

Wind sensor for the LCN-Bus

The LCN-IW65 is a wind sensor for connecting directly to the LCN Bus. It has an LCN-UPS module, that is prewired and ready for connection. A screwed fitting, makes it possible to insert the cable: NYM-4(5)x1,5mm². The housing is respectively weather resistant and has mounting accessories for wall or pole mounting.

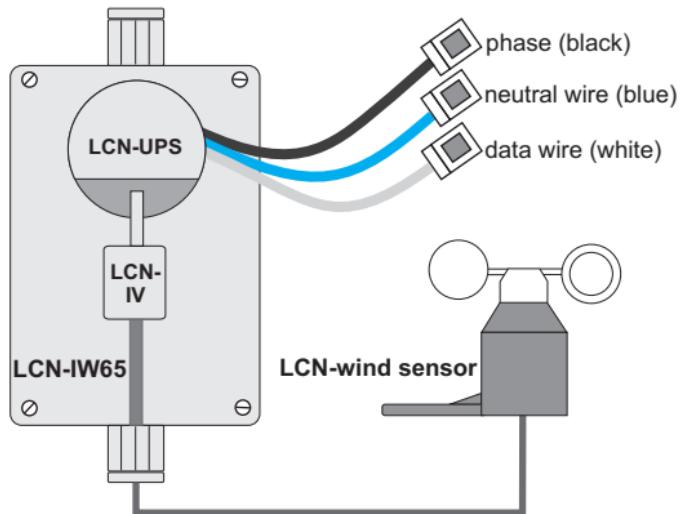
Included in delivery

LCN-IW65 (with LCN-UPS & -IV),
metal bracket (for wind sensor
mounting).

How it works

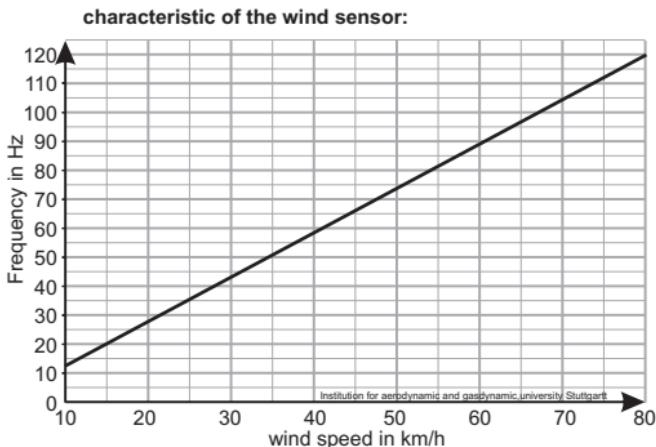
The LCN wind sensor counts the pulses of the wind wheel. The wind wheel gives 4 pulses per revolution to the module, that are counted in the module within a certain amount of time (5 seconds). Within this time period, a check is done, if the wind speed is great enough to exceed the threshold 1.

connecting plan:



After the time period has run out, the next time period begins and the counting starts again. In other words, there are an amount of pulses that are repeatedly counted within 5 seconds. When suddenly so many pulses are counted, that have exceeded the switching threshold 1 within 5 seconds, an output on the wind measuring module will be switched to stairway light. With the command stairway light, a permanent signal "wind" is produced, that is not only evaluated per status message. With status commands, many desired actions, like <motor/shutters move up> can be carried out.

The output switches on (to 100%) and triggers off key 'D1 hit' per status command - shutters move up. If the next blast comes from "stairway light" within the active time, the "stairway light" will be restarted, without having to trigger off a new (unnecessary) shutter UP command. When no further "wind" comes, the "stairway light" runs out (output off), it triggers off per status command, the key 'D1 break' (here not assigned in the example).



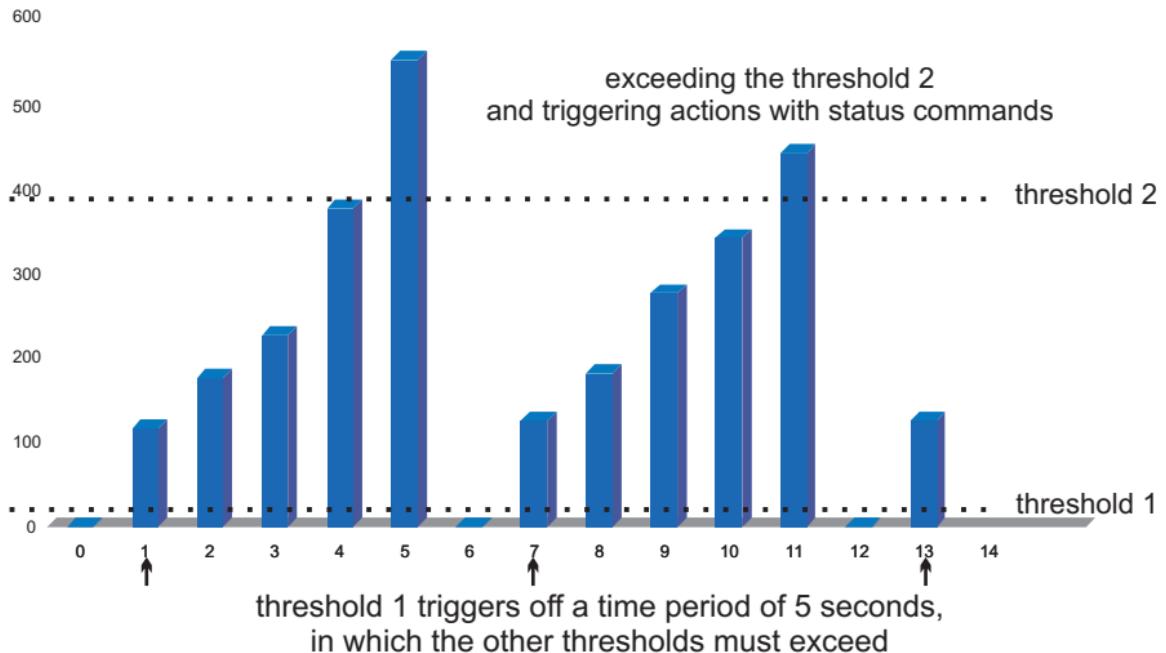
Calculating the threshold yourself: $\text{threshold} = \text{Hz} \times 2_{\text{(flanks)}} \times 5_{\text{(sec.)}}$

Table for determining the thresholds:

wind strength	speed km/h	speed m/s	impact due to the wind	switch thresh. value 2
3 weak breeze	20	6	leaves and thin twigs are moving	280
4 middle breeze	20-27	6-8	moving branches and twigs, dust swirls	280-390
5 fresh breeze	27-38	8-11	little trees are swaying, white crests on waves	390-570
6 strong wind	38-49	11-14	whistling on open landlines	570-730
7 stiff wind	49-61	14-17	trees are moving, light difficulty walking	730-900
8 stormy wind	61-74	17-21	branches and twigs are breaking, difficult walking	900-1110

Graphical representation of the counter register values

pulses



Simple parameter example for the wind sensor (also as template in the LCN-PRO)

You will find the following parameterization as a module template in the LCN-PRO, under templates/Weather station. You can pull the template on to the unprogrammed module per 'Drag & Drop'. The ID must not be changed, otherwise this program template will not function.

```
ID 201 : WRL65-WS-RS      // WindS on I-Port,  
Typ: UPS-module           (ISSENDORFF)   running time: 0J 0T 0:0  
Serial nr: 1106010307     Stat: 0 RE, 0 SE, 0 CE, 0 WD
```

```
Groups: none  
T-port: LCN-T8/-TU4x (kein Sensor)  
I-port: pulse counter          <-- LCN-IV (wind sensor) on I-port  
                           counting factor 1 (not 50)  
P-port sensor not defined.  
behaviour:    message local (not global)  
                  beep on errors  
                  beep on key press  
output:       double dimmer          <-- output 1  
timer:        key A2 hit every 5s    <-- period. timer every 5s key A2  
status com.:  outp. 1 / -----    <-- status command output 1  
Schwellw.:   1=500, -, -, -, -, hyst.=1  <-- threshold 1 = your value (see table)  
                           source: T-Var.  
regulator A: (no regulator settings)  
regulator B: (no regulator settings)
```

```
key A1: - free -
key A2: to module 201 "WRL65-WS-RS"
    Hit: count/compute : reset to 0           <-- T-Var reset to 0 every 5s.
    Make: not programmed
    Break: not programmed

key A3-A8:      - frei -
key B1: (threshold 2) to module 201 "WRL65-WS-RS"
    Hit: not programmed
    Make: output 1 stairway light (switch off value:5)<-- before trigger (sw. off value 5 = 30s)
    Break: not programmed
key B2-B8:      - free -
key C1-C8:      - free -

key D1: (status command A1) to Group 210
    Hit: motor/shutter UP          <-- trigger ON / "storm"
    Make: not programmed
    Break: not programmed         <-- trigger OFF / "slack"key
key D2-D8:      - free -
```

Note:

- ` Even short blasts, trigger off the “stairway light” over threshold 2 (key B2 LONG). The output triggers per status command, key ‘D1 HIT’ - the shutter moves up. If the next blast comes before the “stairway light duration” runs out, it will be extended to the full switch on duration time. Only when the “stairway light” runs out (output goes to 0%), it triggers off per status command, the key ‘D1 break’ (not programmed in the example).
- ` With modules that have serial numbers 10.. (June 2006, or after), the status command lies on key D1. With older modules (up until 0F..), the status command lies on key C7. You only have to transfer the given parameters from key D1 to key C7.
- ` Old LCN-SH and LCN-UPP modules (up until serial number 0A0B../year 2000) the A table, the thresholds are lying there.
- ` The thresholds are lying on keys-table B.
- ` Threshold 1 triggers off key B1 ... threshold 5 the key B5.
- Important:** When operating the LCN-IV as pulse counter/counter input, no other periphery will function on the I-port!

Technical data

connection

power supply: 230VAC ±15%, 50/60Hz (110V available)

power consumption: <0,5W

connection power side: fine wire 0,75 mm² with wire end-sleeves incl. WAGO- lamp terminals 224

sensor

measuring range: 6 - 21m/s

triggering: 4 pulses each rotation

installation

operating temperature: -10°C to +40°C

air humidity: max. 80% rel., non condensing

environmental conditions: use as stationary installation according to VDE632,VDE637

protection art (sensor): IP33

dimensions (sensor, BxDxH) ca. 40mm x 40mm x 90mm, wind wheel 105 mm

protection art: IP65

dimensions (LxBxH): 120mm x 80mm x 55mm

The programming suggestion as mentioned on pages 6&7, is a sample without obligation, that we have produced to the best of our knowledge. It relates to the solutions that were possible at the time of publication. Mentioned products or product properties, do not automatically represent an obligation to deliver.

The user is responsible for safety and function.

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