

# 1 Node Descriptor 52 – Airflow sensor

## 1.1 Device Description

The Airflow sensor uses a flexible, stress sensitive ribbon to detect air flow within

## 1.2 Hardware Details

### 1.2.1 Flex Ribbon

Possible hardware combinations include:

- Platform RFSC Rev A, Ver 0: Not Supported.
- Platform RFSC Rev B, Ver 0: Supported.
- Platform RFSC Rev C, Ver 0: Supported.
- Platform MoWi Rev 2, Ver x: Not Supported.

Length	4 mm
Resistance range	3.0k $\Omega$ – 9.0k $\Omega$
Life Cycle	1,000,000
Hysteresis	7%
Resolution	1° bend
Temperature Range	-35°C - +85°C
Humidity Range	0-95% RH

## 1.3 Enclosure Details

This sensor is available in WIT and WIT2. Not available in Industrial or MoWi.

## 1.4 Message Details

### 1.4.1 STATE (SOM, SDM)

Both the Spurious Orphan Message (SOM) and the Spurious Data Message (SDM) contain the STATE field. STATE is defined here

Field	Length	Description
Test Active	1 bit LSB	Test state is active (1) or inactive (0)
Aware State	1 bit	Aware State is active (1) or inactive (0)
Sensor Disable	1 bit	Sensor is disable (communication still happens)
RSVD	1 bit	Currently not used
Calibrate Active	1 bit	Not used.
Self Test Status	1 bit	Always set to 0, not used.
Not used	1 bit	
Not used	1 bit MSB	

This application specifies no action control types.

### 1.4.2 SDATA (SDM)

The Spurious Data Message contains the SDATA field, which is defined here. The SDATA field is defaulted to 5 bytes for this application.

SDATA[0]: STATE

SDATA[1]: Detected presence or absence of moving air.

SDATA[2-5]: Value of resistance in ohms.

Field	Length	Value	Format
SDATA[0]	1 byte	Int8	STATE
SDATA[1]	1 byte	Int8	Current state, either Still Air (0), or Moving Air (1).
SDATA[2-5]	4 bytes	Int32	Value of resistance in ohms.

## 1.5 General Configuration Defaults

The Configuration Defaults below are native to the Air Flow sensor only.

Field	Default	Min	Max	Comments
NODEDESC	52	N/A	N/A	Fixed.

## 1.6 Profile Defaults

The Flex sensor operates using the Interval device profile.

Field	Default	Min	Max	Comments
PROFILE	1	N/A	N/A	1=Interval profile.
MRES	1	1	250	Measurements per heartbeat
SYNCMASK	0	0	0x00FF	Synchronization or offset of heartbeats.
HYST	0	0	9000	Buffer zone around a threshold value.
THRSHMIN	3000	0	9000	Trip resistance low.
THRSHMAX	9000	0	90000	Trip resistance high.
CALVAL_1	1000	1	65535	Test Interval in milliseconds.
CALVAL_2	2	1	65535	When trip resistance is breached, the number of additional measurements that must be exceed the trip resistance in order to qualify a state change from moving air to still air and vice versa.
CALVAL_3	1	0	1	Trigger type: 0 for aware on still, 1 for aware on air moving
CALVAL_4	1000	0	65535	Exact fixed bias resistor value.