

#### **EnOcean Equipment Profiles**

#### **REVISION HISTORY**

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

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# **System Specification**

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**EnOcean Equipment Profiles** 

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### System Specification

# D2-01: Electronic Switches and Dimmers with Local Control

This EEP family shall be used for bidirectional actuators that control electric loads, e.g. for lightning purposes. Switching and dimming is controlled and high-resolution energy measurement is supported. Local Control, either thru a user interface or thru other measures shall be supported on the actuator. This may include other EnOcean enabled devices taught-in to a device belonging to the EEP family, e.g. a simple rocker switch or more sophisticated devices like occupancy sensors with timing control. The proposed EEP family serves up to 30 output channels and allows controlling them either individually or as a bulk. Extension of this EEP family is possible in different ways:

- 1. A new device with a different feature mix creates a new TYPE within this EEP family
- -> new column in following table
- 2. An additional feature is added and a new device with a new TYPE is created
- -> new column and new line in following table
- 3. Like 2, but EnOcean communication of the EEP family needs to be extended
- -> new column and new line in following table
- -> one or more additional messages need to be defined

For teach-in and teach-out UTE (Universal Uni- and Bidirectional Teach-In Procedure for EEP based Communication) shall be used.

Supported function of Type	00	01	02	03	04	05	06	07	08	09	0A	ОВ	0C	0D	0E	0F	10	11	12	13	14	15	16
No. of output channels	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	4	8	4	2
Switching	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Dimming	-	-	Х	Х	Х	Х	-	-	-	Х	-	-	-	-	-	-	-	-	-	-	-	-	Х
Dimming configurable	-	-	-	-	Х	Х	-	-	-	Х	-	-	-	-	-	-	-	-	-	-	-	-	Х
Pilot wire	-	-	-	-	-	-	-	-	-	-	-	-	Х	-	-	-	-	-	-	-	-	-	-
Local control	Х	Х	Х	Х	Х	Х	-	-	X	Х	Х	X	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Local control enable/disable	-	-	-	-	Х	Х	-	-	Х	-	Х	Х	Х	Х	Х	Х	-	-	Х	-	-	Х	Х
External Switch / Push Button Control	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Х	-	-	X	-	-	Х	Χ
External Switch / Push Button Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Х	-	-	Χ	-	-	Х	Χ
Auto OFF Timer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Х	-	-	X	-	-	Х	Χ
Delay OFF Timer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Х	-	-	Х	-	-	Х	Х
Taught-in devices enable/disable 2)	-	-	-	-	Х	Х	-	-	Х	Х	Х	Х	Х	X	Х	Х	-	-	X	-	-	-	-
User interface day/night mode	-	-	-	-	-	Х	-	-	Х	-	Х	Х	Х	Х	Х	Х	-	-	Х	-	-	Х	Χ
Over current reporting	-	-	-	-	Х	Х	-	-	Х	Х	-	-	Х	-	-	-	-	-	-	-	-	-	-
Over current configurable	-	-	-	-	Х	Х	-	-	X	-	-	-	Х	-	-	-	-	-	-	-	-	-	-
Energy measurement	Х	-	Х	-	Х	Х	X	-	Х	Х	-	Х	Х	-	Х	-	Х	-	-	-	-	-	-
Power measurement	-	-	-	-	Х	Х	-	-	Х	Х	-	Х	Х	-	Х	-	-	-	-	-	-	-	-
Measurement Roll Over 1)	Х	-	Х	-	-	-	Χ	-	-	-	-	Х	-	-	Х	-	Х	-	-	-	-	-	-
Measurement Auto Scaling 1)	-	-	-	-	Х	Х	-	-	X	Х	-	-	Х	-	-	-	-	-	-	-	-	-	-
Measurement configurable	-	-	-	-	-	Х	-	-	Х	Х	-	Х	Х	-	Х	-	-	-	-	-	-	-	-
Measurement report on query	Х	-	Х	-	Х	Х	X	-	X	Х	-	Х	Х	-	Х	-	Х	-	-	-	-	Х	-
Measurement auto reporting	-	-	-	-	Х	Х	-	-	Х	Х	-	Χ	Х	-	Х	-	-	-	-	-	-	-	-
Default state configurable	-	-	-	-	-	Х	-	-	X	Х	Х	Х	Х	Х	Х	Х	-	-	Х	-	-	Х	-
Error level reporting	-	-	-	-	-	Х	-	-	Х	Х	-	-	Х	-	-	-	-	-	-	-	-	Х	-
Power Failure Detection	-	-	-	-	-	-	-	-	-	-	Х	Х	-	-	-	-	-	-	-	-	-	-	-
Power Failure Detection enable/disable	-	-	-	-	-	-	-	-	-	-	Х	Х	-	-	-	-	-	-	-	-	-	-	-
Maximum Dimming Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Х
Minimum Dimming Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X

<sup>1)</sup> A device may either support Measurement Roll Over or Measurement Auto Scaling.

Enable / disable only effects devices that are taught-in to a device belonging to this EEP family; it does not effect communication between a device belonging to this EEP family and any other entity where this device has been taught-in by itself.



RORG	D2	VLD Telegram
FUNC	01	Electronic Switches and Dimmers with Local Control
TYPE	06	Type 0x06 (description: see table)

Submitter: Team

#### CMD 0x1 - Actuator Set Output

This message is sent to an actuator. It controls switching / dimming of one or all channels of an actuator.

# 

#### REMARK:

In case an Actuator Set Output message specifies a parameter that is not supported by the addressed device, such device should react as following:

- Channel not supported by device -> ignore message
- Dimming command to switching device -> no change of status
- Dimming command with non-supported speed -> dim with regular speed

#### RECOMMENDATION:

Dimmers should take things like phase shifting into account to provide dimming based on power consumption (results in brightness for lamps) rather than interpreting percentage values as phase angle only.

Offset	Size	Data	ShortCut	Description	Vali	d Range	Scale	Unit
0	4	Not Used (=	0)					
4	4	Command	CMD	command	Enum:			
		ID		identifier	0x01: ID 01			
8	3	Dim value	DV		Enum:			
					0x00:	Switch to new out	put value	
					0x01:	Dim to new output	t value – dim tim	ner 1
					0x02:	Dim to new output	t value – dim tim	ner 2
					0x03:	Dim to new output	t value – dim tim	ner 3
					0x04:	Stop dimming		
					0x050x07	: not used		
11	5	I/O channel	I/O		Enum:			
					0x000x1D:	Output channel (t	o load)	
					0x1E:	All output channel device	s supported by t	he
					0x1F:	Input channel (fro	m mains supply)	)
16	1	Not Used (=	0)					
17	7	Output value	ov		Enum:			
					0x00:	Output value 0%	or OFF	
					0x010x64	: Output value 1% t	to 100% or ON	
					0x650x7E	: Not used		
					0x7F:	Output value not v	alid / not application	able

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#### CMD 0x2 - Actuator Set Local

This message is sent to an actuator. It configures one or all channels of an actuator.

Response Timing: None

#### RECOMMENDATION:

In case the device implements an internal order for dim timers, this order should be from "dim timer 1" (fast) to "dim timer 3" (slow). The configured time shall always be interpreted for a full range (0 to 100%) dimming.

#### Command ID 02 (CMD)



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Offset	Size	Data	ShortCut	Description		Valid Range	Scale	Unit
0	1	Taught-in devices	d/e		Enum:			
						Disable taught-in de EEP)	vices (with diff	ferent
						Enable taught-in dev EEP)	vices (with diff	erent
1	3	Not Used (= 0)						
4	4	Command ID	CMD	Command identifier	Enum: 0x02:	: ID 02		
8	1	Over current shut down	ос		Enum:			
					0b0:	Over current shut do	own: static off	
						Over current shut do restart	own: automation	С
9	1	reset over current shut	RO		Enum:			
		down			0b0:	Reset over current s	shut down: not	active
						Reset over current s signal	shut down: trig	iger
10	1	Local control	LC		Enum:			
						Disable local control		
	_				0b1:	Enable local control		
11	5	I/O channel	I/O		Enum:			
					0x00	0x1D:	nnel (to load)	
					0x1E	the device	nannels suppor	
					0x1F:	: Input chann supply)	el (from mains	5
16	4	Dim timer 2	DT2		Enum:			
					0x00			
					0x01		[0,5 7,5s /	steps
20	4	Dim timer 3	DT3		Enum:			
					0x00			
					0x01		[0,5 7,5s /	steps
24	1	User interface	d/n		Enum:			
		indication				User interface indica		
						User interface indica	ation: night op	eration
25	1	Power Failure	PF		Enum:			_
						Disable Power Failur		-
26	2	Default etate	DC		<del> </del>	Enable Power Failure	e Detection	
26	2	Default state	DS		Enum:	· Dofault state · 00/	or OFF	
						: Default state: 0% : Default state: 100		
						: Default state: 100		s state
						: Not used	citibet previou	3 state
28	4	Dim timer 1	DT1		Enum:			
			_		0×00	: Not used		
					0x01		[0,5 7,5s /	steps
					OKOTIII	5,1311 5,55]		

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#### CMD 0x3 - Actuator Status Query

This message is sent to an actuator. It requests the status of one or all channels of an actuator.

#### Response Timing:

An Actuator Status Response message shall be received within a maximum of 300ms from the time of transmission of this message. In case no such response is received within this time frame the action shall be treated as completed without result.

# Command ID 03 (CMD) DB\_1.BIT\_7 ← 0 7 6 5 4 3 2 1 0 7 6 5 4 3 2 1 0 Bit Offset: 0 → 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Offset	Size	Data	ShortCut	Description	Valid	l Range	Scale	Unit
0	4	Not Used (=	0)					
4	4	Command ID	CMD	Command identifier	Enum: 0x03: ID 03	_		
8	3	Not Used (=	0)					
11	5	I/O channel	I/O		Enum: 0x000x1D:	Output channel (to	o load)	
					0x1E:	All output channel device	s supported by t	ne
					0x1F:	Input channel (fro	m mains supply)	

#### CMD 0x4 - Actuator Status Response

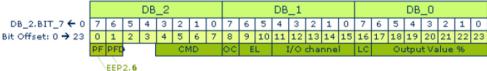
This message is sent by an actuator if one of the following events occurs:

- Status of one channel has been changed locally
- Message Actuator Status Query has been received

#### Response Timing:

This message shall be sent within a maximum of 50ms from the time of reception of the Actuator Status Query message.

### Command ID 04 (CMD)



#### REMARK 1:

In case an Actuator Status Query message specifies a parameter that is not supported by the device being addresses, such device shall ignore the message and shall not answer using the Actuator Status Response message.

REMARK 2:

In case an Actuator Status Query message queries all output channels supported by a device being addresses, such device shall answer per each output channel by using an individual Actuator Measurement Response message.

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Offset	Size	Data	ShortCut	Description	Valid Range Scale Unit
0	1	Power Failure	PF		Enum:
					Power Failure Detection disabled/not 0b0: supported
					Power Failure Detection enabled 0b1:
1	1	Power Failure	PFD		Enum:
		Detection			Power Failure not detected/not 0b0: supported/disabled
					Power Failure Detected 0b1:
2	2	Not Used (= 0)			
4	4	Command ID	CMD	Command identifier	Enum: 0x04: ID 04
8	1	Over current switch	ОС		Enum:
		off			Over current switch off: ready / not 0b0: supported
					Over current switch off: executed 0b1:
9	2	Error level	EL		Enum:
					0b00: Error level 0: hardware OK
					0b01: Error level 1: hardware warning
					0b10: Error level 2: hardware failure
					0b11: Error level not supported
11	5	I/O channel	I/O		Enum:
					0x000x1D: Output channel (to load)
					0x1E: Not applicable, do not use
					0x1F: Input channel (from mains supply)
16	1	Local control	LC		Enum:
					0b0: Local control disabled / not supported
					0b1: Local control enabled
17	7	Output value	ov		Enum:
					0x00: Output value 0% or OFF
					0x010x64: Output value 1% to 100% or ON
					0x650x7E: Not used
					0x7F: output value not valid / not set

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#### CMD 0x5 - Actuator Set Measurement

The command defines values at offset 32 and at offset 40 which are the limits for the transmission periodicity of messages. MIT must not be set to 0, MAT  $\geq$  MIT.

Response Timing: None

# 

Offset	Size	Data	ShortCut	Description	Valid Range Scale Unit
0	4	Not Used (= 0)		•	
4	4	Command ID	CMD	Command identifier	Enum:
					0x05: ID 05
8	1	Report measurement	RM		Enum:
					Report measurement: query 0b0: only
					Report measurement: query / 0b1: auto reporting
9	1	Reset measurement	RE		Enum:
					Reset measurement: not active 0b0:
					Reset measurement: trigger 0b1: signal
10	1	Measurement mode	e/p		Enum:
					0b0: Energy measurement
					0b1: Power measurement
11	5	I/O channel	I/O		Enum:
					Output channel (to 0x000x1D: load)
					0x1E: All output channels supported by the device
					0x1F: Input channel (from mains supply)
16	4	Measurement delta to be reported (LSB)	MD_LSB		04095 04095 N/A
20	1	Not Used (= 0)			
21	3	Unit	UN		Enum:
					0x00: Energy [Ws]
					0x01: Energy [Wh]
					0x02: Energy [KWh]
					0x03: Power [W]
					0x04: Power [KW]
	_				0x050x07: Not used
24	8	Measurement delta to be reported (MSB)	MD_MSB		04095 04095 N/A
32	8	Maximum time between two	MAT	Measurement	Enum:
		subsequent actuator messages		Response messages [10s]	1255: s
		messages		[105]	102550
					0: Reserved
40	8	Minimum time between two	MIT	Measurement	Enum:
		subsequent actuator messages		Response messages [s]	1255: s
				[-]	1255
					0: Reserved

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#### CMD 0x6 - Actuator Measurement Query

This message is sent to an actuator. The actuator replies with an Actuator Measurement Response message.

#### Response Timing:

An Actuator Message Response message shall be received within a maximum of 300ms from the time of transmission of this message. In case no such response is received within this time frame the action shall be treated as completed without result.

# Command ID 06 (CMD) DB\_1.BIT\_7 ← 0 7 6 5 4 3 2 1 0 7 6 5 4 3 2 1 0 Bit Offset: 0 → 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 CMD Qu I/O channel

Offset	Size	Data	ShortCut	Description	Vali	d Range	Scale	Unit
0	4	Not Used (=	0)					
4	4	Command ID	CMD	Command identifier	Enum: 0x06: ID 06	_		
8	2	Not Used (=	0)					
10	1	Query	qu		Ob0: Query (			
11	5	I/O channel	I/O		0x000x1D: 0x1E: 0x1F:	device	nel (to load) annels supported by ti el (from mains supply)	

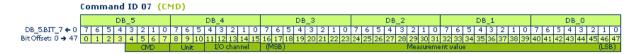
#### CMD 0x7 - Actuator Measurement Response

This message is sent by an actuator if one of the following events occurs:

- Measurement results trigger an automated transmission (see Actuator Set Measurement message)
- Message Actuator Measurement Query has been received

#### Response Timing:

This message shall be sent within a maximum of 50ms from the time of reception of the Actuator Measurement Query message.



#### REMARK 1:

In case an Actuator Measurement Query message specifies a parameter that is not supported by the device

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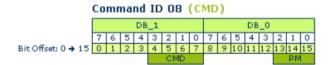
addressed, such device shall ignore the message and shall not answer using the Actuator Measurement Response message.

REMARK 2:

In case an Actuator Measurement Query message queries all output channels supported by a device being addresses, such device shall answer per each output channel by using an individual Actuator Measurement Response message.

Offset	Size	Data	ShortCut	Description	Valid F	tange	Scale	Unit
0	4	Not Used (= 0)						
4	4	Command ID	CMD	Command identifier	Enum:			
					0x07: ID 07			
8	3	Unit	UN		Enum:			
					0x00:	Energy [Ws]		
					0x01:	Energy [Wh]		
					0x02:	Energy [KWl	h]	
					0x03:	Power [W]		
					0x04:	Power [KW]		
					0x050x07	: Not used		
11	5	I/O channel	I/O		Enum:			
						Output chan	nel (to load	I)
					0x000x1D:			
					0x1E:	Not applicab	le, do not ι	ise
					0x1F:	Input channe supply)	el (from ma	ains
16	32	Measurement value (4 bytes)	MV	DB3 = MSB / DB0 = LSB	0429496729	95		N/A

#### CMD 0x8 - Actuator Set Pilot Wire Mode

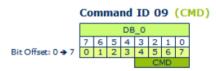


Offset	Size	Data	ShortCut	Description	Valid Range Scale Unit
0	4	Not Used (= 0)			
4	4	Command ID	CMD	Command identifier	Enum:
					0x08: ID 08
8	5	Not Used (= 0)			
13	3	Pilotwire mode	PM		Enum:
					0x00: Off
					0x01: Comfort
					0x02: Eco
					0x03: Anti-freeze
					0x04: Comfort-1
					0x05: Comfort-2

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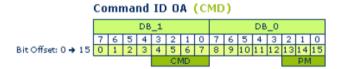


#### CMD 0x9 - Actuator Pilot Wire Mode Query



Offset	Size	Data	ShortCut	Description	Valid Range	Scale U	Jnit
0	4	Not Used (=	0)				
4	4	Command ID	CMD	Command identifier	Enum:		
					0x09: ID 09	)	

#### CMD 0xA - Actuator Pilot Wire Mode Response



Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	4	Not Used (= 0)	)				
4	4	Command ID	CMD	Command identifier	Enum:		
					0x0A: ID 0A	١	
8	5	Not Used (= 0)					
13	3	Pilotwire mode	PM		Enum:		
					0x00: Off		
					0x01: Comf	ort	
					0x02: Eco		
					0x03: Anti-	freeze	
					0x04: Comf	ort-1	
					0x05: Comf	ort-2	

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#### CMD 0xB - Actuator Set External Interface Settings



Offset	Size	Data	ShortCut	Description	Valid R	ange	Scale	Unit
0	4	Not Used (= 0)						
4	4	Command ID	CMD	Command identifier	Enum: 0x0B: ID 0B	_		
8	3	Not Used (= 0)						
11	5	I/O channel	I/O		Enum:			
					0x000x1D:	Output channel		
						All output chanr by the device	nels supp	orted
						Input channel (i supply)	rom mai	ns
16	16	Auto OFF Timer	AOT	Timer to automatically set	Enum:			
				OFF output channel when it is set ON	0x0000:	Timer deactivated		
					0x00010xFFI	FE:	0.1	.6553.4 s
					0xFFFF:	Does not modify save value	d	
32	16	Delay OFF	DOT	Delay timer before setting	Enum:			
		Timer		output channel to OFF value received by radio	0x0000:	Timer deactivated		
				cmd	0x00010xFF	FE:	0.1.	6553.4 s
					0xFFFF:	Does not modify save value	d	
48	2	External	EBM	External interface mode	Enum:			
		Switch/Push			0b00: Not ap	plicable	_	
		Button			0b01: Extern	al Switch		
					0b10: Extern	al Push Button		
					0b11: Auto d	letect		
50	1	2-state switch	SWT	Switching state	Enum:			
						e of key state se		OFF
						ic ON/OFF positi		
						ien contacts are hen contacts are		
51	5	Not Used (= 0)			L OPF W	nen contacts are	open.	_
31	Э	Not Used (= 0)						

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#### CMD 0xC - Actuator External Interface Settings Query

#### Command ID OC (CMD)



Offset	Size	Data	ShortCut	Description	Valid	d Range	Scale	Unit
0	4	Not Used (=	0)					
4	4	Command ID	CMD	Command identifier	Enum: 0x0C: ID 0C	_		
8	3	Not Used (=	0)					
11	5	I/O channel	I/O		Enum: 0x000x1D:	Output channel (to	o load)	
					0x1E: 0x1F:	All output channel device Input channel (fro	,	

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#### CMD 0xD - Actuator External Interface Settings Response

	Co	mı	ma	nd	ID	01	) (	(C	MD	)																																														
				DB	_6							DB	_5							DB	_4							DB.	_3							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	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2 :	1 (	a
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	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53 5	4 5	5
						CN	D						/0	Chi	anne	el .								AC	)T															DC	T								EM	В	SWT					

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	e Unit
0	4	Not Used (= 0)		2 coch paron	Tana nange		
4	4	Command ID	CMD	Command identifier	Enum: 0x0D: ID 0D		
8	3	Not Used (= 0)	•				
11	5	I/O channel	I/O		Output char   Output char	ble	
16	16	Auto OFF Timer	AOT	Timer to automatically set OFF output channel when it is set ON	supply)	(	).16553.4 s
32	16	Delay OFF Timer	DOT	Delay timer before setting output channel to OFF value received by radio cmd	modify s value  Enum:  0x0000: Timer deactiva:  0x000010xFFFE:	ted	0.16553.4 s
					0xFFFF: Does not modify s value	_	
48	2	External Switch/Push Button	ЕВМ	External interface mode	Enum:  0b00: Not applicable  0b01: External Switch  0b10: External Push Butt  0b11: Auto detect	on	
50	1	2-state switch	SWT	Switching state	Enum:  0b00: Change of key stat  0b01: Specific ON/OFF po ON when contacts OFF when contacts	ositions. are close	ed.
51	5	Not Used (= 0)					

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#### CMD 0xF / ECID 0x00 - Actuator Set Dimming Limits

This message is sent to the actuator. It controls the maximum and minimum brightness of the channel output. If the actuator receives an out of range dimming value or an error command, the following actions should be performed:

- Channel not supported by device -> ignore the message
- Set dimming minimum value is less than 0% -> The minimum value is set to 0%
- Set dimming maximum value greater than 100% -> The maximum value is set to 100%

#### Command ID 0xF / Ext. CID 0x00

Data Byte				DB	_4							DB	_3							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	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	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Data						CN	4D					EC	ID						I/O									M	IAX۱	/						N	//IN	/		

Offset	Size	Data	ShortCut De	scription	Valid	l Range	Scale	Unit
0	4	Not Used (= 0)						
4	4	Command ID	CMD		Enum: 0xF: ID F			
8	8	Extended Command ID	ECID		Enum: 0x00: ID 00	_		
16	5	I/O Channel	I/O		Enum:			
				·	0x000x1D:	Output channel (1	to load)	
					0x1E:	All output channe device	els supported by	/ the
					0x1F:	Reserved		
21	4	Not Used (= 0)						
25	7	Maximum Value	MAXV		Enum:			
					0x00:	Reserved		
					0x010x64	: Set maximum va	lue	
					0x650x7F	: Reserved		
32	1	Not Used (= 0)						
33	7	Minimum Value	MINV		Enum:			
					0x000x63	: Set minimum val	ue	
					0x640x7F	Reserved		

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#### CMD 0xF / ECID 0x01 - Actuator Dimming Limits Query

#### Command ID 0xF / Ext. CID 0x01

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						CI	4D					EC	ID						I/O					

Offset	Size	Data	ShortCut	Description	Valid	l Range	Scale	Unit
0	4	Not Used (= 0)						
4	4	Command ID	CMD		Enum: 0xF: ID F	-		
8	8	Extended Command ID	ECID		Enum: 0x01:ID 01	_		
16	5	I/O Channel	I/O		0x000x1D: 0x1E:	Single channel (to		the the
					0x1F:	device Reserved		
21	3	Not Used (= 0)						

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#### CMD 0xF / ECID 0x02 - Actuator Dimming Limits Response

#### Command ID 0xF / Ext. CID 0x02

Data Byte				DB	_4							DB	_3							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	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	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Data						CI	ИD					EC	ID						I/O									N	1AX	/						P	MIN	V		

Offset	Size	Data	ShortCut	Description	Valid	l Range	Scale	Unit
0	4	Not Used (= 0)						
4	4	Command ID	CMD		Enum:			
					0xF: ID F			
8	8	Extended Command	ECID		Enum:			
		ID			0x02: ID 02			
16	5	I/O Channel	I/O		Enum:			
					0x000x1D:	Output channel (	to load)	
					0x1E:	All output channe device	els supported by	the
					0x1F:	Reserved		
21	4	Not Used (= 0)						
25	7	Maximum Value	MAXV		Enum:			
					0x00:	Reserved		
					0x010x64	: Set maximum va	lue	
					0x650x7F	: Reserved		
32	1	Not Used (= 0)						
33	7	Minimum Value	MINV		Enum:			
					0x000x63	: Set minimum val	ue	
					0x640x7F	: Reserved		

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