

4-20mA signal isolator, splitter with 2, 3, 4 outputs CAL4/100ig CAL4/100igM

LOREME

- **CAL4/100ig** (current loop splitter)
 - CAL4/100ig4: 1 or 2 inputs to 4 outputs
- **CAL4/100igM** (multi current loop isolator)
 - 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 according to IEC 61508**

HART



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 mm² 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)

Operational safety data:

type A components, HFT = 0

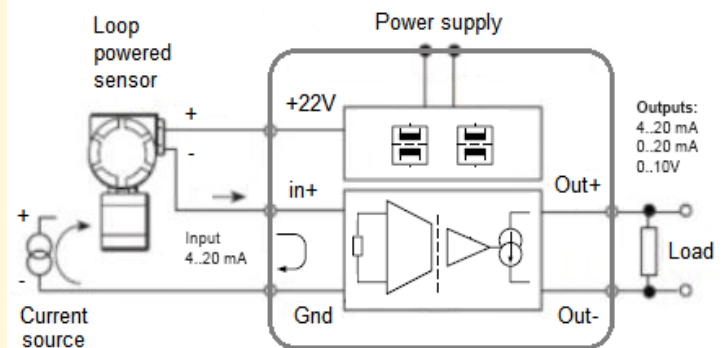
λf : 265 fit (1/MTBF)

DC : 88.8 % (diagnostic coverage)

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

SFF : 99.4 % (safe failure fraction)

Synoptic (1 internal cell)



Version and order code

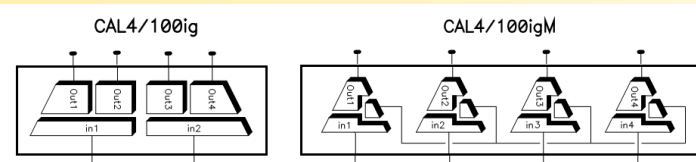
- **CAL4/100ig** (current loop splitter)

- CAL4/100ig4: 1 or 2 inputs to 4 outputs

- **CAL4/100igM** (multiple current loop isolator)

- 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.

