

EnOcean Equipment Profiles

REVISION HISTORY

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System Specification

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EnOcean Equipment Profiles



D2-14: Multi Function Sensors

TYPE 00 ... 24 Submitter: Perfactory

TYPE 30 ... 31 Submitter: Nexelec

Description:

Indoor Smarthome Multisensor

These EEPs describe a family of smarthome multi-functional sensors with optional Touch Button devices. Each device/member of the family is equipped with a different set of sensors to measure ambient environmental parameters, e.g. temperature, humidity, light level etc.

Some family-members are equipped with buttons in addition to the sensors. The response to pressing a button can be defined freely.

Sensor fault mode status (COA / SMA):

A smoke sensor failure prevents operation of a smoke / CO alarm signal. The smoke / CO sensor is supervised and a failure activates this flag.

Smoke Alarm Condition analysis:

The smoke alarm might be activated by improper environmental conditions like dust, humidity, etc. The product will activate flags if some of these conditions are observed at the moment of alarm activation.

- Maintenance: the flag is set if there is a lack of maintenance
- Temperature: the flag is set if the temperature may cause the alarm
- Humidity: the flag is set if the relative humidity may cause the alarm

!!! An activated flag doesn't mean that there is no smoke. It is dangerous to suspect a false alarm as the smoke preceding the onset of the flames are toxic and may cause you to lose consciousness: despite the absence of flames, a fire may blaze up in a few minutes. Nexelec recommends to analyse the environmental condition of a smoke alarm after the disappearance of the smoke alarm signal.

CO Alarm Condition analysis:

The CO alarm might be activated by improper environmental conditions like dust, humidity, etc. The product will activate flags if some of these conditions are observed at the moment of alarm activation.

- Maintenance: the flag is set if there is a lack of maintenance
- Temperature: the flag is set if the temperature may cause the alarm
- Humidity: the flag is set if the relative humidity may cause the alarm

!!! An activated flag doesn't mean that there is no CO. It is dangerous to suspect a false alarm. Nexelec recommends to analyse the environmental condition of a CO alarm after the disappearance of the CO alarm signal.

EEP Properties defined by the submitter:

Data exchange

Direction: unidirectional Addressing: broadcast

Communication trigger: event- & time-triggered

Communication interval: According to configuration ((non-)autonomous operation, battery status, etc.)

Trigger event: change of value (configuration-dependent) over threshold

Tx delay: -Rx timeout: -

Teach-in

Teach-in method: Universal teach-in (UTE)

Security

Encryption supported: no Security level format: -

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Parameters applied by EEP family members:

Each member of the family transports at least one or more parameters it its messages as defined later. The parameters are defined in the following table; these are the "building blocks" of the telegrams.

Name	ShortCut	Size	Description	Valid Range	Scale	Unit			
Massace ID	MSGID		Massace ID	0 255					
Message ID	MSGID	8	Message ID	0 255					
Temperature	TMP8			0 250	Linear, range sensor (TYPE) dependent	°C			
remperature	TMPO	0	Status of Temperature Sensor	Enum: 251 254: Reserved					
				255: Error					
T	TMDO		Temperature	0 500	Linear, range sensor (TYPE) dependent	°c			
Temperature	TMP9	9	Status of	Enum:					
			Temperature Sensor	501 510: R	eserved				
				511: Error					
			rel. Humidity (linear)	0 200	0 100	%			
Humidity	ним	8	Status of Humidity Sensor	Enum: 201 254: Reserved 255: Error					
				233. [110]					
			Illumination (linear)	0 100,000	0 100,000	lx			
Illumination	ILL	17	Status of Illumination Sensor	Enum: 100,001 13					
				131,071: Error					
Energy Storage	ES	2	Energy Storage Status	Enum: 0: High 1: Medium 2: Low					
				3: Critical					
			VOC in CO2 equivalents (linear)	0 250	0 2,000	ppm/e			
voc	VOC	8	TVOC (linear)	0 250	0 1,150	ppb			
VOC	VOC	8	Status of VOC	Enum: 251 254: Reserved					
		Sensor		255: Error					
CO2	CO2	9	CO2 (linear)	0 250	Sensor dependent, e.g. 0 2,000	ppm			
CO2	CO2	8	Status of CO2 Sensor	Enum: 251 254: Ro 255: Error					



со	со	8	CO (linear)	0 200 Sensor dependent, e.g. 0 1,000 ppm						
CO	100	8		Enum:						
			Status of CO Sensor	201 254: Reserved						
				255: Error						
			Barometer (linear)	0 500 600 1,000 hPa						
				Enum:						
Barometer	BAR	9	Status of Barometer Sensor	501 510: Reserved						
			Daronieter Sensor	511: Error						
	<u>'</u>		•							
				Enum:						
				0: Present						
Presence	PR	2	Presence Detector	1: Not present						
				2: Not detectable						
				3: Presence Detector error						
	_									
				Enum:						
		2		0: Button A released						
Button A	BA		Button A	1: Button A pressed						
				2: Reserved						
				3: Button A error (state not detectable)						
				Enum:						
		2		0: Button B released						
Button B	BB		Button B	1: Button B pressed						
Dutton D		_		2: Reserved						
				3: Button B error (state not detectable)						
				Enum:						
		1	Smoke Alarm status	0: Smoke Alarm non-activated						
		-	Sillotto Atlantii Status	1: Smoke Alarm non-activated						
				Enum:						
		1	Sensor fault mode	0: Sensor Fault mode non-activated						
		-	status	1: Sensor Fault mode activated						
			Smoke Alarm	Enum:						
		1	Condition analysis:	0: Maintenance OK						
		-	Maintenance	1: Maintenance not done						
Smoke Alarm	SMA		Smoke Alarm	Enum:						
		1	Condition analysis:	0: Humidity range OK						
			Humidity	1: Humidity range NOK						
			Smoke Alarm	Enum:						
		1	Condition analysis:	0: Temperature range OK						
			Temperature	1: Temperature range NOK						
				0 250 0 250 Week						
			Time since last	Enum:						
		8	maintenance	251 254: Reserved						
				255: Error						



				Enum:							
		1	CO Alarm status	0: CO Alarm n							
				1: CO Alarm a	ctivated						
			Sensor fault mode	Enum:							
		1	status	0: Sensor Fau	It mode non-activ	vated					
			Status	1: Sensor Fault mode activated							
			CO Alarm	Enum:							
		1	Condition analysis:	0: Maintenand	ce OK ce not done range OK range NOK ure range OK ure range NOK 0 250 Week Product dependent, e.g. 0 250 Month						
			Maintenance	1: Maintenand	e not done	Week Month ty range					
CO Alarm	COA		CO Alarm	Enum:							
		1	Condition analysis:	0: Humidity ra	nge OK						
			Humidity	Enum: 251 254: Reserved 255: Error Product dependent, Month							
			00.41		go ivo k						
		1	CO Alarm Condition analysis:		re range OK						
		1	Temperature								
			Tomperature	-		Week					
					0 250	week					
		8	Time since last maintenance								
			maintenance		eserved						
				255: Error							
Daniel de			County down the c	0 250		Month					
Remaining Product Life	RPLT	8	Countdown time until product end		e.g. 0 250						
Time	RPLI		of life	Enum:							
				251 254: Reserved							
				255: Error							
				Enum:							
			Comfort Index	0: Good							
Hygrothermal	HCI	2	based on	1: Medium							
Comfort Index		_	temperature and humidity	2: Bad							
			numidity	3: Error							
				J. LITOI							
				F							
				Enum:							
				0: Optimal air							
			Indoor Air quality	1: Dry Air rang							
T/Hum, Indoor			analysis based on	2: High humid							
Air Analysis	IAQTH	3	temperature and		rature and humic						
			humidity		e or Humidity ou	t of					
				analysis range							
				5 6: Reserve	ed						
				7: Error							
				Enum:							
			Indoor Air quality	0: Good							
CO Indoor Air	IAQCO	2	analysis based on	1: Medium							
Analysis			co	2: Bad							
				3: Error							
				3: EITOF							

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System Specification

EEP Family Tables:

Each line in the Family Table describes a parameter which is part of the message(s) of the marked Family Members (= column in the table / TYPE).

Line Powered devices:

Туре	0x00	0x01	0x02	0x03	0x04	0x05
Temperature Sensor, TMP9	050	050		050	050	050
Humidity Sensor, HUM	Χ	Χ		X	X	Χ
Illumination Sensor, ILL					X	Х
VOC Sensor [CO2-equiv.], VOC			02000	02000		02000
Freely Programmable Button A, BA		X				
Freely Programmable Button B, BB		X				

Туре	0x06	0x07	0x08	0x09	0x0A
Temperature Sensor, TMP9		050	050	050	050
Humidity Sensor, HUM		X	Χ	X	Χ
Illumination Sensor, ILL			X		Х
VOC Sensor [CO2-equiv.], VOC				02000	02000
CO2 Sensor, CO2	02000	02000	02000	02000	02000

Туре	0x0B	0x0C	0x0D	0x0E	0x0F	0x10
Temperature Sensor, TMP9	050		050	050	050	050
Humidity Sensor, HUM	X		Χ	Χ	X	X
VOC Sensor [CO2-equiv.], VOC			02000	02000		02000
VOC Sensor, TVOC	01150					
CO2 Sensor, CO2				02000		
CO2 Sensor, CO2		05000				
Barometer Sensor, BAR					X	
Room Occupancy Sensor, PR						X
Freely Programmable Button A, BA			X	X		

Autonomous devices (indoor):

Туре	0x1A	0x1B	0x1C	0x1D
Temperature Sensor, TMP9	050	050	050	050
Humidity Sensor, HUM	Χ	X	X	X
Illumination Sensor, ILL		X		X
Energy Storage Status, ES	Χ	X	X	X
Barometer Sensor, BAR			X	X

Туре	0x30	0x31
Temperature Sensor, TMP8	050	050
Humidity Sensor, HUM	X	X
Smoke Alarm, SMA	X	
CO Alarm, COA		X
CO Sensor, CO		01000
Energy Storage Status, ES	Х	X
Remaining Product Life Time, RPLF	120	120
Hygrothermal Comfort Index, HCI	X	X
T/Hum. Indoor Air Analysis, IAQTH	X	X
CO Indoor Air Analysis, IAQCO		X

Autonomous devices (outdoor):

Туре	0x20	0x21	0x22	0x23	0x24
Temperature Sensor, TMP9	-4060	-4060	-4060	-4060	
Humidity Sensor, HUM	Х		Х		
Illumination Sensor, ILL	X			X	X
Energy Storage Status, ES	X	X	Χ	X	Χ

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RORG	D2	VLD Telegram
FUNC	14	Multi Function Sensors
TYPE	1A	Sensor for Temperature, Humidity and Energy Storage

Submitter: Perfactory

For the parameter ES (energy storage) applies: manufacturers / devices which would like to indicate a percentage value it is recommended to handle this in the user manual of the device, respectively an application note.

TYPE **0x1A** - Sensor for Temperature, Humidity, and Energy Storage

Data Byte	DB_2							DB_1							DB_0									
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Data		ТМР9								ним							Е	S						

Offset	Size	Data	ShortCut	Description	Valid Range	Scale U	Jnit
0	9	Temperature	TMP9	Temperature (linear)	Enum:	·	
				Status of Tamparatura Capaar	0500:		°C
				Status of Temperature Sensor		050	
					501510: Reserv	ed	
					511: Error		
9	8	Humidity	HUM	Rel. Humidity (linear)	Enum:		
				Status of Humidity Sensor	0200:		%
						0100)
					201254: Reserv	ed	
					255: Error		
17	2	Energy Storage	ES	Energy Storage Status	Enum:		
					0: High		
					1: Medium		
					2: Low		
					3: Critical		
19	5	Not Used (= 0)				•	

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