

## TL50 IO-Link Data Map

This document refers to the following IO-Link file: Banner\_Engineering-TL50-20160616-IO-Link-1.1.xml. The IO-Link file and support files can be found on [www.bannerengineering.com](http://www.bannerengineering.com) under the download section of the product family page.

### Communication Parameters

The following communication parameters are used.

Parameter	Value	Parameter	Value
IO-Link revision	V1.1	Port class	A
Process Data In length	N/A	SIO mode	No
Process Data Out length	16 bit	Smart sensor profile	N/A
Bit Rate	38400 bps	Block parameterization	Yes
Minimum cycle time	4 ms	Data Storage	Yes

### IO-Link Process Data In (Device to Master)

Not applicable.

### IO-Link Process Data Out (Master to Device)

Process Data Out is transmitted cyclically to the IO-Link device from the IO-Link master. These values written to the TL50 are used to perform one of the following functions:

- Tower light and audible segments turn off = 00
- Tower light and audible segments turn on = 01
- Tower light segment flashes; audible segment turns on = 10

Bits															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	0	0	1	1	0	1	0	0	0	1	0	0	1	0	1
		Segment 7		Segment 6		Segment 5		Segment 4		Segment 3		Segment 2		Segment 1	
Example:		On		Flashing		Flashing		Off		Flashing		On		On	

### Parameters Set Using IO-Link

These parameters can be read from and/or written to an IO-Link model of the TL50 Tower Light. Also included is information about whether the variable in question is saved during Data Storage. Unlike Process Data Out, which is transmitted to the IO-Link device from the IO-Link master cyclically, these parameters are written to the TL50 acyclically as needed.

Index	Subindex	Name	Value Range	Default	Access Rights	Data Storage
0	1-16	Direct Parameter Page 1 (incl. Vendor ID & Device ID)			ro	
1	1-16	Direct Parameters Page 2			rw	
2		Standard Command (Restore Factory Settings)			wo	
3		Unused				
4-11		reserved by IO-Link Specification				
12		Device Access Locks				



Index	Subindex	Name	Value Range	Default	Access Rights	Data Storage
12	1	Parameter Write Access Lock			rw	Yes
12	2	Data Storage Lock			rw	Yes
12	3	Local Parameterization Lock			rw	Yes
12	4	Local User Interface Lock			rw	Yes
13		Unused				
14		Unused				
15		Unused				
16		Vendor Name string		Banner Engineering Corp	ro	
17		Vendor Text string			ro	
18		Product Name string			ro	
19		Product ID string	TL50IOLQ8		ro	
20		Product Text string			ro	
21		Serial Number			ro	
22		Hardware Version			ro	
23		Firmware Version (e.g. 1.0.14)			ro	
24		Application Specific Tag (user defined)			rw	Yes
25–40		unused/reserved				
41		Process Data Output			ro	
42-58		unused/reserved				
59-64		reserved for Smart Sensor Profile				
65		Number of Segments	1 through 7		ro	
66		unused				
67		Flashing Frequency				
67	1	Segment 1 Flashing Frequency (Hz)	0.5 through 20	1	rw	Yes
67	2	Segment 2 Flashing Frequency (Hz)	0.5 through 20	1	rw	Yes
67	3	Segment 3 Flashing Frequency (Hz)	0.5 through 20	1	rw	Yes
67	4	Segment 4 Flashing Frequency (Hz)	0.5 through 20	1	rw	Yes
67	5	Segment 5 Flashing Frequency (Hz)	0.5 through 20	1	rw	Yes
67	6	Segment 6 Flashing Frequency (Hz)	0.5 through 20	1	rw	Yes
67	7	Segment 7 Flashing Frequency (Hz)	0.5 through 20	1	rw	Yes
68		Segment 1 description (segment color, audible type, or N/A)			ro	
69-70		unused				
71		Segment 2 description (segment color, audible type, or N/A)			ro	
72		Segment 3 description (segment color, audible type, or N/A)			ro	
73		Segment 4 description (segment color, audible type, or N/A)			ro	
74		Segment 5 description (segment color, audible type, or N/A)			ro	
75		Segment 6 description (segment color, audible type, or N/A)			ro	
76		Segment 7 description (segment color, audible type, or N/A)			ro	

## IO-Link Events

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Events are acyclic transmissions from the IO-Link device to the IO-Link master. Events can be error messages and/or warning or maintenance data.

Code	Type	Description
20753 (0x5111)	Warning	Primary supply voltage under-run / Check tolerance of power supply