

## IO-Link Data Map

This document refers to the following IODD file: Banner\_Engineering-VSM-2M5APD10-20190405-IODD1.0.1.xml. The IODD 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	V1.0	SIO Mode	Yes
Process Data In Length	2-bit	Bit Rate	38400 bps
Process Data Out Length	N/A	Minimum Cycle Time	10 ms

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

The following is the process data, if binary data is included.

Subindex	Name	Number of Bits	Data Values	Bit
1	Detection state	1	0=not detected, 1=object is detected	0
2	Stability alarm	1	0=stable, 1=detection is not stable (not enough margin on 20 consecutive detections)	1

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

Not applicable.

## Parameters Set Using IO-Link

Index	Subindex	Bit Offset	Name	Length	Value Range	Default	Access Rights
0	1-16		Direct Parameter Page 1 (incl. Vendor ID & Device ID)				ro
1			Direct Parameters Page 2				
	1	126	Switching delay time base	2-bit uinteger	0 = 0.1 ms 1 = 0.4 ms 2 = 1.6 ms 3 = 6.4 ms	0	rw
	1	124	Output stretch time base	2-bit uinteger	0 = 0.1 ms 1 = 0.4 ms 2 = 1.6 ms 3 = 6.4 ms	0	rw
	1	122	Output 1 configuration	2-bit uinteger	0 = Detection light-on 1 = Detection dark-on 2 = Stability alarm 3 = Stability alarm inverted	0	rw
	1	120	Reserved	2-bit uinteger			
	2	112	Switching delay multiplier	8-bit uinteger	0-255	0	rw
	3	104	Output stretch multiplier	8-bit uinteger	0-255	0	rw
	4	98	Reserved	6-bit uinteger			
	4-5	88	Reserved	10-bit uinteger			
	6	84	Reserved	4-bit uinteger			



Index	Subindex	Bit Offset	Name	Length	Value Range	Default	Access Rights
	6	80	Sensor mode	4-bit uinteger	1 = Fine (500 Hz) 2 = Normal (1 kHz) 3 = Fast (2.5 kHz)	2	rw
	7	74	Reserved	6-bit uinteger			
	7	72	Reserved	2-bit uinteger			
	8–9	56	Detection counter	16-bit uinteger	0–65535	0	rw
	10		Event flags		All flags generate a Device Warning in IO-Link standard "Event" byte. Writing to any value will reset flag.		
	bit 6	54	Event flag: LED regulation limit	Boolean	If 1, the limit on LED regulator is reached, no additional compensation possible	0	rw
	bit 5	53	Event flag: Disturbance on receiver	Boolean	Always 0 for emitter	0	rw
	bit 4	52	Event flag: Under-voltage for IO-Link	Boolean	If 1, voltage under IO-Link required level has been detected	0	rw
	bit 3	51	Event flag: Under-voltage on sensor	Boolean	If 1, voltage under sensor required level has been detected	0	rw
	bit 2	50	Event flag: Maximum temperature	Boolean	If 1, new maximum temperature has been detected	0	rw
	bit 1	49	Event flag: EMC detected	Boolean	If 1, an EMC event has been detected	0	rw
	bit 0	48	Event flag: Short-circuit detection	Boolean	If 1, too high current causing short circuit protection has been detected	0	rw
	11	40	Maximum temperature	8-bit uinteger	Maximum sensor over the sensor lifetime. Temperature[°C] = (maximum temp × 0.8915) - 54.125		ro
	12	32	Actual temperature	8-bit uinteger	Actual sensor temperature. Temperature[°C] = (actual temp × 0.8915) - 54.125		ro
	13–16	0	Reserved	32-bit uinteger			