Micron

IO-Link



Original Instructions

ENGLISH

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INTRODUCTION

The Micron photoelectric light curtain is a multi-beam optoelectronic system consisting of an emitter and a receiver, used to detect or measure objects.
The two units can be synchronised via optical link or cable.
The status of the light curtain outputs (which reside in the receiver) changes as soon as a measurement is performed (or an object is detected).
Micron light curtains **MUST NOT** be used as safety devices for protection of operators in hazardous areas.

Beam positioning

The following figure shows the arrangement of the beams and their numbering:

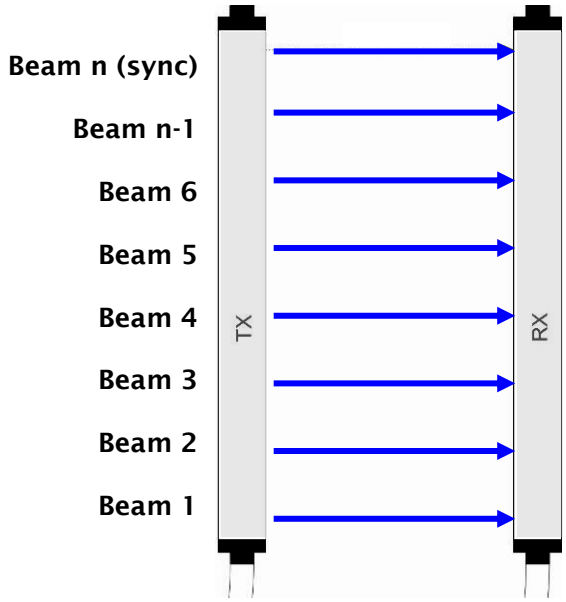


Figure 1

➔ Note that beams must always be numbered starting from the bottom, as shown in figure 1. If synchronised via cable, the last beam can also be used for measurements.
➔ With optical synchronisation, the uppermost beam must never be obstructed as this would interrupt the measurement function.

Working range

➔ Particular operating conditions may affect the sensing level of photo-electric devices. In environments characterised by fog, rain, fumes or dust, to always guarantee correct operation of the appliance, it is advisable to apply suitable correction factors Cf so as to maximum working range values. In these cases:

$$Pu = Pm \times Fc$$

where Pu and Pm are, respectively, the working and maximum range expressed in metres.

The recommended correction factors CF are indicated in the table below.

OPERATING CONDITIONS	CORRECTION FACTOR Cf
Fog	0.25
Vapours	0.50
Dust	0.50
Dense fumes	0.25

➔ If the device is installed in environments characterised by sudden changes in temperature, suitable precautions must be taken to prevent the formation of condensation on the mirrors, which could impair detection capability.

ELECTRICAL CONNECTIONS

➔ Perform the connections as shown in below tables, in order to ensure the correct functioning of the barrier.
➔ We recommend the use of separate power supplies for the barrier and for other electrical power equipment (electric motors, inverters, frequency converters) or other sources of disturbance.

Emitter connections and LEDs

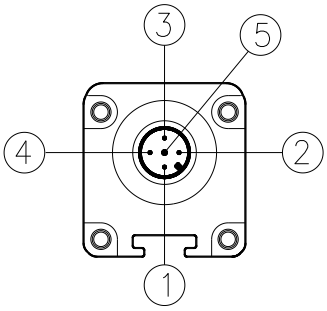


Figure 2

PIN	NAME	TYPE	DESCRIPTION
1	24VDC	-	24 VDC power supply
2	RANGE	DI	24 VDC input → HIGH range 0 DC input → LOW range
3	0VDC	-	0 VDC power supply
4	SYNC	DI	RX-TX SYNC INPUT (OPTIONAL)
5	PE	-	Ground connection

M12 5-pole

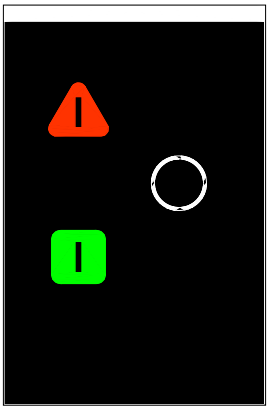


Figure 3

RED	System start
RED BLINKING	FAIL condition
GREEN	Normal operation. At power on: • 2 slow blinks -> Low range • 2 fast blinks -> High range
ORANGE BLINKING	No synchronisation via cable

Receiver connections and LEDs

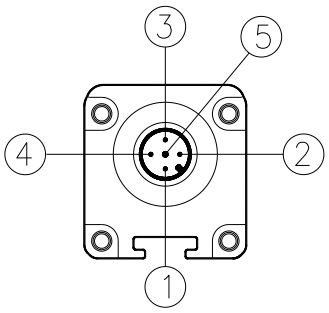


Figure 4

PIN	NAME	TYPE	DESCRIPTION
1	L+	-	24 VDC power supply
2	SYNC	DO	RX-TX SYNC OUTPUT (OPTIONAL)
3	L-	-	0 VDC power supply
4	C/Q	COM/DO	SIO standard input/output or IO-Link communication
5	NC	-	Not connected

M12 5-pole

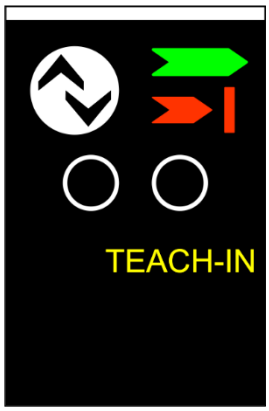


Figure 5

IO-LINK LED	
RED BLINKING	No connection to the IO-Link master
GREEN BLINKING	Connection to the IO-Link master
STATUS LED	
RED FIXED	Curtain occupied
RED BLINKING	No synchronisation
GREEN FIXED	Curtain free
YELLOW BLINKING	Fault

IO-Link master – Micron connection via custom Y cable

A custom Y cable (ReeR CSYIOLH 1250902/ CSYIOLL 1250903) can be used to simplify connection between the emitter and the receiver to the IO-Link master. Two different cables are available to manage the range of the emitter.
Alternatively the receiver can be connected to the IO-Link master with a standard IO-Link cable and the emitter can be wired with a standard M12 5 pole cable. In this case the range can be choosen with the appropriate wire and the Receiver/Emitter synchronization via cable is not possible.

Warnings about connection cables

- Cables must not be more than 20m long.
- Keep the power supply to the light curtain separate from that to other electric power equipment (electric motors, inverters, frequency converters) or other sources of disturbance.
- Connection cables must follow different paths from other power cables.

TECHNICAL FEATURES

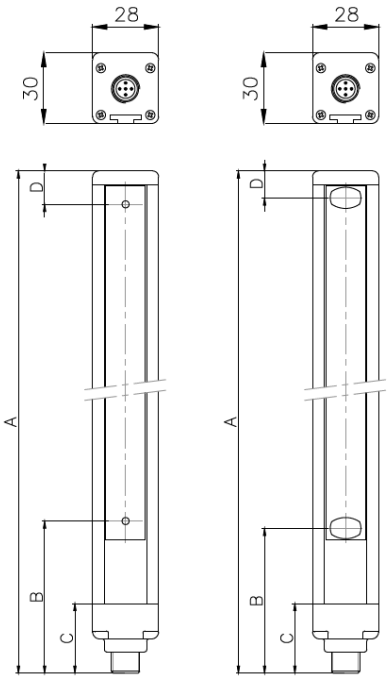
Micron 10mm / 25mm / 30mm MEASURE CURTAIN TECHNICAL FEATURES				Unit
Operating range		Standard model	HS model	m
	Low range	0 ÷ 2	0 ÷ 0,15	
	High range	1 ÷ 10	0 ÷ 1	
Operating range Reduced range models		10mm / 30mm	25mm	m
	Low range	0 ÷ 1	0 ÷ 2,5	
	High range	0,8 ÷ 5	0 ÷ 5	
Power supply	24 ± 20%			VDC
Connections	Emitter: M12 - 5-pole / Receiver: M12 - 5-pole			
Synchronisation	Optical or via cable, selectable			
Max power	1 (Emitter)/ 3 (Receiver)			W
Max. connection length	20			m
Operating temperature	-10 ÷ 55°C			°C
Protection class	IP 65 - IP 67			
IO-Link	IO-Link Interface and System specification - Version 1.1.2 July 2013 Port Class A (Type A) COM2 = 38.4 kbaud Minimum cycle time: see tables below SIO mode supported: Yes Block parameterization: Yes Data storage: Yes Support of IO-Link 1.0: No			

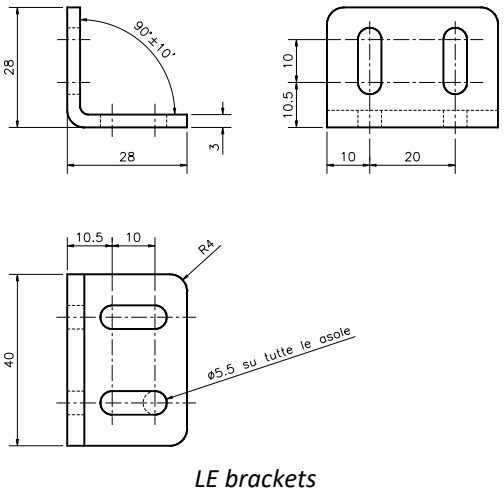
Beam spacing 10 mm										
Model	**151**	**301**	**451**	**601**	**751**	**901**	**1051**	**1201**	**1351**	**1501**
Measurement height (mm)	140	290	440	590	740	890	1040	1190	1340	1490
Number of beams	15	30	45	60	75	90	105	120	135	150
Minimum cycle time Measurements mode (ms)	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4
Minimum cycle time Beams state mode (ms)	7,2	8	8,8	9,6	10,4	11,2	11,6	12	12,8	13,6
PFHd	2,93E-07	4,77E-07	6,61E-07	8,44E-07	1,03E-06	1,21E-06	1,39E-06	1,58E-06	1,76E-06	1,95E-06
MTTF (years)	389,0	239,3	172,8	135,2	111,1	94,2	81,8	72,3	64,8	58,7
Model	**1651**	**1801**	**1951**	**2101**	**2251**	**2401**	**2551**	**2701**	**2851**	**3001**
Measurement height (mm)	1640	1790	1940	2090	2240	2390	2540	2690	2840	2990
Number of beams	165	180	195	210	225	240	255	270	285	300
Minimum cycle time Measurements mode (ms)	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4
Minimum cycle time Beams state mode (ms)	14,4	15,2	15,6	16,4	17,2	17,6	N/A	N/A	N/A	N/A
PFHd	2,13E-06	2,31E-06	2,50E-06	2,68E-06	2,86E-06	3,05E-06	3,23E-06	3,41E-06	3,60E-06	3,78E-06
MTTF (years)	53,6	49,4	45,7	42,6	39,9	37,5	35,3	33,4	31,7	30,2

Beam spacing 25 mm										
Model	**152**	**302**	**452**	**602**	**752**	**902**	**1052**	**1202**	**1352**	**1502**
Measurement height (mm)	125	275	425	575	725	875	1025	1175	1325	1475
Number of beams	6	12	18	24	30	36	42	48	54	60
Minimum cycle time Measurements mode (ms)	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4
Minimum cycle time Beams state mode (ms)	7	7,5	7,5	8	8,5	8,5	9	9	9,2	9,5
PFHd	2,93E-07	4,77E-07	6,61E-07	8,44E-07	1,03E-06	1,21E-06	1,39E-06	1,58E-06	1,76E-06	1,95E-06
MTTF (years)	389,0	239,3	172,8	135,2	111,1	94,2	81,8	72,3	64,8	58,7
Model	**1652**	**1802**	**1952**	**2102**	**2252**	**2402**	**2552**	**2702**	**2852**	**3002**
Measurement height (mm)	1625	1775	1925	2075	2225	2375	2525	2675	2825	2975
Number of beams	66	72	78	84	90	96	102	108	114	120
Minimum cycle time Measurements mode (ms)	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4
Minimum cycle time Beams state mode (ms)	9,5	10	10,5	10,5	11	11	11,2	11,5	11,5	12
PFHd	2,13E-06	2,31E-06	2,50E-06	2,68E-06	2,86E-06	3,05E-06	3,23E-06	3,41E-06	3,60E-06	3,78E-06
MTTF (years)	53,6	49,4	45,7	42,6	39,9	37,5	35,3	33,4	31,7	30,2

Beam spacing 30 mm										
Model	**153**	**303**	**453**	**603**	**753**	**903**	**1053**	**1203**	**1353**	**1503**
Measurement height (mm)	120	270	420	570	720	870	1020	1170	1320	1470
Number of beams	5	10	15	20	25	30	35	40	45	50
Minimum cycle time Measurements mode (ms)	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4
Minimum cycle time Beams state mode (ms)	6,8	7,2	7,2	7,6	8	8	8,4	8,4	8,8	9,2
PFHd	1,08E-08	1,21E-08	1,57E-08	1,70E-08	2,06E-08	2,19E-08	2,55E-08	2,68E-08	3,04E-08	3,16E-08
MTTF (years)	324,8	302,2	284,8	267,6	253,9	240,2	229,0	217,8	208,6	199,3
Model	**1653**	**1803**	**1953**	**2103**	**2253**	**2403**	**2553**	**2703**	**2853**	**3003**
Measurement height (mm)	1620	1770	1920	2070	2220	2370	2520	2670	2820	2970
Number of beams	55	60	65	70	75	80	85	90	95	100
Minimum cycle time Measurements mode (ms)	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4	10,4
Minimum cycle time Beams state mode (ms)	9,2	9,6	10	10	10,4	10,4	10,8	11,2	11,2	11,6
PFHd	3,52E-08	3,65E-08	4,01E-08	4,14E-08	4,50E-08	4,63E-08	4,99E-08	5,12E-08	5,47E-08	5,60E-08
MTTF (years)	191,5	183,6	177,0	170,3	177,0	158,7	153,8	148,6	144,3	139,7

Mechanical dimensions[1]





LE brackets

Model	150	300	450	600	750	900	1050
Dimension A	213	363	513	663	813	963	1113
Dimension B (step 10mm, 30mm)	61,5	61,5	61,5	61,5	61,5	61,5	61,5
Dimension C	29	29	29	29	29	29	29
Dimension D (step 10mm)	11	11	11	11	11	11	11
Dimension D (step 25mm, 30mm)	31	31	31	31	31	31	31
Mounting	2 LE TYPE brackets with 2 inserts						

Model	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000
Dimension A	1263	1413	1563	1713	1863	2013	2163	2313	2463	2613	2763	2913	3063
Dimension B	61,5	61,5	61,5	61,5	61,5	61,5	61,5	61,5	61,5	61,5	61,5	61,5	61,5
Dimension C	29	29	29	29	29	29	29	29	29	29	29	29	29
Dimension D (step 10mm)	11	11	11	11	11	11	11	11	11	11	11	11	11
Dimension D (step 25mm, 30mm)	31	31	31	31	31	31	31	31	31	31	31	31	31
Mounting	3 LE TYPE brackets with 2 inserts												

[1] *all measurements are in mm*

CONFIGURATION

IO-Link identification

Vendor id

1269

Device id

Each Micron IOL model will have two different Device Id depending on the value of parameter Process data type (2069): Beams state or Measurements.

Beam spacing 10 mm										
Model	**151**	**301**	**451**	**601**	**751**	**901**	**1051**	**1201**	**1351**	**1501**
Device Id Measurements mode	1	3	5	7	9	11	13	15	17	19
Device Id Beams state mode	2	4	6	8	10	12	14	16	18	20
Model	**1651**	**1801**	**1951**	**2101**	**2251**	**2401**	**2551**	**2701**	**2851**	**3001**
Device Id Measurements mode	21	23	25	27	29	31	33	35	37	39
Device Id Beams state mode	22	24	26	28	30	32	34	36	38	40

Beam spacing 30 mm										
Model	**153**	**303**	**453**	**603**	**753**	**903**	**1053**	**1203**	**1353**	**1503**
Device Id Measurements mode	41	43	45	47	49	51	53	55	57	59
Device Id Beams state mode	42	44	46	48	50	52	54	56	58	60
Model	**1653**	**1803**	**1953**	**2103**	**2253**	**2403**	**2553**	**2703**	**2853**	**3003**
Device Id Measurements mode	61	63	65	67	69	71	73	75	77	79
Device Id Beams state mode	62	64	66	68	70	72	74	76	78	80

Beam spacing 25 mm										
Model	**152**	**302**	**452**	**602**	**752**	**902**	**1052**	**1202**	**1352**	**1502**
Device Id Measurements mode	81	83	85	87	89	91	93	95	97	99
Device Id Beams state mode	82	84	86	88	90	92	94	96	98	100
Model	**1652**	**1802**	**1952**	**2102**	**2252**	**2402**	**2552**	**2702**	**2852**	**3002**
Device Id Measurements mode	101	103	105	107	109	111	113	115	117	119
Device Id Beams state mode	102	104	106	108	110	112	114	116	118	120

IO-Link Parameters

Parameter overview

Parameter	Index	Subindex	Type	Factory setting
Device Access Locks	12		RecordT (16 Bit)	false (Unlocked)
Vendor name	16		StringT (10 Byte)	ReeR S.p.A.
Vendor text	17		StringT (19 Byte)	www.reersafety.com
Product Name	18		StringT (8 Byte)	MixxxxM / MixxxxB
Product ID	19		StringT (8 Byte)	MixxxxM / MixxxxB
Product Text	20		StringT (23 Byte)	Measuring Light Curtain
Serial Number	21		StringT (12 Byte)	
Hardware Revision	22		StringT (2 Byte)	
Firmware Revision	23		StringT (5 Byte)	
Application-specific Tag	24		StringT (32 Byte)	***
Function Tag	25		StringT (32 Byte)	***
Location Tag	26		StringT (32 Byte)	***
Device Status	36		UIntegerT (8 Bit)	0 (Device is OK)
Detailed Device Status	37		OctetStringT (3 Byte) [6]	0x00,0x00,0x00
Process data input	40		RecordT (96 Bit)	
Process data output	41		RecordT (96 Bit)	
TI Select	58		UIntegerT (8 Bit)	1 (SSC1)
TI Result	59		RecordT (8 Bit)	
SSC1 Param	60		RecordT (32 Bit)	
SP1	60	1	IntegerT (16 Bit)	1
SP2	60	2	IntegerT (16 Bit)	0 (N.A.)
SSC1 Config	61		RecordT (32 Bit)	
Logic	61	1	UIntegerT (8 Bit)	0 (High active)
Mode	61	2	UIntegerT (8 Bit)	144 (Custom - Single point Tolerance)
Hysteresis	61	3	UIntegerT (16 Bit)	0 (N.A.)
SSC2 Param	62		RecordT (32 Bit)	
SP1	62	1	IntegerT (16 Bit)	1
SP2	62	2	IntegerT (16 Bit)	0 (N.A.)
SSC2 Config	63		RecordT (32 Bit)	
Logic	63	1	UIntegerT (8 Bit)	0 (High active)
Mode	63	2	UIntegerT (8 Bit)	144 (Custom - Single point Tolerance)
Hysteresis	63	3	UIntegerT (16 Bit)	0 (N.A.)
SSC1 Tol	364		IntegerT (16 Bit)	0
SSC2 Tol	365		IntegerT (16 Bit)	0
SSC1 Switch-On delay	370		UIntegerT (16 Bit)	0
SSC1 Switch-Off delay	371		UIntegerT (16 Bit)	0
SSC2 Switch-On delay	372		UIntegerT (16 Bit)	0
SSC2 Switch-Off delay	373		UIntegerT (16 Bit)	0
P-n	500		UIntegerT (8 Bit)	0 (PnP)
Power cycles	541		IntegerT (32 Bit)	0
Operating hours	542		IntegerT (32 Bit)	0
Internal temperature	543		IntegerT (16 Bit)	32764 (NoData)
Active Events	545		RecordT (32 Bit)	
Param configuration fault	546		UIntegerT (32 Bit) [10]	0 (OK)

Parameter	Index	Subindex	Type	Factory setting
Number of beams	2065		IntegerT (16 Bit)	
Synchronisation type	2066		UIntegerT (8 Bit)	0 (optical / optical)
Orientation of beams	2067		UIntegerT (8 Bit)	0 (Normal / Normal)
Data transmission mode	2068		UIntegerT (8 Bit)	0 (Always_enabled / Always enabled)
Process data type	2069		UIntegerT (8 Bit)	2 (Measurements / Measurements)
SSC Switching condition	2070		RecordT (16 Bit)	
SSC1	2070	1	UIntegerT (8 Bit)	5 (GTBO / (GTBO) greater than beam occupied)
SSC2	2070	2	UIntegerT (8 Bit)	5 (GTBO / (GTBO) greater than beam occupied)

Identification

Vendor name	Index 16	Subindex 0	StringT (10 byte)	ReadOnly
The vendor name that is assigned to a Vendor ID				
Factory setting	ReeR S.p.A.			

Vendor text	Index 17	Subindex 0	StringT (19 byte)	ReadOnly
Additional information about the vendor				
Factory setting	www.reersafety.com			

Product Name	Index 18	Subindex 0	StringT (8 byte)	ReadOnly
Complete product name				
The four xxxx characters are based on the lenght and the pitch Based on the process data type the ending character is B(eams) or M(easurements)				
Factory setting	MixxxxM / MixxxxB			

Product ID	Index 19	Subindex 0	StringT (8 byte)	ReadOnly
Vendor-specific product or type identification				
The four xxxx characters are based on the lenght and the pitch Based on the process data type the ending character is B(eams) or M(easurements)				
Factory setting	MixxxxM / MixxxxB			

Product Text	Index 20	Subindex 0	StringT (23 byte)	ReadOnly
Additional product information for the device				
Factory setting	Measuring Light Curtain			

Serial Number	Index 21	Subindex 0	StringT (12 byte)	ReadOnly
Unique, vendor-specific identifier of the individual device				

Hardware Revision	Index 22	Subindex 0	StringT (2 byte)	ReadOnly
Unique, vendor-specific identifier of the hardware of the individual device				

Software Revision	Index 23	Subindex 0	StringT (5 byte)	ReadOnly
Unique, vendor-specific identifier of the hardware of the individual device				

Application-specific Tag	Index 24	Subindex 0	StringT (32 byte)	ReadWrite
Possibility to mark a device with user- or application-specific information				
Factory setting	***			

Function Tag	Index 25	Subindex 0	StringT (32 byte)	ReadWrite
Possibility to mark a device with function-specific information				
Factory setting	***			

Location Tag	Index 26	Subindex 0	StringT (32 byte)	ReadWrite
Possibility to mark a device with location-specific information				
Factory setting	***			

Basic settings

Parameter	Index	Subindex	Access	Description	
P-n	500		RW	Output polarity for the switching outputs Factory setting 0 (PnP)	
				Value range	0 (PnP)
					1 (nPn)
Process data type[2]	2069		RW	Select between Measurements mode or Beams state mode in the process data (this will change the product Id of the device) Factory setting 2 (Measurements mode)	
				Value range	0 (reserved)
					1 (Beams state mode)
					2 (Measurements mode)

[2] Olny for light curtains with less than than 240 beams.

Digital output 1

Parameter	Index	Subindex	Access	Description	
SSC1 Switch-On delay	370		RW	Switching signal channel 1, Switch-On delay Factory setting 0	
				Value range	(0 to 30000) [ms]
SSC1 Switch-Off delay	371		RW	Switching signal channel 1, Switch-Off delay Factory setting 0	
				Value range	(0 to 30000) [ms]
SSC1 Tol	364		RW	+/- Switching signal channel 1 tolerance Factory setting 0	
				Value range	(0 to 1)

Digital output 2

Parameter	Index	Subindex	Access	Description	
SSC2 Switch-On delay	372		RW	Switching signal channel 2, Switch-On delay Factory setting 0	
				Value range	(0 to 30000) [ms]
SSC2 Switch-Off delay	373		RW	Switching signal channel 2, Switch-Off delay Factory setting 0	
				Value range	(0 to 30000) [ms]
SSC2 Tol	365		RW	+/- Switching signal channel 2 tolerance Factory setting 0	
				Value range	(0 to 1)

SSC1 Mode = Single point tolerance

Parameter	Index	Subindex	Access	Description	
SSC1 Param	60		RW	Switching signal channel 1, parameter	
SP1		1	RW	Setpoint 1 Factory setting 1	
				Value range	(1 to max num rays)
SP2		2	RW	Setpoint 2 Factory setting (N/A)	
				Value range	0 (N.A.)
SSC1 Config	61		RW	Switching signal channel 1, configuration	
Logic		1	RW	Setpoint logic / State for target detected Factory setting 0 (High active)	
				Value range	0 (High active)
					1 (Low active)
Mode		2	RW	Setpoint mode Factory setting 144 (Custom - Single point Tolerance)	
				Value range	144 (Custom - Single point Tolerance)
Hysteresis		3	RW	Setpoint hysteresis Factory setting 0 (N.A.)	
				Value range	0 (N.A.)

SSC2 Mode = Single point tolerance

Parameter	Index	Subindex	Access	Description	
SSC1 Param	60		RW	Switching signal channel 1, parameter	
SP1		1	RW	Setpoint 1 Factory setting 1	
				Value range	(1 to max num rays)
SP2		2	RW	Setpoint 2 Factory setting (N/A)	
				Value range	0 (N.A.)
SSC1 Config	61		RW	Switching signal channel 1, configuration	
Logic		1	RW	Setpoint logic / State for target detected Factory setting 0 (High active)	
				Value range	0 (High active)
					1 (Low active)
Mode		2	RW	Setpoint mode Factory setting 144 (Custom - Single point Tolerance)	
				Value range	144 (Custom - Single point Tolerance)
Hysteresis		3	RW	Setpoint hysteresis Factory setting 0 (N.A.)	
				Value range	0 (N.A.)

Signal

Parameter	Index	Subindex	Access	Description	
Synchronisation type[3]	2066		RW	Selection of synchronisation Factory setting 0 (optical / optical)	
				Value range	0 (optical / optical)
					1 (cable / via cable)
Pitch	2064		RO	Pitch of the light beams	
Number of beams	2065		RW	Number of beams	
				Value range	(0 to 245)
Orientation of beams[3]	2067		RW	Orientation of beams Factory setting 0 (Normal / Normal)	
				Value range	0 (Normal / Normal)
					1 (Upside_down / Upside down)
Data transmission mode[3]	2068		RW	Selection of different PDOut data transmission modes Factory setting 0 (Always_enabled / Always enabled)	
				Value range	0 (Always_enabled / Always enabled)
					1 (Peak_detection / Peak detection)
					2 (One_shot / One shot)
SSC Switching condition	2070		RW	Selection of output criteria	
SSC1		1	RW	SSC1 Switching condition Factory setting 5 (GTBO / (GTBO) greater than beam occupied)	
				Value range	0 (NCBO / (NCBO) number of consecutive beams occupied)
					1 (NBO / (NBO) number of beams occupied)
					2 (CBO / (CBO) central beam occupied)
					3 (LBO / (LBO) last beam occupied)
					4 (FBO / (FBO) first beam occupied)
					5 (GTBO / (GTBO) greater than beam occupied)
SSC2		2	RW	SSC2 Switching condition Factory setting 5 (GTBO / (GTBO) greater than beam occupied)	
				Value range	0 (NCBO / (NCBO) number of consecutive beams occupied)
					1 (NBO / (NBO) number of beams occupied)
					2 (CBO / (CBO) central beam occupied)
					3 (LBO / (LBO) last beam occupied)
					4 (FBO / (FBO) first beam occupied)
					5 (GTBO / (GTBO) greater than beam occupied)

[3] Changing this parameter could require up to 15 seconds and a reboot of the light curtain

Teach

Parameter	Index	Subindex	Access	Description	
TI Select	58		RW	Teach selection Factory setting 1 (SSC1)	
				Value range	1 (SSC1)
					2 (SSC2)
TI Result State	59		RO	Teach result Factory setting 0 (Idle)	
				Value range	0 (Idle)
					1 (SP1 success)
					2 (SP2 success)
					3 (SP12 success)
					4 (Wait for command)
					5 (Busy)
					7 (Error)

Diagnosis

Parameter	Index	Subindex	Access	Description	
Device Status	36		RO	Indicator for the current device condition and diagnosis state Factory setting 0 (Device is OK)	
				Value range	0 (Device is OK)
					1 (Maintenance required)
					2 (Out of specification)
					3 (Functional check)
					4 (Failure)
Detailed Device Status	37		RO	List of all currently pending events in the device Factory setting 0x00,0x00,0x00	
Power cycles	541		RO	Number of power cycles since delivery Factory setting 0	
				Value range	(0 to 2000000)
Operating hours	542		RO	Counter of the operating hours since delivery Factory setting 0	
				Value range	(0 to 2000000) [h]
Active events	545		RO	Bit mask for current pending events	
Param configuration fault	546		RO	Displays the incorrectly set parameters	

Temperature

Parameter	Index	Subindex	Access	Description
Internal temperature	543		RO	Current internal temperature of the device Factory setting 32764 (NoData)

IO-Link Process Data

PDIn - Measurements

INT16					
FBO					
INT16					
LBO					
INT16					
CBO					
INT16					
NBO					
INT16					
NCBO					
INT8	INT4	BOOL	BOOL	BOOL	BOOL
RESERVED	Device Status	Beams state	Syncro state	SSC2	SSC1

Len.Offset	Data type	Description
16.80	IntegerT16	FBO: first beam occupied
16.64	IntegerT16	LBO: last beam occupied
16.48	IntegerT16	CBO: central beam occupied[4]
16.32	IntegerT16	NBO: number of beams occupied
16.16	IntegerT16	NCBO: number of consecutive beams occupied[5]
4.4	UIntegerT4	Current device status, a copy of the parameter [Device Status, Index 36] in the process data channel
1.3	Bool	Light curtain beams state: 0 for occupied , 1 for free
1.2	Bool	Light curtain syncro state: 0 for syncro non present, 1 for syncro present
1.1	Bool	SSC2
1.0	Bool	SSC1

PDIn - Beams state

BOOL					
Beams					
INT8	INT4	BOOL	BOOL	BOOL	BOOL
RESERVED	Device Status	Beams state	Syncro state	SSC2	SSC1

Len.Offset	Data type	Description
240.16	240 Bool[6]	Single beam state
4.4	UIntegerT4	Current device status, a copy of the parameter [Device Status, Index 36] in the process data channel
1.3	Bool	Light curtain beams state: 0 for occupied , 1 for free
1.2	Bool	Light curtain syncro state: 0 for syncro non present, 1 for syncro present
1.1	Bool	SSC2
1.0	Bool	SSC1: 0 for „inactive“ (target not detected), 1 for „active“ (target not detected)

[4] If more than one zone is obstructed, the data refer to the zone with the highest number of obstructed beams. If the size of all the zones is the same the data refer to the one nearest to the first beam.

[5] If more than one zone is obstructed, the data refer to the zone with the highest number of obstructed beams.

[6] Variable, based on the light curtain's actual number of beams. Light curtains with more than 240 beams don't have this type of process data.

PDOut

				BOOL			
Reserved	Reserved	Reserved	Reserved	Trigger	Reserved	Reserved	Reserved

Len.Offset	Data type	Description
1.3	Bool	Trigger

IO-Link events

Code	Device status	Process data quality	Class	Name	Description
0x5000	4 (Failure)	Invalid	Error	Device hardware fault	Replace device
0x8CDB	1 (Maintenance required)	Valid	Warning	Flash sequence active. Device Status = 1 (Maintenance required)	Deactivate flash sequence
0x8CE4		Valid	Error	Sync signal lost. Device Status = 3 (Functional check)	Correct device
0x8DFE	1 (Maintenance required)	Valid	Warning	Test Event 1. Device Status = 1 (Maintenance required)	Event appears by setting index 2 to value 240, event disappears by setting index 2 to value 241
0x8DFF	1 (Maintenance required)	Valid	Warning	Test Event 1. Device Status = 1 (Maintenance required)	Event appears by setting index 2 to value 242, event disappears by setting index 2 to value 243

EC DECLARATION OF CONFORMITY

REER

CE

Dichiarazione CE di conformità
EC declaration of conformity

Torino, 05/05/2020

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Italy

dichiara che:

- le barriere fotoelettriche **MICRON IO-Link**

sono dispositivi optoelettronici di misura realizzati in conformità alle seguenti Direttive Europee:

declares that:

- *the **MICRON IO-Link** photoelectric barriers*

are Electro-sensitive Measuring Equipments compliant with the following European Directives:

- **2011/65/EU** "RoHS – Linea Guida"
  "RoHS – Guideline"
- **2014/30/EU** "Direttiva Compatibilità Elettromagnetica"
  "Electromagnetic Compatibility Directive"
- **IEC 61131-2** "Controllori programmabili - Parte 2: Requisiti e prove delle apparecchiature"
  "Programmable controllers – Part 2: Equipment requirements and tests"
- **IEC 61131-9** "Controllori programmabili - Parte 9: "Interfaccia di comunicazione digitale (SDCI) per piccoli sensori e attuatori"
  "*Programmable controllers - Part 9: Single-drop digital communication interface for small sensors and actuators (SDCI)"*

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