






### Ultrasonic anemometers



- ▶ Wide range of signal outputs 4...20 mA, RS232/485 Modbus
- ▶ No moving parts
- ▶ Very-High speed wind measurement (0...85 m/s) using DNB105.2 model
- ▶ Fast response time and low measurement threshold
- ▶ Low cost compact versions option (DNB205-205.2)
- ▶ 3-Axis ultrasonic models (DNB146-146.3)
- ▶ In-house ISO17025 calibration laboratory

Ideal sensors for general meteorological applications requiring no moving parts for low-maintenance or measurements with fast response even in very low-range wind speed conditions. Model DNB205 (serial output) is a compact size sensor very suitable in lite weather stations. DNB305-305.1 (serial output) are made in Aluminium and have very good performances. DNB306-306.1 models have 4...20 mA outputs. DNB105.2 model is made for high speed range up to 85 m/s, it comes with 4...20 mA and RS485-RS232output. DNB146-146.3 are 3-axis models and measure 3 components of wind speed.

#### Technical Specifications

| PN                           | DNB205<br>DNB205<br>.2  | DNB205<br>.1  | DNB305<br>DNB305<br>.2   | DNB305<br>.1  | DNB306  | DNB306<br>.1   | DNB105<br>.2                 | DNB146   | DNB146<br>.3     |                   |                   |
|------------------------------|---|---|--|---|---|----------------|------------------------------|--|------------------|-------------------|-------------------|
|                              |  |  |  |  |  |                |                              |  |                  |                   |                   |
| <b>Output</b>                | DNB205-205.1-305-305.1: RS485<br>DNB205.2-305.2: RS232                              |   |  |   | 2x4...20 mA   |                | 2x4...20 mA<br>2xRS485-RS232 | RS485<br>5x4...20 mA   |                  |                   |                   |
| <b>Type</b>                  | Sonic 2-Axis (U-V)  |   |  |   |   |                |                              | Sonic 3-Axis   |                  |                   |                   |
| <b>Measurements</b>          | Wind Speed and Wind Direction   |   |  |   |   |                |                              | <ul style="list-style-type: none"> <li>• Wind S&amp;D</li> <li>• Sound speed</li> <li>• Sonic temperature</li> </ul> |                  |                   |                   |
| <b>Compass</b>               | NO  |   | NO   |   | NO  |                | YES                          |  | YES              |                   |                   |
| <b>Material</b>              | Luran   |   | Aluminium  |   | Aluminium   |                | Aluminium                    |  | Luran Aluminium  |                   |                   |
| <b>Heater</b>                | NO  | YES   | NO   | YES   | NO  | YES            | NO                           |  | NO YES           |                   |                   |
| <b>Protocol</b>              | Modbus-RTU  |   | Modbus-RTU   |   | -   |                | Modbus-RTU                   |  | Modbus-RTU       |                   |                   |
| <b>Power supply (sensor)</b> | 12...30 V DC  |   |  |   |   |                |                              |  |                  |                   |                   |
| <b>Power supply (heater)</b> | -   | 24V DC<br>@10A  | -  | 24V DC<br>@10A  | -   | 24V DC<br>@10A | -                            | -  | 12...30 V<br>DC* |                   |                   |
| <b>Consumption @12V DC)</b>  | 11 mA   |   | 11 mA  |   | 25 mA   |                | 12 mA                        |  | 25 mA            | 110 mA<br>@15V DC | 400 mA<br>@15V DC |

\* For increased efficiency of the heater supplied at 30 V DC

| PN                               | <b>DNB205<br/>DNB205.1<br/>DNB205.2</b>   | <b>DNB305<br/>DNB305.1<br/>DNB305.2</b> | <b>DNB306<br/>DNB306.1</b> | <b>DNB105.2</b>  | <b>DNB146<br/>DNB146.3</b>  |
|----------------------------------|---|---|----------------------------|--|---|
| <b>Dimensions</b>                | 110x126 mm  | 180x160 mm                              | 180x160 mm                 | 179x150 mm   | 537x214 mm  |
| <b>Weight</b>                    | 0,5 kg  | 1 kg                                    | 1 kg                       | 640 gr   | 1,5 kg  |
| <b>Mounting</b>                  | On Ø 35...50 mm pole (support include)  |   |                            | On pole<br>Ø 40 mm.<br><br>On pole Ø 50 mm<br>(using DNB191<br>adapter non- inclu-<br>ded) | On pole<br>Ø 33 mm<br>On pole Ø 50 mm<br>(using DNB192<br>adapter non- inclu-<br>ded) |
| <b>Cable</b>                     | Not included<br>DWA8xx  |   |                            | Not included<br>DWA8xx.1   | Included<br>10 m  |
| <b>Operative Temperature</b>     | -40...60 °C (in the event of ice formation, snow/snowfall use the heated versions)                                  |   |                            |  |   |
| <b>Protection</b>                | IP66  |   |                            |  |   |
| <b>Connector</b>                 | 10-pins (MG2267)  |   |                            | 12-pins (MG2272)   |   |
| <b>Data logger compatibility</b> | Versions with RS232, 4...20 mA outputs: E-Log, Alpha-Log with ALIEM module<br>Versions with RS485 output: Alpha-Log |   |                            |  |   |

### Technical Specifications

| PN                    |                                    | <b>DNB205<br/>DNB205.1<br/>DNB205.2</b>             | <b>DNB305<br/>DNB305.2<br/>DNB305.1<br/>DNB306<br/>DNB306.1</b> | <b>DNB105.2</b>  | <b>DNB146<br/>DNB146.3</b>                             |
|-----------------------|------------------------------------|---|---|--|--|
| <b>Wind speed</b>     | Range                              | 0...60 m/s  | 0...60 m/s  | 0...85 m/s   | 0...70 m/s   |
|                       | Accuracy                           | ± 0.3 m/s or 5%<br>(0.02...35 m/s)<br>10% (>35 m/s) | ± 0.2 m/s or 3%<br>(0.02...35 m/s)<br>5% (>35 m/s)              | ± 0.2 m/s or 2%<br>(0.01...60 m/s)<br>3% (>60 m/s)     | ± 1%   |
|                       | Threshold                          | -   | -   | 0.01 m/s   | 0.2 m/s  |
|                       | Resolution                         | 0.1 m/s   | 0.1 m/s   | 0.01 m/s   | 0.01 m/s   |
|                       | Response time                      | 250 ms  |   |  | 20 ms  |
| <b>Wind direction</b> | Range                              | 0...360°  | 0...360°  | 0...360°   | 0...360°   |
|                       | Accuracy                           | ±3° (>1 m/s)  | ±2° (>1 m/s)  | ±2° (>1 m/s)   | ±1° (>1 m/s)   |
|                       | Threshold                          | -   | -   | 0.1 m/s  | 0.2 m/s  |
|                       | Resolution                         | 1°  | 0.1°  | 1°   | 0.1°   |
|                       | WS threshold for<br>WD calculation | 0.2 m/s   | 0.2 m/s   | Programmable<br>0.01...1.00 m/s<br>(default: 0.02 m/s) | Programmable<br>0.01...1.00 m/s<br>(default: 0.02 m/s) |
|                       | Response time                      | 250 ms  |   |  | 20 ms  |
| <b>Compass</b>        | Principle                          | -   | -   | Magnetic   | Magnetic   |
|                       | Range                              | -   | -   | 0...360°   | 0...360°   |
|                       | Resolution                         | -   | -   | 0.1°   | 0.1°   |
|                       | Accuracy                           | -   | -   | ±1°  | ±1°  |

## Accessories

|                  |  |
|------------------|--|
| <b>DWA054</b>    | Cable L=5 m for DNB205-205.2-305-305.2   |
| <b>DWA104</b>    | Cable L=10 m for DNB205-205.2-305-305.2  |
| <b>DWA254</b>    | Cable L=25 m for DNB205-205.2-305-305.2  |
| <b>DWA056</b>    | Cable L=5 m for DNB205.1-305.1   |
| <b>DWA106</b>    | Cable L=10 m for DNB205.1-305.1  |
| <b>DWA256</b>    | Cable L=25 m for DNB205.1-305.1  |
| <b>DWA058</b>    | Cable L=5 m for DNB306-306.1   |
| <b>DWA108</b>    | Cable L=10 m for DNB306-306.1  |
| <b>DWA258</b>    | Cable L=25 m for DNB306-306.1  |
| <b>DWA810.1</b>  | Cable L=10 m for DNB105.2 anemometer   |
| <b>DWA825.1</b>  | Cable L=25 m for DNB105.2 anemometer   |
| <b>DWA826.1</b>  | Cable L=50 m for DNB105.2 anemometer   |
| <b>DEA602</b>    | RS232 DB-9 male connector for connecting DNB2XX-DNB3XX cables to RS232 female port |
| <b>MG2272.R</b>  | Watertight connector for making DNB105.2 sensor cable                              |
| <b>MG2267.R</b>  | Watertight connector for making DNB2XX-DNB3XX sensors cable                        |
| <b>DNB191</b>    | Adapter for DNB105.2 sensor to pole Ø 50 mm  |
| <b>DNB192</b>    | Adapter for DNB146 sensor to pole Ø 50 mm  |
| <b>SVICA2203</b> | ISO9001 type calibration certificate (Wind Speed)                                  |
| <b>SVICA2304</b> | ISO9001 type calibration certificate (Wind Direction)                              |
| <b>SVACA2216</b> | ISO17025-ACCREDIA type calibration certificate (Wind Speed)                        |



▶ LSI LASTEM is an ISO17025 accredited laboratory for air speed measurements. All sensors manufactured are tested inside this laboratory. LSI LASTEM provides Test report for any sensor supplied and on request, ISO17025 or ISO9001 calibration certificates (see Accessories list).

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