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# ecocirc<sup>®</sup> XL Modbus Parameters

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**Bell & Gossett**

a xylem brand

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# 1. Purpose of this document

The purpose of this document is to provide a list and a simple explanation of the Modbus registers implemented in the “ecocirc XL” electronic drive: they are organized as a Modbus virtual memory (described in par. 5), and each of them has a corresponding register inside the physical memory of the drive.

## 2. Legend

<b>MB</b>	Modbus
<b>REG</b>	Register
<b>MIN</b>	Minimum
<b>MAX</b>	Maximum
<b>DEF</b>	Default
<b>R</b>	Readable
<b>R/W</b>	Readable & Writable
<b>RPM</b>	Revolutions per Minute
<b>Q</b>	Flow Rate
<b>H</b>	Head
<b>P</b>	Power
<b>PROP.</b>	Proportional
<b>W</b>	Watt
<b>A</b>	Ampere
<b>LSW / MSW</b>	Least Significant Word / Most Significant Word
<b>PWR</b>	Power
<b>FW</b>	Firmware
<b>KI</b>	Integral constant
<b>KP</b>	Proportional constant
<b>N.U.</b>	Not used
<b>N.A.</b>	Not accessible

## 3. Data organization

The data-set managed by the ecocirc XL can be divided into 2 main subsets:

- *Parameters*, that is “Readable and Writable” data [R/W] used for setting a specific behavior, activating a function, writing data, etc. inside the drive.
- *Information*, that is “Readable” data [R], used for acquiring values or feedbacks from the drive

# 4. Modbus Virtual Memory

The complete data-set managed by the ecocirc XL is accessible via a Modbus virtual memory made exclusively of Holding Registers, representing both *Parameters* and *Information*.

*Parameters*: are readable and writable

*Information*: is readable only

## 4.1 Function codes

Among the set of all the public Function Codes available in the Modbus protocol definition, ecocirc XL implements only the subsequent Function codes

- **Read Holding Registers** [hex code 0x03] for reading both holding registers representing *Parameters* and *Information*
- **Write Multiple Registers** [hex code 0x10] for writing holding registers representing *Parameters*

## 4.2 Virtual Memory organization

The holding register addressable space, according to the Modbus protocol, is 65536 regs wide (from 0x0000 to 0xFFFF), and has been organized as follows.

Bank 0	↑↑	0x0000	⇒ Devoted to Parameters (Holding Registers R/W)
	256		
	↓↓	0x00FF	
	↑↑	0x0100	⇒ Devoted to Parameters (Holding Registers R/W)
Bank 1	256		
		↓↓	0x01FF
		↑↑	0x0200
	Bank 2	256	
		↓↓	0x02FF
		↑↑	0x0300
Bank 3		256	
		↓↓	0x03FF
		↑↑	0x0400
	Bank 4	256	
		↓↓	0x04FF
	...	...	
Bank 255	↑↑	0xFF00	
	256		
	↓↓	0xFFFF	

Figure 1

### 4.3 Virtual Memory - Banks for Parameters

#### 4.3.1 Bank 0

Bank 0 is organized as follows

↑↑ 48 ↓↓	0x0000  0x002F	Parameters Table 1  N.A.	Pump parameters for standard settings (see parameter 5.5.1)  Not accessible
↑↑ 48 ↓↓	0x0030  0x005F	Parameters Table 2  N.A.	Pump parameters for advanced settings (see parameter 5.5.2)  Not accessible
↑↑ 48 ↓↓	0x0060  0x008F	Parameters Table 3  N.A.	Twin pump parameters (see parameter 5.5.3)  Not accessible
↑↑ 48 ↓↓	0x0090  0x00BF	Parameters Table 4  N.A.	Reserved  Not accessible
↑↑ 48 ↓↓	0x00C0  0x00EF	Parameters Table 5  N.A.	Reserved  Not accessible
↑↑ 16 ↓↓	0x00F0  0x00FF	N.A.	Not accessible

**Figure 2**

Accessing Bank 0 regions declared as “Not accessible” (N.A.), outside of the Parameters Tables described, will bring an “Invalid Address” response.

#### 4.3.2 Bank 1

Bank 1 is Not Used, therefore accessing Bank 1 addresses will generate an “Invalid Address” response.

## 4.4 Virtual Memory - Banks for Information

### 4.4.1 Bank 2

Bank 2 is organized as follows

↑↑ 48	0x0200	Information Table 1	Pump parameters for standard settings (see parameter 5.6.1)
↓↓	0x022F	N.A.	Not accessible
↑↑ 48	0x0230	Information Table 2	Pump information for advanced settings (see parameter 5.6.2)
↓↓	0x025F	N.A.	Not accessible
↑↑ 48	0x0260	Information Table 3	Twin pump information (see parameter 5.6.3)
↓↓	0x028F	N.A.	Not accessible
↑↑ 48	0x0290	Information Table 4	Reserved
↓↓	0x02BF	N.A.	Not accessible
↑↑ 48	0x02C0	Information Table 5	Reserved
↓↓	0x02EF	N.A.	Not accessible
↑↑ 16	0x02F0	N.A.	Not accessible
↓↓	0x02FF		

**Figure 3**

Accessing to Bank 2 regions declared as “Not accessible” (N.A.), outside of the Information Tables described, will generate an “Invalid Address” response.

### 4.4.2 Bank 3

Bank 3 is Not Used, therefore accessing Bank 3 addresses will generate an “Invalid Address” response.

**4.4.3 Bank 4**

Bank 4 is organized as follows

↑ 192 ↓	0x0400	Log Errors Table	Alarms/Errors information (see parameter 5.7.1)
	0x04BF	N.A.	Not accessible
↑ 48 ↓	0x04C0	Log Counters Table	Life counters information (see parameter 5.7.2)
	0x04EF	N.A.	Not accessible
↑ 16 ↓	0x04F0	N.A.	Not accessible
	0x04FF		

**Figure 4**

Accessing Bank 4 regions declared as “Not accessible” (N.A.), outside of the Logs Tables described, will generate an “Invalid Address” response.

## 4.5 Virtual Memory - Parameters Tables

### 4.5.1 Parameters Table 1

A set of parameters [R/W] used for standard settings; generally the same operations or functions a user can perform/activate through the user interface.

MB ADDRESS (HEX)	PARAMETER DESCRIPTION	MEASURING UNIT	MIN	MAX	DEF	STEP
0x0000	<b>OPERATING MODE</b> 0 = OFF 1 = ON	-	0	1	1	1
0x0001	<b>CONTROL MODE<sup>1</sup></b> 1 = CONSTANT PRESSURE 2 = PROPORTIONAL PRESSURE 3 = CONSTANT CURVE	-	1	3	2	1
0x0002	<b>NIGHT MODE ACTIVATION</b> 0 = NOT ACTIVE 1 = ACTIVE	-	0	1	0	1
0x0003	<b>AIR VENTING PROCEDURE</b> 0 = NOT ACTIVE 1 = ACTIVE	-	0	1	1	1
0x0004	<b>PROPORTIONAL PRESSURE SETPOINT<sup>2</sup></b> (FOR CONTROL MODE = 2)	[1/100 m] (i.e. 350 = 3,50 m)	200	1200	550	1
0x0005	<b>CONSTANT PRESSURE SETPOINT<sup>2</sup></b> (FOR CONTROL MODE = 1)	[1/100 m] (i.e. 350 = 3,50 m)	100	1200	550	1
0x0006	<b>CONSTANT CURVE SETPOINT<sup>2</sup></b> (FOR CONTROL MODE = 3)	[rpm]	800	4500	2000	1
0x0007	<b>AIR VENTING POWER ON</b> 0 = NOT ACTIVE 1 = ACTIVE	-	0	1	1	1

**Parameters Table 1**

<sup>1</sup> [CONTROL MODE = 0] is reserved for future implementation

<sup>2</sup> The MIN, MAX and DEFAULT value depends strictly on the pump model: values in the table are only for reference. See also parameter 5.6.2.



**4.5.2 Parameters Table 2**

A set of parameters [R/W] used for advanced settings; which are not accessible through the user interface.

MB ADDRESS (HEX)	PARAMETER DESCRIPTION	MEASURING UNIT	MIN	MAX	DEF	STEP
0x0030	<b>TEMPERATURE CONTROL MODE</b> 0 = NOT ACTIVE 1 = PROP. TEMPERATURE TO HEAD 2 = CONSTANT TEMPERATURE	-	0	2	0	1
0x0031	<b>ABSOLUTE TEMPERATURE SETPOINT</b>	[°C]	-10	110	50	1
0x0032	<b>DIFFERENTIAL TEMPERATURE SETPOINT</b>	[°C]	5	50	30	1
0x0034	<b>TEMPERATURE SLOPE</b> 0 = INCREASING 1 = DECREASING	-	0	1	0	1
0x0035	<b>K<sub>p</sub> FOR TEMPERATURE CONTROL</b>	-	1	5000	50	1
0x0036	<b>K<sub>i</sub> FOR TEMPERATURE CONTROL</b>	-	1	450	4	1
0x0037	<b>TEMPERATURE CONTROL SAMPLING TIME</b>	[ms]	100	3000	2500	1

**Parameters Table 2**

**4.5.3 Parameters Table 3**

A set of parameters [R/W] used for twin pump settings.

MB ADDRESS (HEX)	PARAMETER DESCRIPTION	MEASURING UNIT	MIN	MAX	DEF	STEP
0x0060	<b>CIRCULATOR CONFIGURATION</b> 0 = TWIN MASTER 1 = TWIN SLAVE 2 = SINGLE	-	0	2	2	1
0x0061	<b>TWIN PUMPS CONTROL MODE</b> 0 = BACKUP 1 = ALTERNATE 2 = PARALLEL 3 = FORCED PARALLEL	-	0	2	1	1

**Parameters Table 3**

## 4.6 Virtual Memory - Information Tables

### 4.6.1 Information Table 1

A set of information [R] used for standard use.

MB ADDRESS (HEX)	INFORMATION DESCRIPTION	MEASURING UNIT	MIN	MAX	DEF	STEP
0x0200	<b>INPUT POWER<sup>1</sup></b>	[W]	-	-	-	1
0x0201	<b>HEAD [H]<sup>1</sup></b>	[1/100 m] (i.e. 1050 = 10,50 m)	-	-	-	1
0x0202	<b>FLOW [Q]<sup>1</sup></b>	[1/10 l/s] (i.e. 1054 = 105,4 l/s)	-	-	-	1
0x0203	<b>SPEED<sup>1</sup></b>	[rpm]	-	-	-	1
0x0204	<b>WATER TEMPERATURE</b>	[1/10 °C] (i.e. -155 = -15,5°C) 1126 = 112,6°C)	-200	1200	-	1
0x0205	<b>EXTERNAL WATER TEMPERATURE</b>	[1/10 °C] (i.e. -155 = -15,5°C) 1126 = 112,6°C)	-200	1200	-	1
0x0206	<b>WINDING 1 TEMPERATURE</b>	[°C]	0	255	-	1
0x0207	<b>WINDING 2 TEMPERATURE</b>	[°C]	0	255	-	1
0x0208	<b>WINDING 3 TEMPERATURE</b>	[°C]	0	255	-	1
0x0209	<b>POWER MODULE TEMPERATURE</b>	[°C]	0	255	-	1
0x020A	<b>QUADRANT CURRENT<sup>1</sup></b>	[1/100 a] (i.e. 124 = 1,24 [a])	-	-	-	1
0x020B	<b>BIT FIELDS STATUS I/O</b> Bit 0: 0/10V SIGNAL STATUS Bit 1: 4/20mA SIGNAL STATUS Bit 2: START/STOP SIGNAL STATUS Bit 3: TEMP PROBE SIGNAL STATUS Bit 4 ÷ 7: N.U. Bit 8: OUTPUT RELAY STATUS Bit 9 ÷ 15: N.U.	-	-	-	0	-
0x020C	<b>BIT FIELDS ALARM 1</b> Bit 0: WATER PROBE ALARM (A1) Bit 1: WATER OVERTEMPERATURE ALARM (A2) Bit 2: POWER MODULE OVERTEMP. ALARM (A3) Bit 3: N. U. Bit 4: DATA MEMORY CORRUPTED ALARM (A5) Bit 5: EXT. WATER TEMP. PROBE ALARM <sup>2</sup> (A6) Bit 6: PRESSURE SENSOR ALARM (A7) Bit 7 ÷ 10: N. U. Bit 11: TWIN COMM. LOST <sup>3</sup> (A12) Bit 12: TWIN COMM. LOST <sup>4</sup> (A12) Bit 13 ÷ 15: N. U.	-	-	-	0	-

**4.6.1 Information Table 1 (continued)**

A set of information [R] used for standard use.

MB ADDRESS (HEX)	INFORMATION DESCRIPTION	MEASURING UNIT	MIN	MAX	DEF	STEP
0x020D	<p><b>BIT FIELDS ALARM 2</b></p> <p>Bit 0: INTERNAL ALARM<sup>5</sup> (A20)                      Bit 1: INTERNAL ALARM<sup>6</sup> (A20)                      Bit 2: INTERNAL ALARM<sup>7</sup> (A20)                      Bit 3: INTERNAL ALARM<sup>8</sup> (A20)                      Bit 4: INTERNAL ALARM<sup>9</sup> (A20)                      Bit 5: INTERNAL ALARM<sup>10</sup> (A20)                      Bit 6: INTERNAL ALARM<sup>11</sup> (A20)                      Bit 10 ÷ 15: N. U.</p>	-	-	-	0	-
0x020E	<p><b>BIT FIELDS ERRORS</b></p> <p>Bit 0: INTERNAL COMM. LOST (E1)                      Bit 1: MOTOR OVERLOAD (E2)                      Bit 2: DC-BUS OVERVOLTAGE (E3)                      Bit 3: TRIP CONTROL ERROR (E4)                      Bit 4: DATA MEMORY CORRUPTED ERROR<sup>12</sup> (E5)                      Bit 5: GRID VOLTAGE ERROR (E6)                      Bit 6: MOTOR WINDING TEMPERATURE ERROR (E7)                      Bit 7: POWER MODULE TEMPERATURE ERROR (E8)<sup>13</sup>                      Bit 8: NTC HW ERROR (E9)<sup>14</sup>                      Bit 9: DATA MEMORY CORRUPTED ERROR<sup>15</sup> (E5)                      Bit 10: DATA MEMORY CORRUPTED ERROR<sup>16</sup> (E5)                      Bit 11: DRY-RUN DETECT (E10)                      Bit 12: NTC POWER MODULE FAIL (E9)                      Bit 13: ROTOR BLOCKED (E4)                      Bit 14: MOTOR UNCONNECTED (E9)                      Bit 15 = N. U.</p>	-	-	-	0	-
0x020F	<p><b>ACTIVE ERROR CODE</b></p> <p>0 = NO ERROR                      1 = INTERNAL COMM. LOST                      2 = MOTOR OVERLOAD                      3 = DC-BUS OVERVOLTAGE                      4 = TRIP CONTROL ERROR                      5 = DATA MEMORY CORRUPTED ERROR                      6 = GRID VOLTAGE ERROR                      7 = MOTOR WINDING TEMPERATURE ERROR                      8 = POWER MODULE TEMPERATURE ERROR                      9 = GENERIC HW ERROR                      10 = DRY-RUN DETECT</p>	-	0	10	0	1

**Information Table 1**

- 1 The MIN, MAX and DEFAULT value depends strictly on the pump model.
- 2 This alarm is enabled only if “TEMP. CONTROL MODE” (at address 0x0030) is active
- 3 This bit field is enabled only in Twin Slave
- 4 This bit field is enabled only in Twin Master
- 5 This bit field refers to internal communication problem, specifically UNKNOWN COMMAND
- 6 This bit field refers to internal communication problem, specifically INCORRECT DATA LENGTH
- 7 This bit field refers to internal communication problem, specifically INCORRECT DATA VALUE
- 8 This bit field refers to internal communication problem, specifically INCORRECT MOTOR CONFIGURATION
- 9 This bit field refers to internal communication problem, specifically INCORRECT PWM FREQUENCY
- 10 This bit field refers to internal communication problem, specifically PARAMETER NOT SAVED
- 11 This bit field refers to internal communication problem, specifically COMMAND NOT ACCEPTED
- 12 This bit field refers to EEPROM data corruption
- 13 This bit field refers to over-temperature, probe open or shortened
- 14 This bit field refers to stuck probe
- 15 This bit field refers to factory data corruption
- 16 This bit field refers to hydraulic maps corruption

**4.6.2 Information Table 2**

A set of information [R] used for advanced use; generally these data cannot be accessed through the user interface.

MB ADDRESS (HEX)	INFORMATION DESCRIPTION	MEASURING UNIT	MIN	MAX	DEF	STEP
0x0230	<b>MODBUS SLAVE ADDRESS</b>	-	1	255	105	1
0x0231	<b>WI-FI CLIENT/SERVER CONFIGURATION</b> 0 = SERVER 1 = CLIENT	-	0	1	0	1
0x0232	<b>PRESSURE SENSOR MODEL</b> 0 = DIFF. PRESSURE SENSOR / Range 0 ÷ 1.0bar 1 = DIFF. PRESSURE SENSOR / Range 0 ÷ 2.0bar		0	1	0	1
0x0233	<b>PROPORTIONAL PRESSURE MIN SETPOINT</b>	[1/100 m] (i.e. 350 = 3,50M)	-	-	-	-
0x0234	<b>PROPORTIONAL PRESSURE MAX SETPOINT</b>	[1/100 m] (i.e. 350 = 3,50M)	-	-	-	-
0x0235	<b>CONSTANT PRESSURE MIN SETPOINT</b>	[1/100 m] (i.e. 350 = 3,50M)	-	-	-	-
0x0236	<b>CONSTANT PRESSURE MAX SETPOINT</b>	[1/100 m] (i.e. 350 = 3,50M)	-	-	-	-
0x0237	<b>CONSTANT CURVE MIN SETPOINT</b>	[rpm]	-	-	-	-
0x0238	<b>CONSTANT CURVE MAX SETPOINT</b>	[rpm]	-	-	-	-
0x0239	<b>COMMUNICATION PROTOCOL</b> 0 = MODBUS 1 = BACNET		0	1	0	1
0x023A	<b>BAUD RATE</b>					

**Information Table 2**

**4.6.3 Information Table 3**

A set of information [R]<sup>1</sup> used for twin pump use: generally these data cannot be accessed through the user interface, and are available to the Twin Master for managing the pump.

MB ADDRESS (HEX)	INFORMATION DESCRIPTION	MEASURING UNIT	MIN	MAX	DEF	STEP
0x0260	<b>TWIN SLAVE DRIVEN CURVE<sup>2</sup></b>	[rpm]	800	4500	2000	1
0x0261	<b>TWIN SLAVE START/STOP</b> 0 = STOP 1 = START	-	0	1	0	1
0x0262	<b>TWIN SLAVE INPUT POWER<sup>2</sup></b>	[W]	-	-	-	1
0x0263	<b>TWIN SLAVE HEAD [H]<sup>2</sup></b>	[1/100 m] (i.e. 1050 = 10,50m)	-	-	-	1
0x0264	<b>TWIN SLAVE FLOW [Q]<sup>2</sup></b>	[1/10 l/s] (i.e. 1054 = 105,4l/s)	-	-	-	1
0x0265	<b>TWIN SLAVE SPEED<sup>2</sup></b>	rpm	-	-	-	1
0x0266	<b>TWIN SLAVE WINDING 1 TEMPERATURE</b>	[°C]	0	255	-	1
0x0267	<b>TWIN SLAVE WINDING 2 TEMPERATURE</b>	[°C]	0	255	-	1
0x0268	<b>TWIN SLAVE WINDING 3 TEMPERATURE</b>	[°C]	0	255	-	1
0x0269	<b>TWIN SLAVE POWER MODULE TEMPERATURE</b>	[°C]	0	255	-	1
0x026A	<b>TWIN SLAVE QUADRATURE CURRENT<sup>2</sup></b>	[1/100 A] (i.e. 124 = 1,24 [A])	-	-	-	1
0x026B	<b>TWIN SLAVE BIT FIELDS ALARM 1<sup>3</sup></b>	-	-	-	0	-
0x026C	<b>TWIN SLAVE BIT FIELDS ALARM 2<sup>4</sup></b>	-	-	-	0	-
0x026D	<b>TWIN SLAVE BIT FIELDS ERRORS<sup>5</sup></b>	-	-	-	0	-

**Information Table 3**

<sup>1</sup> This table is visible only if the circulator is set as twin pump MASTER.

<sup>2</sup> The MIN, MAX and DEFAULT value depends strictly on the pump model; values in the table are only for reference.

<sup>3</sup> Bit Field register with the same active bits as in the register at address 0x020C

<sup>4</sup> Bit Field register with the same active bits as in the register at address 0x020D

<sup>5</sup> Bit Field register with the same active bits as in the register at address 0x020E

## 4.7 Virtual Memory - Log Tables

### 4.7.1 Log Errors Table

A set of information [R] used for standard use.

MB ADDRESS (HEX)	INFORMATION DESCRIPTION	MIN	MAX	DEF	STEP
0x0400	ACTIVE ERROR CODE 1 <sup>1</sup>	0	20	-	1
0x0401	START TIME ERROR 1 (LSW)	0	0xFFFF	-	1
0x0402	START TIME ERROR 1 (MSW)	0	0xFFFF	-	1
0x0403	END TIME ERROR 1 (LSW)	0	0xFFFF	-	1
0x0404	END TIME ERROR 1 (MSW)	0	0xFFFF	-	1
0x0405	BIT FIELDS ERRORS 1 <sup>2</sup>	0	0xFFFF	-	1
0x0406	INFO 1_1 / ERROR COUNTER	-	-	-	-
0x0407	INFO 1_2 / SPEED SETPOINT	-	-	-	-
0x0408	INFO 1_3 / SPEED <sup>3</sup>	-	-	-	-
0x0409	INFO 1_4 / QUADRATURE CURRENT <sup>4</sup>	-	-	-	-
0x040A	INFO 1_5 / BIT FIELDS ALARM 1 <sup>5</sup>	-	-	-	-
0x040B	INFO 1_6 / BIT FIELDS ALARM 2 <sup>6</sup>	-	-	-	-
0x040C	INFO 1_7 / BIT FIELDS STATUS I/O <sup>7</sup>	-	-	-	-
0x040D	INFO 1_8 / INPUT POWER <sup>8</sup>	-	-	-	-
0x040E	INFO 1_9 / FLOW [Q] <sup>9</sup>	-	-	-	-
0x040F	INFO 1_10 / HEAD [H] <sup>10</sup>	-	-	-	-
0x0410	INFO 1_11 / POWER MODULE TEMPERATURE <sup>11</sup>	-	-	-	-
0x0411	INFO 1_12 / OPERATING MODE <sup>12</sup>	-	-	-	-
0x0412	INFO 1_13 / N.U.	-	-	-	-
0x0413	INFO 1_14 / N.U.	-	-	-	-
0x0414	INFO 1_15 / N.U.	-	-	-	-
0x0415	INFO 1_16 / N.U.	-	-	-	-
0x0416	ACTIVE ERROR CODE 2 <sup>1</sup>	0	20	-	1
0x0417	START TIME ERROR 2 (LSW)	0	0xFFFF	-	1
-	-	-	-	-	-
0x042B	INFO 2_16 / N.U.	-	-	-	-
0x042C	ACTIVE ERROR CODE 3 <sup>1</sup>	0	20	-	1
0x042D	START TIME ERROR 3 (LSW)	0	0xFFFF	-	1
-	-	-	-	-	-
0x0441	INFO 3_16 / N.U.	-	-	-	-
0x0442	ACTIVE ERROR CODE 4 <sup>1</sup>	0	20	-	1

4.7.1 Log Errors Table (continued)

MB ADDRESS (HEX)	INFORMATION DESCRIPTION	MIN	MAX	DEF	STEP
0x0443	<b>START TIME ERROR 4 (LSW)</b>	0	0xFFFF	-	1
-	-	-	-	-	-
0x0457	<b>INFO 4_16 / N.U.</b>	-	-	-	-
0x0458	<b>ACTIVE ERROR CODE 5<sup>1</sup></b>	0	20	-	1
0x0459	<b>START TIME ERROR 5 (LSW)</b>	0	0xFFFF	-	1
-	-	-	-	-	-
0x046D	<b>INFO 5_16 / N.U.</b>	-	-	-	-
0x046E	<b>ACTIVE ERROR CODE 6<sup>1</sup></b>	0	20	-	1
0x046F	<b>START TIME ERROR 6 (LSW)</b>	0	0xFFFF	-	1
-	-	-	-	-	-
0x0483	<b>INFO 6_16 / N.U.</b>	-	-	-	-
0x0484	<b>ACTIVE ERROR CODE 7<sup>1</sup></b>	0	20	-	1
0x0485	<b>START TIME ERROR 7 (LSW)</b>	0	0xFFFF	-	1
-	-	-	-	-	-
0x0499	<b>INFO 7_16 / N.U.</b>	-	-	-	-
0x049A	<b>ACTIVE ERROR CODE 8<sup>1</sup></b>	0	20	-	1
0x049B	<b>START TIME ERROR 8 (LSW)</b>	0	0xFFFF	-	1
-	-	-	-	-	-
0x04AF	<b>INFO 8_16 / N.U.</b>	-	-	-	-

- 1 Stored value of the register “ACTIVE ERROR CODE” (address 0x020F) when the error happened
- 2 Stored value of the register “BIT FIELDS ERRORS” (address 0x020E) when the error happened
- 3 Stored value of the register “SPEED” (address 0x0203) when the error happened
- 4 Stored value of the register “QUADRATURE CURRENT” (address 0x020A) when the error happened
- 5 Stored value of the register “BIT FIELDS ALARM 1” (address 0x020C) when the error happened
- 6 Stored value of the register “BIT FIELDS ALARM 2” (address 0x020D) when the error happened
- 7 Stored value of the register “BIT FIELDS STATUS I/O” (address 0x020B) when the error happened
- 8 Stored value of the register “INPUT POWER” (address 0x0200) when the error happened
- 9 Stored value of the register “FLOW [Q]” (address 0x0202) when the error happened
- 10 Stored value of the register “HEAD [H]” (address 0x0201) when the error happened
- 11 Stored value of the register “POWER MODULE TEMPERATURE” (address 0x0209) when the error happened
- 12 Stored value of the parameter “OPERATING MODE” (address 0x0000) when the error happened



#### 4.7.2 Log Counters Table

A set of information [R] updated continuously while the system is powered up with grid voltage: this information is not accessible through the user interface.

MB ADDRESS (HEX)	INFORMATION DESCRIPTION	MIN	MAX	DEF	STEP
0x04C0	<b>LIFE TIMER (LSW)</b>	0	0xFFFF	-	1
0x04C1	<b>LIFE TIMER (MSW)</b>	0	0xFFFF	-	1
0x04C2	<b>POWER CONSUMPTION 0-25 TIMER (LSW)</b>	0	0xFFFF	-	1
0x04C3	<b>POWER CONSUMPTION 0-25 TIMER (MSW)</b>	0	0xFFFF	-	1
0x04C4	<b>POWER CONSUMPTION 25-50 TIMER (LSW)</b>	0	0xFFFF	-	1
0x04C5	<b>POWER CONSUMPTION 25-50 TIMER (MSW)</b>	0	0xFFFF	-	1
0x04C6	<b>POWER CONSUMPTION 50-75 TIMER (LSW)</b>	0	0xFFFF	-	1
0x04C7	<b>POWER CONSUMPTION 50-75 TIMER (MSW)</b>	0	0xFFFF	-	1
0x04C8	<b>POWER CONSUMPTION 75-100 TIMER (LSW)</b>	0	0xFFFF	-	1
0x04C9	<b>POWER CONSUMPTION 75-100 TIMER (MSW)</b>	0	0xFFFF	-	1
0x04CA	<b>CURRENT IDX LOG</b>	0	7		1

# Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're 12,500 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

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