DIRIS® A

The multi-function measurement range
FOR MANAGING YOUR ELECTRICAL NETWORKS

MADE TO MEASURE
The DIRIS® system: the reference

Measurement is the key link in managing an energy efficiency project.

With DIRIS, SOCOMEC has developed the most advanced multifunction measurement range on the market, dedicated to improving your energy performance.

For over 20 years, thousands of users, installers or integrators have trusted DIRIS innovative solutions for:

• energy metering and management
• electrical facility monitoring
• power quality analysis.

Follow the leader and run with the pioneers, by opting for the DIRIS solution.

**DIRIS A:** compliant with IEC 61557-12

**DIRIS A** conforms to this new standard, which has been specifically created to govern Performance Measuring and monitoring Devices (PMD). IEC 61557-12 guarantees the user that the product meets all the metrological, mechanical and environmental requirements of an electrical distribution network (EMC, temperature, etc.).

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**Customised upgradability**

Thanks to the optional plug-in modules the product features can be upgraded at any time. **DIRIS A** has optimum adaptability to the requirements of multi-measurement applications.

SOCOMEC is once again expanding the field of application of the **DIRIS A** with the addition of modules for:

• Ethernet communication
• Temperature measurement & monitoring.

**Ethernet connectivity**

Allows direct connection to an Ethernet communication network. Module with gateway function enables devices on an RS485 bus to communicate via Ethernet.

**The embedded WEB server**

The new Ethernet communication modules incorporate an embedded web server function, thereby enabling remote operation and configuration of a product without specific software. Access is via your Internet browser, simply by entering the IP address of the **DIRIS**.

**Expanded monitoring**

The new temperature monitoring module:

• enhances energy diagnostics
• improves monitoring of facilities

**Dedicated supervision**

• Centralising and display
• Creating load curves
• Performing measurement comparisons

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For further information: [www.socomec.com](http://www.socomec.com)
The new DIRIS A Power Measurement Devices with extended functionality enabling you to:

- reduce operating costs,
- reduce production costs,
- optimise maintenance costs,
- improve the efficiency of your facility.

**Metering**
energy consumed by each building or manufacturing line, in order to distribute and optimise energy costs (multi-utility management)

**Measuring**
all electrical or analogue values (temperature, etc.) to verify that your facilities are working properly

**Monitoring**
your electrical networks via alarm management, secure monitoring of distribution parameters and remote control of electrical apparatus

**Analysing**
energy quality via detailed breakdown of harmonics and identification of troughs, outages, overvoltages and overcurrents on the electrical network

**Communicating**
all available information via a network tailored to your facility:
- ETHERNET (Modbus TCP, Jbus/Modbus RTU over TCP)
- RS485 (Jbus/Modbus, Profibus DP)
**Standard functions**

**DIRIS A10**
- Multi-measurement and metering
- THD voltages and currents up to level 51
- Programmable hour meter
- Alarm management
- RS485 Jbus/Modbus communication
- Dual tariff function
- 4 DIN modules

**DIRIS A40/A41**
- Advanced metering and multi-measurement
- Individual harmonics up to level 63
- RS485 (Jbus/Modbus and Profibus-DP) and Ethernet communication (Modbus TCP and Jbus/Modbus over TCP)
- Optional additional modules
- Alarm management
- Predictive power indicator
- 96 x 96 mm panel mount

**DIRIS A60**
- **DIRIS A40 +**
  - Mean power load curves (P, Q, S)
  - Sag, swell and outage detection
  - Overcurrent detection
  - Saving of RMS 1/2 period curves linked to events
  - Tangent
  - Voltage and current unbalance
  - 96 x 96 mm panel mount

**DIRIS A20/A40/A41/A60 : Optional functions**

For your specific requirements, additional functions may be added via plug-in modules (maximum 4 for **DIRIS A40** and 3 for **DIRIS A41/A60**).

**DIRIS A20**
- Multi-measurement and metering
- THD voltages and currents up to level 51
- Programmable hour meter
- Alarm management
- RS485 Jbus/Modbus communication
- Optional additional modules
- 96 x 96 mm panel mount

**1 OUTPUT ALLOCABLE TO**
- Pulses: configurable (type, weight, time) in kWh or kvarh
- Monitoring: 3I, In, 3V, 3U, F, 3P, Tp, Tq, TPLC, THD 3I, THD 3V, THD 3U and timer

**COMMUNICATION**
- RS485 connection with JBUS/MODBUS protocol (speed up to 38,400 bauds): 1 module

**DIRIS A40/A41/A60**
- Mean power load curves (P, Q, S)
- Sag, swell and outage detection
- Overcurrent detection
- Saving of RMS 1/2 period curves linked to events
- Tangent
- Voltage and current unbalance
- 96 x 96 mm panel mount

**PULSE OUTPUTS**
- 2 configurable pulse outputs (type, weight and duration)

**COMMUNICATION**
- RS485 connection with JBUS/MODBUS protocol (speed up to 38,400 bauds): 1 module
- RS485 connection with PROFIBUS DP protocol (speed up to 12 Mbauds): 1 sidecar module
- Ethernet connection with Modbus TCP or JBUS/MODBUS RTU over TCP protocol: 1 sidecar module
- Ethernet connection with RS485 gateway (Modbus TCP or JBUS/MODBUS RTU over TCP protocol): 1 sidecar module

**ANALOGUE OUTPUTS**
- 2 configurable outputs for all values measured by the DIRIS
  - A maximum of 2 modules may be connected, giving 4 analogue outputs.
- 2 to 6 outputs allocated to monitoring of all values measured by DIRIS or to remote control
- 2 to 6 inputs for pulse counting

**MEMORY**
- Memorisation of P+, P-, Q+, Q- with an internal or external synchronisation signal for 5, 8, 10, 15, 20 and 30 minutes for 31 or 62 days
- Memorisation of the last 10 time-stamped alarms
- Memorisation of minimum and maximum instant values for 3U, 3V, In, F, xP, xQ, xS, THD3U, THD3V, THD3I, THDIn
- Memorisation of mean values according to the synchronisation signal for 3U, 3V and F

**TEMPERATURE INPUTS (PT100 SENSOR)**
- Internal temperature indication
- Temperature indication via external sensor (T°1)
- Temperature indication via external sensor (T°2)
- Temperature indication via external sensor (T°3)
Selection guide

**Requirements**
- Feeder measurement & control
- Energy breakdown & allocation
- Load analysis & management
- Event monitoring
- Detection & storage of network perturbations
- Form factor

**Functions**

**Measurement**
- Currents, voltages, frequency, active, reactive and apparent power, power factor
- Predictive power
- Voltage/current unbalance, Tangent $\varphi$
- Temperature(s)
- Average currents, voltages and frequency
- Average power

**Energy Management**
- Energy meters (cf. IEC 62053-22; cl. 2 IEC 62053-22)
- Pulse meter
- Load curves

**Quality Analysis and Event Detection**
- THD 3U, 3V, 3I/ln
- Individual harmonics 3U, 3I, 3I/ln (level 63)
- Sag, swell and outages, overcurrent
- RMS 1/2 period curve backup
- Alarm output

**Measurement and Event History**
- Load curves
- Events & Alarms
- Maximum average power
- Maximum average currents

* 1 configurable

**References**

**DIRIS A10**
- DIRIS A10
- DIRIS A10 with RS485 Jbus/Modbus communication

**DIRIS A20**
- DIRIS A20 110 to 400 V AC and 120 to 350 V DC supply
- Module 1 output
- RS485 Jbus/Modbus communication module

**DIRIS A40/A41**
- DIRIS A40 110 to 400 V AC and 120 to 350 V DC supply
- DIRIS A41 12 to 48 V DC supply
- DIRIS A41 110 to 400 VAC and 120 to 350 VDC supply

**DIRIS A60**
- DIRIS A60 110 to 400 V AC and 120 to 350 V DC supply

**Module option: DIRIS A40/A41/A60**
- Pulse outputs module
- RS485 Jbus/Modbus communication module
- Ethernet module
- Ethernet module with RS485 gateway
- Monitoring or control/command module
- Analogue outputs module
- Memory module (DIRIS A40/A41)
- Functional earth module

**Associated current transformers**

<table>
<thead>
<tr>
<th>Primary</th>
<th>Through cable CT</th>
<th>Three phase</th>
<th>Bar or cable-through CT</th>
<th>Split-core CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTB 70</td>
<td>T2B 115 T2A 225</td>
<td>TCB 17-20</td>
<td>TCB 85-100</td>
<td>TO 23 TO 58</td>
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<td>CTB 220</td>
<td>T2B 115 T2A 225</td>
<td>TCB 22-30</td>
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<td>TO 58 TO 812</td>
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<tr>
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<td>T2B 115 T2A 225</td>
<td>TCB 32-40</td>
<td>TCB 85-100</td>
<td>TO 812 TO 816</td>
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Others types of transformers in our catalogue.