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### Specific customer studies

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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
- 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

**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 current loop
- 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
- 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
  - IEC6 protection
- INP201i:
  - 316 Stainless Steel version
- INP201H:
  - Hart protocol option
- INP201ADF
  - ATEx / IECEx option
  - Explosion proof
- SIL2 compliance
  - According to IEC 61508

**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
- INP101H: 316 Stainless Steel version
- Hart protocol (available option on all models)
- FDT DTM certified HART drivers
- SIL2 compliance
  - 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

**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 current loop
- SIL2 conformity according to IEC 61508

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- Miniature head mounting
  - 25mm diameter, 19mm mounting hole spacing
- RTD 100ohms input
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- 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
  - IEC6 protection
- INP201i:
  - 316 Stainless Steel version
- INP201H:
  - Hart protocol option
- INP201ADF
  - ATEx / IECEx option
  - Explosion proof
- SIL2 compliance
  - According to IEC 61508

**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
- INP101H: 316 Stainless Steel version
- Hart protocol (available option on all models)
- FDT DTM certified HART drivers
- SIL2 compliance
  - according to IEC 61508
Transmitter and isolator

Voltage and 4-20mA current loop isolator and splitter

**4-20 mA Current loop isolator and signal splitter**

- **SIL3 / SIL2**
  - CAL23DmA
  - GET A QUOTE

  - **input current:** (0...4...20mA)
  - With or without sensor power supply
  - **Simulation plug:** (Automatic input switching)
  - Allowing full loop 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 to IEC61508

**4-20mA signal isolator, splitter with 2, 3, 4 outputs**

- **SIL2 / SIL3**
  - CAL4/100ig / CAL4/100igM
  - GET A QUOTE

  - **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**

**Galvanic isolator current loop powered**

- **0-10mA, 0-20mA, 4-20mA, 10-50mA, ...**
  - **CAL25IG**
  - GET A QUOTE

  - **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**

**4-20mA loop powered analog transmitter**

- **DIN rail mounting, Pt100 and thermocouple**
  - **CAL25**
  - GET A QUOTE

  - **CAL25**
    - 2 or 3-wires Pt100, PT1000
  - **CAL252**
    - Thermocouple
  - **CAL25**
    - mV, mA, potentiometer
  - **2-wire transmitter,** 4-20 mA loop powered
  - **3-wire transmitter,** 0-10 V output
  - **LED indicators for power and sensor**
    - Green LED for 4-20mA loop current OK
    - Red LED for sensor breaking detection
  - **SIL2 and SIL3 compliance** according to IEC 61508

**Self powered galvanic isolator for 0...4...20mA current loop**

- **SIL2 / SIL3**
  - CAL25igD
  - GET A QUOTE

  - **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

**8 channels signal splitter, signal isolator**

- **4...20mA or 0...10V**
  - **CAL150-8**
  - GET A QUOTE

  - **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

**Analogue isolated transmitter for Pt100, thermocouple, ...**

- **loop powered 4...20mA, DIN rail mounting**
  - **type CAL45**
  - GET A QUOTE

  - **CAL45:**
    - Pt100 to Pt1000 input
  - **CAL45:**
    - Thermocouple input
  - **CAL45:**
    - mV, V (dc), mA (dc), potentiometer input
  - **2-wire transmitter:**
    - (powered by the 4-20mA loop)
  - **isolation:**
    - input / output
  - **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

- **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 temperature and process isolated transmitter

- **Programmable temperature and process input**
  - Voltage V, mV, mA, potentiometer
  - thermocouple, RTD PT100
- **2 wire Loop powered**
  - Powered by the 4-20mA current loop
- **Galvanic isolation**
- **Fully configurable**
- **Measure display** (10 000 pts)
- **High thermal stability**

Isolated loop powered transmitter

- **Programmable temperature and process input**
  - Volt, V, mA, potentiometer
  - thermocouple, RTD PT100
- **2 wire Loop powered**
  - Powered by the 4-20mA current loop
- **Galvanic isolation**
- **Fully configurable**
- **Measure display**
- **High thermal stability**

Programmable, isolated temperature transmitter, 4-20mA loop powered, option SIL2

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

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

- **Temperature and process input**
  - Voltage V, mA Current, Potentiometer
  - thermocouple, Pt100
- **2 wire Loop powered**
  - 4-20mA current loop powered
- **Galvanic isolation**
- **Fully configurable**
- **low profile DIN rail mounted enclosure**

Isolated signal conditioner with auxiliary power supply

**ISOLATED ANALOG SIGNAL CONDITIONER GALVANIC ISOLATION**

- **Process inputs:** mV, V, mA, Ohms, potentiometer
  - direct input up to 1000Vdc and 10Aac
- **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**

- **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

**Type:** 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**

### 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, 3 wires 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**

**Type:** 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**

### High output power signal amplifier

**Programmable analog signal conditioner**

**Cal 101L / Cal 140 / Cal 240**

- **Application :**
  - Valve control, positioner, actuators...
  - Voltage or current amplifier,
  - High magnitude signal conditioner
  - Amplifier integrator for Rogowski coil sensor (1Aac or 5Aac output)
- **Current or voltage output**
  - Unipolar up to 60V / 5A
  - Bipolar up to +/- 30V / 5A
- **Maximum output power: 150 VA**
- **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**

**Type :** TEMPLAX105LCD

- **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 converter to 4-20mA or 0-10V output 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**
  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:**
- 6ynch 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**

- 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**

- 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
Room thermometer and hygrometer

**Thermo hygrometer probe with PoE Ethernet interface**

- 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
- Optional remote sensors
  - Humidity and temperature sensor with up to 10m cable length

**Room thermometer with PoE Ethernet interface and remote temperature probes**

- 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:
  - Clean 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**

- 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 5 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**

- 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-CNLH: 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
- SPAI-CAL
- SPAE-CAL
- SPAI-A
- SPC-CAL
- SPAE-CNLH

**HYGROMETER: SHL20, HRA40**

- **Type:** HRA40
- **HRAE40:** Outdoor hygrometer
- **HRAE40/T:** Outdoor thermo-hygrometer
  - Surface mounted device
  - Protection rating IP65
- **HRA40:** Indoor hygrometer
- **HRA40/T:** Indoor thermo-hygrometer
  - Surface mounted device
  - Protection rating IP20
- Available in 4-20mA loop powered or with 0-10V output

---

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

- 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 5 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

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  - Wall mounting (optional DIN rail adapter)
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  - 4 lines of 16 characters
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- SPAI - A: Room temperature measure with LCD display
- SPAE - CAL: Waterproof outside temperature measure (IP 65)
- SPAE-CNLH: 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
- SPAI-CAL
- SPAE-CAL
- SPAI-A
- SPC-CAL
- SPAE-CNLH

**HYGROMETER: SHL20, HRA40**

- **Type:** HRA40
- **HRAE40:** Outdoor hygrometer
- **HRAE40/T:** Outdoor thermo-hygrometer
  - Surface mounted device
  - Protection rating IP65
- **HRA40:** Indoor hygrometer
- **HRA40/T:** Indoor thermo-hygrometer
  - Surface mounted device
  - Protection rating IP20
- Available in 4-20mA loop powered or with 0-10V output
Duct mounted thermometer and hygrometer

**HYGROMETER FOR AIR DUCTS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHL18</td>
<td>Hygrometer, 1 voltage output 0...10V</td>
</tr>
<tr>
<td>SHL18T</td>
<td>Thermo-hygrometer, 2 voltage outputs 0...10V</td>
</tr>
</tbody>
</table>

**Application:**
- Room measurement, air duct, oven
- Mounting with clamp or flange

**HRG 40:**
- Hygrometer
  - Accuracy: +/−2% RH, +/−0.4°C from 5 to 40°C
  - Use in hard environment
  - Protection rating IP65

**HRG 40/T:**
- Thermo-hygrometer
  - Accuracy: +/−3.5% RH, +/−0.5°C to 25°C
  - Version with display 10000 pts LCD

**HRG 40 L:**
- Low cost version

**HRG 40/A:**
- Version with display

---

**Temperature probe with conditioner interchangeable with M12 connector**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPM12-TR18</td>
<td>Set of PT100 probe with 4-20mA conditioner</td>
</tr>
<tr>
<td>TR18</td>
<td>Transmitter alone</td>
</tr>
</tbody>
</table>
  - 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
Panel meter (temperature and analog signal)

**Small panel meter PT100, Thermocouple, 4-20mA, 0-10V**

- **Panel mount Thermostat**
- **Type:** INL4000

- **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
- **1000 pts LED display**
  - Available in red, green, blue, yellow
- **Relay output option :** 94000/R
- **4..20mA analog output option :** 94000/S
- **RS485 Modbus link option:** 94000/CM
- **Universal :** all process and temperature inputs
  - Volt, mV, mA, 2 wires sensor power supply, potentiometer, frequency, strain gauge
- **Programmable via the front face and USB - RS232 link**
- **Display :**
  - 10 000 pts for measure, unit display on 4 alphanumeric digits
- **Up to 4 relay outputs**
- **Option :** Isolated analog output, RS485 link modbus or profibus
- **Power supply :** Universal AC-DC
- **Applications:**
  - Thermometry, weighing, tachometer, measurement process, signal conditioning, threshold relays, control, ...

**PROGRAMMABLE PANEL INDICATOR**

**Type :** INL35

- **Universal :** all 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
- **Up to 4 relay outputs**
- **Option :** Isolated analog output, RS485 link modbus or profibus
- **Universal power supply :** AC-DC
- **Applications:**
  - Thermometry, weighing, tachometer, measurement process, signal conditioning, threshold relays, control, ...

**PROGRAMMABLE PROCESS INDICATOR**

**Type :** INL35L

- **All process inputs**
  - Volt, mV, mA, 2 wires sensor power supply, potentiometer, frequency, strain gauge
- **5 digits, 100 000 pts display measure**
- **Up to 4 relays**
- **Option :** Isolated analog output
  - RS485 link modbus or profibus
  - Ethernet Modbus TCP link
- **Pluggable connectors**
- **Universal power supply**
- **Fast response time: 35 ms**
- **Size 96x48mm**

**LARGE LED PANEL METER**

**Type :** INL144

- **96 x 48 mm 6 DIGITS PANEL METER 0...4... 20mA input**
  - **HIGH PRECISION / HIGH SPEED**
- **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 or profibus
    - Ethernet Modbus TCP link
  - Pluggable connector
  - Universal power supply
  - Applications : weighing, rapid process measurement, signal conditioning, threshold control, regulation, ...

**ANALOG PANEL METER PROCESS INPUT**

**Type :** INL24L

- **4-20mA Loop powered Display meter**
  - **Type:** 95600
- **Temperature and Analog Signal**
  - Panel meter (temperature and analog signal)
  - **Type :** INL24L
- **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

**PROGRAMMABLE PANEL INDICATOR**

**Type :** INL35

- **Universal :** all 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
- **Up to 4 relay outputs**
- **Option :** Isolated analog output, RS485 link modbus or profibus
- **Universal power supply**
- **Fast response time: 35 ms**
- **Size 96x48mm**
### Indicator and display

#### Bargraph for analog signal

**Miniature single LED BARGRAPH meter configurable (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.

**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, 10 000 pts LED display  
  Available in color: red, yellow, blue  
  Possibility to have more than one color for the ramp
- **BGL136:** Single LED bar with 4 digits display
- **BGL136/R:** with alarm relay
- **DIN format** 144 x 36 mm

**LED BARGRAPH WITH CIRCULAR STRIP LIGHT**  
**BGCL96**

- **Process and temperature inputs**  
  Volt, 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 ...

**LARGE LED BARGRAPH METER**  
**288 x 36 mm**  
**BGCL288**

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

**BARGRAPH PANEL METER single channel with 4 digits display**  
**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/R:** with alarms relays option
- **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
## Indicator and display

### Multi channel temperature and analog signal display

<table>
<thead>
<tr>
<th>Measure and acquisition unit with isolated inputs, and alarm relays</th>
<th>INL100 and INL150</th>
</tr>
</thead>
<tbody>
<tr>
<td>All temperature, process and analog inputs</td>
<td></td>
</tr>
<tr>
<td>INL100, INL150 (NIV, thermocouples, PT100 3 or 4 wires, Cu10, ...)</td>
<td></td>
</tr>
<tr>
<td>INL100P, INL150P (4...20 mA and 0...10V)</td>
<td></td>
</tr>
<tr>
<td>Universal supply:</td>
<td></td>
</tr>
<tr>
<td>Large format:</td>
<td></td>
</tr>
<tr>
<td>Passive technology:</td>
<td></td>
</tr>
<tr>
<td>16 digital inputs, 127Vdc inputs</td>
<td></td>
</tr>
<tr>
<td>- 20% ... 265 Vac/dc</td>
<td></td>
</tr>
<tr>
<td>- INL100: 4, 8 or 12 isolated inputs</td>
<td></td>
</tr>
<tr>
<td>- INL100: 16, 20 or 24 isolated inputs</td>
<td></td>
</tr>
<tr>
<td>- individual setting for each inputs</td>
<td></td>
</tr>
<tr>
<td>- 3 alarm thresholds per inputs</td>
<td></td>
</tr>
<tr>
<td>- option: analog output</td>
<td></td>
</tr>
<tr>
<td>Communication:</td>
<td></td>
</tr>
<tr>
<td>- Profibus-TP</td>
<td></td>
</tr>
<tr>
<td>- Modbus (RTU)</td>
<td></td>
</tr>
<tr>
<td>- Modbus-TCP (Ethernet)</td>
<td></td>
</tr>
<tr>
<td>6 simultaneous connections</td>
<td></td>
</tr>
<tr>
<td>- SNMP</td>
<td></td>
</tr>
<tr>
<td>Application:</td>
<td></td>
</tr>
<tr>
<td>- process monitoring, protection relay, data logger, ...</td>
<td></td>
</tr>
</tbody>
</table>

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

### Alarms annunciator

<table>
<thead>
<tr>
<th>Alarm Annunciator, Indicator Panel</th>
<th>AFL100</th>
</tr>
</thead>
<tbody>
<tr>
<td>• AFL100/8: 8 digital inputs</td>
<td></td>
</tr>
<tr>
<td>• AFL100/16: 16 digital inputs</td>
<td></td>
</tr>
<tr>
<td>• AFL100L: low cost version (LED display only)</td>
<td></td>
</tr>
<tr>
<td>• Option AFL100/R: 1 feedback relay per digital input</td>
<td></td>
</tr>
<tr>
<td>• Communication</td>
<td></td>
</tr>
<tr>
<td>AFL100-CP: RS485 Profibus-TP link</td>
<td></td>
</tr>
<tr>
<td>AFL100-CM: RS485 Modbus link</td>
<td></td>
</tr>
<tr>
<td>AFL100-CMTP: Ethernet Modbus-TCP link</td>
<td></td>
</tr>
<tr>
<td>• Universal power supply: 20...265 Vac-dc</td>
<td></td>
</tr>
</tbody>
</table>

### Analog alarms annunciator panel

<table>
<thead>
<tr>
<th>16 digital input, Dry contact</th>
<th>AFL144HV</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 1 output relay per input (status copy)</td>
<td></td>
</tr>
<tr>
<td>- 3 output relay for alarms groups</td>
<td></td>
</tr>
<tr>
<td>- Choice of alarm group for each input</td>
<td></td>
</tr>
<tr>
<td>- Tricolor led for indication</td>
<td></td>
</tr>
<tr>
<td>• Alarm memorized and fugitive</td>
<td></td>
</tr>
<tr>
<td>- Led indication for each input channel</td>
<td></td>
</tr>
<tr>
<td>- Double output relay for alarm group</td>
<td></td>
</tr>
<tr>
<td>- (memorized and fugitive)</td>
<td></td>
</tr>
<tr>
<td>- Acknowledge by front face or digital input</td>
<td></td>
</tr>
<tr>
<td>- Lamp test by front face or digital input</td>
<td></td>
</tr>
<tr>
<td>• Passive technology</td>
<td>Increase functional safety</td>
</tr>
<tr>
<td>• Large format: 144 x 144 mm</td>
<td></td>
</tr>
<tr>
<td>• Universal power supply: 20...265 Vac-dc</td>
<td></td>
</tr>
</tbody>
</table>

### SSI position display

<table>
<thead>
<tr>
<th>SSI INDICATOR FOR ABSOLUTE ENCODER (96 x 48mm)</th>
<th>INL35ss</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Synchronous Serial interface (SSI) input</td>
<td></td>
</tr>
<tr>
<td>Master or slave mode</td>
<td></td>
</tr>
<tr>
<td>8 to 32bits SSI frame in binary or gray format</td>
<td></td>
</tr>
<tr>
<td>Encoder powered by indicator</td>
<td></td>
</tr>
<tr>
<td>• Display</td>
<td></td>
</tr>
<tr>
<td>6 digits for value, 4 digits for unit</td>
<td></td>
</tr>
<tr>
<td>Easy programming with explicit text message</td>
<td></td>
</tr>
<tr>
<td>• option:</td>
<td></td>
</tr>
<tr>
<td>- Up to 3 relays</td>
<td></td>
</tr>
<tr>
<td>- Isolated analogue output</td>
<td></td>
</tr>
<tr>
<td>RS485 Modbus-Profibus link</td>
<td></td>
</tr>
<tr>
<td>ETHERNET Modbus-TCP or Profinet io link</td>
<td></td>
</tr>
<tr>
<td>• Plug-in connectors</td>
<td></td>
</tr>
<tr>
<td>Universal supply (Ac and Dc)</td>
<td></td>
</tr>
</tbody>
</table>

### Remote display controlled through network

<table>
<thead>
<tr>
<th>NUMERIC DISPLAY FOR ETHERNET Modbus TCP or RS485 Modbus RTU networks</th>
<th>ANL48</th>
</tr>
</thead>
<tbody>
<tr>
<td>• measure transmitting by numerical link</td>
<td></td>
</tr>
<tr>
<td>- Ethernet Modbus TCP client mode (master) or server mode (slave)</td>
<td></td>
</tr>
<tr>
<td>- RS485 Modbus/Profibus slave mode</td>
<td></td>
</tr>
<tr>
<td>• Measure display on 5 digits</td>
<td></td>
</tr>
<tr>
<td>• Watchdog</td>
<td></td>
</tr>
<tr>
<td>- relay contact on communication loss</td>
<td></td>
</tr>
<tr>
<td>• option:</td>
<td></td>
</tr>
<tr>
<td>- 2 alarms relays outputs</td>
<td></td>
</tr>
<tr>
<td>• option:</td>
<td></td>
</tr>
<tr>
<td>- isolated analog output</td>
<td></td>
</tr>
</tbody>
</table>

### Binary BCD Gray display

<table>
<thead>
<tr>
<th>6 DIGITS DISPLAY with BINARY, BCD,GRAY inputs, 4-20mA output and Ethernet</th>
<th>ANL36</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 16 digital inputs</td>
<td></td>
</tr>
<tr>
<td>Voltage or dry contact input</td>
<td></td>
</tr>
<tr>
<td>BCD, GRAY, BINARY format</td>
<td></td>
</tr>
<tr>
<td>• Display, 96 x 48 mm format measure on 6 digits</td>
<td></td>
</tr>
<tr>
<td>unit on 4 alphanumeric digits</td>
<td></td>
</tr>
<tr>
<td>• option:</td>
<td></td>
</tr>
<tr>
<td>- isolated analog output relay output</td>
<td></td>
</tr>
<tr>
<td>RS485 link, Modbus RTU, Ethernet link, Modbus TCP</td>
<td></td>
</tr>
<tr>
<td>• Application:</td>
<td></td>
</tr>
<tr>
<td>Interface for parallel output encoders</td>
<td></td>
</tr>
</tbody>
</table>
DC AC current sensor

Current shunt / Voltage divider

**Precision current SHUNT**

- **AC or DC current measurement**  Up to 100kHz
- **High accuracy**  +/- 0.25% typical, +/- 0.1% on request
- **Wide measure range**  0.01A……….15 000A Voltage output on request

**Split core current transformer mV output**

**Low cost split core current transformer for alternative current 50Hz, 60Hz, 400Hz**  type : TioL

- **Compact split core current transformer**
  333mv calibrated output
- **Fast opening/closing without tools**
  Installation on an existing circuit without interruption. No secondary open-circuit problem.
- **Available for current from 0.01A to 500A**
  Hole diameter: 6, 10, 16, 24 and 36 mm
- **Interchangeable**
  0.5% calibrated output voltage
- **“Low cost” version**

**Split core transformer for AC current measurement**  type : TioLH

- **Compact current transformer**
  333mv calibrated output
- **Fast opening/closing without tools**
  Installation on an existing circuit without interruption. No secondary open-circuit problem.
- **Available for current up to 3000Aac**
  Hole diameter 150mm maxi
- **Interchangeable**
  0.5% calibrated output voltage

**Accurate voltage divider 0.1% to 0.02%**

**Laboratory version**

- **Division ratio from 10/1 up to 10000/1**
  Other ratio on request
- **Ratio accuracy 0.1% or 0.02%**
  Thermal stability < 10 ppm / °C
- **Nominal input up to 2000V**
  Use for Dc signal or Ac up to 100kHz
- **CLASS II isolation**
  Dielectric withstand test voltage 6000Vac
- **Applications**
  instrumentation, test bench, sensor calibration,....

**SPLIT-CORE CURRENT TRANSFORMER miniature current sensor**  type : Tio

- **Compact current transformer**
  Low level output. Voltage or current
- **Fast opening/closing without tool**
  Installation on an existing circuit without interruption. No secondary open-circuit problem.
- **Available for currents from 1A to 500A**
  Passage hole diameter: 8, 12, 17, 24 and 36mm
- **0.5% calibrated output voltage**
  alternative (Tio-AC) : 200mV, 333mV, 500mV
  continuous (Tio-DC) : 500mV
DC AC current sensor

Current transformer 5A output

**SPLIT-CORE CURRENT TRANSFORMER**
Type: T05A-d40

- Split-core transformer with 40mm hole diameter
- Fast closing with clip
- Available for currents from 100A to 800A
- Current output 5 Aac class 1
- Fast opening/closing without tool
  Installation on an existing circuit without interruption.

**MULTI-RATIO SPLIT CORE CURRENT TRANSFORMER**
Type: T05AM

- Multi-ratio split core current transformer
  Selection of ratio by wiring
- Primary current from 100A to 1000A
  Hole diameter: 40mm and 65mm
- Output current 5Aac class 1
- Fast Opening / Closing operation
  Easy mounting on existing networks
  Without disconnecting cables or busbar circuits
  Without tools

**SPLIT-CORE CURRENT TRANSFORMER**
Type: T05A-d105

- Tape wrapped current transformer
  split core closed with serflex clamp
  105mm hole diameter
- Available current up to 3000A
- 5A class 1 output current
- Fast opening / closing
  Installation without disconnecting cable or busbar circuits

**CURRENT TRANSFORMERS**
Type: T05A-d21

- Encapsulated current transformer
  Wall mounting or DIN rail mounting (accessories included)
- Primary current available from 40A to 300A
- Output current 5Aac class 1
- 21mm Hole diameter
  Compact size: 45mm width
  build in sealable terminals covers

**CURRENT TRANSFORMERS**
Type: T05A-d40

- Encapsulated current transformers
  Wall mounting or DIN rail mounting (accessories supplied)
- Primary current available from 120A to 800A
- Output current 5Aac class 1
- 40mm through hole diameter
  or for busbar: 50x10mm ; 40x30mm with locking screws
  Compact size: 70mm width
  build in sealable terminals covers

**CURRENT TRANSFORMERS**
Type: T05A-d50

- Encapsulated current transformers
  Wall mounting or DIN rail mounting (accessories supplied)
- Primary current available from 600A to 1600A
- Output current 5Aac class 1
- 50mm through hole diameter
  or for busbar: 60x12mm ; 50x30mm with locking screws
  Compact size
  build in sealable terminals covers

**THREE-PHASE CURRENT TRANSFORMERS**
Type: T3i5A-d21

- 3 phase moulded case current transformer
  Wall mounting or DIN rail mounting
- Primary current available from 100A to 250A
- Current output 5 Aac class 1
- 21mm orifice pass through size
  or busbar: 25x21mm
  compact size: 105mm width
  build in sealable terminals covers
Current transformer 4-20mA output

**SPLIT-CORE CURRENT TRANSFORMER**
RMS measure 50Hz, 60Hz, 400Hz, 4-20mA output

- **Split-core current transformer**
  - Cable aperture: 12mm and 20mm
  - RMS current: 5Aac to 150Aac in 12mm
  - RMS current: 5Aac to 255Aac in 20mm
  - Frequency range: 20Hz to 64Hz

- **4-20mA current output. Loop powered**
  - TRMS transducer directly embedded in current sensor

- **Fast opening/closing without tool**
  - Installation on an existing circuit without interruption.
  - No secondary open-circuit problem.
  - Fixing directly on wire with cable ties

**CURRENT TRANSDUCER 4-20mA output**
Type: Ti420-d21

- **Molded case current transformer**
  - Base or DIN rail mounting

- **Current from 10A to 150A**

- **4-20mA Loop powered output**

- **21mm hole diameter**
  - Compact size: 45 mm width
  - Built in sealable terminal covers

**Split-core current transformer, 4-20mA output**
RMS measure 50Hz, 60Hz, 400Hz
Type: Tio420

- **Split-core current transformer**
  - Cable aperture: 12mm and 20mm
  - RMS current measurement: 20Aac up to 150Aac
  - Frequency range: 45Hz to 400Hz

- **4-20mA current output. Loop powered**
  - TRMS transducer directly embedded in current sensor

- **3KV isolation**

- **Fast opening/closing without tool**
  - Implementation on an existing circuit without interruption.
  - No secondary open-circuit problem.
  - Surface mounting or DIN rail mounting option

Zero sequence current transformer

**CORE BALANCE CURRENT TRANSFORMER**
to detect Earth leakage current
Type: Tleak

- **Measure or detecting leakage current**
  - Single-phase or three-phase with or without neutral applications

- **Hole diameter**: 32, 50, 70 and 120 mm

- **Voltage or current output**
  - Provide a proportional signal to the leakage current. Can be used with a threshold relay or a measure central.

- **Surface mounting with fixing slots**
  - Slim design

Rogowski coil

**Flexible opening current sensor (Rogowski coil)**
ROGOFLEX® Option amplifier 1Aac or 5Aac output

- **Wide dynamic range**
  - From few amperes to several hundred kA
  - Insensitive to overload, high linearity

- **Non-intrusive**
  - No power consumption, no heating, no secondary open-circuit problem

- **Large sizes**
  - Available up to 6 meter length (1.9 meter diameter), low weight

- **Fully shielded and sealed**
  - Insensitive to external RF fields, IP66 UV resistant

- **Option: protection enclosure**
  - Outdoor application, IP54 protection rating connectors protection

**Flexible Rogowski current sensors (Rogowski coil)**
Type: ROGOFLEX-LT and ROGOFLEX-LC

- **Wide dynamic range**
  - Measuring current up to several kilo amperes.
  - Insensitive to overloads, no saturation, high linearity.

- **Nonintrusive**
  - No power consumption, no heating, no secondary opening problem.

- **Available in 3 sizes**
  - Diameter of 85 mm, 140 mm, 190 mm
  - Low weight

- **Fully shielded and sealed**
  - Insensitive to external RF fields, IP67 protection rating.

- **1A output amplifier**
  - Allowing direct replacement of current transformers.
Hall effect current sensor voltage output

HALL EFFECT SPLIT-CORE CURRENT SENSOR for ALTERNATING AND DIRECT CURRENT  Hco d12
- Hall effect technology
  For direct and alternating current up to 20kHz.
- Fast opening/closing by screw
  Installation on an existing circuit without interruption. No secondary open-circuit problem. Safety screw closure system.
- 12mm aperture
  Available for current up to +/- 1000A
- interchangeable : Calibrated (0.5%) Output: +/- 4V for I nominal, +/-10V maxi
  Power supply: +/-15V by measure electronic.
- 2.5kV insulation
  Voltage output: 0...10V calibrated (0.5%) 12V power supply (provided by measure electronic)

HALL EFFECT SPLIT-CORE CURRENT SENSOR for ALTERNATING AND DIRECT CURRENT  Hco d20
- Hall effect technology
  For direct and alternating current up to 20kHz.
- Fast opening/closing without tool
  Installation on an existing circuit without interruption. No secondary open-circuit problem.
  Fast cable clamp connection.
- 20mm cable aperture
  Available for current up to +/-1500A
- interchangeable : Calibrated (0.5%) Output: +/- 4V for I nominal, +/-10V maxi
  Power supply: +/-15V by measure electronic.
- 3kV insulation
  Voltage output: 0...15V calibrated (0.5%)

HALL EFFECT SPLIT-CORE CURRENT SENSOR for ALTERNATING AND DIRECT CURRENT  Hco d21
- Hall effect technology
  For direct and alternating current up to 20kHz.
- Fast opening/closing
- 21mm cable aperture
  Available for current up to +/-1250A
- interchangeable : Calibrated (0.5%) Output: +/- 4V for I nominal, +/-10V maxi
  Power supply: +/-15V by measure electronic.
- 3kV insulation
  Voltage output: 0...15V calibrated (0.5%)

HALL EFFECT SPLIT-CORE CURRENT SENSOR for ALTERNATING AND DIRECT CURRENT  Hco d31
- Hall effect technology
  For direct and alternating current up to 50kHz.
- Fast opening/closing
- 31mm aperture
  Available for current up to +/-3750A
- interchangeable : calibrated (0.5%) Voltage output: +/- 4V for I nominal, +/- 10V maxi
  Power supply: +/-15V provide by measure electronic.
- 3kV insulation
  Voltage output: 0...15V calibrated (0.5%)

DC AC current sensor

HALL EFFECT SPLIT-CORE CURRENT SENSOR
5V power supply, 0...5V output  Hco5V-d31
- Hall effect technology
  measure direct and pulsed current up to 50kHz (unipolar).
- Fast opening / closing system
  Installation without interrupting the primary current. Closing with safety screw lock, surface mounting flanges
- Available for current up to 3750A 31mm aperture
- Measure amplifier embedded
  Voltage output 0...5V calibrated (0.5%) Power supply 5Vdc, 8mA
- 3kV insulation

HALL EFFECT SPLIT-CORE CURRENT SENSOR
AC and DC currents, 12V power supply  Hco12V-d20
- Hall effect technology
  measure DC or AC current up to 20kHz. High overloads strength, no insertion loss.
- Available for current up to +/- 600A
  20mm cable aperture
  Voltage output: 2.5V +/- 1V calibrated (0.5%). The output voltage reflect the waveform of primary current 12V power supply (provide by the measure device)
- Fast opening/closing without tool
  Installation on an existing circuit without interruption. No secondary open-circuit problem.
  Fixing on measure cable with clamp.
- 3kV insulation

HALL EFFECT SPLIT-CORE CURRENT SENSOR
ALTERNATIVE and DIRECT CURRENT  Hco d8
- Hall effect technology
  For direct and alternating current up to 2kHz.
- Fast opening/closing without tool
  Installation on an existing circuit without interruption. No secondary open-circuit problem.
  Fast cable clamp connection.
- Pluggable and interchangeable
  calibrated +/- 1V voltage output (0.5%) 12V power supply (provided by measure electronic)
- 2.5kV insulation
  Voltage output 2.5V +/- (0.5%)

Press for HCO5V-D31
- 4V nominal, +/- 10V max
- 4V nominal, +/- 10V max
- 10V max
- 15V provide by measure electronic.
- 15V by measure electronic.
- 1V calibrated (0.5%)
- 1250A
- 10V maxi
- 1000A
- 80A
- 3750A
- 1800A
- 1000A
- 80A
- 1800A
- 15V)
- 15V).
<table>
<thead>
<tr>
<th><strong>Hall effect current sensor</strong></th>
<th><strong>Voltage output</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HALL EFFECT SPLIT-CORE CURRENT SENSOR for ALTERNATING and DIRECT CURRENT</strong></td>
<td><strong>Hco d35</strong></td>
</tr>
<tr>
<td>Hall effect technology. Non-intrusive</td>
<td>For direct and alternating current up to 20kHz.</td>
</tr>
<tr>
<td>35mm cable aperture</td>
<td>Available for current up to +/- 2000A. Overload current admissible &gt;50 rated current</td>
</tr>
<tr>
<td>Interchangeable</td>
<td>Calibrated (0.5%) Output +/- 4V for I nominal, +/-15V for I maxi. Powered by measure electronic (+/-15V).</td>
</tr>
<tr>
<td>3kV insulation</td>
<td><strong>HALL EFFECT SPLIT-CORE CURRENT SENSOR for ALTERNATING and DIRECT CURRENT</strong></td>
</tr>
<tr>
<td>Hall effect technology</td>
<td>For direct and alternating current up to 20kHz.</td>
</tr>
<tr>
<td>40mm cable aperture</td>
<td>Available for current up to +/- 5000A</td>
</tr>
<tr>
<td>Interchangeable</td>
<td>Calibrated (0.5%) Output +/-4V nominal, +/-10V max. Powered by measure electronic (+/-15V).</td>
</tr>
<tr>
<td>5kV insulation</td>
<td><strong>HALL EFFECT SPLIT-CORE CURRENT SENSOR for ALTERNATING and DIRECT CURRENT</strong></td>
</tr>
<tr>
<td>Hall effect technology</td>
<td>For direct and alternating current up to 3kHz.</td>
</tr>
<tr>
<td>60mm cable aperture</td>
<td>Available for current up to +/- 5000A</td>
</tr>
<tr>
<td>Interchangeable</td>
<td>Calibrated (0.5%) Output: +/- 4V for I nominal, +/-10V for I maxi. Powered by measure electronic (+/-15V).</td>
</tr>
<tr>
<td>5kV insulation</td>
<td><strong>SPLIT-CORE HALL EFFECT CURRENT SENSOR for DIRECT and ALTERNATING CURRENT</strong></td>
</tr>
<tr>
<td>Hall effect technology</td>
<td>For direct current or alternating current up to 20kHz.</td>
</tr>
<tr>
<td>Current up to +/-3000A</td>
<td>Aperture size 85 x 27mm</td>
</tr>
<tr>
<td>Pluggable and interchangeable</td>
<td>Calibrated voltage output +/- 4V (0.5%) Supply provided by measure electronic (+/-15V).</td>
</tr>
<tr>
<td>6kV insulation</td>
<td><strong>SPLIT-CORE HALL EFFECT CURRENT SENSOR for DIRECT and ALTERNATING CURRENT</strong></td>
</tr>
<tr>
<td>Hall effect technology</td>
<td>For direct current and alternating current up to 3kHz.</td>
</tr>
<tr>
<td>Fast opening/closing</td>
<td>Installation on an existing circuit without interruption. No secondary open-circuit problem. Secure closure system by screw. Aperture size 104 x 36mm</td>
</tr>
<tr>
<td>Available for current up to +/-7500A</td>
<td>Aperture size 104 x 36mm</td>
</tr>
<tr>
<td>Pluggable and interchangeable</td>
<td>Calibrated voltage output +/- 4V (0.5%) Calibrated voltage output. Power by measure electronic (+/-15V).</td>
</tr>
<tr>
<td>6kV insulation</td>
<td><strong>HALL EFFECT CURRENT SENSOR for DIRECT AND ALTERNATIVE CURRENT</strong></td>
</tr>
<tr>
<td>Hall effect technology</td>
<td>AC or DC current measurement 3Khz bandwidth Suitable to pulsed and mixed current AC+DC</td>
</tr>
<tr>
<td>Current up to +/-20000A</td>
<td>Aperture size 210 x 100mm</td>
</tr>
<tr>
<td>Pluggable and interchangeable</td>
<td>Calibrated +/- 4V voltage output (0.5%) Power by measure electronic (+/-15V).</td>
</tr>
<tr>
<td>3kV insulation</td>
<td></td>
</tr>
</tbody>
</table>
Hall effect current sensor 4-20mA output

- Hall effect technology
  Direct current measurement or pulsed current up to 20kHz (unipolar)
- 4-20mA active output, power supply 24Vdc (3 wires)
  Built-in transmitter in sensor
- Fast opening / closing system
  Installation without interrupting the primary current
  Closing with safety screw lock, surface mounting brackets
- 21mm sensing aperture
  Available for current up to 500A
- Pluggable terminal blocks
- 3kV insulation

Hall effect split-core direct current sensor transducer, Through hole current sensor 4-20mA output

- Hall effect technology
  Direct current and pulsed current (<10kHz) measurement (unipolar)
- 4-20mA active output current, 24V power supply
  Embedded transmitter in sensor
- Fast opening / closing system
  Installation on existing circuit
  Closing with safety screw lock, surface mounting bracket
- 40mm cable aperture
  Available for current up to 2000A
- Pluggable terminal blocks
- 3kV isolation

Hall effect current sensor RS485 output

- Encapsulated sensor, 15mm aperture
  Configurable current scales in unipolar or bipolar
  25A TRMS or 50A TRMS up to 2kHz
  +/-25Adc or +/-50Adc range setting by dip switch
- High resistance to overload
  300A continuous , 2000A pulse without alteration
- Non-intrusive
  Installation on existing circuit
  No insertion loss on measured circuit
  No alteration of efficiency and integrity on primary circuit
- RS485 Modbus communication link
  Configurable by dip switch
- 0..10V analog output
- > 3 kV insulation
- 0.5% accuracy

Hall effect split-core current sensor / transducer, True RMS AC+DC measurement, 4-20mA output

- Hall effect technology
  True RMS measurement for direct and alternating current 50Hz 60Hz 400Hz.
- Loop powered 4-20mA output
  Embedded TRMS transmitter.
- Fast opening / closing system
  Installation without interrupting the primary current
  No secondary open-circuit problem
  Closing with safety screw lock, surface mounting flanges
- Available for current up to 1500A
  31mm aperture
- Pluggable terminal blocks
- 3kV insulation
Hall effect current sensor for low current AC or DC or Leakage current

**CURRENT DETECTION SENSOR, DC LEAKAGE SENSOR**

- **HcL d20**
- High sensitivity
  - measure of DC current < 1mA, non intrusive
- Highly overload resistant
  - up to 10000 x rated current without alteration
- Non intrusive
  - No insertion loss in measured circuit
  - No alteration of efficiency and integrity on primary circuit
- Available for current < 100 mA
  - 20mm hole diameter
- Disconnectable and interchangeable
  - Calibrated voltage output +/- 4V (0.5%)  
  - Powered by measure electronic
- Isolation >3 Kv

**Leakage current sensor AC and DC with dual signal output**

- **HcLRMS d20**
- 20 mm aperture
- High sensitivity, Hall effect technology
  - Small DC current measurement from 0.1mA to 100mA
  - One bipolar +/-5V output for DC current measurement
  - One unipolar 0...5V output for AC RMS measurement
  - measure AC current from 10Hz to 30kHz
  - +/-15V sensor power supply. Provide by electronic measurement
- High overload capability
  - Up to 1000 x rated current without alteration.
- Non intrusive
  - Installation on an existing circuit without interruption.
  - No insertion loss in measurement circuit.
  - No alteration of efficiency and integrity of primary circuit.
- >3kV isolation

**SPLIT-CORE LEAKAGE CURRENT SENSOR, DC CURRENT TRANSDUCER**

- **HcLo d33**
- High sensitivity, Hall effect technology
  - small DC current measurement from 1mA to 2.4A.
- High overload capability
  - up to 1000 x rated current without alteration.
- Non intrusive, split-core system
  - Installation on an existing circuit without interruption.
  - No insertion loss in measurement circuit.
  - No alteration of efficiency and integrity of primary circuit.
- 33mm sensing aperture
  - Available for current up to +/- 2.4 Adc
- Pluggable and interchangeable
  - Calibrated voltage output +/- 4V (0.5%)  
  - Power supply: +/-15V provide by measure electronic.
- 3kV insulation
**AC DC electric measurement**

**Voltage, current, frequency measurement**

**True RMS current and voltage transducer for alternating and direct signals**
- CPL35L
  - 4/20mA
  - RS485

**50Hz...400Hz AC voltage and current transmitter**
- CAL45CA
  - 4-20mA loop powered
  - 20mA, +/-1mA, +/-1V

**Miniature current sensor transmitter for DC current**
- CAL25CC
  - DC current input:
    - from 1A up to 1000A (or +/- 1A to +/- 50A)
  - Hall effect technology:
    - “through hole” design or terminal blocks design
  - Current or Voltage Output:
    - Voltage or bipolar: U : +/-20mA, +/-10V, ...
    - Isolated from power supply
  - Direct shunt replacement:
    - Isolated mV output (no thermal dissipation)
  - CAL35CC
    - Input for Rogowski coil sensor up to 100kA

**Transmitter for current and voltage measurement**
- 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
    - Wave train
  - CAL35TRMS
    - TRMS measure (AC + DC) all type of signals up to 500kHz

**AC or DC power measurement single phase / three phase**
- Measure transducer TRMS AC and DC
  - Wattmeter, Voltmeter, Ammeter,....
  - CPL35
    - 4/20mA
    - Ethernet

**Power converter and energy meter for electric networks**
- Type: CPL305
  - Three-phase or single phase network
  - 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
### AC DC electric measurement

#### AC or DC power measurement single phase / three phase

<table>
<thead>
<tr>
<th><strong>Wattmeter, energy counter for three-phases unbalanced network, electrical measure transmitter</strong></th>
<th>CPL101</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>• Three phase unbalanced network</strong>&lt;br/&gt;with or without neutral, frequency range: 40 to 400Hz.&lt;br/&gt;<strong>• Programmable:</strong>&lt;br/&gt;function: voltmeter, ammeter, frequency meter, wattmeter, varmeter, power factor&lt;br/&gt;<strong>• Up to 3 isolated analog outputs</strong>&lt;br/&gt;0...A, 20mA, 0...10V, +/-20mA, +/-10V&lt;br/&gt;<strong>• 1 relay output</strong>&lt;br/&gt;threshold relay or energy counter&lt;br/&gt;<strong>• CPL101/C:</strong> RS485 link, Modbus option&lt;br/&gt;<strong>• CPL101T:</strong> Fast version (response time: 100ms)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Hardened TRMS converter for AC and DC signals</strong></th>
<th>CPL36</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>• RMS measure AC + DC hardened version:</strong>&lt;br/&gt;Single-phase or balanced three-phase 0...440 Hz&lt;br/&gt;with or without neutral&lt;br/&gt;PWM, wave train, Phase angle variation, high level harmonics signals&lt;br/&gt;<strong>• multi-sensor for current measurement:</strong>&lt;br/&gt;Shunt, transformer, Rogowski coil, Hall effect sensor or 1A and 5A direct inputs&lt;br/&gt;<strong>• Programmable:</strong>&lt;br/&gt;Voltmeter, ammeter, wattmeter, varmeter, power factor, Cos phi, frequency meter&lt;br/&gt;<strong>• 4 digits measure display</strong>&lt;br/&gt;U, I, Cos, P, Q, Hz&lt;br/&gt;<strong>• 2 isolated analog outputs and 2 relay outputs</strong>&lt;br/&gt;<strong>• Wide range universal ac/dc power supply</strong></td>
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</tbody>
</table>

### Multi channel electrical measurement

#### Measurement unit for distribution panel (DPM)

<table>
<thead>
<tr>
<th><strong>Wattmeter, Energy meter for 18 feeders</strong></th>
<th>CPL165</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>• Energy meter for 18 electrical feeders.</strong>&lt;br/&gt;Three phase or single-phase, measure U, I, Cos, P, W&lt;br/&gt;<strong>• Measure current from 1A to 500A</strong>&lt;br/&gt;With small split-core current transformers (CT)&lt;br/&gt;Diameter of passage: 12 to 36mm&lt;br/&gt;<strong>• Ethernet Modbus TCP or SNMP link</strong>&lt;br/&gt;Embedded Web Server&lt;br/&gt;6 Modbus TCP concurrent connections&lt;br/&gt;Bus connection possibility directly onto the DIN rail&lt;br/&gt;Modbus link possibility over RS485&lt;br/&gt;<strong>• Application:</strong>&lt;br/&gt;Energy efficiency, building management&lt;br/&gt;Data center - Intelligent PDU, Measure of PUE (Power Usage Effectiveness)</td>
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</tbody>
</table>

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<tr>
<th><strong>Communicating sensor for direct current voltmeter and wattmeter in option</strong></th>
<th>CNL36CC</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>• DC current input from 0.1Adc up to 1000Adc</strong>&lt;br/&gt;Option: voltage input up to +/-300Vdc (230Vac)&lt;br/&gt;and power measurement.&lt;br/&gt;<strong>• Communication:</strong>&lt;br/&gt;Ethernet link Modbus TCP protocol&lt;br/&gt;1 IP address for 32 modules&lt;br/&gt;Internal bus integrated on DIN rail&lt;br/&gt;Modbus TCP (6 simultaneous connection)&lt;br/&gt;SNMP, embedded web server&lt;br/&gt;RS485 Modbus RTU&lt;br/&gt;<strong>• CNL36CC:</strong> Input on screw terminal 25mm², 86A max.&lt;br/&gt;<strong>• CNL36CC-H:</strong> Input for HALL effect sensor, 1000A max&lt;br/&gt;<strong>• Shared power supply through the internal bus</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Current measurement unit, Data Logger with Ethernet PoE link</strong></th>
<th>SCA60</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
</tbody>
</table>

#### Measurement for single phase distribution panel type : CPL165L

| **Wattmeter, Voltmeter, Ammeter,...** | | |
| | | |

8 channels communicating measurement unit for direct current

<table>
<thead>
<tr>
<th><strong>CML100CC</strong></th>
<th>GET A QUOTE</th>
</tr>
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<tbody>
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</tbody>
</table>

8 channels communicating measurement unit for direct current

<table>
<thead>
<tr>
<th><strong>Metered rack PDU</strong>&lt;br/&gt;Remote monitoring and management</th>
<th>PDU431</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description will be available soon</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 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)
  - Two input ranges: 100V and 800V.
  - Current input (AC and DC)
    - 94000MC: direct input, up to 10A.
    - 94000CM: input for shunt or Hall effect sensor up to 80A.
    - 94000CROGO: 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**

---

**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:
    - Voltage, ammeter, wattmeter, var meter, power factor, Cos phi, frequency meter.
  - 6 digits measure display, 96 x 48mm format
    - 4 digits alphanumerical display for the 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 concurrent connections) and SNMP.
  - Universal wide range ac/dc power supply.

---

**Phase meter**

**PHASE METER FOR ALTERNATING VOLTAGES**

- **PHL165**

  - Phase angle measurement -180°...+180°
    - Accuracy: better than 1°
    - Resolution: 0.1°
  - 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/RIN 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.
AC DC electric measurement

Power controller, dimmer

**SINGLE-PHASE POWER CONTROLLER / DIMMER**  
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**  
VPL73  
- **Firing mode**  
  Full wave train VPL73-TR  
  Phase angle modulation VPL73-PH  
- **Output power** : up to 5KW  
  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**  
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 ovens, environmental chamber, test bench, lighting, IR light, band heaters, dryers, …

**SINGLE-PHASE POWER CONTROLLER**  
VPL74  
- **Firing mode** : full wave train  
  Voltage range: from 200 Vac to 440Vac  
  also available in 24 Vac and 48 Vac, …..  
- **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)
## Industrial electronic thermostat

**Temperature threshold relay RTD and thermocouple**

<table>
<thead>
<tr>
<th>THL36</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Suitable for heating and cooling mode.</td>
<td></td>
</tr>
<tr>
<td>- <strong>Application:</strong> protection relay, thermostat threshold relay,......</td>
<td></td>
</tr>
<tr>
<td>- <strong>Temperature input</strong></td>
<td></td>
</tr>
<tr>
<td>PT100 - 3 wires / Thermocouples J,K,T</td>
<td></td>
</tr>
<tr>
<td>- <strong>Fully configurable via front face</strong></td>
<td></td>
</tr>
<tr>
<td>With push button under the cover</td>
<td></td>
</tr>
<tr>
<td>- <strong>Relay output (changeover contact)</strong></td>
<td></td>
</tr>
<tr>
<td>10A switching current</td>
<td></td>
</tr>
<tr>
<td>- <strong>1000 pts LED display for the measure</strong></td>
<td></td>
</tr>
<tr>
<td>- <strong>DIN Rail mounting</strong></td>
<td></td>
</tr>
<tr>
<td>- <strong>Option:</strong> EN 14597 conformity</td>
<td></td>
</tr>
<tr>
<td>Temperature regulating and limiting devices for heat generating systems.</td>
<td></td>
</tr>
</tbody>
</table>

**Thermostat regulator for heating cables and ribbons.**

<table>
<thead>
<tr>
<th>THL105</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>Temperature display</strong></td>
<td></td>
</tr>
<tr>
<td>LCD 2 lines of 16 characters (temperature, set point, output state)</td>
<td></td>
</tr>
<tr>
<td>- <strong>Temperature input</strong></td>
<td></td>
</tr>
<tr>
<td>PT100 - 2 wires (-50 °C ...... + 250 °C)</td>
<td></td>
</tr>
<tr>
<td>- <strong>Fully configurable</strong></td>
<td></td>
</tr>
<tr>
<td>with pushbuttons</td>
<td></td>
</tr>
<tr>
<td>- <strong>Breaking capacity 16 A resistive</strong></td>
<td></td>
</tr>
<tr>
<td>- <strong>Mounting in IP66 waterproof enclosure</strong></td>
<td></td>
</tr>
<tr>
<td>Transparent cover</td>
<td></td>
</tr>
</tbody>
</table>

## Threshold relay for process signal

**SIL2 / SIL3 high safety operational level analogue threshold relay**

<table>
<thead>
<tr>
<th>DSL1-35mA-SIL</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>Current input</strong></td>
<td></td>
</tr>
<tr>
<td>4...20 mA</td>
<td></td>
</tr>
<tr>
<td>- <strong>1 adjustable threshold with multi-turn potentiometer</strong></td>
<td></td>
</tr>
<tr>
<td>And input loop break detection</td>
<td></td>
</tr>
<tr>
<td>- <strong>Positive security</strong></td>
<td></td>
</tr>
<tr>
<td>Relays activated below the threshold</td>
<td></td>
</tr>
<tr>
<td>- <strong>2 electromechanical changeover contact outputs</strong></td>
<td></td>
</tr>
<tr>
<td>Independent relays</td>
<td></td>
</tr>
<tr>
<td>- <strong>Safety Integrity Level:</strong> SIL2 / SIL3</td>
<td></td>
</tr>
<tr>
<td>conform to IEC 61508</td>
<td></td>
</tr>
</tbody>
</table>

**Threshold relay, threshold detection for analog signals protection relay**

<table>
<thead>
<tr>
<th>DSL35L</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>Wide range of process and temperature inputs</strong></td>
<td></td>
</tr>
<tr>
<td>Volt, mA, potentiometer, CTN, CTP,......</td>
<td></td>
</tr>
<tr>
<td>- <strong>1000 pts LED display for measurement</strong></td>
<td></td>
</tr>
<tr>
<td>- <strong>Internal or external threshold</strong></td>
<td></td>
</tr>
<tr>
<td>setting with push buttons (under the cover) or with analog signal (4...20mA/0...10V) DSL35-Cext</td>
<td></td>
</tr>
<tr>
<td>- <strong>1 or 2 output relays, 10A changeover contact</strong></td>
<td></td>
</tr>
<tr>
<td>- <strong>Application</strong></td>
<td></td>
</tr>
<tr>
<td>Thermal protection relay threshold relay for 4...20mA loop thermostat,......</td>
<td></td>
</tr>
</tbody>
</table>

**Analog threshold relay**

<table>
<thead>
<tr>
<th>DSL1-35mA-NUC</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>Current input</strong></td>
<td></td>
</tr>
<tr>
<td>4...20 mA</td>
<td></td>
</tr>
<tr>
<td>- <strong>1 adjustable threshold with multi-turn potentiometer</strong></td>
<td></td>
</tr>
<tr>
<td>And input loop break detection</td>
<td></td>
</tr>
<tr>
<td>- <strong>Relay security selectable by dipswitch</strong></td>
<td></td>
</tr>
<tr>
<td>Relays activated over or below the threshold</td>
<td></td>
</tr>
<tr>
<td>- <strong>2 electromechanical changeover contact outputs</strong></td>
<td></td>
</tr>
<tr>
<td>Independent relays</td>
<td></td>
</tr>
<tr>
<td>- <strong>Traceability of internal components</strong></td>
<td></td>
</tr>
<tr>
<td>provided with the List of Manufacturing Operation and Individual control sheet (Nuclear application)</td>
<td></td>
</tr>
<tr>
<td>- <strong>Operational Safety level :</strong> SIL2 / SIL3</td>
<td></td>
</tr>
<tr>
<td>according to IEC 61508</td>
<td></td>
</tr>
</tbody>
</table>

**ANALOG THRESHOLD DETECTOR**

<table>
<thead>
<tr>
<th>DSL35</th>
<th>GET A QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>All process and temperature inputs</strong></td>
<td></td>
</tr>
<tr>
<td>Volt, mA, Aac, Adc, RMS, TRMS with or without sensor supply, potentiometer, frequency, thermocouple, PT100, CTN, CTP,...... Namur proximity sensor (IEC 60497-5-6)</td>
<td></td>
</tr>
<tr>
<td>- <strong>DSL1-35:</strong> 1 threshold / 1 relay (SPDT contact)</td>
<td></td>
</tr>
<tr>
<td>- <strong>DSL2-35:</strong> 2 thresholds / 2 relays (SPDT contact)</td>
<td></td>
</tr>
<tr>
<td>- <strong>Fast version &lt; 3 ms ref:</strong> DSL35T</td>
<td></td>
</tr>
<tr>
<td>- <strong>Solid state or electromechanical relay output</strong></td>
<td></td>
</tr>
<tr>
<td>- Positive or negative safety (selection with internal switch)</td>
<td></td>
</tr>
<tr>
<td>- Internal (potentiometer) or external (volt, mA, pot) setpoint</td>
<td></td>
</tr>
<tr>
<td>- AC or DC Power supply, from 5Vdc up to 400Vac.</td>
<td></td>
</tr>
</tbody>
</table>
**Threshold relay - protection relay**

**Relay for AC-DC voltage and frequency**

**Protection monitoring relay for AC and DC current phase control relay**
- **RPL23**
  - **DC and AC Voltage monitoring**
    - 50Hz..500Hz, 60Hz..70Hz, 400Hz
  - **RPL23**: 0-5V/AC.... 0-20mA/DC.... 0-20mA/DC, 0-5V/DC.... 0-20mA/DC, 0-5V/DC
    - **RPL23-BT**: 12V/AC, 24V/AC, 230V, 375V/DC
  - 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**
- **RPL23f**: 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, 100...400Vac-DC
- **SIL2 option** in accordance to IEC 61508

**Protection relay for DC current and voltage High isolation voltage (10kV)**
- **RPL34HiG**

- **Voltage, current and power monitoring**
  - Voltage measurement: +/-1500Vac max
  - Current measurement: +/-1500Vac max 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**

- **Isolation**: 10kV/DC

- **Display** Measure and default

- **Configuration**
  - user setting with front face pushbuttons
  - **Power supply** universal 20...265Vac-DC
  - **SIL2 option** in accordance to IEC 61508

**Relay for AC and DC current**

**Threshold relay for direct or alternative current**
- **Current monitoring relay**
  - **DSL35LCC**

  - **DC or DC+AC current monitoring**
    - **DSL35LCC**
      - Terminal blocks version, embedded sensor
      - Range: +/-1A to +/-125A/DC
  - **DSL35LCCHALL**
    - Remote sensor version
    - Range: +/-0.1A to +/-600A/DC

  - **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

**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

**Voltage presence relay for capacitive divider, transformer, resistive bridge AC + DC**
- **RPT23**

  - **AC and DC voltage monitoring**
    - TRMS measure: 10...600Vac, 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

**Frequency control relay**
- **(50Hz, 60Hz or 400Hz applications)**
  - **type: RCF35**

  - **Monitor the network frequency variations**
    - self-powered: for 40Hz to 400Hz 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**
    - sensor and delay configurable, relay state indicated by LED

  - **DIN rail mounting**
    - 2 modules (35mm)

  - **Application**
    - Electric power source monitoring
    - Generator, wind turbine, micro station, ...

  - **Resolver compatible with neon indicators on voltage divider output**
  - **High input impedance**

**Battery Protection Relay**
- **RBP45S**

  - **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…305Vac 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,…….)
Instrumentation power supply AC-DC DC-DC

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

- 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)

**Automatic low noise version or high density switching power**

**SMALL INSTRUMENTATION POWER SUPPLIES**
AC-DC & DC-DC

- 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.

**Power over Ethernet injector (Power over Ethernet)**

**POWER OVER ETHERNET INJECTOR**
DIN rail mounting

- 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

**MID RANGE POWER SUPPLY**
500Watts max
24Vdc / 48Vdc / 60Vdc / 110Vdc / 127Vdc

- 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 ... 265 Vac (50Hz, 60Hz, 400Hz)
  - 100 ... 370Vdc
- Fully protected
  - Short circuit, overload and thermal
- AL125/Wd
  - Watchdog relay output, changeover contact

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

- Linear or switched-mode version
  - DC or AC 50Hz - 60Hz - 400Hz input
- Fully protected
  - short-circuits, overload, thermal
- 1 to 4 isolated outputs
  - Limited output current for sensor safety
- Applications
  - 4...20 mA loop power supply, instrumentation, sensors,...
Power supply and DC-DC converter

**Power supply AC-DC or DC-DC up to 1000 Watts**

110Vdc, 115Vdc, 125Vdc, 127Vdc, ...

**AL175**

- **DIN RAIL or surface mounting**
  - 1000 Watts total, 1 to 5 x 200 W outputs
  - Output voltage: 5Vdc....250Vdc (application: 110Vdc and 127Vdc)
- **AC or DC Input**: Switching-mode power supply
  - 85...265Vdc (50Hz, 60Hz, 400Hz)
  - 100 ... 370Vdc; 200 ... 1200Vdc
- **Fully protected**: Short circuit, overload, thermal
- **AL175L**: natural convection, 400 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 AC-DC or DC-DC up to 2500 Watts**

Output: 110 Vdc, 115Vdc, 125Vdc, 127 Vdc, ...

**AL200**

- **DIN RAIL or surface mounting**
  - 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 analog input
- **Input voltage**: DC, 50Hz, 60Hz and 400Hz
  - 85...265 Vac single-phase
  - 180...550Vac Two-phase / Three-phase
  - 9...36Vdc, 18...72Vdc, 40Vdc...160Vdc
  - 120...400Vdc, 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,
  - Battery-backed version
  - Analog output 0...10V, 4-20mA, copy of output current

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

**AL175V**

- **Adjustable output with external setpoint**
  - 200 Watts max
- **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

**Power supply with adjustable output via external setpoint variable output up to 2500 Watts**

Output: 110 Vdc, 115Vdc, 125Vdc, 127 Vdc, ...

**AL200**

- **DIN RAIL or surface mounting**
  - 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 analog input
- **Input voltage**: DC, 50Hz, 60Hz and 400Hz
  - 85...265 Vac single-phase
  - 180....550Vac Two-phase / Three-phase
  - 9...36Vdc, 18...72Vdc, 40Vdc...160Vdc
  - 120...400Vdc, 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,
  - Battery-backed version
  - Analog output 0...10V, 4-20mA, copy of output current

**DIN RAIL MEDIUM POWER SUPPLIES**

Single phase or three phases input

**ALDR**

- **Ac and Dc Inputs**
  - Single phase versions (HV): 340...550 Vac / 480...780 Vdc
- **DIN RAIL mounting**
  - Available power:
    - 120W version, type ALDR120
    - 240W version, type ALDR240
    - 480W version, type ALDR480
    - Output voltage: 24 Vdc or 48 Vdc
- **Fully protected**
  - Short circuit, 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-DC CONVERTER up to 127Vdc**

- **Application:** Photovoltaic, wind power, regulation of a fluctuating voltage for inverters, ...

- **Option:**
  - Short circuit, overload, thermal

- **Protection:**
  - 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

- **Isolation:** 2500V

**DC-DC AC-DC DC-AC**

- **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**

- **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, ...

**Converter DC-DC AC-DC DC-AC**

- **Wide range of input and output voltage**
  - Input: DC: 12Vdc, 24Vdc, 48Vdc, 110Vdc, 220Vdc
  - Output: DC: 3.3Vdc, 5Vdc, 12Vdc, 24Vdc, 48Vdc, 110Vdc, 220Vdc

- **Power from 25 to 240 watts**

- **Modular design:**
  - Wide range for input voltage: 9..36Vdc, 18..5Vdc, 48..160Vdc, 110..370Vdc, 200..1500Vdc
  - Wide range for output voltage: 5V, 12V, 15V, 24V, 48V, 72V, 110V, 110Vdc, 125V, 127V

- **Protection:**
  - Short circuit, overload, thermal

**DC-DC Converter or DC-AC sinusoidal converter**

- **Wide range of voltage**
  - inputs: DC: 12Vdc, 370Vdc
  - output: DC: 12Vdc, 370Vdc

- **Protection:**
  - short circuit, overload, thermal

- **High efficiency up to 96%**

- **2500V input/output isolation**

- **Wall, DIN rail or Rack mounting**

- **Application:**
  - Solar, battery, Fuel cells
  - Automation, renewable energies

**Rack mounted medium power supply**

- **Wide range of input and output voltage**
  - Power from 25 to 1000 watts

- **Protection:**
  - short circuit, overload, thermal

**DC-DC Power Supply or DC-DC converter**

- **Wide range of input voltage (DC or AC single, two, three phase)**
  - 85...250Vac, 180...550Vac
  - 50Hz, 60Hz, 400Hz

- **Wide range of output voltage**
  - 5V, 12V, 24V, 48V, 72V, 110V, 110Vdc, 125V, 127Vdc, 230Vac

- **Protection:**
  - Short circuit, overload, thermal

- **Modular design in 2U or 3U 19 inch rack**

- **Increase power with parallel coupling**

- **Power up to 10000 watts**

**RACK INSTRUMENTATION POWER SUPPLIES**

- **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

- **Applications**
  - 4..20 mA loop power supply, instrumentation, sensors, ...

**RACK MOUNTED MEDIUM POWER SUPPLY**

- **Wide range of input and output voltage**
  - Power from 5 to 90 watts

- **Protection:**
  - short circuit
  - overload, thermal

- **Fully isolated**
  - between each outputs

**Wall, DIN rail or Rack mounting**

- **Universal input: 85...265 Vac-dc**

- **Fully protected**

- **Total protection**

- **High density**

- **Small footprint**

- **Applications**
  - Renewable energies
  - Automation, renewable energies

**AC/DC High density POWER SUPPLY**

- **Wide range of input voltage**
  - 85...265 Vac

- **Efficiency:**
  - up to 96%

- **Output:**
  - DC: 12Vdc, 370Vdc

- **Protection:**
  - short circuit
  - overload, thermal

- **High efficiency up to 96%**

- **2500V input/output isolation**

- **Wall, DIN rail or Rack mounting**

- **Application:**
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  - Automation, renewable energies

**RACK MOUNTED MEDIUM POWER SUPPLY**

- **Wide range of input and output voltage**
  - Power from 25 to 1000 watts

- **Protection:**
  - short circuit, overload, thermal

- **Modular design**
  - two, three phase

- **Increase power with parallel coupling**

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**DC-DC Power Supply or DC-DC converter**

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  - 85...250Vac, 180...550Vac
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  - 50Hz, 60Hz, 400Hz

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  - 5V, 12V, 24V, 48V, 72V, 110V, 110Vdc, 125V, 127Vdc, 230Vac

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  - Short circuit, overload, thermal

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- **Increase power with parallel coupling**

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  - short circuit, overload, thermal

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  - two, three phase

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- **Power up to 10000 watts**
Battery charger

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

**REDUNDANCY MODULE with DIODE:**

- **MPA2:**
  - 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
    - + resettable thermal protection
    - for each power supplies
    - Option: resettable current limiter
    - until the output voltage is set.
  - **Application**
    - Uninterruptible power supply, installation requiring a high level of availability.

- **MPA4:**
  - 20Vdc … 280Vdc
  - 20A nominal, 30A maxi (natural convection)
  - 240A nominal, 30A maxi (ventilated model)
  - Monitoring relay in option
  - **Application**
    - Uninterruptible power supply, installation requiring a high level of availability.

**REDUNDANCY MODULE with DIODE:**

- **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**

**Redundancy module**

- **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

- **MPA24**
  - 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 - 20A**
    - Control relays and signalisation Led
    - allowing the diagnosis of power supplies
  - **Application**
    - Uninterruptible power supply, installation requiring a high level of availability.

Power supply and DC-DC converter

Inrush current limiter

**INRUSH CURRENT LIMITER**

**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**

**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

---

**PFL25**

**MOV surge protector for power line Ac / Dc**

Absorbs the lightning impulse and surge power line protection in alternative or continuous according to EN 61000-4-5 chok 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

**Avantages**
- 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)

**Input / Output communicating module**

- Internal bus for communication between modules
- **Up to 24 isolated inputs/outputs by module**

  - **temperature inputs module**
    - RTD (PT100, PT1000)
    - Thermistor CNT, CTP
    - Thermocouple (B, E, J, K, R, S, T, …)

  - **Process input module**
    - 0...1...5...10 Volts; 0...4...20 mA; …

  - **Digital Input Module**
    - Read state, counting, time measurement

  - **Relays output module**
    - Command, alarm, …

  - **Analog outputs module**
    - Measure: voltage, current, power, phase, energy, …

**Application:**
- Remote measuring and command interface for calculator, PLC, PC …
- Monitoring, supervision, management ……….

**Isolated 4 channels analog measurement device**

**Remote analog acquisition**

Type: CML70

- 4 isolated analog inputs

  - CML7DT: thermocouple, PT100 3 wires
  - CML7TOP: 0...4...20 mA and 0...10V
  - CML7TOP4: 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, ….

**High-accuracies 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, ….

**Measurement unit, remote acquisition unit**

Type: CML100

- 16 measure inputs per module

  - Rtd sensor inputs (PT100, PT1000)
  - Thermistor CNT, CTP inputs
  - 0...1...5...10 Volts; 0...4...20 mA

  - 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

**Application:**
- Acquisition interface, measure, control, monitoring: motor, transformer, generator …
  - Protection: temperature, pressure, current, ….

**Digital inputs**

**Pulse concentrator / remote digital inputs**

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
- Options: 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

**Remote outputs**

Remote communicating module with analog and relay outputs : SRAL165

**Digital outputs**

Remote communicating module with relay outputs: SRL165
Special functions

Silo temperature monitoring

- 14 temperature measures per module
- Power supply and communication bus into the DIN rail, up to 32 modules interconnected
- 1 Ethernet Modbus TCP link
- 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, Tripettes and Renaud, JUMO, MAI, Foss...

Radio link receiver hub

- Bidirectional RF link
- Frequency 2.4 GHz band according to IEEE802.15.4
- Several networks can coexist
- Several transmitters per receiver on one network
- Several networks can coexist

Silo temperature monitoring unit

- 24 temperature measures per module
- Power supply and communication bus incorporated into the DIN rail. 32 modules interconnected
- 1 Ethernet Modbus TCP link
- ATEX dust zone 21 and 22
- Mounting in a box, the whole is certified: II 2 D Ex tb IIIC T80°C Db
- Open solution: full compatibility with digital silo sensors: AMI and OP (2 or 3 wires)

Frequency divider

- 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. 50Vdc to 400Vac

Setpoint generator (current - voltage)

- 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
- 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 plate / Pulse replicator**

**Pre-wired PLC outputs**

* **Type : IRL**

- Standard interface : 1, 2, 4, 8, 16 or 32 relay
- PLC interface
  - Pulse replicator (IRL25-2)
  - Connections:
    - Screw terminal, spring terminal blocks
    - SUBD, HE10, ...
- SIL2 option : with safety relay
  - All contacts are forcibly guided contact according to EN50205
- Interface relay or specific contactors:
  - Electromechanic or static
  - Up to 50A on PCB
  - On specific specifications
  - No minimum quantity
  - Power interface for machines
  - Coil voltage up to 127Vdc / 400Vac

**GET A QUOTE**

### 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 inhibit 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

**GET A QUOTE**

### 125KHz RFID reader, ethernet MODBUS-TCP link

**RFID90**

- Reader for EM4102 lco 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.

**GET A QUOTE**

### Communicating battery charger

**Charger 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 chargers on one bus

- Application:
  - Intelligent automatic charger

**GET A QUOTE**

### Line continuity monitoring

**Prewiring system for PLC**

**Connection interface**

* **IAL8**

### Insulation and digital level adaptation interface (optocoupler)

**Type : OPT22ig**

- 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
  (Proftibus , Modbus , Modbus TCP, ……)

### Sequencer

**SEQUENCER for DEDUSTING / CLEANING PLANTS**

* **Type : SE0165**

- 16 outputs relays
  - Breaking capacity of 250V 6A
- Programmable cycle
  - Automatic, timed or manual starting
- Application
  - Dedusting valve, cleaning unit
- Application
  - Dedusting valve,
**High frequency transmission and GSM**

**Modular temperature transmission with GSM network for isolated sites**

- 3GL70

**HF radio temperature transmitter wireless stand-alone module**

- EML120 - RML120

- Description will be available soon

**Measurement system with radiofrequency mesh network**

- Emitter for 4-20mA analog signal.

- TNL120-mA

- Description will be available soon

---

**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 signaling 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 transient protection diodes on each input

---

**Special functions**

**Timer**

**Panel mounted timer, delay time**

- Programmable timer: TML94

- Description will be available soon

- 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.**
### Specific customer studies

<table>
<thead>
<tr>
<th>Position sensor with Reed contact</th>
<th>Measurement, monitoring and remote data transmission module</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>type:</strong> POSREED</td>
<td><strong>TRT200</strong></td>
</tr>
<tr>
<td>• Analog and all or nothing output</td>
<td>• Monitoring 2 purge stations by TRT200</td>
</tr>
<tr>
<td>4..20mA proportional to the displacement</td>
<td>• Display and keypad on the front</td>
</tr>
<tr>
<td>Dry contact of end of stroke or particular position</td>
<td>• 230Vac power supply or Peltier cell</td>
</tr>
<tr>
<td>• Modular design</td>
<td>• Automatic switching</td>
</tr>
<tr>
<td>Adapt to a measurement linear or angular</td>
<td>• Backup battery backup</td>
</tr>
<tr>
<td>Configurable resolution</td>
<td>• built-in add-ons</td>
</tr>
<tr>
<td>• Low response time</td>
<td>- Pressure, analog input</td>
</tr>
<tr>
<td>500 us rising time</td>
<td>- Hourly counting, pulse counting,</td>
</tr>
<tr>
<td>• High reliability</td>
<td>- 2 way telephone switch</td>
</tr>
<tr>
<td>lifetime &gt; 107 operations</td>
<td></td>
</tr>
</tbody>
</table>

### 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

### Measure interface, VULCATHERM control

**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:

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57071 METZ CEDEX 3

Phone: 03.87.76.32.51 -

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