DIRIS DigiBOX B

Multifunction power meter - enclosed

DIRIS DigiBOX B
Enclosed power meter

Configuration with Easy Config System

Function

DIRIS DigiBOX B 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 & play selection to complete your system. With just two part numbers, DIRIS DigiBOX B allows you to address a wide range of metering applications.

DigiBOX B is powered by our DIRIS B-30 power monitoring device that communicates Modbus RTU via RS485.

Advantages

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

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 B meter accuracy

Plug & Play design
• Color coded RJ12 cables for easy phase identification when wiring current sensors to the DigiBOX B
• 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

The solution for

> Renewable
> Infrastructure
> Industry
> Buildings

Strong points

> Safe and reliable
> Plug & Play design
> Accurate

Conformity to standards

> cULus 508A

> ANSI C12.20

> PBI Meter per CA Energy Commission

> IEC 61557-12
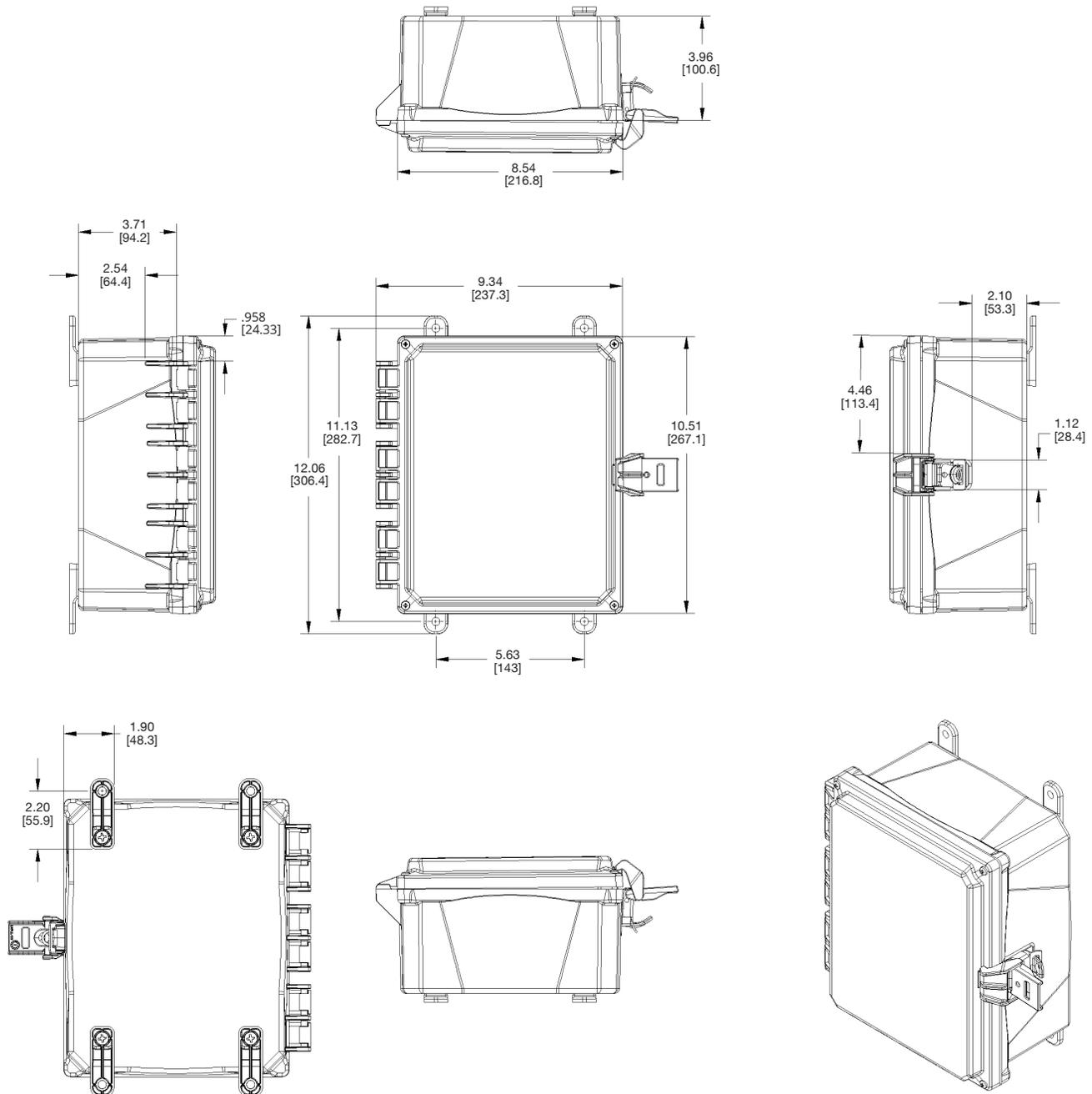
> UL 61010-1 CSA-C22.2 No. 61010-1 Guide PICQ

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Selection Guide

	DigiBOX B
Metering technology	**DIRIS B-30**
Number of metering points (3P)	1
Number of current inputs	4
Communication	
RS485 (*)	•
Enclosure	
Type	Polycarbonate
Rating	NEMA 4X
Dimensions (H x W x D)	12 x 10 x 6 in
Electrical characteristics	
Voltage Input	110 - 240 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)	•
Alarms	
Measurement thresholds	•
System alarms	•
Reference	USDBBB30ND0

(*) Supported RS485 protocol: Modbus RTU

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Dimensions (in/mm)

3.96 [100.6]

8.54 [216.8]

3.71 [94.2]

2.54 [64.4]

.958 [24.33]

9.34 [237.3]

11.13 [282.7]

12.06 [306.4]

10.51 [267.1]

5.63 [143]

2.10 [53.3]

4.46 [113.4]

1.12 [28.4]

1.90 [48.3]

2.20 [55.9]

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Technical characteristics

Electrical characteristics

Input Power	
Voltage	110 - 240 VAC (Ph-Ph or Ph-N) with USDBBB30ND0 110 - 480 VAC (Ph-Ph or Ph-N) with USDBPB30ND0
Frequency	50/60 Hz

Measurement characteristics

Power and energy measurement	
Accuracy active energy and active power	Class 0.2, DigiBOX B (Meter Only) Class 0.5 (Meter with TE, iTR, TF sensors) Class 1 (Meter + TR sensors)
Accuracy reactive energy	Class 2 (Meter with TE, iTR, TF sensors)
Power factor measurement	
Accuracy	Class 0.5 (Meter with TE, iTR, TF sensors) Class 1 (Meter + 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	4
Associated current sensors	Solid-core TE, split-core TR/iTR, flexible Rogowski TF
Connection	Socomec RJ12 cables
Accuracy	Class 0.2 DigiBOX B (Meter Only) Class 0.5 (Meter with TE, iTR, TF sensors) Class 1 (Meter + TR sensors)

Mechanical characteristics

Enclosure	Polycarbonate
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
RS485	
Link	RS485
Connection type	Half-Duplex, 2 wires
Protocol	Modbus RTU
Baudrate	1200 – 115200 baud
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

DIRIS DigiBOX B enclosed power meters		Reference
DigiBOX B-30	RS485 Modbus RTU - 110 - 240 VAC	USDBBB30ND0
DigiBOX B-30	RS485 Modbus RTU - 110 - 480 VAC	USDBPB30ND0

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	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		Reference
1/2 day remote commissioning	Remote commissioning including installation verification, programming and communication testing	9230**100027**
1/2 day on-site commissioning	On-site commissioning including installation verification, programming and communication testing	9230**100004**

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.

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