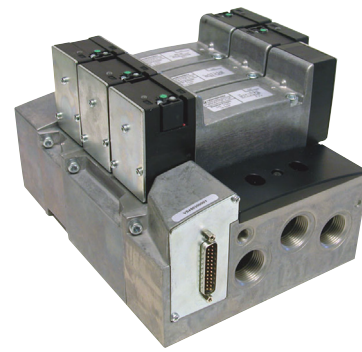




- > 2x3/2, 5/2 and 5/3 valves  
Size 45 mm
- > 24 V d.c. Multipole
- > Integrated Fieldbus
- > Field expandable with single add-on stations

- > Dual spool technology
  - VS45G Glandless spool and sleeve for long life
  - VS45S Softseal spool for high flow
- > Wide range of accessories
- > Universal PNP/NPN  
24 V d.c. Multipole



### Technical features

**Medium:**

Compressed air, filtered to 40 µm, lubricated or non-lubricated

**Operation:**

VS45G: Glandless spool valve, solenoid pilot actuated

VS45S: Softseal spool valve, solenoid pilot actuated

**Flow:**

Series	Function	l/min	Cv
VS45G	5/2	3200	3,2
VS45G	5/3	2900	2,9
VS45S	2x3/2	3900	3,9
VS45S	5/2	4200	4,2
VS45S	5/3	3700	3,7

**Mounting:**

Sub-base

**Ports 2+4:**

G 3/8, G 1/2

**Ports 1, 3, 5:**

G 3/4

**Operating pressure:**

Maximum pressure  
10 bar (145 psi) VS45S models and VS45G solenoid pilot actuated valves with internal pilot supply  
16 bar (232 psi) VS45G solenoid pilot actuated valves with external pilot supply. Details of minimum and maximum pilot pressure see overleaf

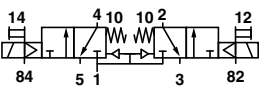
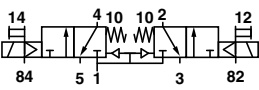
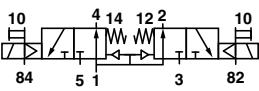
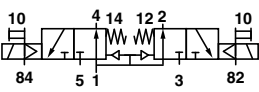
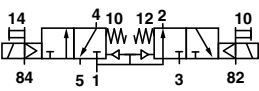
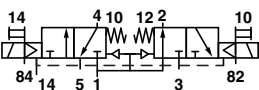
**Ambient/Media temperature:**

Ambient  
-15 ... +50°C (+5 ... +122°F)  
Media  
-5 ... +50°C +23 ... +122°F  
Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F).

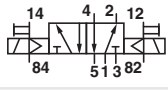
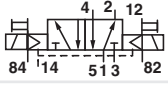

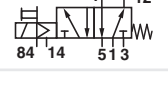
**Materials:**

Body/sub-base: die-cast aluminium  
Glandless spool & sleeve (VS45G): aluminium, hard anodised, PTFE coated  
Softseal spool (VS45S): aluminium with HNBR seals  
Plastic parts: POM, PA, PPA, TPE, PBT  
Mounting sheets/screws: steel, zinc coated  
Springs: stainless steel  
Sandwich plates: aluminium bar material  
Electrical contacts: brass, tin/gold coated  
PCB: glass reinforced epoxy

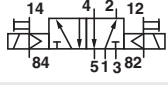
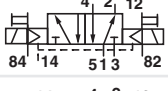
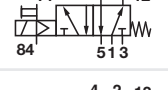
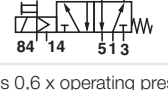
**Plug-in connection, solenoid actuated valves**  
**2x3/2 Double solenoid actuated softseal valves (flow 3900 l/min)**

Symbol	Function 2x2/2	Actuation/return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Manual override	Voltage	Short code	Model
	2x3/2 NC or 5/3 COE	Solenoid/Spring	Internal	–	3 ... 10	Push only	24 V d.c. 1,2 W	SAU	VS45SA11DF313A
	2x3/2 NC or 5/3 COE	Solenoid/Spring	Internal	–	3 ... 10	Push & turn	24 V d.c. 1,2 W	SAT	VS45SA11DF213A
	2x3/2 NC or 5/3 COE	Solenoid/Spring	External	1,7*1)	0 ... 10	Push only	24 V d.c. 1,2 W	SDU	VS45SA22DF313A
	2x3/2 NC or 5/3 COE	Solenoid/Spring	External	1,7*1)	0 ... 10	Push & turn	24 V d.c. 1,2 W	SDT	VS45SA22DF213A
	2x3/2 NO or 5/3 COP	Solenoid/Spring	Internal	–	3 ... 10	Push only	24 V d.c. 1,2 W	SBU	VS45SB11DF313A
	2x3/2 NO or 5/3 COP	Solenoid/Spring	Internal	–	3 ... 10	Push & turn	24 V d.c. 1,2 W	SBT	VS45SB11DF213A
	2x3/2 NO or 5/3 COP	Solenoid/Spring	External	1,7*1)	0 ... 10	Push only	24 V d.c. 1,2 W	SEU	VS45SB22DF313A
	2x3/2 NO or 5/3 COP	Solenoid/Spring	External	1,7*1)	0 ... 10	Push & turn	24 V d.c. 1,2 W	SET	VS45SB22DF213A
	2x3/2 NO/NC	Solenoid/Spring	Internal	–	3 ... 10	Push only	24 V d.c. 1,2 W	SCU	VS45SC11DF313A
	2x3/2 NO/NC	Solenoid/Spring	Internal	–	3 ... 10	Push & turn	24 V d.c. 1,2 W	SCT	VS45SC11DF213A
	2x3/2 NO/NC	Solenoid/Spring	External	1,7*1)	0 ... 10	Push only	24 V d.c. 1,2 W	SFU	VS45SC22DF313A
	2x3/2 NO/NC	Solenoid/Spring	External	1,7*1)	0 ... 10	Push & turn	24 V d.c. 1,2 W	SFT	VS45SC22DF213A

**5/2 Single and double solenoid actuated glandless valves (flow 3200 l/min)**

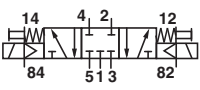
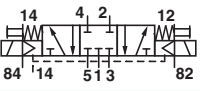
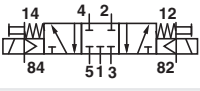
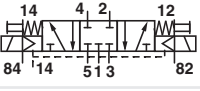
Symbol	Function	Actuation/return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Manual override	Voltage	Short code	Model
	5/2	Solenoid/Solenoid	Internal	–	2 ... 10	Push only	24 V d.c. 1,2 W	GJU	VS45G511DF313A
	5/2	Solenoid/Solenoid	Internal	–	2 ... 10	Push & turn	24 V d.c. 1,2 W	GJT	VS45G511DF213A
	5/2	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push only	24 V d.c. 1,2 W	GKU	VS45G522DF313A
	5/2	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push & turn	24 V d.c. 1,2 W	GKT	VS45G522DF213A
	5/2	Solenoid/Spring	Internal	–	2 ... 10	Push only	24 V d.c. 1,2 W	GGU	VS45G517DF313A
	5/2	Solenoid/Spring	Internal	–	2 ... 10	Push & turn	24 V d.c. 1,2 W	GGT	VS45G517DF213A
	5/2	Solenoid/Spring	External	2 ... 10	-0,9 ... 16	Push only	24 V d.c. 1,2 W	GHU	VS45G527DF313A
	5/2	Solenoid/Spring	External	2 ... 10	-0,9 ... 16	Push & turn	24 V d.c. 1,2 W	GHT	VS45G527DF213A

**5/2 Single and double solenoid actuated softseal valves (flow 4200 l/min)**

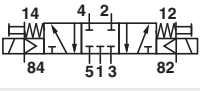
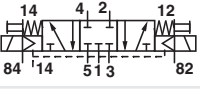
Symbol	Function	Actuation/return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Manual override	Voltage	Short code	Model
	5/2	Solenoid/Solenoid	Internal	–	2 ... 10	Push only	24 V d.c. 1,2 W	SJU	VS45S511DF313A
	5/2	Solenoid/Solenoid	Internal	–	2 ... 10	Push & turn	24 V d.c. 1,2 W	SJT	VS45S511DF213A
	5/2	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 10	Push only	24 V d.c. 1,2 W	SKU	VS45S522DF313A
	5/2	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 10	Push & turn	24 V d.c. 1,2 W	SKT	VS45S522DF213A
	5/2	Solenoid/Spring	Internal	–	2 ... 10	Push only	24 V d.c. 1,2 W	SGU	VS45S517DF313A
	5/2	Solenoid/Spring	Internal	–	2 ... 10	Push & turn	24 V d.c. 1,2 W	SGT	VS45S517DF213A
	5/2	Solenoid/Spring	External	2 ... 10	-0,9 ... 10	Push only	24 V d.c. 1,2 W	SHU	VS45S527DF313A
	5/2	Solenoid/Spring	External	2 ... 10	-0,9 ... 10	Push & turn	24 V d.c. 1,2 W	SHT	VS45S527DF213A

\*1) plus 0,6 x operating pressure  
NO = Normally Open, NC = Normally Closed, COE = Central Open Exhaust, COP = Central Open Pressure  
Valve dimensions see page 8

**Plug-in connection, solenoid actuated valves**
**5/2 Single and double solenoid actuated glandless valves (flow 3200 l/min)**

Symbol	Function	Actuation/ return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Manual override	Voltage	Short code	Model
	5/3 APB	Solenoid/Solenoid	Internal	–	2 ... 10	Push only	24 V d.c. 1,2 W	GLU	VS45G611DF313A
	5/3 APB	Solenoid/Solenoid	Internal	–	2 ... 10	Push & turn	24 V d.c. 1,2 W	GLT	VS45G611DF213A
	5/3 APB	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push only	24 V d.c. 1,2 W	GMU	VS45G622DF313A
	5/3 APB	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push & turn	24 V d.c. 1,2 W	GMT	VS45G622DF213A
	5/3 COE	Solenoid/Solenoid	Internal	–	2 ... 10	Push only	24 V d.c. 1,2 W	GQU	VS45G711DF313A
	5/3 COE	Solenoid/Solenoid	Internal	–	2 ... 10	Push & turn	24 V d.c. 1,2 W	GQT	VS45G711DF213A
	5/3 COE	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push only	24 V d.c. 1,2 W	GRU	VS45G722DF313A
	5/3 COE	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push & turn	24 V d.c. 1,2 W	GRT	VS45G722DF213A

**5/3 Double solenoid actuated softseal valves (flow 3700 l/min)**

Symbol	Function	Actuation/ return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Manual override	Voltage	Short code	Model
	5/3 APB	Solenoid/Solenoid	Internal	–	2,5 ... 10	Push only	24 V d.c. 1,2 W	SLU	VS45S611DF313A
	5/3 APB	Solenoid/Solenoid	Internal	–	2,5 ... 10	Push & turn	24 V d.c. 1,2 W	SLT	VS45S611DF213A
	5/3 APB	Solenoid/Solenoid	External	2,5 ... 10	-0,9 ... 10	Push only	24 V d.c. 1,2 W	SMU	VS45S622DF313A
	5/3 APB	Solenoid/Solenoid	External	2,5 ... 10	-0,9 ... 10	Push & turn	24 V d.c. 1,2 W	SMT	VS45S622DF213A

Valve dimensions see page 8

APB = All Ports Blocked, COE = Centre Open Exhaust

**Options selector**

Option	Substitute	Option	Substitute
<b>Spool technology</b>		<b>Manual override *3)</b>	
Glandless spool & sleeve	<b>G</b>	Push & turn	<b>2</b>
Softseal spool	<b>S</b>	Push only	<b>3</b>
<b>Guiding systems</b>		Extended, push only	<b>5</b>
2x3/2 Normally closed *1)	<b>A</b>	<b>Actuation/Pilot supply</b>	
2x3/2 Normally open *1)	<b>B</b>	Solenoid/Spring	<b>17</b>
2x3/2 Normally open/Normally closed *1)	<b>C</b>	Internal pilot supply	<b>27</b>
5/2	<b>5</b>	Solenoid/Spring	<b>27</b>
5/3 All ports blocked	<b>6</b>	External pilot supply	<b>11</b>
5/3 Centre open exhaust	<b>7</b>	Solenoid/Solenoid	<b>11</b>
		Internal pilot supply	<b>22</b>
		Solenoid/Solenoid	<b>22</b>
		External pilot supply	

\*1) Available with softseal spool only (VS45S).

\*2) Available with glandless spool only (VS45G).

\*3) On request

**Electrical details for solenoid operators**

<b>Voltage tolerances</b>	(24 V d.c.) +/- 10%
<b>Rating</b>	100 % Continuous duty
<b>Inlet orifice</b>	0,8 mm
<b>Indication</b>	LED green
<b>Surge suppression</b>	Transil diode
<b>Materials</b>	PPS (body), FPM and NBR (seal)

**Protection classification (IP Code):**

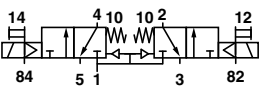
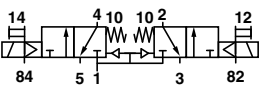
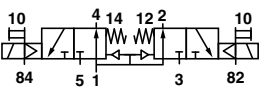
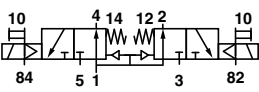
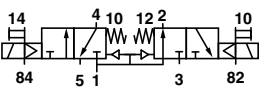
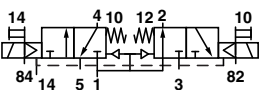
All VS45 valve islands fulfill IP65 and NEMA4 ratings.

**Power supply and precautions:**

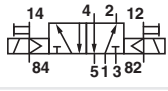
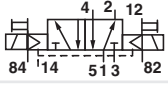
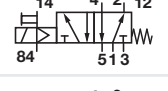
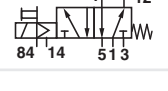
All VS45 24 V d.c products are designed to be used with a protective extra low voltage (PELV) power supply.

All VS45 115 V a.c products correspond to the protection class I. Connection of the protective earth (PE) ground is required.

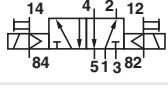
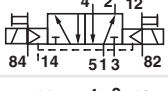
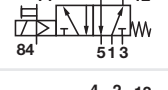
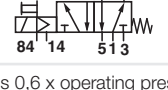
**Individually wired, solenoid actuated valves**  
**2x3/2 Double solenoid actuated softseal valves (flow 3900 l/min)**

Symbol	Function 2x2/2	Actuation/return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Manual override	Model
	2x3/2 NC or 5/3 COE	Solenoid/Spring	Internal	–	3 ... 10	Push only	VS45SA11DC3**#
	2x3/2 NC or 5/3 COE	Solenoid/Spring	Internal	–	3 ... 10	Push & turn	VS45SA11DC2**#
	2x3/2 NC or 5/3 COE	Solenoid/Spring	External	1,7*1)	0 ... 10	Push only	VS45SA22DC3**#
	2x3/2 NC or 5/3 COE	Solenoid/Spring	External	1,7*1)	0 ... 10	Push & turn	VS45SA22DC2**#
	2x3/2 NO or 5/3 COP	Solenoid/Spring	Internal	–	3 ... 10	Push only	VS45SB11DC3**#
	2x3/2 NO or 5/3 COP	Solenoid/Spring	Internal	–	3 ... 10	Push & turn	VS45SB11DC2**#
	2x3/2 NO or 5/3 COP	Solenoid/Spring	External	1,7*1)	0 ... 10	Push only	VS45SB22DC3**#
	2x3/2 NO or 5/3 COP	Solenoid/Spring	External	1,7*1)	0 ... 10	Push & turn	VS45SB22DC2**#
	2x3/2 NO/NC	Solenoid/Spring	Internal	–	3 ... 10	Push only	VS45SC11DC3**#
	2x3/2 NO/NC	Solenoid/Spring	Internal	–	3 ... 10	Push & turn	VS45SC11DC2**#
	2x3/2 NO/NC	Solenoid/Spring	External	1,7*1)	0 ... 10	Push only	VS45SC22DC3**#
	2x3/2 NO/NC	Solenoid/Spring	External	1,7*1)	0 ... 10	Push & turn	VS45SC22DC2**#

**5/2 Single and double solenoid actuated glandless valves (flow 3200 l/min)**

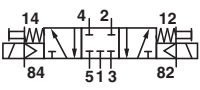
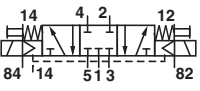
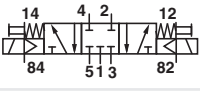
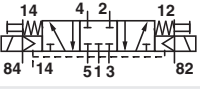
Symbol	Function	Actuation/return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Manual override	Model
	5/2	Solenoid/Solenoid	Internal	–	2 ... 10	Push only	VS45G511DC3**#
	5/2	Solenoid/Solenoid	Internal	–	2 ... 10	Push & turn	VS45G511DC2**#
	5/2	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push only	VS45G522DC3**#
	5/2	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push & turn	VS45G522DC2**#
	5/2	Solenoid/Spring	Internal	–	1,6 ... 10	Push only	VS45G517DC3**#
	5/2	Solenoid/Spring	Internal	–	1,6 ... 10	Push & turn	VS45G517DC2**#
	5/2	Solenoid/Spring	External	2 ... 10	-0,9 ... 16	Push only	VS45G527DC3**#
	5/2	Solenoid/Spring	External	2 ... 10	-0,9 ... 16	Push & turn	VS45G527DC2**#

**5/2 Single and double solenoid actuated softseal valves (flow 4200 l/min)**

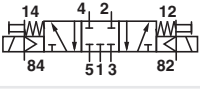
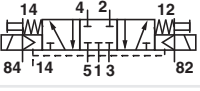
Symbol	Function	Actuation/return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Manual override	Model
	5/2	Solenoid/Solenoid	Internal	–	2 ... 10	Push only	VS45S511DC3**#
	5/2	Solenoid/Solenoid	Internal	–	2 ... 10	Push & turn	VS45S511DC2**#
	5/2	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 10	Push only	VS45S522DC3**#
	5/2	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 10	Push & turn	VS45S522DC2**#
	5/2	Solenoid/Spring	Internal	–	2 ... 10	Push only	VS45S517DC3**#
	5/2	Solenoid/Spring	Internal	–	2 ... 10	Push & turn	VS45S517DC2**#
	5/2	Solenoid/Spring	External	2 ... 10	-0,9 ... 10	Push only	VS45S527DC3**#
	5/2	Solenoid/Spring	External	2 ... 10	-0,9 ... 10	Push & turn	VS45S527DC2**#

\*1) plus 0,6 x operating pressure  
NO = Normally Open, NC = Normally Closed, COE = Central Open Exhaust, COP = Central Open Pressure  
Valve dimensions see page 8

**Individually wired, solenoid actuated valves**
**5/2 Single and double solenoid actuated glandless valves (flow 3200 l/min)**

Symbol	Function	Actuation/ return	Pilot supply	Pilot pressure (bar)	Operating pres- sure (bar)	Manual override	Model
	5/3 APB	Solenoid/Solenoid	Internal	–	2 ... 10	Push only	VS45G611DC3**#
	5/3 APB	Solenoid/Solenoid	Internal	–	2 ... 10	Push & turn	VS45G611DC2**#
	5/3 APB	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push only	VS45G622DC3**#
	5/3 APB	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push & turn	VS45G622DC2**#
	5/3 COE	Solenoid/Solenoid	Internal	–	2 ... 10	Push only	VS45G711DC3**#
	5/3 COE	Solenoid/Solenoid	Internal	–	2 ... 10	Push & turn	VS45G711DC2**#
	5/3 COE	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push only	VS45G722DC3**#
	5/3 COE	Solenoid/Solenoid	External	2 ... 10	-0,9 ... 16	Push & turn	VS45G722DC2**#

**5/3 Double solenoid actuated softseal valves (flow 3700 l/min)**

Symbol	Function	Actuation/ return	Pilot supply	Pilot pressure (bar)	Operating pres- sure (bar)	Manual override	Model
	5/3 APB	Solenoid/Solenoid	Internal	–	2,5 ... 10	Push only	VS45S611DC3**#
	5/3 APB	Solenoid/Solenoid	Internal	–	2,5 ... 10	Push & turn	VS45S611DC2**#
	5/3 APB	Solenoid/Solenoid	External	2,5 ... 10	-0,9 ... 10	Push only	VS45S622DC3**#
	5/3 APB	Solenoid/Solenoid	External	2,5 ... 10	-0,9 ... 10	Push & turn	VS45S622DC2**#

\*\* Please insert voltage codes at first, # Please insert connector codes  
 APB = All Ports Blocked COE = Centre Open Exhaust  
 Valve dimensions see page 8

**\*\* Voltage codes and spare pilot valves**

Voltage	Code	Manual override	Power Inrush / Hold	Pilot valve
24 V d.c.	13	Push & turn	1,2 W	VS45DC213-KG00
110/120 V 50/60 Hz	18	Push & turn	2,1 / 1,5 VA	VS45DC218-KG00
24 V d.c.	13	Push only	1,2 W	VS45DC313-KG00
110/120 V 50/60 Hz	18	Push only	2,1 / 1,5 VA	VS45DC318-KG00

**# Connector codes and part numbers**

Code	Part number
A = Solenoid without connector	
B = 12-250 V a.c./d.c. wireable connector	V10027-D00
C = 12-250 V a.c./d.c. 3 m moulded cable	V10013-D03
H = 12-24 V d.c. LED, Surge suppression, wireable connector	V10012-D13
J = 110 V a.c. LED, Surge suppression, wireable connector	V10012-D18
5 = 24 V a.c./d.c., LED, Surge suppression, 3 m moulded cable	V10014-D03
6 = 110 V a.c., LED, Surge suppression, 3 m moulded cable	V10015-D03

**Options selector**

Spool technology	Substitute
Glandless spool & sleeve	<b>G</b>
Softseal spool	<b>S</b>
Guiding systems	Substitute
2x3/2 Normally closed *1)	<b>A</b>
2x3/2 Normally open *1)	<b>B</b>
2x3/2 Normally open/Normally closed *1)	<b>C</b>
5/2	<b>5</b>
5/3 All ports blocked	<b>6</b>
5/3 Centre open exhaust	<b>7</b>

**VS45\*\*\*\*\*DC\*\*\*\*\*A**

\*1) Available with softseal spool only (VS45S).  
 \*2) Available with glandless spool only (VS45G).  
 \*3) On request

Voltage	Substitute
24 V d.c 1,2 W	<b>13</b>
115 V a.c 1,5 VA	<b>18</b>
Manual override *3)	Substitute
Push & turn	<b>2</b>
Push only	<b>3</b>
Extended, push only *3)	<b>5</b>
Actuation/Pilot supply	Substitute
Solenoid/Spring Internal pilot supply	<b>17</b>
Solenoid/Spring External pilot supply	<b>27</b>
Solenoid/Solenoid Internal pilot supply	<b>11</b>
Solenoid/Solenoid External pilot supply	<b>22</b>

**Air pilot actuated valves**

**2x3/2 Double pilot actuated softseal valves (flow 3900 l/min)**

Symbol	Function	Actuation/return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Model
	2x3/2 NC or 5/3 COE	Air/air	External	1,7 *1)	3 ... 10	VS45SADDAX900A
	2x3/2 NO or 5/3 COP	Air/air	External	1,7 *1)	3 ... 10	VS45SBDAX900A
	2x3/2 NO/NC	Air/air	External	1,7 *1)	3 ... 10	VS45SCDDAX900A

**5/2 Single and double pilot actuated glandless valves (flow 3200 l/min)**

Symbol	Function	Actuation/return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Model
	VS45G5D7AX900A	05. Feb	Air/spring	External	2 ... 10	1,6 ...10
	VS45G5DDAX900A	05. Feb	Air/air	External	2 ... 10	2 ...10

**5/2 Single and double pilot actuated softseal valves (flow 4200 l/min)**

Symbol	Function	Actuation/return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Model
	VS45S5D7AX900A	05. Feb	Air/spring	External	2 ... 10	2 ... 10
	VS45S5DDAX900A	05. Feb	Air/air	External	2 ... 10	2 ... 10

**5/3 Double pilot actuated glandless valves (flow 2900 l/min)**

Symbol	Function	Actuation/return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Model
	VS45G5DDAX900A	APB	Air/Air	External	2 ... 10	-0,9 ... 16
	VS45G7DDAX900A	COE	Air/Air	External	2 ... 10	-0,9 ... 16

**5/3 Double pilot actuated glandless valves (flow 2900 l/min)**

Symbol	Function	Actuation/return	Pilot supply	Pilot pressure (bar)	Operating pressure (bar)	Model
	VS45S5D7AX900A	APB	Air/Air	External	2 ... 10	2,5 ... 10

\*1) plus 0,6 x operating pressure  
Valve dimensions see page 8

**Options selector**

**VS45★★D★AX900A**

<b>Spool technology</b>	<b>Substitute</b>	←----- -----→	<b>Actuation/return</b>	<b>Substitute</b>
Glandless spool & sleeve	<b>G</b>		Air/Spring	<b>7</b>
Softseal spool	<b>S</b>		Air/Air	<b>D</b>
<b>Guiding systems</b>	<b>Substitute</b>	←----- -----→	<b>Manual override *3)</b>	<b>Substitute</b>
2x3/2 Normally closed *1)	<b>A</b>		5/2	<b>5</b>
2x3/2 Normally open *1)	<b>B</b>		5/3 All ports blocked	<b>6</b>
2x3/2 Normally open/Normally closed *1)	<b>C</b>		5/3 Centre open exhaust	<b>7</b>

\*1) Available with softseal spool only (VS45S).  
\*2) Available with glandless spool only (VS45G).  
\*3) On request

**Accessories**
**Base accessories**
**Intermediate supply/exhaust module**

**Page 13**

VS4540416-BG00 (G1/2)

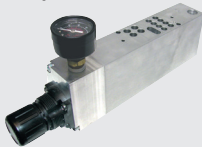
**Blanking plate**

**Page 13**

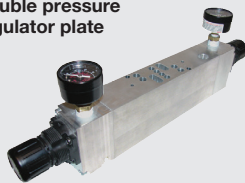
VS4540415-KG00

**Port blanking discs for modular sub-base**


V40414-K00 (Ports 1, 3, 5)

**Sandwich plates**
**Single pressure regulator plate**

**Page 11**

VS4540410-KG10 (Port 1)

**Double pressure regulator plate**

**Page 11**

VS4540410-KG40 (Ports 2+4)

**Flow regulator plate**

**Page 12**

VS4540408-KG00

**Replacement gauge**


18-015-212

**Replacement Solenoids**
**Plug-in replacement solenoids**


VS45DF313-KG00	24V DC 1.2W	Push only
VS45DF213-KG00	24V DC 1.2W	Push & turn
VS45DF513-KG00	24V DC 1.2W	Extended, push only

**Individually wired replacement solenoids**


VS45DC313-KG00	24V DC 1.2W	Push only
VS45DC213-KG00	24V DC 1.2W	Push & turn
VS45DC318-KG00	110/120 Vac	Push only
VS45DC218-KG00	110/120 Vac	Push & turn

**Air pilot replacement operator**


VS45AX900-KG00

Kits include screws, gasket and V ring.

**Cables**
**D Sub-connector  
25 pin, IP65**

**Page 13**

V11569-E01 (1 m)
V11569-E03 (3 m)
V11569-E05 (5 m)

**D Sub-connector  
44 pin, IP65**

**Page 13**

V11570-E01 (1 m)
V11570-E03 (3 m)
V11570-E05 (5 m)

**D Sub-connector  
25 pin 90°, IP65**

**Page 14**

V12086-E01 (1 m)
V12086-E03 (3 m)
V12086-E05 (5 m)

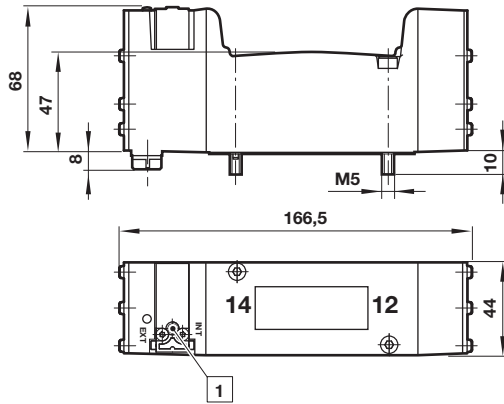
**D Sub-connector  
44 pin 90°, IP65**

**Page 14**

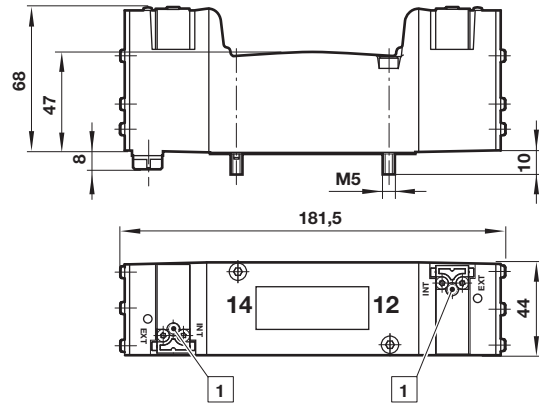
V12088-E01 (1 m)
V12088-E03 (3 m)
V12088-E05 (5 m)

**Valve dimensions**

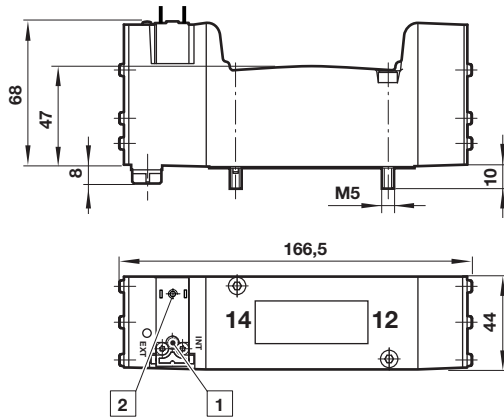
Plug-in connection  
VS45\*5\*7DF\*13A models  
5/2 Single solenoid valve, spring return



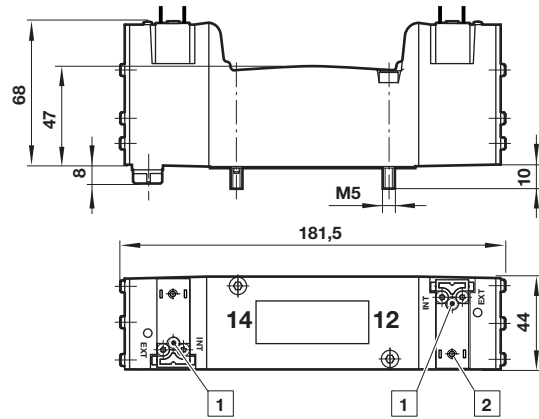
Plug-in connection  
VS45\*\*\*DF\*13A models  
2x3/2, 5/2 and 5/3 Double solenoid valve



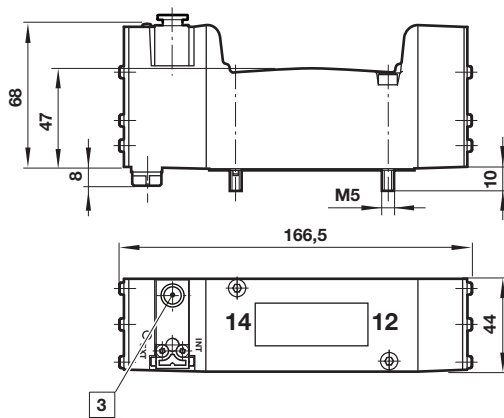
Individually wired connection  
VS45\*5\*7DC\*1\*A models  
5/2 Single solenoid valve, spring return



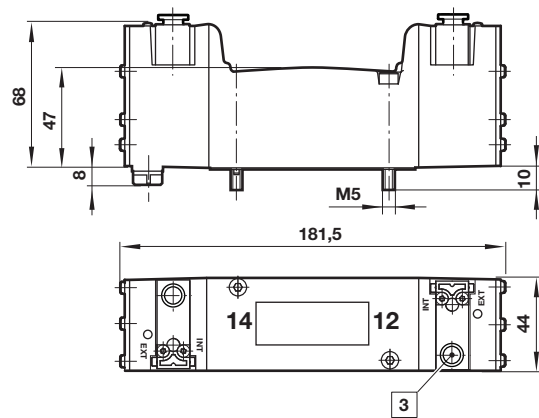
Individually wired connection  
VS45\*\*\*DC\*1\*A models  
2x3/2, 5/2 and 5/3 Double solenoid valve



Air pilot  
VS45\*5D\*AX900A models  
5/2 Single air pilot valve, spring return



Air pilot  
VS45\*\*\*AX900A models  
2x3/2, 5/2 and 5/3 Double air pilot valve



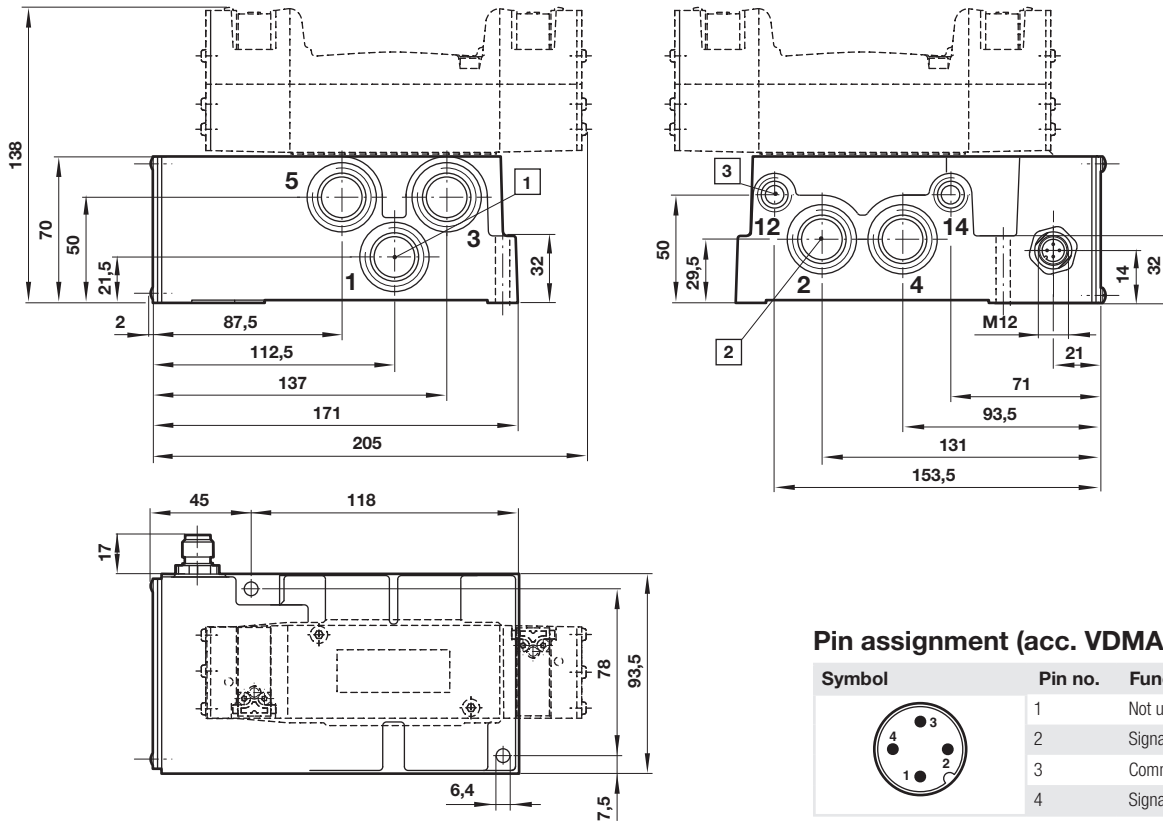
- 1 Manual override
- 2 Electrical connection
- 3 Pilot port  $\varnothing$  4 mm



### Single station sub-base, connector type: M12

Description	Ports 1, 3 & 5	Ports 12/14	Ports 2 & 4	Model
Stand alone, single subbase for 24 V d.c.	G1/2	G1/8	G1/2	VS4540438-DG00
Stand alone, single subbase for 24 V d.c.	G3/4	G1/8	G3/4	VS4540438-EG00

Dimensions in mm  
Projection/First angle

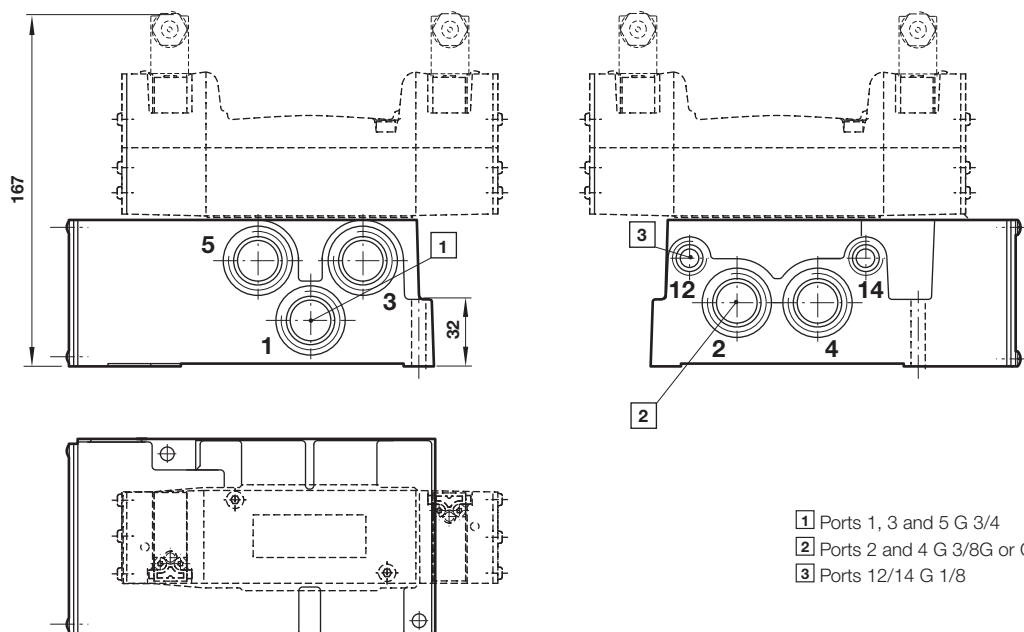


#### Pin assignment (acc. VDMA 24571)

Symbol	Pin no.	Function
	1	Not used
	2	Signal for solenoid 12
	3	Common for solenoid 12 and 14
	4	Signal for solenoid 14

### Single station sub-base, connector type: M12

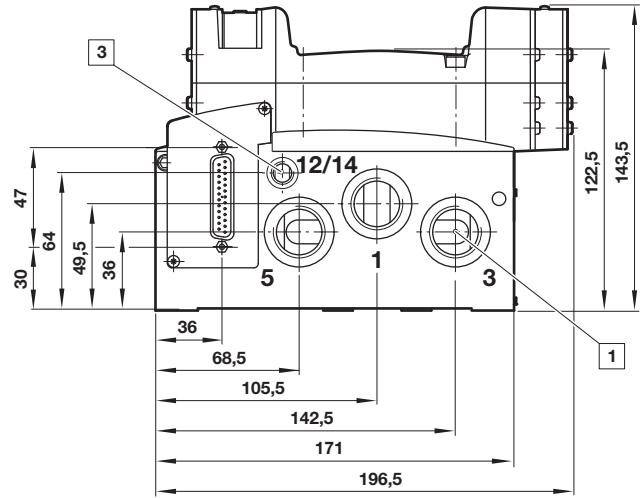
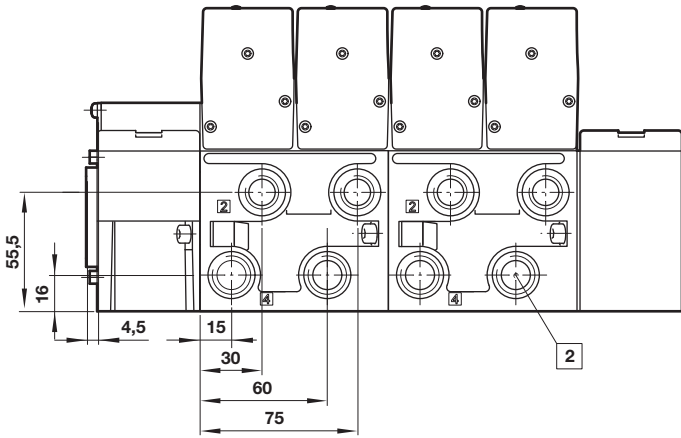
Description	Ports 1, 3 & 5	Ports 12/14	Ports 2 & 4	Model
Stand alone, single station subbase, individually wired & air pilot	G1/2	G1/8	G1/2	VS4540438-DG01
Stand alone, single station subbase, individually wired & air pilot	G3/4	G1/8	G3/4	VS4540438-EG01



- 1 Ports 1, 3 and 5 G 3/4
- 2 Ports 2 and 4 G 3/8G or G 1/2
- 3 Ports 12/14 G 1/8

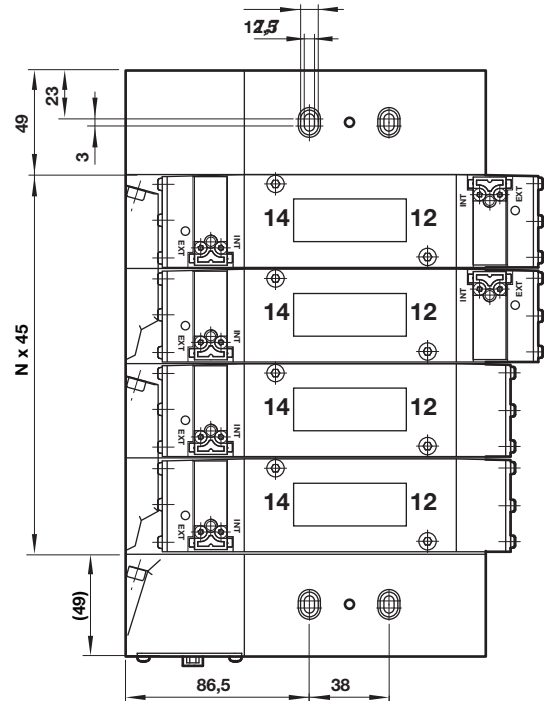
Valve island dimensions, multipole/fieldbus connection  
See page 24 for sub-base and end plate kit ordering information.

Dimensions in mm  
Projection/First angle



- 1 Ports 1, 3 and 5 G 3/4
- 2 Ports 2 and 4 G 3/8G or G 1/2
- 3 Ports 12/14 G 1/8

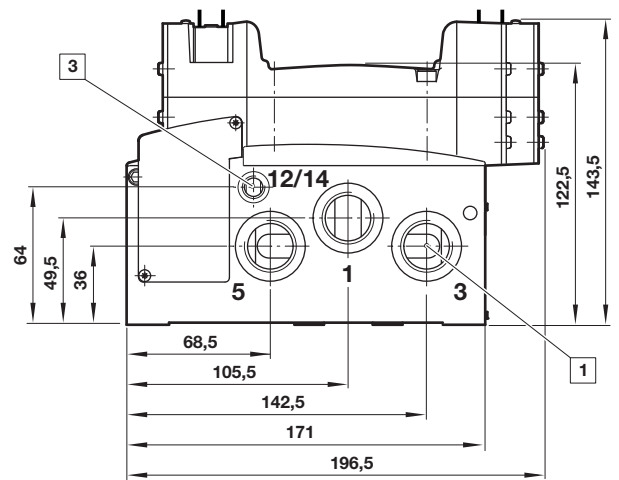
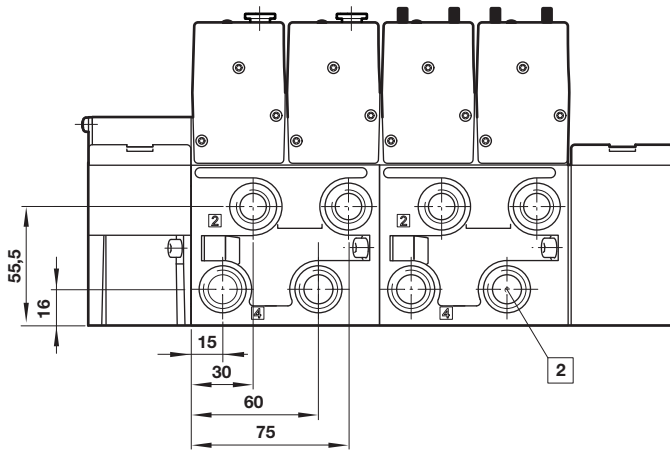
N Number of stations



Electrical connection	Min. no. of valve stations	Max. no. of valve stations	For details see page
Multipole	2	16	15
Other Fieldbus protocols	4	16	18

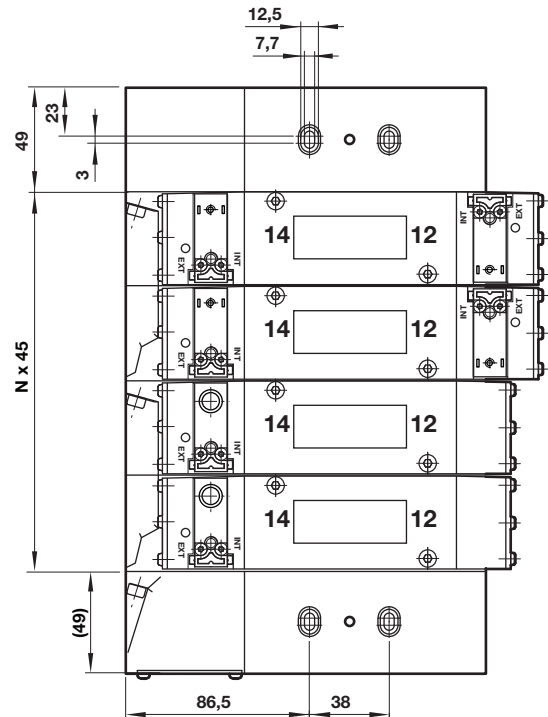
**Valve island dimensions, individually wired & air pilot**  
See page 24 for sub-base and end plate kit ordering information.

Dimensions in mm  
Projection/First angle



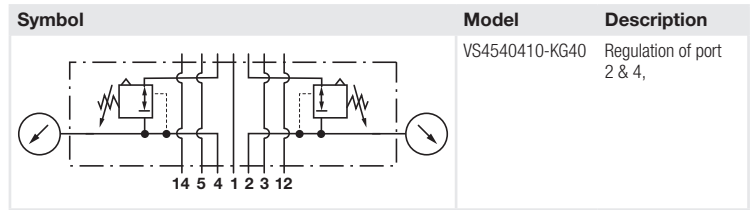
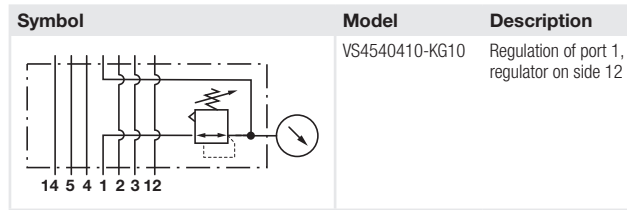
- 1 Ports 1, 3 and 5 G 3/4
- 2 Ports 2 and 4 G 3/8G or G 1/2
- 3 Ports 12/14 G 1/8

**N** Number of stations

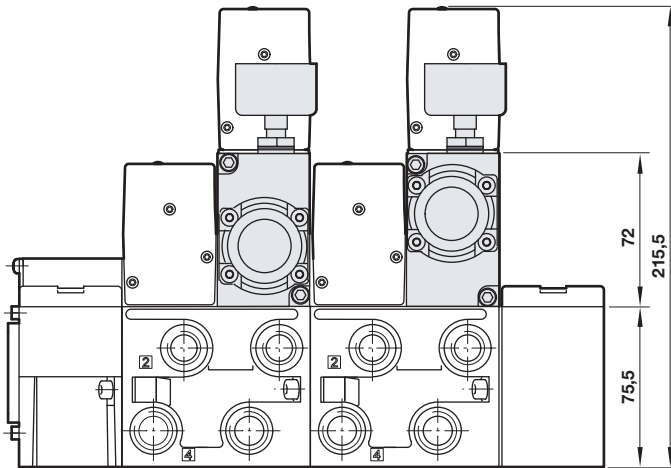


**Sandwich plates**

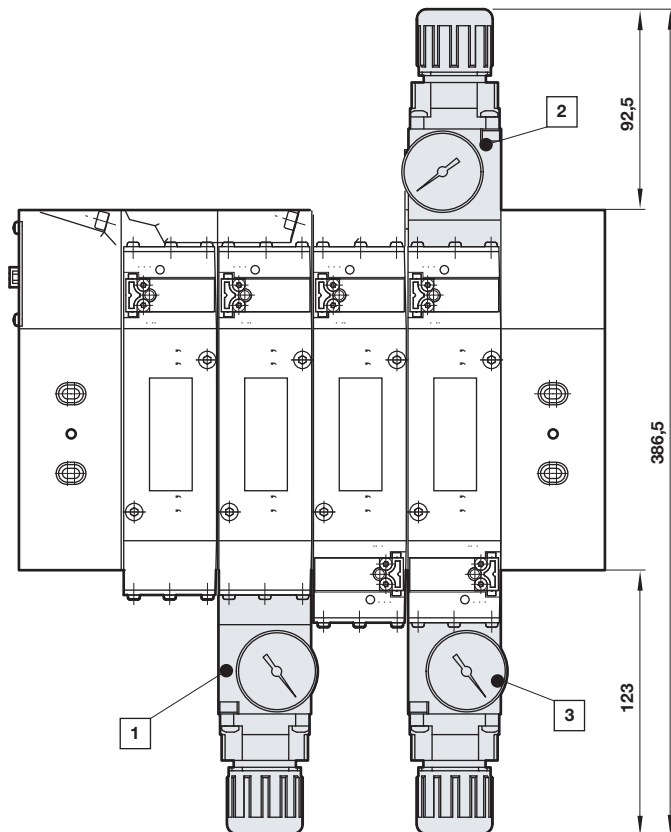
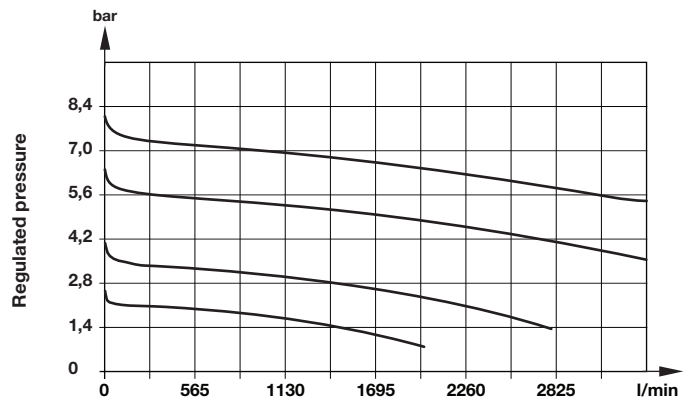
**Pressure regulator sandwich plates**



Dimensions in mm  
Projection/First angle

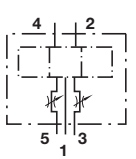


**Flow characteristics for pressure regulator plates**



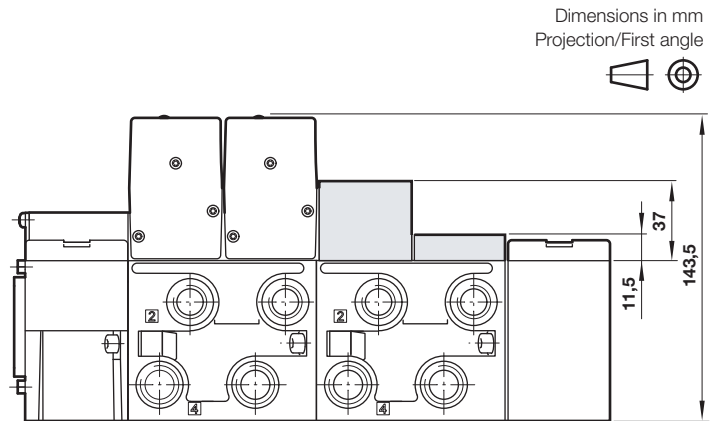
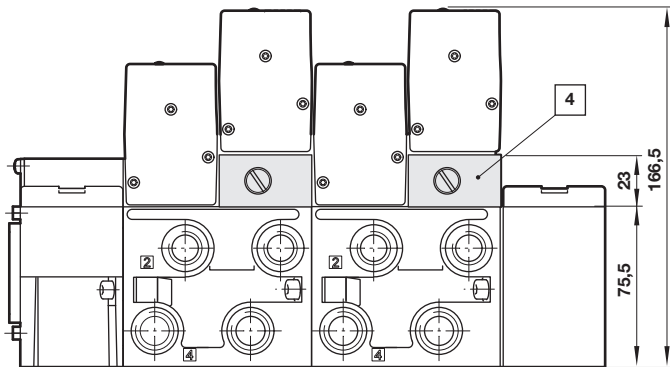
- 1 Regulation of port 1
- 2 Regulation of port 2+4
- 3 Gauge

**Sandwich plates**  
**Flow regulator sandwich plates**

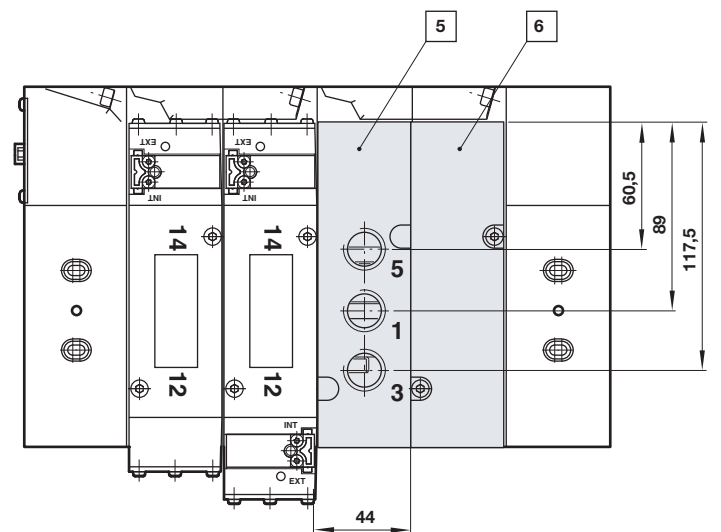
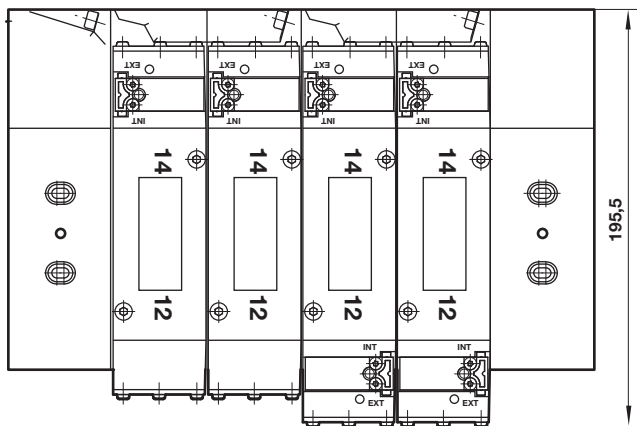
Symbol	Model	Description
	VS4540408-KG00	Flow regulator supplied with gasket, dual regulation of exhaust ports 3 and 5

Model	Description
VS4540416-BG00	Intermediate supply & exhaust manifold (ISEM), port size G 1/4 *1)
VS4540415-KG00	Blanking plate for blocking of unused stations (supplied with gasket)

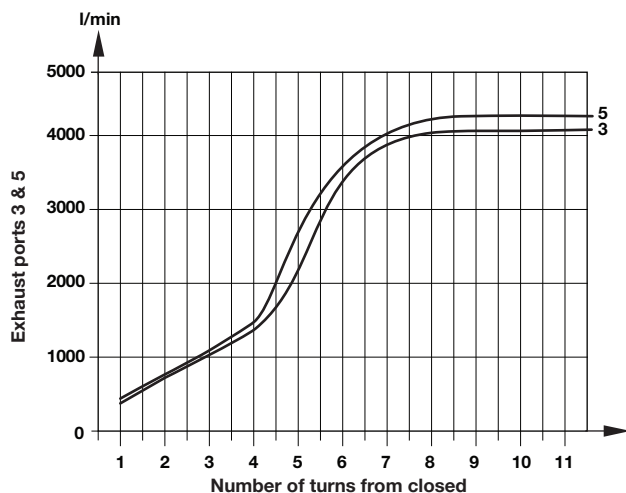
\*1) For use see page 14



Dimensions in mm  
Projection/First angle



**Flow characteristics**  
**Dual regulation of exhaust ports 3 and 5**



- 4) Flow regulator plate
- 5) Intermediate supply & exhaust manifold (ISEM)
- 6) Blanking plate

Flow: port 1 > 2 and 1 > 4: remains unchanged.  
Flow measured at 6 bar inlet, pressure drop 1 bar

Multi pressure configurations

Dimensions in mm  
Projection/First angle



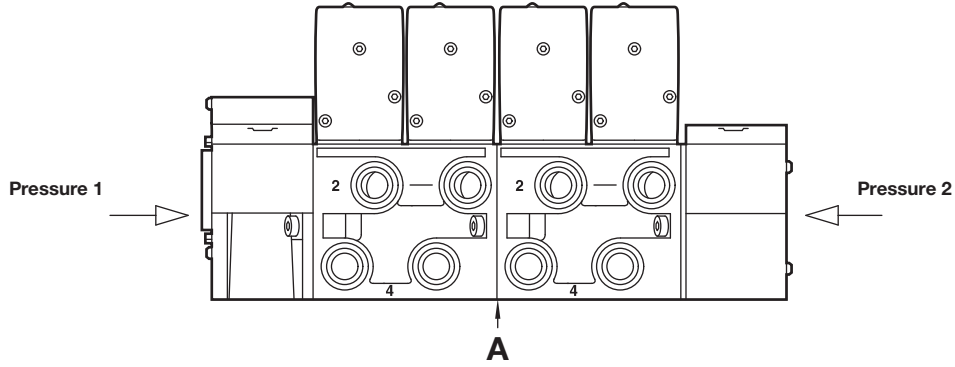
**A**

Blanking disc	Type
V40414-K00	Suitable for ports 1, 3 and/or 5

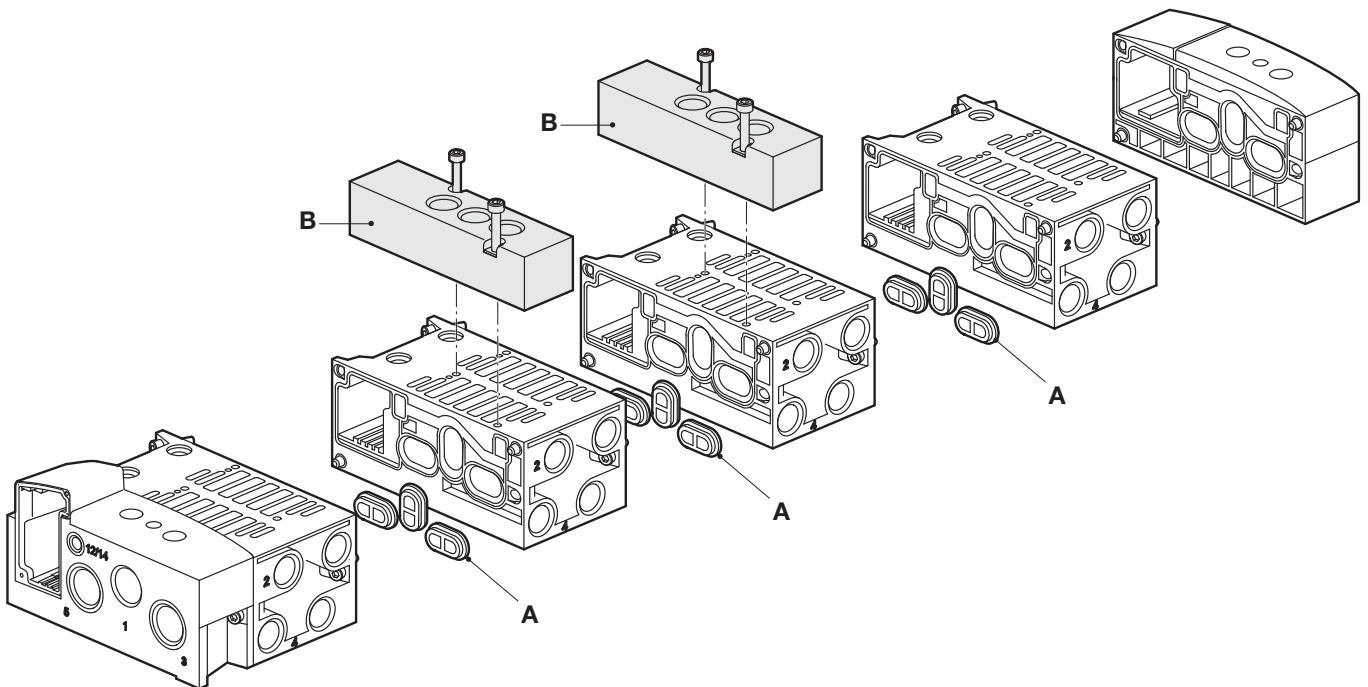
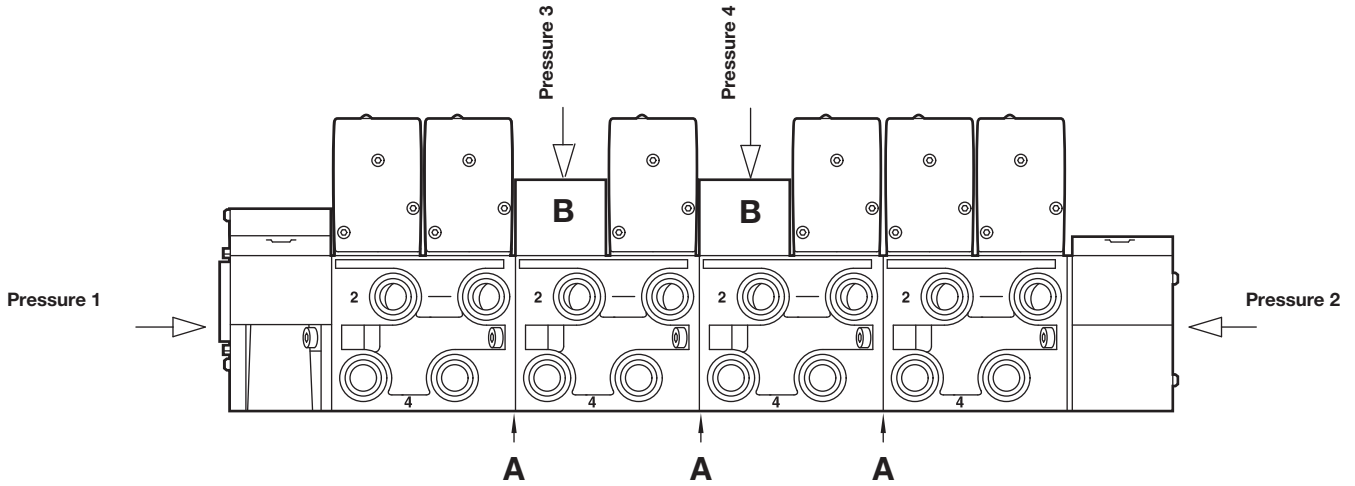
**B**

Intermediate supply & exhaust manifold (ISEM)	Type
VS4540416-BG00	G 1/4

Dual pressure



Multi pressure

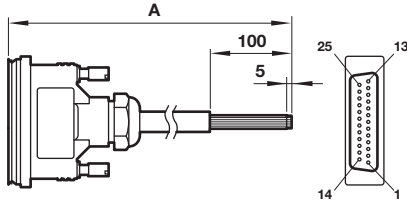


## Multipole options

Connector type	Voltage	No. of stations	Max. no. solenoids
D-Sub 25-pin	24 V d.c.	02/03/04/05/06/07/08/09/10/11/12	24
D-Sub 44-pin	24 V d.c.	08/09/10/11/12/13/14/15/16	32

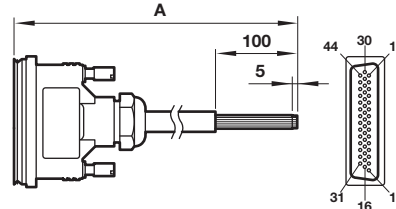
For details of single parts see pages 21

### D sub-connector 25 pin (IP65)



A	Model
1 m	V11569-E01
3 m	V11569-E03
5 m	V11569-E05

### D Sub-connector 44 pin (IP65)



Dimensions in mm  
Projection/First angle



A	Model
1 m	V11570-E01
3 m	V11570-E03
5 m	V11570-E05

Pin no.	Wire colour	Socket	Pilot	Station
1	White	Solenoid 1-a	14	1
2	Brown	Solenoid 2-a	14	2
3	Green	Solenoid 3-a	14	3
4	Yellow	Solenoid 4-a	14	4
5	Grey	Solenoid 5-a	14	5
6	Pink	Solenoid 6-a	14	6
7	Blue	Solenoid 7-a	14	7
8	Red	Solenoid 8-a	14	8
9	Black	Solenoid 9-a	14	9
10	Violet	Solenoid 10-a	14	10
11	Grey/Pink	Solenoid 11-a	14	11
12	Red/Blue	Solenoid 12-a	14	12
13	White/Green	Common-Ve		—
14	Brown/Green	Solenoid 1-b	12	1
15	White/Yellow	Solenoid 2-b	12	2
16	Yellow/Brown	Solenoid 3-b	12	3
17	White/Grey	Solenoid 4-b	12	4
18	Grey/Brown	Solenoid 5-b	12	5
19	White/Pink	Solenoid 6-b	12	6
20	Pink/Brown	Solenoid 7-b	12	7
21	White/Blue	Solenoid 8-b	12	8
22	Brown/Blue	Solenoid 9-b	12	9
23	White/Red	Solenoid 10-b	12	10
24	Brown/Red	Solenoid 11-b	12	11
25	White/Black	Solenoid 12-b	12	12

Note: Conforms to DIN 47100

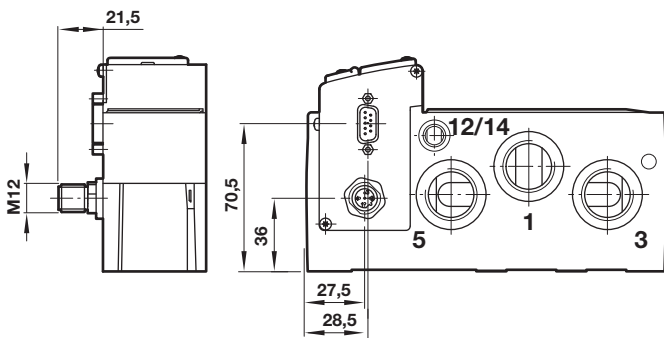
Pin no.	Wire colour	Socket	Pilot	Station
1	White	Solenoid 1-a	14	1
2	Brown	Solenoid 2-a	14	2
3	Green	Solenoid 3-a	14	3
4	Yellow	Solenoid 4-a	14	4
5	Grey	Solenoid 5-a	14	5
6	Pink	Solenoid 6-a	14	6
7	Blue	Solenoid 7-a	14	7
8	Red	Solenoid 8-a	14	8
9	Black	Solenoid 9-a	14	9
10	Violet	Solenoid 10-a	14	10
11	Grey/Pink	Solenoid 11-a	14	11
12	Red/Blue	Solenoid 12-a	14	12
13	White/Green	Solenoid 13-a	14	13
14	Brown/Green	Solenoid 14-a	14	14
15	White/Yellow	Solenoid 15-a	14	15
16	Yellow/Brown	Solenoid 1-b	12	1
17	White/Grey	Solenoid 2-b	12	2
18	Grey/Brown	Solenoid 3-b	12	3
19	White/Pink	Solenoid 4-b	12	4
20	Pink/Brown	Solenoid 5-b	12	5
21	White/Blue	Solenoid 6-b	12	6
22	Brown/Blue	Solenoid 7-b	12	7
23	White/Red	Solenoid 8-b	12	8
24	Brown/Red	Solenoid 9-b	12	9
25	White/Black	Solenoid 10-b	12	10
26	Brown/Black	Solenoid 11-b	12	11
27	Grey/Green	Solenoid 12-b	12	12
28	Yellow/Grey	Solenoid 13-b	12	13
29	Pink/Green	Solenoid 14-b	12	14
30	Yellow/Pink	Solenoid 15-b	12	15
31	Green/Blue	Solenoid 16-a	14	16
32	Yellow/Blue	Solenoid 16-b	12	16
33	—	Not used	—	—
34	—	Not used	—	—
35	—	Not used	—	—
36	—	Not used	—	—
37	—	Not used	—	—
38	—	Not used	—	—
39	—	Not used	—	—
40	—	Not used	—	—
41	—	Not used	—	—
42	—	Not used	—	—
43	—	Not used	—	—
44	Red/Black Yellow/Black	Common -Ve	—	—

**Fieldbus options: Overview**

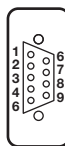
Fieldbus protocol	Fieldbus interface/connector	Power connector (Fieldbus and valves)	No. of stations	Max. no. solenoids
Profibus DP	1xD-Sub9-pin	M12 4-pin	04/05/06/07/08/09/10/11/12/13/14/15/16	32
	2xM125-pin	M12 4-pin	04/05/06/07/08/09/10/11/12/13/14/15/16	32
CANopen	1xM125-pin	M12 4-pin	04/05/06/07/08/09/10/11/12/13/14/15/16	32
AB RIO	2xM125-pin	M12 4-pin	04/05/06/07/08/09/10/11/12/13/14/15/16	32

For parts and assembly instructions of Fieldbus components, consult our technical service.


**Fieldbus protocol: Profibus DP  
Connector: 1 x D-Sub 9-pin / M12 4-pin**



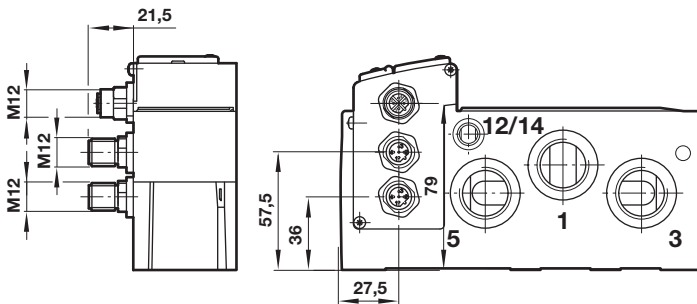
**Bus connector: D-Sub 9-pin**

Female Communication in/out	Pin no.	Function
	1	Shield
	2	N/C
	3	B-line (red) RxD / TxD-P
	4	N/C
	5	DGND (OVI) isolated
	6	VP (5V) isolated
	7	N/C
	8	A-line (green) RxD / TxD-N N/C
	9	N/C



**Power connector: M12 4-pin**

Male	Pin no.	Function	Tolerance	Max. current
	1	24 VB logic circuit supply	±25%	300 mA
	2	24 VA valves	±10%	*1)
	3	0 V	–	*2)
	4	Earth	–	–


**Connector: 2 x M12 5-pin / M12 4-pin**



**Bus connector: M12 5-pin (B-coded)**

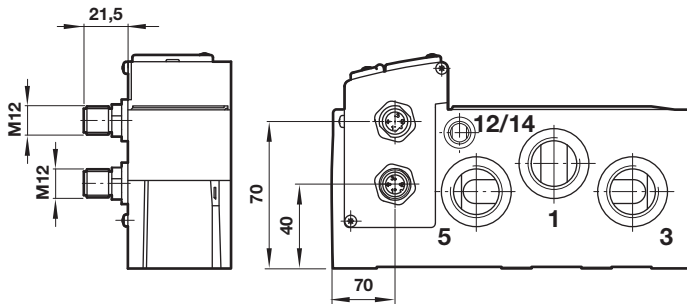
Male Communication in	Female Communication out	Pin no.	Function
		1	5VI Opto isolated
		2	A-line (green)
		3	OVI Opto isolated
		4	B-line (red)
		5	Shield
		Threaded joint	Shield


**Power connector: M12 4-pin**

Male	Pin no.	Function	Tolerance	Max. current
	1	24 VB logic circuit supply	±25%	300 mA
	2	24 VA valves	±10%	*1)
	3	0 V	–	*2)
	4	Earth	–	–


\*1)  $I_{max} = 10 \text{ mA} + n \cdot 60 \text{ mA}$   
n = number of energized solenoids  
\*2)  $I_{max} = I_{VA} + I_{VB}$

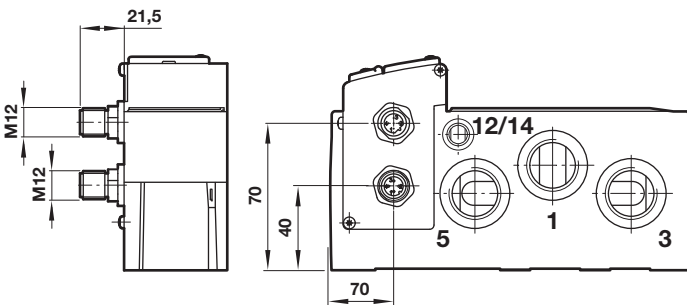



**Fieldbus protocol: DeviceNet  
Connector: 1 x M12 5-pin / M12 4-pin**

**Bus connector: M12 5-pin (A-coded)**

Male communication in	Pin no.	Function	Tolerance	Max. current
	1	Drain	-	-
	2	V+ 24 V *3)	±25%	200mA
	3	V- 0 V *3)	-	-
	4	CAN_H	-	-
	5	CAN_L	-	-


**Power connector: M12 4-pin**

Male	Pin no.	Function	Tolerance	Max. current
	1	-	-	-
	2	24 VA valves	±10%	*1)
	3	0 V	-	*2)
	4	Earth	-	-

**Fieldbus protocol: CANopen  
Connector: 1 x M12 5-pin / M12 4-pin**

**Bus connector: M12 5-pin (A-coded)**

Male communication in	Pin no.	Function	Tolerance	Max. current
	1	Drain	-	-
	2	V+ 24 V *3)	±25%	200mA
	3	V- 0 V *3)	-	-
	4	CAN_H	-	-
	5	CAN_L	-	-

**Power connector: M12 4-pin**






Male	Pin no.	Function	Tolerance	Max. current
	1	-	-	-
	2	24 VA valves	±10%	*1)
	3	0 V	-	*2)
	4	Earth	-	-

\*1)  $I_{max} = 10 \text{ mA} + n \cdot 60 \text{ mA}$   
n = number of energized solenoids

\*2)  $I_{max} = I_{VA} + I_{VB}$

\*3) Must be galvanic isolated to 24 VA valves.

**Fieldbus accessories**

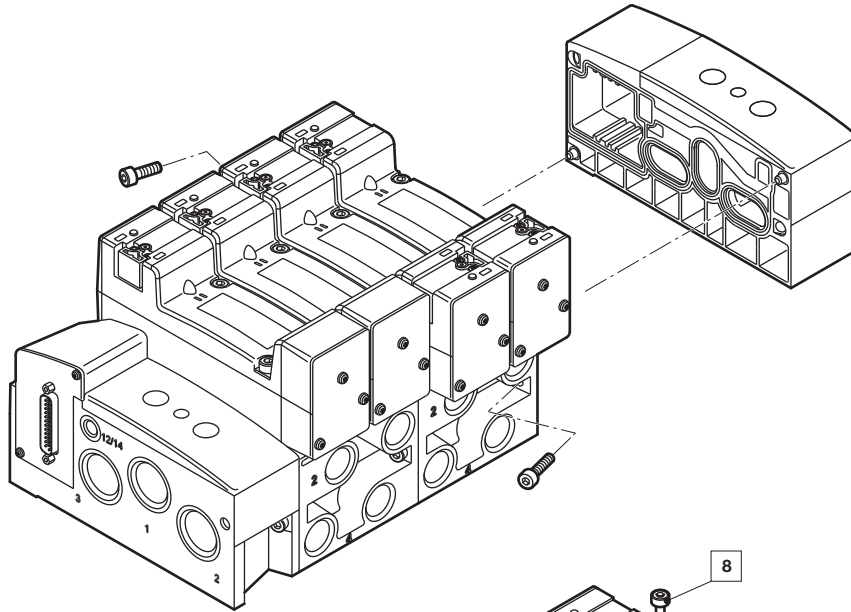
Fieldbus power connector	Description	Connection	Cable length	Protection class	Model
	Profibus DP (4-pin, female) Interbus-S (4-pin, female) DeviceNet (4-pin, female) CANopen (4-pin, female) AB RIO (4-pin, female)	M12	Wireable	IP65 Required for ATEX	V11588-E01
<b>Communication cable and connector</b>					
	DeviceNet (5-pin, female) CANopen (5-pin, female) AB RIO (5-pin, female)	M12	Wireable	IP65 Required for ATEX	V11589-E01
	Profibus DP, reverse keyway (5-pin, male)	M12	Wireable	IP65 Required for ATEX	V11590-E01
	Profibus DP, reverse keyway (5-pin, female)	M12	Wireable	IP65 Required for ATEX	V11591-E01
	Profibus DP connector (9-pin, male) with terminating resistor	D-Sub	Wireable	IP65 Required for ATEX	V11654-E01
	Profibus DP terminating resistor (male)	M12	-	IP40	V11592-E01

**A – Single add-on stations including PCB, sub-base, gasket and screws**

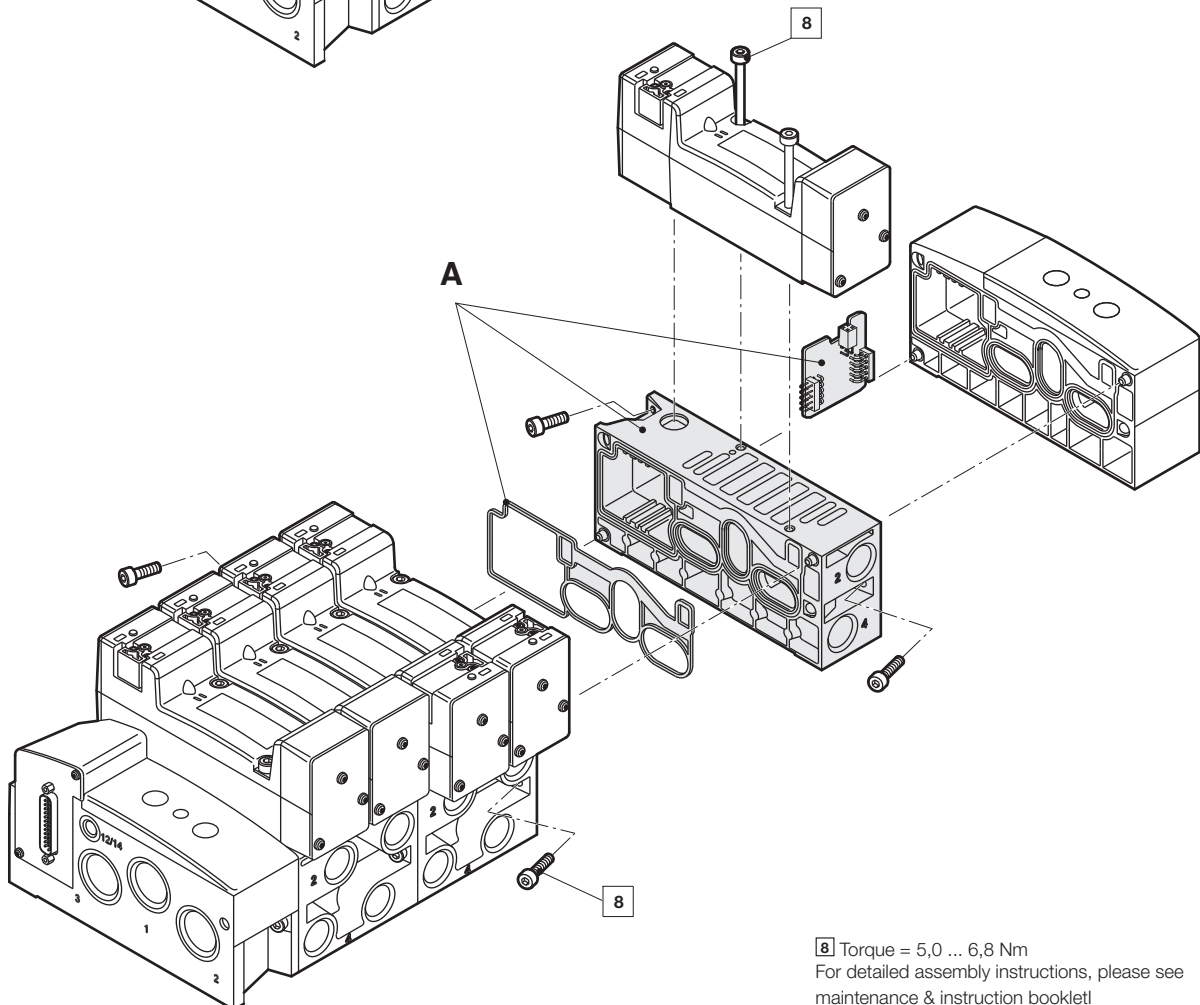
Ports 2 & 4	Description	Model
G3/8	Add-on station for D-Sub connectors and Fieldbus	VS4540400-CGC1
G1/2	Add-on station for D-Sub connectors and Fieldbus	VS4540400-CGC1

Valves and accessories to be ordered separately, see pages 2 ... 7

**Step 1**



**Step 2**



**8** Torque = 5,0 ... 6,8 Nm  
For detailed assembly instructions, please see maintenance & instruction booklet!

**Sub-bases and end plates (without PCB's)  
including screws and gaskets**
**A – End plate kit**

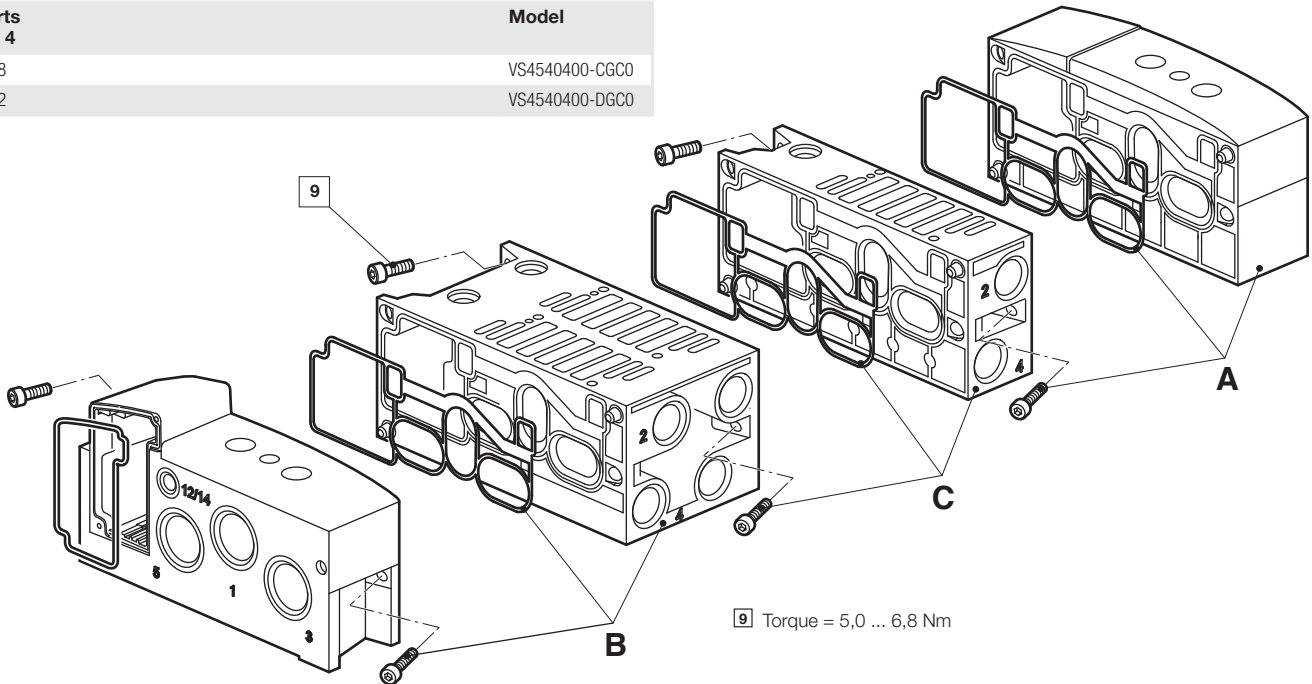
Description	Ports 1, 3 + 5	Ports 12/14	Model
End plate kit for Multipole	G3/4	G1/8	VS4540403-EGC0
End plate kit for Multipole	G3/4	G1/8	VS4540403-EGC1

**B – Double station modular sub-base**

Ports 2 + 4	Model
G3/8	VS4540401-CGCO
G1/2	VS4540401-DGCO

**C – Single station modular sub-base**

Ports 2 + 4	Model
G3/8	VS4540400-CGCO
G1/2	VS4540400-DGCO

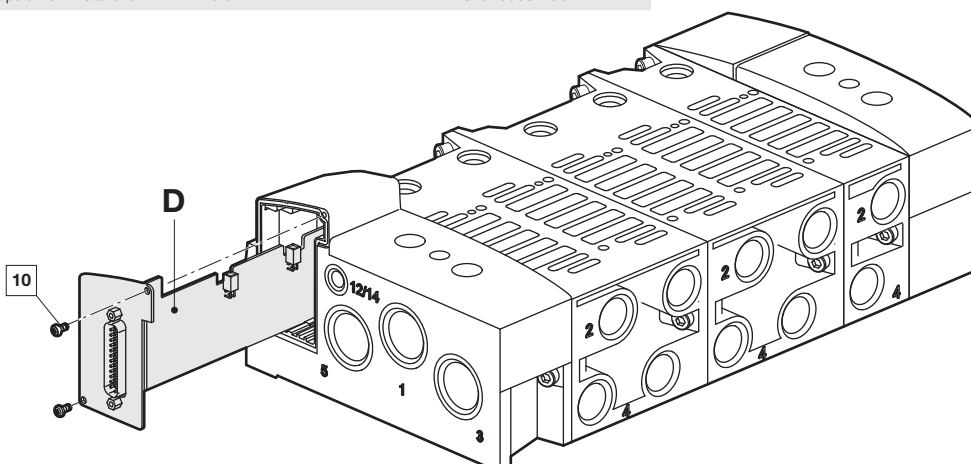

**Multipole components**
**D – Output boards with D-Sub connectors**

Connector type	Description	Expandable to max. x no. of stations 1*)	Voltage	Model
D-Sub 25-pin	Multipole PCB 2 stations	6	24 V d.c.	VS4540550-KG00
D-Sub 25-pin	Multipole PCB 4 stations	8	24 V d.c.	VS4540550-KG01
D-Sub 25-pin	Multipole PCB 6 stations	10	24 V d.c.	VS4540550-KG02
D-Sub 44-pin	Multipole PCB 8 stations	12	24 V d.c.	VS4540550-KG03
D-Sub 44-pin	Multipole PCB 10 stations	14	24 V d.c.	VS4540550-KG04
D-Sub 44-pin	Multipole PCB 12 stations	16	24 V d.c.	VS4540550-KG05

1) Using expansion output boards below.2

**Expansion output boards for D-Sub connectors**

Description	Voltage	Model
Multipole PCB 1 station	24 V d.c.	VS4540553-KG00
Multipole PCB 2 stations	24 V d.c.	VS4540553-KG01



**Sub-bases and end plates (without PCB's)  
including screws and gaskets**

**A – End plate kit**

Description	Ports 1, 3 + 5	Ports 12/14	Model
End plate kit for Multipole	G3/4	G1/8	VS4540403-EGCO

**C – Single station modular sub-base**

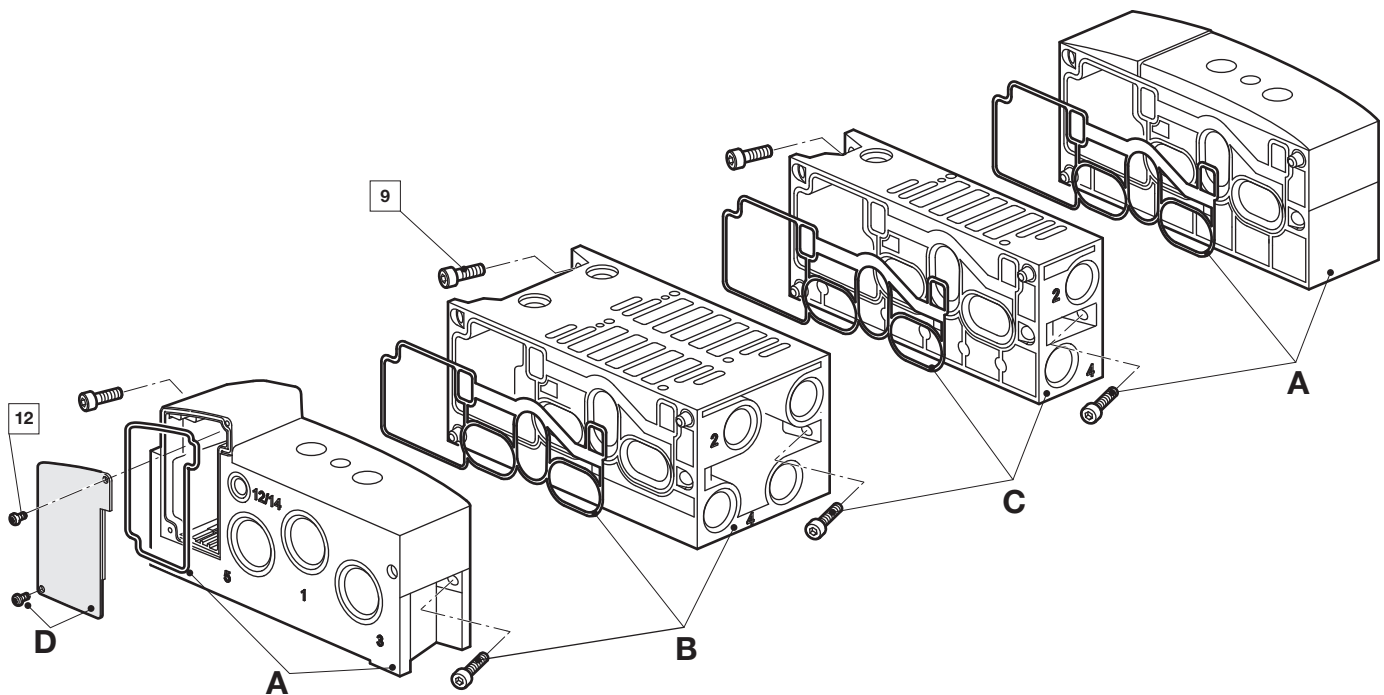
Ports 2 + 4	Model
G3/8	VS4540400-CGCO
G1/2	VS4540400-DGCO

**B – Double station modular sub-base**

Ports 2 + 4	Model
G3/8	VS4540401-CGCO
G1/2	VS4540401-DGCO

**D – Wireway cover**

Description	Model
Cover plate	VS4540442-KG00



9 Torque = 5 ... 6,8 Nm

12 Torque = 0,8 ... 0,9 Nm

Screwdriver speed = max. 1100 r.p.m

For detailed assembly instructions, please see maintenance & instruction booklet

**Warning**

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under »Technical features/data«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications, consult IMI Precision Engineering, Norgren GmbH.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.