

IO-Link data table								
GENERAL INFORMATION								
Communication mode IO-Link			COM 2					
Min. cycle time			2.3 ms					
SIO mode			Supported					
Length process data			8 Bit					
Vendor ID			1832 (0x0728)					
Device ID			127 (0x00007f)					
Data storage			Supported					
Specification IO-Link			1.1					
PROCESS DATA								
SMART - SENSOR PROFILE								
Byte 1								
7	6	5	4	3	2	1	0	
X	X	X	TIME STAMP EVENT	QUALITY SIGNAL		SSC2 (DO pin)		SSC1 (C/Q Pin)
TIME STAMP EVENT								
QUALITY SIGNAL								
SSC2 (DO pin) [false = INACTIVE, true = ACTIVE]								
SSC1 (C/Q Pin) [false = INACTIVE, true = ACTIVE]								
IDENTIFICATION DATA								
Index (dec/hex)	Access ⁽¹⁾	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
16 / 0x10	R	StringT	64 Bytes	0	TMSS France	-	Vendor Name	The vendor name that is assigned to a Vendor ID
17 / 0x11	R	StringT	64 Bytes	0	Simply easy!	-	Vendor Text	Additional information about the vendor.
18 / 0x12	R	StringT	64 Bytes	0	XUMRPGAYM8	-	Product Name	Complete product name.
19 / 0x13	R	StringT	64 Bytes	0	XUMRPGAYM8	-	Product ID	Vendor-specific product or type identification (e.g., item number or model number).
20 / 0x14	R	StringT	64 Bytes	0	PHOTO MINIAT CONTRAST IOL M8	-	Product Text	The parameter Product Text contains additional product information for the device.
21 / 0x15	R	StringT	16 Bytes	0	-	-	Serial Number	Unique, vendor-specific identifier of the individual device.
22 / 0x16	R	StringT	64 Bytes	0	-	-	Hardware Revision	Unique, vendor-specific identifier of the hardware revision of the individual device (For example: HW-V1.0).
23 / 0x17	R	StringT	64 Bytes	0	-	-	Firmware Revision	Unique, vendor-specific identifier of the firmware revision of the individual device (For example: FW-V1.0).
DIRECT PARAMETERS								
Index (dec/hex)	Access ⁽¹⁾	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
0 / 0x00	R/W	UIntegerT	128 Bit	0	-	-	Direct Parameters - Page 1	Contain the required parameters defining the communication characteristics and identifiers for device validation.
	R	UIntegerT	8 Bit	1	-	-	Reserved	-
			8 Bit	2	-	-	Master Cycle Time	Communication: Current communication cycle duration used by the master. This value defines the process data cycle.
			8 Bit	3	-	-	Min Cycle Time	Communication: Minimum communication cycle duration supported by the device. This value defines the lowest possible process data cycle.
			8 Bit	4	-	-	M-Sequence Capability	Communication: Information on the structure and the supported features of the communication messages.
			8 Bit	5	17	-	IO-Link Revision ID	Communication: Revision Identification for the currently used communication protocol revision.
			8 Bit	6	-	-	Process Data Input Length	Communication: Information on Length and characteristics of the process input data (Process Data from Device to Master).
			8 Bit	7	-	-	Process Data Output Length	Communication: Information on Length of the process output data (Process Data from Master to Device).
			8 Bit	8	-	-	Vendor ID 1	Identification: Highest byte of the Vendor ID. Combined with the parameter Vendor ID 2, this parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community.
			8 Bit	9	-	-	Vendor ID 2	Identification: Lowest byte of the Vendor ID. Combined with the parameter Vendor ID 1, this parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community.
			8 Bit	10	-	-	Device ID 1	Identification: Highest byte of the Device ID. Combined with the parameters Device ID 2 and 3, this parameter defines the 24-bit value of the vendorspecific Device ID.
			8 Bit	11	-	-	Device ID 2	Identification: Middle byte of the Device ID. Combined with the parameters Device ID 1 and 3, this parameter defines the 24-bit value of the vendorspecific Device ID.
			8 Bit	12	-	-	Device ID 3	Identification: Lowest byte of the Device ID. Combined with the parameters Device ID 1 and 2, this parameter defines the 24-bit value of the vendorspecific Device ID.
			8 Bit	13	-	-	Reserved	-
			8 Bit	14	-	-	Reserved	-
			8 Bit	15	-	-	Reserved	-
	W	UIntegerT	8 Bit	16	-	-	System Command	Application: Command interface for devices without ISDU support. Validity and execution of commands are not confirmed.
(1) R = Read / W = Write								

SYSTEM COMMAND								
Index (dec/hex)	Access ⁽¹⁾	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
2 / 0x02	W	UIntegerT	8 Bit	0	-	130 = Restore factory settings 131 = Back-to-box 165 = Confirm maintenance 175 =Start/Stop Ping 176 =Emission Toggle	System command	130: Restore factory settings (Device Access Locks, Application Specific Tag, Function Tag, Location Tag, Device Temperature Threshold, Delay Settings, Output Type, Keylock, Process Data configuration, Time stamp trigger, Time Stamp Synch Value, Time Stamp List, Jobs, SSC1/SSC2 Param, SSC1/SSC2Config, TI Result, Active Teach, RGB Selection, Sensitivity selection) 131: It restores all factory settings and the sensor goes in a "wait for power cycle" state, blinking alternatively yellow and green leds. If the master is not updated to last specifications, this command could be visualized in a wrong way. Use ISDU to send the command. 165: Reset Maintenance parameters (Operating Hours Maintenance, Minimum device temperature since power up, Maximum device temperature since power up, Device Status, Detailed Device Status) 175: Feature to identify the sensor by yellow led blinking 176: Toggle emission (see Emitter Status parameter to check the current status)
DETECTION PARAMETERS								
Index (dec/hex)	Access ⁽¹⁾	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
System Command								
2 / 0x02	W	UIntegerT	8 Bit	0	-	75 = Teach Static 76 = Teach Dynamic 79 =Teach Cancel	System command	75: Standard 2 points mark-background teach 76: Start/stop dynamic teach 79: Exit from FAIL condition
Parameter								
67 / 0x43	R	UIntegerT	8 Bit	0	-	0 = NO TEACH 1 = STATIC TEACH 2 = DYNAMIC TEACH	Active Teach	Last teach acquisition done. After a failed teach, it will be set to default "no teach" value.
90 / 0x5A	R/W	UIntegerT	8 Bit	0	-	0...13	Sensitivity selection	Selects amplification of analogue signal. For each step the amplification increases by $\sqrt{2}$ (same value of Job Active - Gain) Sensitivity will be change during the next acquisition.
92 / 0x5C	R	UIntegerT	8 Bit	0	-	1 = GOOD TEACH 2 =MEDIUM TEACH 3 =BAD TEACH	Teach Quality	Indicates how wide the acquired contrast is GOOD TEACH means the sensor was able to find a configuration with a contrast between mark and background more than twice the hysteresis. MEDIUM and BAD means the sensor was teach between 100%-75% and 75%-50% of the good contrast respectively. The sensor can work also with MEDIUM and BAD contrast, but it has a smaller margin vs detection thresholds. In case of "BAD TEACH" quality alarm bits in process data will always be "1". If the measured contrast is lower than the hysteresis the teach goes in FAIL state (TI Result - Teach-in State = 0x07 (ERROR)).
93 / 0x5D	R	UIntegerT	16 Bit	0	-	0...2048	Quality Threshold High	Quality alarm threshold for alarm function on PD-bit3 (Look at Process Data Input section)
94 / 0x5E	R	UIntegerT	16 Bit	0	-	0...2048	Quality Threshold Low	Quality alarm threshold for alarm function on PD-bit2 (Look at Process Data Input section)
DATA PARAMETERS								
Index (dec/hex)	Access ⁽¹⁾	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
36 / 0x24	R	UIntegerT	8 Bit	0	-	0 = Device is OK, 1 = Maintenance required, 2 = Out of specification, 3 = Functional check, 4 = Failure	Device Status	Indicator for the current device condition and diagnosis state. "Device is OK" is device is ok, "Maintenance required" is maintenance required "Out of specification" is out of specification "Functional check" is functional check "Failure" is failure
37 / 0x25	R	Array of 3-bytes OctetString	3 Bytes	-	-	-	Detailed Device Status	List of all currently pending events in the device.
40 / 0x28	R	UIntegerT	1 Bit	0	-	-	PD Input	Read last valid Process Data Input from PDin channel
65 / 0x41	R	UIntegerT	16 Bit	0	-	0...2048	Light Received	Measured signal Analog signal has an offset of ~325. When the sensor is set to fast mode (Job Active – Detection mode = 60kHz) the reading of this parameter may affect jitter and response time.
81 / 0x51	R	UIntegerT	8 Bit	0	-	0 =EMISSION OFF 1 =EMISSION ON	Emission Status	Read emission status
82 / 0x52	R	UIntegerT	80 Bit	0	-	-	Device Temperature	The following parameters indicate different operating temperatures
			16 Bit	1	-	-	Temperature actual	Read the current operating temperature
			16 Bit	2	-	-	Temperature minimum Power Up	Read the minimum operating temperature recorded since last restart
			16 Bit	3	-	-	Temperature maximum Power Up	Read the maximum operating temperature recorded since last restart
			16 Bit	4	-	-	Temperature minimum during lifetime	Read the minimum operating temperature recorded since the first usage
			16 Bit	5	-	-	Temperature maximum during lifetime	Read the maximum operating temperature recorded since the first usage
83 / 0x53	R/W	UIntegerT	32 Bit	0	-	-	Device Temperature Threshold	Saved in non-volatile memory every hour. Events are generated if the device temperature exceeds the thresholds
			16 Bit	1	- 40	-	Temperature minimum threshold	-
			16 Bit	2	130	-	Temperature maximum threshold	-
87 / 0x57	R	UIntegerT	64 Bit	0	-	-	Operating Hours Counter	The 3 following parameters indicate the operating hours counter
			32 Bit	1	-	0 ... 2 ³² -1	Operating Hours	Device operating hours. Not resettable by user.
			32 Bit	2	-	0 ... 2 ³² -1	Operating Hours Maintenance	Device operating hours, reset on system command "Confirm Maintenance".
			32 Bit	3	-	0 ... 2 ³² -1	Operating Hours Power Up	Time in hours since power up.

(1) R = Read / W = Write

FUNCTION PARAMETERS								
Index (dec/hex)	Access ⁽¹⁾	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
System Command								
0 / 0x02	W	UIntegerT	8 Bit	0	-	177 = Reset Time Stamp Application 178 = Reset Time Stamp 179 = Time Stamp Synchronization 180 = Reset Time Stamp PD bit	System Command	177: Reset Time Stamp application (Time Stamp trigger, Time Stamp List and Time Stamp PD bit) 178: Reset clock counter 179: Start counting from the Time Stamp Synch Value (index 187). This command clears the Time Stamp List and reset the Time Stamp PD bit. 180: Reset the Time Stamp PD bit
Parameter								
24 / 0x18	R/W	StringT	32 Bytes	0	**** ... ****	-	Application-specific Tag	Possibility to mark a device with user- or application-specific information.
25 / 0x19	R/W	StringT	32 Bytes	0	**** ... ****	-	Function Tag	The parameter Function Tag is dedicated for the user application. It can be used to set role of the device.
26 / 0x1A	R/W	StringT	32 Bytes	0	**** ... ****	-	Location Tag	The parameter Location Tag is dedicated for the user application. It can be used to set the location of the device.
72 / 0x48	R/W	UIntegerT	40 Bit	0	-	-	Delay Setting	-
			4 Bit	1	1	0 = NO DELAY 1 = DELAY OFF	Delay mode	Select Delay mode
			32 Bit	2	20	0 ... 2 ³² -1	Delay value	Select Delay value [ms]
73 / 0x49	R/W	UIntegerT	32 Bit	0	-	-	PDInput Configuration	Define smartfunctions switching values Q1
			2 Bit	1	0	0 = DISABLED 1 = ENABLED	Quality alarm bit	QUALITY ALARM bits
			2 Bit	2	-	-	Unused bit	-
			2 Bit	3	-	-	Unused bit	-
			2 Bit	4	0	0 = DISABLED 1 = ENABLED	Time stamp bit	TIME STAMP bit
88 / 0x58	R/W	UIntegerT	2 Bit	0	0	0 = INACTIVE 1 = ACTIVE	Keylock	Enable/disable push button
89 / 0x59	R/W	UIntegerT	8 Bit	0	-	1 = RED , 2 = GREEN , 3 = BLUE	RGB selection	Selects emission type (same value of Job Active - RGB selection)
91 / 0x5B	R/W	UIntegerT	8 Bit	0	0	0 = No function 1 = Remote 2 = Light/dark 3 = Delay enable	Input function configuration	White wire input functions The white wire function remains selected even if the wire is set as output from the output configuration parameter (180).
184 / 0xB8	R/W	UIntegerT	40 Bit	0	-	-	Time Stamp Trigger	Event that generates a time stamp
			2 Bit	1	0	0 = DISABLED 1 = ENABLED	EVENT_1 (Not used)	-
			2 Bit	2	0	0 = DISABLED 1 = ENABLED	EVENT_2 (Temperature underrun)	-
			2 Bit	3	0	0 = DISABLED 1 = ENABLED	EVENT_4 (Short Circuit)	-
			2 Bit	4	0	0 = DISABLED 1 = ENABLED	EVENT_3 (Temperature overrun)	-
			2 Bit	5	0	0 = DISABLED 1 = ENABLED	EVENT_5 (Power Fault)	-
185 / 0xB9	R	UIntegerT	16 Bit	0	-	-	Time Stamp settings	Latency between event and time stamp (hardware dependent). Typically 3ms.
			8 Bit	1	0	3	Maximum time stamp latency time	-
			8 Bit	2	0	1	Time stamp resolution	-
186 / 0xBA	R	UIntegerT	70 Bit	0	-	-	Time Stamp List	Last time stamp trigger starts counting from Power Up, from Time Stamp Synch Value or from 0 (after Restore Factory Settings) See format in Time Stamp Table at the end of the data table.
			7 Bit	1	-	-	-	
			7 Bit	...	-	-	-	
			7 Bit	10	-	-	-	
187 / 0xBB	R/W	UIntegerT	48 Bit	0	-	-	Time Stamp Trigger	Reset value for time stamp synchronization
			16 Bit	1	0	0..999	Milliseconds	-
			8 Bit	2	0	0..59	Seconds	-
			8 Bit	3	0	0..59	Minutes	-
			8 Bit	4	0	0..23	Hours	-
			2 Bit	5	0	0...255	Days	-

(1) R = Read / W = Write

OUTPUT PARAMETERS 1/2								
Index (dec/hex)	Access ⁽¹⁾	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
58 / 0x3A	R/W	UIntegerT	8 Bit	1	0	0 = SSC1 (default)	TI Select	Select the teach channel C/Q and DO outputs are antivalent. Teach SSC1 equals to teach SSC2
59 / 0x3B	R	UIntegerT	8 Bit	0	-	-	TI Result	The parameter "Teach-in Status" provides feedback on the status and the results of the teach-in process
		UIntegerT	4 Bit	1	0	0 = IDLE 1 = SUCCESS 4 = WAIT FOR COMMAND 5 = BUSY 7 = ERROR	Teach-in State	Indicates the status of the teach-in process
		Boolean	1 Bit	2	0	false = Teachpoint not acquired or not successful true = Teachpoint successfully acquired	Teach-in Flags SP	Teach-in Flags SP
60/ 0x3C	R/W	UIntegerT	32 Bit	0	-	-	SSC1 Param	-
			12 Bit	1	-	300..2000 ⁽²⁾	SP1	Switching Point 1 (SP1), default value 400 Switching threshold must be ≥ offset (typ.325) Same value of Job Active - Threshold
			12 Bit	2	-	0	SP2	Not Used
61/ 0x3D	R/W	UIntegerT	32 Bit	0	-	-	SSC1 Config	C/Q pin configuration
			2 Bit	1	-	0 =HIGH ACTIVE 1 =LOW ACTIVE	Logic	In low active mode the output is active with dark marks on light backgrounds (dark mode). In high active mode the output is active with light marks on dark backgrounds (light mode). SSC1_Logic = High Active (0) → Job Active_Dark Mode = 0 SSC1_Logic = Low Active (1) → Job Active_Dark Mode = 1
			8 Bit	2	-	1 =SINGLE POINT	Mode	-
			16 Bit	3	-	0 =HYSTERESIS MIN 1 =HYSTERESIS MAX	Hysteresis	Hysteresis_max = 2 x Hysteresis_min When Hysteresis is set to max, also the minimum contrast seen by the sensor is doubled. Teach becomes more stable, but less sensible to small differences between marks and background.
62/ 0x3E	R/W	UIntegerT	32 Bit	0	-	-	SSC2 Param	-
			12 Bit	1	-	300..2000 ⁽²⁾	SP2	Switching Point 2 (SP2), default value 400 Switching threshold must be ≥ offset (typ.325) Same value of Job Active - Threshold
			12 Bit	2	-	0	SP2	Not Used
63/ 0x3F	R/W	UIntegerT	32 Bit	0	-	-	SSC2 Config	DO pin configuration
			2 Bit	1	-	0 =HIGH ACTIVE 1 =LOW ACTIVE	Logic	SSC1 and SSC2 will always have an opposite logic.
			8 Bit	2	-	1 =SINGLE POINT	Mode	-
			16 Bit	3	-	0 =HYSTERESIS MIN 1 =HYSTERESIS MAX	Hysteresis	DO pin configuration: Hysteresis Hysteresis_max = 2 x Hysteresis_min When Hysteresis is set to max, also the minimum contrast seen by the sensor is doubled. Teach becomes more stable, but less sensible to small differences between marks and background.
180 / 0xB4	R/W	UIntegerT	16 Bit	0	-	-	Output Type	-
			8 Bit	1	3	1 = PNP 3 = PUSH PULL	Output type of C/Q pin in SIO mode	-
			8 Bit	2	3	1 = PNP, 2 = NPN, 3 = PUSH PULL 4 = INPUT	Output type of DO pin	-
102 / 0x66	R/W	UIntegerT	8 Bit	0	-	0..3	Load Job	Copy the job corresponding to the selected number to Job Active
103 / 0x67	R/W	UIntegerT	8 Bit	0	-	0..3	Save Job	Save current Job settings (Job Active) into the Job position indicated
200 / 0xC6	R/W	UIntegerT	128 Bit	0	-	-	Job Active	-
		Record	8 Bit	1	-	-	Name	-
		UIntegerT	8 Bit	2	-	300...2000 ⁽²⁾	Threshold	SSCx Param – SP1
		UIntegerT	8 Bit	3	-	0...13	Gain	Sensitivity selection
			8 Bit	4	1	1...3	Color	RGB Selection: 1 = Red emission , 2 = Green emission, 3 = Blue emission
			8 Bit	5	1	0...1	Dark mode	SSC1 Config - Logic: 0 = High Active, 1 = Low Active
			8 Bit	6	0	0...1	Hysteresis factor	SSCx Config – Hysteresis: 0 = Hysteresis min, 1 = Hysteresis max
			8 Bit	7	0	0...1	Contrast factor	0 = Contrast factor min , 1 = Contrast factor max
			8 Bit	8	1	0...1	Detection mode	0 = Detection mode accurate (30kHz), 1 = Detection mode fast (60kHz)
201 / 0xC9	R/W	UIntegerT	128 Bit	0	-	-	Job Active	-
		Record	8 Bit	1	-	-	Name	-
		UIntegerT	8 Bit	2	-	300...2000 ⁽²⁾	Threshold	SSCx Param – SP1
		UIntegerT	8 Bit	3	-	0...13	Gain	Sensitivity selection
			8 Bit	4	1	1...3	Color	RGB Selection: 1 = Red emission , 2 = Green emission, 3 = Blue emission
			8 Bit	5	1	0...1	Dark mode	SSC1 Config - Logic: 0 = High Active, 1 = Low Active
			8 Bit	6	0	0...1	Hysteresis factor	SSCx Config – Hysteresis: 0 = Hysteresis min, 1 = Hysteresis max
			8 Bit	7	0	0...1	Contrast factor	0 = Contrast factor min , 1 = Contrast factor max
			8 Bit	8	1	0...1	Detection mode	0 = Detection mode accurate (30kHz), 1 = Detection mode fast (60kHz)

(1) R = Read / W = Write (2) analog signal has an offset of more or less 325; if the threshold is set below this value the output cannot switch

OUTPUT PARAMETERS 2/2								
Index (dec/hex)	Access ⁽¹⁾	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
202 / 0xCA	R/W	UIntegerT	128 Bit	0	-	-	Job Active	-
		Record	8 Bit	1	-	-	Name	-
		UIntegerT	8 Bit	2	-	300...2000 ⁽²⁾	Threshold	SSCx Param – SP1
		UIntegerT	8 Bit	3	-	0...13	Gain	Sensitivity selection
			8 Bit	4	1	1...3	Color	RGB Selection: 1 = Red emission , 2 = Green emission, 3 = Blue emission
			8 Bit	5	1	0...1	Dark mode	SSC1 Config - Logic: 0 = High Active, 1 = Low Active
			8 Bit	6	0	0...1	Hysteresis factor	SSCx Config – Hysteresis: 0 = Hysteresis min, 1 = Hysteresis max
			8 Bit	7	0	0...1	Contrast factor	0 = Contrast factor min , 1 = Contrast factor max
			8 Bit	8	1	0...1	Detection mode	0 = Detection mode accurate (30kHz), 1 = Detection mode fast (60kHz)
203 / 0xCB	R/W	UIntegerT	128 Bit	0	-	-	Job Active	-
		Record	8 Bit	1	-	-	Name	-
		UIntegerT	8 Bit	2	-	300...2000 ⁽²⁾	Threshold	SSCx Param – SP1
		UIntegerT	8 Bit	3	-	0...13	Gain	Sensitivity selection
			8 Bit	4	1	1...3	Color	RGB Selection: 1 = Red emission , 2 = Green emission, 3 = Blue emission
			8 Bit	5	1	0...1	Dark mode	SSC1 Config - Logic: 0 = High Active, 1 = Low Active
			8 Bit	6	0	0...1	Hysteresis factor	SSCx Config – Hysteresis: 0 = Hysteresis min, 1 = Hysteresis max
			8 Bit	7	0	0...1	Contrast factor	0 = Contrast factor min , 1 = Contrast factor max
			8 Bit	8	1	0...1	Detection mode	0 = Detection mode accurate (30kHz), 1 = Detection mode fast (60kHz)

Job Active contains all the parameters used to set the sensor. After a teach, the resulting configuration is visible in Job Active. You can name the Job and save it in one of the 3 job slots. Use the parameter "Save Job" to save the active job in a memory slot, and "Load Job" to recall it to the active configuration. If you need to store more job configurations, read index 200 and store the resulting 16 bytes. Write back the 16 bytes at index 200 (Job Active) to recall the configuration.

Most parameters of Active Job are duplicated at the standard index of other Datasensing's photoelectric sensors parameters.
You can change them using the parameter at the standard index, or directly in the Job Active configuration. The sensor will keep parameters aligned.

You can use Hysteresis and Contrast factors to reduce the sensor sensibility, making the detection more stable against signal variations (vibrations, distance variations, noise, etc.).

Hysteresys factor	Contrast factor	
0	0	minimum hysteresis and minimum contrast for a good teach = 2x min hysteresis
0	1	minimum hysteresis, doubled contrast for the good teach
1	0	doubled hysteresis and doubled contrast for good teach
1	1	doubled hysteresis and 4x contrast for good teach

Increasing the hysteresis, you increase the difference between on and off detection thresholds.
Increasing the contrast for a good teach, you force the sensor to look for a higher contrast configuration during the teach.
These two parameters automatically define the quality alarm thresholds (index 93 and 94).

Use Detection Mode to set the sensor speed to 60kHz (jitter = 4us) or to 30kHz (jitter = 8us).
With a lower speed, the sensor increases its sensibility. Use the Accurate (30kHz) for most challenging contrasts.

TIME STAMP TABLE							
		ID event	Day	Hours	Minutes	Seconds	Milliseconds
Last EVENT_X occurred	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
	Byte 8	Byte 9	Byte 10	Byte 11	Byte 12	Byte 13	Byte 14
	Byte 15	Byte 16	Byte 17	Byte 18	Byte 19	Byte 20	Byte 21
	...	...	...	...	...	...	...
	...	...	...	...	...	...	...
	...	...	...	...	...	...	...
First EVENT_X occurred	Byte 64	Byte 65	Byte 66	Byte 67	Byte 68	Byte 69	Byte 70

ERROR TYPES			
Code (dec/hex)	Additional code	Name	Description
128 / 0x80	17 / 0x11	Index not available	Read or write access attempt to a non-existing index.
128 / 0x80	18 / 0x12	Subindex not available	Read or write access attempt to a non-existing subindex of an existing index.
128 / 0x80	48 / 0x30	Parameter value out of range	Written parameter value is outside of the permitted value range.
128 / 0x80	51 / 0x33	Parameter length overrun	Written parameter is longer than specified.
128 / 0x80	52 / 0x34	Parameter length underrun	Written parameter is shorter than specified.

EVENTS			
Code (dec/hex)	Warning	Name	Description
16928 / 0x4220	Warning	Temperature underrun	Insulate device
16912 / 0x4210	Warning	Temperature overrun	Clear source of heat
20736 / 0x5100	Error	Power Fault	Check availability
30480 / 0x7710	Error	Short Circuit	Check installation
35904 / 0x8c40	Warning	Maintenance required - Cleaning	Clean device

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