

# Fieldbus systems for MCC door control system

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# MCC fieldbus systems

## Network interfaces for MCC door control system

The MCC door control system can be connected via PROFIBUS, PROFINET, EtherNet/IP or PROFINET with PROFIsafe. The modules differ depending on the version.

## Mechanical setup

The network modules are installed in an extension box directly on the MCC door control system. A carrier circuit board with the relevant network module is mounted inside, where the connection to the network level takes place via a plug connection accessible from the outside.

## Network communication

With the help of the fieldbus modules, data for the door control can be used for detecting the normal operating status or for the error messages. The data is shown cyclically. For PROFINET with PROFIsafe, secure input and output data is also communicated. Details on the data exchange and arrangements can be found in the operating instructions.





### PROFIBUS

With the PROFIBUS structure, the connection to the fieldbus takes place via the two plug connections integrated in the connecting plate (B-coded). The plug acts as an input and the socket acts as an output. The bus termination required with PROFIBUS can be switched on or off as required. Switching on the bus termination switches off the outgoing line.



### PROFINET

The PROFINET technology is developed by Siemens and the member companies of the Profibus user organisation. PROFINET is based on Ethernet-TCP/IP and supplements the Profibus technology for applications where quick data communication via Ethernet networks, combined with industrial IT functions, is required. With PROFINET, solutions can be achieved for production technology, process automation, building automation, as well as for the entire range of drive technology right through to synchronised motion control applications. PROFINET is standardised in IEC 61158 and IEC 61784.

The PROFINET concept is modular in design. The versions differ mainly in the type of data exchange in order to meet the high demands on speed.

- **1-port:** This network structure requires an external switch.
- **2-port:** With this network structure, the switch is already integrated in the bus module.



### EtherNet/IP

The Ethernet Industrial Protocol (EtherNet/IP) is an open standard for industrial networks. It is used for transferring cyclical I/O data, as well as acyclical parameter data. EtherNet/IP was developed by Rockwell Automation and the ODVA (Open DeviceNet Vendor Association) and standardised in the international standards series IEC 61158. It is a particularly widely used communication standard in the American market and in the field of Rockwell control systems.

EtherNet/IP uses the proven basic technology of Ethernet-TCP/IP. Normal Ethernet twisted pair cables or fibre optic cables are used as a transfer medium. The CIP protocol (Common Industrial Protocol) familiar from DeviceNet and ControlNet is used as the application protocol.

- **1-port:** The 1-port network structure requires an external switch. With this solution, the connection to the network takes place via the M12 socket (D coded) integrated in the connecting plate.



### PROFINET with PROFI-safe

The safety-relevant components such as the limit switch and emergency stop (Safe Torque Off) can also be connected via the network with PROFI-safe. This setup offers a compact, space-saving and pre-assembled solution, which can be retrofitted without major effort. With PROFI-safe, the communication takes place so that the position switches reach Performance Level (PL) "e" and the emergency stop function reaches PL "d" in accordance with ISO 13849-1. Further safety sensors are possible.

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