

TROXNETCOM AS-i

AS-EM/SIL2



Safe communication interface between a component and the controller

Certified motor control module for safe communication up to SIL2

- Integrated AS-i slave with AS-i Safety at Work
- Capturing of damper blade position CLOSED with safe 2-channel communication
- Monitoring of signal reception
- With short circuit protection
- Controller can be used to monitor the run time of the damper blade actuator



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Product description

Application

- Certified motor control module for safe communication up to SIL2
- Capturing of damper blade positions CLOSED and OPEN
- Capturing of damper blade position CLOSED with safe 2-channel communication
- Integrated AS-i slave with AS-i Safety at Work
- Up to 20 AS-EM/SIL2 modules per AS-i master with safety monitor or on the AS-i safety controller
- Controller can be used to monitor the run time of the damper blade actuator

- Same simple wiring as for standard AS-EM because the 2-wire AS-i cable is used to supply both the module and the damper actuator (24 V DC) with power

Standards and guidelines

- Certified to EN 61508

Order code

AS-EM/SIL2 Module with SIL2 certificate for controlling actuators

Technical data

Electrical data

Safety board	2 safe inputs
Carrier board	2 non-safe inputs
Supply voltage	26,5 – 31,6 V DC
Current consumption	< 500 mA

Ambient conditions

Ambient temperature	-20 – 50 °C
Storage temperature	-20 – 75 °C
Height above sea level	2000 m
maximum acceptable relative humidity	90 % (no condensation)
Protection level	IP 42 (without AS-i connection cable)
Temperature change	0,5 K/min
IEC protection class	III
Contamination level	2

Approvals/tests

EMC	EN 62026-2 EN 61000-4-3 EN 61000-6-2 EN 61000-6-3
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Safety board (safe AS-i slave)

Inputs	
Switching	DC PNP
Sensor supply of the inputs	from AS-i
Input current	Typically 5 mA
Short circuit detection	no
Cross-fault detection	no
Watchdog integrated	yes

AS-i parameters

AS-Interface / extended address mode possible	Version 2.11 and 3.0/no
AS-i profile	S-7.B.E
I/O configuration	7 [Hex]
ID code	B.E [Hex]

Carrier board (non-safe AS-i slave)

Inputs	
Switching	DC PNP
Power supply	from AS-i
Voltage range	18 – 30 V DC
Input current high/low	> 5 mA/< 1 mA
Outputs	
Supply via AS-i	yes
With short circuit protection	yes
Max. current load per output	340 mA; > 420 mA for 2.5 s
Watchdog integrated	yes
AS-i parameters	
AS-Interface	Version 3.0
extended address mode possible	yes
AS-i profile	S-7.A.E
I/O configuration	7 [Hex]
ID code	A.E [Hex]

Safety specifications

Specifications	Value
Safety integrity level	SIL 2
Service duration T	10 years at -25 - 60 °C
PFD _{avg}	7.9×10^{-6}
PFH _D	$1.8 \times 10^{-10}/h$

These calculations have been carried out at an ambient temperature of 40 °C.

The unit complies with the requirements SIL 2 (IEC 61508).

The PFD/PFH values or MTTFd values of the other components, in particular the AS-i safety monitor, can be found in the respective documentation.

Response time

To calculate the response time of the overall system, the response time of the safety board as well as the response time of the other components need to be added up (mechanical switch contacts, data transmission, safety monitors and potentially further external relays connected to the monitor output.)

Safety board	≤ 10 ms
Safety monitor (including data transmission)	≤ 40 ms
Total reaction time (from when the signal is applied to the unit until the safe outputs of the safety monitor are switched)	≤ 50 ms

The switching times of the mechanical contacts (emergency stop switch) and any external relays or contactors connected to the relay output of the safety monitor were not taken into account here.

Residual error probability according to IEC 61508

To calculate the PFHD (probability of a dangerous failure per hour) of a safety-related function, the PFHD values of all components used in this function must be taken into account.

Specification text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Specification text

Certified motor control module for safe communication up to SIL2

- Supplied separately or attached
- SIL2 certification to EN 61508
- Capturing of damper blade position CLOSED with safe 2-channel communication
- Integrated AS-i slave with AS-i Safety at Work
- Transmission function is monitored with safety monitor or safety controlle
- With short circuit protection
- Controller can be used to monitor the run time of the damper blade actuator
- Voltage supply for the module and for the damper actuator (24 V DC) via AS-i
- Supply voltage: 26.5 – 31.6 V DC
- Total current consumption from AS-i: approx. 400 mA
- Ambient temperature: -20 – 70 °C
- Protection level: IP 42
- Manufacturer: TROX GmbH
- Type: AS-EM/SIL2

Dimensions

AS-i module AS-EM/SIL2

