

## IO-Link-General

• Sensor ist nach „Smart Sensor Profile“ implementiert	• Sensor is implemented according „Smart Sensor Profile“	• Le capteur est de „Smart Sensor Profile“ mis en oeuvre
• Der Sensor unterstützt „Data Storage“	• The sensor supports „Data Storage“	• Le capteur prend en charge „Data Storage“
• Weitere Informationen zu IO-Link: <a href="http://www.io-link.com">www.io-link.com</a>	• More information about IO-Link: <a href="http://www.io-link.com">www.io-link.com</a>	• Information complémentaire de IO-Link: <a href="http://www.io-link.com">www.io-link.com</a>

## IO-Link Process Data

7	6	5	4	3	2	1	0
				A	Q		BDC 1

Q:	Das Quality bit signalisiert, dass die Signalqualität unter einen festgelegten Wert gesunken ist.	The quality bit signals that the signal quality has fallen below the configured threshold.	Le bit de qualité qui indique la qualité du signal en vertu une valeur fixe a baissé.
BDC1:	Status des logischen Schaltausgangs des Sensors	Status of the logical switching output of the sensor.	Etat de la sortie de commutation logique du capteur.
A	Das Alarmbit signalisiert, dass es mit der Konfiguration oder der Funktion des Sensors ein Problem gibt.	The alarm bit signals that there is a problem with the configuration or the functionality of the sensor.	Le bit d'alarme signale l'existence d'un problème avec la configuration ou la fonctionnalité du capteur.

## IO-Link Binary Data Channels

Index	Subindex (dec)	Access	Parameter name	Coding	Definition
0x003c (60)	01	R/W	Setpoint SP 1	UInt16	Teach Point [mm] (TP) <sup>1)</sup>
	02	R/W	Setpoint SP 2	UInt16	Not supported
0x003d (61)	01	R/W	Switchpoint logic	UInt8	0x00: not inverted 0x01: inverted
	02	R/(W)	Switchpoint mode	UInt8	Fixed value <sup>2)</sup> 0x01: Single point mode

<sup>1)</sup> um mit dem „Smart Sensor Profile“ kompatibel zu sein, wird TP in den Parametern gespeichert statt SP1 und SP2	<sup>1)</sup> to be compliant with the „Smart Sensor Profile“, the TP is stored in the parameters instead of SP1 and SP2	<sup>1)</sup> pour être compatible avec „Smart Sensor Profile“, le TP est mémorisé dans les paramètres au lieu de SP1 et SP2
<sup>2)</sup> Änderung des Standardwerts generiert eine PAR_VALOUTOFRNG Fehlermeldung	<sup>2)</sup> writing another value than the default to this index generates a PAR_VALOUTOFRNG error code	<sup>2)</sup> écrire une autre valeur que la défaut de ce générique taux d'index une PAR_VALOUTOFRNG code d'erreur

## IO-Link Teach-In Channels

Index	Subindex (dec)	Access	Parameter name	Coding	Definition
0x003a (58)	0	R/W	Teach Channel	0	Address of the manufacturer/vendor specific predefined (default) BDC
				1 - 128	Address of the BDC1 to BDC128
				129 - 191	Reserved
				192 - 254	Different manufacturer/vendor specific BDC sets
				255	Addressing of all implemented BDCs
0x003b (59)	0	R	Teach-In Status	0	See „Smart Sensor Profile“ (Teach Flags and Teach State)
				1	SP1 success
				2	SP2 success
				3	SP12 success
				4	Wait for command
				5	Busy
				6	Reserved
				7	Error
				8 – 11	Reserved
				12 - 15	Manufacturer / vendor specific

## IO-Link System Commands

Command	Value
Teach Apply	0x40
SP1 Single Value Teach	0x41
SP1 Two Value Teach TP1	0x43
SP1 Two Value Teach TP2	0x44
Teach Cancel	0x4F
Restore Factory settings	0x82

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|---|---|--|
| <ul style="list-style-type: none"> <li>System commands werden an den Index 0x002 (2) geschrieben</li> </ul> | <ul style="list-style-type: none"> <li>System commands have to be written at index 0x002 (2)</li> </ul> | <ul style="list-style-type: none"> <li>Commands du système doivent être écrites à l'index 0x002 (2)</li> </ul> |
|---|---|--|

## IO-Link Quality and Quality Bit Threshold

Index	Subindex (dec)	Access	Parameter name	Coding	Definition
0x0040 (64)	01	R	Quality value	Uint 16	< 100: Not enough signal strength 100: Just exactly the signal strength that is required 200: Twice of the signal strength that is required
0x0041 (65)	01	R/W	Quality bit threshold	Uint 16	If the quality value falls below this threshold, the quality bit in the process data will be set. 0xFFFF: The quality bit will never be set.

**IO-Link pre defined parameters**

Index	Subindex (dec)	Access	Parameter name	Coding	Definition
0x000C (12)	0	R/W	Device Access Locks	Uint 16	0: Unlocked (default)
					1: Device is operating properly
0x0010 (16)	0	R	Vendor Name	String	ipf electronic gmbh
0x0011 (17)	0	R	Vendor Text	String	<a href="http://www.ipf.de">www.ipf.de</a>
0x0012 (18)	0	R	Device Name	String	<Product key external>
0x0013 (19)	0	R	Product ID	String	ipf article-no.
0x0014 (20)	0	R	Device Text	String	Sensor Specific
0x0015 (21)	0	R	Serial Number	String	Serial Number
0x0017 (24)	0	R	Firmware Revision	String	Major.Minor „###.##“
0x0018 (24)	0	R/W	Application Specific Tag	String	Default: Filled with “*****”, as recommended by the IO-Link spec.
0x0024 (36)	0	R	Device Status	Uint 16	0: Device is operating properly
					1: Device is operating properly
					2: Out-of-Specification
					3: Functional-Check
					4: Failure
					5 – 255: Reserved
0x0025 (37)	0	R	Detailed Device Status	Uint 16	EventQualifier “0x00” EventCode “0x00, 0x00”

**IO-Link ipf specific parameters**

Index	Subindex (dec)	Access	Parameter name	Coding	Definition
0x0050 (80)	0	R/W	Local teach lock time	Uint8	0: Local teach never locked 1 ... 120: Local teach locked after n minutes 0xFF: Local teach always locked Default value: 5
0x0060 (96)	01	R/W	Response Delay Filter	Uint16	0: filter OFF (default) 5 ... 1000 <sup>3)</sup> : Delay in ms in steps of 5ms
	02	R/W	Release Delay Filter	Uint16	0: filter OFF (default) 5 ... 1000 <sup>3)</sup> : Delay in ms in steps of 5ms
0x0061 (97)	0	R/W	Minimum pulse duration	Uint16	0: pulse duration OFF (default) 5 ... 1000 <sup>3)</sup> : Minimum pulse in ms in steps of 5ms
0x0064 (100)	0	R/W	Teach method	Uint16	0: xPert Full functionality 1: xPress Reflector teach only (tap qTeach for 2 sec to teach reflector)

<sup>3)</sup> Der Wert wird auf 5ms gerundet

<sup>2)</sup> The value is rounded to 5ms

<sup>3)</sup> La valeur est arrondie à 5ms

**IO-Link Event codes for devices**

Event Codes	Definition and recommended maintenance action	Device Status Value	Type
0x5000	Device hardware fault - Device exchange	4	Error