

Modular pneumatic valve unit

- Compact design
- Modular configuration
- High flexibility
- Simple exchange of valves (with option "P-shut-off"- also possible during operation)

Type 8640 can be combined with...



Type 8032

Switch



Type 6212

Solenoid valve



Type 2012

Process valve



Type 8695

Control head



Type 0498

Double pilot controlled check valve

The 8640 valve unit system is designed to solve diverse and complex control problems due to its systematic modular construction and combination of pneumatic and electrical interfaces. By putting together a row of pneumatic modules with different numbers of valves, 2 to 24 valve functionalities may be realized on one valve unit.

Electrical connectivity is achieved by either fieldbus interfaces, common connection (parallel connection technique) or multipole interfaces. The valves allow different applications to be covered. Bodies and connection modules are made of high-quality plastic (polyamide) and are easy to assemble by means of the built-in snap connectors.

Specification	Solenoid valve Type 6524/6525 	Solenoid valve Type 6526/6527 
Mounting dimensions	11 mm	16.5 mm
Ambient temperature	-10 to +55°C	-10 to +55°C
Storage temperature	-20 to +60°C	-20 to +60°C
Pressure range	Vac. - 10 bar	Vac. - 10 bar
Operating voltage	24 V/DC	24 V/DC
Voltage tolerance	±10%	±10%
Residual ripple	1 Vss (with fieldbus)	1 Vss (with fieldbus)
Degree of protection	3 according to VDE 0580	3 according to VDE 0580
Duty cycle	Continuous operation (100% ED)	Continuous operation (100% ED)
Circuit functions	C and D (3/2-way), H (5/2-way)	C and D (3/2-way), H (5/2-way)
Flow rate	300 l/min	700 l/min
Rated power	1 W	2 W, 1 W
Rated current per valve	42 mA	86 mA
No. of valve functionalities per unit	Max. 24	Max. 24
Pneumatic module	Type MP11, 2- and 8-valves	Type MP12, 2-, 3- and 4-valves
Electric module	6-, 8- and 12-valves	4-, 8- and 16-valves
Feedback	Max. 32	Max. 32
Degree of protection	IP 20 with terminals	IP 20 with terminals IP 54 with circular connector

to be continued on page 2

Specification	Solenoid valve Type 6524/6525 	Solenoid valve Type 6526/6527 
Electric Connection	<ul style="list-style-type: none"> ▪ Common connection (parallel connection) ▪ Multipole (D-Sub, 25 pole) ▪ Profibus-DP ▪ DeviceNet ▪ CANopen ▪ Internal bus extension by Profibus DP (RIO) 	
Total current with common connection with multipole connection with fieldbus connection	<p>as a function of the electrical connection technique</p> <p>max. 3A (sum of current through individual valves)</p> <p>max. 3A (sum of current through individual valves) + max. 3A (repeater)</p> <p>$I_{TOTAL} = I_{BASE} + (n \times I_{VALVE}) + (m \times I_{REPEATER})$</p> <p>n=quantity of valves, m=quantity of repeaters, I_{VALVE}= rated current of each valve</p> <p>I_{REPEATER}= rated current of each repeater, m x I_{REPEATER}=max. 650 mA</p> <p>I_{BASE}=</p> <p>200 mA spec. base current Profibus-DP</p> <p>200 mA spec. base current DeviceNet</p>	

The 8640 valve island system

Solenoid valves

6524/6525 

6526/6527 



1



Common electrical connection

2



Multipole electrical connection

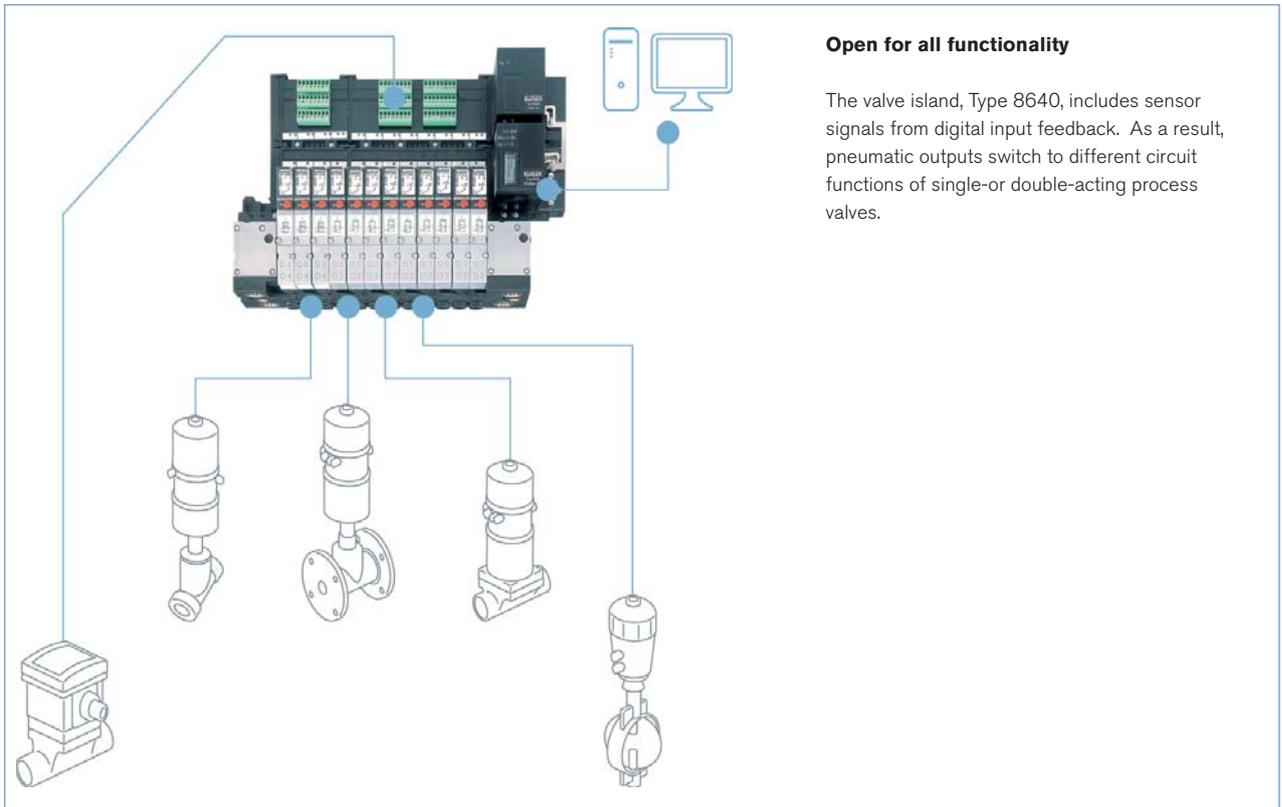
3



Fieldbus



Application example



Open for all functionality

The valve island, Type 8640, includes sensor signals from digital input feedback. As a result, pneumatic outputs switch to different circuit functions of single- or double-acting process valves.

Configuration software

The 8640 valve island system is a system of modular design which can be built up to specific requirements. Bürkert offers a software program, the simple, precise generation of the required configuration of each 8640 system.

The Bürkert Configurator defines

- Number and types of valves
- Type of (intermediate) supplies
- Combination of Fieldbus, pilot valves and I/O modules

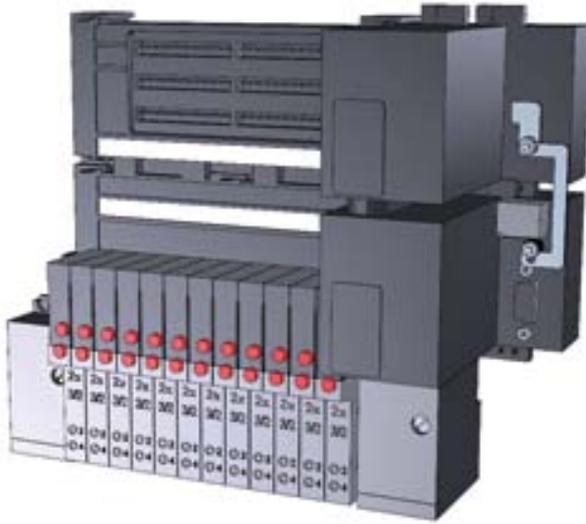
The results supplied by the Configurator

- Bill of materials
- Illustration
- Drawings
- 2D / 3D CAD data

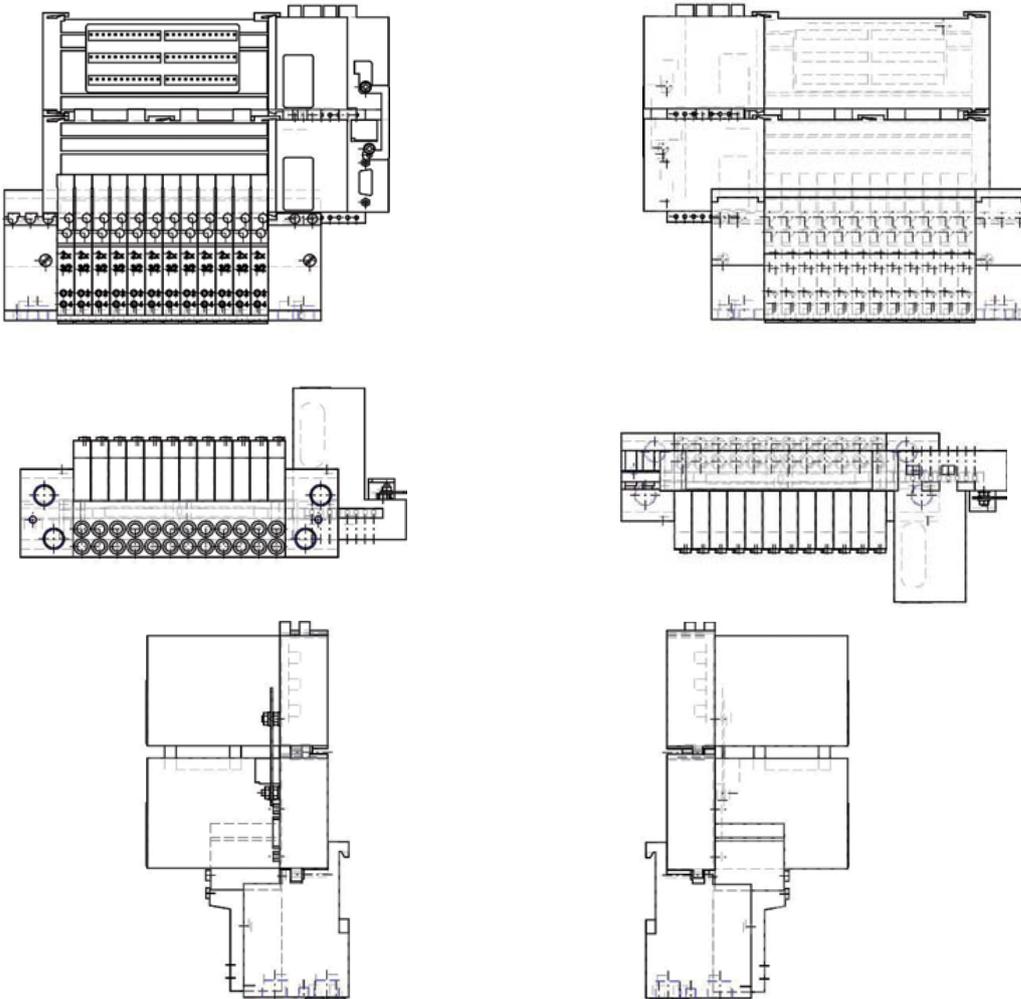
For more information consult individual datasheets, downloadable at www.burkert.com

Examples 2D / 3D CAD data

Example 3D CAD model in 3D-Pdf format



Examples 2D DXF drawings in different views



11mm width per station: Multi-way solenoid valve Types 6524 and 6525



The solenoid valve Types 6524 and 6525 consist of a pneumatic valve body fitted with Type 6144 rocker pilot valve. The rocker principle allows switching of high pressure at low power consumption and fast response times. The pilot valves are equipped with manual override as a standard. The 2 x 3/2-way valve version is the combination of two pilot rocker solenoid valves type 6104 and a pneumatic seat valve.

Spezifikationen	3/2-way valve	2 x 3/2-way valve
Body material	PA (polyamide)	
Seal material	FPM, NBR	
Media	Lubricated and non-lubricated dry air, neutral gases (5 µm-Filter)	
Port connection	Flange for MP11	
Pneumatic module	Type MP11 with push-in connection dimension 4 mm, 6 mm, D1/4, M5, M7	
Manual override	As a standard feature	
Voltage	24 V DC *	
Nominal power	0.8 W	2 x 0.8 W with reduction of power consumption
Duty cycle	Continuous operation (100% ED)	
Elec. connection on valve	Rectangular plug 2-pole with raster 5.08 mm	Rectangular plug 3-pole with raster 2.54 mm
Mounting	With 2 screws M2 x 20	With 2 screws M2 x 28
Installation position	As required, preferably with pilot valve upright	
Flow rate: QNn value air [l/min]	Measured at +20°C, 6 bar pressure at valve inlet and 1 bar pressure difference	
Pressure ranges [bar]	Measured as overpressure to the atmospheric pressure	
Response times [ms]	Measured according to ISO 12238	

* 10% residual ripple allowed

Order chart for valves

Circuit function	Orifice [mm]	QNn value air [l/min]	Pressure range [bar]	Response times		Voltage/Frequency [V/Hz]	Item no.
				Opening [ms]	Closing [ms]		
Circuit function C 3/2-way valve, servo-assisted in de-energized position port 2 to atmosphere	4	300	Vak.-7	15	20	24 V DC *	186 258
			1-10 ¹⁾	15	20	24 V DC *	186 257
			2.5-10	15	28	24 V DC *	184 043
Circuit function D 3/2-way valve, servo-assisted in de-energized position port 2 pressurized			2,5-10	15	28	24 V DC *	184 400
Circuit function H 5/2-way valve, servo-assisted in de-energized position port 1 connected to port 2, port 4 exhausted	4	300	1.0-10 ¹⁾	15	20	24 V DC *	186 271
			2.5-10	20	28	24 V DC *	179 938
Circuit function C 2 x 3/2-way valve, servo-assisted in de-energized position port 2/4 to atmosphere	4	300	1.0-10 ¹⁾	12	20	24 V DC *	186 259 ²⁾
			2.5-10	12	20	24 V DC *	186 260 ²⁾

¹⁾ Version with auxiliary air.

²⁾ Version with integrated reduction of power consumption

* 10% residual ripple allowed

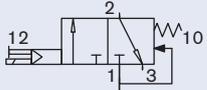
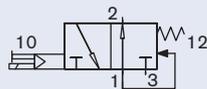
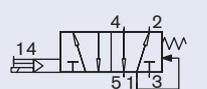
16.5mm width per station: Multi-way for solenoid valve Types 6526 and 6527



The solenoid valve Types 6526 and 6527 consist of a pneumatic valve body fitted with Type 6106 rocker pilot valve. The rocker principle allows switching of high pressure at low power consumption and fast response times. The pilot valves are equipped with manual override as a standard.

Specification	
Body material	PA (polyamide)
Seal material	NBR
Media	Lubricated and non-lubricated dry air, neutral gases (10 µm filter)
Port connection	Flange for MP12
Manual override	Standard
Voltage	24 V DC
Nominal power	2 W, 1W
Duty cycle	Continuous operation (100% ED)
Elec. Connection on valve	Tag connector acc. to DIN EN 175301-803 (previously DIN 43650) Form C
Mounting	With 2 screws M3x30
Installation position	As required, preferably with pilot valve upright
Einbaulage	beliebig, vorzugsweise Antrieb nach oben
Flow rate: QNn value air [l/min]	Measured at +20°C, 6 bar pressure at valve inlet and 1 bar pressure difference
Pressure ranges [bar]	Measured as overpressure to the atmospheric pressure
Response times [ms]	Measured acc. to ISO 12238

Order chart for valves

Wirkungsweise	Nennweite [mm]	QNn-Wert Luft [l/min]	Druckbereich [bar]	Nennleistung [W]	Schaltzeiten		Spannung/Frequenz [V/Hz]	Bestell-Nr.
					Öffnen [ms]	Schließen [ms] ²⁾		
C  3/2-way valve, servo-assisted in de-energized position port 2 to atmosphere	6	700	1,0 - 10 ¹⁾	2	20	12	24 V DC	156 842
			1,0 - 10 ¹⁾	2	20	12	24 V DC	163 028 ²⁾
			2,0 - 10	2	20	12	24 V DC	156 318
			2,0 - 10	2	20	12	24 V DC	158 944 ²⁾
			2,0 - 8,0	1	20	17	24 V DC	156 840
			2,0 - 8,0	1	20	12	24 V DC	158 947 ²⁾
D  3/2-way valve, servo-assisted in de-energized position port 2 pressurized	6	700	1,0 - 10 ¹⁾	2	12	20	24 V DC	157 672
			1,0 - 10 ¹⁾	2	20	12	24 V DC	163 029 ²⁾
			2,0 - 10	2	12	20	24 V DC	156 320
			2,0 - 10	2	20	12	24 V DC	158 946 ²⁾
			2,0 - 8,0	1	17	20	24 V DC	156 841
			2,0 - 8,0	1	20	12	24 V DC	158 948 ²⁾
H  5/2-way valve, servo-assisted in de-energized position port 1 connected to port 2, port 4 exhausted	6	700	1,0 - 10 ¹⁾	2	20	12	24 V DC	156 828
			1,0 - 10 ¹⁾	2	20	12	24 V DC	163 030 ²⁾
			2,0 - 10	2	20	12	24 V DC	156 337
			2,0 - 10	2	20	12	24 V DC	158 942 ²⁾
			2,0 - 8,0	1	20	17	24 V DC	156 827
			2,0 - 8,0	1	20	12	24 V DC	158 943 ²⁾

¹⁾ version with auxiliary air

²⁾ electric connection with manual override.

³⁾ closing time approx. 5 ms higher when used together with valve unit

More valve options

Covering plates

When all the valve connections in a basic valve unit module are not used, then these connections should be covered by the appropriate covering plate for full efficiency.

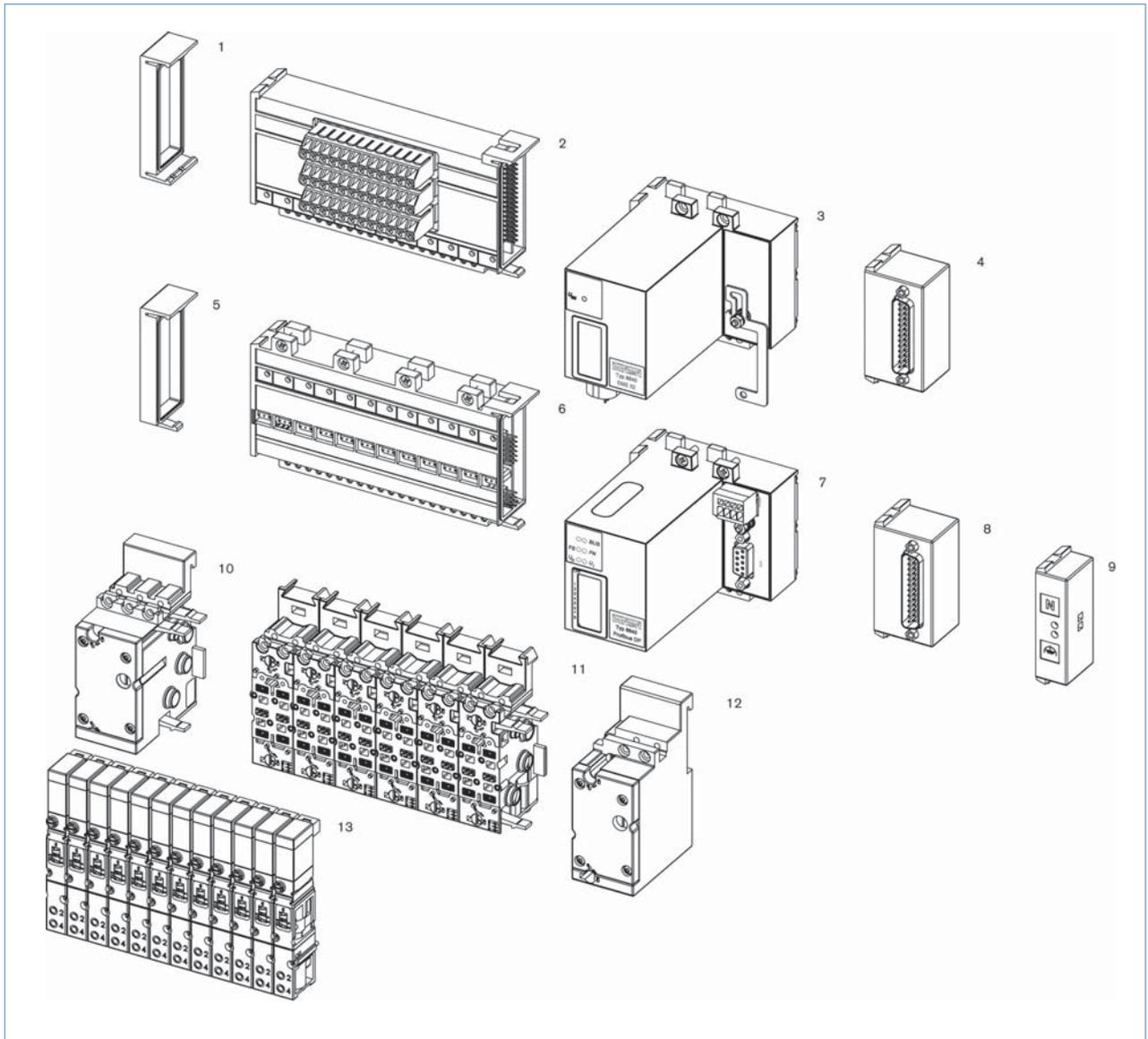
Covering plates	Item no.
Covering plate for solenoid valve Type 6524/6525	650 373
Covering plate for solenoid valve Type 6524 2 x 3/2-way valve	661 092
Covering plate for solenoid valve Type 6526/6527	653 765

Exhaust plates

An exhaust plate is mounted on the pneumatic module of the valve unit and offers an additional possibility to remove compressed air from the system.

Exhaust plates	Item no.
Exhaust air plate complete Type 6524/6525	655 166
Exhaust air plate complete Type 6526/6527	653 697

Valve unit configuration



Basic module choice, for further modules see the following pages

- | | |
|--|--|
| 1. Electrical end module left | 2. Terminal module for electronic inputs |
| 3. Extension module for electrical inputs | 4. Multipole repeater inputs (initiators) |
| 5. Electrical end module left | 6. Basic electrical module standard |
| 7. Fieldbus module | 8. Multipole valve outputs |
| 9. Common connection module | 10. Pneumatic connection module left, Type MP11 |
| 11. Basic pneumatic modules, Type MP11 for 12 valves | 12. Pneumatic connection module right, Type MP11 |
| 13. Valves of Type 6525 (5/2-way) | |

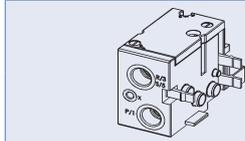
Module description

Pneumatic module Type MP11 and MP12, mounting dimensions 11 mm and 16.5 mm

6524/6525
Mounting dimensions 11mm



6526/6527
Mounting dimensions 16.5mm

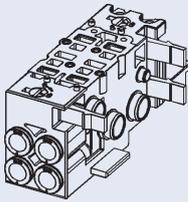
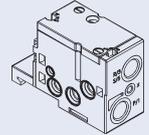


Left connector module

G 1/4	G 3/8
NPT 1/4	NPT 3/8
Push-in Ø10 mm	-

Right connector module

G 1/4	G 3/8
NPT 1/4	NPT 3/8
Push-in Ø10 mm	-



Basic module, 2 valves wide

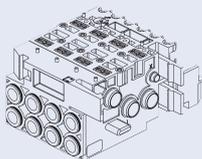
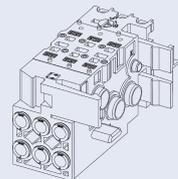
M5 and M7	G 1/8
Push-in Ø 6 mm	NPT 1/8
Push-in Ø 1/4"	Push-in Ø8 mm
Push-in Ø 5/32" / Ø 4 mm	Push-in Ø 5/16"
P shut-off option	-
Check valve in R&S optional	Check valve in R&S optional

Basic module, 2 valves wide with 2 x 3/2-way valve

M5 and M7	-
Push-in Ø 6 mm	-
Push-in Ø 1/4"	-
Push-in Ø 5/32" / Ø 4 mm	-
Check valve in R&S optional	-

Basic module, 3 valves wide

-	M5 und M7
-	Push-in Ø 6 mm
-	Ø 1/4"
-	Ø 5/32" / Ø 4 mm
-	Push-in Ø 5/32" / Ø 4 mm



Basic module, 4 valves wide

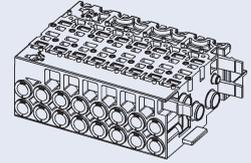
-	G 1/8
-	NPT 1/8
-	Steckkupplung Ø 8 mm
-	Ø 5/16"
-	Check valve in R&S optional

Module description

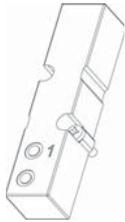
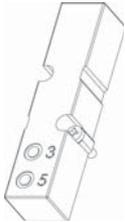
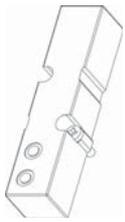
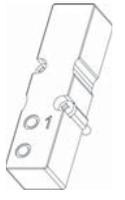
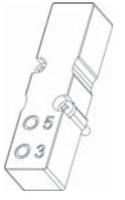
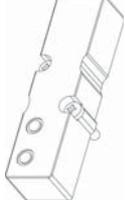
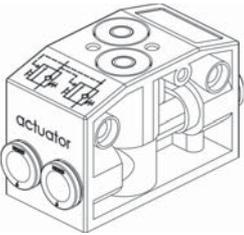
Pneumatic module Type MP11 and MP12, mounting dimensions 11 mm and 16.5 mm

 6524/6525 Mounting dimensions 11mm	 6526/6527 Mounting dimensions 16.5mm
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Basic module, 8 valves wide	
M5 and M7	-
Push-in Ø 6 mm	-
Push-in Ø 1/4"	-
Push-in Ø 5/32" / Ø 4	-
P shut-off option	-
Check valve in R&S optional	-
Basic module, 8 valves wide with 2 x 3/2-way valve	
M5 and M7	-
Push-in Ø 6 mm	-
Push-in Ø 1/4"	-
Push-in Ø 5/32" / Ø 4	-
Check valve in R&S optional	-



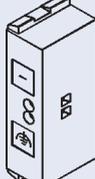
Additional pneumatic accessories

<p>MP11</p>	 Intermediate supply plate	 Separate exhaust plate	 Bulkhead	 Covering plate
<p>MP12</p>	 Intermediate supply plate	 Separate exhaust plate	 Bulkhead	 Covering plate
<p>Typ 0498</p>	 Double pilot controlled check valve			

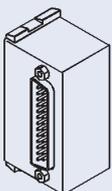
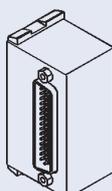
Module description

Collective line and multipol module
for single connection of valves and feedbacks

 6524/6525 Mounting dimension 11mm	 6526/6527 Mounting dimension 16.5mm
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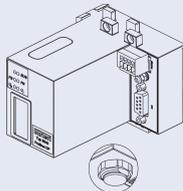


Connection via individual stranded wires
Looped-through ground potential
Max. 24 valves
IP20 degree of protection
Screw terminal

<p>Multipole module Valve outputs</p> 	<p>Multipole module Repeater inputs (initiators)</p> 
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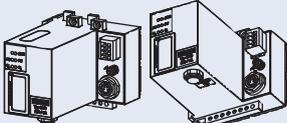
Fieldbus modules

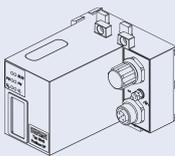
 6524/6525 Mounting dimension 11mm	 6526/6527 Mounting dimension 16.5mm
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Fieldbus PROFIBUS-DP, IP20 degree of protection
Max. 24 valves
Max. 32 repeaters (in connection with EME module)
Transmission rates 9.6; 19.2; 93.75; 187.5; 500 kBaud; 1.5; 3; 6; 12 MBaud
Power supply with rectangular plug (4-pole male)
Bus connection D-SUB (9-pole female)
Option with RIO-connection M8 (4-pole)

Internal bus extension RIO-VA module, IP20 degree of protection
Max. 24 valves
Max. 32 repeaters (in connection with EME module)
Plug





Fieldbus PROFIBUS-DP IP54 degree of protection
on connection with the basic electrical module the complete system meets the degree of protection IP54
Max. 24 valves
Max. 32 repeaters (in connection with EME module)
Transmission rates 9.6; 19.2; 93.75; 187.5; 500 kBaud; 1.5; 3; 6; 12 MBaud
Power supply with M12 circular plug (4-pole male)
Bus connection M12 (5-pole female)
For a trouble-free assembly use the following Y-piece (Item No 902098)

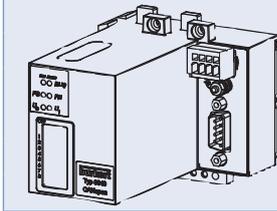
Module description

Fieldbus modules

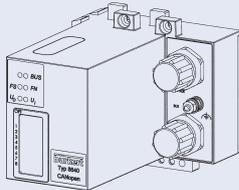
6524/6525
Mounting dimension 11mm

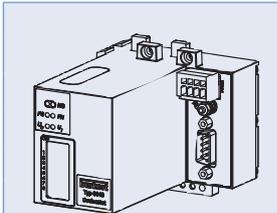


6526/6527
Mounting dimension 16.5mm

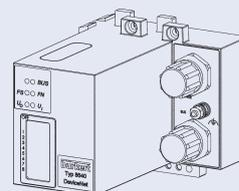


Fieldbus CANopen, IP20 degree of protection
Max. 24 valves,
Max. 32 repeaters (in connection with EME module)
Transmission rates 20, 125, 250 or 500 kBaud
Power supply with rectangular plug (4-pole)
Bus connection D-SUB (9-pole male)

Fieldbus CANopen, IP54 degree of protection on connection with the basic electrical module the complete system meets the degree of protection IP54	
Max. 24 valves	
Max. 32 repeaters (in connection with EME module)	
Transmission rates 20, 125, 250 or 500 kBaud	
Power supply with M12 circular plug (4-pole male)	
Bus connection M12 (5-pole male)	
For a trouble-free assembly use the following Y-piece (Item No 788643)	



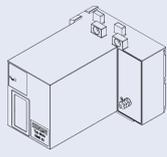
Fieldbus Device Net, IP20 degree of protection
Max. 24 valves
Max. 32 repeaters (in connection with EME module)
Transmission rates 125, 250 or 500 kBaud
Power supply with rectangular plug (4-pole)
Bus connection D-Sub (9-pole male)

Fieldbus Device Net, IP54 degree of protection on connection with the basic electrical module the complete system meets the degree of protection IP54	
Max. 24 valve	
Max. 32 repeaters (in connection with EME module)	
Transmission rates 125, 250 or 500 kBaud	
Power supply with M12 circular plug (4-pole male)	
Bus connection M12 (5-pole male)	
For a trouble-free assembly use the following Y-piece (Item No 788643)	

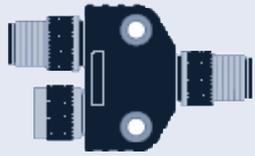
Module description

Fieldbus modules

	
6524/6525 Mounting dimension 11mm	6526/6527 Mounting dimension 16.5mm

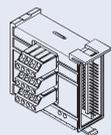
	EME module (extension module inputs), IP54 degree of protection
	Module for connection of repeater inputs in connection with fieldbus modules

Further electrical accessories

	Bus Y-piece for PROFIBUS you must use at least one preconverted	
	Bus Y-piece for CANopen and DeviceNet	

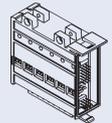
Modules with connection points for repeaters

	
6524/6525 Anreihmaß 11mm	6526/6527 Anreihmaß 16,5mm

	Module with plugged connection for repeaters/initiators	
	6, 8, 12, 16 or 24 input	8 or 16 input
	IP20 degree of protection	IP20 degree of protection
	Pluggable screw terminals	Pluggable screw terminals

Modules with integrated cable plug for the electrical connection of the valves

	
6524/6525 Mounting dimension 11mm	6526/6527 Mounting dimension 16.5mm

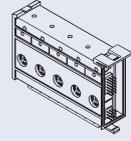
	Basic electric module, standard version	
	6, 8 or 12 valve stations	4, 6 or 8 valve stations
	IP20 degree of protection	IP20 degree of protection
	Basic electric module with 2 x 3/2-way valve, standard version	
6, 8 or 12 valve stations	–	
IP20 degree of protection	–	

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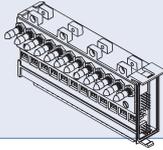
Module description

Modules with integrated cable plug for the electrical connection of the valves

Basic electrical module, Common connection	
6, 8 or 12 valve stations	4 or 8 valve stations
IP20 degree of protection	IP20 degree of protection
Wire connection via screw terminals	Wire connection via screw terminals
Electrical module with 2 x 3/2-way valve, common connection	
6, 8 or 12 valve stations	–
IP20 degree of protection	–



Basic electrical module with manual-automatic switchover	
6, 8 or 12 valve stations	–
IP20 degree of protection	–
Version with 3-stage safety ratchet switch	–



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