

EN

P1MKxxx

Retro-Reflex Sensor for Transparent Objects
High-End with Teach-in



Interface Description

IO-Link P1MKxxx

Vendor ID

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

Device ID

Produkt	hex	dec	hex (Bytes)	dec (Bytes)
P1MK101	0x2A0C0D	2755597	2A 0C 0D	42 12 13
P1MK102	0x2A0C11	2755601	2A 0C 11	42 12 17

IO-Link Version:	V1.1
Parameter Server / Data Storage:	Yes
Blockparameter:	Yes
MinCycletime:	3,0 ms
SIO-Mode:	Yes
COM-Mode:	COM2
ISDU:	Yes
Process data In (Device to Master)	24 Bit
Process data Out (Master to Device)	-

Process data (Length: 16 Bit)

Subindex	Name	Bit Offset	Data Type	Range
1	A1 Output	0	Bool	0 = off 1 = on
2	Signal Warning	1	Bool	0 = false 1 = true
3	---	2	---	---
4	---	3	---	---
5	Short Circuit	4	Bool	0 = false 1 = true
6	---	5	---	---
7	Overtemperature	6	Bool	0 = false 1 = true
8	---	7	---	---
9	Switchpoint	8	Uint8	0...245
10	Signal	16	Uint8	0...255

Octet 0

Subindex	10							
Bit Offset	23	22	21	20	19	18	17	16

Octet 1

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

Octet 2

Subindex	8	7	6	5	4	3	2	1
Bit Offset	7	6	5	4	3	2	1	0

Parameter

Name	Index (hex)	Index (dec)	Sub-index	R/W	Data type	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				P1MKxxx	-
Product ID	0x0013	19	0	R	String				P1MKxxx	-
Product Text	0x0014	20	0	R	String				Retro-Reflex Sensor for Clear Glass Recognition	-
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 = unlocked	0 = unlocked 1 = Parameter Access locked
Device Access Locks.Data Storage Lock	0x000C	12	2	R/W	Bool	X			0 = unlocked	0 = unlocked 1 = Data Storage Locked
Device Access Locks.Local Parameterization	0x000C	12	3	R/W	Bool	X			0 = unlocked	0 = unlocked 1 = Local Parameterization locked
NFC Disable	0x0305	773	0	R/W	UInt8	X			0 = Active Mode	0 = Active Mode 1 = Passive Mode 2 = Disable
Mesasured Value Settings										
Emitted Light	0x00E0	224	0	R/W	UInt8	X			0 = On	0 = On 1 = Off
Operating Mode	0x0110	272	0	R/W	UInt8	X			0 = Standard	0 = Standard 1 = Speed
Hysteresis	0x0300	768	0	R/W	UInt8	X			0 = Small	0 = Small 1 = Large
Gain	0x0301	769	0	R/W	Bool	X			1 = High	0 = Low 1 = High
Dynamic Readjustment	0x0302	770	0	R/W	Bool	X			1 = On	0 = Off 1 = On
Dynamic Readjustment Storage	0x0303	771	0	R/W	Bool	X			1 = On	0 = Off 1 = On
Dynamic Readjustment Time	0x0304	772	0	R/W	UInt32	X			3600	5...3600 sec.
Mesasured Value Settings										
A1 Pin Function	0x0040	64	0	R/W	UInt8	X		X	0 = Switching Output	0 = Switching Output 1 = Error Output 2 = Contamination Output
E/A2 Pin Function	0x0041	65	0	R/W	UInt8	X		X	4 = Extern Teach A1	1 = Error Output 2 = Contamination Output 4 = Extern Teach A1 5 = Deactivated 6 = Antivalent Switching Output
A1 Settings (Switching Output)										
A1_Teach_In	0x0200	512	0	W	UInt8			X	-	1 = Teach-In
A1 Teach Mode	0x0290	656	0	R/W	UInt8	X			0 = Minimal	0 = Minimal 1 = Normal
A1 Teach Percentage	0x0291	657	0	R/W	UInt8	X			10	6...15 %
A1 Switch Point	0x0270	624	0	R/W	UInt8	X			245	0...245
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			1 = NC	0 = NO 1 = NC

Name	Index (hex)	Index (dec)	Sub-index	R/W	Data type	Data Storage	Dynamic	Modify others	Default value	Range
A1 PNP/NPN	0x0220	544	0	R/W	Uint8	X			1 = PNP: P1MK101 2 = NPN: P1MK102	0 = PushPull 1 = PNP 2 = NPN
A1 Settings (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 = NO	0 = NO 1 = NC
A1 PNP/NPN	0x0220	544	0	R/W	Uint8	X			1 = PNP: P1MK101 2 =NPN: P1MK102	0 = PushPull 1 = PNP 2 = NPN
A2 Settings (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 = NO	0 = NO 1 = NC
A2 PNP/NPN	0x0221	545	0	R/W	Uint8	X			1 = PNP: P1MK101 2 =NPN: P1MK102	0 = Push-Pull 1 = PNP 2 = NPN
A2 Settings (Antivalent Switching Output)										
A2 PNP/NPN	0x0221	545	0	R/W	Uint8	X			1 = PNP: P1MK101 2 =NPN: P1MK102	0 = Push-Pull 1 = PNP 2 = NPN
E2 Settings (Teach Input)										
Input Ub active/inactive	0x0260	608	0	R/W	Uint8	X			0 = Ub active	0 = Ub active 1 = Ub inactive
Device Test										
Test Mode	0x0310	784	0	R/W	Uint8		X		0 = OFF	0 = OFF 1 = ON
Test Output A1	0x0317	791	0	R/W	Uint8		X		0 = OFF	0 = OFF 1 = ON
Test Input E2	0x0313	787	0	R	Uint8		X		0 = OFF	0 = OFF 1 = ON
Test Error	0x0314	788	0	R/W	Uint8		X		0 = OFF	0 = OFF 1 = ON
Test Contamination	0x0315	789	0	R/W	Uint8		X		0 = OFF	0 = OFF 1 = ON
Test signal	0x0316	790	0	R/W	Uint8		X		0	0...245

Notes for the use of the IODD

RAM-memory

The changed parameters are stored in the volatile memory of the sensor. This could be used for testing and if the configuration of the sensor changes often (e. g. for different production batches).

Changes have the following effects:

- Sensor behavior is adjusted immediately without a restart according to the changed parameter.
- In case of a sensor restart (e. g. by turning power off and on) the settings are lost.
- Changes have no effects on the OTP-memory of the sensor.

OTP-memory

By writing the parameters, they are stored in the non-volatile memory. At every start-up the OTP parameters are loaded to the RAM of the sensor. The OTP-memory has limited write cycles. The wenglor sensoric GmbH can guarantee at least 240 writes to the OTP-memory at delivery.

The current number of writes is readable from the parameter "Counter OTP memory".

Procedure to save parameters in the OTP-memory of the sensor:

1. Test the sensor settings within the application until the desired configuration is clear.
2. Set the parameter "Write parameters to OTP memory" to "write parameters" and send it to the sensor.
3. The configuration is applied directly, and after a restart it is loaded from the OTP-memory.
4. New configuration is stored in the sensors RAM and OTP-memory.