

LCN | Weather Sensors

LCN-WIH

Weather station with DIN rail indoor unit

The weather station consists of an outdoor unit with built-in wind, rain, light, temperature and GPS sensor and an indoor interface unit with a microcomputer and power supply in a 2 MW case. The outdoor unit is mounted either on the roof or on a wall to the south side and is connected with a four-wire low voltage cable with the interface unit. The indoor unit itself connects to the LCN bus via the I-Port of a LCN-SHS, -SH, -HU, -LD or -UPP, -UPU, -UPS from serial number 160101 (since Jan 2012). Due to the GPS receiver LCN-WIH transfers the precise time and date into the LCN bus. The interface unit supports all time zones as well as local daylight saving times - worldwide.

Application field

LCN-WIH is a complete weather station for controlling all weather depending units and processes in a building. The parameters of all functions can be set within the connected LCN module.

Hardware

- Weather station (outdoor unit)
- Indoor unit (2 DU),
- Multi-function mounting bracket for wall- or pole-mounting



Functional specifications:

Outdoor unit

Wind sensor

The wind sensor works without moving parts: A measurement resistor is heated electrically. The blowing wind cools the resistor. The wind speed is calculated with help of the temperature loss and written into the T-variable.

Rain detector

The resistance between the electrodes on the lid of the rain detector is reduced by rain drops. The sensor activates the binary input 8 of the LCN module. When the sensor surface dries again, it takes approx. five minutes until the sensor reports "dry".

Light sensor

The sensor value is transferred to the R2-variable. The light can be handled for example with threshold values. The sensor is embedded into the lid of the case. The measured light values are handled logarithmically in order to allow a large range of values.

Temperature sensor

The sensor value is transferred into the R1-variable.

GPS-receiver

The embedded GPS-receiver provides the current time at nuclear clock precision. The interface unit calculates the local time considering possible daylight saving time and sends it to the LCN-bus.

Indoor unit

The interface unit converts the data of the weather station and transfers it to its LCN module via the I-Port. It supplies the outdoor unit and needs 110-230V line voltage.

Note:

Attention: Connect without power!

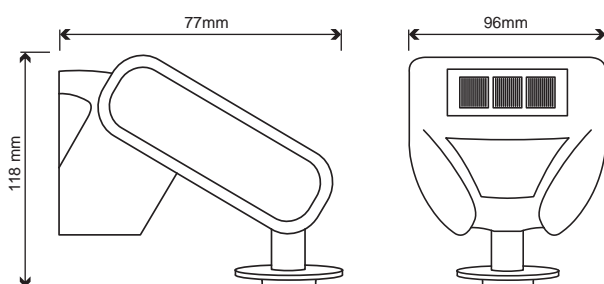
A parallel operation with a LCN-IV (working as pulse counter/counting input) or IOS periphery is not possible. The weather station is wired with a common telephone cable 0.8 mm Ø. The maximum length of the cable is 50 meters. Detailed information is included in the installation guide.

LCN-WIH

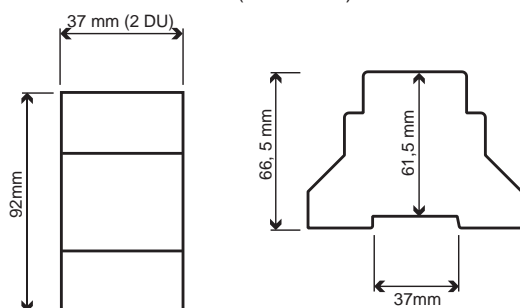
Weather station with DIN rail indoor unit

Dimensions:

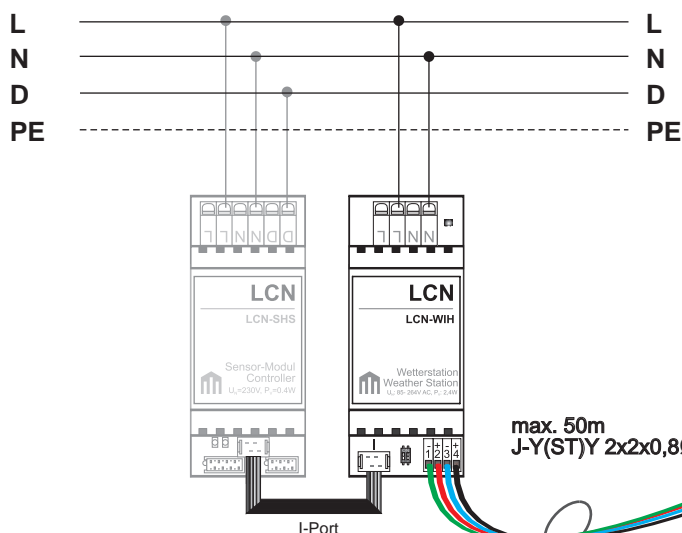
LCN-WIH (W x D x H): 96 x 77 x 118 mm
 Assembly: screw mounting



Indoor unit (W x D x H): 37 x 92 x 66,5 mm
 Space requirement: 2 DU
 Assembly: TH35 on 35 mm mounting rail (DIN 50022)



Circuit diagram



Technical Data:

Connection:

Power supply: via LCN-WIH (indoor unit)
 Terminals: screwless, solid conductor max. 0.5 mm² (0.8 mm Ø)

wind sensor

Detection range: Wind force 1-12 (0-35 m/s)
 (measured value at Var7)
 Accuracy: ±22% of the measured value at 45° approaching angle and mast mounting

rain sensor

Power consumption: 1.2 W (heating)

light sensor

Measuring range: 0-100.000 lx
 Resolution: 2 Lx at 0-1046 Lx, 4 lx at 1047 Lx (accuracy: ±35%)

temperature sensor

Measuring range: -30 to 50 °C
 Resolution: 0.1 °C
 Accuracy: max. ±1.5 °C

GPS receiver

Time zone: Central European time (CET)
 with automatic time change

General data

Operating temperature: -30 to 50 °C
 environmental conditions: For use in stationary installation according to VDE632, VDE637

Degree of protection: IP 44
 Housing: plastic
 Colour: white/translucent

evaluation unit

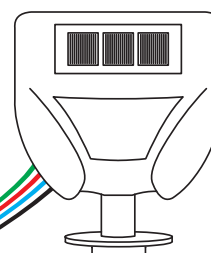
Supply voltage: 85-260 VAC, 50/60 Hz
 Power consumption: 2.4 W
 Type of conductor (supply): screwless, solid max. 2.5 mm² or strand wire with ferrules max. 1.5 mm², max. 16 A

Conductor type: screwless, solid or strand max. 0.2-1.5 mm²/0.5-1.38 mm Ø

LCN connection: I-Port cable 300 mm

Operating temperature: -10 to 40 °C
 environmental conditions: For use in stationary installation according to VDE 632, VDE 637

Degree of protection: IP20



LCN-IW

Wind sensor

The LCN-IW is a wind sensor without a processor. Evaluation is carried out via an impulse counter connected to the I-Port of an LCN bus module.

The casing is weather-proof and has a connection cable of approximately two meters in length. It comes complete with an assembly kit for wall- or pole/mast fixing.

Application

The LCN-IW is used for measuring wind strength so that awnings, shutters and other facilities sensitive to wind can be protected. The parameters for the corresponding functions are set in the LCN bus modules within the LCN network.



Functional specifications:

The LCN wind sensor counts the pulses of the wind turbine. The turbine delivers eight potential free pulses per revolution. Connection and evaluation occur via an LCN-IV(H) and LCN bus module (not included in delivery). Connected over an LCN-IV with 2 metres of rubber sheathed cable.

Note:

The LCN-IW requires a LCN-HU, LCN-UPP, LCN-UPU or LCN-SH and the LCN pulse-counting cable for operation. For more detailed information please refer to the installation guide.

LCN-IW

Wind sensor

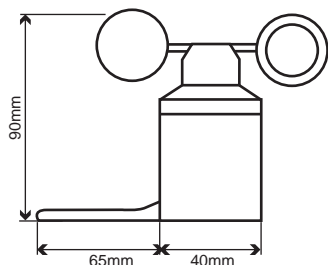
- Wind sensor with connecting cable
- For operating on the I-Port

Technical Data:

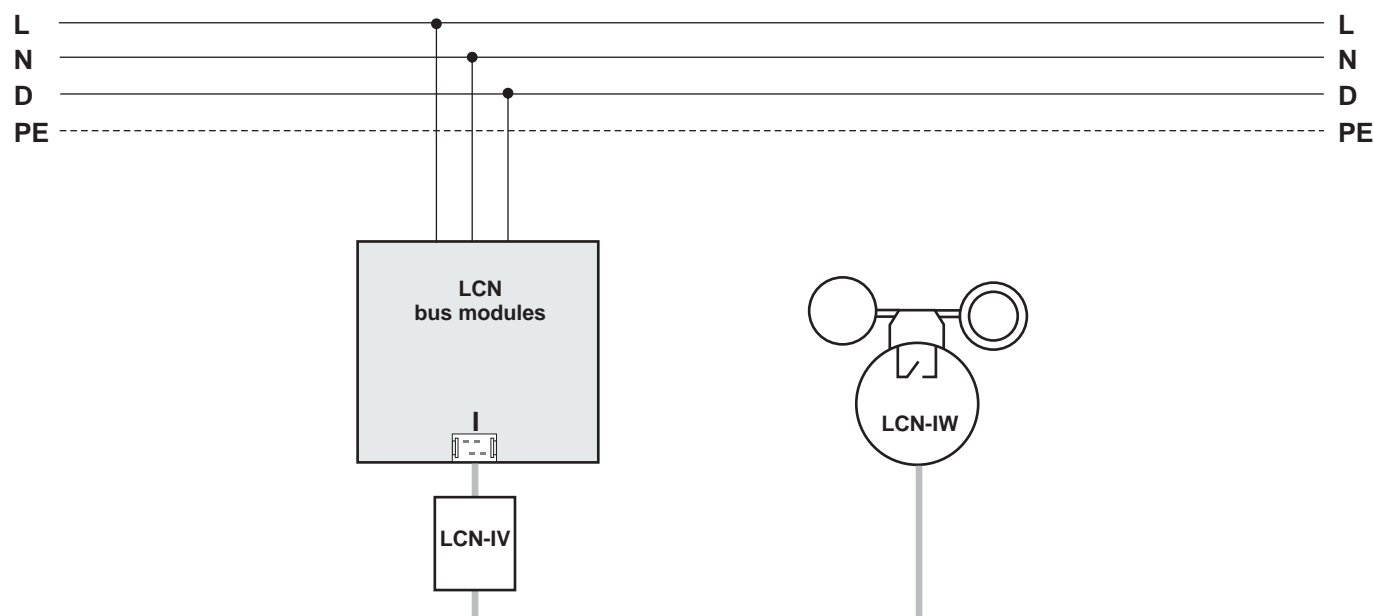
Connection:	
Power supply:	Availability through LCN-IV
Connection power side:	2 m rubber tube cable
Sensor:	
Record range:	6-21 m /s
Resolution:	8 pulses/revolution max.100 m
General details:	
Operating temperature:	-10 to 40 °C
Environmental conditions:	Stationary installation according to VDE632, VDE637
Degree of protection:	IP 65

Dimensions:

LCN-IW (L x W x H):	40 x 40 x 95 mm
Rotor (Ø):	105 mm
Assembly:	screw mounting



Circuit diagram



LCN-IW65

Complete wind sensor in IP65 Case

The LCN-IW65 is a wind sensor with an impulse counter and an integrated LCN bus module for evaluating the sensor's registered data. The parameters of the LCN bus module are set using the system software LCN-PRO.

The casing is accordingly weather-proof with an IP 65 housing and has a connection cable with a length of approximately two meters. It comes complete with the necessary assembly kit for wall or pole/mast fixing.

Application

The LCN-IW65 is used for recognising wind strength so that awnings, shutters and other facilities sensitive to wind can be protected. The parameters for the corresponding functions are set in the LCN bus module.

Hardware

- 1 x LCN-UPS
- 1 x LCN-IV
- 1 x LCN-IW



Functional specifications:

The LCN wind sensor counts the pulses of the wind turbine. The turbine delivers eight pulses per revolution. The pulses are recorded with the LCN-IV on the I-Port connection of the LCN bus module and internally evaluated according to the parameters set.

The LCN-IW65 requires a 230 V power supply as well as the LCN data line for bus communication.

Note:

For more detailed information please refer to the installation guide.

LCN-IW65

Complete wind sensor in IP65 Case

- Wind sensor complete with module
- Casing in a protection degree of IP65
- For operating on the I-Port

Dimensions:

LCN-IW65 (L x W x H):	40 x 40 x 95 mm
Rotor (Ø):	105 mm
Exterior Case:	120 x 80 x 50 mm
Assembly:	screw mounting

Technical Data:

Connection:

Power supply:	230 VAC ±15%, 50 Hz
Power capacity:	< 0.5 W internal consumption
Connection power side:	strand wires 0.75 mm ² (with insulated ferrules)

Sensor:

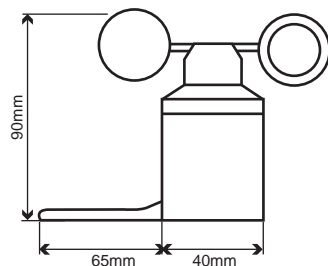
Record range:	6-21 m /s
Resolution:	8 pulses/revolution max.100 m

General details:

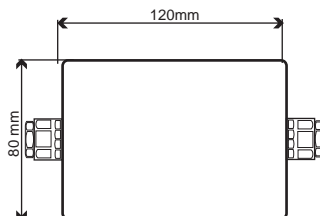
Operating temperature:	-10 to 40 °C
Environmental conditions:	Stationary installation according to VDE632, VDE637
Degree of protection:	IP 65

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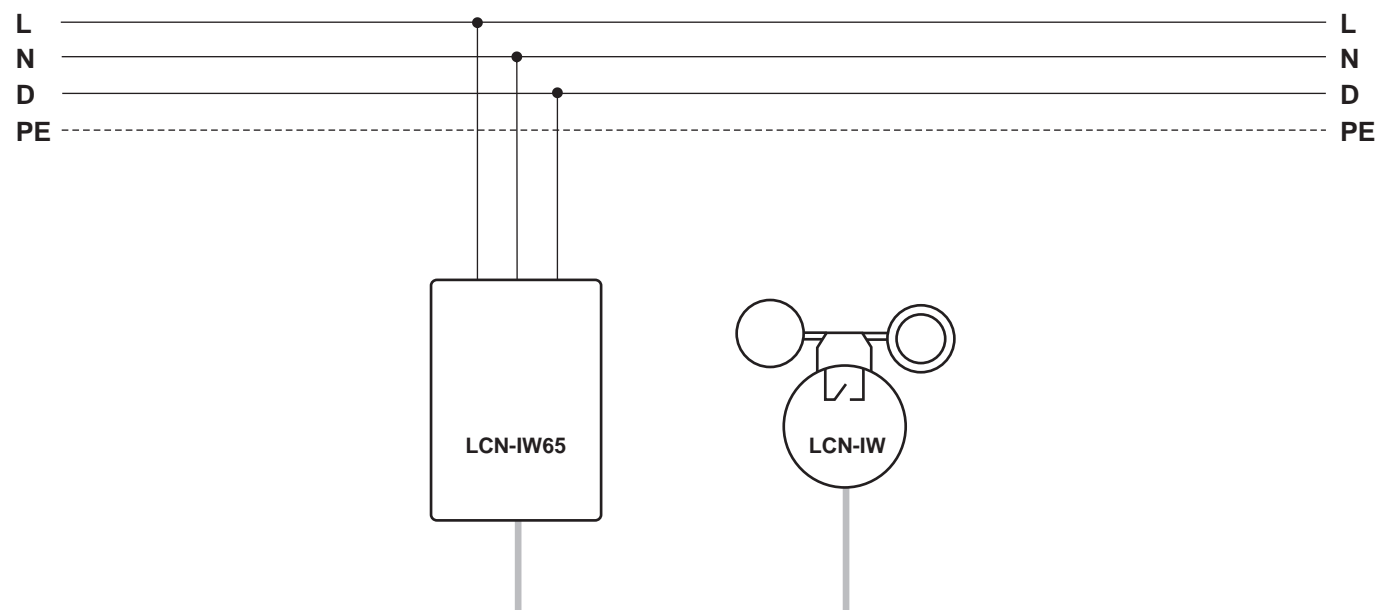
Windsensor:



Außengehäuse:



Circuit diagram



LCN-LSA

Light sensor for the outdoor area

The LCN-LSA is a light sensor for the outdoor area. The light sensor covers a very large measurement range of five decades (1-100,000 lux). The LCN-LSA can be combined with any I-Port peripheral equipment at the I-Port of all intelligent LCN modules like LCN-UPP, LCN-UPS, LCN-UPU, LCN-SH, LCN-SHS, LCN-HU or LCN-LD.

The LCN-LSA can take effect on the R1 and R2 controllers as well as the signal thresholds 1-4. Measured values can be exchanged between LCN modules and used for arithmetic operations. The sensor is supplied in a compact IP 65 housing.

Application

The LCN-LSA light sensor can be used to measure the brightness in the outdoor area. This allows complex control systems to be implemented for interior and exterior lighting as well as shading systems.

Hardware

- Light sensor in the IP65 housing for wall mounting
- Screw terminal for I-Port via over low power cable (up to 0.8 mm Ø)



Note:

The installation location of the photosensor has a strong influence on the measured values. Detailed information can be found in the installation guide.

LCN-LSA

Light sensor for the outdoor area

- Light sensor for outdoor use
- Casing in a protection degree of IP65
- For operating on the I-Port

Technical Data:

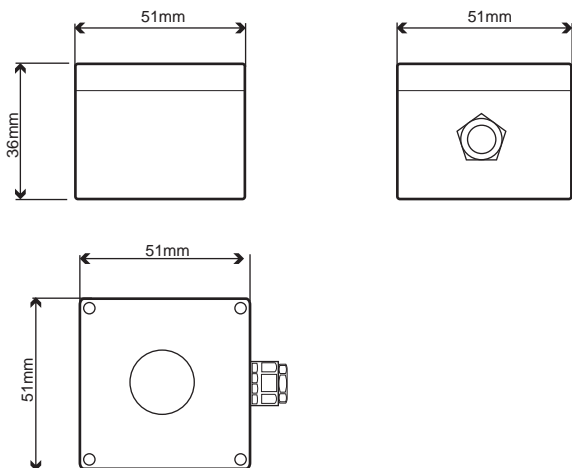
Light sensor:
 Measuring spectrum: 450-650 nm
 Measuring range: 1-100.000 lx
 Accuracy: ±15% over the entire measuring range
 Resolution: 1% of lux reading
 I-Port connection: screw terminal

General details:
 Operating temperature: -20 to 65 °C
 Environmental conditions: Stationary installation according to VDE632, VDE637
 Degree of protection: IP 65

Dimensions:

LCN-LSA (L x W x D): 51 x 51 x 36 mm

Assembly: screw mounting



Circuit diagram

