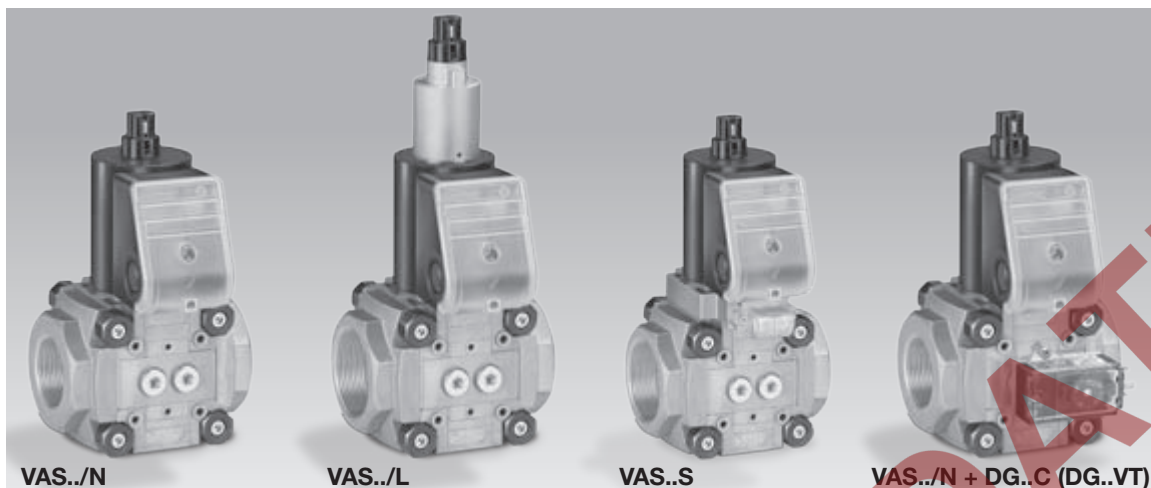


valvario®

Solenoid valves for gas VAS

- // A further development of the solenoid valves for gas VG and VS
- // Suitable for a max. inlet pressure of 500 mbar (7 psig)
- // Easy installation into a system
- // Compact design saves space
- // Easy flow adjustment with display
- // Check indication by blue LED
- // Position indicator with integral visual indicator
- // Suitable for intermittent operation
- // Wide-ranging applications due to the modular construction
- // Higher flow rates with the same nominal size
- // EC type-tested and certified
- // FM and CSA approved





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

Application

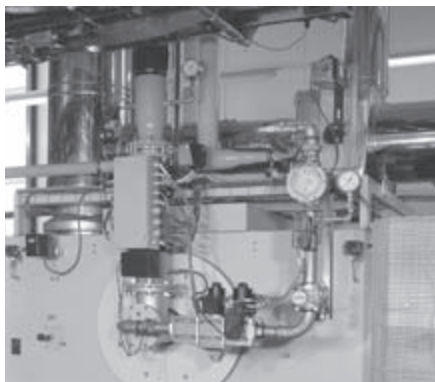
Solenoid valves for gas VAS for safeguarding and controlling the air and gas supply to gas burners and gas appliances. For use in gas control and safety systems in all sectors of the iron, steel, glass and ceramics industries, also in commercial heat generation, such as the packaging, paper and foodstuffs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



Ceramics industry

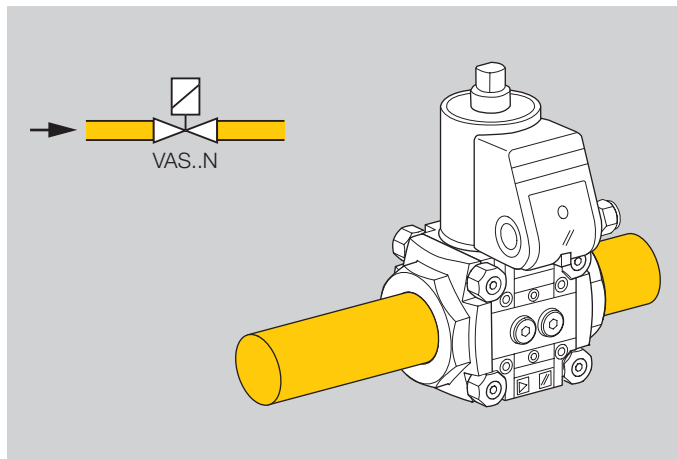


*Aluminium industry:
curing oven for
wheel rims*

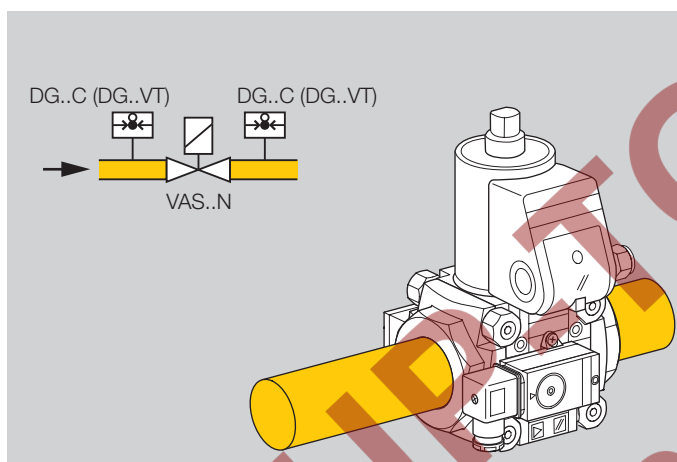


*Foodstuffs industry:
baking oven*

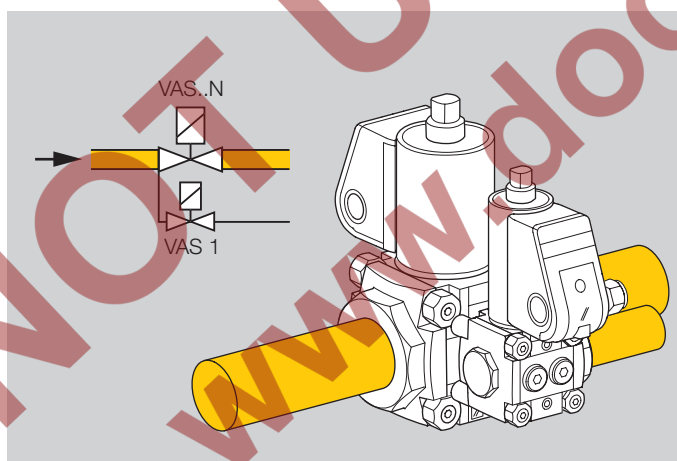
Application examples



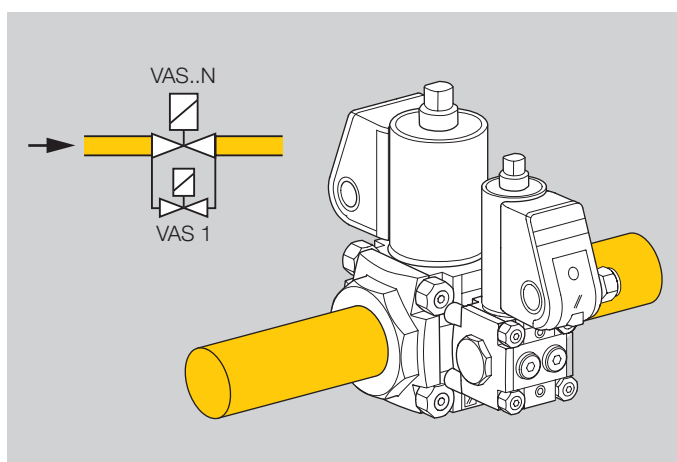
Solenoid valve for gas
VAS..N, quick opening



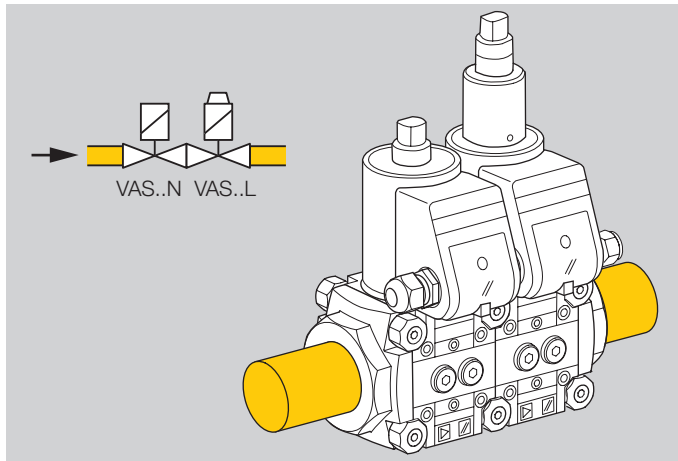
Gas solenoid valve with inlet and outlet pressure switch
VAS..N, quick opening,
pressure switch DG..C (DG..VT) for inlet pressure p_e and outlet pressure p_a



Gas solenoid valve with pilot gas valve
VAS..N, quick opening,
VAS 1 as pilot
gas valve

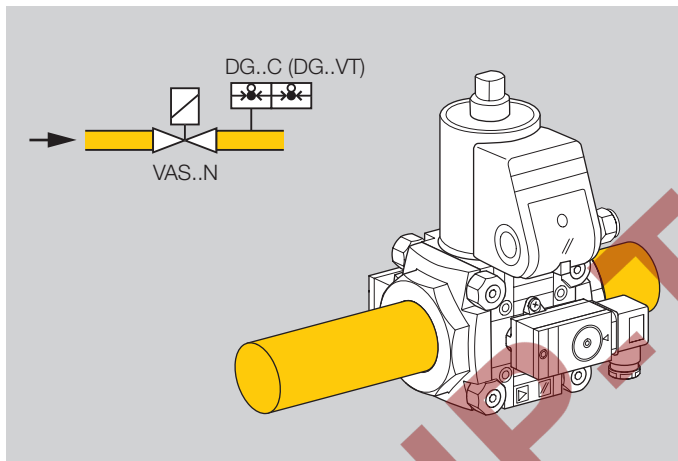


Gas solenoid valve with bypass valve
VAS..N, quick opening,
VAS 1 as
bypass valve



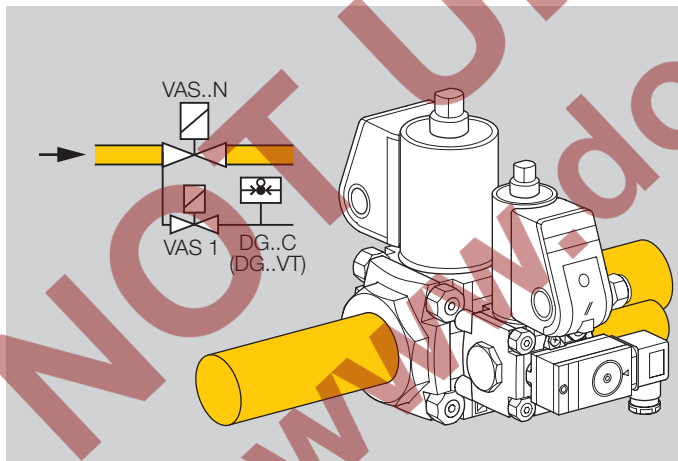
Double disc solenoid valve

VAS..N,
quick opening,
VAS..L,
slow opening



Gas solenoid valve with two outlet pressure switches

VAS..N, quick opening,
pressure switch DG..C (DG..VT) for outlet pressure $2 \times p_a$



Gas solenoid valve with pilot gas valve and pressure switch

VAS..N, quick opening,
VAS 1 as pilot
gas valve,
pressure switch DG..C (DG..VT)

Replacement possibilities

Solenoid valves for gas VG

VG is to be replaced by VAS			
Type			Type
VG	Solenoid valve for gas		VAS
10/15	DN 10	internal 15 mm (0.59")	Size 1 DN 10 110
15	DN 15		Size 1 DN 15 115
15/12	DN 15	internal 12 mm (0.47")	– – –
20	DN 20		Size 1 DN 20 120
25	DN 25		Size 1 DN 25 125
25/15	DN 25	internal 15 mm (0.59")	– – –
40/32	DN 40	internal 32 mm (1.26")	Size 2 DN 40 240
40	DN 40		Size 2 DN 40 240
40/33	DN 40	internal 33 mm (1.30")	– – –
50	DN 50		Size 3 DN 50 350
50/39	DN 50	internal 39 mm (1.54")	– – –
50/65	DN 50	internal 65 mm (2.59")	Size 3 DN 50 350
65	DN 65		Size 3 DN 65 365
65/49	DN 65	internal 49 mm (1.93")	– – –
T	T-product		T-product T
R	Rp internal thread		Rp internal thread R
N	NPT internal thread		NPT internal thread N
02	P _e max.: 200 mbar (2 psig)		P _e max.: 500 mbar (7 psig) ●
03	360 mbar (5 psig)		500 mbar (7 psig) ●
10	1000 mbar (14.5 psig)		– – –
18	1800 mbar (26.1 psig)		– – –
N	Quick opening		Quick opening /N
L	Slow opening		Slow opening /L
K	Mains voltage: 24 V DC		Mains voltage: 24 V DC K
Q	120 V AC		120 V AC Q
T	220/240 V AC		230 V AC W
3	Electrical connection via terminals		Electrical connection via terminals ●
6	Electrical connection via socket		Electrical connection via socket ○
9	Metal terminal connection box		Electrical connection via terminals ●
1	Screw plug at the inlet		Screw plug at the inlet and outlet ●
3	Screw plug at the inlet and outlet		Screw plug at the inlet and outlet ●
4	Pressure test point at the inlet		Pressure test point at the inlet and outlet* ○
6	Pressure test point at the inlet and outlet		Pressure test point at the inlet and outlet* ○
D	Flow adjustment		Flow adjustment ●
S	Position indicator		Position indicator and visual indicator** S
G	Position indicator for 24 V		Position indicator for 24 V and visual indicator** G
OCS	Valve stem overtravel switch		Position indicator and visual indicator** S
CPS	Position indicator		Position indicator and visual indicator** S
VI	Visual indicator		Position indicator and visual indicator** S
M	Suitable for biologically produced methane		Suitable for biologically produced methane ●
V	Viton valve disc seal		Viton valve disc seal –
VG 25R02NT31DM	Example		Example VAS 125R/NW

● = standard, ○ = available

* Pressure test points may be attached at the left and/or right-hand side.

** Position indicator and visual indicator can be attached at the left- or right-hand side.

Replacement possibilities

MODULINE solenoid valves for gas VS

VS is to be replaced by VAS				
Type	Flange	Solenoid valve for gas		Type
VS		Solenoid valve for gas		VAS
115 125	3/8"	Size 115 Size 125	Size 1 DN 10	110
115 125	1/2"	Size 115 Size 125	Size 1 DN 15	115
115 125	3/4"	Size 115 Size 125	Size 1 DN 20	120
115 125	1"	Size 115 Size 125	Size 1 DN 25	125
230 240	1"	Size 232 Size 240	Size 2 DN 25	225
232 240	1 1/2"	Size 232 Size 240	Size 2 DN 40	240
350	1 1/2"	Size 350	Size 3 DN 40	340
350	2"	Size 350	Size 3 DN 50	350
ML	MODULINE + connection flanges Rp internal thread		Rp internal thread	R
TML	MODULINE + connection flanges NPT internal thread		NPT internal thread	N
02	p _{e max.} 200 mbar (2 psig)		p _{e max.} 500 mbar (7 psig)	●
03	p _{e max.} 360 mbar (3 psig)		p _{e max.} 500 mbar (7 psig)	●
N	Quick opening		Quick opening	/N
L	Slow opening		Slow opening	/L
D	Flow adjustment		Flow adjustment	●
K	Mains voltage: 24 V DC		Mains voltage: 24 V DC	K
Q	120 V AC		120 V AC	Q
T	220/240 V AC		230 V AC	W
3	Electrical connection via terminals		Electrical connection via terminals	●
6	Electrical connection via socket		Electrical connection via socket	
9	Metal terminal connection box		Electrical connection via terminals	
●	Pressure test point at the inlet		Pressure test point at the inlet and outlet*	○
S	Position indicator		Position indicator at the right-hand side	SR
			Position indicator at the left-hand side	SL
G	Position indicator for 24 V		Position indicator for 24 V, right-hand side	GR
			Position indicator for 24 V, left-hand side	GL
M	non-ferrous metals		non-ferrous metals	●
V	Viton valve disc seal		–	–

VS 240ML02LT3
with Rp 1 1/2 connection flanges

Example

Example

VAS 240R/LW
with test points

● = standard, ○ = available

Selection

Solenoid valve for gas VAS, EC type-tested and certified

Solenoid valve for gas VAS..T, (T-product) FM and CSA approved

Type	-	- 0	10	15	20	25	32	40	50	65	/-	/0	/10	/15	/20	/25	/32	/40	/50	/65	R	N	/N	/L	K	Q	W	SR	GR	SL	GL
VAS 1	●	●	●	●	●	●	●				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○
VAS 2	●					●	●	●	●		●					●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○
VAS 3	●							●	●	●	●							●	●	●	●	●	●	●	●	●	●	○	○	○	○
VAS 1T	●	●	●	●	●	●					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○
VAS 2T	●					●	●	●	●		●					●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○
VAS 3T	●							●	●	●	●							●	●	●	●	●	●	●	●	●	○	○	○	○	
Inlet flange nominal size No inlet flange = - Blind flange = -0																															
Outlet flange nominal size - = no outlet flange /0 = blind flange Specification may be omitted if outlet = inlet																															
Rp internal thread = R NPT internal thread = N																															
Quick opening, quick closing = /N Slow opening, quick closing = /L																															
Mains voltage: 24 V DC = K 120 V AC; 50/60 Hz = Q 230 V AC; 50/60 Hz = W																															
Position indicator and visual indicator: attached at the right-hand side = SR* with gold contacts, attached at the right-hand side = GR* attached at the left-hand side = SL* with gold contacts, attached at the left-hand side = GL*																															

Cont.

VAS 1	●	○	○	○	●	○	○	○	●	○	○	○	○	○	●	○	○	○	○	○
VAS 2	●	○	○	○	●	○	○	○	●	○	○	○	○	○	●	○	○	○	○	○
VAS 3	●	○	○	○	●	○	○	○	●	○	○	○	○	○	●	○	○	○	○	○
VAS 1T									●	○	○	○	○	○	●	○	○	○	○	○
VAS 2T									●	○	○	○	○	○	●	○	○	○	○	○
VAS 3T									●	○	○	○	○	○	●	○	○	○	○	○
Electrical connection: M20 cable gland Plug with socket Plug without socket																				
Attached to the left side of the connection box: Not fitted Plug for valve Plug for position indicator																				
Attached to the right side of the connection box: Not fitted Plug for valve Plug for position indicator																				
Accessories attached at the right-hand side: 2 screw plugs 2 test points p_e and p_a Gas pressure switch DG../VC (DG../VT) at the inlet Gas pressure switch DG../VC (DG../VT) at the outlet Reserved for bypass valve VAS 1* Bypass or pilot gas valve VBY *																				
Accessories attached at the left-hand side: 2 screw plugs 2 test points p_e and p_a Gas pressure switch DG../VC (DG../VT) at the inlet Gas pressure switch DG../VC (DG../VT) at the outlet Reserved for bypass valve VAS 1* Bypass or pilot gas valve VBY *																				

* Position indicator and bypass valve cannot be installed together on one side.

● = standard

○ = available

Order example

VAS 232R/NW

Electrical connection via M20 cable gland, not fitted, with 2 screw plugs attached at the right-hand side and 2 test points attached at the left-hand side

Gas pressure switch DG.../VC for VAS

Type	Adjusting range [mbar]
DG 17/VC	2 – 17
DG 40/VC	5 – 40
DG 110/VC	30 – 110
DG 300/VC	100 – 300

Gas pressure switch DG../VT for VAS..T

Type	Adjusting range ["WC]
DG 17/VT	0.8 – 6.8
DG 40/VT	2 – 16
DG 110/VT	12 – 44
DG 300/VT	40 – 120

Technical data

Types of gas: Natural gas, LPG (gaseous), biologically produced methane (max. 0.1 %-by-vol. H₂S) or air; other gases on request.

The gas must be dry in all temperature conditions and must not condense.

Max. inlet pressure p_e : max. 500 mbar (7 psig),

FM: max. inlet pressure p_e (valve remaining closed):

700 mbar (10 psig),

CSA approved up to 350 mbar (5 psig).

Flow adjustment limits the maximum flow volume between 20 and 100%. The setting can be monitored on an indicator.

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

Opening times:

VAS../N quick opening: ≤ 0.5 s;

VAS../L slow opening: approx. 10 s.

Closing time: Quick closing: < 1 s.

Ambient temperature: $-20 - +60^\circ\text{C}$ ($-4 - +140^\circ\text{F}$),

no condensation permitted,

Storage temperature: $0 - 40^\circ\text{C}$ ($32 - 104^\circ\text{F}$).

Safety valve: Class A to EN 161,

Factory Mutual Research Class: 7410 and 7411, ANSI Z21.21 and CSA 6.5.

Mains voltage:

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

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

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

Cable gland: M20 x 1.5

Electrical connection: max. 2.5 mm² (AWG 12) or plug with socket to EN 175301-803.

Power consumption:

Type	24 V DC [W]	120 V AC [W]	230 V AC [W]
VAS 1	29	30	30
VAS 2	46	54	53
VAS 3	58	63	63

Flow rate:

Type	$\dot{V}$ with $\Delta p = 1$ mbar (0,4 "WC) Air	
	m ³ /h	SCFH
VAS 110	4,4	155
VAS 115	5,5	194
VAS 120	8,3	292
VAS 125	10,0	352
VAS 225	15,5	194
VAS 232	19,5	687
VAS 240	21,0	740
VAS 250	22,0	775
VAS 340	30,5	1074
VAS 350	37,0	1303
VAS 365	41,0	1444

Enclosure: IP 65.

Duty cycle: 100%.

Power factor of the solenoid coil:

$\cos \varphi = 1$.

Valve housing: Aluminium,

Valve seal: NBR.

Connection flanges with internal thread:

Rp to ISO 7-1,

NPT to ANSI/ASME.

Switching frequency:

VAS..N: Arbitrary,

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

Position indicator Contact rating:

VAS..S:

125–250 V AC, 50/60 Hz,
max. 3 A (resistive load)

VAS..G:

125–250 V AC, 50/60 Hz,
max. 0,1 A (resistive load)

12–48 V DC, max. 0,1 A

Switching frequency: 5 x per minute

switching current [A]	switching cycles	
	$\cos \varphi = 1$	$\cos \varphi = 0,6$
0,1	500 000	500 000
0,5	300 000	250 000
1	200 000	100 000
3	100 000	–



Certification

- EC type-tested and certified pursuant to
- Gas Appliances Directive (90/396/EEC) in conjunction with EN 161, EN 13611 and EN 126
 - Machinery Directive (98/37/EC),
 - Low Voltage Directive (73/23/EEC) in conjunction with the relevant standards,
 - EMC Directive (89/336/EEC) in conjunction with EN 55014.

Maintenance cycles

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

FM approved

Factory Mutual Research Class: 7410 and 7411 Safety overpressure slam shut valves. Designed for applications pursuant to NFPA 85 and NFPA 86.

CSA approved

Canadian Standard Association – ANSI Z21.21 and CSA 6.5

UL approval

In preparation.

Detailed information on this product

www.valvario.com

Contact www.kromschroeder.com → Sales

We reserve the right to make technical modifications in the interests of progress.

Kromschroder uses environment-friendly production methods. Please send away for our Environment Report.

Elster Kromschroder GmbH
Postfach 2809
D-49018 Osnabrück
Tel. +49 (0)541 1214-0
Fax +49 (0)541 1214-370
info@kromschroeder.com
www.kromschroeder.com