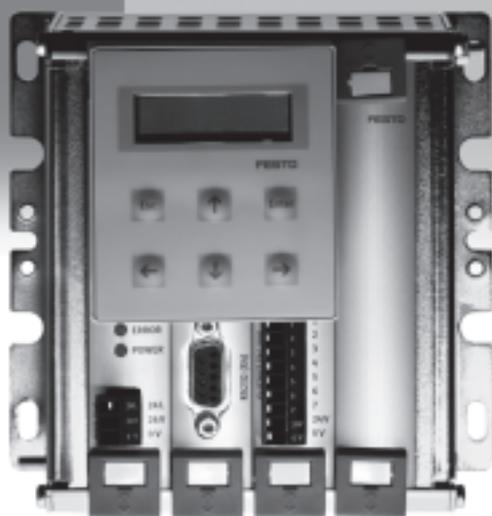# Axis controllers SPC200

FESTO

Controlling servopneumatic
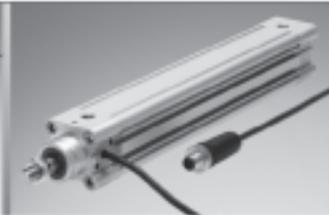axes flexibly and dynamically

Info 137

Servopneumatics – at a glance

Servopneumatics: Free advancing to any position with maximum dynamics – can also handle high forces with ease.

Control the entire spectrum ...

of servopneumatic ...

positioning drives!
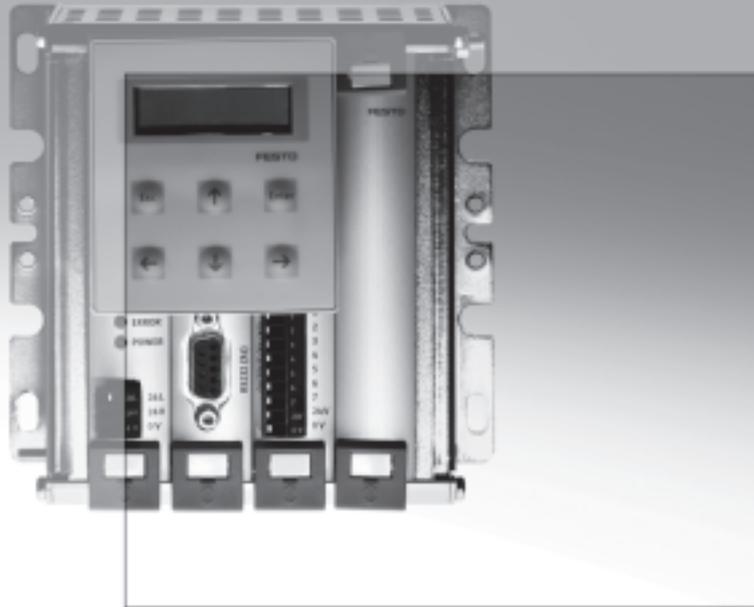
Flexible positioning with servopneumatics
Ideal wherever
- compact and cost-effect solutions are required,
- the moved loads exceed 10 kg in weight,
- positioning accuracy of a few tenths of a millimetre is sufficient.

Optimised cost-effectiveness
Rule of thumb: the overall economy grows with the weight of the loads to be moved at high speed.

Full application versatility
Thanks to the wide range of drives with integrated or external displacement encoder. As a standardised controller, the SPC200 offers open interfaces to all higher-order controllers!

SPC200: flexibility and maximum dynamism for servopneumatic positioning technology

Variety
- Connection of up to 4 axes
- For use with pneumatic drive families, with stepper motor axes or a combination of both
- As a standalone controller or on a fieldbus

Modularity
Individual adaptation of the controller to the application including:
- Varying number of digital I/Os, analogue inputs
- Fieldbus interfaces for Profibus, DeviceNet
- Further project-specific fieldbus protocols upon request

Flexibility
- Record selection – for positioning functions with fixed traversing tasks which can simply be called up via I/Os

- "Program" mode – with up to 100 programs for solving the most complex tasks or calculating and changing positions; I/Os control the process
- Quick commissioning using the WINPISA diagnostic and programming tool
- The PROFIBUS and DeviceNet fieldbus interfaces facilitate direct reading and writing of the position data. You can calculate, select and archive the position in a PLC and then download it directly into the SPC200. For support purposes, a functional module for the Siemens S7 controller family is available

Innovation
The wide range of positionable servopneumatic drives

Servopneumatics with the SPC200 – the advantages at work

Dynamic with high loads
In quality assurance, for example: aligning vehicles on a test stand in order to adjust the track width. Servopneumatics with the SPC200 offers advantages where loads of 10 ... 300 kg are moved very dynamically. The pneumatics supply the dynamics, while the SPC200 handles the controlled and gentle cushioning of the moving loads – a perfect partnership.

Flexible and economical
In packaging, for example: the repacking of parts into a larger box. The size and number of the parts themselves vary from product to product. Servopneumatics is ideal where positioning accuracy of a few tenths of a millimetre is sufficient. Easily handled using the SPC200 and a servopneumatic drive of your choice.

Uniformity in motion
In metering, for example: filling cartons with food, such as a fruit yoghurt with a layer of cream on top. The requirement here is for low and uniform speed, delivered by a precise piston stroke, otherwise the yoghurt will be minus the cream! This is an ideal job for servopneumatics. The SPC200 controls the force easily and flexibly and all at a very attractive price/performance ratio.

Servopneumatics and the SPC200 offer maximum freedom of movement ...

... with the piston rod drives DNC with external displacement encoder, for example. The double-acting standard cylinder DNC is available in a wide range of variants, all of which can be combined to provide the right solution to any application.

To ISO 15552
Diameter: 32 ... 80 mm
Stroke: 100 ... 500 mm

... with the piston rod drives DNCI with integrated displacement encoder, for example. The double-acting standard cylinder DNCI is available with through piston rod, external guide unit and clamping cartridge.

To ISO 15552
Diameter: 32, 40, 50, 63 mm
Stroke: 100 ... 500 mm

... with the rodless drives DGCI with integrated displacement encoder.

... with the rodless drives DGPI/DGPIL with integrated displacement encoder, for example. The pneumatic linear drives DGPI/DGPIL are available either with driver or slide.

... with the semi-rotary modules DSMI with integrated displacement encoder, for example, on the basis of the semi-rotary module DSM. The maximum swivel angle of the semi-rotary modules is 270°.

Diameter: 18 ... 63 mm
Stroke: 100 ... 2,000 mm

Diameter: 25 ... 63 mm
Stroke: 225 ... 2,000 mm

Sizes: 25, 40
Swivel angle (max.): 270°
Torque (max.): 5 or 20 Nm
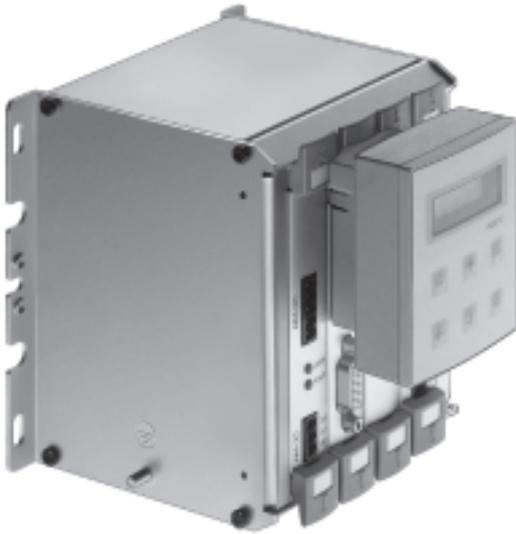
SPC200 – the most unique positioning controller in the world for pneumatic and electrical positioning technology

Strength in variety
- 1 to 4 positioning axes
- 3 different pneumatic drive families
- Stepper motor axes
- Technology mix

Strength in modularity
- Two housing sizes
- 9 different plug-in cards
- Combinable as required

Multi-purpose
- Set selection for simple applications
- Start/stop operation for demanding automation tasks
- Up to 100 programs
- Subprogram technology
- Register operations and much more

Strength in flexibility
- Digital inputs/outputs
- Analogue inputs
- Profibus, Device Net, Interbus
- CPV valve terminals for pneumatic switching functions

Strength in installation
- One axis string controls
- 2 pneumatic axes
- CPV valve terminals can be connected directly to the axis string
- Pre-assembled cables
- Plugs fit only in the correct sockets
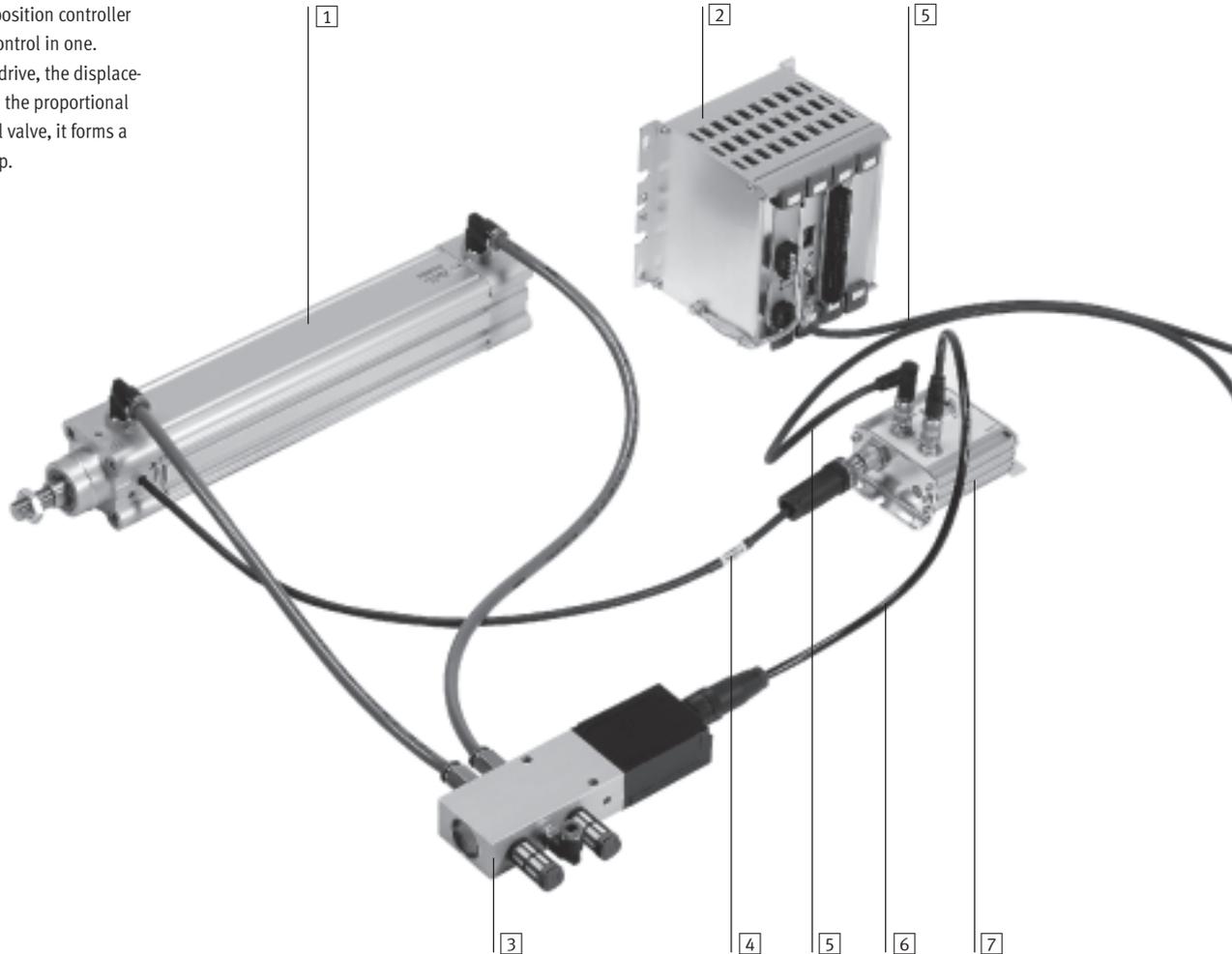
Software WINPISA
- Project archiving
- Simple commissioning
- User-friendly programming
- Comprehensive diagnostics with graphics functions
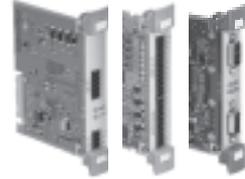
In combination with the drive DNCI

The SPC200 is a position controller and positioning control in one. Together with the drive, the displacement encoder and the proportional directional control valve, it forms a closed control loop.

Individual components		
Type		**Brief description**
1	DNCI-...	The pneumatic drive, in this case DNCI with integrated displacement encoder, generates the movement. It is controlled by the SPC200.
2	SPC200-...	The axis controller with operating unit, in this case designed for a pneumatic drive, is an open and closed loop controller in one.
3	MPYE-...	The proportional directional control valve is the final control element in the control loop and controls the movement of the drive in accordance with the specification of the closed loop controller in the SPC200.
4	–	Connecting cable that connects the displacement encoder with the axis interface. The cable is permanently attached to the drive.
5	KSPC-AIF-...	Connecting cable that connects the controller SPC200 with the axis interface.
6	KMPYE-AIF-...	Connecting cable that connects the proportional directional control valve with the axis interface.
7	SPC-AIF-...	The axis interface forwards the measured values from the displacement encoder to the closed loop controller in the SPC200 and the control signal from the closed loop controller to the proportional directional control valve.

Axis controllers SPC200

Product range overview

FESTO

Individual components for SPC200			
	Type	Brief description	➔ Page/Internet
Basic units			
	SPC200-CPU-4	Basic unit with 4 card locations	10
	SPC200-CPU-6	Basic unit with 6 card locations	10
Plug-in cards			
	SPC200-BP	Blanking plate	11
	SPC200-PWR-AIF	Power supply unit and axis interface connection	14
	SPC200-MMI-DIAG	Diagnostics and control unit connection	15
	SPC200-DIO	Digital inputs/outputs (10I/8O)	16
	SPC200-2AI-U	Analogue setpoint specification, 2 channels, 0 … 10 V	18
	SPC200-SCU-AIF	Sub-controller for 3rd and 4th pneumatic axes	19
	SPC-200-SMX-1	Stepper motor interface	20
	SPC200-COM-PDP	Profibus-DP interface	22
	SPC200-COM-DN2	DeviceNet interface	24
	SPC200-COM-IBS	Interbus interface	26
Control unit			
	SPC200-MMI-1	Control unit for commissioning, programming and diagnostics. Not all functions of the axis controller SPC200 are supported. Please use Win-PISA for commissioning.	27

Connector modules for SPC200			
	Type	Brief description	➔ Page/Internet
Axis interface			
	SPC-AIF-POT SPC-AIF-POT-LWG	For analogue displacement encoder (potentiometer)	28
	SPC-AIF-MTS	– For digital displacement encoder Temposonics/AIF – For linear drive DGPI…-…-AIF	28
	SPC-AIF-INC	For standard cylinder DNCI	30
	SPC-AIF-MTS-2	For linear drive DGCI	32
Power supply module			
	SPC-AIF-SUP-24V	Additional power supply for the load voltage at the axis interface for cable lengths over 16 m	34

Axis controllers SPC200

Product range overview

FESTO

Basic configuration of controller packages

Version	Brief description	SPC200-MMI-1	SPC200-PWR-AIF	SPC200-MMI-DIAG	SPC200-DIO	SPC200-2AI-U	SPC200-SCU-AIF	SPC200-COM-PDP	SPC200-COM-IBS	SPC200-SMX-1	→ Page/Internet
SPC200/P01	For 1 or 2 pneumatic axes with control unit	■	■	■	■	–	–	–	–	–	13
SPC200/P02	For 1 or 2 pneumatic axes with control unit and 2 analogue inputs for positioning specifications	■	■	■	■	■	–	–	–	–	13
SPC200/P03	With sub-controller for 3 or 4 pneumatic axes, with control unit	■	■	■	■	–	■	–	–	–	13
SPC200/P04	With Profibus-DP interface for 1 or 2 pneumatic axes	–	■	■	–	–	–	■	–	–	13
SPC200/P05	With Profibus-DP interface for up to 4 pneumatic axes	–	■	■	–	–	■	■	–	–	13
SPC200/P06	With Interbus interface for 1 or 2 pneumatic axes	–	■	■	–	–	–	–	■	–	13
SPC200/P07	With Interbus interface for up to 4 pneumatic axes	–	■	■	–	–	■	–	■	–	13
SPC200/P08	With stepper motor interface for 1 axis and up to 2 pneumatic axes, with control unit	■	■	■	■	–	–	–	–	■	13

Expansion options for controller packages

Version	Brief description	SPC200-MMI-1	SPC200-DIO	SPC200-2AI-U	SPC200-SCU-AIF	SPC200-COM-PDP	SPC200-COM-IBS	SPC200-COM-CAN	SPC200-SMX-1
SPC200/P01	For 1 or 2 pneumatic axes with control unit	–	1)	1)	1)	1)	1)	1)	1)
SPC200/P02	For 1 or 2 pneumatic axes with control unit and 2 analogue inputs for positioning specifications	–	–	–	–	–	–	–	–
SPC200/P03	With sub-controller for 3 or 4 pneumatic axes, with control unit	–	–	–	–	–	–	–	–
SPC200/P04	With Profibus-DP interface for 1 or 2 pneumatic axes	2)	1)	1)	–	–	–	–	1)
SPC200/P05	With Profibus-DP interface for up to 4 pneumatic axes	2)	–	–	–	–	–	–	–
SPC200/P06	With Interbus interface for 1 or 2 pneumatic axes	2)	1)	1)	–	–	–	–	1)
SPC200/P07	With Interbus interface for up to 4 pneumatic axes	2)	–	–	–	–	–	–	–
SPC200/P08	With stepper motor interface for 1 axis and up to 2 pneumatic axes, with control unit	–	–	–	–	–	–	–	–

1) One free card location, therefore expandable with max. one card. This must be ordered separately.
   Other configurations can be produced from the individual components
2) Optional

Axis controllers SPC200

Technical data

Axis controller basic unit
SPC200-CPU-4
SPC200-CPU-6

Function
Basic unit for 4 or 6 function cards,
contains closed loop position
controller for 2 pneumatic axes and
universal positioning control for
4 axes

General technical data			
			SPC200
Power supply			➔ 14 (SPC200-PWR-AIF)
Current consumption	SPC200-CPU-4/6 incl. SPC200-PWR-AIF	[mA]	Typically 100
Processor type			Digital signal processor
Operating system			Festo OS 4.6x[1]
Controller sampling time		[ms]	Typically 1.5
Control cycle		[ms]	Typically 2
Memory	Available for programs and data	[KB]	20
Data backup			Flash memory
	Backup cycles		> 100 000
No. of positioning axes	Total		4
	Pneumatic		Max. 4
	Stepper motor		Max. 3
No. of inputs/outputs	Local		Max. 40 inputs, 32 outputs[2]
	Per AIF string		Max. 16 inputs and 16 outputs[3]
	Via fieldbus		Max. 64 inputs and 64 outputs
No. of start programs			2[4]
No. of position registers			100 per axis
Operating modes	Set selection	No. of motion sets	Max. 32 via local I/O per start program
			Max. 1,000 via fieldbus interface per start program
		Control signals	ENABLE, READY, STOP, RESET, RECBIT1..5, CLK_A/B, RC_A/B, ACK_A/B
	Start/stop	No. of programs	Max. 100
		Control signals	ENABLE, READY, START/RESET, STOP, MC_A/B, SYNC_IA/B, SYNC_OA/B
		Programming	NC programming to DIN 66025
		Instruction classes	Positioning instructions I/O instructions Register instructions Sequence instructions
		No. of NC sets	Max. 2,000
		No. of NC sets per program	Max. 1,000
		Nesting depth for subprograms	Max. 4

1) Status: April 2003
2) Less the used control signals of the first card
3) Either as 1 input device and 1 output device of the CP fieldbus modules or 1 input/output module SPC-FIO ...
4) At least 1 start program must be active

Axis controllers SPC200

Technical data

General technical data			SPC200
CE marking symbol (see conformity declaration)			As per EU EMC directive
Vibrations/shock	Vibrations		Tested to DIN/IEC 68, parts 2-6, severity level 1
	Shock		Tested to DIN/IEC 68, parts 2-27, severity level 2
Ambient conditions	Temperature range	[°C]	−5 … +50
	Protection class		IP20[5]
	Relative air humidity		95% non-condensing
Weight	SPC200-CPU-4	[kg]	0.675
	SPC200-CPU-6	[kg]	0.85

5) With fully equipped basic unit

-◯- New

Communication modules for connecting to a fieldbus, like Profibus or DeviceNet, facilitate reading and writing all registers of the axis controller SPC200.

Reading the actual position and writing a digital position setpoint.

Ordering data		Part No.	Type
Axis controller basic unit	With 4 mounting locations	170 173	**SPC200-CPU-4**
	With 6 mounting locations	170 174	**SPC200-CPU-6**
Accessories	Blanking plate (plug-in card)	170 229	**SPC200-BP**
	Clip for H-rail assembly for SPC200	170 169	**CP-TS-HS-35**
User documentation	For axis controller basic unit, German	170 245	**P.BE-SPC200-DE**
	For axis controller basic unit, English	170 246	**P.BE-SPC200-EN**
	For axis controller basic unit, French	194 500	**P.BE-SPC200-FR**
	For axis controller basic unit, Italian	194 501	**P.BE-SPC200-IT**
Programming software WinPISA on CD-ROM	For Windows 95, 98, 2000, NT and XP, German	170 095	**P.SW-WIN-PISA-CD-DE**
	For Windows 95, 98, 2000, NT and XP, English	170 096	**P.SW-WIN-PISA-CD-EN**
	For Windows 95, 98, 2000, NT and XP, French	194 508	**P.SW-WIN-PISA-CD-FR**

Function modules

➜ www.festo.com

Function modules that support communication between third-party controllers and the Profibus card of the axis controller SPC200 can be downloaded from the Download Area of the Festo website.
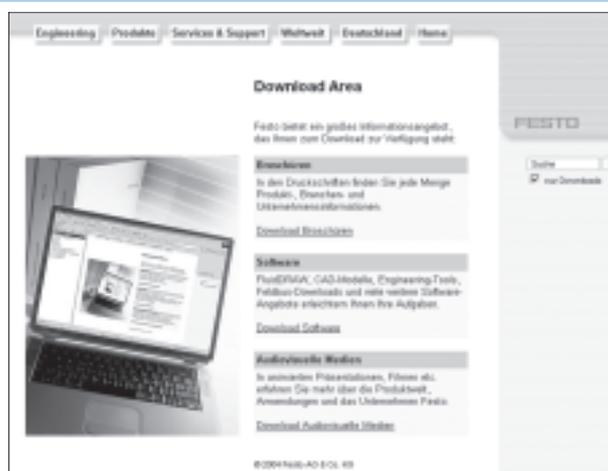
Axis controllers SPC200

Technical data

Dimensions
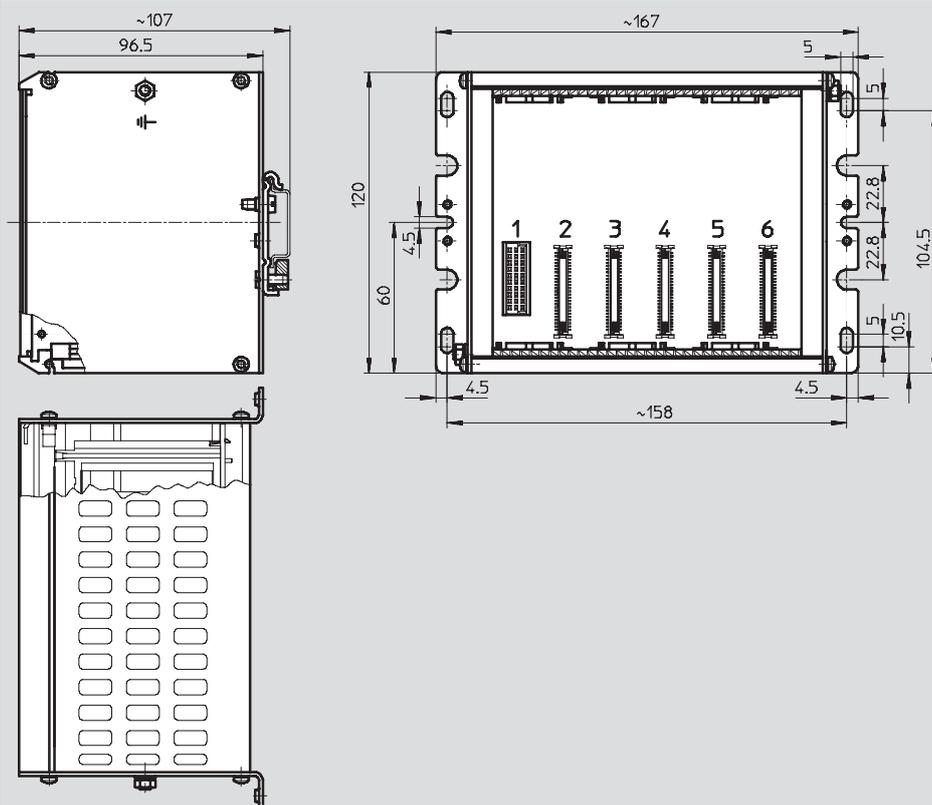
SPC200-CPU-4 (rack for 4 mounting locations) using as an example: SPC200/P02
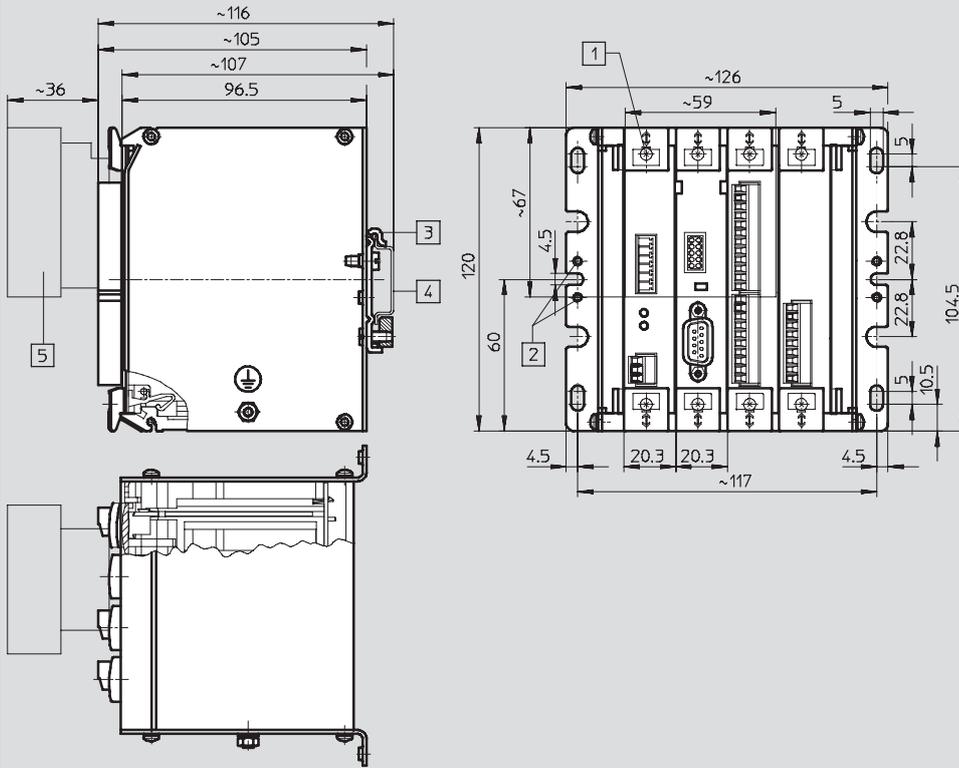
1	Installation option for inscription label LBS 6x10
2	Mounting option for clip
3	Clip for rail mounting
4	Mounting rail
5	Control unit SPC200-MMI-1

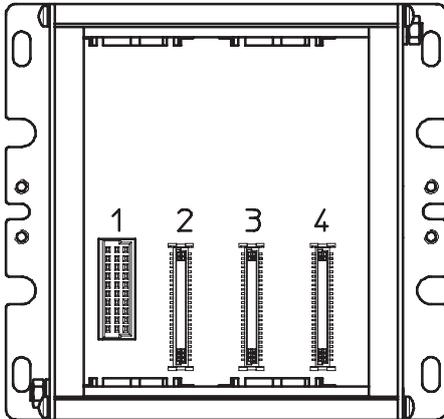### SPC200-CPU-6 (rack for 6 mounting locations)

- ∥ - Note

The numbers 1 … 6 represent the order of the mounting locations.

Order of the mounting locations

Configured controller packages

Controller packages	Mounting location				Control unit SPC200-MMI-1[1]	Part No.	Type
	1	2	3	4			
P01	1	2	4	9	■	170 521	**SPC200/P01**
P02	1	2	4	5	■	170 522	**SPC200/P02**
P03	1	2	4	3	■	170 523	**SPC200/P03**
P04	1	2	9	7	–	187 812	**SPC200/P04**
P05	1	2	3	7	–	187 813	**SPC200/P05**
P06	1	2	9	8	–	187 814	**SPC200/P06**
P07	1	2	3	8	–	187 815	**SPC200/P07**
P08	1	2	4	6	■	187 816	**SPC200/P08**

1) Included in the scope of delivery

Legend

	Type	Description	→ Page/Internet
1	SPC200-PWR-AIF	Power supply	14
2	SPC200-MMI-DIAG	Serial interface	15
3	SPC200-SCU-AIF	Sub-controller	19
4	SPC200-DIO	Digital I/O	16
5	SPC200-2AI-U	Setpoint module	18
6	SPC200-SMX-1	Stepper motor interface	20
7	SPC200-COM-PDP	Profibus-DP interface	22
8	SPC200-COM-IBS	Interbus interface	26
9	SPC200-PB	Blanking plate	11

Power supply
SPC200-PWR-AIF

Function
Power supply and connection of the
first axis string

General technical data			
			SPC200-PWR-AIF
Current consumption	Plug-in card	[mA]	See basic unit
Power supply unit (PWR)	Supply	[V DC]	24 −5/+25%
	Residual ripple	[%]	2
	Power failure buffering for logic supply (pin 2)	[ms]	10
	Current consumption	Load, pin 1 [A]	Max. 5.0
		Logic, pin 2 [A]	Max. 4.0
Feature	–		2 pneumatic axes
Axis connection	Digital inputs	[max]	16 function inputs[1]
	Digital outputs	[max]	16 function outputs[1]
Electrical connections	Power supply unit		3-pin terminal strip
	Axis connection		5-pin terminal strip
CE marking symbol (see conformity declaration)			As per EU EMC directive
Weight		[g]	82
Mounting location ➜ 13			1

1) Either as 1 input module and 1 output module of the CP modules or 1 input/output module SPC-FIO-...

Pin allocation
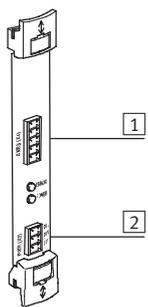
1 Terminal strip on cable
type KSPC-AIF-WD-...
pre-assembled

2 3-pin terminal strip included in
the scope of delivery.
Connection cross section
max. 1.5 mm^2

Connecting cable ➜ 36, no. 1

Note

The valves at the axis interfaces and
the outputs of the CP modules are
supplied via the 24 V load supply.
They can therefore be switched off
independently of the logic supply in
an emergency stop situation.

1 **AXES (X1)**	
Pin	Function
1	CAN-LOW (brown)
2	CAN-LOW (white)
3	24 V (yellow)
4	0 V (green)
5	24 V load supply (grey)

2 **PWR (X2)**	
Pin	Function
1	24 V load supply (switchable)
2	24 V supply logic
3	0 V

Ordering data			
		Part No.	Type
Plug-in card	Power supply unit and axis interface connection	**170 175**	**SPC200-PWR-AIF**

Axis controllers SPC200

Technical data

Serial interface
SPC200-MMI-DIAG

Function
Serial interface for diagnostics and
programming, connection of the
control unit MMI-1

General technical data			
			SPC200-MMI-DIAG
Current consumption	Plug-in card	[mA]	Typically 50[1]
Serial interface	Version		RS 232 C
	Electrical isolation		Yes
	Baud rate	[baud]	9,600; 19,200; 38,400; 57,600; 115,200[2]
	Data	[bit]	8
	Stop bit	[bit]	1
	Parity		Even parity
	Protocol		No handshake
MMI interface	Version		Similar to RS 232 C
	Electrical isolation		No
Electrical connections	Serial interface		9-pin SUB-D, female
	MMI-1		5 double-pin row
CE marking symbol (see conformity declaration)			As per EU EMC directive
Weight		[g]	68
Mounting location ➔ 13			2

1) With control unit SPC200-MMI-1
2) The baud rate is 9,600 baud after each POWER ON

Pin allocation
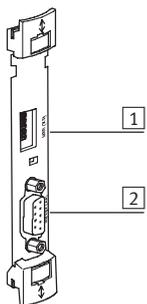
1 Interface for control unit
  SPC200-MMI-1
2 Serial interface

Connecting cable ➔ 36, no. 7

2 RS232 (X4)	
Pin	Function
2	Received Data (RxD)
3	Transmitted Data (TxD)
5	Signal Ground (SNGD)

Ordering data		Part No.	Type
		Part No.	Type
Plug-in card	Diagnostics and control unit connection	**170 176**	**SPC200-MMI-DIAG**

Axis controllers SPC200

Technical data

Digital I/O module
**SPC200-DIO**

Function
Digital input/output card (local I/O)

General technical data			
			SPC200-DIO
Current consumption	Plug-in card	[mA]	Typically 50
Digital inputs	Number		10
	Sensor supply	[A]	0.5[1]
	Current consumption	[mA]	8 (at 24 V DC/"logic 1")
	Fuse protection for sensor supply		Electronic short-circuit protection
	Delay	[ms]	5
Digital outputs	Number		8
	Supply	[V DC]	24 ±25%[2]
	Max. current-carrying capacity per output	[mA]	250
	Fuse protection for outputs		Electronic, all outputs
	Max. tripping current	[A]	2
	Response time	[ms]	1.5
Version	Inputs/outputs		To IEC 61131-2, positive logic (PNP)
Electrical isolation	Inputs/outputs		No/yes
Electrical connections	Inputs		12-pin terminal strip
	Outputs		10-pin terminal strip
Weight		[g]	62
Mounting location ➜ 13			From 3 upwards

1) Via internal 24 V supply (pin 2 to PWR to plug-in card SPC200-PWR-AIF)
2) Supplied separately, note load data

Pin allocation
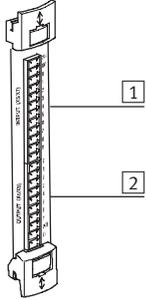
[1] 12-pin terminal strip included in the scope of delivery. Connection cross section max. 1.5 mm^2

[2] 10-pin terminal strip included in the scope of delivery. Connection cross section max. 1.5 mm^2

- Note

Inputs and outputs on the first card are reserved for necessary functions such as start, stop, etc. Up to 7 inputs and 5 outputs are freely programmable.

On the other cards, all 10 inputs and 8 outputs are freely programmable. Up to 4 I/O cards can be inserted (in 6x rack).

[1] Input (X5/X7)			
Pin	Function	Start/stop operation	Set selection
1	24 V	Supply (for switch/sensor)	
2	0 V		
3	I0.0	Freely programmable	RECBIT1
4	I0.1	Freely programmable	RECBIT2
5	I0.2	Freely programmable	RECBIT3
6	I0.3	Freely programmable	RECBIT4
7	I0.4	Freely programmable	RECBIT5
8	I0.5	(SYNC_IN/B)[1]	CLK_B
9	I0.6	(SYNC_IN/B)[1]	CLK_A
10	I0.7	STOP	STOP
11	I0.8	START/RESET[2]	RESET[2]
12	I0.9	ENABLE	ENABLE

[2] Output (X2)			
Pin	Function	Start/stop operation	Set selection
1	Q0.0	Freely programmable	–
2	Q0.1	Freely programmable	–
3	Q0.2	Freely programmable	–
4	Q0.3	MC_B	RC_B
5	Q0.4	MC_A	RC_A
6	Q0.5	(SYNC_OUT/B)[1]	ACK_B
7	Q0.6	(SYNC_OUT/A)[1]	ACK_A
8	Q0.7	READY	READY
9	24 V	Supply (load supply for outputs)	
10	0 V		

1) Freely programmable, if not used
2) Reset (program reset) only in combination with 0 signal at stop input

Ordering data

		Part No.	Type
Plug-in card	Digital inputs/outputs (10I/8O)	**170 179**	**SPC200-DIO**

Axis controllers SPC200

Technical data

Setpoint module
SPC200-2AI-U

Function
Analogue input card

General technical data

			SPC200-2AI-U
Current consumption	Plug-in card	[mA]	Typically 10
Analogue inputs	Number		2
	Input voltage	[V DC]	0 ... 10
	Input filter, low pass	[Hz]	16
	Resolution	[bit]	12
	Non-linearity		3 LSB
	Max. amplification error	[%]	0.2
	Max. offset error	[mV]	1.5
	Absolute accuracy	[%]	< 0.3
	Input resistance	[kΩ]	> 200
Reference voltage		[V DC]	10
	Absolute accuracy	[%]	0.4
	Max. current	[mA]	8
Electrical connection			9-pin terminal strip
Weight		[g]	55
Mounting location ➜ 13			From 3 upwards

Pin allocation

1 9-pin terminal strip included in the scope of delivery.
Connection cross section max. 1.5 mm^2

- ░ - Note

Max. 2 plug-in cards can be used for position specifications for up to 4 axes.
The allocation of the channel to an axis is programmable.

Only one axis can be allocated to each channel.
Offset and scaling of the setpoint specifications are also separately programmable for each channel.

1 Analogue IN (X9)

Pin	Function
1	Reference voltage 10 V$_{REF}$
2	0 V
3	A1+; signal (+) for channel 1
4	A1−; signal (−) for channel 1
5	Reference voltage 10 V$_{REF}$
6	0 V
7	A2+; signal (+) for channel 2
8	A2−; signal (−) for channel 2
9	PE

Ordering data

		Part No.	Type
Plug-in card	Analogue setpoint specification, 2 channels, 0 ... 10 V	**170 177**	**SPC200-2AI-U**

Axis controllers SPC200

Technical data

Sub-controller
SPC200-SCU-AIF

Function
Contains the position controllers for 2
further pneumatic axes and connec-
tion for the second axis string

General technical data			
			SPC200-SCU-AIF
Current consumption	Plug-in card	[mA]	Typically 100
Axis connection	2nd string		3rd and 4th pneumatic axes
	Digital inputs	[max]	16 function I/O[1]
	Digital outputs	[max]	16 function I/O[1]
Electrical connection	Axis connection		5-pin terminal strip
CE marking symbol (see conformity declaration)			As per EU EMC directive
Weight		[g]	80
Mounting location → 13			From 3 upwards

1) Either as 1 input module and 1 output module of the CP modules or 1 input/output module SPC-FIO-...

Pin allocation
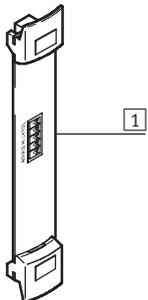
1 Terminal strip on cable
type KSPC-AIF-1-WD-...
pre-assembled

Connecting cable → 36, no. 1

1 AXES B (X10)	
Pin	Function
1	CAN-LOW (brown)
2	CAN-LOW (white)
3	24 V (yellow)
4	0 V (green)
5	24 V load supply (grey)

Ordering data			
		Part No.	Type
Plug-in card	Sub-controller for 3rd and 4th pneumatic axes	**178 311**	**SPC200-SCU-AIF**

Axis controllers SPC200

Technical data

Stepper motor interface
SPC200-SMX-1

Function
Stepper motor interface with clock/
direction interface and all necessary
sensor inputs

General technical data				
				SPC200-SMX-1
Current consumption	Plug-in card		[mA]	Typically 80
Stepper motor interface	Inputs	+ READY	[V DC]	24[1]
		– READY		Connect via relay contact
		Switching current	[mA]	Typically 8
	Outputs	PULSE, DIRECTION, ENABLE, F/H STEP		
		Version		Push-pull to RS 485/RS 422[2]
		Max. line length	[m]	50
	Step frequency		[Hz]	80 ... 40,000
	Frequency ramp		[kHz/s]	Max. 500
	Programmable travel		[mm]	0 ... 9,999.99
	Resolution		[steps/ mm]	0.01000 ... 9,999.99999
Sensors	Digital inputs	Number		3
		Version		To IEC 61131-2, positive logic (PNP)
		Voltage	[V DC]	24 ±15%[3]
		Input current	[mA]	Typically 8
Electrical connections	Stepper motor			15-pin SUB-D, female
	Sensors			5-pin terminal strip
CE marking symbol (see conformity declaration)				As per EU EMC directive
Weight			[g]	69
Mounting location ➜ 13				From 3 upwards

1) Connected internally with 24 V of the sensor supply (pin 4)
2) As point to point connection
3) Note voltage range of the sensors used

Pin allocation

1   15-pin SUB-D socket for connection of the stepper motor controller

2   5-pin terminal strip included in the scope of delivery. Connection cross section max. 1.5 mm^2

Connecting cable ➔ 37, no. 8

- ▯ -   Note

With the plug-in card SPC200-SMX-1 the SPC200 can **control a stepper motor axis.** Max. 3 cards SPC200-SMX-1 can be used to control stepper motor axes.

1 Amplifier (X30)	
Pin	Function
1	+ PULSE (pulse)
2	+ DIRECT. (direction)
3	+ ENABLE (gate/enable)
4	Unused
5	+ F/H STEP switching (full/half step)
6	− F/H STEP switching (full/half step)
7	Unused
8	+ READY (readiness)
9	− PULSE (pulse)
10	− DIRECT. (direction)
11	− ENABLE (gate/enable)
12	Unused
13	Unused
14	Unused
15	− READY (readiness)

2 End and reference switches	
Pin	Function
1	LIM+
2	REF
3	LIM−
4	24V
5	0V

Ordering data		Part No.	Type
Plug-in card	Stepper motor interface	**175 731**	**SPC200-SMX-1**
User documentation	For stepper motor interface, German	**188 894**	**P.BE-SPC200-SMX-1-DE**
	For stepper motor interface, English	**188 895**	**P.BE-SPC200-SMX-1-EN**
	For stepper motor interface, French	**194 506**	**P.BE-SPC200-SMX-1-FR**
	For stepper motor interface, Italian	**194 507**	**P.BE-SPC200-SMX-1-IT**

Axis controllers SPC200

Technical data

Profibus-DP interface
SPC200-COM-PDP

Function
Profibus interface of the SPC200 as
slave to a Profibus network

General technical data			
			SPC200-COM-PDP
Current consumption	Plug-in card	[mA]	Typically 50
Profibus	Version		RS 485
	Electrical isolation		Yes
	Type of transmission		Serial asynchronous, half-duplex
	Protocols		Profibus-DP (standard slave), to DIN 19245, 1 – 4, EN 50170 Vol. 2
	Addressing range of the fieldbus interface		0 ... 125
	Max. address volume	Outputs [Byte]	32
		Inputs [Byte]	32
	Baud rate	[kBit/s]	9.6 – 12,000[1]
	Line length	[km]	23.8[2]
	Max. load capacity	[mA]	100[3]
Configuration support for the fieldbus interface			GSD file
Electrical connection	Profibus		9-pin SUB-D, female
CE marking symbol (see conformity declaration)			As per EU EMC directive
Weight		[g]	80
Mounting location ➜ 13			From 3 upwards[4]

1) Automatic baud rate detection
2) Line length dependent on baud rate and type of cable
3) Supply voltage positive (PV5), pin 6
4) When using the control unit MMI-1 as of location 4

Pin allocation
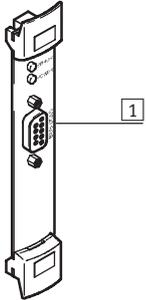
| 1 | 9-pin plug usable acc. to Profibus standard, type FBS-SUB-9-WS-PB-K → Table below |

- ◯ - New

Position data can be read and written directly via Profibus (as of firmware release 2.0)

1 Bus (X20)	
Pin	Function
1	PE
2	Unused
3	RxD/TxD-P
4	CNTR-P
5	DGND
6	UP
7	Unused
8	RxD/TxD-N
9	Unused

Ordering data		Part No.	Type
Plug-in card	Profibus-DP interface	**170 224**	**SPC200-COM-PDP**
Accessories	Connector plug	**533 780**	**FBS-SUB-9-WS-PB-K**
User documentation	For Profibus-DP interface, German	**188 892**	**P.BE-SPC200-COM-PDP-DE**
	For Profibus-DP interface, English	**188 893**	**P.BE-SPC200-COM-PDP-EN**
	For Profibus-DP interface, French	**194 502**	**P.BE-SPC200-COM-PDP-FR**
	For Profibus-DP interface, Italian	**194 503**	**P.BE-SPC200-COM-PDP-IT**
Software and manual	For Simatic S7 controller, German	**540 188**	**P.SW-SPC200-S7-PC-DE**
	For Simatic S7 controller, English	**540 189**	**P.SW-SPC200-S7-PC-EN**

Function modules

→ www.festo.com

Function modules that support communication between third-party controllers and the Profibus card of the axis controller SPC200 can be downloaded from the Download Area of the Festo website.
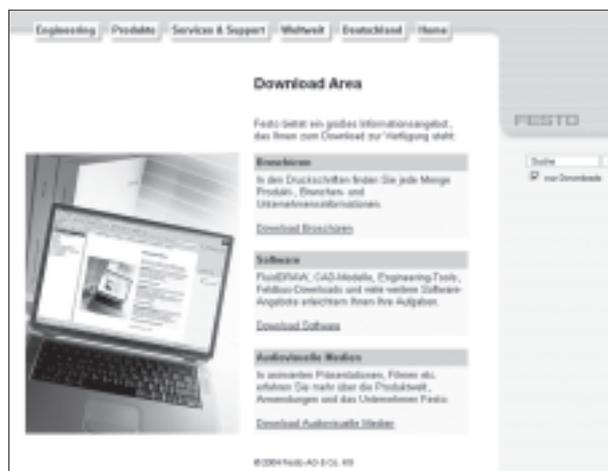
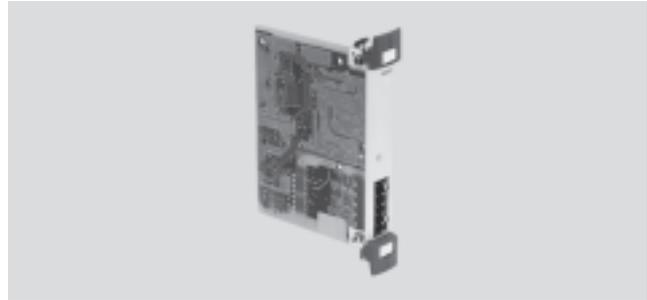# Axis controllers SPC200

Technical data

FESTO

DeviceNet interface
SPC200-COM-DN2

Function
DeviceNet interface of the SPC200 as
slave to a DeviceNet network.

- ▯ -   Note
This function card replaces the
following card:
Part No. 194 017
Type: SPC200-COM-DN2

General technical data			
			SPC200-COM-DN2
Current consumption	Plug-in card	[mA]	Typically 50
Power supply	Fieldbus	[V DC]	11 … 30
DeviceNet bus	Version		– Physical layer (layer 1) to ISO/DIS 11898
			– Standard highspeed to 1 Mbit
			– Data Link layer (layer 2) to CAN specifications V2.0
			– DeviceNet, Release 2.0
	Electrical isolation		Yes
	Protocols		– DeviceNet-IO
			– DeviceNet-Profil
	Addressing range of the fieldbus interface		0 … 63
	Baud rate	[kBit/s]	125, 250, 500
Number of outputs	Set selection	[Byte]	2
	Start/Stop	[Byte]	2 … 8
Number of inputs	Set selection	[Byte]	4
	Start/Stop	[Byte]	2 … 8
Operation characteristic			Reading an writing inputs and outputs
			Reading and writing all program registers of the SPC200
			Read out the actual position
			Digital setpoint specification
LED display			Module and network status
Device-specific diagnosis			Via status bit
			Via WinPISA status display
Configuration support for the fieldbus interface			EDS file
Electrical connection	Open Style		5-pin terminal strip
CE marking symbol (see conformity declaration)			As per EU EMC directive
Weight		[g]	80
Mounting location ➔ 13			From 3 upwards

Axis controllers SPC200

Technical data

FESTO

Pin allocation
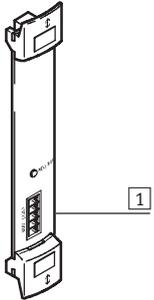
| 1 | 5-pin terminal strip included in the scope of delivery. Connection cross section max. 1.5 mm^2 |

New

The card SPC200-COM-DN2 facilitates the connection of the SPC200 to DeviceNet.
Position data can be read and written directly via Profibus (as of firmware release 4.9).

1 Bus (X20)

Pin	Function
1	0 V bus interface/logic (CAN_GND)
2	Data – (CAN_L)
3	Screen (CAN_SHLD)
4	Data + (CAN_H)
5	24 V DC bus interface/logic (CAN_V+)

Ordering data

		Part No.	Type
Plug-in card	DeviceNet interface	**540 305**	**SPC200-COM-DN2**
User documentation	For DeviceNet interface, German	**196 607**	**P.BE-SPC200-COM-CANDN-DE**
	For DeviceNet interface, English	**196 608**	**P.BE-SPC200-COM-CANDN-EN**
	For DeviceNet interface, French	**196 611**	**P.BE-SPC200-COM-CANDN-FR**
	For DeviceNet interface, Italian	**196 610**	**P.BE-SPC200-COM-CANDN-IT**

Axis controllers SPC200

Technical data

Interbus interface
SPC200-COM-IBS

Function
Interbus interface of the SPC200 to an
Interbus network

General technical data			
			SPC200-COM-IBS
Current consumption	Plug-in card	[mA]	Typically 70
Interbus	Version		RS 422
	Electrical isolation		Yes
	Type of transmission		Serial asynchronous, full-duplex
	Protocols		Remote bus
	Max. no. of process data	Outputs	64
	bits	Inputs	64
	Baud rate	[kBit/s]	500
	Line length, overall system	[km]	12.8
	Between 2 remote bus stations	[m]	400
Configuration support for the fieldbus interface			Icons for CMD software
Electrical connection	Input		9-pin SUB-D, male
	Output		9-pin SUB-D, female
CE marking symbol (see conformity declaration)			As per EU EMC directive
Weight		[g]	80
Mounting location ➔ 13			From 3 upwards[1]

1) When using the control unit MMI-1 as of location 4

Pin allocation
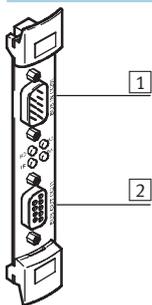
1 + 2 Cable with plug acc. to
Interbus standard

Note

The card SPC200-COM-IBS facili-
tates the connection of the SPC200
to Interbus.
The operating modes that are
available via I/Os are emulated.

1 IN (X20)	
Pin	Function
–	Housing/screen
1	D0
2	DI
3	Load
4	Unused
5	Unused
6	/D0
7	/DI
8	Unused
9	Unused

2 OUT (X21)	
Pin	Function
–	Housing/screen
1	D0
2	DI
3	Load
4	Unused
5	VCC
6	/D0
7	/DI
8	Unused
9	RBST

Ordering data		Part No.	Type
Plug-in card	Interbus interface	**170 225**	**SPC200-COM-IBS**
User documentation	For Interbus interface, German	**188 890**	**P.BE-SPC200-COM-IBS-DE**
	For Interbus interface, English	**188 891**	**P.BE-SPC200-COM-IBS-EN**
	For Interbus interface, French	**194 504**	**P.BE-SPC200-COM-IBS-FR**
	For Interbus interface, Italian	**194 505**	**P.BE-SPC200-COM-IBS-IT**

Axis controllers SPC200

Technical data

Control unit
SPC200-MMI-1

Not all functions of the axis controller
SPC200 are supported. Please use
WinPISA for commissioning.
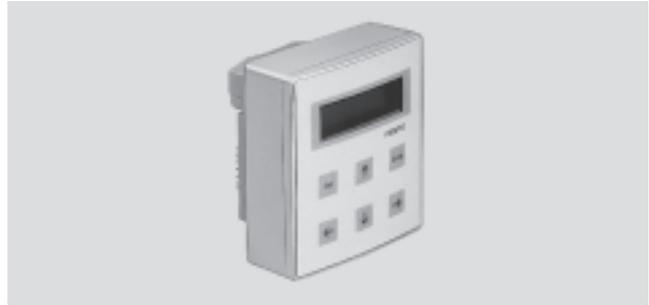
General technical data		
		SPC200-MMI-1
Display		LCD display, 2 x 16 characters
Operation		Touch-sensitive keypad with 6 keys
Power supply	[V DC]	5[1]
Current consumption	[mA]	30[2]
Interface		[3]
Electrical isolation		No
Electrical connections	Interface	10-pin row
	Power supply	10-pin row
CE marking symbol (see conformity declaration)		As per EU EMC directive
Ambient conditions	Temperature range [°C]	−5 ... +50
	Protection class to IEC 60529	IP20
Weight	[g]	90

1) Is supplied directly via the plug-in card SPC200-MMI-DIAG
2) Referred to 24 V supply of the SPC200-PVR card
3) Similar to RS 232

Pin allocation
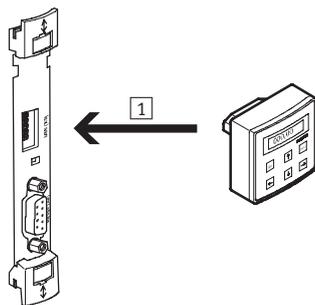
[1] Plug-in direct

Ordering data				
			Part No.	Type
Control unit	For commissioning, programming and diagnostics		**170 226**	**SPC200-MMI-1**

Axis controllers SPC200

Technical data

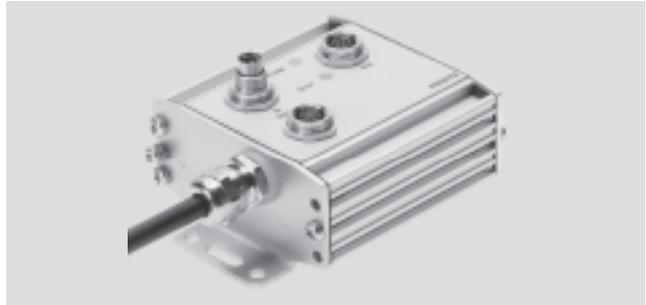**Axis interface**
SPC-AIF-POT
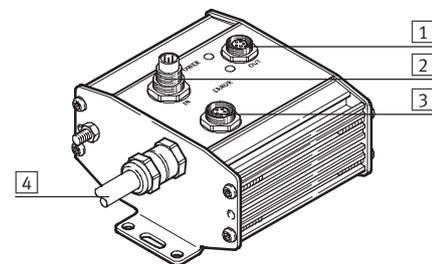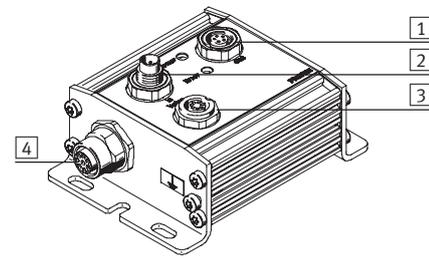**SPC-AIF-POT-LWG**
SPC-AIF-MTS

Function

Connection of the proportional valve and the displacement encoder of a pneumatic axis to the SPC200.

Routing of the axis connection to the second axis interface or to a CP module

General technical data			SPC-AIF-POT	SPC-AIF-POT-LWG	SPC-AIF-MTS
Current consumption	Axis interface	[mA]	100	100	200
	Prop. directional control valve, max.	[A]	1.1		
Electrical connections	AIF IN		5-pin M9, male		
	AIF OUT		5-pin M9, female		
	Prop. directional control valve		7-pin M9, male		
	Displ. encoder cable length	[m]	0.3		
	Plug		Type A DIN 43650	4-pin square plug	6-pin round connector DIN 45322
CE marking symbol (see conformity declaration)			As per EU EMC directive		
Ambient conditions	Temperature range	[°C]	0 ... +50		
	Protection class to IEC 60529		IP65		
Weight		[g]	300		

Pin allocation

Connecting cable ➔ 36, no. $\boxed{2}$/no. $\boxed{3}$/no. $\boxed{5}$

$\boxed{1}$ **AIF OUT**	
Pin	Function
1	24 V (yellow)
2	24 V load supply (grey)
3	0 V (green)
4	CAN-HIGH (white)
5	CAN-LOW (brown)
PE	Screen

$\boxed{2}$ **AIF IN**	
Pin	Function
1	24 V (yellow)
2	24 V load supply (grey)
3	0 V (green)
4	CAN-HIGH (white)
5	CAN-LOW (brown)
PE	Screen

$\boxed{3}$ **Proportional directional control valve**	
Pin	Function
1	+24 V
2	0 V
3	0 V
4	Setpoint value
5	GND
6	Unused
7	+24 V
PE	Screen

$\boxed{4}$ **Displacement encoder POT**	
Pin	Function
1	+10 V (green)
2	Signal (white)
3	GND (brown)
PE	PE (yellow)

$\boxed{4}$ **Displacement encoder LWG**	
Pin	Function
1	+10 V (green)
2	Signal (white)
3	GND (brown)
PE	PE (yellow)

$\boxed{4}$ **Displacement encoder MTS**	
Pin	Function
1	Can LOW (white)
2	Can HIGH (yellow)
3	Unused
4	Unused
5	+24 V (green)
6	0 V (brown)
PE	Screen

Dimensions

Download CAD data ➔ **www.festo.com**

SPC-AIF-POT/-LWG/-MTS

1 Mounting set
2 Connecting cable

Ordering data		Part No.	Type
Axis interface	For analogue displacement encoder	**170 228**	**SPC-AIF-POT**
		527 496	**SPC-AIF-POT-LWG**
	For digital displacement encoder	**170 231**	**SPC-AIF-MTS**
Accessories	Terminating resistor for AIF string	**175 403**	**KABS-M9-R100**[1]
	Mounting set for vertical fitting	**540 309**	**SPC-HBW-SET**

1) One contained in SPC200/P0X

Axis controllers SPC200

Technical data

Axis interface
SPC-AIF-INC

Function

Connection of the proportional valve and the displacement encoder of a pneumatic axis to the SPC200.

Routing of the axis connection to the second axis interface or to a CP module.
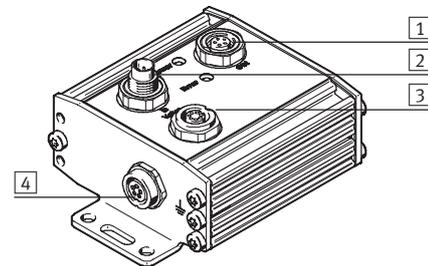
General technical data			
			SPC-AIF-INC
Current consumption	Axis interface	[mA]	60
	Prop. directional control valve, max.	[A]	1.1
Electrical connections	AIF IN		5-pin M9, male
	AIF OUT		5-pin M9, female
	Prop. directional control valve		7-pin M9, male
	Displacement encoder		8-pin M12, female
CE marking symbol (see conformity declaration)			As per EU EMC directive
Ambient conditions	Temperature range	[°C]	0 ... +50
	Protection class to IEC 60529		IP65
Weight		[g]	240

Pin allocation

Connecting cable ➔ 36,
no. 2/no. 3/no. 5

1 **AIF OUT**	
Pin	Function
1	24 V (yellow)
2	24 V load supply (grey)
3	0 V (green)
4	CAN-HIGH (white)
5	CAN-LOW (brown)
PE	Screen

2 **AIF IN**	
Pin	Function
1	24 V (yellow)
2	24 V load supply (grey)
3	0 V (green)
4	CAN-HIGH (white)
5	CAN-LOW (brown)
PE	Screen

3 **Proportional directional control valve**	
Pin	Function
1	+24 V
2	0 V
3	0 V
4	Setpoint value
5	GND
6	Unused
7	+24 V
PE	Screen

4 **Displacement encoder INC**	
Pin	Function
1	5 V
2	GND
3	sin+
4	sin−
5	cos−
6	cos+
7	Screen
8	–

Dimensions	Download CAD data ➔ **www.festo.com**
SPC-AIF-INC	
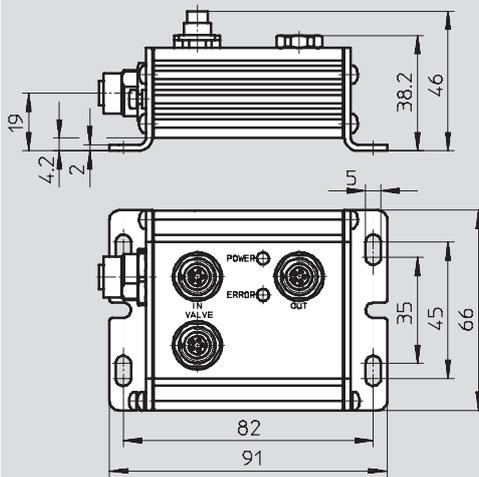
Ordering data		Part No.	Type
Axis interface	For digital displacement encoder	**537 320**	**SPC-AIF-INC**
Accessories	Terminating resistor for AIF string	**175 403**	**KABS-M9-R100**[1]

1) One contained in SPC200/P0X

Axis controllers SPC200

Technical data

FESTO

Axis interface
SPC-AIF-MTS-2

Function

Connection of the proportional valve and the displacement encoder of a pneumatic axis to the SPC200.

Routing of the axis connection to the second axis interface or to a CP module.

General technical data			
			SPC-AIF-MTS-2
Current consumption	Axis interface	[mA]	200
	Prop. directional control valve, max.	[A]	1.1
Electrical connections	AIF IN		5-pin M9, male
	AIF OUT		5-pin M9, female
	Prop. directional control valve		7-pin M9, male
	Displacement encoder		5-pin M9, female
CE marking symbol (see conformity declaration)			As per EU EMC directive
Ambient conditions	Temperature range	[°C]	0 … +50
	Protection class to IEC 60529		IP65
Weight		[g]	300

Pin allocation

Connecting cable ➔ 36,
no. 2/no. 3/no. 5

1 AIF OUT	
Pin	Function
1	24 V (yellow)
2	24 V load supply (grey)
3	0 V (green)
4	CAN-HIGH (white)
5	CAN-LOW (brown)
PE	Screen

2 AIF IN	
Pin	Function
1	24 V (yellow)
2	24 V load supply (grey)
3	0 V (green)
4	CAN-HIGH (white)
5	CAN-LOW (brown)
PE	Screen

3 Proportional directional control valve	
Pin	Function
1	+24 V
2	0 V
3	0 V
4	Setpoint value
5	GND
6	Unused
7	+24 V
PE	Screen

4 Displacement encoder DGCI	
Pin	Function
1	+24 V
2	Unused
3	0 V
4	CAN-HIGH
5	CAN-LOW
PE	Screen

Axis controllers SPC200

Technical data

FESTO

Dimensions	Download CAD data ➔ **www.festo.com**

SPC-AIF-MTS-2
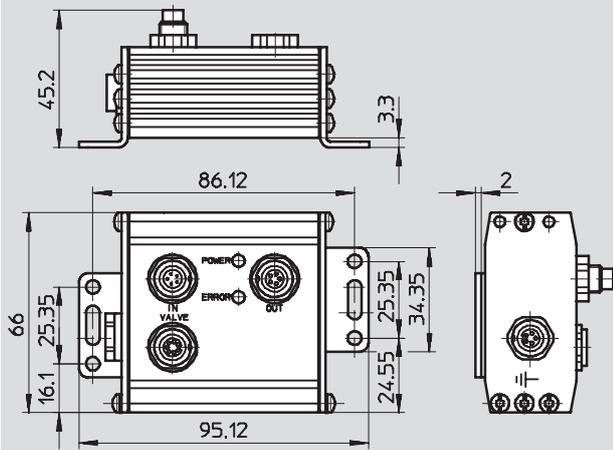
Ordering data		Part No.	Type
Axis interface	For digital displacement encoder	**548 128**	**SPC-AIF-MTS-2**
Accessories	Terminating resistor for AIF string	**175 403**	**KABS-M9-R100**[1]

1) One contained in SPC200/P0X

Power supply module
SPC-AIF-SUP-24V

Function
Additional power supply for the load
voltage at the axis interface string, for
cable lengths over 16 m.

General technical data			
			SPC-AIF-SUP-24V
Electrical connections	AIF IN		5-pin M9, male
	AIF OUT		5-pin M9, female
	Cable length	[m]	0.2
	For load voltage		5-pin M12, male
	Voltage	[V DC]	24 −5/+25%
	Current	[A]	3
Protection against polarity reversal			No
CE marking symbol (see conformity declaration)			As per EU EMC directive
Ambient conditions	Temperature range	[°C]	0 ... +50
	Protection class to DIN 60529		IP65
Weight		[g]	150

Pin allocation

Connecting cable ➜ 36,
no. 3/no. 4
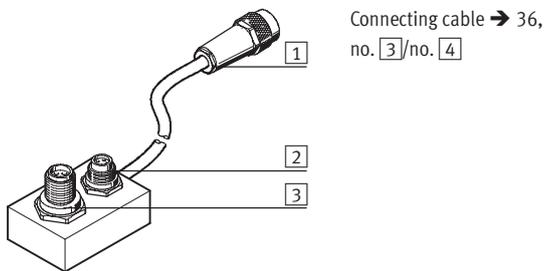
1 AIF OUT	
Pin	Function
1	24 V (yellow)
2	24 V load supply of 3
3	0 V (green)
4	CAN-HIGH (white)
5	CAN-LOW (brown)
PE	Screen

2 AIF IN	
Pin	Function
1	24 V (yellow)
2	Unused
3	0 V (green)
4	CAN-HIGH (white)
5	CAN-LOW (brown)
PE	Screen

3 Load supply	
Pin	Function
1	Unused
2	24 V load
3	0 V
4	Unused

Dimensions

Download CAD data ➔ **www.festo.com**

SPC-FIO-2E/2A-M8
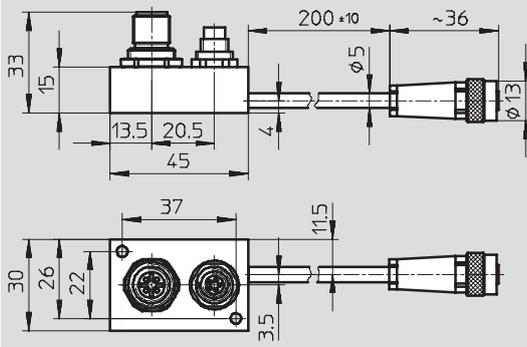
Ordering data

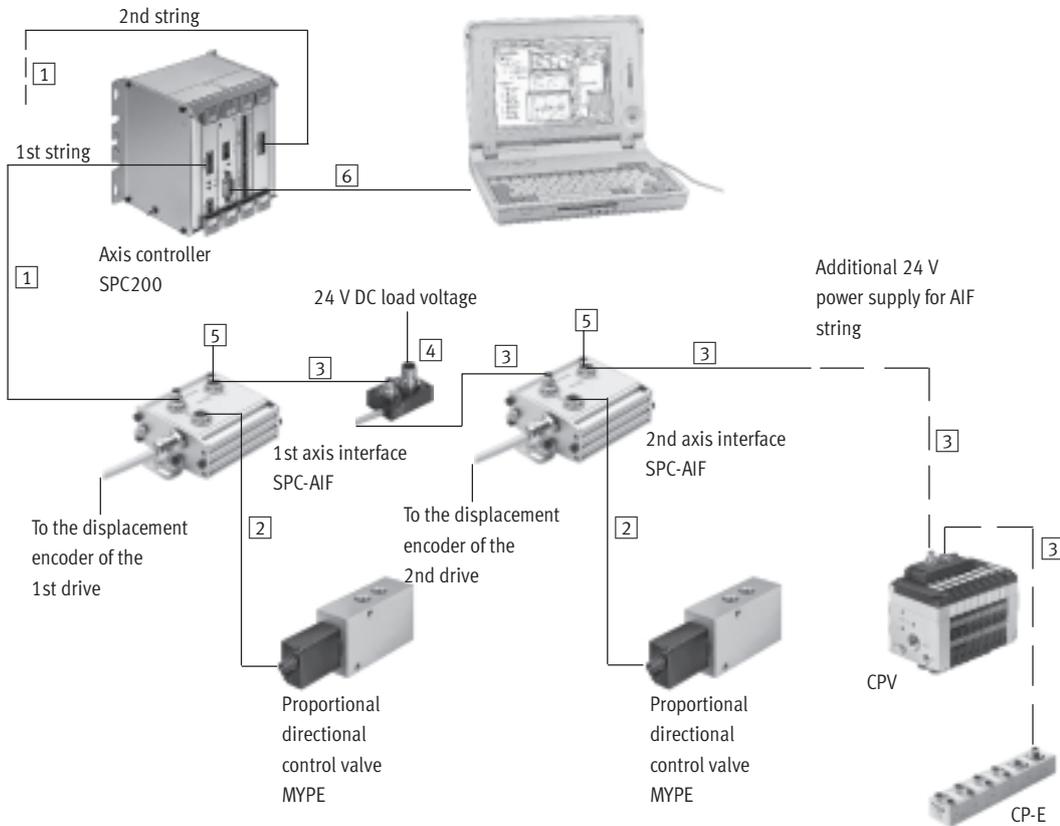|		Part No.	Type
Power supply module	Additional power supply for the load voltage	**171 182**	**SPC-AIF-SUP-24V**

Axis controllers SPC200

Accessories

Cables – Pneumatic drives

No.	Brief description	Length [m]	Connection	Suitable for chain link trunking	Part No.	Type
1	Connecting cable for axis controller/interface[1]	5	angled	–	**170 236**	**KSPC-AIF-1-WD-5**
1	Connecting cable for axis controller/interface[1]	8	angled	–	**170 237**	**KSPC-AIF-1-WD-8**
2	Connecting cable for axis interface/valve	0.3	straight	–	**170 239**	**KMPYE-AIF-1-GS-GD-0,3**
2	Connecting cable for axis interface/valve	2	straight	–	**170 238**	**KMPYE-AIF-1-GS-GD-2**
3	Connecting cable for axis interface/function I/O[1]	0,25	angled	■	**540 327**	**KVI-CP-3-WS-WD-0,25**
3	Connecting cable for axis interface/function I/O[1]	0,5	angled	■	**540 328**	**KVI-CP-3-WS-WD-0,5**
3	Connecting cable for axis interface/function I/O[1]	2	angled	■	**540 329**	**KVI-CP-3-WS-WD-2**
3	Connecting cable for axis interface/function I/O[1]	5	angled	■	**540 330**	**KVI-CP-3-WS-WD-5**
3	Connecting cable for axis interface/function I/O[1]	8	angled	■	**540 331**	**KVI-CP-3-WS-WD-8**
3	Connecting cable for axis interface/function I/O[1]	2	straight	■	**540 332**	**KVI-CP-3-GS-GD-2**
3	Connecting cable for axis interface/function I/O[1]	5	straight	■	**540 333**	**KVI-CP-3-GS-GD-5**
3	Connecting cable for axis interface/function I/O[1]	8	straight	■	**540 334**	**KVI-CP-3-GS-GD-8**
4	Additional 24 V power supply for AIF string[2]	–	straight	–	**171 182**	**SPC-AIF-SUP-24 V**
5	Terminating resistor for AIF string[3]	–	straight	–	**175 403**	**KABS-M9-R100**
6	Programming cable	3	straight	–	**151 915**	**KDI-PPA-3-BU9**

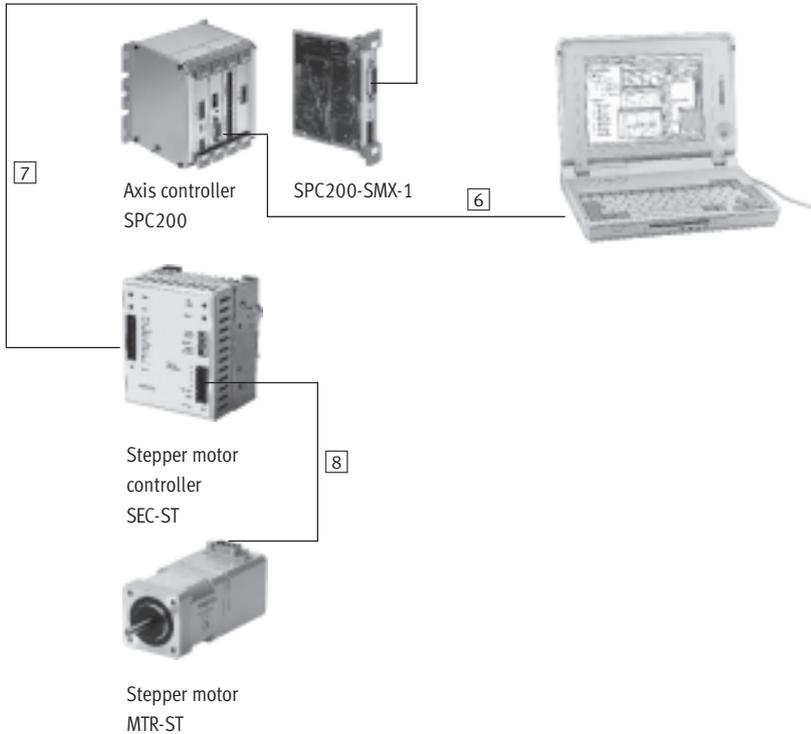1) The total length of the lines must not exceed 30 m
2) Recommended where the total length of connecting cable is over 16 m
3) Must be connected at the last axis interface in the chain
   (Contained in the controller package SPC200/P0X)

Cables – Electrical stepper motors

7   Axis controller
     SPC200

SPC200-SMX-1   6

Stepper motor
controller
SEC-ST   8

Stepper motor
MTR-ST

No.	Length [m]	Suitable for chain link trunking	Brief description	Part No.	Type
6	3	–	Programming cable	151 915	KDI-PPA-3-BU9
7	1.5	–	Control cable SPC200-SMX-1/motor controller SEC-ST	530 077	KSPC-SECST-1,5
8	5	■	Motor cable	530 071	KMTR-ST-5

Products and services – everything from a single source

Products incorporating new ideas are created when enthusiasm for technology and efficiency come together. Tailor-made service goes without saying when the customer is the focus of attention.

➔ Internet: www.festo.com/catalogue/...

Pneumatic and electrical drives

- Pneumatic cylinders
- Semi-rotary drives
- Handling modules
- Servopneumatic positioning systems
- Electromechanical drives
- Positioning controllers and controllers

Valves and valve terminals

- Standard valves
- Universal and application-optimised valves
- Manually and mechanically actuated valves
- Shut-off, pressure control and flow control valves
- Proportional valves
- Safety valves

**Fieldbus systems/
electrical peripherals**
- Fieldbus Direct
- Installation system CP/CPI
- Modular electrical terminal CPX

Compressed air preparation

- Service unit combinations
- Filter regulators
- Filters
- Pressure regulators
- Lubricators
- On-off and soft-start valves
- Dryers
- Pressure amplifiers
- Accessories for compressed air preparation

Components
Modules
Systems
Customer-specific solutions
Industry-specific solutions
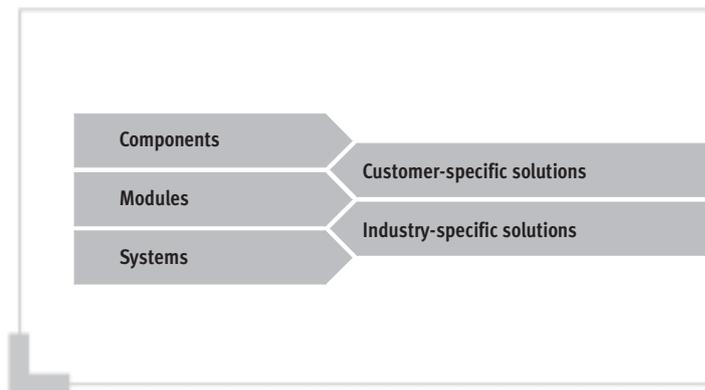
Services from Festo to increase your productivity – across the entire value creation sequence

Engineering – for greater speed in the development process

- CAD models
- 14 engineering tools
- Digital catalogue
- FluidDRAW®
- More than 1,000 technical consultants and project engineers worldwide
- Technical hotlines

Supply chain – for greater speed in the procurement process

- E-commerce and online shop
- Online order tracking
- Euro special manufacturing service
- Logistics optimisation

Gripping and vacuum technology

- Vacuum generators
- Vacuum grippers
- Vacuum security valves
- Vacuum accessories
- Standard grippers
- Micro grippers
- Precision grippers
- Heavy-duty grippers

Sensors and monitoring units

- Proximity sensors
- Pressure and flow sensors
- Display and operating units
- Inductive and optical proximity sensors
- Displacement encoders for positioning cylinders
- Optical orientation detection and quality inspection
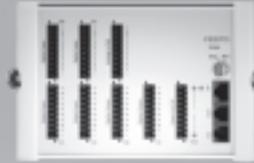
Controllers/bus systems

- Pneumatic and electropneumatic controllers
- Programmable logic controllers
- Fieldbus systems and accessories
- Timers/counters
- Software for visualisation and data acquisition
- Display and operating units

Accessories

- Pipes
- Tubing
- Pipe connectors and fittings
- Electrical connection technology
- Silencers
- Reservoirs
- Air guns

All in all, 100% product and service quality

A customer-oriented range with unlimited flexibility:
Components combine to produce ready-to-install modules and systems. Included in this are special designs – since at Festo, most industry-specific products and customer-specific solutions are based on the 23,000 plus catalogue products. Combined with the services for the entire value creation sequence, the end result is unbeatable economy.

Assembly – for greater speed in the assembly/commissioning process

- Prepack
- Preassembly
- Turnkey pneumatics
- Handling solutions

Operation – for greater speed in the operational process

- Spare parts service
- Energy saving service
- Compressed air consumption analysis
- Compressed air quality analysis
- Customer service

Aspects of quality

Quality can be viewed from a number of aspects. A short virtual tour of the Research and Development department, the Production department or the Customer Service Centre speaks more than a thousand words.

3D engineering and simulation   ·····>
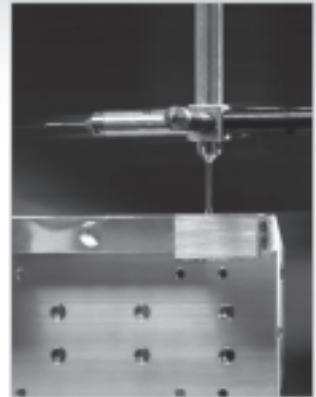
Innovation quality

Production quality

Let's look at some of the figures:

- 6.5% of turnover
- 2,800 patents with 100 new applications every year
- 3D engineering and simulation
- 10,600 employees worldwide
- Each and every one of them a lateral thinker

Your interest is quality and economy – therefore we place considerable value on:

- Minimum production tolerances
- Ultra-modern, proprietary production methods
- Core competencies in production
- Defined quality standards across the entire production chain
- Strict quality assurance systems: on that you can depend.

Price quality

More service for less money. Many of the new and further developments in the Festo product range have one thing in common: they are technically superior and more attractively priced than their predecessor product. Examples are to be found in all product segments: among the drives, valves, valve terminals; among the service units, and among the range of accessories.
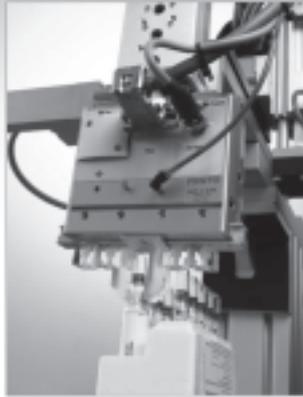
Range quality

For individual solutions. Festo offers components as industry-specific catalogue products as well as standards-based and highly individual special designs. Ready-to-install combinations of these components play an integral part in the Festo product portfolio as modules or systems. Incidentally, an increasing number of components can be individually configured as modular products.

Didactic quality

To complement the products and services for automation, Festo Didactic offers exceptionally efficient training hardware, learning software and seminars of the highest quality. Optimally tailored to your value creation sequence.
In short – training in practical applications for practical application.

What must be observed when using Festo components?

Specified limit values for technical data and any specific instructions must be adhered to by the user in order to ensure recommended operating conditions.

When pneumatic components are used, the user shall ensure that they are operated using correctly prepared compressed air without aggressive media.

When Festo components are used in safety-oriented applications, the user shall ensure that all applicable national and local safety laws and regulations, for example the machine directive, together with the relevant references to standards are observed. Unauthorised conversions or modifications to products and systems from Festo involve a safety risk and are thus not permissible.

Festo does not accept any liability for resulting damages.

You should contact Festo's advisors if one of the following apply to your application:

- The ambient conditions and conditions of use or the operating medium differ from the specified technical data.
- The product is to perform a safety function.
- A risk or safety analysis is required.
- You are unsure about the product's suitability for use in the planned application.
- You are unsure about the product's suitability for use in safety-oriented applications.

All technical data applies at the time of going to print.