

DIRIS Digiware *Idc*

Direct current measurement module



DIRIS Digiware I-30dc/I-35dc



Function

DIRIS Digiware *Idc* modules measure consumption and monitor the DC electrical installation. Several of these modules can be used within the same system, allowing the measurement of a large number of DC circuits. They are powered with DIRIS Digiware Udc voltage measurement modules.

Direct current is measured using external sensors connected by RJ12-Molex cables, available in multiple lengths. These cables are color coded (brown, orange, white) to easily identify circuits. The associated DIRIS Digiware D screen and the embedded webserver Webview can display electrical measurements from both DIRIS Digiware AC and DC systems simultaneously.

Advantages

Multi-circuit

- Measurement of up to 3 DC circuits per *Idc* module.
- Multiple *Idc* modules can be connected together which allows the measurement of a large number of DC loads simultaneously.

Flexible

- Adapted to suit metering and quality analysis of the direct current.
- A complete range of solid core and split core DC current sensors from 16 to 6000 A.

Plug & Play

- Quick RJ45 connection between modules and RJ12-Molex to current sensors.
- Easy to configure from DIRIS Digiware D interfaces or from the Easy Config System.

Compact

3 DC meters combined in a single module, just 18mm (0.71in) wide, to address space constraints inside electrical panels.

The solution for

- > Data center
- > Telecommunication
- > Renewable power
- > Transportation



Strong points

- > Multi-circuit
- > Plug & Play
- > Flexible
- > Compact

Conformity to standards



- > UL 61010-1, CSA-C22.22 No. 61010-1, Guide FTRZ/PICQ, File E257746



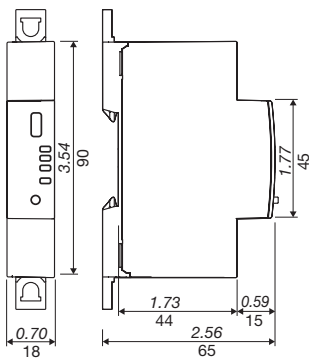
- > ISC 61557-12



- > ISO 14025

Application	Direct current (DC) measurement modules	
		
DIRIS Digiware Idc	I-30dc	I-35dc
General		
Number of RJ12 DC sensor inputs	3	3
Metering		
± kWh	•	•
P (± kW)	•	•
Load curves / demand profile		•
Peak demand		•
Multi-measurement		
DC current (I DC)	•	•
Power Quality		
I ripple (current ripple)		•
I rms		•
Alarms		
Measurement thresholds		•
History		
Average values		•
Reference	4829 0156	4829 0157

Dimensions (in/mm)

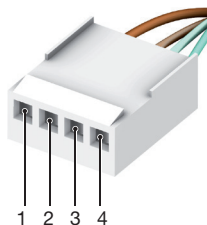


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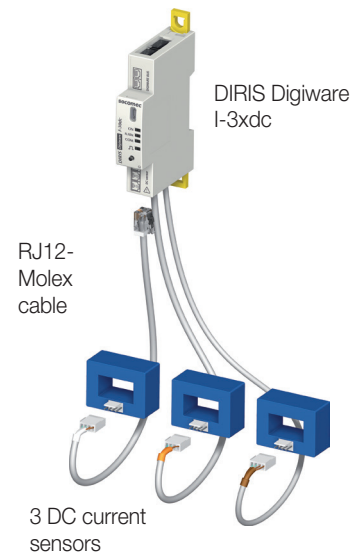
Current sensors

DC current is measured by external sensors connected to the DIRIS Digiware I-3xdc modules via RJ12-Molex cables. Connection of the current sensors is quick and error free. A wide range of current sensors is available from Socomec to suit all installations and applications including split-core current sensors for retrofit applications.

- Open-loop Hall effect sensors
- Solid core or split core.
- Power supply voltage: ± 15 V.
- Power supply current: ± 25 mA depending on sensor.
- Output voltage: ± 4 V.
- 4-point male Molex terminal strip.
- Measuring range: 16 to 6000 A.
- Category III overvoltage.



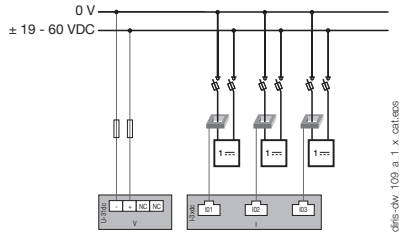
- PIN 1: + 15 V (+ Vc)
- PIN 2: - 15 V (- Vc)
- PIN 3: sensor input (M)
- PIN 4: 0 V sensor (0)



Voltage and current sensors connection examples

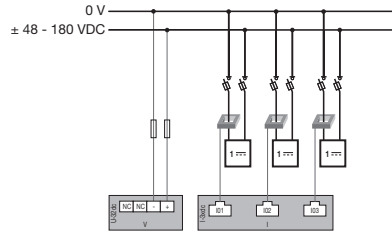
Measurement of 3 DC loads

DIRIS Digiware U-31 dc
Voltage (VDC): 19 - 60 V



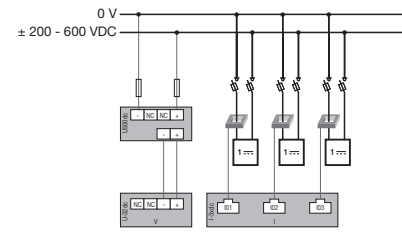
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DIRIS Digiware U-32dc
Voltage (VDC): 48 - 180 V



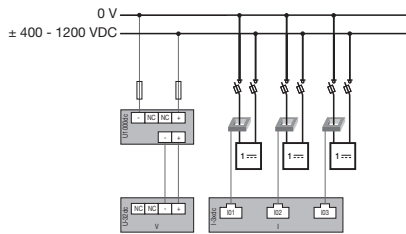
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DIRIS Digiware U-32dc + adaptor U500dc
Voltage (VDC): 200 - 600 V



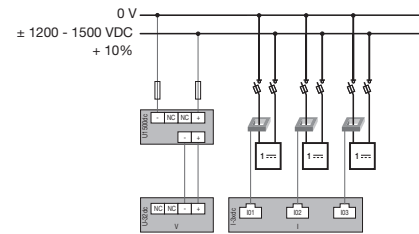
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DIRIS Digiware U-32dc + adaptor U1000dc
Voltage (VDC): 400 - 1200 V



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DIRIS Digiware U-32dc + adaptor U1500dc
VDC voltage: 1200 - 1500 V +10%



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1. Fuse: 2A gPV



DC current sensor



DC load

Technical characteristics

Measurement characteristics

Number of current inputs	3
Associated current sensors	Open-loop Hall effect
Current measurement accuracy	Class 0.5
Precision measurement of power and energy	With U-31dc/U-32dc only: class 1 With U-32dc + adaptor: class 2
Connection	Specific Socomec cable with RJ12-Molex connectors
Power consumption	2 VA

Mechanical characteristics

Mounting	DIN-rail or back plate
Protection degree	IP20, front face
Weight	2.43 oz / 69 g

Environmental characteristics

Operating temperature	+14 °F ... +158 °F / -10 ... +70 °C
Storage temperature	-4 °F ... +158 °F / -20 ... +70 °C
Operating humidity	0% to 97% RH / 131 °F / 55 °C, non condensing
Operating altitude	≤ 6560 ft / 2000 m

Communication characteristics

USB	
Connection type	USB Type Micro-B
Protocol	Modbus RTU over USB
Function	Firmware upgrade and configuration
Digiware bus	
Connection type	Socomec RJ45 cable
Function	Proprietary bus connecting Digiware units

References

DIRIS Digiware Idc		Part number
I-30dc	Metering - 3 current inputs	4829 0110
I-35dc	Analysis - 3 current inputs	4829 0111
Accessories		Reference
Digiware Bus terminating resistor (already supplied with DIRIS Digiware C, M & D)		4829 0180
6.5-ft USB Cable for configuration - Type A to Type Micro-B		4829 0050

Digiware bus cables ⁽¹⁾		Reference
RJ45 cables for Digiware Bus	Length 0.20 ft / 0.06 m	4829 0189
	Length 0.32 ft / 0.10 m	4829 0181
	Length 0.66 ft / 0.20 m	4829 0188
	Length 1.64 ft / 0.50 m	4829 0182
	Length 3.28 ft / 1 m	4829 0183
	Length 6.56 ft / 2 m	4829 0184
	Length 9.84 ft / 3 m	4829 0190
	Length 16.4 ft / 5 m	4829 0186
	Length 32.8 ft / 10 m	4829 0187
	164.04 ft / 50 m reel + 100 connectors	4829 0185

(1) To guarantee the proper operation of the DIRIS Digiware system, do not substitute Socomec Digiware bus cables with standard Ethernet RJ45 cables.

References - DC current sensors

DC solid-core current sensors ⁽²⁾			
Model	Nominal current range (A)	Window size (in/mm)	Reference
Frame size 1	50	0.80 x 0.41 / 20.4 x 10.4	4829 0700
	100	0.80 x 0.41 / 20.4 x 10.4	4829 0701
	200	0.80 x 0.41 / 20.4 x 10.4	4829 0702
	300	0.80 x 0.41 / 20.4 x 10.4	4829 0703
	400	0.80 x 0.41 / 20.4 x 10.4	4829 0704
	500	0.80 x 0.41 / 20.4 x 10.4	4829 0705
Frame size 2	600	0.80 x 0.41 / 20.4 x 10.4	4829 0706
	850	2.52 x 0.83 / 64 x 21	4829 0707
	1000	2.52 x 0.83 / 64 x 21	4829 0708
	1500	2.52 x 0.83 / 64 x 21	4829 0709
	2000	2.52 x 0.83 / 64 x 21	4829 0710
	2500	2.52 x 0.83 / 64 x 21	4829 0711
	5000	2.52 x 0.83 / 64 x 21	4829 0712

(2) Refer to pages 356-359 for more information on DC sensors

DC split-core current sensors ⁽²⁾			
Model	Nominal current range (A)	Window size (in/mm)	Reference
Frame size 1	50	∅ 0.83 / 21	4829 0750
	100	∅ 0.83 / 21	4829 0751
	200	∅ 0.83 / 21	4829 0752
	300	∅ 0.83 / 21	4829 0753
	400	∅ 0.83 / 21	4829 0754
	500	∅ 0.83 / 21	4829 0755
Frame size 2	800	4.09 x 1.57 / 104 x 40	4829 0756
	1000	4.09 x 1.57 / 104 x 40	4829 0757
	1500	4.09 x 1.57 / 104 x 40	4829 0758
	2000	4.09 x 1.57 / 104 x 40	4829 0759

(2) Refer to pages 356-359 for more information on DC sensors

RJ12 sensor lead cables	Cable length (ft / m)				
	0.96/0.3	1.64/0.5	3.3/1	6.5/2	16.4/5
Number of cables	Reference	Reference	Reference	Reference	Reference
1	-	-	-	-	4829 0786
3	4829 0782	4829 0783	4829 0784	4829 0785	-

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

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.

