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 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 split a loop current into 4 isolated 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-circuit 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 mm² max.)
- "Test" terminals to control output currents value with an ammeter without opening the current loop. (accessible under the front panel)
- The LEDs in series on output allow a visual diagnosis on loop integrity. - main voltage presence indicated by green LED
- Wide input range Ac - Dc switching power supply
- isolation by high frequency transformer

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

<table>
<thead>
<tr>
<th>Operational safety data:</th>
</tr>
</thead>
<tbody>
<tr>
<td>type A components, HFT = 0</td>
</tr>
<tr>
<td>λt: 265 fit (1/MTBF)</td>
</tr>
<tr>
<td>DC : 88.8 % (diagnostic coverage)</td>
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<tr>
<td>PFH : 1.8 fit (probability of dangerous failure per hour)</td>
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<tr>
<td>SFF : 99.4 % (safe failure fraction)</td>
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**Synoptic (1 internal cell)**

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Option : SIL2 / SIL3 (according to IEC 61508)
## TECHNICAL SPECIFICATIONS

### ENVIRONMENT
- **Operating temperature**: -25°C ... 60°C
- **Storage temperature**: -25°C ... +85°C
- **Humidity**: 85% not condensed
- **Weight**: 300 g
- **Protection rating**: IP20
- **Dielectric strength**: 1000 Vrms continuous (input/output), 2500 Vrms continuous (power supply)
- **MTBF**: > 3,000,000 Hrs @ 25°C
- **Lifetime**: > 170,000 Hrs @ 30°C

### INPUT
- **Current**: 0 ... 4 ... 20 mA
- **Voltage**: 0 ... 10 V
- **Impedance**: 50 Ohms (mA input), 1 Mohms (volt input)

### OUTPUT
- **Current**: 0 ... 4 ... 20 mA
- **Admissive load**: 0 ... 600 Ohms
- **Voltage**: 0 ... 10 V
- **(Up to 40V with serial connection of outputs)**
- **On internal shunt**: 500 Ohms
- **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)

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### Electromagnetic compatibility
- EN 61000-4-2: ESD
- EN 61000-4-3: RF
- EN 61000-4-4: EFT
- EN 61000-4-5: CWG
- EN 61000-4-9: Pulse
- EN 61000-4-11: AC dips
- EN 61000-4-12: Ring wave
- EN 55011

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### 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 serie in order to have one input split to 4 outputs.