cSCALE AI2CAN+ trueSafety
Safety trip amplifier for analog/CAN signal conversion and cross comparison functionalities

Applications

- Mobile Cranes
- Lifting Applications
- Road Construction Machinery
- Earth Moving Machinery
- Concrete Machinery
- Agricultural Machinery

Digital safety trip amplifier

Special Features

- Digital safety trip amplifier
- CANopen Safety interface 50 kBit/s..1 MBit/s
- AI (4..20 mA) supports 2-wire sensors from 10 V..33 V)
- Possible redundant AI configuration 2xAI (4..20 mA) with stand-alone cross comparisons (Cat. 3 architecture acc. EN ISO 13849-1)
- 3x digital I/O (2x DO + 1x DI), can also be used for internal (I< 2 A) or external (I>2 A) cutoff functionality
- Converts ADC inputs into scaled values
- Linearization and filtering per channel
- 3x multicolor status LED
- PL d / SIL 2 acc. to EN 13849 / EN 62061

Description

cSCALE AI2CAN+ trueSafety is a digital safety trip amplifier designed to convert up to four analog inputs into a CAN output signal. This digital safety trip amplifier not only offers signal conversion functionalities, but also stand-alone features, including cross comparison with optional cut-off functionality. The digital safety trip amplifier can be driven as a CAN slave device or can be used as a standalone device.

Three digital I/O's are available for cSCALE AI2CAN+ trueSafety. This enables users to combine system elements with analog or digital signal transmission with system elements communicating via CANbus, e.g. sensors or controller. This implies that specific small PLC functions can be overtaken by cSCALE AI2CAN+ trueSafety up to safety level PL d / SIL 2 acc. to EN 13849 / EN 62061.

The digital safety trip amplifier offers a wide set of comparison thresholds (TH1 and TH2) as well as a wide spectrum of different physical sensor values (force, pressure, temperature or geometric values). A configurator tool is available upon request.

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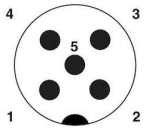
Technical Specifications

Model cSCALE AI2CAN+ trueSafety	
I/O count	**4x AI, 2x DO, 1x DI**
4	AI (4..20 mA) or VI (0.5..4.5 V), 12bit, per SW individually configurable Linearity: < ±0.15% FS; temperature drift < ±0.015%/10K FS
2	DO_static (HS) (Cat. 3) total current draw 2 A
1	DI_static (HS)
1	CANopen Safety (DS 304, DS 404)
Power supply	4...33 V_{DC} specified operating condition for internal DCDC converter 10…30 V_{DC} specified operating condition for all I/Os
Environment	
Ambient temperature	EN 60721 3-5: class 5K3 -40..+70°C
Ingress protection	IP66/67 (EN 60529)
Shock & vibration	EN 60721 3-5: class 5M3
EMC	EN 61000-4-2, EN 61000-4-4, EN 61000-6-2, EN 61000-4-5, EN 61000-6-7, EN 7637-2, EN 7637-3
CE	Machinery Directive, EMC, RoHS
Housing	140 x 80 x 27 mm (L x W x H)

CAN in connector

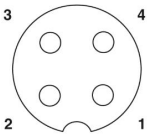
Connector type: M12, Male, A-coded, 5 pins



Pin	Name	Description
1	SHIELD	CASE
2	CAN V+	System positive power supply
3	CAN GND	System negative power supply
4	CAN High	CAN-Bus Signal
5	CAN Low	CAN-Bus Signal

AI connectors

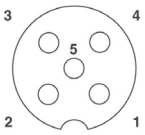
Connector type: M12, Female, A-coded, 4 pins



Pin	Name	Description
1	+UB	Supply +UB
2	NC	Not Connected
3	GND	Supply -UB
4	SIG	AI (4..20 mA / 0,5..4,5 V)

CAN out connector

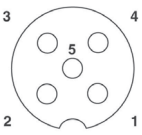
Connector type: M12, Female, A-coded, 5 pins



Pin	Name	Description
1	SHIELD	CASE
2	CAN V+	System positive power supply
3	CAN GND	System negative power supply
4	CAN High	CAN-Bus Signal
5	CAN Low	CAN-Bus Signal

DI/O connector

Connector type: M12, Female, A-coded, 5 pins



Pin	Name	Description
1	DI	Digital Input
2	+UBP	DO positive power supply (P=Power)
3	GND	DO negative power supply
4	DO1	Digital Output #1
5	DO2	Digital Output #2

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