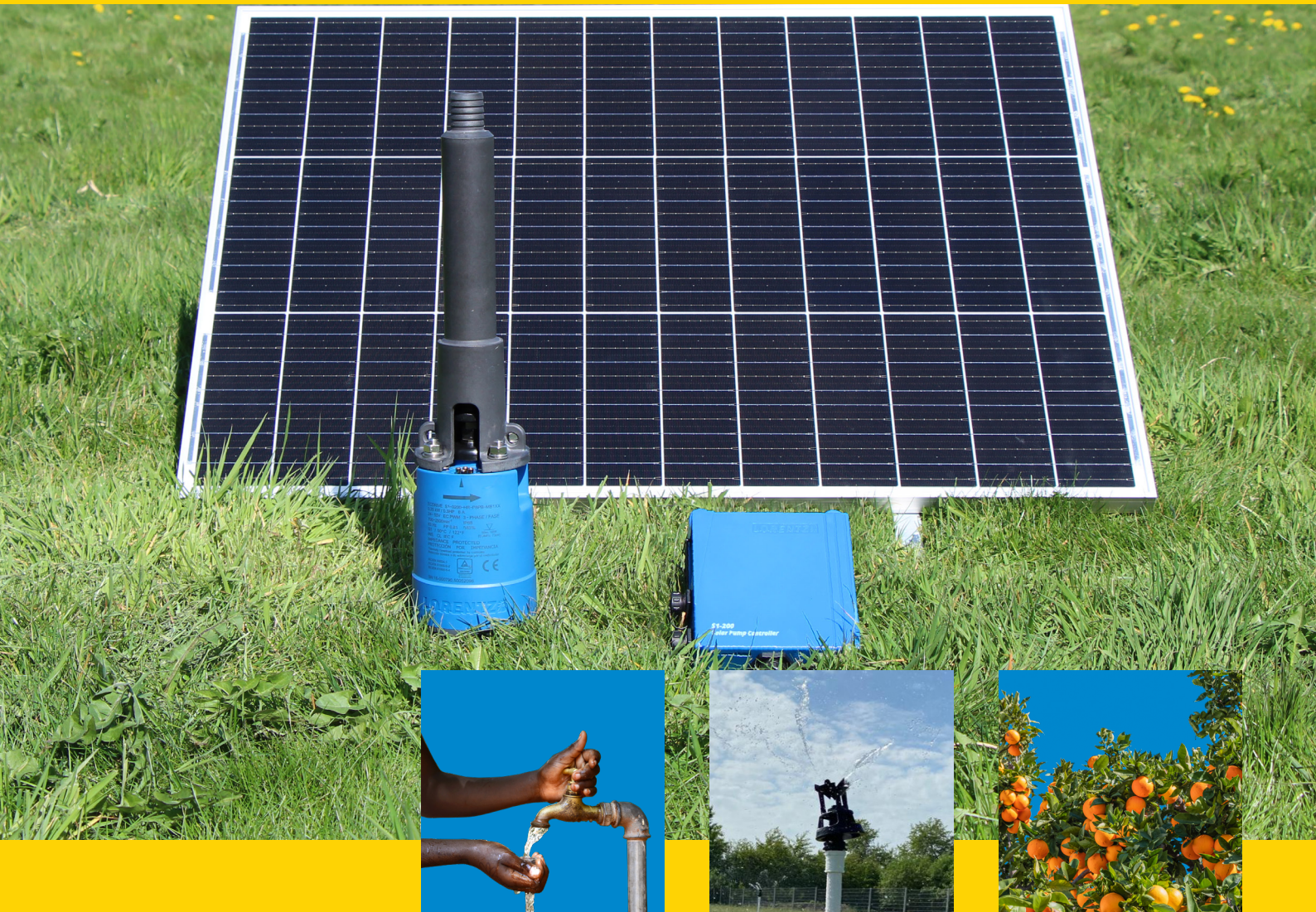


# **S1-200 PAYGo**

## **Solar powered water pump**



S1-200 PAYGo is a high quality, high efficiency, cost effective, solar water pumping system. Flexibility in use, ease of transport and high performance makes it perfect for PAYGo distributors.

This submersible pump fits a wide range of productive use applications, contributing to sustainable development in the agricultural sector and improving food security.

S1-200 PAYGo can easily be installed by anyone, no special expertise or tools are required. It is as simple as: pick it up, plug it in, pump water.

**SOLAR WATER PUMPING MADE SIMPLE**  
[www.lorentz.de/s](http://www.lorentz.de/s)



## An exciting application with high impact

### Why are solar water pumps exciting ?

Solar water pumping is the largest and highest impact productive use application.

Moving water using the power of the sun extends the places that farmers can farm, extends the places where livestock can drink and increases productivity.

Solar power is the cheapest power source available, provides grid and fuel independence and protects the environment.

Solar water pumping is a well established application and is now seeing fast growth and attracting impact investment to increase food security and improve the prosperity of farming communities .

### Simple to ship, stock, sell and install

LORENTZ have taken their knowledge and experience to build a high quality, long-lasting, efficient product that is simple to ship, stock, sell and install.

The S1-200 PAYGo comes in a single box which is easy to stock, and ship. The system has been designed for simple self installation with all aspects of the product and support material focused on simplicity.

Plug and play, no previous technical knowledge is required, no tools, no wiring, it is "solar water pumping made simple".

### Why choose a LORENTZ pump

If you opt for LORENTZ you receive a solar water pump which works out of the box, is reliable, highly efficient and is made with premium material.

We started designing solar pumps in Germany in 1993 and can look back at 30 years of experience in designing and manufacturing solar water pumps and accessories. Today, LORENTZ is the global leader in the solar water pumping market.

Millions of people, their animals and crops rely on LORENTZ pumps every day.



## Benefiting a wide range of customers

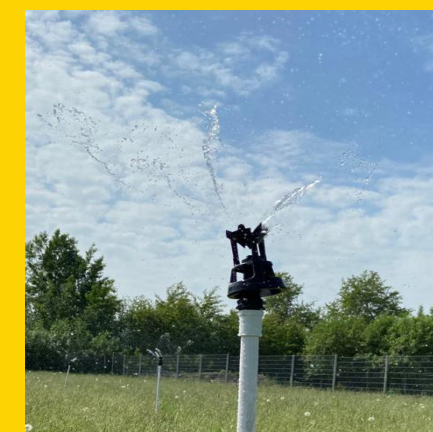
S1-200 PAYGo is a submersible pump which allows it to be used in the widest range of applications, typically for irrigation, livestock water or for community water projects.



S1-200 PAYGo pump can be used in a well, pond, river or lake. Their size and weight makes them portable, providing customers with the option to move from field to field or to home.



Pumps will provide up to 27,000 liters [7,100 US gal] of water per day and pump up to 40 meter [130 feet] heads.





# Features and scope of delivery

## S1-200 PAYGo solar water pumping system

Product features include:

- submersible helical rotor pump
- high efficiency DC brushless water filled motor
- plugged connections for simple self-install
- maximum 40 m [130 ft] head and maximum 3 m³/h [13 US gpm] flow rate
- multiple pump ends to match local pumping requirements: HR-07/-14/-23
- outdoor PAYGo-enabled controller [IP 68] designed for temperatures to 50 °C [122 °F] ambient
- sophisticated MPPT for maximum performance
- accessory inputs for automating the system
- on-board data storage and Bluetooth™ connectivity for pump control and info

- PAYGo credit (based on time)
- easy top-up using a token via S-Connect app
- Adopts OpenPAYGo Token, which allows any PAYGo software platform can be integrated.
- LORENTZ APM partnerNET Interface available

More detailed technical information is provided in product datasheets.

## All in one box

S1-200 PAYGo is provided as a kit in a single box. The only addition is to add a PV module to suit local market applications and any optional accessories the customer might need.

## Box content

- PAYGo-enabled controller with inputs for PV modules, pump, dry run protection and tank full switch or remote tank switch
- Bluetooth™ connectivity
- ready-to-install helical rotor pump with 8-pole high-efficiency brushless ECDRIVE DC motor with 15 m [50 ft] cable and plug
- MC4 adapter cable to connect PV modules to the controller
- 2 screws to fix the controller on the folding PV module
- 1" hose clamp
- a manual with links to helpful videos and FAQ ([www.lorentz.de/shelp](http://www.lorentz.de/shelp))

## Dimensions and weights

S1-200 PAYGo systems are shipped in pallets with 54 systems.

Single pallet:

- dimensions 1200 mm x 800 mm x 1100 mm [47.2 in x 31.5 in x 43.3 in]
- net weight 375 kg [827 lb]
- gross weight 425 kg [937 lb]

Single S1-200 PAYGo system:

- dimensions 590 mm x 170 mm x 150 mm [23 in x 6.7 in x 5.9 in]
- volume 0.015 m³ [0.53 ft³]
- net weight 6.2 kg [13.7 lb]
- gross weight 7.2 kg [15.4 lb]

## PV modules

An S1-200 PAYGo system would typically be powered by a single 60 or 72 cell module in the power range of 200 Wp to 350 Wp (larger is also ok). The maximum input voltage (Voc) is 55 V DC.

Where systems need to be mobile, folding module sets are a good solution. LORENTZ have an 200 W portable module kit available (see picture below).

LORENTZ stock 100 Wp modules in packs of 2. These are a perfect size to avoid oversized shipping charges and are a convenient size where some portability is required. Modules are provided on a pallet to match pump quantities (54 sets of 2 modules).



## S-Connect App for real-time info and control

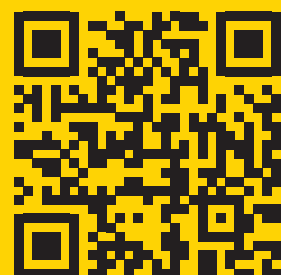
### Control the pump with LORENTZ S-Connect

The LORENTZ S-Connect app allows the customer to see in real time what the pump is doing, change settings or even export performance data.

Connecting via Bluetooth™ shows current water flow, daily amount of water pumped, power and speed.

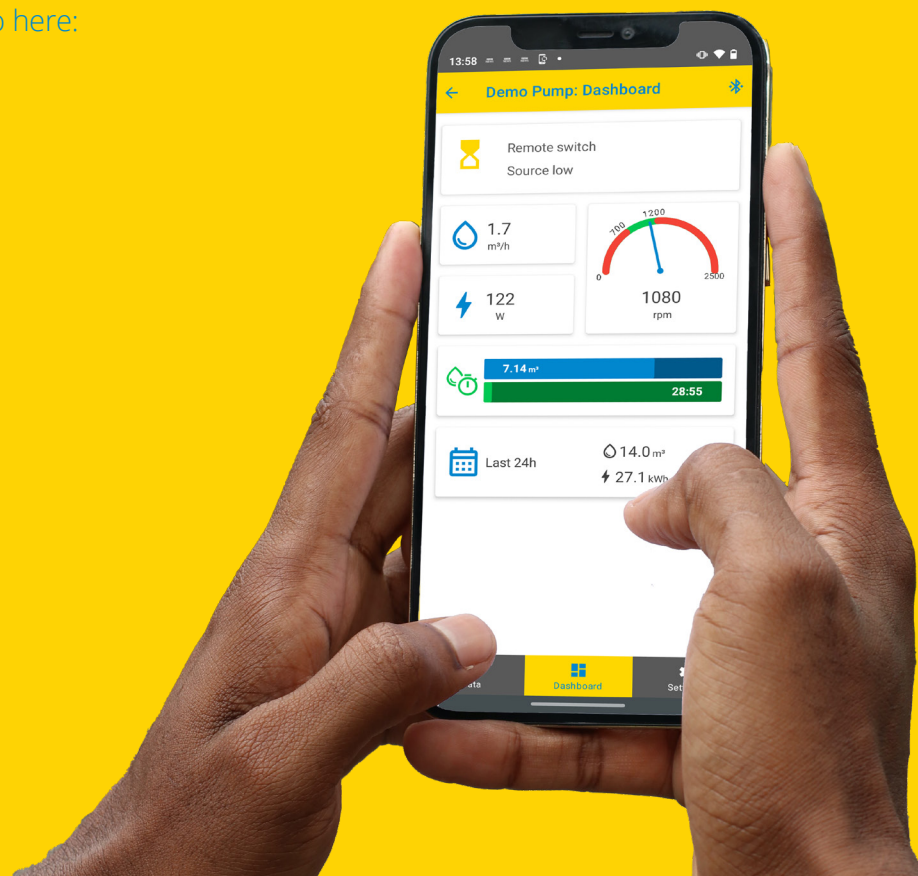
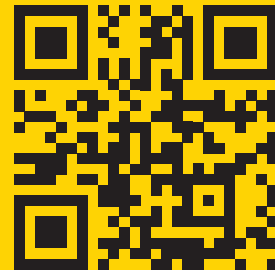
Using the LORENTZ S-Connect app the customer can control the pump by setting a timer, control flow with a maximum motor speed or set a maximum daily amount of water.

PAYGo users can easily and quickly top up the usage time (days) by simply entering a code. Access the top-up video here:

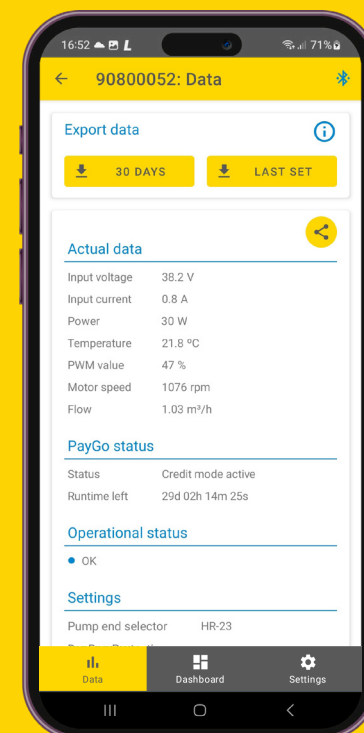
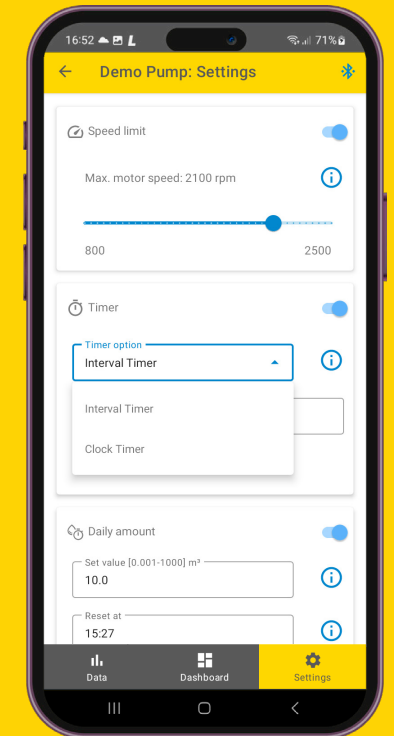
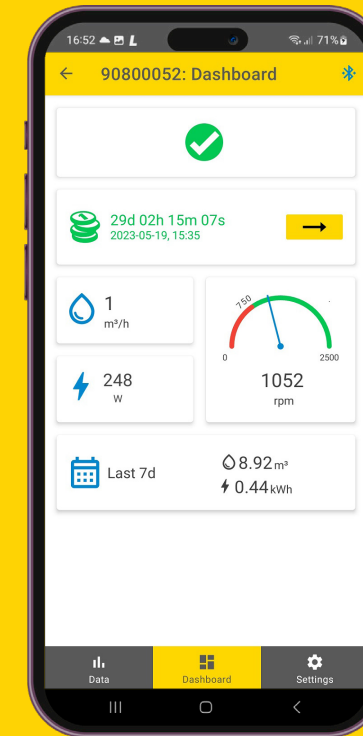
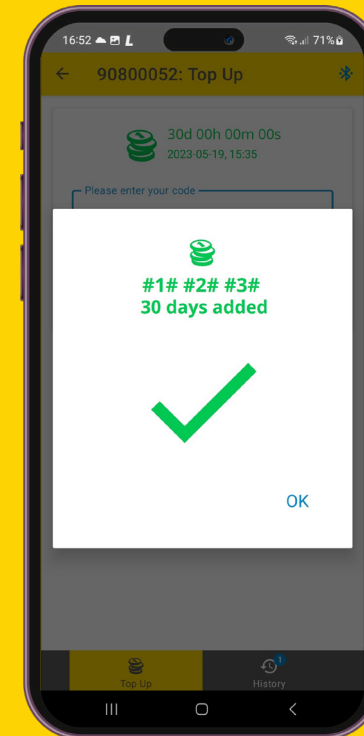


The LORENTZ S-Connect app is available for Android devices on the Google Play Store or IOS devices on the App Store. There is a demo feature that allows the app to be used before purchasing a pump system.

LORENTZ S-Connect also has features that support the customer with links to FAQ content. Firmware updates and technical data downloads are also included to assist with troubleshooting and support.



## Top up and pump easily





## Example installations with basic components

Below are examples of different applications that illustrate the flexibility of the S1-200 PAYGo pumping system by installing only its basic components (**PV modules, controller, and pump unit**).

### Irrigate a field with a hose

The pump is installed in a pond and serves water via a hose to directly irrigate a crop.

### Irrigate a field using sprinklers

The pump is installed in a river, and connected to sprinklers, providing automated irrigation.

### Irrigation using direct drip irrigation

The pump is installed in a well, serving irrigating a field through a drip irrigation system.

## Extending uses with simple accessories

### S1-200 PAYGo used to fill a tank

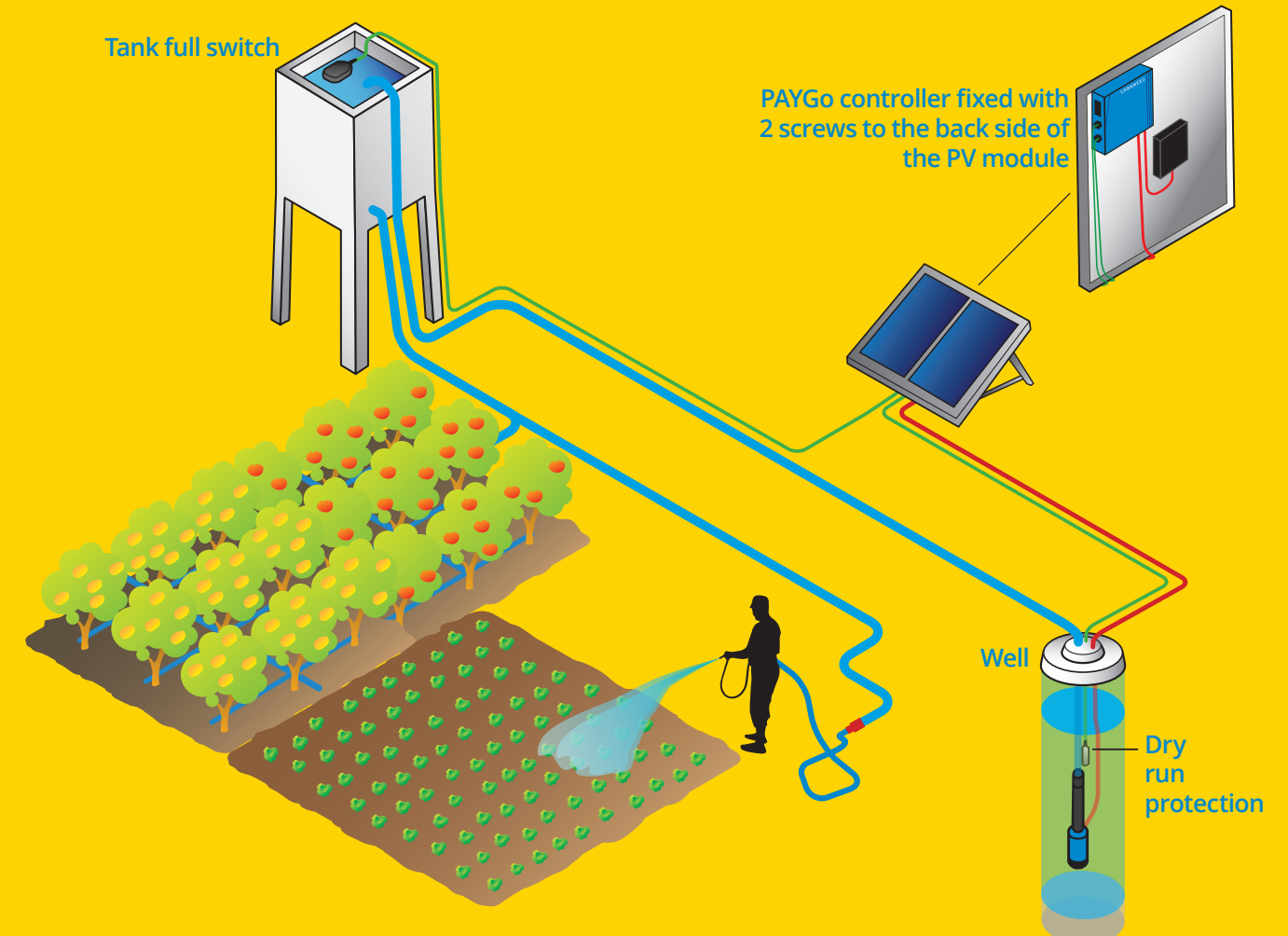
The picture below shows an S1-200 PAYGo pump system pumping water to a tank. The tank stores water. The elevated tank provides water throughout the day and night.

Two accessories have been added to the system. These accessories plug into the S1-200 PAYGo system, no wiring is required.

As the pump is installed in a deep well, a dry run protection accessory is installed. This will switch off the pump if the well has no water.

A tank full switch accessory is installed in the tank. This will stop the pump when the tank is full, avoiding wasted water.

Additionally, it is possible to automatically control the filling of remote tanks using the remote tank switch accessory. This is used when the tank being filled is too far away to use a tank full switch accessory.





## Amazing Performance

Even though S1-200 PAYGo is a relatively small-sized system it has great performance.

There are three different pump ends to choose from in the S1-200 PAYGo range depending on the installation depth of the pump and the amount of water needed.

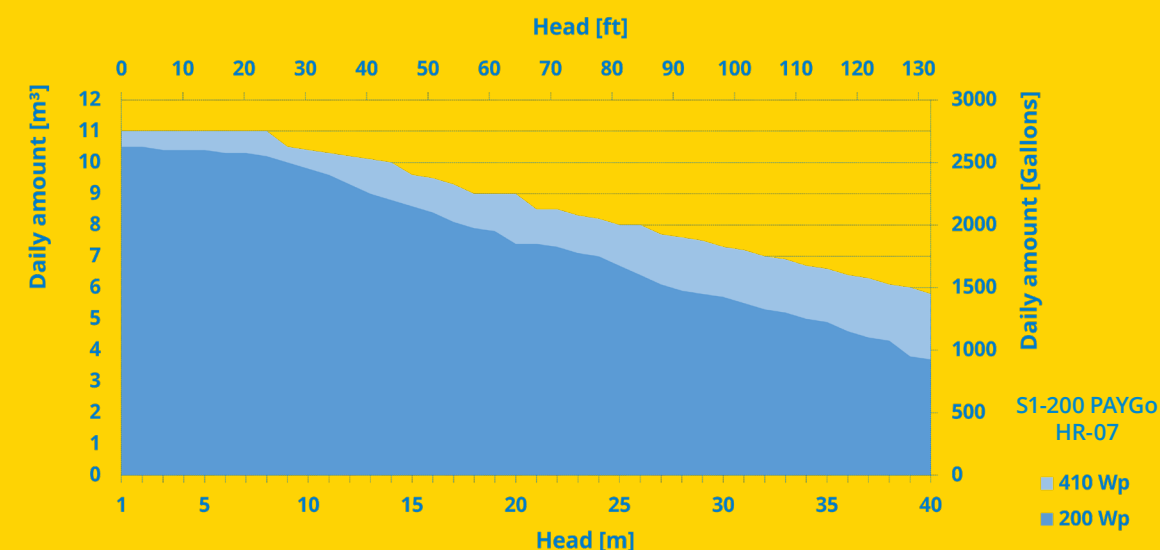
The charts show the performance of all three pumps powered by a 200 Wp module and a 410 Wp module.

Measure the vertical distance that you need to pump water and look at the bottom or top axis (depending on whether you handle length units in meters or feet), then read to the left or right (depending on whether you handle water volume in cubic meters per day or gallons per day) to see the amount of water you can get per day.

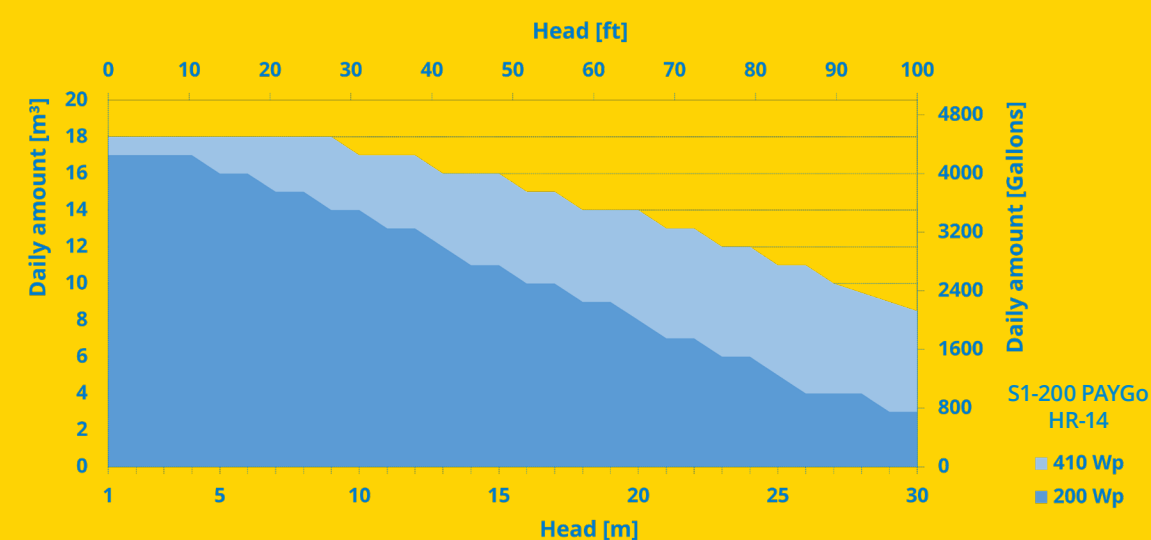
If the S1-200 PAYGo does not meet your customer needs LORENTZ have a wide portfolio of solar water pumps.

Contact us so that we can find the right system for you and connect you with a partner that can help.

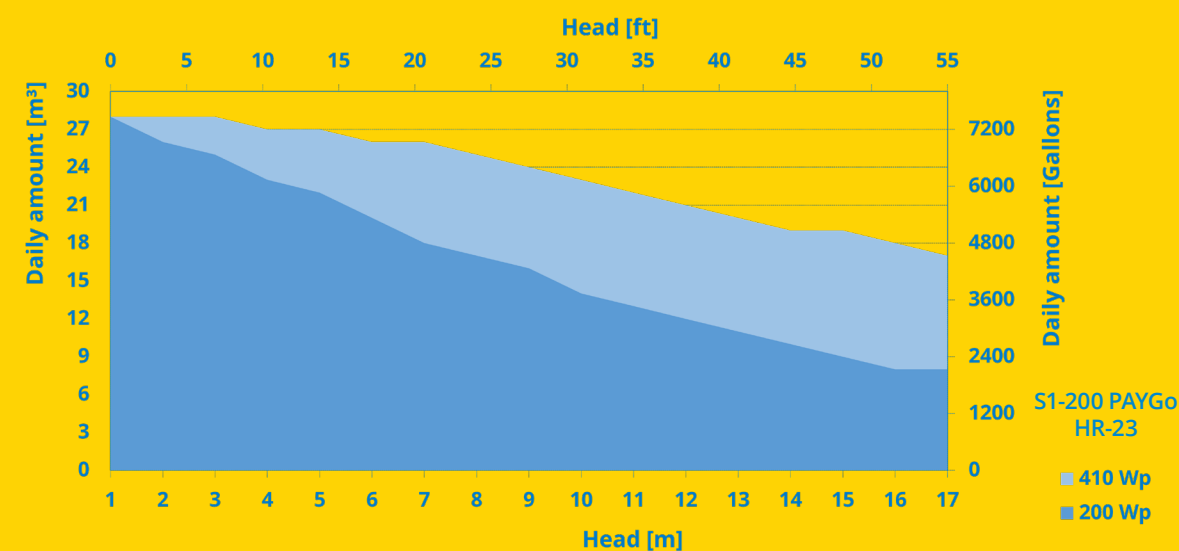
Daily water output of an S1-200 PAYGo HR-07 system powered by a 200 Wp or 410 Wp solar module



Daily water output of an S1-200 PAYGo HR-14 system powered by a 200 Wp or 410 Wp solar module



Daily water output of an S1-200 PAYGo HR-23 system powered by a 200 Wp or 410 Wp solar module





# Supporting distributors

## New opportunities

Adding a new product line to your portfolio always has risk. Will it sell? Will it create support issues? Is the supplier reliable? LORENTZ have always gone to market through local partners, we don't sell our products directly.

Our focus is on supporting partners to serve the local market.

## Channel friendly company

We provide distributors with partnerNET access, this is our extra-net for distributors containing promotional materials, prices, ticketing etc, a simple way to conduct business.

Our channel management team will train your team on products and share go to market experience to help you succeed.

## Expand business models

S1-200 PAYGo allows distributors to take advantage of the increasing accessibility and popularity of solar pumping among farmers. This results in a higher demand and sales volume, ensuring a steady cash flow. Moreover, this model fosters customer loyalty, thereby strengthening the relationship between the two parties.

With OpenPAYGo Token, distributors will have the ability to choose any PAYGo software platform for managing LORENTZ S1-200 PAYGo pumping systems, providing better customer support and increased flexibility.

## Product design

LORENTZ S systems are designed for retail and e-tail. These products have simple instructions, are plug and play and reliable in use. We have challenged ourselves to make solar water pumping simple.

## Spare parts and consumables

Distributors have access to a wide range of spare parts and consumables. Cables, clips, nuts and bolts, motors, pump parts are all available without premium pricing.

## Customer self support

Customers today demand high quality self support content.

The [www.lorentz.de/shelp](http://www.lorentz.de/shelp) sites provide this with clear information, videos and articles for self support. If self support fails customers can raise an inquiry which will be answered by LORENTZ staff.

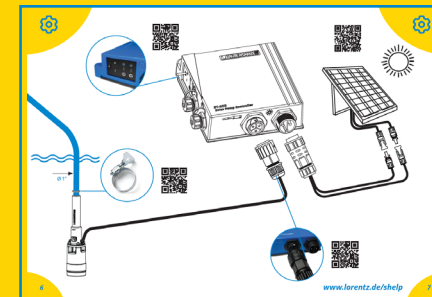
## Consistent product supply

LORENTZ have been in business for 30 years and supply consistent quality products. We know how important consistency is for supply and support to your customers.

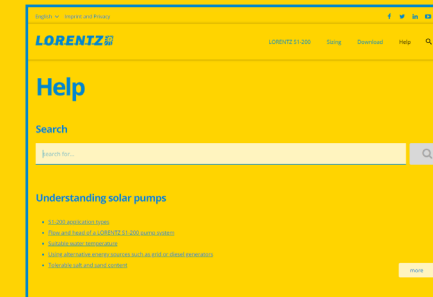
S1-200 PAYGo is part of a planned range of products that will expand to offer you more opportunities to serve a wider range of customers in the future.



OpenPAYGo™



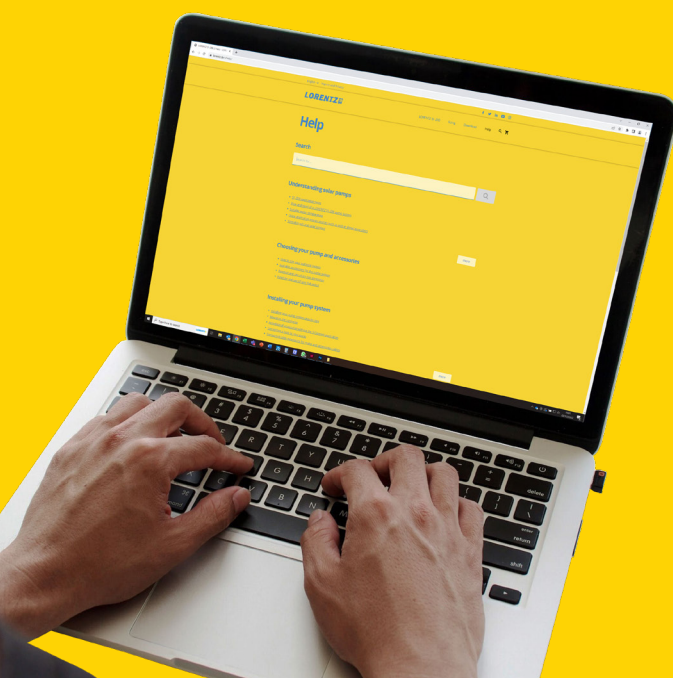
Pictorial manuals



[www.lorentz.de/shelp](http://www.lorentz.de/shelp)



Help videos





## Accessories

All accessories have connections to make installation simple for the customer. The dry run accessory prevents the pump from running dry and the tank full switch allows for pump control when a tank is filled, if the tank is too far away, the remote tank switch accessory can be used. The dry run protection, tank full and remote tank switch accessories come with fixed

length cables. An accessory extension cable is also available which extends the cable lengths and uses high quality plugs for a weatherproof and mechanically good connection.

A motor extension cable is also available allowing customers that need to have longer distances between the pump and controller to accommodate this

without the need for connection boxes, joints or cable splicing.

Additionally, a sprinkler irrigation kit is available with all the necessary parts for a simple irrigation system covering up to 1 hectare [2.5 acres] of land. This flexible kit is designed to suit various crops, sprinkler spacing, plot shapes, and sizes.

### Dry run protection

Includes 15 m [50 ft] of cable



### Tank full switch

Includes 10 m [33 ft] of cable



### Remote tank switch

Includes 3 m [10 ft] of cable



### Accessory extension cable

Includes 20 m [65 ft] of cable



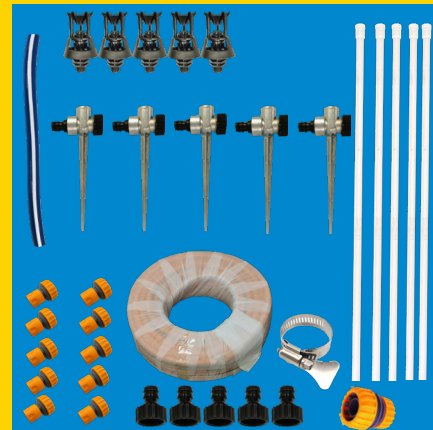
### Motor extension cable

Includes 20 m [65 ft] of cable



### Sprinkler Irrigation Kit

for up to 1 hectare [2.5 acres] of land



## Design choices

### 30 years of off-grid solar pumping experience, engineered into a product

You might wonder why LORENTZ made certain choices when designing the S1-200 PAYGo. We have been designing and manufacturing solar pumps for 30 years. Solar pumps need to be designed differently to other electric pumps, they must operate with varying power conditions and are usually installed in hot, wet, dusty, sunny, exposed, sometimes cold places, and off grid. Here are some questions that we get asked.

### Why use DC brushless (BLDC) motors?

Solar power varies through the day. The 8 pole brushless motor that is used in S1-200 PAYGo pumps is super efficient, irrespective of power or speed. The result is 2-3 times more water than competitor products for a given input power. The motor design is internally water lubricated, has long life bearings, no brushes to wear or sensors to fail, all to maximize reliability and lifetime.

### Why polymer and not stainless steel ?

We use high quality engineering polymers in S1-200 PAYGo pumps for parts that need to be accurate, durable and light weight. There are several benefits of polymer over steel, polymers can be injection molded with high accuracy without the need for secondary machining. Molded polymers fit well with high volume manufacturing and also reduce the weight of the product making it easy to move from source to source.

### Why submersible pumps and not surface pumps?

We chose a submersible design for flexibility and for use in the widest range of applications. Submersible pumps have some benefits over surface pumps that make them much easier to use. The S1-200 PAYGo can be used in a river, stream, pond, tank or a well / borehole. There is no need to prime the pump, just drop it in the water. There is no need to consider "suction limits" with a submersible pump. There is also no need for a suction hose and a discharge hose, just one pipe. The submersible pump is small and light weight allowing it to be easily transported.

### Why a helical rotor pump?

Helical rotor / progressive cavity pumps are used across many industries and are known for their efficiency and reliability. Helical rotor pumps will create pressure at any speed which means that as soon as the pump motor can turn water will pump. The pump mechanism is very efficient and reliable.

### Why pre-plugged?

One of the biggest barriers to installing solar pumps is wiring. The S1-200 PAYGo is "plug and play", all wiring is done using weatherproof plugs. The plugs are unique so there is no risk of wrong connections.

### Why have an app?

With the LORENTZ S-Connect app besides top up the S1-200 PAYGo system you can also access different features and functions such as: set timers for when you want the pump to run, set a daily water amount, configure sensors or simply view performance data. The LORENTZ S-Connect app also helps you troubleshoot problems.



## About LORENTZ

LORENTZ is the global market leader in solar powered water pumping solutions. Founded in Germany during 1993 LORENTZ has pioneered, innovated and excelled in the engineering and manufacturing of solar powered water pumping. Today LORENTZ is active in over 130 countries through a dedicated network of professional partners.

LORENTZ S product range is specially designed to bring solar pumping to the widest audience. LORENTZ S products take the experience, quality, reliability and efficiency of LORENTZ world leading solar pumps and simplifies them for self installation. Solar water pumping, made simple.



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