

# LNR – Stand-alone logger and radar level sensor

The **LNR06V4-12P** is a water level sensor with an integrated radar, suitable for both indoor measurements (storm water outlets, pumping station overflows, etc.) and outdoor measurements (river monitoring, storm water basins, etc.). Fully self-contained with its long-life battery, data logger and integrated modem (optional). Simple to install and use, programming is carried out securely via a radio link without any physical intervention on the sensor. In addition, it features cellular communication options (2G, 4G (LTE-M or NB-IoT) or LoRaWAN, depending on the model. The data logger can be fitted with an interchangeable communication card, allowing, for example, a switch from 4G to LoRa without changing the entire unit.



- **Wireless radio configuration (Wiji protocol)**
- **Long-life lithium battery**
- **Communication: local radio + optional communication card: 2G / 4G (LTE-M / NB-IoT) or LoRaWAN**
- **Inputs: External power supply (7 V – 24 V), 4 Contacts / 100 Hz, Modbus, 2 x 4–20 mA**
- **Outputs: Power supply (internal battery or switch), Open Drain, Modbus**
- **Memory: 500,000 measurements**
- **IP68 ingress protection (1 bar / 30 days)**
- **Built-in conversion tables (height, flow rate, volume)**

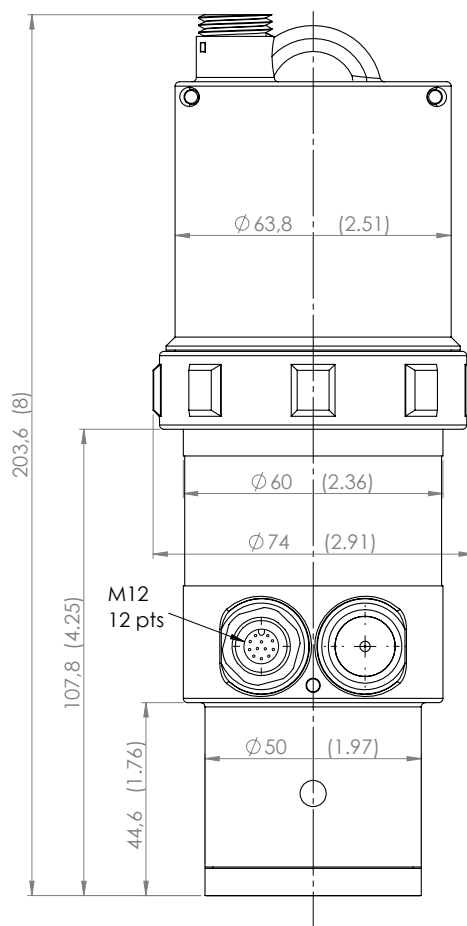
## Applications

- |                                                                                                                                                                                              |                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Flood and meltwater monitoring</li> <li>• Monitoring and management of storage tanks</li> <li>• Ongoing diagnosis of sanitation networks</li> </ul> | <ul style="list-style-type: none"> <li>• Self-monitoring of stormwater overflows</li> <li>• Water sampler enslaving</li> </ul> |
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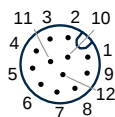
| Characteristics             | LNR06V4                                                                                                                                                                                                                                    |                                                                                                             |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Measuring distance          | 0.15 m – 10 meters                                                                                                                                                                                                                         |                                                                                                             |
| Resolution                  | 2,000 points over the measuring range with a minimum of 1 mm (example: 4 mm for a distance measurement of 6.0 m)                                                                                                                           |                                                                                                             |
| Measurement uncertainty     | ± 0.2% of distance measurement with a minimum of ± 2 mm                                                                                                                                                                                    |                                                                                                             |
| Communication               | <ul style="list-style-type: none"> <li>• HF radio (868 or 915 MHz)</li> <li>• 2G / 4G (LTE M / NB IoT)</li> <li>• LoRaWAN: Europe 863–870 MHz (SF12 for RX2) LoRaWAN Specification 1.0.2</li> </ul> Protocols: FTPS, HTTPS, COAP and MQTTS |                                                                                                             |
| Radio Range                 | 100 meters in open field (Wiji protocol)                                                                                                                                                                                                   |                                                                                                             |
| Storage capacity            | 500,000 measurements                                                                                                                                                                                                                       |                                                                                                             |
| Radio concentrator function | Yes                                                                                                                                                                                                                                        |                                                                                                             |
| Radio / mobile antenna      | <ul style="list-style-type: none"> <li>• Internal or external radio</li> <li>• Internal or external mobile</li> </ul>                                                                                                                      |                                                                                                             |
| Temperature range           | –20°C ... +70°C                                                                                                                                                                                                                            |                                                                                                             |
| Sensor material             | PA12                                                                                                                                                                                                                                       |                                                                                                             |
| Ingress protection          | IP68: 1 bar for 1 month (only if using an Ijinus mounting kit; ref: H0T00053 or H0T00060)                                                                                                                                                  |                                                                                                             |
| Power Supply                | Internal : 3,6V – 34 Ah lithium Battery – External : 7 – 24 Vdc                                                                                                                                                                            |                                                                                                             |
| Configuration               | Wireless programming kit (PN: M0C00001) comprising AVELOUR software, cable and antenna                                                                                                                                                     |                                                                                                             |
| Technology                  | <ul style="list-style-type: none"> <li>• 60 GHz radar imaging</li> <li>• eKo ® algorithm</li> <li>• LAMY ® filtering</li> </ul>                                                                                                            |                                                                                                             |
| ATEX zone 2 certifications  | II 3G<br><br>Ex ic ec IIB T4 Gc<br><br>Ambient temp: –20 °C...+ 60 °C                                                                                                                                                                      | <b>Certifications</b>  |



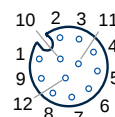
|               |                                                                                                                      |                                                                                                                                                               |
|---------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Input</b>  | <ul style="list-style-type: none"> <li>• 1 Voltage input (7V – 24V)</li> <li>• 2 Current inputs (4-20 mA)</li> </ul> | <ul style="list-style-type: none"> <li>• 4 digital contact inputs or counter 100 Hz max</li> <li>• 1 RS485 Modbus input (if not used as an output)</li> </ul> |
| <b>Output</b> | <ul style="list-style-type: none"> <li>• 1 Voltage output (5V – 18V on internal battery or Vin switch)</li> </ul>    | <ul style="list-style-type: none"> <li>• 1 Open Collector Output</li> <li>• 1 Modbus output (if not used as an input)</li> </ul>                              |



| 2G /4G Modem features                                                                                                                                                                                                             |                        |                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency Bands                                                                                                                                                                                                                   | LTE-FDD                | Cat M1 : B1 / B2 / B3 / B4 / B5 / B8 / B12 / B13 / B18 / B19 / B20 / B25 / B26 / B27 / B28 / B66 / B85<br><br>Cat NB2 : B1 / B2 / B3 / B4 / B5 / B8 / B12 / B13 / B18 / B19 / B20 / B25 / B28 / B66 / B71 / B85 |
|                                                                                                                                                                                                                                   | GSM/EDGE               | B5 / B19 / B3 / B2                                                                                                                                                                                              |
| RF Emission Power                                                                                                                                                                                                                 | GSM 900                | + 33 dBm                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                   | GSM 1800               | + 30 dBm                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                   | LTE B1 / B3 / B8 / B20 | + 23 dBm                                                                                                                                                                                                        |
| B1 (2100) / B2 (1900) / B3 (1800) / B4 (1700) / B5 (850) / B8 (900) / B9 (1800) / B12 (700) / B13 (700) / B18 (800) / B19 (800) / B20 (800) / B25 (1900) / B26 (850) / B27 (850) / B28 (700) / B66 (1700) / B71 (600) / B85 (700) |                        |                                                                                                                                                                                                                 |

**Connector wiring:**


Male



Female

| Cable colors | Brown  | Blue  | White  | Green  | Pink  | Yellow  |
|--------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| PIN number   | <b>1</b>                                                                                | <b>2</b>                                                                               | <b>3</b>                                                                                | <b>4</b>                                                                                 | <b>5</b>                                                                                 | <b>6</b>                                                                                   |
| Signal       | GND                                                                                     | AI 1                                                                                   | V in                                                                                    | V out                                                                                    | AI 2                                                                                     | Input or output                                                                            |
| Features     | Ground                                                                                  | Current 1                                                                              | External power or battery (7 - 24V)                                                     | Power 5V...18V* (internal battery) or Switch Vout=Vin                                    | Current 2                                                                                | RS485-H                                                                                    |
| Type         |                                                                                         | 4-20 mA                                                                                | Power Supply in                                                                         | Power Supply out                                                                         | 4-20 mA                                                                                  | Modbus                                                                                     |

\* 1.8 W maximum on the V<sub>out</sub> if the connected sensor is powered by the internal battery (voltage adjustable via software).

| Cable colors | Black  | Grey  | Red  | Purple  | Grey / Pink  /  | Blue / Red  /  |
|--------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PIN number   | <b>7</b>                                                                                | <b>8</b>                                                                               | <b>9</b>                                                                              | <b>10</b>                                                                                 | <b>11</b>                                                                                                                                                                             | <b>12</b>                                                                                                                                                                            |
| Signal       | DI 1                                                                                    | Input or output                                                                        | Open output drain                                                                     | DI 2                                                                                      | DI 3                                                                                                                                                                                  | DI 4                                                                                                                                                                                 |
| Features     | Digital 1 / Counter 1 - 100 Hz                                                          | RS485-L                                                                                | Ground contact                                                                        | Digital 2 / Counter 2 - 100 Hz                                                            | Digital 3 / Counter 3 - 100 Hz                                                                                                                                                        | Digital 4 / Counter 4 - 100 Hz                                                                                                                                                       |
| Type         | Digital                                                                                 | Modbus                                                                                 | Open (1A/30V) drain                                                                   | Digital                                                                                   | Digital                                                                                                                                                                               | Digital                                                                                                                                                                              |

**Options configurator**

**LNR06V4-** Radar Level Logger - measuring range 0.15 - 10 m

**12P** 12 points connector

**Code Frequency**

**8** 868 MHz Europe - China

**9** 915 MHz USA - Canada - Australia

**Code Antenna**

**0** Internal radio

**1** External radio

**2** Internal radio / external mobile

**3** External radio / external mobile


**Code Communication options**

**Empty** Local radio communication

**LTE** Radio communication + 2G / LTE-M / NB-IoT

**LPI** Radio communication + LoRaWAN

LNR06V4-12P 8 2 LTE = **LNR06V4-82-LTE**