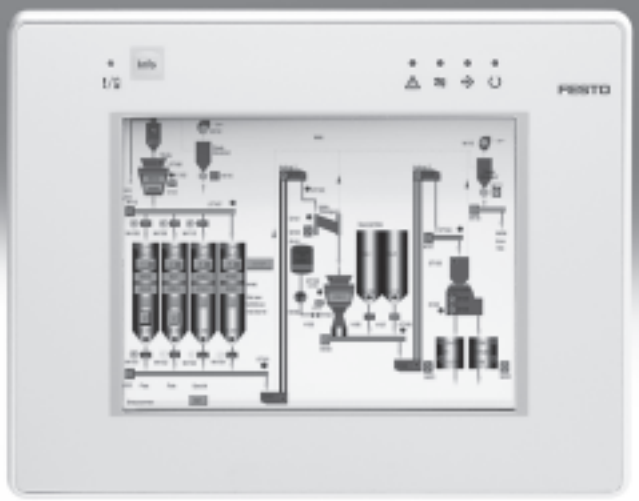
Operator units FED

FESTO



Operator units FED

Key features

Multifunctional in use

FED human-machine interfaces simplify the control of automation tasks at field level and set new standards in functionality and integration.

Whether for single or multi-axis control systems in handling technology or process automation, the Front End Display FED is the optimum solution.

FED-40 ... FED-90:
The semi-graphical display of process values makes them easier to read. Straightforward designing of human-machine dialogues using the FED Designer programming tool supplied.

FED-300 ... FED-5010:
Graphics-capable for maximum flexibility when displaying processes and data. Straightforward designing of human-machine dialogues using the FED Designer programming tool supplied. With integrated web features that support the use of standards. Also with VipWin for convenient visualisation.

Text-based Front End Displays FED-40 ... FED-90

The FED-40 and FED-60 versions complement the proven FED-50 and FED-90 for simple dialogues using 4-line text display and operating buttons whether via a serial, fieldbus or Ethernet connection – the text panels of the FED series are 100% compatible with Festo controllers.

The following functionalities are available depending on the version:

- Serial interface (FED-40 to FED-90), optional Ethernet for use in a network (not with FED-40)
- Battery backup of the alarm and event data (not with FED-40)
- FED Designer graphical design tool included
- No parameterisation required; the software contains the controller data and detects the display
- Simple graphics possible, enabling scalable font size and simple representation of pictograms and bar charts
- Software for uploading projects
- Recipe handling
- Simple data acquisition
- Generous program memory
- Real-time clock (not with FED-40)
- Printer port (FED-90)
- Password protection
- Alarm handling
- Keypad can be easily programmed using macros
- Multilingual projects possible
- Import and export of texts for translation

FED-40: the entry-level model

A serial connection is established with the controller. Operation is by means of four freely programmable function keys and seven system keys.

FED-50: fieldbus-capable

The FED-50 offers the functions of the FED-40 and can additionally be extended with an Ethernet or fieldbus interface. A real-time clock is standard on the FED-50 and higher.

FED-60: 10-key pad included

In addition to the function and system keys, the FED-60 also features a 10-key pad. The real-time clock is also standard and a fieldbus interface can be optionally retrofitted.

FED-90: all-inclusive

Because of its larger size in comparison with the FED-60, the FED-90 can offer 12 function keys and 23 system keys. A printer interface permits direct output of the alarm and/or event list.

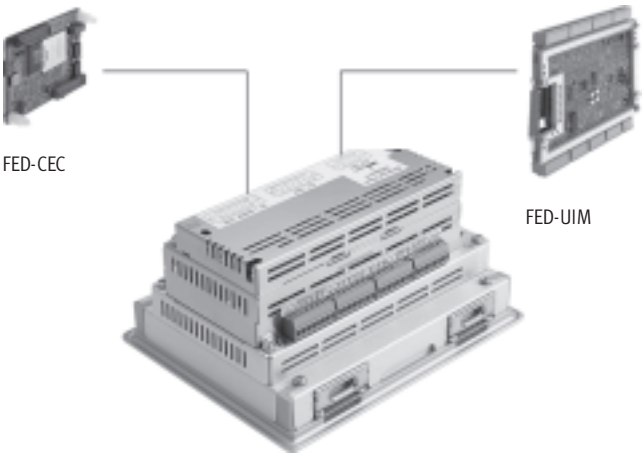
Front End Displays with touchscreen FED-300 to FED-5010

The touchscreen displays FED-300 to FED-5010 with graphical user interface extend the proven text-based and key pad-equipped Front End Displays FED-40 to FED-9 to include touch-sensitive displays in sizes from 3.8" to 15". As alternatives to CPX handhelds and integrated displays, these Front End Displays provide a freely definable user interface.
As a client/server system, the terminal receives data from web servers connected to it and displays this data using the integrated browser functionality.

Operator units FED

Key features

FED-CEC with CoDeSys software platform



CoDeSys makes your life easier with simple commissioning, fast programming and parameterisation – standardised programming of embedded devices to IEC 61131-3.

- Hardware-neutral software platform for quick and easy configuration, programming and commissioning of pneumatic and electric automation solutions.
- Extensive module libraries for single or multi-axis positioning motions.
- The IEC 61131-3 standard means that CoDeSys is flexible and open for all types of control tasks.
- Extremely flexible and modular: offline and online functions, as well as components for hardware configuration and visualisation. User-friendly IEC functional module extension.
- Re-use of existing application parts.

Functions

- Can be connected to all FEC® and CoDeSys controllers from Festo, serially or via Ethernet
- Trend display
- Recipe handling
- Multilingual projects and language changeover during runtime
- Software enables uploading of projects
- Import and export of texts for translation

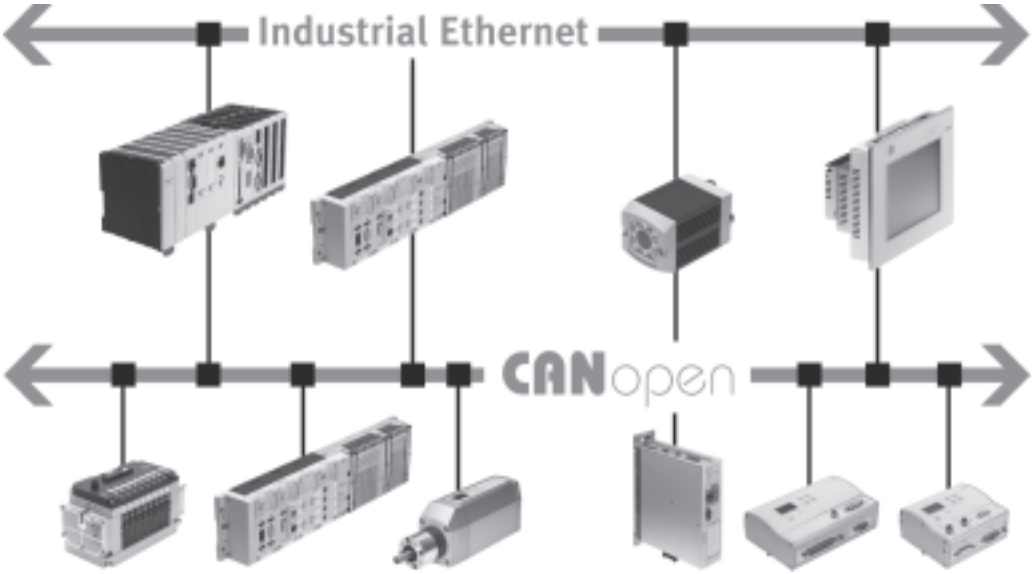
Designing

Straightforward designing and programming with the programming tool CoDeSys provided by Festo and FED Designer.

Key features at a glance

- Convenient FED Designer WYSIWYG design tool.
- No duplicate work thanks to import of variable declarations (allocation list) from the control software.
- Can also be used with Festo FEC® and CoDeSys controllers from Festo in a network by means of Ethernet.
- Graphics capability offers maximum flexibility when displaying processes and data.
- Shorter design times thanks to reusability of objects (libraries containing graphical elements).
- Generous memory means almost unlimited numbers of graphics and texts can be displayed.
- Display of complex processes is possible thanks to an unlimited number of variables per page.
- Extremely sturdy thanks to a metal housing to facilitate use in tough environments.

The Front End Displays in the Festo controller landscape



Operator units FED

Product range overview, type codes

Type	Display resolution	Number of colours	Display size	Interfaces	➔ Page/Internet
Text-based					
FED-40	120x32 pixels	B/W	4 x 20 characters	PLC, PC	5
FED-50				PLC, PC, Ethernet[1)]	
FED-60				PLC, PC, Ethernet[1)]	
FED-90				PLC, PC, printer, Ethernet[1)]	
Touchscreen					
FED-300	1/4 VGA, 320x240 pixels	256	3.5”	PLC, PC, Ethernet[1)]	7
FED-301		B/W	3.8”		
FED-500		256	5.6”	PLC, PC, printer, Ethernet[1)]	
FED-501		8 grey levels	5.6”		
FED-700	VGA, 640x480 pixels	64 k	7.5”	PLC, PC, printer, Ethernet[2)]	
FED-1000			10.4”		
FED-2000	SVGA, 800x600 pixels	64 k	12.1”	PLC, PC, printer, Ethernet[2)]	
FED-5000	XGA, 1024x768 pixels	64 k	15”		
Touchscreen, with integrated web browser					
FED-710	VGA, 640x480 pixels	64 k	7.5”	PLC, USB, printer, Ethernet[2)]	10
FED-1010			10.4”		
FED-2010	SVGA, 800x600 pixels	64 k	12.1”	PLC, USB, printer, Ethernet[2)]	
FED-5010	XGA, 1024x768 pixels	64 k	15”	PLC, USB, printer, Ethernet[2)]	

1) 10 MBd optional
2) 10/100 MBd standard, 2nd 10 MBd interface optional

Type codes

FED – 2010

Function	
FED	Operator unit

Display size, equipment	
Text-based	
40	4 x 20 characters
50	Equipment details ➔ Product range overview and Technical data
60	
90	
Touchscreen	
300	3.5”, 256 colours
301	3.8”, B/W
500	5.6”, 256 colours
501	5.6”, 8 grey levels
700	7.5”, 64 k colours
1000	10.4”, 64 k colours
2000	12.1”, 64 k colours
5000	15”, 64 k colours
Touchscreen, with integrated web browser	
710	7.5”, 64 k colours
1010	10.4”, 64 k colours
2010	12.1”, 64 k colours
5010	15”, 64 k colours

Operator units FED, text-based

Technical data

FESTO

Voltage
18 ... 30 V DC

Temperature range
0 ... 50 °C

General technical data					
		FED-40	FED-50	FED-60	FED-90
Display		Monochrome LCD with backlighting			
Display size		4 x 20 characters			
Display resolution		120x32 pixels			
Number of colours		–			
Number of function keys		4	4	9	12
Number of system keys		7	7	10	23
Number of user LEDs		5	5	10	13
Number of system LEDs		4	4	4	4
User memory		512 KB			
Recipe memory		–	16 KB	16 KB	16 KB
Event lists		–	256	256	256
Alarms		1,024			
Type of mounting		Front panel mounting			
Installation depth	[mm]	53	53	53	71
Max. front panel thickness	[mm]	5			

Electrical data					
		FED-40	FED-50	FED-60	FED-90
Nominal operating voltage DC	[V]	24			
Operating voltage range DC	[V]	18 ... 30			
Current consumption at nominal operating voltage	[A]	0.25			0.3
AUX interface		–	Sub-D socket, 9-pin		
Printer interface		–	–	–	Sub-D socket, 15-pin, RS232
Ethernet interface		–	Optional, 10 MBd		
PC interface		Sub-D plug, 15-pin, RS232			Sub-D socket, 15-pin, RS232
Programming interface		9.6 kBd	9.6 ... 38.4 kBd		
Programming software		FED Designer 6.06 or higher			
PLC interface		Sub-D plug, 15-pin, RS232			
Backup battery		–	3 V / 270 mA lithium		
Real-time clock		–	Yes		
Accuracy of real-time clock		–	130 s/month		
Protection class		IP65 at the front following installation into control panel, IP20 at the back			

Operating and environmental conditions		
Ambient temperature	[°C]	0 ... 50
Storage temperature	[°C]	–20 ... +70
Relative air humidity	[%]	5 ... 85, non-condensing
CE mark (see declaration of conformity)		To EU EMC Directive
Certification		cULus listed (HL)
		C-Tick

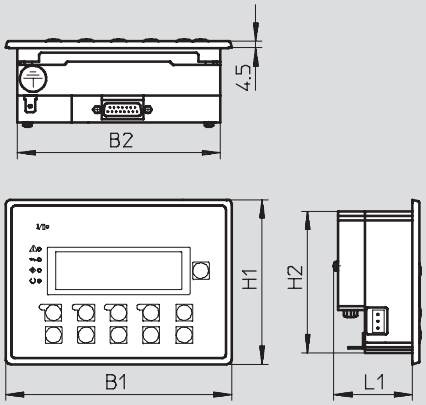
Operator units FED, text-based

Technical data

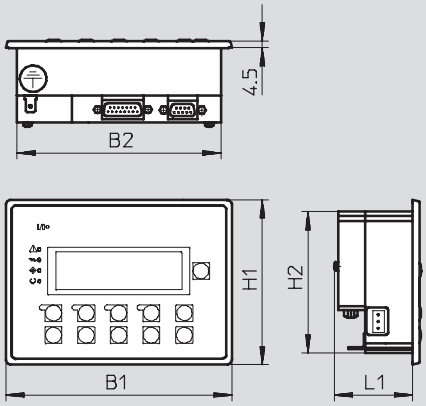
Weight [g]					
		FED-40	FED-50	FED-60	FED-90
Product weight	[g]	1,000	1,000	1,000	1,100

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

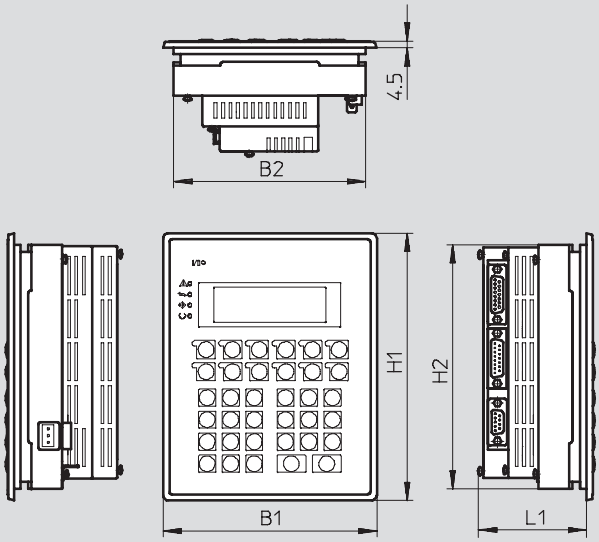
FED-40



FED-50/60



FED-90



Type	B1	B2	H1	H2	L1
FED-40	149	134	108.5	93.5	52.5
FED-50					
FED-60					
FED-90	140.6	126.6	176	161	71

Ordering data

Display resolution	Number of colours	Display size	Interfaces	Number of function/ system keys	Part No.	Type
120x32 pixels	B/W	4 x 20 characters	PLC, PC	4/7	**541 998**	**FED-40**
			PLC, PC, Ethernet[1)]	4/7	**533 531**	**FED-50**
			PLC, PC, Ethernet[1)]	9/10	**541 999**	**FED-60**
			PLC, PC, printer, Ethernet[1)]	12/23	**533 532**	**FED-90**

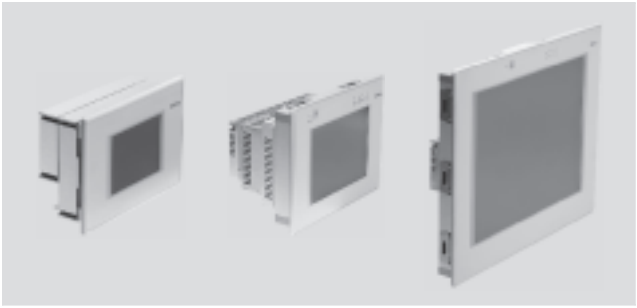
1) 10 MBd optional

Operator units FED, touchscreen

Technical data

FESTO

- Voltage
  18 ... 30 V DC
- Temperature range
  0 ... 50 °C



General technical data									
		FED-300	FED-301	FED-500	FED-501	FED-700	FED-1000	FED-2000	FED-5000
Type of display		Touchscreen							
Display		Colour TFT	Monochrome LCD	Colour STN	Monochrome LCD	Colour TFT			
Display size		3.5"	3.8"	5.6"	5.6"	7.5"	10.4"	12.1"	15"
Display resolution		1/4 VGA, 320x240 pixels				VGA, 640x480 pixels		SVGA, 800x600 pixels	XGA, 1024x768 pixels
Number of colours		256	B/W	256	8 grey levels	64 k			
Number of function keys		–		1	1	1	1	1	1
Number of user LEDs		–		1	1	1	1	1	1
Number of system LEDs		4	4	4	4	4	4	4	4
User memory		1 MB	512 KB	32 MB					
Recipe memory		32 KB							
Event lists		256		1,024		1,024	1,024	1,024	1,024
Alarms		1,024							
Type of mounting		Front panel mounting							
Installation depth	[mm]	56	61	91	66	71	91	91	101
Max. front panel thickness	[mm]	5							

Electrical data									
		FED-300	FED-301	FED-500	FED-501	FED-700	FED-1000	FED-2000	FED-5000
Nominal operating voltage DC	[V]	24							
Operating voltage range DC	[V]	18 ... 30							
Current consumption at nominal operating voltage	[A]	0.4		0.8	0.6	1.1	1.2	1.3	1.5
AUX interface		Sub-D socket, 9-pin							
Printer interface		–		Sub-D socket, 15-pin, RS232					
Ethernet interface		Optional, 10 MBd				RJ45 10/100 MBd 2nd Ethernet interface optional, 10 MBd			
PC interface		Sub-D plug, 15-pin, RS232		Sub-D socket, 15-pin, RS232					
Programming interface		9.6 ... 38.4 kBd							
Programming software		FED Designer 6.06 or higher							
PLC interface		Sub-D plug, 15-pin, RS232							
Backup battery		3 V / 270 mA lithium							
Real-time clock		Yes							
Accuracy of real-time clock		130 s/month							
Protection class		IP65 at the front following installation into control panel, IP20 at the back							

Operator units FED, touchscreen

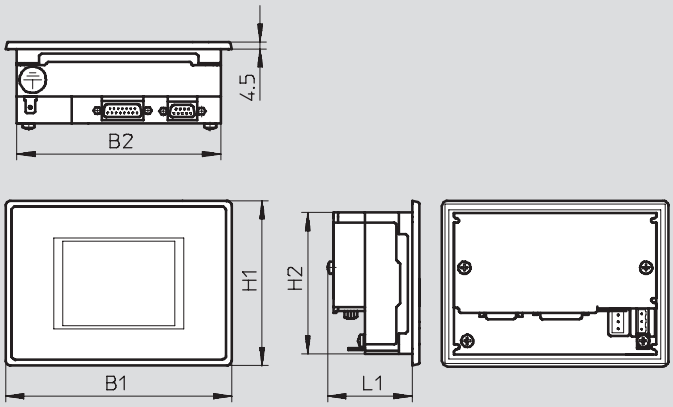
Technical data

Operating and environmental conditions									
		FED-300	FED-301	FED-500	FED-501	FED-700	FED-1000	FED-2000	FED-5000
Ambient temperature	[°C]	0 ... 50		0 ... 45	0 ... 50	0 ... 45			
Storage temperature	[°C]	–20 ... +70							
Relative air humidity	[%]	5 ... 85, non-condensing							
CE mark (see declaration of conformity)		To EU EMC Directive							
Certification		cULus listed (OL)		cULus listed (HL)		cULus listed (OL)	cULus listed (HL)	cULus listed (HL)	cULus listed (OL)
		C-Tick							

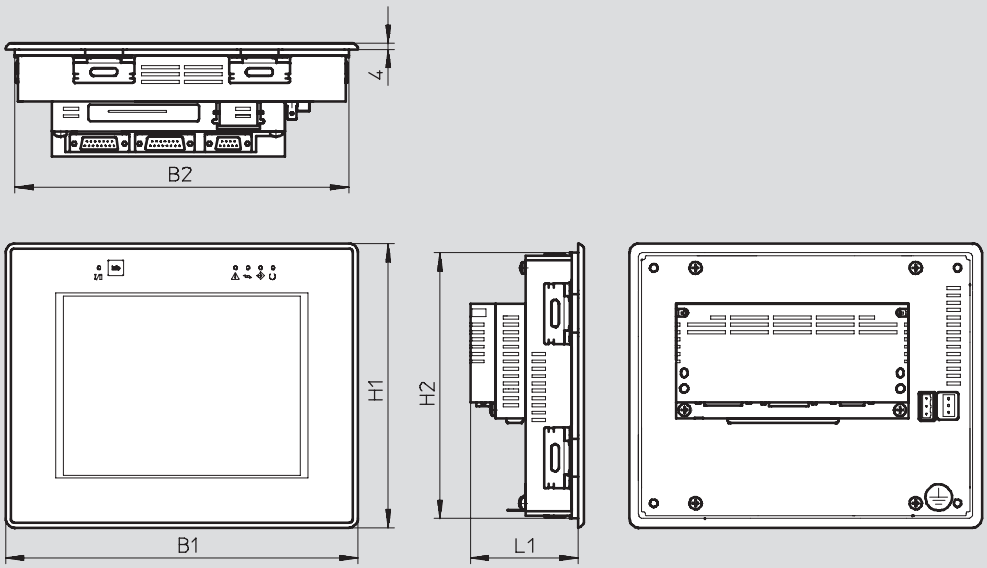
Weight [g]									
		FED-300	FED-301	FED-500	FED-501	FED-700	FED-1000	FED-2000	FED-5000
Product weight	[g]	1,000		1,400		1,600	2,300	2,800	3,800

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

FED-300/301



FED-700



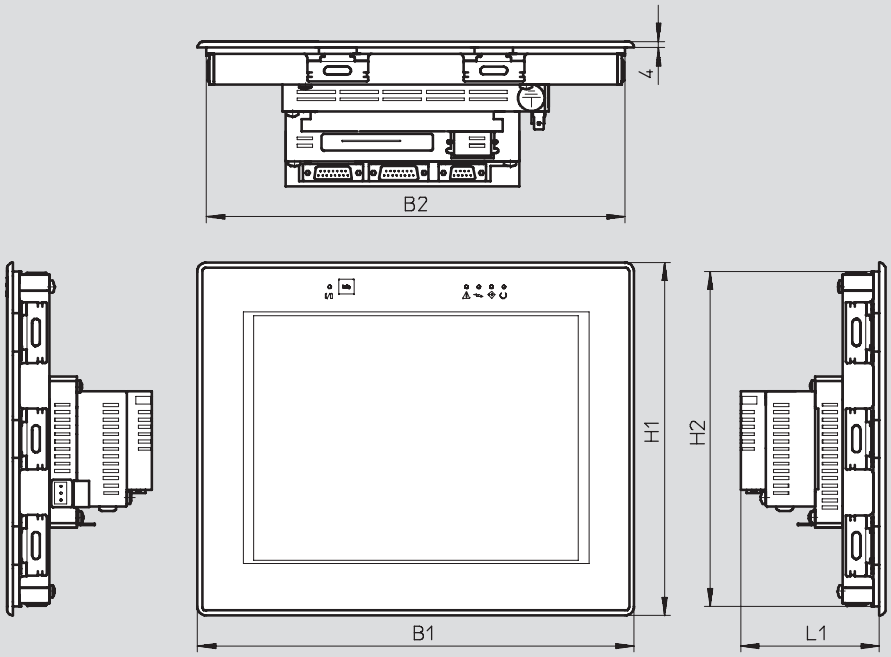
Type	B1	B2	H1	H2	L1
FED-300	149	134	108.5	93.5	56
FED-301					60.5
FED-700	232	200	187	175	71

Operator units FED, touchscreen

Technical data

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

FED-500/501/1000/2000/5000



Type	B1	B2	H1	H2	L1
FED-500	187	175	147	135	90.5
FED-501					66
FED-1000	287	275	232	220	91
FED-2000	337	325	267	255	91
FED-5000	392	380	307	295	101

Ordering data

Display resolution	Number of colours	Display size	Interfaces	Number of function/ system keys	Part No.	Type
1/4 VGA, 320x240 pixels	256	3.5”	PLC, PC, Ethernet[1]	–/–	**543 439**	**FED-300**
	B/W	3.8”		–/–	**543 438**	**FED-301**
	256	5.6”	PLC, PC, printer, Ethernet[1]	1/–	**543 441**	**FED-500**
	8 grey levels	5.6”		1/–	**543 440**	**FED-501**
VGA, 640x480 pixels	64 k	7.5”	PLC, PC, printer, Ethernet[2]	1/–	**543 442**	**FED-700**
		10.4”		1/–	**543 515**	**FED-1000**
SVGA, 800x600 pixels	64 k	12.1”	PLC, PC, printer, Ethernet[2]	1/–	**543 444**	**FED-2000**
XGA, 1024x768 pixels	64 k	15”		1/–	**543 447**	**FED-5000**

1) 10 MBd optional
2) 10/100 MBd standard, 2nd 10 MBd interface optional

Operator units FED, touchscreen, web browser

Technical data

FESTO

Voltage
18 ... 30 V DC

Temperature range
0 ... 45 °C

General technical data					
		FED-710	FED-1010	FED-2010	FED-5010
Type of display		Touchscreen			
Display		Colour TFT			
Display size		7.5”	10.4”	12.1”	15”
Display resolution		VGA, 640x480 pixels		SVGA, 800x600 pixels	XGA, 1024x768 pixels
Number of colours		64 k			
User memory		32 MB			
Type of mounting		Front panel mounting			
Installation depth	[mm]	71	91	91	101
Max. front panel thickness	[mm]	5			

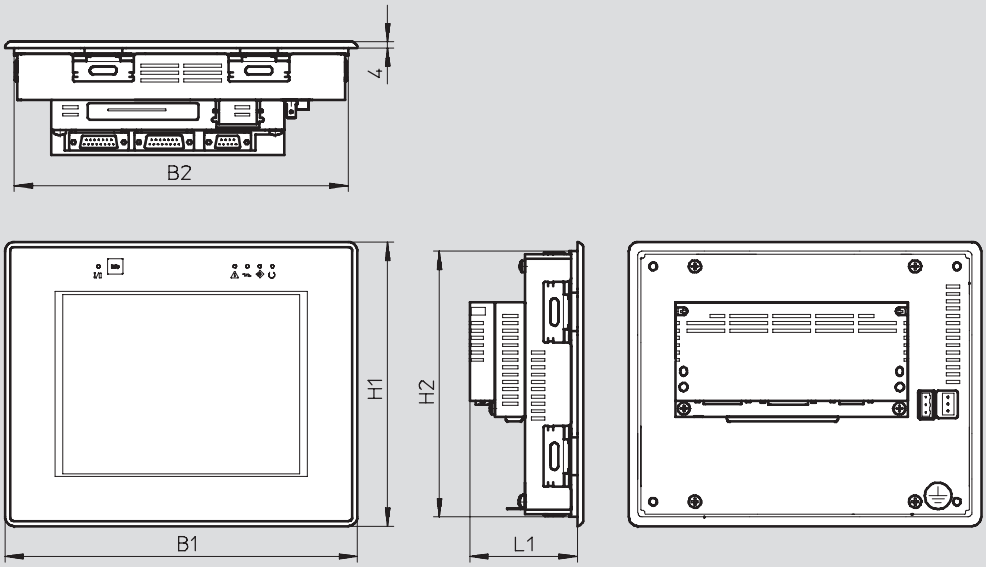
Electrical data					
		FED-710	FED-1010	FED-2010	FED-5010
Nominal operating voltage DC	[V]	24			
Operating voltage range DC	[V]	18 ... 30			
Current consumption at nominal operating voltage	[A]	1.1	1.2	1.3	1.5
AUX interface		Sub-D socket, 9-pin			
Printer interface		Sub-D socket, 15-pin, RS232			
Ethernet interface		RJ45 10/100 MBd 2nd Ethernet interface optional, 10 MBd			
PLC interface		Sub-D plug, 15-pin, RS232			
USB interface		Yes			
Backup battery		3 V / 270 mA lithium			
Real-time clock		Yes			
Accuracy of real-time clock		130 s/month			
Protection class		IP65 at the front following installation into control panel, IP20 at the back			

Operating and environmental conditions					
		FED-710	FED-1010	FED-2010	FED-5010
Ambient temperature	[°C]	0 ... 45			
Storage temperature	[°C]	–20 ... +70			
Relative air humidity	[%]	5 ... 85, non-condensing			
CE mark (see declaration of conformity)		To EU EMC Directive			
Certification		cULus listed (OL)	cULus listed (HL)	cULus listed (HL)	cULus listed (OL)
		C-Tick			

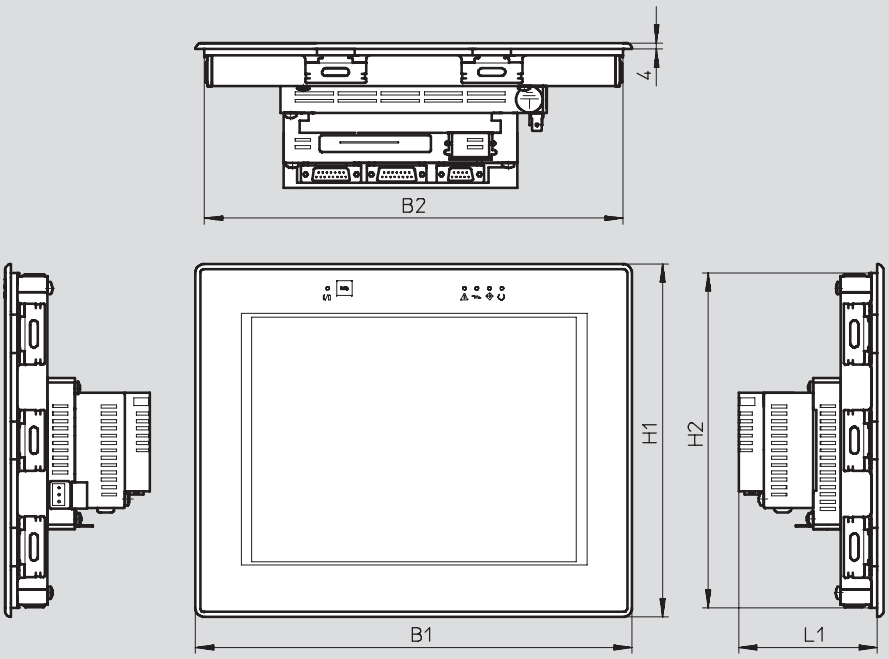
Weight [g]					
		FED-700	FED-1000	FED-2000	FED-5000
Product weight	[g]	1,600	2,250	2,850	3,800

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

FED-710



FED-1010/2010/5010



Type	B1	B2	H1	H2	L1
FED-710	232	200	187	175	71
FED-1010	287	275	232	220	91
FED-2010	337	325	267	255	91
FED-5010	392	380	307	295	101

Operator units FED, touchscreen, web browser

Technical data

Ordering data						
Display resolution	Number of colours	Display size	Interfaces	Number of function/ system keys	Part No.	Type
VGA, 640x480 pixels	64 k	7.5”	PLC, USB, printer, Ethernet[1]	–/–	**543 443**	**FED-710**
		10.4”		–/–	**543 516**	**FED-1010**
SVGA, 800x600 pixels	64 k	12.1”	PLC, USB, printer, Ethernet[1]	–/–	**543 445**	**FED-2010**
XGA, 1024x768 pixels	64 k	15”	PLC, USB, printer, Ethernet[1]	–/–	**543 448**	**FED-5010**

1) 10/100 MBd standard, 2nd 10 MBd interface optional

Operator units FED, embedded control

Accessories

FESTO

Controller FED-CEC
Plug-in card with processor module for installation in the operator units FED-50 to FED-5000.

Fieldbus interfaces
CANopen

General technical data	
CPU data	32-bit RISC processor, 24 MHz
	Watchdog
Programming software	CoDeSys provided by Festo
Programming language	SFC, STL, FCH, LDR and ST to IEC 61131-3
	Additionally CFC
Ethernet	
Connector plug	RJ45
Number	1
Transmission rate	10 Mbit/s
Supported protocols	TCP/IP
	EasyIP
Fieldbus interface	
Type	CAN
Connection technology	Sub-D plug, 9-pin
Transmission rate	1 Mbit/s max., adjustable
Supported protocols	CANopen
Materials	
Note on materials	Contains PWIS (paint-wetting impairment substances)

Operating and environmental conditions		
Ambient temperature	[°C]	0 ... +50
Storage temperature	[°C]	–20 ... +70
Relative air humidity	[%]	5 ... 85 (non-condensing)
CE mark (see declaration of conformity)		To EU EMC Directive

Ordering data		
	Part No.	Type
Controller	**559 869**	**FED-CEC**

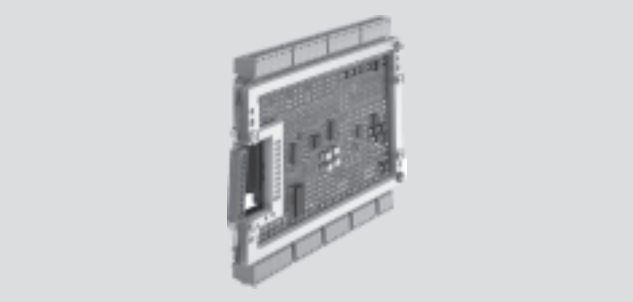
Operator units FED, embedded control

Accessories

FESTO

I/O module FED-UIM

Plug-in card for installation in the operator units FED-500, FED-1000, FED-2000 and FED-5000.



General technical data		
Analogue inputs		
Number		8
Resolution	[bit]	12
Signal range	[V]	0 ... 10
	[V]	±10
	[V]	0 ... 5
	[V]	±5
	[V]	0 ... 1
	[V]	±1
	[mA]	0 ... 20
	[mA]	4 ... 20
		PT 100 (–100 ... +850 °C)
		Thermoelement E, J, K, R, S, T
Absolute accuracy at 25 °C	[%]	0.1
Linearity error at 25 °C	[%]	0.1
Input resistance	[Ω]	47 with current
Analogue outputs		
Number		4
Resolution	[bit]	12
Max. load resistance	[Ω]	470
Signal range	[V]	±10
	[mA]	0 ... 20
	[mA]	4 ... 20
Linearity error at 25 °C	[%]	±0.15 voltage output
	[%]	±0.2 current output
Digital inputs		
Number		20
Fast clock pulse inputs		4
Incremental encoder connection		4
Input signal delay	[ns]	200
Input voltage	[V DC]	24
Input current	[mA]	3
Input signal delay	[ms]	50
Nominal value for TRUE	[V DC]	≤ 6
Nominal value for FALSE	[V DC]	12 ... 30
Electrical isolation		Yes, via optocoupler

Operator units FED, embedded control

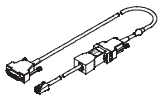
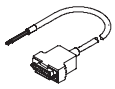
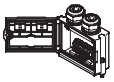
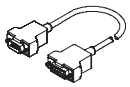
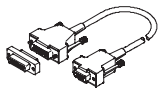
Accessories

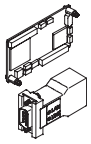
FESTO

General technical data		
Digital outputs		
Number		12
Contact		Transistor
Output voltage	[V DC]	12 ... 30
Output current	[mA]	500
Electrical isolation		Yes, via optocoupler
Short circuit proof		Yes
Overload proof		Yes
Materials		
Note on materials		Contains PWIS (paint-wetting impairment substances)

Operating and environmental conditions		
Ambient temperature	[°C]	0 ... +50
Storage temperature	[°C]	–20 ... +70
Relative air humidity	[%]	5 ... 85 (non-condensing)
CE mark (see declaration of conformity)		To EU EMC Directive

Ordering data		
	Part No.	Type
I/O module	**559 870**	**FED-UIM**

Ordering data – Cables and plugs					
	Description	Electrical connection	Cable length [m]	Part No.	Type
	For connecting to FEC Compact/Standard controller	Plug RJ12 Sub-D socket, 15-pin	1.8	**189 432**	**FEC-KBG6**
	For connecting to control block CPX-FEC prepared for combining with plug FBS-SUB-9-GS-1X9POL-B	Open end Sub-D socket, 15-pin	5	**539 642**	**FEC-KBG7**
	Suitable for control block CPX-FEC for combining with cable FEC-KBG7	Sub-D plug, 9-pin	–	**534 497**	**FBS-SUB-9-GS-1X9POL-B**
	For connecting to control block CPX-FEC	Sub-D plug, 15-pin Sub-D socket, 15-pin	2.5	**539 643**	**FEC-KBG8**
	Programming cable	Sub-D plug, 15-pin Sub-D socket, 15-pin	3	**533 534**	**FEDZ-PC**

Ordering data				
	Description	Electrical connection	Part No.	Type
Bus interface				
	Ethernet interface module (Controller software FST)	Sub-D adapter, 9-pin to RJ45	**533 533**	**FEDZ-IET**
	Ethernet TCP interface module (Controller software CoDeSys)	Sub-D adapter, 9-pin to RJ45	**543 450**	**FEDZ-IET TCP**
Memory card				
	User memory 32 MB		**543 514**	**FEDZ-MEM32**

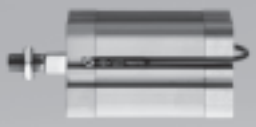
What must be observed when using Festo components?

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.

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.



Pneumatic and electrical drives

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

Valves and valve terminals

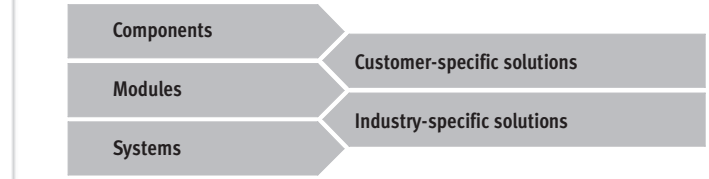
- Standard valves
- Universal and application-optimised valves
- Manually and mechanically actuated valves
- Shut-off, pressure control and flow control valves
- Proportional valves
- Safety valves

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



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