

形 E3Z-□8□-IL□

光電センサ Photoelectric Sensor

インデックスリスト INDEX LIST

IO-Link設定ファイル (IODDファイル)は当社Webサイト (www.fa.omron.co.jp) からダウンロードしてください。

Please download IO-Link setting file from company's official website (www.fa.omron.co.jp).



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1.通信仕様 Physical layer

Table with 3 columns: Model, Baudrate, Min. cycle time, Process data length, Vendor ID. Rows include E3Z-T8□-IL3, E3Z-R8□-IL3, E3Z-D8□-IL3, E3Z-L8□-IL3.

2.デバイスID Device ID

Table with 4 columns: 形式 Model, デバイスID Device ID. Rows include E3Z-T8□-L-IL3, E3Z-T8□-D-IL3, E3Z-R8□-IL3, E3Z-D8□-IL3, E3Z-L8□-IL3.

3.プロセスデータ Process data

E3Z-T8□-D-IL□/E3Z-R8□-IL□/E3Z-D8□-IL□/E3Z-L8□-IL□

Table with 3 columns: Byte0 (PDO), 割り当て Assignment, 詳細 Details. Rows include Monitor output, Control Output1, Control Output2, Reserved, Instability Alarm, Warning, Error.

4.サービスデータ Service data

Large table with 10 columns: インデックス Index, サブインデックス Sub-Index, 項目 Name, バックアップ対象 Back up target, フォーマット Format, アクセス Access, データ長 Length, 初期値 Default value, 選択範囲 Range, 備考 Remark. Rows include Direct Parameter Page 1, System Command, Data Storage, Device Access Locks, Vendor Name, Product Name, Product Text, Serial Number, Hardware Version, Firmware Version, Application Specific Tag, Device Status, Process-Data Input, Switchpoint Logic Output1/2, Vendor Command, Timer Output1/2, Sensitivity Level, Instability Threshold, Teaching Level, Potentiometer Value, Switch Value, Operating Hours, Instability Alarm ON Delay Timer, Sensitivity Setting Method.

*1 サブインデックスが空白の箇所は0を指定してください。 For the blank sub-index cell, specify zero. *2 IO-Linkマスタとの間で設定をバックアップ/リストアする時に使用します。詳細はIO-Link規格書 (IO-Link Interface and System Specification V1.1.2) を参照ください。 Use when backing up or restoring the settings to/from the IO-Link master unit. Details please refer to the specification (IO-Link Interface and System Specification V1.1.2). *3 制御出力1、制御出力2個別に入光ON/遮光ONを設定できます。SW有効とすると筐体のSWの有効となります。制御出力1をIO-Link通信、制御出力2をオープンコレクタ出力として使用することも可能です。 Either Light ON or Dark ON can be set for control output 1 and control output 2 separately. By setting the local SW, the local SW value is enabled. It is also possible to use control output 1 for the IO-Link communications and control output 2 for the open collector output. *4 ティーチングの実行および実行時のティーチングレベルを設定することができます。制御出力のしきい値(100%)に対する目標の受光量をティーチングレベルとして設定してください。 Teaching can be executed, and a teaching level applied to execution can be set. Set the target light receiving amount for the control output threshold(100%) as the teaching level. *5 センサの感度を0~1023の範囲で変更することができます。感度ポットminがIO-Link設定値0、感度ポットmaxがIO-Link設定値1023となります。設定値とモニタ出力の関係性は、「6.モニタ出力-距離特性」をご確認ください。 Sensor's sensitivity can be changed in a range of 0-1023. The minimum and maximum values of the potentiometer correspond to IO-Link settings of 0 and 1023, respectively. For the relation between the setting and monitor output, refer to section 6 "Monitor output - Sensing Distance." *6 筐体の感度ポット、動作切替スイッチ、IO-Link通信いずれかによって設定された感度レベルの値および動作モードを読み出すことが可能です。 It is able to read out the sensitivity level and operation mode set by the potentiometer or operation mode switch or the IO-Link communications. *7 透過形投光器には搭載されていません。 Emitter of Through-beam type don't have this function. *8 透過形受光器には搭載されていません。 Receiver of Through-beam type don't have this function.

E3Z-T8□-L-IL□

Table with 3 columns: Byte0 (PDO), 割り当て Assignment, 詳細 Details. Rows include Reserved, Warning, Error.

5.イベント機能 Event function

Table with 5 columns: イベントコード Event Code, イベント名 Event function, 種類 Type, 内容 Description, 処置・対策 Action. Rows include 内部故障 Breakdown, 制御出力2負荷短絡 Load short-circuit of control output2, サービスデータ異常 Parameter error.

6.モニタ出力-距離特性 (代表例) Monitor output - Sensing Distance (Reference Value)

Section containing 6 graphs showing Detection Level vs Sensing distance (m) for different sensor types: 透過形 (Through-beam), 細ビームタイプ反射形 (Diffuse reflective), 回帰反射形 (Retro-reflective), 拡散反射形 (Diffuse reflective).

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型 E3Z-□□8□-IL□

光电传感器
Photoelectric Sensor

索引列表 INDEX LIST

IO-Link 设定文件 (IO0D文件) 请从本公司官网
(www.fa.omron.co.jp)上下载。

Please download IO-Link setting file from company's official
website (www.fa.omron.co.jp).



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1.通信规格 Physical layer

型号 Model	E3Z-T8□-IL3 E3Z-R8□-IL3 E3Z-D8□-IL3 E3Z-L8□-IL3	E3Z-T8□-IL2 E3Z-R8□-IL2 E3Z-D8□-IL2 E3Z-L8□-IL2
传送速度 Baudrate	COM3 (230.4kbps) COM2 (38.4kbps)	
最小周期 Min. cycle time	1ms	2.3ms
进程数据长 Process data length	2byte (M-sequence type: TYPE_2_2)	
供应商ID Vendor ID	612 (0x0264)	

2.设备ID Device ID

型号 Model	设备ID Device ID	型号 Model	设备ID Device ID
E3Z-T8□-L-IL3	65537 (0x010001)	E3Z-T8□-L-IL2	65542 (0x010006)
E3Z-T8□-D-IL3	65538 (0x010002)	E3Z-T8□-D-IL2	65543 (0x010007)
E3Z-R8□-IL3	65539 (0x010003)	E3Z-R8□-IL2	65544 (0x010008)
E3Z-D8□-IL3	65540 (0x010004)	E3Z-D8□-IL2	65545 (0x010009)
E3Z-L8□-IL3	65541 (0x010005)	E3Z-L8□-IL2	65546 (0x01000A)

3.进程数据 Process data

E3Z-T8□-D-IL□/E3Z-R8□-IL□/E3Z-D8□-IL□/E3Z-L8□-IL□

Byte0 (PDO)		分配 Assignment	详细 Details						
7	6	5	4	3	2	1	0	监视器输出 Monitor output	感应的检出量以8bit (0-255) 输出 详细参考第6项。 The Sensing data are output as eight bits (0-255). For details, refer to Section 6
7	6	5	4	3	2	1	0	控制输出1 Control Output1	0: OFF 1: ON
								控制输出2 Control Output2	0: OFF 1: ON
								- Reserved	0
								遮光不安定检出警报 Instability Alarm(Non-Light Receiving)	0: 安定状态 Stable 1: 不安定状态 Unstable
								入光不安定检出警报 Instability Alarm(Light Receiving)	0: 安定状态 Stable 1: 不安定状态 Unstable
								- Reserved	0
								轻度异常 Warning	当传感器因负载短路或服务数据异常等可恢复的原因而无法持续动作时的诊断输出 Diagnostic output when the sensor cannot continue operation due to a recoverable factor such as a load short-circuit or a service data error 0: 正常 Normal (OFF) 1: 异常 Error (ON)
								重度异常 Error	传感器内部发生投光回路破坏等异常需要进行更换时的诊断输出 Diagnostic output when the sensor has an internal error such as the emitting circuit destruction and replacement is needed 0: 正常 Normal (OFF) 1: 异常 Error (ON)

4.服务数据 Service data

索引 Index	子索引 Sub-Index	*1 项目 Name	备份对象 Back up target	格式 Format	访问 Access	数据长 Length	初始值 Default value	选择范围 Range	备注 Remark
0		直接参数页1 Direct Parameter Page 1		Record	R	16 byte			
2		系统指令 System-Command		UInteger	W	1 byte		0x82: 恢复工厂设置 Restore factory setting	
3		数据存储 Data Storage							*2
12		设备访问锁 Device Access Locks		Record	-	2 byte		0x0000: 未锁定 Unlocked 0x0002: 数据保存锁定 Data Strage Locked	
16		供应商名 Vendor Name		String	R	64 byte	OMRON Corporation		
18		产品名 Product Name		String	R	64 byte			型号 Model
20		产品文本 Product Text		String	R	64 byte			传感器种类 Sensor type
21		序号 Serial Number		String	R	8 byte			
22		硬件版本 Hardware Version		String	R	4 byte			
23		固件版本 Firmware Version		String	R	4 byte			
24		用户可设定领域 Application Specific Tag	○	String	R/W	32 byte			
37		设备状态 Detailed Device Status		Record	R	18 byte			
40		进程数据输入 Process-Data Input		PD In	R	2 byte			
61	1	控制输出1动作切换 *3※7 Switchpoint Logic Output1	○		R/W	1 byte	0x81	0x00: Light ON 0x01: Dark ON 0x81: SW有效 Local SW	标准I/O模式 (SIO模式)、 IO-Link模式 (Byte1_bit0) 均适用 Applied to both the Standard I/O mode (SIO mode) and IO-Link mode (Byte1_bit0)
63	1	控制输出2动作切换 *3※7 Switchpoint Logic Output2	○		R/W	1 byte	0x81	0x00: Light ON 0x01: Dark ON 0x81: SW有效 Local SW 0x82: SW有效 (反转) Local SW(Inverse)	标准I/O模式 (SIO模式)、 IO-Link模式 (Byte1_bit1) 均适用 Applied to both the Standard I/O mode (SIO mode) and IO-Link mode (Byte1_bit1)
64		供应商指令 *4 Vendor Command			W	1 byte		0x01: 1点示教执行 Teach 0xA1: 投光OFF Emitter OFF 0xA2: 投光ON Emitter ON	
65	1	控制输出1计时模式切换 *7 Timer Output1(Mode)	○		R/W	1 byte	0x00	0x00: 无效 Disable 0x01: ON延时 ON Delay 0x02: OFF延时 OFF Delay 0x03: 瞬发 One Shot	标准I/O模式 (SIO模式)、 IO-Link模式 (Byte1_bit0) 均适用 Applied to both the Standard I/O mode (SIO mode) and IO-Link mode (Byte1_bit0)
65	2	控制输出1计时时间设定 *7 Timer Output1(Time)	○		R/W	2 byte	5ms	1~4000ms (1ms单位)(Unit: 1ms)	
66	1	控制输出2计时模式切换 *7 Timer Output2(Mode)	○		R/W	1 byte	0x00	0x00: 无效Disable 0x01: ON延时 ON Delay 0x02: OFF延时 OFF Delay 0x03: 瞬发 One Shot	标准I/O模式 (SIO模式)、 IO-Link模式 (Byte1_bit1) 均适用 Applied to both the Standard I/O mode (SIO mode) and IO-Link mode (Byte1_bit1)
66	2	控制输出2计时时间设定 *7 Timer Output2(Time)	○		R/W	2 byte	5ms	1~4000ms (1ms单位)(Unit: 1ms)	
67		灵敏度等级设定 *5※7 Sensitivity Level	○		R/W	2 byte	1023	0~1023	
69	1	入光不安定检出阈值设定 *7 Instability Threshold (Light Receiving)	○		R/W	1 byte	0x00	0x00: 140% 0x01: 200% 0x02: 300% 0x03: 400% 0x04: 500%	安定指示灯 (标准I/O模式、 IO-Link模式)、 入光不安定检出警报 (Byte1_bit4)均适用 Applied to both the stability indication lamp (standard I/O mode (SIO mode) and instability Alarm (Light Receiving) (Byte1_bit4)
69	2	遮光不安定检出阈值设定 *7 Instability Threshold (Non-Light Receiving)	○		R/W	1 byte	0x00	0x00: 70% 0x01: 50%	安定指示灯 (标准I/O模式、 IO-Link模式)、 遮光不安定 检出警报 (Byte1_bit3) 均适用 Applied to both the stability indication lamp (standard I/O mode (SIO mode) and instability Alarm (Non-Light Receiving) (Byte1_bit3)
70		示教等级设定 *4※7※8 Teaching Level	○		R/W	2 byte	1000%	10~1000%	
71	1	旋钮读取 *6※7 Potentiometer Value			R	2 byte		0~1023	
71	2	SW状态读取 *7 Switch Value			R	1 byte		0x00: Light ON 0x01: Dark ON	
160		工作期间 Operating Hours			R	4 byte		1~131071h (1h单位)(Unit: 1h)	
161		不安定检出ON延时 *7 Instability Alarm ON Delay Timer	○		R/W	1 byte	0x04	0x00: 0ms 0x01: 10ms 0x02: 50ms 0x03: 100ms 0x04: 300ms 0x05: 500ms 0x06: 1000ms	不安定检出 (Byte1_bit3, Byte1_bit4)均适用 Applied to instability detection (Byte1_bit3, Byte1_bit4)
162		灵敏度等级设定方式 *7 Sensitivity Setting Method	○		R/W	1 byte	0x02	0x00: 旋钮有效 Valid Local Potentiometer 0x01: IO-Link设定有效 (旋钮设定无效) Valid IO-Link (Local Potentiometer Disabled) 0x02: IO-Link设定/旋钮均有效 Valid Both Local and IO-Link	

*1 子索引空位的地方指定为0。
For the blank sub-index cell, specify zero.
*2 备份或恢复设定时在IO-Link主站之间使用。详细参照IO-Link规格书 (IO-Link Interface and System Specification V1.1.2)。
Use when backing up or restoring the settings to/from the IO-Link master unit. Details please refer to the specification (IO-Link Interface and System Specification V1.1.2).
*3 可对控制输出1、控制输出2单独进行入光ON/遮光ON的设置。SW有效时则外部的SW的值有效。也可将控制输出1作为IO-Link 通讯控制输出作为集电极开路输出使用。
Either Light ON or Dark ON can be set for control output 1 and control output 2 separately. By setting the local SW, the local SW value is enabled. It is also possible to use control output 1 for the IO-Link communications and control output 2 for the open collector output.
*4 可执行示教功能。并对执行时的示教等级维持设定。请将控制输出阈值 (100%) 的目标受光量设定为示教等级。
Teaching can be executed, and a teaching level applied to execution can be set. Set the target light receiving amount for the control output threshold (100%) as the teaching level.
*5 可在0~1023的范围内对传感器的灵敏度等级进行调节。与灵敏度旋钮的关系性见。灵敏度旋钮的min为IO-Link设定值0, 灵敏度旋钮的max为IO-Link设定值1023。设定值与灵敏度输出的关系性请确认。f. 监视器输出-距离特性。
Sensor's sensitivity can be changed in a range of 0-1023. The minimum and maximum values of the potentiometer correspond to IO-Link settings of 0 and 1023, respectively. For the relation between the setting and monitor output, refer to section 6 "Monitor output - Sensing Distance".
*6 通过外部的灵敏度按钮, 动作切换开关, IO-Link通信中任何一种方式所设定的灵敏度等级值以及动作模式都可以读取。
It is able to read out the sensitivity level and operation mode set by the potentiometer or operation mode switch or the IO-Link communications.
*7 对射型投光器上未搭载。
Emitter of Through-beam type don't have this function.
*8 对射型受光器上未搭载。
Receiver of Through-beam type don't have this function.

E3Z-T8□-L-IL□

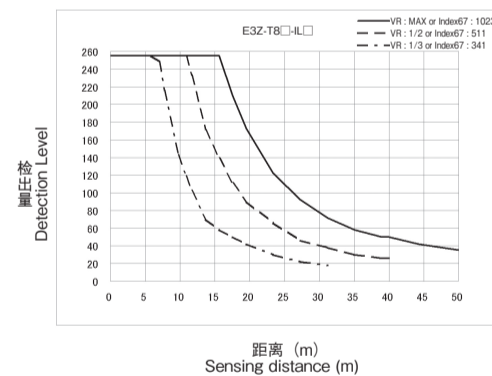
Byte0 (PDO)		分配 Assignment	详细 Details						
7	6	5	4	3	2	1	0	- Reserved	0
								- Reserved	0
								- Reserved	0
								- Reserved	0
								- Reserved	0
								轻度异常 Warning	当传感器因负载短路或服务数据异常等可恢复的原因而无法持续动作时的诊断输出 Diagnostic output when the sensor cannot continue operation due to a recoverable factor such as a load short-circuit or a service data error 0: 正常 Normal (OFF) 1: 异常 Error (ON)
								重度异常 Error	传感器内部发生投光回路破坏等异常需要进行更换时的诊断输出 Diagnostic output when the sensor has an internal error such as the emitting circuit destruction and replacement is needed 0: 正常 Normal (OFF) 1: 异常 Error (ON)

5.事件机能 Event function

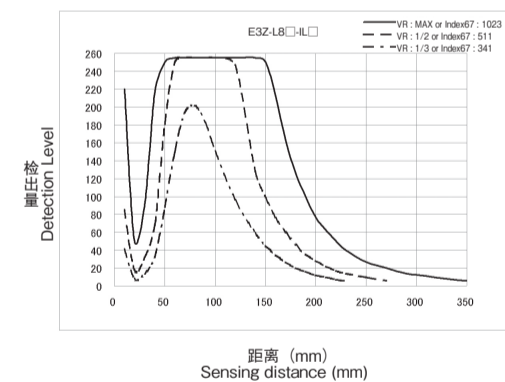
事件代码 Event Code	事件名 Event function	种类 Type	内容 Description	处置·对策 Action
0x1800	内部故障 Breakdown	错误 Error	传感器内部可能发生了投光回路等故障。 The sensor might be broken internally due to such as a failure of the emitting circuit.	请重新启动传感器。若异常再发, 请更换传感器。 Start up the sensor again. If the error occurs again, replace the sensor.
0x7710	控制输出2负载短路 Load short-circuit of control output2	错误 Error	控制输出2发生了负载短路。 Control output 2 is in the load short-circuit condition.	请确认配线。 若异常再发, 请更换传感器。 Check the wiring. If the error occurs again, replace the sensor.
0x6320	服务数据异常 Parameter error	错误 Error	用IO-Link通信写入的设定 (服务数据) 中发生了错误。 There is inconsistency on the settings written in by the IO-Link communications (service data).	请执行系统指令“恢复出厂设置”、对设定值进行初始化。 Execute the system command to "Restore the factory settings" to initialize the settings.

6.监视器输出-距离特性(代表例) Monitor output - Sensing Distance (Reference Value)

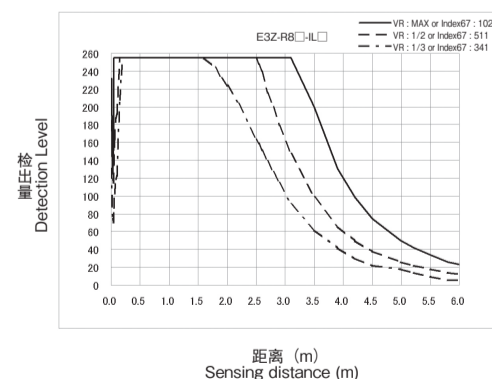
对射型 型E3Z-T8□-IL□
Through-beam Type Type E3Z-T8□-IL□



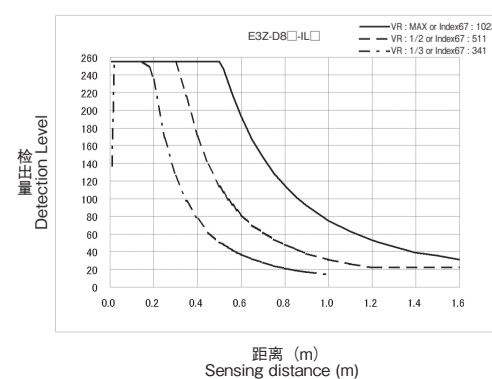
细光束型反射型 型E3Z-L8□-IL□
Diffuse reflective Type Type E3Z-L8□-IL□



回归反射型 型E3Z-R8□-IL□
Retro-reflective Type Type E3Z-R8□-IL□



扩散反射型 型E3Z-D8□-IL□
Diffuse reflective Type Type E3Z-D8□-IL□



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