Mains voltage: 100 V AC; 50/60 Hz Mains voltage: 120 V AC; 50/60 Hz Mains voltage: 200 V AC; 50/60 Hz Mains voltage: 230 V AC; 50/60 Hz
S G	Proof of closure switch with visual position indicator Proof of closure switch for 24 V with visual position indicator
R L	Viewed from the right (in the direction of flow) Viewed from the left (in the direction of flow)

Type code VAS 6 – 9

Code	Description
VAS	Gas solenoid valve
6 – 9	Size
T	T-product
65 – 125	Nominal inlet flange diameter
F A	ISO flange ANSI flange
05	Max. inlet pressure p <sub>u max.</sub> = 500 mbar (7 psig)
N L	Quick opening, quick closing Slow opening, quick closing
W A Q K	Mains voltage: 230 V AC; 50/60 Hz Mains voltage: 120 – 230 V AC; 50/60 Hz Mains voltage: 120 V AC; 50/60 Hz Mains voltage: 24 V DC
S G	Proof of closure switch with visual position indicator Proof of closure switch for 24 V with visual position indicator
R L	Viewed from the right (in the direction of flow) Viewed from the left (in the direction of flow)
3	Electrical connection: M20 cable gland
B E	Basic Prepared for adapter plates

Code	Description
/P /M /1 /2 /3 /4 /B /Z /V /E	<b>Accessories, right, inlet</b> Screw plug Test point for inlet pressure p <sub>i</sub> Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC Bypass valve VAS 1, fitted Pilot gas valve VAS 1, fitted Prepared for 1½ NPT breather line Prepared for Rp 1 breather line
P M 1 2 3 4	<b>Accessories, right, outlet</b> Screw plug Test point for outlet pressure p <sub>a</sub> Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC
/P /M /1 /2 /3 /4 /B /Z /V /E	<b>Accessories, left, inlet</b> Screw plug Test point for inlet pressure p <sub>i</sub> Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC Bypass valve VAS 1, fitted Pilot gas valve VAS 1, fitted Prepared for 1½ NPT breather line Prepared for Rp 1 breather line
P M 1 2 3 4	<b>Accessories, left, outlet</b> Screw plug Test point for outlet pressure p <sub>a</sub> Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC



## Type code VCS 1– 3

Code	Description
VCS	Gas solenoid valve
1 – 3	Size
E T	EU certified T-product
– 10 – 65	No inlet and outlet flange Nominal inlet and outlet diameter
R N F	Rp internal thread NPT internal thread Flange to ISO 7005
05	Max. inlet pressure $p_u = 500$ mbar (7 psig)
F	Filter module
N L	1st valve quick opening, quick closing 1st valve slow opening, quick closing
N L	2nd valve quick opening, quick closing 2nd valve slow opening, quick closing
V 010 – 032	Fine-adjusting valve VMV Measuring orifice VMO, Ø 10 – Ø 32 mm
K P Q Y W	Mains voltage: 24 V DC Mains voltage: 100 V AC; 50/60 Hz Mains voltage: 120 V AC; 50/60 Hz Mains voltage: 200 V AC; 50/60 Hz Mains voltage: 230 V AC; 50/60 Hz
S G	Proof of closure switch with visual position indicator Proof of closure switch for 24 V with visual position indicator
R L	Flow from left to right Flow from right to left
3	Electrical connection: M20 cable gland

Code	Description
/P /M /1 /2 /3 /4	<b>Accessories, right, inlet</b> Screw plug Test point for inlet pressure $p_u$ Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC
P M 1 2 3 4	<b>Accessories, right, interspace 1</b> Screw plug Test point for interspace pressure $p_z$ Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC
P M 1 2 3 4 BY ZS	<b>Accessories, right, interspace 2</b> Screw plug Test point for interspace pressure $p_z$ Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC Bypass valve VBY, fitted Pilot gas valve VAS 1, fitted
P M 1 2 3 4 BY ZS	<b>Accessories, right, outlet</b> Screw plug Test point for outlet pressure $p_d$ Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC Bypass valve VBY, fitted Pilot gas valve VAS 1, fitted

The same accessories can be selected for the other viewing side.

## Type code VCS 6– 9

Code	Description
VCS	Gas solenoid valve
6 – 9	Size
T	T-product
65 – 125	Niminal inlet flange diameter size
F A	ISO flange ANSI flange
05	Max. inlet pressure $p_{u \max.}$ 500 mbar (7 psig)
N L	1st valve quick opening, quick closing 1st valve slow opening, quick closing
N L	2nd valve quick opening, quick closing 2nd valve slow opening, quick closing
K Q W A	Mains voltage: 24 V DC Mains voltage: 120 V AC; 50/60 Hz Mains voltage: 230 V AC; 50/60 Hz Mains voltage: 120 – 230 V AC; 50/60 Hz
S G	Proof of closure switch with visual position indicator Proof of closure switch for 24 V with visual position indicator
R L	Viewed from the right (in the direction of flow) Viewed from the left (in the direction of flow)
3	Electrical connection: M20 cable gland
B E	Basic Prepared for adapter plates

Code	Description
/P /M /1 /2 /3 /4	<b>Accessories, right, inlet</b> Screw plug Test point for inlet pressure $p_u$ Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC
P M 1 2 3 4	<b>Accessories, right, interspace 1</b> Screw plug Test point for interspace pressure $p_z$ Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC
P M 1 2 3 4 B Z V E	<b>Accessories, right, interspace 2</b> Screw plug Test point for interspace pressure $p_z$ Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC Bypass valve VAS 1, fitted Pilot gas valve VAS 1, fitted Prepared for 1½ NPT breather line Prepared for Rp 1 breather line
P M 1 2 3 4	<b>Accessories, right, outlet</b> Screw plug Test point for outlet pressure $p_d$ Gas pressure switch DG 17VC Gas pressure switch DG 40VC Gas pressure switch DG 110VC Gas pressure switch DG 300VC

The same accessories can be selected for the other viewing side.

## Technical data

### Gas types:

natural gas, LPG (gaseous), biogas (max. 0.1 %-by-vol. H<sub>2</sub>S) or clean air; other gases on request. The gas must be clean and dry in all temperature conditions and must not contain condensate.

CE and FM approved, UL listed, max. inlet pressure  $p_u$ : 500 mbar (7 psig).

FM approved, non operational pressure: 700 mbar (10 psig).

ANSI/CSA approved: 350 mbar (5 psig).

Flow adjustment limits the maximum flow volume between approx. 20 and 100%. On VAS 1 – 3, the setting can be monitored on an indicator.

Adjustment of the start gas rate: 0 to approx. 70%.

### Opening times:

VAS../N quick opening:  $\leq 1$  s;

VAS../L slow opening: up to 10 s.

Closing time: VAS../N, VAS../L quick closing:  $< 1$  s.

### Medium and ambient temperatures:

-20 to +60°C (-4 to +140°F),

no condensation permitted.

Long-term use in the upper ambient temperature range accelerates the ageing of the elastomer materials and reduces the service life (please contact manufacturer).

Storage temperature: -20 to +40°C (-4 to +104°F).

### Safety valve:

Class A, Group 2 pursuant to EN 13611 and EN 161, Factory Mutual (FM) Research Class: 7400 and 7411, ANSI Z21.21 and CSA 6.5.

### Mains voltage:

230 V AC, +10/-15%, 50/60 Hz,

200 V AC, +10/-15%, 50/60 Hz,

120 V AC, +10/-15%, 50/60 Hz,

100 V AC, +10/-15%, 50/60 Hz,

24 V DC,  $\pm 20\%$ .

Cable gland: M20 x 1.5.

Electrical connection: cable with max. 2.5 mm<sup>2</sup> (AWG 12) or plug with socket to EN 175301-803.

Enclosure: IP 65.

Duty cycle: 100%.

Power factor of the solenoid coil:  $\cos \phi = 0,9$ .

### Switching frequency:

VAS../N 1 – 8, VCS../N 1 – 8: max. 30 x per minute.

VAS../L, VCS../L: there must be a period of 20 seconds between switching off and on again so that the damping is fully effective.

Valve housing: aluminium.

Valve seal: NBR.

### Connection flanges:

VAS/VCS 1 – 3 with internal thread:

Rp pursuant to ISO 7-1, NPT pursuant to ANSI/ASME;

VAS/VCS 2 – 9 with ISO flange (pursuant to ISO 7005) PN 16, with ANSI flange pursuant to ANSI 150.

## VAS 6 – 8/VCS 6 – 8

### Mains voltage:

120 V AC, +10/-15%, 50/60 Hz,

230 V AC, +10/-15%, 50/60 Hz,

24 V DC,  $\pm 20\%$ .

## VAS 9/VCS 9

Mains voltage: 120 – 230 V AC, +10/-15%, 50/60 Hz.

Switching frequency: max. 1 x<sup>66</sup> per minute.

### Max. temperature of solenoid coil:

+20°C (+68°F) above ambient temperature.

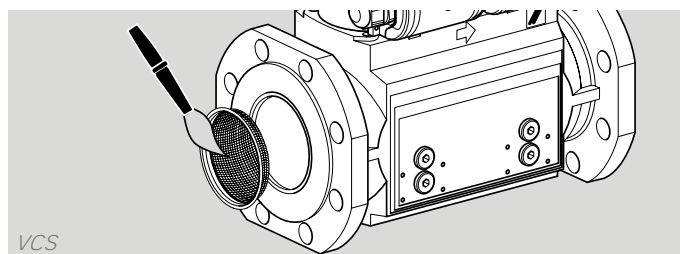
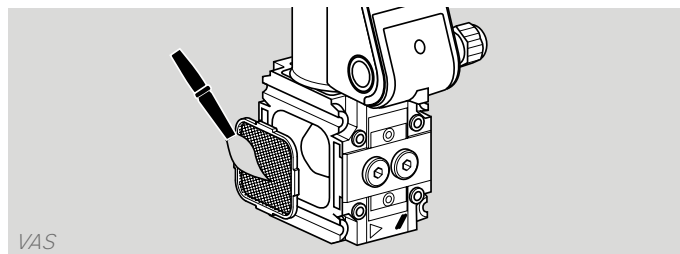
Current consumption at 20°C (68°F):

pick-up current: 1.8 A, holding current: 0.3 A.

## Maintenance cycles

At least once per annum, at least twice per annum for biologically produced methane.

If the flow rate drops, clean the strainer!



## Contact

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## Technical Information bulletin for this product

www.docuthek.com

Search term: VAS, VCS

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