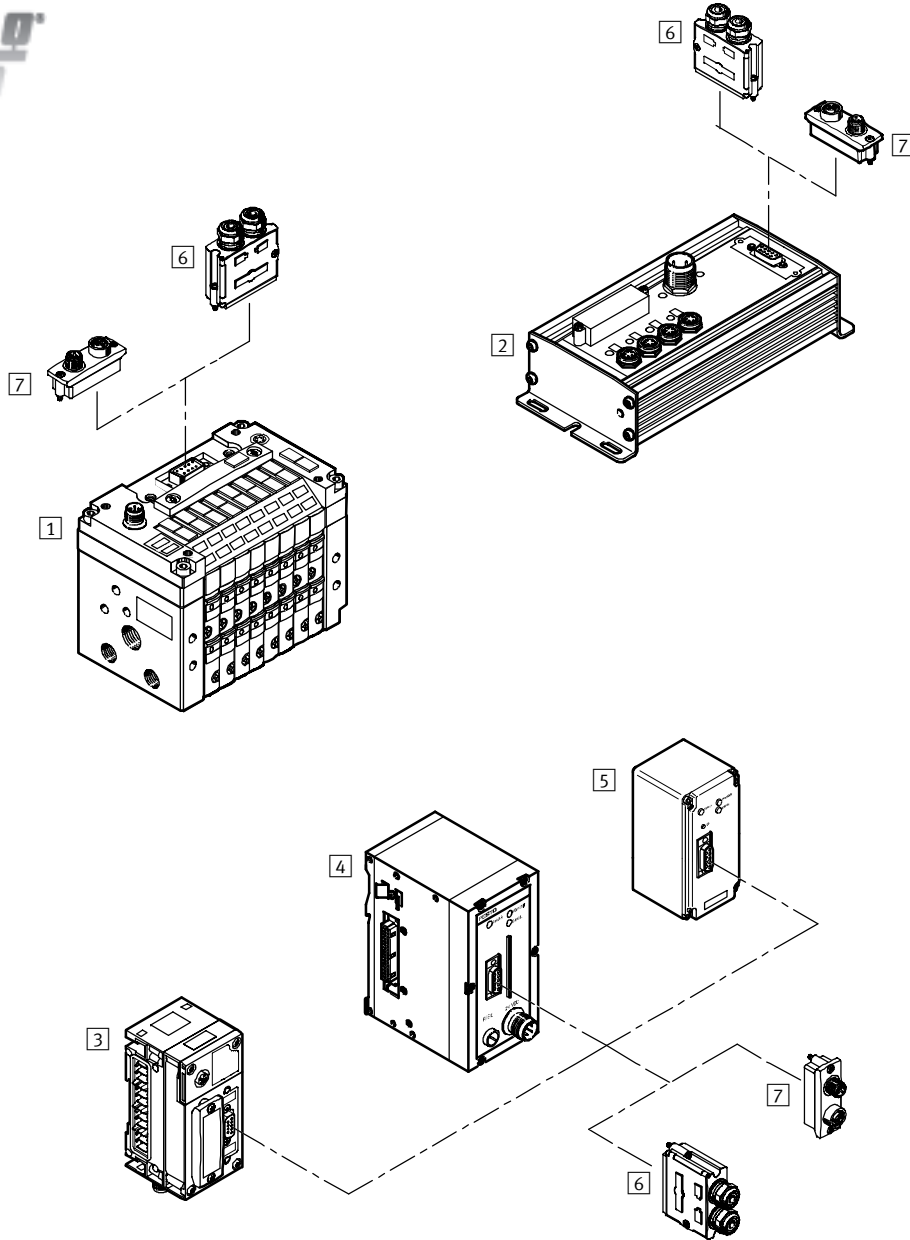


Electrical connection technology, for fieldbus connection

Peripherals overview

Profibus connection options



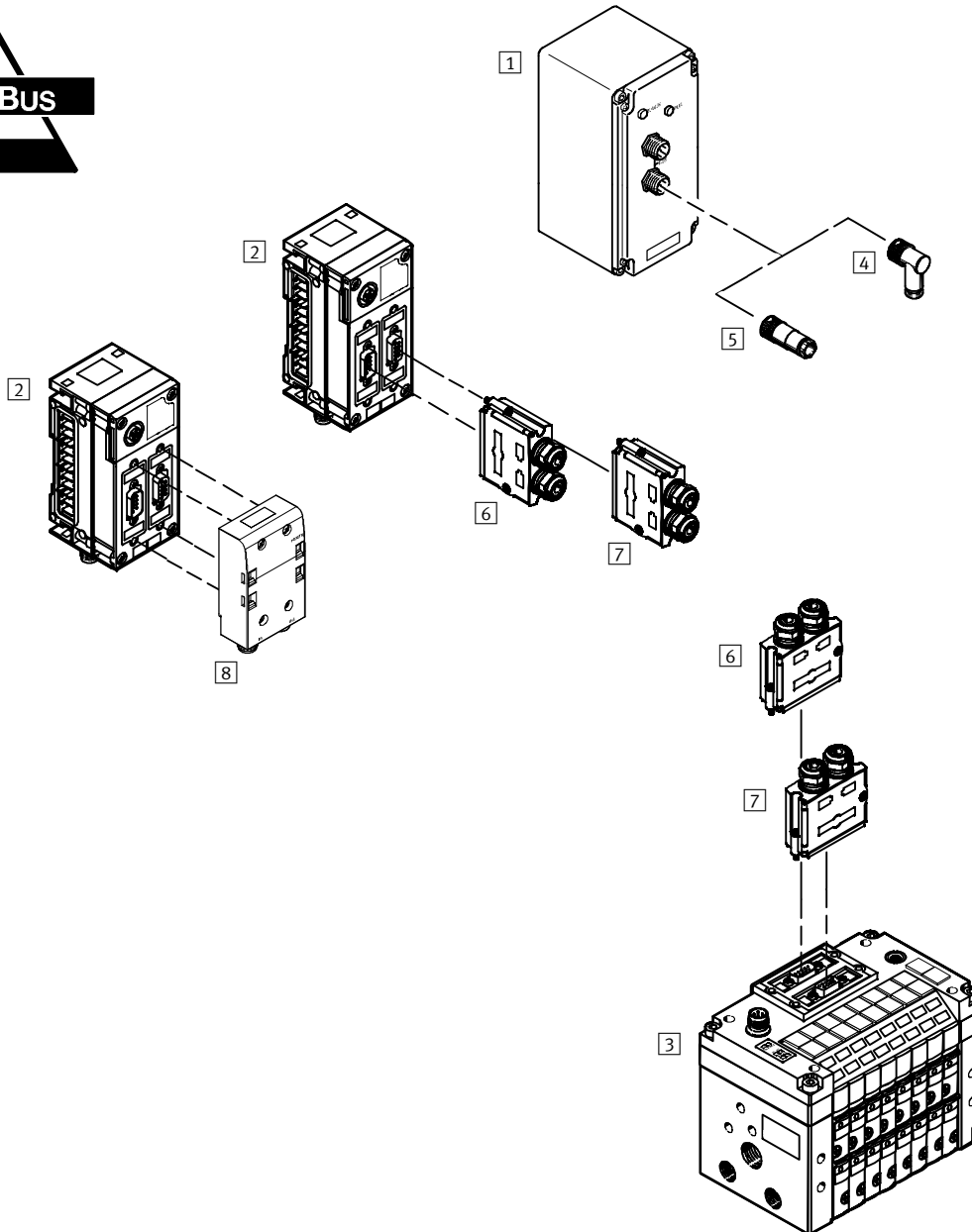
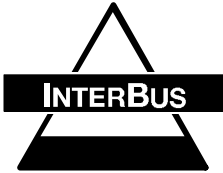
Accessories			
	Brief description	→ Page	
1	CPV- ... -GE-DI01-8	Fieldbus, directly integrated	4 / 4.7-9
2	CP-FB13-E	Fieldbus node, CP installation system	4 / 4.6-24
3	CPX-FB13	Fieldbus node, CPX terminal	4 / 4.8-33
4	IFB13-03	Fieldbus node, modular electrical peripherals for type 03/04	4 / 4.8-113
5	VIFB13-02	Fieldbus node, valve terminal type 02	4 / 2.3-1
6	FBS-SUB-9-GS-DP-B	Bus connection Sub-D	4 / 5.1-88
7	FBA-2-M12-5POL-RK	Bus connection, M12 adapter plug Reverse Key (B-coded)	4 / 5.1-90

Electrical connection technology, for fieldbus connection

Peripherals overview

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INTERBUS connection options

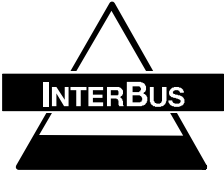


Accessories		
	Brief description	→ Page
1	VIFB6-02 Fieldbus node, valve terminal type 02	4 / 2.3-1
2	CPX-FB6 Fieldbus node, CPX terminal	4 / 4.8-25
3	CPV10-... -GE-IB-B Fieldbus, directly integrated	4 / 4.7-13
4	FBSD-WD-... Plug socket, angled (fieldbus)	4 / 5.1-86
5	FBSD-GD-... Plug socket, straight (fieldbus)	4 / 5.1-86
6	FBS-SUB-9-BU-IB-B Socket for fieldbus connection, Sub-D, incoming	4 / 5.1-88
7	FBS-SUB-9-GS-IB-B Plug for fieldbus connection, Sub-D, outgoing	4 / 5.1-88
8	CPX-AB-2-M12-RK-IB Connection block for CPX Interbus node from 9-pin Sub-D plug to 5-pin M12x1 plug with B-code (ReverseKey)	4 / 5.1-93

Electrical connection technology, for fieldbus connection

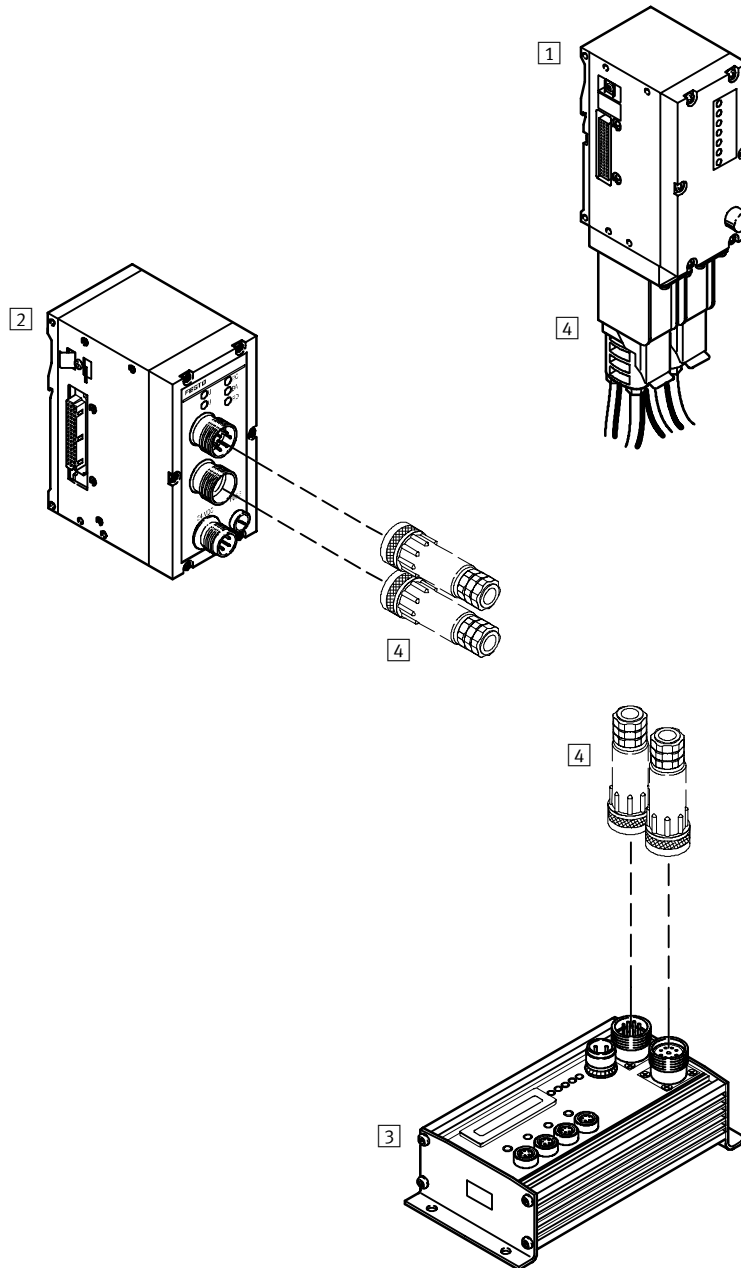
Peripherals overview

INTERBUS connection options



Accessories for valve terminals
Electrical connector systems

5.1



Accessories		
	Brief description	→ Page
1	IFB21-03 Fieldbus node, modular electrical peripherals for type 03/04, with Interbus connection via fibre optic cable	4 / 4.8-121
2	IFB6-03 Fieldbus node, modular electrical peripherals for type 03/04	4 / 4.8-97
3	CP-FB06-E Fieldbus node, CP installation system	4 / 4.6-12
4	Non-Festo plugs	-

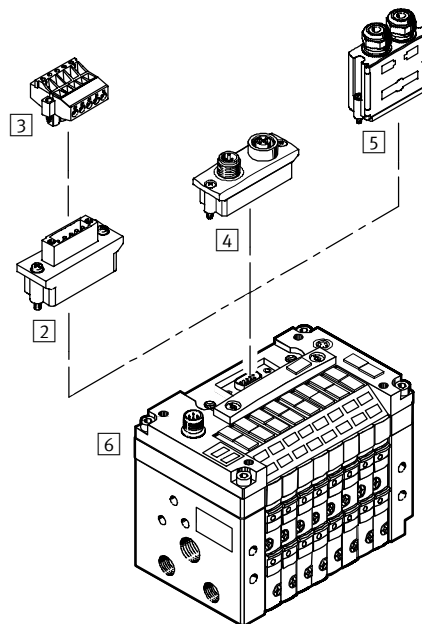
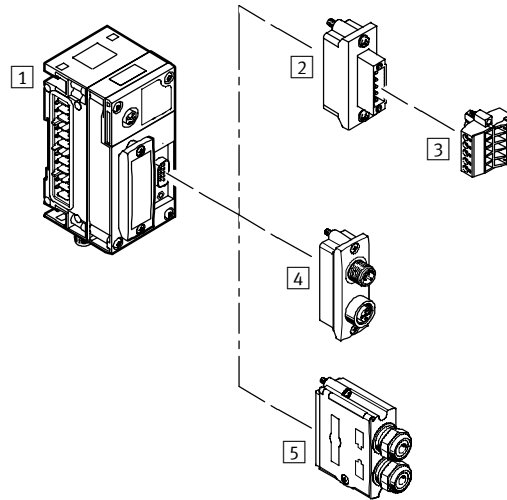
Electrical connection technology, for fieldbus connection

Peripherals overview

FESTO

DeviceNet connection options

DeviceNet



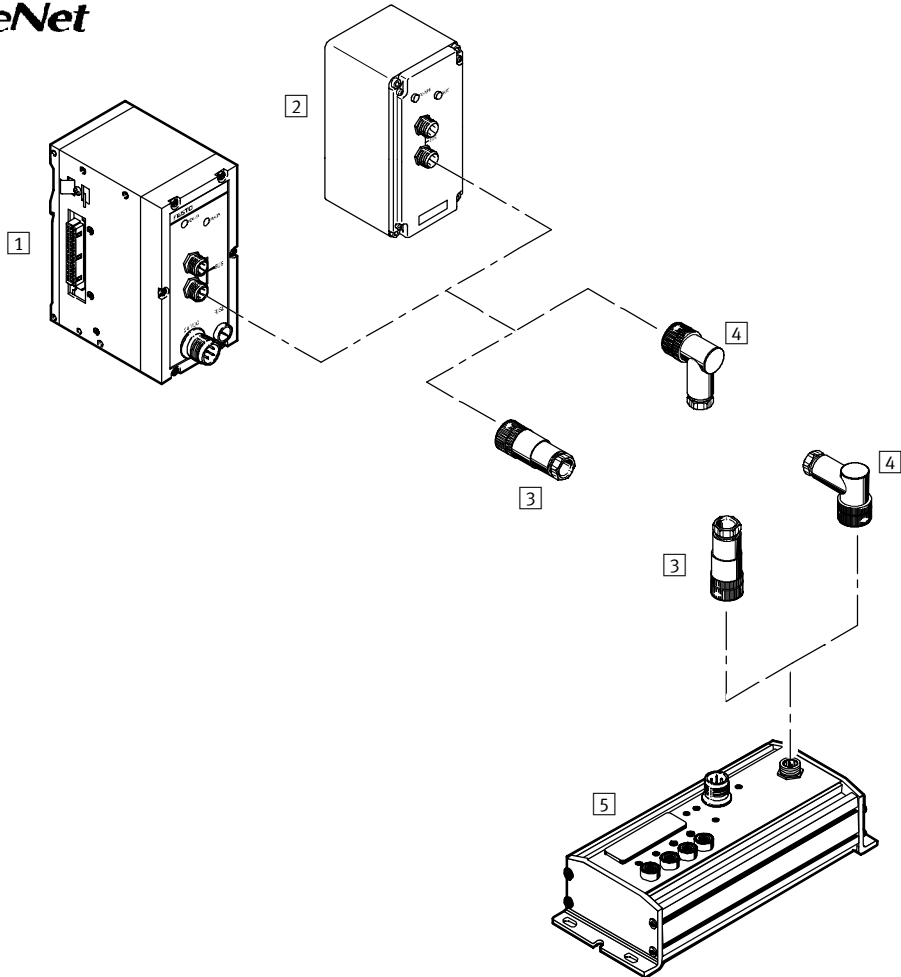
Accessories for valve terminals
Electrical connector systems

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Accessories		Brief description	→ Page
1	CPX-FB11	Fieldbus node, CPX terminal	29
2	FBA-1-SL-5POL	Bus connection, adapter plug, 5-pin	4 / 5.1-90
3	FBSD-KL-2x5POL	Bus connection, screw connector, 2x5-pin	4 / 5.1-90
4	FBA-2-M12-5POL	Bus connection, adapter plug 2xM12, 5-pin (Micro Style)	4 / 5.1-90
5	FBS-SUB-9-BU-2x5POL-B	Plug for fieldbus connection, Sub-D	4 / 5.1-88
6	CPV-...-GE-DN2-8	Fieldbus, directly integrated	13

DeviceNet connection options

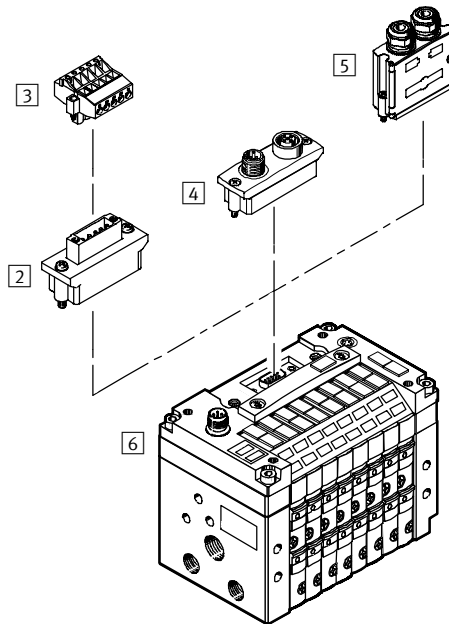
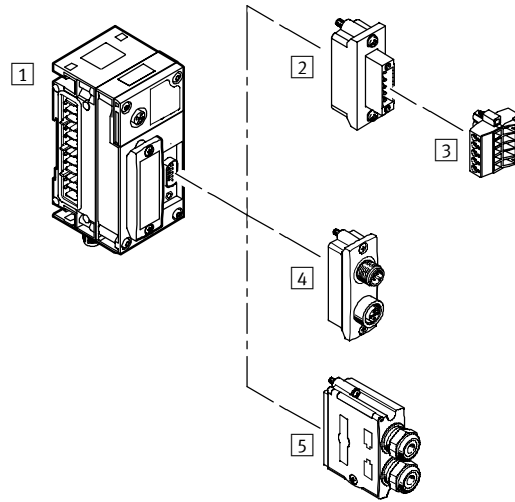
DeviceNet



Accessories		
	Brief description	→ Page
1	IFB11-03 Modular electrical peripherals, for type 03/04	105
2	VIFB6-02 Fieldbus node, valve terminal type 02	4 / 2.3-1
3	FBSD-GD-... Plug socket, straight (fieldbus)	4 / 5.1-86
4	FBSD-WD-... Plug socket, angled (fieldbus)	4 / 5.1-86
5	CP-FB11-E Fieldbus node, CP installation system	20

CANopen connection options

CANopen



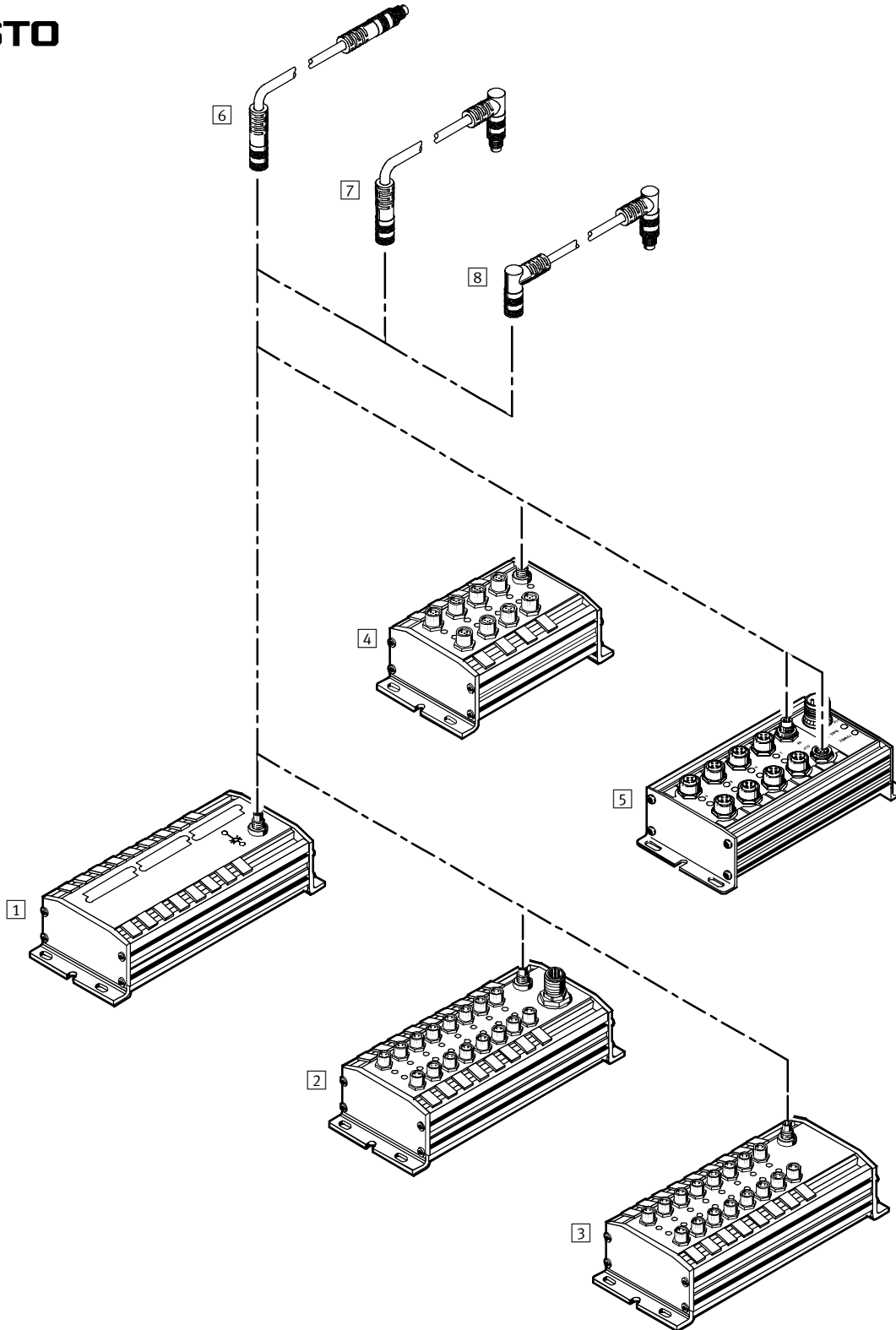
Accessories		
	Brief description	→ Page
1	CPX-FB14 Fieldbus node, CPX terminal	4 / 4.8-37
2	FBA-1-SL-5POL Bus connection, adapter plug, 5-pin	4 / 5.1-90
3	FBSD-KL-2x5POL Bus connection, screw connector, 2x5-pin	4 / 5.1-90
4	FBA-2-M12-5POL Bus connection, adapter plug 2xM12, 5-pin	4 / 5.1-90
5	FBS-SUB-9-BU-2x5POL-B Plug for fieldbus connection, Sub-D	4 / 5.1-88
6	CPV-...-GE-C02-08 Fieldbus, directly integrated	4 / 4.7-3

Electrical connection technology, for fieldbus connection

Peripherals overview



Component connection options



Accessories for valve terminals
Electrical connector systems

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Electrical connection technology, for fieldbus connection

Peripherals overview

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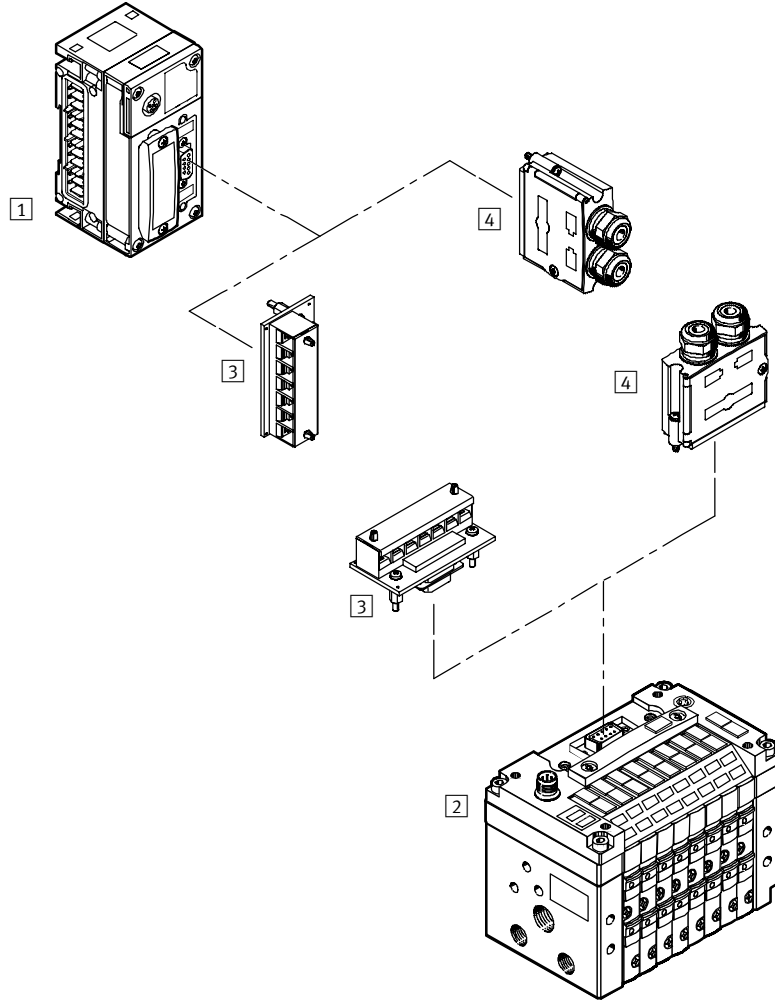
Accessories			
	Brief description	→ Page	
1	CP-E16-EL-IP20-Z	Input module with additional power supply for sensors	4 / 4.6-46
2	CP-E16-M8-Z	Input module with additional power supply for sensors	4 / 4.6-46
3	CP-E16-M8	Input module with 16 inputs	4 / 4.6-46
	CP-E16N-M8	Input module with 16 inputs	
4	CP-E16-M12x2-5POL	Input module with 16 inputs	4 / 4.6-46
	CP-E16N-M12x2	Input module with 16 inputs	
5	CP-A08-M12-5POL	Output module with 8 outputs	4 / 4.6-54
6	KVI-CP-1-GS-GD	Connecting cable, straight plug, straight socket	4 / 5.1-84
7	KVI-CP-1-GS-WD	Connecting cable, straight plug, angled socket	4 / 5.1-84
8	KVI-CP-1-WS-WD	Connecting cable, angled plug, angled socket	4 / 5.1-84

Accessories for valve terminals
Electrical connector systems

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CC-Link connection options

CC-Link



Accessories		Brief description	→ Page
1	CPX-FB23	Fieldbus node, CPX terminal	4 / 4.8-41
2	CPV-...-GE-CC-8	Fieldbus, directly integrated	4 / 4.7-25
3	FBA-1-KL-5POL	5-pin terminal strip	4 / 5.1-90
4	FBS-SUB-9-GS-2x4POL-B	Plug for fieldbus connection, Sub-D	4 / 5.1-88

Electrical connection technology, for fieldbus connection



Peripherals overview

Overview of fieldbus sockets/plugs for valve terminals							
Bus plug	Valve terminal						→ Page
	Type 04	Type 10 ¹⁾	Type 03	Type 02	Type ECP	Type 50	
FBA-1-KL-5POL	-	■	-	-	■	■	4 / 5.1-90
FBA-1-SL-5POL	-	■	-	-	■	■	4 / 5.1-90
FBA-2-M12-5POL	-	-	-	-	-	■	4 / 5.1-90
FBA-2-M12-5POL-RK	■	■	■	■	■	■	4 / 5.1-90
CPX-AB-2-M12-RK-IB	-	-	-	-	-	■	4 / 5.1-93
FB-TA	■	■	■	■	■	-	4 / 5.1-96
FB-TA1	■	■	■	■	■	-	4 / 5.1-96
FB-TA-M12-5POL	■	■	■	-	■	-	4 / 5.1-96
FBS-SUB-9-GS-DP-B	■	■	■	■	■	■	4 / 5.1-88
FBS-SUB-9-BU-2x5POL-B	-	■	-	-	-	■	4 / 5.1-88
FBS-SUB-9-GS-2 x 4POL-B	-	-	-	-	-	■	4 / 5.1-88
FBS-SUB-9-GS-IB-B	-	■	-	-	-	■	4 / 5.1-88
FBS-SUB-9-BU-IB-B	-	■	-	-	-	■	4 / 5.1-88
FBS-M12-5GS-PG9	■	■	■	■	■	-	4 / 5.1-86
FBSD-GD-7	■	■	■	■	■	-	4 / 5.1-86
FBSD-GD-9	■	■	■	■	■	-	4 / 5.1-86
FBSD-GD-9-5POL	■	■	■	■	■	-	4 / 5.1-86
FBSD-GD-9-13,5	■	■	■	■	■	-	4 / 5.1-86
FBSD-WD-7	■	■	■	■	■	-	4 / 5.1-86
FBSD-WD-9	■	■	■	■	■	-	4 / 5.1-86
FBSD-KL-2 x 5POL	-	■	-	-	■	■	4 / 5.1-90

1) Fieldbus interface via CPV Direct

Overview of connecting cables for valve terminals					
Cable type	Valve terminal				→ Page
	Type 04	Type 10	Type 03	Type ECP	
KVI-CP-1-GS-WD-5	■	■	■	■	4 / 5.1-84
KVI-CP-1-GS-WD-8	■	■	■	■	4 / 5.1-84
KVI-CP-1-WS-WD-0,5	■	■	■	■	4 / 5.1-84
KVI-CP-1-WS-WD-1.0	■	■	■	■	4 / 5.1-84
KVI-CP-1-WS-WD-2	■	■	■	■	4 / 5.1-84
KVI-CP-1-WS-WD-3.0	■	■	■	■	4 / 5.1-84
KVI-CP-1-WS-WD-5	■	■	■	■	4 / 5.1-84
KVI-CP-1-GS-GD-2	■	■	■	■	4 / 5.1-84
KVI-CP-1-GS-GD-5	■	■	■	■	4 / 5.1-84
KVI-CP-2-GS-GD-8	■	■	■	■	4 / 5.1-84

Electrical connection technology, for fieldbus connection

Technical data – KVI



- Plug socket with cable for fieldbus connection (CP bus valve terminal type 04, CPV, type 03 and CP installation system)
- Pre-assembled at both ends
- Cable lengths 0.5 m, 2 m, 5 m or 8 m
- 5-pin
- Round plug
- Cable with straight plug and straight socket, suitable for chain link trunking



General technical data		KVI-...
Type		KVI-...
Type of mounting		M9 union nut
Mounting position		Any
Operating voltage range	[V]	60 AC
Current-carrying capacity	[A]	3
Constructional design	[mm ²]	5x0.24
Cable diameter	[mm]	5.2
Protection class to EN 60 529		IP65 (assembled)
Material of housing		Nickel-plated brass
Material of contacts		Gold-plated bronze
Material of cable sheath		Polyurethane
Ambient temperature	[°C]	-20 ... +70
Ambient temperature of flexible cable installation	[°C]	-5 ... +80

Ordering data						
	Suitable for chain link trunking	Electrical connection	Product weight [g]	Cable length [m]	Type	Part No.
		Straight plug - angled socket	285	5	KVI-CP-1-GS-WD-5	163 137
		Straight plug - angled socket	412	8	KVI-CP-1-GS-WD-8	163 136
		Angled plug - angled socket	57	0.5	KVI-CP-1-WS-WD-0,5	178 564
		Angled plug - angled socket	81	1	KVI-CP-1-WS-WD-1.0	191 892
		Angled plug - angled socket	133	2	KVI-CP-1-WS-WD-2	163 139
		Angled plug - angled socket	177	3	KVI-CP-1-WS-WD-3.0	191 893
		Angled plug - angled socket	283	5	KVI-CP-1-WS-WD-5	163 138
	■	Straight plug - straight socket	126	2	KVI-CP-2-GS-GD-2	170 234
	■	Straight plug - straight socket	262	5	KVI-CP-2-GS-GD-5	170 235
	■	Straight plug - straight socket	397	8	KVI-CP-2-GS-GD-8	165 616

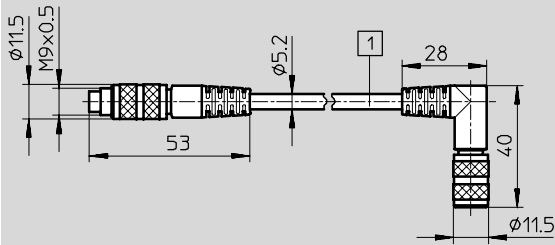
Electrical connection technology, for fieldbus connection

Technical data – KVI

Dimensions

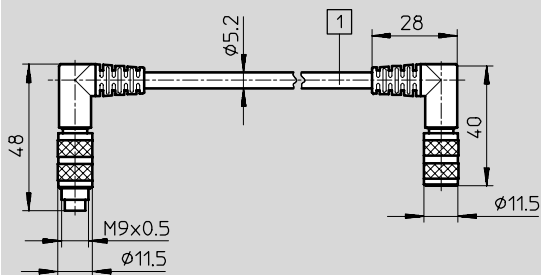
Download CAD data → www.festo.com/en/engineering

KVI-CP-1-GSWD-...



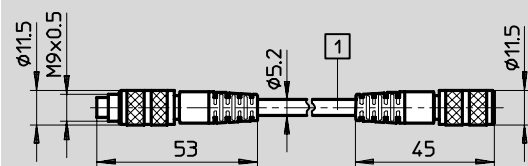
1 Cable length of 5 m or 8 m

KVI-CP-1-WSWD-...



1 Cable length 0.5 m, 1 m, 2 m, 3 m or 5 m

KVI-CP-2-GSGD-...



1 Cable length 2 m, 5 m or 8 m

Electrical connection technology, for fieldbus connection

Technical data – FBS/FBSD



- Plug/socket for fieldbus connection
- Can be fabricated with any cable lengths
- 5-pin plug/4-pin or 5-pin socket
- With screw terminals
- Wire cross section of up to 0.75 mm²



5.1

General technical data		
Type	FBS/FBSD-...	
Type of mounting	M12 union nut	
Mounting position	Any	
Max. wire cross section	[mm ²]	0.75
Current-carrying capacity	[A]	3
Protection class to EN 60 529	IP67 (assembled)	
Material of housing	FBS	Polybuteneterephthalate
	FBSD	Polyamide
Material of contacts	FBS	Nickel-plated/gold-plated brass
	FBSD	Tin-plated/silver-plated bronze
Material of union nut	Nickel-plated brass	
Ambient temperature	[°C]	-40 ... +85

Ordering data							
	Electrical connection	Operating voltage range	Cable gland fitting	Permissible cable diameter	Product weight	Type	Part No.
		[V]		[mm]	[g]		
	Straight plug, 5-pin, screw terminal	30 AC 36 DC	Pg9	6 ... 8	26	FBS-M12-5GS-PG9	175 380
	Straight socket, 4-pin, screw terminal	125 AC	Pg7	4 ... 6	28	FBSD-GD-7	18 497
	Straight socket, 4-pin, screw terminal	125 AC	Pg9	8 ... 9.5	29	FBSD-GD-9	18 495
	Straight socket, 5-pin, screw terminal (DeviceNet)	30 AC	Pg9	6 ... 8	30	FBSD-GD-9-5POL	18 324
	Straight socket, 4-pin, screw terminal	125 AC	Pg13.5	10 ... 12	35	FBSD-GD-13,5	18 496
	Angled socket, 4-pin, screw terminal	125 AC	Pg7	4 ... 6	29	FBSD-WD-7	18 524
	Angled socket, 4-pin, screw terminal	125 AC	Pg9	6 ... 8	30	FBSD-WD-9	18 525

Electrical connection technology, for fieldbus connection

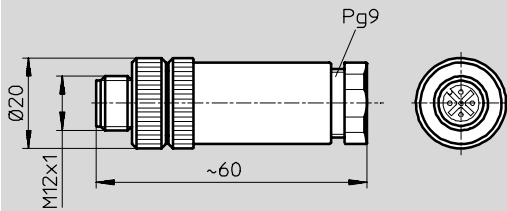
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Technical data – FBS/FBSD

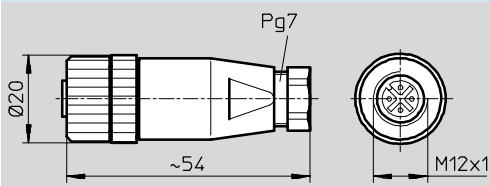
Dimensions

Download CAD data → www.festo.com/en/engineering

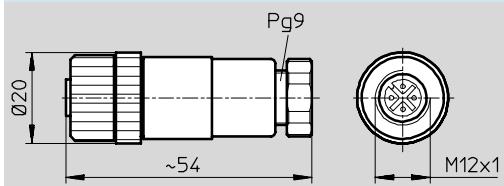
FBS-M12-5GS-PG9



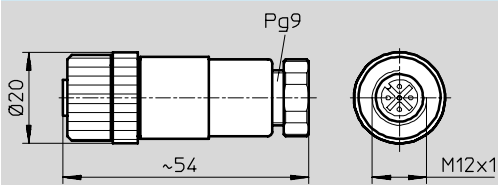
FBSD-GD-7



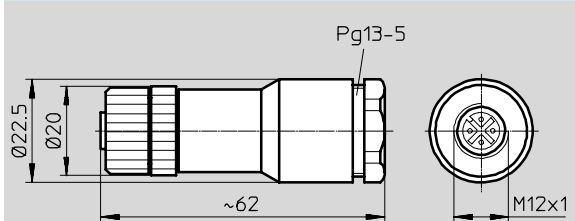
FBSD-GD-9



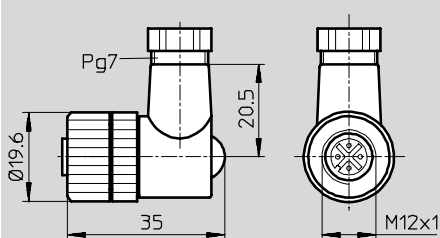
FBSD-GD-9-5POL



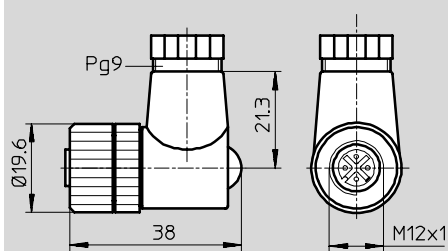
FBSD-GD-13,5



FBSD-WD-7



FBSD-WD-9



Electrical connection technology, for fieldbus connection

Technical data – FBS-SUB-9-...-B



- Fieldbus plug with 9-pin Sub-D connection
- Options for different fieldbus systems
- Position of DIL switch can be read externally
- Easy assembly



General technical data		
Type	FBS-SUB-9-...-B	
Type of mounting	2 M3x20 screws	
Cable gland fitting	Pg9	
Perm. cable diameter	[mm]	5 ... 10
Protection class to EN 60 529	IP65/67 (assembled)	
Material of housing	Polyamide	
Material of seal	Perbunan	
Material of union nut	Nickel-plated brass	
Ambient temperature	[°C]	0 ... +50
Storage temperature	[°C]	-20 ... +70

Ordering data					
	Electrical connection	Interface	Product weight [g]	Type	Part No.
	Plug, 9-pin, Sub-D	Profibus DP	60	FBS-SUB-9-GS-DP-B	532 216
	Plug, 9-pin, Sub-D	Interbus nodes CPX and CPV	60	FBS-SUB-9-GS-IB-B	532 217
	Plug, 9-pin, Sub-D	–	60	FBS-SUB-9-GS-1x9POL-B	534 497
	Socket, 9-pin, Sub-D	Interbus nodes CPX and CPV	60	FBS-SUB-9-BU-IB-B	532 218
	Socket, 9-pin, Sub-D	DeviceNet/Can CPX and CPV	60	FBS-SUB-9-BU-2x5POL-B	532 219
	Socket, 9-pin, Sub-D	CC-Link CPX and CPV	60	FBS-SUB-9-BU-2x4POL-B	532 220

Electrical connection technology, for fieldbus connection

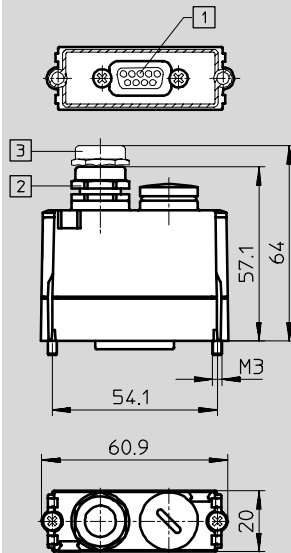
Technical data – FBS-SUB-9-...-B

Dimensions

Download CAD data → www.festo.com/en/engineering

FBS-SUB-9-...-B

Housing



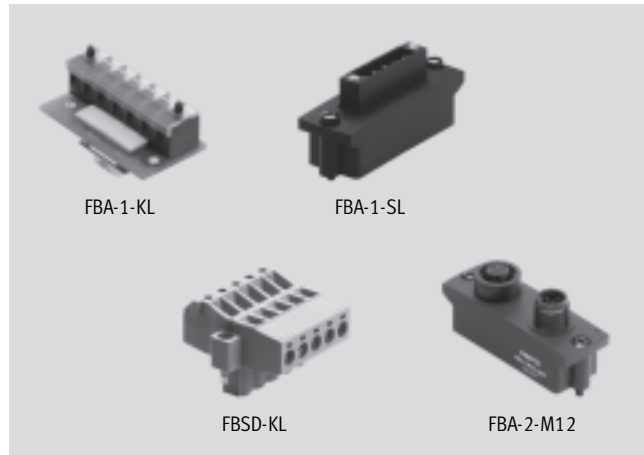
- 1 Sub-D socket/plug, 9-pin
- 2 Cable gland fitting, polymer, Pg9
- 3 Cable gland fitting, metal, Pg9

Electrical connection technology, for fieldbus connection

Technical data – BA/FBSD

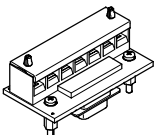
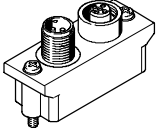
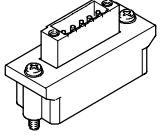
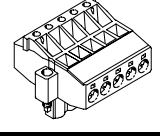


- Plug/socket for fieldbus connection
- Adapter for Sub-D plug and socket
- Plug/socket, 9-pin, on connection, 5-pin/2x5-pin



5.1

General technical data		
Type	FBA...	FBSD-KL-...
Type of mounting	2 M3x20 screws	2 M2.5x12 screws
Mounting position	Any	
Operating voltage range [V]	24 DC	
Material of housing	Polyamide	
Material of contacts	Gold-plated bronze	
Ambient temperature [°C]	-5 ... +50	
Storage temperature [°C]	-20 ... +70	

Ordering data							
	Electrical connection	Max. wire cross section [mm ²]	Current-carrying capacity [A]	Protection class to EN 60 529	Product weight [g]	Type	Part No.
	Plug, straight, Sub-D, 9-pin, screw terminal, 5-pin	0.5	7.5	IP20	47	FBA-1-KL-5POL	197 962
	Straight socket, Sub-D, 9-pin, plug/socket, M12, 5-pin	–	4	IP65	28	FBA-2-M12-5POL	525 632
	Straight socket, Sub-D, 9-pin, plug, 5-pin	–	4	IP40	26	FBA-1-SL-5POL	525 634
	Socket, angled, 5-pin, screw terminal, 5-pin	0.2 ... 2.5	12	IP20	20	FBSD-KL-2x5POL	525 635

Electrical connection technology, for fieldbus connection

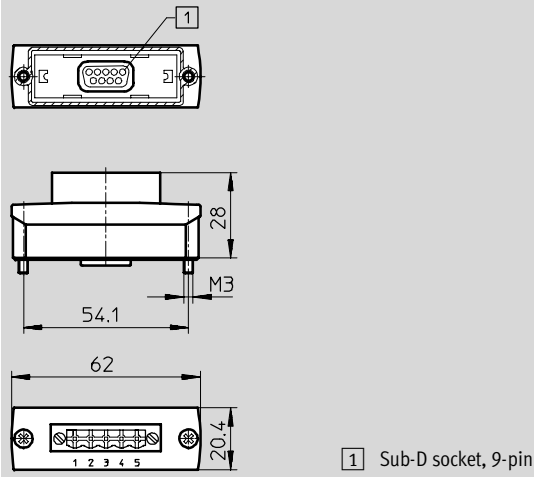
Technical data – FBA/FBSD



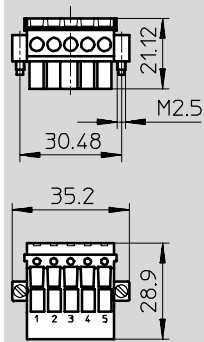
Dimensions

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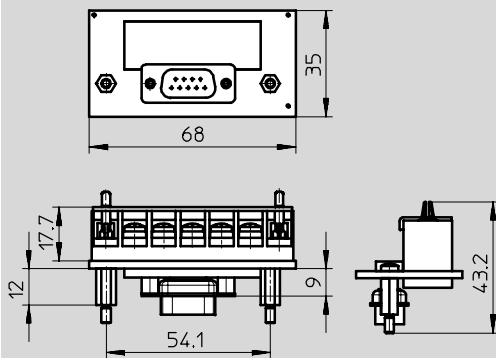
FBA-1-SL-...



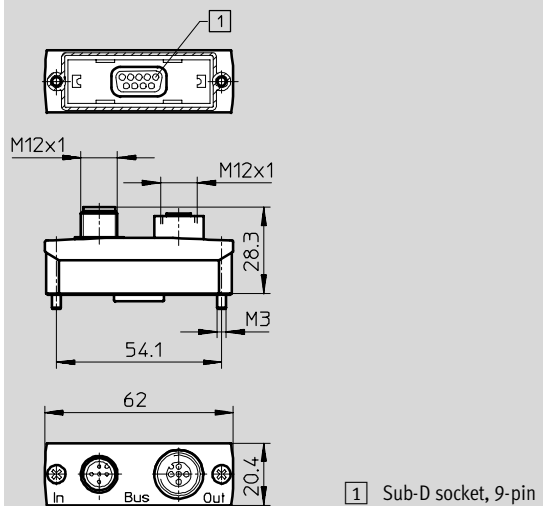
FBSD-KL-...



FBA-1-KL-...



FBA-2-...



Electrical connection technology, for fieldbus connection

Technical data – FBA/FBSD



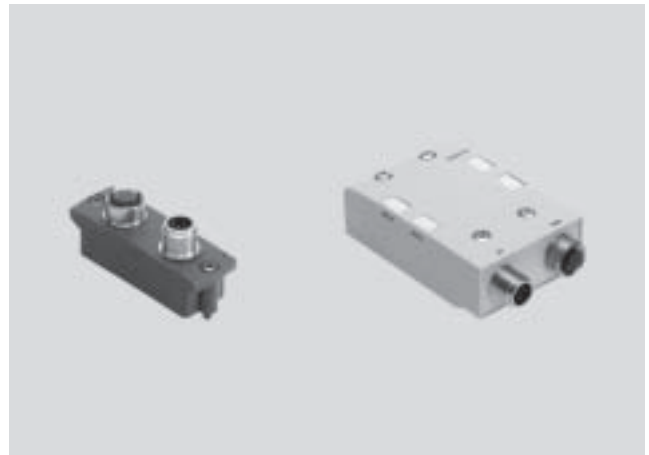
Pin allocation Sub-D/opposite side							
FBA-1-KL-5POL				FBA-1-SL-5POL			
Sub-D connection	Pin	Pin	Terminal strip	Sub-D connection	Pin	Pin	Plug
	1				1		
	2	DA		2	2		
	3	DG		3	1		
	4			4			
	5	FG		5	3		
	6			6			
	7	DB		7	4		
	8			8			
	9			9	5		
	Housing	SLD		Housing	3		
FBA-2-M12-5POL				FBA-2-M12-5POL			
Sub-D connection	Pin	Pin	Plug	Sub-D connection	Pin	Pin	Socket
	1				1		
	2	2		2	2		
	3	1		3	1		
	4			4			
	5	3		5	3		
	6			6			
	7	4		7	4		
	8			8			
	9	5		9	5		
	Housing	3		Housing	3		

Electrical connection technology, for fieldbus connection

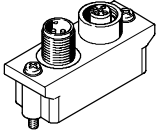
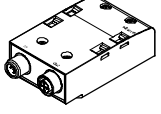
Technical data – FBA/CPX-AB-2



- Adapter for Sub-D plug and socket
- Plug/socket, 9-pin, on connection, 2xM12, 5-pin
- B coded (ReverseKey)



General technical data		
Type	FBA-...	CPX-AB-2-...
Type of mounting	2 M3x20 screws	4 M3x25 screws
Mounting position	Any	
Operating voltage range [V]	24 DC	
Material of housing	Polyamide	
Material of contacts	Gold-plated bronze	
Ambient temperature [°C]	-5 ... +50	
Storage temperature [°C]	-20 ... +70	

Ordering data						
	Electrical connection	Current-carrying capacity [A]	Protection class to EN 60 529	Product weight [g]	Type	Part No.
	Plug, straight, Sub-D, 9-pin, plug/socket, M12, 5-pin	4	IP65	37	FBA-2-M12-5POL-RK	533 118
	Plug/socket, straight, Sub-D, 9-pin, plug/socket, M12, 5-pin		IP65	140	CPX-AB-2-M12-RK-IB	534 505

Electrical connection technology, for fieldbus connection

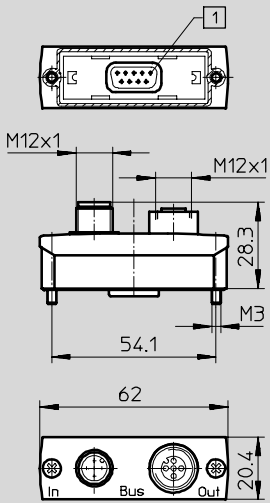
Technical data – FBA/CPX-AB-2



Dimensions

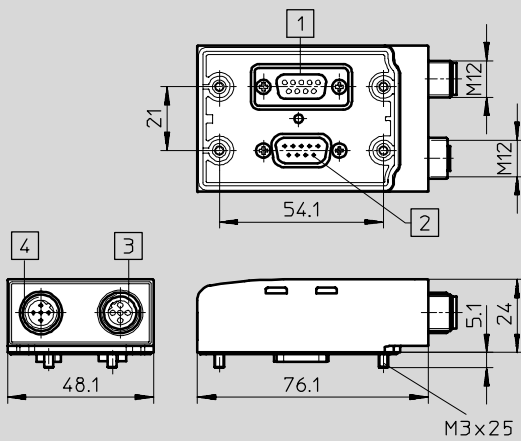
Download CAD data → www.festo.com/en/engineering

FBA-2-M12-5POL-RK



1 Sub-D plug, 9-pin,

CPX-AB-2-M12-RK-IB



- 1 Socket, 9-pin
- 2 Plug, 9-pin
- 3 Socket, M12, 5-pin
- 4 Plug, M12, 5-pin

Electrical connection technology, for fieldbus connection



Technical data – FBA/CPX-AB-2

Pin allocation Sub-D/opposite side							
FBA-2-M12-5POL-RK							
Sub-D connection	Pin	Pin	Plug	Sub-D connection	Pin	Pin	Socket
	1	5			1	5	
	2				2		
	3	4			3	4	
	4				4		
	5				5	3	
	6				6	1	
	7				7		
	8	2			8	2	
	9				9		
	Housing	Housing			Housing	Housing	

CPX-AB-2-M12-RK-IB							
Sub-D connection	Pin	Pin	Plug	Sub-D connection	Pin	Pin	Socket
	1	1			1	1	
	2	3			2	3	
	3	5			3	5	
	4				4		
	5				5	3	
	6	2			6	2	
	7	4			7	4	
	8				8		
	9				9		
	Housing	Housing			Housing	Housing	

Electrical connection technology, for fieldbus connection

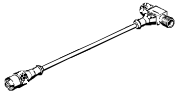

Technical data – FB-TA



- T-adapter for fieldbus connection (for valve terminal type 02, type 03, type 04, CPV and CP installation system)
- Branch line for the connection and disconnection of fieldbus components
- Connected fieldbus components can be unplugged without interrupting signal transmission (to other components)
- FB-TA-1 with open cable end for self-assembly
- FB-TA and FB-TA-1 with 5-pin push-in connectors, but only 3 continuous contacts



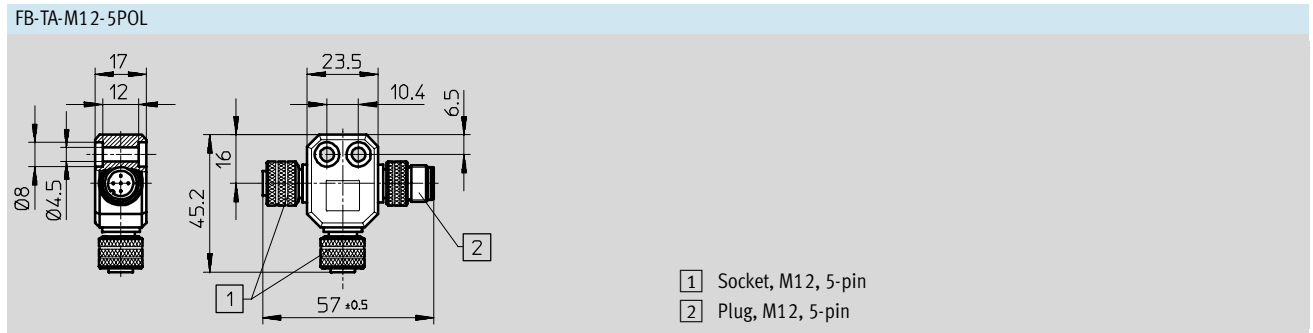
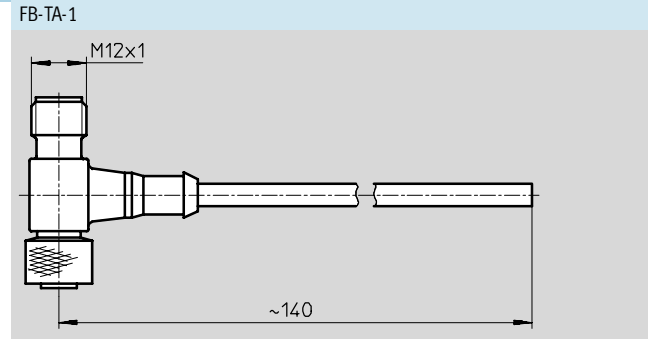
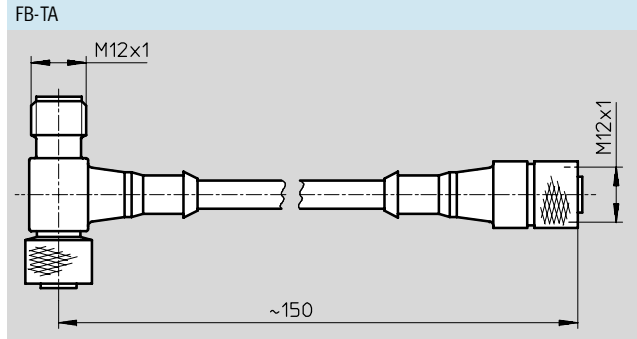
General technical data	
Type	FB-TA-...
Type of mounting	M12 union nut
Mounting position	Any
Operating voltage range [V]	10 ... 30 DC
Current-carrying capacity [A]	4
Cable diameter [mm]	5 (except FB-TA-M12-5POL)
Protection class to EN 60 529	IP67
Material of housing	Polyamide
Material of cable sheath	Polyvinyl chloride (except FB-TA-M12-5POL)
Ambient temperature [°C]	-25 ... +90

Ordering data						
	Electrical connection	Material of contacts	Construc-tional design [mm ²]	Product weight [g]	Type	Part No.
	Socket/plug, 5-pin, M12	Brass, nickel-plated/tin-plated	2x0.25	37	FB-TA	18 498
		Brass, nickel-plated/tin-plated	2x0.25	23	FB-TA-1	18 499
	Socket/plug, 5-pin, M12	Bronze, gold-plated	–	39	FB-TA-M12-5POL	171 175

Electrical connection technology, for fieldbus connection

Technical data – FB-TA

Dimensions Download CAD data → www.festo.com/en/engineering



Accessories for valve terminals
Electrical connector systems

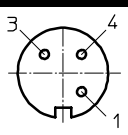
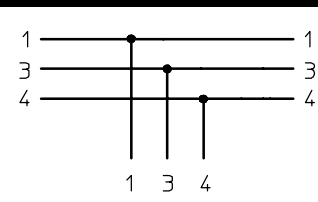
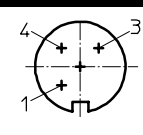
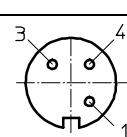
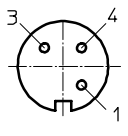
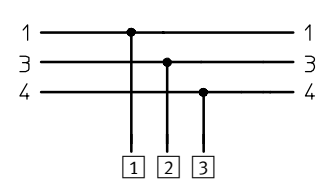
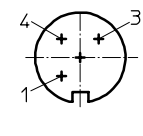
5.1

Electrical connection technology, for fieldbus connection

Technical data – FB-TA



5.1

Wiring allocation (socket/plug view)		
Socket	Wiring allocation	Plug
FB-TA 		
		
FB-TA-1 	 <div style="margin-top: 10px;"> 1 White 2 Black 3 Screen </div>	
FB-TA-M12-5POL 