DATA SHEET

Type 8644
WAGO I/O System 750

bürkert
FLUID CONTROL SYSTEMS

AirLINE and AirLINE Quick – electrical/pneumatic Automation System – WAGO Remote I/O and Fieldbus modules

- Fully compatible with WAGO I/O System 750
- Combination of Fieldbus, pilot valves and I/O modules
- Higher flexibility in the control cabinet with AirLINE Quick
- Compact design
- High flow rate value

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

Type 2000 ▸
Pneumatically operated 2/2 way angle seat valve CLASSIC

Type MKRS ▸
Redundancy valve block for safety related shut-off function

Type 0498 ▸
Double pilot controlled check valve for realising 5/3 way function with all ports blocked

Type 8614 ▸
Pneumatic control cabinet solutions for hygienic process environments

Type description

The AirLINE System integrates high performance solenoid pilot valves, remote electronic I/O and fieldbus communication into a process actuation and control system that is both compact and extremely flexible. Its modular design allows fully customized, pre-mounted and tested solutions to exactly meet all application needs including the integration of a local Mini PLC. Due to the full electronic and mechanical integration, the valve block can be added without the need of any tools or wiring.

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Visit product website ▸

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1. General Technical Data

Pilot valves	Type 0460, Type 6524, Type 6525	Type 0461, Type 6526, Type 6527
Product properties		
Dimensions	Detailed information can be found in chapter "3. Dimensions" on page 8.	Detailed information can be found in chapter "3. Dimensions" on page 8.
Width/station	11 mm	16.5 mm
Module Types	4x[1.)]	4x
Max. number of modules	Depending on application	Depending on application
Max. number of valves	64 (by use of Type 0460 and Type 6524: 2 × 3/2 way-valve: 32)	32 (by use of Type 0461: 24)
Fieldbus Type	PROFIBUS DP, INTERBUS, DeviceNet, CAN-open, Ethernet, others on request	PROFIBUS DP, INTERBUS, DeviceNet, CANopen, Ethernet, others on request
Electrical modules	WAGO I/O System 750	WAGO I/O System 750
Pneumatic intermediate supply	Necessary after 24 valve functions; with 2 × 3/2 way valve: Necessary after 16 valve functions	Necessary after 16 valve functions
Electrical data		
Operating voltage	24 V DC	24 V DC
Voltage tolerance	+20 %/-15 % (by use of Type 0460: ±10 %)	+20 %/-15 % (by use of Type 0461: ±10 %)
Residual ripple (at DC)	1 Vss	1 Vss
Nominal power per valve	1 W (0.5 W nominal power acc. to 120 ms)	2 W (1 W nominal power acc. to 120 ms)
Rated current per valve	43 mA (28 mA hold current after 120 ms) 41 mA (by use of Type 0460)	85 mA (52 mA hold current after 120 ms) 41 mA (by use of Type 0461)
Performance data		
Flow (Q_{Nn} value air)	300 l/min[2.)]	700 l/min (500 l/min by circuit functions Z, L and N)
Pressure range	Vac. up to 10 bar	Vac. up to 10 bar
Approvals and Certificates		
Approvals	ATEX, Zone 2 (BVS 20 ATEX E 031 U) IECEx, Zone 2 (IECEx BVS 20.0024 U)	ATEX, Zone 2 (BVS 20 ATEX E 031 U) IECEx, Zone 2 (IECEx BVS 20.0024 U)
Degree of protection	IP20, IP65 in closed field housing	IP20, IP65 in closed field housing
Environment and installation		
Ambient temperature	0…+55 °C (by use of Type 0460: 0…+50 °C)	0…+55 °C (by use of Type 0461: 0…+50 °C)
Storage temperature	-20…+60 °C	-20…+60 °C

1.) Integrated check valve and P-Shut off valve are optional)

2.) Maximum flow rate depending on valve function - see chapter 1.1...1.4.

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1.1. 11 mm width/station: Solenoid valves Type 6524 and Type 6525

Note:

- The solenoid valve Types 6524 and 6525 consist of a 6144 flipper pilot valve and a pneumatic seat valve. The principle allows switching of high pressures together with low power consumption and fast response times. The pilot valves are equipped with manual override as a standard.
- Detailed information about ordering information see **"11 mm width/station: Solenoid valve Type 6524 and Type 6525" on page 13**.
- Detailed information about further valve options see **"5.4. Ordering chart accessories" on page 16**.

Circuit function	3/2 way valve	2×3/2 way valve
Product properties		
Material		
Body	PA (Polyamide)	
Seal	FPM, NBR and PUR	
Manual override	Standard	
Pneumatic modules	With push-in connection diameter 6 mm	
Performance data		
Pressure data	Overpressure with respect to atmospheric pressure	
Flow (Q_{Nn} value air)	Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference	
Nominal operating mode	Continuous operation (100 % ED)	
Switching times	Measured according to ISO 12238	
Electrical data		
Operating voltage	24 V DC (10 % residual ripple allowed)	
Nominal power	0.8 W	2×0.8 W with reduction of power
Medium data		
Operating medium	Lubricated and non-lubricated dry compressed air; neutral gases (5µm filter recommended)	
Process/Port connection & communication		
Port connection size	Flange	
Electrical connection (on valve)	With 2 screws M2×20	With 2 screws M2×28
Environment and installation		
Installation position	As required, preferably with actuator upright	
Assembly conditions	With 2 screws M2×20	With 2 screws M2×28

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1.2. 11 mm width/station: Pilot valve Type 0460

Note:

- The solenoid valve Type 0460 consists of a pneumatic valve body fitted with a double coil pilot valve. The principle allows switching of high pressures together with low power consumption and fast response times. All valves are equipped with manual override as a standard.
- Detailed information about ordering information see **“11 mm width/station: Pilot valve Type 0460” on page 14**.
- Detailed information about further valve options see **“5.4. Ordering chart accessories” on page 16**.

Product properties	
Material	
Body	Aluminium
Seal	NBR
Manual override	Standard
Pneumatic modules	With push-in connection diameter 6 mm
Performance data	
Pressure data	Overpressure to the atmospheric pressure
Flow (Q_{Nn} val_{ue} air)	Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference
Switching times	Measured according to ISO 12238
Electrical data	
Operating voltage	24 V DC (10 % residual ripple allowed)
Medium data	
Operating medium	Lubricated and non-lubricated dry compressed air; Neutral gases (5µm filter recommended)
Process/Port connection & communication	
Port connection size	Flange
Electrical connection (on valve)	Rectangular plug

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1.3. 16.5 mm width/station: Solenoid valves Type 6526 and Type 6527

Note:

- The solenoid valve Types 6526 and 6527 consist of a pneumatic valve body fitted with Type 6106 rocker pilot valve. The principle allows switching of high pressures together with low power consumption and fast response times. The pilot valves are equipped with manual override as a standard.
- Detailed information about ordering information see "16.5 mm width/station: Pilot valve Type 6526 and Type 6527" on page 14.
- Detailed information about further valve options see "5.4. Ordering chart accessories" on page 16.

Product properties	
Material	
Body	PA (Polyamide)
Seal	NBR
Manual override	Standard
Pneumatic modules	With push-in connection diameter Ø 8 mm
Performance data	
Pressure data	Overpressure with respect to atmospheric pressure
Flow (Q_{Nn} value air)	Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference
Nominal operating mode	Continuous operation (100 % ED)
Switching times	Measured according to ISO 12238
Electrical data	
Operating voltage	24 V DC
Nominal power	2 W, 1 W
Medium data	
Operating medium	Lubricated and non-lubricated dry compressed air; neutral gases (10µm filter recommended)
Process/Port connection & communication	
Port connection size	Flange
Electrical connection (on valve)	Tag connector acc. to DIN EN 175301-803 (previously DIN 43650) Form C
Environment and installation	
Installation position	As required, preferably with actuator upright
Assembly conditions	With 2 screws M3×30

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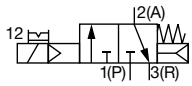
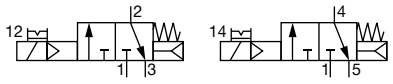
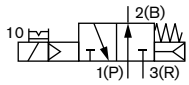
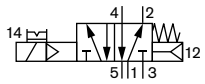
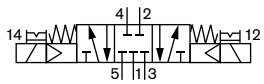
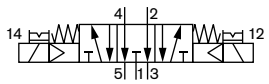
1.4. 16.5 mm width/station: Pilot valve Type 0461

Note:

- The solenoid valve Type 0461 consists of a pneumatic valve body fitted with a double coil pilot valve. The principle allows switching of high pressures together with low power consumption and fast response times. All valves are equipped with manual override as a standard.
- Detailed information about ordering information see **"16.5 mm width/station: Pilot valve Type 0461" on page 15**.
- Detailed information about further valve options see **"5.4. Ordering chart accessories" on page 16**.

Product properties	
Material	
Body	Aluminium
Seal	NBR
Manual override	Standard
Pneumatic modules	With push-in connection diameter Ø 8 mm
Performance data	
Pressure data	Overpressure to the atmospheric pressure
Flow (Q_{Nn} val_{ue} air)	Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference
Switching times	Measured according to ISO 12238
Electrical data	
Operating voltage	24 V DC (10 % residual ripple allowed)
Medium data	
Operating medium	Lubricated and non-lubricated dry compressed air; Neutral gases (10µm filter recommended)
Process/Port connection & communication	
Port connection size	Flange
Electrical connection (on valve)	Rectangular plug

2. Circuit functions

Circuit Function	Description
	**Type: C, solenoid valve** 3/2 way Servo-controlled, with manual mode Normally closed
	**Type: C, solenoid valve** 2 x 3/2 way Servo-controlled, with manual mode Normally closed
	**Type: D, solenoid valve** 3/2 way Servo-controlled, with manual mode Normally open
	**Type: H, solenoid valve** 5/2 way Servo-controlled, pilot air and manual mode Pressure applied via port (1), therefore one of the two ports (2) or (4) is under pressure.
	**Type: L, solenoid valve** 5/3 way With manual mode In middle position all ports locked Normally closed
	**Type: N, solenoid valve** 5/3 way With manual mode In middle position ports 2 and 4 exhausted There is always one of the two outlet ports (2) or (4) pressurized when coil is activated.

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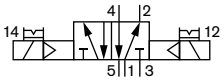
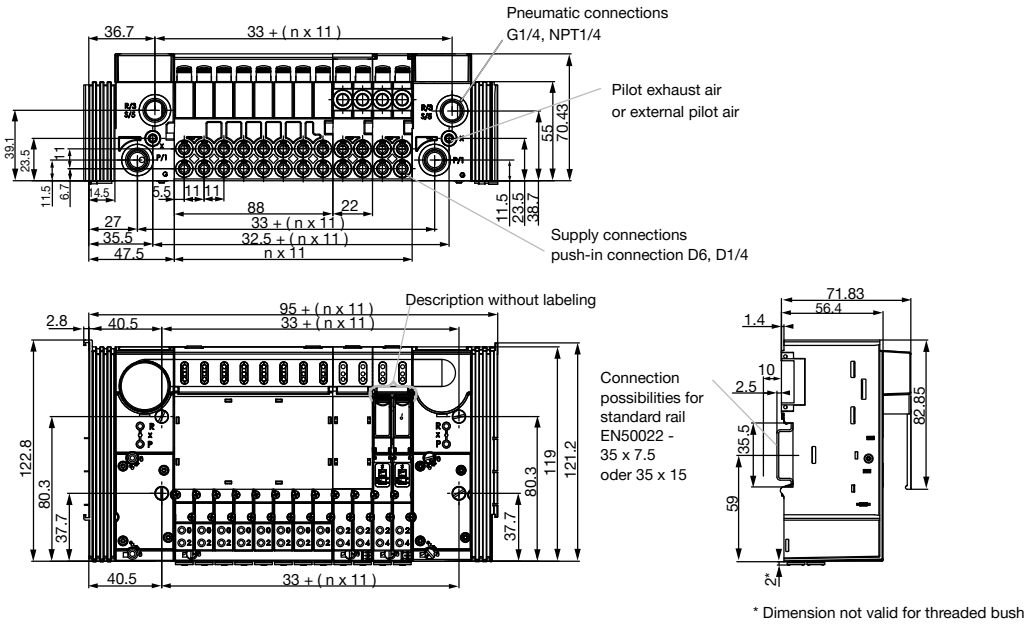
Circuit Function	Description
	**Type: Z, solenoid valve** 5/2 way Impulse version with 2 coils and manual mode Normally open Pressure applied via port (1), therefore one of the two ports (2) or (4) is under pressure.

3. Dimensions

3.1. 11 mm width/station: Solenoid valve Type 6524 and Type 6525

Note:

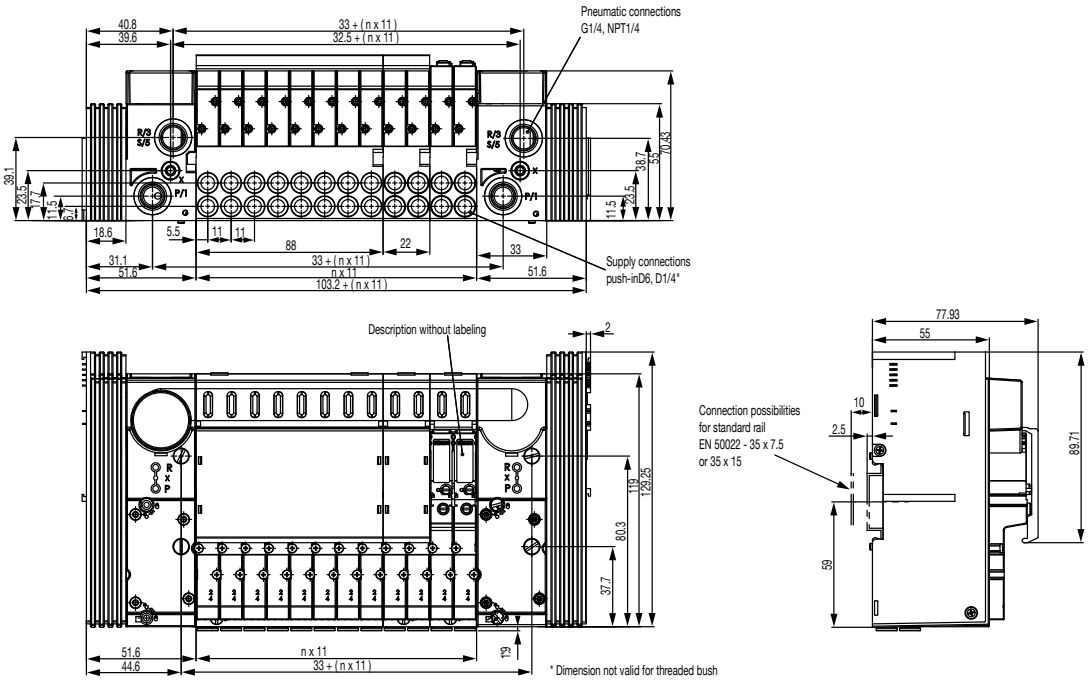
- Dimensions in mm
- n = number of valves



3.2. 11 mm width/station: Solenoid valve with Type 6524 2 × 3/2 way valve

Note:

- Dimensions in mm
- n = number of valves



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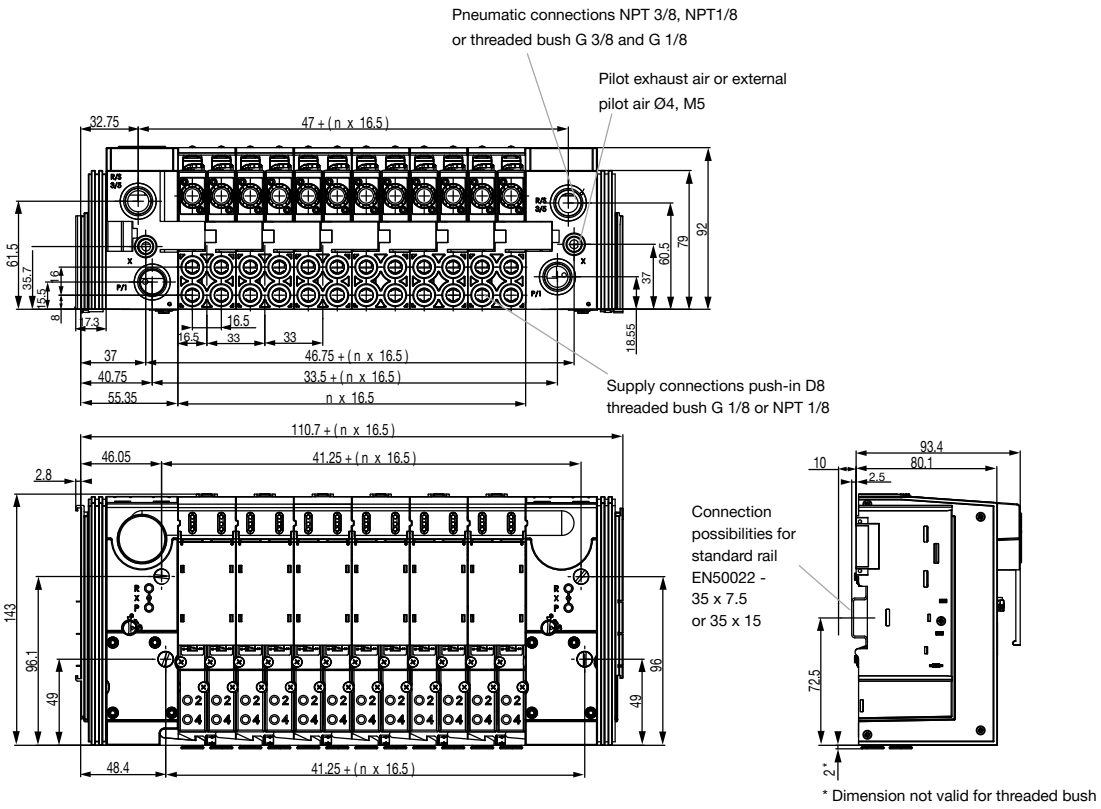
3.3. 16.5 mm width/station: Solenoid valve Type 6526 and Type 6527

Note:

- Dimensions in mm
- n = number of valves



4. Product design and assembly

4.1. AirLINE Quick-Adapter

Note:

- With AirLINE Quick you can reduce the amount of the components in the control cabinet considerably. With the AirLINE Quick Adapter the valve island is directly adapted on the control cabinet floor or wall.
- Detailed information about product assembly see "4.2. Product assembly" on page 11.

Your advantages:

- Less space required in the control cabinet
- This allows the use of more compact control cabinets
- Reduced installation effort due to hose connections directly on the control cabinet floor

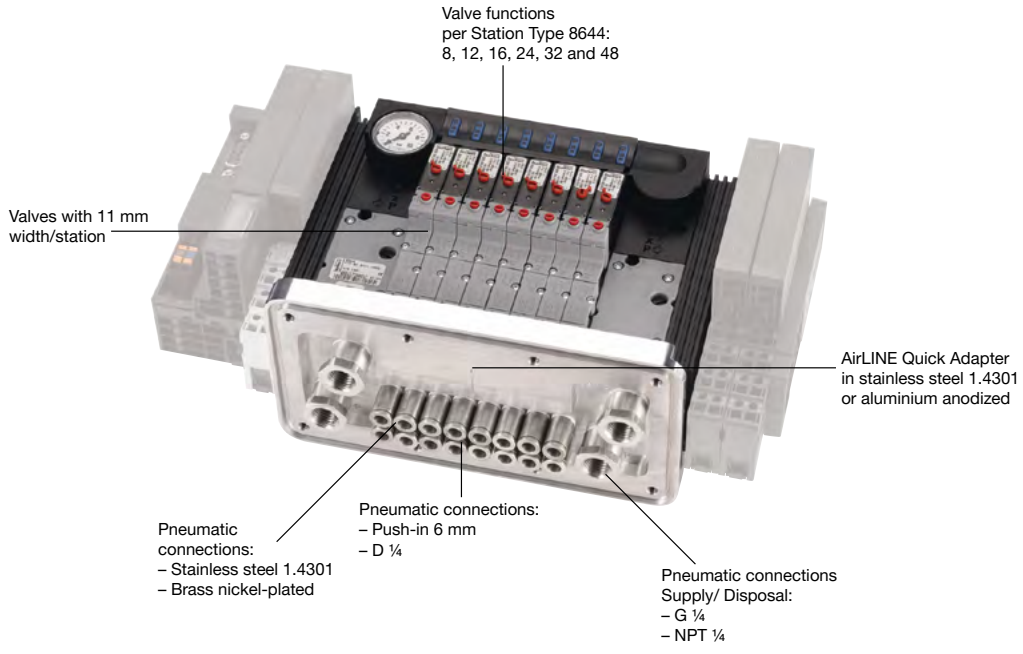
Product properties	
Material	
AirLINE Quick-Adapter	Stainless steel 1.4301, aluminium anodized
Pneumatic connection	Stainless steel 1.4301, brass nickel-plated
Valve functions per station	8, 12, 16, 24, 32 and 48
Process/Port connection & communication	
Connections	
Pneumatic feeding	G ¼, NPT ¼
Pneumatic service ports	Push-in D6 mm, D ¼"
Environment and installation	
Installation	Control cabinet wall Control cabinet floor

4.2. Product assembly

AirLINE Quick-Adapter

With AirLINE Quick you can reduce the amount of the components in the control cabinet considerably. With the AirLINE Quick Adapter the valve island is directly adapted on the control cabinet floor or wall.

Note:
The valves of Type 0460 can not be installed with AirLINE Quick because of their size.



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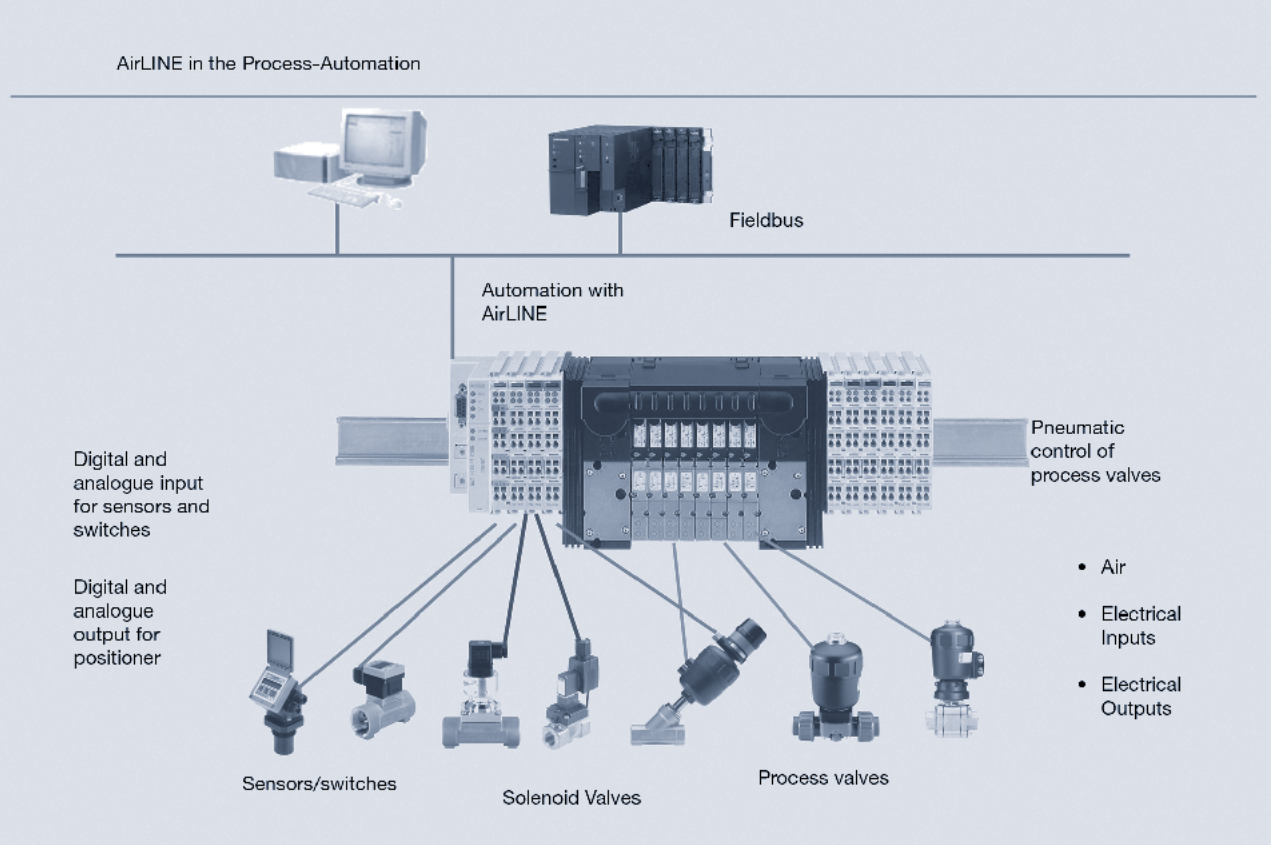
4.3. Example configuration

AirLINE in the Process-Automation



5. Ordering information

5.1. Bürkert eShop – Easy ordering and quick delivery

Bürkert eShop – Easy ordering and fast delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

Order online now

5.2. Bürkert product filter

Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.

Try out our product filter

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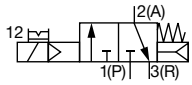
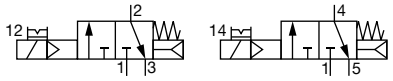
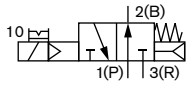
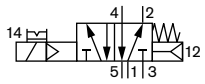
5.3. Ordering chart spare valves

11 mm width/station: Solenoid valve Type 6524 and Type 6525

Note:
Detailed information about product version see "3.1. 11 mm width/station: Solenoid valve Type 6524 and Type 6525" on page 8.

Circuit function	Nominal diameter	Q_{Nn}-value[1.] air	Pressure range	Switching times		Voltage/ Frequency[3.]	Article no.
	[mm]	[l/min]	[bar]	Opening [ms]	Closing [ms]	[V/Hz]	
Type: C, solenoid valve 3/2 way Servo-controlled, with manual mode Normally closed 	4	300	Vac. 7	15	20	24 V DC	186258
			1…10[2.]				186257
			2.5…10		28		184043
Type: C, solenoid valve 2 x 3/2 way Servo-controlled, with manual mode Normally closed 	4	300	1…10[2.]	12	20	24 V DC	186259
			2.5…10				186260
Type: D, solenoid valve 3/2 way Servo-controlled, with manual mode Normally open 	–	–	2.5…10	15	28	24 V DC	184400
Type: H, solenoid valve 5/2 way Servo-controlled, pilot air and manual mode Pressure applied via port (1), therefore one of the two ports (2) or (4) is under pressure. 	4	300	1…10[2.]	15	20	24 V DC	186271
			2.5…10	20	28		179938

1.) With integrated HotSwap and/or non-return function, the flow rate reduces

2.) Version with auxiliary control air

3.) 10 % residual ripple allowed

4.) Version with integrated power reduction

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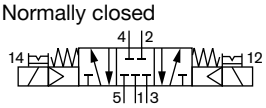
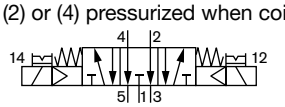
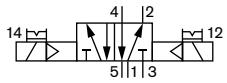
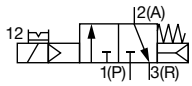
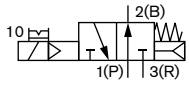
11 mm width/station: Pilot valve Type 0460

Note:
Detailed information about product version see "1.2. 11 mm width/station: Pilot valve Type 0460" on page 5.

Circuit function	Nominal diameter	Q_{Nn}-value[1.] air	Pressure range	Switching times		Voltage/ Frequency[3.]	Article no.
	[mm]	[l/min]	[bar]	Opening [ms]	Closing [ms]	[V/Hz]	
Type: L, solenoid valve 5/3 way With manual mode In middle position all ports locked Normally closed 	2.5	200	2…7	1	15	20	154184
Type: N, solenoid valve 5/3 way With manual mode In middle position ports 2 and 4 exhausted There is always one of the two outlet ports (2) or (4) pressurized when coil is activated. 	2.5	200	2…7	1	15	20	154184
Type: Z, solenoid valve 5/2 way Impulse version with 2 coils and manual mode Normally open Pressure applied via port (1), therefore one of the two ports (2) or (4) is under pressure. 	2.5	200	2…7	1	15	20	154185

16.5 mm width/station: Pilot valve Type 6526 and Type 6527

Note:
Detailed information about product version see "1.3. 16.5 mm width/station: Solenoid valves Type 6526 and Type 6527" on page 6.

Circuit function	Nominal diameter	Q_{Nn}-value[1.] air	Pressure range	Switching times		Voltage/ Frequency[3.]	Article no.
	[mm]	[l/min]	[bar]	Opening [ms]	Closing [ms]	[V/Hz]	
Type: C, solenoid valve 3/2 way Servo-controlled, with manual mode Normally closed 	6	700	1…10[2.]	2	20	24 V DC	156842
			1…10[2.]				163028
			2…10				156318
			2…10				158944
			2…8	1			156840
			2…8				158947
Type: D, solenoid valve 3/2 way Servo-controlled, with manual mode Normally open 	6	700	1…10[2.]	2	20	12	163029
			2…10		12	20	156320
			2…10		20	12	158946
			2…8	1	17	20	156841

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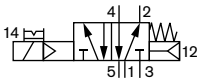
Circuit function	Nominal diameter	Q_{Nn}-value[1.] air	Pressure range	Switching times		Voltage/ Frequency[3.]	Article no.
	[mm]	[l/min]	[bar]	Opening [ms]	Closing [ms]	[V/Hz]	
Type: H, solenoid valve 5/2 way Servo-controlled, pilot air and manual mode Pressure applied via port (1), therefore one of the two ports (2) or (4) is under pressure.  	6	700	1…10[2.]	2	20	24 V DC	156828
			1…10[2.]				163030
			2…10				156337
			2…10				158942
			2…8	1			156827
			2…8				158943

1.) With integrated HotSwap and/or non-return function, the flow rate reduces

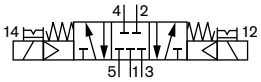
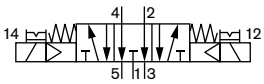
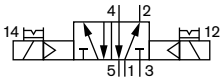
2.) Version with auxiliary control air

3.) 10 % residual ripple allowed

4.) Version with integrated power reduction

16.5 mm width/station: Pilot valve Type 0461

Note:
Detailed information about product version see "1.4. 16.5 mm width/station: Pilot valve Type 0461" on page 7.

Circuit function	Nominal diameter	Q_{Nn}-value[1.] air	Pressure range	Switching times		Voltage/ Frequency[3.]	Article no.
	[mm]	[l/min]	[bar]	Opening [ms]	Closing [ms]	[V/Hz]	
Type: L, solenoid valve 5/3 way With manual mode In middle position all ports locked Normally closed  	6	500	2.5…7	1	15	50	156767
Type: N, solenoid valve 5/3 way With manual mode In middle position ports 2 and 4 exhausted There is always one of the two outlet ports (2) or (4) pressurized when coil is activated.  	6	500	2.5…7	1	15	50	156768
Type: Z, solenoid valve 5/2 way Impulse version with 2 coils and manual mode Normally open Pressure applied via port (1), therefore one of the two ports (2) or (4) is under pressure.  	6	500	2.5…7	1	20	30	156766

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5.4. Ordering chart accessories

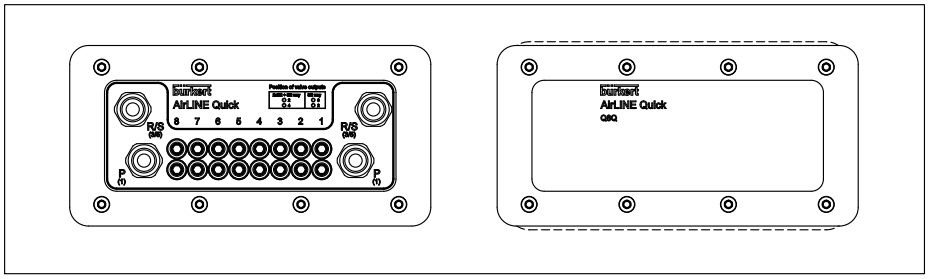
Covering plates

Note:
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	Article no.
Covering plate for solenoid valve Type 6524/6525	650373
Covering plate for solenoid valve Type 6524 2×3/2 way valve	661092
Covering plate for solenoid valve Type 6526/6527	653765

Blanking plates

Note:
A blanking plate is used to cover an existing flange for AirLINE Quick on the cabinet wall or on the cabinet floor.



Material	Amount of valve slots	Article no.
Aluminium anodized	8	246933
	12	246929
	16	246925
	16[1.)]	246935
	24	246927
	24[1.)]	246931
Stainless steel 1.4301	8	246934
	12	246930
	16	246926
	16[1.)]	246936
	24	246928
	24[1.)]	246932

1.) With intermediate pneumatic supply module

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