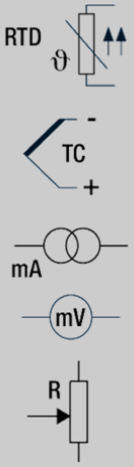
Analogue isolated transmitter for Pt100, thermocouple loop powered 4..20mA, DIN rail mounting — *Type CAL45*

- ***CALP45:*** *Pt100, Pt1000, Ptxxx, 2 or 3 wires input*
- ***CALT45:*** *Thermocouple input*
- ***CAL45:*** *mV, V (dc), mA (dc), potentiometer input*
- ***isolation:*** *input / output*
- ***2-wire transmitter:***
  powered by the 4-20 mA current loop



- ***LED to the immediate control of the loop and sensor***
  Green LED 4 ... 20mA loop OK ; red LED fault detection
- ***SIL2 and SIL3 compliance*** *According to IEC1508*

The CAL45 conditioner allow, for a Pt100, Tc, mA, mV or potentiometer input measure, to provide an output current (4-20 mA), isolated two-wire technique. Their use is recommended for eliminating ground loops, or for the acquisition system protection.

DESCRIPTION:

- Thermocouples : CALT45
- Platinum resistance sensor (PT100, PT1000) : CALP45
- Voltage (mV-V) : CAL45-mV
- Current (mA) : CAL45-mA
- Potentiometer : CALpot45

Correction of sensors
- RTD linearization .
- Cold junction compensation for thermocouples.
- Line compensation for RTD.

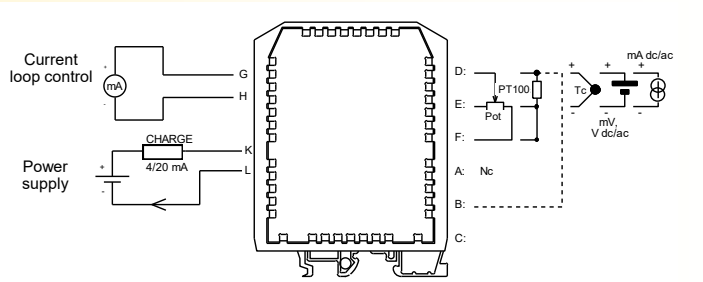
Feature:
- DIN rail mounting,
- IP20 protection rating,
- connection with screw-terminals,
  (section of the wires up to 2.5 mm²)
- green led for supply voltage presence,
- red led indicating failure, sensor breaking or excess by 15 % off the scale
- start and end scale adjustment with potentiometers,
- customization of the measure scale at manufacturing,
- high security value when sensor breaking
  (24 mA limitation, low safety on request),
- protected against reverse polarity,
- "test" terminals to control the output current without opening the loop (no green led during control).
  Do not put any load on this "test" terminals !

Environment:
- Long term stability : 0.1% / year
- Operating temperature up to 85 °C
- High EMC immunity
- Resistant protected against shock and vibration

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)

WIRING :



⚠ The TEST terminals (G,H) don't be use as output

Version and order code : Request a quote

CALP45:	linearized Pt100, Pt1000 inputs (2 or 3 wires),
CALT45:	thermocouple inputs (B, E, J, K, R, S, T, …to specify),
CAL45:	voltage input (mV), current (mA)
CALpot45:	potentiometer input

The input measurement range should be define on request

Option : - **SIL2 / SIL3** (all models)

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

INPUT

CALP45: Pt100 to Pt1000 (2 or 3 wires)
- Measure input range mini : 30 °C
- Line length compensation
- Response time : < 30 ms
- Accuracy : 0.2 % of full scale

CALT45: Thermocouple input (B, E, J, K, R, S, T, ... To be defined)
- Measure input range mini : 100 °C (according to type of thermocouple)
- Cold junction compensation (-10 to 60 °C)
- Response time: < 200 ms
- Accuracy: 0.5 % of full scale

CAL45: mV, mA, potentiometer input
- Measure input range mini for mV, mA : 5 mV, 500uA
- Measure input range for potentiometer: 100 - 1 MOhms
- Response time: < 30 ms,
- Accuracy : 0.2 % of full scale

POWER SUPPLY / OUTPUT (two-wire technique)

Loop power supply	14 to 50 V
Current output (loop powered)	4 / 20 mA
Load maxi:	500 Ohms for 24 Vcc
Admissible load :	(Vsupply - 14v) / 0,02
Load influence:	0.005 % / 100 Ohms
Supply influence:	0.003 % / V
Intrinsic consumption:	< 3.6 mA
Safety current:	> 22mA
Error of linearity (typ):	0.05 %
ripple (noise):	< 30 mV

ENVIRONNEMENT

Operating temperature	-20 °C to 60 °C
Storage temperature	-25 °C to +85 °C
Relative humidity	85 % not condensed
Influence (% full scale)	0.01 % / °C
Weight (plastic case)	80g
Protection rating	IP20
MTBF (MIL HDBK 217F)	> 4 000 000 Hrs @ 25°C
Lifetime	> 200 000 Hrs @ 30°C

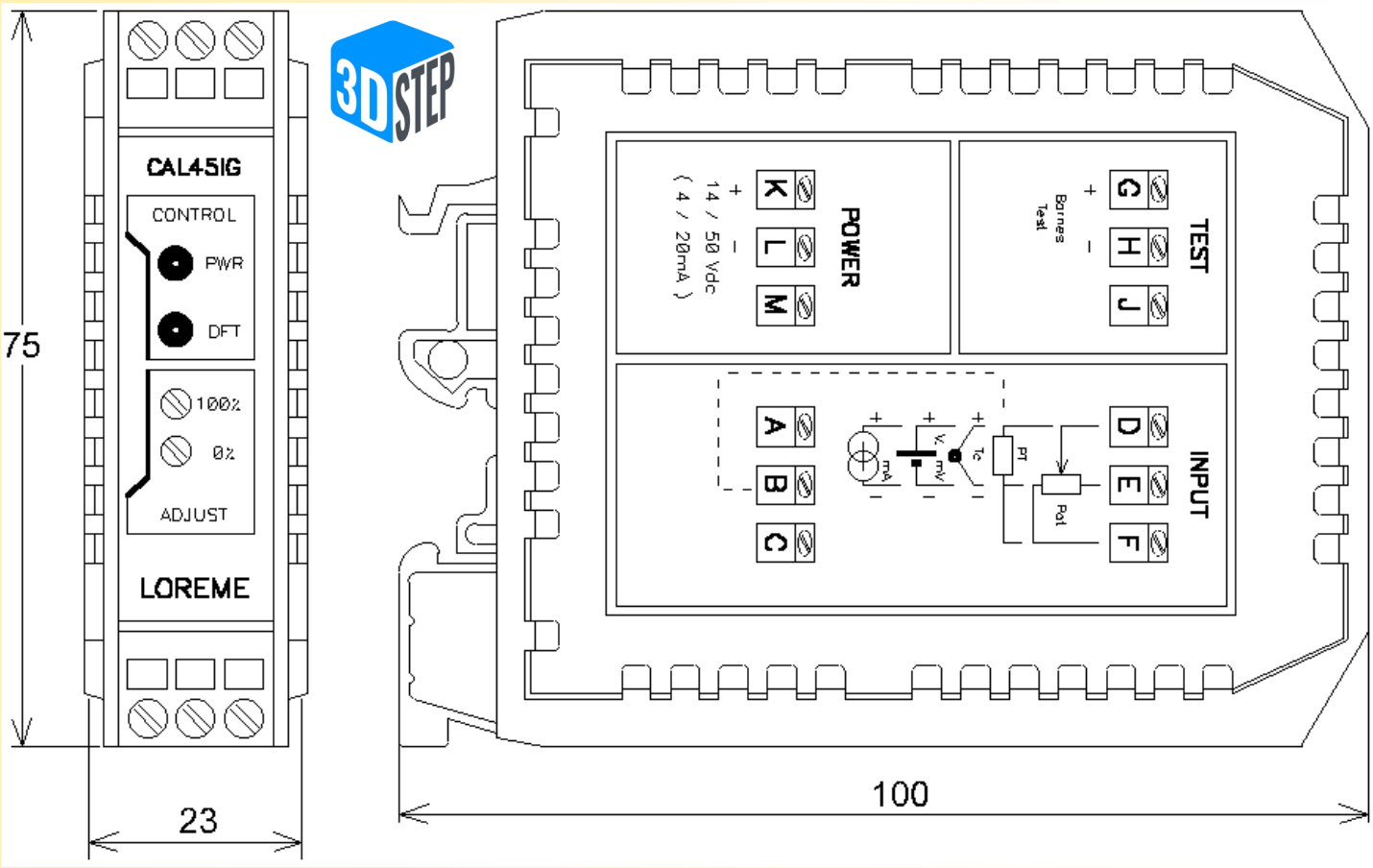
Shock IEC 60068-2-27 (operating)	15 G / 11 ms
Bump IEC 60068-2-29 (transportation)	40 G / 6 ms
Vibrations IEC 60068-2-6 (operating)	1 G / 10 - 150 Hz
Vibrations IEC 60068-2-6 (transportation)	2 G / 10 - 150 Hz
Montage	horizontal or vertical

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*	*group 1 class A*
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*	

CE

WIRING AND OUTLINE DIMENSIONS:



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