



G010513

System: CFD5000

Safety Control Module

CS-Safety M H

Part no. 5210001-00A

General description

The CS-Safety M H module is intended to be used as a part of a fire or gas detection system and is suitable for use in SIL 1 and SIL 2 environments.

The CS-Safety M H is an interface module and data collector for all CS-Loop M H modules in a fire detection system designed to comply with the standards for the industrial, maritime, offshore and rolling stock markets up to Safety Integrity Level 2 (SIL 2).

The CS-Safety M H supports both single and redundant setups.


Features:

- An xFire signal input
- An SSP bus for communication with the CS-Loop M H and other CS-Safety M H modules
- Two redundant 24 VDC power inputs
- Three relay outputs reserved for signaling the fire, fault and disablement condition
- An Ethernet interface for external protocols (SSPxt)

For details on assembling a system and definitions of common system terms, please see the Installation & Commissioning manual.

The CS-Safety M H module consists of two products, the CS-Safety M and the CS-Housing H, which can be ordered separately as spare parts.

Data

Operating voltage range	19–30 VDC
Current consumption (at 24 V)	70 mA
Cable terminals	2,5 mm ²
Operating temperature	-40 °C to +70 °C
Storage temperature	-50 °C to +70 °C
Relative humidity	≤ 95 % RH non-condensing
Addressing method	DIP switch
Ethernet port	10/100 Mbit Auto Negotiation
Communication	Internal: SSP Protocol Backbone (BBI) External: Ethernet SSPxt
Relay output	30 VDC, max 1 A resistive load
Material	Nylon 6.6
Weight (with housing)	≈140 g
Colour	Yellow (RAL 1018)
Spare part no. CS-Safety M (without housing)	5210000-00A
Spare part no. for housing	5210069-00A
CE Conformity	EN 54-2
Certified according to	 2531/yy yy = year of production



Functional Safety Data

Type	B
HFT	0
SFF	97 %
PFD_{avg}	1.83×10^{-4}

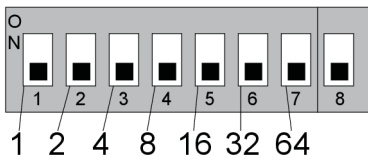
PFD_{avg} is calculated for MTTR 8 h and proof test interval 1 year.
 Suitable for use in SIL 1 and SIL 2 environments.

Settings

The module is identified by a physical address on the Backbone Bus. The address is set with an 8-pole DIP switch.

Address switch

The DIP switch value follows the binary system. The address no. can be set using DIP-switch poles 1 to 7. The address selected on the DIP-switch must correspond to the settings in the configuration program.



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Configuration of Safe Relay

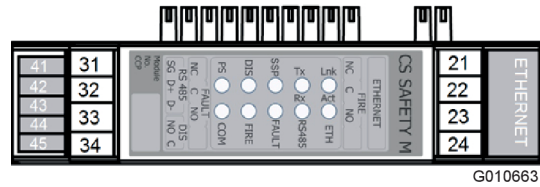
The CS-Safety M has three relay contact outputs, called Safe Relay.

The Safe Relays are not configurable.

Table 1. Safe Relay configurations

Safe Relay		Active High/Low	CS-Safety M
Output	Fire	H	X
	Fault	L	X
	Disablement	H	X

Connections



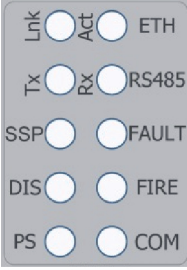
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Table 2. CS-Safety terminal numbers

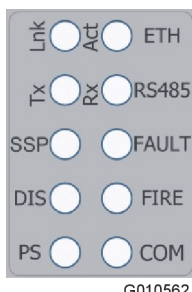
	Ethernet	Ethernet interface
21	NC	Common Fire Relay output
22	C	
23	NO	
24		
31	NC	Common Fault Relay output
32	C	
33	NO	
34		
41	SG	Not used
42	D+	
43	D-	
44	NO	Common Disablement Relay output
45	C	

Indicators

CS-Safety M indicators display fire, fault and disablement condition as well as communication and power status.

Front label	Indicator	Colour, pattern	Module status	Failure classification
 <p>G010562</p>	ETH Lnk (Ethernet link connected)	Green, steady	OK	N/A
		None	No communication	*
	ETH Act (Ethernet activity)	Green, steady	OK	N/A
		None	No communication	*
	RS-485 Tx	Green, steady	OK	N/A
		None	No communication	*
	RS-485 Rx	Green, steady	OK	N/A
		None	No communication	*
	SSP (Communication)	Green, steady	OK	N/A
		None	No communication	*
	FAULT	Yellow, steady	One or more faults are present	*
		Yellow, flashing	Module is booting or re-scanning	*
		None	There are no faults	N/A
	DIS (Disablement)	Green, steady	One or more disablements in the system	N/A
	FIRE	Red, steady	One or more alarms are present	Follow local procedures
		Red, flashing	Pre-alarm	Follow local procedures
		None	There are no alarms	N/A
	PS (Power Supply)	Green, steady	OK	N/A
		Yellow, steady	Power fault on one of the two power channels feeding the module. A single power fault does not prevent the safety module to communicate with the other modules.	Minor fault*
		Yellow, flashing: 0.5 sec On, 0.5 sec Off.	Boot loader mode. Only active during firmware download to the module.	*
Yellow, flashing: 1 sec On, 0.5 sec Off.		Safe State Predefined state to avoid disturbing system integrity.	*	

* Check fault alarm on the control panel and refer to fault code information in the CFD5000 Installation & Commissioning manual or the CFD5000 Service & Maintenance manual.

Front label	Indicator	Colour, pattern	Module status	Failure classification
 <p>G010562</p>	COM (Backbone communication)	Green, steady	OK	N/A
		Green, flashing	Unconfigured. Could be a configuration error in the application program file. (Communication working)	Minor fault*
		Yellow, steady	System fault.	Major fault*
		Yellow, steady	Communication fault on the backbone interface.	Major fault*
		None	No communication	Major fault*
	PS + COM (both flashing)	PS Yellow, flashing	Transferring software. (Download or upload.)	*
COM Green, flashing				

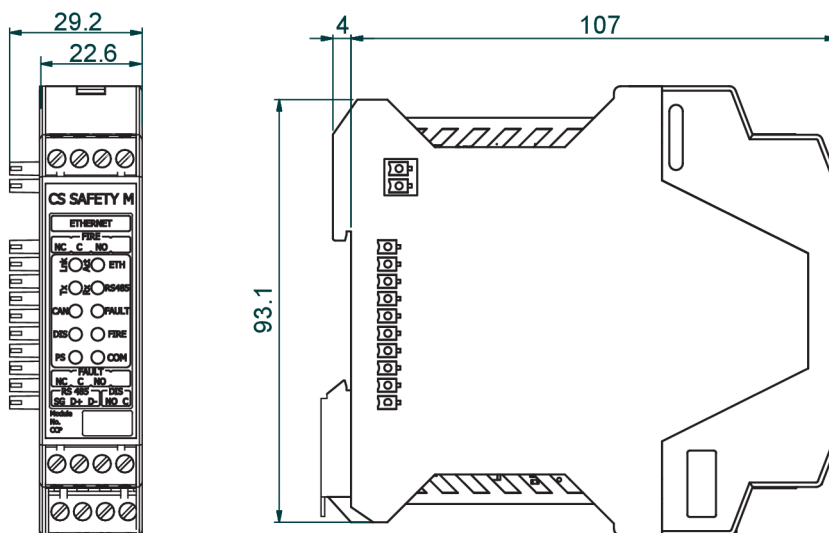
* Check fault alarm on the control panel and refer to fault code information in the CFD5000 Installation & Commissioning manual or the CFD5000 Service & Maintenance manual.



NOTE!

If all LED's are flashing the DIP switches are set to OFF or all are set to ON. Please set according to project documentation.

Dimensions (mm)



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Mounting

Mount the module on a horizontal 35 mm DIN rail.