



AirLINE SP – electropneumatic automation system

- Direct connection to the I/O systems SIMATIC ET 200SP and SIMATIC ET 200SP HA
- Integration in Siemens PCS7 possible
- Combination of fieldbus, pilot valves and I/O modules
- Easy diagnostics by LC display
- Safety-related shut-off of valves possible

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

Can be combined with

	Type 2012 ▶ Pneumatically operated 2/2 way globe valve CLASSIC
	Type 8692 ▶ Digital electropneumatic Positioner for the integrated mounting on process control valves
	Type 6524 ▶ 3/2 way or 2 x 3/2 way solenoid valve for pneumatics
	Type 6525 ▶ 5/2 way solenoid valve for pneumatics

Type description

The pneumatic valve island Type 8647 AirLINE SP is a modular, electropneumatic automation system consisting of connection and valve modules. It has been especially developed for safe and complete integration into the decentralised peripheral system "SIMATIC ET 200SP" and "SIMATIC ET 200SP HA" from Siemens. Pneumatically operated process valves, pneumatic cylinders or other pneumatic components can be connected to the pneumatic outputs. If the pneumatic components are installed with position feedbacks, the position of the actuated pneumatic components can be displayed on the associated pilot valve. This can save time on start-up and maintenance.

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1. General technical data

Note:

The general technical data refers to the pilot valves, Types 0460, 6524 and 6525.

Product properties	
Width/station	11 mm
Max. number of modules	Depending on application
Max. number valve functions	64 on one valve block; several valve blocks possible on one station ^{1.)}
Manual override	Standard
Electrical data	
Circuit function	C (3/2 way), D (3/2 way), H (5/2 way), H (5/2 way) impulse. L + N (5/3 way) See "3. Circuit functions" on page 6.
Fieldbus type	PROFIBUS DP, PROFINET I/O
Electrical modules	Siemens SIMATIC ET200SP and ET 200SP HA
Operating voltage	24 V DC
Voltage tolerance	± 10 %
Residual ripple	2.4 V _{ss}
Nominal power per valve	0.8 W (0.5 W Nominal power acc. to 120 ms)
Rated current per valve	40 mA (28 mA hold current after 120 ms) 20 mA (by use of Type 0460)
Performance data	
Flow rate	300 l/min ^{2.)}
Flow rate: Q _{Nn} value air	Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference
Pressure range	Vac. up to 10 bar (with UL approval up to 8 bar)
Pressure values	Overpressure with respect to atmospheric pressure
Response times	Measured according to ISO 12238
Temperatures	
Ambient	0...+55 °C
Storage	-20...+60 °C
Medium data	
Medium	Compressed air, lubricated, oil free, dry; neutral gases (5 µm Filter recommended) ISO 8573-1: 2010, Klasse 7.4.4
Approvals and Certificates	
Approvals	ATEX, Zone 2 (BVS 18 ATEX E 078 X) IECEX, Zone 2 (IECEX BVS 18.0068X) UL approval (2018-2-28-E238179)
Protection class	IP20, IP65 in closed field housing

1.) With ET 200SP HA only one valve block possible. For details on max. station configuration, see manual.

2.) Maximum flow rate depending on valve function

1.1. AirLINE Quick technical data

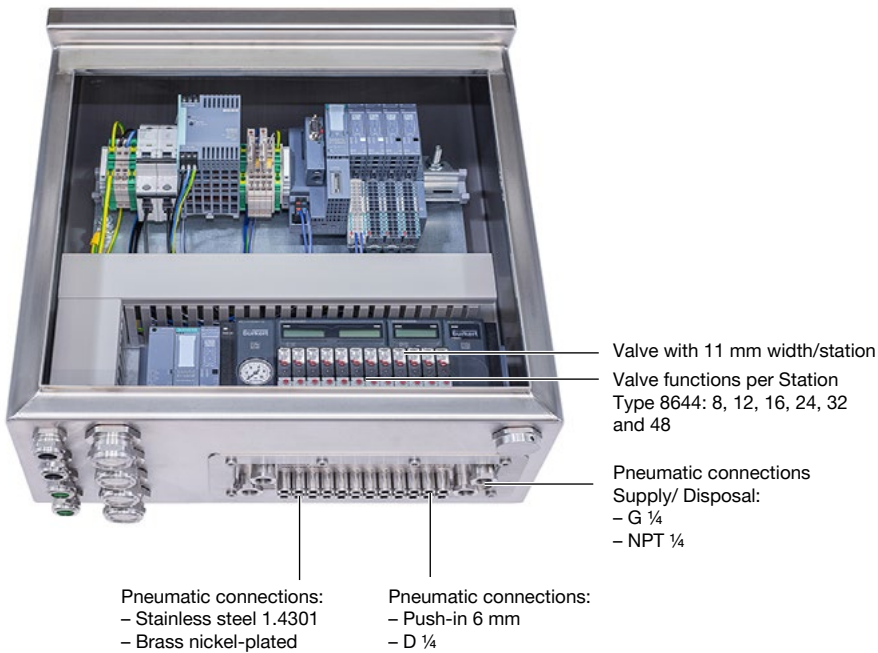
AirLINE Quick considerably reduces the use of components in the control cabinet. With the AirLINE Quick Adapter, the valve terminal is adapted directly to the control cabinet floor or wall.

Advantages:

- Reduced space requirement in the control cabinet
- This makes it possible to use more compact control cabinets
- Reduced installation effort due to hose connections directly at the bottom of the switch cabinet

Product properties	
Material: AirLINE Quick Adapter	Stainless steel 1.4301 Aluminium anodized
Material: pneumatic connection	Stainless steel 1.4301 brass nickel-plated
Valve functions per station	8, 12, 16, 24, 32 and 48
Product connections	
Connection: pneumatic feeding	G ¼, NPT ¼
Connection: pneumatic service ports	Push-in D6 mm, D¼"
Environment and installation	
Installation	Wall control cabinet Floor control cabinet

AirLINE Quick Adapter in stainless steel 1.4301 oder anodized aluminium



2. Product versions



Pilot valves 6524 ▶ and 6525 ▶

The pilot 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.

See “6.3. Ordering chart for Type 6524 and 6525” on page 9.

Product properties	3/2 and 5/2 way valve	2 x 3/2 way valve
Materials		
Body	PA (Polyamide)	
Seal	FPM, NBR and PUR	
Pneumatic module	Type MP11	
Electrical data		
Nominal power	0.8 W	2 x 0.8 W
Electrical connection at the valve	Rectangular plug 2 pin grid spacing 5.08 mm Cable with leads ^{1.)}	Rectangular plug 3 pin grid spacing 2.54 mm Cable with leads ^{1.)}
Performance data		
Duty cycle	Continuous operation (100 % ED)	
Product connections		
Port connections	Flange for MP11	
Supply port connection	G ¼, NPT ¼	
Service port 2 (A), 4 (B)	Push-in connection Ø 6 mm, Push-in connection Ø ¼", Threaded port M7	
Environment and installation		
Montage	With 2 screws M2 x 20	With 2 screws M2 x 28
Installation	As required, preferably with actuator upright	

1.) For versions with safety-related shutdown



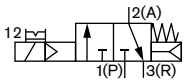
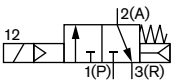
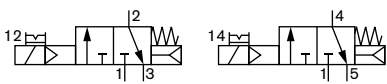
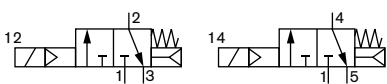
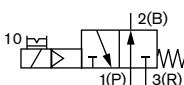
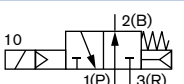
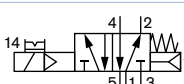
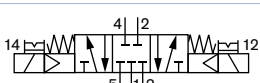

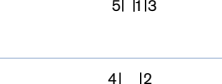
Pilot valve 0460 ▶

The pilot 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.

See “6.4. Ordering chart for Type 0460” on page 10.

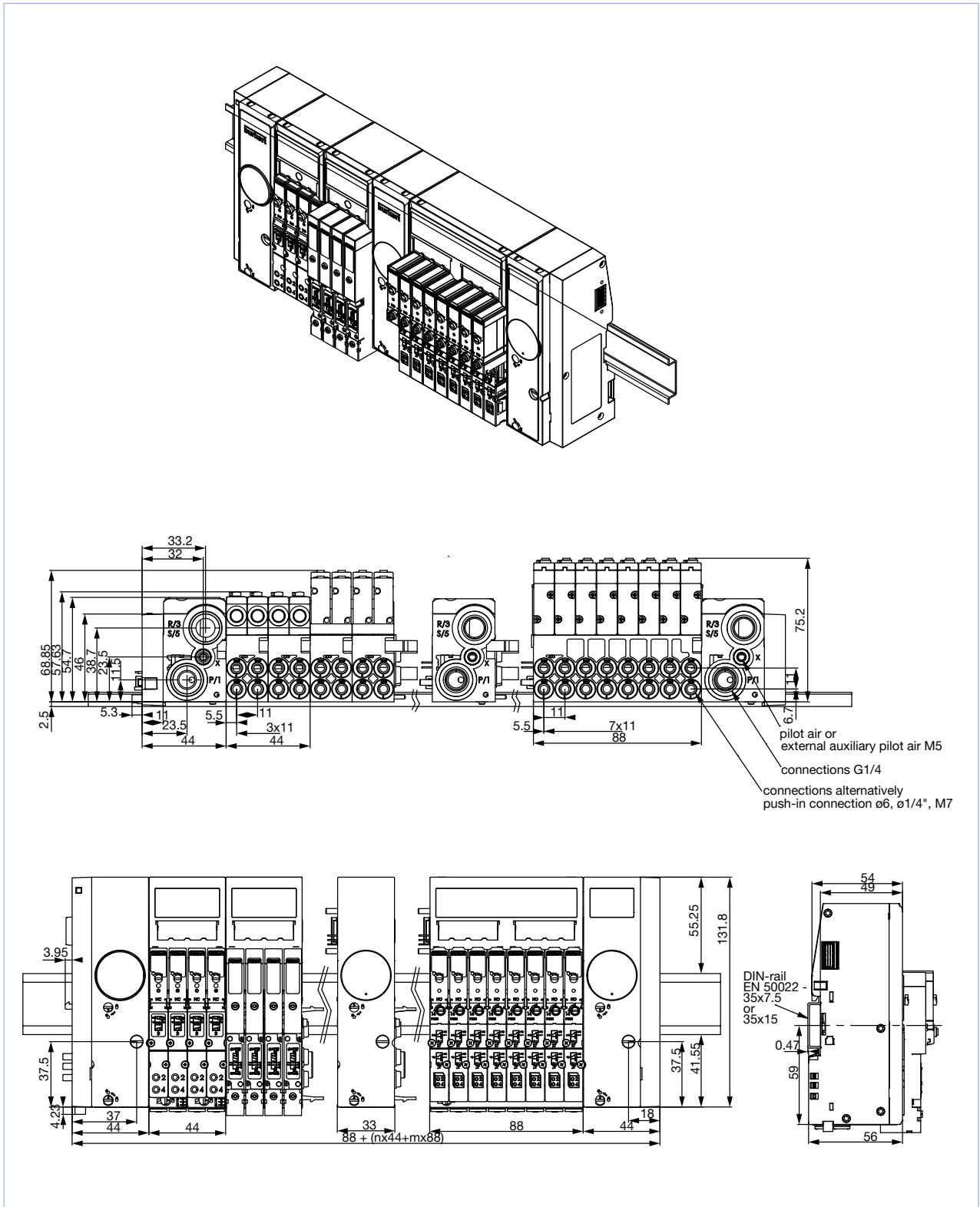
Product properties	5/2 way Impulse / 5/3 way valve
Materials	
Body	Aluminium
Seal	NBR
Pneumatic module	Type MP11
Electrical data	
Electrical connection at the valve	Rectangular plug
Product connections	
Port connections	Flange for MP11
Supply port connection	G ¼, NPT ¼
Service port 2 (A), 4 (B)	Push-in connection Ø 6 mm, Push-in connection Ø ¼", Threaded port M7

3. Circuit functions

Circuit Function	Description
	Type: C, solenoid valve 3/2 way Servo-controlled, with manual mode Normally closed
	Type: C, solenoid valve 3/2 way Servo-controlled Normally closed
	Type: C, solenoid valve 2 x 3/2 way Servo-controlled, with manual mode Normally closed
	Type: C, solenoid valve 2 x 3/2 way Servo-controlled Normally closed
	Type: D, solenoid valve 3/2 way Servo-controlled, with manual mode Normally open
	Type: D, solenoid valve 3/2 way Servo-controlled 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.
	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.

4. Dimensions

Note:
Dimensions in mm



5. Product installation

5.1. Installation notes

- External valve shut-off function (EVS Function): The switching-off of the modules with the additional connection (optionally available) cannot be combined with the ATEX/IEC-Ex approval.
- HotSwap function of the individual valves cannot be combined with the ATEX/IEC-Ex approval.
- The following project planning and commissioning restrictions must be observed.

Description	Type 8647 combines with	
	ET 200SP	ET 200SP HA
Installation with standard file PROFINET IO (GSDML)	Yes	Yes
Installation with standard file PROFIBUS DP (GSD)	Yes	No
Full integration in Software STEP 7 Classic (HSP)	Yes	No
Full integration in Software STEP 7 TIA-Portal (HSP)	Yes	No
Full integration in Software PCS 7 V9.0 SP2 (HUP)	Yes (HF Interface module required)	Yes
Several valve blocks can be arranged in series in one station	Yes (new power supply necessary)	No
Link to Siemens homepage	Assembly limits for Siemens ET 200SP	Assembly limits for Siemens ET 200SP HA
New power supply (ET 200SP base unit) required upstream of the valve block	Recommended, but not mandatory	Yes (mandatory) (base unit cover required)
Further ET 200SP modules can be mounted to the right of the valve block	Yes	No

6. Ordering information

6.1. Bürkert eShop – Easy ordering and quick delivery



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6.2. Bürkert product filter

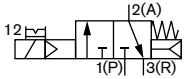
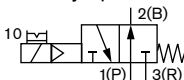
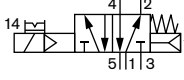
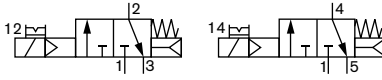


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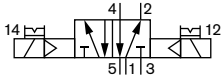

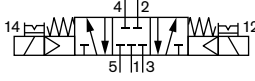

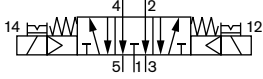

6.3. Ordering chart for Type 6524 and 6525

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min] ^{1.)}	Pressure range [bar]	Response times		Voltage/Frequency [V/Hz]	Article no.
				Opening [ms]	Closing [ms]		
Type: C, solenoid valve 3/2 way Servo-controlled, with manual mode Normally closed 	4	300	Vac. ...7	15	20	24 V DC	186258 ☒
			1.0...10 ^{2.)}	15	20	24 V DC	186257 ☒
			2.5...10	15	20	24 V DC	184043 ☒
Type: D, solenoid valve 3/2 way Servo-controlled, with manual mode Normally open 	4	300	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	1.0...10 ^{2.)}	15	20	24 V DC	186271 ☒
			2.5...10	20	28	24 V DC	179938 ☒
Type: C, solenoid valve 2 x 3/2 way Servo-controlled, with manual mode Normally closed 	4	300	1.0...10 ^{2.)}	12	20	24 V DC	300817 ☒
			2.5...10	12	20	24 V DC	204710 ☒

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

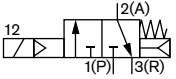

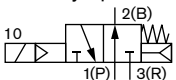
2.) Version with auxiliary pilot air

6.4. Ordering chart for Type 0460

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Nominal power [W]	Response times		Article no.
					Opening [ms]	Closing [ms]	
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	2.0...7.0	0.5	15	15	154183 
Type: L, solenoid valve 5/3 way With manual mode In middle position all ports locked Normally closed 	2.5	200	2.0...7.0	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	2.0...7.0	1	15	20	154185 

6.5. Ordering chart for Type 6524 and 6525 with second connection for shut-off function

3/2 way solenoid valve without manual override

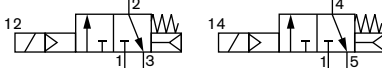

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min] ^{1.)}	Pressure range [bar] ^{2.)}	Voltage/frequency [V/Hz]	Article no.
Type: C, solenoid valve 3/2 way Servo-controlled Normally closed 	4	300	Vac....10 ^{3.)}	24 V DC	On request
			1...10	24 V DC	On request
			2.5...10	24 V DC	285545 
Type: D, solenoid valve 3/2 way Servo-controlled Normally open 	4	300	2.5...10	24 V DC	On request

1.) Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference

2.) Measured as overpressure to the atmospheric pressure

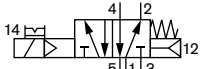

3.) Version with auxiliary pilot air

2 x 3/2 way solenoid valve without manual override

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min] ^{1.)}	Pressure range [bar] ^{2.)}	Voltage/frequency [V/Hz]	Integrated power reduction	Article no.
Type: C, solenoid valve 2 x 3/2 way Servo-controlled Normally close 	4	300	Vac...10 ^{3.)}	24 V DC	Yes	On request
	–	–	2.5...10	24 V DC	Yes	300818 
	–	–	2.5...10	24 V DC	No	On request

- 1.) Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference
 2.) Measured as overpressure to the atmospheric pressure
 3.) Version with auxiliary pilot air

5/2 way solenoid valve with manual override

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Response times		Voltage/frequency [V/Hz]	Article no.
				Opening [ms]	Closing [ms]		
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	2.5...10	20	28	24 V DC	285544 

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