DIRIS Digiware M

Multi-protocol communication gateways
for the DIRIS Digiware system



The solution for

> Data centre
> Building
> Industrial process



Strong points

> Plug & Play
> Advanced connectivity
> Embedded web server
> Cyber security
> Email notifications

RJ45 (Digiware bus) cables are available.

Compliance with standards

> IEC 62974-1 (Energy Server)
> IEC 62443 (Cyber security)
> UL 61010 Guide FTRZ/PICQ File E257746
> FCC
> IC

Create your project

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

METER SELECTOR DIGITAL TOOL AVAILABLE

Function

The **DIRIS Digiware M-50 and M-70** communication gateways are the access point for the DIRIS Digiware system, centralising the 24 VDC power supply and communication in one single point.
The M-50 and M-70 act as the Ethernet gateway for all the devices connected on the Digiware or RS485 bus, and integrate a web server to configure the network parameters and to remotely display measurement data.

The M-50 and M-70 gateways offer a wide range of functionalities, including:
- Bluetooth connectivity to collect data from environmental sensors,
- memory extension for connected devices,
- automatic export of logged consumption and data to an FTP(S) server,
- notification emails if there is an alarm on one of the connected devices (SMTPS),
- automatic time synchronisation of all connected devices via SNTP.

Advantages

Plug & Play
- Direct Digiware and RS485 to Ethernet gateway.
- Automatic detection of connected devices.
- Easy setup.
- Safety Extra Low Voltage 24 VDC power supply.

Advanced connectivity
- Ethernet output for communication using multiple protocols: Modbus TCP, BACnet IP and SNMP v1, v2, v3 (encrypted) to suit any metering and power monitoring application.
- Possible to configure as RS485 slave to communicate measurement data to a second PLC, for example.

Embedded web server
A WEB-CONFIG is embedded in the M-50 gateway to configure the communication architecture.
WEBVIEW-M is embedded in the M-70 gateway and available without license fees to visualise measurements and consumption remotely.

Cyber security
The M-50 and M-70 gateways include advanced cyber security features following the IEC 62443 referential to secure the transmission of data and reduce the risk of cyber attacks:
- customised security policy (blocking or restricting certain protocols and services),
- secured HTTPS navigation by uploading TLS/SSL certificates,
- secured data push (FTPS, SMTPS),
- implementation of a Firewall and Whitelist rules to guard against denial-of-service attacks.

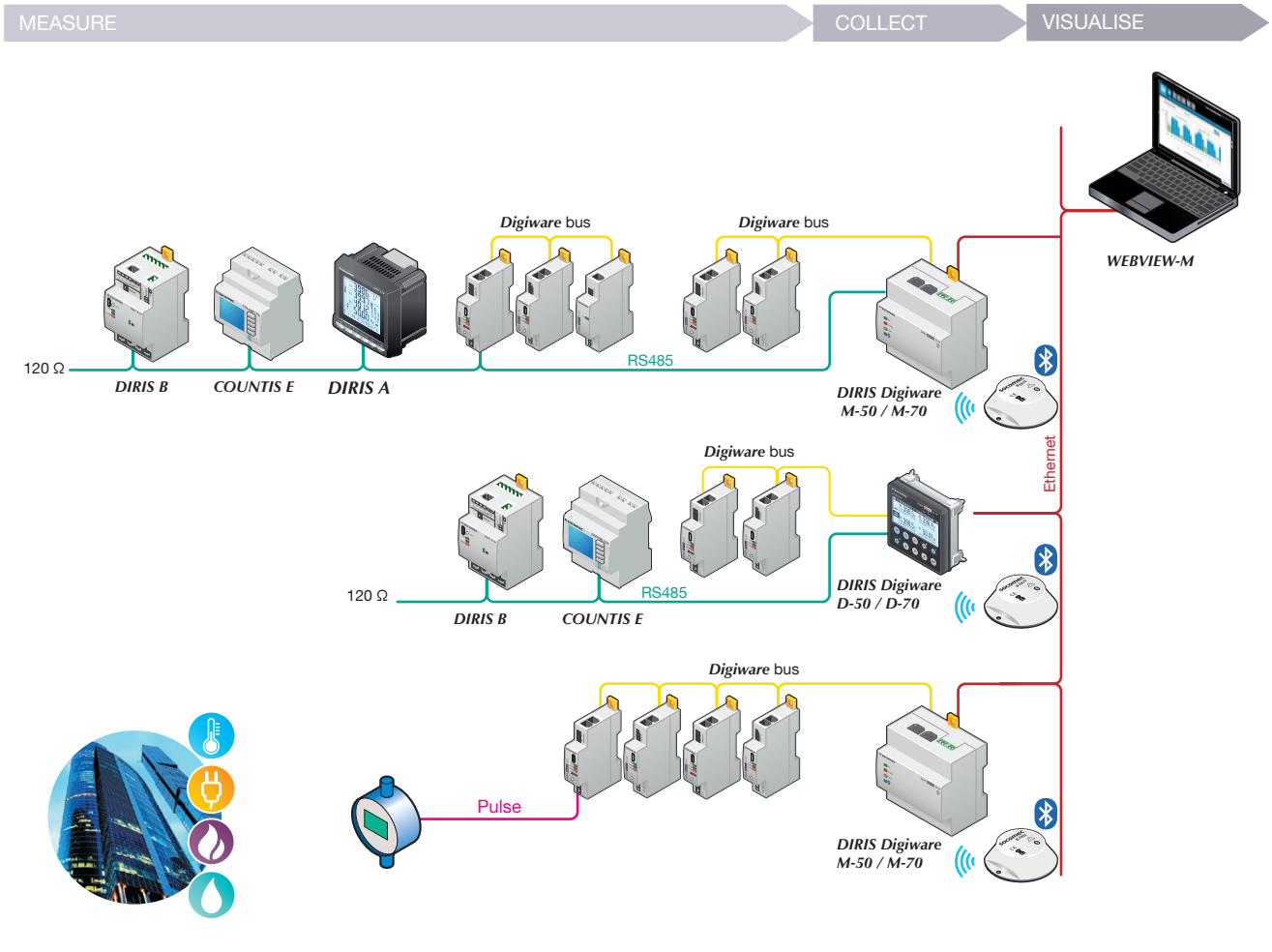
Email notifications
The M-50/M-70 gateway can send email notifications in case of an alarm.

General characteristics
- 24 VDC power supply.
- Modbus RTU/TCP, BACnet IP, SNMP v1, v2, v3 & Traps, HTTPS, FTPS, SMTPS, SNTP, DHCP.
- Up to 32 devices (max. 196 circuits) displayed.
- Free embedded web-based software.

Application	Multi-protocol communication gateway	
		
DIRIS Digiware M	***M-50***	***M-70***
Digiware bus input	•	•
RS485	Input/output (1)	Input/output (1)
Ethernet output	•	•
Compatible protocols	Modbus RTU Modbus TCP BACnet IP SNMP v1, v2, v3, Traps	Modbus RTU Modbus TCP BACnet IP SNMP v1, v2, v3, Traps
Bluetooth	•	•
FTP(S) (automatic data export)	•	•
SMTP(S) (email notifications in case of alarm)	•	•
SNTP (time synchronisation)	•	•
Web Server	WEB-CONFIG	WEBVIEW-M

(1) The gateways can be configured as Modbus master (RS485 input) or slave (RS485 output).

Architecture



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Embedded webserver

WEB-CONFIG (M-50)

The M-50 gateway includes a WEB-CONFIG allowing you to:

- configure the device hierarchy and data access,
- block or restrict access to certain peripherals, protocols or services.

WEBVIEW-M (M-70)

In addition to the WEB-CONFIG, the M-70 gateway allows a remote visualisation of data on the embedded WEBVIEW-M software, available without licence fees.

- Real-time measurements.
- On-going and terminated alarms.
- Consumption curves and load curves per load or usage.
- Photoview: displays electrical parameters on a customised background such as a site map, an electrical diagram or a panel picture to provide an overview of your electrical installation.

Data storage

These gateways extend the memory of connected devices so you can log a year's worth of measurements, load curves and consumption curves.







Configuration

Device consumption

Device	Power supplied (W)
Power supply	
P15 100-240 VAC / 24 VDC	15
P30 100-240 VAC / 24 VDC	20
Device	**Power consumed (W)**
Cables	
50-metre package	1.5
System interfaces	
DIRIS Digiware C-31	0.8
DIRIS Digiware D-50/D-70	2.5
DIRIS Digiware M-50/M-70	2.5
Voltage module	
DIRIS Digiware U-xx	0.72
DIRIS Digiware U-3xdc	0.6
Current modules	
DIRIS Digiware I-3x	0.52
DIRIS Digiware I-4x	1.125
DIRIS Digiware I-6x	0.7
DIRIS Digiware I-3xdc (+ 3 DC current sensors)	2
DIRIS Digiware S-xx	0.35
Input/output modules	
DIRIS Digiware IO-10/IO-20	0.5
Repeater	
DIRIS Digiware C-32	1.5

Calculation rules for the max. number of devices on the Digiware bus

The total power consumed by the devices connected to the Digiware bus must not exceed the power from the 24 VDC supply.
The power supply must not exceed 20 W / 70°C or 27 W / 40°C.

Size with P15 power supply (ref: 4829 0120) delivering 15 W

For example, it is possible to use

- 1 DIRIS Digiware M-50 gateway (2.5 W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 50 metres of cable (1.5 W)

and

- 29 DIRIS Digiware current modules S-xx (29x 0.35 = 10.15 W)
  ⇨ **Total power = 14.87 W**

or

- 9 DIRIS Digiware current modules I-4x (9 x 1.125 = 10.125 W)
  ⇨ **Total power = 14.845 W**.

Size with a 24 VDC power supply delivering a maximum of 20 W (P30 ref. 4729 0603)

Possible options include:

- 1 DIRIS Digiware M-50 gateway (2.5 W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 50 metres of cable (1.5 W)

and

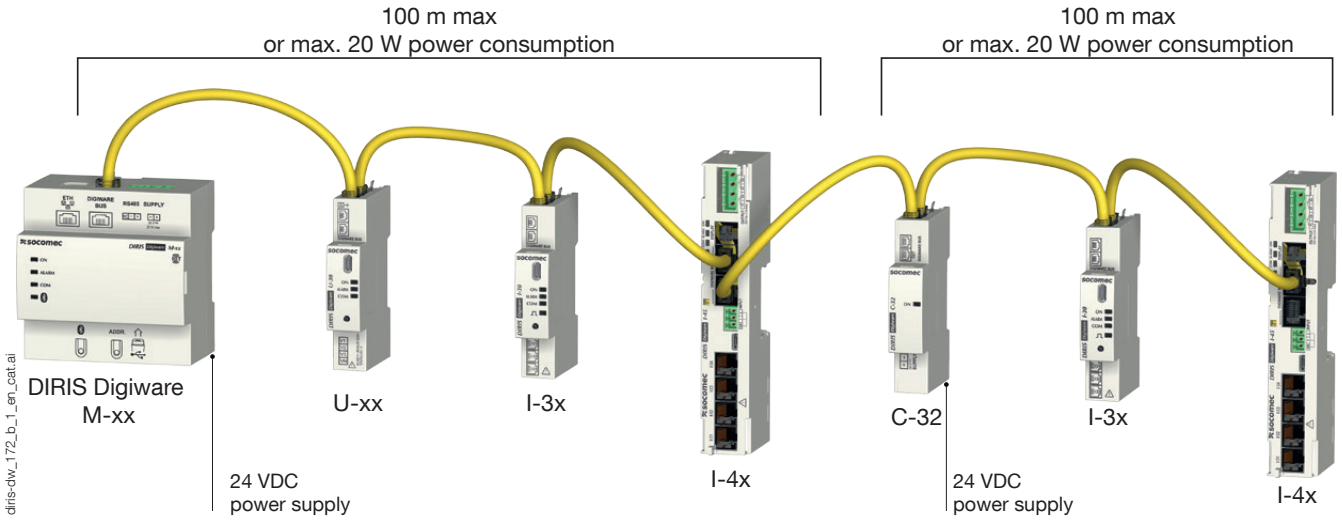
- 29 DIRIS Digiware current modules I-3x (30 x 0.52 = 15.08 W)
  ⇨ **Total power = 19.8 W**

or

- 14 DIRIS Digiware current modules I-4x (13 x 1.125 = 15.72)
  ⇨ **Total power = 19.345 W**.

Repeater

With power consumptions higher than 20 W or distances greater than 100 m, a DIRIS Digiware C-32 repeater is required.
In a DIRIS Digiware system, a maximum of 2 repeaters may be used.



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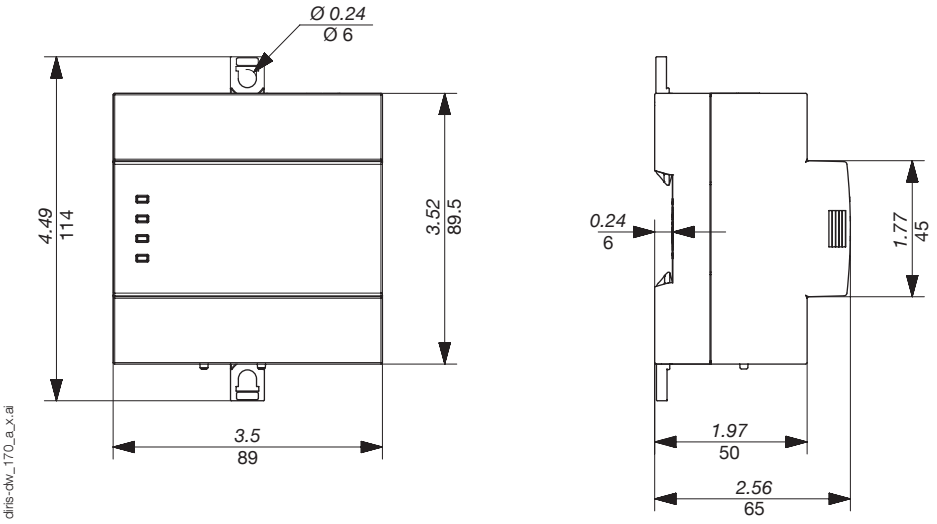
Dimensions (in/mm)



Technical characteristics

Electrical characteristics	
Power supply	24 VDC ± 10 % - 20 W max
Power consumption	2.5 W
Battery life	10 years

Mechanical characteristics	
Casing type	DIN-rail or back plate mounting
Weight	166 g
Protection degree	IP40 on the nose in modular assembly

Environmental characteristics	
Ambient operating temperature	-10 … +55°C
Storage temperature	-25 … +70°C
Operating humidity	95% at 40°C
Operating altitude	< 2000 m

Communication characteristics	
Ethernet RJ45 10/100 Mbs	Gateway function (M-50/M-70): Modbus TCP BACnet IP SNMP v1, v2, v3, Traps
Digiware bus	
Function	2 to 3 half duplex wires
Cable type	Specific Socomec cable with RJ45 connection
RS485	
Connection type	24 VDC +10 % / -20%
Protocol	Modbus RTU
Baudrate	9600 bds (max. 10 devices) 38400 bds - 115200 bds (max. 32 devices)
Function	Communication with PMD and meters or energy management systems (in RS485 slave mode)
USB	
Protocol	Modbus RTU over USB
Function	Configuration of gateway and connected PMDs/meters

References

DIRIS Digiware		Reference
M-50	Multi-protocol Ethernet gateway	4829 **0219**
M-70	Multi-protocol Ethernet gateway with embedded WEBVIEW-M web server	4829 **0220**
M-50 Bluetooth	Multi-protocol Ethernet gateway (with Bluetooth connectivity)	4829 **0221**
M-70 Bluetooth	Multi-protocol Ethernet gateway with embedded WEBVIEW-M web server (with Bluetooth connectivity)	4829 **0222**
Power supply		**Reference**
P15	Power supply 100-240 VAC/ 24 VDC 15 W	4829 **0120**
P30	Power supply 100-240 VAC/ 24 VDC 20 W	4729 **0603**
Digiware connection cables		**Reference**
RJ45 cables for Digiware bus	Length 0.06 m	4829 **0189**
	Length 0.10 m	4829 **0181**
	Length 0.20 m	4829 **0188**
	Length 0.50 m	4829 **0182**
	Length 1 m	4829 **0183**
	Length 2 m	4829 **0184**
	Length 3 m	4829 **0190**
	Length 5 m	4829 **0186**
	Length 10 m	4829 **0187**
	50 m reel + 100 connectors	4829 **0185**
Terminal for Digiware bus (spare part ref. only as already supplied with M-50 and M-70 gateways)		4829 **0180**
USB configuration cable		4829 **0050**

Accessories	Available for order in multiples of	Reference
Fuse circuit breakers to protect voltage inputs (type RM) 1 pole + neutral	4	5701 **0017**
gG 10x38 0.5 A fuses	10	6012 **0000**

Expert Services

Need help to integrate this sytem in your network?
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audit your system, **commission** selected equipment and **train** your staff on its use.
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