

## Generic Profiles - Appendix

### V 1.1

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#### Executive Summary

Generic Profiles are the successor of EnOcean Equipment Profiles and targets the short comings of it. Both EnOcean Equipment Profiles and Generic Profiles describe the data communication of products utilizing The EnOcean Radio Protocol and enables manufacturers to develop interoperable products. The strength of Generic Profiles is to enable devices to have self-described communication.

New products can be developed without submission of its profile to the EnOcean Alliance.

Ver.	Editor	Change	Date
1.0	MH	First release	20.6.2013
1.1	MH	Update of Enums, Teach IN Info and Signal data	23.07.2018

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## **System Specification**

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## 8. Generic Profiles Appendix

### 8.1. About this document

This document defines the variable lists, which are used in the Generic Profiles Specification. The process of Generic Profiles and usage of the following definitions is described in the Generic Profiles Specification.

Additions to the following definitions can be submitted to the EnOcean Alliance Technical Working Group for approval. The EAC (EEP Approval Committee) will revise the changes and will help submitters with questions and requests.

Additional definitions should be made, if a planned product cannot be sufficiently described with the existing definitions.

### 8.2. Signal types

In this chapter the signal types for all channel types are described. There are signal type definitions for channel type:

- Data
- Flag
- Enumeration
- Teach-in information

## 8.2.1. Signal type Data

Signal Type			
8 bits	Data		
00000000	=	Reserved	N/A
00000001	=	Acceleration	m / s <sup>2</sup>
00000010	=	Angle	°
00000011	=	Angular velocity	rad / s
00000100	=	Area	m <sup>2</sup>
00000101	=	Concentration	ppm
00000110	=	Current	A
00000111	=	Distance	m
00001000	=	Electric field strength	V / m
00001001	=	Energy	J
00001010	=	Number	N/A
00001011	=	Force	N
00001100	=	Frequency	Hz
00001101	=	Heat flux density	W / m <sup>2</sup>
00001110	=	Impulse	Ns
00001111	=	Luminance intensity	lux
00010000	=	Magnetic field strength	A / m
00010001	=	Mass	kg
00010010	=	Mass density	kg / m <sup>3</sup>
00010011	=	Mass flow	kg / s
00010100	=	Power	W
00010101	=	Pressure	Pa
00010110	=	Relative humidity	%
00010111	=	Resistance	Ω
00011000	=	Temperature	°C
00011001	=	Time	s
00011010	=	Torque	Nm
00011011	=	Velocity	m / s
00011100	=	Voltage	V
00011101	=	Volume	m <sup>3</sup>
00011110	=	Volumetric Flow	m <sup>3</sup> / s
00011111	=	Sound Pressure Level	dB <sub>SPL</sub>
00100000	=	Correlated Color Temperature	Kelvin
00100001	=		
-	=	Reserved	N/A
11111111			

TABLE 8.1: SIGNAL TYPE 'DATA'

## 8.2.2. Signal type Flag

Signal Type			
8 bits	Flag		
00000000	=	Reserved	N/A
00000001	=	Automatic / manual	(1) automatic; (0) manual
00000010	=	Button pressed	(1) pressed; (0) not pressed
00000011	=	Button changed	(1) change; (0) no change
00000100	=	Day / night	(1) day; (0) night
00000101	=	Down “-“	(1) down; (0) no change
00000110	=	General alarm	(1) alarm; (0) manual
00000111	=	Heat / cool	(1) heat; (0) cool
00001000	=	High / low	(1) high; (0) low
00001001	=	Occupancy	(1) occupied; (0) unoccupied
00001010	=	On / off	(1) on; (0) off
00001011	=	Open / closed	(1) open; (0) closed
00001100	=	Power alarm	(1) alarm; (0) no change
00001101	=	Start / stop	(1) start; (0) stop
00001110	=	Up “+“	(1) up; (0) no change
00010000			
-	=	Reserved	N/A
11111111			

TABLE 8.2: SIGNAL TYPE ‘FLAG’



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### 8.2.3. Signal type Enumeration

For the signal type 'Enumeration' the values and ranges are defined for every single enumeration. When using the enumeration channel type in Teach-in request message, the resolution description from Table 3.3: Resolution 'data' and 'enumeration' has to be applied. The range definition in the table below has only an informative character.

Signal Type				
8 bits	Enumeration	Range	Values	Use
00000000	= Reserved		N/A	
00000001	= Multipurpose		Defined by application	
00000010	= Building Mode	0..2	0 = Building in use 1 = Building not used 2 = Building protection	global
00000011	= Occupancy Mode	0..2	0 = Occupied 1 = Standby 2 = Not occupied	global
00000100	= HVAC Mode	0..6	0 = Auto 1 = Comfort 2 = Standby 3 = Economy 4 = Building Protection	HVAC
00000101	= Changeover Mode	0..3	0 = Auto 1 = Cooling Only 2 = Heating Only	HVAC
00000110	= Time	32 bit	Seconds since fixed date	global
00000111	= Battery	0..200	0.5 % Step of Battery power	global
00001000	= Reserved			
-				
11111111				

TABLE 8.3: SIGNAL TYPE 'ENUMERATION'

The signal type *multipurpose* (0b00000001) is dedicated to manufacturer or application specific enumeration channel types. The values and range of the *multipurpose enumeration* can vary between products and manufacturers. It is to assume that such enumeration fulfils one of these criteria:

- is not likely to be reused by other application or manufacturer



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- is very specific for a given application or manufacturer
- has different reasons not to be added as interoperable enumeration to this document

The values and range of the *multipurpose enumeration* have to be described in the product documentation of the product applying it.



## 8.2.4. Signal Type Teach-in information

Signal Type		
8 bits	Teach-in information	
		Length
00000000	= Reserved	N/A
00000001	= Inbound Channels description following	0 bytes
00000010	= Product ID	4 bytes
00000011	= Connected GSI Sensor IDs	N Bytes
00000100	=	
00000101	=	
00000110	=	
00000111	=	
00001000	=	
00001001	=	
00001010	=	
00001011	=	
00001100	=	
00001101	=	
00001110	=	
00010000		
-	= Reserved	N/A
11111111		

TABLE 8.4: SIGNAL TYPE 'TEACH-IN INFORMATION'

The Length information is used in the channel definition of the Teach-in information channel type during Teach-in process as indicator how many bytes of data will follow.

Product ID is defined to be a unique reference to a device type (not devices them self). Manufacturers can use this filed to identify different types of devices in the field and effectively improve the plug & play capabilities. A common platform to share Product ID definition and device meta-data will be defined. The rules of usage will be defined by the TWG.

Connected GSI Sensor IDs is a specific channel defined to translate the Generic Sensor Interface (GSI) for Long range sensors into Generic Protocol Teach in. Additionally to Product ID it includes the Socket number and Number of connected sensors. Those parameters are specific for GSI.



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Data definition of "Connected GSI Sensor IDs"		
Socket	Additional Sensors	GSI-Product Ids
1 byte	1 byte	N * 6 Bytes
1-255	0-254 0: Only this Sensor	N * 6 bytes Sensor Product Ids with the format:  0xAA 00xBB 0xBB 0xCC 0xCC 0xCC  0xAA: 1 Byte Manufacturer ID  0xBB 0xBB: 2 Bytes Sensor Product Type 0xCC 0xCC 0xCC : 3 Bytes Sensor Serial Number