

1 Node Descriptor 33 – Vehicle Presence Sensor

1.1 Device Description

The Vehicle Presence sensor monitors the surrounding magnetic field for variances to determine the presence or absence of a vehicle.

1.2 Hardware Details

1.2.1

Possible hardware combinations include:

- Platform RFSC Rev A, Version x: Not supported.
- Platform RFSC Rev B, Version 1.2: Not supported
- Platform RFSC Rev C, Version 2.x: Daughter Board loaded on SP3 – SP7.

Sensor Specifications:

Field Range	Full scale, -8 to +8 gauss
Mag Dynamic Range	3 bit gain control, ± 1 to ± 8 gauss
Sensitivity (Gain)	230 to 1370 LSb/gauss
Digital Resolution	0.73 to 4.35 milli-gauss
Noise Floor	2 milli-gauss
Linearity	± 2.0 gauss input range, 0.1%FS
Hysteresis	± 2.0 gauss input range, ± 25 ppm

1.3 Enclosure Details

Standard Monnit enclosures including: WIT, WIT2, Industrial, MOWI.

1.4 MNP 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. (For definition of STATE, refer to Monnit Network Specifications, Section 4.2).

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 disabled (communication still happens)
RSVD	1 bit	Currently not used
State Data	1 bit	0-No vehicle, 1-Vehicle
State Data	1 bit	0-Nothing, 1-Unknown state
Not used	1 bit	
Not Used	1 bit MSB	

This application does not use Action Control types.

1.4.2 SDATA (SDM)

The Spurious Data Message contains the SDATA field, which is defined here. The field is defaulted to 3 bytes total for this application. The SDATA[1] field is defaulted to 2 bytes.

SDATA[0]: App_DiscoverState()

SDATA[1]: Int16, the magnitude of the change as measured from the baseline.

Field	Length	Value	Format
SDATA[0]	1 byte	Int8	STATE.
SDATA[1]	Signed, 2 bytes	Int16	Magnitude.

1.5 General Configuration Defaults

The Configuration Defaults below are native to the Vehicle Presence sensor only.

Field	Default	Min	Max	Comments
NODEDESC	33	N/A	N/A	Fixed.

1.6 Profile Defaults

The Vehicle Presence Sensor operates using the Interval device profile.

Field	Default	Min	Max	Comments
PROFILE	1	N/A	N/A	1 = Interval device profile.
MRES	1	1	250	1 = Every measurement is reported.
SYNCMASK	0	0	250	Synchronize or offset heartbeats.
HYST	0	0	0	Not used.
THRSHMIN	1	1	100	Debounce Time (1-first measurement, 2-two measurements, etc)
THRSHMAX	50	50	3000	Detection Threshold of magnitude
CALVAL_1	1000	0	1000	If 0-24, then Sample rate is Intervals/Mres If > 24, then the number of milliseconds to sleep
CALVAL_2	3	1	1800	Seconds. Sleep for time, then Rearm, Renew Average
CALVAL_3	0	0	0	Not used
CALVAL_4	0	0	0	Not used