

Ed. 1

DIRIS DigiBOX A

Enclosed single-point metering solution



When **energy** matters

socomtec
Innovative Power Solutions



DIRIS DigiBOX A

Enclosed single-point metering solution for retrofit applications

Single-point metering, measurement & analysis



Function

DIRIS DigiBOX A is an easy-to-install enclosed single-point metering solution. It provides users all they need for installation at site right out of the box, just select the type and the range of CTs from our wide plug and play CT selection. With just three part numbers for the meters you are able to address most of your metering needs.

Manufactured in UL508 A shop with utmost care for quality and reliability. Factory voltage wiring is clean and safe for installations.

DigiBOX A is powered by our DIRIS A-40 meters packed with futuristic features, design and performance.

Advantages

Easy to order

- Same part number for indoor or outdoor installations (NEMA 3R, 4, 4X, 12)
- Universal system voltage and power supply
- The meter itself comes with features such as I/Os and various communication protocols onboard
- Kits are available that include the DigiBOX A current sensors and RJ12 cables

UL rated electrical design

- UL listed enclosures and components
- cULus 508 A assembly facility
- Fused voltage connections
- Reliable detailed wiring instructions

RJ12 current sensor connection

- Fast: automatic detection of ratings and verification of current flow direction
- Reliable: identification of cables by color-coding and wiring control by the system
- Disconnection of the current sensor secondary under load
- Auto-configuration of parameters

Accurate

Accuracy of measurements guaranteed according to ANSI C12.20 and IEC 61557-12 standards:

- Class 0.5 from 2% to 120% of rated current for the global measurement chain (associated with TE/ITR/TF current sensors).
- Class 0.2 for the meter alone

The solution for

- > Industry
- > Infrastructures
- > Building



Strong points

- > Easy to order
- > RJ12 current sensor connection
- > Class 0.5 system accuracy

Conformity to standards

- > cULus 508 A
- > ANSI C12.20
- > IEC 61557-12



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Simple integration

The three current sensor technologies, solid-core, split-core and flexible (TE, TR/ITR & TF) allow the ability to implement a monitoring solution in new or existing installations.



Assisted configuration

The configuration wizard guides the user step-by-step and detects and corrects configuration errors, cutting the commissioning time in half and guaranteeing a reliable monitoring system.



Connected

The DIRIS A-40 power meter can automatically export logged data for remote processing without any limits on time or storage.



Factory pre-wired



Fused voltage terminations

DIRIS DigiBOX A Kits

DIRIS DigiBOX A Kits have DigiBOX A meter with current sensors and connecting cables ready to be installed. DigiBOX A kits come in various current ratings covering 5 Amps to 2000 Amps rated loads. This covers most loads from main to sub feeders in a typical commercial and industrial electrical distribution system.



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Functions

Monitoring

- Real-time measurement of electrical values.
- View data as graphs or tables.
- Power quality analysis of the utility supply and of loads.



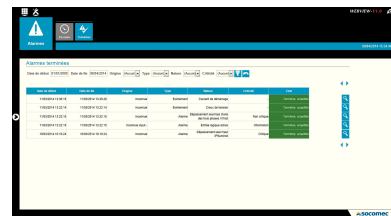
Metering

- Measurement of active, reactive and apparent energies.
- Historical record of measurements.
- Graphic display on monthly, weekly, daily or hourly basis.

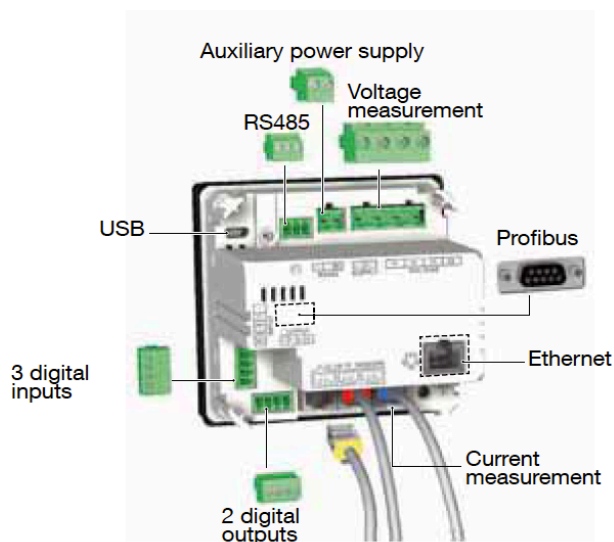


Alarming

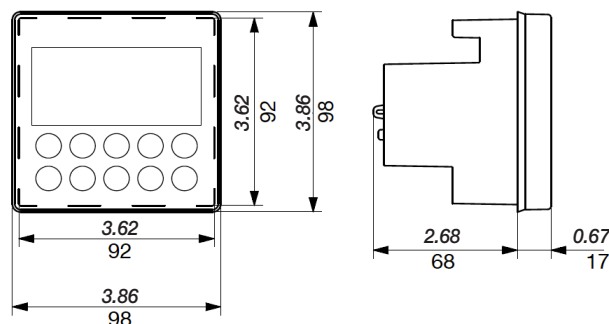
- Display of alarms.
- Alarm logs.



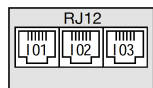
Terminals



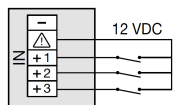
Dimensions (in/mm)



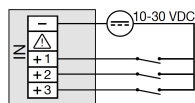
Current measurement



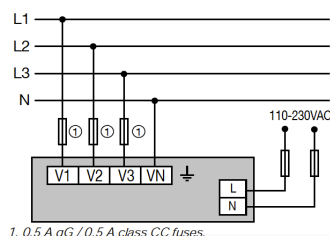
3 inputs supplied by the product



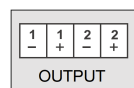
3 inputs with external power supply



Voltage connections inc auxiliary power supply



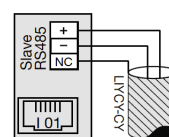
2 outputs



Earth



RS485



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Connections

Associated current sensors

Various types of current sensors can be connected to the DIRIS A-40: solid-core (TE), split-core (TR/iTR) or Rogowski (TF). This range of sensors is suitable for all types of new or existing installations. A quick RJ12 connection makes wiring easy and reliable and prevents wiring errors. The DIRIS A-40 automatically recognizes the sensor type and rating. This guarantees the overall accuracy of the DIRIS A-40 + current sensor measurement chain.

TE solid-core current sensors



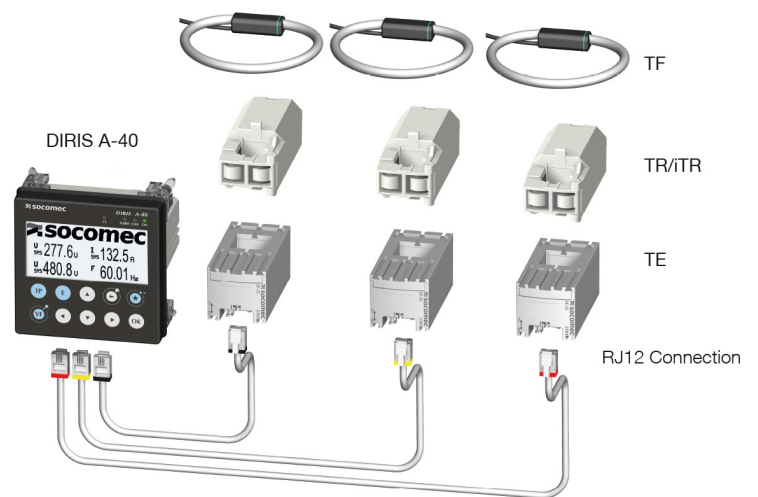
TR/iTR split-core current sensors



TF Rogowski current sensors



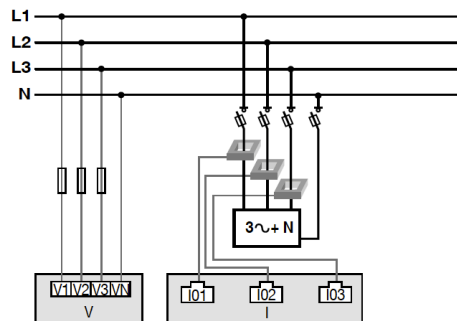
TE / TR/iTR / TF current sensors



Network and connection examples

Three-phase + Neutral

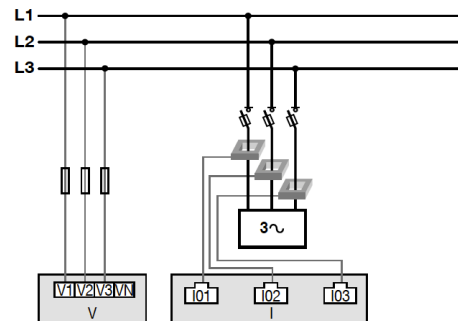
3P+N - 3 CT (1 three-phase load + calculated Neutral)



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Three-phase

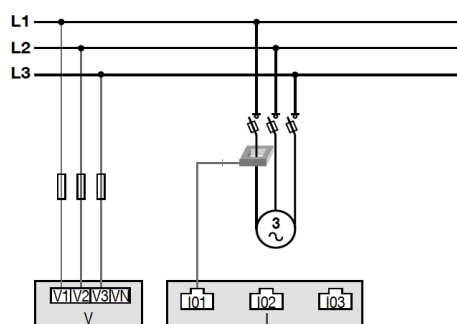
3P - 3CT (1 three-phase load)



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Three-phase

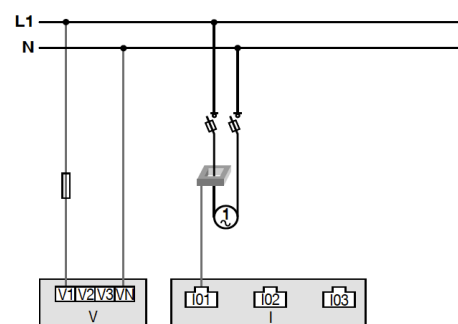
3P - 1 CT (1 balanced three-phase load)



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Single-phase

1P+N - 1 CT (1 single-phase load)



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1. 0.5 A gG / 0.5 A class CC fuses.
If self-supplied, a fuse must always be added to the Neutral.

CT: Current sensor 3~ Load

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Characteristics

Electrical characteristics

Auxiliary power supply	
Alternative voltage	110/400 VAC or 120/300 VDC - Cat III
Frequency	50/60 Hz
Power consumption	5 VA AC / 1.5 VA DC (4825 0500) 8 VA AC / 2.5 VA DC (4825 0501 & 4825 0502)
Connection	Removable spring-cage terminal block, 2 x 2 positions, AWG 10 ... 24 / 0.5 ... 2.5 mm ² solid cable or AWG 15 ... 30 / 0.25 ... 1.5 mm ² stranded cable with ferrule

Measurement characteristics

Power and energy measurement	
Accuracy	Class 0.2 for the DIRIS A-40 only
Active energy and active power	Class 0.5 with TE, TF or ITR sensors Class 1 with TR sensors
Accuracy of reactive energy	Class 1 with TE, ITR or TF sensors
Power factor measurement	
Accuracy	Class 0.5 with TE, TF or ITR sensors Class 1 with TR sensors
Voltage measurement	
Characteristics of the network measured	50-300VAC (Ph/N) - 87-520VAC (Ph/Ph) - CAT III
Frequency range	45 to 65Hz
Frequency accuracy	Class 0.02
Network type	Single-phase / Two-phase / Two-phase with neutral / Three-phase / Three-phase with neutral
Measurement by voltage transformer	Primary: 400 000 VAC Secondary: 60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Accuracy of voltage measurement	Class 0.2
Connection	Removable spring-cage terminal block, 4 positions, AWG 10 ... 24 / 0.5 ... 2.5 mm ² solid cable or AWG 15 ... 30 / 0.25 ... 1.5 mm ² stranded cable with ferrule
Current measurement	
Number of current inputs	3
Associated current sensors	Solid TE, split-core TR/ITR, flexible TF current sensors
Accuracy	Class 0.2 DIRIS A-40 alone Class 0.5 with TE, TF or ITR sensors Class 1 with TR sensors
Connection	Specific Socomec cable with RJ12 connectors

Input characteristics

Number	3
Type / Power supply	Optocoupler with internal (12 VDC ± 10%) or external (12-24 VDC ± 20%) polarisation
Input function	Logical status, protective device monitoring, pulse metering of multifluid meters.
Connection	Removable screw terminal block, 5 positions, AWG 15 ... 35 / 0.14 to 1.5 mm ² stranded or solid cable

Output characteristics

Number	2
Type	Optocoupler 30 Vd.c. max 20mA max - SELV
Output function	Command, energy pulse output, load shedding, alarm
Connection	Removable screw terminal block, 4 positions, AWG 15 ... 35 / 0.14 to 1.5 mm ² stranded or solid cable

Communication characteristics

DIRIS A-40 RS485	
Link	RS485
Connection type	2 to 3 half duplex wires
Protocol	Modbus RTU
Baud rate	1200 to 115 200 baud
USB	Configuration of DIRIS A-40

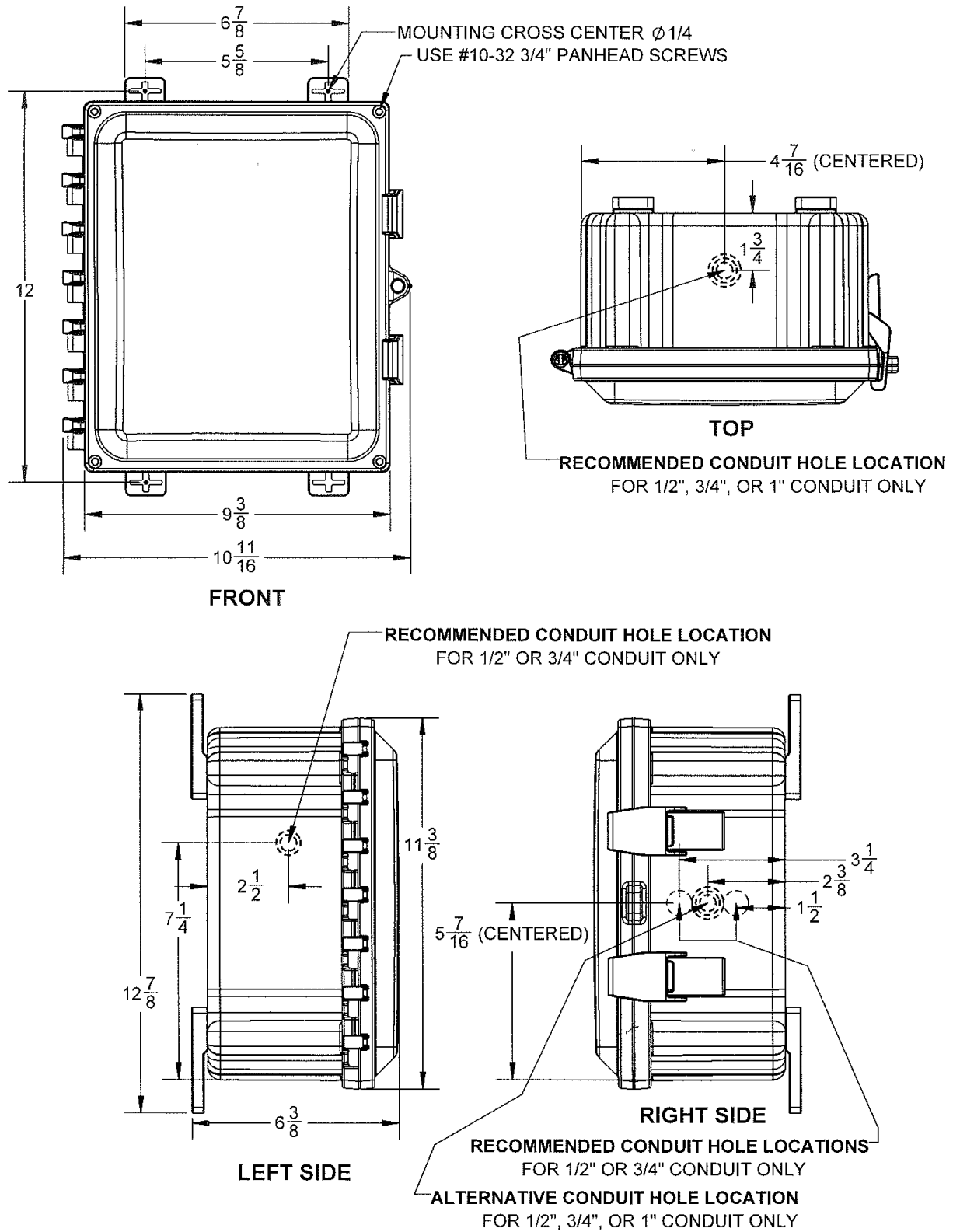
DigiBOX A References

Basic device Description	DIRIS DigiBOX A Reference
DIRIS A-40 Power Analyzer with Modbus RS485 output Enclosed in NEMA 4X PC Enclosure prewired with fused voltage connections	USDBPA40RS
DIRIS A-40 Power Analyzer with Modbus RS485 & Ethernet TCP/IP output and built in web server - Enclosed in NEMA 4X PC Enclosure prewired with fused voltage connections	USDBPA40ET
Diris A-40 Power Analyzer with Profibus output Enclosed in NEMA 4X PC Enclosure prewired with fused voltage connections	USDBPA40PR

Kit References

Basic device Description	DIRIS DigiBOX A Kits Reference
Enclosed A-40 meter with Ethernet Output, 3x250amps split core sensors and 6.5' RJ12 cables	USDBPA40ET250
Enclosed A-40 meter with Ethernet Output, 3x600amps split core sensors and 6.5' RJ12 cables	USDBPA40ET600
Enclosed A-40 meter with Ethernet Output, 3x2000amps flexible sensors and 6.5' RJ12 cables	USDBPA40ET2000
Enclosed A-40 meter with RS485 Output, 3x250amps split core sensors and 6.5' RJ12 cables	USDBPA40RS250
Enclosed A-40 meter with RS485 Output, 3x600amps split core sensors and 6.5' RJ12 cables	USDBPA40RS600
Enclosed A-40 meter with RS485 Output, 3x2000amps flexible sensors and 6.5' RJ12 cables	USDBPA40RS2000

Dimensions



Socomec: our innovations supporting your energy performance

1 independent manufacturer

3,600 employees
worldwide

10 % of sales revenue
dedicated to R&D

400 experts
dedicated to service provision

Your power management expert



POWER
SWITCHING



POWER
MONITORING



POWER
CONVERSION



ENERGY
STORAGE



EXPERT
SERVICES

The specialist for critical applications

- Control, command of LV facilities
- Safety of persons and assets
- Measurement of electrical parameters
- Energy management
- Energy quality
- Energy availability
- Energy storage
- Prevention and repairs
- Measurement and analysis
- Optimization
- Consultancy, commissioning and training

A worldwide presence

12 production sites

- France (x3)
- Italy (x2)
- Tunisia
- India
- China (x2)
- USA (x3)

28 subsidiaries and commercial locations

- Algeria • Australia • Belgium • Canada • China
- Dubai (United Arab Emirates) • France • Germany
- India • Indonesia • Italy • Ivory Coast • Netherlands
- Poland • Portugal • Romania • Singapore, Slovenia
- South Africa • Spain • Switzerland • Thailand
- Tunisia, Turkey • UK • USA

80 countries

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