

DIRIS[®] A

The multi-function multi-measurement range
FOR MANAGING YOUR ELECTRICAL NETWORKS

MADE TO MEASURE



DIRIS[®] system: the reference

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

With **DIRIS**, SOCOMEC has developed the most advanced Power Measurement Device on the market, dedicated to improving your energy performance.

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

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

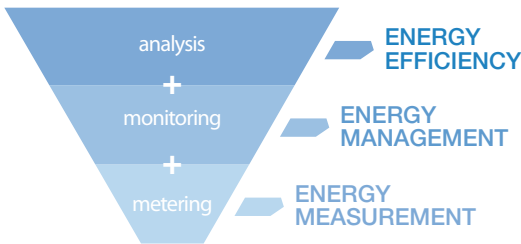
Follow the leader and run with the pioneers, by opting for the **DIRIS** solution.



GAMME 115 A GB

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.



DIRIS 781 A GB

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

Measurement precision

DIRIS products have a built-in electronic component (ASIC) developed specifically by SOCOMEC for the measurement function, which can achieve very high measurement precision.



DIRIS 568 A

Customised upgradeability

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.



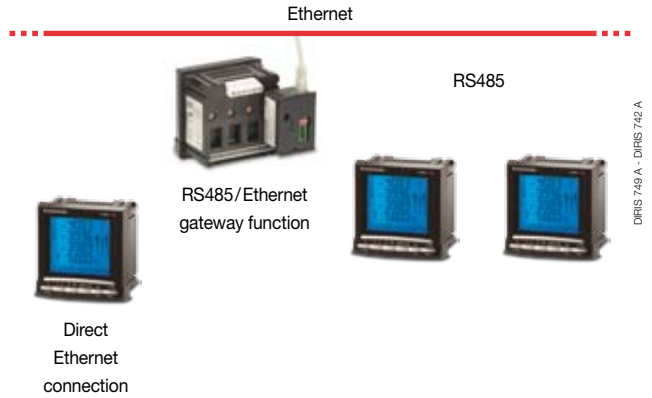
DIRIS 767 A

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

- Ethernet communication
- temperature measurement & monitoring.

Ethernet connectivity

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



DIRIS 749 A - DIRIS 742 A

Expanded monitoring

The new temperature monitoring module:

- enhances energy diagnostics
- improves monitoring of facilities



Sensor PT 100-1
Sensor PT 100-2

Sensor PT 100-
Internal T[°]
measurement
Sensor PT 100-3

DIRIS 747 A

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**.

DIRIS[®] A20 and A40

MADE TO MEASURE

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 the facility.



Metering

energy consumed by each building or process, in order to allocate and optimise energy costs (multi-fluid management)

Measuring

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

Monitoring

your electrical networks via alarm management, secure monitoring of distribution parameters and remote control of electrical equipment

Analysing

energy quality via detailed breakdown of harmonics and identification of troughs, outages and voltage surges 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

The following functions are standard on **DIRIS A** products:



INSTANTANEOUS, RMS VALUES

| | DIRIS A20 | DIRIS A40/A41 |
|--|-----------|---------------|
| Current (3I, In) | • | • |
| 4 th CT for measuring neutral current (In) on networks with harmonic disturbances | | A41 |
| Phase-neutral and phase-phase voltage (3V, 3U) | • | • |
| Frequency (F) | • | • |
| Active, reactive and apparent power, per phase and total ($\pm 3P$, $\pm 3Q$, $3S$, $\pm \Sigma P$, $\pm \Sigma Q$, ΣS) | • | • |
| Power factor, per phase and total ($3PF^{L/C}$, $\Sigma PF^{L/C}$) | • | • |

AVERAGE AND MAXIMUM VALUE MEASUREMENTS

| | | |
|--|---|---|
| Current (3I, In) | • | • |
| Phase-neutral & phase-phase voltages and frequency (3U, 3V, F) | | • |
| Total active, reactive and apparent power ($\pm \Sigma P$, $\pm \Sigma Q$, ΣS) | | • |
| Predictive power | | • |

POWER QUALITY MEASUREMENTS

| | | |
|---|---|---|
| Harmonic distortion rate on current and voltage integrated up to the 51 st harmonic (THD 3I, 3V, 3U) | • | |
| Harmonic distortion rate on current and voltage integrated up to the 63 rd harmonic (THD 3I, 3V, 3U) | | • |



Spectral analysis of individual current and voltage harmonics up to the 63rd harmonic (HI, HU, HV)

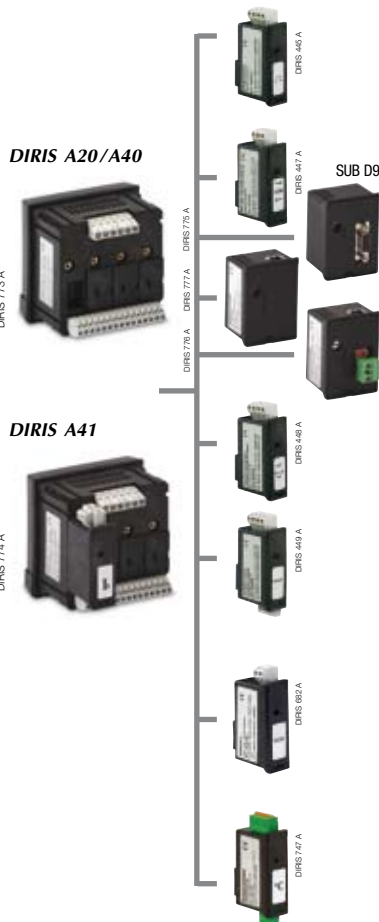
METERS

| | | |
|--|--|---|
| Active, reactive and apparent energy on 4 quadrants ($\pm kWh$, $\pm kvarh$, $kVAh$) | | • |
|--|--|---|

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**).

DIRIS A20 DIRIS A40/A41



PULSE OUTPUTS

| | | |
|--|--|---|
| • 2 configurable pulse outputs (type, weight and duration) | | • |
|--|--|---|

1 OUTPUT ALLOCATED TO

| | | |
|--|---|--|
| • Pulses: configurable (type, weight, time) in kWh or kvarh | • | |
| • Monitoring: 3I, In, 3V, 3U, F, ΣP , ΣQ , ΣS , $\Sigma PF^{L/C}$, THD 3I, THD 3V, THD 3U and timer | • | |

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 | | • |
| • Ethernet connection with RS485 gateway with Modbus TCP or JBUS/MODBUS RTU over TCP protocol | | • |

ANALOGUE OUTPUTS

| | | |
|--|--|---|
| • 2 outputs configurable to all values measured by DIRIS Maximum of 2 modules can be connected, i.e. 4 analogue outputs | | • |
|--|--|---|

2 INPUTS - 2 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 of 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, 3I, In, F, $\pm \Sigma P$, $\pm \Sigma Q$, ΣS , THD3U, THD3V, THD3I, THDIn | | • |
| • Time-stamped memorisation of the last 10 voltage troughs, voltage surges outages | | • |
| • Memorisation of average values according to the synchronisation signal for 3U, 3V and F | | • |



TEMPERATURE INPUTS (SENSOR PT100)

| | | |
|--|--|---|
| • Internal temperature indication | | • |
| • Temperature indication via external sensor (T°1) | | • |
| • Temperature indication via external sensor (T°2) | | • |
| • Temperature indication via external sensor (T°3) | | • |

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