DIRIS DigiBOX A
Multifunction power meter - enclosed

DIRIS DigiBOX A
Enclosed power meter

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 and DIRIS A-200 power monitoring device, loaded with features, design and performance.

Advantages

Easy to order
- Same part number for indoor or outdoor installations (NEMA 3R, 12, 4, 4X)
- 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
- > PBI Meter per CA Energy Commission
- > IEC 61557-12
- > UL 61010-1 CSA-C22.2 No. 61010-1 Guide PICQ File E257746

Create your project
- > Find the best power monitoring configuration: **www.meter-selector.com**

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Selection Guide

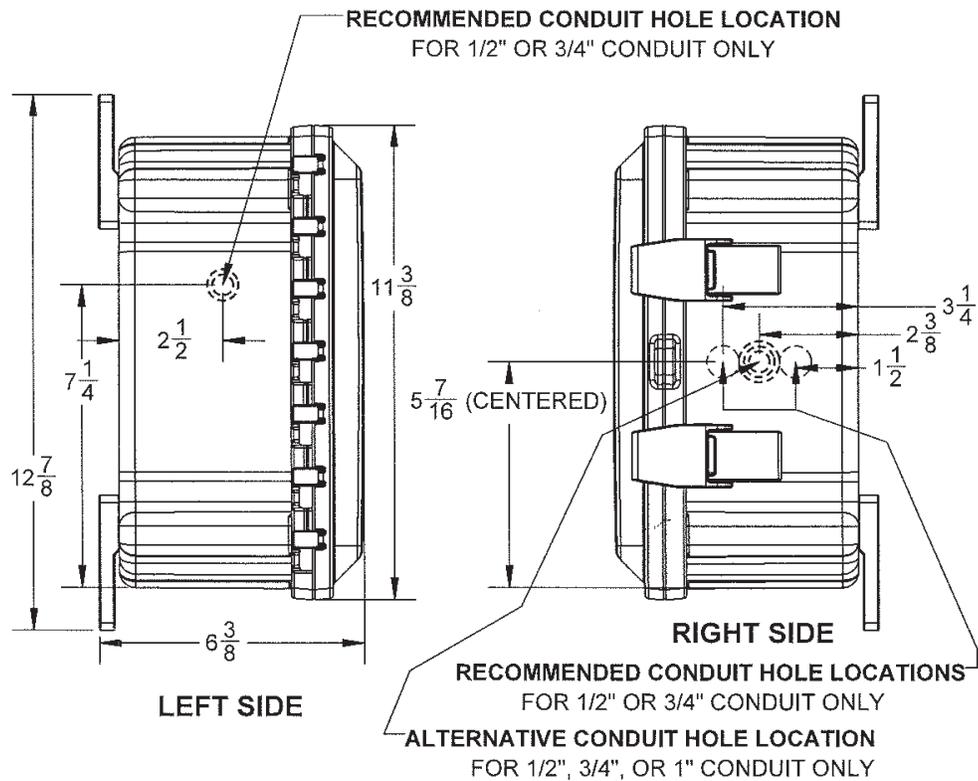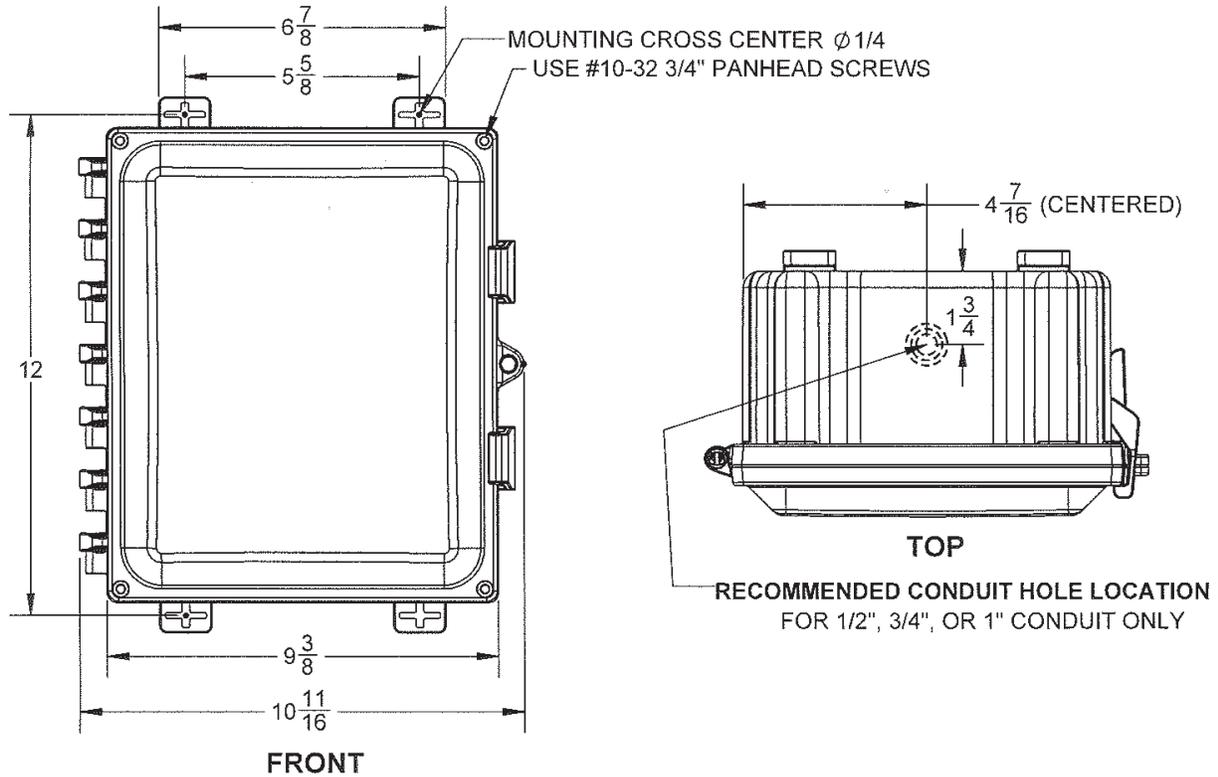|	DigiBOX A	
Metering technology	DIRIS A-40	DIRIS A-200
Number of metering points (3P)	1	1
Number of current inputs	3	4
Display	•	•
WEBVIEW webserver	•	•
Communication		
RS485 [1]	•	•
Ethernet [2]	•	•
Enclosure		
Type	Polycarbonate	Polycarbonate
Rating	NEMA 4X	NEMA 4X
Dimensions (H x W x D)	12 x 10 x 6 in	12 x 10 x 6 in
Electrical characteristics		
Voltage Input	110 - 277 VAC	110 - 600 VAC
Energy metering		
±kWh, ±kvarh, kVAh	•	•
∑P (kW), ∑Q (kvar), ∑S (kVA), PF	•	•
P (kW), Q (kvar), S (kVA), PF per phase	•	•
Multi-measurement		
Amps, Volts, Frequency	•	•
Unbalance U, V, I	•	•
Power quality		
THD U, V, I	•	•
Individual Harmonics V, U, I (up to 63rd)	•	•
PQ Events (sags, swells, interruptions and overcurrents)	•	•
Waveform capture		•
Alarms		
Measurement thresholds	•	•
System alarms	•	•
Email notifications	•	•
Reference	USDBPA40ET	USDBPA200RJ

(1) Supported RS485 protocol: Modbus RTU.
(2) Supported Ethernet protocols: ModbusTCP/IP, BACnet IP.

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MOUNTING CROSS CENTER ∅ 1/4
USE #10-32 3/4" PANHEAD SCREWS

$6\frac{7}{8}$

$5\frac{5}{8}$

12

$9\frac{3}{8}$

$10\frac{11}{16}$

FRONT

$4\frac{7}{16}$ (CENTERED)

$1\frac{3}{4}$

TOP

RECOMMENDED CONDUIT HOLE LOCATION
FOR 1/2", 3/4", OR 1" CONDUIT ONLY

RECOMMENDED CONDUIT HOLE LOCATION
FOR 1/2" OR 3/4" CONDUIT ONLY

$11\frac{3}{8}$

$2\frac{1}{2}$

$7\frac{1}{4}$

$12\frac{7}{8}$

$5\frac{7}{16}$ (CENTERED)

$6\frac{3}{8}$

LEFT SIDE

$3\frac{1}{4}$

$2\frac{3}{8}$

$1\frac{1}{2}$

RIGHT SIDE

RECOMMENDED CONDUIT HOLE LOCATIONS
FOR 1/2" OR 3/4" CONDUIT ONLY

ALTERNATIVE CONDUIT HOLE LOCATION
FOR 1/2", 3/4", OR 1" CONDUIT ONLY

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Technical Characteristics

Electrical characteristics

Input Power	
Voltage	• 110-277 VAC (Ph-Ph or Ph-N) with USDBPA40ET • 110-600 VAC (Ph-Ph or Ph-N) with USDBPA200RJ
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 of 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	• 50-300 VAC L-N / 87-520 VAC (Ph-Ph) - CAT III with USDBPA40ET • 50-600 VAC (Ph-N) / 90-690 VAC (Ph-Ph) - CAT III with USDBPA200RJ
Voltage accuracy	Class 0.2 for DigiBOX A-40 and class 0.1 for DigiBOX A-200
Voltage input consumption	≤ 1 VA
Frequency range	45 – 65 Hz
Frequency accuracy	Class 0.02
Current measurement	
Number of current inputs	• 3 with USDBPA40ET • 4 with USDBPA200RJ
Associated current sensors	Solid-core TE, split-core TR/iTR, flexible TF current sensors
Connection	Socomec RJ12 cables
Accuracy	Class 0.2 DigiBOX A-40 only Class 0.1 DigiBOX A-200 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 with USDBPA40ET • -13...+158°F/-25°C...+70°C with USDBPA200RJ
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	Use Configuration via Easy Config System and firmware upgrade via Product Upgrade Tool

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References

DIRIS DigiBOX A enclosed power meters

DIRIS DigiBOX A enclosed power meters		Reference
DigiBOX A-40	RS485 Modbus RTU + Ethernet Modbus TCP & BACnet IP - 110 - 277 VAC L-N	USDBPA40ET
DigiBOX A-200	RS485 Modbus RTU + Ethernet Modbus TCP & BACnet IP - 110 - 600 VAC L-N	USDBPA200RJ

Accessories

Accessories	Reference
1A/5A secondary CT adapter with RJ12 output	4829 0599
6.5-ft USB Cable for configuration - Type A to Type Micro-B	4829 0050

RJ12 Solid-core current sensors [1]

Model	Nominal current range (A)	Real range covered (A)	Window 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

(1) Refer to pages 348-351 for more information on TE current sensors

RJ12 Split-core current sensors [2]

Model	Nominal current range (A)	Real range covered (A)	Window 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

(2) Refer to pages 352-353 for more information on TR/iTR current sensors

RJ12 Flexible Rogowski current sensors [3] [4]

Model	Nominal current range (A)	Real range covered (A)	Window 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 power meter and TF sensor				4829 0670

(3) TF Rogowski sensors come with a 6-ft cable lead with RJ12 male connector
(4) Refer to pages 354-355 for more information on TF current sensors

RJ12 sensor lead cables

RJ12 sensor lead cables	Cable length (ft / m)										
	0.32/0.1	0.64/0.2	0.96/0.3	1.64/0.5	3.3/1	6.5/2	9.84/3	16.4/5	22.9/7	32.8/10	164/50 reel + 100 connectors
Number of cables	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
1	-	-	-	-	-	-	-	4829 0602	-	4829 0603	4829 0601
3	4829 0580	4829 0581	4829 0582	4829 0595	4829 0583	4829 0584	4829 0606	4829 0607	4829 0608	4829 0609	-
4	-	-	-	4829 0596	4829 0588	4829 0589	-	-	-	-	-
6	4829 0590	4829 0591	4829 0592	4829 0597	4829 0593	4829 0594	-	-	-	-	-

Commissioning

Commissioning		Reference
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

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Expert Services

Our service engineers are an essential part of our team, and they are dedicated to ensuring your power monitoring system provides accurate and reliable measurements to your EPMS software or SCADA system.

Our services include:

> Site audits to verify the proper wiring of your system
> Personnel training on how to configure, operate and maintain power monitoring equipment and associated software
> Remote and on-site commissioning to ensure that your system is up and running quickly, with peace of mind.

For further information, please contact your nearest SOCOMEC branch.