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MCAD-S model 1

safety-related analog input card, 24 input channels, 2 frequency inputs optional

D-Sub terminals



SIL3 / PLe

The MCAD-S card is an analog input card for safety-related field signals. It is certified for use in safety functions up to SIL3.
The card has an internally redundant design with hardware fault tolerance HFT=1.

Safety application programs can run directly on this card.

Diagnostic functions with the redundant on-board micro-controllers include:
monitoring of linearity and cross-talk by read-back of 12-bit test patterns with 2x 12 D/A-converters, monitoring of frequency input with redundant frequency signal generators, temperature monitoring, voltage monitoring, window watchdog, program flow control, background memory test, mutual monitoring of self-tests, ...

Technical data

- current input channels:
  1x 24 (simplex) or 2x 12 (redundant)
  or
- 1x 22 / 2x 11 current inputs plus 2 redundant frequency input
- input type: differential current
- digital precision: 14 bit
- input current range: 0 ... 25mA
- sampling time: approx. 5 ms per channel
- error detection: open, under-range, over-range, short, fault (detected by internal tests)
- redundant frequency input for magnetic-inductive sensor or Hall sensor
- redundant power supply for Hall sensor
- frequency range: 1Hz ... 15kHz
- error detection for frequency:
  amplitude error, cable failure, short-cut, hall sensor power supply failure, signal fault (detected by internal tests)
- monitoring of operating voltages
- electrical isolation between input-side and backplane interface
- hot-replaceable
- signals connected via DIN 41652 Sub-D multipoint female connector (50-pin), at the face plate

- dimensions for card with D-Sub connector:
  4 TE , 3 HE, 175mm (WxHxD)

- operating temperature range: -20°C ... 70°C
- relative humidity: 10 ... 90%, non-condensing
- shelf life: unlimited

applied standards:

IEC 61508, EN ISO 13849, IEC 62061, IEC 61511, IEC 61131-2, EN 50178, EN 50155, EN 50156, IEC 61326, EN 54, EN 50130, EN 298, EN 61373, NFPA 72

DATASHEET