



FT 10-RLH-PNSL-...

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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	9729 / 9473
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 10-RLH-PNSL-...
19 / 0x32					Product ID	600-11163 600-11164 600-11165 600-11166
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	
							Define switching output Q ₁ (physical pin)	
60 / 0x3C	Read / write	Uint	16 Bit	1	700	100 ... 700	Switching point 1	Needed for single, window and two-point mode, in 1/10 mm (e.g. 10 mm = 100 1/10 mm)
				2	700	100 ... 700	Switching point 2	Needed for window and two-point mode, in 1/10 mm (e.g. 10 mm = 100 1/10 mm)
							Set-Up switching output Q ₁ (physical pin)	
61 / 0x3D	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
							Define switching output Q ₂ (only virtual via IO-Link)	
62 / 0x3E	Read / write	Uint	16 Bit	1	700	100 ... 700	Switching point 1	Needed for single, window and two-point mode, in 1/10 mm (e.g. 10 mm = 100 1/10 mm)
				2	700	100 ... 700	Switching point 2	Needed for window and two-point mode, in 1/10 mm (e.g. 10 mm = 100 1/10 mm)
							Set-Up switching output Q ₂ (only virtual via IO-Link)	
63 / 0x3F	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	Hvsteresis	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	Uint	32 Bit	1			Read operating data	
				2			Counter operating hours	No reset possible
							Counter switch cycle	No reset possible
95 / 0x5F	Read	String		1	10 ... 70 mm		Read sensor characteristics	
				5	Laser, red, 655 nm, class 1		Operating range	
				6	≤ 12 mA		Type of light and laser class	
				7	≤ 1000 Hz		No-load current	
							Switching frequency	
				9	-20 ... 50 °C		Ambient temperature	
Signal quality level								
196 / 0xC4	Read / write	Uint	8 Bit		10	10 ... 90	Signal quality level	If below 10 % no stable detection
208 / 0xD0	Read / write	Uint	16 Bit	1	0	0 ... 65535	Smart functions Q ₁ (physical pin)	
				2	0	0 ... 65535	Counter	
				3	0	0 ... 65535	On delay	In ms, adjustable in 1 ms
				4	0	0 ... 65535	Off delay	In ms, adjustable in 1 ms
					0	0 ... 65535	Impulse	In ms, adjustable in 1 ms
					0	0 ... 500	Monitoring frequency	In 1/10 Hz, adjustable in 0.1 Hz steps ²⁾
209 / 0xD1	Read / write	Uint	16 Bit	1	0	0 ... 65535	Smart functions Q ₂ on virtual switching output Q ₂ ²⁾	
				2	0	0 ... 65535	Counter	
				3	0	0 ... 65535	On delay	In ms, adjustable in 1 ms
				4	0	0 ... 65535	Off delay	In ms, adjustable in 1 ms
					0	0 ... 65535	Impulse	In ms, adjustable in 1 ms
					0	0 ... 500	Monitoring frequency	In 1/10 Hz, adjustable in 0.1 Hz steps ²⁾
Function switching output Q ₁								
213 / 0xD5	Read / write	Uint	8 Bit	1	2	0, 1, 2	PNP / NPN	0 = NPN 1 = PNP 2 = auto-detect
221 / 0xDD	Read / write	Uint	8 Bit	1	1	0, 1	Control input ³⁾	
							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	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