



8023601 0319

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

ENGLISH

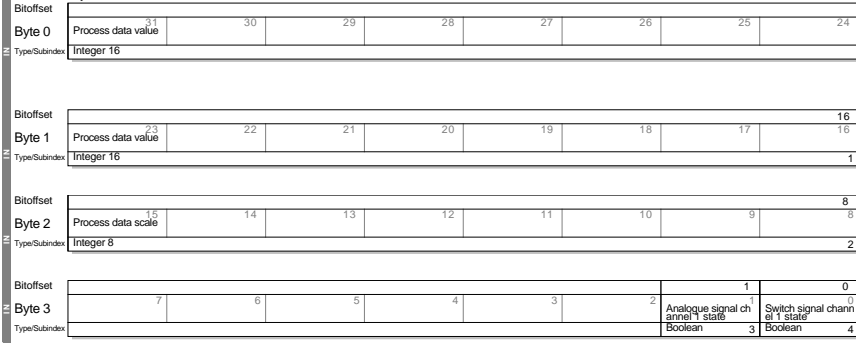
1. Physical layer

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	20.0 ms
Baudrate <sup>2</sup>	COM2
Process Data Length (IN)	4 Byte
IODD version	V187017.594571
Valid for IO-Link version	1.1.0

2. Process data

Record: 4 Byte



3. Service data

The following ISDU will not be saved via Data-Storage: Teach-in channel

Index dec (hex)	Name	Format (Offset)	Length	Access <sup>1</sup>	Default Value	Value / Range	Remark [Unit]
0 (0x00)	Direct Parameters 1	Record	16 Byte	rw			
1 (0x01)	Direct Parameters 2	Record	16 Byte	rw			
12 (0x0C)	Device Access Locks	Record	2 Byte	rw			
1 (0x01)	Parameter (write) Access Lock	Bit (0)	1 Bit	rw			
2 (0x02)	Data Storage Lock	Bit (1)	1 Bit	rw			
3 (0x03)	Local Parameterization Lock	Bit (2)	1 Bit	rw			
16 (0x10)	Vendor Name	String	64 Byte	ro	SICK AG		
17 (0x11)	Vendor Text	String	64 Byte	ro	Sensor Intelligence.		
18 (0x12)	Product Name	String	64 Byte	ro			
19 (0x13)	Product ID	String	64 Byte	ro			
20 (0x14)	Product Text	String	64 Byte	ro	Ultrasonic sensor		
21 (0x15)	Serial Number	String	16 Byte	ro			
23 (0x17)	Firmware Version	String	64 Byte	ro			
24 (0x18)	Application Specific Tag	String	32 Byte	rw			
32 (0x20)	Error Count	UInt	16 Bit	ro			
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	

DEUTSCH

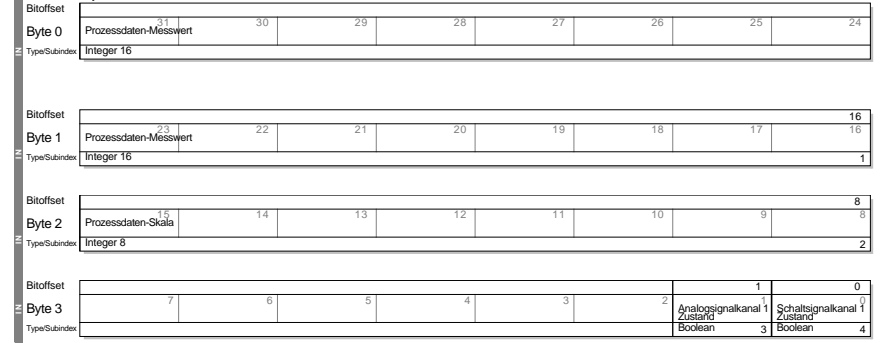
1. Physikalische Schicht

Hinweis: Max. Stromaufnahme des IO-Link Devices (inkl. Lastströme) darf max. Ausgangsstrom des Master-Ports nicht überschreiten.

SIO Modus	ja
Min. Zykluszeit	20.0 ms
Baudrate <sup>2</sup>	COM2
Prozessdatenlänge (IN)	4 Byte
IODD Version	V187017.594571
Gültig für IO-Link Version	1.1.0

2. Prozessdaten

Record: 4 Byte



3. Servicedaten

Die folgende ISDU wird nicht über Data-Storage gesichert: Teach-in Kanal

Index dez (hex)	Name	Format (Offset)	Länge	Zugriff <sup>1</sup>	Standard Wert	Wertebereich	Bemerkung [Einheit]
0 (0x00)	Direkte Parameter 1	Record	16 Byte	rw			
1 (0x01)	Direkte Parameter 2	Record	16 Byte	rw			
12 (0x0C)	Gerätezugriffssperren	Record	2 Byte	rw			
1 (0x01)	Parameter (Schreib-)Zugriffssperre	Bit (0)	1 Bit	rw			
2 (0x02)	Datenspeicherungs-sperre	Bit (1)	1 Bit	rw			
3 (0x03)	Lokale Parameterisierungssperre	Bit (2)	1 Bit	rw			
16 (0x10)	Herstellername	String	64 Byte	ro	SICK AG		
17 (0x11)	Herstellertext	String	64 Byte	ro	Sensor Intelligence.		
18 (0x12)	Produktname	String	64 Byte	ro			
19 (0x13)	Produkt-ID	String	64 Byte	ro			
20 (0x14)	Produkttext	String	64 Byte	ro	Ultrasonic sensor		
21 (0x15)	Seriennummer	String	16 Byte	ro			
23 (0x17)	Firmwareversion	String	64 Byte	ro			
24 (0x18)	Anwendungsspezifische Markierung	String	32 Byte	rw			
32 (0x20)	Fehlerzähler	UInt	16 Bit	ro			
36 (0x24)	Gerätestatus	UInt	8 Bit	ro		0 = Gerät ist OK 1 = Wartung erforderlich 2 = Außerhalb der Spezifikation 3 = Funktionsprüfung 4 = Fehler 5...255 = Reserviert	

<sup>1</sup> ro = read only, wo = write only, rw = read/write / ro = nur lesen, wo = nur schreiben, rw = lesen/schreiben

<sup>2</sup> COM values specify the bitrate (see IO-Link specification) / COM Werte spezifizieren die Baudrate (s. IO-Link Spezifikation): COM1 (4,8 kbit/s), COM2 (38,4 kbit/s), COM3 (230,4 kbit/s)



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

ENGLISH

IO-Link specific							
Index dec (hex)	Name	Format (Offset)	Length	Access <sup>1</sup>	Default Value	Value / Range	Remark [Unit]
37 (0x25)	Detailed Device Status	Array	30 Byte	ro		Octet String [10]	
40 (0x28)	Process Data Input	PD In	4 Byte	ro			

SICK device specific

Index dec (hex)	Name	Format (Offset)	Length	Access <sup>1</sup>	Default Value	Value / Range	Remark [Unit]
58 (0x3A)	Teach-in channel	Ulnt	8 Bit	rw	0	0 = SSC1: pin 4 (push-pull) 1 = SSC1: pin 4 (push-pull) 192 = ASC1: pin 2 (voltage)	Choice of channel for the next teach-in procedure
59 (0x3B)	Teach-in status	Record	1 Byte	ro			
1 (0x01)	Teach-in status	Bit (0)	4 Bit	ro	0	0 = Idle 1 = SP1 success 2 = SP2 success 3 = SP12 success 4 = Wait for command 5 = Busy 7 = Error	
2 (0x02)	SP1 TP1	Bit (4)	1 Bit	ro	0		
3 (0x03)	SP2 TP1	Bit (6)	1 Bit	ro	0		
60 (0x3C)	SSC1 parameter	Record	4 Byte	rw			
1 (0x01)	SP1	Bit (16)	16 Bit	rw	10000	1200...13000	Setpoint 1 for switching output; Values are output as a multiple of the scaling increment 0.1 [mm]
2 (0x02)	SP2	Bit (0)	16 Bit	rw	12000	1200...13000	Setpoint 2 for switching output; Values are output as a multiple of the scaling increment 0.1 [mm]
61 (0x3D)	SSC1 configuration	Record	4 Byte	rw			
1 (0x01)	Logic	Bit (24)	8 Bit	rw	0	0 = High active 1 = Low active	Logic state for target detected
2 (0x02)	Mode	Bit (16)	8 Bit	rw	1	0 = Deactivated 1 = Single point (SP1: DtO) 2 = Window (SP1, SP2: window mode) 3 = Two point (SP1, SP2: hysteresis mode) 128 = Single point + set point offset (SP1: DtO + offset) 129 = Window ± set point offset (SP1: ObSB)	Operating mode of the switching output; distance to object (DtO), window mode, hysteresis mode, distance to object (DtO) + Offset, object between sensor and background mode (ObSB)
3 (0x03)	Hysteresis	Bit (0)	16 Bit	rw	200	10...11800	Hysteresis for SP1 and SP2; Values are output as a multiple of the scaling increment 0.1 [mm]
100 (0x64)	SSC1 advanced configuration	Record	3 Byte	rw			
1 (0x01)	Switch-on delay	Bit (16)	8 Bit	rw	0	0...255	Switch-on delay in seconds; Values are output as a multiple of the scaling increment 0.1 [s]

DEUTSCH

IO-Link spezifisch								
Index dez (hex)	Name	Format (Offset)	Länge	Zugriff <sup>1</sup>	Standard Wert	Wertebereich	Bemerkung [Einheit]	
37 (0x25)	Ausführlicher Geräte-status	Array	30 Byte	ro		Octet String [10]		
40 (0x28)	Prozessdaten Eingang	PD In	4 Byte	ro				

SICK spezifisch

Index dez (hex)	Name	Format (Offset)	Länge	Zugriff <sup>1</sup>	Standard Wert	Wertebereich	Bemerkung [Einheit]
58 (0x3A)	Teach-in Kanal	Ulnt	8 Bit	rw	0	0 = SSC1: Pin 4 (Push-Pull) 1 = SSC1: Pin 4 (Push-Pull) 192 = ASC1: Pin 2 (Spannung)	Auswahl des Kanals für den nächsten Teach-In Vorgang
59 (0x3B)	Teach-in Status	Record	1 Byte	ro			
1 (0x01)	Teach-in Status	Bit (0)	4 Bit	ro	0	0 = Untätig 1 = SP1 erfolgreich 2 = SP2 erfolgreich 3 = SP12 erfolgreich 4 = Warte auf Kommando 5 = In Arbeit 7 = Fehler	
2 (0x02)	SP1 TP1	Bit (4)	1 Bit	ro	0		
3 (0x03)	SP2 TP1	Bit (6)	1 Bit	ro	0		
60 (0x3C)	SSC1 Parameter	Record	4 Byte	rw			
1 (0x01)	SP1	Bit (16)	16 Bit	rw	10000	1200...13000	Setpoint 1 für Schalt-ausgang; Werte werden ausgegeben als Vielfaches der Skalierungs-Schrittweise 0.1 [mm]
2 (0x02)	SP2	Bit (0)	16 Bit	rw	12000	1200...13000	Setpoint 2 für Schalt-ausgang; Werte werden ausgegeben als Vielfaches der Skalierungs-Schrittweise 0.1 [mm]
61 (0x3D)	SSC1 Konfiguration	Record	4 Byte	rw			
1 (0x01)	Logik	Bit (24)	8 Bit	rw	0	0 = High active 1 = Low active	Logischer Zustand bei Objekt detektiert
2 (0x02)	Modus	Bit (16)	8 Bit	rw	1	0 = Deaktiviert 1 = Einzelpunkt (SP1: DtO) 2 = Fenster (SP1, SP2: Fensterbetrieb) 3 = Zweipunkt (SP1, SP2: HysteresebetrieB) 128 = Einzel-punkt + Offset (SP1: DtO + Offset) 129 = Fenster ± Offset (SP1: ObSB)	Betriebsart des Schalt-ausgangs; Distanz zu Objekt (DtO), Fensterbetrieb, Hysteresenbetrieb, Distanz zu Objekt (DtO) + Offset, Objekt zwischen Sensor und Hintergrund Betrieb (ObSB)
3 (0x03)	Hysteresis	Bit (0)	16 Bit	rw	200	10...11800	Hysteresis für SP1 und SP2; Werte werden ausgegeben als Vielfaches der Skalierungs-Schrittweise 0.1 [mm]
100 (0x64)	SSC1 erweiterte Konfiguration	Record	3 Byte	rw			
1 (0x01)	Einschaltverzögerung	Bit (16)	8 Bit	rw	0	0...255	Einschaltverzögerung in Sekunden; Werte werden ausgegeben als Vielfaches der Skalierungs-Schrittweise 0.1 [s]

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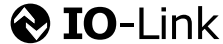
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Table with columns: Index dec (hex), Name, Format (Offset), Length, Access, Default Value, Value / Range, Remark (Unit). Rows include switch-off delay, Set point offset, ASC1 parameter, SP1, SP2, ASC1 configuration, Output characteristic, Measurement configuration, Foreground suppression, Filter, Strength, Maximum object speed.

DEUTSCH

Table with columns: Index dez (hex), Name, Format (Offset), Länge, Zugriff, Standard Wert, Wertebereich, Bemerkung (Einheit). Rows include Ausschaltverzögerung, Schaltpunktoffset, ASC1 Parameter, SP1, SP2, ASC1 Konfiguration, Ausgangscharakteristik, Messkonfiguration, Vordergrundaussblendung, Filter, Stärke, Maximale Objektgeschwindigkeit.

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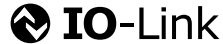
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Please note the validity of the additional operating instructions for automation functions

ENGLISH							
SICK device specific							
Index dec (hex)	Name	Format (Offset)	Length	Access <sup>1</sup>	Default Value	Value / Range	Remark [Unit]
300 (0x12C)	Temperature compensation	Record	2 Byte	rw			The sensor is equipped with an internal temperature unit in order to determine the ambient temperature. Thus the temperature dependency of the sound velocity in air is compensated.
1 (0x01)	Source of temperature	Bit (8)	8 Bit	rw	1	0 = Reference temperature 1 = Internal Temperature	Evaluate the data of the internal temperature unit or use the reference temperature.
2 (0x02)	Reference temperature	Bit (0)	8 Bit	rw	+20	-25...70	Is the internal temperature unit deactivated, the temperature compensation is using the reference temperature. [°C]
350 (0x15E)	Synchronisation and multiplex operation	Record	3 Byte	rw			
1 (0x01)	Mode	Bit (16)	8 Bit	rw	1	0 = Inactive 1 = Active	
2 (0x02)	Sensor operation	Bit (8)	8 Bit	rw	0	0 = Synchronisation active 1 = Multiplex address 1 2 = Multiplex address 2 3 = Multiplex address 3 4 = Multiplex address 4 5 = Multiplex address 5 6 = Multiplex address 6 7 = Multiplex address 7 8 = Multiplex address 8 9 = Multiplex address 9 10 = Multiplex address 10 128 = IO-Link synchronisation active	
3 (0x03)	Multiplex number of participants	Bit (0)	8 Bit	rw	10	2 = 2 participants 3 = 3 participants 4 = 4 participants 5 = 5 participants 6 = 6 participants 7 = 7 participants 8 = 8 participants 9 = 9 participants 10 = 10 participants	Maximum number of multiplex participants should be adjusted to correct number of participants in order to speed up multiplex operation.
370 (0x172)	Pin 5	Record	1 Byte	rw			
1 (0x01)	Mode	Bit (0)	8 Bit	rw	1	0 = Inactive 1 = Active	
371 (0x173)	LED	Record	1 Byte	rw			
1 (0x01)	Mode	Bit (0)	8 Bit	rw	1	0 = Inactive 1 = Active	
2000 (0x7D0)	Temperature compensation diagnosis	Record	3 Byte	ro			
1 (0x01)	Sensor temperature	Bit (8)	16 Bit	ro			[°C]
2 (0x02)	Heating-up phase	Bit (0)	8 Bit	ro		0 = Not completed 1 = Completed	
16512 (0x4080)	Measurement data channel description	Record	11 Byte	ro			

DEUTSCH								
SICK spezifisch								
Index dez (hex)	Name	Format (Offset)	Länge	Zugriff <sup>1</sup>	Standard Wert	Wertebereich	Bemerkung [Einheit]	
300 (0x12C)	Temperaturkompensation	Record	2 Byte	rw			Der Sensor ist mit einem internen Temperaturfühler ausgestattet, um die Umgebungstemperatur zu erfassen. Damit wird die Temperaturabhängigkeit der Schallgeschwindigkeit in Luft kompensiert.	
1 (0x01)	Quelle der Temperatur	Bit (8)	8 Bit	rw	1	0 = Referenztemperatur 1 = Interne Temperaturmessung	Internen Temperaturfühler auswerten oder feste Referenztemperatur verwenden	
2 (0x02)	Referenztemperatur	Bit (0)	8 Bit	rw	+20	-25...70	Ist der Temperaturfühler deaktiviert, greift die Temperaturkompensation auf die feste Referenztemperatur zurück. [°C]	
350 (0x15E)	Synchronisation und Multiplexbetrieb	Record	3 Byte	rw				
1 (0x01)	Modus	Bit (16)	8 Bit	rw	1	0 = Inaktiv 1 = Aktiv		
2 (0x02)	Sensorbetriebsart	Bit (8)	8 Bit	rw	0	0 = Synchronisation aktiv 1 = Multiplexadresse 1 2 = Multiplexadresse 2 3 = Multiplexadresse 3 4 = Multiplexadresse 4 5 = Multiplexadresse 5 6 = Multiplexadresse 6 7 = Multiplexadresse 7 8 = Multiplexadresse 8 9 = Multiplexadresse 9 10 = Multiplexadresse 10 128 = IO-Link Synchronisation aktiv		
3 (0x03)	Multiplex-Teilnehmeranzahl	Bit (0)	8 Bit	rw	10	2 = 2 Teilnehmer 3 = 3 Teilnehmer 4 = 4 Teilnehmer 5 = 5 Teilnehmer 6 = 6 Teilnehmer 7 = 7 Teilnehmer 8 = 8 Teilnehmer 9 = 9 Teilnehmer 10 = 10 Teilnehmer	Die maximale Anzahl von Multiplex-Teilnehmern sollte auf die richtige Anzahl der Teilnehmer eingestellt werden, um den Multiplexbetrieb zu beschleunigen.	
370 (0x172)	Pin 5	Record	1 Byte	rw				
1 (0x01)	Modus	Bit (0)	8 Bit	rw	1	0 = Inaktiv 1 = Aktiv		
371 (0x173)	LED	Record	1 Byte	rw				
1 (0x01)	Modus	Bit (0)	8 Bit	rw	1	0 = Inaktiv 1 = Aktiv		
2000 (0x7D0)	Diagnose der Temperaturkompensation	Record	3 Byte	ro				
1 (0x01)	Sensortemperatur	Bit (8)	16 Bit	ro			[°C]	
2 (0x02)	Aufheizphase	Bit (0)	8 Bit	ro		0 = Nicht abgeschlossen 1 = Abgeschlossen		
16512 (0x4080)	Messdatenkanalbeschreibung	Record	11 Byte	ro				

<sup>1</sup> ro = read only, wo = write only, rw = read/write / ro = nur lesen, wo = nur schreiben, rw = lesen/schreiben

<sup>2</sup> COM values specify the bitrate (see IO-Link specification) / COM Werte spezifizieren die Baudrate (s. IO-Link Spezifikation): COM1 (4,8 kbit/s), COM2 (38,4 kbit/s), COM3 (230,4 kbit/s)



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ENGLISH

SICK device specific							
Index dec (hex)	Name	Format (Offset)	Length	Access <sup>1</sup>	Default Value	Value / Range	Remark [Unit]
1 (0x01)	Lower limit	Bit (56)	32 Bit	ro			Lower limit of the measuring range (blind zone) [mm]
2 (0x02)	Upper limit	Bit (24)	32 Bit	ro			Upper limit of the measuring range (maximum range) [mm]
3 (0x03)	Unit code	Bit (8)	16 Bit	ro			IO-Link unit code: 1013 = [mm]
4 (0x04)	Scale	Bit (0)	8 Bit	ro			Process data value * (10 ^ scale) [Unit code] = measuring value in mm

Standard command							
Index dec (hex)	Name	Access <sup>1</sup>	Value	Name	Remark [Unit]		
2 (0x02)	Standard Command	wo	65	SP1 single value teach-in			
			66	SP2 single value teach-in			
			130	Restore Factory Settings			

Events			
Code dec (hex)	Name	Type	Remark [Unit]
16384 (0x4000)	Temperature fault	Error	Overload
16912 (0x4210)	Device temperature over-run	Warning	Clear source of heat
16928 (0x4220)	Device temperature under-run	Warning	Insulate device
20736 (0x5100)	General power supply fault	Error	Check availability
30480 (0x7710)	Short circuit	Error	Check installation
36000 (0x8CA0)	Teach-in error	Notification	Teach-in process was not successful.
36001 (0x8CA1)	Teach-in success	Notification	Teach-in process was successful.
36002 (0x8CA2)	CycleTime error	Notification	CycleTime error is triggered if cycle time does not respond to the permitted configuration.

DEUTSCH

SICK spezifisch								
Index dez (hex)	Name	Format (Offset)	Länge	Zugriff <sup>1</sup>	Standard Wert	Wertebereich	Bemerkung [Einheit]	
1 (0x01)	Untere Grenze	Bit (56)	32 Bit	ro			Untere Grenze des Messbereiches (Blindzone) [mm]	
2 (0x02)	Obere Grenze	Bit (24)	32 Bit	ro			Obere Grenze des Messbereiches (Grenzstweite) [mm]	
3 (0x03)	Einheitencode	Bit (8)	16 Bit	ro			IO-Link Einheitencode: 1013 = [mm]	
4 (0x04)	Skala	Bit (0)	8 Bit	ro			Prozessdatenwert * (10 ^ Skala) [Einheitencode] = Messwert in mm	

Standardkommando								
Index dez (hex)	Name	Zugriff <sup>1</sup>	Wert	Name	Remark [Einheit]			
2 (0x02)	Standardkommando	wo	65	SP1 Einzelpunkt Teach-in				
			66	SP2 Einzelpunkt Teach-in				
			130	Auslieferungszustand wiederherstellen				

Events			
Code dez (hex)	Name	Typ	Bemerkung [Einheit]
16384 (0x4000)	Temperaturfehler	Error	Überlast
16912 (0x4210)	Zulässige Gerätetemperatur überschritten	Warning	Lokalisieren Sie die Wärmequelle
16928 (0x4220)	Zulässige Gerätetemperatur unterschritten	Warning	Isolieren Sie das Gerät
20736 (0x5100)	Allgemeiner Fehler der Versorgungsspannung	Error	Überprüfen Sie die Verfügbarkeit
30480 (0x7710)	Kurzschluss	Error	Überprüfen Sie die Installation
36000 (0x8CA0)	Teach-in Fehler	Notification	Ein Teach-in-Vorgang war nicht erfolgreich.
36001 (0x8CA1)	Teach-in erfolgreich	Notification	Ein Teach-in-Vorgang war erfolgreich.
36002 (0x8CA2)	CycleTime Fehler	Notification	Ein CycleTimeError wird ausgelöst, wenn die CycleTime nicht der erlaubten Konfiguration entspricht.

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