# Quick reference guide
Simrad PI Charger

Purpose

The Simrad PI Charger is an intelligent battery charger for fast and secure charging of the PI sensors. The charger will automatically set up the correct charging current depending on the sensor type and the battery temperature.

Even though the PI Charger is designed for fast charging of the PI sensors, it can also charge the PS sensors, *but only at normal charge rate.*

A "fuel meter" shows the status of the battery during the charge.
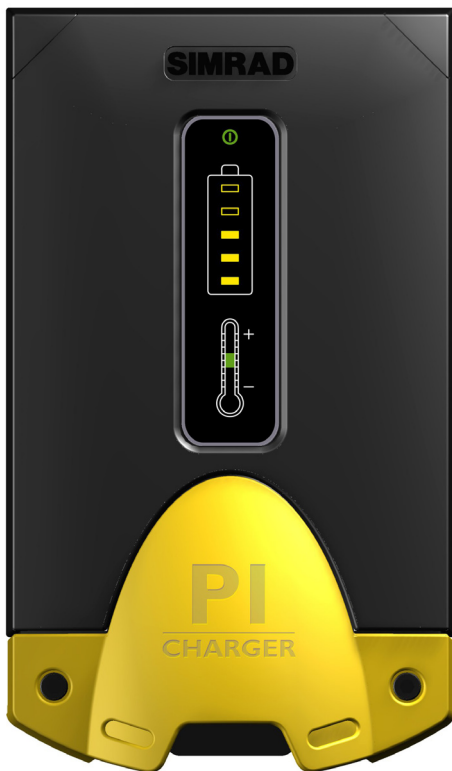
> ### WARNING!
> *Charging a sensor at sub-zero temperature might develop explosive gases representing a potential danger. Simrad assumes no liability for improper charging, or the use of other chargers than those approved by Simrad.*

Daily operation

1) Attach the charging clamps to the sensor as follows:
Red clamp: Positive fastening lug (+)
Black clamp: Negative lug (-)

2) Ensure that attachment materials, rope etc. do not short circuit the charging lugs. This will prevent charging, and may and cause damage to the sensor lugs.

Once connected, the charger will identify whether the sensor connected can be fast charged or not. The battery temperature will always be monitored for a fast charging sensor. If the sensor can not be fast charged, the charger will not display the battery temperature, and the temperature LED will be dark.

3) Observe the charge times and temperature limitations:

Fast charge: First approximately one hour for 70% battery capacity, then approximately three hours to reach 100% capacity. Once fully charged, a constant trickle charge will compensate for self discharging.

Note that fast charging applies to PI sensors only!

Normal charge: 16 hours for full battery capacity. This mode applies for charging outside specified temperature range, and for all PS sensors.

Charging temperature: For best results, keep the ambient temperature between +10 and +25°C.

Do not charge sensors in temperatures above +50°C or below 0°C!

Indicators

(A) = 12 to 32 Vdc connected

(B) = "Fuel meter", the number of LEDs illuminated shows the current charging status. A complete charging cycle is indicated with all "full" battery. Charging is indicated as follows:
Fast: Fast flash
Normal: Slow flash
Trickle: On, off every 4 second

(C) = Battery temperature indicators during fast charging of PI sensors:

**Green**: Battery temperature between +5 and +40°C. Fast charge is enabled.

Green and **Blue**: Battery temperature between 0 and +5°C. Fast charge is disabled, normal charge is used.

Green and **Red**: Battery temperature between +40 and +50°C. Fast charg disabled, normal charge is used.

Blue: Battery temperature is below 0°C. No charging takes place.

Red: Battery temperature is above +50°C. No charging takes place.

Turn the page for more!

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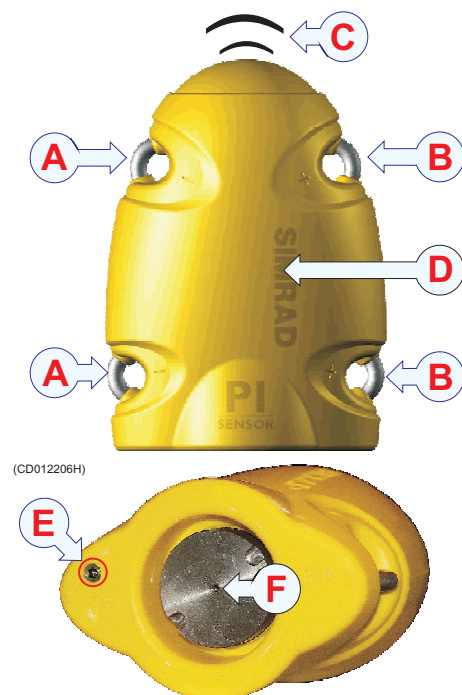TECHNOLOGY FOR SUSTAINABLE FISHERIES
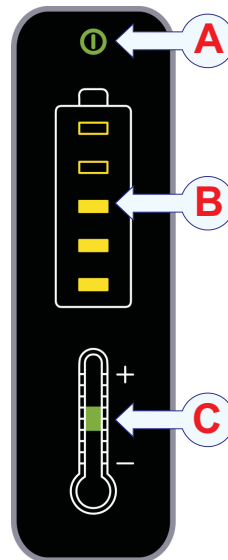
Automatic configuration

The charger communicates with the sensor at regular intervals. The fast charge cycle is controlled by data exchanged between the **PI** sensor and the charger, and a series of safety mechanisms controls the termination of the fast charging current.

The **PS** sensors do not communicate with the charger. A constant charge current of 58 mA is then set up by the charger regardless of the battery temperature.

Typical sensor (PI Depth)

(A) = Negative charging / fastening lug
(B) = Positive charging / fastening lug
(C) = Communication link
(D) = Location of sensor lamp
(E) = Water switch sensor
(F) = Water pressure sensor

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