

EnOcean Equipment Profiles

REVISION HISTORY

Ver.	Editor	Change	Date
2.6.8	NM	Last xml edition of the EEP-Specification	Dec 31, 2017

Copyright © EnOcean Alliance Inc. (2019). All rights reserved.

The information within this document is the property of the EnOcean Alliance and its use and disclosure are restricted. Elements of the EnOcean Alliance specifications may also be subject to third party intellectual property rights, including without limitation, patent, copyright or trademark rights (such a third party may or may not be a member of the EnOcean Alliance.)

The EnOcean Alliance is not responsible and shall not be held responsible in any manner for identifying or failing to identify any or all such third party intellectual property rights. This document and the information contained herein are provided on an “as is” basis and the EnOcean Alliance disclaims all warranties express or implied, including but not limited to

- (1) any warranty that the use of the information herein will not infringe any rights of third parties (including any intellectual property rights, patent, copyright or trademark rights, or
- (2) any implied warranties of merchantability, fitness for a particular purpose, title or non-infringement.

In no event will the EnOcean Alliance be liable for any loss of profits, loss of business, loss of use of data, interruption of business, or for any other direct, indirect, special or exemplary, incidental, punitive or consequential damages of any kind, in contract or in tort, in connection with this document or the information contained herein, even if advised of the possibility of such loss or damage. All Company, brand and product names may be trademarks that are the sole property of their respective owners.

The above notice and this paragraph must be included on all copies of this document that are made.

The EnOcean Alliance “EnOcean Equipment Profiles definitions” are available free of charge to companies, individuals and institutions for all non-commercial purposes (including educational research, technical evaluation and development of non-commercial tools or documentation.)

This specification includes intellectual property („IPR“) of the EnOcean Alliance and joint intellectual properties („joint IPR“) with contributing member companies. No part of this

System Specification



specification may be used in development of a product or service for sale without being a participant or promoter member of the EnOcean Alliance and/or joint owner of the appropriate joint IPR.

These errata may not have been subjected to an Intellectual Property review, and as such, may contain undeclared Necessary Claims.

EnOcean Alliance Inc.
2400 Camino Ramon, Suite 375
San Ramon, CA 94583
USA
Graham Martin
Chairman & CEO EnOcean Alliance

A5-37: Energy Management

RORG	A5	4BS Telegram
FUNC	37	Energy Management
TYPE	01	Demand Response

Submitter: Echoflex Solutions Inc.

Purpose of EEP:

Demand Response is a developing standard to allow utility companies to send requests for reduction in power consumption during peak usage times. It is also used as a means to allow users to reduce overall power consumption as energy prices increase. Having an EEP for this will allow ease of integration with EnOcean products to this standard. The EEP was designed with a very flexible setting for the level (0-15) as well as a default level whereby the transmitter can specify a specific level for all controllers to use (0-100% of either maximum or current power output, depending on the load type). This EEP also includes a timeout setting to indicate how long the DR event should last if the DR transmitting device does not send heartbeats or subsequent new DR levels.

Description:

This EEP is included under a new function of Energy Management. Additional types could be added in future for power, voltage, and current data. The proposed EEP type 01 only deals with demand response activation at this point. Data Byte 3 is the default DR value for devices that implement a control algorithm that uses a set-point. It will be used for any controllers not supporting the current DR Level in the message and having an adjustable set-point.

Data Byte 2 is the default DR Level for any controllers not supporting the current DR Level in the message and having an adjustable control. It can be defined as either a percentage of the maximum power or a percentage of the current power, depending on the value of bit 7 in Data Byte 2. Bits 0 through 6 contain the percentage of power (either relative or absolute) that should be used. A value of 0 corresponds to 0% and a value of 100 corresponds to 100%. Any value higher than 100 should be interpreted as 100%. For example, if the current DR level is not supported by the controller and Data Byte 2 bit 7 is 0 and Data Byte 2 bits 0 through 6 are set to 55, then the controller should try to use 55% of its maximum power usage. In the case of a lighting load with 0-10V dimming, this would correspond to 5.5V on the dimming line. In the case of a heating controller with a maximum set back of 5 degrees C, this would correspond to a set back of 2.75 degrees C (this would most likely be rounded to 3).

Data Byte 1 is the timeout for this DR event. After this command is sent the controller will stay at the DR level for Data Byte 1 multiplied by 15 minutes. Once this time has elapsed the controller will return to normal operation. If Data Byte 1 is 0 then the controller will remain in the DR event until the next DR command is received. This timeout allows DR devices to leave or turn off after setting controllers into a DR state, thus the DR transmitter is not needed to take the devices out of the DR state and the controllers will automatically recover. For example a DR transmitter that only sends messages when a DR event is active could be used with the timeout to create a successful DR system.

Data Byte 0, Bits 7 through 4 make up a nibble that will be used as the DR level. Levels 0 through 15 will be possible using these bits. Bit 4 will be the lowest bit in this nibble and bit 7 will be the highest. If any level is not supported by a controller then that controller should use the default settings sent in this message or map the level to one that it supports.

Data Byte 0 Bits 2 and 1 indicate whether the power adjustment at start and end of the DR event should be randomized or not. This feature is intended to minimize rapid changes on the power distribution equipment by delaying each controller's response. If random start or end is enabled, each controller will delay starting or ending the DR event by a random time that will vary uniformly over a specific time period (for example, 5 seconds, 60 seconds, or 15 minutes).. The maximum length of these random delays will depend on the implementation in the controller.

System Specification

Data Byte 0, Bit 0 is the state for loads that are not adjustable for the default DR level. If a controller does not support the current DR level and does not have adjustable control then it should use this bit. The two states of this bit are defined as follows: 1 = maximum power usage by controller, 0 = minimum power usage by the controller. If for example lights are being controlled, then a setting of 1 will mean the lights should be ON, whereas a setting of 0 will mean the lights should be OFF. For a thermostat application with non adjustable set back, a setting of 1 will mean that no set back should be applied, whereas a setting of 0 will mean that the full set back should be applied. This setting only applies to the maximum power usage of the controller; if for example the lights are currently off and the controller receives a DR event with this bit set, then the lights should not turn ON as the DR event has only set the maximum power usage for the device.

Offset	Size	Bitrange	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	DB3.7...DB3.0	Temporary default	TMPD	New Temporary default DR set point Min. ... Max. (linear)	0...255	0...255	N/A
8	1	DB2.7	Absolute/relative power usage	SPWRU		Enum:		
						0: Absolute power usage. Interpret DB_2.BIT_6...DB_2.BIT_0 as a percentage of the maximum power use.		
						1: Relative power usage. Interpret DB_2.BIT_6...DB_2.BIT_0 as a percentage of the current power use.		
9	7	DB2.6...DB2.0	Power Usage	PWRU	0% to 100% power usage in 1% increments; 101...127 = interpreted as 100%	0...100	0...100	N/A
16	8	DB1.7...DB1.0	Timeout Setting	TMOS	Time in 15 min. intervals; 0 = No time specified; 1...255 = increasing 15 min. intervals. Max value: 3825 = 255*15	1...255	15...3825	min
24	4	DB0.7...DB0.4	DR Level	DRL	DR Level	0...15	0...15	N/A
28	1	DB0.3	LRN Bit	LRNB	LRN Bit	Enum:		
						0: Teach-in telegram		
						1: Data telegram		
29	1	DB0.2	Random start delay	RSD	...	Enum:		
						0: False		
						1: True		
30	1	DB0.1	Randomized end delay	RED	...	Enum:		
						0: False		
						1: True		
31	1	DB0.0	Max/Min Power Usage for Default DR State	MPWRU		Enum:		
						0: Minimum Power usage		
						1: Maximum Power usage		