IPC FEC® Standard

Strong on communication, easy on installation

FESTO

IPC FEC® Standard – the innovative miniature controller in an aluminium housing.

Info 804 →→

IPC FEC® Standard – creates time and space

The IPC FEC® Standard is the standard miniature controller:
ensuring condensed, simpler and faster automation technology as standard features.

The shrinking control cabinet
The IPC FEC® Standard is not only extremely small, above all it helps reduce control cabinet size. Space and time are saved with the help of the plug connectors at the front, and the sensor-actuator plug which eliminates the need for a terminal strip.

Rapid programming
Programming with FST software, which has been in use for decades, is ideal for small, high speed applications: Programming the way you think: IF ... THEN ... ELSE – as simple as the controller itself. Including a ladder diagram for use with Windows.

Simple networking
The IPC FEC® Standard can also be operated as a mini-controller as a full capability network partner for communication between controllers, programming via Ethernet and TCP/IP, operation on the intranet / Internet.

The intelligent all-rounder with worldwide service options
An extremely concentrated service network spanning more than 170 countries ensures adherence to technical operating standards throughout the world in a trouble-free fashion. Ideal for original equipment manufacturers, as well as for end users.

Advantages as a glance:
- Robust controller with minimal space requirement
- Analogue inputs and outputs, as well as optional Ethernet interface
- Time-saving installation with sensor-actuator connector SAC
- User oriented software – program "the way you think"

A born all-rounder:
the IPC FEC® Standard.
Allowing you to fully adapt a controller to your project.
Fast, simple and space-saving.

Simple configuration ...

... and programming: The Festo FST software tool not only supports final programming of FEC® Compact, FEC® Standard and CPX-FEC controllers, but even the developmental process as well.

Control ...

... and pre-processing:
The sturdy miniature controller with analogue value processing, e.g. for acquiring measured values.

Visualisation ...

... and monitoring: Logical expansion of FEC® controllers, e.g. with Festo's FED front end displays as man-machine interfaces.

Benefit from progress:
Are productivity, economy and a sound future investment the most important factors in your decision making process? If so, the FEC® is the preferred choice for project decision makers, electricians and pneumatics technicians.

	Advantages for Engineering	Advantages for Purchasing
1. The miniature controller that shrinks the control cabinet	■ 50% less space for the control cabinet allows for improved concepts when laying out electronics and machine functions.	■ Smaller control cabinets and simpler installation facilitate project engineering and planning.
2. Miniature controller with PLC and PC capabilities	■ PLC and PC technology in a single housing ■ Network compatibility in a miniature controller ■ Programming with time tested FST	■ Universal hardware for various tasks with different programming simplifies purchasing and training.
3. Easy replacement	■ Plug connectors simplify servicing work	■ Reduced maintenance costs and downtime increase productivity.

Decisive advantages: rapid installation in less space

Front end controller

Pushbutton

Sensors

IPC FEC® Standard

Valves

Cylinders

Relays

Motors

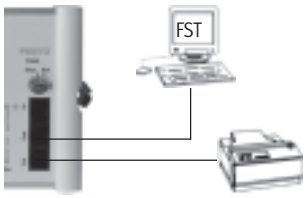
Consistent control sequence – from controller to actuator:

You can fully rely upon Festo for the entire control sequence. From compressed air preparation through drive units and valve terminals, right on up to the controller itself, all functions intermesh smoothly. Eliminate week points in your control sequence as well with perfectly matched components.

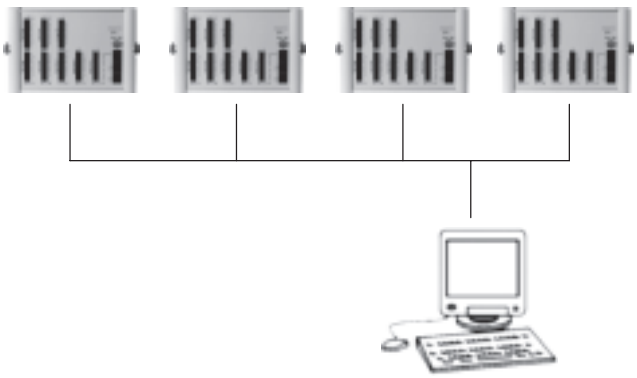
Faster with SAC connector technology:
SAC connector technology provides the IPC FEC® Standard installed in a control cabinet with the decisive advantage: up to 50% less space, and up to 40% less installation time.

Time tested, PC-based:
Discover a complete range of controllers. They're all based on PC architecture – including Ethernet and web servers. Each CPU is a programmable logic controller and an industrial PC. This makes expansion and modification possible that would be unthinkable with conventional systems.

FEC stand-alone solution:
- 2 serial ports are always available
- COM port for programming and debugging
- EXT port for control unit, barcode scanner, modem etc.



FEC network solution:
An Ethernet interface is alternatively available for each FEC, allowing for:
- Communication between controllers
- Programming and debugging
- Data exchange with Windows programs by means of DDE or OPC
- Web server
- Transmission of e-mails from the controller



Economical with time and space: The FEC® controller range ...

... but not with regard to the multiplicity of connection options, openness and compatibility.

IPC FEC® Standard
The IPC FEC® Standard is part of a complete range of controllers. It allows you to fully adapt control technology to your project.

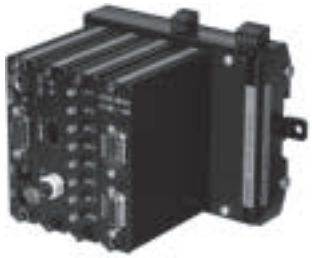
IPC FEC® Compact
The IPC FEC® Compact is the low-cost controller of the IPC FEC® range. In a simple plastic housing with screw terminals for sensors and actuators, the IPC FEC® Compact combines top quality technology with low prices. The same processor, the same high-speed counters and analogue I/Os, and the same two serial ports and network connectability via Ethernet featured by the IPC FEC® Standard are at the heart of the compact controller as well.

It differs from the IPC FEC® Standard by its connection technology and limitation to a single controller with 20 digital I/Os, or 16 digital and 3 analogue I/Os.

Professional solutions, both large and small
Together with its subsidiary, Beck IPC GmbH, Festo is expanding automation technology in both directions.

IPC@CHIP®
The IPC@CHIP® provides users with a miniature, chip-sized controller, ideal for creating one's own solutions which require a separate housing and individual configuration.

IPC PS1®
The IPC PS1® facilitates expansion of the modular system with more than 100 different modules from all areas of automation and PC technology. Positioning and fieldbus systems for PLC technology, memory modules, printers and communications for PC technology, programming in FST for PLC technology, and programming in C/C++ for PC technology. The IPC PS1® has extended the boundaries of automation technology with additional I/Os and more functions.



Controllers FEC, Standard

Key features

The installation-saving controller

The FEC Standard is not just a new mini controller. It shows that there is still room for innovation in mini controllers at the start of the new millennium.
With its robust extruded aluminium housing, it demonstrates that compact design and toughness can go hand in hand.
Its connector system is accessible from the front, ensuring no wastage of space within control cabinets. And the sensor/actuator connector system SAC, making its world premiere in this product, very largely replaces terminal strips in the I/O area.

This means that control cabinets with FEC Standard have a decisive advantage: Up to 50% less space required, and up to 40% less time. Thanks to the integration of a high-speed counter into every CPU, this mini controller is well able to carry out counting and simple positioning operations. Additionally, the optional analogue inputs/outputs turn a smart mini controller into a smart process controller.

The two serial interfaces in every CPU make the FEC Standard into a talented communicator which allows programming via one interface and operation and monitoring via the other, at the same time. The leading concept in communication today is Ethernet, the “network of networks”. This can of course be integrated into FEC Standard as an option. After all, smart automation technology demands smart network technology.

With Ethernet and a web server, the FEC Standard paves the way for the visualisation technology of tomorrow: Controller surfing.

Controllers FEC, Standard

Key features

Hardware

The FEC Standard has a clip for a top-hat rail and corner holes for bolt-mounting using a mounting plate. All connections are accessible from the front; there is no need for additional space for connections from above or below.

Power supply

The FEC Standard is powered exclusively via 24 V DC as per modern control cabinet technology.
24 V DC (+25%/-15%) power supply for the controller itself,
24 V DC (+/–25%) power supply for the input signals, positive switching, 24 V DC output signals 400 mA, proof against short-circuits and low-resistance loads.
The analogue inputs/outputs are 0(4) ... 20 mA I/Os, 12 bit resolution.

Serial interfaces

Every FEC Standard is equipped with two serial interfaces – COM and EXT. These are universal TTL interfaces with a maximum data transmission rate of 115 kbits/s. Depending on requirements, the interfaces can be used as RS232c (SM14 or SM15) or RS485 (SM35) interfaces. Adapters should be ordered separately. The COM interface is generally used together with the SM14 for programming, while the EXT interface can be used for an MMI device, a modem or other devices with a serial interface.

Ethernet interface

The FEC Standard versions with an Ethernet interface incorporate an Ethernet 10BaseT interface with an RJ45 connection and a data transmission rate of 10 Mbits/s.
A combined "Link/Active" LED indicates the connection status. The FEC Standard supports data communication and programming/troubleshooting via the Ethernet interface.

Programming

The FEC Standard is programmed using FST.
FST is a unique programming language rich in tradition and very easy to use, allowing "programming the way you think":
IF ... THEN ... ELSE
FST also supports STEP operation for sequence programming. FST can be used for programming via Ethernet; a web server is also available.

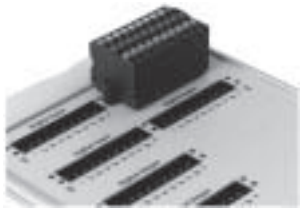
Controllers FEC, Standard

Key features

The sensor/actuator connector

Together with the FEC Standard, we are introducing an innovative new installation concept, the sensor/actuator connector SAC. This connector combines three functions in a very compact design:

- Connection of inputs, outputs and power supply
- Status signal by means of an LED
- Replaces terminal strip for sensors and actuators



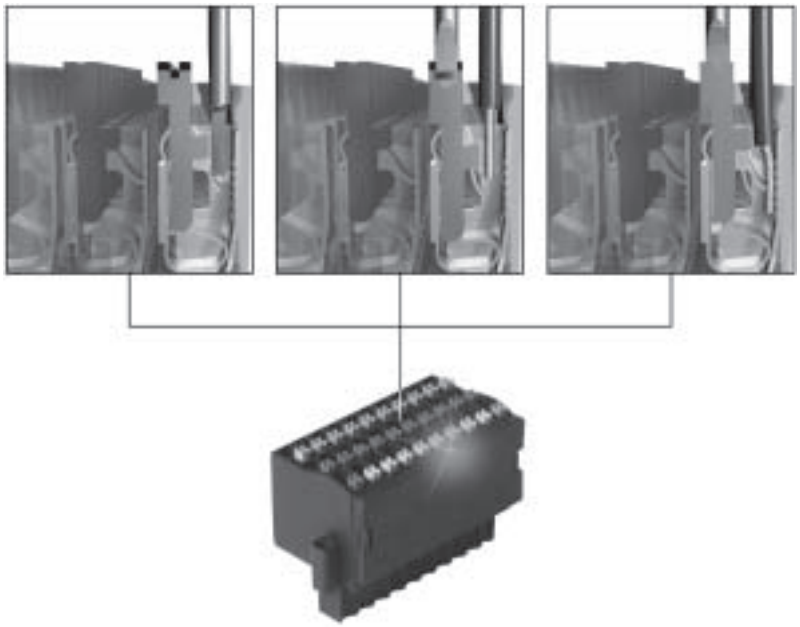
The three-wire version of the connector has internally connected straps for 0 V and 24 V DC. This allows any sensor (up to 3 wires) or actuator (up to the maximum permissible output current) to be fed directly to the connector. There is no need for a terminal strip for sensors and actuators. This allows space savings in control cabinets of up to 50%.

The SAC uses a tension-spring contact system. This means no need for screw connections. Solid wires can simply be pushed into the connector, while in the case of finely-stranded wire, all that is necessary is to open the contact by pressing on the relevant pin and then introduce the wire. Cable end sleeves can be used if desired but are not essential. The tension-spring system and the fact that no terminal strip between the controller and sensors/actuator is required means that a time saving of up to 40% can be achieved during installation.

The pin assignment for the I/O panel is simple and is always the same:

Pin 1	+24 V DC
Pin 2	Bit 0
Pin 3	Bit 1
Pin 4	Bit 2
Pin 5	Bit 3
Pin 6	Bit 4
Pin 7	Bit 5
Pin 8	Bit 6
Pin 9	Bit 7
Pin 10	0 V

The power supply for the LEDs is taken from the signal pins in the connector. This means that the entire input assignment can be checked without a controller.



Programming with FST

Programming the way you think

How do we describe a machine?
"When a workpiece reaches here, this cylinder should advance."
How does the software interpret this?

```
IF                  I0.0
THEN  SET           O0.0
```

Or does your machine work through a sequence step by step?
"First, this cylinder must advance and stop the workpiece, and then the workpiece must be clamped, and then finally..."

```
STEP Aplus
 IF                 I0.0
 THEN  SET          O0.0

STEP Close
 IF                 I0.2
 THEN  RESET        O0.2
       SET          O0.3
STEP More
```

Programming just couldn't be easier.

How, for example, can we sub-divide a task?

Program 0:	Organisation
Program 1:	Set-up program
Program 2:	Automation program
Program 3:	Fault monitoring
Program 4:	Manual operation
.	
.	
.	
Program 63:	Troubleshooting program

How does one controller communicate with another?
Every controller with Ethernet can send and receive data from every other controller within a network – no matter whether this data relates to inputs, outputs, flags or registers.

Central programming of distributed controllers
Every controller within a network can be programmed from any desired network interface.

A controller on the World Wide Web
FST incorporates a web server – the Internet and the world of automation meet.

Controllers FEC, Standard

Product range overview

The FEC Standard

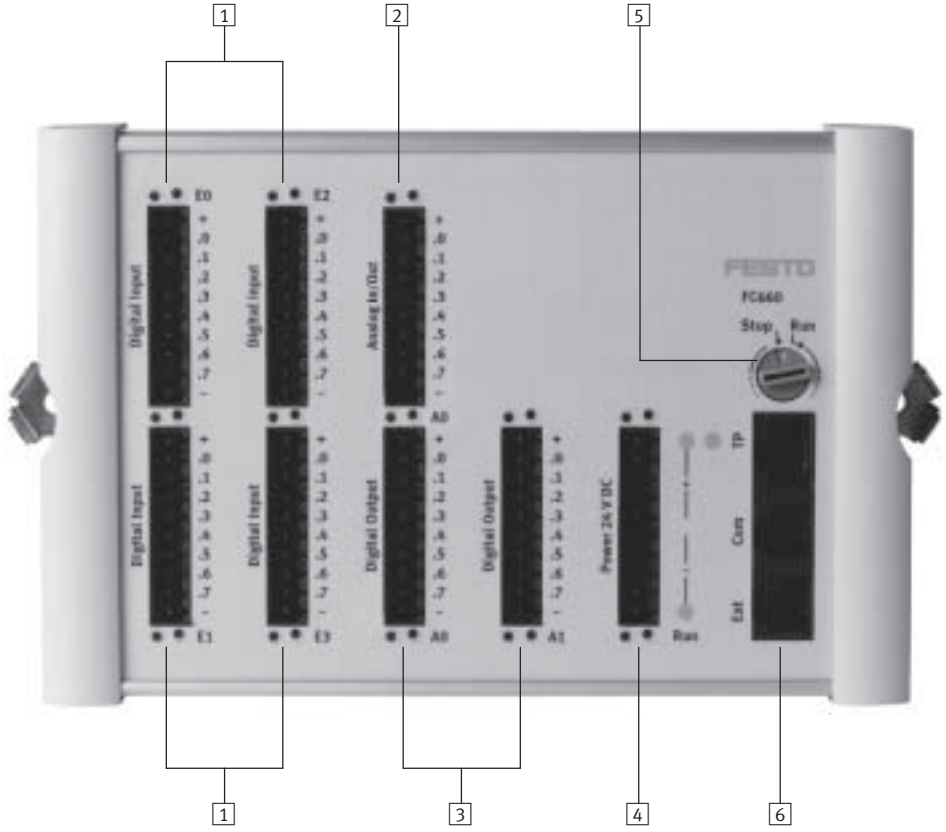
FEC Standard
Aluminium
Extruded housing
Can be mounted on top-hat rail
2 serial interfaces

- FC4XX
  16 digital inputs
  8 digital outputs
  4 slots (96.3 mm)
  - FC400
  - FC440
    Ethernet
    10BaseT
- FC6XX
  32 digital inputs
  16 digital outputs
  6 slots (138.9 mm)
  - FC600
  - FC640
    Ethernet
    10BaseT
  - FC620/660
    3 analogue inputs
    1 analogue output
    - FC620
    - FC660
      Ethernet
      10BaseT

Controllers FEC, Standard

Product range overview

The principle of the FEC Standard



1 In each case 16 digital inputs, 24 V DC, positive-switching

2 Optionally: 3 analogue inputs/ 1 analogue output

3 In each case 8 digital outputs

4 Power supply

5 Rotary RUN/STOP switch

6 2 serial interfaces, option of Ethernet

Controllers FEC, Standard

Technical data

General						
	FEC-FC400	FEC-FC440	FEC-FC600	FEC-FC620	FEC-FC640	FEC-FC660
Max. operating temperature	0 ... 55 °C					
Max. transport and storage temperature	–25 ... +70 °C					
Rel. humidity	0 ... 95% (non condensing)					
Operating voltage	24 V DC +25%/–15%					
Power consumption	<5 W					
Degree of protection	IP20					
Degree of protection	Degree of protection III. Power pack in accordance with IEC 742/EN60742/VDE0551/PELV with at least 4 kV insulation resistance or switched-mode power supplies with safety isolation as defined by EN 60950/VDE 0805 are required.					
I/O connection	Tension spring connector					
EMC	EN 61000-6-2, EN 50081-2					

Digital inputs						
	FEC-FC400	FEC-FC440	FEC-FC600	FEC-FC620	FEC-FC640	FEC-FC660
Number	16		32			
Number of above usable as high-speed inputs (max. 2 kHz)	2 Minimum pulse length for TRUE: 250 µs, Minimum pause length for FALSE: 250 µs					
Input voltage/current	24 V DC, typical 5 mA					
Nominal value for TRUE	15 V DC min.					
Nominal value for FALSE	5 V DC max.					
Input signal delay	Typical 5 ms					
Electrical isolation	Yes, via optocoupler					
Permissible length of connecting cable	Max. 30 m					
Status display via LED	Optional, in connector					

Analogue inputs						
	FEC-FC400	FEC-FC440	FEC-FC600	FEC-FC620	FEC-FC640	FEC-FC660
Number	0	0	0	3	0	3
Signal range	0(4) ... 20 mA					
Resolution	12 bit, ±3 LSB					
Conversion time	10 ms					
Permissible length of connecting cable	Max. 30 m					

Digital outputs						
	FEC-FC400	FEC-FC440	FEC-FC600	FEC-FC620	FEC-FC640	FEC-FC660
Number	8		16			
Contacts	Transistor					
Current/voltage	24 V DC, max. 400 mA					
Short circuit proof	Yes					
Proof against low-resistance loads	Yes, up to 5 W					
Overload-proof	Yes					
Electrical isolation	Yes, via optocoupler					
Switching speed	Max. 1 kHz					
Electrical isolation in groups	Yes, in each case 1 byte					
Maximum group current	3.2 A					
Switching cycles	Unlimited					
Status display via LED	Optional, in connector					

Analogue outputs						
	FEC-FC400	FEC-FC440	FEC-FC600	FEC-FC620	FEC-FC640	FEC-FC660
Number	0	0	0	1	0	1
Signal range	0(4) ... 20 mA					
Resolution	12 bit					
Conversion time	10 ms					
Max. load resistance	700 Ω					

Controllers FEC, Standard

Technical data

Rotary switch						
	FEC-FC400	FEC-FC440	FEC-FC600	FEC-FC620	FEC-FC640	FEC-FC660
Number	1					
Positions	16					
STOP/RUN	0 = Stop 1 ... F = RUN					

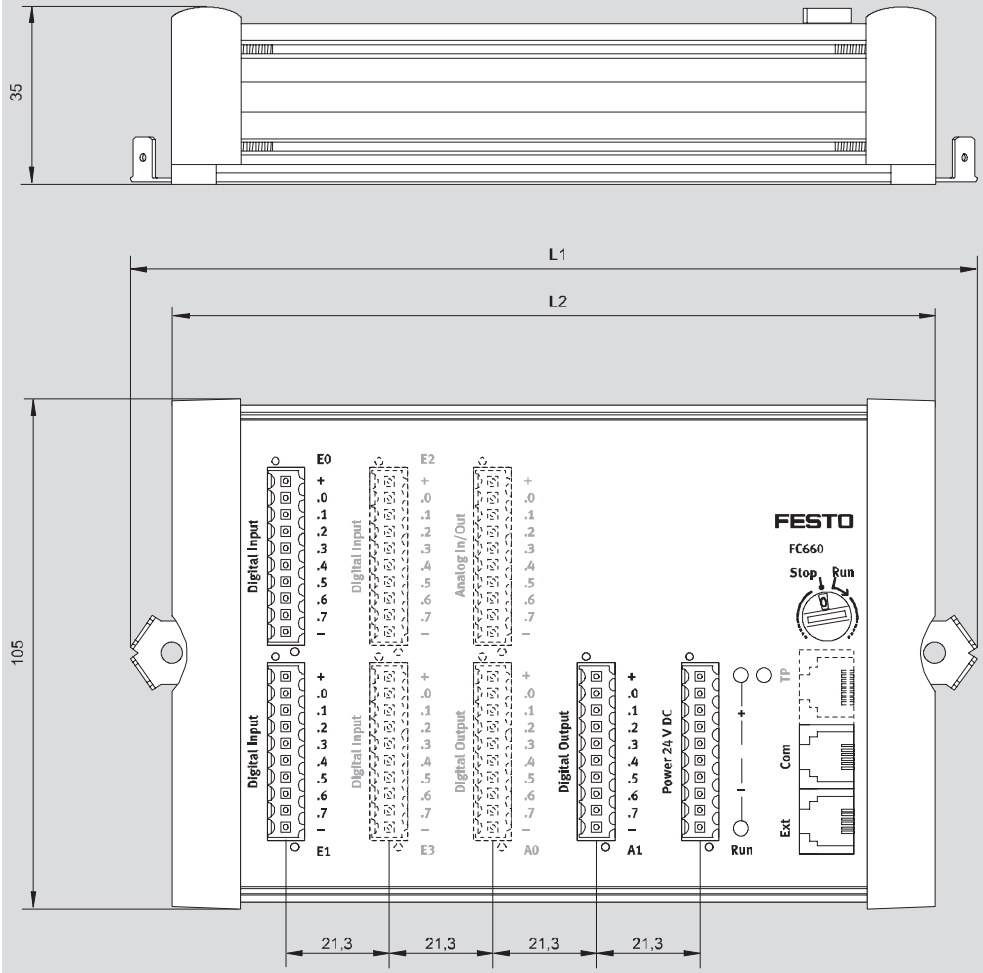
Serial interface						
	FEC-FC400	FEC-FC440	FEC-FC600	FEC-FC620	FEC-FC640	FEC-FC660
Number	2					
Connection	RJ12 plug socket					
Features	Serial, asynchronous, TTL level, no electrical isolation					
Use as RS232c	PS1-SM14 or PS1-SM15 required					
Terminal assignment SM14/15	Transmit, receive, RTS, CTS					
Use as RS485	PS1-SM35 required					
Use as programming interface	9600 bits/s, 8/N/1					
Use as universal interface: COM	300 ... 9600 bits/s, 7N1, 7E1, 7O1, 8N1, 8E1, 8O1					
Use as universal interface: EXT	300 ... 115,000 bits/s, 7N1, 7E1, 7O1, 8N1, 8E1, 8O1					

SAC connector						
	FEC-FC400	FEC-FC440	FEC-FC600	FEC-FC620	FEC-FC640	FEC-FC660
Number of connectors required	4	4	7	8	7	8
Insulating material	PBT, colour black					
Temperature range	PS1-SAC10/SAC30: –20 ... +100 °C					
	PS1-SAC11/SAC31: –20 ... +75 °C					
Flammability class	V-0					
Grid dimension	3.5 mm					
Connector system	Spring connection					
Insulation-stripping length	9 ... 10 mm					
Clamping range	0.05 ... 1.5 mm^2					
Single-conductor H05(07)V-U	0.20 ... 1.5 mm^2					
Multi-stranded without cable end sleeves	0.5 ... 1.5 mm^2					
Multi-stranded with cable end sleeves in accordance with DIN 46 228/1	0.5 ... 1.5 mm^2					
Multi-stranded hot-dip galvanized	0.05 ... 0.2 mm^2					
Current rating for strap contacts	16 A					
Current rating for individual contacts	2 A (max. 6 A per contact, please note the admissible loads for distributor board and supply contacts)					

Ethernet						
	FEC-FC400	FEC-FC440	FEC-FC600	FEC-FC620	FEC-FC640	FEC-FC660
Number	0	1	0	0	1	1
Bus interface	IEEE802.3 (10BaseT)					
Data transmission speed	10 Mbits/s					
Connector	RJ45					
Supported protocols	TCP/IP, EasyIP, http (FST only)					
OPC server	upon request					
DDE server	Yes, for EasyIP					

Programming	
	FST
Programming languages	Version 4.02: statement list (with version 3.2: statement list and ladder diagram in German and English)
Working language	German and English
Number of programs and tasks per project	64 (0 ... 63)
Permissible input addresses	0 ... 255 addressable as bits or words
Permissible output addresses	0 ... 255 addressable as bits or words
Number of flags	10,000 (0 ... 9999), addressable as bits or words
Number of timers and counters	256 (0 ... 255) in each case, with 1 status bit, 1 setpoint and 1 actual value
Number of registers (words)	0 ... 255 addressable as words
Programming interface	RS232 or Ethernet
Number of different operations	> 28
Subroutine	Up to 200 different subroutines per project
C/C++	Yes, for modules and drivers
File handling	Yes
RS232c	Yes
ABG	Yes
FED	Yes
Web server	Yes (FST from version 4)
Remanence	Flag words 0 ... 255 Register 0 ... 126 Timer and counter preselects and counter words 0 ... 127 Password
Performance	1.6 ms/1k instructions approx.

Dimensions Download CAD data ➔ **www.festo.com/en/engineering**



Direct mounting or mounting on top-hat-rail in accordance with DIN EN 50 022 using integrated clip

Type	L1	L2
FEC-FC4...	132.1	114.2
FEC-FC6...	174.7	156.8

Controllers FEC, Standard

Technical data

Ordering data – The FEC Standard with FST programming			
Designation	Features	Part No.	Type
IPC controller	16 I/8 O	**183 862**	**FEC-FC400-FST**
	16 I/8 O, Ethernet	**185 205**	**FEC-FC440-FST**
	32 I/16 O	**191 449**	**FEC-FC600-FST**
	32 I/16 O, 3/1 analogue I/Os	**197 154**	**FEC-FC620-FST**
	32 I/16 O, Ethernet	**191 450**	**FEC-FC640-FST**
	32 I/16 O, 3/1 analogue I/Os, Ethernet	**197 157**	**FEC-FC660-FST**

Ordering data – Connectors for the FEC Standard			
Designation	Features	Part No.	Type
Plug	1-row, no LED, tension-spring system	**197 159**	**PS1-SAC10-10POL**
Plug	1-row, with LED, tension-spring system	**197 160**	**PS1-SAC11-10POL+LED**
Plug	3-row, no LED, tension-spring system	**197 161**	**PS1-SAC30-30POL**
Plug	3-row, with LED, tension-spring system	**197 162**	**PS1-SAC31-30POL+LED**

Note

Connectors must be ordered separately.

Ordering data – Cables for the FEC Standard			
Designation	Features	Part No.	Type
Programming cable	RS232 adapter for programming from PC, complete with neutral modem cable	**188 935**	**PS1-SM14-RS232**
Converter	RS232 adapter for connection of any desired devices with a serial interface, with top-hat-rail clip, no neutral modem or RS232 cable	**192 681**	**PS1-SM15-RS232**
Converter	RS485 adapter, with top-hat-rail clip	**193 390**	**PS1-SM35-RS485**
Cable	Neutral modem cable	**160 786**	**PS1-ZK11-NULLMODEM-1,5M**
Earthing set	Earthing set for earthing of cable screening via the H-rail	**526 683**	**FEC-ZE30**

Note

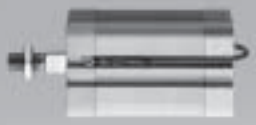
For programming from a PC via RS232, a PS1-SM14 must be ordered separately. For programming via Ethernet, the necessary drivers must first be loaded via RS232 (PS1-SM14).

Ordering data – Display and operating units			
Designation	Features	Part No.	Type
Operator unit	Display and operating unit, LCD with 4 lines, 20 characters each, illuminated background, 4 function keys, real-time clock and expansion interface, e.g. Ethernet	**533 531**	**FED-50**
Operator unit	Display and operating unit, LCD with 4 lines, 20 characters each, illuminated background, 12 function keys, numeric keypad, real-time clock and expansion interface, e.g. Ethernet	**533 532**	**FED-90**
Fieldbus interface	Ethernet interface module for FED	**533 533**	**FEDZ-IET**
Programming cable	Programming cable for FED	**533 534**	**FEDZ-PC**
Cable	Connecting cable FEC (RJ12, COM and EXT) to FED	**189 432**	**FEC-KBG6**

Ordering data – Software and manuals for the FEC Standard			
Designation	Features	Part No.	Type
Programming software	FST software version 4.X on CD, manuals on CD	**191 440**	**PS1-FST2-CD-WIN**
	FST software version 4.1 on CD with manual DIN A5 in German	**537 927**	**FST 4.1 DE**
	FST software version 4.1 on CD with manual DIN A5 in English	**537 928**	**FST 4.1 EN**
Manual	System manual FEC Standard, German	**525 368**	**P.BE-FEC-S-SYS-DE**
	System manual FEC Standard, English	**525 369**	**P.BE-FEC-S-SYS-EN**

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

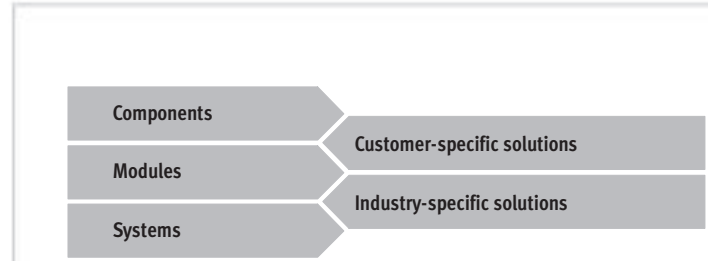
- Standard valves
- Universal and application-optimised valves
- Manually and mechanically actuated valves
- Shut-off, pressure control and flow control valves
- Proportional valves
- Safety valves

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

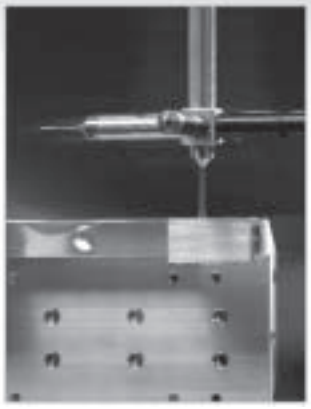
Operation – for greater speed in the operational process

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

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

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

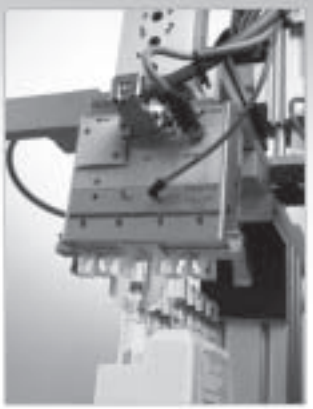
Production quality

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.