

Isolated loop powered transmitter Temperature and process inputs

CNL45



• Programmable temperature and process input

Volt ,mV, mA, potentiometer

thermocouple, RTD PT100

• 2 wire Loop powered

powered by 4-20mA current loop

• Galvanic isolation

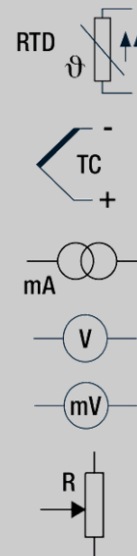
1000V input / output

• Fully configurable

RS232 link

• High thermal stability

50 ppm



The CNL 45 is an isolated numeric transmitter powered by the 4-20 mA current loop, combining the ease of use of loop powered device with the flexibility of programmable converters.

DESCRIPTION:

Temperature input :

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

Process input :

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

Output :

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

Additional functions :

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

Front face :

- Jack 3.5 plug for device configuration
- Green led for loop current presence,

Feature:

- DIN rail mounting, IP20
- connection on 2.5 mm² screw-terminals,
- protection against reverse polarity,
- test terminals for controlling current without opening the loop,
- configuration settings saved in FLASH, data retention > 20 years,
- "Watchdog" controls the good program running,
- input / output galvanic isolation,
- conformal coating.

CONFIGURATION:

The **CNL45** can be configured via the serial RS232 link (jack 3.5), with any system emulating a terminal.

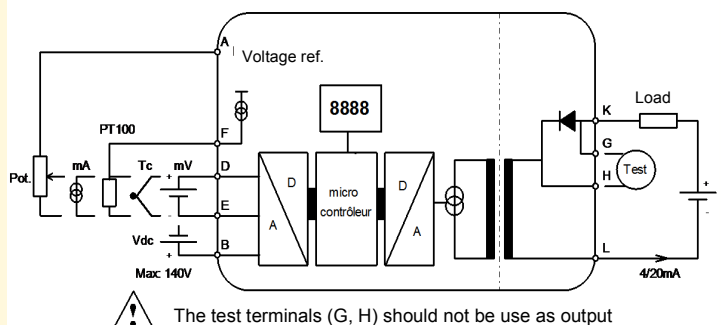
- No specific software required.
- USB - jack 3.5 adapter provide separately.

Via the terminal, the user will can:

- see the measures, shift the measure
- setting the transmitter parameters: input range, output range, filter, ...

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 :

[Request a quote](#)

CNL45 : Standard version


CNL45L : Low cost version

TECHNICAL SPECIFICATIONS

INPUT	RANGE	CNL45 (24bits resolution)	ACCURACY CNL45L (20bits resolution)
Low level voltage	-10/ 140 mV	± 0.01 mV	± 0.02 mV
input impedance	> 2 MOhms		
High level voltage	-10/ 140V	± 10 mV	± 15 mV
input impedance	1 MOhms		
Current	0/ 35 mA	± 0.02 mA	± 0.02 mA
impedance	2 Ohms		
Resistance 2, 3 wires	0 / 384 Ohms	± 0.1 Ohms	± 0.1 Ohms
measure current	400 µA		
Potentiometer	1K to 1MOhms	± 0.1 %	± 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	± 0.4 °C
Influence of the line	< 0.4 °C / 10 Ohms		
Thermocouples			
Tc B	200 / 1800 °C	± 2 °C	± 2.2 °C
Tc E	-250 / 1000 °C	± 0.4 °C	± 0.6 °C
Tc J	-200 / 600 °C	± 0.4 °C	± 0.6 °C
Tc K	-200 / 1350 °C	± 0.5 °C	± 0.6 °C
Tc R	0 / 1750 °C	± 1.5 °C	± 1.6 °C
Tc S	0 / 1600 °C	± 1.5 °C	± 1.6 °C
Tc T	-250 / 400 °C	± 0.5 °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 (14 bits resolution)	± 0.01 mA
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		-20 to 60 °C
storage temperature		-20 to +85 °C
influence (% of the full scale)		< 0.004 % / °C
Humidity		85 % (not condensed)
Weight		105 g
Protection rating		IP 20
Dielectric strength		1000 Veff continuous (input / output)
MTBF (MIL HDBK 217F)		> 4 500 000 Hrs @ 25°C
Life time		> 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 RF	EN 61000-4-29 DC dips	



WIRING AND OUTLINE DIMENSIONS:

