Programmable, isolated temperature transmitter, 4..20mA loop powered, option SIL2 — *CNL25igD*

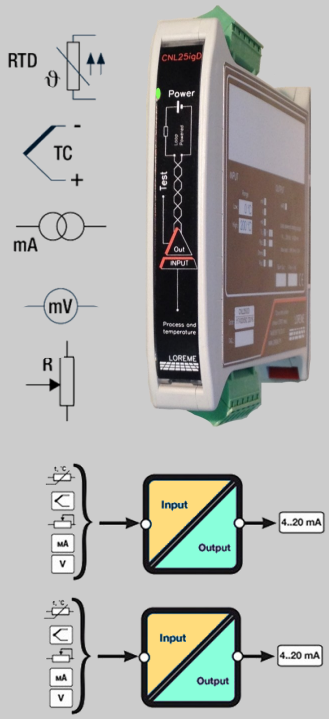
- ***Temperature and process inputs***

  RTD Pt100 2,3 or 4 wires, thermocouple,

  mV, mA, Potentiometer

- ***2 wires technology output :*** *4-20mA current loop powered*
- ***Galvanic isolation :*** *input / output*
- ***Fully configurable:*** *USB-serial link*
- ***CNL25igDH:*** *Hart protocol* HART

  Drivers DTM HART FDT certified
- ***CNL25igD-2:*** *2 independent transmitters. High density application*
- ***SIL2 compliance*** *according to IEC 61508*
- ***compact size :*** *18mm width case*



The CNL25igD is an isolated transmitters, DIN rail mounting, powered by the 4-20mA current loop, designed for temperature or process measurement. The CNL25igDH embedded the HART communication protocol, FDT certified, and available with SIL2 compliance according to IEC61508 standard.

Temperature inputs:
- Thermocouples with linearization and internal cold junction compensation,
- platinum RTD probe (2, 3 or 4 wires mount) with linearization and line length compensation.

Process inputs:
- voltage (mV),
- current (mA) on external shunt.
- potentiometer: 1kohms to 200kohms,

Signal processing:
- square root calculation (on process measures)
- user defined sensor breaking security value,
- user defined response time, 0.2 to 60 seconds (damping),
- normal or reverse output,
- offset measure adjustment,
- low sensibility to thermal ambient variations.

Features:
- 18mm width case,
- symmetrical DIN rail mounting,
- connection on pluggable screw terminal (2.5mm² maxi),
- reverse polarity protection,
- LED on front face for loop current presence indication,
- RS232 link for configuration (under the hinged front face),
- Store configuration parameters in Flash memory, data retention > 30 years,
- "watchdog" function to monitor the internal firmware running,
- input / output galvanic isolation (cancellation of measure errors dues to ground loop),
- conformal coating for electronics,
- protection rating (enclosure/ terminal blocks) IP20.

CONFIGURATION:

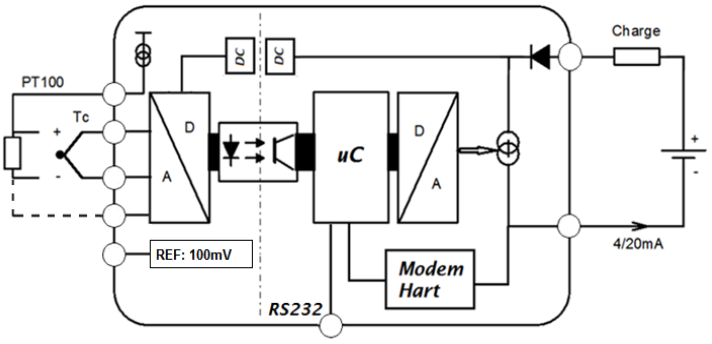
The device is configurable via the RS 232 serial link (jack 3.5mm) with any operating system emulating terminal.
- USB - jack 3.5mm cable (to order separately).

Operational safety data:
Type B components, HFT = 0

λf : 458 fit	(1/MTBF)
DC : 91.8 %	(Diagnostic Coverage)
PFH : 21 fit	(Probability of Failure per Hour)
SFF : 95.4.1 %	(Safe Failure Fraction)

SIL2

Synoptic:



Version and order code: Request a quote

CNL25igD : version with 3 wires PT100, thermocouple, mV, mA inputs and voltage reference for potentiometer inputs

CNL25igD-4F : version with 4 wires PT100, thermocouple, mV, mA inputs

CNL25igD-2 : version 2 independent transmitters

Option : /H : with HART communication
/SIL2 SIL2 version according to IEC 61508

Remark: options -2, /H and /SIL2 are combinable

INPUT (24 bits resolution)

TYPE	RANGE	ACCURACY
Tc B	200 / 1800 °C	+/- 2 °C
Tc E	-250 / 1000 °C	+/- 0.4 °C
Tc J	-200 / 600 °C	+/- 0.4 °C
Tc K	-200 / 1350 °C	+/- 0.4 °C
Tc R	0 / 1750 °C	+/- 1 °C
Tc S	0 / 1600 °C	+/- 1.5°C
Tc T	-250 / 400 °C	+/- 0.5 °C
Other thermocouple on request		
T° Compensation	-20 / 60 °C	+/- 0.3 °C
Input impedance		> 1 MOhms
Current for sensor breaking detection		0.25µA
2, 3, 4 wires PT100	-200 / 800°C	± 0.3 °C
Excitation current		300 µA
Line influence		< 0.03°C / Ohms
(maximum line resistance: 10 ohms by wires)		
Voltage	0 / 120 mV	+/- 0,02 mV
Input impedance		> 1 MOhms
Current	0 / 30 mA	+/- 0,015 mA
on external shunt	2,5 Ohms (provided on request)	
Potentiometer	1Kohms to 200 Kohms	
(supplied by 120 mV internal reference)		
Measurement rate	6 per seconds	

OUTPUT / POWER SUPPLY (14 bits resolution)

TYPE	RANGE	ACCURACY
Current	4 / 20 mA	+/- 0.01 mA
(loop powered : from 13 to 40 Vdc)		
user defined security value		3.7 to 22 mA
Load for 24 Vdc supply		550 Ohms
Load influence		0.004 % / 100 Ohms
Power supply influence		0.002 % / V
Response time		200 ms to 60 s
Long term stability		< 0.1% / years
Intrinsic consumption		< 3.7 mA

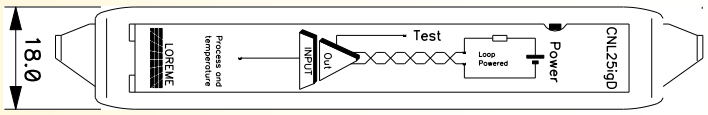
ENVIRONMENT

Dielectric strength	1000Vrms (Input / Ouput)
Operating temperature	-20 to 60 °C
Storage temperature	-20 to 85 °C
Influence (% full scale)	< 0.01 % / °C
Humidity	85 % not condensing
Weight	50 g
Protection rating	IP20
MTBF (MIL HDBK 217F)	> 2 000 000 Hrs @ 25°C
Life time	200 000 Hrs @ 30°C
Life time	85 000 Hrs @ 45°C

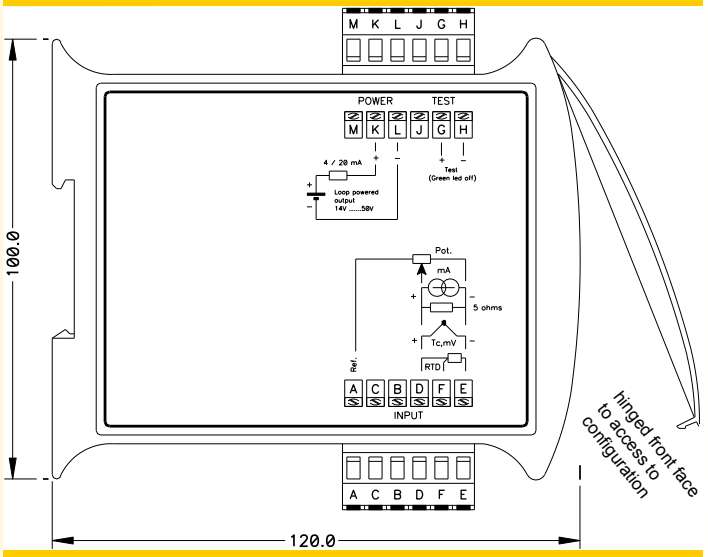
Electromagnetic compatibility 2014/30/UE / Low Voltage Directive 2014/35/UE

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*	CE
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*		

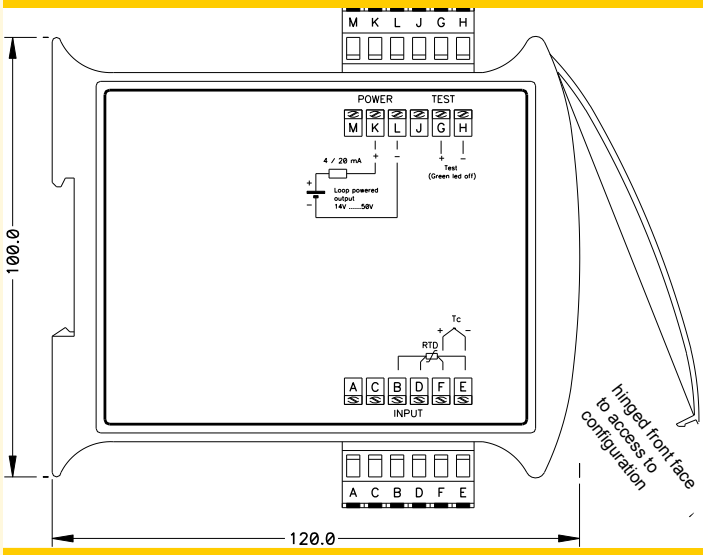
WIRING AND OUTLINE DIMENSIONS:



CNL25igD PT100 3 wires, thermocouple, mV, mA, potentiometer inputs



CNL25igD-4F PT100 4 wires , thermocouple, mV, mA inputs



CNL25igD-2 Dual transmitters version