SICK

8028177 1023

AS30

8389130

1977553007

9371438 1023 (1.1.0)

Australia
Phone +61 3 9457 0600
Belgium/Luxembourg
Phone +32 (0)2 466 55 66
Brasil
Phone +55 11 3215-4900
Canada
Phone +1 905 771 14 44
Česká republika
Phone +420 2 57 91 18 50
China
Phone +86 4000 121 000
+852-2153 6300
Danmark
Phone +45 45 82 64 00
Deutschland
Phone +49 211 5301-301
España
Phone +34 93 480 31 00
France
Phone +33 1 64 62 35 00
Great Britain
Phone +44 (0)1727 831121
India
Phone +91-22-4033 8333
Israel
Phone +972-4-6801000
Italia
Phone +39 02 27 43 41
Japan
Phone +81 (0)3 5309 2112
Magyarország
Phone +36 1 371 2680
Nederland
Phone +31 (0)30 229 25 44
Österreich
Phone +43 (0)22 36 62 28 8-0
Norge
Phone +47 67 81 50 00
Polska
Phone +48 22 837 40 50
România
Phone +40 356 171 120
Russia
Phone +7-495-775-05-30
Schweiz
Phone +41 41 619 29 39
Singapore
Phone +65 6744 3732
Slovenija
Phone +386 (0)1-47 69 990
South Africa
Phone +27 11 472 3733
South Korea
Phone +82 2 786 6321/4
Suomi
Phone +358-9-25 15 800
Sverige
Phone +46 10 110 10 00
Taiwan
Phone +886-2-2375-6288
Türkiye
Phone +90 (216) 528 50 00
United Arab Emirates
Phone +971 (0) 4 8865 878
USA/México
Phone +1(952) 941-6780

SICK AG, Erwin-Sick-Strasse 1, D-79183 Waldkirch

Please find detailed addresses and additional representatives and agencies in all major industrial nations at **www.sick.com**

BZ.mk3

IO-Link

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

ENGLISH

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	1.1 ms
Baudrate[2]	COM3
Process Data Length (IN)	8 Byte
IODD version	V1.0
Valid for IO-Link version	1.1.0

2. Process data

Record[3] : 8 Byte

	Bitoffset								
Byte 0		63	62	61	60	59	58	57	56
IN	Type/Subindex	Unsigned Integer 16							
	Bitoffset								48
Byte 1	Center position / Width	55	54	53	52	51	50	49	48
IN	Type/Subindex	Unsigned Integer 16							18
	Bitoffset								
Byte 2	Edge 2 position	47	46	45	44	43	42	41	40
IN	Type/Subindex	Unsigned Integer 16							
	Bitoffset								32
Byte 3	Edge 2 position	39	38	37	36	35	34	33	32
IN	Type/Subindex	Unsigned Integer 16							17
	Bitoffset								
Byte 4	Edge 1 position	31	30	29	28	27	26	25	24
IN	Type/Subindex	Unsigned Integer 16							
	Bitoffset								16
Byte 5	Edge 1 position	23	22	21	20	19	18	17	16
IN	Type/Subindex	Unsigned Integer 16							16
	Bitoffset	15	14	13	12	11	10	9	8
Byte 6		Reserved		PD invalid	QoR alarm	Edge 2 immediate loss	Edge 2 loss top	Edge 2 loss bottom	Edge 1 immediate loss
IN	Type/Subindex	Unsigned Integer 2	15	Boolean 14	Boolean 13	Boolean 12	Boolean 11	Boolean 10	Boolean 9
	Bitoffset	7	6	5	4	3	2	1	0
Byte 7		Edge 1 loss top	Edge 1 loss bottom	Qint. 4	Qint. 3	Qint. 2	Qint. 1	QL2	QL1
IN	Type/Subindex	Boolean 8	Boolean 7	Boolean 6	Boolean 5	Boolean 4	Boolean 3	Boolean 2	Boolean 1

3. Service data

The following ISDUs will not be saved via Data-Storage: Device specific tag, Alignment help enable, Sender configuration, Find me, Job assurance part 1 and Job assurance part 2

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			
4 (0x04)	Local User Interface Lock	Bit (3)	1 Bit	rw			
17 (0x11)	Vendor Text	String	64 Byte	ro	www.sick.com		
19 (0x13)	Product ID	String	13 Byte	ro	see Index 219		
20 (0x14)	Product Text	String	64 Byte	ro	Array Sensor		
21 (0x15)	Serial Number	String	8 Byte	ro			
22 (0x16)	Hardware Version	String	12 Byte	ro			
23 (0x17)	Firmware Version	String	30 Byte	ro			
24 (0x18)	Application Specific Tag	String	32 Byte	rw	*******		
36 (0x24)	Device Status	UInt	8 Bit	ro	0	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]	15 Byte	ro	Octet String [5]		
40 (0x28)	Process Data Input	PD In	8 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	14 Byte	ro	Unsigned Integer16 [7]	This parameter contains the list of ProfileIdentifiers (PID's) corresponding to the device profile implemented in the device.	
14 (0x0E)	PDInput Descriptor	Array	12 Byte	ro	Octet String [4]	This parameter contains the description of the data structure of the process input data of the device.	

[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)
[3] Subindex access not supported

SICK

8028177 1023

AS30

8389130

1977553007

9371438 1023 (1.1.0)

Australia
Phone +61 3 9457 0600
Belgium/Luxembourg
Phone +32 (0)2 466 55 66
Brasil
Phone +55 11 3215-4900
Canada
Phone +1 905 771 14 44
Česká republika
Phone +420 2 57 91 18 50
China
Phone +86 4000 121 000
+852-2153 6300
Danmark
Phone +45 45 82 64 00
Deutschland
Phone +49 211 5301-301
España
Phone +34 93 480 31 00
France
Phone +33 1 64 62 35 00
Great Britain
Phone +44 (0)1727 831121
India
Phone +91-22-4033 8333
Israel
Phone +972-4-6801000
Italia
Phone +39 02 27 43 41
Japan
Phone +81 (0)3 5309 2112
Magyarország
Phone +36 1 371 2680
Nederland
Phone +31 (0)30 229 25 44
Österreich
Phone +43 (0)22 36 62 28 8-0
Norge
Phone +47 67 81 50 00
Polska
Phone +48 22 837 40 50
România
Phone +40 356 171 120
Russia
Phone +7-495-775-05-30
Schweiz
Phone +41 41 619 29 39
Singapore
Phone +65 6744 3732
Slovenija
Phone +386 (0)1-47 69 990
South Africa
Phone +27 11 472 3733
South Korea
Phone +82 2 786 6321/4
Suomi
Phone +358-9-25 15 800
Sverige
Phone +46 10 110 10 00
Taiwan
Phone +886-2-2375-6288
Türkiye
Phone +90 (216) 528 50 00
United Arab Emirates
Phone +971 (0) 4 8865 878
USA / México
Phone +1(952) 941-6780

SICK AG, Erwin-Sick-Strasse 1, D-79183 Waldkirch

Please find detailed addresses and additional representatives and agencies in all major industrial nations at **www.sick.com**

BZ.mk3

IO-Link

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

ENGLISH

SICK device specific

Index dec (hex)	Name	Format (Offset)	Length	Access[1]	Default Value	Value / Range	Remark [Unit]
58 (0x3A)	Teach-in channel	UInt	8 Bit	rw	0	0 = Qint1 1 = Qint2 2 = Qint3 3 = Qint4	Qint to be tought via system commands.
59 (0x3B)	Teach-in status	UInt	8 Bit	ro	0	0 = Idle 1 = SP1 Success 2 = SP2 Success 3 = SP12 Success 4 = Wait for command 5 = Busy 7 = Error	See IO-Link Smart Sensor Profile Version 1.0 chapter 12.4 (link below)
60 (0x3C)	Qint. 1 SP1/SP2	Record	4 Byte	rw			
1 (0x01)	Qint. SP1	Bit (16)	16 Bit	rw	Setpoint for switching output [Resolution see ISDU 265, Subindex 3].		
2 (0x02)	Qint. SP2	Bit (0)	16 Bit	rw	Setpoint for switching output [Resolution see ISDU 265, Subindex 3].		
61 (0x3D)	Qint. 1 configuration	Record	5 Byte	rw			
1 (0x01)	Qint. logic	Bit (32)	8 Bit	rw	0 = Value as specified 1 = Inverted value		
2 (0x02)	Qint. mode	Bit (24)	8 Bit	rw	0 = Deactivated 1 = Single point mode 2 = Window mode 3 = Two point mode		
3 (0x03)	Qint. hysteresis	Bit (8)	16 Bit	rw	Hysteresis for setpoints [Resolution see ISDU 265, Subindex 3].		
4 (0x04)	Qint. task	Bit (0)	8 Bit	rw	0 = Edge 1 position 1 = Edge 2 position 2 = Center / Width determination		
62 (0x3E)	Qint. 2 SP1/SP2	Record	4 Byte	rw			
1 (0x01)	Qint. SP1	Bit (16)	16 Bit	rw	Setpoint for switching output [Resolution see ISDU 265, Subindex 3].		
2 (0x02)	Qint. SP2	Bit (0)	16 Bit	rw	Setpoint for switching output [Resolution see ISDU 265, Subindex 3].		
63 (0x3F)	Qint. 2 configuration	Record	5 Byte	rw			
1 (0x01)	Qint. logic	Bit (32)	8 Bit	rw	0 = Value as specified 1 = Inverted value		
2 (0x02)	Qint. mode	Bit (24)	8 Bit	rw	0 = Deactivated 1 = Single point mode 2 = Window mode 3 = Two point mode		
3 (0x03)	Qint. hysteresis	Bit (8)	16 Bit	rw	Hysteresis for setpoints [Resolution see ISDU 265, Subindex 3].		
4 (0x04)	Qint. task	Bit (0)	8 Bit	rw	0 = Edge 1 position 1 = Edge 2 position 2 = Center / Width determination		
64 (0x40)	Device specific tag	String	32 Byte	rw	*******	Will not be stored in data storage.	
69 (0x45)	Alignment help enable	UInt	8 Bit	rw	0	0 = Alignment help inactive 1 = Alignment help active	Variable to enable alignment help of sensor. Alignment values may be read out on ISDU 101.
73 (0x49)	Sensitivity	UInt	8 Bit	rw	1	0 = Fine 1 = Middle 2 = Coarse 3 = Reserved (vendor default)	General detection sensitivity
74 (0x4A)	Reading direction	UInt	8 Bit	rw	0	0 = Connector to head 1 = Head to connector 2 = Defined by input pin	
75 (0x4B)	Automatic drift correction	UInt	8 Bit	rw	1	0 = Inactive 1 = Active	Automatic teach edge adaption to compensate contamination.
76 (0x4C)	Teach-in tolerance	UInt	8 Bit	rw	3	0 = Sensitive 1 = Middle 2 = Robust 3 = Auto (Scaled by sensitivity)	Tolerance in identifying the taught-in edge according to its contrast and remission levels.
82 (0x52)	Teach-in edges	Array[3]	232 Byte	rw	0	Unsigned Integer16 [116]	Each four array elements represent one teach edge with position [metric], width [metric], remission [digits] and constrast [digits] values represented as 16 bit integer values in this order.
83 (0x53)	Smoothing	Record	2 Byte	rw	Edge position values are averaged when active.		
1 (0x01)	Activation	Bit (8)	8 Bit	rw	0	0 = Inactive 1 = Active	
2 (0x02)	Length	Bit (0)	8 Bit	rw	33	Length in milliseconds of the median filter used for smoothing.	
86 (0x56)	Edge teach-in configuration	Record	3 Byte	rw	Defines which of the taught-in edges (in edge search direction) shall be used in run mode.		
1 (0x01)	Index first edge	Bit (16)	8 Bit	rw	0	0...29	0 = Teach selection is disabled, 1-29 = Teach edge number
2 (0x02)	Index second edge	Bit (8)	8 Bit	rw	0	0...29	0 = Teach selection is disabled, 1-29 = Teach edge number. Only applicable for width and diameter applications.
3 (0x03)	Teach-in background	Bit (0)	8 Bit	rw	0	0 = Proximity teach background 1 = Reflector teach background 2 = Ext. illumination teach background	Background used for this teach configuration if ISDU 264 (Background selection) is AUTO.
97 (0x61)	Sender configuration	UInt	8 Bit	rw	0	0 = Sender active 1 = Sender not active	No measurement with inactive sender possible.
101 (0x65)	Alignment help	Record	8 Byte	ro	Measured alignment data of the sensor when alignment help is enabled (see ISDU 69).		
1 (0x01)	Nominal scanning distance offset	Bit (32)	32 Bit	ro	Offset from nominal scanning distance. Invalid measurement: INT32_MAX. [µm]		
2 (0x02)	Tipping angle	Bit (0)	4 Byte	ro	Target tipping angle to sensor (in °). Invalid measurement: NAN. [°]		
110 (0x6E)	Operating mode	UInt	8 Bit	wo	0 = Edge detection 1 = Object positioning 2 = Width measurement 3 = Center determination		

[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)
[3] Subindex access not supported

SICK

8028177 1023

AS30

8389130

1977553007

9371438 1023 (1.1.0)

Australia
Phone +61 3 9457 0600
Belgium/Luxembourg
Phone +32 (0)2 466 55 66
Brasil
Phone +55 11 3215-4900
Canada
Phone +1 905 771 14 44
Česká republika
Phone +420 2 57 91 18 50
China
Phone +86 4000 121 000
+852-2153 6300
Danmark
Phone +45 45 82 64 00
Deutschland
Phone +49 211 5301-301
España
Phone +34 93 480 31 00
France
Phone +33 1 64 62 35 00
Great Britain
Phone +44 (0)1727 831121
India
Phone +91-22-4033 8333
Israel
Phone +972-4-6801000
Italia
Phone +39 02 27 43 41
Japan
Phone +81 (0)3 5309 2112
Magyarország
Phone +36 1 371 2680
Nederland
Phone +31 (0)30 229 25 44
Österreich
Phone +43 (0)22 36 62 28 8-0
Norge
Phone +47 67 81 50 00
Polska
Phone +48 22 837 40 50
România
Phone +40 356 171 120
Russia
Phone +7-495-775-05-30
Schweiz
Phone +41 41 619 29 39
Singapore
Phone +65 6744 3732
Slovenija
Phone +386 (0)1-47 69 990
South Africa
Phone +27 11 472 3733
South Korea
Phone +82 2 786 6321/4
Suomi
Phone +358-9-25 15 800
Sverige
Phone +46 10 110 10 00
Taiwan
Phone +886-2-2375-6288
Türkiye
Phone +90 (216) 528 50 00
United Arab Emirates
Phone +971 (0) 4 8865 878
USA / México
Phone +1(952) 941-6780

SICK AG, Erwin-Sick-Strasse 1, D-79183 Waldkirch

Please find detailed addresses and additional representatives and agencies in all major industrial nations at **www.sick.com**

BZ:m43

IO-Link

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

ENGLISH

SICK device specific

Index dec (hex)	Name	Format (Offset)	Length	Access[1]	Default Value	Value / Range	Remark [Unit]
114 (0x72)	Quality of teach	UInt	8 Bit	ro	100	0...100	Quality value in percent.
117 (0x75)	Display direction switch	UInt	8 Bit	rw	0	0 = Reading direction not turned 1 = Reading direction upside-down	
120 (0x78)	Process data select	UInt	8 Bit	rw	0	0 = Width measurement 1 = Center determination	Defines if process data shall contain width (distance between edge 1 and 2) or center (center point between edge 1 and 2).
121 (0x79)	Pin 2 configuration	UInt	8 Bit	rw	37	0 = Deactivated 37 = Qa Edge 1 96 = Qa Edge 2 97 = Qa Width / Center position 98 = Qa Edge 1 coverage	
122 (0x7A)	Pin 5 configuration	UInt	8 Bit	rw	34	0 = Deactivated 1 = External input (Smart Task) 17 = Edge teach-in 34 = Switching output QL2 39 = Switching output QL1 80 = Reflector teach-in 81 = Input for reading direction and edge search 82 = Input for turning teach-in pattern 100 = Ext. illumination teach-in 120 = Quality of run alarm output 140 = Deactivate sender	
153 (0x99)	Internal temperature	Record	5 Byte	ro			
1 (0x01)	Current temperature	Bit (32)	8 Bit	ro	Internal device temperature in °C. [°C]		
2 (0x02)	Maximum temperature all time	Bit (24)	8 Bit	ro	Maximum internal device temperature since production of sensor in °C. [°C]		
3 (0x03)	Minimum temperature all time	Bit (16)	8 Bit	ro	Minimum internal device temperature since production of sensor in °C. [°C]		
4 (0x04)	Maximum temperature since last reset	Bit (8)	8 Bit	ro	Maximum internal device temperature since last reset via system command in °C. [°C]		
5 (0x05)	Minimum temperature since last reset	Bit (0)	8 Bit	ro	Minimum internal device temperature since last reset via system command in °C. [°C]		
160 (0xA0)	Key lock type	UInt	8 Bit	rw	0	0 = Interface fully locked 1 = Edge teach-in and area teach-in available 2 = Edge teach-in available 3 = Area teach-in available	Defines the configuration options available on user interface when key lock is active.
165 (0xA5)	Live edges	Array[3]	232 Byte	ro	0	Unsigned Integer16 [116]	Each four array elements represent one live edge with position [metric], width [metric], remission [digits] and constrast [digits] values represented as 16 bit integer values in this order.
175 (0xAF)	Quality of run	UInt	8 Bit	ro	100	Quality level in percent.	
176 (0xB0)	Quality of run alarm threshold	UInt	8 Bit	rw	50	0...90	Threshold position in percent. [%]
190 (0xBE)	Operating hours	Record	8 Byte	ro			
1 (0x01)	Total operating hours	Bit (32)	32 Bit	ro	Operating hours since production of sensor in h. [h]		
2 (0x02)	Operating hours since last reset	Bit (0)	32 Bit	ro	Operating hours since last reset via system command in h. [h]		
204 (0xCC)	Find me	UInt	8 Bit	rw	0	0 = Deactivated 1 = Yellow LED blinks with 1 Hz 16 = Yellow LED + Q (pin 5) blinks with 1 Hz	Only for identification purposes.
206 (0xCE)	Direction of edge search	Record	2 Byte	rw			
1 (0x01)	Edge 1	Bit (8)	8 Bit	rw	0	0 = Bottom to top 1 = Top to bottom 2 = Defined by input pin	
2 (0x02)	Edge 2	Bit (0)	8 Bit	rw	0	0 = Bottom to top 1 = Top to bottom 2 = Defined by input pin	
207 (0xCF)	Setup analog output	Record	5 Byte	rw	Current values in steps of 100 µA.		
1 (0x01)	Signal at beginning of measurement area	Bit (32)	8 Bit	rw	40	40...200	
2 (0x02)	Signal at end of measurement area	Bit (24)	8 Bit	rw	200	40...200	
3 (0x03)	Signal beyond measurement area, lower limit or no coverage	Bit (16)	8 Bit	rw	35	0...240	
4 (0x04)	Signal beyond measurement area, upper limit or full coverage	Bit (8)	8 Bit	rw	205	0...240	
5 (0x05)	Signal upon loosing edge	Bit (0)	8 Bit	rw	30	0...240	
209 (0xD1)	Measurement area	Record	4 Byte	rw	Describes the limits of the measurement area of the sensor. By default this is the maximum field of view which may be read on ISDU 265.		
1 (0x01)	Lower limit	Bit (16)	16 Bit	rw	Lower limit for measurement area [Resolution see ISDU 265, Subindex 3].		
2 (0x02)	Upper limit	Bit (0)	16 Bit	rw	Upper limit for measurement area [Resolution see ISDU 265, Subindex 3].		
219 (0xDB)	Product ID (order number)	Record	7 Byte	ro			
1 (0x01)	Product ID IO-Link device	Bit (0)	7 Byte	ro	SICK order number of the AS30.		
222 (0xDE)	Job assurance part 1	Array[3]	232 Byte	rw	Integer8 [232]	One complete AS30 job consists of both Job Assurance ISDUs (222 and 223). Use system command 208 to activate a loaded job after it has been written to ISDUs 222 and 223. Use system command 209 before reading out a job on the same ISDUs.	
223 (0xDF)	Job assurance part 2	Array[3]	232 Byte	rw	Integer8 [232]	See index 222.	
227 (0xE3)	Notification Handling	Record	2 Byte	rw	Enable / Disable generation of IO-Link events.		
1 (0x01)	General setup	Bit (8)	8 Bit	rw	0	0 = All enabled 1 = All disabled 2 = Events enabled, PD invalid flag disabled 3 = Events disabled, PD invalid flag enabled	
2 (0x02)	Specific setup	Bit (0)	8 Bit	rw	0	0 = Ignore edge loss events 1 = Throw events on edge loss	

[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)
[3] Subindex access not supported

SICK

8028177 1023

AS30

8389130

1977553007

9371438 1023 (1.1.0)

Australia
Phone +61 3 9457 0600
Belgium/Luxembourg
Phone +32 (0)2 466 55 66
Brasil
Phone +55 11 3215-4900
Canada
Phone +1 905 771 14 44
Česká republika
Phone +420 2 57 91 18 50
China
Phone +86 4000 121 000
+852-2153 6300
Danmark
Phone +45 45 82 64 00
Deutschland
Phone +49 211 5301-301
España
Phone +34 93 480 31 00
France
Phone +33 1 64 62 35 00
Great Britain
Phone +44 (0)1727 831121
India
Phone +91-22-4033 8333
Israel
Phone +972-4-6801000
Italia
Phone +39 02 27 43 41
Japan
Phone +81 (0)3 5309 2112
Magyarország
Phone +36 1 371 2680
Nederland
Phone +31 (0)30 229 25 44
Österreich
Phone +43 (0)22 36 62 28 8-0
Norge
Phone +47 67 81 50 00
Polska
Phone +48 22 837 40 50
România
Phone +40 356 171 120
Russia
Phone +7-495-775-05-30
Schweiz
Phone +41 41 619 29 39
Singapore
Phone +65 6744 3732
Slovenija
Phone +386 (0)1-47 69 990
South Africa
Phone +27 11 472 3733
South Korea
Phone +82 2 786 6321/4
Suomi
Phone +358-9-25 15 800
Sverige
Phone +46 10 110 10 00
Taiwan
Phone +886-2-2375-6288
Türkiye
Phone +90 (216) 528 50 00
United Arab Emirates
Phone +971 (0) 4 8865 878
USA/México
Phone +1(952) 941-6780

SICK AG, Erwin-Sick-Strasse 1, D-79183 Waldkirch

Please find detailed addresses and additional representatives and agencies in all major industrial nations at **www.sick.com**

BZ.mk3

IO-Link

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

ENGLISH

SICK device specific

Index dec (hex)	Name	Format (Offset)	Length	Access[1]	Default Value	Value / Range	Remark [Unit]
235 (0xEB)	Energy saving mode for display	UInt	8 Bit	rw	1	0 = Off 1 = On	Display switches off after five minutes of non-use when active.
242 (0xF2)	Analog output edge loss indicator	UInt	8 Bit	rw	0	0 = Edge loss beyond measurement area top / bottom 1 = Edge loss full / no coverage	Chooses if the edge loss signals shall indicate the direction or type of loss.
261 (0x105)	External illumination settings	Record	2 Byte	rw	Settings for the external illumination accessory for the sensor.		
1 (0x01)	Intensity	Bit (8)	8 Bit	rw	50	1...100	Intensity of the external illumination in percent. [%]
2 (0x02)	Balancer	Bit (0)	8 Bit	rw	0	-100...100	Boost the dark areas if the ext. ill. is placed from the side and a teach is not possible.
264 (0x108)	Background selection	Record[3]	1 Byte	rw			
1 (0x01)	Default Background	Bit (0)	2 Bit	rw	0	0 = Auto 1 = Proximitiy 2 = Reflector 3 = Ext. Illumination	On Auto background is selected dependent on teach data. If teach data is not valid, background is selected during startup.
2 (0x02)	Detect reflector covering edge only	Bit (2)	1 Bit	rw	0	true = active false = inactive	
3 (0x03)	Detect edge on background only	Bit (3)	1 Bit	rw	0	true = active false = inactive	
265 (0x109)	Geometrical properties	Record	18 Byte	ro	Geometrical properties of sensor.		
1 (0x01)	Measurement range minimum	Bit (128)	16 Bit	ro	Minimum value of measurement range consequently minimum value of process data, setpoints etc.		
2 (0x02)	Measurement range maximum	Bit (112)	16 Bit	ro	Minimum value of measurement range consequently minimum value of process data, setpoints etc.		
3 (0x03)	Measurement range resolution	Bit (96)	16 Bit	ro	Resolution factor of measurement data, if positiv unit of measurement data is 1 mm / resolution, if negative unit of measurement data is 1 mm * resolution.		
4 (0x04)	Sensing distance nominal	Bit (64)	32 Bit	ro	Nominal sensing distance of object edge		
5 (0x05)	Sensing distance minimum	Bit (32)	32 Bit	ro	Minimum working sensing distance		
6 (0x06)	Sensing distance maximum	Bit (0)	32 Bit	ro	Maximum working sensing distance		
1080 (0x438)	SLTI Version	String	8 Byte	ro	1.1.0		
1081 (0x439)	Input selector 1	UInt	8 Bit	rw	0	0 = Qint.1 1 = Qint.2 2 = Qint.3 3 = Qint.4 64 = Ext. input 1	
1082 (0x43A)	Input Selector 2	UInt	8 Bit	rw	1	0 = Qint.1 1 = Qint.2 2 = Qint.3 3 = Qint.4 64 = Ext. input 1	
1083 (0x43B)	Logic 1	UInt	8 Bit	rw	0	0 = Direct 1 = And 2 = Or 3 = Reserved 4 = Reserved	
1084 (0x43C)	Logic 2	UInt	8 Bit	rw	0	0 = Direct 1 = And 2 = Or 3 = Reserved 4 = Reserved	
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	
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	
1087 (0x43F)	Time 1 Setup	UInt	16 Bit	rw	1	1...30000 = Time value in ms	Time value in ms. [ms]
1088 (0x440)	Time 2 Setup	UInt	16 Bit	rw	1	1...30000 = Time value in ms	Time value in ms. [ms]
1089 (0x441)	Inverter 1	UInt	8 Bit	rw	0	0 = Not inverted 1 = Inverted	
1090 (0x442)	Inverter 2	UInt	8 Bit	rw	0	0 = Not inverted 1 = Inverted	
1093 (0x445)	Inverter External input	UInt	8 Bit	rw	0	0 = Not inverted 1 = Inverted	Setup of the inverter.
16000 (0x3E80)	Device ID setup	UInt	32 Bit	rw	8389130	8389125 = Version 1 8389130 = Version 3 8389133 = Version 2	Chooses the IO-Link Device ID which is initialized during startup.
16384 (0x4000)	Qint. 3 SP1/SP2	Record	4 Byte	rw			
1 (0x01)	Qint. SP1	Bit (16)	16 Bit	rw	Setpoint for switching output [Resolution see ISDU 265, Subindex 3].		
2 (0x02)	Qint. SP2	Bit (0)	16 Bit	rw	Setpoint for switching output [Resolution see ISDU 265, Subindex 3].		
16385 (0x4001)	Qint. 3 configuration	Record	5 Byte	rw			
1 (0x01)	Qint. logic	Bit (32)	8 Bit	rw	0 = Value as specified 1 = Inverted value		
2 (0x02)	Qint. mode	Bit (24)	8 Bit	rw	0 = Deactivated 1 = Single point mode 2 = Window mode 3 = Two point mode		
3 (0x03)	Qint. hysteresis	Bit (8)	16 Bit	rw	Hysteresis for setpoints [Resolution see ISDU 265, Subindex 3].		

[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)
[3] Subindex access not supported

SICK

8028177 1023

AS30

8389130

1977553007

9371438 1023 (1.1.0)

Australia
Phone +61 3 9457 0600
Belgium/Luxembourg
Phone +32 (0)2 466 55 66
Brasil
Phone +55 11 3215-4900
Canada
Phone +1 905 771 14 44
Česká republika
Phone +420 2 57 91 18 50
China
Phone +86 4000 121 000
+852-2153 6300
Danmark
Phone +45 45 82 64 00
Deutschland
Phone +49 211 5301-301
España
Phone +34 93 480 31 00
France
Phone +33 1 64 62 35 00
Great Britain
Phone +44 (0)1727 831121
India
Phone +91-22-4033 8333
Israel
Phone +972-4-6801000
Italia
Phone +39 02 27 43 41
Japan
Phone +81 (0)3 5309 2112
Magyarország
Phone +36 1 371 2680
Nederland
Phone +31 (0)30 229 25 44
Österreich
Phone +43 (0)22 36 62 28 8-0
Norge
Phone +47 67 81 50 00
Polska
Phone +48 22 837 40 50
România
Phone +40 356 171 120
Russia
Phone +7-495-775-05-30
Schweiz
Phone +41 41 619 29 39
Singapore
Phone +65 6744 3732
Slovenija
Phone +386 (0)1-47 69 990
South Africa
Phone +27 11 472 3733
South Korea
Phone +82 2 786 6321/4
Suomi
Phone +358-9-25 15 800
Sverige
Phone +46 10 110 10 00
Taiwan
Phone +886-2-2375-6288
Türkiye
Phone +90 (216) 528 50 00
United Arab Emirates
Phone +971 (0) 4 8865 878
USA / México
Phone +1(952) 941-6780

SICK AG, Erwin-Sick-Strasse 1, D-79183 Waldkirch

Please find detailed addresses and additional representatives and agencies in all major industrial nations at **www.sick.com**

BZ.mk43

IO-Link

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

ENGLISH

SICK device specific

Index dec (hex)	Name	Format (Offset)	Length	Access[1]	Default Value	Value / Range	Remark [Unit]
4 (0x04)	Qint. task	Bit (0)	8 Bit	rw	0 = Edge 1 position 1 = Edge 2 position 2 = Center / Width determination		
16386 (0x4002)	Qint. 4 SP1/SP2	Record	4 Byte	rw			
1 (0x01)	Qint. SP1	Bit (16)	16 Bit	rw	Setpoint for switching output [Resolution see ISDU 265, Subindex 3].		
2 (0x02)	Qint. SP2	Bit (0)	16 Bit	rw	Setpoint for switching output [Resolution see ISDU 265, Subindex 3].		
16387 (0x4003)	Qint. 4 configuration	Record	5 Byte	rw			
1 (0x01)	Qint. logic	Bit (32)	8 Bit	rw	0 = Value as specified 1 = Inverted value		
2 (0x02)	Qint. mode	Bit (24)	8 Bit	rw	0 = Deactivated 1 = Single point mode 2 = Window mode 3 = Two point mode		
3 (0x03)	Qint. hysteresis	Bit (8)	16 Bit	rw	Hysteresis for setpoints [Resolution see ISDU 265, Subindex 3].		
4 (0x04)	Qint. task	Bit (0)	8 Bit	rw	0 = Edge 1 position 1 = Edge 2 position 2 = Center / Width determination		

Standard command

Index dec (hex)		Access[1]	Value	Name	Remark [Unit]
2 (0x02)	Standard Command	wo	65	SP1 single value teach	
			66	SP2 single value teach	
			75	Static edge teach-in	
			80	BM_UNLOCK_S	
			81	BM_UNLOCK_F	
			82	BM_UNLOCK_T	
			83	BM_ACTIVATE	
			128	Device Reset	
			129	Application Reset	
			130	Restore Factory Settings	
			208	Restore / Activate job in ISDUs 222 and 223	
			209	Renew / Update job in ISDUs 222 and 223	
			211	Reflector teach-in	
			212	Alignment teach-in	
			213	Background teach-in	
			228	Reset diagnostic parameters	

Events

Code dec (hex)	Name	Type	Remark [Unit]
20480 (0x5000)	Device hardware fault	Error	Device Exchange
36000 (0x8CA0)	Short Circuit on Output Pin	Warning	There is a short circuit at least on one output pin.
36001 (0x8CA1)	New Parameters	Notification	Parameters have been changed not via IO-Link interface.
36004 (0x8CA4)	Quality of Run Alarm	Warning	Low device performance, check detecting conditions. E.g. correct alignment or clean lenses.
36032 (0x8CC0)	Edge Loss Immediate	Notification	Edge moves out of field of view sidewards.
36033 (0x8CC1)	Edge Loss Top	Notification	Edge moves out of field of view at maximum value side.
36034 (0x8CC2)	Edge Loss Bottom	Notification	Edge moves out of field of view at minimum value side.

4. Job Assurance

Job assurance allows to set, save and manage parameters for specific formats or recipes via IO-Link. The following overview shows the necessary ISDUs.

1. Job content

Teach-in channel (58), Qint. 1 SP1/SP2 (60), Qint. 1 configuration (61), Qint. 2 SP1/SP2 (62), Qint. 2 configuration (63), Sensitivity (73), Automatic drift correction (75), Teach-in tolerance (76), Teach-in edges (82), Smoothing (83), Edge teach-in configuration (86), Process data select (120), Quality of run alarm threshold (176), Direction of edge search (206), Qint. 3 SP1/SP2 (16384), Qint. 3 configuration (16385), Qint. 4 SP1/SP2 (16386), Qint. 4 configuration (16387)

[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)
[3] Subindex access not supported