

## Laser Precipitation Monitor

The acquisition comprises the types of precipitation, intensity and the spectrum. All measuring values are available for the user via an RS485/422 interface. In addition, the instrument is equipped with two further digital outputs (opto-couplers), which output, for ex., pulses and state of precipitation. The optical components are equipped with an integrated heating.

Suitable Transmitters:

Hygro-Thermotransmitter 1.1005.54.000

Wind Transmitter 4.3519.00.000

Wind Direction Transmitter 4.3129.00.000

## Specification

Part number: 5.4110.10.xxx

### Wind speed

Electrical input	Impulse
Measuring range	0 ... 50 m/s (0 ... 630 Hz)
Resolution	0.1 m/s
Accuracy	±0.1 m/s

### Wind direction

Electrical input	serial synchron
Measuring range	0 ... 360 °
Resolution	11.25 °

### Precipitation

Meas. principle	laser beam
Particle size	0.16 ... 8 mm
Particle speed	0.2 ... 20 m/s
Intensity	0.001 ... 1000 mm/h
Error intensity -/ quantity measurement	±5% at adjustment under laboratory conditions with a specific test system with the permissible tolerance of ± 5%. Each LNM is supplied with a factory acceptance certificate after passing the calibration. 15% rain 0,5... 20mm/h 30% snow (WS 3m/s)
Precipitation types	drizzle (also freezing) rain (also freezing) hail snow snow grains / ice needles soft hail / ice grains

Accuracy comparing with synoptic observation  
 drizzle > 97%  
 rain > 99%  
 hail > 97%\*  
 snow > 99%  
 soft hail > 85%  
 snow grains > 60%  
 \*According to human observer

### Temperature

Electrical input PT100  
 Measuring range -40 ... +70 °C  
 Accuracy ±0,1 K  
 Resolution 0.1 K

### Rel. Humidity

Electrical input 0 ... 1 V  
 Measuring range 0 ... 100 % rel. h.  
 Resolution 0.1 % rel. h.  
 Accuracy ± 0.1% rel. h.

### Sensors

Laser diode 786 nm, max. 0.5 mW  
 Laser class 1M (EN60825-1:1994 A2:2001)

### Data output digital

Interface RS485 / 422, potential isolation and 2 impulse outputs, potential isolation  
 Baudrate 1200 ... 115200 Baud  
 Output type ASCII, Synop, Metar @ RS485 / 422  
 frequency @ impulse outputs  
 Resolution intensity 0.001 mm/h @ RS485 / 422  
 Resolution quantity 0,001 mm @ RS485 / 422  
 0.1 mm, 0,01 mm, 0,005 mm @ impulse outputs

### General

Ambient temp. -40 ... +70 °C  
 Protection IP 65  
 Dimension Ø 270 x 170 x 540 mm  
 Weight 4.8 kg

## Versions

As per 5.4110.10.xxx, but:

**Product number 5.4110.10.000**

**General**

Power supply 24 V AC/DC or  
22 ... 30 V DC, 750 mA

**Product number 5.4110.10.100**

**General**

Power supply 115 V AC, 15 W

**Product number 5.4110.10.200**

**General**

Power supply 230 V AC, 15 W

**Product number 5.4110.10.300**

**General**

Power supply 24 VDC, 600 mA

## Accessories

Product	Product name	Brief description
	Hygro-Thermo Transmitter compact 1.1005.54.000	<p>Model with</p> <ul style="list-style-type: none"> <li>• Temperature output: PT100</li> <li>• Temperature meas. range: -30 ... +70 °C</li> <li>• rel. Humidity output: 0 ... 1 V</li> </ul> <p><b>Temperature</b></p> <p>Measuring range -30 ... +70 °C</p> <p>Accuracy ±0,1 K (PT100)</p> <p>Electr. output PT100</p> <p><b>Rel. Humidity</b></p> <p>Electr. output 0 ... 1 V</p> <p><b>General</b></p> <p>Power supply 6 ... 30 V DC</p>



Wind Direction  
Transmitter  
Compact  
4.3129.00.x00

- Digital Synchron Serial Output
- With 20 W heating

**Wind direction**

Measuring range 0 ... 360 °  
Resolution 11.25 °  
Accuracy ±5 °

**Data output digital**

Output type 5-bit serial synchron

**Operating voltage**

Electronic 5 ... 30 V DC  
Current consumption 15 µA ( standby @ 5V )  
200 µA ( active @ 5V )  
Heating 24 V AC/DC, max 20 W

**General**

Ambient temp. -50 ... +70 °C  
Protection IP 55



Instrument  
Support  
4.3187.61.x00

For the vibration-reduced operation of the LPM on an available concrete foundation, provided by the customer.

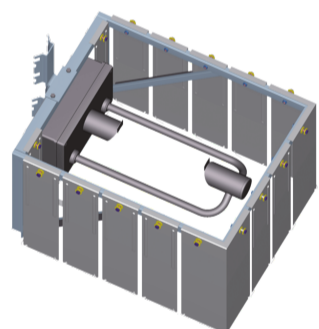
**General**

Material steel, zinc plated  
Tube diameter Ø 60 mm  
Mounting distance 424 mm  
Dimension 645 x 645 mm  
Weight 30 kg



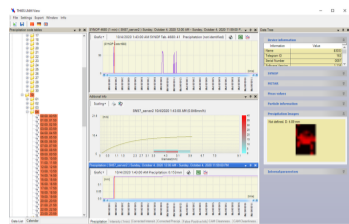
Wind  
Transmitter  
compact  
4.3519.00.x00

- Low Power
- frequency output
  
- Wind speed**
- Measuring range                      0.5 ... 50 m/s
- Resolution                                0.1 m/s
- Accuracy                                  ±3 % of meas. value or ± 0.5 m/s
  
- Data output digital**
- Frequency                                2 Hz ... 630 Hz
  
- Operating voltage**
- Electronic                                3.3 V ... 42 V DC
- Current consumption                1 mA
- Heating                                    24 V AC/DC, max 20 W
  
- General**
- Ambient temp.                         -40 ... +70 °C
- Protection                                IP 55



Wind  
Protection  
Element  
5.4200.00.000

- Serves as optional accessory for uninterrupted acquisition even in case of wind.
  
- Material**
- Frame                                      stell, zinc plated
- Laminations                              stainless steel
  
- General**
- Dimension                                600 x 480 x 400 mm
- Weight                                      18 kg
- Mounting                                 Ø 48 ... 102 mm



LNM-View  
9.1700.99.000

The Thies LNM View program is used to display data generated by the Thies Laser Precipitation Monitor and/or Thies 3D Stereo Disdrometer.

#### Compatibility

Connectable instruments

- Laser precipitation monitor 5.4110.xx.xxx
- 3D Stereo Disdrometers 5.4120.xx.xxx

System requirements

- PC with:
- 1GHz, 256 MBRAM, recommended 2 GHZ, 512MBRAM
  - Graphics resolution: 800 x 600
  - Graphics colours: 16bit TrueColor

Operating system

- Recommended operation system:
- Windows 8
  - Windows 10

