

IO-Link Parameter Datasheet

Signal light

ICA-SL-9MCS-70MM-IO-V1

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Internet: www.pepperl-fuchs.com
DOCT-9842A - Version 1.00.002 / 2025-05-15

General Information

Device Identification	
Vendor ID	1 (0x0001)
Device ID	983825 (0x0F0311)

Features	
Data Storage	Yes
Block Parameterization	Yes

Communication Characteristics	
IO-Link revision	V1.1 (specification V1.1.3)
IO-Link backward compatibility	V1.0
Data transmission rate	COM3 (230.4 kbit/s)
Min. cycle time	6.0 ms
Process data input	n/a
Process data output	3 byte
SIO mode support	no
Compatible master port type	Class A, Class B (see NOTE)

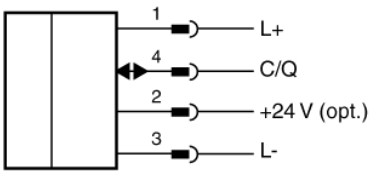
NOTE: For use at IO-Link master port Class B, use 3-pole adapter or 3-wire cable.

Profile	
Firmware update	49 (0x0031)
Identification and Diagnosis – I&D	16384 (0x4000)

Supported Product Variants

Product ID	*Product Name*	*Description*	*Connector*
70163554	ICA-SL-9MCS-70MM-IO-V1	Signal light, diameter 70 mm, 9 segments, multi-color, siren, M12 plug, 4-pin	Plug, M12, 4-pin

Connection

Connection Diagram	*Description*
	**Plug, M12, 4-pin** 1: L+ 2: +24 V (optional) 3: L- 4: C/Q

Process Data

Process Data Output

Octet	*Bitoffs.*	*Name*	*Data type*	*Length*	*Value*	*Unit*	*Description*
Condition: Operation Mode = 0 (Signal tower)							
1 .. 2	0	Tiers (binary combination in decimal value)	UInteger	16 bit	0 .. 31 (0b00000 .. 0b11111)		Defines the binary combination of active tiers. If a tier is activated, the corresponding segments of the signal light are illuminated.
0	16	Tone	UInteger	8 bit	*0* *1* *2* *3* *4* *5* *6* *7* *8* *9* *10*		Defines the tone to be emitted via the siren of the signal light. *Disabled* *Tone 1* *Tone 2* *Tone 3* *Tone 4* *Tone 5* *Tone 6* *Tone 7* *Tone 8* *Tone 9* *Tone 10*
Condition: Operation Mode = 1 (Auto-scale)							
1 .. 2	0	Tiers (binary combination in decimal value)	UInteger	16 bit			*See 'Operation Mode = 0'*
0	16	Tone	UInteger	8 bit			*See 'Operation Mode = 0'*
Condition: Operation Mode = 2 (Filling level)							
1 .. 2	0	Filling Level	UInteger	16 bit	0 .. 100	%	Defines the percentage value for the filling level indication via the segments of the signal light.
0	16	Tone	UInteger	8 bit			*See 'Operation Mode = 0'*
Condition: Operation Mode = 3 (Individual)							
1 .. 2	0	Segments (binary combination in decimal value)	UInteger	16 bit	0 .. 511 (0b000000000 .. 0b111111111)		Defines the binary combination of active segments of the signal light.
0	16	Tone	UInteger	8 bit			*See 'Operation Mode = 0'*

NOTE: The process data output content can be accessed in addition over parameter 'Process Data Output' at index 41 (0x29).

Parameter Data

Identification

Index	Parameter	Access	Data type	Length	Default	Description	DS	R
16 (0x10)	Vendor Name	ro	String	13 byte	Pepperl+Fuchs	The vendor name that is assigned to a Vendor ID.		
17 (0x11)	Vendor Text	ro	String	29 byte	www.pepperl-fuchs.com/io-link	Additional information about the vendor.		
18 (0x12)	Product Name	ro	String	max. 48 byte	*See table 'Supported Product Variants'*	Complete product name.		
19 (0x13)	Product ID	ro	String	max. 16 byte	*See table 'Supported Product Variants'*	Vendor-specific product or type identification (e.g., item number or model number).		
20 (0x14)	Product Text	ro	String	max. 64 byte	Signal light	Additional product information for the device.		
21 (0x15)	Serial Number	ro	String	max. 16 byte		Unique, vendor-specific identifier of the individual device.		
22 (0x16)	Hardware Revision	ro	String	max. 10 byte		Unique, vendor-specific identifier of the hardware revision of the individual device.		
23 (0x17)	Firmware Revision	ro	String	max. 10 byte		Unique, vendor-specific identifier of the firmware revision of the individual device.		
24 (0x18)	Application-specific Tag	rw	String	max. 32 byte	***	Possibility to mark a device with user- or application-specific information.	Y	F
25 (0x19)	Function Tag	rw	String	max. 32 byte	***	Possibility to mark a device with function-specific information.	Y	F
26 (0x1A)	Location Tag	rw	String	max. 32 byte	***	Possibility to mark a device with location-specific information.	Y	F
17342 (0x43BE)	Hardware Identification Key	ro	String	max. 64 byte		Shall be used for the identification of valid FW-Update files.		

Diagnosis

Index .sub	Parameter	Access	Data type	Length	Bitoffs.	Default	Value	Unit	Description	DS	R
32 (0x20)	Error Count	ro	UInteger	16 bit					Number of errors that occurred in the technology-specific application since power on or restart.		
36 (0x24)	Device Status	ro	UInteger	8 bit		0	*0* *1* *2* *3* *4*		Indicator for the current device condition and diagnosis state. *Device is OK* *Maintenance required* *Out of specification* *Functional check* *Failure*		F
37 (0x25)	Detailed Device Status	ro	Array [S0]	6 byte					List of all currently pending events in the device. *See Event Codes*		F
.1	Element 1		Octetstr	3 byte	24	0					F
.2	Element 2		Octetstr	3 byte	0	0					F
74 (0x4A)	Operating Hours	ro	UInteger	32 bit			0 .. 2^{32}-1	0.1 h	Shows the overall hours of operation since initial commissioning.		

Parameterization & Configuration

Index .sub	Parameter	Access	Data type	Length	Bitoffs.	Default	Value	Unit	Description	DS	R
100 (0x64)	Operation Mode	rw	UInteger	8 bit		1	*0* *1* *2* *3*		Defines the operation mode with which the signal light is operated. *Signal tower* *Auto-scale* *Filling level* *Individual*	Y	FA
101 (0x65)	Segment 1 Config	rw	Record	8 byte					Defines the optical settings for segment 1.	Y	FA
.1	Light Effect	rw	UInteger	8 bit	56	0	*0* *1* *2* *3* *4* *5* *6* *7*		Defines the light effect for the segment. *Continuous* *Blinking 1 Hz* *Blinking 2 Hz* *Blinking 3 Hz* *Flash 1 time* *Flash 2 times* *Flash 3 times* *Rotating*	Y	FA
.2	Variable Color - RGB R-value	rw	UInteger	8 bit	48	0	0 .. 255		Defines the RGB R-value of the variable color that can be used as the default color for the segment.	Y	FA
.3	Variable Color - RGB G-value	rw	UInteger	8 bit	40	255	0 .. 255		Defines the RGB G-value of the variable color that can be used as the default color for the segment.	Y	FA
.4	Variable Color - RGB B-value	rw	UInteger	8 bit	32	0	0 .. 255		Defines the RGB B-value of the variable color that can be used as the default color for the segment.	Y	FA
.5	Brightness	rw	UInteger	8 bit	24	3	*0* *1* *2* *3*		Defines the brightness for the segment. *Minimum* *Low* *High* *Maximum*	Y	FA
.6	Default Color	rw	UInteger	8 bit	16	2	*0* *1* *2* *3* *4* *5* *6* *7* *8*		Defines the default color for the segment. If the variable color is chosen, its configured RGB values are applied. *Variable Color* *Red* *Green* *Blue* *Yellow* *Light yellow* *Turquoise* *Violet* *White*	Y	FA
.7	Reserved			8 bit	8				Reserved		
.8	Reserved			8 bit	0				Reserved		
102 (0x66)	Segment 2 Config	rw	Record	8 byte					Defines the optical settings for segment 2.	Y	FA
.1	Light Effect	rw	UInteger	8 bit	56	0			*See index 101 subindex 1*	Y	FA
.2	Variable Color - RGB R-value	rw	UInteger	8 bit	48	179			*See index 101 subindex 2*	Y	FA
.3	Variable Color - RGB G-value	rw	UInteger	8 bit	40	77			*See index 101 subindex 3*	Y	FA
.4	Variable Color - RGB B-value	rw	UInteger	8 bit	32	0			*See index 101 subindex 4*	Y	FA
.5	Brightness	rw	UInteger	8 bit	24	3			*See index 101 subindex 5*	Y	FA
.6	Default Color	rw	UInteger	8 bit	16	4			*See index 101 subindex 6*	Y	FA
.7	Reserved			8 bit	8				Reserved		
.8	Reserved			8 bit	0				Reserved		
103 (0x67)	Segment 3 Config	rw	Record	8 byte					Defines the optical settings for segment 3.	Y	FA
.1	Light Effect	rw	UInteger	8 bit	56	0			*See index 101 subindex 1*	Y	FA
.2	Variable Color - RGB R-value	rw	UInteger	8 bit	48	255			*See index 101 subindex 2*	Y	FA
.3	Variable Color - RGB G-value	rw	UInteger	8 bit	40	0			*See index 101 subindex 3*	Y	FA

Parameterization & Configuration											
Index .sub	***Parameter***	***Access***	***Data type***	***Length***	***Bitoffs.***	***Default***	***Value***	***Unit***	***Description***	***DS***	***R***
.4	Variable Color - RGB B-value	rw	UInteger	8 bit	32	0			*See index 101 subindex 4*	Y	FA
.5	Brightness	rw	UInteger	8 bit	24	3			*See index 101 subindex 5*	Y	FA
.6	Default Color	rw	UInteger	8 bit	16	1			*See index 101 subindex 6*	Y	FA
.7	Reserved			8 bit	8				Reserved		
.8	Reserved			8 bit	0				Reserved		
104 (0x68)	Segment 4 Config	rw	Record	8 byte					Defines the optical settings for segment 4.	Y	FA
.1	Light Effect	rw	UInteger	8 bit	56	0			*See index 101 subindex 1*	Y	FA
.2	Variable Color - RGB R-value	rw	UInteger	8 bit	48	0			*See index 101 subindex 2*	Y	FA
.3	Variable Color - RGB G-value	rw	UInteger	8 bit	40	0			*See index 101 subindex 3*	Y	FA
.4	Variable Color - RGB B-value	rw	UInteger	8 bit	32	255			*See index 101 subindex 4*	Y	FA
.5	Brightness	rw	UInteger	8 bit	24	3			*See index 101 subindex 5*	Y	FA
.6	Default Color	rw	UInteger	8 bit	16	0			*See index 101 subindex 6*	Y	FA
.7	Reserved			8 bit	8				Reserved		
.8	Reserved			8 bit	0				Reserved		
105 (0x69)	Segment 5 Config	rw	Record	8 byte					Defines the optical settings for segment 5.	Y	FA
.1	Light Effect	rw	UInteger	8 bit	56	0			*See index 101 subindex 1*	Y	FA
.2	Variable Color - RGB R-value	rw	UInteger	8 bit	48	0			*See index 101 subindex 2*	Y	FA
.3	Variable Color - RGB G-value	rw	UInteger	8 bit	40	204			*See index 101 subindex 3*	Y	FA
.4	Variable Color - RGB B-value	rw	UInteger	8 bit	32	255			*See index 101 subindex 4*	Y	FA
.5	Brightness	rw	UInteger	8 bit	24	3			*See index 101 subindex 5*	Y	FA
.6	Default Color	rw	UInteger	8 bit	16	0			*See index 101 subindex 6*	Y	FA
.7	Reserved			8 bit	8				Reserved		
.8	Reserved			8 bit	0				Reserved		
106 (0x6A)	Segment 6 Config	rw	Record	8 byte					Defines the optical settings for segment 6.	Y	FA
.1	Light Effect	rw	UInteger	8 bit	56	0			*See index 101 subindex 1*	Y	FA
.2	Variable Color - RGB R-value	rw	UInteger	8 bit	48	0			*See index 101 subindex 2*	Y	FA
.3	Variable Color - RGB G-value	rw	UInteger	8 bit	40	255			*See index 101 subindex 3*	Y	FA
.4	Variable Color - RGB B-value	rw	UInteger	8 bit	32	102			*See index 101 subindex 4*	Y	FA
.5	Brightness	rw	UInteger	8 bit	24	3			*See index 101 subindex 5*	Y	FA
.6	Default Color	rw	UInteger	8 bit	16	0			*See index 101 subindex 6*	Y	FA
.7	Reserved			8 bit	8				Reserved		
.8	Reserved			8 bit	0				Reserved		
107 (0x6B)	Segment 7 Config	rw	Record	8 byte					Defines the optical settings for segment 7.	Y	FA
.1	Light Effect	rw	UInteger	8 bit	56	0			*See index 101 subindex 1*	Y	FA
.2	Variable Color - RGB R-value	rw	UInteger	8 bit	48	102			*See index 101 subindex 2*	Y	FA
.3	Variable Color - RGB G-value	rw	UInteger	8 bit	40	255			*See index 101 subindex 3*	Y	FA
.4	Variable Color - RGB B-value	rw	UInteger	8 bit	32	0			*See index 101 subindex 4*	Y	FA
.5	Brightness	rw	UInteger	8 bit	24	3			*See index 101 subindex 5*	Y	FA
.6	Default Color	rw	UInteger	8 bit	16	0			*See index 101 subindex 6*	Y	FA
.7	Reserved			8 bit	8				Reserved		
.8	Reserved			8 bit	0				Reserved		
108 (0x6C)	Segment 8 Config	rw	Record	8 byte					Defines the optical settings for segment 8.	Y	FA
.1	Light Effect	rw	UInteger	8 bit	56	0			*See index 101 subindex 1*	Y	FA
.2	Variable Color - RGB R-value	rw	UInteger	8 bit	48	0			*See index 101 subindex 2*	Y	FA

Parameterization & Configuration

Index .sub	Parameter	Access	Data type	Length	Bitoffs.	Default	Value	Unit	Description	DS	R
.3	Variable Color - RGB G-value	rw	UInteger	8 bit	40	204			*See index 101 subindex 3*	Y	FA
.4	Variable Color - RGB B-value	rw	UInteger	8 bit	32	255			*See index 101 subindex 4*	Y	FA
.5	Brightness	rw	UInteger	8 bit	24	3			*See index 101 subindex 5*	Y	FA
.6	Default Color	rw	UInteger	8 bit	16	0			*See index 101 subindex 6*	Y	FA
.7	Reserved			8 bit	8				Reserved		
.8	Reserved			8 bit	0				Reserved		
109 (0x6D)	Segment 9 Config	rw	Record	8 byte					Defines the optical settings for segment 9.	Y	FA
.1	Light Effect	rw	UInteger	8 bit	56	0			*See index 101 subindex 1*	Y	FA
.2	Variable Color - RGB R-value	rw	UInteger	8 bit	48	255			*See index 101 subindex 2*	Y	FA
.3	Variable Color - RGB G-value	rw	UInteger	8 bit	40	0			*See index 101 subindex 3*	Y	FA
.4	Variable Color - RGB B-value	rw	UInteger	8 bit	32	0			*See index 101 subindex 4*	Y	FA
.5	Brightness	rw	UInteger	8 bit	24	3			*See index 101 subindex 5*	Y	FA
.6	Default Color	rw	UInteger	8 bit	16	0			*See index 101 subindex 6*	Y	FA
.7	Reserved			8 bit	8				Reserved		
.8	Reserved			8 bit	0				Reserved		
120 (0x78)	Tone 1 Config	rw	Record	16 byte					Defines the acoustic settings for tone 1.	Y	FA
.1	Tone Type	rw	UInteger	8 bit	120	1	*0* *Sound off* *1* *Permanent* *2* *Pulse* *3* *Rising* *4* *Falling* *5* *Alternating* *6* *Sweep*		Defines the type of the tone.	Y	FA
.2	Frequency 1 - Start	rw	UInteger	16 bit	104	2700	245 .. 6000	Hz	Defines the frequency 1 at the start of a cycle or repeat.	Y	FA
.3	Frequency 2 - Stop	rw	UInteger	16 bit	88	0	0, 245 .. 6000	Hz	Defines the frequency 2 at the end of a cycle or repeat.	Y	FA
.4	Frequency 3 - Period	rw	UInteger	16 bit	72	0.0 (0)	0.0 .. 1000.0 (0 .. 10000)	Hz	Defines the frequency 3 for the periodic switching between frequency 1 and frequency 2.	Y	FA
.5	Volume	rw	UInteger	8 bit	64	0	*0* *Low* *1* *Medium* *2* *High* *3* *Very high*		Defines the volume of the tone.	Y	FA
.6	Repeat Count	rw	UInteger	16 bit	48	0	0 .. 2^{16}-1		Defines the repeat count of frequency switching for a cycle.	Y	FA
.7	Repeat Pause	rw	UInteger	16 bit	32	0	0 .. 2^{16}-1	ms	Defines the duration of the pause after a repeat of frequency switching in a cycle.	Y	FA
.8	Cycle Pause	rw	UInteger	16 bit	16	0	0 .. 2^{16}-1	ms	Defines the duration of the pause between the end of one cycle and the start of the next cycle.	Y	FA
.9	Hold Time Frequency 2	rw	UInteger	16 bit	0	0	0 .. 2^{16}-1	ms	Defines the hold time for frequency 2.	Y	FA
121 (0x79)	Tone 2 Config	rw	Record	16 byte					Defines the acoustic settings for tone 2.	Y	FA
.1	Tone Type	rw	UInteger	8 bit	120	1			*See index 120 subindex 1*	Y	FA
.2	Frequency 1 - Start	rw	UInteger	16 bit	104	900		Hz	*See index 120 subindex 2*	Y	FA
.3	Frequency 2 - Stop	rw	UInteger	16 bit	88	0		Hz	*See index 120 subindex 3*	Y	FA
.4	Frequency 3 - Period	rw	UInteger	16 bit	72	0.0 (0)		Hz	*See index 120 subindex 4*	Y	FA
.5	Volume	rw	UInteger	8 bit	64	0			*See index 120 subindex 5*	Y	FA
.6	Repeat Count	rw	UInteger	16 bit	48	0			*See index 120 subindex 6*	Y	FA
.7	Repeat Pause	rw	UInteger	16 bit	32	0		ms	*See index 120 subindex 7*	Y	FA
.8	Cycle Pause	rw	UInteger	16 bit	16	0		ms	*See index 120 subindex 8*	Y	FA

Parameterization & Configuration

Index .sub	Parameter	Access	Data type	Length	Bitoffs.	Default	Value	Unit	Description	DS	R
.9	Hold Time Frequency 2	rw	UInteger	16 bit	0	0		ms	*See index 120 subindex 9*	Y	FA
122 (0x7A)	Tone 3 Config	rw	Record	16 byte					Defines the acoustic settings for tone 3.	Y	FA
.1	Tone Type	rw	UInteger	8 bit	120	2			*See index 120 subindex 1*	Y	FA
.2	Frequency 1 - Start	rw	UInteger	16 bit	104	2100		Hz	*See index 120 subindex 2*	Y	FA
.3	Frequency 2 - Stop	rw	UInteger	16 bit	88	0		Hz	*See index 120 subindex 3*	Y	FA
.4	Frequency 3 - Period	rw	UInteger	16 bit	72	420.0 (4200)		Hz	*See index 120 subindex 4*	Y	FA
.5	Volume	rw	UInteger	8 bit	64	0			*See index 120 subindex 5*	Y	FA
.6	Repeat Count	rw	UInteger	16 bit	48	0			*See index 120 subindex 6*	Y	FA
.7	Repeat Pause	rw	UInteger	16 bit	32	0		ms	*See index 120 subindex 7*	Y	FA
.8	Cycle Pause	rw	UInteger	16 bit	16	0		ms	*See index 120 subindex 8*	Y	FA
.9	Hold Time Frequency 2	rw	UInteger	16 bit	0	0		ms	*See index 120 subindex 9*	Y	FA
123 (0x7B)	Tone 4 Config	rw	Record	16 byte					Defines the acoustic settings for tone 4.	Y	FA
.1	Tone Type	rw	UInteger	8 bit	120	2			*See index 120 subindex 1*	Y	FA
.2	Frequency 1 - Start	rw	UInteger	16 bit	104	900		Hz	*See index 120 subindex 2*	Y	FA
.3	Frequency 2 - Stop	rw	UInteger	16 bit	88	0		Hz	*See index 120 subindex 3*	Y	FA
.4	Frequency 3 - Period	rw	UInteger	16 bit	72	20.0 (200)		Hz	*See index 120 subindex 4*	Y	FA
.5	Volume	rw	UInteger	8 bit	64	0			*See index 120 subindex 5*	Y	FA
.6	Repeat Count	rw	UInteger	16 bit	48	0			*See index 120 subindex 6*	Y	FA
.7	Repeat Pause	rw	UInteger	16 bit	32	0		ms	*See index 120 subindex 7*	Y	FA
.8	Cycle Pause	rw	UInteger	16 bit	16	0		ms	*See index 120 subindex 8*	Y	FA
.9	Hold Time Frequency 2	rw	UInteger	16 bit	0	0		ms	*See index 120 subindex 9*	Y	FA
124 (0x7C)	Tone 5 Config	rw	Record	16 byte					Defines the acoustic settings for tone 5.	Y	FA
.1	Tone Type	rw	UInteger	8 bit	120	2			*See index 120 subindex 1*	Y	FA
.2	Frequency 1 - Start	rw	UInteger	16 bit	104	2646		Hz	*See index 120 subindex 2*	Y	FA
.3	Frequency 2 - Stop	rw	UInteger	16 bit	88	0		Hz	*See index 120 subindex 3*	Y	FA
.4	Frequency 3 - Period	rw	UInteger	16 bit	72	20.0 (200)		Hz	*See index 120 subindex 4*	Y	FA
.5	Volume	rw	UInteger	8 bit	64	0			*See index 120 subindex 5*	Y	FA
.6	Repeat Count	rw	UInteger	16 bit	48	0			*See index 120 subindex 6*	Y	FA
.7	Repeat Pause	rw	UInteger	16 bit	32	0		ms	*See index 120 subindex 7*	Y	FA
.8	Cycle Pause	rw	UInteger	16 bit	16	0		ms	*See index 120 subindex 8*	Y	FA
.9	Hold Time Frequency 2	rw	UInteger	16 bit	0	0		ms	*See index 120 subindex 9*	Y	FA
125 (0x7D)	Tone 6 Config	rw	Record	16 byte					Defines the acoustic settings for tone 6.	Y	FA
.1	Tone Type	rw	UInteger	8 bit	120	2			*See index 120 subindex 1*	Y	FA
.2	Frequency 1 - Start	rw	UInteger	16 bit	104	900		Hz	*See index 120 subindex 2*	Y	FA
.3	Frequency 2 - Stop	rw	UInteger	16 bit	88	0		Hz	*See index 120 subindex 3*	Y	FA
.4	Frequency 3 - Period	rw	UInteger	16 bit	72	1.0 (10)		Hz	*See index 120 subindex 4*	Y	FA
.5	Volume	rw	UInteger	8 bit	64	0			*See index 120 subindex 5*	Y	FA
.6	Repeat Count	rw	UInteger	16 bit	48	0			*See index 120 subindex 6*	Y	FA
.7	Repeat Pause	rw	UInteger	16 bit	32	0		ms	*See index 120 subindex 7*	Y	FA
.8	Cycle Pause	rw	UInteger	16 bit	16	0		ms	*See index 120 subindex 8*	Y	FA
.9	Hold Time Frequency 2	rw	UInteger	16 bit	0	0		ms	*See index 120 subindex 9*	Y	FA
126 (0x7E)	Tone 7 Config	rw	Record	16 byte					Defines the acoustic settings for tone 7.	Y	FA
.1	Tone Type	rw	UInteger	8 bit	120	2			*See index 120 subindex 1*	Y	FA
.2	Frequency 1 - Start	rw	UInteger	16 bit	104	2700		Hz	*See index 120 subindex 2*	Y	FA
.3	Frequency 2 - Stop	rw	UInteger	16 bit	88	0		Hz	*See index 120 subindex 3*	Y	FA
.4	Frequency 3 - Period	rw	UInteger	16 bit	72	1.0 (10)		Hz	*See index 120 subindex 4*	Y	FA
.5	Volume	rw	UInteger	8 bit	64	0			*See index 120 subindex 5*	Y	FA

Parameterization & Configuration

Index .sub	Parameter	Access	Data type	Length	Bitoffs.	Default	Value	Unit	Description	DS	R
.6	Repeat Count	rw	UInteger	16 bit	48	0			*See index 120 subindex 6*	Y	FA
.7	Repeat Pause	rw	UInteger	16 bit	32	0		ms	*See index 120 subindex 7*	Y	FA
.8	Cycle Pause	rw	UInteger	16 bit	16	0		ms	*See index 120 subindex 8*	Y	FA
.9	Hold Time Frequency 2	rw	UInteger	16 bit	0	0		ms	*See index 120 subindex 9*	Y	FA
127 (0x7F)	Tone 8 Config	rw	Record	16 byte					Defines the acoustic settings for tone 8.	Y	FA
.1	Tone Type	rw	UInteger	8 bit	120	6			*See index 120 subindex 1*	Y	FA
.2	Frequency 1 - Start	rw	UInteger	16 bit	104	2300		Hz	*See index 120 subindex 2*	Y	FA
.3	Frequency 2 - Stop	rw	UInteger	16 bit	88	3600		Hz	*See index 120 subindex 3*	Y	FA
.4	Frequency 3 - Period	rw	UInteger	16 bit	72	0.5 (5)		Hz	*See index 120 subindex 4*	Y	FA
.5	Volume	rw	UInteger	8 bit	64	0			*See index 120 subindex 5*	Y	FA
.6	Repeat Count	rw	UInteger	16 bit	48	0			*See index 120 subindex 6*	Y	FA
.7	Repeat Pause	rw	UInteger	16 bit	32	0		ms	*See index 120 subindex 7*	Y	FA
.8	Cycle Pause	rw	UInteger	16 bit	16	0		ms	*See index 120 subindex 8*	Y	FA
.9	Hold Time Frequency 2	rw	UInteger	16 bit	0	0		ms	*See index 120 subindex 9*	Y	FA
128 (0x80)	Tone 9 Config	rw	Record	16 byte					Defines the acoustic settings for tone 9.	Y	FA
.1	Tone Type	rw	UInteger	8 bit	120	1			*See index 120 subindex 1*	Y	FA
.2	Frequency 1 - Start	rw	UInteger	16 bit	104	2646		Hz	*See index 120 subindex 2*	Y	FA
.3	Frequency 2 - Stop	rw	UInteger	16 bit	88	0		Hz	*See index 120 subindex 3*	Y	FA
.4	Frequency 3 - Period	rw	UInteger	16 bit	72	0.0 (0)		Hz	*See index 120 subindex 4*	Y	FA
.5	Volume	rw	UInteger	8 bit	64	0			*See index 120 subindex 5*	Y	FA
.6	Repeat Count	rw	UInteger	16 bit	48	0			*See index 120 subindex 6*	Y	FA
.7	Repeat Pause	rw	UInteger	16 bit	32	0		ms	*See index 120 subindex 7*	Y	FA
.8	Cycle Pause	rw	UInteger	16 bit	16	0		ms	*See index 120 subindex 8*	Y	FA
.9	Hold Time Frequency 2	rw	UInteger	16 bit	0	0		ms	*See index 120 subindex 9*	Y	FA
129 (0x81)	Tone 10 Config	rw	Record	16 byte					Defines the acoustic settings for tone 10.	Y	FA
.1	Tone Type	rw	UInteger	8 bit	120	5			*See index 120 subindex 1*	Y	FA
.2	Frequency 1 - Start	rw	UInteger	16 bit	104	1200		Hz	*See index 120 subindex 2*	Y	FA
.3	Frequency 2 - Stop	rw	UInteger	16 bit	88	800		Hz	*See index 120 subindex 3*	Y	FA
.4	Frequency 3 - Period	rw	UInteger	16 bit	72	1.0 (10)		Hz	*See index 120 subindex 4*	Y	FA
.5	Volume	rw	UInteger	8 bit	64	0			*See index 120 subindex 5*	Y	FA
.6	Repeat Count	rw	UInteger	16 bit	48	0			*See index 120 subindex 6*	Y	FA
.7	Repeat Pause	rw	UInteger	16 bit	32	0		ms	*See index 120 subindex 7*	Y	FA
.8	Cycle Pause	rw	UInteger	16 bit	16	0		ms	*See index 120 subindex 8*	Y	FA
.9	Hold Time Frequency 2	rw	UInteger	16 bit	0	0		ms	*See index 120 subindex 9*	Y	FA
131 (0x83)	Power Reduction (current consumption)	rw	UInteger	8 bit		1	*0* *1*		Defines if a reduction of the current consumption is applied. If enabled, the current consumption is limited to 200 mA. *Off* *On - max. 200 mA*	Y	FA
132 (0x84)	Segment Settings (Filling Level Mode)	rw	UInteger	8 bit		1	*0* *1*		Defines which optical settings are applied to the segments in the operation mode 'Filling level'. Either the settings of segment 1 can be used for all segments or the settings of each individual segment are used. *Individual segment settings* *Segment 1 settings*	Y	FA
138 (0x8A)	Mounting Orientation	rw	UInteger	8 bit		0	*0* *1*		Defines the mounting orientation of the signal light. The segment positions are inverted for suspended mounting. *Upright* *Suspended*	Y	FA

Parameterization & Configuration											
Index .sub	***Parameter***	***Access***	***Data type***	***Length***	***Bitoffs.***	***Default***	***Value***	***Unit***	***Description***	***DS***	***R***
139 (0x8B)	Tier Count (Signal Tower / Auto-Scale Modes)	rw	UInteger	8 bit		5	1 .. 5		Defines the number of tiers that are used to combine the segments in the operation modes 'Signal tower' and 'Auto-scale'.	Y	FA

NOTE 1: The parameter data provide the attributes DS (Data Storage) and R (Reset behavior). The following rules apply:
DS: Parameter marked with ‘Y’ (yes) are exchanged with the master via the data storage mechanism.
R: Parameter marked with ‘F’ are reset to the factory default value upon reception of the command ‘Restore Factory Settings’ or ‘Back-to-box’.
Parameter marked with ‘A’ are reset to the factory default value upon reception of the command ‘Application Reset’.

NOTE 2: Parameter with datatype Record or Array, which are marked with ‘S0’ can only be accessed over subindex 0 (whole parameter object). Subindex access to single items is not possible.

Command Interface

Index	*Parameter*	*Access*	*Data type*	*Length*	*Value*	*Description*
2 (0x02)	System Command	wo	UInteger	8 bit	See command value	Command interface for applications. A positive acknowledge indicates the complete and correct finalization of the requested function.

Command Value	*Command*	*Description*
129 (0x81)	Application Reset	The parameter of the technology-specific application are set to default values. Identification parameter remain unchanged. An upload to the data storage of the master will be executed, if activated in the port configuration of the master.
130 (0x82)	Restore Factory Settings	The parameter of the device are reset to factory settings. Note: A download of the data storage may be executed on the next power cycle and overwrite the factory default settings!
131 (0x83)	Back-to-box	The parameter of the device are set to factory default values and communication will be inhibited until the next power cycle. Note: Directly detach the device from the master port!

Error Codes

Code	*Additional code*	*Name*	*Description*
128 (0x80)	17 (0x11)	Index not available	Read or write access attempt to a non-existing index.
128 (0x80)	18 (0x12)	Subindex not available	Read or write access attempt to a non-existing subindex of an existing index.
128 (0x80)	32 (0x20)	Service temporarily not available	Parameter not accessible due to the current state of the technology-specific application.
128 (0x80)	33 (0x21)	Service temporarily not available - local control	Parameter not accessible. The device is currently in an ongoing, locally controlled operation.
128 (0x80)	34 (0x22)	Service temporarily not available - device control	Parameter not accessible. The technology-specific application is currently in a remotely triggered operation.
128 (0x80)	35 (0x23)	Access denied	Write access to a read-only parameter or read access to write-only parameter.
128 (0x80)	48 (0x30)	Parameter value out of range	Written parameter value is outside of the permitted value range.
128 (0x80)	49 (0x31)	Parameter value above limit	Written parameter value is above its specified value range.
128 (0x80)	50 (0x32)	Parameter value below limit	Written parameter value is below its specified value range.
128 (0x80)	51 (0x33)	Parameter length overrun	Written parameter is longer than specified.
128 (0x80)	52 (0x34)	Parameter length underrun	Written parameter is shorter than specified.
128 (0x80)	53 (0x35)	Function not available	Written command is not supported by the technology-specific application.
128 (0x80)	54 (0x36)	Function temporarily unavailable	Written command is unavailable due to the current state of the technology-specific application.
128 (0x80)	64 (0x40)	Invalid parameter set	Written single parameter value collides with other existing parameter settings.
128 (0x80)	65 (0x41)	Inconsistent parameter set	Parameter set inconsistencies at the end of block parameter transfer. Device plausibility check failed.

Event Codes

Code	*Type*	*Name*	*Description*
6145 (0x1801)	Warning	LED overtemperature	
6146 (0x1802)	Warning	Controller overtemperature	
6147 (0x1803)	Error	Temperature sensor failure	
6148 (0x1804)	Error	Siren failure	