

# 4-20mA signal isolator, splitter with 2, 3, 4 outputs SIL2 / SIL3

CAL4/100ig CAL4/100igM



- **CAL4/100ig** (current loop splitter)
  - CAL4/100ig2: 1 input to 2 outputs
  - CAL4/100ig3: 1 or 2 inputs to 3 outputs
  - CAL4/100ig4: 1 or 2 inputs to 4 outputs
- **CAL4/100igM** (multi current loop isolator)
  - CAL4/100igM2: 2 inputs, 2 outputs
  - CAL4/100igM3: 3 inputs, 3 outputs
  - CAL4/100igM4: 4 inputs, 4 outputs
- **Input: 0...10V or 4...20mA** active or passive
- **Output: 0...10V or 4...20mA**  
with test terminals and control led
- **AC-DC universal supply: 20.....265V**
- **option HART transparency**
- **option SIL2 and SIL3 according to IEC 61508**



Series of galvanic isolators composed of several independent cells designed for the 0..4..20mA current loop processing. Each input may be wired in active or passive mode, so it is able to measure a current provided by an active transmitter or to supply a 2-wire transmitter and measure the loop current.

Due to the modular design of this isolators, it is possible to isolate up to 4 independent loops or by serializing the inputs to split a 4-20mA loop current into 4 isolated 4-20mA outputs. Similarly, connect in series or in parallel the outputs allows to have higher loads or higher output current.

## DESCRIPTION:

Isolator for passive or active inputs:  
The 4...20mA input current maybe provided by an active transmitter, or the isolator input can supply a 2 wire transmitter and measure current of the loop. (Do not short-circuited the inputs in active mode operating)

Its design and its transformation ratio fixed to 1/1 improve accuracy (+ / - 0.15%), and thermal stability (<0.01% / °C). The long term stability (greater than 0.1% / year) requires no recalibration in the most applications.

The circuit separation ensures high operational reliability and a complete measure independence, while protecting the acquisition system. (There is no impact of outputs on inputs or between outputs themselves, no load influence, or when output is opening ....)

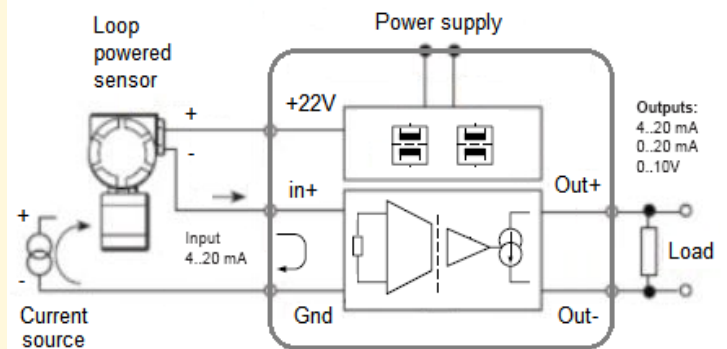
## FEATURE:

- Symmetrical DIN rail mounting, IP20 enclosure
- connection on pluggable screw terminal blocks (section: 2.5 mm<sup>2</sup> max.)
- "Test" terminals to control output currents value with an ammeter without opening the current loop. (accessible under the front face)
- The LEDs in series on output allow a visual diagnosis on loop integrity.
- main supply voltage presence indicated by green LED
- Wide input range Ac - Dc switching power supply
- high frequency ferrite transformer isolation

**INTERNAL DIAGRAM:** (the power supply is not drawn)

<b>Operational safety data:</b>		
type A components, HFT = 0		
$\lambda f$ : 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 (1 internal cell)



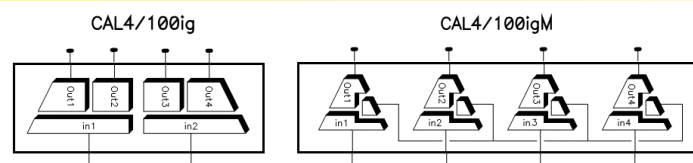
## Version and order code

[Request a quote](#)

- **CAL4/100ig** (current loop splitter)
  - CAL4/100ig2: 1 input to 2 outputs
  - CAL4/100ig3: 1 or 2 inputs to 3 outputs
  - CAL4/100ig4: 1 or 2 inputs to 4 outputs
- Option -H HART transparency bidirectional (input / output 1)

- **CAL4/100igM** (multiple current loop isolator)
  - CAL4/100igM2: 2 inputs, 2 outputs
  - CAL4/100igM3: 3 inputs, 3 outputs
  - CAL4/100igM4: 4 inputs, 4 outputs

Option : SIL2 / SIL3 (according to IEC 61508) 96Hrs burn-in included



**INPUT**

Current 0 ... 4 ... 20 mA  
 Voltage 0 ... 10 ... 100V  
 Impedance 50 Ohms (mA input)  
 1Mohms (volt input)

**OUTPUT**

Current: 1 to 4 outputs 0 ... 4 ... 20 mA  
 Admissible load 0 ... 600 Ohms  
 Voltage 0 ... 10 V  
 (Up to 40V with serial connection of outputs)  
 on internal shunt 500 Ohms  
 Transformation ratio 1:1  
 Load influence <0.03 % / 100 Ohms  
 Residual ripple (Noise) 40 mV pp max.  
 Response time < 20 ms  
 on load 500 Ohms

**AUXILIARY**

Power supply for transmitter 21 V regulated +/- 10 %  
 (isolated for each input)

**POWER SUPPLY**

20...265Vac /Vdc 5VA (10..30Vdc in option)

**ENVIRONMENT**

Operating temperature -25°C ... 60°C  
 Storage temperature -25°C ... +85°C  
 Thermal drift 0.01 % / °C  
 Humidity 85 % not condensed  
 Weight 300 g  
 protection rating IP20  
 Dielectric strength 1000 Vrms continuous (input/output)  
 2500 Vrms continuous (power supply)  
 MTBF (MIL HDBK 217F) > 3 000 000 Hrs @ 25°C  
 Lifetime > 170 000 Hrs @ 30°C  
 Shock CEI 60068-2-27 (operational) 15 G / 11 ms  
 Bump CEI 60068-2-29 (transportation) 40 G / 6 ms  
 Vibrations CEI 60068-2-6 (operational) 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 61000-6-2		Emission standard for industrial environments EN 61000-6-4
EN 61000-4-2 ESD	EN 61000-4-8 AC MF	EN 55011 group 1 class A
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	



**WIRING AND OUTLINE DIMENSIONS:**

**Inputs connection:**

For 4...20mA input in passive mode : between in+ and GND (for active transmitter)  
 For 4...20mA input with sensor supply : between +22V and in+ (for loop powered transmitter)  
 The input are isolated, so they can be wired in series in order to have one input split to 4 outputs.

