

Digital sensors monitoring unit CML36N

LOREME

- **46 temperature measures per module**

2 or 3 wires digital sensors

DS18B20 type for sensor elements

automatic detection of the sensors in the probe

- **Power supply and communication bus**

Incorporated into the DIN rail.

32 modules Interconnection

- **1 Ethernet Modbus TCP link**

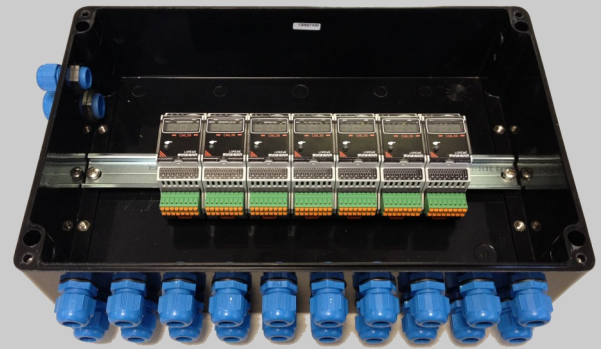
for all the BUS,

1472 measurement points.

Embedded Web Server

- **Open solution:**

evolving system: introduction of a new digital sensors type by product firmware update



The CML36N is a bus inter- connectable monitoring unit, allowing temperature measurement via digital silo probes. A bus can integrate up to 32 silo probes of 46 sensors points on a single Ethernet link.

Description : The digital temperature silo probes are using a communication bus called "one wire", data flows bidirectional on one wire, two other wires are used to power the probe. Each internal temperature sensor in the silo probe has a unique 64 bit ID and a 8 bits position register (register is initialized during the manufacturing process to define the location of the measurement point inside the silo probe).

Operation : At each silo probe reading, a specific search algorithm automatically determines how many temperature points are present in the probe. Once all the points are identified, the unit performs a reading of the temperature and the position of each sensor and processes these values (alarm management, display, making them available on the Ethernet,)

Security : All data exchanges are controlled by a "checksum" to ensure relevance of the measures. A transmission error automatically leads to a reiteration.

Each probe is entirely reset prior each reading to ensure a perfect measurement reliability and prevent false alarms.

Front face:

- Measure display: Green LEDs 7 segments 3 digits, resolution 0.1 °C
- Probe absence detection (display : Abs).
- One push button on the front face for the manual selection of displayed temperature point. (automatic return to the maximum temperature display of the probe after a 30sec delay)
- One push button under the front face, for configuration (number of measure point , address, ...)

Features:

- Mounting on DIN rail (symmetrical)
- Communication bus (built-in DIN rail)
- Connection on spring terminal block (max section 1 mm²)
- Conformal coating.
- Protection rating: IP20

Configuration / update:

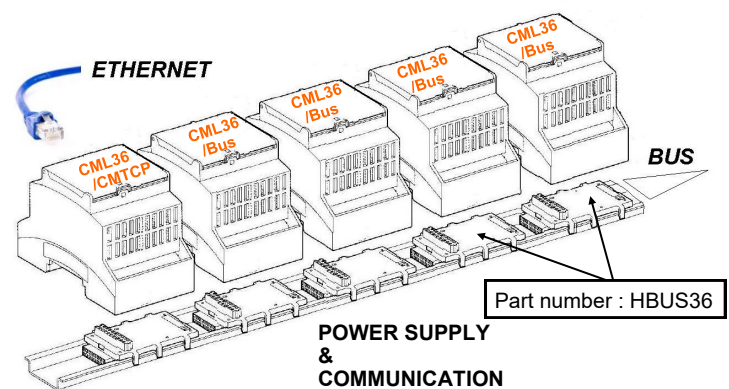
The device can be configured via the front panel.

Firmware update is possible via serial link
(USB cable available separately.)

Communication:

- Modbus TCP over Ethernet 10/100 T base (RJ45 connection)

Bus composition on DIN rail



Version and order code:

CML36N/CMTCP	Master module with the Ethernet MODBUS TCP link
CML36N/BUS	Slave module on the internal bus
HBUS36	Connecting element for the internal bus.
NAPPE-HBUS	Interconnection ribbon cable (length 50cm) (for bus continuity on another DIN rail)
BZN7760ac	- Zener barrier for use with intrinsically safe sensors (ia or iad)

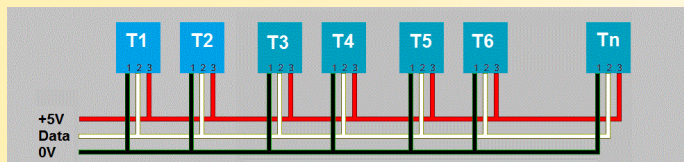
Measures

Type	Range	Accuracy
Digital sensor	-55.....125 °C	+/- 0.5 °C (-10°C/+85°C)
2 or 3 wires assembly (automatic detection)		
Supported sensor type : DS1820, DS18B20		
9 or 12 bits resolution according to sensor type.		
Internal bus Refresh: 6 seconds (1472 measures)		

COMMUNICATION

Modbus TCP over Ethernet 10 /100 T Base Port 502
RJ45 connector. Web server embedded

Internal detail of digital silo temperature probe



Some digital probe have only two wires (they works in a mode called "*parasitic power*", 5V and 0V are internally connected) This type of connection reduces the allowable distance between the probe and electronics.
The typical maximum length is 200 meter with 3 wires shielded cable.

Auxiliary POWER SUPPLY

12 32 Vdc		
consumption:	(CML36/CMTCP)	60 mA typical @ 24V
consumption:	(CML36/BUS)	25 mA typical @ 24V

ENVIRONMENT

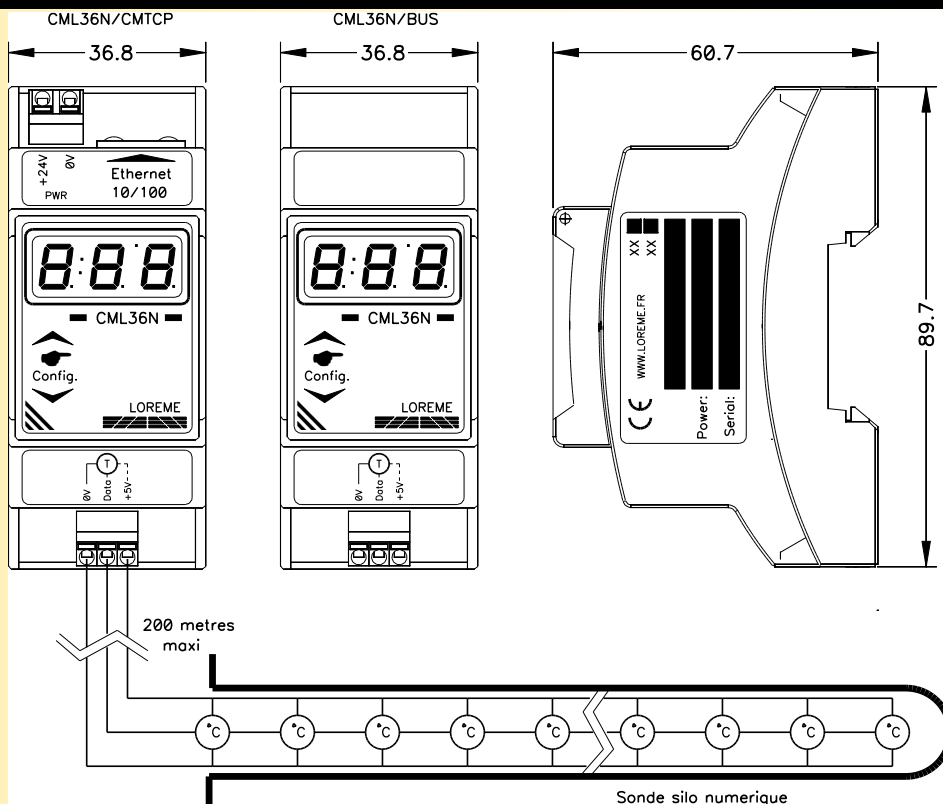
Operating temperature	-20 to 65 °C
Storage temperature	-20 to 85 °C
thermal effect	none
Relative humidity	85 % not condensed
Weight	100 g
Protection rating	IP 20
Dielectric strength:	input / power supply: no isolation
	input / Ethernet communication: 500 V
MTBF (MIL HDBK 217F)	> 500 000 Hrs @ 25°C
life time	> 130 000 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 group 1 class A
EN 61000-4-3 RF	EN 61000-4-9 pulse MF	
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:



Zener barrier for use with intrinsically safe sensors: Zone 0, 1, 2 (gas or dust application)

