

4-20 mA Current loop isolator and signal splitter SIL3 / SIL2

CAL23DmA



- **Input current :** (0...4....20mA)
With or without sensor power supply
- **Simulation plug :** (Automatic input switching)
Allowing full loops control without disconnection
- **4 ways galvanic isolation** (1000 V)
- **2 Active or Passive Current Outputs**
Independents outputs
Max Load : 750 ohms
- **Analog design**
- **pluggable terminal blocks**
- **Universal power supply :** 20 to 265 Vac/Vdc or 24Vdc
- **HART transparency**
- **SIL2 and SIL3 compliance** according IEC61508



The analog converter CAL23DmA-S2 is designed for current loop isolation and signal splitter with a high reliability level. The 4 ways galvanic isolation (Input / Output 1 / Output 2 / Power) allows complete independence of each current loop.

Application :

Power supply and current loop isolator, with bidirectional HART® protocol communication for 2 or 4 wires transmitters.

Inputs :

Current : 0...4....20....22 mA (active or passive)
Power supply (21 volts) for 2 wires 4-20mA transmitter
(HART compatible)

Simulation :

3.5 mm Jack plug allows connection of standard currents simulator. Automatic "test" mode switching with a red LED lighting.
The current simulation is applied directly on the input circuit and takes in account the complete device.

cable and simulator are provided separately



Outputs:

Output current 0...4..20 mA (active or passive)
HART® transparency option between output 1 and input.

Features:

- DIN rail mounting (symmetrical),
- protection rating IP20,
- conformal coating,
- pluggable terminal blocks (max. 2.5 mm²),
- green LED for power supply indication,
- green LED for output signal indication (led is off when test terminals are used),
- test terminals (behind the front cover) allow output control without disturb the current loops,
- universal power supply, AC or DC, not polarized.

Operational safety data:

components type A, HFT = 0

λf : 265 fit (1/MTBF)

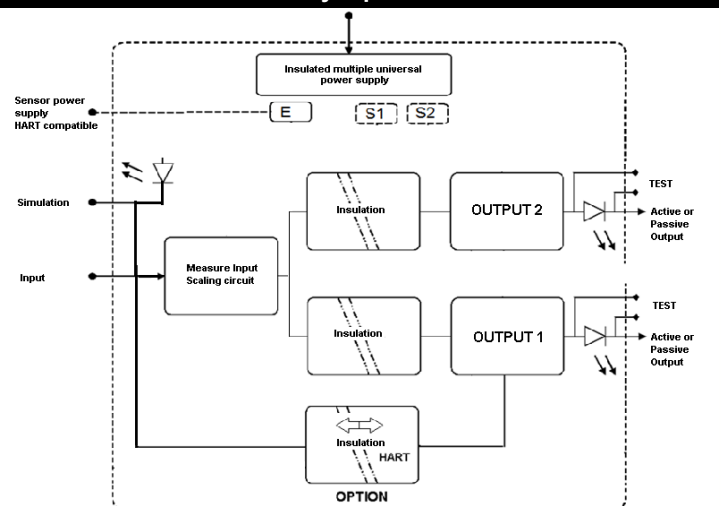
DC : 88.8 % (diagnostic coverage)

PFH : 1.8 fit (probability of dangerous failure per hour)

SFF : 99.4 % (Safe failure fraction)



Synoptic:



Version et order code:

[Request a quote](#)

CAL23DmA-S1 1 output + Hart transparency
CAL23DmA-S2 2 outputs + Hart transparency
(without SIL3 approval)

CAL23DmA-S1/SIL3 1 output + Hart transparency + SIL3
CAL23DmA-S2/SIL3 2 outputs + Hart transparency + SIL3
(SIL3 approval according to IEC61508)

Connectors : pluggable screw terminal blocks in standard
pluggable spring terminal blocks on request

INPUT

TYPE	RANGE
Current mA dc	0...4.....20 mA
Input Impedance	250 Ohms
Accuracy	+/- 0.25 % of full range
Response time	< 30 ms

AUXILIARY

Sensor power supply	21 V (Regulated +/-5%)
Limitation	50 mA

*Note: the voltage remaining at the sensor is approximately:
21V - (input impedance x input current), the cable losses are neglected
21V - (250 ohms x 0.02mA) is around 16 Volts*

OUTPUT

TYPE	RANGE
Current	0 ... 4 ... 20 mA
Load	0750 Ohms
When use as passive output: external loop voltage is 35 V maxi	

POWER SUPPLY

Universal , not polarized
(on 3 range to be defined at order)

standard version :	20 to 265 Vac - dc, 2 VA maxi
Low voltage version :	10 to 30 Vdc, 2 VA maxi
"long life" version:	24V +/-10% 3VA maxi

ENVIRONMENT

Operating Temperature :	-10 °C to 60 °C
Storage Temperature :	-20 °C to +85 °C
Temperature Drift :	~ 0.015 % / °C
Relative humidity	85 % not condensed
Weight	~ 110 gr.
Protection rating	IP 20
Dielectric strength standard :	(Inputs/Pwr supply/Outputs) 1000 Vac continuous
MTBF	> 3 000 000 Hrs @ 45°C
lifetime (20...265Vac-dc)	> 200 000 Hrs @ 30°C
lifetime (24Vdc +/-10%)	> 400 000 Hrs @ 30°C
Shock IEC 60068-2-27 (operating)	15 G / 11 ms
Bump IEC 60068-2-29 (transportation)	40 G / 6 ms
Vibrations IEC 60068-2-6 (operating)	1 G / 10 - 150 Hz
Vibrations CEI 60068-2-6 (transportation)	2 G / 10 - 150 Hz

Electromagnetic compatibility 2014/30/UE / Low Voltage Directive 2014/35/UE

Immunity standard for industrial environments
EN 61000-6-2Emission standard for industrial environments
EN 61000-6-4

EN 61000-4-2 ESD	EN 61000-4-8 AC MF
EN 61000-4-3 RF	EN 61000-4-9 pulse MF
EN 61000-4-4 EFT	EN 61000-4-11 AC dips
EN 61000-4-5 CWG	EN 61000-4-12 ring wave
EN 61000-4-6 RF	EN 61000-4-29 DC dips

EN 55011
group 1
class A



WIRING AND OUTLINE DIMENSIONS:

