HYPERION TECHNICAL DATASHEET EN

GENERAL INFORMATION

- The **Hyperion** is a multifunctional, compact bidirectional energy meter with a width of just 90 mm (5TE), offering excellent flexibility and precision.
- Through direct connection or current transformers, it assists in analyzing and monitoring a wide range of parameters in demanding residential, commercial, or industrial applications.
- It combines the functions of an energy meter, a data logger, and provides additional measurements such as current, voltage, power, and more.
- Data transmission is available via mioty or LoRaWAN (depending on the version).

FEATURES

- Bidirectional metering (delivery and consumption)
- MID B + D certification for billing purposes
- Mechanical environmental conditions: M2
- 1 and 5 A current transformer connections for up to 20,000/5 A or 4,000/1 A; the transformer ratio can be configured multiple times via sealable buttons.
- Direct connection up to 100 A
- 2 or 4 tariff options (configurable on the meter)

- High-load Opto Power MOSFET
- S0 pulse output, 5–60V AC and DC
- Graphic LC display (38x28 mm) with backlight
- Dynamic 8-digit display with up to three decimal places
- Wireless interface: mioty or LoRaWAN

MID CERTIFICATION FOR BILLING PURPOSES

The **Hyperion** is certified according to MID Module B + D (Measurement Instrument Directive 2004/22/EC of the European Commission) and comes with the required declaration of conformity. With additional certification under Module D, which includes a quality management system for manufacturing and final testing, all Hyperion energy meters can be used for billing purposes within the European Union and the European Economic Area (EEA).

DISPLAY OPERATION:

A 38x28 mm graphic LC display with backlight allows readings and settings to be viewed even under challenging lighting conditions. The menu language can be selected via buttons. The clear and intuitive user interface simplifies commissioning and daily operation of the energy meters.

ACCURACY IN PHOTOVOLTAIC SYSTEMS

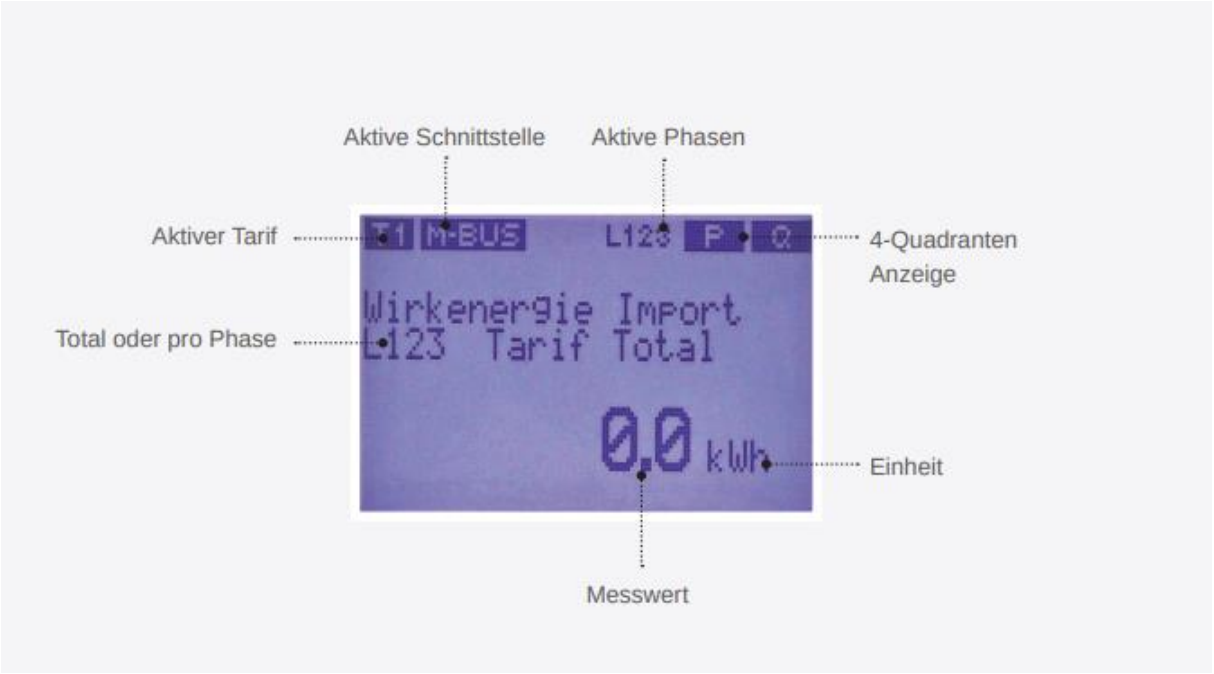
The **Hyperion** has been specially tested for use with inverters in photovoltaic systems. This additional testing guarantees that the Hyperion energy meters deliver accurate measurements in the unregulated frequency range between 2 kHz and 150 kHz. Studies by renowned trade publications have highlighted the issue that measurement errors of up to 18% can occur in such systems.

CURRENT TRANSFORMERS

The transformer ratio on the **Hyperion** with MID certification can be configured multiple times via buttons, from 5/5 A to 20,000/5 A or from 1/1 A to 4,000/1 A. The service button is sealable to prevent tampering. Additionally, configuration changes are logged and archived for security.

Highlights:

- MID B+D certification
- Bidirectional meter
- Certified for frequency-independent measurement in the range of 2 kHz to 150 kHz
- Integrated tamper detection



	Total/3 Phases	Per Phase	Per Tariff
Active energy consumption (kWh)	✓	✓	✓
Active energy delivery (kWh)	✓	✓	✓
Reactive energy consumption (kvarh)	✓	✓	✓
Reactive energy delivery (kvarh)	✓	✓	✓
Active power (kW)	✓	✓	-
Reactive power (kvar)	✓	✓	-
Apparent power (kVA)	✓	✓	-
Current (A)	✓	✓	-
Voltage (V) L-N	-	✓	-
Voltage (V) L-L	-	✓	-
Power factor (Cos Phi)	-	✓	-
Frequenz (Hz)	✓	-	-
Voltage drop count	✓	-	-
Load profile storage	-	-	✓

DISPLAYED MEASUREMENTS

The table of available measurements is not exhaustive. More values are continuously being integrated and can be accessed via the graphical display or the reading interface.

Additional Features:

- Logbook for legal events and configuration changes
- Modification of time or date
- Adjustment of the transformer ratio
- Configuration of the pulse rate and duration
- Adjustment of the voltage transformer ratio

Buffered internal clock: The internal clock is supported in case of power failure, and the load profile is stored every 15 minutes. The memory can be read via the interface or viewed on the display.

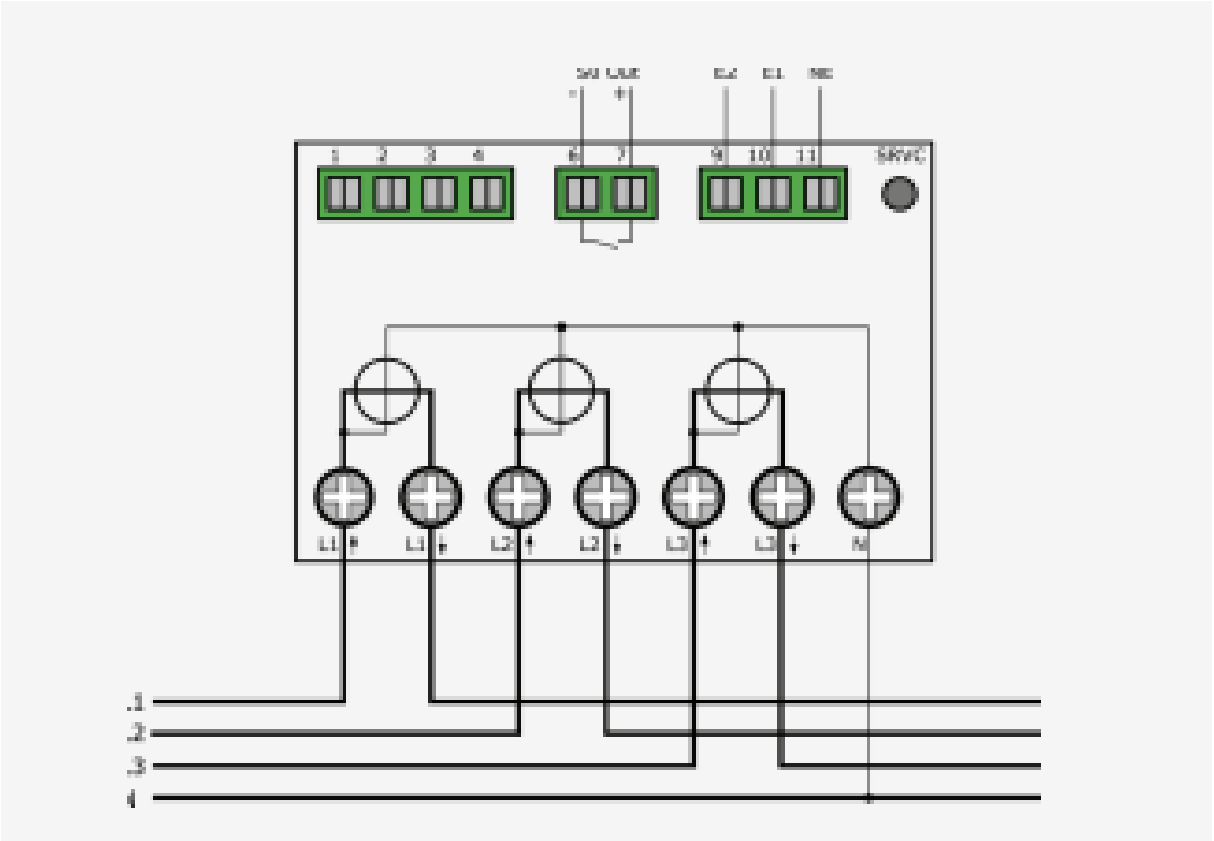
LORAWAN AND MOITY TECHNOLOGY

The **LoRaWAN®** or **mioty®** wireless technology enables communication between meters, sensors, and actuators via free radio frequencies. **mioty®** and **LoRa®** are designed for long-range transmission while adhering to current security standards, and they are specially developed for the Internet of Things (IoT).

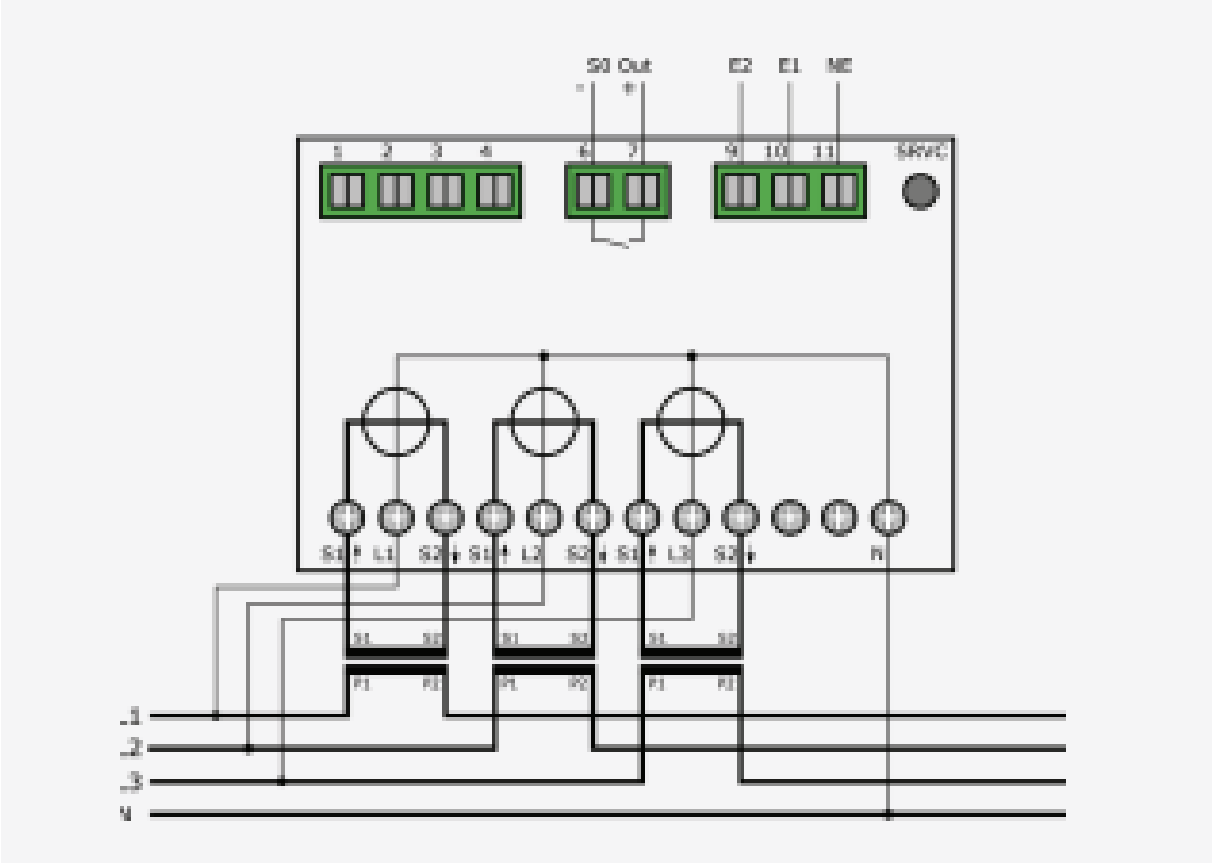
- The Hyperion features an optional integrated LoRa interface, designed as a Class C device, allowing it to receive LoRa commands at any time. The transmitted measurements can be freely configured and flexibly adapted to local conditions and needs.
- The mioty version only supports uplink and does not receive downlink commands (upcoming feature).

ORDERING INFORMATION

Version	Type	Part No.
Hyperion Energy Meter with direct measurement up to 100A	LoRaWAN, internal antenna	S-HYPE-LOEU-D-INT
Hyperion Energy Meter with direct measurement up to 100A	LoRaWAN, external antenna	S-HYPE-LOEU-D-EXT
Hyperion Energy Meter with direct measurement up to 100A	mioty, internal antenna	S-HYPE-MIOTY-D-INT
Hyperion Energy Meter with direct measurement up to 100A	mioty, external antenna	S-HYPE-MIOTY-D-EXT
Hyperion Energy Meter with current transformer connection	LoRaWAN, internal antenna	S-HYPE-LOEU-W-INT
Hyperion Energy Meter with current transformer connection	LoRaWAN, external antenna	S-HYPE-LOEU-W-EXT
Hyperion Energy Meter with current transformer connection	mioty, internal antenna	S-HYPE-MIOTY-W-INT
Hyperion Energy Meter with current transformer connection	mioty, external antenna	S-HYPE-MIOTY-W-EXT



3/5



PRODUCT INFORMATION

Feature	Details
Active Energy	Class B (1%) according to EN50470-3 for direct connection meters, Class B (1%) according to EN50470-3 for transformer meters
Reactive Energy	Class 2 (2%) according to EN62053
Operating Voltage	L-L: 400VAC +/- 20%, L-N: 230VAC +/- 20%
Maximum Current	Direct connection meters: 100A, Transformer meters: 6A
Starting Current	Direct connection meters: 20mA at power factor 1, Transformer meters: 1mA at power factor 1
Network Frequency	Nominal frequency: 50Hz, 60Hz available on request, Frequency limits: 40 - 65 Hz
Power Consumption	Voltage path: 0.8 VA / 0.8W per phase, Current path (transformer meters): 0.075 VA per phase
Current and Voltage Connections	Direct connection meters: 1.5-35 mm², torque: 2 Nm, max. 3 Nm, Transformer meters: 1-6 mm², torque: 0.8 Nm, max. 1 Nm
Tariff Switching	2 or 4 tariffs (configurable on the meter), tariff switching: 230VAC
Transformer Ratios	Transformer ratio on Hyperion 3/5 is configurable multiple times, Transformer /5 A: from 5/5 A to 20,000/5 A in 5 A steps, Transformer /1 A: from 1/1 A to 4,000/1 A in 1 A steps
Display (LCD)	Dynamic 8-digit display with up to three decimal places, Graphic LC display with backlight (LxH) 38x28 mm
S0 Pulse Output	Standard EN62053-31, Potential-free output, Pulse rate per kWh/kVarh: 1, 10, 100, 1,000, or 10,000 pulses, Pulse length: 2ms, 10ms, 30ms, 40ms, or 120ms, Pulse rate and length configurable on the meter
Optional Data Interfaces	LoRa or mioty (optional SMA socket for external antenna)
Optical (IR) D0 Interface	EN 62056-21

Data Retention	EEPROM without power, minimum 10 years
Optional	IOTA Tangle (Blockchain Technology)
Clock	Buffered clock (up to 18 days)
Time Synchronization	Possible via interfaces
Mounting / Installation	Position independent, On 35 mm DIN rail or with front panel frame
Weight	Approximately 350g
Housing Material	Polycarbonate, halogen-free, recyclable
Housing Protection Class	IP51 for the housing, IP20 for terminal protection
Protection Class	II
Dimensions (LxWxD)	90x91x72 mm, 5 modules wide
Approvals	CE and MID B + D, Suitable for energy management according to ISO 50001
Environmental Conditions	Mechanical: M2, Electromagnetic: E2, Operating temperature: -25°C to +70°C, Storage temperature: -30°C to +70°C, Relative humidity: Average 75%, temporarily 90%, non-condensing
Safety Note	The energy meters must only be installed by a qualified electrician. Current transformers must not be operated open, as high voltages can occur. These can cause personal injury and/or property damage.
Device Selection	To ensure easy maintenance or replacement (e.g., due to verification validity) of the Hyperion energy meter, it is recommended for applications where a simple and cost-effective shutdown of the system is not possible.
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