

# NEMOS N100+

## IP68 GSM DATALOGGER

The NEMOS N100+ is a battery powered data acquisition device with GSM communication, designed for operation in manholes and environments prone to flooding. It has been specifically engineered to meet the needs of district flow monitoring and remote reading for large consumers in an efficient and straightforward manner.

It is available in three configurations: the N100+ with 2 digital inputs, the N102+ with 2 digital inputs and 2 analog inputs, and the N110+ with two digital inputs and an integrated pressure sensor capable of detecting water hammer events.

The Nemos N100+ incorporates the latest narrowband communication technologies, NB-IoT and CAT.M1, while still retaining the

2G standard. This way, the Nemos communicates with the currently most prevalent networks (2G) and is ready for the future development of NB-IoT/CAT.M1. The included antenna, a dipole with over 90% efficiency, offers excellent sensitivity for its operation inside manholes. For local communication and diagnostics, it has a Bluetooth radio that allows these tasks to be performed conveniently from outside the manhole.

Thanks to its low power consumption and the use of high-capacity lithium batteries, it achieves a typical battery life of 5 years in standard operation. Replacing the batteries and the SIM card can be easily done by the user without any tools.



### ZEUS 6 PLATFORM

ZEUS 6, the free monitoring platform from Microcom, allows you to monitor your installation through the ZeusWeb portal and the ZeusMobile mobile application for iOS and Android..



## FEATURES

- 2 digital inputs for flow meters
- 2 analog inputs (N102+)
- 1 integrated pressure probe with fast sampling up to 128 Hz (N110+)
- Bluetooth 4.0 LE
- Compact size
- 5 years typical battery life
- IP68 protection (2m for 100 days)
- High-performance detachable antenna
- 5-year warranty

# NEMOS N100+

IP68 GSM DATALOGGER

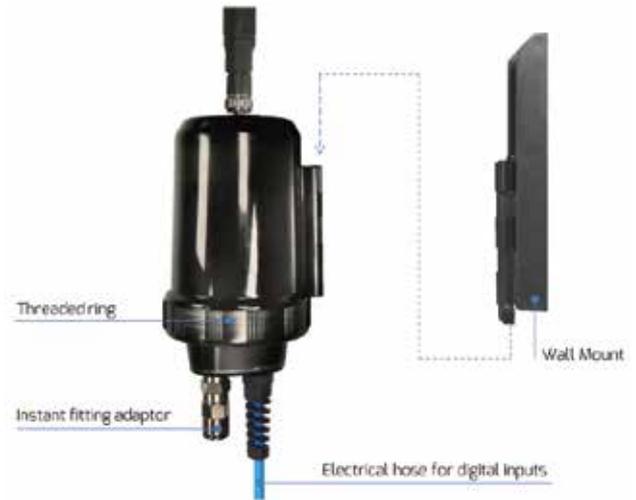
Product sheet

## EASY TO HANDLE AND INSTALL

Compact size



Easy to install



## BATTERY LIFE

The NEMOS N100+ is supplied with single pack battery of 3,6 VDC and 14 AH.

Channels	Sampling Freq.	Transmission Freq.	Estim. Bat. Life*
Flow and pressure	5 minutes	24 hours	5 years
Flow and pressure (transient detection)	5 minutes	24 hours	3 years

\* Test conditions: Temperature 20 °C, RSSI: -93 dBm, download on Zeus server via GPRS.

## PRESSURE MONITORING



The Nemos N110+ is among the most advanced data loggers in its sector when it comes to pressure monitoring. This is due to an extremely energy-efficient implementation, which makes continuous pressure measurement feasible, despite the limitations imposed by battery power.

Pressure monitoring can be configured in two modes:

- **Low consumption mode:** Pressure is read every second. In this way, statistics for the maximum, minimum, and average of each recording period are generated. The impact on battery life is negligible.
- **Transient detection mode:** Pressure is read between 8 and 128 times per second, depending on the configuration and detected pressure gradient, recording pressure transients and water hammer events. The high sampling rate of 128Hz allows for capturing peak pressures with high accuracy.

### TECHNICAL SPECIFICATIONS

#### GENERAL

Battery Capacity	3,6 V / 14 Ah
IP Rating	IP68 2m for 100 days
Operating Temperature	-20 °C to +75 °C
Radio Modem Chipset	2G/NB-iot/LTE-M
Log Memory	>150.000 entries
Antenna	1/2 wave dipole (detachable)
Real-time Clock	High precision. NTP synchronization
Configuration & Diagnostics	Bluetooth 4.0
Exterior Materials	Polycarbonate / ABS

#### ANALOG INPUTS (N102+)

Quantity	2
Type	4/20 mA
Precision	0,25 %
Resolution	12 bits
Impedance	125 Ω

#### DIGITAL INPUTS

Quantity	2
Sampling Frequency	64 Hz / 256 Hz

#### SENSOR POWER OUTPUTS (N102+)

Quantity	2
Type	15 / 22 VCC
Max Output Current	40 mA
Precision	5 %

#### PRESSURE SENSOR (N110+)

Quantity	1
Type	0-10 / 0-20 Bar
Sampling Frequency	Low power mode: 1 Hz Transients: 8 -128 Hz
Precision	0,4 % FSO
Pressure Connection	Ø 8 mm. Pneumatic fitting

### MODELS

Model	Supported networks	Digital Inputs	Analog Inputs	Integrated pressure probe
N100+.W2G-NB.X	2G/NB-iot/LTE-M	2	0	No
N102+.W2G-NB.X	2G/NB-iot/LTE-M	2	2	No
N110+.W2G-NB.P10	2G/NB-iot/LTE-M	2	0	10 Bar
N110+.W2G-NB.P20	2G/NB-iot/LTE-M	2	0	20 Bar

### ACCESSORIES



**EXCALIBUR M1**

High-performance GSM IP68 antenna. Designed for operation in manholes and confined spaces.



**PRESSURE TRANSDUCER**

External IP68 pressure transducer for N102+.

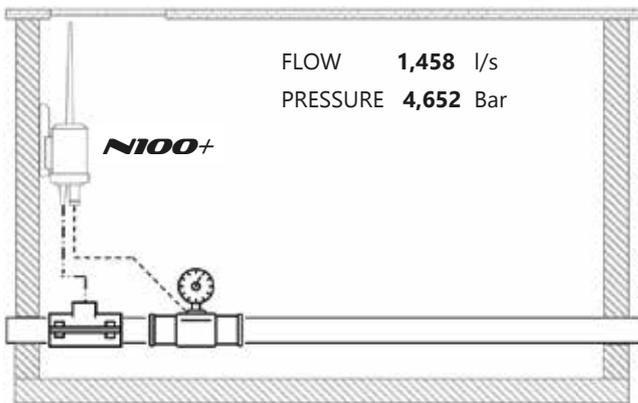
### USE CASES



#### LEAK DETECTION IN DRINKING WATER DISTRIBUTION NETWORKS

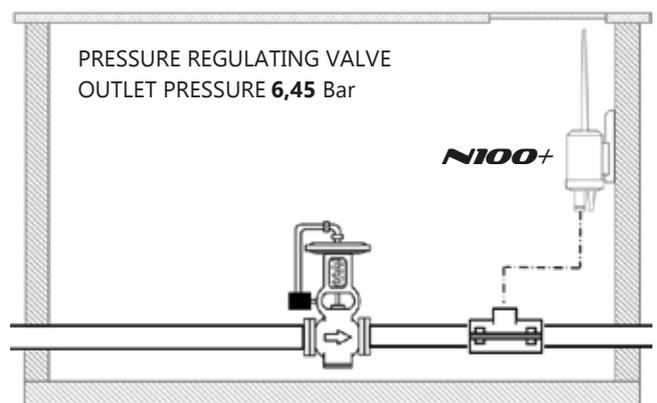
Registration of flowmeters with pulse output:

- Instantaneous flow
- Daily accumulated flow
- Night minimum
- Volume lost between sectors
- etc.



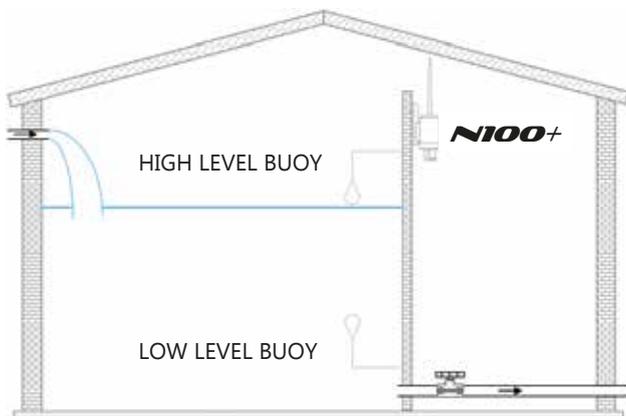
#### LEAK DETECTION WITH PRESSURE MONITORING

Comprehensive supervision of drinking water supply networks.



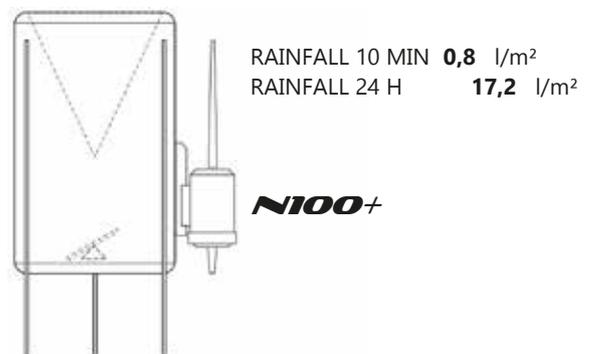
#### PRESSURE REGULATING VALVES

Recording of level at the inlet/outlet and automatic control of the outlet pressure.



#### LEVEL MONITORING

In tanks and wells without electrical supply.



#### PLUVIOMETRY

Rain gauges and anemometers with pulse output.



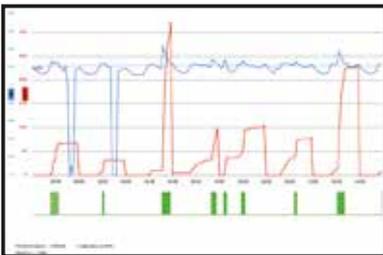
The standout features of ZEUS, the online SCADA that Microcom provides to its customers for free, are its ease of use and the application of the latest web technologies to offer an interface as secure as any online banking service.

All you need is a simple web browser to access the service and start managing your facilities from anywhere. When you're away from the office, the ZEUSmobile mobile application available for iOS and Android provides optimized access for phones and tablets, as well as the receipt of alarms using PUSH technology, making SMS obsolete in most cases.

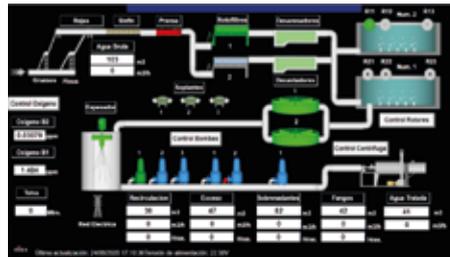
ZEUS is not just for visualization, it also allows for the reconfiguration of remote stations without the need to physically be there, the sending of commands, and the management of users and stations. Integration into other platforms is guaranteed through the most common current standards such as OPC UA and REST API.

## TOOLS AND FEATURES

Display of historical data in graphic format



Real-time supervision through synoptics



Geolocated map of stations



Example of visualization in:  
**ZEUS mobile**



Comprehensive report generation tool



Reception, management, and forwarding of alarms



Maximum security thanks to the most advanced web standards: HTTPs / SSL



Remote configuration of Hermes and Nemos devices



Advanced user and privilege management



Availability of the Zeus Synoptic Builder tool for the creation of synoptics.



Easy integration of data into other platforms through OPC UA and REST API