

P1PYxxx

High-Performance Distance Sensors



Interface Description

IO-Link P1PYxxx

Vendor ID

Product	hex	dec	hex (Bytes)	dec (Bytes)
wenglor sensoric GmbH	0x0057	87	00 57	0 87

Device ID

Product	hex	dec	hex (Bytes)	dec (Bytes)
P1PY001	0x370F01	3608321	37 0F 01	55 15 1
P1PY001S01	0x370F63	3608419	37 0F 63	55 15 99
P1PY002	0x370F02	3608322	37 0F 02	55 15 2
P1PY003	0x370F03	3608323	37 0F 03	55 15 3
P1PY004	0x370F04	3608324	37 0F 04	55 15 4
P1PY009	0x370F09	3608329	37 0F 09	55 15 9

IO-Link Version:	V1.1
Data Storage:	Yes
Blockparameter:	Yes
Min Cycle time:	2,3 ms
SIO-Mode:	Yes
COM-Mode:	COM2
ISDU:	Yes
Process data In (Device to Master):	16 Bit
Process data Out (Master to Device):	—

Process data (length: 16 Bit)

If Parameter “Processdatatype” = 0

Subindex	Name	Bit Offset	Length	Range
1	A1 Output	0	1 Bit	0 = false 1 = true
2	A2 Output	1	1 Bit	0 = false 1 = true
3	Contamination Output	2	1 Bit	0 = false 1 = true
4	Error Output	3	1 Bit	0 = false 1 = true
5	Measured Value	4...15	Uint12	200...3000 mm

Octet 0

Subindex	5							
Bit Offset	15	14	13	12	11	10	9	8

Octet 1

Subindex	5				4	3	2	1
Bit Offset	7	6	5	4	3	2	1	0

Measured Value = 0 mm	Object too close
4 093 mm	Laser off
4 094 mm	Object too far
4 095 mm	No signal

If Parameter “Processdatatype” = 1

Subindex	Name	Bit Offset	Length	Range
1	Measured Value	0...11	12 Bit	200...3000 mm

Octet 0

Subindex	0				1 (MSB)			
Bit Offset	15	14	13	12	11	10	9	8

Octet 1

Subindex	1 (LSB)							
Bit Offset	7	6	5	4	3	2	1	0

Measured Value = 0 mm	Object too close
4 093 mm	Laser off
4 094 mm	Object too far
4 095 mm	No signal

Parameter

Name	Index (hex)	Index (dec)	Sub-index	R/W	Datatype	Data Storage	dynamic	modify others	Default value	Range
Identification										
Vendor Name	0x0010	16	0	R	String				wenglor sensoric GmbH	
Vendor Text	0x0011	17	0	R	String				the innovative family	
Product Name	0x0012	18	0	R	String				P1PY0xx	
Product ID	0x0013	19	0	R	String				P1PY0xx	
Product Text	0x0014	20	0	R	String				High-Performance Distance Sensor	
Serial Number	0x0015	21	0	R	String				—	
Hardware Revision	0x0016	22	0	R	String				—	
Firmware Revision	0x0017	23	0	R	String				—	
Application Specific Tag	0x0018	24	0	R/W	String 32 Byte	X			***	
Parameter Device Settings										
System Command	0x0002	2	0	W	UInt8			X	—	Factory Reset = 0x82 (130)
Device Access Locks.Parameter (write) Access Lock	0x000C	12	1	R/W	Bool	X			0	0 = unlocked 1 = Parameter Access locked
Device Access Locks.Data Storage Lock	0x000C	12	2	R/W	Bool	X			0	0 = unlocked 1 = Data Storage Locked
Device Access Locks.Local Parameterization	0x000C	12	3	R/W	Bool	X			0	0 = unlocked 1 = Local Parameterization locked
Mesasured Value Settings										
Processdatatype	0x005A	90	0	R/W	UInt8	X		X	0 = Outputs and Measured Value	0 = Outputs and Measured Value 1 = Measured Value only
Emitted Light	0x00E0	224	0	R/W	UInt8	X			0	0 = On 1 = Off
Pin Function										
E/A1 Pin Function	0x0040	64	0	R/W	UInt8	X		X	0 = Switching Output	0 = Switching Output 1 = Error Output 2 = Contamination Output 3 = Emitted Light Disengageable 4 = Extern Teach
E/A2 Pin Function	0x0041	65	0	R/W	UInt8	X		X	P1PY009: 6 = Antivalent Switching Output Rest 0 = Switching Output	0 = Switching Output 1 = Error Output 2 = Contamination Output 3 = Emitted Light Disengageable 4 = Extern Teach 6 = Antivalent Switching Output
E3 Pin Function	0x0042	66	0	R/W	UInt8	X		X	3 = Emitted Light Disengageable	0 = Disabled 3 = Emitted Light Disengageable 4 = Extern Teach
A1 (Switching Output)										
A1_Teach_in	0x0200	512	0	W	UInt8			X	—	1 = Do Teach
A1 Teach Mode	0x0290	656	0	W	UInt8	X		X	0 = Foreground Teach-in	0 = Foreground Teach-in 1 = Background Teach-in 2 = Window Teach-in
A1 Switch Point	0x0270	624	0	R/W	UInt16	X			3000 mm	200...3000 mm
A1 Window Near	0x0271	625	0	R/W	UInt16	X			30 mm	1..500 mm
A1 Window Far	0x0272	626	0	R/W	UInt16	X			30 mm	1..500 mm
A1_Hysteresis	0x0300	768	0	R/W	UInt16	X			15 mm	15...500mm
A1 ON Delay	0x0050	80	0	R/W	UInt16	X			0 ms	0...10000 ms
A1 OFF Delay	0x0060	96	0	R/W	UInt16	X			0 ms	0...10000 ms
A1 NO/NC	0x0210	528	0	R/W	UInt8	X			P1PY001S01: 1 = Normally closed Rest: 0 = Normally open	0 = Normally open 1 = Normally closed
A1 NPN/PNP	0x0220	544	0	R/W	UInt8	X			P1PY001/001S01/002/009: 0 P1PY003/004: 1	0 = NPN 1 = NPN 2 = Pushpull

Name	Index (hex)	Index (dec)	Sub-index	R/W	Datatype	Data Storage	dynamic	modify others	Default value	Range
A1 (Error or Contamination Output)										
A1 ON Delay	0x0050	80	0	R/W	Uint16	X			0 ms	0...10000 ms
A1 OFF Delay	0x0060	96	0	R/W	Uint16	X			0 ms	0...10000 ms
A1 NO/NC	0x0210	528	0	R/W	Uint8	X			0 = Normally open	0 = Normally open 1 = Normally closed
A1 NPN/PNP	0x0220	544	0	R/W	Uint8	X			P1PY001/001S01/ 002/009: 0 P1PY003/004: 1	0 = PNP 1 = NPN 2 = Pushpull
E1 (Teach Input or Emitted Light)										
E1 Input Ub active/inactive	0x0260	608	0	R/W	Uint8	X			0	0 = Ub active 1 = Ub inactive
A2 (Switching Output)										
A2 Teach_in	0x0201	513	0	W	Uint8			X	—	1 = Do Teach
A2 Teach Mode	0x0291	657	0	R/W	Uint8	X		X	0 = Foreground Teach-in	0 = Foreground Teach-in 1 = Background Teach-in 2 = Window Teach-in
A2 Switch Point	0x0280	640	0	R/W	Uint16	X		X	3000 mm	200...3000 mm
A2 Window Near	0x0281	641	0	R/W	Uint16	X			30 mm	1...500 mm
A2 Window Far	0x0282	642	0	R/W	Uint16	X			30 mm	1...500 mm
A2 Hysteresis	0x0301	769	0	R/W	Uint16	X			15 mm	15...500mm
A2 ON Delay	0x0051	81	0	R/W	Uint16	X			0 ms	0...10000 ms
A2 OFF Delay	0x0061	97	0	R/W	Uint16	X			0 ms	0...10000 ms
A2 NO/NC	0x0211	529	0	R/W	Uint8	X			0 = Normally open	0 = Normally open 1 = Normally closed
A2 NPN/PNP	0x0221	545	0	R/W	Uint8	X			P1PY001/001S01/ 002/009: 0 P1PY003/004: 1	0 = PNP 1 = NPN 2 = Pushpull
A2 (Error or Contamination Output)										
A2 ON Delay	0x0051	81	0	R/W	Uint16	X			0 ms	0...10000 ms
A2 OFF Delay	0x0061	97	0	R/W	Uint16	X			0 ms	0...10000 ms
A2 NO/NC	0x0211	529	0	R/W	Uint8	X			0 = Normally open	0 = Normally open 1 = Normally closed
A2 NPN/PNP	0x0221	545	0	R/W	Uint8	X			P1PY001/001S01/ 002/009: 0 P1PY003/004: 1	0 = PNP 1 = NPN 2 = Pushpull
E2 (Teach Input or Emitted Light Disengageable)										
E2 Input Ub active/inactive	0x0261	609	0	R/W	Uint8	X			0	0 = Ub active 1 = Ub inactive
E3										
E3 Input Ub active/inactive	0x0262	610	0	R/W	Uint8	X			0	0 = Ub active 1 = Ub inactive
Device Test										
Test Mode	0x0310	784	0	R/W	Uint8		X		0	0 = Aus 1 = An
Test Output A1	0x0317	791	0	R/W	Uint8		X		0	0 = Aus 1 = An
Test Output A2	0x0311	785	0	R/W	Uint8		X		0	0 = Aus 1 = An
Test Input E2	0x0313	787	0	R	Uint8		X		0	0 = Aus 1 = An
Test Input E3	0x0318	792	0	R	Uint8		X		0	0 = Aus 1 = An
Test Error	0x0314	788	0	R/W	Uint8		X		0	0 = Aus 1 = An
Test Contamination	0x0315	789	0	R/W	Uint8		X		0	0 = Aus 1 = An
Test Distance	0x0316	790	0	R/W	Uint16		X		1000	200...3000 mm