

IO-Link Data Map

This document refers to the following IODD file: Banner_Engineering-QS18EK6E-20190831-IODD1.1.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	V1.1	Port class	A
Process Data In length	8 bits	SIO mode	Yes
Process Data Out length	8 bits	Smart sensor profile	Yes
Bit Rate	38400 bps	Block parameterization	Yes
Minimum cycle time	2.3 ms	Data Storage	Yes

IO-Link Process Data In (Device to Master)

Process Data Input			
Subindex	Name	Number of Bits	Data Values
1	Emitter Enable	1	0=Enabled, 1=Disabled

Octet 0								
Subindex	7	6	5	4	3	2	1	0
Bit offset	7	6	5	4	3	2	1	0

IO-Link Process Data Out (Master to Device)

Process Data Input			
Subindex	Name	Number of Bits	Data Values
1	Emitter Enable	1	0=Enabled, 1=Disabled

Octet 0								
Subindex	7	6	5	4	3	2	1	0
Bit offset	7	6	5	4	3	2	1	0

Parameters Set Using IO-Link

These parameters can be read from and/or written to an IO-Link model of the QS18EK6E/EV sensor. Also included is information about whether the variable in question is saved during Data Storage and whether the variable came from the IO-Link Smart Sensor Profile.

Unlike Process Data In, which is transmitted from the IO-Link device to the IO-Link master cyclically, these parameters are read or written acyclically as needed.



Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?	Smart Sensor Profile	AOI
0	1-15	Direct Parameter Page 1 (incl. Vendor ID & Device ID)				ro			y
0	16	Standard Command		130 = Restore Factory Settings 162 = Discovery Start 163 = Discovery Stop		wo			
1	1-16	Direct Parameters Page 2				rw			
2		Standard Command	8-bit uinteger	130 = Restore Factory Settings 162 = Discovery Start 163 = Discovery Stop		wo		y	y
3		Data Storage Index (device-specific list of parameters to be stored)							
4-11		<i>reserved by IO-Link Specification</i>							
12		Device Access Locks							y
12	1	Parameter Write Access Lock		0 = off 1 = on	0	rw	y		y
12	2	Data Storage Lock		0 = off 1 = on	0	rw	y		y
12	3	Local Parameterization Lock		0 = off 1 = on	0	rw	y		y
12	4	Local User Interface Lock		0 = off 1 = on	0	rw	y		y
13-15		<i>unused</i>				ro			
16		Vendor Name string		Banner Engineering Corporation		ro			
17		Vendor Text string		More Sensors. More Solutions		ro			
18		Product Name string		QS18 Expert IO-Link series		ro			
19		Product ID string				ro			
20		Product Text string		More Sensors. More Solutions		ro		y	
21		Serial Number				ro			y
22		<i>unused</i>				ro			
23		Firmware Version				ro		y	
24		App Specific Tag (user defined)				rw	y	y	
25-35		<i>reserved</i>							
36		Device Status	8-bit integer	0=Device is OK 1=Maintenance required 2=Out of specification 3=Functional check 4=Failure 5..255 Reserved		ro			
37		Detailed Device Status	Array[6] of 3-octet			ro			
38-39		<i>reserved</i>							
40		Process Data Input				ro			
41		Process Data Output				ro			
42-68		<i>unused/reserved</i>							
69		All Time Run Time	32-bit integer			ro			y
70		Resettable Run Time	32-bit integer			ro			y
76		Vendor Specific Configuration							y

Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?	Smart Sensor Profile	AOI
76	1	Polarity of Pins 2 and 4  <div style="border: 1px solid gray; padding: 2px; width: fit-content; margin-left: 20px;"> Note: If Push/Pull, the polarity of Pin 2 will be PNP. </div>	8-bit uinteger	0 = Push/Pull 1 = PNP 2 = NPN	0	rw	y		y
76	2	Pin 2 Configuration	8-bit uinteger	0 = Deactivated 1 = Pin 2 Emitter Enable 2 = Pin 2 Emitter Disable 3 = Remote Input	0	rw	y		y
76	3	Frequency Selection	8-bit uinteger	0 = High Speed 1 = Frequency A 2 = Frequency B 3 = Frequency C	1	rw	y		y
76	4	Power Lever	8-bit uinteger	0 = Power Level 0 1 = Power Level 1 2 = Power Level 2 3 = Power Level 3 4 = Power Level 4 5 = Power Level 5	5	rw	y		y
76	5	Pushbutton Lockout	8-bit uinteger	0 = Unlocked 1 = Locked	0	rw	y		y
78		All Time Run Time Event	32-bit uinteger	0..2147483647	0	rw	y		y
79		Resetable Run Time Event Time	32-bit uinteger	0..2147483647	0	rw	y		y

IO-Link Events

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	Name	Description
25376 (0x6320)	Error	Parameter Error	Check datasheet and values
36000 (0x8ca0)	Warning	All-time Run Time Event	Event indicating the corresponding configured running time has elapsed
36001 (0x8ca1)	Warning	Resettable Run Time Event	Event indicating the corresponding configured running time has elapsed