

DIRIS DigiBOX A

Enclosed single-point submetering solution



DIRIS DigiBOX A
Enclosed single-point submeter



Configuration
with Easy Config System

Function

DIRIS DigiBOX A is an easy-to-install enclosed single-point submetering solution. It provides users with all they need for a complete submeter installation. Simply select the current sensors (CTs) from our wide plug and play selection to complete your system. With just two part numbers, DIRIS DigiBOX A allows you to address a wide range of metering applications.

DigiBOX A is powered by our DIRIS A-40 power monitoring device, loaded with features, design and performance.

Advantages

Easy to order

- Approved for indoor or outdoor installations (NEMA 3R, 12, 4, 4X)
- Universal system voltage and power supply
- DigiBOX A comes standard with flexible I/Os and communication protocols

Safe and Reliable

- cULus listed enclosures and components
- Assembled at our cULus 508A facility
- Fused voltage connections
- Detailed installation and commissioning instruction guides

Plug & Play design

- Color-coded RJ12 cables for easy phase identification when wiring current sensors to the DigiBOX A
- Automatic detection of current sensor type and rating
- Using low-voltage mV current sensors, no shorting blocks are needed, they can be disconnected safely under load

Accurate

Accuracy of measurements meets ANSI C12.20 and IEC 61557-12 standards:

- Class 0.5 system accuracy (Meter + TE/iTR/TF current sensors) from 2% to 120% of rated current
- Class 0.2 DigiBOX A meter accuracy

The solution for

- > Industry
- > Buildings
- > Infrastructure



Strong points

- > Easy to order
- > Plug & Play design
- > Accuracy
- > Safe and Reliable

Conformity to standards

- > cULus 508A
- > ANSI C12.20
- > IEC 61557-12
- > UL 61010-1
CSA-C22.2 No. 61010-1
Guide PICQ
File E257746



Create your project

- > Find the best DIRIS Digiware configuration:
www.meter-selector.com



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Selection Guide

	DigiBOX A	
		
Metering technology	DIRIS A-40	DIRIS A-40
Number of metering points (3P)	1	1
Number of current inputs	3	3
Display	•	•
WEBVIEW webserver	•	•
Communication		
RS485(*)	•	•
Ethernet (**)	•	•
Enclosure		
Type	Polycarbonate	Polycarbonate
Rating	NEMA 4X	NEMA 4X
Dimensions (H x W x D)	12 x 10 x 6 in	12 x 10 x 6 in
Electrical characteristics		
Power supply	110 - 277 VAC Ph-N WYE	110 - 480 VAC Ph-Ph DELTA
Energy metering		
kWh (+/-), kvarh (+/-), kVAh	•	•
kW (+/-), kvar (+/-), kVA	•	•
Demand Profiles (History)	•	•
Power Factor	•	•
Multi-measurement		
Amps, Volts, Frequency	•	•
Power quality		
Voltage/current imbalance	•	•
THDV, THDU, THDI	•	•
Individual Harmonics V, U, I (up to 63rd)	•	•
Alarms		
Measurement thresholds	•	•
Events (voltage sags, swells, interruptions and overcurrent)	•	•
Email notifications	•	•
Part Nos	USDBPA40ET	USDBPA40ET-D

(*) Supported RS485 protocol: Modbus RTU

(**) Supported Ethernet protocols: Modbus TCP/IP, BACnet IP

Commissioning

To get your DIRIS DigiBOX A up and running quickly with peace of mind, Socomec experts are here to assist you with commissioning. Our commissioning services consist of:

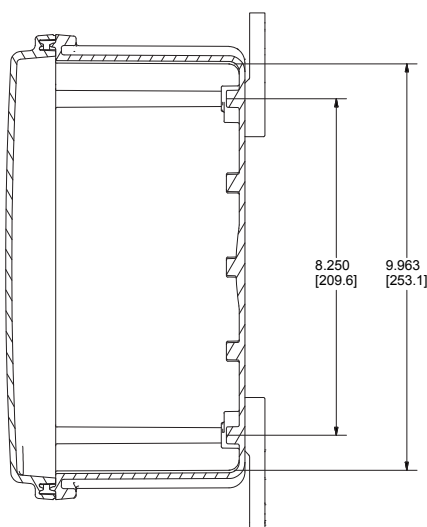
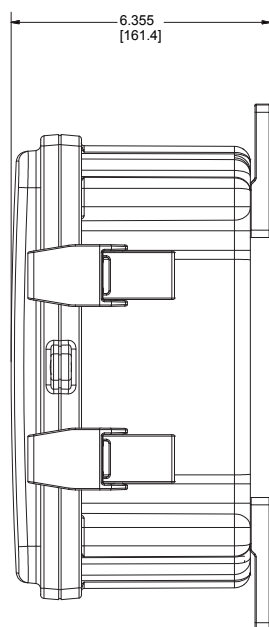
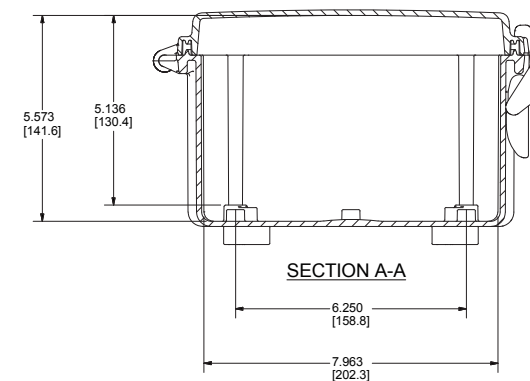
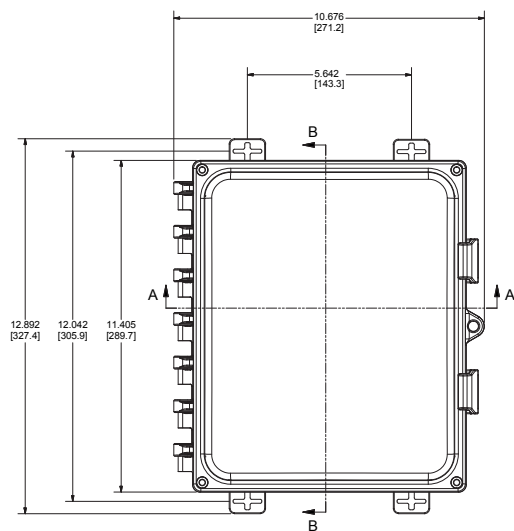
- Verifying the installation and wiring of your power monitoring system (phase association, orientation of CTs etc.)
- Configuring your DIRIS DigiBOX A
- Performing communication tests to ensure measurement data gets communicated to your energy management system.
- Information on how to operate the power monitoring system and associated software
- A detailed commissioning report summarizing the system settings, passwords etc.



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Dimensions (in/mm)



SECTION B-B

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Technical characteristics

Electrical characteristics

Input Power	
Voltage	• 110-277 VAC (Ph-Ph or Ph-N) with USDBPA40ET • 110-480 VAC (Ph-Ph or Ph-N) with USDBPA40ET-D
Frequency	50/60 Hz

Measurement characteristics

Power and energy measurement	
Accuracy active energy and active power	Class 0.2, DigiBOX A (Meter Only) Class 0.5 (Meter with TE, iTR, TF sensors) Class 1 (Meter + TR sensors)
Accuracy reactive energy	Class 1 (Meter with TE, iTR, TF sensors)
Power factor measurement	
Accuracy	Class 0.5 (Meter with TE, iTR, TF sensors) Class 1 (Meter with TR sensors)
Voltage measurement	
Electrical network type	Single-phase (1P2W) / Two-phase (2P2W) / Two-phase with neutral (2P3W) / Three-phase (3P3W) / Three-phase with neutral (3P4W)
Voltage measurement rating	500-300 VAC (Ph-N) / 87-520 VAC (Ph-Ph) – CAT III
Voltage accuracy	Class 0.02
Voltage input consumption	≤ 1 VA
Frequency range	45 – 65 Hz
Frequency accuracy	Class 0.2
Current measurement	
Number of current inputs	3
Associated current sensors	Solid-core TE, split-core TR/iTR, flexible TF current sensors
Connection	Socomec RJ12 cables
Accuracy	Class 0.2 DigiBOX A (Meter Only) Class 0.5 (Meter with TE, iTR, TF sensors) Class 1 (Meter with TR sensors)

Mechanical characteristics

Application	Indoor or outdoor installations
Enclosure	Polycarbonate with UV inhibitors UL94-5VA flammability rating
Enclosure dimensions (in)	12 (H) x 10 (W) x 6 (D)
Protection rating	NEMA 4X / IP66
Operational temperature	+14...+158°F/-10°C...+70°C
Altitude	≤ 9840 ft / 3000 m

Communication characteristics

RS485	
Link	RS485
Connection type	Half-Duplex, 2 wires
Protocol	Modbus RTU
Baudrate	9600 – 115200 baud
Ethernet	
Link	Ethernet
Connection type	RJ45 10/100 Mbs
Protocol	Modbus TCP/IP, BACnet IP
USB	
Link	Micro USB Type b
Protocol	Modbus RTU
Use	Configuration via Easy Config System and firmware upgrade via Product Upgrade Tool

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References

DigiBOX A - Single-point submeter

Description	Reference
DigiBOX A-40 enclosed power meter with RS485 and Ethernet - 110-277 VAC power supply	USDBPA40ET
DigiBOX A-40 enclosed power meter with RS485 and Ethernet - 110-480 VAC power supply	USDBPA40ET-D

Solid-core current sensors

Model	Nominal current range (A)	Real range covered (A)	Aperture size (in/mm)	Reference
TE-18	5 ... 20	0.1 ... 24	Ø 0.33 / 8.6	4829 0500
TE-18	25 ... 63	0.5 ... 75	Ø 0.33 / 8.6	4829 0501
TE-25	40 ... 160	0.8 ... 192	0.53 x 0.53 / 13.5 x 13.5	4829 0502
TE-35	63 ... 250	1.26 ... 300	0.82 x 0.82 / 21 x 21	4829 0503
TE-45	160 ... 630	3.2 ... 756	1.22 x 1.22 / 31 x 31	4829 0504
TE-55	400 ... 1000	8 ... 1200	1.61 x 1.61 / 41 x 41	4829 0505
TE-90	600 ... 2000	12 ... 2400	2.52 x 2.52 / 64 x 64	4829 0506

Split-core current sensors

Model	Nominal current range (A)	Real range covered (A)	Aperture size (in/mm)	Reference
TR-10 / iTR-10	25 ... 63	0.5 ... 75.6	Ø 0.39 / 10	4829 0555 / 4829 0655
TR-14 / iTR-14	40 ... 160	0.8 ... 192	Ø 0.55 / 14	4829 0556 / 4829 0656
TR-21 / iTR-21	63 ... 250	1.26 ... 300	Ø 0.83 / 21	4829 0557 / 4829 0657
TR-32 / iTR-32	160 ... 600	3.2 ... 720	Ø 1.26 / 32	4829 0558 / 4829 0658

Flexible Rogowski current sensors (*)

Model	Nominal current range (A)	Real range covered (A)	Aperture size (in/mm)	Reference
TF-40	100 ... 400	2 ... 480	Ø 1.57 / 40	4829 0573
TF-80	150 ... 600	3 ... 720	Ø 3.15 / 80	4829 0574
TF-120	400 ... 2000	8 ... 2400	Ø 4.72 / 120	4829 0575
TF-200	600 ... 4000	12 ... 4800	Ø 7.87 / 200	4829 0576
TF-300	1600 ... 6000	32 ... 7200	Ø 11.81 / 300	4829 0577
TF-600	1600 ... 6000	32 ... 7200	Ø 23.62 / 600	4829 0578

Set of 3 RJ12 female/female connectors for RJ12 lead extension between DigiBOX A and TF sensors

4829 0670

(*) TF Rogowski sensors come with a 6-ft cable lead with RJ12 male connector

RJ12 sensor lead cables

Model	Number of cables	Length (ft/m)	Color coding	Reference
RJ12 3 x 0.5m	3	1.64 / 0.5	Black, Red, Yellow	4829 0595
RJ12 3 x 1m	3	3.3 / 1	Black, Red, Yellow	4829 0583
RJ12 3 x 2m	3	6.5 / 2	Black, Red, Yellow	4829 0584
RJ12 3 x 3m	3	9.84 / 3	Black, Red, Yellow	4829 0606
RJ12 3 x 5m	3	16.4 / 5	Black, Red, Yellow	Please consult us
RJ12 3 x 10m	3	32.8 / 10	Black, Red, Yellow	Please consult us

Commissioning

1/2-day remote commissioning	Remote commissioning including installation verification, programming and communication testing	9230100027
1/2-day on-site commissioning	On-site commissioning including installation verification, programming and communication testing	9230100004