

Programmable temperature and process isolated transmitter 4...20mA loop powered

CNL45D

LOREME

• Process and temperature measurement

voltage V, mV, current mA, potentiometer

thermocouple, PT100

• 2 wire technology

Powered by the 4-20mA current loop

• Galvanic isolation

• Fully configurable

• Measure display (10 000 pts)

• High thermal stability



The CNL 45D is an isolated numeric transmitter powered by the 4/20 mA current loop, combining the easy implementation of the loop powered technique with the flexibility of programmable converters.

DESCRIPTION:

Temperature inputs :

- thermocouples with linearization and cold junction compensation
- platinum RTD probe (PT100 2 or 3 wires mounting) with linearization and line length compensation.

Process inputs :

- voltage mV, V
- current mA,
- potentiometer : 1 kOhm to 200 kOhms,
- resistance

Output :

- current 4...20 mA in two wires technology (loop powered),
- programmable response time from 0.2 to 60 seconds,
- programmable output security value when sensor breaking,
- normal or reverse output

Complementary functions :

- Special linearization configurable on 20 points,
- square root extraction,
- adjustment of measure offset

Front face (optional) :

- alphanumeric 4 digits led matrix display

Feature :

- DIN rail mounting, IP20 protection rating
- connection on screw terminal block (2.5 mm² max),
- pluggable connectors,
- reverse polarity protection,
- led for loop current presence,
- test terminals to control the current without opening the loop,
- configuration settings saved in FLASH, data retention > 20 years,
- Watchdog function : monitoring the program process,
- input / output galvanic isolation,
- conformal coating.

CONFIGURATION:

The CNL45D can be configured via the serial RS232 link (jack 3.5), with any system emulating a terminal.

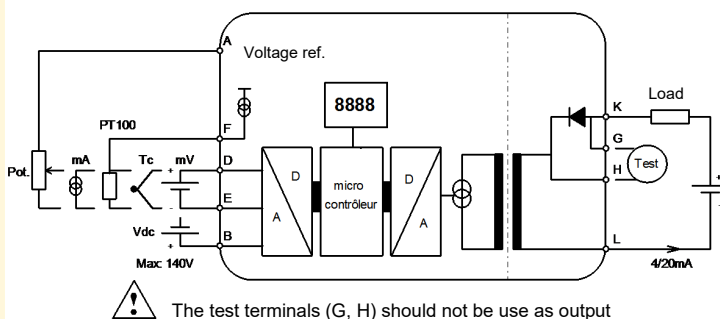
- No specific software required.
- USB - jack 3.5 adapter provide separately.

With the terminal communication, the user is able to

- see the measure, shift the measure
- setting the device parameters: input range, output range, filtering, ...

Warning the RS232 link is not isolated from measure inputs (check the absence of hazardous voltage on inputs before any configuration).

Synoptic :



Version and order code:

CNL45D : 18 mm case width

CNL45DA: version with display, 23mm case width

INPUT	RANGE	ACCURACY
		(24bits resolution)
Low level voltage	-10/ 140 mV	+/- 0.01 mV
input impedance	> 2 Mohms	
High level voltage	-10/ 140V	+/- 10 mV
input impedance	1 Mohms	
Current	0/ 35 mA	+/- 0.02 mA
impedance	2 ohms	
Resistance 2, 3 wires	0 / 384 ohms	+/- 0.1 ohms
polarization current	400 µA	
Potentiometer	1K to 1Mohms	+/- 0.1 %
Potentiometer reference	~ 140 mV for 1 Mohms	
according to potentiometer	~ 55 mV for 1 Kohms	
PT100 2, 3 wires	-200 / 800 °C	+/- 0.35 °C
Line Influence	< 0.4 °C / 10 ohms	
Thermocouples		
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	+/- 0.5 °C
Tc R	0 / 1750 °C	+/- 1.5 °C
Tc S	0 / 1600 °C	+/- 1.5 °C
Tc T	-250 / 400 °C	+/- 0.5 °C
(other couples on request)		
T° compensation	-10 / 60 °C	+/- 0.3 °C
input impedance	> 2 Mohms	

OUTPUT	RANGE	ACCURACY
Current	4 / 20 mA	± 0.01 mA
	(14 bits resolution)	
loop power supply	14 to 50 Vdc	
Load max.	500 ohms at 24Vcc = (Vpwr -14) / 0.02	
Current max.	22 mA	
Noise	< 50 mV pp.	on 500 Ohms
Response time	200 ms to 60 s	
Security value	3.5 to 22 mA	
Power supply influence	0.002 % / V	
Load influence	0.004 % / 100 ohms	
	ENVIRONMENT	
Operating temperature	-10 to 60 °C	
Storage temperature	-20 to +85 °C	
Thermal drift	< 0.004 % / °C (% of the full scale)	
Humidity	85 % (not condensing)	
Weight	105 g	
Protection rating	IP 20	
Dielectric strength	1000 Vrms continuous	
(input / output)		
MTBF (MIL HDBK 217F)	> 4 500 000 Hrs @ 25°C	
Lifetime	> 200 000 Hrs @ 30°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
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 RE	EN 61000-4-29 DC dips	



WIRING AND OUTLINE DIMENSIONS:

