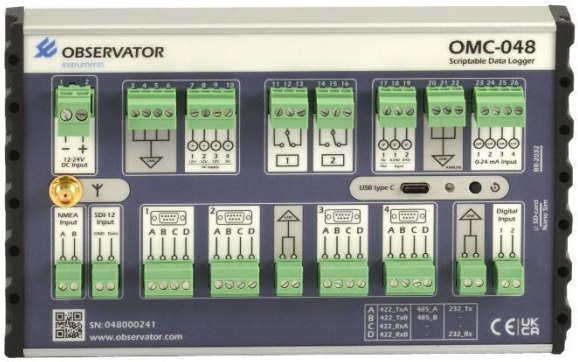
OBSERVATOR
instruments



OMC-048 data logger

Application of the OMC-048 in the OMC-7006 data buoy

Datasheet

OMC-048 Scriptable data logger with 4G LTE-M

This versatile data logger offers a large number of I/O, including SDI-12, RS232/422/485, ModBus, NMEA and analogue. The OMC-048 uses the latest technology and includes a powerful processor as well as a state-of-the-art low-power LTE-M/NB-IoT ‘worldwide’ IoT modem for the cellular network.

Thanks to the availability of a large collection of input and output drivers, it is possible to configure the logger for many sensors and other peripherals, by simply editing a small text file. No programming needed. However, users with programming experience can add their own Python code or modify the existing code. Secure remote configuration is possible using our Blue2Cast web portal.

The logger is designed with meteorological and hydrological applications in mind, but is much wider applicable.

Features

- Large number of I/O, including serial (RS232/422/485), analogue, and digital.
- Drivers for many protocols, including ModBus, SD_12, NMEA and 4-20mA.
- Drivers for sensors from many brands.
- Generic drivers, configurable by the user.
- Configurable without programming skills, but Python programmers can add their own code.
- Worldwide, internal low-power LTE-M/NB-IoT modem.
- Controllable power outputs and relays for powering sensors, wipers and so on.

Note: this data sheet applies to models with SN>48000200.

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Features (continued)

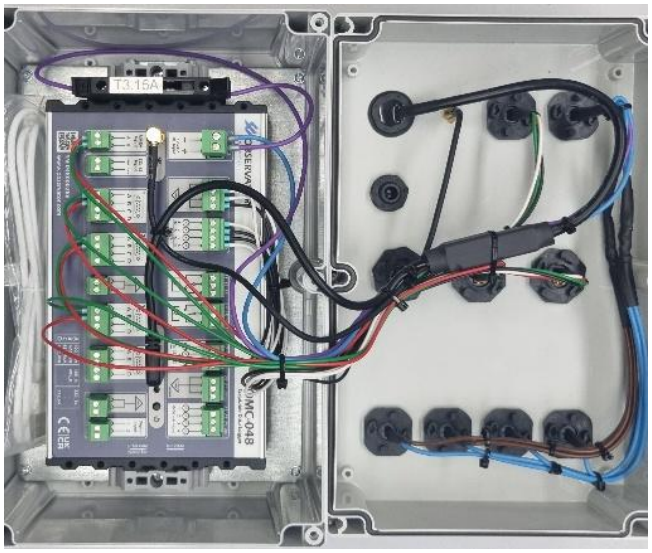
- Large number of flexible I/O
  - Four serial ports, each supporting RS232/422/485 (ModBus).
  - One SDI-12 port.
  - One RS422 input with optical isolation (NMEA).
  - Four analogue 4-20 mA inputs.
  - Two analogue voltage inputs (0-5 V and 0-24 V) plus one 5 V reference output.
  - Two digital (switch or pulse) inputs.
  - Two potential-free single pole, double throw relays.
  - Four switched (programmable) power outputs (3 times 12 V, one time 5 V).

- Software, configuration and communication *1)
  - Fully configurable with a text file. No tools or programming skills needed.
  - Python programmers can extend the functionality even further, by adding their own code.
  - The configuration includes complete control over:
    - powering sensors on and off;
    - reading data from sensors;
    - activating wipers;
    - storing data to SD card;
    - sending data over cellular, radio or Iridium modem.
  - Data can be sent to any server. This is not restricted to the hosting service from Observator.
  - Support for FTP and TCP using TLS1.2 (secure communication using AES-128 ciphering).
  - Remote control using Blue2Cast web portal.

- Drivers *1)
  - Drivers available for all sensors from Observator and many other brands, including: OMC-, NEP-, EXO (Xylem/YSI), Seametrics, Gill, Eureka, NKE, s::can, TriOS, Aqualabo and many more. Drivers for Iridium or radio modems are also available.
  - Drivers available for many protocols, like ModBus, SDI-12, NMEA, 4-20mA.
  - Generic drivers can be configured by the user to read practically any ASCII string, or communicate with any SDI-12 or ModBus sensor.

  **1) Drivers and other functions are constantly being added. Contact Observator for the latest information.*

- Integrated cellular modem
  - LTE UE Category M1/NB1, optimized for low-power IoT application and enhanced coverage.
  - Supports LTE-M1, NB-IoT and GPRS fallback.
  - Suitable for worldwide application.
  - SMA connector.



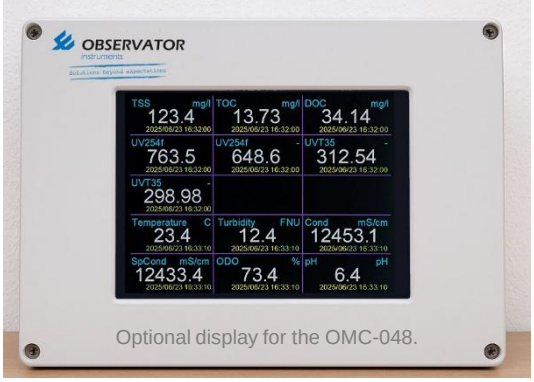
OMC-048 in an enclosure with connectors for multiple sensors.

OMC-048 in a vandalism-resistant pole for water quality monitoring.

- Processor, software and configuration
  - ARM Cortex-M4 32-bit processor.
  - Support for (micro)Python scripts.
  - USB type C connector for configuration, scripting and data transfer.
  - 32 GB SD card.

- Hardware
  - All connectors (PhoenixContact) are easily reachable at the top-panel.
  - Nano SIM card, micro-SD card and back-up battery behind the removable side panel.
  - DIN rail mounting.
  - Internal sensors for humidity, temperature and supply voltage.

- Power
  - Supply voltage nominal 12 V to 24 V (min 9 V, max 32 V).
  - Power consumption in sleep mode: <1 mA at 12 V.
  - Power consumption in active mode: <30 mA at 12 V (excluding modem and power outputs).
  - Peak power consumption (including modem): 250 mA at 12 V (excluding power outputs).
  - Four controllable power outputs (3 x 12 V, 1 x 5 V).
  - Max power output per controllable power output: 0.5 A peak (one output), 200 mA continuously (4 outputs).



Optional display for the OMC-048.

Optional Iridium modem for the OMC-048.

Example of multi-parameter water quality sondes.

OMC-048 on a pole. Various sensors in three tubes in the water.


OMC-048 in a data buoy for water quality monitoring.

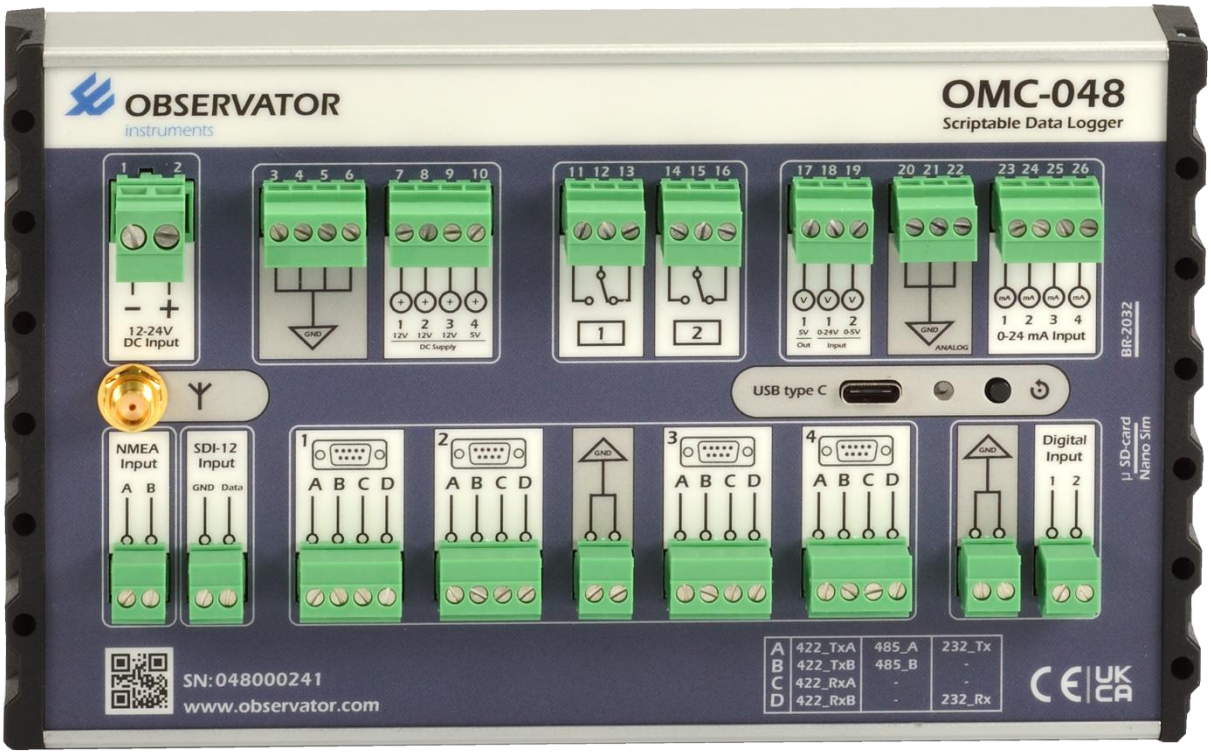
Features (continued)

- Environmental
  - Temperature: -25 ... +70 °C.
  - Humidity: 10 - 90% RH, non-condensing.
  - Enclosure: IP40.

- Dimensions
  - Width x depth x height: 177 x 105,5 x 50 mm.
  - Weight: 410 g.
  - Package dimensions: to be discussed.
  - Package weight: to be discussed.

- SIM & SD cards
  - Nano SIM.
  - Micro SD.

- Standards
  - CE certified.
  - Complies to EMC directive 2014/30/EU.



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Solutions beyond expectations. That's what sets Observator apart. We believe in taking the extra step. Retaining our competitive edge, through innovation and uncompromised support, are key to success. As an ISO 9001:2015 certified company, we apply the highest quality standards to our products and systems.

Solutions beyond expectations

Since 1924 Observator has evolved to be a trend-setting developer and supplier in a wide variety of industries. From instruments for meteorological and hydrological solutions, air and climate technology, to high precision mechanical production, window wipers and sunscreens for shipping and inland applications.

Originating from the Netherlands, Observator has grown into an internationally oriented company with a worldwide distribution network and offices in Australia, Germany, the Netherlands, Singapore and the United Kingdom.

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