

IO-Link Data Map

This document refers to the following IODD file: Banner_Engineering-VSM-2S4RPR500-20190405-IODD1.0.1.xml. The IODD file and support files can be found on 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 - Time base for the switching delay timer	2-bit uinteger	0 = 0.1ms 1 = 0.4ms 2 = 1.6ms 3 = 6.4ms	0	rw
	1	124	Output stretch time base - Time base for the output stretch timer	2-bit uinteger	0 = 0.1ms 1 = 0.4ms 2 = 1.6ms 3 = 6.4ms	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	1	rw
	1	120	Reserved	2-bit uinteger			
	2	112	Switching delay multiplier - Time base multiplier for the switching delay timer. Example: 100 with time base 2(1.6ms) sets the delay at 160ms	8-bit uinteger	0-255	0	rw
	3	104	Output stretch multiplier - Time base multiplier for the output stretch timer. Example: 100 with time base 2(1.6ms) sets the stretch at 160ms	8-bit uinteger	0-255	0	rw
	4	98	Reserved	6-bit uinteger			
	4-5	88	Sensitivity	10-bit uinteger	0-1023	1023	rw



Index	Subindex	Bit Offset	Name	Length	Value Range	Default	Access Rights
	6	84	Sequence choice - Emitter and receiver must have the same sequence choice to work together.	4-bit uinteger	0-9. 0 stops emission. 1-9 is the emitting sequence choice.	1	rw
	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 - An MSB READ refreshes the LSB value. Any WRITE operation in LSB resets the counter to 0	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	Always 0 for receiver	0	rw
	bit 5	53	Event flag: Disturbance on receiver	Boolean	If 1, a disturbance has been detected on receiver stage	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			