

EcoPhi

EMPOWERING CLEAN TECHNOLOGIES



Products and Services

ecophi.io



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Overview EcoPhi Boxes

	Basic Box Up to 50 kWp	Advanced Box Up to 500 kWp	Pro Box No limit
Interfaces and connections			
RS232 interface	1	1	1
RS485 interface	1	1	2
Ethernet interface	no	1	1
No. of inverter, controller, genset connections	10	32	128
No. of different inverter, controller, genset types	1	2	3
Analog sensors	-	3	4
Digital/Pulse sensors	1	3	8
Sensor extension box connection	-	yes	yes
Bluetooth connection	-	-	yes
Data transfer			
Wifi	yes	yes	yes
GSM	2 - 4G	2 - 4G	2 - 4G
LAN	-	yes	yes
Data transfer after connection losses	yes	yes	yes
Control und logic			
On-site logic circuits	-	yes	yes
Remote control of inverters	yes	yes	yes
No. of relays	1	3	6
Remote control of relays	yes	yes	yes
Edge calculations	-	yes	yes
Data storage			
SD card	-	yes	yes
Local data storage	yes	yes	yes
Power supply			
External power supply	20 - 26 V DC	12 - 30 V DC	12 - 30 V DC
Power supply directly from inverter connection	yes	yes	-
Backup power	-	2 Ah	2 Ah
Box setup			
Setup software	yes	yes	yes
Change EcoPhi Box settings from platform	-	yes	yes
Change EcoPhi Box setting via SMS	yes	yes	yes
More			
On-site alarms	-	yes	yes
SMS alarms	-	yes	yes
On-site display	-	-	yes
Camera connection	-	-	yes
Over-the-air updates	-	yes	yes

Basic Box

For monitoring up to 50 kWp

The inverter as the central unit of the solar system already provides important data about your plant. With the Basic Box, you can easily transfer and visualize this data.

You can connect one digital/ pulse sensor to obtain additional information. This way you can efficiently monitor your solar or water system remotely.

The Basic Box is quickly installed and is able to read out a wide range of solar and pump inverters as well as gen sets.



Benefits



- ✓ Simple and complex logic circuits on site
- ✓ Local storage and smart data transfer after blackouts
- ✓ 2G, 3G, and 4G transmission
- ✓ Easy installation
- ✓ Up to three sensors and different inverters
- ✓ Remote access possible

Ideal for

- 🔗 Basic monitoring needs with the essential system data and additional sensor
- 🔗 Multiple distributed systems, Hybrid systems
- 🔗 Systems requiring low data resolution.



Basic Box

Technical Specifications

Interfaces and connections

RS232 interface	1
RS485 interface	1
No. of inverter, controller, genset connections	10
No. of different inverter, controller, genset types	1
Sensor connections	1
Analog sensors	With optional extension box
Digital sensors	✓
Pulse sensors	✓

Data transfer

GSM	✓ (2 - 4G)
Data transfer after connection losses	✓

Control and logic

Remote control of inverters	✓
No. of relays	1
Remote control of relays	✓

Data storage

Local data storage	✓ 8 Days (4MB)
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Power supply

External power supply	10 - 28 V DC
Power supply directly from inverter connection	✓

Box setup

Setup software	✓
Change EcoPhi Box setting via SMS	✓

More

Dimensions (Height, width, depth)	135 x 120 x 35 mm, 300g
Weight	300g

Advanced Box

For monitoring up to 500 kWp

The inverter as the central unit of the solar system already provides important data about your plant.

The Advanced Box is not just an accessory—it's a central command unit for your solar or water supply system, enabling device control remotely

With its high-resolution data capabilities and connection to up to three additional sensors, it offers an unparalleled overview of your system's performance, ensuring no detail is missed.



Benefits



- ✓ Simple and complex logic circuits on site
- ✓ Remote and On-Site control
- ✓ Local storage and smart data transfer after blackouts
- ✓ Zero feed-in regulation
- ✓ Easy to install, Up and running in 3 minutes
- ✓ Individual functions and logics

Ideal for

- ☉ Solar systems with advanced requirements up to 500kW. Eg. C&I systems or minigrids.
- ☉ Multiple distributed systems, Hybrid systems
- ☉ On-site and remote control functions for devices such as batteries, gensets, etc.



Technical Specifications

Interfaces and connections

RS232 interface	1
RS485 interface	1
No. of inverter, controller, genset connections	32
No. of different inverter, controller, genset types	2
Sensor connections	3
Analog sensors	✓
Digital sensors	✓
Pulse sensors	✓

Data transfer

WiFi	✓ 2.4 GHz Antenna
GSM	✓ (2G, 3G,4G) 5dBi
LAN	✓
Data transfer after connection losses	✓

Control and logic

On-site logic circuits	✓
Remote control of inverters	✓
No. of relays	3
Remote control of relays	✓
Edge calculations	✓

Data storage

SD card	✓ up to 32 GB
Local data storage	✓ 8 Days (4MB)

Power supply

External power supply	12 - 30V DC, 100-250V AC
Power supply directly from inverter connection	✓
Backup power	2 Ah

Box setup

Setup software	✓
Change EcoPhi Box setting via Platform	✓
Change EcoPhi Box setting via SMS	✓

Advanced Box

Technical Specifications

More

On-site Alarms	✓
SMS Alarms	✓
Dimensions (Height, width, depth)	200 x 300 x 130 mm
Weight	1.95 Kg

Pro Box

For monitoring Large and Complex systems

With our easy to install Audit Box you can simply create your individual load profile.

The box tracks your power consumption and sends the data to the EcoPhi cloud.

There, the data is processed and visualized.

Thus, exact load profiles can be created for optimal planning based on the data.



Benefits



- ✓ Easy to install box
- ✓ Wide range of sensors
- ✓ Complex on site control
- ✓ Remote and On-Site control
- ✓ Local data storage
- ✓ Individual functions and logics

Ideal for

- ☉ Solar systems. The pro Box is used for solar system above 500kW or when several components and sensors need to be integrated.
- ☉ Large scale water systems. Complex system with many components, multiple distributed systems.
- ☉ On-site and remote control functions for devices such as batteries, gensets, etc.



Technical Specifications

Interfaces and connections

RS232 interface	1
RS485 interface	2
Ethernet interface	1
No. of inverter, controller, genset connections	128
No. of different inverter, controller, genset types	3
Sensor connections	✓
Analog sensors	4
Digital sensors	8 (Total Digital + Pulse)
Pulse sensors	8 (Total Digital + Pulse)
Sensor extension box connection	✓
Bluetooth connection	✓

Data transfer

WiFi	✓ 2.4 GHz Antenna
GSM	✓ (2G, 3G,4G) 5dBi
LAN	✓
Data transfer after connection losses	✓

Control and logic

On-site logic circuits	✓
Remote control of inverters	✓
No. of relays	6
Remote control of relays	✓
Edge calculations	✓

Data storage

SD card	✓ up to 32 GB
Local data storage	✓ 8 Days (4MB)

Power supply

External power supply	12 - 30V DC, 100-250V AC
Power supply directly from inverter connection	✓
Backup power	2 Ah

Box setup

Setup software	✓
Change EcoPhi Box setting via Platform	✓
Change EcoPhi Box setting via SMS	✓

Technical Specifications

More

On-site Alarms	✓
SMS Alarms	✓
On-site Display	✓
Camera connection	✓
Dimensions (Height, width, depth)	250 x 350 x 150 mm
Weight	2.1 Kg

Power Tracker

For monitoring Large and Complex systems

With our easy to install Power Tracker Audit Box you can simply create your individual load profile.

The box tracks your power consumption and sends the data to the EcoPhi cloud. There, the data is processed and visualized.

Thus, exact load profiles can be created for optimal planning based on the data.



Benefits



- ✓ Plug-and-play measurement tool
- ✓ All the information you need for system sizing
- ✓ Real-time online visualization and data export
- ✓ Flexible measuring ranges
- ✓ Data transmission even in remote areas
- ✓ Optional data analysis and sizing

Ideal for

- Determination of the generator/ grid load.
- Tracking overall energy consumption.
- Creation of load profiles to optimize consumption or to design systems.
- Analysis and adjustments of usage behavior.



Technical Specifications

Interfaces and connections

RS232 interface	1
RS485 interface	2
Ethernet interface	1
No. of inverter, controller, genset connections	128
No. of different inverter, controller, genset types	3
Sensor connections	✓
Analog sensors	4
Digital sensors	8 (Total Digital + Pulse)
Pulse sensors	8 (Total Digital + Pulse)
Sensor extension box connection	✓
Bluetooth connection	✓

Data transfer

WiFi	✓ 2.4 GHz Antenna
GSM	✓ (2G, 3G,4G) 5dBi
LAN	✓
Data transfer after connection losses	✓

Control and logic

On-site logic circuits	✓
Remote control of inverters	✓
No. of relays	6
Remote control of relays	✓
Edge calculations	✓

Data storage

SD card	✓ up to 32 GB
Local data storage	✓ 8 Days (4MB)

Power supply

External power supply	12 - 30V DC, 100-250V AC
Power supply directly from inverter connection	✓
Backup power	2 Ah

Box setup

Setup software	✓
Change EcoPhi Box setting via Platform	✓
Change EcoPhi Box setting via SMS	✓

AC Current Clamp



- ④ Split core current sensor enables tracking of current flow of systems
- ④ AC Current Clamps can simply be clipped around wires and cables
- ④ Simple to use and assembly can be carried out by non technicians

Benefits

- ✓ Split core current sensor
- ✓ Easy installation
- ✓ Low power consumption <35 mA
- ✓ Good anti-interference characteristics



Ideal for

- ④ Optimization of consumption
- ④ Determination of loads
- ④ Billing calculation
- ④ Analysis of usage behavior

Technical Specifications

Measurement range	0 - 300A	0 - 500A	0 - 1500A	0 - 2500A	0 - 5000A
Dimensions (Height, width, depth) mm					
Clamp	185 x 144 x 48	20 x 80 x 30	140 x 180 x 30	170 x 240 x 30	170 x 240 x 30
Inside	25mm diam.	35mm diam.	80 / 120mm	80 / 165mm	80 / 165mm
Weight	0.3 kg	0.4 kg	1.16 kg	3 kg	3 kg
Operating temperature	- 15°C to +60°C				
Outdoor / indoor operation	indoor				
Accuracy	0.5%				
Supply voltage	-				
Sensor type	Current transformer				

AC Current Sensor



- ④ Split core current sensor enables tracking of current flow of systems
- ④ AC Current Clamps can simply be clipped around wires and cables and is able to perform without being directly connected to the system power circuit
- ④ Simple to use and assembly can be carried out by non technicians

Benefits

- ✓ Split core current sensor
- ✓ Easy installation
- ✓ Quick response time <200 ms
- ✓ Low power consumption <35 mA
- ✓ Good anti-interference characteristics



Ideal for

- ④ Optimization of consumption
- ④ Determination of loads
- ④ Billing calculation
- ④ Analysis of usage behavior

Technical Specifications

Dimensions (Height, width, depth) mm	30 x 30 x 55 mm
Weight	75 g
Operating temperature	- 10°C to +70°C
Outdoor / indoor operation	indoor
Accuracy	0.5%
Supply voltage	+ 12V DC
Measured value(s)	Ampere (A)
Measuring range	0-100A
Sensor type	Current transformer

Camera 2 MP



- Once installed, the camera can transmit images of the system you want to check on the cloud
- Can be connected to the EcoPhi Pro Box
- Simple to use and assembly can be carried out by non technicians

Benefits

- ✓ High precision and clear pictures
- ✓ Takes color and B/W pictures in 1080p
- ✓ Quick plug & play installation



Ideal for

- Indoor/outdoor surveillance of your system

Technical Specifications

Dimensions (Height, width, depth) mm	50 x 40 x 42 mm
Weight	170g
Operating temperature	- 10°C to +70°C
Outdoor / indoor operation	outdoor
Supply voltage	+ 5V DC
Sensor type	Camera

DC Voltage Sensor



- ④ Detects the presence of voltage, offering crucial insights into the readiness and functionality of technical subsystems.
- ④ Rapid Fault Localization: Strategically placed, this sensor significantly speeds up fault detection and diagnosis, ensuring quicker resolutions.
- ④ Records electrical voltage curves, not only revealing subsystem performance but also serving as an early warning system for potential issues.

Benefits

- ✓ Enables early and easier error detection
- ✓ System performance information availability
- ✓ Use intensity information availability



Ideal for

- ④ Battery systems
- ④ Photovoltaic applications of loads

Technical Specifications

Dimensions (Height, width, depth) mm	78 x 78 x 26 mm
Weight	62 g
Operating temperature	-10°C to +70°C
Outdoor / indoor operation	Indoor
Accuracy	0.5 %
Supply voltage	+24V DC
Measured value(s)	Voltage(V)
Measuring range	0-500V
Sensor type	Analog (4-20mA)

Door Sensor



- ④ **Critical System Insights:** Understand the status of doors and casings – open or closed – to gain valuable insights into system operations.
- ④ **Accurate Monitoring:** This sensor reliably detects and reports the open or closed state of doors, offering real-time information.

Benefits



- ✓ **Operational Insights:** understand door usage patterns and operational timings, aiding in system optimization.
- ✓ **Enhanced Security:** Provides alerts for doors or windows left open accidentally
- ✓ **Effortless Installation:** Quick, plug & play setup



Ideal for

- ④ **Frequently used doors, windows, and control cabinets, especially in security-sensitive areas.**
- ④ **Air conditioning systems for automatic activation or deactivation, based on door status.**

Technical Specifications

Dimensions (Height, width, depth) mm	7 x 20 x 7 mm
Weight	19 g
Operating temperature	- 50 C to +90 C
Outdoor / indoor operation	Indoor/ outdoor
Supply voltage	1 - 24V
Measured value(s)	Open / Closed
Measuring range	0-1
Sensor type	Digital

Energy Meter SPM91 - 1 Phase



- 🔍 **In-Depth Energy Insights:** Delivers essential data on various system components.

From assessing your refrigerator's energy consumption to monitoring the operational schedule of your water pump, this device offers comprehensive solutions for energy-related questions.

Benefits

- ✔ **System Optimization:** Identifies weak points in the system, offering significant benefits to the customer.
- ✔ **Strategic Prioritization:** Facilitates the identification and addressing of critical energy usage areas, streamlining system efficiency.
- ✔ **Battery Efficiency:** Aids in enhancing the performance and lifespan of batteries by optimizing their usage and energy allocation.



Ideal for

- 🔍 Perfectly suited for off-grid, solar, and research projects.
- 🔍 Targeted energy management. Efficiently tracks and records the energy demand of individual customers

Technical Specifications

Dimensions (Height, width, depth) mm		100 x 36 x 65 mm				
Weight		355g				
Operating temperature		- 20 C to +55 C				
Outdoor / indoor operation		Indoor				
Accuracy		kWh Class 1.0				
Supply voltage		220V/3x5 (63) A				
Measuring value	Voltage	Current	Power	Power Factor	Frequency	Energy
Measured range	176 - 276V AC	63A	0 - 14.4kWh	-1.00 - +1.00	45 - 65Hz	0 - 9999999.9kWh
Sensor type		Modbus				

Energy Meter SPM93 - 3 Phase



- 🔍 **In-Depth Energy Insights:** Delivers essential data on various system components.

From assessing your refrigerator's energy consumption to monitoring the operational schedule of your water pump, this device offers comprehensive solutions for energy-related questions.

- 🔍 **For 3 phase applications**

Benefits

- ✔️ **System Optimization:** Identifies weak points in the system, offering significant benefits to the customer.
- ✔️ **Strategic Prioritization:** Facilitates the identification and addressing of critical energy usage areas, streamlining system efficiency.
- ✔️ **Battery Efficiency:** Aids in enhancing the performance and lifespan of batteries by optimizing their usage and energy allocation.



Ideal for

- 🔍 **C and I projects**
- 🔍 **Perfectly suited for off-grid, solar, and research projects.**
- 🔍 **Targeted energy management. Efficiently tracks and records the energy demand of individual customers**

Technical Specifications

Dimensions (Height, width, depth) mm	100 x 72 x 65 mm					
Weight	355g					
Operating temperature	- 20 C to +55 C					
Outdoor / indoor operation	Indoor					
Supply voltage	3 x 220V/3x5 (6) A					
Measuring value	Voltage	Current	Power	Power Factor	Frequency	Energy
Measured range	176 - 276V AC	63A	0 - 14.4kWh	-1.00 - +1.00	45 - 65Hz	0 - 9999999.9kWh
Accuracy	0.5%	0.5%	0.5%	0.5%	0.01	kWh Class 0.5s for 5(6)A kWh Class 1 for 5(63)A
Sensor type	Modbus					

Float Switch



- Often, it needs to be checked if a reservoir is full or empty
- The Float Switch automatically detects this issue and enables automated operations
- Gives a signal in case of wrong water levels

Benefits



- ✓ Easy to install in a reservoir and transmits start/stop signals automatically
- ✓ Protects water reservoirs from overflowing
- ✓ Enables automatic release of water flow

Ideal for

- Automatic controls of pump or load relays
- In water basins or other water reservoirs

Technical Specifications

Dimensions (Height, width, depth) mm	100 x 75 x 45 mm
Weight	650g
Operating temperature	70 C max.
Outdoor / indoor operation	Outdoor
Accuracy	5cm
Supply voltage	1 - 24V
Measured value(s)	On / Off
Measuring range	0-1
Sensor type	Digital

Irradiation Indicator



- ④ The Irradiation Indicator detects radiation in connection with the UVR controllers
- ④ The sensor facilitates switching on the system effectively especially in multi circuit solar plants with priority loads
- ④ Due to its accuracy, it can also be used for pure measuring purposes

Benefits



- ✓ Detection of efficiency changes
- ✓ Simple structure and easy to use
- ✓ Suitable for all kinds of harsh environments



Ideal for

- ④ Photovoltaic systems
- ④ Projects with dependence on weather variables

Technical Specifications

Dimensions (Height, width, depth) mm	61 x 44 x 15 mm
Outdoor / indoor operation	Outdoor
Accuracy	5 % +-50 Watt
Supply voltage	+ 12 V DC
Measured value(s)	Watt/m ²
Measuring range	1400 Watt/m ²
Sensor type	Analog (0 - 10V)



- ④ The solar radiation sensor is mainly used to measure solar short wave radiation in the wavelength range of 400 - 1100nm
- ④ Simple and cost effective, can be used all day and all night, can be reversed or tilted
- ④ Widely used in plant growth, heat conversion box and solar energy monitoring of soil moisture evapotranspiration loss

Benefits

- ✔ Comparability of different systems at the same sun position
- ✔ Comparability of own system with previous year's values
- ✔ Detection of efficiency changes
- ✔ Simple structure and easy to use



Ideal for

- ④ Photovoltaic systems
- ④ Projects with dependence on weather variables

Technical Specifications

Dimensions (Height, width, depth) mm	39 x 155 x 85 mm
Weight	~ 400g
Operating temperature	- 35 up to +80 C
Outdoor / indoor operation	Outdoor
Accuracy	+ 5 W/m ²
Supply voltage	12 - 28 V DC
Measured value(s)	Watt/m ²
Measuring range	0 - 1.500 W/m ²
Sensor type	Analog (0 - 10V)



- ④ Almost every water system has a water storage and it can be crucial to know the water level of the storage
- ④ With a Level Sensor, fill levels can be precisely recorded
- ④ Information from the sensor allows for early reactions to problems and the behaviour of the system is more easily understood

Benefits

- ✓ Detection of bottlenecks
- ✓ Early warning of groundwater drawdown
- ✓ Optimization of own consumption
- ✓ Information about existing reserves and understanding system characteristics
Level Sensor



Ideal for

- ④ Monitoring of groundwater level
- ④ Monitoring of filling levels of individual water reservoirs

Technical Specifications

Dimensions (diameter,length) mm	18 x 135mm
Weight	500g
Operating temperature	-40 up to +80 C
Outdoor / indoor operation	Outdoor/indoor
Accuracy	0.1% FS
Supply voltage	12 - 26 V DC
Measured value(s)	m
Measuring range	0 -500m (in different stages)
Sensor type	Analog (4 - 20mA)



- Regulates system devices in times of over- and undersupply of electricity to the system.
- Load Relays allow users to turn off devices remotely

Benefits

- Optimized use of own equipment
- Possibility to switch off devices automatically in case of malfunction
- Possibility to distinguish between „important“ and „less important“ electrical consumers



Ideal for

- Remote disconnection of circuits that are not needed
- Automatic control of individual devices
- Consumption optimization and intelligent load management

Technical Specifications

Dimensions (Height, width, depth) mm	58,5 x 44,5 x 29 mm		
Weight	44g		
Operating temperature	- 30 C to +75 C		
Outdoor / indoor operation	Indoor		
Supply voltage	2 - 32V		
Measured value(s)	10 - 120A	5 - 220VDC	24 - 480VAC
Measuring range	0 - 1.500 W/m ²		
Sensor type	Digital Output		

Pressure Sensor



- 💧 In water pipes, water is transported from one point to another and the pressure depends on the speed and the head of the water
- 💧 Pipe leakages or clogged pipes have influence on the pressure
- 💧 This is recorded by the Pressure Sensor

Benefits



- ✔ Early detection of holes or blockages in the pipes
- ✔ Safety element for emergency shutdown
- ✔ System performance understanding

Ideal for

- 💧 Monitoring of long distribution networks
- 💧 Localization of leakages/clogs
- 💧 Safety shutdown in case of over pressure

Technical Specifications

Dimensions (diameter,length) mm	25 x 85 mm, 1/4 inch thread
Weight	90g
Operating temperature	- 20 C to + 125 C
Outdoor / indoor operation	Indoor/outdoor
Accuracy	+ - 0.02bar
Supply voltage	4 - 20mA
Measured value(s)	bar
Measuring range	0 - 40bar
Sensor type	General: Analog (4 - 20mA) High temperature: Analog (0 - 10V)

Rain Gauge



- ④ The use of water supply systems is directly related to rainfall
- ④ On rainy days, the system is less needed than on days with little rain
- ④ Rain Water Meter sensors detect this important variable
- ④ We can see when additional irrigation is necessary and when irrigation leads to wastage of water

Benefits



- ✓ Minimization of water wastage
- ✓ Better understanding of user behaviour and the influence on rain
- ✓ Better understanding of cause and effect principles in water projects



Ideal for

- ④ Automatic start/stop of watering depending on the rain yield
- ④ Information about local weather

Technical Specifications

Dimensions (Height, width, depth) mm	80 x 190 x 14 mm
Weight	370g
Operating temperature	-20 C to + 90 C
Outdoor / indoor operation	Outdoor
Accuracy	0.3mm
Supply voltage	1 - 24 V
Measured value(s)	Precipitation (mm)
Measuring range	-
Sensor type	Digital

String Monitoring Unit



- ☑ Photovoltaic systems are divided into strings
- ☑ If one string fails, this can lead to lower performance for months or even years if it goes unnoticed
- ☑ The String Monitoring Unit allows to monitor individual PV strings

Benefits



- ☑ Information about the performance of the different strings
- ☑ Tracking of power losses

Ideal for

- ☑ Photovoltaic systems with multiple strings
- ☑ Often used in combination with an irradiation sensor

Technical Specifications

Dimensions (Height, width, depth) mm	26 x 185 x 95 mm	
Weight	1480g	
Operating temperature	- 20C up to +80 C	
Outdoor / indoor operation	Indoor	
Accuracy	0.3%	
Supply voltage	12 - 24V DC	
Measured value(s)	Current	Voltage
Measuring range	0 - 200A	0-1500V
Sensor type	Modbus	



- ④ Temperature and humidity have an influence on almost every system and can reduce the performance of applications
- ④ User behaviour changes depending on temperature and humidity as for example air conditioners are switched on or water demand increases
- ④ This sensor detects exactly these variables

Benefits

- ✓ Protection of technical devices
- ✓ Information about the influencing variables temperature and humidity
- ✓ Observation of user behaviour as a result of these influencing variables



Ideal for

- ④ Collection of room temperature and humidity
- ④ Monitoring of Cold rooms or technical rooms
- ④ Automated control of air condition

Technical Specifications

Dimensions (diameter,length) mm	18 x 150 mm	
Weight	136g	
Operating temperature	- 40 C to +60 C	
Outdoor / indoor operation	Indoor	
Supply voltage	9 - 24 V DC	
Measured value(s)	Temperature C	Humidity RH
Measuring range	- 40 C to +60 C	0 -100% RH
Accuracy	< +/-0.3 °C(at 25°C)	< +/- 3%RH (at 25°C, 20% - 80% RH)
Sensor type	Modbus	



- ④ Temperature and humidity have an influence on almost every system and can reduce the performance of applications
- ④ User behaviour changes depending on temperature and humidity as for example air conditioners are switched on or water demand increases
- ④ This sensor detects exactly these variables

Benefits

- ✔ Protection of technical devices
- ✔ Information about the influencing variables temperature and humidity
- ✔ Observation of user behaviour as a result of these influencing variables



Ideal for

- ④ Collection of room temperature and humidity
- ④ Monitoring of Cold rooms or technical rooms
- ④ Automated control of air condition

Technical Specifications

Dimensions (diameter,length) mm	140 x 220 mm	
Weight	700g	
Operating temperature	Operating temperature - 40 C to +100 C	
Outdoor / indoor operation	Outdoor	
Supply voltage	12 - 24 V DC	
Measured value(s)	Temperature C	Humidity RH
Measuring range	- 40 C to +100 C	0 -100% RH
Accuracy	+0.3 °C	+/- 3% RH
Sensor type	Modbus	

Temperature Sensor



- Heat is generated in almost all electrical systems, an undetected excess can have fatal consequences for the performance of the system
- The Temperature Sensor measures temperature also in liquids or parts that are difficult to access
- Comes in different sizes and threads for flexible usage

Benefits



- Protection of systems against overheating
- Early detection of problems within the system
- Detection of behavior and performance dependencies due to temperature differences

Ideal for

- Temperature measurement of technical devices
- Temperature measurements of liquid and places that are difficult to access

Technical Specifications

Dimensions (Height, width, depth) mm	Depending on use case	
Weight	Depending on use case	
Operating temperature	Depending on use case	
Outdoor / indoor operation	Indoor/Outdoor (water/ steam/ air)	
Accuracy	0.5% FS	
Supply voltage	15 - 30VDC	
Measured value(s)	Temperature C	
Measuring range	- 50C to +400 C	
Sensor type	Regular: Analog (4 - 20mA)	High temperature: Analog (0 - 10V)

Ultrasonic Water Meter



- Often water is the reason why a project is initiated, it represents the basis of life
- It is important to have continuous information about the pumped quantity of this resource
- With a Water Meter, the flow rate through a pipe can be determined

Benefits

- ✓ Overview of actual use of a system (in terms of time and quantity)
- ✓ No need to interfere into the running system
- ✓ Possibility of intelligent control

Ideal for

- Information on drinking water supply systems
- Automatic control systems for field irrigation
- Plausibility check for larger pipe systems

Technical Specifications

Dimensions (Height, width, depth) mm	90 x 90 x 35 mm	
Weight	~ 0.3 kg	
Operating temperature	Cold : - 20 C to +60 C	
Outdoor / indoor operation	Indoor (Control panel) Outdoor (contacts)	
Accuracy	< 1%	
Supply voltage	8 - 36V DC	10- 30V AC
Measured value(s)	Liters/ m ³	L/s
Measuring range	-	-
Sensor type	Modbus	

Water Meter ($\frac{3}{4}$ Inch)



- Often water is the reason why a project is initiated, it represents the basis of life
- It is important to have continuous information about the pumped quantity of this resource
- With a Water Meter, the flow rate through a pipe can be determined to within the range of a few litres

Benefits



- ✓ Possibility of intelligent control & understanding about system characteristics
- ✓ Overview of actual use of a system (in terms of time and quantity)
- ✓ Learning effect for future projects

Ideal for

- Information on drinking water supply systems
- Automatic control systems for field irrigation
- Tracking of end user consumption

Technical Specifications

Dimensions (Diameter,length) mm	26 x 110 mm
Weight	470g
Operating temperature	1 C - 90 C
Outdoor / indoor operation	Indoor/Outdoor
Accuracy	2%
Supply voltage	1 - 24V
Measured value(s)	Liters, m ³
Measuring range	1 liter steps
Sensor type	Digital

Water Meter standard (2 Inch)



- Often water is the reason why a project is initiated, it represents the basis of life
- It is important to have continuous information about the pumped quantity of this resource
- With a Water Meter, the flow rate through a pipe can be determined to within the range of a few litres

Benefits



- ✓ Overview of actual use of a system (in terms of time and quantity)
- ✓ Possibility of intelligent control & understanding about system characteristics
- ✓ Learning effect for future projects

Ideal for

- Information on water supply systems
- Automatic control systems for field irrigation
- Plausibility check for larger pipe systems

Technical Specifications

Dimensions (Height, width, depth) mm	Depending on use case
Weight	Depending on use case
Operating temperature	Depending on use case
Outdoor / indoor operation	Indoor/Outdoor (water/ steam/ air)
Accuracy	0.5% FS
Supply voltage	15 - 30VDC
Measured value(s)	Temperature C
Measuring range	- 50C to +400 C
Sensor type	Regular: Analog (4 - 20mA) High temperature: Analog (0 - 10V)

Water Meter (Woltman)



- 🌱 Often water is the reason why a project is initiated, it represents the basis of life
- 🌱 It is important to have continuous information about the pumped quantity of this resource
- 🌱 With a Water Meter, the flow rate through a pipe can be determined to within the range of a few litres

Benefits



- ✔ Overview of actual use of a system (in terms of time and quantity)
- ✔ Possibility of intelligent control & understanding about system characteristics
- ✔ For cold and hot water applications

Ideal for

- 🌱 Information on drinking water supply systems
- 🌱 Automatic control systems for field irrigation
- 🌱 Plausibility check for larger pipe systems

Technical Specifications

Dimensions (Height, width, depth) mm	Depending on use case
Weight	Depending on use case
Operating temperature	Depending on use case
Outdoor / indoor operation	Indoor/Outdoor (water/ steam/ air)
Accuracy	0.5% FS
Supply voltage	15 - 30VDC
Measured value(s)	Temperature C
Measuring range	- 50C to +400 C
Sensor type	Regular: Analog (4 - 20mA) High temperature: Analog (0 - 10V)

EcoPhi Platform

With the EcoPhi Platform, you can keep an eye on your systems at any time, even if they are complex or you want to monitor and control multiple systems at once.

The platform is browser based, so you don't need to install any programs to use it and you can access the data from your smartphone, tablet or computer.

A large number of inverter manufacturers and external databases such as weather data can be connected via APIs.

This way you have all important information about your plants visible in one place



Services

Ad-hoc & Regular Reports

Alarms & Notifications



Visualization

Fleet Management View

Tailored Dashboards



AI Analyses

Smart Forecasts

Peer Benchmarking



Business Tools

Business Data

Energy Stock Market

Energy Stock Market



External Platforms & Data Points

Weather Data

Proprietary Monitoring

3rd Party Monitoring

Manual Data



Discover more



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