Data Sheet for the Hyperion

Are you looking for a data sheet for the Hyperion?

Here you can find the data sheet for the Hyperion

Hyperion IoT mioty und LoRaWAN Energiezähler

- The Hyperion is a multifunctional bidirectional energy meter that is just 90 mm (5HP) slim and offers outstanding flexibility and accuracy.
- Via direct or current transformer connection, it helps to analyze and monitor a wide range of parameters in the most demanding applications in residential, commercial or indu environments.

- It combines the functions of an energy meter and a data logger and provides additional measured values such as current, voltage, power, etc.
- Data transmission via mioty or LoRaWAN (depending on the mioty **or** LoRaWAN version)

Characteristics

- Bidirectional meter (supply and consumption)
- MID B + D approval for billing purposes
- Environmental conditions Mechanical: M2
- 1 and 5 A current transformer connection for up to 20,000/5 or 4,000/1 A, the transformer ratio can be configured several times via sealable buttons
- Direct connection up to 100A
- 2 or 4 tariffs (configurable on the meter)
- High load opto power MOSFET
- S0 pulse output, 5-60V AC and V DC
- Graphic LC display (38x28 mm), with backlighting
- Dynamic 8-digit display with up to three decimal places
- Radio interface mioty or LoRaWAN

MID approval for billing purposes

The Hyperion has been tested and approved in accordance with MID module B + D (Measurement Instrument Directive 2004/22/EC of the European Commission).

It therefore has the necessary declaration of conformity. The additional certification according to Module D, QM system for production and final inspection, means that you can use all Hyperion energy meters ex works for billing purposes within the European Union and the European Economic Area (EEA).

Operation on the display

A 38x28 mm graphic LC display with backlighting makes it possible to read measured values and settings even in difficult lighting conditions.

The desired menu language can be selected via buttons. The clear and intuitive operation makes commissioning and daily work with the energy meters easier

Accuracy for photovoltaic systems

The Hyperion has been specially tested for use with inverters in photovoltaic systems. The additional test guarantees that the Hyperion energy meters deliver an exact measurement result in the unregulated frequency range between 2 kHz and 150 kHz.

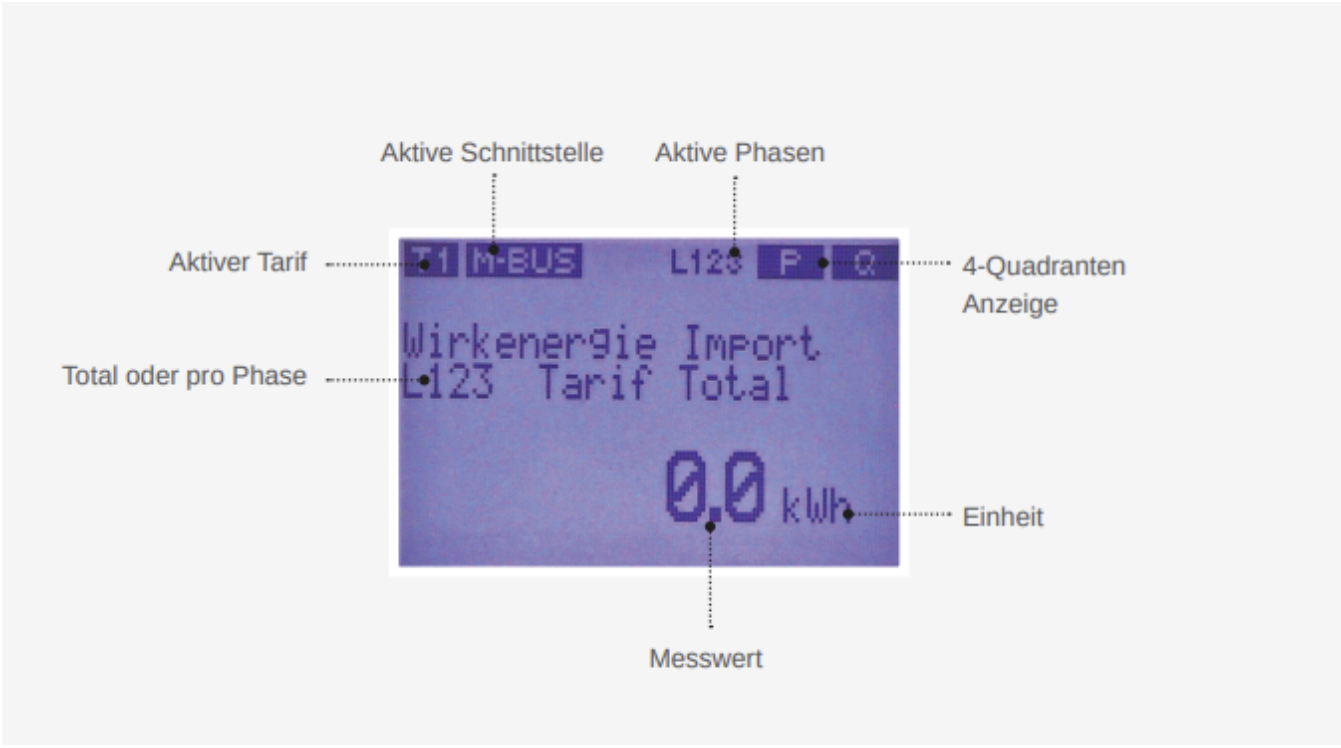
Renowned trade journals have reported on this challenge, stating that measurement errors of up to 18% can occur in such systems.

Current transformer

The current transformer ratio of the Hyperion with MID approval can be configured several times from 5/5 to 20,000/5 A or 1/1 to 4,000/1 A using buttons.
The service button can be sealed and prevents tampering; configuration changes are also logged and archived.

Highlights

- MID B+D approval
- Bidirectional meter
- Proof of frequency-independent measuring mechanism in the range 2 kHz to 150 kHz in accordance with
- Integrated tamper detection



	Total / sum 3-phases	Per phase	Per tariff
Active energy consumption (kWh)	✓	✓	✓
Active energy supply (kWh)	✓	✓	✓
Reactive energy consumption (kvarh)	✓	✓	✓
Reactive energy supply (kvarh)	✓	✓	✓
Active power (kW)	✓	✓	-
Reactive power (kvar)	✓	✓	-
Apparent power (kVA)	✓	✓	-
Current (A)	✓	✓	-
Voltage (V) L-N	-	✓	-
Voltage (V) L-L	-	✓	-
Power factor (Cos Phi)	-	✓	-
Frequency (Hz)	✓	-	-
Number of power failures	✓	-	-
Load profile storage	-	-	✓
Logbook (only for T1/T2)	✓	-	-

Measured values on the display

The table of available measured values is not exhaustive. Additional measured values are constantly being integrated and made available via the graphic display and readout interface.

Features

- Logbook for calibration-relevant events and configuration changes
- Change of time or date
- Change of the current transformer ratio
- Changing the pulse rate and pulse duration
- Change of the voltage transformer ratio
- Buffered internal clock

The internal clock is buffered in the event of a power failure. The load profile is saved every 15 minutes. The memory can be read out via the interface or viewed on the display.

LoRaWAN and mioty radio station

LoRaWAN or mioty radio technology enables communication between measuring devices, sensors and actuators via freely usable radio frequencies. mioty and LoRa are designed to bridge long distances while complying with the latest security technologies and have been specially developed for the Internet of Things (IoT).

The Hyperion has an optional integrated LoRa wireless interface. It is designed as a class C device and is therefore able to receive LoRa commands at any time. The measured values to be transmitted are freely configurable and can be flexibly adapted to local conditions and requirements.

The mioty version is only capable of uplink, i.e. it cannot receive downlinks (upcoming)

Operation of LoRa and mioty networks

The Hyperion energy meter can be

- into existing LoRa or mioty networks
- in self-operated LoRa or mioty networks
- in mioty networks provided by DIEHL

can be integrated. This also enables the cost-effective operation of your own LoRa networks.

Features:

- Internal built-in antenna, optimized for the 863-870 MHz frequency band
- Model with optional SMA socket for connecting an external antenna
- Both antennas have an attenuation of 14dBm
- Class C device, can also be operated as a class A device
- Automatic time synchronization through the LoRa network
- Supports OTAA and ABP as join method
- Interval and content of the uplink messages can be flexibly adapted
- Decoders and encoders are already stored in The Things Network
- The decoders and encoders are freely available for integration into other systems
- LoRa and mioty status display on the LC display

Ordering information (TBD)

Version	Typ	Art.Nr
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

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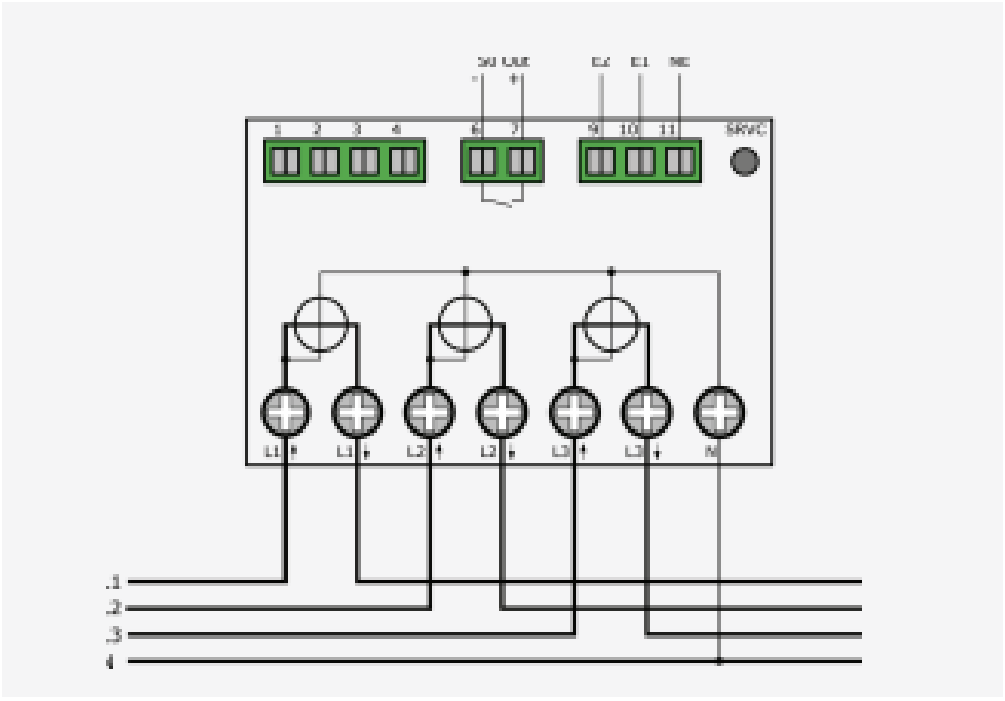

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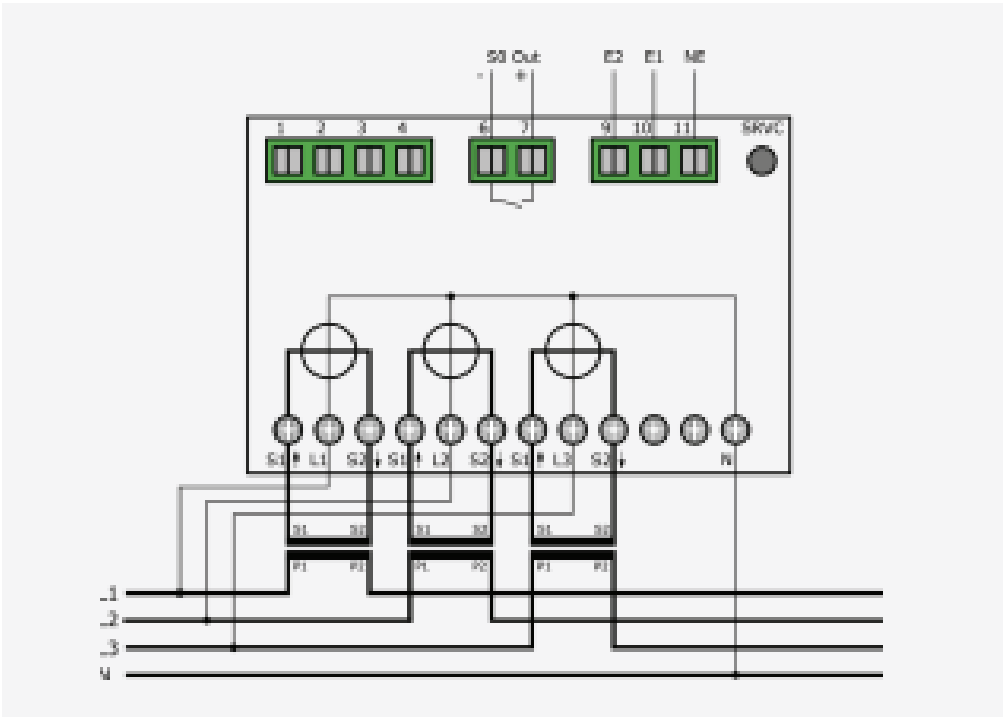

Product information

Active energy	Class B (1%) according to EN50470-3 Direct connection meters Class B (1%) according to EN50470-3 Transformer meters
Reactive energy	Class 2 (2%) according to EN62053
Operating voltage	L-L: 400VAC +/- 20% L-N: 230VAC +/- 20%
Maximum current	Direct measuring meters: 100A Transformer meter: 6A

Starting current	Direct-measuring meters 20mA with power factor 1 Transformer meters 1 mA with power factor 1
Mains frequency	Nominal frequency: 50Hz, 60Hz on request Cut-off frequencies: 40 - 65 Hz
Internal consumption	Voltage path 0.8 VA / 0.8W per phase Current path transformer meter 0.075 VA per phase
Current and voltage connection	Direct measuring 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
Current transformer ratios	With the Hyperion 3/5, the current transformer ratio is can be configured several times. Current transformer /5 A 5/5 A to 20,000/5 A in 5 A steps Current transformer /1 A 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
So 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 adjustable on the meter

Product information

Optional data interfaces	LoRa or mioty (optional SMA socket for external antenna)
Optical (IR) Do interface	EN 62056-21
Data preservation	Voltageless in EEPROM, minimum 10 years Optional: IOTA Tangle (blockchain technology)
Clock	Buffered clock (up to 18 days) Time synchronization via interfaces possible
Assembly / Installation	Position-independent On 35 mm DIN rail or with front mounting frame

Housing	Weight approx. 350g Housing material polycarbonate, halogen-free, recyclable Enclosure protection class IP51, terminal protection class IP20 Protection class II Dimensions (LxWxD) 90x91x72 mm 5 module wide
Approvals	CE and MID B + D PTB-A 20.1 PTB-A 50.7 Suitable for energy management in accordance with ISO 50001
Environmental conditions	Mechanical: M2 Electromagnetic: E2 Operating temperature: -25 °C to + 70 °C Storage temperature: -30 °C to + 70 °C Relative humidity: Annual average 75%, short-term 90%, non-condensing
Safety note	The electricity meters may only be installed by a qualified electrician. Current transformers must not be operated open, as high voltages can occur. This can lead to personal injury and/or damage to property.
Device selection	In order to ensure the simplest possible maintenance or replacement (e.g. calibration validity) of the Hyperion energy meter, in applications where a simple and cost-effective shutdown of the system is not possible.

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