



FT 25-RLHP-PNSL-...

096-00086 25.07.2024-01
www.sensopart.com

GENERAL INFORMATION	
Communication mode IO-Link	COM 2
Min. cycle time	3 ms
SIO mode	Supported
Length process data	PD_IN 8 Bit, PD_OUT 8 Bit
Vendor ID	347 (0x015B)
Device ID	38913 (0x9801)
Data Storage	Supported - Class 1
Specification IO-Link	1.1.3

PROCESS DATA										
PD_IN										
Byte 0										
7	6	5	4	3	2	1	0			
Signal quality MSB	D2	D1	Signal quality LSB	X	Signal quality bit	SSC.2	SSC.1			
	Signal quality 0...10				Signal quality bit	SSC.2 virtual	SSC.1 physical			

PD_OUT							
Byte 0							
7	6	5	4	3	2	1	0
X	X	X	X	X	X	X	Emitter off
0 = Emitter on 1 = Emitter off							

IDENTIFICATION DATA						
Index dec / hex	Access	Data type	Length	Subindex	Description	Comment
16 / 0x10	Read	StringT	Max. 64 Byte	0	Vendor name	SensoPart Industriesensorik GmbH
17 / 0x11					Vendor text	www.sensopart.com
18 / 0x12					Product name	FT 25-RLHP-PNSL-...
19 / 0x13					Product ID	609-11023 609-11022
20 / 0x14					Product text	100...1500 mm, IN, Q1, Auto/PNP/NPN, ...
21 / 0x15					Serial number	"Device specific"
23 / 0x17					Firmware revision	"Device specific"

PARAMETER									
Index dec / hex	Access	Data type	Length	Sub-index	Default value	Data Storage	Range	Description	Comment
36 / 0x24	DeviceStatus								
	Read	UIntegerT	8 Bit	1	"Device specific"	No	0, 1, 2, 3, 4	Device status	0=Device is OK, 1=Maintenance required, 2=Out of specification, 3=Functional check, 4=Failure
37 / 0x25	DetailedDeviceStatus								
	Read	ArrT<uint24>[8]	248 Bit	0	"Device specific"	No		Detailed device status	
24 / 0x18	ApplicationSpecificTag								
	Read / write	StringT	32 Char	1	*****	Yes		Application specific tag	Free text
25 / 0x19	CP Function Tag								
	Read / write	StringT	32 Char	1	*****	Yes		Function tag	Free text
26 / 0x1A	CP Location Tag								
	Read / write	StringT	32 Char	1	*****	Yes		Location tag	Free text
58 / 0x3A	Teach select								
	Read / write	UIntegerT	8 Bit	1	0	No	0, 2	Teach select	0=SSC.1, 2=SSC.2

PARAMETER									
Index dec / hex	Access	Data type	Length	Sub- index	Default value	Data Storage	Range	Description	Comment
59 / 0x3B	Teach result								
	Read	UIntegerT	4 Bit	1	"Device specific"	No	0, 1, 2, 3, 4, 5, 7	State	0=Idle, 1=SP1 success, 2=SP2 success, 3=SP1, SP2 success, 4=Wait for command, 5=Busy, 7=Error
	Read	BooleanT	1 Bit	2	"Device specific"	No	0, 1	Flag SP1 TP1	0=Initial or not ok, 1=OK
	Read	BooleanT	1 Bit	3	"Device specific"	No	0, 1	Flag SP1 TP2	0=Initial or not ok, 1=OK
	Read	BooleanT	1 Bit	4	"Device specific"	No	0, 1	Flag SP2 TP1	0=Initial or not ok, 1=OK
	Read	BooleanT	1 Bit	5	"Device specific"	No	0, 1	Flag SP2 TP2	0=Initial or not ok, 1=OK
60 / 0x3C	SSC.1 param								
	Read / write	IntegerT	32 Bit	1	15000	Yes	1000...15000	SP1	Needed for single-point mode (no offset), window mode, two-point mode and single-point mode (offset - like physical teach button), 1/10 mm
	Read / write	IntegerT	32 Bit	2	15000	Yes	1000...15000	SP2	Needed for window mode and two-point mode, 1/10 mm
61 / 0x3D	SSC.1 config								
	Read / write	UIntegerT	8 Bit	1	0	Yes	0, 1	Logic	0=NO (High active), 1=NC (Low active)
	Read / write	UIntegerT	8 Bit	2	132	Yes	0, 1, 2, 3, 132	Mode	0=Deactivated, 1=Single point, 2=Window, 3=Two point, 132=Single point (offset - like physical teach button)
	Read / write	IntegerT	32 Bit	3	0	Yes	0	Hysteresis	0=Default
62 / 0x3E	SSC.2 param								
	Read / write	IntegerT	32 Bit	1	15000	Yes	1000...15000	SP1	Needed for single-point mode (no offset), window mode, two-point mode and single-point mode (offset - like physical teach button), 1/10 mm
	Read / write	IntegerT	32 Bit	2	15000	Yes	1000...15000	SP2	Needed for window mode and two-point mode, 1/10 mm
63 / 0x3F	SSC.2 config								
	Read / write	UIntegerT	8 Bit	1	0	Yes	0, 1	Logic	0=NO (High active), 1=NC (Low active)
	Read / write	UIntegerT	8 Bit	2	132	Yes	0, 1, 2, 3, 132	Mode	0=Deactivated, 1=Single point, 2=Window, 3=Two point, 132=Single point (offset - like physical teach button)
	Read / write	IntegerT	32 Bit	3	0	Yes	0	Hysteresis	0=Default
88 / 0x58	Operating data								
	Read	UIntegerT	32 Bit	1	"Device specific"	No		Counter operating hours	No reset possible
	Read	UIntegerT	32 Bit	2	"Device specific"	No		Counter switch cycle	No reset possible
95 / 0x5F	Electronic data sheet								
	Read	StringT	13 Char	1	100...1500 mm	No		Operating range	
	Read	StringT	1 Char	2	-	No		Resolution	
	Read	StringT	1 Char	3	-	No		Linearity	
	Read	StringT	15 Char	4	4...34 mm (90%)	No		Hysteresis	
	Read	StringT	26 Char	5	Laser, red 655 nm, class 1	No		Type of light and laser class	
	Read	StringT	8 Char	6	<= 30 mA	No		No-load current	
	Read	StringT	10 Char	7	5...300 Hz	No		Switching frequency	
	Read	StringT	1 Char	8	-	No		Warm-up time	
	Read	StringT	12 Char	9	-20...+50°C	No		Ambient temperature	
	Read	StringT	1 Char	10	-	No		Output signal	
	Read	StringT	1 Char	11	-	No		Repeatability	
196 / 0xC4	Threshold signal quality (main)								
	Read / write	UIntegerT	8 Bit	1	1	Yes	0...10	Threshold signal quality	
208 / 0xD0	SSC.1 smart functions								
	Read / write	UIntegerT	16 Bit	1	0	Yes	0...65535	Counter	
	Read / write	UIntegerT	16 Bit	2	0	Yes	0...65535	Switch-on delay	In ms, adjustable in 1 ms
	Read / write	UIntegerT	16 Bit	3	0	Yes	0...65535	Switch-off delay	In ms, adjustable in 1 ms
	Read / write	UIntegerT	16 Bit	4	0	Yes	0...65535	Impulse (one-shot)	In ms, adjustable in 1 ms

PARAMETER									
Index dec / hex	Access	Data type	Length	Sub-index	Default value	Data Storage	Range	Description	Comment
SSC.2 smart functions									
209 / 0xD1	Read / write	UIntegerT	16 Bit	1	0	Yes	0...65535	Counter	
	Read / write	UIntegerT	16 Bit	2	0	Yes	0...65535	Switch-on delay	In ms, adjustable in 1 ms
	Read / write	UIntegerT	16 Bit	3	0	Yes	0...65535	Switch-off delay	In ms, adjustable in 1 ms
	Read / write	UIntegerT	16 Bit	4	0	Yes	0...65535	Impulse (one-shot)	In ms, adjustable in 1 ms
Function Pin 4									
213 / 0xD5	Read / write	UIntegerT	8 Bit	1	2	Yes	0, 1, 2	PNP/NPN	0=NPN, 1=PNP, 2=Auto-detect
Function Pin 2									
221 / 0xDD	Read / write	UIntegerT	8 Bit	1	1	Yes	0, 1, 2	Control input Pin 2	0=Deactivated, 1=Teach/key lock, 2=Emitter on/off
Switching frequency global									
190 / 0xBE	Read / write	UIntegerT	8 Bit	1	3	Yes	0, 1, 2, 3, 4, 5	SSC switching frequency	0=300 Hz, 1=200 Hz, 2=100 Hz, 3=50 Hz, 4=10 Hz, 5=5 Hz

SYSTEM COMMANDS							
Index dec / hex	Access	Data type	Length	Subindex	Function dec / hex	Description	Comment
2 / 0x02	Write only	UIntegerT	8 Bit	1	1 / 0x01	ParamUploadStart	
					2 / 0x02	ParamUploadEnd	
					3 / 0x03	ParamDownloadStart	
					4 / 0x04	ParamDownloadEnd	
					5 / 0x05	ParamDownloadStore	
					6 / 0x06	ParamBreak	
					64 / 0x40	Teach apply	Adopt teach values on sensor
					65 / 0x41	Teach SP1	The switching point is on the teach value
					66 / 0x42	Teach SP2	
					67 / 0x43	Teach SP1 TP1	The switching point is in the middle of both teach points
					68 / 0x44	Teach SP1 TP2	
					69 / 0x45	Teach SP2 TP1	
					70 / 0x46	Teach SP2 TP2	
					71 / 0x47	Teach SP1 start	The switching point is in the middle of the min. / max. value Teach point 1 and teach point 2 are both necessary
					72 / 0x48	Teach SP1 stop	
					73 / 0x49	Teach SP2 start	
					74 / 0x4A	Teach SP2 stop	
					79 / 0x4F	Teach cancel	
					126 / 0x7E	Locator start	
					127 / 0x7F	Locator stop	
					128 / 0x80	Device reset	The device performs a restart
					129 / 0x81	Application reset	Reset the technology specific application
					130 / 0x82	Restore factory settings	Restore parameters to the original delivery status
					131 / 0x83	Back-to-box	Restore parameters to the original delivery values without any interaction with upper level mechanisms such as Data Storage or PLC based parameterization

EVENTS				
Event code	Definition and recommended maintenance action	Device status value	Type	Comment
16384 / 0x4000	Temperature fault	4	Error	Temperature absolute max ratings
16912 / 0x4210	Device temperature over-run	2	Warning	
16928 / 0x4220	Device temperature under-run	2	Warning	
20480 / 0x5000	Device hardware fault	4	Error	
20497 / 0x5011	Non volatile memory loss	4	Error	
65425 / 0xFF91	Data Storage upload request	0	Notification	