Sun. Water. Life.

LORENTZ

LORENTZ

design and manufacture solar powered water pumping solutions

LORENTZ was founded in Germany in 1993. Since this time we have continually innovated and excelled in engineering solar pumping systems.

Our focus on this technology area has developed into three complementary fields of expertise:

- high efficiency, high reliability pumps
- brushless and sensorless drives for high efficiency and long life
- optimized solar capture where we track the sun to achieve higher and extended PV output

Today we continue to have our headquarters and design functions in Germany while manufacturing in our own facilities across the world. This unique mix gives us the most reliable sourcing of key components and best value manufacturing, something that guarantees quality at a very competitive price point.

We are LORENTZ, this is what we do and why we are proud of it.

Drinking Water

Access to a clean, reliable water supply is critical for the survival of humans and animals. Ground water sources offer a cleaner and reliable supply of drinking water.

With a focus on reliability and efficiency LORENTZ has perfected unique designs for pumps, DC drives and controllers. Components are designed and manufactured using the highest quality materials to ensure a long and trouble free life with low maintenance requirements and low operating costs. LORENTZ pumps are matched to local water conditions for optimum performance. Intelligent designs keep electronics above ground and the brushless DC drives match solar generators perfectly.

LORENTZ solar pumping products deliver drinking water to people and livestock economically and reliably.

Irrigation

The need to irrigate agricultural land efficiently, economically and sustainably is critical for food security. Costs for irrigation using diesel power are rising at >10% per year.

LORENTZ solar irrigation solutions produce no emissions, generate no noise. Solar power for irrigation is more reliable than wind power while being significantly cheaper and cleaner than diesel power. LORENTZ solar pumps complement the design of drip irrigation systems, delivering water precisely and efficiently to individual plants. Very high volumes of water for large scale irrigation can also be supported through a wide range of pump sizes and vertical lifts.

LORENTZ solar irrigation solutions are a very attractive alternative to diesel powered pumping and support sustainable agriculture.

Responsible Leisure

For homes with swimming pools, circulation and filtration pumps used to keep pools clean are typically the second biggest consumers of electricity.

Using the technology, expertise and experience gained in critical drinking water applications, LORENTZ has a range of pool pumps that use zero electricity and have a long life. Additional benefits come from quiet operation and modular construction for simple maintenance. LORENTZ solutions save the homeowner money and reduce their environmental footprint. Tax benefits and government grants also encourage homeowners to make the change to solar pumping.

LORENTZ pool pumps are a compelling proposition for homeowners and commercial pool operators in a sector where operating costs need to be minimized.

Solar Capture

Solar power is important to meet targets for renewable energy, to reduce CO2 emissions and bring electricity to developing communities.

LORENTZ solar tracking systems offer very attractive alternatives to fixed PV module installation both in terms of power generated and length of time power is generated. Tracking the sun reduces the physical size of PV panel area required for a given output, improving power yield and improving return on investment. Tracking combined with a solar pumping system extends the time that peak water yield can be achieved.

LORENTZ tracking solutions increase solar power yields and extend the performance of solar pumping systems.

2013 LORENTZ celebrates 20 years of continuous innovation

1993 – LORENTZ company is registered in Hamburg, Germany – LORENTZ design, develop and manufacture pumps for gasoline, used in car refuelling stations around the world

1994 – After researching new applications for the already developed efficient refuelling pump, solar pump development begins

1995 – First solar pump shipped to Cyprus for testing – LORENTZ solar pump design is further developed. The unique split system design, DC brushless and sensorless drives and the helical rotor compounds all come together making LORENTZ products unique.

1997 – Field testing and limited sales of solar start in southern Europe, Australia, United States, and South Africa

1998 – First passive solar tracker is shipped to maximise power for pump systems

2000 – Launch of EATPUMP – first commercial solar pump system

2001 – Installations increase with a strong focus on US, Canada, South Africa and Australia

2003 – First 700 m pump install for dewatering a gas well – LORENTZ expands across Africa, Asia, South America and the Middle East – LORENTZ attend Intersolar show in Germany

2004 – Active tracker - ETATRACK400 - Our first active tracker design to electronically track the sun

2005 – ETATRACK 1500 introduced for the booming solar park market

2006 – First LORENTZ solar park is installed in Dettendorf, Germany - 50kWp of modules on 24 trackers

2007 – LORENTZ pass the point where they have shipped pumps to 50 countries – Largest LORENTZ solar park is installed in Spain - 2.1 MW across 1,000 active trackers with central control!

2008 – Purchase of a new HQ building just outside of Hamburg, Germany. Perfect environment for our electronic and mechanical design team – LORENTZ has now sold to more than 100 countries with many countries now ordering on a monthly basis

2009 – The PS4000 is added to the range to meet the demand for larger solar pumps, especially in irrigation applications – PSk becomes a portfolio item after being used purely for projects

2010 – LORENTZ moves Asia office to a new prestigious city office in Beijing – To expand reach a multi tier distribution model is introduced in the US, Australia and South Africa – COMPASS provides the industry with the first accurate way to quickly size a solar pumping system – New flexible production facility goes live to meet the increasing demand for solar pumping systems

2011 – LORENTZ starts a new professional channel model called partnerADVANTAGE to recognize the growing and professional sales network – partnerNET extranet service is launched

2012 – New factory extension is opened – LORENTZ achieves 12 consecutive all time record sales months - solar water pumping is mainstream

2013 – LORENTZ is 20 years old

Sun. Water. Life.

PS DataModule and PumpScanner

Integrated Data Logger and Android™ App




The LORENTZ PS DataModule is an integral data logger and remote control device for the whole PS range of helical, centrifugal and surface pumps. The PS DataModule and PumpScanner for Android™ App open new opportunities in drinking water supply for people and livestock, irrigation and swimming pool applications. The PS Data- Module collects performance data from the pump system and stores it for periodic collection.

The PS DataModule uses Bluetooth™ to communicate with the LORENTZ PumpScanner Android™ App allowing secure real time data to be viewed and historic data to be collected without physical connections.

The PS DataModule can be specificed on any PS pump systems and is embedded in the pump controller. The PumpScanner App service version is free to use for approved LORENTZ partners. A one off lifetime fee is payable to activate the data logging services, activation can be made at any time.

The PS DataModule opens up a new world of information rich services previously unavailable at such an accessible price proint.

Benefits

- Provides clear pump and water source performance information for monitoring and future planning
- Very professional diagnostic and information tools available on low cost Android™ smart phones
- Reduces fault finding time and cost
- Identifies any pro-active service work that needs to be carried out

Features

- Provides real-time and stored data for
  - voltages
  - currents
  - input and output power
  - flow rates
  - operating time
  - head
  - pump speed
  - cable losses
  - temperature, and more
- Bluetooth™ connectivity for secure contactless data transfer
- Stores up to 10 years of data (at 10 minute frequency)
- Two-way communication to control and program pump speeds and operating times
- Connections for additional external sensors (flow and pressure)
- LORENTZ PumpScanner for Android™ App for viewing performance data
- PumpScanner is available in Customer and Service Engineer versions

LORENTZ CONNECTED

Part of the LORENTZ Connected range of products for monitoring and control of solar water pumping systems

PS Communicator and pumpMANAGER

Remote Communication Device and Cloud Management Service




The LORENTZ PS Communicator and pumpMANAGER service combine to offer customers a cost effective full management and monitoring system for their LORENTZ pump estate. This is attractive to commercial farms, industrial processes, government or NGO monitoring and anywhere that water is critical to people, livestock or crops.

The PS Communicator sends data from each pump across the cellular (mobile) data network to a secure central web server application called pumpMANAGER. The pumpMANAGER application can be accessed from any web connected device anywhere in the world making access to information and control of your solar pumps simple and convenient. As the connection is two way the pumps can be programmed, speed controlled or switched off, providing full remote control. The pumpMANAGER application also monitors the status of your LORENTZ pumps systems and will alert you if there are any unexpected events.

Benefits

- Actively monitor your water critical processes and applications, perfect for drinking water, livestock or irrigation
- Monitor exactly what is happening on remote sites from one simple to use management screen
- Have control of the time and quantity of water that is moved by your pumps from any web connected device
- Have access to ready integrated, information rich services without the need to invest in expensive equipment or infrastructure
- Allow your nominated service partner to gain access remotely to diagnose any performance issues
- Pro-actively know when there is a problem and achieve the fastest resolution with minimal impact on your water supply
- Auto configuring, low cost simple to buy and use service

Features

PS Communicator

- Self-contained controller and GPRS/cellular modem
- Solar powered with backup battery
- Automatically pairs with up to eight pumps that are in Bluetooth range – pumps must have PS DataModule installed
- Connects to each pump in turn and sends current running data and status via the Internet to a central server
- All data is encrypted and secure
- Local irradiation measurement
- Future proof design with over the air upgrades and hardware for additional inputs and outputs

pumpMANAGER

- Remote monitoring configuration and management of LORENTZ pumps
- Cloud based service for access from any internet enabled device (PC, tablet or cellphone)
- Active reporting of any alerts or problems
- Ability to switch on, switch off, monitor external sensors and control pump speed remotely
- Inclusive monthly fee for cellular data access, application updates and web service
- Customer, manager and technician views



LORENTZ CONNECTED

Part of the LORENTZ Connected range of products for monitoring and control of solar water pumping systems

PS Helical Rotor Solar Pump Systems

Submersible Pump Systems for 4” and 6” Wells




LORENTZ PS helical rotor pumps are high quality products designed for drinking water supply, livestock watering and smaller irrigation applications. PS helical rotor pump systems deliver water economically, cleanly and reliably, anywhere.

The LORENTZ PS range of DC powered helical rotor pumps have been designed specifically to pump water efficiently using solar power. The helical rotor pump is simple, efficient and reliable, pumping water with very low levels of solar power from up to 450 m below the ground.

Each system consists of a pump, pump motor and a controller. This modular concept keeps all electronics above ground providing simple servicing, ease of access and a low cost of ownership.

Benefits

- Long life expectancy and proven in service record
- Designed for use in remote and harsh conditions
- Smart modular design for simple and cost effective servicing and repair
- Water filled motors for reliability and to avoid oil contamination
- Fast and simple installation
- Cost effective spare parts philosophy
- Very strong ROI against diesel powered pumping
- Large range of pumps to closely match each application and optimise efficiency

Features

- Engineered in Germany
- Water temperature specific variants to provide the most efficient outputs
- High quality non corrodible materials used throughout
- Cast stainless steel components
- Solar direct connect with AC connection options
- MPPT technology to maximise power use from PV modules
- ECDRIVE DC brushless motors, designed for solar, with over 90 % efficiency
- Optional data logger

pump system		PS200 HR	PS600 HR	PS1200 HR	PS1800 HR	PS4000 HR
max. total dynamic head (TDH)	[m]	50	180	240	250	450
max. flow rate	[m³/h]	2.6	2.6	2.5	3.9	2.5
solar operation:						
max. power voltage (Vmp)*	[V DC]	> 34	> 68	> 102	> 102	> 238
open circuit voltage (Voc)	[V DC]	max. 100	max. 150	max. 200	max. 200	max. 375
nominal voltage	[V DC]	24 – 48	48 – 72	72 – 96	72 – 96	168 – 192
battery operation:						
nominal voltage	[V DC]	24 and 48	48	96	96	n.a.

*) PV modules at standard test condition: AM = 1.5, E = 1,000 W/m², cell temperature: 25 °C

PS Centrifugal Solar Pump Systems

Submersible Pump Systems for 4” and 6” Wells



LORENTZ PS centrifugal pumps are high quality products designed for higher flow drinking water supply, livestock watering, pond management and irrigation applications. PS centrifugal pumps provide large volumes of water economically, without pollution, anywhere.

The LORENTZ PS range of DC powered centrifugal pumps have been designed specifically to pump larger volumes of water efficiently using solar power. These highly efficient pumps can achieve flow rates of 79 m³/hour.

Each system consists of a pump, pump motor and a controller. This modular concept keeps all electronics above ground providing simple servicing, ease of access and a low cost of ownership.

Benefits

- Long life expectancy and proven in service record
- Designed for use in remote and harsh conditions
- Smart modular design for simple and cost effective servicing and repair
- Water filled motors for reliability and to avoid oil contamination
- Fast and simple installation
- Cost effective spare parts philosophy
- Very strong ROI against diesel powered pumping reducing production costs and reducing carbon footprint
- Large range of pumps to closely match each application and optimise efficiency

Features

- Engineered in Germany
- High quality non corrodible materials used throughout
- Cast stainless steel components
- Solar direct connect with AC connection options
- MPPT technology to maximise power use from PV modules
- ECDRIVE DC brushless motors, designed for solar, with over 90% efficiency
- Optional data logger

pump system		PS150 C	PS600 C	PS1200 C	PS1800 C	PS4000 C
max. total dynamic head (TDH)	[m]	20	30	40	100	160
max. flow rate	[m³/h]	4.0	12	21	53	79
solar operation:						
max. power voltage (Vmp)*	[V DC]	> 17	> 68	> 102	> 102	> 238
open circuit voltage (Voc)	[V DC]	max. 50	max. 150	max. 200	max. 200	max. 375
nominal voltage	[V DC]	12 – 24	48 – 72	72 – 96	72 – 96	168 – 192
battery operation:						
nominal voltage	[V DC]	12 & 24	48	96	96	n.a.

*) PV modules at standard test condition: AM = 1.5, E = 1,000 W/m², cell temperature: 25 °C

PS Surface Solar Pump Systems




LORENTZ PS Surface Pumps are high quality products designed for water transfer, pond management and irrigation applications where a surface pump is required.
The LORENTZ PS range of DC powered surface pumps are connected to a solar generator via a controller. The controller provides inputs for monitoring storage tank levels, controlling the pump speed and uses maximum power point tracking technology to optimize the water volume that is pumped.

Benefits

- Long life expectancy and proven in service record
- Designed for use in remote and harsh conditions
- Smart modular design for simple and cost effective servicing and repair
- Fast and simple installation
- Cost effective spare parts philosophy
- Very strong ROI against diesel powered pumping reducing production costs and reducing carbon footprint

Features

- Engineered in Germany
- High quality non corrodible materials used throughout
- Solar direct connect with AC connection options
- MPPT technology to maximise power use from PV modules
- ECDRIVE DC brushless motors, designed for solar with over 90 % efficiency
- Optional data logger


pump system		**PS150 Boost**	**PS600 CS-F**	**PS1800 CS-F**	**PS4000 CS-F**
max. total dynamic head (TDH)	[m]	150	40	50	70
max. flow rate	[m³/h]	1.3	8.3	8.5	59
solar operation:					
max. power voltage (Vmp)*	[V DC]	> 17	> 68	> 102	> 238
open circuit voltage (Voc)	[V DC]	max. 50	max. 150	max. 200	max. 375
nominal voltage	[V DC]	12 – 24	24 – 48	72 – 96	168 – 192
battery operation:					
nominal voltage	[V DC]	12 and 24	48	96	n.a.
pump type		positive displacement	centrifugal pump	centrifugal pump	centrifugal pump

*) PV modules at standard test condition: AM = 1.5, E = 1,000W/m², cell temperature: 25 °C

PS Solar Pump Systems for Pools




LORENTZ PS Swimming Pool Pumps are high quality products designed for use in residential and commercial swimming pools and spas.
In most pool applications all of the filtration needs can be met directly from solar panels meaning no electricity costs and significant benefits to the environment.
The LORENTZ pump uses a DC brushless motor for high efficiency and reliability, it is connected to a solar generator via a controller. The controller monitors the system, controls the pump speed and optimizes the amount of water pumped based on the power available.

Benefits

- Zero energy costs provide a very fast return on investment
- Longer life expectancy than standard AC motors
- Quiet and efficient
- Proven in service record
- Speed controllable to match the pool size exactly
- Smart modular design for simple and cost effective servicing and repair
- Fast and simple installation, direct replacement for an existing pool pump

Features

- Engineered in Germany
- EC DRIVEDC brushless motors, designed for solar with over 90% efficiency
- High quality non corrodible materials used throughout
- Solar direct connect with AC connection options
- MPPT technology to maximise power use from PV modules
- Optional data logger


pump system		**PS600 CS-17-1**	**PS1800 CS-37-1**
max. total dynamic head (TDH)	[m]	12	14
max. flow rate	[m³/h]	19	36
solar operation:			
max. power voltage (Vmp)*	[V DC]	> 68	> 102
open circuit voltage (Voc)	[V DC]	max. 150	max. 200
nominal voltage	[V DC]	48 – 72	84 – 96
battery operation:			
nominal voltage	[V DC]	48	96
pump type		centrifugal pump	centrifugal pump
integrated strainer		■	■
suitable for sea water		on request	on request

*) PV modules at standard test condition: AM = 1.5, E = 1,000W/m², cell temperature: 25 °C

LORENTZ

Water Solutions for the World

From a truly global company

Today LORENTZ is active in over 120 countries through a dedicated network of professional partners.

LORENTZ technology uses the power of the sun to pump water, sustaining and enhancing the life of millions of people, their livestock and crops.

Simply - Sun. Water. Life.

PSk2 Centrifugal Solar Pump Systems

Submersible Pump Systems for 6” and 8” Wells

LORENTZ PSk2 systems are our next generation of solar water pumps designed to deliver the highest volume of water across a wide range of lifts. PSk2 pumps perform equally well in irrigation projects and for a wide area of drinking water applications where they reliably meet the most demanding requirements, economically and without the use of fossil fuels or a grid connection.

PSk2 provides all of the features and functions that larger scale water projects require including a wide range of sensor inputs and inbuilt monitoring and management. PSk2 is also compatible with LORENTZ CONNECTED services for cost effective remote monitoring and management. Although technically advanced, PSk2 is simple to specify, install and maintain and provides exceptional performance driven by LORENTZ long experience of off grid solar pumping.

Benefits

- Very strong ROI against diesel powered pumping, reducing water production costs and reducing carbon footprint
- Advanced power management techniques to deliver the most water based on the power available
- Comprehensive inputs and outputs to provide a cost effective single unit solution
- Wide range of products to closely match each application and optimize efficiency
- Fast specification, installation and configuration allow for fast implementation and minimal downtime
- Smart modular product design for simple and cost effective product repair
- Powerful inbuilt monitoring and control features provide detailed operational information and simple access to advanced features

Features

- Engineered in Germany using high quality non corrodible materials
- IP54 / NEMA 3A corrosion resistant housing
- 0–60Hz motor speed control
- Wide range of inputs to influence pump behaviour
- Integrated monitoring and management including onboard recording of 5 years performance data, smart device access via PumpScanner Android™ App and integration to LORENTZ pumpMANAGER remote management service
- Inbuilt irradiation measurement and pump control based on power available
- Integration with the LORENTZ SmartPSU for grid / generator connection and power blending

pump system		PS 9k2	PS 15k2	PS 21k2	PS 25k2
max. total dynamic head (TDH)	[m]	120	140	120	120
max. flow rate	[m³/h]	136	235	218	112
solar operation:					
open circuit voltage (Voc)	[V DC]	max. 850	max. 850	max. 850	max. 850

*) PV modules at standard test condition: AM = 1.5, E = 1,000W/m², cell temperature: 25 °C

PSk2 Surface Solar Pump Systems

Centrifugal Pump Systems

LORENTZ PSk2 systems are our next generation of solar water pumps designed to deliver the highest volume of water across a wide range of lifts. PSk2 pumps perform equally well in irrigation projects and for a wide area of drinking water applications where they reliably meet the most demanding requirements, economically and without the use of fossil fuels or a grid connection.

PSk2 provides all of the features and functions that larger scale water projects require including a wide range of sensor inputs and inbuilt monitoring and management. PSk2 is also compatible with LORENTZ CONNECTED services for cost effective remote monitoring and management. Although technically advanced, PSk2 is simple to specify, install and maintain and provides exceptional performance driven by LORENTZ long experience of off grid solar pumping.

Benefits

- Very strong ROI against diesel powered pumping, reducing water production costs and reducing carbon footprint
- Advanced power management techniques to deliver the most water based on the power available
- Comprehensive inputs and outputs to provide a cost effective single unit solution
- Wide range of products to closely match each application and optimize efficiency
- Fast specification, installation and configuration allow for fast implementation and minimal downtime
- Smart modular product design for simple and cost effective product repair
- Powerful inbuilt monitoring and control features provide detailed operational information and simple access to advanced features

Features

- Engineered in Germany using high quality non corrodible materials
- IP54 / NEMA 3A corrosion resistant controller housing
- 0–60Hz motor speed control
- Wide range of inputs to influence pump behaviour
- Integrated monitoring and management including onboard recording of 5 years performance data, smart device access via PumpScanner Android™ App and integration to LORENTZ pumpMANAGER remote management service
- Inbuilt irradiation measurement and pump control based on power available
- Integration with the LORENTZ SmartPSU for grid / generator connection and power blending

pump system		PS 7k2	PS 9k2	PS 15k2	PS 21k2	PS 25k2
max. total dynamic head (TDH)	[m]	90	80	80	80	40
max. flow rate	[m³/h]	114	120	279	306	457
solar operation:						
open circuit voltage (Voc)	[V DC]	max. 850	max. 850	max. 850	max. 850	max. 850

ETATRACK active

Single-axis Tracking Systems for PV Modules




LORENTZ ETATRACK active tracking systems provide up to a 40 % higher yield from your PV modules. ETATRACK systems follow the sun through the day, this extends the time that useful power levels are delivered and maximises the peak power.
LORENTZ have been designing, manufacturing and selling tracking systems since 1998 with thousands of systems installed across the world.

Benefits

- Single axis design for cost effectiveness, reliability and efficiency
- Simple design for fast, failure-free installation
- High reliability and excellent serviceability lowers cost of ownership
- Long life expectancy in line with PV modules for predictable financial planning
- Short Return of Investment (ROI) cycle
- Very attractive business case against fixed and dual axis PV installations

Features

- Single axis, 90° tracking angle East-West
- Robust hot Zinc-coated steel frame
- For ground installation on concrete foundation
- Stainless steel module fixings
- Maintenance-free DC linear drive
- Sensorless control
- Self-powered with very low energy consumption
- Control options to synchronise multiple units
- Designed for high wind speeds according to German and European standards



tracking system	**ETATRACK active 2500-A-30**	**ETATRACK active 2000-A**	**ETATRACK active 1500-A**
PV module surface	26 m²	20.5 m²	16.5 m²
max. power installed	c. 4.6 kWp	c. 3.6 kWp	c. 2.9 kWp
second axis	fixed, 30°, other angles on request	manually adjustable, stepwise 0 – 45°	manually adjustable, stepwise 0 – 45°



tracking system	**ETATRACK active 600**	**ETATRACK active 1000-30**	**ETATRACK active H1500**
PV module surface	6.0 m²	10.5 m²	16.5 m²
max. power installed	c. 1.0 kWp	c. 1.8 kWp	c. 2.9 kWp
second axis	manually adjustable, stepwise 0 – 50°	fixed, 30°, other angles on request	fixed, 0°

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partnerADVANTAGE

Partnering with LORENTZ



We bring our solutions to market via a global partner network. Supporting this network is a key part of what we do. We are excited and proud of our products and pass this passion onto our partners by offering very practical education, pre sales and post sales support through our partnerADVANTAGE program.

We have made significant investments in providing industry leading tools which makes selling and specifying systems simple, accurate and a real point of differentiation for our partners.

The professional partner model ensures that customers receive the right products from trained, experienced companies and that our partners have the confidence to make a full commitment to specifying, installing and supporting LORENTZ products.

Benefits

What we offer

Being a LORENTZ partner means you have a commitment that we will:

- never sell directly to customers
- that we promote our partners alongside our products
- provide premium supporting information, infrastructure, software, sales and marketing tools and technical support
- provide product margins to sustain an interesting and healthy business
- make doing solar pump business as easy as we can

Requirements

What we expect of our partners

To ensure that our partners are solar pumping professionals we have some minimum requirements that we expect to be met in the following areas:

- Training of sales and technical staff to ensure systems are specified and installed correctly
- Quality standards for system installation with customer references
- A minimum number of systems that are installed per year to ensure familiarity with products
- A commitment to support promotion of LORENTZ solutions in a given market

Partnering with LORENTZ makes sense – now and for the future.

Sun. Water. Life.

LORENTZ

All specifications and information are given with good intent, errors are possible and products may be subject to change without notice. Pictures may differ from actual products depending on local market requirements and regulations.

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