SENSOPART

Data sheet

IO-Link

FT 25-BH-PNSL-...

096-00077 20.01.2021-01
www.sensopart.com

GENERAL INFORMATION	
Communication mode IO-Link	COM 2
Min. cycle time	2.3 ms
SIO mode	supported
Length process data	16 Bit
Vendor ID	347 (0x01 0x5B)
Device ID	39681
Data storage	supported
Specification IO-Link	1.1

PROCESS DATA

SMART-SENSOR PROFILE

Byte 0								Byte 1							
7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
MSB D7	D6	D5	D4	D3	D2	D1	LSB D0	X	X	X	X	X	Signal quality	Switching output Q_2	Switching output Q_1
Signal quality 0 ... 100 %															
Signal quality score - adjustable via index 0xC4															
Switching output 2 - only virtual															
Switching output 1 - corresponds to switching output Q_1 in SIO-mode															

IDENTIFICATION DATA

Index dec / hex	Access	Data type	Length		Description	Comment
16 / 0x10	Read	String	Max. 64 Byte		Vendor name	SensoPart Industriesensorik GmbH
17 / 0x11					Vendor text	www.sensopart.com
18 / 0x12					Product name	FT 25-BH-PNSL-...
19 / 0x32					Product ID	608-11063 608-11064 608-11065 608-11070
20 / 0x11					Product text	Device specific
23 / 0x17					Firmware revision	1.0

SMART SENSOR PROFILE PARAMETER

Index in dec / hex	Access	Data type	Length	Subindex	Default value	Range	Description	Comment
12 / 0x0C	Read / write	Uint	16 Bit		0x00 0x00	D0, D1, D3	Lock functions	D0 - parameter write access D1 - data storage lock D3 - local user interface lock
24 / 0x18	Read / write	StringT	32 characters		"***...***"		Application text	Free text, e.g. item designation
58 / 0x3A	Read / write	Uint	8 Bit		0	0, 1, 2	Teach channel	0 / 1 = switching channel 1 2 = switching channel 2
59 / 0x3B	Read	Uint	8 Bit				Teach-in status	
60 / 0x3C							Define switching output Q_1 (physical pin)	
	Read / write	Uint	16 Bit	1	2000	100 ... 2000	Switching point 1	In 1/10 mm (e.g. 10 mm = 100 1/10 mm)
				2	2000	100 ... 2000	Switching point 2	In 1/10 mm (e.g. 10 mm = 100 1/10 mm)
61 / 0x3D							Set-Up switching output Q_1 (physical pin)	
	Read / write	Uint	8 Bit	1	0	0, 1	NO / NC	0 = NO, 1 = NC
				2	1	0, 1, 2, 3	Switching mode	0 - disable 1 - single-point mode 2 - window mode [1)] 3 - two-point mode [1)]
				3	0	0	Hysteresis	Not adjustable
62 / 0x3E							Define switching output Q_2 (only virtual via IO-Link)	
	Read / write	Uint	16 Bit	1	2000	100 ... 2000	Switching point 1	Needed for single, window and two-point mode, in 1/10 mm (e.g. 10 mm = 100 1/10 mm)
				2	2000	100 ... 2000	Switching point 2	Needed for window and two-point mode, in 1/10 mm (e.g. 10 mm = 100 1/10 mm)
63 / 0x3F							Set-Up switching output Q_2 (only virtual via IO-Link)	
	Read / write	Uint	8 Bit	1	0	0, 1	NO / NC	0 = NO, 1 = NC
				2	0	0, 1, 2, 3	Switching mode	0 - disable 1 - single-point mode 2 - window mode [1)] 3 - two-point mode [1)]
				3	0	0	Hysteresis	Not adjustable

[1)] Min. difference between both switchpoints 1 mm

PARAMETER								
Index dec / hex	**Access**	**Data type**	**Length**	**Subindex**	**Default value**	**Range**	**Description**	**Comment**
88 / 0x58							Read operating data	
	Read	Uint	32 Bit	1			Counter operating hours	No reset possible
				2			Counter switch cycle	No reset possible
95 / 0x5F							Read sensor characteristics	
	Read	String		1	10 ... 200 mm		Operating range	
				5	LED		Type of light	
				6	≤ 30 mA		No-load current	
				7	≤ 1000 Hz		Switching frequency	
				9	-20 … 60 °C		Ambient temperature	
196 / 0xC4							Signal quality level	
	Read / write	Uint	8 Bit		10	10 … 90	Signal quality level	If below 10 % no stable detection
208 / 0xD0							Smart functions Q_1 (physical pin)	
	Read / write	Uint	16 Bit	1	0	0 … 65535	Counter	
				2	0	0 … 65535	On delay	In ms, adjustable in 1 ms
				3	0	0 … 65535	Off delay	In ms, adjustable in 1 ms
				4	0	0 … 65535	Impulse	In ms, adjustable in 1 ms
				5	0	0 … 500	Monitoring frequency	In 1/∞ Hz, adjustable in 0.1 Hz steps [2]
209 / 0xD1							Smart functions Q_2 on virtual switching output Q_2	
	Read / write	Uint	16 Bit	1	0	0 … 65535	Counter	
				2	0	0 … 65535	On delay	In ms, adjustable in 1 ms
				3	0	0 … 65535	Off delay	In ms, adjustable in 1 ms
				4	0	0 … 65535	Impulse	In ms, adjustable in 1 ms
				5	0	0 … 500	Monitoring frequency	In 1/∞ Hz, adjustable in 0.1 Hz steps [2]
213 / 0xD5							Function switching output Q_1	
	Read / write	Uint	8 Bit	1	2	0, 1, 2	PNP / NPN	0 = NPN 1 = PNP 2 = auto-detect
221 / 0xDD							Control input [3]	
	Read / write	Uint	8 Bit	1	1	0, 1	Control input PIN 2	0 = PIN 2 disable 1 = PIN 2 active

SYSTEM COMMANDS								
Index dec / hex	**Access**	**Data type**	**Length**		**Function dec / hex**	**Range**	**Description**	**Comment**
2 / 0x02	Read / write	Uint	8 Bit		64 / 0x40		Teach apply	Adopt teach values on sensor
					65 / 0x41		Single value teach - switching point 1	The switching point is on the teach value
					66 / 0x42		Single value teach - switching point 2	
					67 / 0x43		Two value teach - teachpoint 1 for switching point 1	The switching point is in the middle of both teachpoints
					68 / 0x44		Two value teach - teachpoint 2 for switching point 1	
					69 / 0x45		Two value teach - teachpoint 1 for switching point 2	
					70 / 0x46		Two value teach - teachpoint 2 for switching point 2	
					71 / 0x47		Dynamic teach - switching point 1 - start	The switching point is in the middle of the min. / max. value
					72 / 0x48		Dynamic teach - switching point 1 - stop	
					73 / 0x49		Dynamic teach - switching point 2 - start	
					74 / 0x4A		Dynamic teach - switching point 2 - stop	
					79 / 0x4F		Teach cancel	
					160 / 0xA0		Emitter off	
					161 / 0xA1		Emitter on	
					162 / 0xA2		Reset switching channel	Reset of current switching channel
					175 / 0xAF		Detect sensor	1x activated - sensor flashes 60 s 2x activated - permanent flashing 3x activated - stop permanent flashing
					128 / 0x80		Reset sensor	
					130 / 0x82		Factory setting	

EVENTS				
Event	**Status value**	**Warning**		
20480 / 0x5000	4	Error	Device hardware fault	Default: deactivated [4]
20497 / 0x5011	4	Error	Non-volatile memory loss	
65425 / 0xFF91	0	Notice	Data storage - upload request	
16384 / 0x4000	4	Error	Temperature fault	Temperature range exceeded; default: deactivated [4]

[2] Differs to real frequency ± 10 %
[3] Only 4-pin version
[4] For activation use function 0x51