

SICK

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9350641 1121
WLD4F_DID8389355
8389355
1683651881
9350639 1121 (1.1.0)

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France Phone +33 1 64 62 39 00	Suomi Phone +358 9 25 15 800
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SICK AG, Erwin-Sick-Strasse 1, D-79183 Waldkirch

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Please note the validity of the additional operating instructions for automation functions

1. Physical layer

Note: The IO-Link Device's max. current consumption (inclusive load current) shall not exceed the master port's max. output power current.

SIO Modus	yes
Min Cycle Time	2.3 ms
Baudrate ²	COM2
Process Data Length (IN)	2 Byte
IODD version	V1.31093
Valid for IO-Link version	1.1.0

2. Process data

Record³: 2 Byte

Bitoffset																
Byte 0	15	14	13	12	11	10	9	8								
Type/Subindex	Unsigned Integer 14															
Bitoffset																
Byte 1	7	6	5	4	3	2	1	0	2	1	0					
Type/Subindex	Unsigned Integer 14															

3. Service data

The following ISDUs will not be saved via Data-Storage: Profile characteristic, Teach-in channel, Teach-in state, Device specific tag, Sender configuration, Quality of teach, Temperature zone, Quality of run, Current receiver level (live), Find me and SLTI Version

IO-Link specific							
Index dec (hex)	Name	Format (Offset)	Length	Access ¹	Default Value	Value / Range	Remark [Unit]
12 (0x0C)	Device Access Locks	Record ³	2 Byte	rw			
2 (0x02)	Data Storage Lock	Bit (1)	1 Bit	rw	0	0 = unlocked 1 = locked	
4 (0x04)	Local User Interface Lock	Bit (3)	1 Bit	rw	0	0 = unlocked 1 = locked	
16 (0x10)	Vendor Name	String	7 Byte	ro	SICK AG		
17 (0x11)	Vendor Text	String	64 Byte	ro			
18 (0x12)	Product Name	String	18 Byte	ro			
19 (0x13)	Product ID	String	7 Byte	ro			
20 (0x14)	Product Text	String	45 Byte	ro			
21 (0x15)	Serial Number	String	8 Byte	ro			
22 (0x16)	Hardware Version	String	4 Byte	ro			
23 (0x17)	Firmware Version	String	19 Byte	ro			
24 (0x18)	Application Specific Tag	String	32 Byte	rw	*****		
36 (0x24)	Device Status	UInt	8 Bit	ro		0 = Device is OK 1 = Maintenance required 2 = Out of specification 3 = Functional check 4 = Failure 5...255 = Reserved	
37 (0x25)	Detailed Device Status	Array ³	9 Byte	ro		Octet String [3]	
40 (0x28)	Process Data Input	PD In	2 Byte	ro			

SICK device specific							
Index dec (hex)	Name	Format (Offset)	Length	Access ¹	Default Value	Value / Range	Remark [Unit]
13 (0x0D)	Profile characteristic	Array ³	12 Byte	ro		Unsigned Integer16 [6]	
14 (0x0E)	PDInput descriptor	Array ³	6 Byte	ro		Octet String [2]	
15 (0x0F)	PDOOutput descriptor	Array ³	3 Byte	ro		Octet String [1]	
58 (0x3A)	Teach-in channel	UInt	8 Bit	rw	0	0 = default Qint. = Qint.1 1 = Qint.1 2 = Qint.2	
59 (0x3B)	Teach-in state	Record ³	1 Byte	ro			
1 (0x01)	Teach flags	Bit (4)	1 Bit	ro		false = Teachpoint 1 not taught true = Teachpoint 1 successfully taught	
2 (0x02)	Teach state	Bit (0)	4 Bit	ro		0 = IDLE 1 = SP1 SUCCESS 5 = BUSY 7 = ERROR	

¹ro = read only, wo = write only, rw = read/write

²COM values specify the bitrate (see IO-Link specification): COM1 (4,8 kbit/s), COM2 (38,4 kbit/s), COM3 (230,4 kbit/s)

³Subindex access not supported

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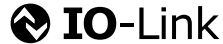
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SICK device specific							
Index dec (hex)	Name	Format (Offset)	Length	Access ¹	Default Value	Value / Range	Remark [Unit]
60 (0x3C)	Qint.1 SP1 / SP2	Record	2 Byte	rw			
	1 (0x01) SP1 upper threshold (switch-on)	Bit (8)	8 Bit	rw	50	50	[%]
	2 (0x02) SP2 lower threshold (switch-off)	Bit (0)	8 Bit	rw	45	45	[%]
61 (0x3D)	Qint.1 configuration	Record	4 Byte	rw			
	1 (0x01) Switchpoint logic	Bit (24)	8 Bit	rw	128	128 = Vendor specific	
	2 (0x02) Switchpoint mode	Bit (16)	8 Bit	rw	128	128 = Vendor specific	
62 (0x3E)	Switchpoint hysteresis	Bit (0)	16 Bit	rw	0	0 = Autodefined hysteresis	
	Qint.2 SP1 / SP2	Record	2 Byte	rw			
	1 (0x01) SP1 upper threshold (switch-on)	Bit (8)	8 Bit	rw	50	50	
63 (0x3F)	2 (0x02) SP2 lower threshold (switch-off)	Bit (0)	8 Bit	rw	45	45	
	Qint.2 configuration	Record	4 Byte	rw			
	1 (0x01) Switchpoint logic	Bit (24)	8 Bit	rw	128	128 = Vendor specific	
64 (0x40)	2 (0x02) Switchpoint mode	Bit (16)	8 Bit	rw	128	128 = Vendor specific	
	3 (0x03) Switchpoint hysteresis	Bit (0)	16 Bit	rw	0	0 = Autodefined hysteresis	
	Device specific tag	String	32 Byte	rw	*****		
92 (0x5C)	Physical input / output type configuration pin2	UInt	8 Bit	rw	3	1 = PNP 2 = NPN 3 = Push/Pull	
97 (0x61)	Sender configuration	UInt	8 Bit	rw	0	0 = Sender active 1 = Sender not active	
114 (0x72)	Quality of teach	UInt	8 Bit	ro		0...100	[%]
121 (0x79)	Pin 2 configuration	UInt	8 Bit	rw	43	0 = Deactivated / no function 1 = External input (Smart Task) 16 = Sender off 17 = Teach-in 33 = Quality of run alarm output 34 = Switching signal QL2 35 = Detection output Qint.1 39 = Switching signal QL1 40 = Switching signal QL1/ 43 = Health	
154 (0x9A)	Temperature zone	UInt	8 Bit	ro		0 = Very cold 1 = Cold 2 = Moderate 3 = Warm 4 = Hot	Sensor-internal temperature
175 (0xAF)	Quality of run	UInt	8 Bit	ro		0...255	[%]
176 (0xB0)	Quality of run alarm threshold	UInt	8 Bit	rw	50	0...90	[%]
177 (0xB1)	Quality of alignment	UInt	8 Bit	ro		0...100	[%]
179 (0xB3)	Alarm thresholds for diagnostic parameters	Record	4 Byte	rw			
	1 (0x01) Operating hours threshold	Bit (0)	32 Bit	rw	40000	0...1000000	[h]
180 (0xB4)	Current receiver level (live)	UInt	8 Bit	ro		0...255	[%]
190 (0xBE)	Operating hours	Record	8 Byte	ro			
	1 (0x01) Total operating hours	Bit (32)	32 Bit	ro		0...1000000	[h]
	2 (0x02) Operating hours since last reset	Bit (0)	32 Bit	ro		0...1000000	[h]
204 (0xCC)	Find me	UInt	8 Bit	rw	0	0 = Find me deactivated 1 = Find me activated	
226 (0xE2)	System state	Record ³	2 Byte	ro			
	1 (0x01) Detection output Qint.1	Bit (0)	1 Bit	ro		false = No object detected true = Object detected	
	5 (0x05) Quality of run alarm output	Bit (6)	1 Bit	ro		false = Alarm not active true = Alarm active	
6 (0x06)	Input signal state Pin 2	Bit (7)	1 Bit	ro		false = External input LOW true = External input HIGH	
	Notification handling	UInt	8 Bit	rw	0	0 = All enabled 1 = All disabled 2 = Events enabled, PD invalid flag disabled 3 = Events disabled, PD invalid flag enabled	
1080 (0x438)	SLTI Version	String	8 Byte	ro			
1083 (0x43B)	Logic 1	UInt	8 Bit	rw	0	0 = DIRECT 1 = AND 2 = OR	

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Index dec (hex)	Name	Format (Offset)	Length	Access ¹	Default Value	Value / Range	Remark [Unit]
1084 (0x43C)	Logic 2	UInt	8 Bit	rw	0	0 = DIRECT 1 = AND 2 = OR	
1085 (0x43D)	Timer 1 Mode	UInt	8 Bit	rw	0	0 = deactivated 1 = T-on delay 2 = T-off delay 3 = T-on/T-off delay 4 = Impulse (one shot)	
1086 (0x43E)	Timer 2 Mode	UInt	8 Bit	rw	0	0 = deactivated 1 = T-on delay 2 = T-off delay 3 = T-on/T-off delay 4 = Impulse (one shot)	
1087 (0x43F)	Time 1 Setup	UInt	16 Bit	rw	1	1...30000	[ms]
1088 (0x440)	Time 2 Setup	UInt	16 Bit	rw	1	1...30000	[ms]
1089 (0x441)	Inverter 1	UInt	8 Bit	rw	1	0 = not inverted 1 = inverted	
1090 (0x442)	Inverter 2	UInt	8 Bit	rw	1	0 = not inverted 1 = inverted	
1093 (0x445)	Inverter Ext. Input	UInt	8 Bit	rw	0	0 = not inverted 1 = inverted	

Standard command					
Index dec (hex)		Access ¹	Value	Name	Remark [Unit]
2 (0x02)	Standard Command	wo	65 130 228	Single value teach Restore Factory Settings Reset diagnostics parameter	

Events			
Code dec (hex)	Name	Type	Remark [Unit]
36000 (0x8CA0)	Short Circuit on Qx	Warning	Short circuit on outputs
36001 (0x8CA1)	New parameters	Notification	Parameters have been changed
36004 (0x8CA4)	Quality of run alarm	Warning	Low device performance, clean sensor
36011 (0x8CAB)	Alarm operating hours	Warning	Threshold for operating hours violated

Error			
Code dec (hex)	Additional Code	Name	Remark [Unit]
128 (0x80)	17 (0x11)	Index not available	Access occurs to a not existing index
128 (0x80)	18 (0x12)	Subindex not available	Access occurs to a not existing subindex
128 (0x80)	32 (0x20)	Service temporarily not available	Parameter is not accessible due to the current state of the device application
128 (0x80)	35 (0x23)	Access denied	Write access on a read-only parameter
128 (0x80)	48 (0x30)	Parameter value out of range	Written parameter value is outside its permitted value range
128 (0x80)	51 (0x33)	Parameter length overrun	Written parameter length is above its predefined length
128 (0x80)	52 (0x34)	Parameter length underrun	Written parameter length is below its predefined length
128 (0x80)	64 (0x40)	Invalid parameter set	Written single parameter collides with other actual parameter settings
128 (0x80)	65 (0x41)	Inconsistent parameter set	Parameter inconsistencies were found at the end of block parameter transfer, device plausibility check failed

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