

Industrial Ethernet FastConnect
- fast, safe and systematic

System Overview

simatic net



SIEMENS



Save time and money with FastConnect

Structured cabling compliant with ISO IEC 11801 / EN 50173

Structured cabling as specified in ISO IEC 11801 / EN 50173 describes the application-neutral, tree-structured cabling of building complexes for information technology purposes.

The FastConnect (FC) assembly system by SIMATIC NET for Industrial Ethernet ensures that the structured cabling concept from the office environment not only meets industry standards for use in factory shopfloors, but also enables FastConnect cables to be assembled with particular speed and ease on site. As an existing standard, the RJ45 cabling system is also available as an industry-standard version which permits structured cabling (patch cables, patch fields, installation cables, connecting outlets, connecting cables).



You save time and money

By using components that are ideally coordinated, the system enables industry-standard network structures to be configured within the shortest possible time.



You eliminate faults

- Minimizing the time required for the connection of terminal equipment by secure displacement of the outer shield and braided shield in one operation
- Simple connection method (insulation piercing contacts) for 4-wire (Cat5) and 8-wire (Cat6) Industrial Ethernet FC twisted pair copper installation cables
- Simple assembly for both types of cable by means of preset FC stripping tool
- Reliable shield contacting and strain-relief assembly

For comparison:
Cable assembly with Sub-D connectors takes about 15 minutes.
Connection of the Industrial Ethernet FC installation cables takes less than one minute using the FC connection technology integrated into the components.

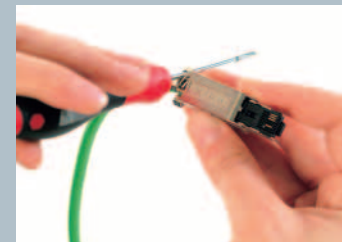
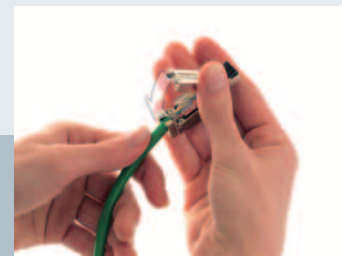
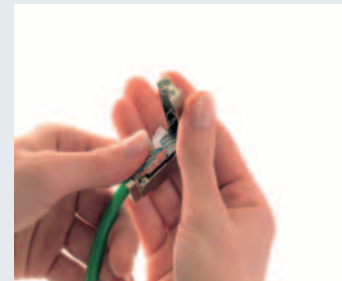
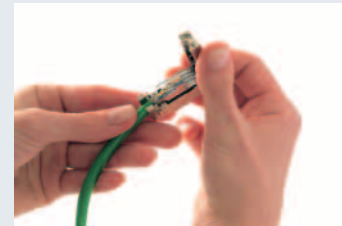
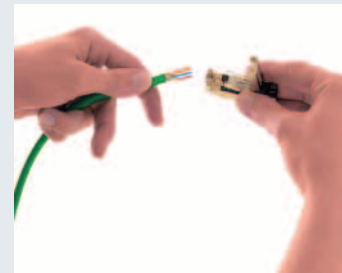
FastConnect – the complete system

It's as easy as this:

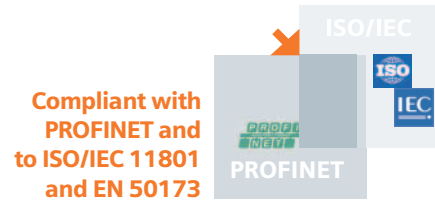
- **Industrial Ethernet FastConnect cables** with special construction for fast assembly (UL and CAT5 PLUS certified) as FC TP Standard Cable, FC TP Trailing Cable, FC TP Marine Cable, FC TP Flexible Cable and FC TP Torsion Cable.
- Convenient insulation displacement system with the **FastConnect Stripping Tool**, which strips the outer shield and the braided shield to a precise measurement in one operation.
- The cable prepared in this way is connected in the **FastConnect products** by using the insulation piercing method.

NEW in the FastConnect range

- **FastConnect RJ45 Plug 180** and **FastConnect RJ45 Plug 90** are resistant to interference thanks to their rugged metal housing and are the ideal solution for the installation of RJ45 connectors in the field (PROFINET-compliant).
- **SIMATIC NET Industrial Ethernet FC Modular Outlet** also for Gigabit cabling.



FastConnect – the complete system for 10/100 Mbit/s



Installation cables

Various types of cables are available for laying structured Industrial Ethernet cabling in hostile industrial environments.

The UL and Cat5 Plus certified 4-wire FC cable is available as:

- Standard cable for universal applications (FC TP Standard Cable 2x2)
- Trailing cable for moving machine parts (FC TP Trailing Cable 2x2)
- Halogen-free, fire resistant and marine approved cable for ships and offshore installations (FC TP Marine Cable 2x2)
- Flexible cable for occasional motion (FC TP Flexible Cable)
- Torsion-resistant cable ($\pm 180^\circ$ at 1 m cable length) for use with robots (FC TP Torsion Cable)

IE FC Stripping Tool

The Industrial Ethernet FC stripping tool is the time-saving tool for removing insulation from the FC cables. Thanks to the precise preset cutting depth and spacing between the cutting blades, it is possible to remove the outer shield and braided

shield reliably to exactly the right dimensions in one simple operation. This eliminates potential sources of faults due to inaccurate stripping of the cable when assembling in the various components.

IE FC RJ45 Plug 180 and Plug 90

The compact and rugged design of the connectors permits the use of the RJ45 plug on devices in both the industrial and office environments.

The Industrial Ethernet RJ45 FastConnect plugs allow the quick and easy assembly of four-wire Industrial Ethernet FC twisted pair installation cables in the field (PROFINET-compliant).

The rugged, industry-standard metal housing affords the data transmission maximum protection against interference.

The four integrated insulation piercing contacts permit simple contacting of the FC cable versions, thereby avoiding faults.

As the connector has no small parts which can be lost, assembly is also possible under difficult conditions.

Thanks to the new connectors, point-to-point connections (100 Mbit/s) can be implemented for Industrial

Ethernet between two terminals/network components up to 100 m apart without patching. By latching the connector to the device housing, strain and bending relief of the plug-in connection is possible (e.g. for SCALANCE X, SCALANCE S or ET 200S).

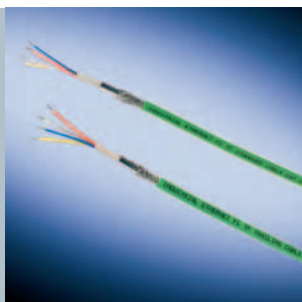
IE FC Outlet RJ45

The RJ45 FC outlet is used for the transition from the rugged Industrial Ethernet FC cables used in the industrial environment to preassembled TP cord cables by means of the RJ45 socket.

It offers the following advantages:

- Rugged metal housing
- Insulation piercing contacts for the fastest possible connection to the Industrial Ethernet FC cables
- By arranging several FC RJ45 outlets in a row it is possible to set up a patch field with any connection density (e.g. 16 outlets over a 19" width)
- DIN rail mounting and direct bolting is possible

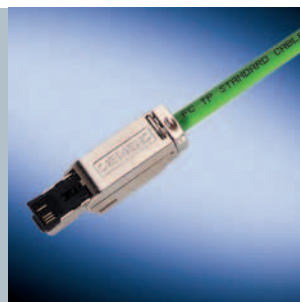
For time-saving and fault-free connection of network components or data terminal equipment, various RJ45 patch cables are available.



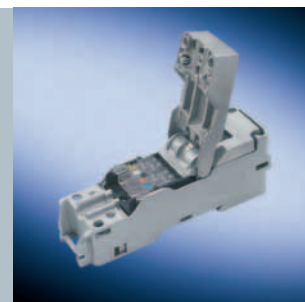
Four-wire bus cables for fast assembly



Insulation stripping is quick and easy



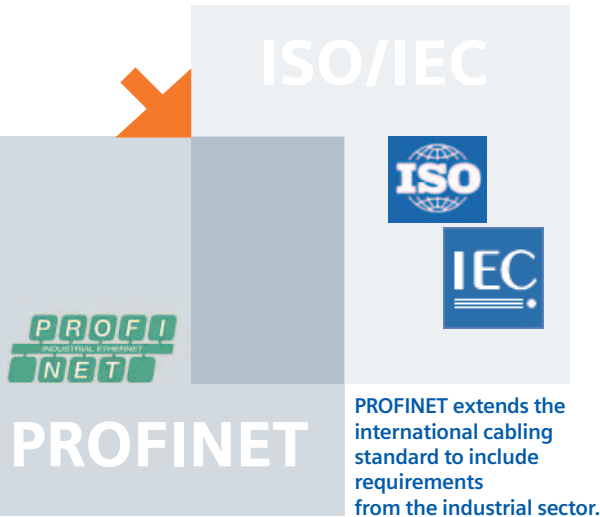
Field connector for Ethernet



Tried and tested insulation piercing technology

FastConnect – the complete system for 10/100/1000 Mbit/s

Compliant with
ISO/IEC 11801
and EN 50173



The Gigabit cabling system facilitates the crossover from 4-wire Industrial Ethernet FastConnect to the 8-wire, Gigabit cabling system.

The IE FC Modular Outlet can optionally be equipped with

- one replacement insert with 2 x RJ45 sockets for 100 Mbit/s systems
- one replacement insert with 1 x RJ45 socket for 1000 Mbit/s systems, or
- one replacement insert with 1 x 24V, 1 x RJ45 sockets for 100 Mbit/s systems

This makes it possible not only to implement individual device ports, but also 100 Mbit/s dual connections.

Just like the 4-wire cabling system, this system also takes into account the conditions in the field of industrial automation.

Assembly is particularly simple, as no special tools are required (e.g. same IE FC Stripping Tool as for the 4-wire cabling system).

Installation cables

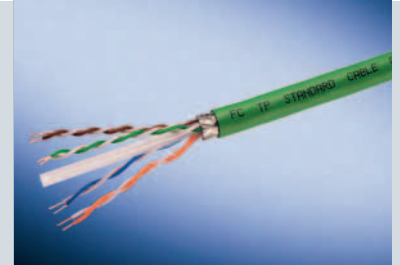
- for rigid cabling as standard type (FC TP Standard Cable 4x2) and
- as a flexible version for use in cable carriers (FC TP Trailing Cable 4x2)

Hybrid cable

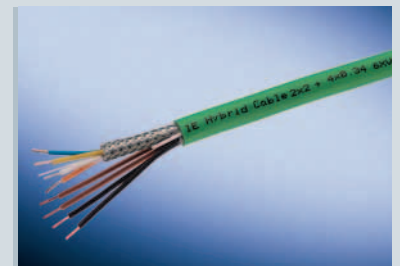
- flexible cable for the transmission of data and energy for IE FC RJ45 Modular Outlet with Power Insert (IE FC Hybrid Cable 2x2 + 4x0,34)

IE FC Modular Outlet

Due to the continuous rise in transmission rates for Ethernet (10/100/1000 Mbit/s) and the service-neutral cabling from the office sector, an 8-wire cabling system has been developed by SIMATIC NET.



8-wire bus cables for fast assembly



Hybrid Cable: mounting in Modular Outlet



Insulation stripping is quick and easy



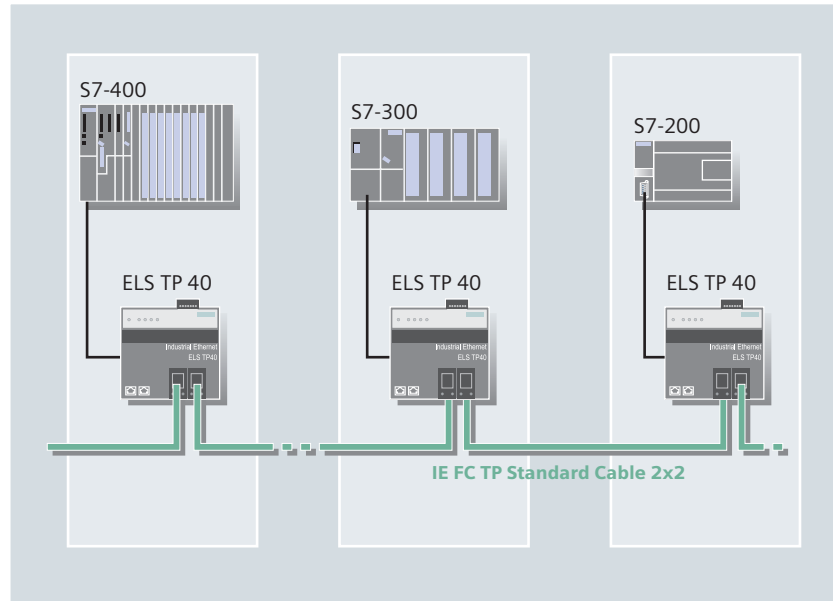
Gigabit cabling for the future (Cat6)

Thanks to the 8-wire cabling, it is currently possible to implement two Industrial Ethernet ports for Fast Ethernet, but in future you can also upgrade to a 1 Gigabit Ethernet port.

Possibilities of device networking with the FastConnect cabling system

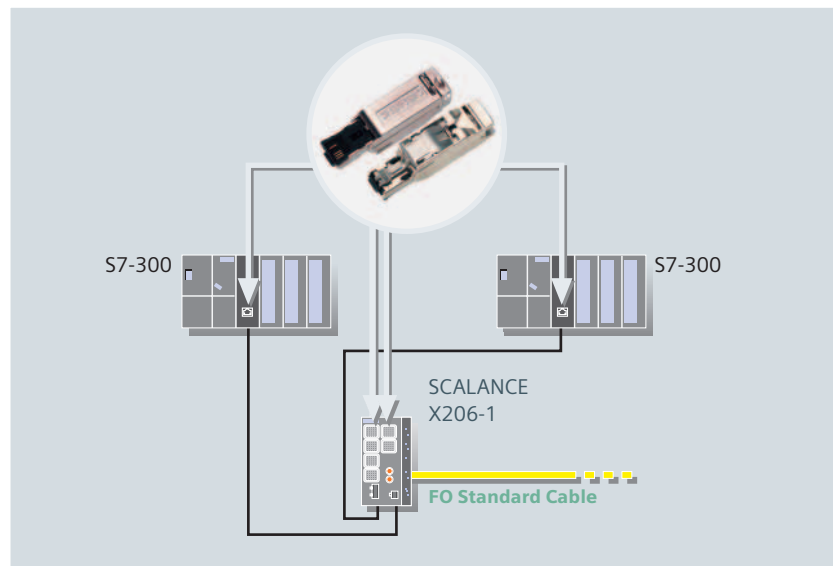
Direct connection up to 100 m for fixed ground installation without connector

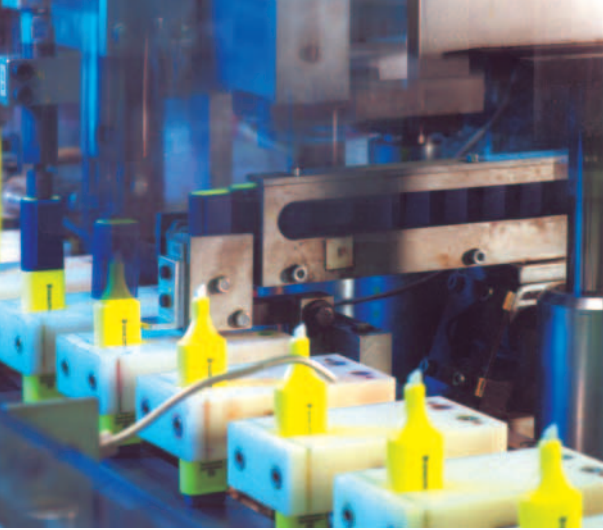
The ELS TP 40//TP 40M permits fast and simple connection of the Industrial Ethernet FastConnect installation cables by means of its insulation piercing connection elements integrated into the device. RJ45 sockets that are also integrated in the device permit the connection of up to two terminal devices.



Direct device connection (point-to-point) using connectors

The Industrial Ethernet FastConnect RJ45 Plug 180 and Plug 90 permit flexible installation of devices at a distance of up to 100 m.





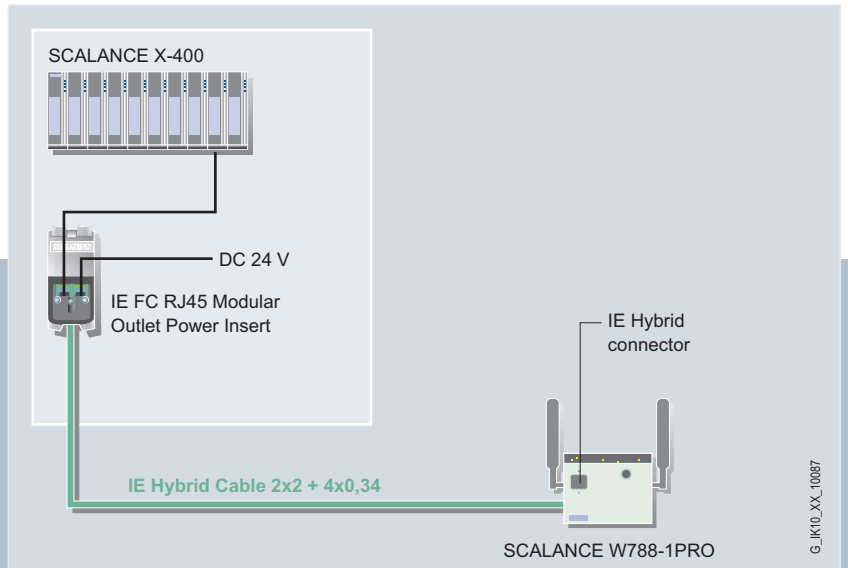
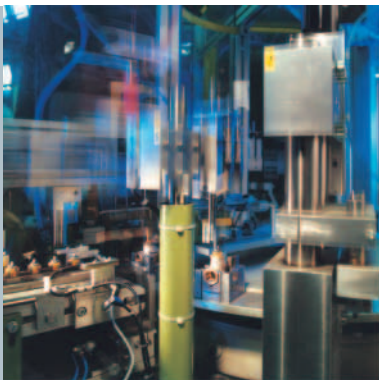
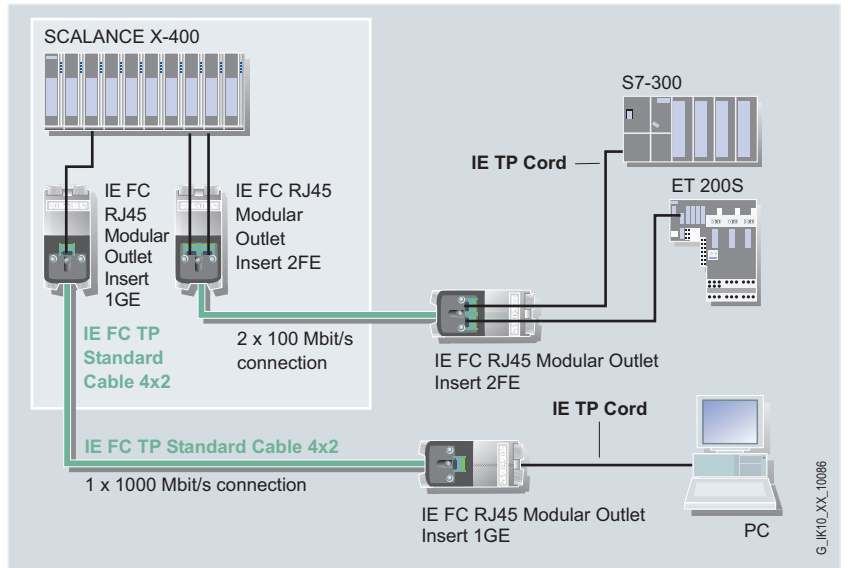
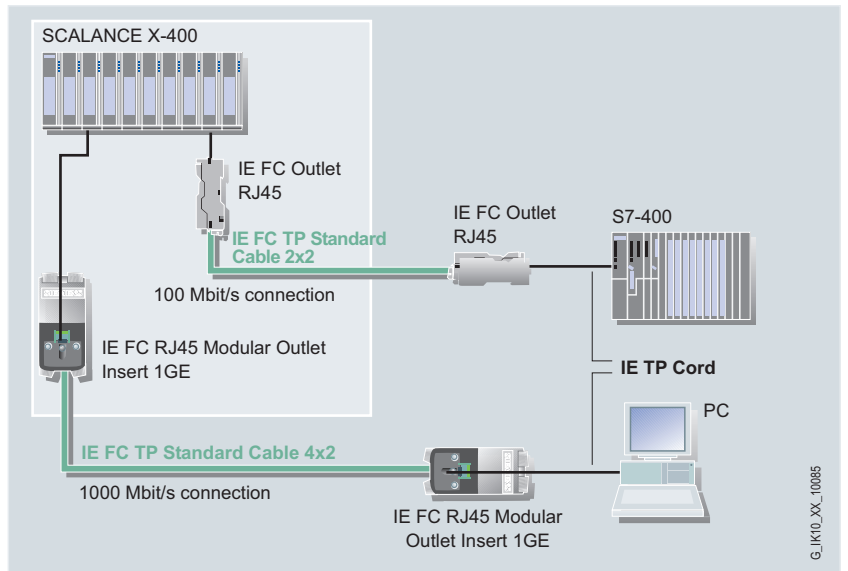
Flexible connection for devices with different interfaces

Industrial Ethernet FC Outlet RJ45 (10/100 Mbit/s) to 4-wire Industrial Ethernet FC cables

or

Industrial Ethernet FC Modular Outlet (10/100/1000 Mbit/s) to 8-wire Industrial Ethernet FC cables for connection to terminal equipment or to data and energy supplies of remote nodes (e.g. access point SCALANCE W).

When using the outlets in a control cabinet or in a control station, pre-assembled RJ45 patch cables are available in various versions (TP Cord 4x2, TP Cord 2x2 RJ45/Sub-D) for connecting network components or terminal equipment.



Always connected

FastConnect by SIMATIC NET



Visit us on our SIMATIC NET
Internet homepage

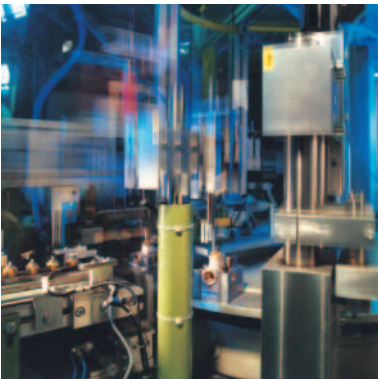


www.siemens.com/automation/simatic-net

There you will find information on products and solutions, current information on SIMATIC NET as well as events and technical publications.

You will also find descriptions of specific SIMATIC NET products at:

www.siemens.com/automation/net/catalog



The information provided in this brochure contains descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products.

An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice.