



# Picoturbina<sup>®</sup> 20W

## Hydroelectric power generator

- Hydroelectric generator with battery charger
  - Suitable for 12V and 24V battery
  - Maximum power output 20W
  - Reliable and easy to install
  - Designed to supply RTU, Data-Logger and measuring system
  - Born to take advantage of the difference of pressure between inlet and outlet of regulation valves with no waste of water
  - Usable in any kind of application falling within the total energy balance and respecting the hydraulic requirements
  - Produced power is regulated for the safeguard of battery
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- The image shows a compact, dark grey hydroelectric generator. It has a cylindrical main body and a smaller rectangular section on the right side. Two yellow plastic fittings are attached to the bottom of the unit. The generator is mounted on a blue metal bracket.
- Low power mode optimized for very low consumption in no generation periods
  - RS-485 interface with MODBUS protocol
  - LCD display for real time monitoring
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- The image shows a white rectangular electronic device, likely a Remote Terminal Unit (RTU) or data logger. It features a blue LCD display at the top showing the number '16.02'. Below the display are several buttons and a small keypad. The front panel has three green terminal blocks for wiring. There are also some printed labels and indicators on the front panel.
- Friendly pc software for operating parameter settings
  - Option internal RTC clock-calendar and I/O lines for advanced functions
  - Option continuous and discontinuous operating mode with external regulation valve

**Picoturbina**® is a hydroelectric generator of 20W maximum power with an MPPT electronic regulator for 12V and 24V battery charge. It's a reliable device, easy to use and easy to install.

Designed to take advantage of the energy produced by the pressure difference between inlet and outlet of a control valve without waste of water, can also be used on water sources and deposits and in general in applications that comply with the flow rate and pressure range and energy balance.

The control electronics (**PTR-20**) manages the activation of the load output and the charging of the battery (12 or 24 V) in order to preserve its integrity. To optimize the use of stored energy, in the periods when the flow of water can't assure a sufficient energy production, the system stops the energy conversion and switches to low power mode; also in this mode all the functions rest active. Moreover the electronics is provided of I/O lines for optionally advanced functions as e.g. the

management of regulation and hi/lo pressure valves. Other functions can be inserted on customer request.

The display shows in real time all the measures and operations of the controller. The user can verify the correct behaviour of the system and set the main operating parameters by means of keyboard. With the RS-485 interface Picoturbina can be connected to a supervisor system. The user can set all operating parameters and advanced functions by dedicated software.

**Picoturbina**® can be used in parallel with other Picoturbina(s) and/or other generation systems as, e.g., photovoltaic panels.

- Main applications**
- Power Supply for:
- RTU and Data-Loggers
  - Measurement instruments
  - Low-power systems
  - Low power chlorine pumps
  - Measurement systems



Device type:	Hydroelectric generator with battery charger
Maximum power:	20W
Battery voltage	12 V or 24 V
Operating $\Delta P_{i0}$ range	1.0 - 3.5 bar
Max pressure	10 bar
Flow rate	0.33 l/sec @ 0.8 bar --- 0.65 l/sec @ 3.0 bar
Maximum load current	2.0 A
Serial interface	RS-485 with MODBUS protocol
Operating temp.	-10 - 55 °C
Storage temp.	-20 - 70 °C
Containers	Generator: 160x130x120, IP68; PTR-20 regulator: 160x110x62, with DIN rail attach
Weight	Generator: 2400 g; PTR-20 regulator: 360 g
Diameter hydraulic connection	Ø 20mm
Generator cable length	3m standard, other on request

