





Version: V1.00	Release Date: 2021-03-01
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PTQ80576	
Vendor ID	780 (0x030c)
Vendor Name	ipf electronic gmbh
Vendor Text	www.ipf.de
Vendor URL	www.ipf.de
Device ID	8079873 (0x7b4a01)
DeviceFamily	Laser Diffuse Reflection Sensor with Background Suppression
<div>  </div>	
Features	
Block Parameter	yes
Data Storage	yes
Profile Characteristic	0x0001 (Device Profile: Smart Sensor), 0x8001 (Function Class: Binary Data Channel), 0x8004 (Function Class: Teach-In Commands)
Supported Access Locks	Parameter: yes, Data Storage: yes, Local Parameterization: no, Local User Interface: yes
Communication	
IO-Link Revision	V1.1
Transmission Rate	38400 bit/s (COM2)
Minimum Cycle Time	2.3 ms
SIO Mode Supported	yes
M-Sequence Capability	PREOPERATE = TYPE_0 with 1 octet on-request data OPERATE = TYPE_2_2 with 1 octet on-request data ISDU supported
Device Variant	PTQ80576
Description	Laser Diffuse Reflection Sensor with Background Suppression
Product ID	PTQ80576
Device Icon	
Device Symbol	
Connection Type	Non-standard connector
Connection Symbol	
Connection Description	Plug, M8, 4-pin
- pin 1	brown; L+; +Ub
- pin 2	white; Other; IN
- pin 3	(light) blue; L-; -Ub
- pin 4	black; C/Q; C/Q

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ProcessData id=PD\_SmartSensor

ProcessDataIn "Switching outputs" id=PDIN\_SmartSensor

bit length: 16  
 data type: 16-bit Record

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	8	8-bit UInteger	0..100		ro			Signal quality	
2	2	Boolean			ro			Q quality	
3	1	Boolean			ro			Switching Q2	
4	0	Boolean			ro			Switching Q1	

Octet 0

bit offset	15	14	13	12	11	10	9	8
subindex					1			
element bit	7	6	5	4	3	2	1	0

Octet 1

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bit offset	7	6	5	4	3	2	1	0
subindex	/////	/////	/////	/////	/////	2	3	4

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### Standard Variable "Direct Parameters 1" index=0 id=V\_DirectParameters\_1

data type: 128-bit Record

access rights: rw

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	120	8-bit UInteger			ro			Reserved	
2	112	8-bit UInteger			ro			Master Cycle Time	
3	104	8-bit UInteger			ro			Min Cycle Time	
4	96	8-bit UInteger			ro			M-Sequence Capability	
5	88	8-bit UInteger		17	ro			IO-Link Version ID	
6	80	8-bit UInteger			ro			Process Data Input Length	
7	72	8-bit UInteger			ro			Process Data Output Length	
8	64	8-bit UInteger			ro			Vendor ID 1	
9	56	8-bit UInteger			ro			Vendor ID 2	
10	48	8-bit UInteger			ro			Device ID 1	
11	40	8-bit UInteger			ro			Device ID 2	
12	32	8-bit UInteger			ro			Device ID 3	
13	24	8-bit UInteger			ro			Reserved	
14	16	8-bit UInteger			ro			Reserved	
15	8	8-bit UInteger			ro			Reserved	
16	0	8-bit UInteger	64 = Teach Apply, 65 = Single value teach - switchpoint 1, 66 = Single value teach - switchpoint 2, 67 = Two value teach - teachpoint 1 for switchpoint 1, 68 = Two value teach - teachpoint 2 for switchpoint 1, 69 = Two value teach - teachpoint 1 for switchpoint 2, 70 = Two value teach - teachpoint 2 for switchpoint 2, 71 = Dynamic teach - switchpoint 1 - start, 72 = Dynamic teach - switchpoint 1 - stop, 73 = Dynamic teach - switchpoint 2 - start, 74 = Dynamic teach - switchpoint 2 - stop, 79 = Teach-in cancel, 128 = Device Reset, 130 = Restore Factory Settings, 160 = Emitter OFF, 161 = Emitter ON, 162 = Reset switching-channel, 175 = Detect Sensor		wo	X		Standard Command	

octet	0	1	2	3	4	5	6	7
bit offset	127 - 120	119 - 112	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64
subindex	1	2	3	4	5	6	7	8
element bit	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0

octet	8	9	10	11	12	13	14	15
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0
subindex	9	10	11	12	13	14	15	16
element bit	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0

### Standard Variable "Direct Parameters 2" index=1 id=V\_DirectParameters\_2

data type: 128-bit Record

access rights: rw

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	120	8-bit UInteger						Device Specific Parameter 1	
2	112	8-bit UInteger						Device Specific Parameter 2	
3	104	8-bit UInteger						Device Specific Parameter 3	
4	96	8-bit UInteger						Device Specific Parameter 4	
5	88	8-bit UInteger						Device Specific Parameter 5	
6	80	8-bit UInteger						Device Specific Parameter 6	
7	72	8-bit UInteger						Device Specific Parameter 7	
8	64	8-bit UInteger						Device Specific Parameter 8	
9	56	8-bit UInteger						Device Specific Parameter 9	
10	48	8-bit UInteger						Device Specific Parameter 10	
11	40	8-bit UInteger						Device Specific Parameter 11	
12	32	8-bit UInteger						Device Specific Parameter 12	
13	24	8-bit UInteger						Device Specific Parameter 13	
14	16	8-bit UInteger						Device Specific Parameter 14	
15	8	8-bit UInteger						Device Specific Parameter 15	
16	0	8-bit UInteger						Device Specific Parameter 16	

octet	0	1	2	3	4	5	6	7
bit offset	127 - 120	119 - 112	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64
subindex	1	2	3	4	5	6	7	8
element bit	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0

octet	8	9	10	11	12	13	14	15
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0
subindex	9	10	11	12	13	14	15	16
element bit	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0

### Standard Variable "Standard Command" index=2 id=V\_SystemCommand

data type: 8-bit UInteger

allowed values: 64 = Teach Apply, 65 = Single value teach - switchpoint 1, 66 = Single value teach - switchpoint 2, 67 = Two value teach - teachpoint 1 for switchpoint 1, 68 = Two value teach - teachpoint 2 for switchpoint 1, 69 = Two value teach - teachpoint 1 for switchpoint 2, 70 = Two value teach - teachpoint 2 for switchpoint 2, 71 = Dynamic teach - switchpoint 1 - start, 72 = Dynamic teach - switchpoint 1 - stop, 73 = Dynamic teach - switchpoint 2 - start, 74 = Dynamic teach - switchpoint 2 - stop, 79 = Teach-in cancel, 128 = Device Reset, 130 = Restore Factory Settings, 160 = Emitter OFF, 161 = Emitter ON, 162 = Reset switching-channel, 175 = Detect Sensor

access rights: wo

modifies other variables

octet	0	
bit offset	7 - 0	
element bit	7 - 0	

### Standard Variable "Device Access Locks" index=12 id=V\_DeviceAccessLocks

data type: 16-bit Record (subindex access not supported)

access rights: rw

excluded from data storage

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	0	Boolean		0				Parameter (write) Access Lock	
2	1	Boolean		0				Data Storage Lock	

3	2	Boolean					Local Parameterization Lock
4	3	Boolean		0			Local User Interface Lock

**Octet 0**

bit offset	15	14	13	12	11	10	9	8
subindex	/////	/////	/////	/////	/////	/////	/////	/////

**Octet 1**

bit offset	7	6	5	4	3	2	1	0
subindex	/////	/////	/////	/////	4	3	2	1

**Standard Variable "Vendor Name" index=16 id=V\_VendorName**

data type: 64-octet String UTF-8  
 default value: "ipf electronic gmbh"  
 access rights: ro

octet	0	1	2	3	4	5	6	7
bit offset	511 - 504	503 - 496	495 - 488	487 - 480	479 - 472	471 - 464	463 - 456	455 - 448

octet	8	9	10	11	12	13	14	15
bit offset	447 - 440	439 - 432	431 - 424	423 - 416	415 - 408	407 - 400	399 - 392	391 - 384

octet	16	17	18	19	20	21	22	23
bit offset	383 - 376	375 - 368	367 - 360	359 - 352	351 - 344	343 - 336	335 - 328	327 - 320

octet	24	25	26	27	28	29	30	31
bit offset	319 - 312	311 - 304	303 - 296	295 - 288	287 - 280	279 - 272	271 - 264	263 - 256

octet	32	33	34	35	36	37	38	39
bit offset	255 - 248	247 - 240	239 - 232	231 - 224	223 - 216	215 - 208	207 - 200	199 - 192

octet	40	41	42	43	44	45	46	47
bit offset	191 - 184	183 - 176	175 - 168	167 - 160	159 - 152	151 - 144	143 - 136	135 - 128

octet	48	49	50	51	52	53	54	55
bit offset	127 - 120	119 - 112	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64

octet	56	57	58	59	60	61	62	63
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0

**Standard Variable "Vendor Text" index=17 id=V\_VendorText**

data type: 64-octet String UTF-8  
 default value: "www.ipf.de"  
 access rights: ro

octet	0	1	2	3	4	5	6	7
bit offset	511 - 504	503 - 496	495 - 488	487 - 480	479 - 472	471 - 464	463 - 456	455 - 448

octet	8	9	10	11	12	13	14	15
bit offset	447 - 440	439 - 432	431 - 424	423 - 416	415 - 408	407 - 400	399 - 392	391 - 384

octet	16	17	18	19	20	21	22	23
bit offset	383 - 376	375 - 368	367 - 360	359 - 352	351 - 344	343 - 336	335 - 328	327 - 320

octet	24	25	26	27	28	29	30	31
bit offset	319 - 312	311 - 304	303 - 296	295 - 288	287 - 280	279 - 272	271 - 264	263 - 256

octet	32	33	34	35	36	37	38	39
bit offset	255 - 248	247 - 240	239 - 232	231 - 224	223 - 216	215 - 208	207 - 200	199 - 192

octet	40	41	42	43	44	45	46	47
bit offset	191 - 184	183 - 176	175 - 168	167 - 160	159 - 152	151 - 144	143 - 136	135 - 128

octet	48	49	50	51	52	53	54	55
bit offset	127 - 120	119 - 112	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64

octet	56	57	58	59	60	61	62	63
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0

### Standard Variable "Product Name" index=18 id=V\_ProductName

data type: 64-octet String UTF-8

default value: "PTQ80576"

access rights: ro

octet	0	1	2	3	4	5	6	7
bit offset	511 - 504	503 - 496	495 - 488	487 - 480	479 - 472	471 - 464	463 - 456	455 - 448

octet	8	9	10	11	12	13	14	15
bit offset	447 - 440	439 - 432	431 - 424	423 - 416	415 - 408	407 - 400	399 - 392	391 - 384

octet	16	17	18	19	20	21	22	23
bit offset	383 - 376	375 - 368	367 - 360	359 - 352	351 - 344	343 - 336	335 - 328	327 - 320

octet	24	25	26	27	28	29	30	31
bit offset	319 - 312	311 - 304	303 - 296	295 - 288	287 - 280	279 - 272	271 - 264	263 - 256

octet	32	33	34	35	36	37	38	39
bit offset	255 - 248	247 - 240	239 - 232	231 - 224	223 - 216	215 - 208	207 - 200	199 - 192

octet	40	41	42	43	44	45	46	47
bit offset	191 - 184	183 - 176	175 - 168	167 - 160	159 - 152	151 - 144	143 - 136	135 - 128

octet	48	49	50	51	52	53	54	55
bit offset	127 - 120	119 - 112	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64

octet	56	57	58	59	60	61	62	63
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0

### Standard Variable "Product ID" index=19 id=V\_ProductID

data type: 64-octet String UTF-8

access rights: ro

octet	0	1	2	3	4	5	6	7
bit offset	511 - 504	503 - 496	495 - 488	487 - 480	479 - 472	471 - 464	463 - 456	455 - 448

octet	8	9	10	11	12	13	14	15
bit offset	447 - 440	439 - 432	431 - 424	423 - 416	415 - 408	407 - 400	399 - 392	391 - 384

octet	16	17	18	19	20	21	22	23
bit offset	383 - 376	375 - 368	367 - 360	359 - 352	351 - 344	343 - 336	335 - 328	327 - 320

octet	24	25	26	27	28	29	30	31
bit offset	319 - 312	311 - 304	303 - 296	295 - 288	287 - 280	279 - 272	271 - 264	263 - 256

octet	32	33	34	35	36	37	38	39
bit offset	255 - 248	247 - 240	239 - 232	231 - 224	223 - 216	215 - 208	207 - 200	199 - 192

octet	40	41	42	43	44	45	46	47
bit offset	191 - 184	183 - 176	175 - 168	167 - 160	159 - 152	151 - 144	143 - 136	135 - 128

octet	48	49	50	51	52	53	54	55
bit offset	127 - 120	119 - 112	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64

octet	56	57	58	59	60	61	62	63
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0

### Standard Variable "Product Text" index=20 id=V\_ProductText

data type: 64-octet String UTF-8  
access rights: ro

octet	0	1	2	3	4	5	6	7
bit offset	511 - 504	503 - 496	495 - 488	487 - 480	479 - 472	471 - 464	463 - 456	455 - 448

octet	8	9	10	11	12	13	14	15
bit offset	447 - 440	439 - 432	431 - 424	423 - 416	415 - 408	407 - 400	399 - 392	391 - 384

octet	16	17	18	19	20	21	22	23
bit offset	383 - 376	375 - 368	367 - 360	359 - 352	351 - 344	343 - 336	335 - 328	327 - 320

octet	24	25	26	27	28	29	30	31
bit offset	319 - 312	311 - 304	303 - 296	295 - 288	287 - 280	279 - 272	271 - 264	263 - 256

octet	32	33	34	35	36	37	38	39
bit offset	255 - 248	247 - 240	239 - 232	231 - 224	223 - 216	215 - 208	207 - 200	199 - 192

octet	40	41	42	43	44	45	46	47
bit offset	191 - 184	183 - 176	175 - 168	167 - 160	159 - 152	151 - 144	143 - 136	135 - 128

octet	48	49	50	51	52	53	54	55
bit offset	127 - 120	119 - 112	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64

octet	56	57	58	59	60	61	62	63
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0

### Standard Variable "Serial Number" index=21 id=V\_SerialNumber

data type: 16-octet String UTF-8  
access rights: ro

octet	0	1	2	3	4	5	6	7
bit offset	127 - 120	119 - 112	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64

octet	8	9	10	11	12	13	14	15
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0

### Standard Variable "Firmware Version" index=23 id=V\_FirmwareRevision

data type: 64-octet String UTF-8  
access rights: ro

octet	0	1	2	3	4	5	6	7
bit offset	511 - 504	503 - 496	495 - 488	487 - 480	479 - 472	471 - 464	463 - 456	455 - 448

octet	8	9	10	11	12	13	14	15
bit offset	447 - 440	439 - 432	431 - 424	423 - 416	415 - 408	407 - 400	399 - 392	391 - 384

octet	16	17	18	19	20	21	22	23
bit offset	383 - 376	375 - 368	367 - 360	359 - 352	351 - 344	343 - 336	335 - 328	327 - 320

octet	24	25	26	27	28	29	30	31
bit offset	319 - 312	311 - 304	303 - 296	295 - 288	287 - 280	279 - 272	271 - 264	263 - 256

octet	32	33	34	35	36	37	38	39
bit offset	255 - 248	247 - 240	239 - 232	231 - 224	223 - 216	215 - 208	207 - 200	199 - 192

octet	40	41	42	43	44	45	46	47
bit offset	191 - 184	183 - 176	175 - 168	167 - 160	159 - 152	151 - 144	143 - 136	135 - 128

octet	48	49	50	51	52	53	54	55
bit offset	127 - 120	119 - 112	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64

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octet	56	57	58	59	60	61	62	63
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0

### Standard Variable "Application Specific Tag" index=24 id=V\_ApplicationSpecificTag

data type: 32-octet String UTF-8

default value: "\*\*\*\*\*"

access rights: rw

octet	0	1	2	3	4	5	6	7
bit offset	255 - 248	247 - 240	239 - 232	231 - 224	223 - 216	215 - 208	207 - 200	199 - 192

octet	8	9	10	11	12	13	14	15
bit offset	191 - 184	183 - 176	175 - 168	167 - 160	159 - 152	151 - 144	143 - 136	135 - 128

octet	16	17	18	19	20	21	22	23
bit offset	127 - 120	119 - 112	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64

octet	24	25	26	27	28	29	30	31
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0

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### Variable "Teach channel" index=58 id=V\_TeachInChannel

data type: 8-bit Record

access rights: rw

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	0	8-bit UInteger	0 = Q1, 2 = Q2	0	rw			Teach channel	

octet	0	
bit offset	7 - 0	
subindex	1	
element bit	7 - 0	

### Variable "Teach-in-status" index=59 id=V\_TeachInStatus

data type: 8-bit Record (subindex access not supported)

access rights: ro

dynamic

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	0	4-bit UInteger	0 = Idle, 1 = Teach successful, 2 = Teach successful, 3 = Teach successful, 4 = Wait for command, 5 = Busy, 7 = Error					Teach status	
2	4	Boolean	false = -, true = Teach successful					Teach flag SP1->TP1	
3	5	Boolean	false = -, true = Teach successful					Teach flag SP1->TP2	
4	6	Boolean	false = -, true = Teach successful					Teach flag SP2->TP1	
5	7	Boolean	false = -, true = Teach successful					Teach flag SP2->TP2	

#### Octet 0

bit offset	7	6	5	4	3	2	1	0
subindex	5	4	3	2			1	
element bit					3	2	1	0

### Variable "Define switching output Q1" index=60 id=V\_BDC1\_Setpoint

data type: 32-bit Record

access rights: rw

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
		16-bit	100..750 =					Switchpoint	

octet	0	1	2	3	
bit offset	31 - 24	23 - 16	15 - 8	7 - 0	
subindex	1	1	2	2	
element bit	15 - 8	7 - 0	15 - 8	7 - 0	

data type: 24-bit Record  
access rights: rw

octet	0	1	2	
bit offset	23 - 16	15 - 8	7 - 0	
subindex	1	2	3	
element bit	7 - 0	7 - 0	7 - 0	

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data type: 32-bit Record
access rights: rw
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octet	0	1	2	3	
bit offset	31 - 24	23 - 16	15 - 8	7 - 0	
subindex	1	1	2	2	
element bit	15 - 8	7 - 0	15 - 8	7 - 0	

data type: 24-bit Record  
access rights: rw

octet	0	1	2	
bit offset	23 - 16	15 - 8	7 - 0	
subindex	1	2	3	
element bit	7 - 0	7 - 0	7 - 0	

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data type: 40-bit Record
access rights: ro
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subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	32	8-bit Integer			ro			Operating temperature	
2	24	8-bit Integer			ro			Max. operating temperature since restart	
3	16	8-bit Integer			ro			Min. operating temperature since restart	
4	8	8-bit Integer			ro			Max. lifetime temperature	
5	0	8-bit Integer			ro			Min. lifetime temperature	

octet	0	1	2	3	4	
bit offset	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0	
subindex	1	2	3	4	5	
element bit	7 - 0	7 - 0	7 - 0	7 - 0	7 - 0	

### Variable "Operating data" index=88 id=V\_Operating\_data

data type: 64-bit Record

access rights: ro

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	32	32-bit UInteger			ro			Counter operating hours	
2	0	32-bit UInteger			ro			Counter switch cycle	

octet	0	1	2	3	4	5	6	7
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0
subindex	1	1	1	1	2	2	2	2
element bit	31 - 24	23 - 16	15 - 8	7 - 0	31 - 24	23 - 16	15 - 8	7 - 0

### Variable "Typelabel" index=95 id=V\_Typelabel

data type: 560-bit Record

access rights: ro

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	480	10-octet String UTF-8			ro			Measurement range	
2	472	1-octet String UTF-8			ro			Resolution	
3	464	1-octet String UTF-8			ro			Linearity	
4	456	1-octet String UTF-8			ro			Hysteresis	
5	264	24-octet String UTF-8			ro			Type of light and laser class	
6	200	8-octet String UTF-8			ro			No-load current	
7	120	10-octet String UTF-8			ro			Switching frequency	
8	112	1-octet String UTF-8			ro			Warm-up time	
9	16	12-octet String UTF-8			ro			Ambient temperature	
10	8	1-octet String UTF-8			ro			Output signal	
11	0	1-octet String UTF-8			ro			Repeatability	

octet	0	1	2	3	4	5	6	7
bit offset	559 - 552	551 - 544	543 - 536	535 - 528	527 - 520	519 - 512	511 - 504	503 - 496
subindex	1	1	1	1	1	1	1	1

octet	8	9	10	11	12	13	14	15
bit offset	495 - 488	487 - 480	479 - 472	471 - 464	463 - 456	455 - 448	447 - 440	439 - 432

subindex	1	1	2	3	4	5	5	5
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octet	16	17	18	19	20	21	22	23
bit offset	431 - 424	423 - 416	415 - 408	407 - 400	399 - 392	391 - 384	383 - 376	375 - 368
subindex	5	5	5	5	5	5	5	5

octet	24	25	26	27	28	29	30	31
bit offset	367 - 360	359 - 352	351 - 344	343 - 336	335 - 328	327 - 320	319 - 312	311 - 304
subindex	5	5	5	5	5	5	5	5

octet	32	33	34	35	36	37	38	39
bit offset	303 - 296	295 - 288	287 - 280	279 - 272	271 - 264	263 - 256	255 - 248	247 - 240
subindex	5	5	5	5	5	6	6	6

octet	40	41	42	43	44	45	46	47
bit offset	239 - 232	231 - 224	223 - 216	215 - 208	207 - 200	199 - 192	191 - 184	183 - 176
subindex	6	6	6	6	6	7	7	7

octet	48	49	50	51	52	53	54	55
bit offset	175 - 168	167 - 160	159 - 152	151 - 144	143 - 136	135 - 128	127 - 120	119 - 112
subindex	7	7	7	7	7	7	7	8

octet	56	57	58	59	60	61	62	63
bit offset	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64	63 - 56	55 - 48
subindex	9	9	9	9	9	9	9	9

octet	64	65	66	67	68	69		
bit offset	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0		
subindex	9	9	9	9	10	11		

### Variable "Signal quality level" index=196 id=V\_BDC\_Quality\_level

data type: 8-bit UInteger  
 allowed values: 10..90 = 10...90  
 default value: 10  
 access rights: rw

octet	0	
bit offset	7 - 0	
element bit	7 - 0	

### Variable "Smartfunctions switching Q1" index=208 id=V\_SmartPlug\_Q1

data type: 80-bit Record  
 access rights: rw

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	64	16-bit UInteger	0..65535 = 0...65535	0	rw			Counter	
2	48	16-bit UInteger	0..65535 = 0...65535	0	rw			On-delay	
3	32	16-bit UInteger	0..65535 = 0...65535	0	rw			Off-delay	
4	16	16-bit UInteger	0..65535 = 0...65535	0	rw			Impulse	
5	0	16-bit UInteger	0..500 = 0...50.0	0	rw			Monitoring frequency	

octet	0	1	2	3	4	5	6	7
bit offset	79 - 72	71 - 64	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16
subindex	1	1	2	2	3	3	4	4
element bit	15 - 8	7 - 0	15 - 8	7 - 0	15 - 8	7 - 0	15 - 8	7 - 0

octet	8	9	
bit offset	15 - 8	7 - 0	
subindex	5	5	

element bit	15 - 8	7 - 0
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### Variable "Smartfunctions switching Q2" index=209 id=V\_SmartPlug\_Q2

data type: 80-bit Record

access rights: rw

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	64	16-bit UInteger	0..65535 = 0...65535	0	rw			Counter	
2	48	16-bit UInteger	0..65535 = 0...65535	0	rw			On-delay	
3	32	16-bit UInteger	0..65535 = 0...65535	0	rw			Off-delay	
4	16	16-bit UInteger	0..65535 = 0...65535	0	rw			Impulse	
5	0	16-bit UInteger	0..500 = 0...50.0	0	rw			Monitoring frequency	

octet	0	1	2	3	4	5	6	7
bit offset	79 - 72	71 - 64	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16
subindex	1	1	2	2	3	3	4	4
element bit	15 - 8	7 - 0	15 - 8	7 - 0	15 - 8	7 - 0	15 - 8	7 - 0

octet	8	9	
bit offset	15 - 8	7 - 0	
subindex	5	5	
element bit	15 - 8	7 - 0	

### Variable "Function Q1" index=213 id=V\_Function\_switching\_channel\_1

data type: 8-bit Record

access rights: rw

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	0	8-bit UInteger	0 = NPN, 1 = PNP, 2 = Autodetect	2				PNP / NPN	

octet	0	
bit offset	7 - 0	
subindex	1	
element bit	7 - 0	

### Variable "Function control input" index=221 id=V\_Function\_Controlinput

data type: 8-bit Record

access rights: rw

subindex	bit offset	data type	allowed values	default value	acc. restr.	mod. other var.	excl. from DS	name	description
1	0	8-bit UInteger	0 = Control input disable, 1 = Control input enable	1				Control input	

octet	0	
bit offset	7 - 0	
subindex	1	
element bit	7 - 0	

### Variable "Test\_252" index=252 id=V\_252

description: Event generation

data type: 8-bit UInteger

allowed values: 0 = A\_Appear, 1 = A\_Disappear, 2 = B\_Appear, 3 = B\_Disappear

access rights: rw

excluded from data storage

octet	0	
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bit offset	7 - 0	
element bit	7 - 0	

### Variable "Test\_253" index=253 id=V\_253

description: Test parameter  
data type: 8-bit UInteger  
access rights: rw  
excluded from data storage

octet	0	
bit offset	7 - 0	
element bit	7 - 0	

### Variable "Test\_254" index=254 id=V\_254

description: Test Parameter  
data type: 16-octet OctetString  
access rights: rw  
excluded from data storage

octet	0	1	2	3	4	5	6	7
bit offset	127 - 120	119 - 112	111 - 104	103 - 96	95 - 88	87 - 80	79 - 72	71 - 64

octet	8	9	10	11	12	13	14	15
bit offset	63 - 56	55 - 48	47 - 40	39 - 32	31 - 24	23 - 16	15 - 8	7 - 0

### Variable "Test\_16382" index=16382 id=V\_16382

description: Teste Parameter  
data type: 2-octet OctetString  
access rights: rw  
excluded from data storage

octet	0	1	
bit offset	15 - 8	7 - 0	

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## Events

Code	Type	Name	Description
16384 (0x4000)	Error	Temperature fault	Overload
16912 (0x4210)	Warning	Device temperature over-run	Clear source of heat
16928 (0x4220)	Warning	Device temperature under-run	Insulate device
20480 (0x5000)	Error	Device hardware fault	Device Exchange
20497 (0x5011)	Error	Non volatile memory loss	Check batteries

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## Process Data Formatting

Formatting for Process Data id=PDIN_SmartSensor
Subindex 4:
Subindex 3:
Subindex 2:
Subindex 1:

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## Observer Menus

Identification Menu
Identification
General information
V_VendorName, ro
V_ProductName, ro

V_ProductID, ro
V_ProductText, ro
V_SerialNumber, ro
V_FirmwareRevision, ro
V_ApplicationSpecificTag, ro

<b>Electronic Data Sheet</b>
V_Typelabel.Measurement range, ro
V_Typelabel.Type of light and laser class, ro
V_Typelabel.No-load current, ro
V_Typelabel.Switching frequency, ro
V_Typelabel.Ambient temperature, ro

**Observation Menu****SmartAdjust**

V\_TeachInChannel.Teach channel

*If V\_TeachInChannel.1 = 0:*

<b>Settings Q1</b>
V_BDC1_Setpoint.Switchpoint 1 * 0.1 + 0 mm
V_BDC1_Setpoint.Switchpoint 2 * 0.1 + 0 mm
V_BDC1_Configuration.NO / NC
V_BDC1_Configuration.Switching mode
V_SystemCommand, Button:=65
V_SystemCommand, Button:=66
V_SystemCommand, Button:=64

*If V\_TeachInChannel.1 = 2:*

<b>Settings Q2</b>
V_BDC2_Setpoint.Switchpoint 1 * 0.1 + 0 mm
V_BDC2_Setpoint.Switchpoint 2 * 0.1 + 0 mm
V_BDC2_Configuration.NO / NC
V_BDC2_Configuration.Switching mode
V_SystemCommand, Button:=65
V_SystemCommand, Button:=66
V_SystemCommand, Button:=64

**Diagnosis Menu****Diagnose**

<b>Operating data</b>
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V_Operating_data.Counter switch cycle, ro
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**Maintenance Menus****Identification Menu****Identification**

<b>General information</b>
V_VendorName, ro
V_ProductName, ro
V_ProductID, ro
V_ProductText, ro
V_SerialNumber, ro
V_FirmwareRevision, ro
V_ApplicationSpecificTag, ro

<b>Electronic Data Sheet</b>
V_Typelabel.Measurement range, ro
V_Typelabel.Type of light and laser class, ro
V_Typelabel.No-load current, ro
V_Typelabel.Switching frequency, ro
V_Typelabel.Ambient temperature, ro

**Parameter Menu****Parameter**

<b>General settings</b>
V_ApplicationSpecificTag
V_SystemCommand, wo Button:=160

V_SystemCommand, wo Button:=161
V_SystemCommand, wo Button:=162
V_SystemCommand, wo Button:=175
V_SystemCommand, wo Button:=128
V_SystemCommand, wo Button:=130
V_Function_Controlinput.Control input, rw
<b>IO-Link lock functions</b>
V_DeviceAccessLocks.Data Storage Lock, rw
V_DeviceAccessLocks.Local User Interface Lock, rw

**Configure output**

<b>Switching output Q1</b>
V_BDC1_Setpoint.Switchpoint 1 * 0.1 mm, rw
V_BDC1_Setpoint.Switchpoint 2 * 0.1 mm, rw
V_BDC1_Configuration.NO / NC, rw
V_BDC1_Configuration.Switching mode, rw
V_BDC1_Configuration.Hysteresis, rw
<b>Switching output Q2</b>
V_BDC2_Setpoint.Switchpoint 1 * 0.1 mm, rw
V_BDC2_Setpoint.Switchpoint 2 * 0.1 mm, rw
V_BDC2_Configuration.NO / NC, rw
V_BDC2_Configuration.Switching mode, rw
V_BDC2_Configuration.Hysteresis, rw
<b>Function switching output Q1</b>
V_Function_switching_channel_1.PNP / NPN, rw
<b>SmartFunctions switching output Q1</b>
V_SmartPlug_Q1.Counter, rw
V_SmartPlug_Q1.On-delay ms, rw
V_SmartPlug_Q1.Off-delay ms, rw
V_SmartPlug_Q1.Impulse ms, rw
V_SmartPlug_Q1.Monitoring frequency * 0.1 Hz, rw Dec.1
<b>SmartFunctions switching output Q2</b>
V_SmartPlug_Q2.Counter, rw
V_SmartPlug_Q2.On-delay ms, rw
V_SmartPlug_Q2.Off-delay ms, rw
V_SmartPlug_Q2.Impulse ms, rw
V_SmartPlug_Q2.Monitoring frequency * 0.1 Hz, rw Dec.1

**Teach output**

<b>Teach settings</b>
V_TeachInChannel.Teach channel, rw
V_TeachInStatus.Teach status, ro
V_TeachInStatus.Teach flag SP1->TP1, ro
V_TeachInStatus.Teach flag SP1->TP2, ro
V_TeachInStatus.Teach flag SP2->TP1, ro
V_TeachInStatus.Teach flag SP2->TP2, ro
<b>Teach switching output Q1/Q2</b>
V_SystemCommand, wo Button:=64
V_SystemCommand, wo Button:=79
V_SystemCommand, wo Button:=65
V_SystemCommand, wo Button:=66
V_SystemCommand, wo Button:=67
V_SystemCommand, wo Button:=68
V_SystemCommand, wo Button:=69
V_SystemCommand, wo Button:=70
V_SystemCommand, wo Button:=71
V_SystemCommand, wo Button:=72
V_SystemCommand, wo Button:=73
V_SystemCommand, wo Button:=74

**Observation Menu****SmartAdjust**

V\_TeachInChannel.Teach channel

If V\_TeachInChannel.1 = 0:

<b>Settings Q1</b>
V_BDC1_Setpoint.Switchpoint 1 * 0.1 + 0 mm

V_BDC1_Setpoint.Switchpoint 2 * 0.1 + 0 mm
V_BDC1_Configuration.NO / NC
V_BDC1_Configuration.Switching mode
V_SystemCommand, Button:=65
V_SystemCommand, Button:=66
V_SystemCommand, Button:=64

If V\_TeachInChannel.1 = 2:

<b>Settings Q2</b>
V_BDC2_Setpoint.Switchpoint 1 * 0.1 + 0 mm
V_BDC2_Setpoint.Switchpoint 2 * 0.1 + 0 mm
V_BDC2_Configuration.NO / NC
V_BDC2_Configuration.Switching mode
V_SystemCommand, Button:=65
V_SystemCommand, Button:=66
V_SystemCommand, Button:=64

## Diagnosis Menu

### Diagnose

<b>Operating data</b>
V_Operating_data.Counter operating hours h, ro
V_Operating_data.Counter switch cycle, ro
V_BDC_Quality_level, rw

## Specialist Menus

## Identification Menu

### Identification

<b>General information</b>
V_VendorName, ro
V_ProductName, ro
V_ProductID, ro
V_ProductText, ro
V_SerialNumber, ro
V_FirmwareRevision, ro
V_ApplicationSpecificTag, ro

<b>Electronic Data Sheet</b>
V_Typelabel.Measurement range, ro
V_Typelabel.Type of light and laser class, ro
V_Typelabel.No-load current, ro
V_Typelabel.Switching frequency, ro
V_Typelabel.Ambient temperature, ro

## Parameter Menu

### Parameter

<b>General settings</b>
V_ApplicationSpecificTag
V_SystemCommand, wo Button:=160
V_SystemCommand, wo Button:=161
V_SystemCommand, wo Button:=162
V_SystemCommand, wo Button:=175
V_SystemCommand, wo Button:=128
V_SystemCommand, wo Button:=130
V_Function_Controlinput.Control input, rw
<b>IO-Link lock functions</b>
V_DeviceAccessLocks.Data Storage Lock, rw
V_DeviceAccessLocks.Local User Interface Lock, rw

### Configure output

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V_BDC1_Setpoint.Switchpoint 1 * 0.1 mm, rw
V_BDC1_Setpoint.Switchpoint 2 * 0.1 mm, rw
V_BDC1_Configuration.NO / NC, rw
V_BDC1_Configuration.Switching mode, rw
V_BDC1_Configuration.Hysteresis, rw

### Switching output Q2

<div>V_BDC2_Setpoint.Switchpoint 1 * 0.1 mm, rw</div> <div>V_BDC2_Setpoint.Switchpoint 2 * 0.1 mm, rw</div> <div>V_BDC2_Configuration.NO / NC, rw</div> <div>V_BDC2_Configuration.Switching mode, rw</div> <div>V_BDC2_Configuration.Hysteresis, rw</div>	
<div>Function switching output Q1</div> <div>V_Function_switching_channel_1.PNP / NPN, rw</div>	
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<div>Teach output</div> <div>Teach settings</div> <div>V_TeachInChannel.Teach channel, rw</div> <div>V_TeachInStatus.Teach status, ro</div> <div>V_TeachInStatus.Teach flag SP1-&gt;TP1, ro</div> <div>V_TeachInStatus.Teach flag SP1-&gt;TP2, ro</div> <div>V_TeachInStatus.Teach flag SP2-&gt;TP1, ro</div> <div>V_TeachInStatus.Teach flag SP2-&gt;TP2, ro</div> <div>Teach switching output Q1/Q2</div> <div>V_SystemCommand, wo Button:=64</div> <div>V_SystemCommand, wo Button:=79</div> <div>V_SystemCommand, wo Button:=65</div> <div>V_SystemCommand, wo Button:=66</div> <div>V_SystemCommand, wo Button:=67</div> <div>V_SystemCommand, wo Button:=68</div> <div>V_SystemCommand, wo Button:=69</div> <div>V_SystemCommand, wo Button:=70</div> <div>V_SystemCommand, wo Button:=71</div> <div>V_SystemCommand, wo Button:=72</div> <div>V_SystemCommand, wo Button:=73</div> <div>V_SystemCommand, wo Button:=74</div>	

Observation Menu
SmartAdjust
V_TeachInChannel.Teach channel
If V_TeachInChannel.1 = 0:
<div>Settings Q1</div> <div>V_BDC1_Setpoint.Switchpoint 1 * 0.1 + 0 mm</div> <div>V_BDC1_Setpoint.Switchpoint 2 * 0.1 + 0 mm</div> <div>V_BDC1_Configuration.NO / NC</div> <div>V_BDC1_Configuration.Switching mode</div> <div>V_SystemCommand, Button:=65</div> <div>V_SystemCommand, Button:=66</div> <div>V_SystemCommand, Button:=64</div>
If V_TeachInChannel.1 = 2:
<div>Settings Q2</div> <div>V_BDC2_Setpoint.Switchpoint 1 * 0.1 + 0 mm</div> <div>V_BDC2_Setpoint.Switchpoint 2 * 0.1 + 0 mm</div> <div>V_BDC2_Configuration.NO / NC</div> <div>V_BDC2_Configuration.Switching mode</div> <div>V_SystemCommand, Button:=65</div> <div>V_SystemCommand, Button:=66</div> <div>V_SystemCommand, Button:=64</div>

Diagnosis Menu
Diagnose



Operating data
V_Operating_data.Counter operating hours h, ro
V_Operating_data.Counter switch cycle, ro
V_BDC_Quality_level, rw

Note: This page shows the content of an IODD file transformed into HTML format. In the case of disparity between this and the XML view, the content of the XML file takes precedence.

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