

Parameter and Process Data

PP5x



IO-Link

PP5x-#.#####.####.#####.####

PP5xH-#.#####.####.#####.####

Device ID

Product	Hex	Decimal
PP5x	0x0403	1027

IO-Link Version: V 1.1
 Data Storage: Yes
 Block Parameter: Yes
 Min. Cycle Time: 4 ms
 SIO-Mode: Yes
 COM-Mode: Yes

Process Data (Length: 48 Bit)

Subindex	Bit Offset	Name	Data type	Bit length	Range
1	0	Switch Output 1	Boolean	1 bit	0 = false/off 1 = true/on
2	1	Switch Output 2	Boolean	1 bit	0 = false/off 1 = true/on
3	2	Sensor Error	Boolean	1 bit	0 = false/off 1 = true/on
4	3	Configuration Error	Boolean	1 bit	0 = false/off 1 = true/on
5	4	Out of Range +	Boolean	1 bit	0 = false/off 1 = true/on
6	5	Out of Range -	Boolean	1 bit	0 = false/off 1 = true/on
7	6	Reserved	-	10 bit	
8	16	Pressure value	Float	32 bit	

Octet 0

Bit Offset	47	46	45	44	43	42	41	40
	Pressure value							

Octet 1

Bit Offset	39	38	37	36	35	34	33	32
	Pressure value							

Octet 2

Bit Offset	31	30	29	28	27	26	25	24
	Pressure value							

Octet 3

Bit Offset	23	22	21	20	19	18	17	16
	Pressure value							

Octet 4

Bit Offset	15	14	13	12	11	10	9	8
	Reserved							

Octet 5

Bit Offset	7	6	5	4	3	2	1	0
	Reserved		Out of Range -	Out of Range +	Configuration Error	Sensor Error	SW2	SW1

Name	Index	Subindex	Data type	Access rights	Byte length	Value range	Description
System commands							
System Command	2	0	UInt8	W	1		Command Code Definition Public: 0x00 – 0x9F Vendor specific 0xA0 – 0xFF - 65 (41h): Teach SP1 single value - 66 (42h): Teach SP2 single value - 126 (7Eh): Locator start - 127 (7Fh): Locator stop - 128 (80h): Device reset - 129 (81h): Application reset - 130 (82h): Restore factory settings - 131 (83h): Back-to-box
Baumer commands							
Baumer Command	1000	0	UInt8	W	1		- 21 (15h): Reset Custom Calibration - 208 (D0h): Auto Zero
General information of sensors							
Device locks	12	0	UInt16	R/W	2		0x0004 = Local parameterization 0x0008 = Local user interface
Profile Characteristics, DeviceProfileID	13	1	UInt16	R	2		0x0018, Measuring and Switching Sensor, floating point, 1 channel
Profile Characteristics, FunctionClasses	13	2	UInt16	R	2		0x4000, ID, Identification and Diagnosis
Profile Characteristics, FunctionClasses	13	3	UInt16	R	2		0x8000, Device Identification
Profile Characteristics, FunctionClasses	13	4	UInt16	R	2		0x8002, PDV, Process Data Variable (Process Data Mapping)
Profile Characteristics, FunctionClasses	13	5	UInt16	R	2		0x8003, Device Diagnosis
Profile Characteristics, FunctionClasses	13	6	UInt16	R	2		0x800D, Multiple Adjustable Switching Signal Channel
Profile Characteristics, FunctionClasses	13	7	UInt16	R	2		0x800E, Measurement Data Channel, (floating point)
Profile Characteristics, FunctionClasses	13	8	UInt16	R	2		0x8010, Adjustable Switching Sensor, 2 channel
Profile Characteristics, FunctionClasses	13	9	UInt16	R	2		0x8100, Extended Identification
Profile Characteristics, FunctionClasses	13	10	UInt16	R	2		0x8101, Locator
PDInputDescriptor	14	1	UInt24	R	3		01 02 00
PDInputDescriptor	14	2	UInt24	R	3		01 04 02
PDInputDescriptor	14	3	UInt24	R	3		03 10 06
PDInputDescriptor	14	4	UInt24	R	3		04 32 16
Vendor Name	16	0	String	R	18	ASCII	Baumer
Vendor Text	17	0	String	R	14	ASCII	Passion for Sensors
Product Name	18	0	String	R	32	ASCII	Baumer Article PP56
Product ID	19	0	String	R	16	ASCII	Baumer Article Family (IODD match) PP5x
Product Text	20	0	String	R	64	ASCII	Pressure sensor
Serial number	21	0	String	R	16	ASCII	Serial Number Eg: K46227X04014251
Hardware Revision	22	0	String	R	16	ASCII	Hardware Revision Eg. 00.00.01
Software Revision	23	0	String	R	16	ASCII	Software Revision Eg. 01.02.00
Application Specific Tag	24	0	String	R/W	16	ASCII	The application specific tag can be used by the end user to store data that is specific to the end users application. The value does not influence the sensor operation.

Name	Index	Subindex	Data type	Access rights	Byte length	Value range	Description
Function Specific Tag	25	0	String	R/W	32	ASCII	The function specific tag can be used by the end user to store data that is specific to the end users application. The value does not influence the sensor operation.
Location Tag	26	0	String	R/W	32	ASCII	The location tag can be used by the end user to store data that is specific to the end users application. The value does not influence the sensor operation.
Status / Diagnosis	36	1	UInt8	R	1	0-0xFF	0x00 = OK. 0x01 = Maintenance-Required 0x02 = Out-of-Specification 0x03 = Functional-Check 0x04 = Failure 0x05-0xFF = Reserved
Detailed Device Status[0]	37	0	UInt8	R	3		0x5010 COMPONENT MALFUNCTION
Detailed Device Status[1]			UInt16				
Detailed Device Status[2]			UInt8				
Detailed Device Status[3]			UInt16				
Detailed Device Status[4]			UInt8				
Detailed Device Status[5]			UInt16				
Detailed Device Status[6]			UInt8				
Detailed Device Status[7]			UInt16				
Part Number			86				
User Date, Day	104	4	UInt8	R/W	1	1-31	A user write and readable day tag
User Date, Month	104	5	UInt8	R/W	1	1-12	A user write and readable month tag
User Date, Year	104	6	UInt16	R/W	2	1900-2100	A user write and readable year tag
Production Date, Day	118	4	UInt8	R	1	1-31	A readable production day tag
Production Date, Month	118	5	UInt8	R	1	1-12	A readable production month tag
Production Date, Year	118	6	UInt16	R	2	1900-2100	A readable production year tag
Sensor values							
Pressure unit	74	4	UInt16	R/W	2		1 = bar 3 = PSI
Damping input	121	32	UInt32	R/W	4	0-60000 ms	Damping for the input
Current pressure	216	1	Float32	R	4		Current measured pressure
Process Value, Pressure, Min	216	4	Float32	R	4		Lifetime minimum pressure
Process Value, Pressure, Max	216	5	Float32	R	4		Lifetime maximum pressure
Temperature unit	74	1	UInt16	R/W	2		13 = Celsius 14 = Fahrenheit 29 = Kelvin
Pressure Cell Temperature	214	1	Float32	R	4		Current pressure cell temperature
Device Temperature, Current	208	1	Float32	R	4		Current temperature inside the device
Device Temperature, Min	208	4	Float32	R	4		Lifetime minimum device temperature
Device Temperature, Max	208	5	Float32	R	4		Lifetime maximum device temperature
Measurement Type	76	1	UInt8	R	1		Pressure measurement type 0 = Relative 1 = Absolute
MDC1 Lower Specification Limit	16512	1	Float32	R	4		Lowest value at which accuracy for the device is guaranteed.

Name	Index	Subindex	Data type	Access rights	Byte length	Value range	Description
MDC1 Upper Specification Limit	16512	2	Float32	R	4		Highest value at which accuracy for the device is guaranteed.
MDC1 Unit Code	16512	3	Uint16	R	2		1137 = bar 1141 = PSI
MDC1 Scale	16512	4	Uint8	R	1		0 = No scale
Analog output (4-20 mA) functions							
Pressure at 4mA	202	2	Float32	R/W	4	-30 - 6000 bar/PSI	Pressure corresponding to 4mA output current
Pressure at 20mA	202	4	Float32	R/W	4	-30 - 6000 bar/PSI	Pressure corresponding to 20mA output current
Lower current limit	202	7	Uint32	R/W	4	3800-22500 mA	Lower truncation current, when input derived current is below this limit.
Upper current limit	202	9	Uint32	R/W	4	3800-22500 mA	Upper truncation current, when input derived current is above this limit.
Error current	116	3	Uint16	R/W	2	3500-23000 mA	Output current during alarm, e.g. sensor error
Damping 4-20mA output	121	22	Uint32	R/W	4	0-60000 ms	Damping for the analog output
Switch 1 functions							
Switch 1 SP1	60	1	Float32	R/W	4	-30 - 6000 bar/PSI	Setpoint 1 for switch 1
Switch 1 SP2	60	2	Float32	R/W	4	-30 - 6000 bar/PSI	Setpoint 2 for switch 1
Switch 1 Logic	61	1	Uint8	R/W	1		Switch output state in active switch range 0 = High-Active 1 = Low-Active
Switch 1 Mode	61	2	Uint8	R/W	1		Mode for switching 0 = deactivated 1 = Single point 2 = Window 3 = Two point
Switch 1 Hysteresis	61	3	Float32	R/W	4	0 - 6000 bar/PSI	Hysteresis for switch setpoints
Switch 1 Circuit	78	1	Uint8	R/W	1		Switch output hardware drive mode 0 = OFF. 1 = Push-Pull. 2 = PNP 3 = NPN
Switch 1 Binary Signal Function	78	2	Uint16	R/W	2		Signal source for the switch function 256 (0100h) = SSC1 state
Switch 1 Overlay Function	78	5	Uint16	R/W	2		Switch output overwrite state during alarm, e.g. sensor error. 0 = No overwrite 1 = Output High 2 = Output Low 3 = Output Floating (High Impedance)
Switch 1 Damping	121	2	Uint32	R/W	4	0-60000 ms	Damping for switch output
Switch 2 functions							
Switch 2 SP1	62	1	Float32	R/W	4	-30 - 6000 bar/PSI	Setpoint 1 for switch 2
Switch 2 SP2	62	2	Float32	R/W	4	-30 - 6000 bar/PSI	Setpoint 2 for switch 2
Switch 2 Logic	63	1	Uint8	R/W	1		Switch output state in active switch range 0 = High-Active 1 = Low-Active
Switch 2 Mode	63	2	Uint8	R/W	1		Mode for switching 0 = deactivated 1 = Single point

Name	Index	Subindex	Data type	Access rights	Byte length	Value range	Description
							2 = Window 3 = Two point
Switch 2 Hysteresis	63	3	Float32	R/W	4	0 - 6000 bar/PSI	Hysteresis for switch setpoints
Switch 2 Circuit	78	11	Uint8	R/W	1		Switch output hardware drive mode 0 = OFF. 1 = Push-Pull. 2 = PNP 3 = NPN 4 = IOUT
Switch 2 Binary Signal Function	78	12	Uint16	R/W	2		Signal source for the switch function 512 (0200h) = SSC2 state
Switch 2 Overlay Function	78	15	Uint16	R/W	2		Switch output overwrite state during alarm, e.g. sensor error. 0 = No overwrite 1 = Output High 2 = Output Low 3 = Output Floating (High Impedance)
Switch 2 Damping	121	12	Uint32	R/W	4	0-60000 ms	Damping for switch output
Teach functions							
Teach Select	58	1	Uint8	R/W	1	1-2	Switch Channel to perform teach on 1 = SSC1.1 2 = SSC1.2
Teach Result	59	1	Uint8	R	1		Bit 0-3 - Teach state xxxx0000b = Idle xxxx0001b = SP1 success xxxx0010b = SP2 success xxxx0011b = SP1 and SP2 success xxxx0101b = Busy xxxx0111b = Error Bit 4-7 - Teach status xx00xxxxb = SP1 not succeeded xx11xxxxb = SP1 succeeded 00xxxxxxb = SP2 not succeeded 11xxxxxxb = SP2 succeeded
Display functions							
Display Orientation	1016	1	Uint8	R/W	1		Orientation for display text 0 = Normal orientation 18 = 180° rotated
Max. Of Decimals	1016	3	Uint8	R/W	1	0-3	Max trailing digits limit. Display value is dynamic, and can max show 5 digits at large screen including the sign.
Backlight Color	1017	1	Uint16	R/W	2		Background color for main screen 0 = None 28 = Green 224 = Red 255 = White
Backlight Intensity	1017	2	Uint8	R/W	1	10-100%	Backlight intensity
Passkey Enable	1018	1	Uint8	R/W	1		Passkey activation when accessing menu 0 = Disable 1 = Enable
Passkey	1018	2	Uint32	R/W	4	0-9999	Passkey when accessing menu, if enabled (index 1018.1)
Display Language	1019	1	Uint16	R/W	2		25966 = English 25701 = German 26226 = French 25697 = Custom
Display Layout	1019	2	Uint8	R/W	1		Layout for main screen 18 = Value (large) + details

Name	Index	Subindex	Data type	Access rights	Byte length	Value range	Description
							19 = Value (large)
Display Menu Timeout	1019	3	Uint16	R/W	2	10-65535s	Display main page return timeout
Warnings Enable	1020	1	Uint8	R/W	1		Activation of warning indications 0 = Disable 1 = Enable
Warning Low Limit	1020	2	Float32	R/W	4	-30 - 6000 bar/PSI	Lower value of warning range
Warning High Limit	1020	3	Float32	R/W	4	-30 - 6000 bar/PSI	Upper value of warning range
Low Warning Indication	1020	4	Uint8	R/W	1		Warning mode for exceeded lower limit 0 = Value 1 = Info 2 = Error Message 3 = User Message
High Warning Indication	1020	5	Uint8	R/W	1		Warning mode for exceeded upper limit 0 = Value 1 = Info 2 = Error Message 3 = User Message
Low Warning Color	1020	6	Uint16	R/W	2		Backlight color for exceeded lower limit 0 = None 28 = Green 224 = Red 255 = White 284 = Green flashing 480 = Red flashing 511 = White flashing
High Warning Color	1020	7	Uint16	R/W	2		Backlight color for exceeded upper limit 0 = None 28 = Green 224 = Red 255 = White 284 = Green flashing 480 = Red flashing 511 = White flashing
Error Low Limit	1022	2	Float32	R/W	4	-30 - 6000 bar/PSI	Lower value of error range
Error High Limit	1022	3	Float32	R/W	4	-30 - 6000 bar/PSI	Upper value of error range
Low Error Indication	1022	4	Uint8	R/W	1		Error mode for exceeded lower limit 0 = Value 1 = Info 2 = Error Message 3 = User Message
High Error Indication	1022	5	Uint8	R/W	1		Error mode for exceeded upper limit 0 = Value 1 = Info 2 = Error Message 3 = User Message
Low Error Color	1022	6	Uint16	R/W	2		Backlight color for exceeded lower limit 0 = None 28 = Green 224 = Red 255 = White 284 = Green flashing 480 = Red flashing 511 = White flashing

Name	Index	Subindex	Data type	Access rights	Byte length	Value range	Description
High Error Color	1022	7	Uint16	R/W	2		Backlight color for exceeded upper limit
							0 = None
							28 = Green
							224 = Red
							255 = White
							284 = Green flashing
480 = Red flashing							
511 = White flashing							
Low Limit Message	1023	1	String	R/W	16	ASCII	User message used when index 1020.4 or 1022.4 = 3
High Limit Message	1023	2	String	R/W	16	ASCII	User message used when index 1020.5 or 1022.5 = 3
Calibration functions							
Calibration Mode Selection	400	1	Uint8	R/W	1		0 = Disable 1 = 1 Point (Offset)
Offset	401	1	Float32	R/W	4	-1500 - 1500 bar/PSI	Offset value applied to the measured pressure, when index 400.1 = 1
Simulation functions							
Current Output Simulation	248	2	Uint8	R/W	1		Overwrites current output, when active Set off at power up
							0 = Off
							3 = Simulation Value (index 248.5)
							30 = Lower Limit (index 202.7)
							31 = Upper Limit (index 202.9)
33 = Device Error (index 116.3)							
Current Output Simulation Value	248	5	Uint32	R/W	4	3500-23000 mA	Simulation current for index 248.2 = 3
Pressure Input Simulation	248	12	Uint8	R/W	1		Overwrites measured pressure, when active Set off at power up
							0 = Off
							3 = Simulation Value (index 248.13)
Pressure Input Simulation Value	248	13	Float32	R/W	4	-10000 - 10000 bar/PSI	Simulation value for index 248.12 = 3
Diagnostics Parameters							
Uptime	211	1	Uint32	R	4		Time since power up
Total uptime	211	3	Uint32	R	4		Uptime across lifetime
Bootcycles	224	2	Uint32	R	4		Number of times the device has been rebooted across lifetime