



AirLINE Ex - electropneumatic automation system for use in hazardous areas

- For use in hazardous areas (zone 1/21)
- Developed in cooperation with Siemens Automation and Drives
- Electrical connection via PROFIBUS® DP-is, electrical I/O functions via Siemens SIMATIC ET 200 iSP™ modules
- NEW REV.2 realizes new integrable functionalities like pressure sensor or pressure switch

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

Can be combined with

	Type 8030 ▶ Inline flowmeter for continuous measurements
	Type 6519 ▶ Servo-assisted 5/2, 5/3 or 3/2 way Solenoid Valve for pneumatics
	Type 2012 ▶ Pneumatically operated 2/2 way globe valve CLASSIC
	Type 2000 ▶ Pneumatically operated 2/2 way angle seat valve CLASSIC
	Type 6524 ▶ 3/2-way or 2 x 3/2-way solenoid valve for pneumatic applications
	Type 6525 ▶ 5/2-way solenoid valve for pneumatic applications

Type description

AirLINE Ex Type 8650 is a modular electrical and pneumatic automation system that controls complex processes in hazardous areas (Zone 1 / 21). The protection class “intrinsically safe” (Ex-i) of electronic modules and valves allows the change of modules during operation. With the modules of the co-operation partner Siemens, Bürkert offers electrical, analogue and digital I/O functions for use in zone 0.

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1. General technical data

Product properties	
Dimensions	Detailed information can be found in chapter "4. Dimensions" on page 8.
Width/station	44mm with valve Types 6524/6525 66mm with valve Types 6526/6527 Detailed information can be found in Bürkert operating instructions.
Max. construction width of a valve terminal Type 8650	1070 mm
Max. construction width of a SIMATIC ET 200iSP	1095 mm (without redundant power supply) 1185 mm (with redundant power supply) Detailed information can be found in the operating instruction of SIMATIC ET 200iSP.
Max. number valve functions	Valve Types 6524/6525: max. 96 valve functions Valve Types 6526/6527: max. 32 valve functions
Electrical data	
Operating voltage	Supply via ET 200iSP: 24 V DC alternatively 120/230 V AC installed protection class Ex-e
Power consumption	Depending on the construction, see "1.3. Valve slice 44 mm" on page 5.
Protection class	I (acc. IEC 61140)
Medium data	
Operating medium	Compressed lubricated air, oil-free, dry; neutral gases e.g. nitrogen, helium, etc., (5 µm filter recommended), ISO 8573-1: 2010, class 7.4.4
Approvals and certificates	
Approvals	ATEX Zone 1/21 (BVS 21 ATEX E013X) IEC-Ex Zone 1/21 (IECEX BVS 21.0013X)
Environment and installation	
Ambient temperature	0...+60 °C (horizontal installation) 0 – 50 °C (for all other installation positions)
Storage temperature	-40...+70 °C
Installation	On S7 profile rail from Siemens
Degree of protection	IP30

1.1. Electrical modules of Siemens SIMATIC ET 200iSP™ series

Note:

- The Siemens SIMATIC ET 200iSP™ is suitable for use in explosion protected areas. It consists of power supply and interface module and a maximum 32 electronic modules.
- Detailed specifications, see Siemens SIMATIC ET 200iSP™ manual.






Overview of the Siemens components required for the AirLINE Ex Type 8650

Note:

The Siemens components required for the AirLINE Ex Type 8650 are presented in an overview in the following. For detailed information concerning the modules from series ET 200iSP™ please refer to the corresponding data sheets from Siemens.

Components for the SIMATIC ET 200iSP™ systems™	
Profile rail	The profile rail is a rack from the ET 200iSP™ system. You mount the modules on this rail. (Profile rails are available in different lengths)

Components for the SIMATIC ET 200iSP™ systems™	
Profile rail	The profile rail is the module carrier of the ET 200iSP™ system. You mount the modules on this rail (profile rails are available in different lengths).
Terminal module	The terminal modules support upright wiring. They hold the power supply, the interface and the electronic modules.
 Power-Supply module	The power supply module is plugged into the TM-PS-A terminal module (optionally redundant, then TM-PS-B terminal module). It supplies the electronics, valves and encoders with power.
 Interface module	The interface module is plugged into the terminal module TM-IM / EM or TM-IM / IM. It connects the ET 200iSP™ system to the PROFIBUS network and distributes the data to the equipped electronic modules.
 Electronic module	The electronic module is plugged onto the terminal module TM-IM / EM or TM-EM / EM. It provides the electrical I/O's (e.g. analogue outputs or digital inputs)
Termination module	The termination module complements the station.

1.2. Supply slice left / right / middle

Note:

- The supply slices (on the picture supply slices right/left) compose the interface between the electronic modules of the Siemens SIMATIC ET 200iSP™ series and the pneumatic valve block from Bürkert. With the supply slices the AirLINE Ex-System is powered with compressed air.
- Detailed information regarding dimensions see “4.2. Supply slice left / right / middle” on page 9.



Product properties	
Material	
Body (pneumatic)	PA, PC, brass, stainless steel
Weight	with manometer: approx. 500 g
Electrical data	
Power consumption	0 W (module is electrically passive)
Process/Port connection & communication	
Pneumatic connection	G 3/8" ans G 1/8"

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1.3. Valve slice 44 mm

Note:

- A valve slice is composed of a terminal module which represents the backplane. On this terminal module an electronic and a pneumatic basic module is fixed. Pilot valves of the following types can be assembled: 6524 / 6525 Ex-i (11 mm width per station).
- Detailed information regarding dimensions see [“4.3. Valve slice 44 mm” on page 10.](#)



Product properties	
Dimensions	Approx. 50 mm x 194 mm x 163.5 mm (44 mm Discs)
Material	
Body (Pneumatic)	PA, PC
Performance data	
Nominal operating mode	Continuous operation (100 % ED)
Electrical data	
Power consumption	3.2 W (3.95 W at 2 x 3/2 way valve)
Process/Port connection & communication	
Pneumatic connection ¹⁾	Plug-in connection D6, D1/4"

¹ Pneumatic connections on the valve disc for valves with 11 mm width/station

1.4. 11 mm width/station: Pilot valves Type 6524 and Type 6525 Ex-i

Note:

- The pilot valves of types 6524 and 6525 consist of a solenoid valve (Ex-i design) and a pneumatic poppet valve as amplifier. The operating principle enables high pressure to be controlled with low power consumption and short switching times. The valves are equipped with manual override (alternatively, versions without).
- Detailed information regarding ordering information see [“7.3. Ordering chart pilot valves Type 6524 and Type 6525 Ex-i \(11 mm width/station\)” on page 14.](#)



Product properties	
Material	
Body	PA (Polyamide)
Seal	NBR
Manual actuation	Yes (alternative versions without)
Orifice	DN 4 mm
Performance data	
Flow (Q_{Nn} value air)	300 l (Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference)
Nominal operating mode	Continuous operation (100 % ED)
Electrical data	
Nominal power	0.3 W (2 x 0.3 W with 2 x 3/2 way valve)
Process/Port connection & communication	
Port connection	Via valve block Bürkert Type 8650
Electrical connection (at valve)	Via valve block Bürkert Type 8650
Environment and installation	
Assembly conditions	With 2 screws M2

1.5. Valve slice 66 mm

Note:

- A valve disc consists of a terminal module that carries the standing wiring. An electronic and a pneumatic base module are mounted on this terminal module. Valves of the following types can be mounted on it: 6526 / 6527 Ex-i (with 16.5 mm width/station).
- Detailed information regarding dimensions see [“4.4. Valve slice 66 mm” on page 11.](#)

Product properties	
Dimensions	Approx. 72 mm x 190 mm x 163.5 mm (66 mm Discs)
Material	
Body (Pneumatic)	PA, PC
Performance data	
Nominal operating mode	Continuous operation (100 % ED)
Electrical data	
Power consumption	3.2 W
Process/Port connection & communication	
Pneumatic connection ¹⁾	Plug-in connection D8

¹ Pneumatic connections on the valve disc for valves with 16.5 mm width/station

1.6. 16.5 mm width/station: Pilot valves Type 6526 and Type 6527 Ex-i

Note:

- The pilot valves of Types 6526 and 6527 consist of a rocker type solenoid valve of Type 6106 (Ex-i design) and a pneumatic poppet valve as amplifier. The operating principle enables high pressure to be controlled with low power consumption and short switching times. The valves are equipped with manual override (alternatively versions without).
- Detailed information regarding ordering information see [“7.4. Ordering chart pilot valves Type 6526 and Type 6527 Ex-i \(16.5 mm width/station\)” on page 15.](#)



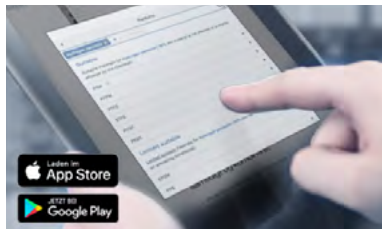
Product properties	
Material	
Body	PA (Polyamide)
Seal	NBR
Manual actuation	Yes (alternative versions without)
Orifice	DN 6 mm
Performance data	
Flow (Q_{Nn} value air)	700 l (Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference)
Nominal operating mode	Continuous operation (100 % ED)
Electrical data	
Nominal power	0.3 W
Process/Port connection & communication	
Port connection	Via valve block Bürkert Type 8650
Electrical connection (at the valve)	Via valve block Bürkert Type 8650
Environment and installation	
Assembly conditions	With 2 Screws M3 x 30

2. Circuit functions

Circuit function	Description
	Type: C, solenoid valve 3/2 way servo-controlled solenoid valve, normally closed, with manual override
	Type: C, solenoid valve 2 x 3/2 way servo-controlled solenoid valve, normally closed, with manual override
	Type: H, solenoid valve 5/2 way servo-controlled solenoid valve, pilot air and manual override

3. Materials

3.1. Chemical Resistance Chart – Bürkert resistApp



Bürkert resistApp – Chemical Resistance Chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

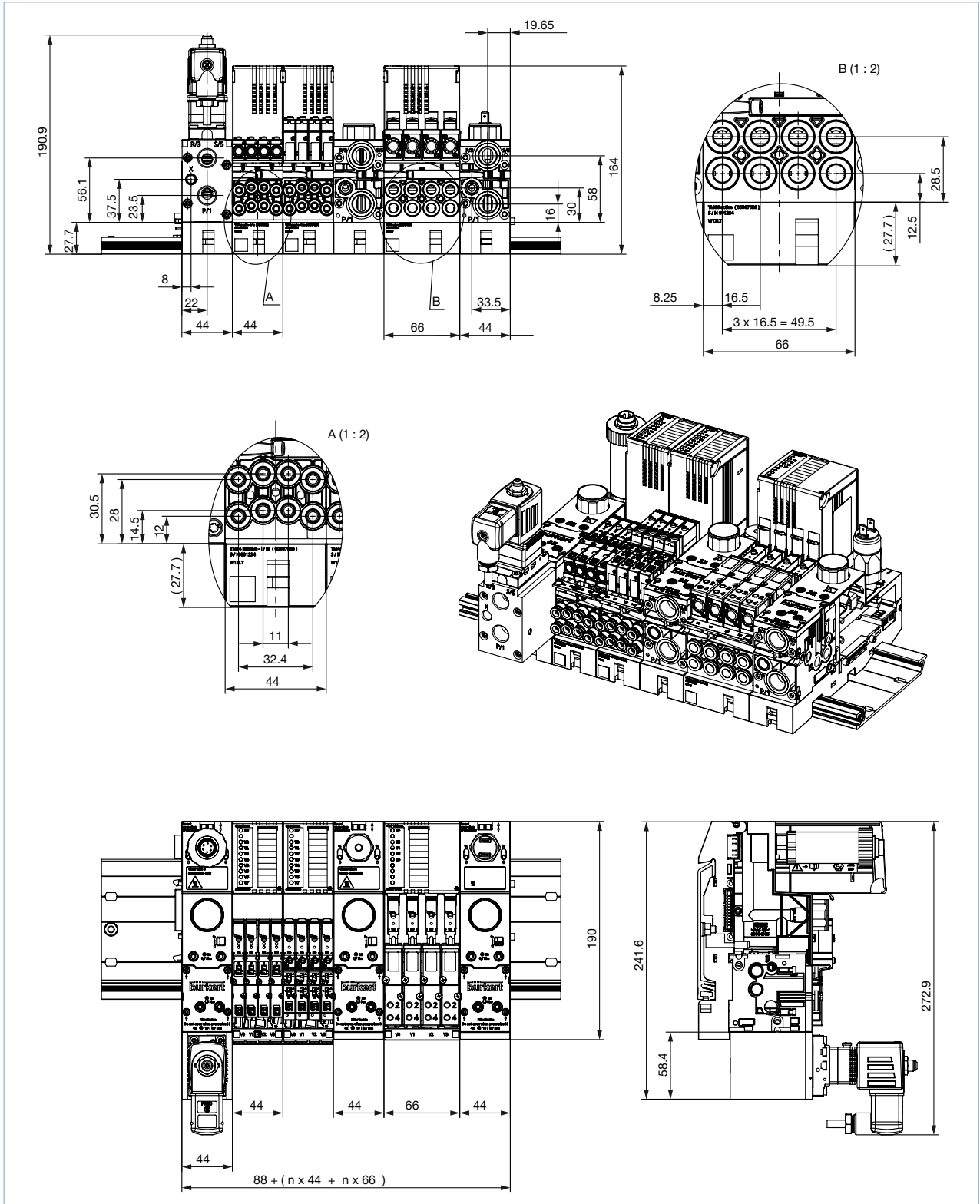
[Start Chemical Resistance Check](#)

4. Dimensions

4.1. System AirLINE Ex Type 8650

Note:

- Dimensions in mm
- Detailed information regarding technical data see “1. General technical data” on page 3.

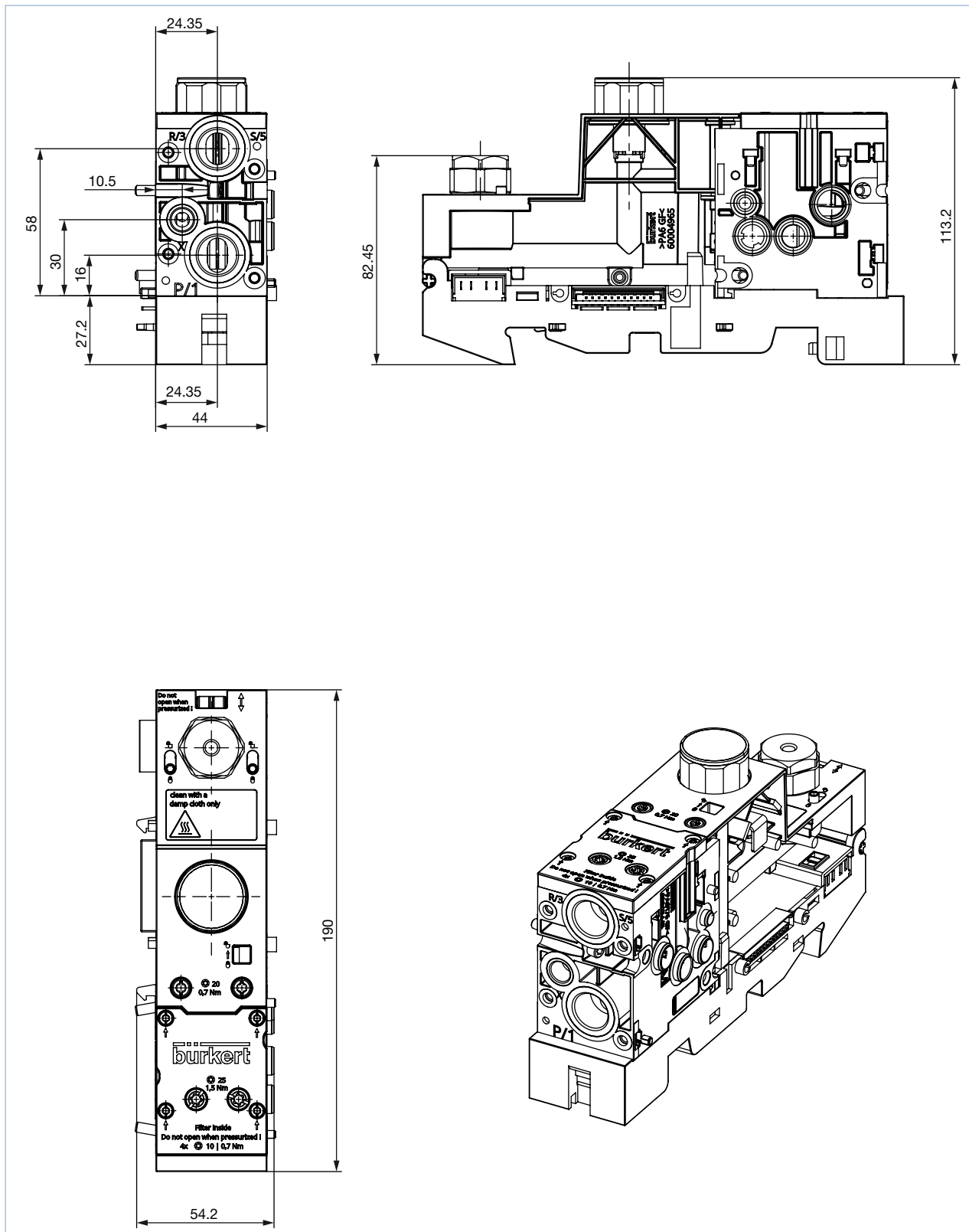


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4.2. Supply slice left / right / middle

Note:

- Dimensions in mm
- Detailed information regarding technical data see “1.2. Supply slice left / right / middle” on page 4.

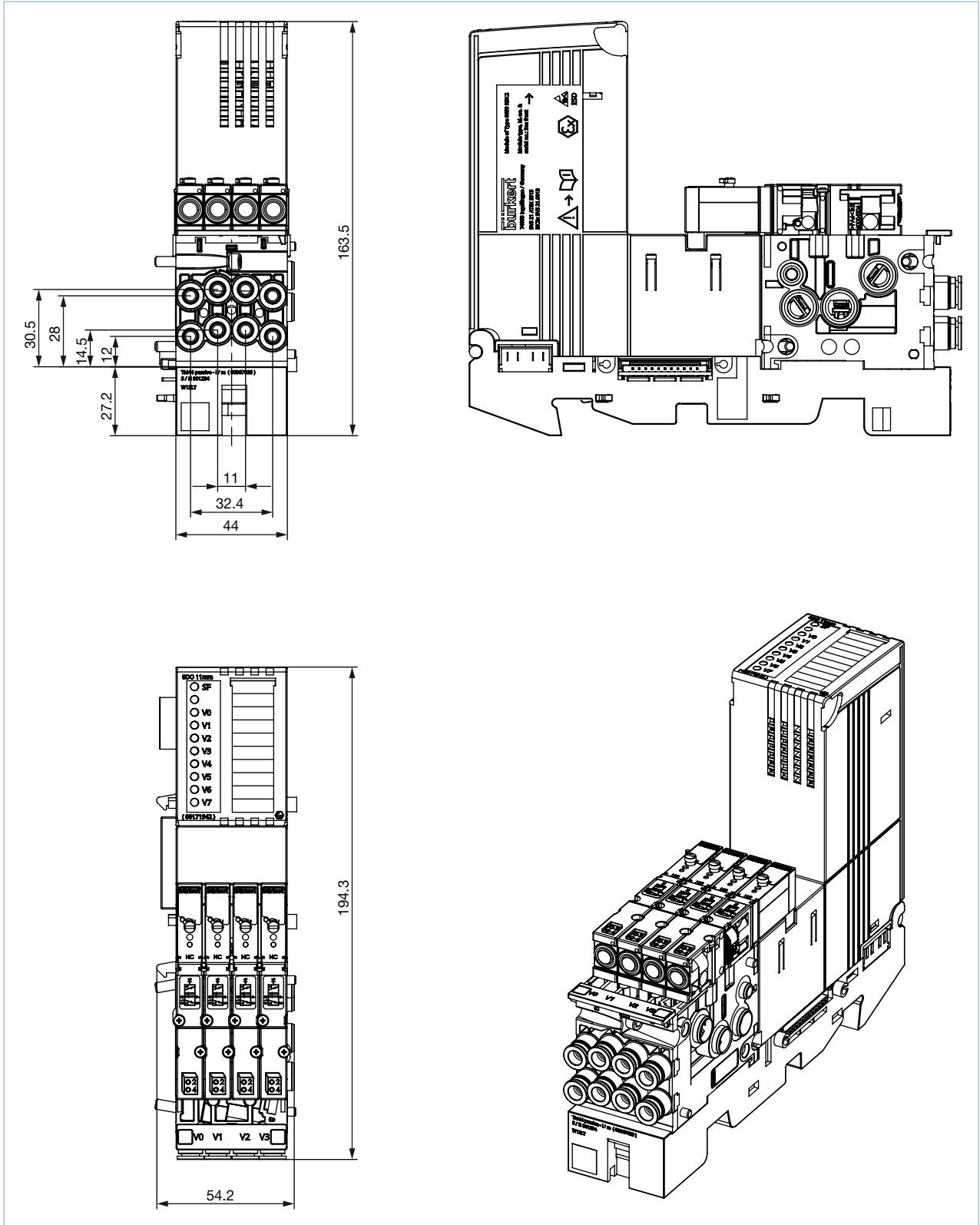


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4.3. Valve slice 44 mm

Note:

- Dimensions in mm
- Detailed information regarding technical data see “1.3. Valve slice 44 mm” on page 5.

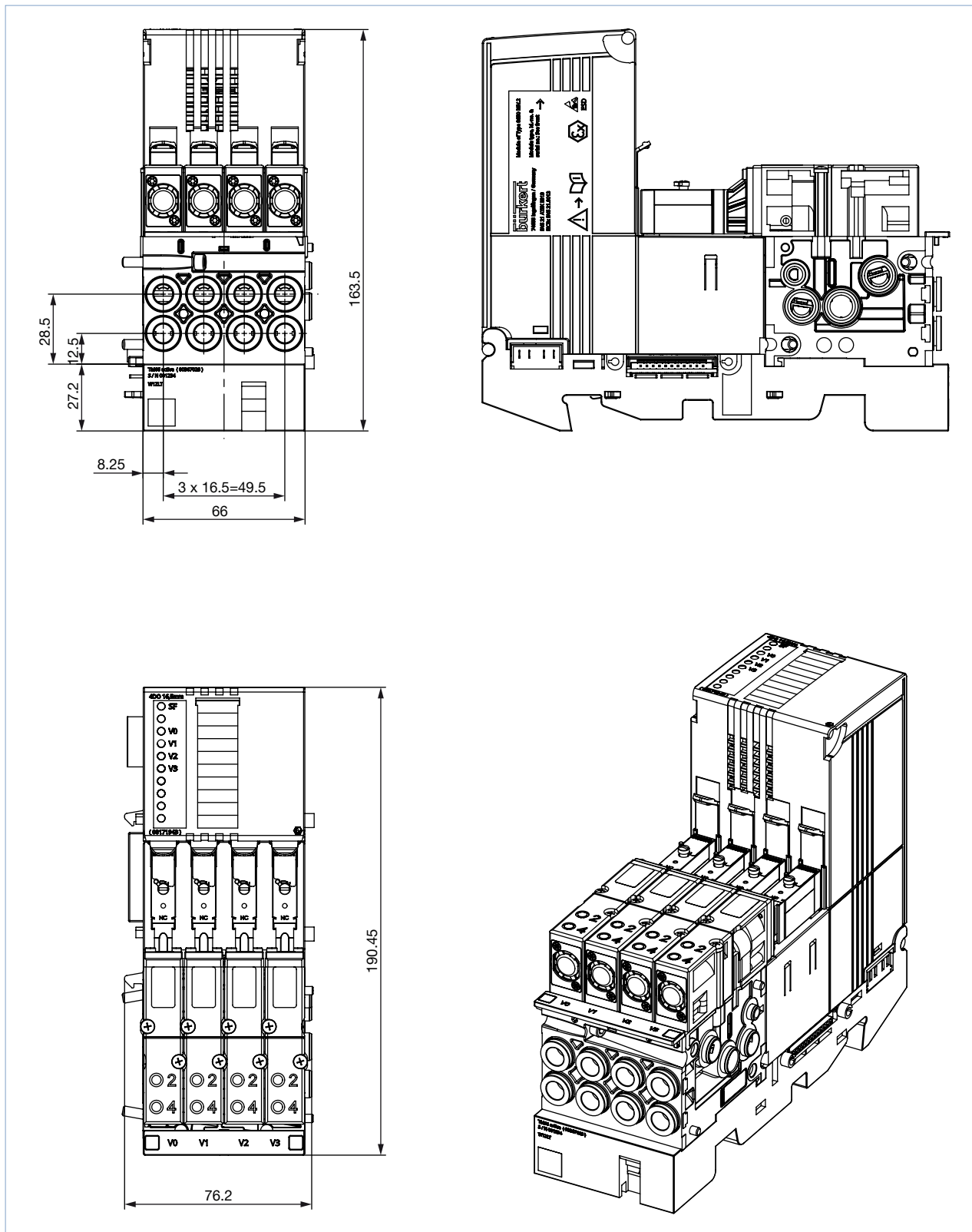


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4.4. Valve slice 66 mm

Note:

- Dimensions in mm
- Detailed information regarding technical data see “1.5. Valve slice 66 mm” on page 6.

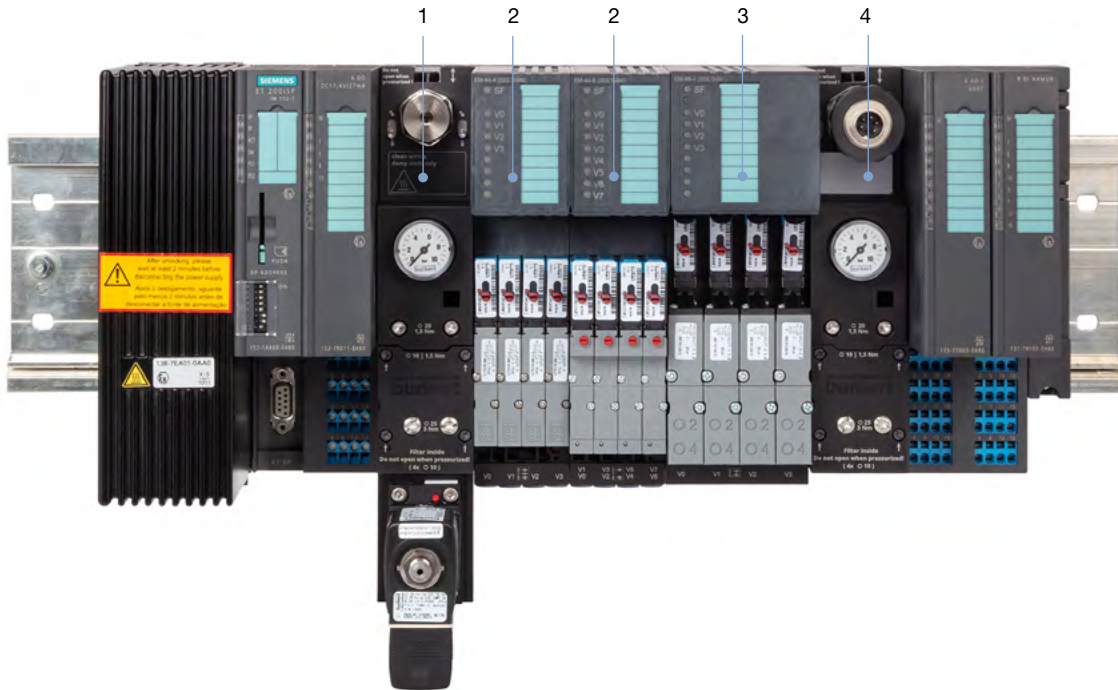


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5. Product design and assembly

Note:

- Open for all functionalities
- The valve terminal acquires sensor signals via digital feedback inputs. As a result, pneumatic outputs switch single-acting or double-acting process valves in different modes of operation.



No.	Element	Pneumatic connections
1	Supply slice, left	G 3/8" and G 1/8"
2	Valve slice 44mm	Plug-in coupling D6, D 1/4"
3	Valve slice 66mm	Plug-in coupling D8
4	Supply slice, right	G 3/8" and G 1/8"

6. Product accessories

6.1. Certified control cabinets


Note:

Certified control cabinets are available on request.

Certified cabinet	Description
	<p>Control cabinet with Siemens SIMATIC ET 200iSP and Bürkert Type 8650, e.g. for use in the pharmaceutical industry.</p>
	<p>Control cabinet with Siemens SIMATIC ET 200iSP and Bürkert Type 8650, e.g. for use in the pharmaceutical industry.</p>

7. Ordering information

7.1. Bürkert eShop – Easy ordering and quick delivery




Bürkert eShop – Easy ordering and fast delivery

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7.2. Bürkert product filter



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7.3. Ordering chart pilot valves Type 6524 and Type 6525 Ex-i (11 mm width/station)

Note:

- ATEX & IEC-Ex certified
- Other valve functions on request
- For detailed information regarding technical data see “1.4. 11 mm width/station: Pilot valves Type 6524 and Type 6525 Ex-i” on page 5.
- For detailed information regarding circuit function see “2. Circuit functions” on page 7.

Circuit function	Switching times	Switching times	Pressure range	Manual override	Article no.
	Opening	Closing			
	[ms]	[ms]	[bar]		
Type: C, solenoid valve 3/2 way servo-controlled solenoid valve, normally closed, with manual override	15	20	2.5...7	yes	365620
			2.5...7	no	–
			1...7	yes	366796 ^{1.)}
Type: C, solenoid valve 2 x 3/2 way servo-controlled solenoid valve, normally closed, with manual override	15	20	2.5...7	yes	182086
			1...7	yes	182088 ^{1.)}
Type: H, solenoid valve 5/2 way servo-controlled solenoid valve, pilot air and manual override	15	20	2.5...7	yes	365625
			2.5...7	no	–
			1...7	yes	366797 ^{1.)}

1.) Version with pilot air

7.4. Ordering chart pilot valves Type 6526 and Type 6527 Ex-i (16.5 mm width/station)

Note:



- ATEX & IEC-Ex certified
- Other valve functions on request
- For detailed information regarding technical data see “1.6. 16.5 mm width/station: Pilot valves Type 6526 and Type 6527 Ex-i” on page 6.
- For detailed information regarding circuit function see “2. Circuit functions” on page 7.

Circuit function	Switching times Opening	Switching times Closing	Pressure range	Manual override	Article no.
	[ms]	[ms]	[bar]		
Type: C, solenoid valve 3/2 way servo-controlled solenoid valve, normally closed, with manual override	80	90	2...8	yes	263932
				no	175674
			1...8	yes	366798 ^{1.)}
Type: H, solenoid valve 5/2 way servo-controlled solenoid valve, pilot air and manual override	80	90	2...8	yes	365024
				no	175728
			1...8	yes	366799 ^{1.)}

1.) Version with pilot air

7.5. Ordering chart system accessories

Accessories	Specification	Article no.
Profile rail	Length: 480 mm	655982
	Length: 530 mm	655983
	Length: 585 mm	671701
	Length: 830 mm	671702
	Length: 885 mm	671703
Further accessories	Plug to block P-channel (to build up several pressure levels or media groups in a 8650 system)	-
	Suitable Ex-i bus plug 9pol sub-D e.g. from Siemens: Article no. 6ES7-972-0DA60-0XA0	655981
	RS 485 IS bus coupler from Siemens. Article no. 6ES7-972-0AC80-0XA0	222963

Picture		Article no.
	Shut-off valve	20002450
 (example)	Pressure sensor	774891
	Pressure switch (with changer)	772515
	Pressure switch (with normally open)	780496

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