



Solar Pumping Products

Solar Water Solution
25.11.2020

Jakob Norman Olesen

be
think
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GRUNDFOS 

The world's largest manufacturer of pumps and pump systems

- Founded in 1945 by Poul Due Jensen in Denmark
- Annual production of more than 16 million pump units
- More than 19,000 employees worldwide
- 55 sales companies working with distributors and dealers all over the world to provide products and service.

- First SP in 1968
- First solar in 1980

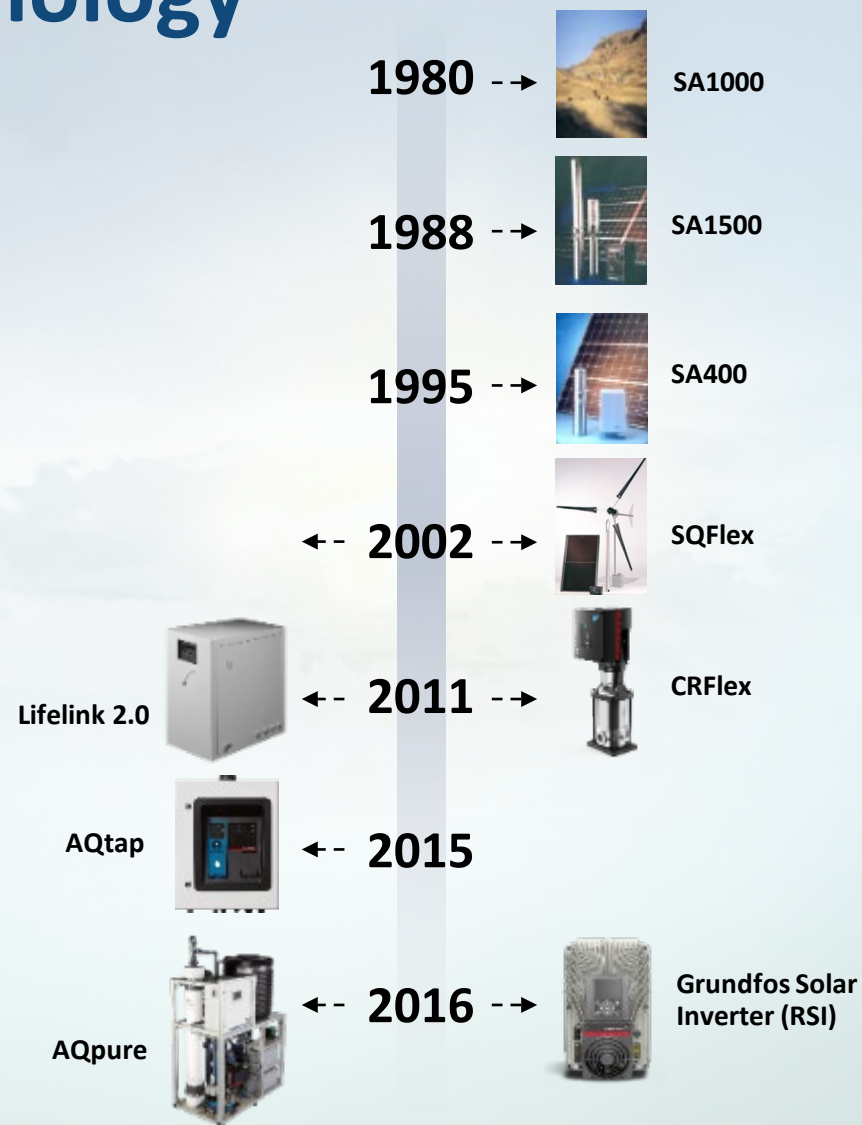


We've supplied
hundreds of thousands
solar pumps

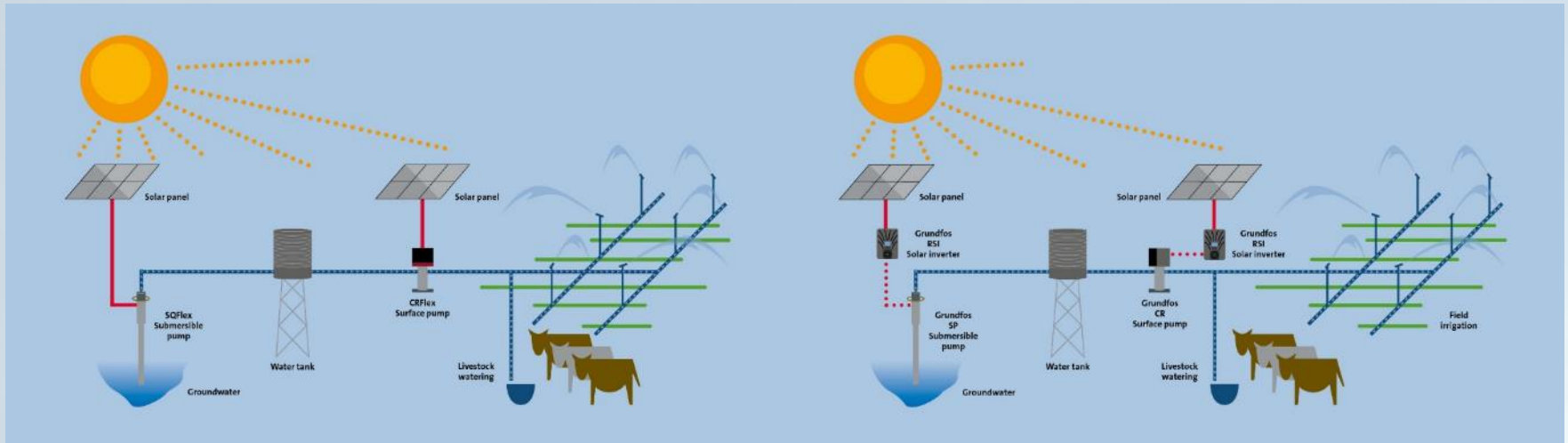


Leaders in off-grid technology

- First **off-grid water supply** in 1980
- Continuously improved efficiency with the original system using an **external inverter**
- **SQFlex** submersible pump launched in 2002 with an integrated solar inverter – the **CRFlex** surface pump followed in 2011
- First water dispenser launched in 2011 – the intelligent **AQtap** water ATM followed in 2015
- **RSI** launched in 2016 for large solar water supply, perfectly matched to standard Grundfos pumps
- **AQpure** water treatment system released



Grundfos Solar Water Solutions



Submersible

Well water intake, water transfer

Surface pump

Irrigation, water distribution, pressure boosting

SQFlex 2.5kW

- Integrated all in one submersible solar solution
- Frequency drive build in
- Dry-run protection
- Plug and pump
- No setup



RSI solar inverter 250kW

- External Solar Drive
- MPPT function
- Up to IP 66
- Easy setup

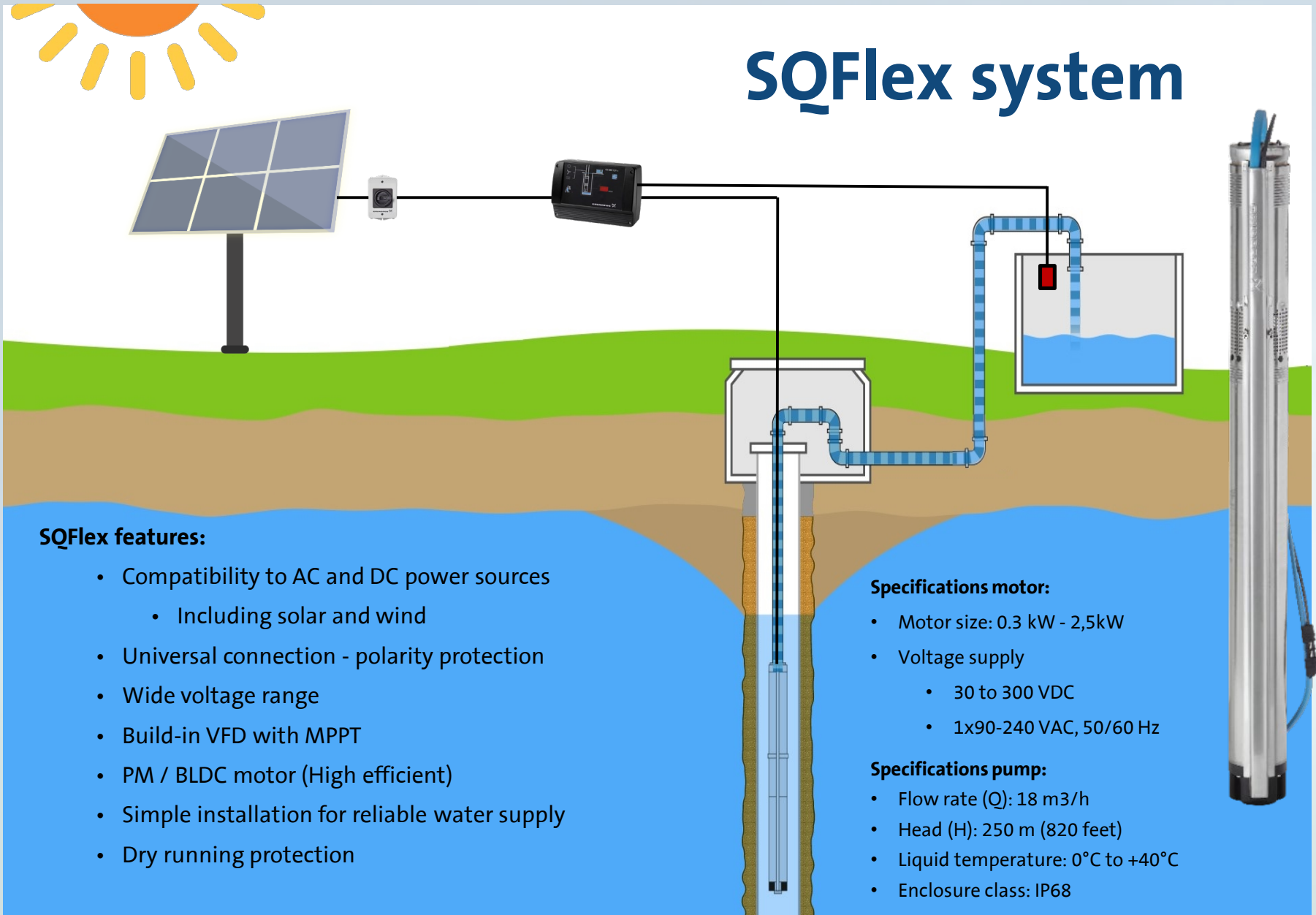


CRFlex 1.73kW

- Integrated all in one surface solar solution
- Frequency drive build in
- Plug and pump
- No setup



SQFlex system



SQFlex features:

- Compatibility to AC and DC power sources
 - Including solar and wind
- Universal connection - polarity protection
- Wide voltage range
- Build-in VFD with MPPT
- PM / BLDC motor (High efficient)
- Simple installation for reliable water supply
- Dry running protection

Specifications motor:

- Motor size: 0.3 kW - 2,5kW
- Voltage supply
 - 30 to 300 VDC
 - 1x90-240 VAC, 50/60 Hz

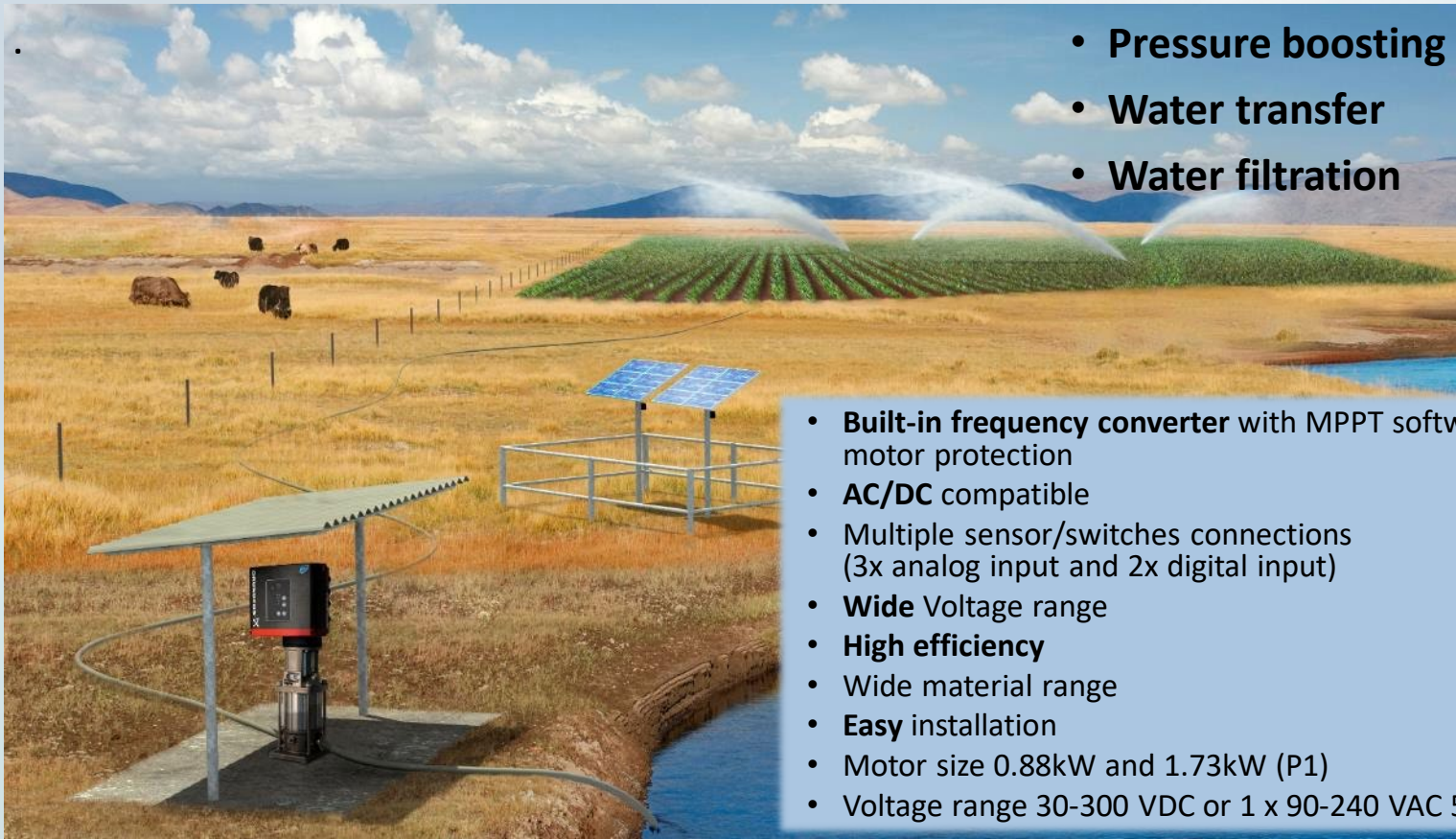
Specifications pump:

- Flow rate (Q): 18 m³/h
- Head (H): 250 m (820 feet)
- Liquid temperature: 0°C to +40°C
- Enclosure class: IP68

MGFlex solar surface motor



The Grundfos **MGFlex solar surface motor** is specifically designed for solar energy applications with various Grundfos hydraulics.



- **Pressure boosting**
- **Water transfer**
- **Water filtration**

- **Built-in frequency converter** with MPPT software and motor protection
- **AC/DC** compatible
- Multiple sensor/switches connections (3x analog input and 2x digital input)
- **Wide** Voltage range
- **High efficiency**
- Wide material range
- **Easy** installation
- Motor size 0.88kW and 1.73kW (P1)
- Voltage range 30-300 VDC or 1 x 90-240 VAC 50/60 Hz



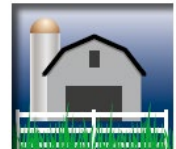
IRRIGATION



LIVESTOCK



SWIMMING POOL

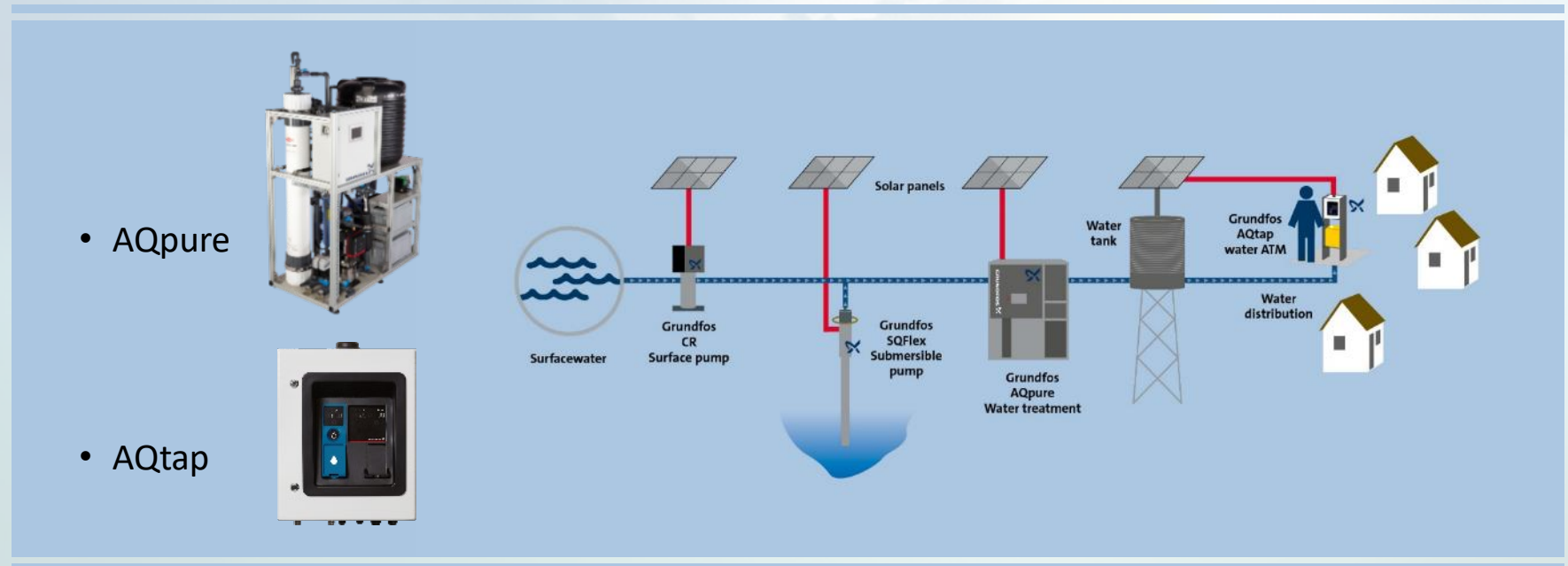


FARM HOUSE

Water treatment and water kiosks

AQpure is a modular and prefabricated water treatment system for producing safe drinking water, providing a reliable and affordable water supply for communities.

AQtap is an intelligent water ATM offering a unique and integrated platform for revenue collection and online remote management of water points.



Grundfos Solar Inverter (RSI)

The intelligent off-grid **Grundfos Solar Inverter (RSI)** can power nearly all Grundfos pumps, greatly expanding possibilities for solar energy water supply systems.

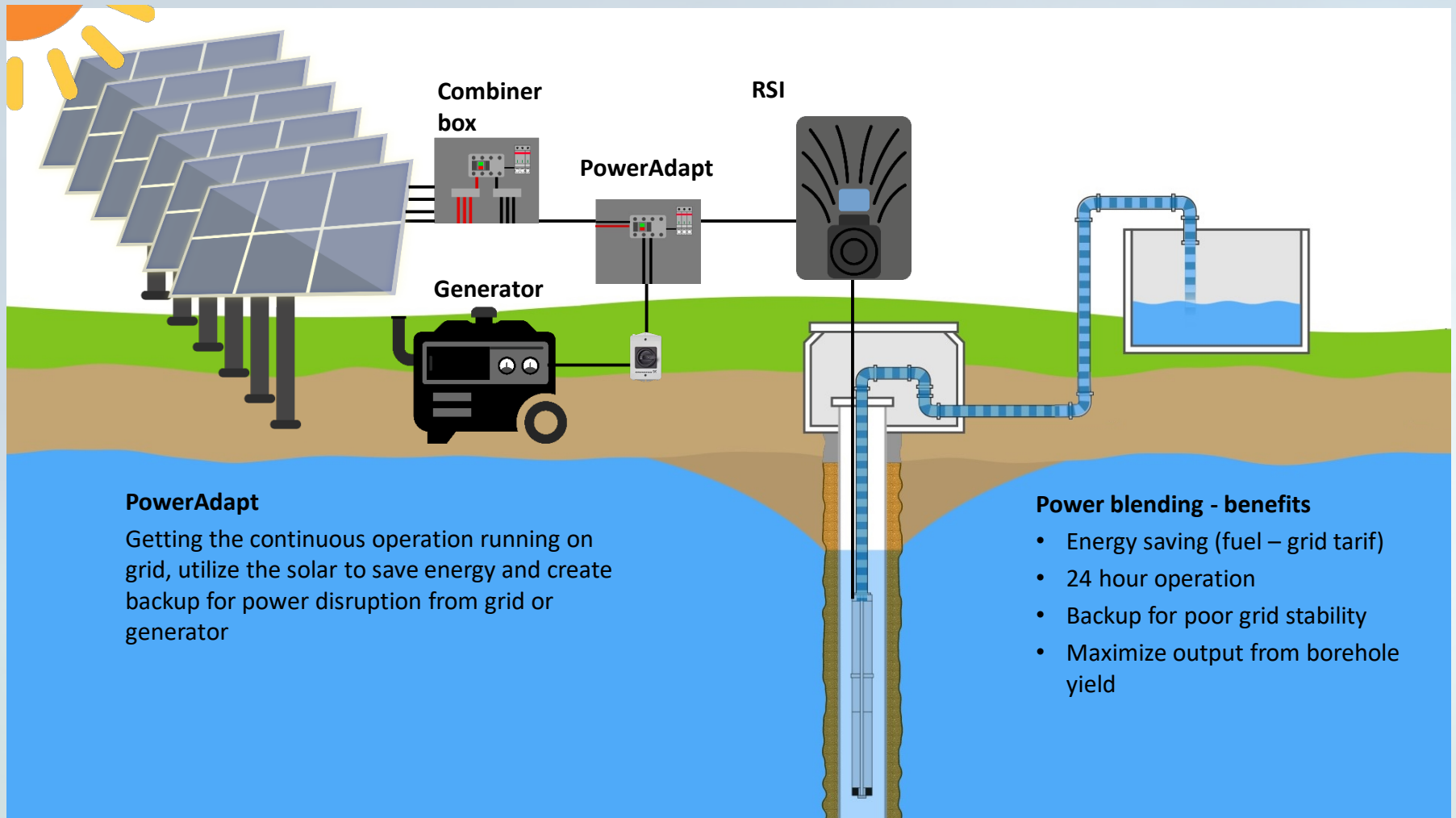
- Power range: **1.5kW to 250 kW**
- Works with PM/BLDC motors
- Retro fit AC system to solar

Features:

- AC/DC compatible
- Quick setup Wizard
- Build in pump selection
- Advanced MPPT software
- Up to IP66 enclosure class

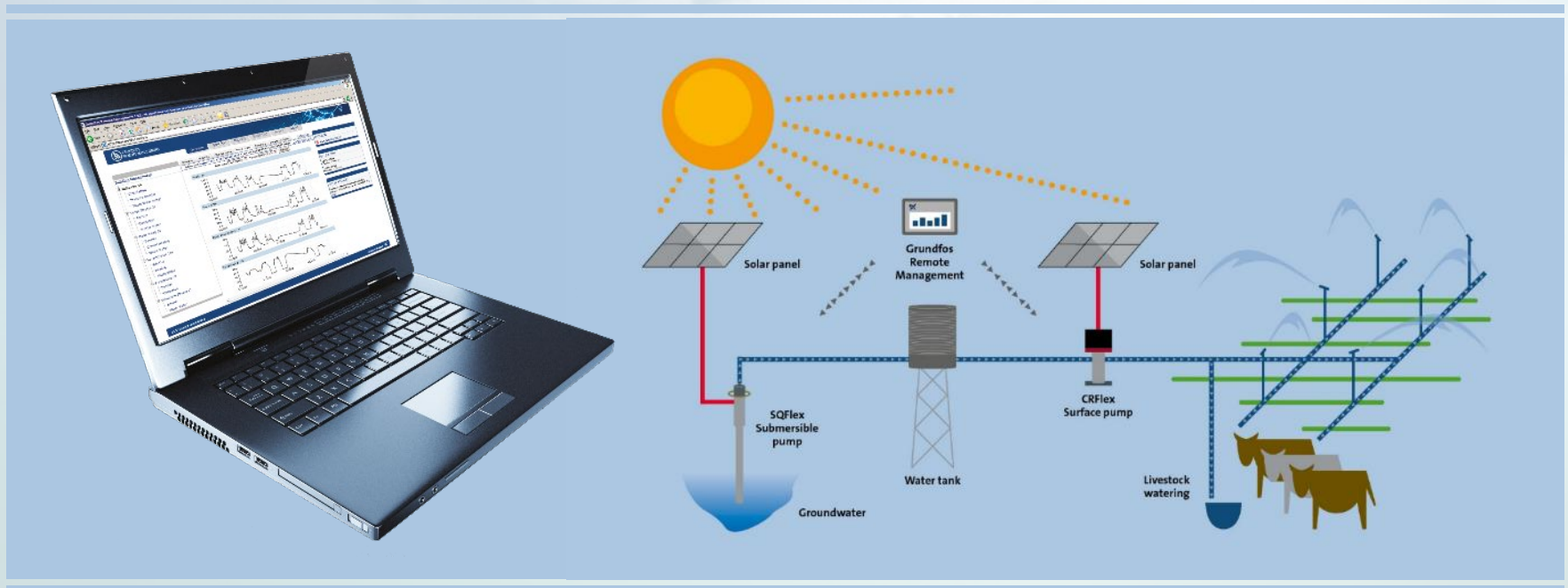


RSI with PowerAdapt



System monitoring with GRM

Grundfos Remote Management is a cost-effective and straightforward way to monitor and manage pump installations. It reduces the need for onsite inspections and in the event of an alarm or warning, the relevant people are notified directly.



Preparation for solar installation

Sizing / Selection: - Free access

- www.grundfos.com
- www.product-selection.grundfos.com
- Fill in needed information:
 - Location
 - Static and dynamic head or TDH
 - Water per day (6 hours*safe yield)
- Size and Select

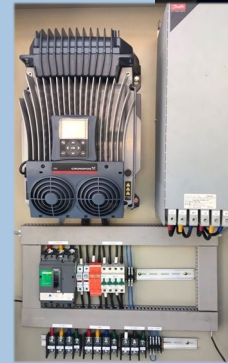
Contact your nearest Grundfos supplier or office

The image shows two screenshots of the Grundfos website. The top screenshot is the main homepage, featuring a large banner for 'FARMERS GROW THEIR BUSINESS WITH IRRIGATION' with a man pointing towards a herd of cows in a field. Below the banner are sections for 'Products' and 'Service'. The bottom screenshot shows the 'PRODUCT CENTER' page, specifically the 'SIZING' tool interface. This interface includes a search bar, a navigation menu with options like 'SIZING', 'CATALOGUE', 'REPLACEMENT', and 'LIQUIDS', and a form for entering daily peak flow and static/dynamic head. The 'SIZING' tool is currently selected, showing options to search by pump design or pump family, and a 'START SIZING' button.

Installation and maintenance

Trouble free operation – FOCUS

- Installation
 - Installation of solar panels
 - Installation of pump and/or RSI
- Maintenance
 - Cleaning of solar panels
 - Remove trees and bushes (shadow)
 - Pump – none, but well conditions should be monitored, water level and sand/silt content



India, Pradikala, Nagpur

Situation: Drinking water

- Dual system for easy access to water all year
 - Hand pump for bad weather
 - SQFlex delivers water even in dry season when water level drops below 50-70m
- **Products used**
 - “Dual” hand pump with SQFlex
 - 1 x CU200
 - 3 * 270W solar panels



Ethiopia - Bui



Situation: Water supply

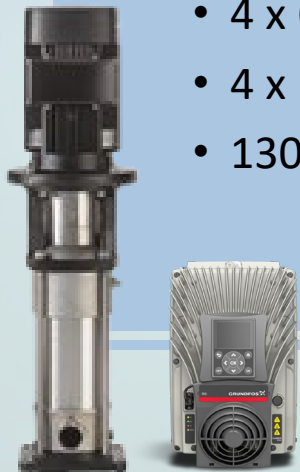
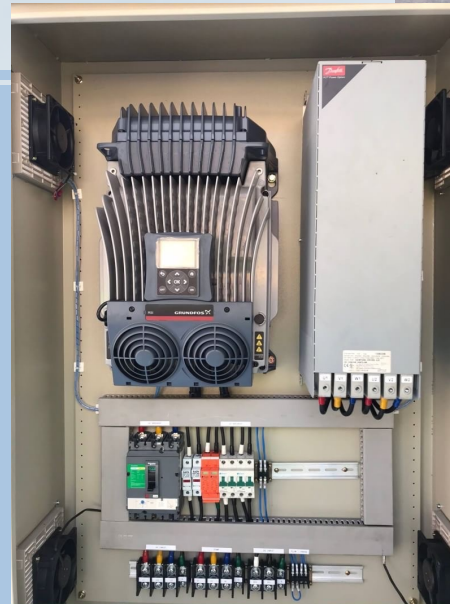
- Ground water supply with transfer
 - Deep well 200m
 - Transfer 5 km
- **Products used**
 - 1 x SP 7
 - 1 x RSI 15kW
 - 114 pcs of 270Wp solar panel



Thailand, Lumpang Province

Situation: Water transfer

- Water transfer from lake to storage
 - Used for irrigation and farming
 - 1000 people
- **Products used**
 - 4 x CR 32
 - 4 x RSI 30kW
 - 130 pcs of 400Wp solar panel



Puerto Rico

Situation: Disaster help

- Water supply during power outage
 - Backup for grid
 - Energy saving by switching

• Products used

- Retro fitting to installed pumps
 - (SP's, CR's etc.)
- RSI
- Typical 5-15 kW solar power



Nepal, Kathmandu

Situation: Drinking water

- Ground water pumping to storage tank
 - Used for drinking water
 - Communities 500-1000 people
 - Mountains farmers

• Products used

- 1 x SP 17
- 1 x RSI 30kW
- 38 pcs of 350Wp solar panel





Thank you

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