DIRIS® A

The multi-function measurement range FOR MANAGING YOUR ELECTRICAL NETWORKS

MADE TO MEASURE
A comprehensive range for measuring your energy efficiency

The new **DIRIS & COUNTIS** solutions are tailored to the requirements of industrial or tertiary environments: energy metering, quality monitoring and analysis of electrical networks.

Compliant with the new standard IEC 61557-12 specifically for multi-measurement devices (PMD), they guarantee the operator use of a product designed and tested in accordance with the functional requirements of its application, ensuring a high performance level.

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.).

**Customised upgradability**

Thanks to the optional modules which you can use to upgrade the product functions 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 new modules for:

- Ethernet communication
- Temperature measurement & monitoring.

**Ethernet connectivity**

The new communication modules offer direct connection to an Ethernet communication network, and the gateway function enabling Ethernet connection of a cluster of products communicating via RS 485.

**The embedded WEB server**

The new Ethernet communication modules incorporate the 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 campaigns

For further information: [www.socomec.com](http://www.socomec.com)
The universal multi-function solution

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-fluid 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 run
- 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 Profbus-DP) and Ethernet communication (Modbus TCP and Jbus/Modbus over TCP)
- Optional additional modules
- Alarm management
- Predictive power indicator
- 96*96 mm unit

**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 \( \varphi \)
  - Voltage and current unbalance
  - 96*96 mm unit

**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**).

<table>
<thead>
<tr>
<th>Function</th>
<th>DIRIS A20</th>
<th>DIRIS A40/A41</th>
<th>DIRIS A60</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 OUTPUT ALLOCABLE TO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Pulses: configurable (type, weight, time) in kWh or kvarh</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Monitoring: 3I, 3V, 3U, F, P, Q, S, 2PFL/C, THD 3I, THD 3V, THD 3U and timer</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• RS485 connection with JBUS/Modbus protocol (speed up to 38,400 bauds): 1 module</td>
<td>✓</td>
<td></td>
<td></td>
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<tr>
<td>PULSE OUTPUTS</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• 2 configurable pulse outputs (type, weight and duration)</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• RS485 connection with JBUS/Modbus protocol (speed up to 38,400 bauds): 1 module</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• RS485 connection with PROFIBUS DP protocol (speed up to 12 Mbauds): 1 sidecar module</td>
<td>✓</td>
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<td></td>
</tr>
<tr>
<td>• Ethernet connection with Modbus TCP or JBUS/Modbus RTU over TCP protocol: 1 sidecar module</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ethernet connection with RS485 gateway (Modbus TCP or JBUS/Modbus RTU over TCP protocol): 1 sidecar module</td>
<td>✓</td>
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<tr>
<td>ANALOGUE OUTPUTS</td>
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<td></td>
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<tr>
<td>• 2 configurable outputs for all values measured by the DIRIS</td>
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<tr>
<td></td>
<td>A maximum of 2 modules may be connected, giving 4 analogue outputs.</td>
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<tr>
<td>2 INPUTS - 2 OUTPUTS</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• 2 to 6 outputs allocated to monitoring of all values measured by DIRIS or to remote control</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 2 to 6 inputs for pulse counting</td>
<td>✓</td>
<td></td>
<td></td>
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<tr>
<td>MEMORY</td>
<td></td>
<td></td>
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<tr>
<td>• Memorisation of P, P, Q, Q with an internal or external synchronisation signal of 5, 10, 15, 20 and 30 minutes for 31 or 62 days</td>
<td>✓</td>
<td></td>
<td></td>
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<tr>
<td>• Memorisation of the last 10 time-stamped alarms</td>
<td>✓</td>
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<tr>
<td>• Memorisation of minimum and maximum instant values for 3U, 3V, 3I, In, P, Q, S, 2PFL/C, THD 3I, THD 3V, THD 3U, THD 3In</td>
<td>✓</td>
<td></td>
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<tr>
<td>• Memorisation of mean values according to the synchronisation signal for 3U, 3V and F</td>
<td>✓</td>
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<tr>
<td>TEMPERATURE INPUTS (PT100 SENSOR)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• Internal temperature indication</td>
<td></td>
<td></td>
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<tr>
<td>• Temperature indication via external sensor (T°1)</td>
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<td></td>
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<tr>
<td>• Temperature indication via external sensor (T°2)</td>
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<tr>
<td>• Temperature indication via external sensor (T°3)</td>
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</tbody>
</table>
Selection guide

Requirements

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

Form factor

4 modules panel mounted 96x96 panel mounted 96x96 panel mounted 96x96

Functions

Measurement

- Currents, voltages, frequency, active, reactive and apparent power, power factor
- Predictive power
- Voltage/current unbalance; Tangent ϕ
- Temperature(s)
- Average currents, voltages and frequency
- Average power

Energy management

- Energy meters (cf. 0.5S IEC 62053-22; cl. 2 IEC 62053-22)
- Pulse meter
- Load curves

Quality analysis and event detection

- THD 3I, 3V, 3ln
- Individual harmonics 3V, 3I, 3ln (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 kW kW
- Maximum average currents

* 1 configurable

References

- DIRIS A10
  - DIRIS A10
  - DIRIS A10 with RS485 Jbus/Modbus communication
- DIRIS A20
  - DIRIS A20
  - Module 1 output
  - RS485 Jbus/Modbus communication module
- DIRIS A40 / A41
  - DIRIS A40 / A41
  - DIRIS A40
  - DIRIS A41
- DIRIS A40 / A41
  - DIRIS A40 / A41
  - DIRIS A60
  - DIRIS A60
  - DIRIS A60
  - Module option: DIRIS A40 / A41 / A60

Module option: DIRIS A40 / A41 / A60

- Pulse outputs module
- RS485 Jbus/Modbus communication module
- RS485 PROibus-DP communication module
- Ethernet Module
- Ethernet module with RS485 gateway
- Temperature module
- Analogue outputs module
- Monitoring or control/command module
- Memory module (DIRIS A40 / A41)
- Functional earth module

Associated current transformers