**DIRIS A10**

Multifunction meters

**Function**

The D**IRIS A10** is a multifunction meter for measuring electrical values in low voltage networks in modular format. It allows all electrical parameters to be displayed and the measurement, energy metering and communication functions to be used. In addition, the D**IRIS A10** has a function for correcting errors in CT connections. It also allows variations in temperature to be detected thanks to its internal temperature measurement function.

**Applications**

- **Multi-function meter**
  - Current
    - instantaneous: I1, I2, I3, In
    - maximum average: I1, I2, I3, In
  - Voltages & frequency
    - instantaneous: U1, U2, U3, U12, U23, U31, F
  - Power
    - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
    - maximum average: ΣP, ΣQ, ΣS
  - Power factor
    - instantaneous: 3PF, ΣPF
  - Internal temperature

- **Conformity to standards**
  - IEC 62053-22 class 0.5S
  - IEC 62053-23 class 2
  - IEC 61557-12

- **Harmonic analysis**
  - Total harmonic distortion (level 51)
    - Currents: thd I1, thd I2, thd I3
    - Phase-to-neutral voltage: thd U1, thd U2, thd U3
    - Phase to phase voltage: thd U12, thd U23, thd U31

- **Dual tariff function**
  - Selection of one out of 2 billing tariffs

- **Communications**
  - RS485 (JBUS/MODBUS) digital

- **Input**
  - Remote control

(1) Available as an option.

(see the following pages).
General Catalogue 2011-2012

Multifunction meters

DIRIS A10

1. Backlit LCD screen.
2. Direct access key for currents (instant and maximum) and current THD.
3. Direct access key for voltages, frequency and voltage THD.
4. Direct access key for active, reactive and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies and hour meter.
6. Pushbutton for currents, temperatures and CT setup wiring correction.
7. Metrological LED.

Front panel

- Backlit LCD screen.
- Direct access key for currents (instant and maximum) and current THD.
- Direct access key for voltages, frequency and voltage THD.
- Direct access key for active, reactive and apparent power (instantaneous and max. values) and power factor.
- Direct access key for energies and hour meter.
- Pushbutton for currents, temperatures and CT setup wiring correction.
- Metrological LED.

Case

Type Modular
Number of optional modules 4
Dimensions W x H x D 72 x 90 x 64 mm
Case protection index 30
Front protection rating 52
Display type LCD
Voltage and other connection section 4 mm²
Connection cross-section of others 2.5 mm²
Weight 205 g (4825 0010) - 215 g (4825 0011)

Electrical characteristics

Current measurement on high-impedance inputs (TRMS)
- Via CT primary 9 999 A
- Via CT secondary 5 A
- Measurement range 0 … 11 kA
- Input consumption 0.6 VA
- Measurement updating period 1 s
- Accuracy 0.2 %
- Sustained overload 6 A
- Intermittent overload 10 L for 1 s

Voltage measurements (TRMS)
- Direct measurement between phases 50 … 500 VAC
- Direct measurement between phase and neutral 28 … 289 VAC
- Input consumption ≤ 0.1 VA
- Measurement updating period 1 s
- Accuracy 0.2 %
- Sustained overload 800 VAC

Power measurement
- Measurement updating period 1 s
- Accuracy 0.5 %

Power factor measurement
- Measurement updating period 1 s
- Accuracy 0.5 %

Frequency measurement
- Measurement range 45 … 65 Hz
- Measurement updating period 1 s
- Accuracy 0.1 %

Energy accuracy
- Active (according to IEC 62053-22) class 0.5 S
- Reactive (according to IEC 62053-23) class 2

Auxiliary power supply
- Alternating voltage 220 … 277 VAC
- AC tolerance ± 15 %
- Frequency 50 / 60 Hz
- Consumption < 3 VA

Digital output (pulses or on/off)
- Number 1
- Type 20 / 30 VDC - 0.5 A - 10 VA
- Max. number of operations ≤ 10⁶

Communication
- Link RS485
- Type 2 … 3 half duplex wires
- Protocol JBUS/MODBUS® in RTU mode
- JBUS/MODBUS® speed 1400 … 38400 bauds

Operating conditions
- Operating temperature - 10 … + 55 °C
- Storage temperature - 20 … + 70 °C
- Relative humidity 85 %
**DIRIS A10 - Connection**

**Low voltage balanced network**

**Recommandation:**
- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondaries of each current transformer must be short-circuited. This operation can be carried out automatically from a product in the SOCOMEC catalogue, PTI: consult us.
- It is recommended that the earthing point for the DIRIS A10 and the current transformer secondaries should not earthed at the same time.

3/4 wires with 1 CT

Single phase

Two phase

**Low voltage unbalanced network**

3/4 wires with 3 CTs

3 wires with 2 CTs

3 wires with 2 CTs

Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.

**Additional information**

Communication via RS485 link

AC & DC auxiliary power supply

It is recommended that the auxiliary power supply be protected by the use of 500 mA gG fuses.
**Terminals**

<table>
<thead>
<tr>
<th>12</th>
<th>14</th>
<th>16</th>
<th>20</th>
<th>22</th>
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</thead>
<tbody>
<tr>
<td>V1</td>
<td>V2</td>
<td>V3</td>
<td>VN</td>
<td>A</td>
</tr>
</tbody>
</table>

**DIRIS A10**

S1 - S2: current inputs.

AUX: auxiliary power supply Ua.

V1, V2, V3 & VN: voltage inputs.

**Communication (option)**

<table>
<thead>
<tr>
<th>13</th>
<th>15</th>
<th>17</th>
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**RS485 link.**

**Output**

<table>
<thead>
<tr>
<th>4</th>
<th>6</th>
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**OUT 1**

**Input**

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<tr>
<th>8</th>
<th>10</th>
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</table>

**IN 1**

**References**

**Basic device**

<table>
<thead>
<tr>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIRIS A10 (grey colour available on request)</td>
<td>4825 0010</td>
</tr>
<tr>
<td>DIRIS A10 with JBUS/MODBUS communication via RS485 (grey colour available on request)</td>
<td>4825 0011</td>
</tr>
</tbody>
</table>

**Description of accessories**

<table>
<thead>
<tr>
<th>Description</th>
<th>To be ordered by multiple</th>
<th>Reference</th>
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</thead>
<tbody>
<tr>
<td>Fuse combination switches for the protection of voltage inputs (type RM) 3 poles</td>
<td>4</td>
<td>5601 0018</td>
</tr>
<tr>
<td>Fuse combination switches for the protection of the auxiliary supply (type RM) 1 pole + neutral</td>
<td>6</td>
<td>5601 0017</td>
</tr>
<tr>
<td>Fuses type gG 10x38 0.5 A</td>
<td>10</td>
<td>6012 0000</td>
</tr>
<tr>
<td>Current transformers range</td>
<td></td>
<td>See page 334</td>
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**Services and Technical assistance**

Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.