

LOW VOLTAGE AC DRIVES

ABB all-compatible drives

CIP Safety™ functions module, FSCS-21

Protect your people, machinery, and processes

FSCS-21 is an easy-to-use, cost-efficient and compact safety functions module for connecting machinery (ACS380), general purpose (ACS580), or industrial (ACS880) drives seamlessly to a safety PLC. This is enabled through the EtherNet/IP™ communication protocol. Common Industrial Protocol (CIP) over EtherNet/IP enables a single-cable solution for safety and non-safety control.

The module is easy to install and configure and is suitable for ensuring the safety of equipment that reduces the risk of accidents for people working with machinery such as conveyors, cranes, and amusement park rides. The FSCS-21 features the ready-made safe stopping functions Safe Torque Off (STO) and Safe Stop 1 (SS1-t), a time-controlled function.



Ensure safety in demanding applications

ABB drives with the integrated TÜV-certified CIP Safety functions module make your machines and processes safe. The FSCS-21 can be used for demanding applications (SIL3/PLe).

Easy to use

No safety parameters or safety passwords are required in a drive – simply define the safety network number and EtherNet/IP communication settings and start to run your motor.

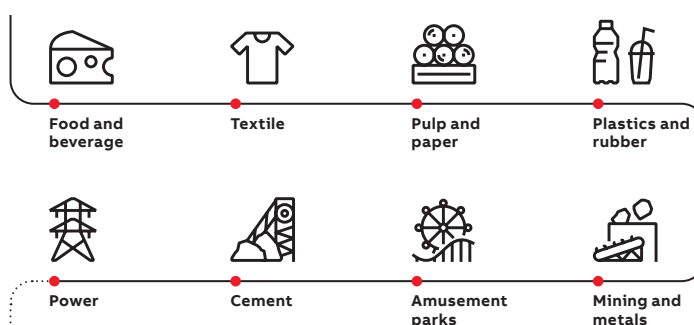
Seamless network integration of drives with safety PLCs

With FSCS-21 you can seamlessly connect drives of different types and sizes with any safety PLC that supports the CIP Safety over EtherNet/IP communication protocol for safety communication and EtherNet/IP for drive control over a single Ethernet cable.

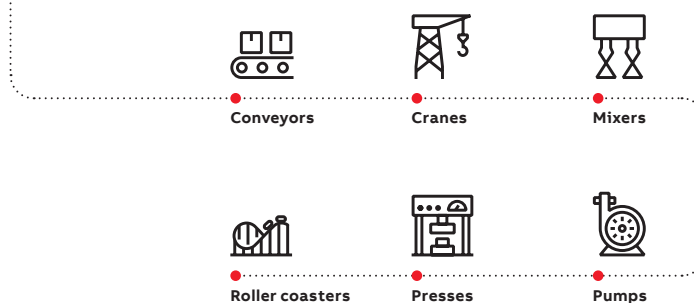
Space and cost savings

FSCS-21 lowers total cost by reducing the amount of hardware and simplifying engineering, while its compact size saves space. With only a single Ethernet cable required, there is no need for external components like safety relays.

Typical industries



Wide range of applications



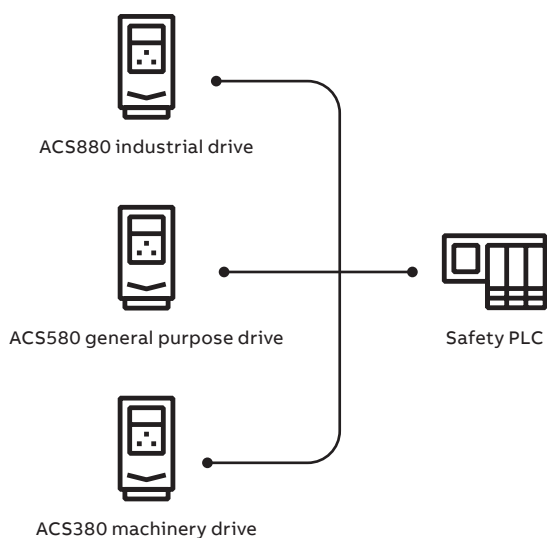


Technical data

CIP Safety functions module, FSCS-21

Safety functions	Safe torque off (STO) Safe stop 1, time controlled (SS1-t)
Safety data	Performance level, PL e / cat. 3 (EN ISO 13849) Safety integrity level, SIL3 (IEC 61508, 62061, 61511, 61800-5-2)
Communication protocol	EtherNet/IP CIP Safety over EtherNet/IP
Control profiles	ABB Drive and ODVA
Connectors for communication	Integrated switch with two ports (RJ45)
Certificates	EtherNet/IP (ODVA DOC) CIP Safety (ODVA DOC) TÜV-certification for safety
Supported ABB drives	ACS380, ACS580 and ACS880 series drives

CIP Safety network architecture



Key features

EtherNet/IP and CIP Safety over EtherNet/IP

Built-in STO and SS1-t control

For demanding safety applications

Safety certifications: TÜV Safety Integrity Level 3 (SIL 3)/Performance Level e (PLe) certified

Supports multiple drive types

Common tools and interface for ACS380, ACS580, and ACS880 drives.

Single-cable solution

Safety communications and drive control can be achieved using a single Ethernet cable.

Ready-made safety functions

No need for separate safety configuration in the drive.

Other advanced EtherNet/IP features

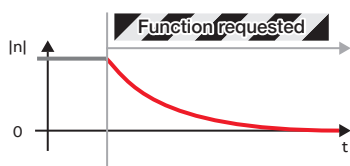
Ring topology – Device Level Ring (DLR)

Engineering tools to support PLC integration

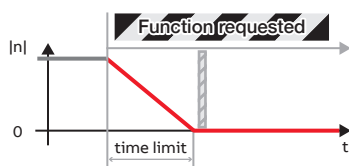
ABB can provide ready-made add-on instructions for safety and non-safety data exchange.

Ready-made safe stopping functions using CIP Safety over EtherNet/IP communication protocol

Safe Torque Off (STO)



Safe Stop 1, time controlled (SS1-t)



Learn more from the safety function module website:

new.abb.com/drives/connectivity



We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB. Copyright© 2024 ABB. All rights reserved.