Operator units FED

FESTO

Operator units FED
Key features

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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-50:
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-770, FED-3000:
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.

Text-based Front End Displays FED-50

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, optional Ethernet for use in a network
- Battery backup of the alarm and event data
- 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
- Password protection
- Alarm handling
- Keypad can be easily programmed using macros
- Multilingual projects possible
- Import and export of texts for translation

FED-50: fieldbus-capable

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

The FED-50 can be extended with an Ethernet or fieldbus interface. A real-time clock is standard.

Front End Displays with touchscreen FED-770, FED-3000

The touchscreen displays FED-770, FED-3000 with graphical user interface extend the proven text-based and key pad-equipped Front End Displays

FED-50 to include touch-sensitive displays in sizes from 7" and 13.3". 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.
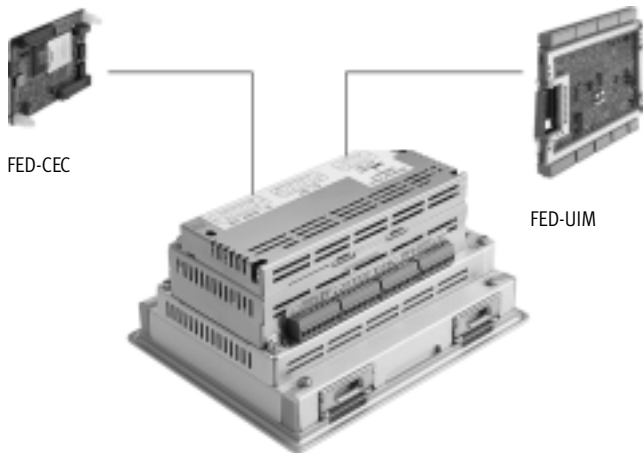
➔ **Internet: www.festo.com/catalogue/…**
Subject to change – 2016/07

Operator units FED
Key features

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FED-CEC with CoDeSys software platform

FED-CEC

FED-UIM

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
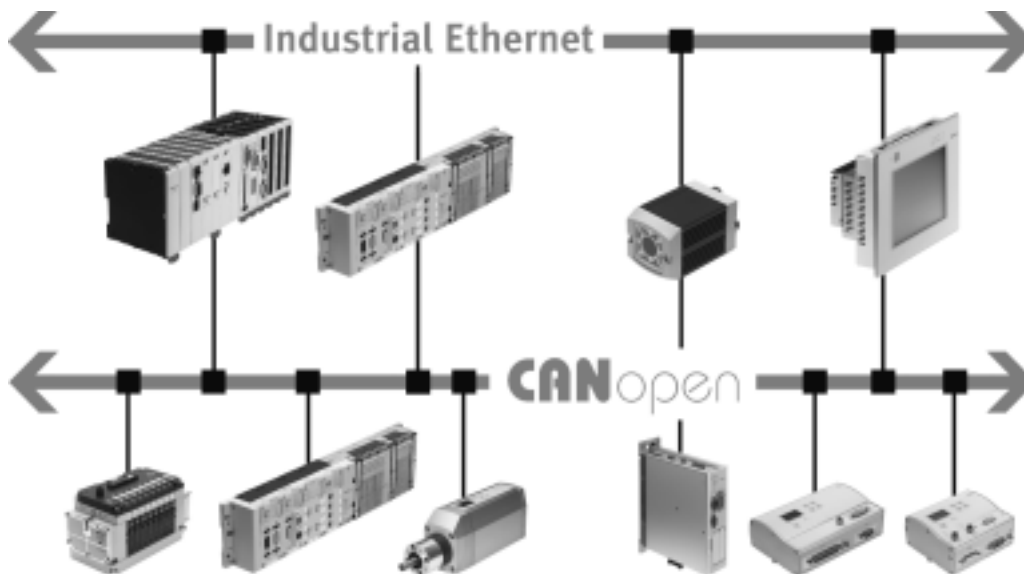
Operator units FED

Product range overview, type codes

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Type	Display resolution	Number of colours	Display size	Interfaces	➔ Page/Internet
Text-based					
FED-50	120x32 pixels	B/W	4x20 characters	PLC, PC, Ethernet[1]	5
Touch screen					
FED-770	WVGA, 800x480 pixels	64 k	7"	PLC, PC, printer, Ethernet[1]	7
FED-3000	WXGA, 1280x800 pixels	64 k	13.3"	PLC, PC, printer, Ethernet[1]	

1) RJ45 10/100 MBd standard, 2nd 10 MBd interface optional

Type codes

FED	–	3000
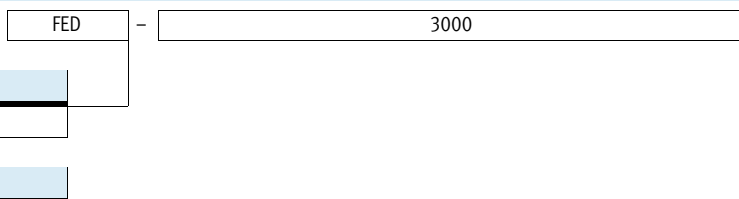
Function	
FED	Teach pendant

Display size, equipment	
Text-based	
50	4 x 20 characters Equipment details ➔ Product range overview and Technical data
Touch screen	
770	7", 64 k colours
3000	13.3", 64 k colours

Operator units FED, text-based

Technical data

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- ⌐ - Voltage
18 … 30 V DC

- ⌐ - Temperature range
0 … +50 °C

General technical data		
		FED-50
Display		Monochrome LCD with backlighting
Display size		4x20 characters
Display resolution		120x32 pixels
Number of colours		–
Number of function keys		4
Number of system keys		7
Number of user LEDs		5
Number of system LEDs		4
User memory		512 KB
Recipe memory		16 KB
Event lists		256
Alerts		1,024
Type of mounting		Front panel mounting
Installation depth	[mm]	53
Max. front panel thickness	[mm]	5

Electrical data		
		FED-50
Nominal operating voltage DC	[V]	24
Operating voltage range DC	[V]	18 … 30
Current consumption at nominal operating voltage	[A]	0.25
AUX interface		Sub-D socket, 9-pin
Printer interface		–
Ethernet interface		Optional, 10 MBd
PC interface		Sub-D plug, 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
Real-time clock deviation		130 s/month
Protection class		IP65 at the front following installation into control panel, IP20 at the back

Operator units FED, text-based

Technical data

FESTO

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[1]
Certification		RCM trademark
		c UL us - Listed (OL)
Explosion protection certification outside the EU		NEC 500 Class I, Div. 2

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
  If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Weight [g]		
		FED-50
Product weight	[g]	1000

Dimensions	Download CAD data ➔ **www.festo.com**
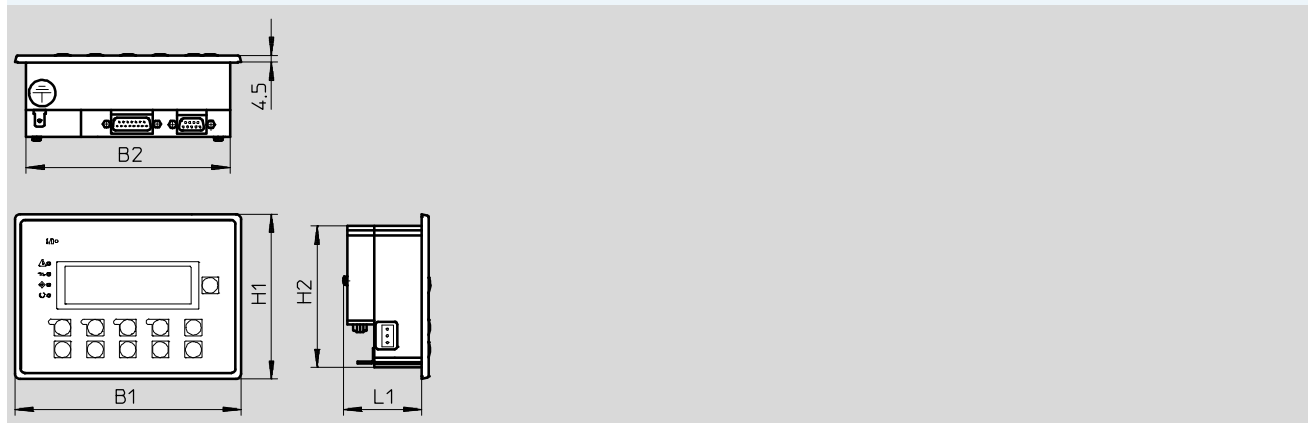
FED-50

Type	B1	B2	H1	H2	L1
FED-50	149	134	108.5	93.5	52.5

Ordering data						
Display resolution	Number of colours	Display size	Interfaces	Number of function/ system keys	Part No.	Type
120x32 pixels	B/W	4x20 characters	PLC, PC, Ethernet[1]	4/7	**533531**	**FED-50**

1) 10 MBd optional

Operator units FED, touch screen

FESTO

Technical data

- ⌐ - Voltage
  18 … 30 V DC

- ⌐ - Temperature range
  0 … +50 °C

General technical data			
		FED-770	FED-3000
Display properties		Touch screen	
Display		Colour TFT	
Display size		7"	13.3"
Display resolution		WVGA, 800x480 pixels	WXGA, 1280x800 pixels
Number of colours		64 k	
Number of function keys		1	
Number of user LEDs		1	
Number of system LEDs		4	
User memory		64 MB	64 MB
Recipe memory		32 KB	
Event lists		1,024	
Alerts		1,024	
Type of mounting		Front panel mounting	
Installation depth	[mm]	45	42
Max. front panel thickness	[mm]	4	4
Materials			
Note on materials		RoHS-compliant	

Electrical data			
		FED-770	FED-3000
Nominal operating voltage DC	[V]	24	
Operating voltage range DC	[V]	18 … 30	
Current consumption at nominal operating voltage	[A]	0.6	1.4
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	
PC interface		Sub-D socket, 15-pin, RS232	
USB interface		Yes	Yes
Programming interface		9.6 … 38.4 kBd	
Programming software		FED Designer 6.06 or higher	
PLC interface		Sub-D plug, 9-pin, RS232, RS485	Sub-D plug, 9-pin, RS232, RS485
Backup battery		Lithium, rechargeable	Lithium, rechargeable
Real-time clock		Yes	
Real-time clock deviation		130 s/month	
Protection class		IP65 at the front following installation into control panel, IP20 at the back	

Operator units FED, touch screen

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Technical data

Operating and environmental conditions		FED-770	FED-3000
Ambient temperature	[°C]	0 … +50	0 … +50
Storage temperature	[°C]	−20 … +70	
Relative air humidity	[%]	5 … 85, non-condensing	
CE mark (see declaration of conformity)		To EU EMC Directive[1]	
Certification		cULus listed (OL)	
		C-Tick	
Ex certification to NEC 500		–	–

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➜ Certificates.
   If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Weight [g]		FED-770	FED-3000
Product weight	[g]	1000	2500

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

FED-770, FED-3000
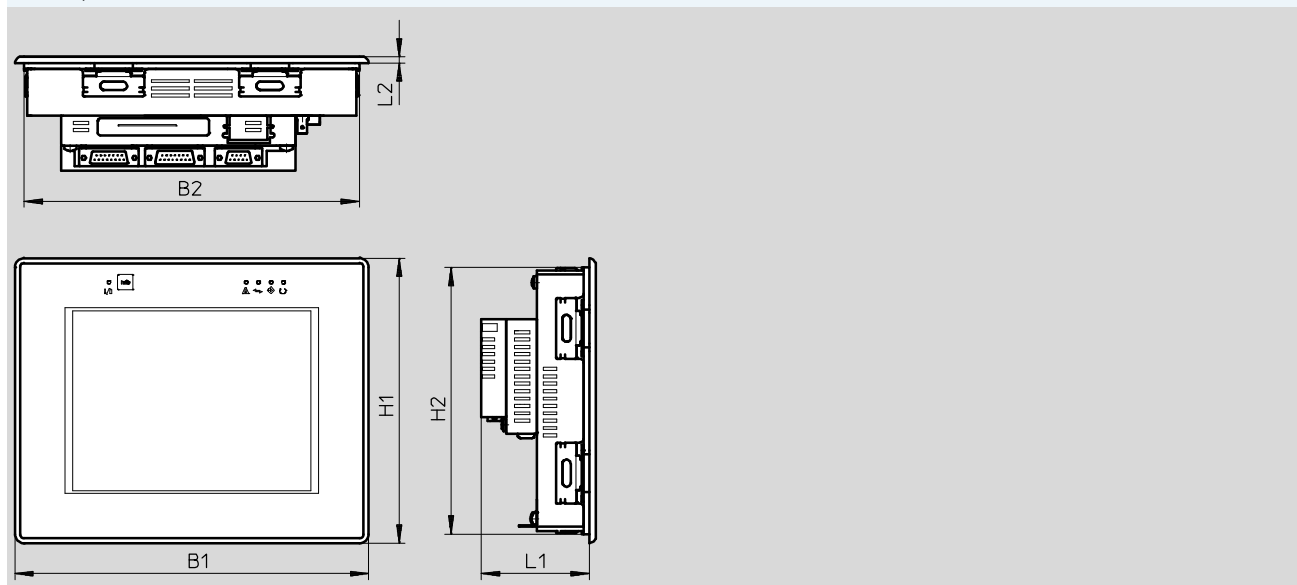
Type	B1	B2	H1	H2	L1	L2
FED-770	187	175	147	135	45	4
FED-3000	337	325	267	255	41.5	4

Ordering data						
Display resolution	Number of colours	Display size	Interfaces	Number of function/ system keys	Part No.	Type
WVGA, 800x480 pixels	64 k	7"	PLC, PC, printer, Ethernet[1]	–	**573905**	**FED-770**
WXGA, 1280x800 pixels	64 k	13.3"	PLC, PC, printer, Ethernet[1]	–	**573906**	**FED-3000**
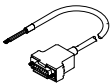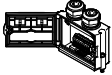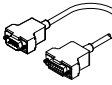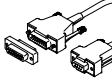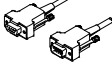
1) 10/100 MBd standard
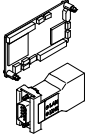
Operator units FED

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Accessories

Ordering data – Cables and plugs					
	Description	Electrical connection	Cable length [m]	Part No.	Type
	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	**539642**	**FEC-KBG7**
	Suitable for control block CPX-FEC For combining with cable FEC-KBG7	Sub-D plug, 9-pin	–	**534497**	**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	**539643**	**FEC-KBG8**
	Programming cable	Sub-D plug, 15-pin Sub-D socket, 15-pin	3	**533534**	**FEDZ-PC**
	Connecting cable, serial	Sub-D plug, 9-pin Sub-D socket, 9-pin	3	**575299**	**FEDZ-PC-9PIN**

Ordering data				
	Description	Electrical connection	Part No.	Type
Fieldbus interface				
	Ethernet TCP interface module (CoDeSys controller software)	Sub-D adapter, 9-pin to RJ45	**543450**	**FEDZ-IET TCP**