1 Index

2 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 XLplus” electronic drive: they are organized as a Modbus virtual memory (described in par. 5), and each of them has a correspondent register inside the physical memory of the drive.

3 Legend

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

4 Data organization

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

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

5 Modbus Virtual Memory

The complete data-set managed by the ecocirc XLplus is accessible considering a Modbus virtual memory made exclusively of Holding Registers, representing both *Parameters* and *Information*: readable and writable the *Parameters*, readable only the *Information*.

5.1 *Function Codes*

Among the set of all the public Function Codes available in the Modbus protocol definition, ecocirc Xlplus 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*

5.2 *Virtual Memory organization*

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

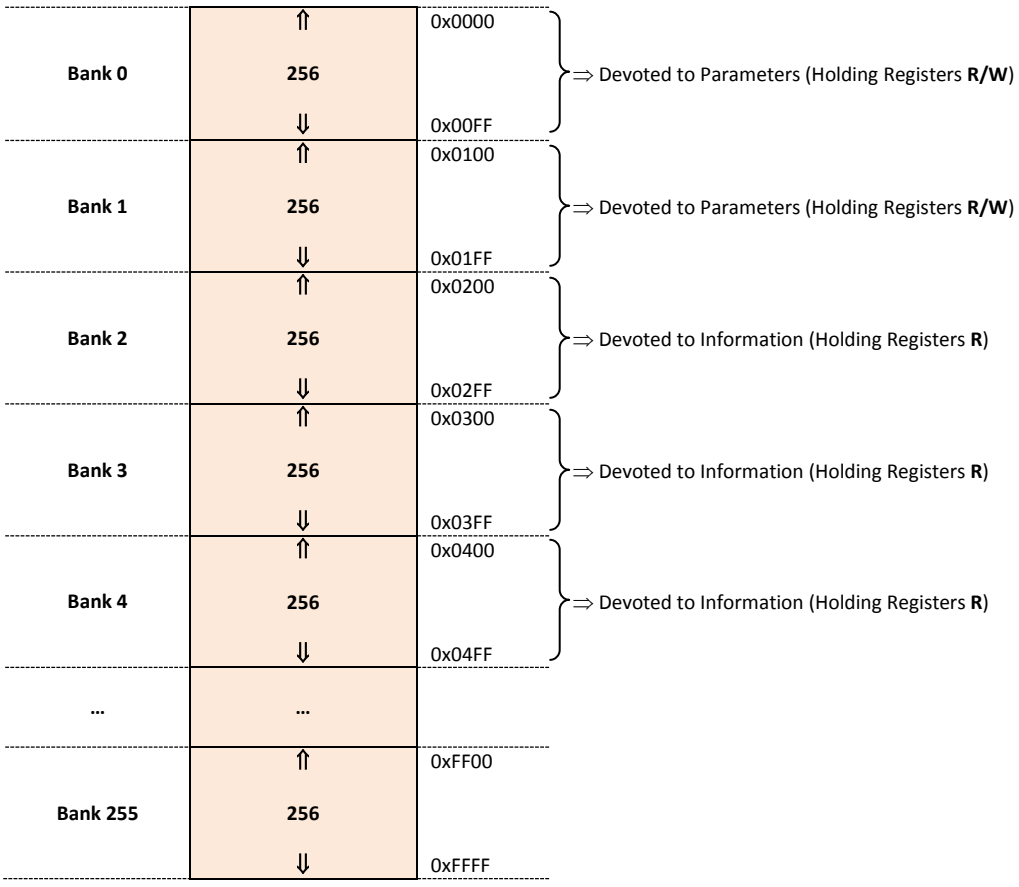

Figure 1

5.3 *Virtual Memory – Banks for Parameters*

5.3.1 Bank 0

Bank 0 is organized as follows

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

Figure 2

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

5.3.2 Bank 1

Bank 1 is Not Used, therefore accessing to Bank 1 addresses will bring to an “Invalid Address” answer.

5.4 *Virtual Memory – Banks for Information*

5.4.1 Bank 2

Bank 2 is organized as follows

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

Figure 3

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

5.4.2 Bank 3

Bank 3 is Not Used, therefore accessing to Bank 3 addresses will bring to an “Invalid Address” answer.

5.4.3 Bank 4

Bank 4 is organized as follows

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

Figure 4

Accessing to Bank 4 regions declared as “Not accessible” (**N.A.**), outside of the Log Tables described, will bring to an “Invalid Address” answer.

5.5 *Virtual Memory – Parameters Tables*

5.5.1 Parameters Table 1

It is 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	**OPERATING MODE** 0 = OFF 1 = ON	-	0	1	1	1
0x0001	**CONTROL MODE**[1] 1 = CONSTANT PRESSURE 2 = PROPORTIONAL PRESSURE 3 = CONSTANT CURVE	-	1	3	2	1
0x0002	**NIGHT-MODE ACTIVATION** 0 = NOT ACTIVE 1 = ACTIVE	-	0	1	0	1
0x0003	**AIR VENTING PROCEDURE** 0 = NOT ACTIVE 1 = ACTIVE	-	0	1	1	1
0x0004	**PROPORTIONAL PRESSURE SETPOINT**[2] (for CONTROL MODE = 2)	[1/100 m] (i.e. .350 = 3,50m)	200	1200	550	1
0x0005	**CONSTANT PRESSURE SETPOINT**[2] (for CONTROL MODE = 1)	[1/100 m] (i.e. .350 = 3,50m)	100	1200	500	1
0x0006	**CONSTANT CURVE SETPOINT**[2] (for CONTROL MODE = 3)	[rpm]	800	4500	2000	1
0x0007	**AIR VENTING POWER ON** 0 = NOT ACTIVE 1 = ACTIVE	-	0	1	1	1

Parameters Table 1

[1] [CONTROL MODE = 0] is reserved for future implementation
[2] The MIN, MAX and DEFAULT value depends strictly on the pump model: values in the table are only for reference. See also par. 5.6.2

5.5.2 Parameters Table 2

It is a set of parameters [**R/W**] used for *advanced settings*: these operations or functions cannot be performed/activated through the user interface.

MB. ADDRESS (HEX)	PARAMETER DESCRIPTION	MEASURING UNIT	MIN	MAX	DEF	STEP
0x0030	**TEMPERATURE CONTROL MODE** 0 = NOT ACTIVE 1 = PROP. TEMPERATURE TO HEAD 2 = CONSTANT TEMPERATURE	-	0	2	0	1
0x0031	**ABSOLUTE TEMPERATURE SETPOINT**	[°C]	30	80	50	1
0x0032	**DIFFERENTIAL TEMPERATURE SETPOINT**	[°C]	20	50	30	1
0x0033	**TEMPERATURE PROBE** 0 = INTERNAL 1 = EXTERNAL 2 = DIFFERENTIAL	-	0	2	0	1
0x0034	**TEMPERATURE SLOPE** 0 = INCREASING 1 = DECREASING	-	0	1	0	1
0x0035	**K_P FOR TEMPERATURE CONTROL**	-	1	5000	50	1
0x0036	**K_I FOR TEMPERATURE CONTROL**	-	1	450	4	1
0x0037	**TEMPERATURE CONTROL SAMPLING TIME**	[ms]	100	3000	2500	1

Parameters Table 2

5.5.3 Parameters Table 3

It is a set of parameters [**R/W**] used for *twin pump settings*.

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

Parameters Table 3

5.6 *Virtual Memory – Information Tables*

5.6.1 Information Table 1

It is a set of information [**R**] used for *standard use*: generally the same data a user can acquire through the user interface.

MB. ADDRESS (HEX)	INFORMATION DESCRIPTION	MEASURING UNIT	MIN	MAX	DEF	STEP
0x0200	**INPUT POWER**[1]	[W]	...	...	...	1
0x0201	**HEAD [H]**[1]	[1/100 m] (i.e. 1050 = 10,50m)	...	...	...	1
0x0202	**FLOW [Q]**[1]	[1/10 l/s] (i.e. 1054 = 105,4l/s)	...	...	...	1
0x0203	**SPEED**[1]	[rpm]	...	...	...	1
0x0204	**WATER TEMPERATURE**	[1/10 °C] (i.e. -155 = -15,5°C 1126 = 112,6°C)	-200	1200	...	1
0x0205	**EXTERNAL WATER TEMPERATURE**	[1/10 °C] (Es. -155 = -15,5°C 1126 = 112,6°C)	-200	1200	...	1
0x0206	**WINDING 1 TEMPERATURE**	[°C]	0	255	...	1
0x0207	**WINDING 2 TEMPERATURE**	[°C]	0	255	...	1
0x0208	**WINDING 3 TEMPERATURE**	[°C]	0	255	...	1
0x0209	**POWER MODULE TEMPERATURE**	[°C]	0	255	...	1
0x020A	**QUADRATURE CURRENT**[1]	[1/100 A] (i.e. 124 = 1,24 [A])	...	...	...	1
0x020B	**BIT FIELDS STATUS I/O** 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	**BIT FIELDS ALARM 1** 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[2] (A6) Bit 6: PRESSURE SENSOR ALARM (A7) Bit 7 ÷ 10: N. U. Bit 11: TWIN COMM. LOST[3] (A12) Bit 12: TWIN COMM. LOST[4] (A12) Bit 13 ÷ 15: N. U.	-	…	…	0	…
0x020D	**BIT FIELDS ALARM 2** Bit 0: INTERNAL ALARM[5] (A20) Bit 1: INTERNAL ALARM[6] (A20) Bit 2: INTERNAL ALARM[7] (A20) Bit 3: INTERNAL ALARM[8] (A20) Bit 4: INTERNAL ALARM[9] (A20) Bit 5: INTERNAL ALARM[10] (A20) Bit 6: INTERNAL ALARM[11] (A20) Bit 7 ÷ 15 = N.U.	-	…	…	0	…
0x020E	**BIT FIELDS ERRORS** 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[12] (E5) Bit 5: GRID VOLTAGE ERROR (E6) Bit 6: MOTOR WINDING TEMPERATURE ERROR (E7) Bit 7: POWER MODULE TEMPERATURE ERROR (E8)[13] Bit 8: NTC HW ERROR (E9)[14] Bit 9: DATA MEMORY CORRUPTED ERROR[15] (E5) Bit 10: DATA MEMORY CORRUPTED ERROR[16] (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.	-	…	…	0	…
0x020F	**ACTIVE ERROR CODE** 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	-	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

5.6.2 Information Table 2

It is 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	**MODBUS SLAVE ADDRESS**	-	1	255	105	1
0x0231	**WI-FI CLIENT/SERVER CONFIGURATION** 0 = SERVER 1 = CLIENT	-	0	1	0	1
0x0232	**PRESSURE SENSOR MODEL** 0 = DIFF. PRESSURE SENSOR / Range 0 ÷ 1.0bar 1 = DIFF. PRESSURE SENSOR / Range 0 ÷ 2.0bar		0	1	0	1
0x0233	**PROPORTIONAL PRESSURE MIN SETPOINT**	[1/100 m] (i.e. .350 = 3,50m)	-	-	…	-
0x0234	**PROPORTIONAL PRESSURE MAX SETPOINT**	[1/100 m] (i.e. .350 = 3,50m)	-	-	…	-
0x0235	**CONSTANT PRESSURE MIN SETPOINT**	[1/100 m] (i.e. .350 = 3,50m)	-	-	…	-
0x0236	**CONSTANT PRESSURE MAX SETPOINT**	[1/100 m] (i.e. .350 = 3,50m)	-	-	…	-
0x0237	**CONSTANT CURVE MIN SETPOINT**	[rpm]	-	-	…	-
0x0238	**CONSTANT CURVE MAX SETPOINT**	[rpm]	-	-	…	-
0x0239	**COMMUNICATION PROTOCOL** 0 = MODBUS 1 = BACNET		0	1	0	1
0x023A	**BAUD RATE**					

Information Table 2

5.6.3 Information Table 3[1]

It is a set of information [**R**] 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	**TWIN SLAVE DRIVEN CURVE[2]**	[rpm]	800	4500	2000	1
0x0261	**TWIN SLAVE START/STOP** 0 = STOP 1 = START	-	0	1	0	1
0x0262	**TWIN SLAVE INPUT POWER[2]**	[W]	…	…	…	1
0x0263	**TWIN SLAVE HEAD [H][2]**	[1/100 m] (i.e. 1050 = 10,50m)	…	…	…	1
0x0264	**TWIN SLAVE FLOW [Q][2]**	[1/10 l/s] (i.e. 1054 = 105,4l/s)	…	…	…	1
0x0265	**TWIN SLAVE SPEED[2]**	rpm	…	…	…	1
0x0266	**TWIN SLAVE WINDING 1 TEMPERATURE**	[°C]	0	255	…	1
0x0267	**TWIN SLAVE WINDING 2 TEMPERATURE**	[°C]	0	255	…	1
0x0268	**TWIN SLAVE WINDING 3 TEMPERATURE**	[°C]	0	255	…	1
0x0269	**TWIN SLAVE POWER MODULE TEMPERATURE**	[°C]	0	255	…	1
0x026A	**TWIN SLAVE QUADRATURE CURRENT[2]**	[1/100 A] (i.e. 124 = 1,24 [A])	…	…	…	1
0x026B	**TWIN SLAVE BIT FIELDS ALARM 1[3]**	-	…	…	0	…
0x026C	**TWIN SLAVE BIT FIELDS ALARM 2[4]**	-	…	…	0	…
0x026D	**TWIN SLAVE BIT FIELDS ERRORS[5]**	-	…	…	0	…

Information Table 3

[1] This table is visible only if the circulator is set as twin pump MASTER.
[2] The MIN, MAX and DEFAULT value depends strictly on the pump model; values in the table are only for reference.
[3] Bit Field register with the same active bits as in the register at address 0x020C
[4] Bit Field register with the same active bits as in the register at address 0x020D
[5] Bit Field register with the same active bits as in the register at address 0x020E

5.7 *Virtual Memory – Log Tables*

5.7.1 Log Errors Table

It is a set of information [**R**] managed whenever the system reaches an *error condition*: these information are not accessible through the user interface.

MB. ADDRESS (HEX)	INFORMATION DESCRIPTION	MIN	MAX	DEF	STEP
0x0400	**ACTIVE ERROR CODE 1**[1]	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**[2]	0	0xFFFF	…	1
0x0406	**INFO 1_1 / ERROR COUNTER**	…	…	…	…
0x0407	**INFO 1_2 / SPEED SETPOINT**	…	…	…	…
0x0408	**INFO 1_3 / SPEED**[3]	…	…	…	…
0x0409	**INFO 1_4 / QUADRATURE CURRENT**[4]	…	…	…	…
0x040A	**INFO 1_5 / BIT FIELDS ALARM 1**[5]	…	…	…	…
0x040B	**INFO 1_6 / BIT FIELDS ALARM 2**[6]	…	…	…	…
0x040C	**INFO 1_7 / BIT FIELDS STATUS I/O**[7]	…	…	…	…
0x040D	**INFO 1_8 / INPUT POWER**[8]	…	…	…	…
0x040E	**INFO 1_9 / FLOW [Q]**[9]	…	…	…	…
0x040F	**INFO 1_10 / HEAD [H]**[10]	…	…	…	…
0x0410	**INFO 1_11 / POWER MODULE TEMPERATURE**[11]	…	…	…	…
0x0411	**INFO 1_12 / OPERATING MODE**[12]	…	…	…	…
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**[1]	0	20	…	1
0x0417	**START TIME ERROR 2 (LSW)**	0	0xFFFF	…	1
…	**…**	…	…	…	…
0x042B	**INFO 2_16 / N.U.**	…	…	…	…
0x042C	**ACTIVE ERROR CODE 3**[1]	0	20	…	1
0x042D	**START TIME ERROR 3 (LSW)**	0	0xFFFF	…	1
…	**…**	…	…	…	…
0x0441	**INFO 3_16 / N.U.**	…	…	…	…
0x0442	**ACTIVE ERROR CODE 4**[1]	0	20	…	1
0x0443	**START TIME ERROR 4 (LSW)**	0	0xFFFF	…	1
…	**…**	…	…	…	…
0x0457	**INFO 4_16 / N.U.**	…	…	…	…
0x0458	**ACTIVE ERROR CODE 5**[1]	0	20	…	1
0x0459	**START TIME ERROR 5 (LSW)**	0	0xFFFF	…	1
…	**…**	…	…	…	…
0x046D	**INFO 5_16 / N.U.**	…	…	…	…
0x046E	**ACTIVE ERROR CODE 6**[1]	0	20	…	1
0x046F	**START TIME ERROR 6 (LSW)**	0	0xFFFF	…	1
…	**…**	…	…	…	…
0x0483	**INFO 6_16 / N.U.**	…	…	…	…
0x0484	**ACTIVE ERROR CODE 7**[1]	0	20	…	1
0x0485	**START TIME ERROR 7 (LSW)**	0	0xFFFF	…	1
…	**…**	…	…	…	…

0x0499	**INFO 7_16 / N.U.**	…	…	…	…
0x049A	**ACTIVE ERROR CODE 8**[1]	0	20	…	1
0x049B	**START TIME ERROR 8 (LSW)**	0	0xFFFF	…	1
…	**…**	…	…	…	…
0x04AF	**INFO 8_16 / N.U.**	…	…	…	…

[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

5.7.2 Log Counters Table

It is a set of information [**R**] updated continuously while the system is *powered up with grid voltage*: these information are not accessible through the user interface.

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