Wind sensor for the LCN-Bus

The LCN-IW is a wind sensor (wind wheel) that delivers pulses. It is connected to the I-port of an LCN module, over an LCN-IV. The housing is respectively weather resistant and has a connection cable approximately one metre in length, as well as mounting accessories for wall or pole mounting.

Included in delivery

LCN-IW & metal bracket (for wind sensor mounting).

How it works

The LCN wind sensor produces pulses. The wind wheel gives 4 pulses per revolution to a module, that is counted in the module within a certain time period (5 seconds).
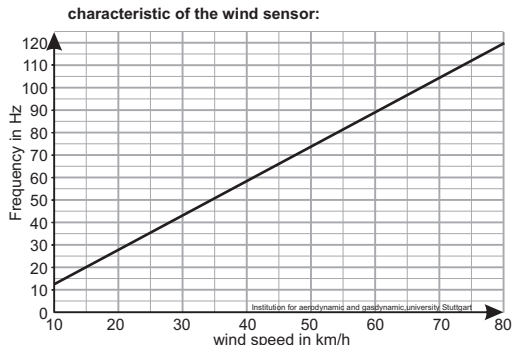
A check is done within this period of time, if the wind speed is great enough to exceed the switching threshold. After a certain amount of time has run out, the time period begins newly and starts counting again. In other words, there are

an amount of pulses that are repeatedly counted within 5 seconds. When suddenly so many pulses are counted, that have exceeded the switching threshold within 5 seconds, an output on the wind measuring module will be switched to stairway light.

The output switches on (to 100%) and triggers (per status command) the key "D1 HIT" off- the shutters are moving 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 (unecessary) shutter UP command.

characteristic of the wind sensor:

Once no new wind comes during the running time, the "stairway light" runs to the end (goes off, 0%) and triggers per status command, the key "D1 break/release (here not assigned in the example). The stairway light is a "buffer" that catches the changing wind speeds.
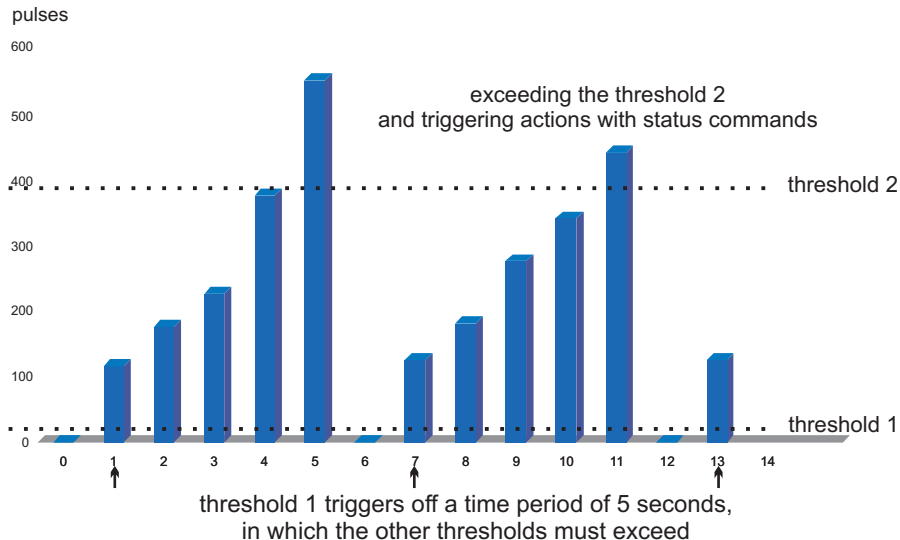

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Frequency in Hz

wind speed in km/h

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

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

exceeding the threshold 2
and triggering actions with status commands

threshold 2

threshold 1

threshold 1 triggers off a time period of 5 seconds,
in which the other thresholds must exceed

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
query voltage: max. 12VDC
cable   approx. 1 m light rubber protection cable H05RR-F
                              2x0,75mm² with wire end-sleeves

sensor
detection area: 6 - 21 m/s
triggering: 4 pulses each rotation

installation
operating temperature: -10°C to +40°C
air humidity: max. 80% rel., non condensing
environmental: use as stationary installation according to VDE632,VDE637
protection art: IP33
dimensions (L x W x H)   ca. 40mm x 40mm x 90mm, wind wheel 105 mm

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.