Galvanic isolator. Current loop powered 0-10mA, 0-20mA, 4-20mA, 10-50mA, ...

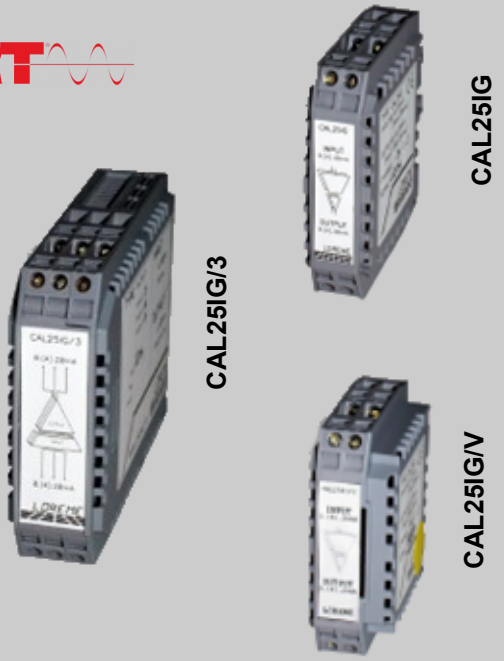
CAL25IG

- **CAL25IG:** *1 or 2 independent channels*
- **CAL25IG/H:** *Hart transparent option*
- **CAL25IG/3:** *3 independent channels*
- **CAL25IG/V:** *dielectric strength of 2500 Vrms*
- **CAL25IGA:** *1 channel, isolation of 2-wire transmitter*

- ***Without auxiliary power supply***
  Self powered by current loop

- ***Excellent linearity:*** *0.1%*
- ***Low response time:*** *< 2 ms*
- ***Small insertion loss:*** *< 65 Ohms*
- ***Wide range, 1:1 ratio:*** *0..4..10..20..50mA*

- ***SIL2 and SIL3 option:*** *in accordance to IEC61508*



The galvanic isolators CAL25IG are designed to isolation of 0...4...20mA current loops.
No auxiliary power supply needed, there are easily integrated in existing current loops. It's a way to eliminate the ground loop or common mode problems.

DESCRIPTION:

- This galvanic isolators allows the copy of current loops 0 ... 4 ... 20 ... (50) mA, without auxiliary power supply.
- Inside the device, the loop current is transform in alternative signal and isolated via a transformer and rectified to recover its initial value.
- This isolation mode bring a small insertion loss.
(equivalent load of 65 ohms, voltage drop: 20mA :1.3V)
- Due to its operating mode (self powered), any load insert on the output current loop have an impact in the input current loop.
- High accuracy: +/- 0.15 %,
- Low thermal drift < 0.01 % / °C
- With its long time stability, it is not necessary to recalibrate the device.
- NAMUR NE43 compliant

OPERATING :

Two operating mode are available :
1) Isolate an active current signal 4..20mA
(the output copy the input constrained current)
2) isolation of a 2-wire transmitter (loop powered transmitter)
(the transmitter constrained the consumed current on the output, the isolator consumes this same current on its input)

FEATURES:

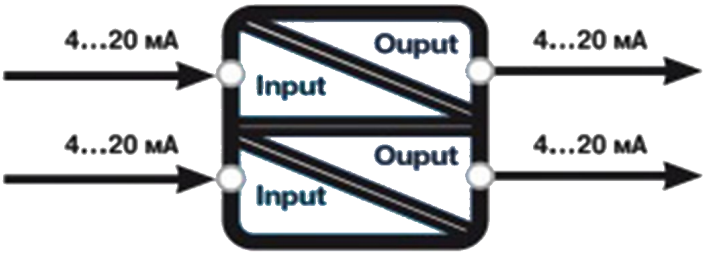
- DIN rail mounting (symmetrical or asymmetrical),
- wiring with screw terminals block
(up to 2.5mm²),
- reverse polarity protection,
- conformal coating,
- protection rating IP20.

Functional security data:
type A component, 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)

SIL2 SIL3

Synoptic: 2 channels version



Version and order code: Request a quote

- **CAL25IG** 1 channel, housing 63 x 62 x 17, 1000 Vac isolation.
- **CAL25IG2** 2 channels, housing 63 x 62 x 17, 1000 Vac isolation.
- **CAL25IG/3** 3 channels, housing 100 x 75 x 23, 1000 Vac isolation.
- **CAL25IG/V** 1 channel, housing 63 x 62 x 23, 2500 Vrms isolation.
- **CAL25IGA** 1 channel, 2-wire transmitter isolation with adjustment of transmitter supply. 63 x 62 x 17mm, 1000 Vac isolation.

Remark: In standard version, a loop breaking on output generates a loop breaking on input loop.

OPTION : **/Z:** 10V zener diode in parallel with the output to prevent the input loop opening when there is a breaking loop on output.
(the zener voltage may be adapt)

OPTION : **/H:** HART transparent
(available only on CAL25IG)

Specials versions : input : **4....20mA** output : **0....20mA**
input : **0....20mA** output : **0....10V**
input : **4....20mA** output : **0....10V**

Option: SIL2 / SIL3 compliance (according to IEC61508)

90 days accuracy (20 °C +/- 2 °C) *DATA SHEET CAN BE DOWNLOADED ON* WWW.LOREME.FR

TECHNICAL SPECIFICATIONS

INPUT / OUTPUT

Input	0 ... 4 ... 20 (50) mA
Max. input voltage	30 V with error <0.25%
Absolute input voltage : 50V, the transfer function accuracy is not guaranteed. Error <5%	
Output	0 ... 4 ... 20 (50) mA
Transformation ratio	1:1
Accuracy	0.15% (24Vdc input voltage)
Threshold current	< 2 µA
Residual ripple (noise)	< 3.57 mV pp. / mA
Insertion loss	< 1.3 V to 20 mA (65 Ohms)
Max. load	1300 Ohms
Load influence	< 0.1 % / 100 Ohms
Input capacity	2 µF
Output capacity	1 µF
Response time	< 2 ms load of 600 Ohms
CAL25IGA	
Supply of input loop	36 to 50 V
Supply of output loop	23 V

ENVIRONMENT

Operating temperature	-25 °C to 70 °C
Storage temperature	-40 °C to +85 °C
Thermal Drift	< 0.01 % / °C
Humidity	85 % not condensed
Weight:	CAL25IG: 44 g CAL25IGA: 50 g CAL25IG/V: 54 g CAL25IG/3: 120 g
Protection rating	IP20
Dielectric strength (inputs / outputs and between channels)	CAL25IG: 1000 Vac CAL25IGA: 1000 Vac CAL25IG/V: 2500 Vac. CAL25IG/3: 1500 Vac
MTBF	> 4 000 000 Hrs @ 45°C
lifetime	> 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

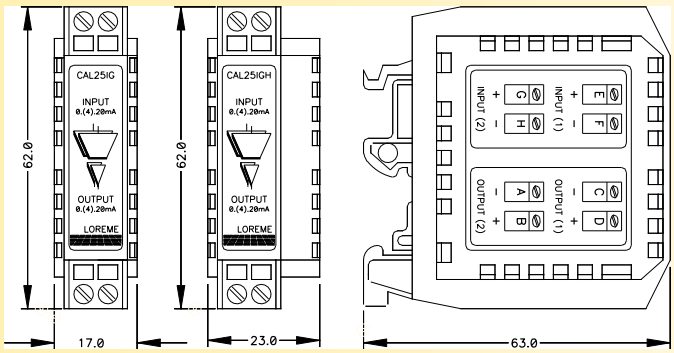
Electromagnetic compatibility 2014/30/UE / Low Voltage Directive 2014/35/UE

Immunity standard for industrial environments EN 61000-6-2		Emission standard for industrial environments EN 61000-6-4
EN 61000-4-2 ESD	*EN 61000-4-8 AC MF*	*EN 55011*
EN 61000-4-3 RF	*EN 61000-4-9 pulse MF*	
EN 61000-4-4 EFT	*EN 61000-4-11 AC dips*	*group 1 class A*
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:

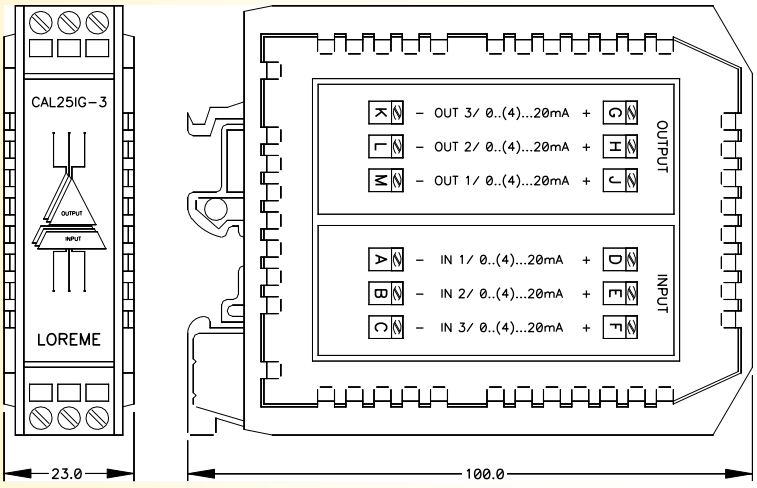
CAL 25 IG

CAL 25 IG/V
CAL 25 IG/H

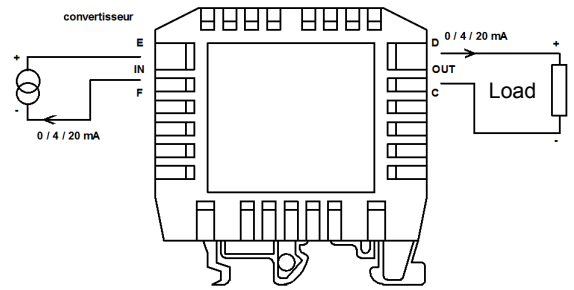


Use of CAL25IG, IG3, IG/V to isolate a load.

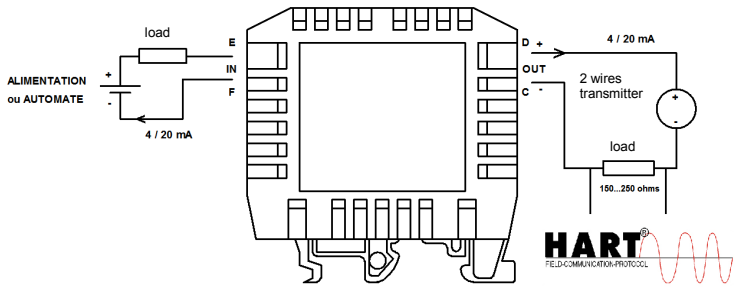
CAL 25 IG-3



Use of CAL25IGA to isolate a 2-wire transmitter.



⚠ Every load in the output impact the input loop,
loop breaking in output generate a loop breaking in input loop



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