

LOREME



LOREME electronic catalogue

Update: 09/12/20

Table of contents

Transmitter and isolator

Head mounting converter	4
Voltage and current loop isolator and splitter	5
Isolated loop powered transmitter	5
Isolated signal conditioner with auxiliary power supply	6
High output power signal amplifier	7
Multi channel PT100 converter	7
Binary BCD gray converter	8
SSi position sensor conditioner	8
Duty cycle PWM output conditioner	8
Resistor or potentiometer output conditioner	9

Thermometer Hygrometer

Room thermometer and hygrometer	10
Duct mounted thermometer and hygrometer	11

Indicator and display

Outdoor display / loop powered display	12
Panel meter (temperature and analog signal)	12
Bargraph for analog signal	13
Multi channel temperature and analog signal display	14
Alarms annunciator	14
Binary BCD Gray display	14
SSi position display	14
Remote display controlled through network	14

AC DC electric measurement

Voltage, current, frequency measurement	16
AC or DC power measurement single phase / three phase	17
Multi channel electrical measurement	18
Panel meter for AC and DC electrical network	19
Phase meter	19
Load shedding unit	19
Power controller, dimmer	20

Table of contents

Threshold relay - protection relay

Industrial electronic thermostat	21
Threshold relay for process signal	21
Relay for AC-DC voltage and frequency	22
Relay for AC and DC current	22
Leakage current protection relay	23
Phase order relay	23
Level relay and resistive level sensor	23

Power supply and DC-DC converter

Instrumentation power supply AC-DC DC-DC	24
PoE injector (Power over Ethernet)	24
DIN rail medium power supply AC-DC and DC-DC	24
Rack power supply AC-DC and DC-DC	26
Converter DC-DC AC-DC DC-AC	26
Waterproof power supply	27
Battery charger	27
Redundancy module	27
Inrush current limiter	28
Surge arrester and overvoltage protection	28

Remote input / output

BUS100 description	29
Analog inputs	29
Digital inputs	29
Analog outputs	29
Digital outputs	29

Special functions

Silo temperature monitoring	30
Frequency divider	30
Setpoint generator (current - voltage)	30
Switch / selector	30
Relay interface and PLC inputs	31
Sequencer	31
RFiD reader	31
Line continuity monitoring	31
Communicating battery charger	31
High frequency transmission and GSM	32
Timer	32
Diode network module	32

Specific customer studies

Transmitter and isolator

Head mounting converter

Analog temperature transmitter for sensors head mounting PT100, PT1000 or potentiometer input type CAL40



- **CALP40** Pt100, Pt1000 temperature transmitter
- **CALpot40** potentiometer input
- **CALP40Si** ATEX version, Intrinsically safe
- **Shockproof head mounting system** spring mounting
- **2 wires transmitter** 4-20mA loop powered
- **Led indicators for quick control of loop and sensor**
Green LED for current loop presence
Red LED for sensor failure
- **SIL2 and SIL3 conformity** according to IEC 61508



Programmable temperature transmitter PT100 and thermocouple for sensors head mounting type CNL40



- **CNL40** : RTD PT100 and thermocouples input
- **CNL40D**: Double version
2 independents transmitters in one enclosure
- **CNL40L** : Low cost version
- **Fully configurable** : RS232 USB link
- **Loop powered**
powered by 4-20mA current loop, without isolation



CNL40D



Isolated temperature transmitter PT100 and thermocouple For sensors head mounting CNL40iG



- **Universal**: RTD (3 or 4 wires), thermocouple, mV, mA
- **CNL40iG** Galvanic insulation
- **CNL40iGH** + HART protocol
- **CNL40iGL** Low cost version
- **Fully configurable** RS232 and HART
- **FDT certified DTM HART Drivers**
- **Loop powered**: Powered by the 4-20 mA loop current
- **SIL2 conformity** according to IEC 61508



Programmable temperature transmitter PT100 For miniature sensors head mounting type CNL27



- **Miniature head mounting**
25mm diameter, 19mm mounting hole spacing
- **RTD 100ohms input**
2 wires
- **Configurable measure range**
communication on the current loop
- **2 wires technique**
powered by the 4-20mA current loop
without insulation
- **Application**
Tertiary sector, air-conditioning



Field mounted transmitter with loop powered indicator ATEX SIL2 INP201



- **LCD display**:
10000 points
configurable display range
- **2 wires technology**
4-20mA current loop powered
- **Mounting**
temperature probe or pipe mounted
IP65 protection
- **INP201i**:
316 Stainless Steel version
- **INP201H**:
Hart protocol option
- **INP201ADF**
ATEX / IECEx option
Explosion-proof
- **SIL2 compliance**
According to IEC 61508



temperature probes assemblies

Pipe mounting

Stainless steel version

Field mount loop powered temperature transmitter with LCD display INP101



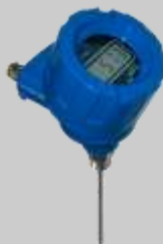
- **Loop powered** (isolated 4-20mA)
- **LCD display**: 10000 points
- **Outside mounting**
IP67 protection
- **Explosion-proof protection**
IECEX and ATEX
- **INP101V**: rotating display
for horizontal or vertical mounting
- **INP101 i**: 316 Stainless Steel version
- **HART protocol**
(available option on all models)
- **FDT DTM certified HART drivers**
- **SIL2 compliance**
according to IEC 61508



INP101V on thermowell

INP101 on thermowell

INP101i stainless steel version



INP101V vertical mounting

INP101V horizontal mounting

INP101

Transmitter and isolator

Voltage and 4-20mA current loop isolator and splitter

4-20 mA Current loop isolator and signal splitter SIL3 / SIL2

CAL23DmA



- **Input current :** (0...4...20mA)
With or without sensor power supply
- **Simulation plug :** (Automatic input switching)
Allowing full loops control without disconnection
- **4 ways galvanic isolation** (1000 V)
- **2 Active or Passive Current Outputs**
Independents outputs
Max Load : 750 ohms
- **Analog design**
- **pluggable terminal blocks**
- **Universal power supply :** 20 to 265 Vac/Vdc or 24Vdc
- **HART transparency**
- **SIL2 and SIL3 compliance** according IEC61508



Self powered galvanic isolator for 0..4..20mA current loop SIL2 / SIL3

CAL25igD



- **Up to 8 isolated channels**
Available with 1 to 8 independents channels
- **High density**
8 isolators in 23mm width case
- **No auxiliary supply**
Loop powered
- **Excellent linearity :** 0.1%
- **Low response time :** < 2 ms
- **Low insertion loss :** < 65 ohms
- **Pluggable terminal blocks**
- **Option SIL2 and SIL3** according to IEC 61508
- **Application**
isolation between PLC



4-20mA signal isolator, splitter with 2, 3, 4 outputs SIL2 / SIL3

CAL4/100ig CAL4/100igM



- **CAL4/100ig** (current loop splitter)
 - CAL4/100ig2: 1 input to 2 outputs
 - CAL4/100ig3: 1 or 2 inputs to 3 outputs
 - CAL4/100ig4: 1 or 2 inputs to 4 outputs
- **CAL4/100igM** (multi current loop isolator)
 - CAL4/100igM2: 2 inputs, 2 outputs
 - CAL4/100igM3: 3 inputs, 3 outputs
 - CAL4/100igM4: 4 inputs, 4 outputs
- **Input:** active or passive
- **Output:** with test terminals and control led
- **AC-DC universal supply:** 20...265V
- **option SIL2 and SIL3** according to IEC 61508



8 channels signal splitter, signal isolator 4...20mA or 0...10V

CAL150-8



- **8 isolated 0..4...20mA current loop**
active or passive inputs
8 isolated 24V loop power supplies
- **Output on terminal blocks or connectors**
or pre-wired output cable
- **Universal power supply**
20...265Vac-dc
- **Fully isolated**
input / output / power supply and between channels
- **Option HART transparency**
- **Option SIL2 and SIL3** according to IEC 61508



Galvanic isolator current loop powered 0-10mA, 0-20mA, 4-20mA, 10-50mA, ...

CAL25IG



- **CAL25IG:** 1 or 2 independent channels
- **CAL25IG/H:** Hart transparent option
- **CAL25IG/3:** 3 independent channels
- **CAL25IG/V:** dielectric strength of 2500 Vrms
- **CAL25IGA:** 1 channel, isolation of loop powered transmitter
- **Without auxiliary power supply**
Powered by current loop
- **Excellent linearity:** 0.1%
- **Low response time:** < 2 msec
- **Small insertion loss:** < 65 Ohms
- **Wide range, 1:1 ratio:** 0..4..10..20..50mA
- **SIL2 and SIL3 option:** in accordance to IEC61508



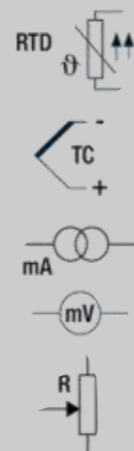
Isolated loop powered transmitter

PT100, thermocouple analog transmitter Compact isolator 0..10V and +/- 10V

CAL25



- **CALP25** 2 or 3 wires Pt100, PT1000 input
- **CALT25** Thermocouple input
- **CAL25** mV, mA, potentiometer inputs
- **2-wire transmitter,** 4-20 mA loop powered
- **3-wire transmitter,** 0-10 V output
- **CAL25isoV** Signal isolator
0..10V input, 0..10V output, 24Vdc power supply
+/-10V input, +/-10V output, 24Vdc power supply
- **LED indicators for supply and sensor**
Green LED for 4-20mA loop current OK
Red LED for sensor breaking
- **SIL2 and SIL3 compliance** according to IEC 61508



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



- **CALP45:** Pt100 to Pt1000 input
- **CALT45:** Thermocouple input
- **CAL45:** mV, V (dc), mA (dc), potentiometer input
- **isolation:** input / output
- **2-wire transmitter:** (powered by the 4-20 mA loop)
- **LED to the immediate control of the loop and sensor**
(Green LED 4 ... 20mA loop OK, red LED fault detection)



Transmitter and isolator

Isolated loop powered transmitter

Programmable temperature transmitter PT100, thermocouple 4-20mA current loop powered

CNL25D



- **Input :** Pt100 RTD, thermocouple
- **Low profile:** 17 mm width
- **Pluggable terminal blocks**
- **2 wires technology :**
powered by the 4-20mA current loop
- **Fully configurable :** Usb-RS232 link



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



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

CNL45D



- **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**



4-20mA loop powered temperature transmitter miniature, isolated, programmable

CNL25IG



- **Temperature and process inputs**
voltage V, mV, mA current, potentiometer
thermocouple, Pt100
- **2 wires technology**
4-20mA loop current powered
- **Galvanic isolation**
- **Fully configurable**
- **low profile DIN rail mounted enclosure**

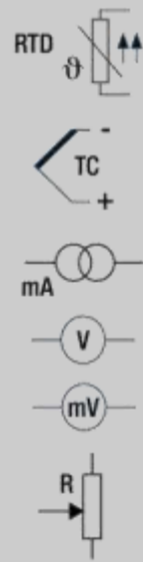


Isolated loop powered transmitter Temperature and process inputs

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



Isolated temperature converter with LCD display powered by the 4-20mA current loop type: CNL70

type: CNL70



- **Temperature and process input**
RTD, thermocouple, mV, mA, Potentiometer
- **Two-wire 4-20mA current loop**
loop powered
- **Galvanic insulation**
Input / output
- **Display**
4 digits LCD, 10 000 pts
- **Fully configurable**
RS232 and HART
- **CNL70-H** **HART**
HART protocol
Driver DTM HART FDT certified



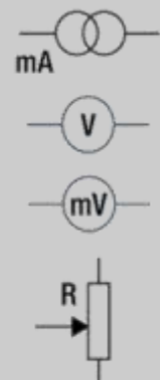
Isolated signal conditioner with auxiliary power supply

ISOLATED ANALOG SIGNAL CONDITIONER GALVANIC ISOLATION

CAL23D



- **Process inputs:** mV, V, mA, A, Ohms, potentiometer
direct input up to 1000Vdc and 10Adc
- **3-way 2.5kVAC galvanic isolation**
- **Active or passive current mode**
For input and output,
2 or 3 wires sensor power supply: 22V, 200mA
- **Typical 10ms response time** 1kHz bandwidth in option
- **High output load resistance** > 1500 ohms
- **Universal power supply** 20 to 265Vac-dc or 10 to 30Vdc
- **Application :** current loop isolator
DC voltage or current measurement.



High voltage, bipolar, fast galvanic isolator measure shunt isolator

CAL23DT-HV



- **Voltage or current input :**
0..100mV (+/-100mV) to 0...1000V (+/- 1000V)
0...1mA (+/- 1mA) to 0...10A (+/- 10A)
- **High galvanic isolation**
dielectric strength 5KVac / 7KVdc
- **Voltage output**
0..10V (+/- 10V)
- **Fast signals**
bandwidth up to 30Khz
- **Applications:**
Energy, railway



Transmitter and isolator

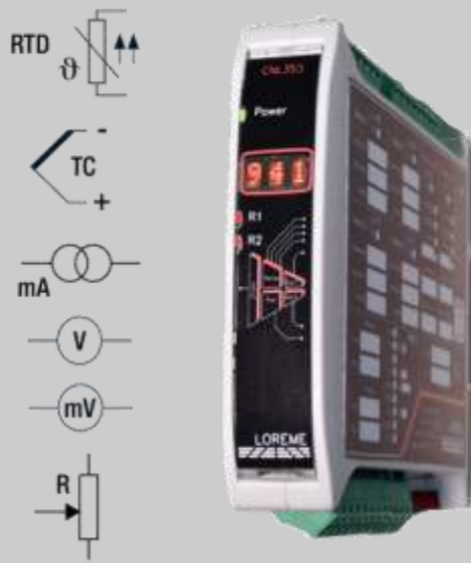
Isolated signal conditioner with auxiliary power supply

Programmable analog signal conditioner with threshold relay

CNL35D



- **Wide range of analog inputs**
Process: voltage, current, sensor power supply, potentiometer
Temperature: thermocouples, PT100, Ni100
- **1 isolated analog output 4...20mA, 0...10V**
- **2 relays outputs**
- **Measure display and front face configuration**
- **Pluggable connectors**
- **Universal supply 20....265Vac-dc**
- **SIL2 option** according to IEC61508



Universal programmable converter for analog signals

TYPE: CNL35L and Threshold Detector DNL35L



- **Wide range of process and temperature analog inputs**
voltage, current, sensor power supply, resistance, potentiometer, frequency, duty cycle, strain gauge, Thermocouples, PT100 3wires and 4 wires, PT1000, Ni100, Ni1000
- **1 or 2 isolated analog outputs**
(version without analog outputs "threshold detector" ref.: DNL35L)
- **Up to 4 relay outputs**
- **Low response time: 35 ms**
- **Measure display (10 000 pts)**
(programmable in front face or by USB-RS232 cable)
- **Pluggable connectors**
- **Universal power supply 20....265Vac-dc**
- **SIL2 option** according to IEC 61508



High voltage Isolation amplifier Signal conditioner

CNL34DHig



- **Process and temperature input**
platinum RTD, thermocouple, mV (shunt), mA
- **High voltage galvanic isolation**
dielectric strength of 10kVac / 15kVdc continuous
- **Fully configurable**
RS232 link
- **Universal power supply Ac / Dc**



Universal isolator and isolated analog signal conditioners

CAL30, CAL35



- **All inputs via interchangeable measure card**
Volt, mV, mA, potentiometer, frequency, Hall effect current sensor, thermocouple, PT100, PT1000, integrator for Rogowski coil sensor
- **Unipolar or bipolar analog output:**
0...4...20mA, 0...1...5...10V, +/-20 mA, +/-10V, frequency
- **Special function**
Maximum value selector between 2 analog inputs
Minimum value selector between 2 analog inputs
Voltage to frequency converter,
Adder, differentiator, absolute value, ...
- **Three way galvanic insulation**
Input / Output / power supply
- **Fast signals version**
response time < 50 us
Bandwidth up to 20 KHz



High output power signal amplifier

High output current analog signal amplifier conditioner

CAL101L / CAL140



- **Application :**
valve control, positioner, actuators...
Voltage or current amplifier,
High magnitude signal conditioner
- **Maximum output power: 150 VA**
- **Current or voltage output**
unipolar up to 80V / 5A
bipolar up to +/- 30V / 5A
- **Fully protected**
short-circuit
overloads
thermal
- **3-way galvanic insulation**
input / output / power supply
- **up to 20Khz of bandwidth on request**
Response time mini < 0.1ms



Multi channel PT100 converter

6 channels PT100 converter output 0...10V

Type : CTL105



- **Up to 6 measure channels**
RTD 100 input
0 ... 10V outputs
- **Fully configurable**
Scale, filter, offset, ...
- **Low cost applications**



Multi-channels PT100 temperature converter LCD display

Maxi, Mini, average output

TEMAX105LCD



- **Temperature input**
Up to 4 platinum RTD
- **2 wires transmitter**
(4-20mA current loop powered)
Output current is an image of maximum, minimum or average of temperature inputs
- **Display : 2 lines of 16 characters LCD**
Display simultaneously the four temperature inputs
- **Fully configurable**



Transmitter and isolator

Binary BCD gray converter

Binary Gray BCD to 4-20mA or 0-10V converter for parallel outputs encoders

TYPE: CNA105



- **18 parallel digital inputs**
(16bits + sign + lock)
BCD, Gray, Binary input formats

- **Analog output**
0...4...20mA, 0...10Volts, 16 bits resolutions

- **Optional relay output (CNA105/R)**
2 programmable thresholds

- **Application :**
Interface for parallel outputs encoders



Analog to digital converter 4-20mA to BCD - GRAY - BINARY

TYPE : CAN105



- **Analog input**
4...20mA, 12bits resolution

- **Parallel digital outputs**
Gray, Binary or BCD code
(14bits + Enable output)

- **Ethernet Modbus TCP link in option**



Gray code comparator for parallel outputs encoder

TYPE : CCN165



- **2 groups of 25 parallels digital inputs**
(from 4 to 25 bits in gray code)

- **3 relays outputs + 1 Watchdog output**
programmable differential threshold
on inputs

- **Application :**
Synch control of 2 sensors



SSi position sensor conditioner

SSi encoder to 0..4..20mA analog output converter

type : CNL35SSi



- **Synchronous Serial interface (SSi) input**
Master or slave mode
8 to 32bits SSi frame in binary or gray format
Encoder may be powered by converter

- **Display**
4 digits for measure
Easy programming with explicit text message

- **option :**
Up to 2 relays
Up to 2 isolated analog output

- **Plug-in connectors**

- **Universal supply (Ac and Dc)**



SSi to parallel converter with Ethernet for absolute encoder

TYPE : CSSIP105



- **Synchronous Serial interface input (SSi)**
Master or slave mode
8 to 25bits SSi frame in binary or gray format
can provide supply for encoder

- **Parallels outputs**
25bits + DATA Valid output
GRAY or BIN format

- **option Ethernet modbus tcp link**



Duty cycle PWM output conditioner

Analog converter Pulse Width Modulation output For driving Static Relay

type: CMi30 & CMi31



- **Direct control of synchronous static relay**
Whole wave train (PWM)

- fix dosing mode
- Analog setpoint converter mode

- **Switchable setpoint**
- Internal potentiometer
- External (4 ... 20mA, 0 ... 10V, potentiometer)

- **Application:**
- Control of heating resistors for:
- Ovens, bath oils, industrial process
- Climatic chambers
- Test benches

- **Voltage output signal or static relay dry contact:**
- 0...10V ;



Power controller with pulse width modulation output For driving SSR

type : CMi70



- **Direct control of synchronous static relay**
whole wave trains modulation

- **selectable setpoint input**
- 4..20mA , 0...10V , 0...20V, potentiometer

- **Application:**
Control of heaters for:
- Ovens, bath oils, industrial process
- Climatic chambers
- Test benches



Transmitter and isolator

Duty cycle PWM output conditioner

Programmable converter with duty cycle output.

DNL35-MLi



GET A
QUOTE

- **Process input**
(Volt , mA, sensor power, potentiometer,)
- **2 , 3 or 4 relays outputs**
(programmable output in PWM)
- **Measure display (10 000 pts)**
(Programmable by front face or RS232)
- **Universal power supply**
- **Low cycle time : 20ms**



Resistor or potentiometer output conditioner

Analog input converter with
resistor or potentiometer output

type : CNLB20pot



GET A
QUOTE

- **Voltage, current, temperature input**
4..20mA , 0..10V , Pt100 , Thermocouple
- **Fully configurable**
- **resistance (Ohms) output 2 or 3 wires**
256 conversion steps
- **user adaptable transfer function**
with 51 points linearization
- **Fully isolated**
- **Pluggable connectors**



Thermometer Hygrometer

Room thermometer and hygrometer

Thermo hygrometer probe with PoE Ethernet interface option: barometer and data recorder

SAi60



- Ambient temperature and humidity probe
- Barometer (atmospheric pressure)
- Recording and export data (Excel format)
 - Graphics display on Web server
- Communication:
 - Modbus TCP (Ethernet) 6 concurrent connections
 - Embedded Web Server
 - SNMP
 - Send alarms email, SMTP protocol
- Powered by the Ethernet switch
Power over Ethernet (POE)
- High visibility LCD display (OLED)
- Configurable sound alarm with internal buzzer
- Applications:
 - Clean room, calibration laboratories,
 - museums and exhibition halls,
 - data center, warehouses,
 - air-conditioned room, ambient probes

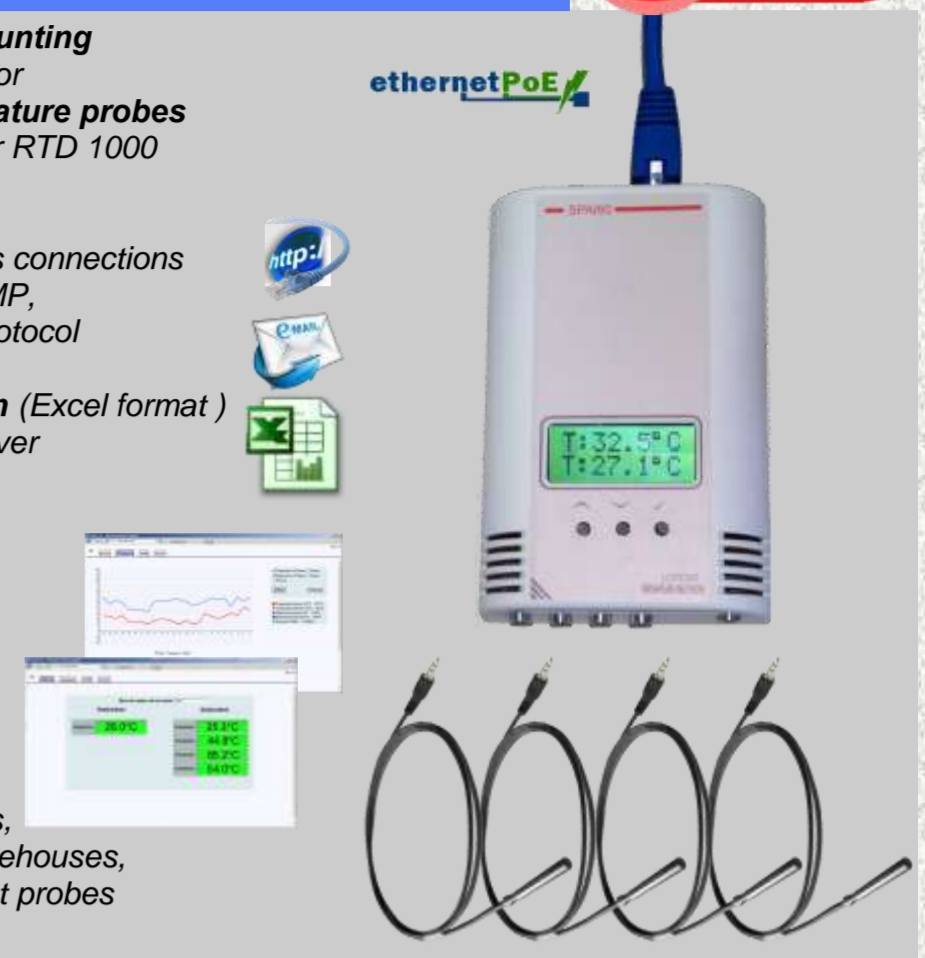


Room thermometer with PoE Ethernet interface and remote temperature probes

SPAi60



- Ambient temperature in wall mounting
 - embedded temperature sensor
- Option: input for remote temperature probes
 - Up to 4 inputs for RTD 100 or RTD 1000
- Communication:
 - Modbus TCP, 6 simultaneous connections
 - Embedded Web Server, SNMP,
 - Send alarms email, SMTP protocol
- Recording measurements option (Excel format)
 - Graphics display on Web server
- Powered by the Ethernet switch
- Power over Ethernet (PoE)
- LCD display
- Applications:
 - sterile room,
 - calibration laboratories,
 - Museums and exhibition halls,
 - Clean room, data center, warehouses,
 - air-conditioned room, ambient probes



Room thermo hygrometer with radio link option : Barometer and remote sensor

WAI60



- Room temperature and hygrometry
- Optional Barometer (atmospheric pressure)
- Bidirectional HF link
 - 2.4Ghz IEEE802.15.4
 - Up to 32 devices in one network
- Optimum reliability
 - Mesh networks between devices (probes)
 - Up to 8 jump to reach a device
 - Dynamic reconfiguration of path according to environment
 - Transmission rate > 99.999%
- Great autonomy
 - > 2 years with 4 standard AAA batteries
 - with refresh rate of 60sec
- Applications :
 - Sterile chambers, calibration laboratories
 - Museums and exhibition halls
 - Clean room, datacenter, warehouse
 - air-conditioned room, room sensor
- Optional remote sensor
 - with up to 10m cable length



HARDENED ROOM SENSOR RS485 MODBUS link for environment monitoring

SAD120



- Integrated sensors:
 - Temperature (-40°C...+85°C)
 - Humidity (0.....100%)
 - Barometric pressure (500.....1150hPa)
 - Dew point (calculated)
 - Remote dust sensor (0.1....0.5mg/m³)
 - Remote anemometer sensor (5...180km/h)
- Communication
 - RS485 half duplex, Modbus RTU protocol
- Power supply
 - 24V Dc
- IP66 painted aluminum case
 - Wall mounting (optional DIN rail adapter)
 - Rugged M12 - 5 pin connectors (RS485, power)
- LCD display 4 lines of 16 characters
 - (temperature, humidity, atmospheric pressure, dust or speed)



PROBE for room temperature and surface temperature INSIDE and OUTSIDE application



- SPAI - CAL:
Room temperature measure
- SPAI - A:
Room temperature measure
with LCD display
- SPAE - CAL:
Waterproof outside
temperature measure (IP 65)
- SPAE-CNL/H:
Waterproof outside
temperature measure (IP 65)
with HART transmitter
- SPC01/CAL:
Surface probe (piping)
- Loop powered (4 - 20 mA)
12 to 35 V power supply



HYGROMETER: SHL20, HRA40 THERMO-HYGROMETER

type: HRA40



- HRAE40: Outdoor hygrometer
- HRAE40/T: Outdoor thermo-hygrometer
 - Surface mounted device
 - Protection rating IP65
- HRAi40: Indoor hygrometer
- HRAi40/T: Indoor thermo-hygrometer
 - Surface mounted device
 - Protection rating IP20



- Available in 4-20mA loop powered or with 0-10V output

Thermometer Hygrometer

Duct mounted thermometer and hygrometer

HYGROMETER FOR AIR DUCTS SHL18 THERMO-HYGROMETER FOR AIR DUCTS SHL18T



• **SHL18-mA:** Hygrometer
two wires 4..20mA output

• **SHL18-v:** Hygrometer
voltage output 0...10V

• **SHL18T-v:** Thermo-hygrometer
2 voltage outputs 0...10V

• **Application:**

room temperature and humidity measurement,
air duct temperature and humidity measurement,
oven or sterile room measurement,
Mounting with clamp or flange



Temperature probe with conditioner interchangeable with M12 connector

SPM12-TR18



• **SPM12-TR18** : set of PT100 probe with 4-20mA conditioner

• **TR18** : Transmitter alone

- RTD 100 3 or 4 wires (female M12 4 pins)
- 4-20mA current loop powered
- Connection with M12 male compatible 4 or 5 pins
- Measure scales configurable (USB link)

• **SPM12** : Temperature probe alone

- All version to defined
smooth, to screw, cable, ...
- Wiring on M12 male 4 pins



Duct mounting hygrometer / thermo-hygrometer

HRG40



• **HRG 40:** Hygrometer

HRG40/A

HRG40

• **HRG 40/T:** Thermo-hygrometer
accuracy +/- 2% RH , +/-0.4°C from 5 to 40°C

• **HRG 40L:** Low cost version
accuracy +/- 3.5% RH , +/-0.5°C to 25°C

• **HRG 40 /A:** Version with display
10000 pts LCD

• **Use in hard environment**

• **Protection rating IP65**



Indicator and display

Outdoor display / loop powered display

4-20mA loop powered Display meter

type: 95600



- **95600 / 95601:**
LCD panel meter 96x48mm
95600 analogue version
95601 programmable version with push buttons
- **95600RD:**
Din rail mounting version
- **95600EXT:**
IP66 waterproof mounting with wall or pipe support
Explosion-proof ATEX version
- **4..20mA Loop powered display**
without external supply
Hart transparency
- **Wide temperature range LCD display**
Configurable display range



Rugged LED display Ethernet controlled

type: ANL201



- **ANL201:**
IP66 external mounted version on pipe or wall mounted
- **ANL201ADF:**
Explosion-proof ATEX option
- **Display drive by numerical link (remote display)**
Ethernet, Wifi ou RS485
- **24Vdc Auxiliary power supply**
48Vdc option
- **5 digits LED display**
Red or green



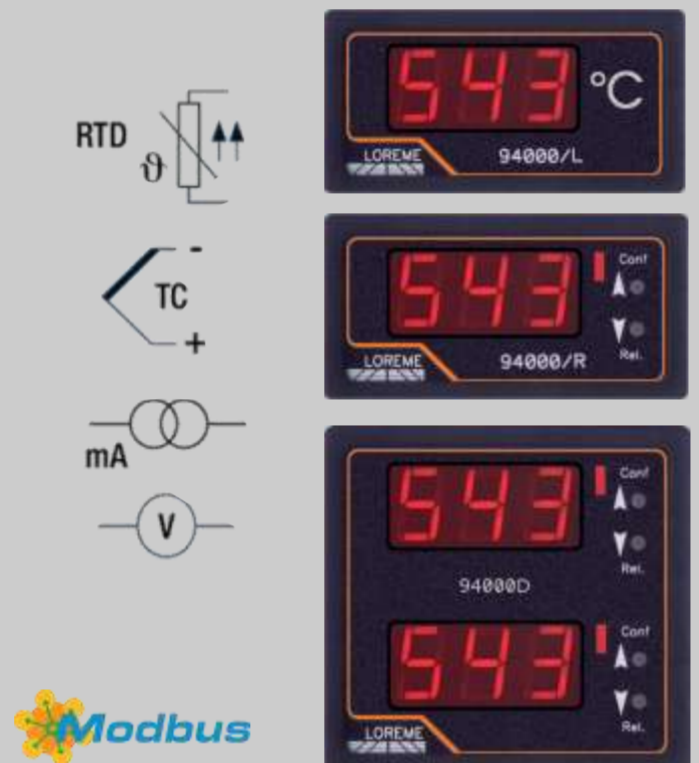
Panel meter (temperature and analog signal)

Small panel meter PT100, Thermocouple, 4-20mA, 0-10V Panel mount Thermostat

type: 94000



- **Process input version**
Input: 0..10 Volts ; 0...4...20 mA,
Sensor power supply
- **Temperature input version**
PT100 ; PT1000; Ni100; Ni1000; ...
Thermocouple : J,K,T
- **Size 72 x 36 mm**
Low depth
- **Size 72 x 72 mm**
Double panel meter version 9400D
- **1000 pts LED display**
Available in red, green, yellow, blue
- **Relay output option :** 94000/R
- **4..20mA analog output option :** 94000/S
- **RS485 Modbus link option:** 94000/CM



Panel meter for analog input

TYPE : INL24L



- **All process input**
Volt, mV, mA, Sensor supply
potentiometer, frequency, strain gauge
- **5 digits, 100 000 pts display**
- **option :** 1 or 2 relay output
- **Pluggable connectors**
- **Universal supply :** 20...265Vac-dc
- **Fast response time:** 35 ms
- **Size:** 96x24 mm



Programmable panel meter : PT100, thermocouple, 4-20mA SIL2

TYPE : INL35



- **Process and temperature inputs**
Volt, mV, mA, sensor power supply, potentiometer, frequency, strain gauge,
thermocouple, PT100
Programmable via the front face and USB-RS232 link
- **Display :**
10 000 pts for measure,
unit display on 4 alphanumeric digits
96 x 48 mm standard format
- **option :** Isolated analog output,
up to 4 relay outputs,
RS485 link Modbus / Profibus,
Ethernet Modbus TCP link
- **Pluggable terminal blocks**
- **Universal power supply** 20 ... 265Vac-dc
- **SIL 2 option** according to IEC 61508



Programmable 5 digits mater panel for analog signal

TYPE : INL35L



- **All process inputs**
Volt, mV, mA, potentiometer,
frequency, strain gauge
sensor power supply
- **5 digits, 100 000 pts display**
- **option :** up to 4 relays outputs
isolated analog output
RS485 Modbus or Profibus
ETHERNET Modbus TCP
- **Universal supply** AC and DC
- **Fast response time:** 35 ms
- **INL35L :** size 96x48mm
- **INL35LD :** size 96x96mm
double display module
- **Pluggable connectors**



96 x 48 mm 6 DIGITS PANEL METER 0...4... 20mA input HIGH PRECISION / HIGH SPEED

INL36



- **24 bits 0...4...20 mA current input**
Configurable acquisition 7 to 3500 samples / second
Very low noise
< 250 nA at 7 samples / second
< 25 µA at 3500 samples / second
- **Measure display 1 000 000 pts**
- **4 digits display for the unit**
- **Up to 4 relay outputs**
- **option :** Isolated analog output
RS485 link modbus/profibus
Ethernet Modbus TCP link
- **Pluggable connector**
- **Universal power supply**



Large LED display panel meter

TYPE : INL144



- **Great readability**
- **Display:** 100 000 points
- **Fully configurable**
- **Universal > 10 inputs type**
- **2 slots in option:**
analog output, relay, RS485 link



Indicator and display

Bargraph for analog signal

Miniature signal bar BARGRAPH meter (96x 24 mm)

BGL24



- **Process inputs:** mA, V, Hz
- **Display:** 20 led column, 10 000 points display
- **BGL24:** Bargraph with 4 digits display.
- **BGL24/R:** 2 alarms relays option.
- **BGL144L :** low cost version, without 4 digits display.



LED BARGRAPH WITH CIRCULAR STRIP LIGHT 96 x 96 mm

BGCL96



- **Process and temperature inputs**
Volt ,mV, mA, sensor power supply, potentiometer, frequency, strain gauge, thermocouple, PT100) (programmable in front face or with serial link)
- **Circular strip light 55 Leds** (choice of colors)
- **4 digits measure display**
- **Up to 4 relays output**
- **option :** isolated analog output
RS485 Modbus/Profibus link
ETHERNET Modbus TCP link
- **plug in terminals**
- **Ultra wide input power supply**
- **Applications :** thermometry, weighing, frequency , process
signal conditioning, trip amplifier, control,

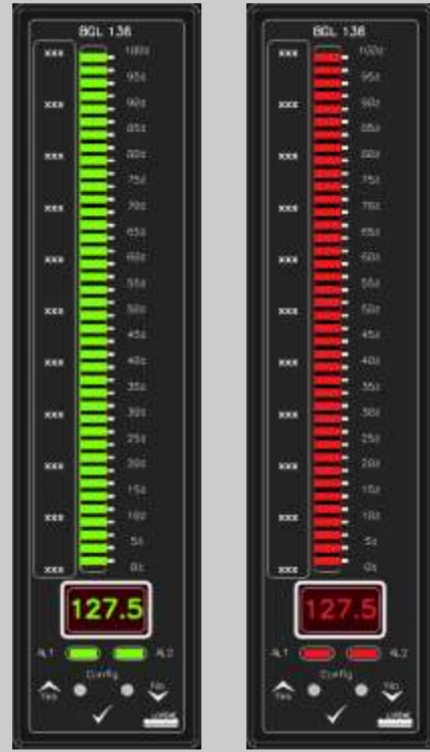


BARGRAPH PANEL METER single channel with 4 digits display

BGL136



- **Analog input**
0..4...20mA, 0...10...20V (user configurable)
- **Display:**
40 segments LED bargraph, 10 000pts LED display
Available in colour : red, yellow, blue
possibility to have more than one colour for the ramp
- **BGL136**
Single LED bar with 4 digits display
- **BGL136/R**
with alarm relay
- **DIN format**
144 x 36 mm

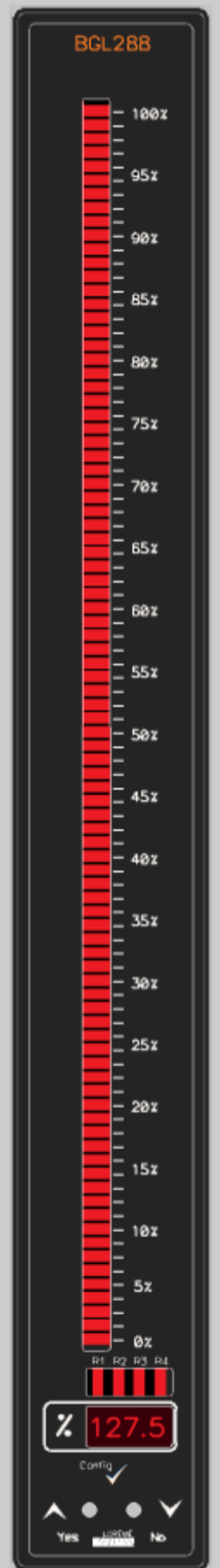


LARGE LED BARGRAPH METER 288 x 36 mm

BGL288



- **Process Input:** mA, V (Selectable)
- **Display:** 90 leds ramp, 10 000 pts red display
available in green or yellow colours
- **BGL288:** Single channel with measure display version
- **BGL288-L:** Low-cost, without measure display



LED BARGRAPH WITH SINGLE OR DUAL STRIP LIGHT Format : 144 x 72 mm

BGL172



- **Process Input:** mA, mV, V (configurable)
- **Display:**
40 leds strip light, 10 000 pts red led display
available in Green, Yellow, Blue colors
- **BGL172-1:** Single strip light with display version
- **BGL172-2:** Dual strip light with display version
- **BGL172/R:** with alarms relays option



LED BARGRAPH METER single or dual channel 4...20mA, 0...10V inputs, size: 144 x 48mm

BGL144

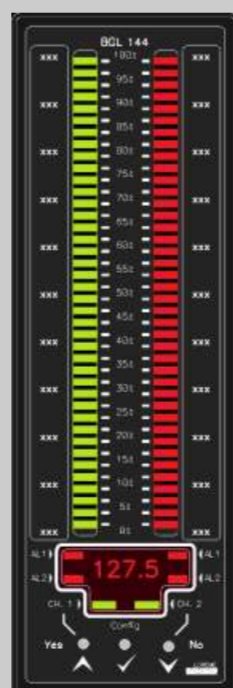


- **Process Input:** mA, mV, V (Configurable)
- **Display:** 40 segment LED array, 10 000 pts led display
Available in Red, Green, Yellow, Blue
- **BGL144-1:** Single strip light with display version
- **BGL144-2:** Dual strip light with display version
- **BGL144-L:** Low cost version, without display
- **BGL144/R:** option: alarms relays
- **BGL144/S:** option: analog output 4...20mA / 0...10V
- **BGL144/R:** option: communication
Modbus, Profibus, Ethernet Modbus TCP, SNMP
- **BGL144 H:** Horizontal mounting version

Modbus

PROFIBUS

http://



Indicator and display

Multi channel temperature and analog signal display

Acquisition unit with isolated inputs, SIL2, alarms relays, RS485 or Ethernet INL100 and INL150



INL100, INL150 mV, thermocouple, PT100 3 or 4 wires, Cu10 inputs
INL100P, INL150P 4...20 mA and 0...10V inputs

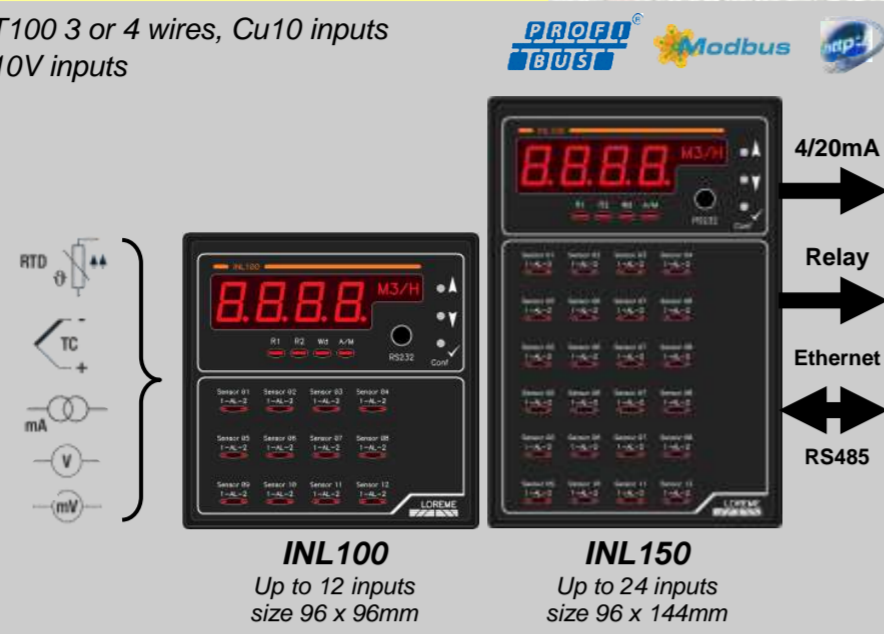
INL100(P): 4, 8 or 12 isolated inputs.
INL150(P): 16, 20 or 24 isolated inputs.

individual setting for each inputs.
2 alarm thresholds per inputs.
option: analog output.

Communication:

RS485 Profibus-DP
RS485 Modbus RTU
Modbus-TCP (Ethernet)
Embedded Web Server
SNMP
6 simultaneous connections

• **SIL2 option:** According to IEC61508



Alarms annunciator

Alarm Annunciator, Indicator Panel

AFL100



- **AFL100/8:** 8 digital inputs
- **AFL100/16:** 16 digital inputs
- **AFL100L:** low cost version (LED display only)
- **Option AFL100/R:** 1 feedback relay per digital input

Communication

AFL100/CP: RS485 Profibus-DP link
AFL100/CM: RS485 Modbus link
AFL100/CMTCP: Ethernet Modbus-TCP link

• **Universal power supply :** 20 265 Vac-dc



Analog alarms annunciator panel

AFL144HV



16 digital input. Dry contact

- 1 output relay per input (status copy)
- 3 output relay for alarms groups
- Choice of alarm group for each input
- Tricolour led for indication

Alarm memorized and fugitive

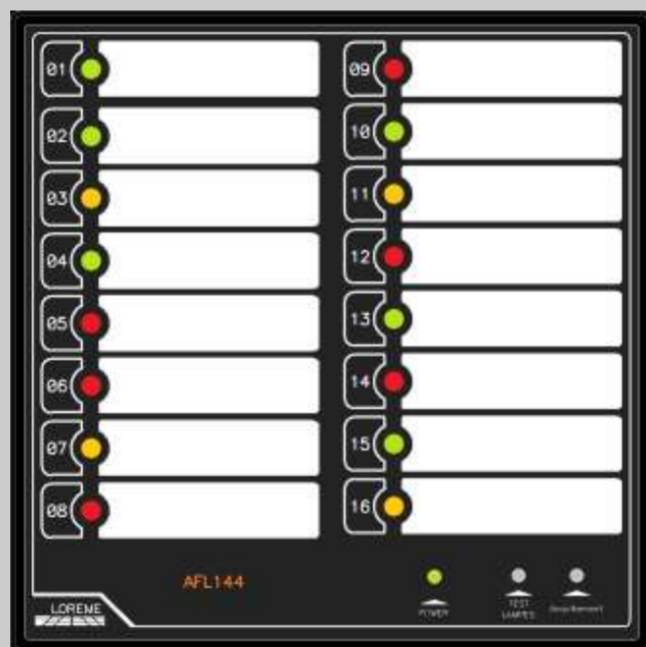
- Led indication for each input channel
- Double output relay for alarm group (memorized and fugitive)
- Acknowledge by front face or digital input
- Lamp test by front face or digital input

Passive technology

Increase functional safety

• **Large format :** 144 x 144 mm

• **Universal power supply :** 20....265 Vac/dc



Analog alarms annunciator panel

AFL144



16 digital inputs. 127Vdc inputs

- 1 output relay per input (status copy)
- 3 output relays for alarm groups (2 contacts)
- Choice of alarm group for each input
- Tricolour led for indication

Alarm memorized and fugitive

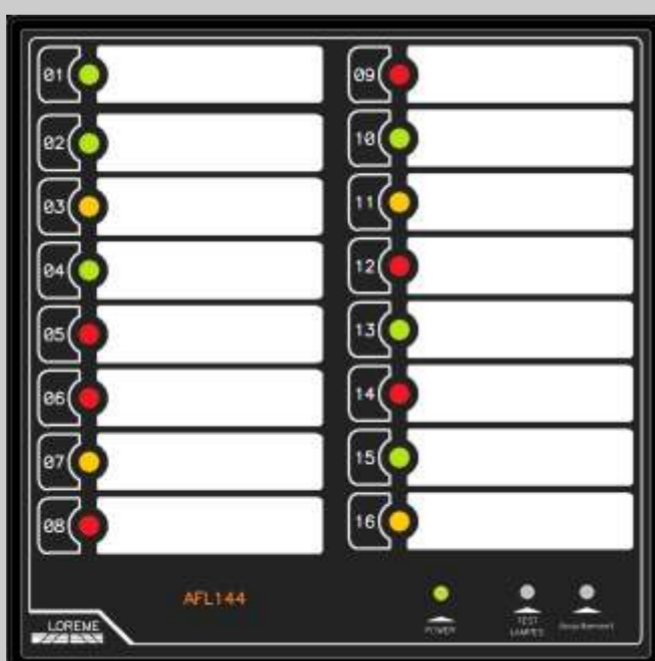
- Led indication for each input channel
- Output relay for fugitive alarm (pulse)
- Acknowledge by front face or digital input
- Lamp test by front face or digital input

Passive technology

Increase functional safety

• **Large format :** 144 x 144 mm

• **Universal power supply :** 127Vdc +/- 20%

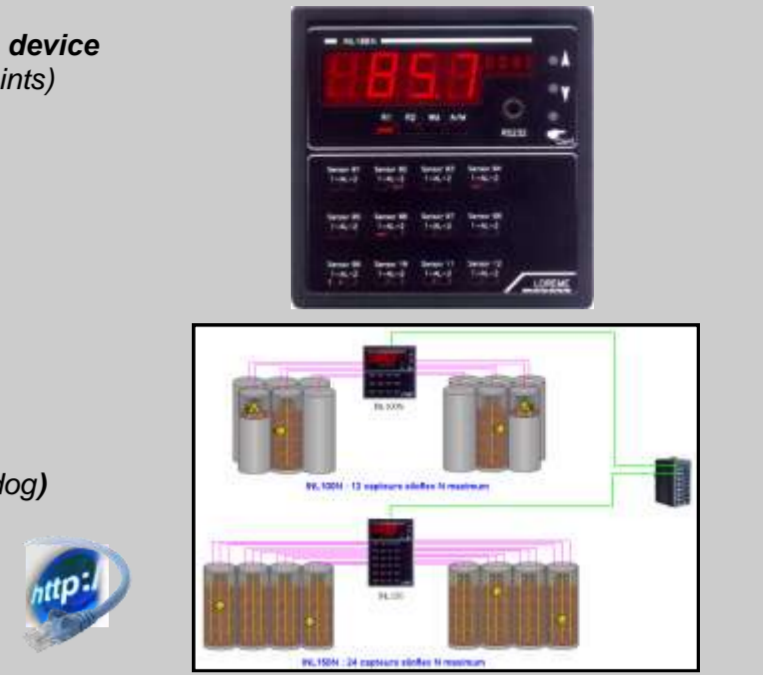


Silo temperature monitoring unit

INL100N and INL150N



- **Up to 576 temperature points on a single device** (INL150N 576 points - INL100N 288 points)
- **3 wires cable by Silo probe**
- **Digital sensors in 3 wires link** (-55°C to +125°C)
- **Polling time 25 ms / measurement point** (576 measures in 15 seconds)
- **Accuracy: +/- 0.5 °C**
- **Output relay** (pre-alarm, alarm and Watchdog)
- **Communication option**
 - Modbus
 - Modbus TCP (on Ethernet)
 - Profibus



SSi position display

SSi INDICATOR FOR ABSOLUTE ENCODER (96 x 48mm)

INL35ssi



- **Synchronous Serial interface (SSi) input**
 - Master or slave mode
 - 8 to 32bits SSi frame in binary or gray format
 - Encoder powered by indicator
- **Display**
 - 6 digits for value, 4 digits for unit
 - Easy programming with explicit text message
- **option :**
 - Up to 3 relays
 - Isolated analogue output
 - RS485 Modbus/Profibus link
 - ETHERNET Modbus TCP or Profinet io link



• **Plug-in connectors**

• **Universal supply (Ac and Dc)**

Remote display controlled through network

NUMERIC DISPLAY FOR ETHERNET Modbus TCP or RS485 Modbus RTU networks

ANL48



- **measure transmitting by numerical link**
 - **Ethernet Modbus TCP** client mode (master) or server mode (slave)
 - **RS485 Modbus/Profibus** slave mode
- **Measure display on 5 digits**
- **Watchdog**
 - relay contact on communication loss
- **option :** 2 alarms relays outputs
- **option :** isolated analog output



Binary BCD Gray display

6 DIGITS DISPLAY with BINARY, BCD, GRAY inputs, 4-20mA output and Ethernet

ANL36



- **16 parallel digital inputs**
 - Voltage or dry contact input
 - BCD, GRAY, BINARY format
- **Display, 96 x 48 mm format**
 - measure on 6 digits
 - unit on 4 alphanumeric digits
- **option :**
 - isolated analog output
 - relay output
 - RS485 link, Modbus RTU
 - Ethernet link, Modbus TCP



• **Application :** Interface for parallel output encoders

AC DC electric measurement

Voltage, current, frequency measurement

True RMS current and voltage transducer for alternating and direct signals

[CPL35L](#)



- **RMS measures AC + DC:** Dc to 440Hz
PWM, phase angle variation, wave train, high level harmonics signals
- **Multi-sensor input current:**
Shunt, transformer, Rogowski coil, Hall effect sensor, or direct input 1A and 5A
- **Programmable:**
voltmeter, ammeter, frequency meter
- **4 digits measure display**
U, I, Hz
- **2 isolated analog outputs**
double outputs
- **3 relay outputs**
- **Ethernet link** Modbus-TCP, SNMP
- **Universal ac/dc power supply**

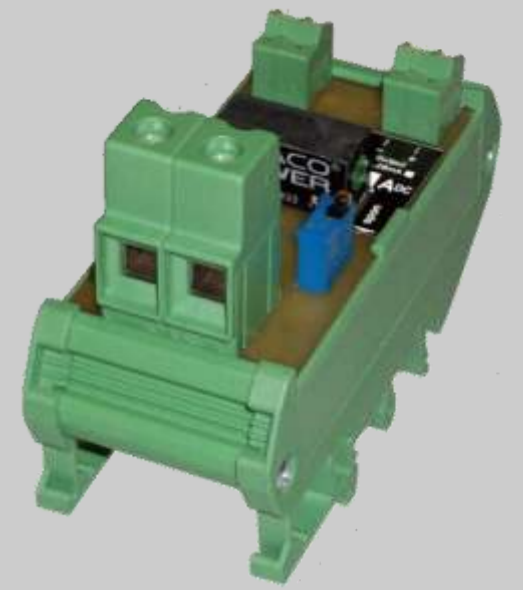


Sensor transmitter for DC current

[CAL35CC](#)



- **DC Current input:**
from 1A to 100 Adc (or +/- 1A to +/- 100A)
Up to 50kHz bandwidth, optional TRMS measurement version
- **Hall effect Technology :**
through-hole design or terminal blocks design for input
- **Current or Voltage Output**
Unipolar or bipolar: 0 .. 4 .. 20mA, +/-20mA, +/-10V, ...
isolated from power supply
- **Direct shunt replacement**
isolated mV output (no heat dissipation)
- **CAL35CC**
screw terminals input 25mm² (5A...100A max)
- **Power supply:** 4.5...18Vdc, 18...36Vdc, 9...36Vdc, 18...75Vdc, ...



50Hz...400Hz AC voltage and current transmitter 4-20mA loop powered

[CAL45CA](#)



- **Measure of sinusoidal alternating signals**
(voltage or current)
- **Direct input up to 250A and 1000V**
- **Galvanic insulation** (up to 5000V)
- **Accuracy:** +/- 0.5 %
- **CAL45CA:** measure 5Aac/dc ; 500Vac/dc
- **CAL45CAD:**
measure: up to 50Aac ; 1000Vac
- **CAL45CAH:** high current version
(11 switchable input ranges from 10A to 200A)
(Hole diameter : 18 mm)
- **CAL45CAH-iwatch:**
Version allowing the memorization of high speed phenomena
~ 10mS settling time.



Analog conditioner for alternative current and voltage, shunt, current transformer or Rogowski coil

[CAL35CAD](#)



- **CAL35CAD**
Converter for sinusoidal AC signal.
- **CAL35CAD-RMS** (True RMS version)
PWM, phase angle variation, wave train, and signal with high harmonics level
- **Option embedded through hole CT**
measure up to 50Aac
- **CAL35CAD-ROGO**
Input for Rogowski coil sensor up to 100 kA



Integrator amplifier for Rogowski sensor 5A current output

[CAL10Irogo-3](#)



- **Provide with 3 flexible Rogoflex sensors**
From 40 cm to 120 cm length
Installation on bus bar where space is limited
- **3 x 5Aac outputs (1.8VA)**
Direct replacement of current transformers
- **2.5A to 50KA current measurement**
ratio : 500A, 1kA, 2.5kA, 5kA, 10kA, 25kA, 50kA
individual channel setting
50Hz and 60Hz systems (45...65Hz)
- **Applications** Retrofit installations.
The flexible Rogowski coil are easily fit into tight panels and suit of most installations.

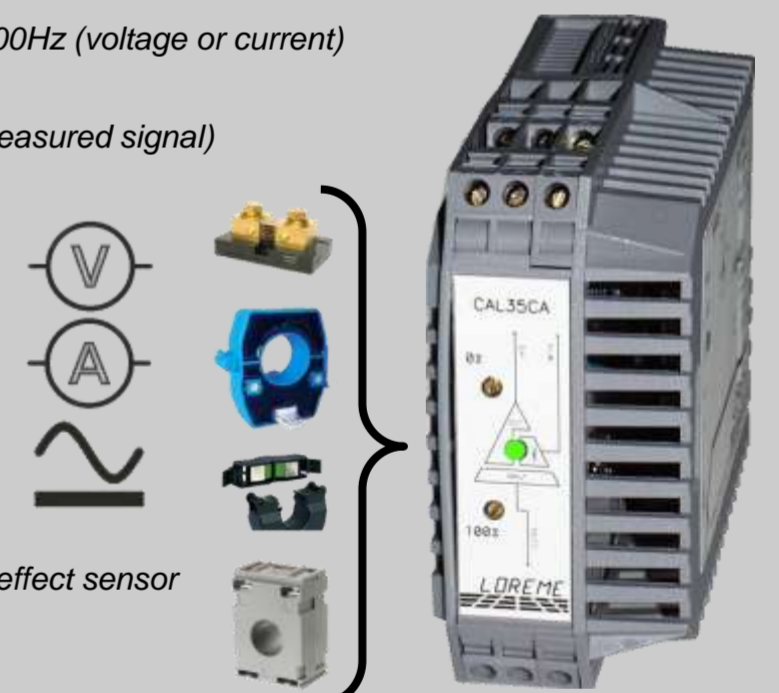


Transmitter for current and voltage measurement RMS (AC) or TRMS (AC+DC)

[CAL35CA](#)



- **CAL35CA**
measure converter for alternative sinusoidal signals 50Hz, 60Hz and 400Hz (voltage or current)
- **CAL35CA/A**
Self-powered version (powered by measured signal)
- **CAL35RMS** True rms version (AC)
DC component suppressed
all type of signals up to 500kHz
PWM, Phase angle variation, Wave train,
- **CAL35TRMS**
TRMS measure (AC + DC)
all type of signals up to 500kHz
- **CAL35TRMS-HALL**
TRMS measure (AC + DC) with Hall effect sensor
sensor power supply embedded
- **3 Ways galvanic isolation**



Miniature current sensor transmitter for DC current

[CAL25CC](#)



- **DC current input :**
from 1A up to 10 Adc (or +/-1A à +/- 10A)
- **Hall effect technology:**
Through measure cable or wiring measure
- **Current or voltage input**
Unipolar or bipolar : 0..4..20mA , +/-20mA , +/-10V, ...
isolated from power supply
- **Available for direct replacement of shunt**
isolated mV output (no thermal dissipation)
- **Small footprint:**
17 mm width
- **Wide power supply range :**
4.5...18Vdc , 18...36Vdc , 9...36Vdc , 18...75Vdc,



AC DC electric measurement

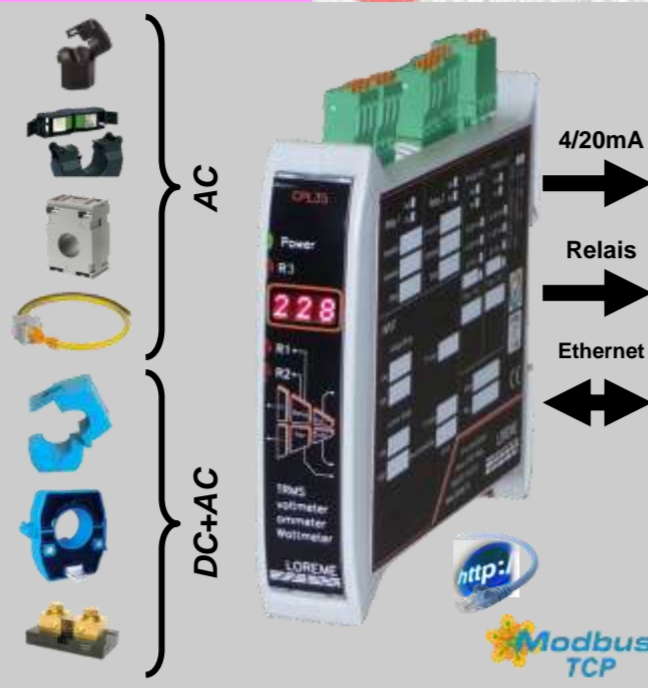
AC or DC power measurement single phase / three phase

Measure transducer TRMS AC and DC Wattmeter, Voltmeter, Ammeter,....

CPL35



- **RMS measure AC + DC:** 0...440Hz
Single-phase, bi-phase, balanced three-phase with or without neutral
PWM, wave train, phase angle variation, high level harmonics signals
- **multi-sensor for current measurement:**
Shunt, transformer, Rogowski coil, Hall effect sensor or direct input 1A / 5A
- **Programmable:**
Voltmeter, ammeter, wattmeter, varmeter, power factor, Cos phi, frequency meter
- **4 digits measure display:** U, I, Cos, P, Q, Hz
- **Outputs :** 2 analog outputs, 2 relay outputs, Ethernet link Modbus-TCP and SNMP
- **Wide range universal ac/dc power supply**



Power converter and energy meter for electric networks

type : CPL105



- **Three-phase or single phase network**
Measure U, I, Cos, P, Q, W
- **Multi sensor :** CT, Rogowski coil sensor
- **Ethernet Modbus TCP or SNMP link**
Embedded web server
6 Modbus TCP connections
Possibility to connect device with internal Bus on DIN rail
- **RS485 Modbus RTU link**
- **3 output relays**
- **Display :** LCD 2 lines of 16 characters
- **Can be use as 3 isolated single phase meters**



Wattmeter, energy counter for three-phases unbalanced network, electrical measure transmitter

CPL101



- **Three phase unbalanced network**
with or without neutral, frequency range: 40 to 400Hz.
- **Programmable:**
function : voltmeter, ammeter, frequency meter, wattmeter, varmeter, power factor
- **Up to 3 isolated analog outputs**
0...4...20mA , 0...10V , +/- 20mA , +/-10V
- **1 relay output**
threshold relay or energy counter
- **CPL101/C:** RS485 link, Modbus option
- **CPL101T:** Fast version (response time: 100ms)

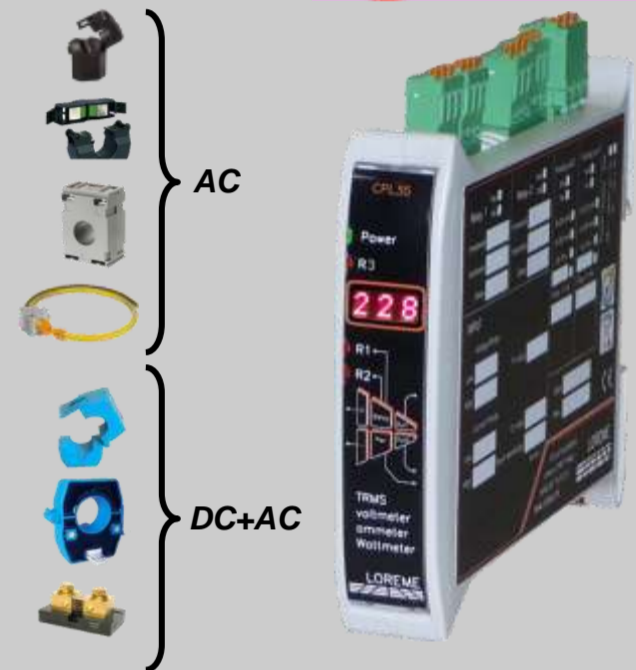


Hardened TRMS converter for AC and DC signals Wattmeter, Voltmeter, Ammeter,....

CPL36



- **RMS measure AC + DC hardened version:**
Single-phase or balanced three-phase 0...440 Hz with or without neutral
PWM, wave train, Phase angle variation, high level harmonics signals
- **multi-sensor for current measurement:**
Shunt, transformer, Rogowski coil, Hall effect sensor or 1A and 5A direct inputs
- **Programmable:**
Voltmeter, ammeter, wattmeter, varmeter, power factor, Cos phi, frequency meter
- **4 digits measure display**
U, I, Cos, P, Q, Hz
- **2 isolated analog outputs and 2 relay outputs**
- **Wide range universal ac/dc power supply**



AC DC electric measurement

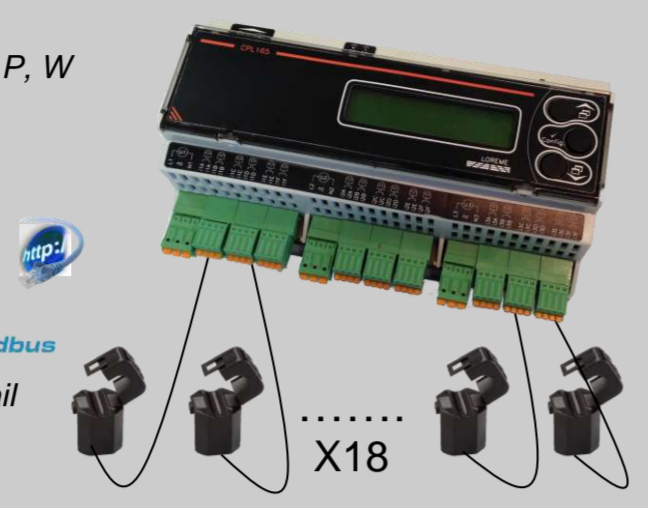
Multi channel electrical measurement

Measurement unit for distribution panel (DPM)
Wattmeter, Energy meter for 18 feeders

CPLI65



- **Energy meter for 18 electrical feeders.**
Three-phase or single-phase, measure U, I, Cos, P, W
- **Measure current from 1A to 500A**
With small split-core current transformers (CT)
Diameter of passage: 12 to 36mm
- **Ethernet Modbus TCP or SNMP link**
Embedded Web Server
6 Modbus TCP concurrent connections
Bus connection possibility directly onto the DIN rail
Modbus link possibility over RS485
- **Application:**
Energy efficiency, building management
Data center : intelligent PDU, Measure of PUE (Power Usage Effectiveness)



Measurement for single phase distribution panel
type : CPLI65L

type : CPLI65L



Current measurement unit , Data Logger
with Ethernet PoE link

SCAi60



Metered rack PDU
Remote monitoring and management

PDU431



AC DC electric measurement

Panel meter for AC and DC electrical network

Panel Voltmeter - Ammeter - Frequency meter Direct or alternative current 50Hz, 60Hz, 400Hz

94000CA



- **Voltage input up to 800 Vrms (AC + DC) 94000uCA**
Two input ranges: 100V and 800V

- **Current input (AC and DC)**
94000iCA : direct input. Up to 10A
94000iCHall : for remote Hall effect sensor up to 80A
94000iCmV : mV input for shunt or Tio (current transformer)
94000iCROGO : input for Rogowski coil sensor

- **Frequency measurement 94000-Hz**

- **1000 pts Led display for measurement**
Available in Red, Green, Yellow, Blue

- **Relay output option: 94000CA/R**

- **4-20mA analog output option**

- **Size 72 x 36 mm**
Compact depth



AC sensor

DC + AC sensor

TRMS panel Voltmeter, Ammeter, frequency meter Direct and alternative current 50Hz, 60Hz, 400Hz

IPL36L



- **RMS measures AC + DC:**

Single phase or balanced three phase 0...440Hz
PWM, wave train,
Phase angle variation,
high level harmonics signals.

- **Multi sensor for current measurement:**

Shunt, transformer, Rogowski coil,
Hall effect sensor or direct input 1A and 5A.

- **Programmable:**

function: voltmeter, ammeter, frequency meter

- **6 digits measure display**

4 digits alphanumerical display for the unit
Display: U, I, Hz

- **option:**

isolated analog output, 2 relay outputs
RS485 Modbus RTU
Ethernet Modbus TCP (6 concurrent connections) and SNMP

- **Universal ac/dc wide range power supply**



AC

DC+AC

Wattmeter and energy counter TRMS (true RMS) Direct or alternative current 50Hz, 60Hz, 400Hz

IPL36



- **TRMS measurement AC + DC:**

Single-phase or balanced three-phase 0...440 Hz
PWM, Wave train,
Phase angle variation,
High level harmonics signals

- **Multi sensors for current measurement :**

Shunt, transformer, Rogowski coil,
Hall effect sensor or direct input 1A and 5A.

- **Programmable:**

voltmeter, ammeter, wattmeter, var meter,
power factor, Cos phi, frequency meter.

- **6 digits measure display, 96 x 48mm format**

4 digits alphanumerical display for measure unit
Display: U, I, Cos, P, Q, S, Hz (energy in option)

- **option:**

isolated analog output, 2 relay outputs, RS485 Modbus,
Ethernet Modbus TCP (6 connections) and SNMP

- **Universal wide range ac/dc power supply**



AC

DC+AC

Programmable electric network analyser

IPL14V



- **Network:**

direct, alternative, one-phased,
three-phased, balanced, unbalanced,
with neutral, without neutral,

- **Display:**

3 values on 3 digits,
1 value on 4 digits,
available in red, green, yellow, blue,

- **IPL14V/R:**

2 relays in alarm or counting,

- **IPL14V/CM:**

MODBUS/JBUS RS485 link,

- **IPL14V/CP:**

PROFIBUS DP RS485 link,

- **IPL14V/CMTCP:**

Modbus-tcp link,

- **Universal power supply**



Phase meter

Phase meter for alternative voltages

PHL165



- **Phase angle measurement -180°....+180°**

Accuracy: better than 1°
Resolution: 0.1°
Phase angle offset and sign configurable
Frequency range from 40 to 70 Hz

- **Two isolated voltage inputs**

Two input range 150Vac and 400Vac

- **Up to 3 analog outputs**

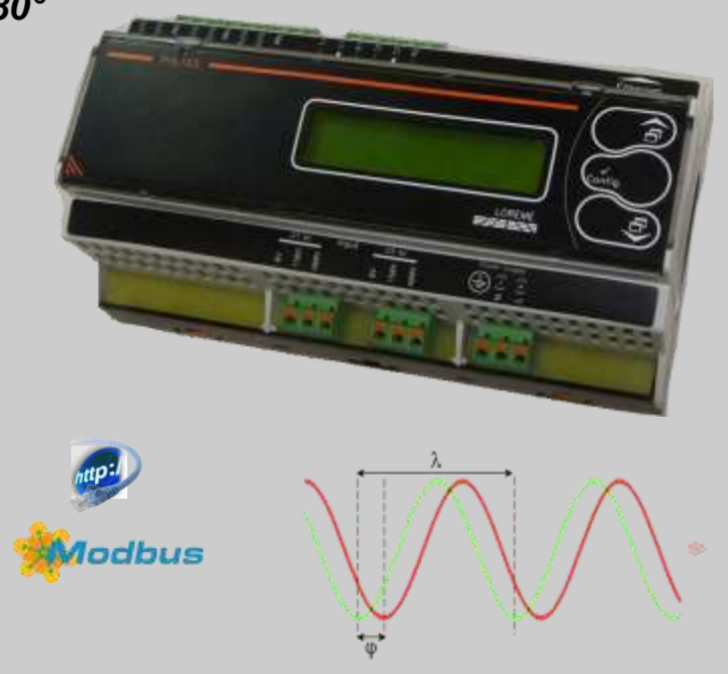
- **2 relay outputs option**

- **Ethernet Modbus TCP link option**

Embedded Web server
6 Modbus TCP concurrent connections

- **LCD display**

2 lines of 16 characters



Load shedding unit

Load shedding contactor single and three phase

DLB105



- **Multi-step load shedding**

DLB105/BIN 8 step, binary coded output
DLB105/R 3 step, direct output

- **Real time clock**

Peak and Off-peak hours
Daylight Saving Time

- **Display : LCD, 2 lines, 16 characters**

Display of all electrical parameters

- **Fully configurable**

Power limits, delay of load shedding,
delay of reloading, reloading threshold



Power controller, dimmer

Single-phase power controller / Dimmer
DIN rail mounting, for resistive or inductive load **VPL50**



- **Firing mode**
Phase angle modulation
- **Output power : 600 Watts max**
Current range from 0.1A to 2.5A
Embedded fast fuse
- **Proportional internal setpoint**
Setting by multi-turn trimmer
- **Application :**
Fan speed control
pump flow rates adjustment
motor control
light dimmer,...



Single-phase power controller
power dimmer **VPL72**



- **Selectable firing mode**
Phase angle variation
Burst fired
- **Output power**
VPL72 - 115 : 5 kW, 115 Volts version
VPL72 - 230 : 9 kW, 230 Volts version
VPL72 - 400 : 16 kW, 400 Volts version
Current range: 0.1A to 40A
also available in 24 Vac and 48 Vac,
- **Selectable setpoint mode**
Internal potentiometer
External (4...20mA or 0...10V)
- **Application :** Plastics processing
Small oven, environmental chamber, test bench,
lighting, IR light, band heaters, dryers, ...



Single-phase power controller
wave train or phase angle modulation **VPL73**



- **2 firing mode :**
Full wave train VPL73-TR
Phase angle modulation VPL73-PH
- **Output power : up to 6KW**
Current range: 0.2A to 25A
Fast fuse embedded
- **Proportional internal setpoint**
Setting by potentiometer
- **Application :**
Plastics processing,
small ovens, dryers
environmental chambers,
test bench.
Heating clamps
(not for inductive loads)



Single phase power controller

VPL74



- **firing mode : full wave train**
Voltage range: from 200 Vac to 440Vac
also available in 24Vac, 48Vac, 115Vac,...
- **Output power : 7KW à 230V - 12KW à 400V**
Current range: 0.1A to 30A
Fast fuse embedded
- **Proportional internal setpoint**
Setting by potentiometer
- **Application :** Plastics processing,
small ovens, dryers
environmental chambers,
test bench.
Heating clamps
(not for inductive loads)



Threshold relay - protection relay

Industrial electronic thermostat

Temperature threshold relay RTD and thermocouple Industrial thermostat SIL2 option

THL36



- **Suitable for heating and cooling mode.**
Application : protection relay, thermostat, threshold relay,
- **Temperature input**
PT100 - 3 wires / Thermocouples J,K,T
- **Fully configurable via front face**
With push button under the cover
- **Relay output (changeover contact)**
10A switching current
- **1000 pts LED display for the measure**
- **DIN Rail mounting**
- **Option : EN 14597 conformity**
Temperature regulating and limiting devices for heat generating systems.
- **Option : SIL2** According to IEC 61508



Thermostat for heating cable or heating element high switching capacity

THL37



- **Temperature sensor input**
PT100 -3 wires / Thermocouples J,K,T
- **Fully configurable with front face**
By push buttons
- **20A power switching (resistive load)**
- **Measure / setpoint display : 1000pts green led**
- **DIN rail mounting or IP65 sealed case**



Thermostat regulator for heating cables and ribbons.

THL105



- **Temperature display**
LCD 2 lines of 16 characters
(temperature , set point , output state)
- **Temperature input**
Pt100 - 2 wires (-50 °C+ 250 °C)
- **Fully configurable**
with pushbuttons
- **Breaking capacity 16 A resistive**
- **Mounting in IP66 waterproof enclosure**
Transparent cover



Field mount electronic thermostat with local display

THL101



- **3 digits, green Led display for measure**
- **Temperature input**
Pt100 2 / 3 wires mount
- **Threshold setting on front face**
by push buttons
- **2 output relays**
- **THL101 :** Cast aluminium box
- **THL101i:** 316 stainless steel box
- **THL101ADF:** ATEX Ex-proof version
- **Pipe mounting or temperature probe assemblies**



Threshold relay for process signal

SIL2 / SIL3 high safety operational level analogue threshold relay

DSL1-35mA-SIL



- **Current input**
4...20 mA
- **1 adjustable threshold with multi-turn potentiometer**
And input loop break detection
- **Positive security**
Relays activated below the threshold
- **2 electromechanical changeover contact outputs**
Independent relays
- **Safety Integrity Level: SIL2 / SIL3**
conform to IEC 61508



Analog threshold relay High safety level operation SIL3

DSL1-35mA-NUC



- **Current input**
4...20 mA
- **1 adjustable threshold with multi-turn potentiometer**
And input loop breaking detection
- **Relay security selectable by dipswitch**
Relays activated over or below the threshold
- **2 electromechanical changeover contact outputs**
Independent relays
- **Traceability of internal components**
provided with the List of Manufacturing Operation and Individual control sheet (Nuclear application)
- **Operational Safety level : SIL2 / SIL3**
according to IEC 61508



Threshold relay, threshold detection for analog signals protection relay for PTC (CTP)

DSL35L



- **Wide range of process and temperature inputs**
Volt ,mA, potentiometer,
NTC ,PTC ,
- **1000 pts LED display for measurement**
- **Internal or external threshold**
setting with push buttons (under the cover)
or with analog signal (4...20mA/0...10V)
- **1 or 2 output relays, 10A changeover contact**
- **Application**
thermal protection relay, thermostat
threshold relay for 4 ... 20mA loop

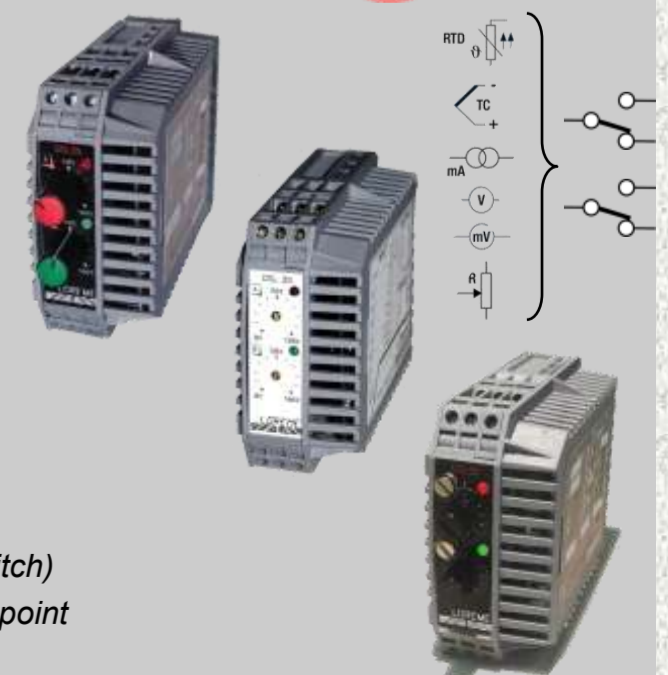


Analog threshold detector Threshold relay

DSL35



- **All process and temperature inputs**
Volt, mV, mA, Aac, Adc, RMS, TRMS
with or without sensor supply,
potentiometer, frequency,
thermocouple, PT100, CTN, CTP,
Namur proximity sensor (IEC 60497-5-6)
- **DSL1-35:** 1 threshold / 1 relay (SPDT contact)
- **DSL2-35:** 2 thresholds / 2 relays (SPDT contact)
- **Fast version < 3 ms** ref: **DSL35T**
- **Solid state or electromechanical relay output**
- **Positive or negative safety (selection with internal switch)**
- **Internal (potentiometer) or external (volt, mA, pot) setpoint**
- **AC or DC Power supply. from 5Vdc up to 400Vac.**



Threshold relay - protection relay

Relay for AC-DC voltage and frequency

Protection relay for AC and DC voltage frequency and phase control relay

RPL23



- **DC and AC Voltage monitoring** (5Hz...50Hz...60Hz...70Hz - 400Hz)
RPL23 : 50VAc-Dc..... 800Vac, 1200Vdc
RPL23-BT : 12Vac-Dc.....250Vac, 375Vdc
True RMS measurement (AC+DC)
Monitor : Undervoltage, overvoltage, phase asymmetry, phase loss, under frequency, over frequency
For single phase or three-phase network or DC voltage compatible with variable speed drive (PWM filter embedded)
- **Phase order control** (option)
- **RPL23uC**: specific version for voltage dips detection
- **RPL23peak**: specific version for peak voltage detection
- **RPL23Ho** : specific version for zero sequence voltage detection
- **RPL23F** : specific version for frequency monitoring
- **Voltage display and default indication**
- **Fully configurable** with pushbutton under the front face
- **Auxiliary power supply** universal 20... 265Vac-dc or 100... 400Vac-dc
- **SIL2 option** in accordance to IEC 61508



Voltage presence relay for capacitive divider, transformer, resistive bridge AC + DC

RPT23



- **AC and DC voltage monitoring**
TRMS measure : 10600Vac, 1000Vdc
Voltage presence / absence detection thresholds for single-phase, three-phase networks or DC voltage
- **Direct measurement or via capacitive divider or transformer**
High input impedance
compatible with neon indicators on voltage divider output
- **Display** voltages and status indicators for fast diagnostic
- **Fully configurable** with pushbutton under the front panel
- **Auxiliary power supply** universal 20...265Vac-dc, 100...400Vac-dc
- **option SIL2** in accordance to IEC 61508

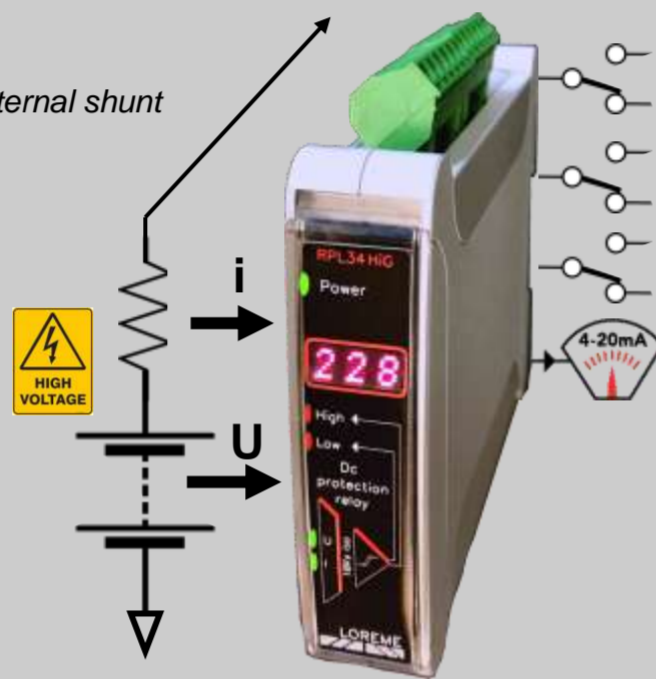


Protection relay for DC current and voltage High isolation voltage (10kV)

RPL34HiG



- **Voltage, current and power monitoring**
Voltage measurement : +/-1500Vdc max
Current measurement : +/-150mVdc maxi on external shunt
Calculation of consumed or generated power
- **3 configurable alarms relay**
Over or under voltage, over or under current
Overpowering, under load, ...
- **4-20mA output** (option)
- **isolation: 10kVdc**
10mm internal creepage distance
- **Display** Measure and default
- **Configuration**
user setting with front face pushbuttons
- **Power supply** universal 20... 265Vac-dc
- **SIL2 option** in accordance to IEC 61508



Frequency control relay (50Hz, 60Hz, or 400Hz applications)

type : RCF35



- **Monitor the network frequency variations**
self-powered, for 40Hz to 450Hz networks
self-powered : 115Vac, 230Vac, 400Vac
- **10000 pts Led display**
Resolution 0.1Hz < 100Hz; 1Hz up to 450Hz
- **Front face threshold setting**
with push buttons, setting resolution 0.1Hz
- **Over and under frequency with 2 outputs relays**
sense and delay configurable,
relay state indicated by LED
- **DIN rail mounting**
2 modules (35mm)
- **Application**
Electric power source monitoring
- Generator, wind turbine, micro station, ...



Relay for AC and DC current

Threshold relay for direct or alternative current Overcurrent protection

DSL35LCC



- **DC or DC+AC current monitoring**
DC or TRMS measurement
- **DSL35LCC**
Terminal blocks version, embedded sensor
Range : +/- 1A to +/-125Adc
- **DSL35LCCCHALL**
Remote sensor version
Range : +/- 0.1A to +/- 600 Adc
- **1 relay output, changeover contact**
Configurable alarm via front face
Threshold, delays, hysteresis
- **1000 pts Led display for measure**
- **Application**
Solar, battery,
Dc current motor monitoring



Threshold relay, protection relay for alternative current Current control relay

DSL35LCA



- **Alternative current control**
Up to 500Aac 50Hz/ 60Hz /400Hz
RMS measure for all input type,
PWM, phase angle variation,
wave train, signal with high harmonics content
- **DSL35LCA - peak** : peak detection
- **Measure input by split-core current transformer**
- **1000 pts LED display for measurement**
- **2 adjustable thresholds by the front face**
threshold, delays, hysteresis
- **2 relays output 10A changeover contact**
- **DIN rail mounting**



Inverse-time thermal protection and overcurrent protection relay for DC current

RPS23



- **All types of protection curves**
Constant time, inverse time
very inverse time or extremely inverse time curves ...
- **1, 2, 3 or 4 relay outputs**
- **Measure display (10 000 pts)**
Configuration on front face
- **Option: 1 or 2 isolated analog outputs**
option: measure converter function
- **Universal power supply**
- **Option SIL2** According to IEC 61508



Battery Protection Relay control relay for charge and discharge current

RPB45S



- **Bidirectional battery protection**
Charge current control
Discharge current control
- **3 relay outputs**
- **Measure display (10 000 pts)**
(front face programming)
- **Isolated Analog Output**
(measure copy function)
- **Pluggable connectors**
- **Universal power supply**



Threshold relay - protection relay

Relay for AC and DC current

AC current sensing relay

DIL36



- **Non intrusive current detection**
0.1A threshold detection, input current > 200A
- **Remote split core current sensor**
- **24Vdc, 200mA output**
can power a lamp indicator or a contactor
- **DIN rail mounting**
- **Application**
non intrusive detection of starting up of machine or installation
Radiology equipment
- **Universal power supply**
20.....265Vac-dc



Threshold protection relay for three-phase network with remote split core current sensors

RCL105



- **3 current inputs up to 100A**
Three-phase or three single phase networks
- **Split core current sensors**
Calibrated 333mV output (sensor type TioL)
- **3 relay outputs**
Monitoring of each phases
- **Front face LCD 2 lines of 16 characters**
Display of three currents
Thresholds settings
- **Can be used like 3 single phase relays**



Leakage current protection relay

Earth leakage protection relay isolation controller

DSL36LEAK



- **Leakage current monitoring**
10mAac to 1Aac (50Hz, 60Hz, 400Hz in option)
improve immunity to nuisance tripping (RMS measurement)
- **Input for core balance transformers**
type Tleak
- **Leakage current display**
3 digits green LED display
- **2 configurable thresholds**
Threshold, delay
- **1 or 2 relays. Changeover contact**
10A switching capacity
- **DIN rail mounting**



Phase order relay

PHASE SEQUENCE / PHASE FAILURE DETECTION RELAY

DOP23



- **Indication of the phase order in a three-phase systems**
Network frequency : 50Hz , 60Hz and 400Hz (40Hz...500Hz)
- **Led status indicator**
Normal , reverse and phase loss
- **Output contact for phase order ok**
Electromagnetic or static relays version
- **Self powered**
- **Unplug terminal blocks**



Level relay and resistive level sensor

Resistive level probe Type : SNL

Threshold relay for resistive level sensor RNL35L



- **Multi-level probe for conductive liquids.**
fully static design
Up to 5 levels (adjustable length electrodes)
Maximum pressure 6 bar
Peak temperature 150 °C (HT version)
Waterproof IP66, cable output or connection head
316L Stainless Steel Electrodes wrapped with Teflon
- **Application**
Level control or regulation
For tank or duct
Monitoring the presence or absence of fluid
(tank overflow , leak detection , pump control,.....)



Power supply and DC-DC converter

Instrumentation power supply AC-DC DC-DC

High reliability DC power supply For 4...20mA current loop SIL2 / SIL3

AL45D



- **Linear low noise version or high density switching power**
AC or DC input
- **Fully protected**
short-circuits, overload, thermal
- **1 to 8 isolated outputs**
Fully independent circuits
- **Long life version, extended temperature**
AL45DLL "long life" with polymer capacitors
- **Applications**
4..20 mA loop power supply
with current limited (safety for measurement transmitters),
Hart protocol, very low noise.
- **SIL2 and SIL3 compliance** according to IEC 61508 (redundant version)



Instrument power supplies with single or symmetrical isolated outputs for sensor or 4-20mA current loop

AL35



- **Linear or switched-mode version**
DC or AC 50Hz - 60Hz - 400Hz input
- **Fully protected**
short-circuits, overload, thermal
Limited output current for sensor safety
- **1 to 4 isolated outputs**
Fix or adjustable from 1V to 96V by coupling
single: 3V, 5V, 9V, 10V, 12V, 15V, 18V, 24V
symmetrical: +/-5V, +/-12V, +/-15V, ...
Adjustable version from 1V to 24V
- **Applications**
4..20 mA loop power supply,
instrumentation, sensors,....



SMALL INSTRUMENTATION POWER SUPPLIES AC-DC & DC-DC

type AL25



- **Universal input: 20....265 Vac-dc**
SMPS version
- **Total protection**
short-circuits, overload, thermal
- **1 to 3 insulated output (1 Watt per output)**
3.3 V.....24 V up to 72 V by coupling
30 mA.....500 mA depending of output voltage
- **very small footprint**
62 x 63 x 23mm
- **Applications**
4..20 mA loop power supply, instrumentation.



PoE injector (Power over Ethernet)

POWER OVER ETHERNET INJECTOR DIN rail mounting

type: AL36PoE



- **Direct integrated on Ethernet network**
between switch and PoE device
Allows upgrade existing network to PoE
Supply over Ethernet cable
- **Fully protected**
short circuit, overload, thermal
- **48V output, 5 Watts on RJ45**
IEEE 802.3af compliant
- **Universal supply : 20....265 Vac-dc**
- **Applications**
Using PoE device on network without switch PoE



15 W POWER OVER ETHERNET INJECTOR DIN rail mounting

AL53PoE



- **Direct integrated on Ethernet network**
between switch and PoE device
Allows upgrade existing network to PoE
Supply over Ethernet cable
- **Fully protected**
short circuit, overload, thermal
- **48V output, 15 Watts on RJ45**
IEEE 802.3af compliant, class 0, 1,2,3
- **Universal supply : 85...265 Vac and 120...370 Vdc**
- **Applications**
Integration of POE products on networks without POE Switch



DIN rail medium power supply AC-DC and DC-DC

DIN rail power supply. Up to 1500Vdc for photovoltaic or alternative 115Vac, 230Vac, 400Vac, 690Vac

AL140L



- **AL140L : Single phase input or direct input**
85Vac....265 Vac and 110Vdc....320Vdc
- **AL140L-HV : High level input or three-phase network**
85Vac....528 Vac and 120Vdc....750Vdc
- **AL140L-THV : photovoltaic isolated power supply**
200Vdc....1500Vdc or 200Vac....800Vac
- **Protection** short-circuits, overload, thermal
- **1 to 3 isolated outputs, 10 to 100 Watts total**
Output coupling is possible
- **DIN rail mounting**, cooling by natural convection
- **Applications:** Photovoltaic, automatism, machine, instrumentation

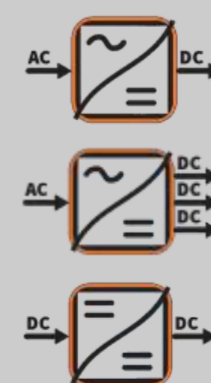


MID RANGE POWER SUPPLY 500Watts max 24Vdc / 48Vdc / 60Vdc / 115Vdc / 125Vdc

type:AL125



- **DIN RAIL or surface mounting**
500 Watts total, up to 3 isolated outputs
Voltage output : 3.3Vdc 400Vdc
Symmetrical voltage output : +/-3.3Vdc ... +/-200Vdc
- **Universal Input: Ac-Dc**
85 ... 265Vac (50Hz, 60Hz, 400Hz)
100 ... 370Vdc
- **Fully protected**
Short circuit,
overload and thermal
- **AL125/Wd**
Watchdog relay output, changeover contact



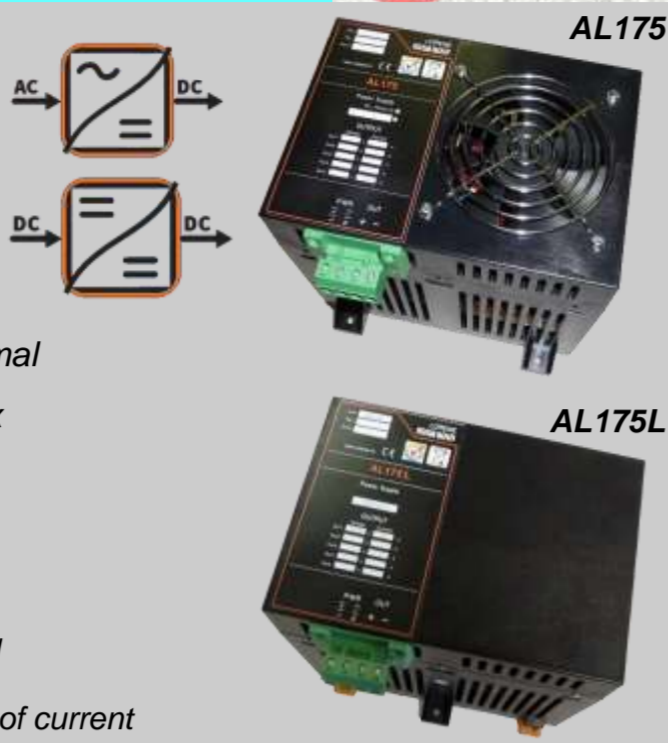
Power supply and DC-DC converter

DIN rail medium power supply AC-DC and DC-DC

AC-DC or DC-DC power supply up to 1500 Watts output: 110Vdc, 115Vdc, 125Vdc, 127Vdc ... 250Vdc AL175



- **DIN RAIL or surface mounting**
1500 Watts total, up to 5 outputs
Output voltage: 5Vdc.....480Vdc
(application : 110Vdc and 127Vdc)
- **AC or DC Input:** Switching-mode power supply
85 265Vac (50Hz, 60Hz, 400Hz)
100 ... 370Vdc; 200 ... 1200Vdc
- **Fully protected :** Short circuit, overload, thermal
- **AL175L** natural convection, 400 Watts max
- **AL175** fan cooling, 1000 Watts max
- **AL175HD** fan cooling, 1500 Watts max
- **AL175R** redundant version
- **Option:** Ethernet link for monitoring
Internal ORing diode for parallel coupling
Watchdog relay for "output OK"
Analog output 0...10V or 4...20mA. copy of current



Power supply with adjustable output via external setpoint variable output up to 127Vdc AL175V



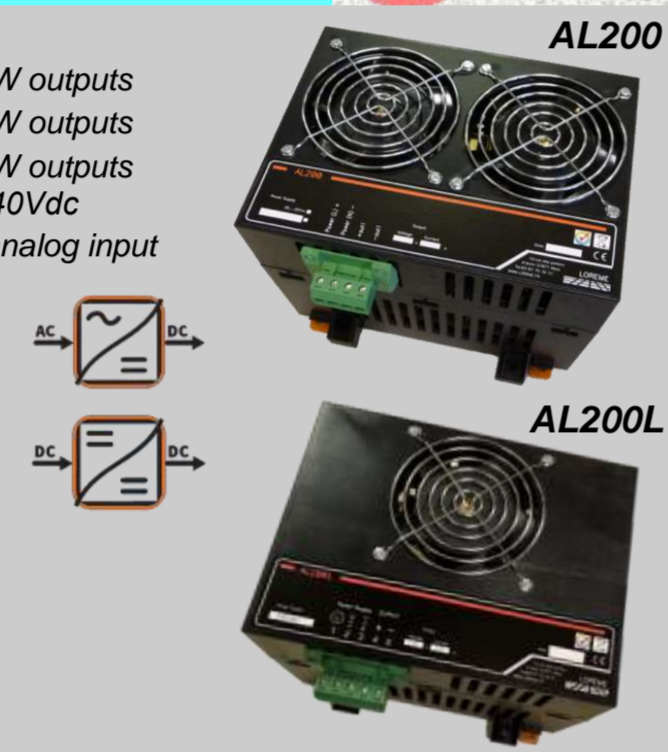
- **Adjustable output with external setpoint**
200 Watts maxi
- **Setpoint input**
0...10V, 4...20mA or potentiometer
- **Adjustable range**
0...30Vdc / 5A; 0...48Vdc / 2A; 0...60Vdc / 1.8A
0...115Vdc / 1A; 0...127Vdc / 1A; other on request
- **AC or DC Power supply**
48Vac; 85 265Vac (50Hz, 60Hz, 400Hz)
100 ... 370Vdc; 200 ... 1200Vdc
- **Fully protected**
Short circuit, overload, thermal
- **DIN RAIL or surface mounting**
fan air cooling



AC-DC or DC-DC power supply up to 2500 Watts Output: 110 Vdc 115Vdc 125Vdc, 127 Vdc AL200



- **DIN RAIL or surface mounting**
AL200HD 3000 Watts total, up to 6 x 500 W outputs
AL200 2500 Watts total, up to 5 x 500 W outputs
AL200L 2000 Watts total, up to 4 x 500 W outputs
Output voltage: 12Vdc....110Vdc...127Vdc....240Vdc
AL200V: adjustable with potentiometer or by analog input
- **Input voltage:** DC, 50Hz, 60Hz and 400Hz
85 265Vac single-phase
180550Vac Two-phase / Three-phase
9...36Vdc, 18...72Vdc, 40Vdc ..160Vdc
120...340Vdc, 254..780Vdc
200Vdc ... 1500Vdc (photovoltaic)
- **Fully protected:** Short circuit, overload, thermal
- **Options :**
Ethernet link for remote monitoring
Internal ORing diode for parallel coupling,
Watchdog relay monitoring the output voltage,
Analog output 0...10V, 4-20mA copy of output current



DIN rail medium power supply Single phase or three phases input ALDR



- **Ac and Dc Inputs**
Single phase version: 85...265 Vac / 120...370 Vdc
Three phases versions (HV): 340...550 Vac / 480...780 Vdc
Switching power supply
- **DIN RAIL mounting**
Available power:
120Watts; 240Watts; 480Watts; 960Watts
Output voltage : 24 Vdc / 28Vdc / 48 Vdc
- **Fully protected**
Short circuits,
overload,
over temperature
- **Built in power factor correction**
- **Natural air cooling**



DIN rail medium power supply Wide input range and 400Hz version ALDRW



- **Universal input**
single phase and three phases
Available in 400Hz version
180...550 Vac / 250...780 Vdc
Switching power supply
- **DIN rail mounting**
120W version, type **ALDRW120**
240W version, type **ALDRW240**
480W version, type **ALDRW480**
Output voltage: 24 Vdc or 48 Vdc
- **Fully protected**
Short circuits, overload, thermal
- **Built in Power factor correction**
- **Cooling by free air convection**
- **Contact relay for output DC ok**



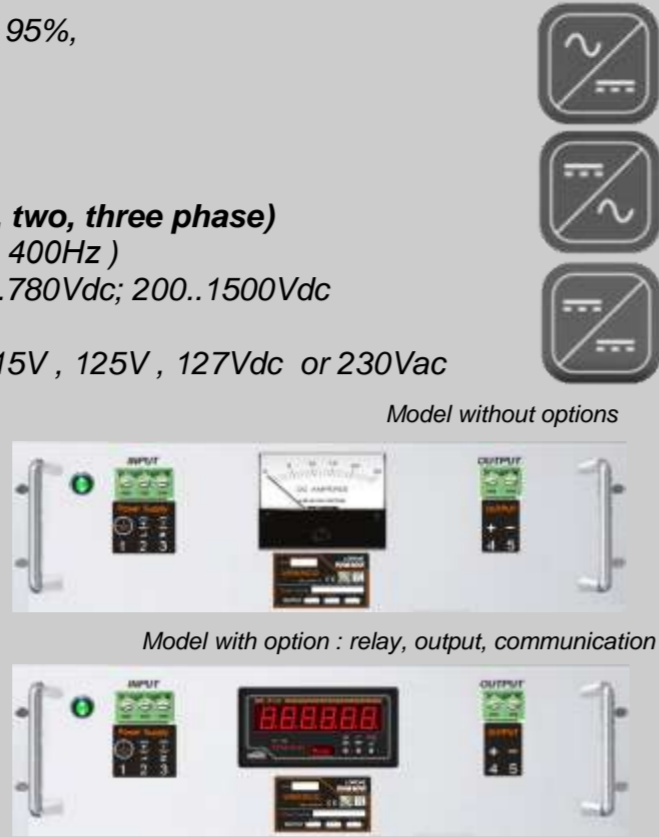
Power supply and DC-DC converter

Rack power supply AC-DC and DC-DC

Rack mount AC-DC Power supply or DC-DC converter DC-AC inverter 2U or 3U 19 inch rack **WRKMOD**



- **Power up to 10000 watts** high efficiency up to 95%, Low residual ripple, excellent regulation
- **Increase power with parallel coupling**
- **Modular design in 2U or 3U 19 inch rack**
Wide range of input voltage (DC or AC single, two, three phase)
85...265Vac 180...550Vac (50Hz , 60Hz , 400Hz)
18..75Vdc; 40..160Vdc; 110..370Vdc; 254...780Vdc; 200..1500Vdc
Wide range of output voltage
5V , 12V , 15V , 24V , 48V , 72V , 110V , 115V , 125V , 127Vdc or 230Vac
- **Protection**
- Short circuit, overload, thermal
- **Option**
- Watchdog relay output, internal ORing diode
- Battery charger (current limiter)
- Output analog signal : 0..10V / 4..20mA (remote monitoring: power, current or voltage)
- Communication RS485 / Ethernet (Modbus , SNMP)
- **Isolation** - 2500V
- **Application:** Photovoltaic, wind power, regulation of a fluctuating voltage for inverters, ...



RACK 24Vdc power supplies for instrumentation **ALR20 & AL100**



- **Linear or SMPS version**
- **Total protection**
short-circuits, overload, thermal
- **1 to 8 insulated outputs AL100**
• **1 to 4 insulated outputs ALR20**
- **small footprint**
SMPS version 23 mm
linear version 35 mm
- **Applications**
4..20 mA loop power supply, instrumentation, sensors, ...



Rack mounted medium power supply **ALPK**



- **Rack mounting**
75 Watts total
up to 3 outputs
- **Universal input : 85....265 Vac-dc**
switching mode power supply
- **Fully protected**
short circuit
overload
thermal
- **Fully isolated**
between each outputs



converter DC-DC AC-DC DC-AC

DC-DC CONVERTER up to 127Vdc AC-DC CONVERTER up to 127Vdc

type: WRD
type: WRACD



- **Wide range of input and output voltage**
- **Input:** 12V, 24V, 36V, 48V , 110V, 127V
- **Output :** 3.3V, 5V, 12V , 24V, 36V, 48V , 110V, 120V, 125V, 127V
- **Power from 5 to 90 watts**
- **1 to 8 outputs**
- **Protection** - short circuits
- overload
- thermal
- **High efficiency up to 92%**
- **1500V input / output isolation**
- **Low ripple**
- **Excellent regulation**
- **Application**
- Regulation of voltage fluctuation, solar, battery, ...

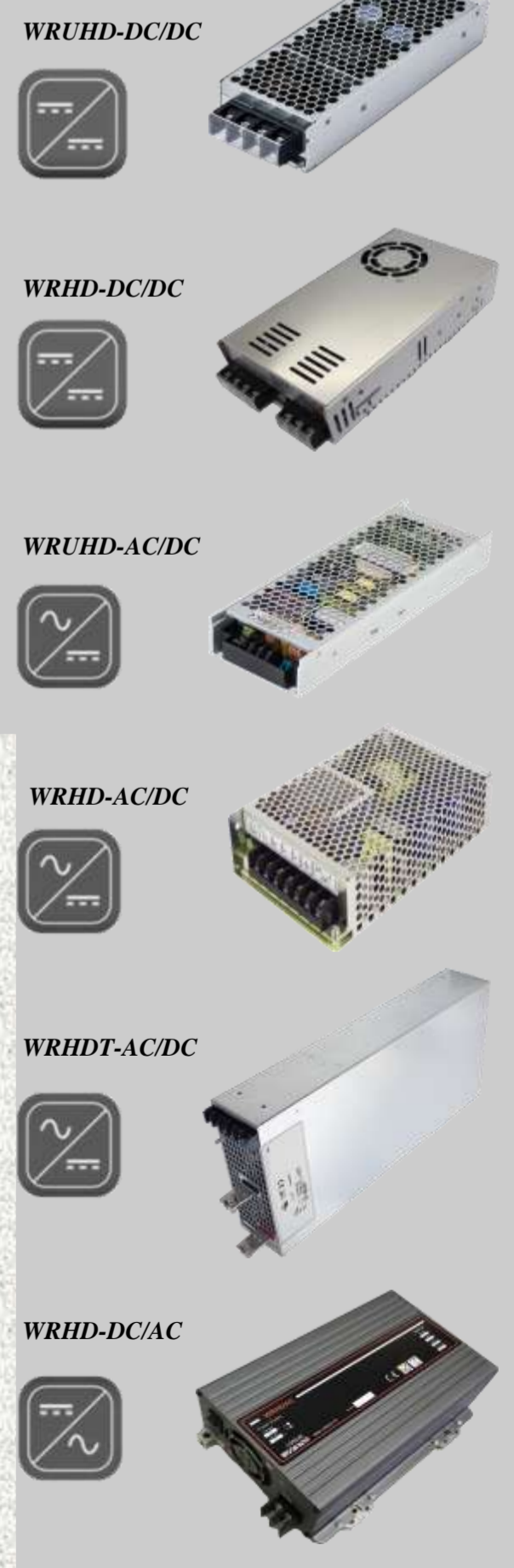


DC-DC Converter or DC-AC sinusoidal converter AC-DC High density POWER SUPPLY

WRHD



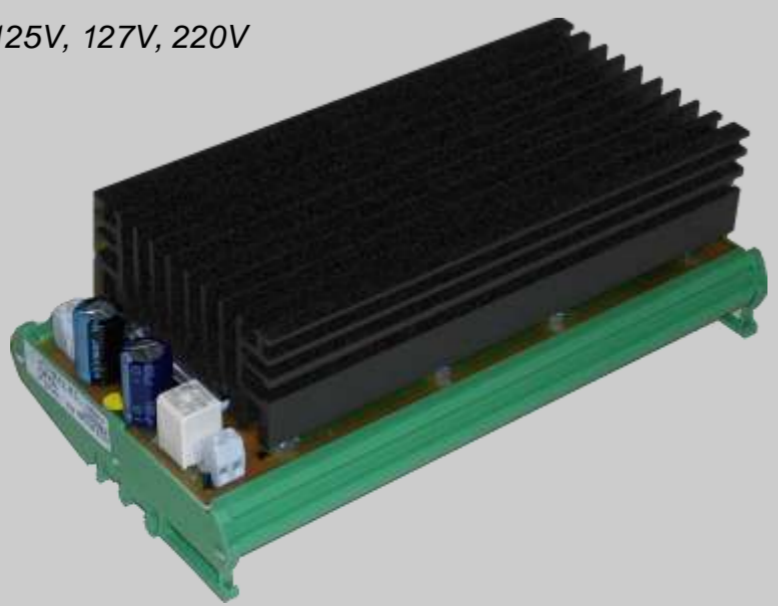
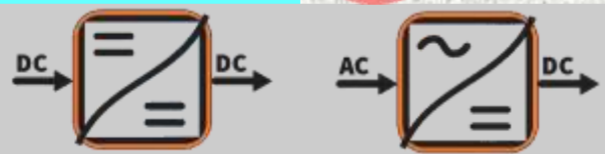
- **Power from 25 to 1000 watts** High density
- **Wide range of voltage**
inputs DC : 12Vdc....370Vdc
AC : 85Vac...530Vac
output DC : 12Vdc....125Vdc
AC : 115Vac / 230Vac 50Hz/60Hz
- **Protection**
short circuit, overload, thermal
- **Up to 96% efficiency**
- **2500V input/output isolation**
- **Wall , DIN rail or Rack mounting**
- **Application**
- Solar, battery, Fuel cells
- Automatism, renewable energies



DC-DC / AC-DC Modular Converter Photovoltaic DC/DC converter Up to 1500Vdc input **WRMod**



- **Power from 25 to 240 watts**
- **Modular design**
Wide range for input voltage
9..36Vdc, 18..75Vdc, 40..160Vdc, 110..370Vdc, 200..1500Vdc
Wide range for output voltage
5V, 12V, 15V, 24V, 48V, 72V, 110V, 115V, 125V, 127V, 220V
- **Protection**
Short circuit, overload, thermal
- **High efficiency up to 95%**
- **input / output isolated**
- **Low ripple**
- **Excellent regulation**
- **Extend temperature range version**
- **Application:**
- Photovoltaic, wind power
- Regulation of a varying voltage



Power supply and DC-DC converter

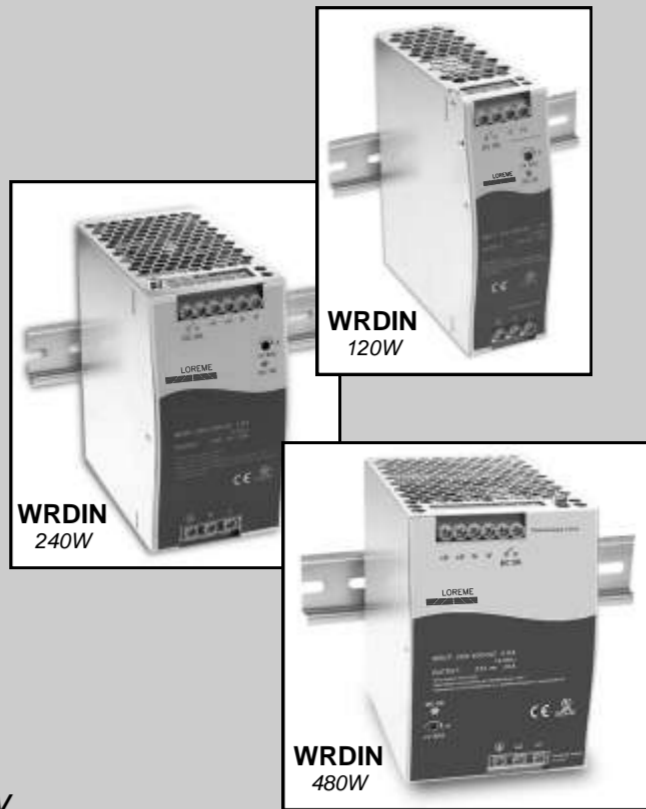
DC-DC, AC-DC, DC-AC converter

DC-DC converter

WRDIN



- **Wide range of voltage input**
9..18Vdc ; 17...34Vdc ; 65....155Vdc
- **Output** : 12V, 24V, 48V, adjustable
- **Power** : 120W ; 240W ; 480W
peak power 150% 5 seconds
- **Fully protected**
 - short circuit
 - overload
 - thermal
- **High efficiency, up to 93%**
- **1500V input / output isolation**
- **Application**
- Regulation of fluctuating voltage, battery,



Waterproof power supply

IP65 Watertight power supply. Portable or fixed use, 24Vdc ..48Vdc ..110Vdc ..125Vdc ..460Vdc output AL450IP



- **Mounting in portable heat sink case**
water and dustproof
good resistance to corrosion
screw watertight connectors
Wall mounting possible with 4 x M6
- **Input Ac or Dc**
Switching regulation
85....265Vac (50Hz , 60Hz , 400Hz)
100.....370Vdc
- **Output**
up to 5000 Watts total , 1 to 3 outputs
output voltage : 12Vdc.....460Vdc
- **Fully protected**
Short circuit, overload, thermal
- **Options**
Watchdog relay for "output ok" condition



Miniature DC-DC converter DIN rail mounting

WR25



- **Wide range input, ratio of 1 to 4**
9...36Vdc or 18....75Vdc
- **Fully protected**
short circuit, overload, thermal,
high efficiency EMC filter embedded
- **1500Vdc isolated output, up to 30 Watts**
3.3V, 5V, 10V, 12V, 15V, 24V, 30V, 48V
up to 90% efficiency
- **small footprint, high density**
62 x 63 x 23mm
- **Applications**
Isolation, EMC protection, level adaptation



Battery charger

300 Watts industrial battery charger 12V, 24V, 48V for lead acid battery and lithium battery

CHL300



- **3 stages charger** : fast / normal / float
Constant current, constant voltage, maintenance current
- **300 Watts power** high power density
- **12V battery** from 60Ah to 200Ah
- **24V battery** from 30Ah to 100Ah
- **48V battery** from 15Ah to 50Ah
- **Input voltage** 115 / 230 Vac
- **Protection** : short-circuit,
reverse polarity, overvoltage, thermal
- **High efficiency up to 88%**
natural air cooling
- **LED loading indication**
RED: charging, GREEN: end of charge
- **Wall mounting or DIN rail mounting**



Redundancy module

REDUNDANCY MODULE with DIODE: MPA2 MPA2L 250Vdc / 127Vdc / 110Vdc / 48Vdc / 24Vdc / 12Vdc



- **For parallel connection of 2 DC power supplies**
Increases system availability and safety
Ensures uninterrupted redundancy when one of the power supplies fails.
- **MPA2L(HV) : 12Vdc ... 127Vdc (280Vdc) maxi 10A**
Low dissipation, dropout voltage < 1V
Option : control relay
- **MPA2 : 24Vdc version**
+ monitoring relay
for power supplies diagnosis
+ resettable thermal protection
for each power supplies
Option: inrush current limiter
until the output voltage is set.
- **Application**
Uninterruptible power supply,
installation requiring a high level of availability.



REDUNDANCY MODULE with DIODE: MPAx 250Vdc /127Vdc /125Vdc /115Vdc /110Vdc /48Vdc /24Vdc



- **For parallel connection of 2 or 3 DC power supplies**
Increases system availability and safety
Ensures uninterrupted redundancy
Allowing the replace of one power supply without stop
- **Using range : 20Vdc ... 280Vdc**
MPA3 : 20A nominal, 30A maxi (natural convection)
MPA3-3 : version with 3 inputs 30A maxi
MPA4 : 40A nominal, 50A maxi (ventilated model)
MPA5 : 80A nominal, 100A maxi (ventilated model)
MPA6 : 200A nominal, 250A maxi (ventilated model)
Monitoring relay in option
- **DIN rail or wall mounting**
- **Application**
Installation requiring a high level of availability.



REDUNDANCY MODULE with DIODE: 24Vdc - 20A

MPA24-20



- **For parallel connection of 2 DC power supplies**
Increases system availability and safety
Ensures uninterrupted redundancy
Allowing the replace of one power supply without stop
- **24Vdc output, up to 20A**
Control relays and signalisation Led
allowing the diagnosis of power supplies
- **Application**
Uninterruptible power supply,
installation requiring a high level of availability.
- **Natural convection cooling**
- **DIN rail mounting**



Power supply and DC-DC converter

Inrush current limiter

INRUSH CURRENT LIMITER AC + DC

LCA36



• Limiting the inrush current at start-up

avoid to oversize protections
protection of power sources like batteries
Increases system availability and safety
avoid the blocking of power supplies

• Wide operational range

Rating voltage 12 to 270Vac or dc
Rating current up to 16A

• Applications

Current clamping for capacitive loads
DC/DC converter, power supply ...



INRUSH CURRENT LIMITER for DIRECT CURRENT

LCA25



• Limiting the inrush current at start-up

current clamping for capacitive load or DC-DC converter
avoid to oversize protections
Increases system availability and safety
avoid the blocking of power supplies

• Wide operational range

Rating voltage 20 to 270Vdc
Rating current up to 3A



active INRUSH CURRENT LIMITER temporized action AC+ DC

Type: LCA37



• Limits the inrush current at start-up

avoid to oversize protections
protection of power sources like batteries
increases system availability and safety
avoid the blocking of power supplies

• Wide operating range possible

Nominal voltage from 20Vdc to 300Vdc
or 48 Vac to 265Vac
Nominal current up to 16A
Bypass relay embedded

• Applications

Current limiter for capacitive load
DC/DC converter, power supplies ...



Active INRUSH CURRENT LIMITER delayed action high current AC+ DC

LCA125



• Limits the inrush current at start-up

avoid to oversize protections
protection of power sources like batteries
increases system availability and safety
avoid the blocking of power supplies
allows the soft start of motors

• Wide operating range available

Voltage from 20Vdc to 300Vdc or 48 Vac to 265Vac
Nominal current up to 30A
Limitation current up to 100A
Bypass relay embedded

• Applications

Current limiter for capacitive load
DC/DC converter, power supplies ...



Surge arrester and overvoltage protection

surge arrester , modular DIN rail surge protection transient voltage surge suppressor

Type: PFL25



• PFL25-MOV surge protector for power line Ac / Dc

Absorb the lightning impulse and surge
power line protection in alternative or continuous
according to EN 61000-4-5 chock wave

• PFL25-TVS limiter, overvoltage arrester

Limit the transient voltage
Protection for analog lines : PT100 , 4..20mA , ...
Protection for transmission lines : RS485 , RS232 ,
Protection for remote sensors
according to 61000-4-4 fast electrical transient salve

• Advantages Increase the reliability of systems (DC/DC converter , power supplies , instrumentation)

• Application high voltage substation, variable speed drive



Remote input / output

BUS100 description

Remote modular Input / Output system, ETHERNET link type BUS100

- **1 Ethernet Modbus TCP link for 12 modules (optional Wifi or GSM network)**

Internal bus for communication between modules

- **Input / Output communicating module**

Up to 24 isolated inputs/outputs by module

- **temperature inputs module**

RTD (PT100, PT1000)
Thermistor CTN, CTP
Thermocouple (B,E,J,K,R,S,T,...)

- **Process input module**

0..1....5....10Volts ; 0...4.....20mA ;

- **Digital input Module**

Read state, counting, time measurement

- **Relays output module**

Command, alarm, ...

- **Analog outputs module**

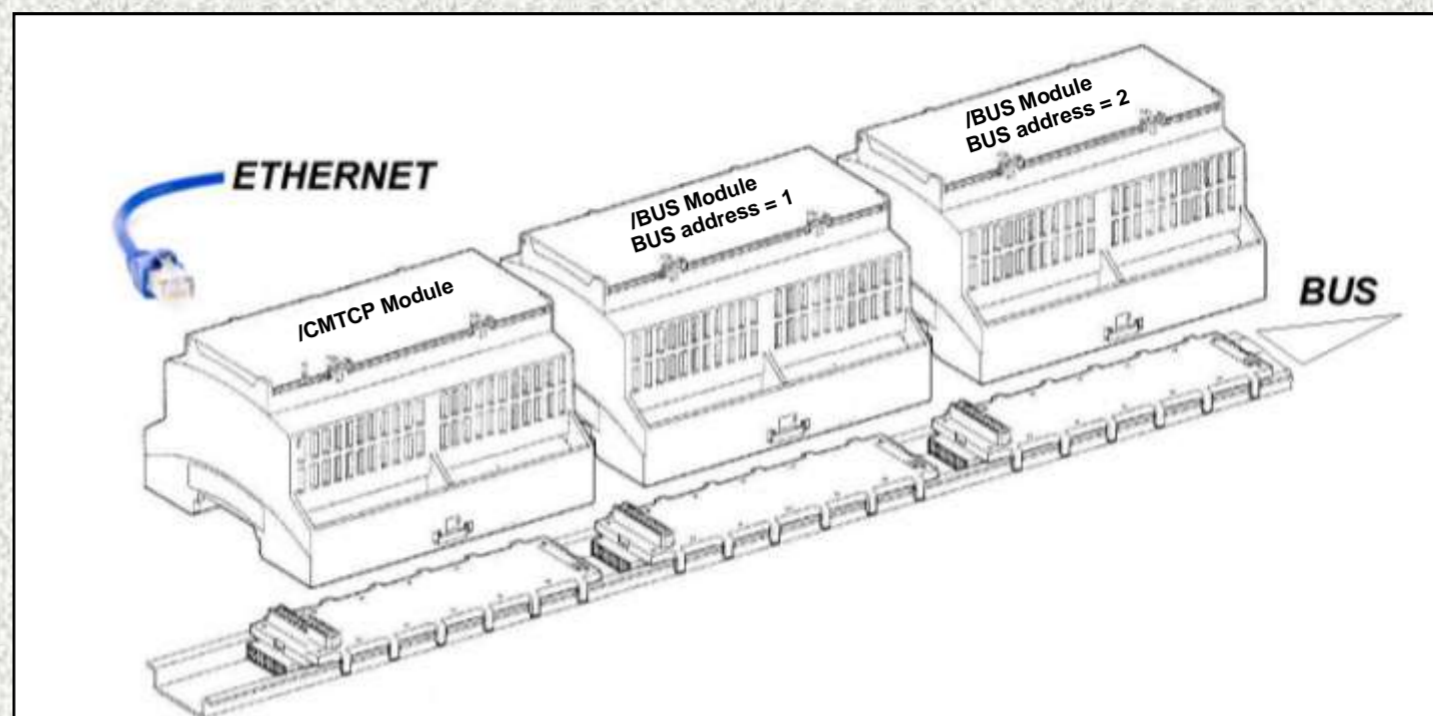
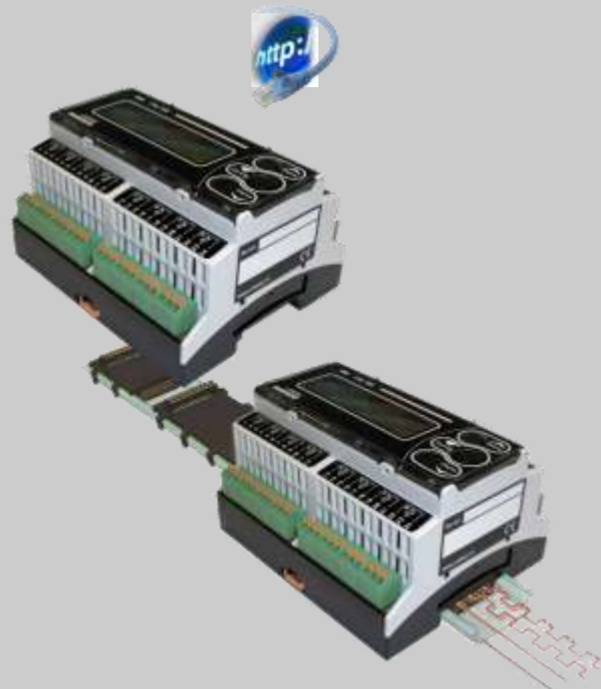
0...4...20mA, 0....10V, +/-10V, +/-20mA

- **Wattmeter, energy meter module**

Measure : voltage, current, power, phase, energy,

- **Application :**

- remote measuring and command interface for calculator, PLC, PC ...
- Monitoring, supervision, management



Analog inputs

Isolated 4 channels analog measurement device, Remote analog acquisition

type : **CML70**



- **4 isolated analog inputs**

CML70T thermocouple, PT100 3 wires
CML70P 0..4...20 mA and 0...10V
CML70PT4 thermocouple, PT100 4 wires
- individual configuration of each inputs.
- 1 alarm threshold by input.

- **Communication :**

- Modbus RTU
- Modbus-TCP (Ethernet) 6 simultaneous connections
- Embedded web server
- SNMP

- **Application :**

Acquisition interface, measure, control,
monitoring: motor, transformer, alternator ...
protection relay: temperature, pressure, current....



Measurement unit, remote acquisition unit Temperature, current, process

CML100



- **Up to 16 measure inputs per module**

Rtd sensor inputs (PT100, PT1000)
Thermocouples inputs (J,K,S,T)
Thermistor CTN, CTP inputs
0..1....5....10Volts ; 0...4.....20mA
Strain gauges
Current : 0...5A.....100Aac
with small split core transformer (Tio Dc)

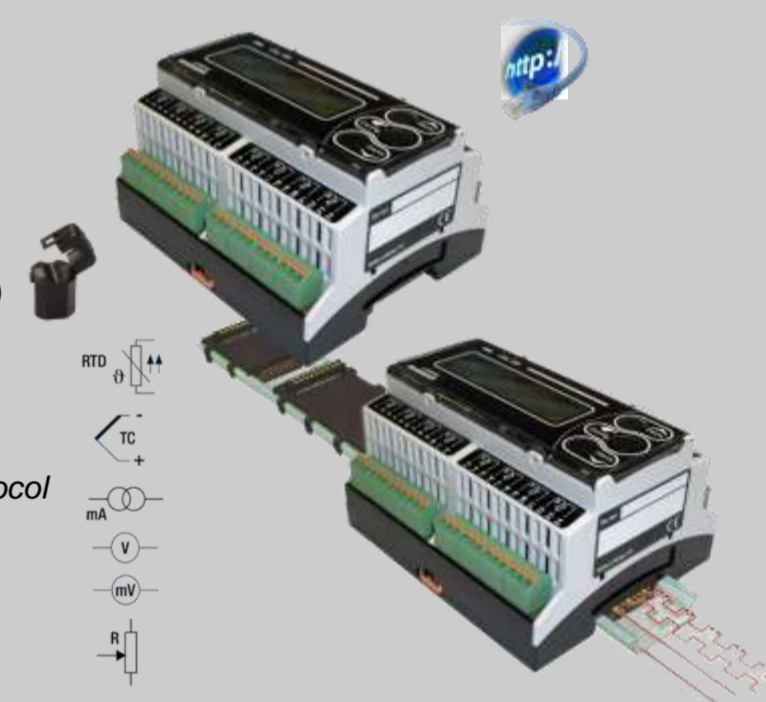
- **Ethernet Modbus TCP / SNMP link**

6 Modbus TCP concurrent connections
Bus connection onto the DIN rail
Embedded Web Server and SNMP protocol

- **RS485 Modbus RTU link**

- **2 threshold relays**

Local alarm



High-accuracy measurement unit with isolated inputs

Type: **CML106**



- **8 isolated analog input, temperature and process**

- 4 input channels for 4-wires PT100
- 4 input channels for 4...20 mA current

- **Communication :**

- Modbus-TCP (Ethernet) 6 simultaneous connections
- Embedded Web Server

- **Application :**

- measurement, control, management
- acquisition interface
- monitoring: motor, transformer, generator ...
- protection: temperature, pressure, current



Remote acquisition unit with isolated inputs for Temperature or process

Type : **CML105**



- **8 isolated analog inputs, temperature and process**

CML105T mV, thermocouple, PT100
CML105P 4-20 mA and 0-10V
Individual configuration of each input.
2 alarm thresholds per input.

- **Communication :**

Modbus RTU RS485
Modbus TCP (Ethernet), 6 simultaneously connections
Embedded Web Server
SNMP

- **Application :**

Acquisition interface,
protection relay



Digital inputs

Pulse concentrator / remote digital inputs Parallel to Ethernet converter

TYPE : **ELL100**



- **from 4 to 16 digital inputs with functions:**

State registers
32 bits counters
"ON" and "OFF" elapsed time counters
inter-pulse duration (power or flow rate)
frequency up to 6 Hz

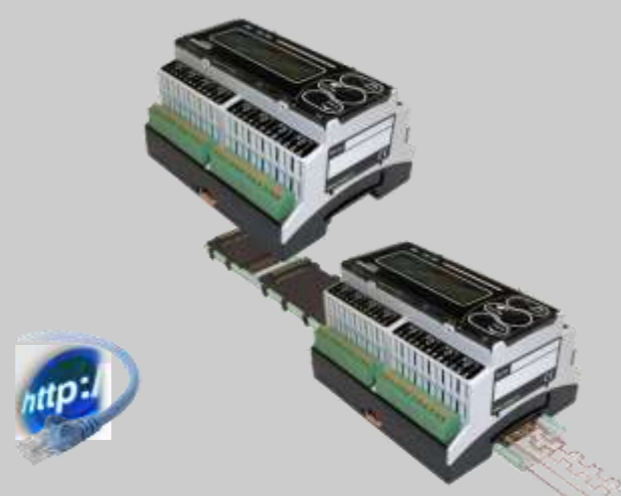
- **Ethernet Modbus TCP or SNMP link**

Bus connection possibility onto the DIN rail
Embedded Web Server
Option: Power over Ethernet (POE)

- **Application:**

Interface for metering electrical energy, gas, water, air.
State control, operating hours counting....
Remote diagnostics, test equipment, automation,

Parallel (Gray, BCD, Binary) to Ethernet converter



Analog outputs

Remote communicating module with analog and relay outputs : **SRAL165**

Digital outputs

Remote communicating module with relay outputs: **SRL165**

Special functions

Silo temperature monitoring

Transmitter and repeater for SILO temperature sensor
PT1000 or CTN ATEX zone 21 and 22 TNL120



- **up to 24 temperature inputs per module**
Configurable : - PT1000 platinum probes.
- NTC, PTC thermistor.
+ Ambient temperature measurement.
- **Bidirectional RF link**
2.4 GHz band according to IEEE802.15.4.
- **Great autonomy**
> 3 years with 4 AA lithium batteries with a refresh rate of 5 minutes or 24Vdc auxiliary power supply
- **Fully compatible**
With sensors: Chopin, Serdia, Tripette and Renaud, JUMO, MAI, Foss. easily replaces these solutions: No multiplexing, no adjustment.
- **Upgradable**
- Incorporation of new sensors curves by updating the product.
- Characterization of measuring elements on request (Plot of temperature curve).



Radio link receiver hub
Ethernet MODBUS-TCP output SML160



- **Bidirectional RF link**
2.4 GHz band according to IEEE802.15.4
Up to 32 transmitters per receiver on one network
Several networks can coexist
Integrated or remote antenna
- **Communication**
- Modbus TCP (Ethernet) 6 concurrent connections
- Embedded web server (viewing and configuration)
- **Power supply over Ethernet cable**
- Power over Ethernet (PoE)
- **Indoor, outdoor use**
- Integrated antenna
- IP66 waterproof



Silo temperature monitoring unit

CML36



- **14 temperature measures per module**
RTD PT1000, Thermistor CTN inputs
- **Power supply and communication bus**
Into the DIN rail. up to 32 modules Interconnected
- **1 Ethernet Modbus TCP link**
For the entire BUS, up to 448 measurement points, embedded Web Server
- **ATEX dust zone 21 and 22 :**
Mounting in a box, all certified : II 2 D Ex tb IIIC T80°C Db
- **Application:**
Silo-thermometry, Acquisition Interface for PLC, process monitoring, supervision ...
- **fully compatible:**
With silo sensors: Chopin, Serdia, Tripette and Renaud, JUMO, AMI, Foss Advantageously replaces these solutions: no multiplexing, no adjustment, automatic detection and compensation of sensors
- **Upgradable :** introduction of new sensors curves by product update. Characterization of measuring elements on request (record of the curve).



Silo temperature monitoring unit for digital sensors

CML36N



- **24 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
- **ATEX dust zone 21 and 22 :**
boxed, the whole is certified : II 2 D Ex tb IIIC T80°C Db
- **Open solution:**
full compatibility with digital silo sensors: AMI and OPi (2 or 3 wires)
Advantageously replaces these solutions: the failure of a sensor does not cause the loss of several probes (probe bus separation)
evolving system: introduction of a new digital sensors type by product firmware update



Frequency divider

Frequency divider
Pulse divider

DFL35



- **Voltage or dry contact input**
- **Selectable division factor**
from 2 up to 4096
- **Isolated, potential-free output contact**
200Hz max output frequency
- **Galvanic isolation**
- **Application**
frequency adaptation, flow, speed, pulse distribution, signal shaping, signal level adaptation,...
- **AC or DC power supply. 5Vdc to 400Vac**



Setpoint generator (current - voltage)

Panel meter setpoint generators
4..20mA or 0..10V analog output



- **Setpoint generator voltage or current output** 0..10V, 4..20mA, 0..20mA,
- **Several setting mode** potentiometer, push button, switches, logical input
- **Wide range of enclosure size** 72x36mm, 96x48mm, 96x96mm, 144 x 72 mm



Switch / selector

Switch for thermocouple, PT100, mA
COM48 COM96 COM192



- **COM48 COM96**
- Passive blind switch
- 96 x 48 mm or 96 x 96mm format
- up to 24 positions
- For digital or analog signals
- **COM96/A**
- 10 000 points display
- Analog output in option
- **COM192**
- Version with momentary contact switches
- **High adaptability**
- Switching a wide range of signals
- mV, mA, Volt, PT100, thermocouples,
- **Excellent reliability**
- Low resistance golden switches
- Very low thermoelectric emf



Special functions

Relay interface and PLC inputs

Interface relay / Contactors board / Pulse or frequency duplicator Pre-wired PLC outputs
Type : IRL

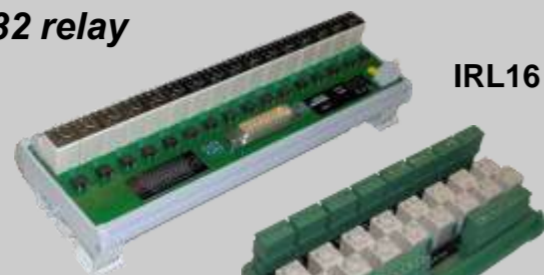


- **Standard interface : 1, 2, 4, 8, 16 or 32 relay**

PLC interface

Wiring on:

- screw or spring terminal blocs,
- SUBD, HE10, ...



IRL16

- **IRL25-2 :** Pulse duplicator
Frequency duplicator



IRL25

- **SIL2 option :** with guided contact safety relay according to EN50205

- **Interface relay board or specific contactors:**

Electromechanical or solid state relays up to 50A on PCB according to users specifications
No minimum quantity
power interface for machines
coil voltage up to 127Vdc / 400Vac



Insulation and digital level adaptation interface (optocoupler)
Type : OPT25ig



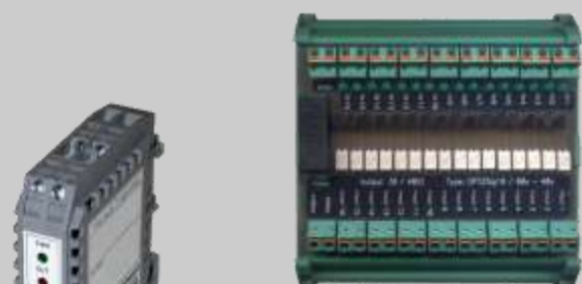
- **Standard insulation interface : 1,2,4, 8, 16 or 32 channels**

Interfacing with PLC

Impedance or level adaptation

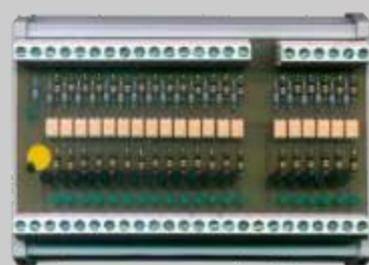
digital level isolator

- can be use in digital input or output
- EMC protection



- **Board for specific interface**

According to customer specifications :
Impedance or level adaptation
and EMC protection
Communicating version on industrial bus (Profibus , Modbus , Modbus TCP,)



Prewiring system for PLC Connection interface
IAL8



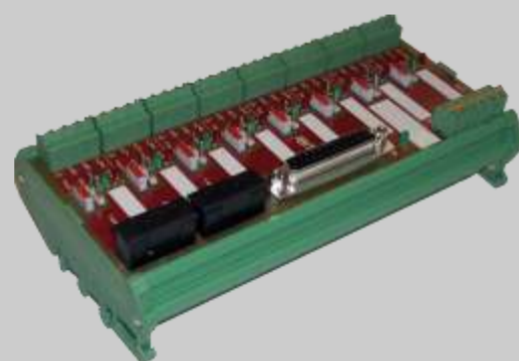
- **Connection interface standard : 8 channels**

PLC interface

Inputs limitation and protection

Visual diagnosis with led

- Available in RTD100 inputs,
0..4..20mA inputs or output



- **Specific interface board**

according to user specific request
for all type of inputs signal, number of channels
CEM protection and limitation
Communicating version with industrial protocols (Profibus , Modbus , Modbus TCP,)

Sequencer

Sequencer for debusting / cleaning plants

TYPE : SEQ16S



- **16 outputs relays**

Breaking capacity of 250V-6A

- **Programmable cycle**

Automatic, timed or manual starting

- **Application**

dedusting valve,
cleaning unit,

- **Option ATEX dust zone 21 and 22**

mounted in box, certification : II 2 D Ex tb IIIC T80°C Db



Line continuity monitoring

Line monitoring module, continuity detector SIL2 / SIL3
DCL105-8



- **8 simultaneous lines monitoring**

1 green Led per channel "line ok, presence of load"
1 red Led per channel " line break , missing load"
1 inhibition switch per channel
1 relay output : synthesis / watchdog

- **Control load presence when powered or not**

By injection of a quiescent current (0.3mA)
Wide range of load capacity (from 10 mA to 2A)

- **Analog technology**

Allowing to increase functional safety

- **Operational Safety level : SIL2 / SIL3**

According to IEC 61508

- **Applications**

Load Monitoring for safety devices (siren, horn, flash, flashing light)
- Continuity check for indicator lights and warning lights



RFid reader

125KHz RFid reader, ethernet MODBUS-TCP link
RFid90



- **Reader for EM4102 iso card tags**

- Frequency 125Khz, read distance <10 cm

- **Communication**

- Modbus TCP (Ethernet) 4 concurrent connections.
- Embedded Web Server.
- SNMP option.
- Specific protocol on request.

- **Dual power supply**

- Power over Ethernet (PoE).
- Auxiliary power supply 8....28 Vdc.

- **Applications**

- Access control, automatic identification,
inventory tracking, payment systems.

- **Indoor or outdoor use**

- Integrated antenna.
- IP66 protection.



Communicating battery charger

Communication battery charger with Ethernet link For Lithium, Nimh, or Nicd battery
CHL70



- **Battery charger for automatic charge bench**

Programmable charge current setpoint
programmable compliance voltage
battery voltage measurement
charge current measurement
continuous regulation of setpoint current
protection circuit for over voltage or short circuit
Relay for battery disconnecting
Relay for battery report on external circuit

- **Ethernet Modbus tcp link**

Embedded web server

- **Internal communication bus**

incorporated in DIN rail support
up to 15 charger on one bus

- **Application :**

Intelligent automatic charger

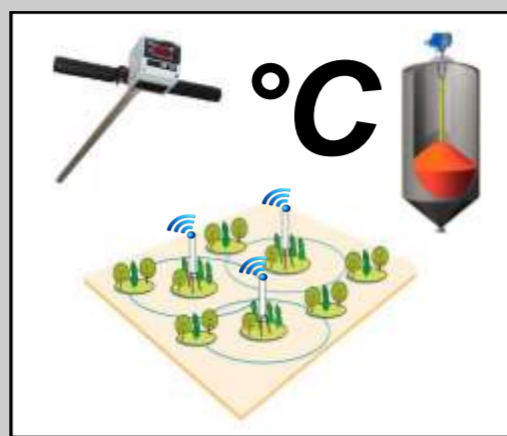


Special functions

High frequency transmission and GSM

Modular temperature transmission with GSM network for isolated sites

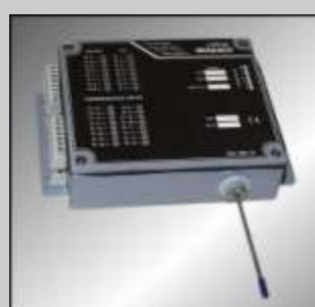
SGL70



GSM

HF radio temperature transmitter wireless stand-alone module

EML120 - RML120



Measurement system with radiofrequency mesh network Emmitter for 4-20mA analog signal.

TNL120-mA



- **Bidirectional RF link**
2.4Ghz band according to IEEE802.15.4 with antenna
- **Maximum reliability**
Meshing of all devices
Up to 8 jumps are possible to reach the receiver
Dynamic reconfiguration of path depending of environment
Transmission efficiency > 99.999%
- **Analog input**
4...20 mA + ambient temperature
- **Great autonomy**
> 2 years avec 4 standard batteries type AA with a refresh rate of 60 seconds
or with auxiliary power supply: 5Vdc from 30Vdc
- **Evolving**
- up to 32 devices per network



Timer

Panel mounted timer, delay time Programmable timer

type : TML94



- **Timeout period setting by front face**
0 to 999 minutes
- **1A switch over contact relay output**
- **Starting with external digital input**
- **Led display 1000 points**
Display of remaining time
Led for output relay state indication
- **All other special timing function on request.**



Diode network module

Diode Network Modules type MDL70 for 250Vdc / 127Vdc / 110Vdc / 48Vdc /24Vdc applications



- **Several configurations available :**
MDL70-cc : 22 diodes with common cathode
MDL70-ac : 22 diodes with common anode
MDL70-dl : 12 diodes for free wiring
MDL70-xxx : according to custom specifications
- **Wide range of application :**
Centralization of control signals
Decoupling of defect signalling system
Flyback diode for inductive load
- **Diode model configurable on request**
type BY500-800 by default (5A - 800V)
- **Fast transient burst protection in option**
MDL70 /TVS with transil protection diodes on each input



Diode matrix encoder decoder Decimal binary gray bcd converter

MDL107



- **Many design available:**
Decimal to binary
Decimal to BCD
Decimal to Gray
or according to customer specifications
up to 32 inputs
- **Wide range of applications :**
PLC interface
Button keyboard encoding
Simple logical function

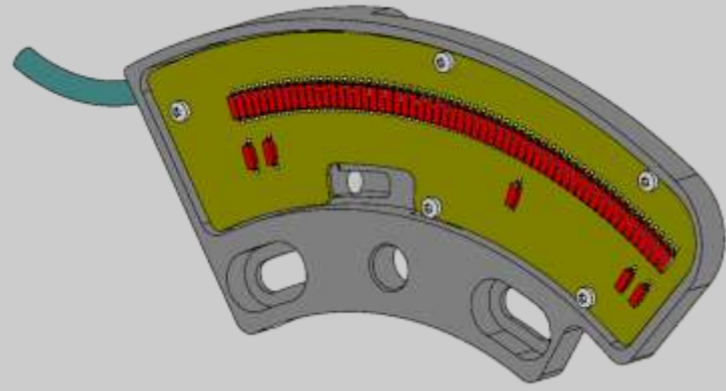


Specific customer studies

Position sensor with Reed contact

type : POSREED

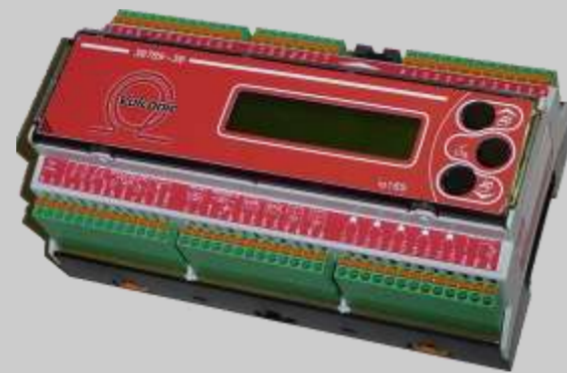
- **Analog and all or nothing output**
4..20mA proportional to the displacement
Dry contact of end of stroke or particular position
- **Modular design**
Adapt to a measurement
linear or angular
Configurable resolution
- **Low response time**
500 us rising time
- **High reliability**
lifetime > 10⁷ operations



Measure interface, VULCATHERM control

VULCANIC type : IO165 reference : 30789-30

- **Peripheral module for programmable logic controller**
temperature measurement (PT100 and Thermocouples)
pressure measurement (4..20mA with sensor supply)
level measurement by resistive probes
digital inputs and frequency (flowmeter)
external setpoint input
relay outputs + integrated fuse protection
motorized proportional valve control output
static relay control (PWM and phase angle)
alarm buzzer output machine
- **Modbus RS485 link**
- **Local display**



Measurement, monitoring and remote data transmission module

TRT200

- Monitoring 2 purge stations by TRT200
- Display and keypad on the front
- 230Vac power supply or Peltier cell
Automatic switching
- Backup battery backup
- built-in add-ons
Pressure, analog input
Hourly counting, pulse counting,
2 way telephone switch



HEADQUARTERS:

LOREME

12, rue des Potiers d Etain Actipôle BORNY - B.P. 35014
57071 METZ CEDEX 3

Phone: 03.87.76.32.51 -

To obtain a complement of technical informations : technique@loreme.fr

For all commercial informations : sales@loreme.fr

