



INDEX LIST

Long distance laser BGS sensor

TOF-DL250G SERIES

IO-Link setting file (IODE file) can be downloaded from our web site.
<https://www.optex-fa.com>



OPTEX FA CO., LTD.

Communication specifications

Min. cycle time	1.0 ms	
Baud rate	COM 3 (230.4kbps)	
M-Sequence code in Pre-operate mode	0	
M-Sequence code in Operate mode	0	
ISDU support	Yes	
IO-Link revision	1.1	
Inputting process data length	4 byte	
Outputting process data length	0 byte	
Vender ID	dec: 1076	hex: 0x0434
Device ID	dec: 65539	hex: 0x010003

Process Data Format

Upper byte																Lower byte															
bit 15	bit 14	bit 13	bit 12	bit 11	bit 10	bit 9	bit 8	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0	Distance data between sensor and object															
Upper byte																Lower byte															
bit 15	bit 14	bit 13	bit 12	bit 11	bit 10	bit 9	bit 8	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0	Output status															
Spare value																Qint8	Qint7	Qint6	Qint5	Qint4	Qint3	Qint2	Qint1	QL2	QL1						

Service Data

Name	Index No. DEC (HEX)	Sub index No.	Read/Write *1	Back-up	Format	Length in bytes	Default	Setting details	Remark [Unit]	
Vendor Text	17 (0x11)	0	R		STRING	64	www.optex-fa.com			
PRduct ID	19 (0x13)	0	R		STRING	18	20262			
PRduct Text	20 (0x14)	0	R		STRING	45	Photoelectric Proximity Sensor			
Serial Number	21 (0x15)	0	R		STRING	14	LOT(4 digits) + 262 + Serial (4digits) + F			
Hardware Version	22 (0x16)	0	R		STRING	4	MP01			
Firmware Version	23 (0x17)	0	R		STRING	19	*.*.*.R			
Application Specific Tag	24 (0x18)	0	R/W	✓	STRING	32	*****			
Device Status	36 (0x24)	0	R		UINT	8	0x00: Device is OK 0x01: Maintenance required 0x02: Out of specification 0x03: Functional check 0x04: Failure 0x05...0x255: Reserved			
Teach-in Channel	58 (0x3A)	0	R/W		UINT	1	0	0x00: Qint.1 0x01: Qint.1 0x02: Qint.2 0x03: Qint.3 0x04: Qint.4 0x05: Qint.5 0x06: Qint.6 0x07: Qint.7 0x08: Qint.8		
Teach-in State	59 (0x3B)	0	R		UINT	1	Bit 6: Teach flag SP2 0: Teach point 2 not taught 1: Teach point 2 successfully taught Bit 4: Teach flag SP1 0: Teach point 1 not taught 1: Teach point 1 successfully taught Bit 0 to 3: Teach status 0: IDLE 1: 1-PT SUCCESS 2: 2-PT SUCCESS 5: BUSY 7: ERROR			
Qint.1 SP1 / SP2	60 (0x3C)	1	R/W	✓	UINT	2	3000	0...4000	[mm]	
Qint.1 SP2 sensing range		2	R/W	✓	UINT	2	0	0...4000	[mm]	

Name	Index No. DEC (HEX)	Sub index No.	Read/Write *1	Back-up	Format	Length in bytes	Default	Setting details	Remark [Unit]
Qint.1 configuration	Switchpoint logic	61 (0x3D)	1	R/W	✓	UINT	1	0	0x00: Not inverted (light ON operation) 0x01: Inverted (dark ON operation)
	Switchpoint mode	2	R/W	✓	UINT	1	1	0x00: Deactivated 0x01: Single point mode 0x02: Window mode 0x03: Two point mode	
	Switchpoint hysteresis	3	R/W	✓	UINT	2	0		
Qint.2 SP1 / SP2	62 (0x3E)	*2	R/W	✓	UINT	4	*2	*2	
Qint.2 configuration	63 (0x3F)	*3	R/W	✓	UINT	4	*3	*3	
Device specific name	64 (0x40)	0	R/W		STRING	32	*****		
Measurement averaging	89 (0x59)	0	R/W	✓	UINT	1	6	0x00: 1 value 0x01: 2 values 0x02: 4 values 0x03: 8 values 0x04: 16 values 0x05: 32 values 0x06: 64 values 0x07: 128 values 0x08: 256 values 0x09: 512 values	
Teach-in offset	90 (0x5A)	0	R/W	✓	INT	2	0	-100...100	
Sender off	97 (0x61)	0	R/W		UINT	1	0	0x00: Sender active 0x01: Sender not active	
Pin 2 configuration	121 (0x79)		R/W		UINT	1	34	0x00: Deactivated / no function 0x01: External input 0x16: Sender off 0x17: Teach-in 0x33: Quality of run alarm output 0x34: Switching signal QL2 0x35: Detection output Qint.1 0x36: Detection output Qint.2 0x39: Switching signal QL1 0x40: Switching signal QL1	
Temperature	153 (0x99)								
Current temperature	1	R			INT	1	[°C]		
Max. temperature all time	2	R			INT	1	20		
Min. temperature all time	3	R			INT	1	20		
Max. temperature since last reset	4	R			INT	1	20		
Min. temperature since last reset	5	R			INT	1	20		
Remaining sender lifetime	155 (0x9B)	0	R		UINT	2	0...5000, 65535	Shows the predicted number of days until the sender unit (e.g. laser, LED) reaches its end of lifetime (= data sheet performance values can no longer be guaranteed). Value 65535 = Calculation not possible e.g. due to missing history. [Day]	
Quality of run	175 (0xAF)	0	R		UINT	1	0		[%]
Quality of run alarm threshold	176 (0xB0)	0	R/W	✓	UINT	1	50	0...90	[%]
Maintenance prediction	178 (0xB2)	0	R		UINT	2	0...5000, 65535	Shows the predicted number of days until a maintenance service is required. Value 65535 = Calculation not possible e.g. due to missing history. [day]	
Alarm thresholds for diagnostic parameters	179 (0xB3)	1	R/W	✓	INT	1	80	-127...127	Related to index 153 dez, sub-index 1 [°C]
Remaining sender lifetime threshold	2	R/W	✓		UINT	2	30	0...5000	Related to index 155dez [day]
Maintenance prediction threshold	3	R/W	✓		UINT	2	30	0...5000	Related to index 178 dez [day]
Operating hours threshold	4	R/W	✓		UINT	4	40000	0...1000000	Related to index 190 dez, sub-index 2 [hour]
Operating hours	190 (0xBE)	1	R		UINT	4	0...1000000	Continuous counting of number of hours in which the sensor was powered-up. [hour]	
Operating hours since last service	2	R			UINT	4	0...1000000	Operating hours since last reset to 0 via System Command 0xD2	
Find me	204 (0xCC)	0	R/W		UINT	1	0	0x00: Find me deactivated 0x01: Find me activated	
System state	226 (0xE2)	0	R		UINT	2		Bit 6: Quality of run alarm 0: Alarm active 1: Alarm not active Bit 7: Input signal state Pin 2 0: External input HIGH 1: External input LOW	
Notification handling	227 (0xE3)	0	R/W	✓	UINT	1	0	0x00: All enabled 0x01: All disabled 0x02: Events enabled, PD invalid flag disabled 0x03: Events disabled, PD invalid flag enabled	Does not affect the event "DS_UP_LOAD_REQ"
Distance to object	229 (0xE5)	1	R		UINT	2	0...30000		[mm]
Eco mode	235 (0xEB)	0	R/W	✓	UINT	1	0	0x00: Off 0x01: On	By enabling Eco-mode, the display will go dark 30 seconds after the last key operation.

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