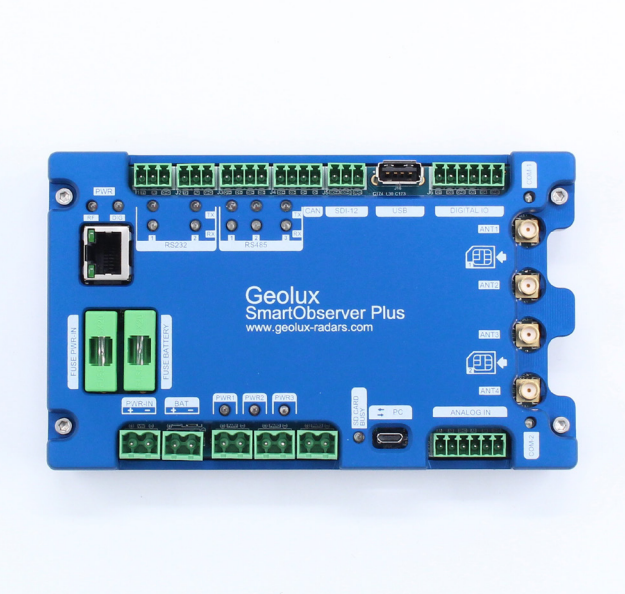
SmartObserverPlus Datalogger

ROBUST DATALOGGER WITH INTEGRATED MPPT BATTERY CHARGER

Highlights

- Versatile communication interfaces support various sensors
- Integrated MPPT battery charge
- Digitally controlled power distribution system for sensors
- Integrated GSM/GPRS or LoRaWAN or Satellite modem
- Wide operational temperature range (-40 °C to +85 °C)
- Dual-SIM models available for improved data transmission reliability



Applications

- Automatic hydrometeorological monitoring station
- Early flood warning systems
- Hydro power monitoring
- Irrigation systems
- Road side monitoring station

Product Description

The Geolux SmartObserverPlus is a powerful datalogger designed specifically for environmental monitoring applications.

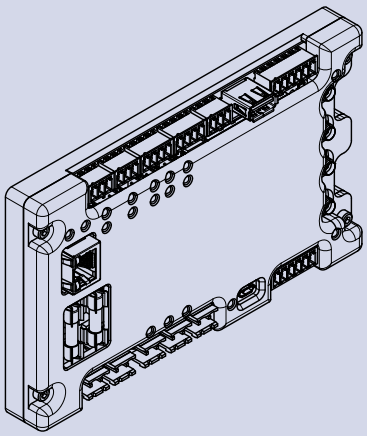
It easily integrates with various instruments and sensors, offering RS-232, RS-485 Modbus, SDI-12, and CAN serial communication lines. It also includes four 24-bit analog inputs supporting both voltage and current measurement modes, and four digital inputs that can operate in pulse and frequency counter modes. Additionally, the onboard Ethernet interface allows for connection to instruments equipped with Ethernet.

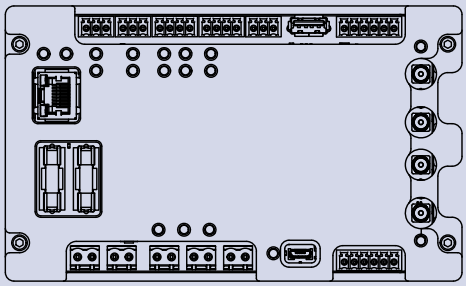
The SmartObserverPlus features a modular communication subsystem, providing flexible options such as GSM/GPRS, LoRaWAN IoT, and modern satellite communication interfaces.

Designed for use in remote areas, the datalogger includes an integrated Maximum Power Point Tracking (MPPT) battery charger and three digitally controlled power outputs for managing power supply to instruments. The datalogger itself consumes extremely low power, with less than 1 mA used in sleep mode between measurements.

Configuration is straightforward via the Geolux PC application. Most users can configure the datalogger through the intuitive UI, while advanced users can leverage the built-in MicroPython engine to write custom Python scripts for controlling the datalogger.

Detailed Specifications





Analog Inputs	4x 24-bit, voltage or current configurable
Analog Sampling Fequency	10 Hz – STARTER version 200 Hz – all other versions
Digital I/O	4x Channels
Digital Input Type	Pulse counter / Frequency counter
RS-232 Channels	2x
RS-485 / Modbus Channels	3x
SDI-12 Channels	2x
CAN Channels	1x
Ethernet	10 / 100 MBps
SD Card	1x MicroSD
Internal Flash Memory	8 MB – STARTER version 16 MB – all other versions
USB host	1x for USB Flash Memory
USB device	1x for connection to PC
Wireless communication	Depending on the datalogger version: GPRS, LTE-M, NB-IoT / 3G, 4G (LTE, HSPA+) / 5G / KINEIS Satellite
MicroPython Scripting	Supported
Integrated Battery Charger	MPPT, with charging current temperature compensation
Battery Charger Max. Current	3A
Controlled Power Outputs	3x
Operating Power Consumption	0.85 W - typical
Standby Power Consumption	< 0.012 W
Operating Temperature Range	-40°C to +85°C
Relative Humidity Range	0 to 99% non-condensing
Enclosure Material	Anodized Aluminum
Enclosure Dimensions	161 mm x 97 mm x 20 mm
Weight	400 g

FCC & CE ***APPROVED***

MADE IN ***EU***

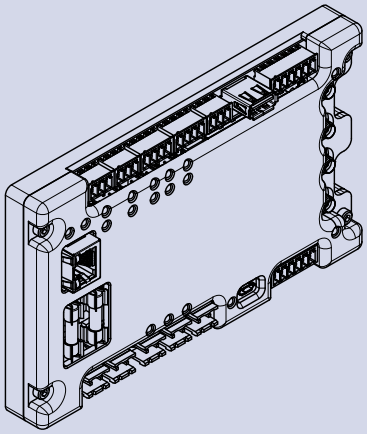
For more information, contact us:

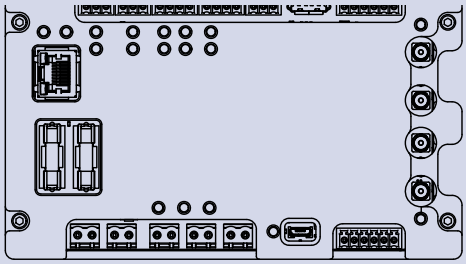
Phone: +385 1 6701 241
E-mail: geolux@geolux.hr

Geolux

www.geolux-radars.com

Detailed Specifications





Data Transmission Interval	1 minute to 24 hours, configurable
Device Configuration	Local, via PC through USB cable Remote, via Hydroview portal and API
GNSS Receiver	GPS / GLONASS / Beidou (internal NMEA 0183)
Dual-SIM	Available on DUAL-SIM and DUAL-SIM-5G models
Communication Protocols	HTTP, HTTPS, FTP, SFTP, FTPS, MQTT, MQTTS, SSL, TLS1.2, TLS1.3
Internal Parameter Monitoring	Battery voltage, battery charge status, input voltage, power consumption, internal device temperature, internal device relative humidity, modem signal strength, health status of the attached equipment
Real-time Clock	Internal RTC, with supercap backup power
Time Synchronisation	GNSS / NTP / HTTP (±1 sec timesync accuracy)
Watchdog Timer	Internal hardware WDT
External Memory	SD card up to 256 GB, USB Flash up to 256 GB
Internal Memory Size	16 MB circular buffer, using compact binary format
Internal Memory Capacity	2 years of data at 15 min. scan interval 1.3 years of data at 10 min. scan interval
Data Retransmission	Automatic retransmission of the data from internal memory after interrupted transmissions, in chronological order
Input Voltage Range	9-29 VDC
Supported Batteries	Li-ion, LiFePO4, Lead-acid, Gel, AGM deep-cycle
Battery Protection	Deep discharge protection
Installation	DIN-rail mount
Enclosure Protection	IP30 Optional IP54, with sealing and conn. caps

FCC & CE ***APPROVED***

MADE IN ***EU***

For more information, contact us:

Phone: +385 1 6701 241
E-mail: geolux@geolux.hr

Geolux

www.geolux-radars.com