DIRIS DigiBOX M

Enclosed multi-point submetering solution

DIRIS DigiBOX M8
Enclosed 8-circuit submeter

Configuration
with *Easy Config System*

Function

Socomec's enclosed **DIRIS DigiBOX M** submetering line is designed to offer a complete and modular multi-circuit metering solution in NEMA 12.3R enclosures for indoor and outdoor use.

With ease of installation for retrofit applications and factory pre-wired Plug & Play technology, DIRIS DigiBOX solutions provide considerable savings in installation costs and customer site downtime. The solution offers the benefits of the scalable & customizable Digiware technology.

Advantages

Plug & Play design

- Factory pre-wired
- Color-coded RJ12 cables for easy phase identification when wiring current sensors to the DigiBOX meters.
- Automatic detection of current sensor types and ratings
- 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 M

Safe & reliable

- Durable NEMA 12, 3R
- cULus listed enclosures and components
- Assembled at our cULus 508A facility
- Fused voltage connections
- Detailed installation and commissioning instruction guides

The solution for

- > Industry
- > Building
- > Infrastructure
- > Data center

Strong points

- > Plug & Play design
- > Accurate
- > Safe & reliable

Conformity to standards

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

Create your project

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

METER▶SELECTOR
DIGITAL TOOL AVAILABLE

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Selection Guide

	DigiBOX M4		DigiBOX M8		DigiBOX M4 Pro		DigiBOX M8 PRO	
Metering technology	DIRIS Digiware system		DIRIS Digiware system		DIRIS Digiware system		DIRIS Digiware system	
Number of metering points (3P)	4		8		4		8	
Number of current inputs	12		24		12		24	
Display		•		•		•		•
WEBVIEW webserver						•		•
Communication								
RS485 (*)	•	•	•	•	•	•	•	•
Ethernet (**)		•		•		•		•
Enclosure								
Type	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel
Rating	NEMA 3R	NEMA 3R	NEMA 3R	NEMA 3R	NEMA 3R	NEMA 3R	NEMA 3R	NEMA 3R
Dimensions (H x W x D)	12 x 12 x 6 in	12 x 12 x 6 in	12 x 12 x 6 in	12 x 12 x 6 in	12 x 12 x 6 in	12 x 12 x 6 in	12 x 12 x 6 in	12 x 12 x 6 in
Electrical characteristics								
Auxiliary Power	110 - 480 VAC	110 - 480 VAC	110 - 480 VAC	110 - 480 VAC	110 - 480 VAC	110 - 480 VAC	110 - 480 VAC	110 - 480 VAC
Energy metering								
kWh (+/-), kvarh (+/-), kVAh	•	•	•	•	•	•	•	•
Demand Profiles (History)	•	•	•	•	•	•	•	•
kW (+/-), kvar (+/-), kVA	•	•	•	•	•	•	•	•
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		•		•		•		•
References	USDBB04ND0	USDBB04D50	USDBB08ND0	USDBB08D50	USDBP04ND0	USDBP04D70	USDBP08ND0	USDBP08D70

o = only on power measurements (kW, kvar, kVA)

(*) Supported RS485 protocol: Modbus RTU
(**) Supported Ethernet protocols: Modbus TCP/IP, BACnet IP, SNMP V1, V2, V3 & Traps

Commissioning

To get your DIRIS DigiBOX M up and running quickly with peace of mind, Socomec experts are here to assist you with commissioning. Our commissioning services consist of:
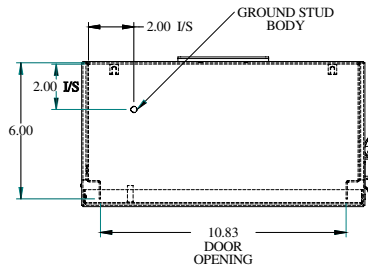
- Verifying the installation and wiring of your power monitoring system (phase association, orientation of CTs etc.)

- Configuring your DIRIS DigiBOX M

- 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.
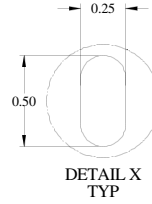
DIRIS DigiBOX M

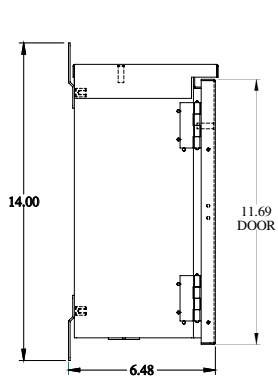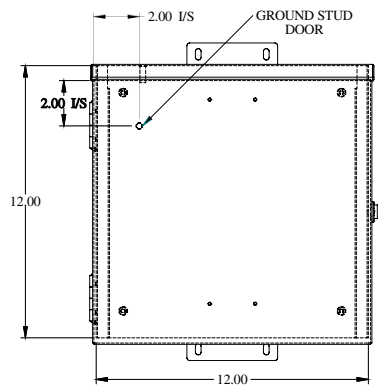Enclosed multi-point submetering solution

Dimensions

GROUND STUD BODY

2.00 I/S

2.00 I/S

6.00

10.83 DOOR OPENING

TOP VIEW

0.25

0.50

DETAIL X TYP

2.00 I/S

GROUND STUD DOOR

2.00 I/S

12.00

12.00

FRONT VIEW

6.60

1.19 I/S

10.50 DOOR OPENING

9.63

SIDE VIEW

14.00

11.69 DOOR

6.48

SIDE VIEW

0.88

0.88

DETAIL Z TYP

12.31 DOOR

1.88 TYP

2.25

2.06

Z   Y

9.63

1.19 I/S

BOTTOM VIEW

1.38

1.13

DETAIL Y TYP

12.00

3.00   4.50

0.50

X

13.00
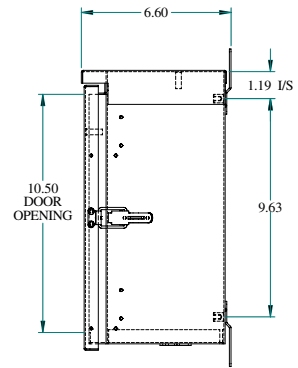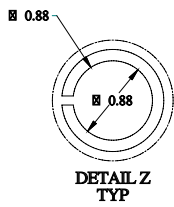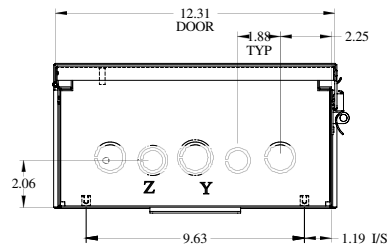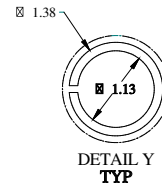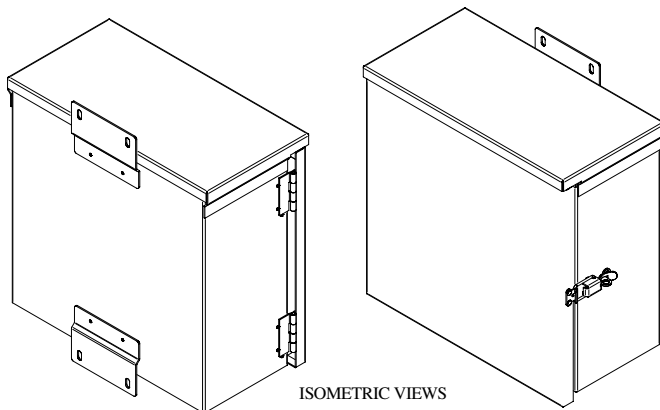
BACK VIEW

ISOMETRIC VIEWS
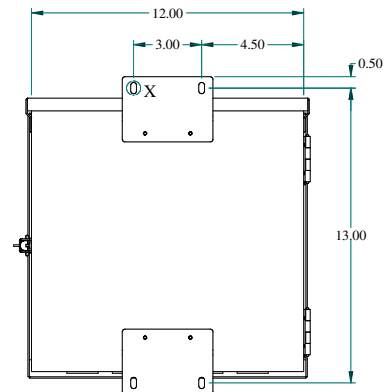
Technical characteristics

Electrical characteristics

Input Power	
Voltage	110-480 VAC
Frequency	50/60 Hz

Measurement characteristics

Power and energy measurement	
Accuracy active energy and active power	Class 0.2, DigiBOX M alone Class 0.5 with TE, iTR, TF sensors Class 1 with TR sensors
Accuracy reactive energy	Class 1 with TE, iTR, TF sensors
Power factor measurement	
Accuracy	Class 0.5 with TE, iTR, TF sensors Class 1 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	DigiBOX M4: 12 DigiBOX M8: 24
Associated current sensors	Solid-core TE, split-core TR/iTR, flexible Rogowski TF
Connection	Dedicated Socomec RJ12 cables
Accuracy	Class 0.2 DigiBOX M alone

Mechanical characteristics

Application	Indoor installations
Enclosure	Steel, finished in ANSI 61 gray powder coating
Enclosure dimensions (in)	12 (H) x 12 (W) x 6 (D)
Protection rating	NEMA 3R / IP24
Operational temperature	+14 ... +131 °F / -10 °C ... +70 °C
Altitude	≤ 9840 ft / 3000 m

Communication characteristics

RS485	
Link	RS485
Connection type	2 to 3 half duplex wires
Protocol	Modbus RTU
Baudrate	9600 – 115200 baud
Ethernet	
Link	Ethernet
Connection type	RJ45 10/100 Mbs
Protocol	Modbus TCP/IP, BACnet IP, SNMP v1, v2, v3
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 M - multipoint submeter

		Reference
DIRIS DigiBOX M4 without display	Enclosed submeter with 12 x CT inputs - RS485 communication	**USDBB04ND0**
DIRIS DigiBOX M4 with display	Enclosed submeter with 12 x CT inputs - display - RS485 and Ethernet communication	**USDBB04D50**
DIRIS DigiBOX M4 PRO without display	Enclosed submeter with 12 x CT inputs - power quality and alarming - RS485 communication- WEBVIEW-M webserver	**USDBP04ND0**
DIRIS DigiBOX M4 PRO with display	Enclosed submeter with 12 x CT inputs - power quality and alarming - display - RS485 and Ethernet communication - WEBVIEW-M webserver	**USDBP04D70**
DIRIS DigiBOX M8 without display	Enclosed submeter with 24 x CT inputs - power quality and alarming - RS485 communication	**USDBB08ND0**
DIRIS DigiBOX M8 with display	Enclosed submeter with 24 x CT inputs - display - RS485 and Ethernet communication	**USDBB08D50**
DIRIS DigiBOX M8 PRO without display	Enclosed submeter with 24 x CT inputs - power quality and alarming - RS485 communication	**USDBP08ND0**
DIRIS DigiBOX M8 PRO with display	Enclosed submeter with 24 x CT inputs - power quality and alarming - display - RS485 and Ethernet communication - WEBVIEW-M webserver	**USDBP08D70**

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 curre nt 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 M and TF sensor				**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**

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