

SICK

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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	V1.24863
Valid for IO-Link version	1.1.0

2. Process data

Record³: 2 Byte

Bitoffset	15	14	13	12	11	10	9	8
Byte 0								
Type/Subindex								
Bitoffset	7	6	5	4	3	2	1	0
Byte 1							QL2	QL1
Type/Subindex							Boolean	Boolean

3. Service data

The following ISDUs will not be saved via Data-Storage: Profile characteristic, Teach-in channel, Teach-in state, Device / function name, Sender configuration, Quality of teach, Quality of run, Current receiver level (live), Upper threshold (switch-on) dynamic, Lower threshold (switch-off) dynamic, Find me and SLTI Version

IO-Link specific							
[A] ATTENTION: Deviating default values can be possible. See device data sheet for details: www.sick.com/[articlenumber]							
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			
4 (0x04)	Local User Interface Lock	Bit (3)	1 Bit	rw			
16 (0x10)	Vendor Name	String	7 Byte	ro	SICK AG		
18 (0x12)	Product Name	String	18 Byte	ro			
19 (0x13)	Product ID	String	13 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	***** [A]		
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	
40 (0x28)	Process Data Input	PD In	2 Byte	ro			
SICK device specific							
[A] ATTENTION: Deviating default values can be possible. See device data sheet for details: www.sick.com/[articlenumber]							
Index dec (hex)	Name	Format (Offset)	Length	Access ¹	Default Value	Value / Range	Remark [Unit]
13 (0x0D)	Profile characteristic	Array ³	10 Byte	ro		Unsigned Integer16 [5]	
14 (0x0E)	PDInput descriptor	Array ³	6 Byte	ro		Octet String [2]	
15 (0x0F)	PDOutput descriptor	Array ³	3 Byte	ro		Octet String [1]	
58 (0x3A)	Teach-in channel	Uint	8 Bit	rw	0 [A]	0...2 = Default BDC	
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	
60 (0x3C)	Qint.1 SP1 / SP2	Record	2 Byte	ro			
1 (0x01)	SP1 upper threshold (switch-on)	Bit (8)	8 Bit	ro		10...90 110...200	[%]

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

² COM 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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SICK device specific							
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Index dec (hex)	Name	Format (Offset)	Length	Access ¹	Default Value	Value / Range	Remark [Unit]
2 (0x02)	SP2 lower threshold (switch-off)	Bit (0)	8 Bit	ro		5...85 105...195	[%]
61 (0x3D)	Qint.1 configuration	Record	4 Byte	rw			
1 (0x01)	Switchpoint logic	Bit (24)	8 Bit	rw	128 [A]	128 = Vendor specific	
2 (0x02)	Switchpoint mode	Bit (16)	8 Bit	rw	128 [A]	128 = Vendor specific	
3 (0x03)	Switchpoint hysteresis	Bit (0)	16 Bit	rw	0 [A]	0 = Autodefined hysteresis	
62 (0x3E)	Qint.2 SP1 / SP2	Record	2 Byte	ro			
1 (0x01)	SP1 upper threshold (switch-on)	Bit (8)	8 Bit	ro		10...90 110...200	
2 (0x02)	SP2 lower threshold (switch-off)	Bit (0)	8 Bit	ro		5...85 105...195	
63 (0x3F)	Qint.2 configuration	Record	4 Byte	rw			
1 (0x01)	Switchpoint logic	Bit (24)	8 Bit	rw	128 [A]	128 = Vendor specific	
2 (0x02)	Switchpoint mode	Bit (16)	8 Bit	rw	128 [A]	128 = Vendor specific	
3 (0x03)	Switchpoint hysteresis	Bit (0)	16 Bit	rw	0 [A]	0 = Autodefined hysteresis	
64 (0x40)	Device / function name	String	32 Byte	rw	***** [A]		
97 (0x61)	Sender configuration	UInt	8 Bit	rw	0 [A]	0 = Sender active 1 = Sender not active	
112 (0x70)	AutoAdapt	UInt	8 Bit	ro	1	1 = On - time based	
114 (0x72)	Quality of teach	UInt	8 Bit	ro		0...100	[%]
121 (0x79)	Pin 2 configuration	UInt	8 Bit	rw	32 [A]	0 = Deactivated / no function 1 = External input 16 = Sender off 17 = Teach-in 32 = Detection output Q/ 33 = Quality of run alarm output 34 = Switching signal QL2 35 = Detection output Qint.1 39 = Switching signal QL1	
175 (0xAF)	Quality of run	UInt	8 Bit	ro		0...255	[%]
176 (0xB0)	Quality of run alarm threshold	UInt	8 Bit	rw	50 [A]	0...90	[%]
177 (0xB1)	Quality of alignment	UInt	8 Bit	ro		0...255	
180 (0xB4)	Current receiver level (live)	UInt	8 Bit	ro		0...255	[%]
181 (0xB5)	Upper threshold (switch-on) dynamic	UInt	8 Bit	ro		0...255	[%]
182 (0xB6)	Lower threshold (switch-off) dynamic	UInt	8 Bit	ro		0...255	[%]
204 (0xCC)	Find me	UInt	8 Bit	rw	0 [A]	0 = Find me deactivated 1 = Find me activated	
205 (0xCD)	SICK profile version	String	4 Byte	ro			
219 (0xDB)	Article No.	Record	7 Byte	ro			
1 (0x01)	Article No. IO-Link Device	Bit (0)	7 Byte	ro			
226 (0xE2)	System state	Record ³	1 Byte	ro			
1 (0x01)	Quality of run alarm output	Bit (1)	1 Bit	ro		false = Alarm not active true = Alarm active	
2 (0x02)	Detection output Q.int1	Bit (0)	1 Bit	ro		false = No object detected true = Object detected	
227 (0xE3)	Notification handling	UInt	8 Bit	rw	0 [A]	0 = All enabled 1 = All disabled 2 = Events enabled, PD invalid flag disabled 3 = Events disabled, PD invalid flag enabled	
237 (0xED)	Minimum detectable object	UInt	8 Bit	rw	[A]	10 = 10 mm 15 = 15 mm 20 = 20 mm 25 = 25 mm 30 = 30 mm	
1080 (0x438)	SLTI Version	String	8 Byte	ro			
1083 (0x43B)	Logic 1	UInt	8 Bit	rw	0 [A]	0 = DIRECT 1 = AND 2 = OR 3 = Window Mode 4 = Hysteresis	

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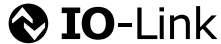
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ENGLISH

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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 [A]	0 = DIRECT 1 = AND 2 = OR 3 = Window Mode 4 = Hysteresis	
1085 (0x43D)	Timer 1 Mode	UInt	8 Bit	rw	0 [A]	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 [A]	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 [A]	1...30000	[ms]
1088 (0x440)	Time 2 Setup	UInt	16 Bit	rw	1 [A]	1...30000	[ms]
1089 (0x441)	Inverter 1	UInt	8 Bit	rw	1 [A]	0 = not inverted 1 = inverted	
1090 (0x442)	Inverter 2	UInt	8 Bit	rw	1 [A]	0 = not inverted 1 = inverted	
Standard command							
Index dec (hex)			Access ¹	Value	Name	Remark [Unit]	
2 (0x02)	Standard Command		wo	65	Single value teach		
				130	Restore Factory Settings		
Events							
Code dec (hex)	Name	Type			Remark [Unit]		
36000 (0x8CA0)	Short Circuit on Qx	Notification			Short circuit on outputs		
36001 (0x8CA1)	New parameters	Notification			Parameters have been changed		
36004 (0x8CA4)	Quality of run alarm	Notification			Low device performance, clean sensor		
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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