



mercredi 23 mai 2018

Démonstration 1

Projet de pompage solaire

Paramètre

Emplacement:	Madagascar, Antananarivo (19° Sud; 47° Est)	Température de l'eau:	25 °C		
Rendement quot. requis:	10 m ³ ; Dimensionnement pour mois moyen	Perte par saletés:	5,0 %	Câble moteur:	30 m
Type de tuyau:	-	Hauteur manométrique :	30 m	Longueur du tuyau:	-

Produits

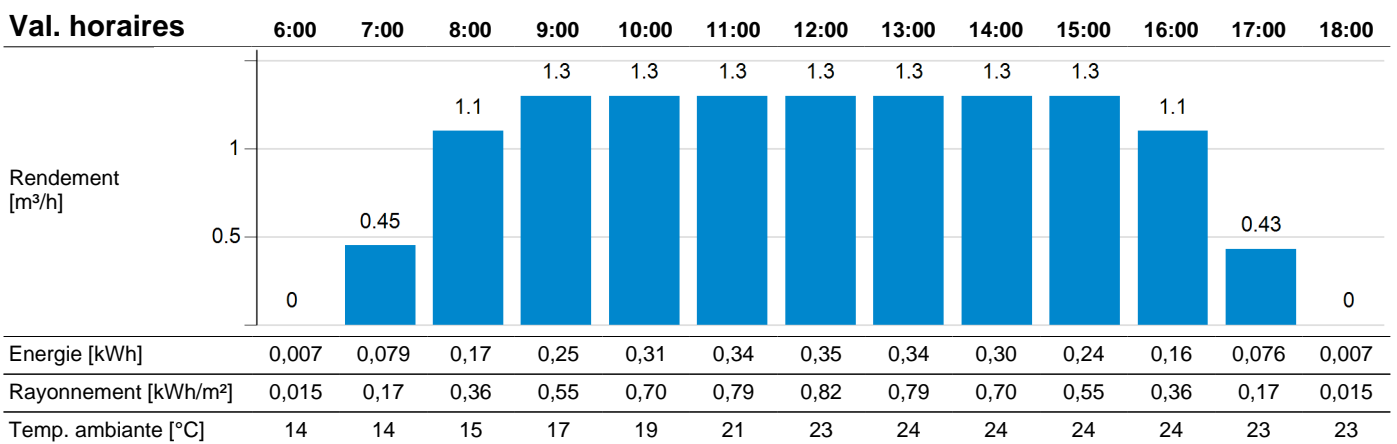
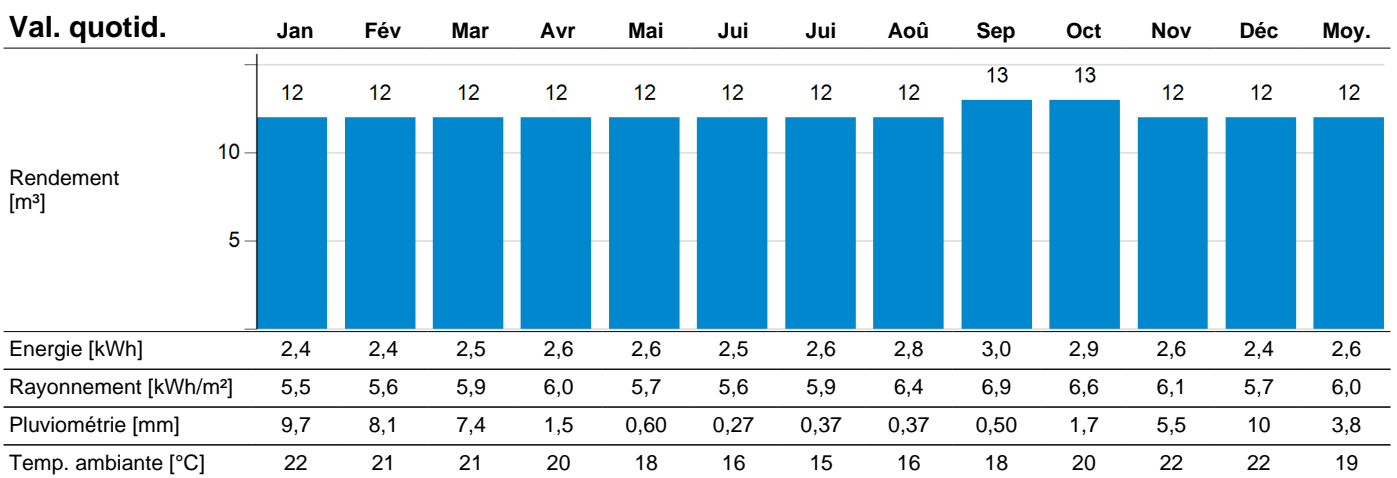
	Quantité	Détails
PS2-200 HR-07-3	1 pce	Système de pompe immergée comprenant contrôleur avec DataModule, moteur et extrémité de pompe
SQSO-C-SP250	2 pce	500 Wp; 2 x 1 modules; 19 ° incliné
Câble moteur	30 m	4 mm ² Câble triphasé pour le courant et câble monophasé pour la mise à la terre
Accessoires	1 ensemble	Well Probe, Float Switch, Surge Protector, PV Disconnect 440-40-1, Sacrificial Anode for HR Pump, PP200AC PowerPack, Sun Sensor Module, Flow Sleeve for HR Pumps, PS2 Manual Speed Controller

Sun Sensor setting in PumpScanner

min. 150 W/m²

Rendement quotidien en mois moyen

12 m³



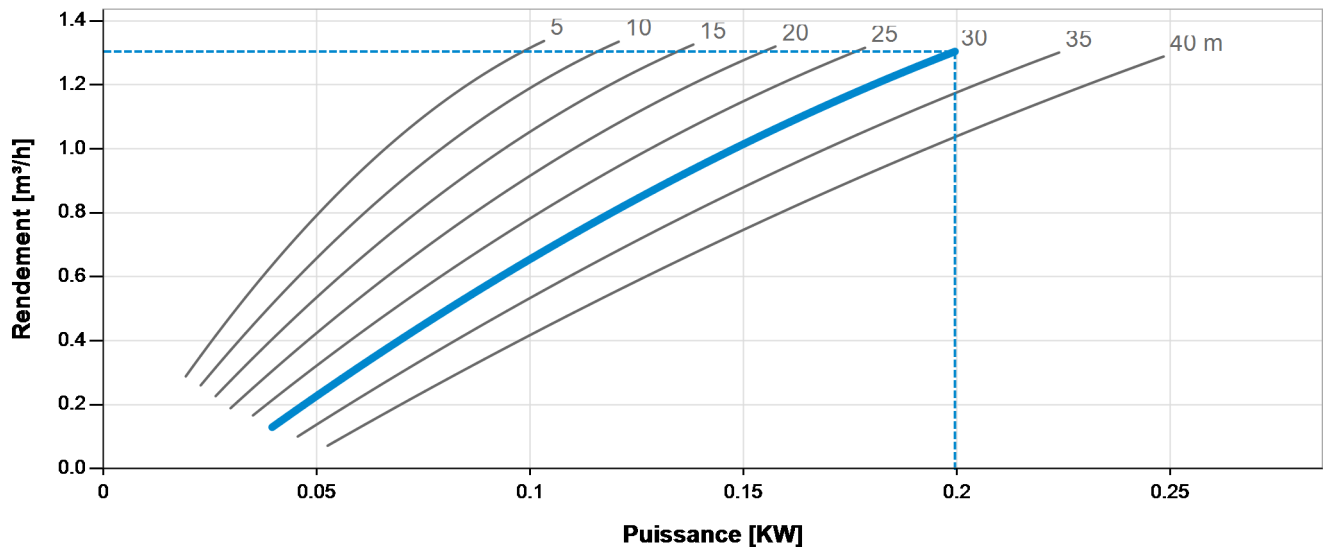


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Projet de pompage solaire

Caractéristique du système



		Min.	800 W/m ² , 20 °C	Max./STC*
Générateur PV	Température des cellules	[°C]	46	25
	Perte de température	[%]	10	-
	Perte par saletés	[%]	5,0	-
	Pmax	[Wp]	342	500
	Vmp	[V]	55	61
	Imp	[A]	6,2	8
	Voc	[V]	68	75
	Isc	[A]	6,7	9
	Pout	[W]	206	-
	Vout	[V]	64	-
	Iout	[A]	3,3	-
Câble moteur	Perte de puissance	[%]	2,1	5,4
Systèmes de pompe	Puissance du moteur	[W]	40	200
	Tension du moteur	[V EC]	14	51
	Intensité du moteur	[A]	2,9	4,0
	Vitesse du moteur	[rpm]	755	3 290
	Débit	[m³/h]	0,13	1,3
	Efficacité	[%]	25	52

*STC: Modules photovoltaïques en condition de test standard, rayonnement 1 000 W/m², température des cellules 25 °C



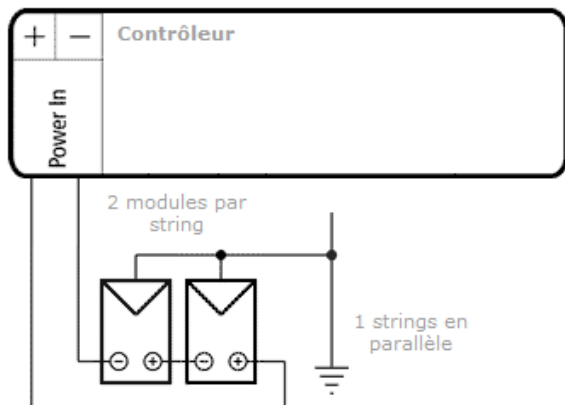


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Démonstration 1

Projet de pompage solaire

Schéma de branchement



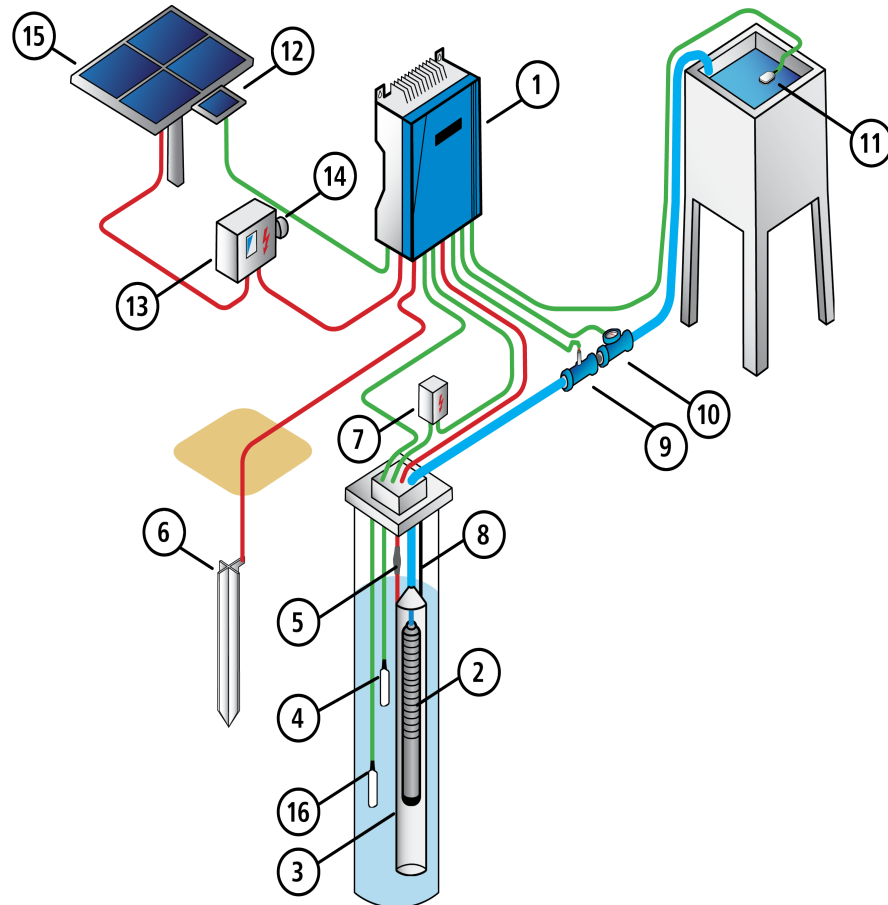


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Démonstration 1

Projet de pompage solaire

System Layout



1: PS2 Controller

2: Submersible Pump

3: Flow Sleeve

4: Well Probe

5: Cable Splice Kit

6: Grounding Rod

7: Surge Protector*

8: Safety Rope

9: Water Meter

10: Pressure Sensor

11: Float Switch

12: Sun Switch

13: PV Disconnect

14: Lightning Surge Protector

15: PV Generator

*Il est recommandé d'installer une protection contre les surtensions au niveau de chaque entrée de capteur du contrôleur.

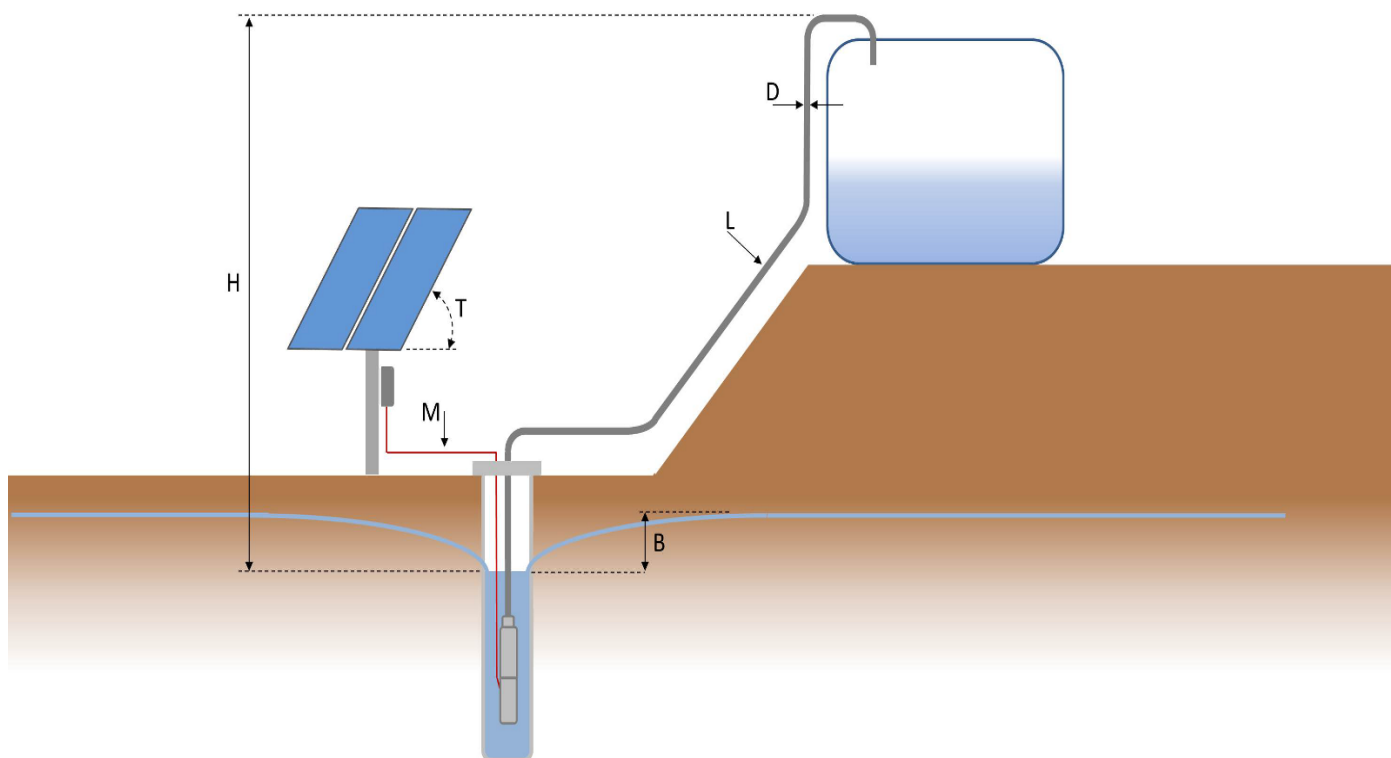


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Démonstration 1

Projet de pompage solaire

Sizing Layout



H (Perte de pression statique):	Hauteur verticale du niveau dynamique de l'eau au point de livraison le plus élevé.
B (Abaissement de la nappe phréatique):	Abaissement de l'eau dépendant du débit et taux de récupération du puit.
D (Diamètre intérieur de la canalisation)	
L (Longueur du tuyau):	Canalisation entière de la sortie de la pompe au point de livraison. Des coudes et armatures doivent être ajoutés comme longueur de canalisation équivalente.
M (Câble moteur):	Câble entre le contrôleur et la pompe.
T (Angle d'inclinaison):	Angle entre le panneau du générateur PV et le panneau horizontal.



PS2-200 HR-07

Systeme de pompe solaire immergée pour puits 4"

Gamme de systemes

Chute	max. 40 m
Débit	max. 1,3 m ³ /h

Données techniques

Contrôleur PS2-200

- Commande et surveillance
- Entrées de commande pour protection contre le fonctionnement à sec, commande à distance, etc.
- Protection contre inversion de polarité, surcharge et surchauffe
- MPPT (Maximum Power Point Tracking) intégré
- Fonctionnement à batterie: protection intégrée contre la décharge profonde

Puissance	max. 0,30 kW
Tension d'entrée	max. 100 V
Optimal Vmp**	> 34 V
Intensité du moteur	max. 11 A
Efficacité	max. 98 %
Temp. ambiante	-40...50 °C
Classe de protection	IP68

Moteur ECDRIVE 200-HR

- Entretien minimal, moteur DC sans balais
- Rempli d'eau
- Matériel de haute qualité, acier inoxydable: AISI 304/316
- Moteur sans électronique à l'intérieur

Puissance nominale	0,3 kW
Efficacité	max. 92 %
Vitesse du moteur	750...3 300 rpm
Classe d'isolation	F
Classe de protection	IP68
Submersion	max. 150 m

Extrémité de la pompe PE HR-07***

- Clapet anti-retour
- Matériel de haute qualité, acier inoxydable: AISI 304/316
- En option : protection contre le fonctionnement à sec
- Helical rotor pump

Efficacité	max. 63 %
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Pompe PU200 HR-07 (Moteur, Extrémité de la pompe)

Diamètre de forage	min. 4,0 in
Température de l'eau	max. 50 °C****

Normes



2006/42/EC, 2004/108/EC, 2006/95/EC

IEC/EN 61702:1995

Les logos indiquent les autorisations obtenues pour cette gamme de produits. Les produits sont commandés et livrés selon les autorisations propres aux exigences du marché.

**Vmp: Tension MPP en condition de test standard (STC) : rayonnement solaire 1 000 W/m², température des cellules 25 °C

***Préciser la plage de température à la commande

****Special solutions available for >50 °C, please consult your distributor

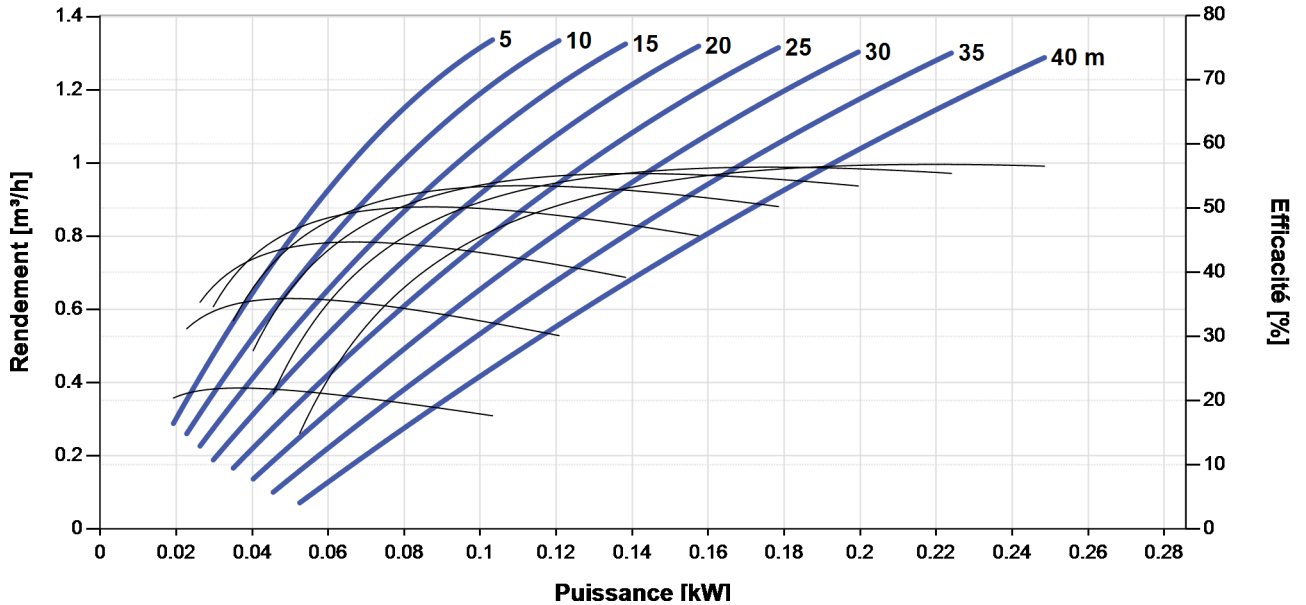


PS2-200 HR-07

Système de pompe solaire immergée pour puits 4"

Graphique de la pompe

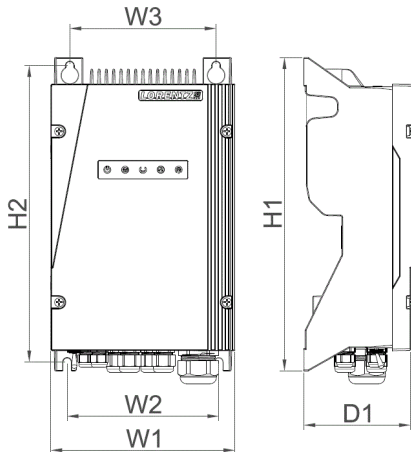
Vmp* > 34 V



Dimensions et poids

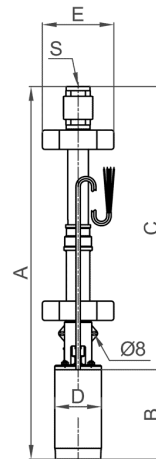
Contrôleur

H1 = 352 mm
 H2 = 333 mm
 W1 = 207 mm
 W2 = 170 mm
 W3 = 164 mm
 D1 = 124 mm



Pompe**

A = 771 mm
 B = 185 mm
 C = 586 mm
 D = 96 mm
 E = 147 mm
 S = 1,25 in



	Poids net
Contrôleur	5,6 kg
Pompe	12 kg
Moteur	7,0 kg
Extrémité de la pompe	4,5 kg

*Vmp: Tension MPP en condition de test standard (STC) : rayonnement solaire 1 000 W/m², température des cellules 25 °C

**En taillant les rondelles en caoutchouc, le diamètre peut être réglé entre 6" et 4".



Well Probe

Mechanically Activated Device for Dry Run Protection in Applications with LORENTZ Solar Pump Systems

The switch can be used to detect the water level within a well. When the water level in the well dropped below the level of the well probe, the LORENTZ Controller will stop the pump and indicates Source Low LED.

ORDER INFORMATION

- **Item no.:** 19-000000 **product name:** Well probe sensor

FEATURES

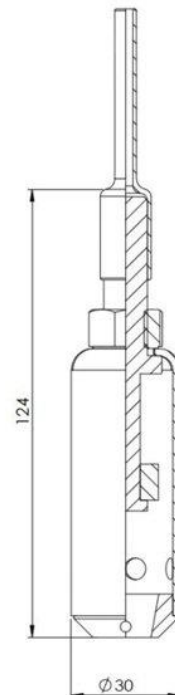
- Reliable dry run protection
- Simple to install
- Trouble free operation
- Corrosion-free
- Splicing kit included

TECHNICAL DATA

- Max. operating temperature 55 °C
- Enclosure class: IP68
Submersion depth: max 50 m
- Cable length: 1.5m
- Wire size: 2x 0.75mm² or AWG 19, waterproofed
- Mounted in vertical position
- Meets the requirements for CE

DIMENSION/WEIGHT

- Packaging dimensions: 260 x 170 x 40 mm
10.3 x 6.7 x 1.6 in
- Total weight: 0.1 kg / 0.2 lbs



Float Switch

Mechanically Activated Device for Water Level Detection in Applications with LORENTZ Solar Pump Systems

The switch can be used to detect the water level within a tank. When the water level in the tank reaches the maximum, the LORENTZ Controller will stop the pump and indicates Tank Full LED.

ORDER INFORMATION

- **Item no.:** 19-000030 **product name:** Float Switch

FEATURES

- **N.O.** (normally open) and **N.C.** (normally closed) function
- Reliable water level detection
- Simple to install
- Trouble free operation
- Not sensitive to rotation
- Corrosion-free

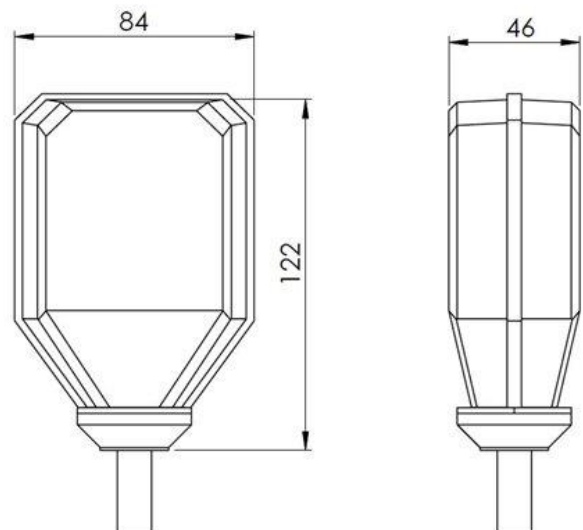


TECHNICAL DATA

- Operating temperature: -10°C to 55°C
- Storage temperature: : -10°C to 55°C
- Enclosure class: IP68
- Cable length: 3m, waterproof
- Wire size: 3x 1.0mm² or AWG 18
- Meets the requirements for CE

DIMENSION/WEIGHT

- Packaging dimensions: 230 x 160 x 55 mm
9.1 x 6.3 x 2.2 in
- Total weight: 0.8 kg / 1.8 lbs



Surge Protector

Device to Protect LORENTZ Pump Accessories from Voltage Spikes

ORDER INFORMATION

- **Item no.:** 19-000280 **product name:** Surge Protector

FEATURES

- Reliable surge protection for all LORENTZ pump accessories
- Can be installed inside the PS Controller

TECHNICAL DATA

- Max. voltage: 14 VDC
- Max current 8/20 μ s: 500 A
- Enclosure class: IP65
- Ambient temperature: max. 50°C
- Wire size: 2x 1.5mm² or AWG 16
- Meets the requirements for CE



DIMENSION/WEIGHT

- Packing dimensions: 70 x 45 x 20 mm
2.8 x 1.8 x 0.8 in
- Total weight 0.1 kg / 0.2 lbs

PV Disconnect 440-40-1

Box with DC Disconnect Switch and optional lightning surge protection

ORDER INFORMATION

- **Item no.:** 19-000137 **product name:** PV Disconnect 440-40-1
- **Item no.:** 19-002120 **product name:** MNSPD-115
- **Item no.:** 19-002130 **product name:** MNSPD-300
- **Item no.:** 19-002140 **product name:** MNSPD-600

Lightning surge protectors must be ordered separately

FEATURES

- Designed for PS150 – PS4000
- For professional installation of pumping systems

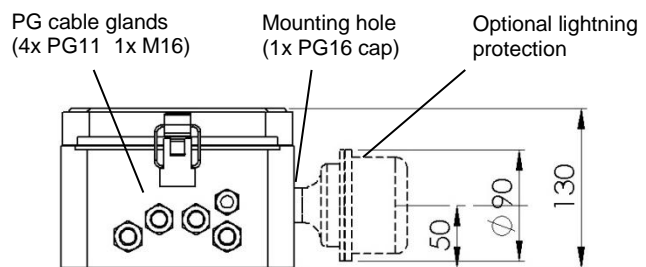
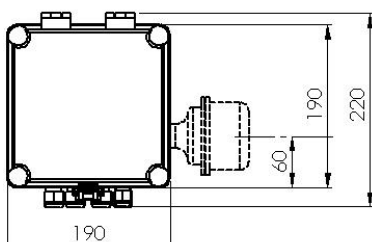
TECHNICAL DATA

- DC rated disconnect switch enclosed
- Enclosure class IP 54
- Meets the requirements for CE

PV Disconnect 440-20-1

Max. voltage	440 V DC
Max. current	40 A
String cable size	4 - 10 mm ²
Output cable size	4 - 10 mm ²

DIMENSION/WEIGHT [mm]



Net. Weight: 1,4kg (+0,35kg)



Optional lightning surge protector

- Connects through an existing mounting hole in the PV connect housing
- Proper grounding of the device is mandatory to achieve protection

Controller	MidNite surge protector
PS150 – PS200	MNSPD115
PS600 – PS1800	MNSPD300
PS4000	MNSPD600

Sacrificial Anode for HR Pump

Zinc sacrificial anode for corrosion protection of HR pump ends

USE / PURPOSE

The LORENTZ Sacrificial Anode is designed for use with LORENTZ pump ends. Where solar pump ends operate in aggressive water conditions acidic water can attacks the passive layer of the high quality-steel pump end. This corrosion reduces the life time of the product. The LORENTZ Sacrificial Anode protects the pump system from this type of corrosion and extends the pump life

ORDER INFORMATION

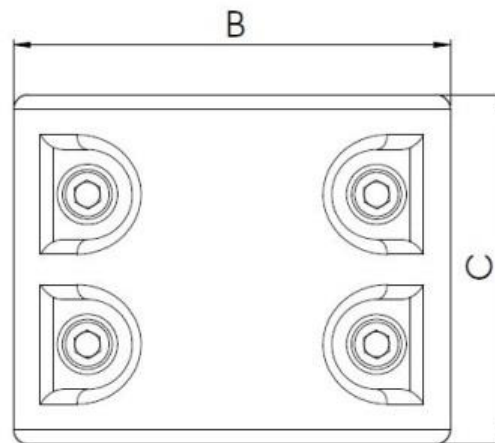
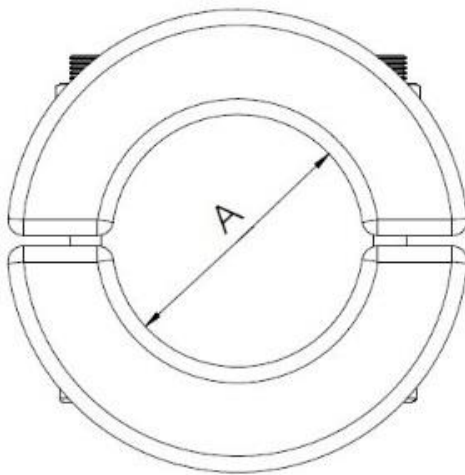
- **Item no.:** 19-002621 **Product name:** Anode, Sacrificial Zink Anode, Di42mm
- **Item no.:** 19-002622 **Product name:** Anode, Sacrificial Zink Anode, Di48mm

FEATURES

- Simple and cost effective part to protect the pump end from corrosion
- Designed for HR pump ends



TECHNICAL DATA



	A	B	C	Weight	Surface	Item no.
HR03/04/05	48 mm 1,89 in	88 mm 3,46 in	70 mm 2,76 in	1,76 kg 3,88 lbs	59100 mm ² 91,61 in ²	19-002622
HR07/10/14/23/32	42 mm 1,65 in	82 mm 3,23 in		1,68 kg 3,70 lbs	55500 mm ² 86,01 in ²	19-002621

PP200AC PowerPack

AC/DC Converter to Supply PS2-200 Pump Systems with Backup Power from a Generator or Mains Supply

ORDER INFORMATION

- Item no.: 19-004250 / 19-004270 product name: Power Pack 200

TECHNICAL DATA

Product name	Power Pack 200	
Item no.	19-004270	19-004250
Pump System	PS2-200	
AC input		
Nominal voltage	120 VAC	240 VAC
Max. current	10 A	6 A
Frequency	50-60 Hz	50-60 Hz
DC output		
Max. voltage	48 VDC	48 VDC
Max. current	10.0 A	10.0 A

- AC input: 120/240 V ($\pm 15\%$) as factory setting, 50 to 60 Hz
- DC output: max. 48 V DC (no load), 450 W
- Enclosure: steel, gasket-sealed, indoor-use, hinged front cover with key-lock
- Must be protected from direct mid-day sun
- Enclosure class: IP22
- Ambient temperature: max. 45 °C / 113°F
- PV cable length 2 m, with MC4 plugs
- Main supply AC input cable length 1.8 m, pre-connected grid main supply plugs
- Manual with further information is available on partnerNET
- Meets the requirements for CE



DIMENSION/WEIGHT

- Packaging dimensions: 390 x 270 x 160 mm / 15.4 x 10.6 x 6.3 in
- Total weight: 6.4 kg / 14 lbs

BERNT LORENTZ GmbH & Co. KG
 Siebenstuecken 24, 24558 Henstedt-Ulzburg, Germany
 Tel +49 (0)4193 8806-700, www.lorentz.de

Sun. Water. Life.

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.

Sun Sensor

Irradiation measurement module and software

The LORENTZ Sun Sensor module and software allow the PS2 controller to accurately estimate irradiation levels and control the pump based on this.

The Sun Sensor function can be configured to offer the pump mechanical protection from repeated stop starts. The Sun Sensor function can also be configured to switch external devices via the PS2 output terminals.

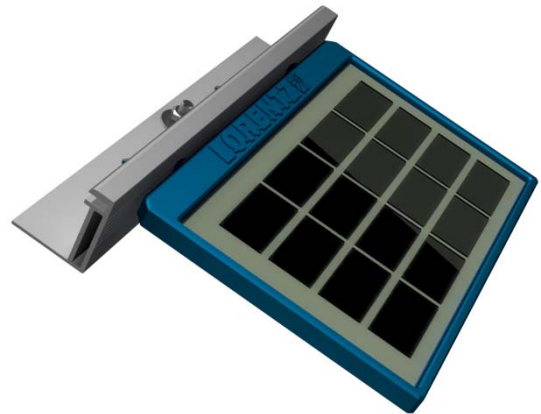
Each module is tested and specially calibrated for use with the PS2 system. The Module also includes a software license to use the features which is accessed via the item serial number.

This Sun Sensor module is included with any PS2-1800 or PS2-4000 controller.

For PS controllers (non PS2) refer to the SunSwitch Datasheet.

ORDER INFORMATION

- **Item no.:** 19-005030
- **Product name:** Sun Sensor module



TECHNICAL DATA

- Open circuit voltage $V_{oc} = 10.2 \text{ V}$
- Short circuit current $I_{sc} = 0.19 \text{ A}$
- Wire size: 3x 1.0mm² or AWG 18, waterproofed
- Mount close to the solar array
- PS2 manual with further information is available in PartnerNet
- Meets the requirements for CE

DIMENSION/WEIGHT

- Packaging dimensions: 180 x 205 x 60 mm
7.08 x 8.07 x 2.36 in
- Total weight: 0.6 kg / 1.33 lbs

Flow Sleeve for HR Pumps

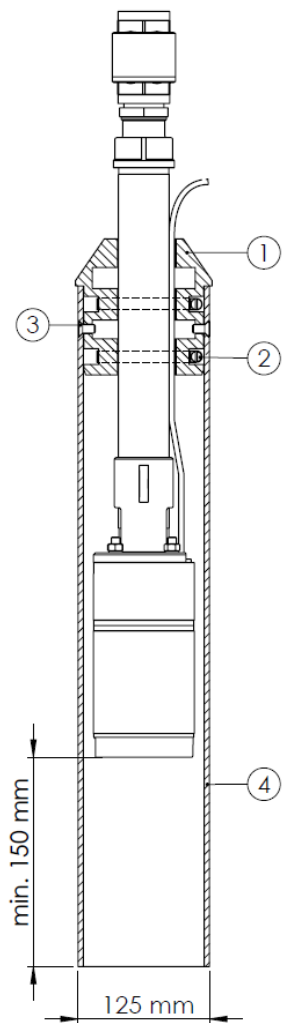
Device to protect the pump from dirt and for motor cooling

A flow sleeve is a sleeve that goes around the pump body and motor. It has two functions:

1. **A flow sleeve reduces the amount of dirt in the pump.** Where water sources contain sand or have the potential for dirt falling into them (uncapped wells) a flow sleeve is recommended to protect the pump from dirt. Due to the large inner diameter of the flow sleeve the water rises very slowly and dirt deposits at the bottom of the well. Subsequently, water with less sediments enters the pump which increases its lifetime.
2. **A flow sleeve cools the motor.** In open water, tanks or pools there is no natural flow of water across the motor which can lead to heat build-up. The tube enforces water flow across the motor which has a cooling effect.

ORDER INFORMATION (please compare (1), (2) etc. with the sample flow sleeve)

Item no.	Product name	Scope of delivery	Suitable for
19-000220	Flow Sleeve Kit for 4" HR Pumps	(1) 1 x flow sleeve adapter (2) 2 x hose clamp (3) 4 x countersunk bolt M6x20 (4) 1 x PVC tube: $\varnothing 125 \times 5$, 800 mm length	All HR pumps with 4" motor
19-000240	Flow Sleeve Adaptor for 4" HR Pumps	(1) 1 x flow sleeve adaptor (2) 2 x hose clamp (3) 4 x countersunk bolt M6x20 A tube (4) is not part of the scope of delivery.	All HR pumps with 4" motor



sample flow sleeve

FEATURES

- Due to the large inner diameter of the flow sleeve the water rises very slowly allowing dirt to settle at the bottom of the well
- The life expectancy of the pump is increased due to less sand entering the pump
- Simple installation
- Can be used with PS2-200 – PS2-4000 HR Pumps
- Min. well diameter of 6" (150 mm) required

DIMENSIONS/WEIGHT

Flow Sleeve Kit for 4" HR Pumps (19-000220):

- Packaging dimensions: 850 x 150 x 130 mm
33.5 x 6.0 x 5.1 in
- Total weight: 3.7 kg / 8.2 lbs

Flow Sleeve Adaptor for 4" HR Pumps (19-000240, without PVC tube):

- Packaging dimensions: 135 x 135 x 135 mm
5.3 x 5.3 x 5.3 in
- Total weight: 1.2 kg / 2.6 lbs

PS2 Manual Speed Controller

Device to provide manual motor speed control of PS2 systems

The LORENTZ PS2 Manual Speed Controller allows adjustment of the maximum motor speed without using the PumpScanner App. To use the Manual Speed Controller, it is required to activate this function in the settings of PumpScanner during or before installation.



ORDER INFORMATION

- Item no.: 19-000035 Product name: PS2 Manual Speed Controller

FEATURES

- Allows manual control of PS2 motor speed
- Outdoor rated, installed in the housing of the controller

TECHNICAL DATA

- Voltage: 15-24 V DC
- Enclosure class: IP65
- Ambient temperature: -38...50 °C (-36... 122 F)
- Wire size: 2 x 0,75 mm²/18 AWG
- Replaces Ø 20mm cable gland
- Meets the requirements for CE
- Please note that if “Manual Speed Controller” is configured then “Set speed limitation” function is not available in PumpScanner.

DIMENSION/WEIGHT

- Packing dimension : 100 x 70 x 35 mm; 3.9 x 2.7 x 1.3 in
- Total weight: 0.2 kg / 0.4 lbs

