



Building Management System and T-Box integration

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System settings

Protocol parameters:

1	Standard	RS485
2	Baudrate	9600, 19200, 38400, 57600, 76800, 115200, 230400
3	Data bits	8
4	Parity	Even
5	Stop Bits	1
6	Version	ModBus RTU

Flowair system can be controlled via Building Management System (referred to as BMS) using T-Box as a gate to access all available Flowair devices. There are two different BMS work modes. The option to change BMS work mode is located in Holding Registers under address 0x04.

Holding registers: includes changeable (**if not stated otherwise**) registers.

Input registers: includes non - changeable registers.

BMS Single driver mode.

Direct access to DRV settings. T-box settings are blocked (it's not possible to manually change system options). All the settings can be changed via BMS for every driver. For example change of antifreeze settings in holding registers (0x07) do not change this setting in other connected drivers to given T-Box.

How to extract and change single driver registers?

BMS Work parameter has to be set to 0x01. Driver holding and input registers are shifted depending on the address set by the user on DRIVER PCB. The information about the shift can be found in a sub-chapter called Input Registers.

Example:

- DRV - ELIS with address 0x04
- check Drv04GroupId register and its value (can be found in a sub-chapter called Input Registers) it should be equal to 0x03 (DRV - ELIS)

0x14	Drv04GroupId	Single DRV identifier. Modbus address 0x04.									
<table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x01C0</td><td>0x01FF</td></tr> <tr> <td>Holding registers</td><td>0x01C0</td><td>0x01FF</td></tr> </table>			Address space	First address	Last address	Input registers	0x01C0	0x01FF	Holding registers	0x01C0	0x01FF
Address space	First address	Last address									
Input registers	0x01C0	0x01FF									
Holding registers	0x01C0	0x01FF									

- first address column contains the information about the starting location of registers used to control driver with address 04
- to calculate shifted address chose a register from DRV documentation and add it to first address e.g.
 - DRV-ELIS Holding Registers Address 0x04 (WorkMode)
 - First address 0x01C0 (Group 4)
 - DRV-ELIS Holding Register Address via BMS T-Box gate $0x04 + 0x01C0 = 0x01C4$

BMS Group mode.

Indirect access to DRV settings via groups. T-Box settings are unblocked and can be freely modified by BMS. Group is a compilation of the same products connected to T-Box (Leo D, Leo V, Leo M, Leo KM, ELiS, DUO, OXeN). Every change in (for example) OXeN group will modify settings for all OXeN's connected to single T-Box.

Single driver settings are read only.

How to extract and change group registers?

BMS Work parameter has to be set to 0x02. Driver holding and input registers are shifted depending on the group. There can be maximum eight groups (there are eight groups: Leo D, Leo V, Leo M, Leo KM, ELiS, DUO, OXeN. One group 'NON' is control: empty), to identify which driver is assigned to which group read adequate register address.

Example:

- DRV - ELIS with address 0x04, DRV - ELIS with address 0x0A
- check the group identifiers (can be found in a sub-chapter called Input Registers 0x41 - 0x48), DRV - ELIS group is identified by value 0x03
- for the sake of the example let's assume Input Register 0x42 equals 0x03

0x42	Group02Id	Second DRV group identifier.						
		<table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Holding registers</td><td>0x1100</td><td>0x11FF</td></tr> </table>	Address space	First address	Last address	Holding registers	0x1100	0x11FF
Address space	First address	Last address						
Holding registers	0x1100	0x11FF						

- first address column contains the information about the starting location of registers used to control the second group of drivers
- to calculate shifted address chose a register from Group DRV documentation and add it to first address e.g.
 - GroupElis Holding Registers Address 0x04 (WorkMode)
 - First address 0x1100 (Second DRV group)
 - GroupElis Holding Address via BMS T-Box gate $0x04 + 0x1100 = 0x1104$

_Holding registers

Address	Name	Description									
0x00	Rsv	Reserved.									
0x01	SoftType	Enables software setup. Information about program type and it's version. Description is split between <MSB> <LSB>. <MSB> software version 0x00 - T-Box <LSB> software programming options (implemented for future use). <table> <tr> <th><LSB></th><th>Option name</th><th>Description</th></tr> <tr> <td>0x02</td><td>MAIN</td><td>Main software version</td></tr> </table>	<LSB>	Option name	Description	0x02	MAIN	Main software version			
<LSB>	Option name	Description									
0x02	MAIN	Main software version									
0x02	Rsv	Reserved.									
0x03	Rsv	Reserved.									
0x04	BmsMode	BMS work mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x0001</td><td>BMS_WM_RAW</td><td>Direct access to DRV settings. T-box settings blocked.</td></tr> <tr> <td>0x0002</td><td>BMS_WM_GROUP</td><td>Indirect access to DRV settings via groups. T-box settings unblocked.</td></tr> </table>	Value	Name	Description	0x0001	BMS_WM_RAW	Direct access to DRV settings. T-box settings blocked.	0x0002	BMS_WM_GROUP	Indirect access to DRV settings via groups. T-box settings unblocked.
Value	Name	Description									
0x0001	BMS_WM_RAW	Direct access to DRV settings. T-box settings blocked.									
0x0002	BMS_WM_GROUP	Indirect access to DRV settings via groups. T-box settings unblocked.									
0x05	Enable	Enables/disables T-Box and DRV. 0 - disable 1..65535 - enable									
0x06	Tref	Target reference temperature for all drivers. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal value</td></tr> <tr> <td>450</td><td>45,0</td><td>Maximal value</td></tr> </table>	Value	Temperature	Description	50	5,0	Minimal value	450	45,0	Maximal value
Value	Temperature	Description									
50	5,0	Minimal value									
450	45,0	Maximal value									
0x07	AntifreezeWareHouseEnable	Enables/disables warehouse antifreeze mode. 0 - disable 1..65535 - enable									
0x08	AntifreezeWareHouseTempRef	Target temperature to enable warehouse antifreeze. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal value</td></tr> <tr> <td>150</td><td>15,0</td><td>Maximal value</td></tr> </table>	Value	Temperature	Description	50	5,0	Minimal value	150	15,0	Maximal value
Value	Temperature	Description									
50	5,0	Minimal value									
150	15,0	Maximal value									

0x09	TleadSensorSelect	Leading sensor selection. <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>1</td><td>TSL_TLEAD</td><td>T-Box leading sensor temperature.</td></tr><tr><td>3</td><td>TSL_T4</td><td>DRV sensor temperature (T4 connector)</td></tr></table>	Value	Name	Description	1	TSL_TLEAD	T-Box leading sensor temperature.	3	TSL_T4	DRV sensor temperature (T4 connector)
Value	Name	Description									
1	TSL_TLEAD	T-Box leading sensor temperature.									
3	TSL_T4	DRV sensor temperature (T4 connector)									
0x0A	Tsl_Tlead_Offset	T-Box temperature sensor offset. <table><tr><th>Value</th><th>Temperature</th><th>Description</th></tr><tr><td>-100</td><td>-10,0</td><td>Minimal value</td></tr><tr><td>100</td><td>10,0</td><td>Maximal value</td></tr></table>	Value	Temperature	Description	-100	-10,0	Minimal value	100	10,0	Maximal value
Value	Temperature	Description									
-100	-10,0	Minimal value									
100	10,0	Maximal value									
0x0B	Tsl_T4_Offset	DRV temperature sensor offset (regards all T4 sensors). <table><tr><th>Value</th><th>Temperature</th><th>Description</th></tr><tr><td>-100</td><td>-10,0</td><td>Minimal value</td></tr><tr><td>100</td><td>10,0</td><td>Maximal value</td></tr></table>	Value	Temperature	Description	-100	-10,0	Minimal value	100	10,0	Maximal value
Value	Temperature	Description									
-100	-10,0	Minimal value									
100	10,0	Maximal value									
0x0C	GasSensorEnable	Enables/disables two-step alarm threshold from CO2 gas detector connected to DRV-KM or DRV-OXeN. 0 - disable 1..65535 - enable									
0x0D	GasSensorConnectId	DRV-KM, DRV-OXeN modbus address with two-step threshold CO2 gas detector connected.									
0x0E	DateYear	Set year. <table><tr><th>Value</th><th>Description</th></tr><tr><td>2014</td><td>Minimal value</td></tr><tr><td>2100</td><td>Maximal value</td></tr></table>	Value	Description	2014	Minimal value	2100	Maximal value			
Value	Description										
2014	Minimal value										
2100	Maximal value										
0x0F	DateMonth	Set month. Range from 1 to 12.									
0x10	DateDay	Set day. Range from 1 to 31.									
0x11	DateHours	Set hour. Range from 0 to 23.									
0x12	DateMinutes	Set minute. Range from 0 to 59.									
0x13	DateSeconds	Set second. Range from 0 to 59.									

_Input registers

Address	Name	Description															
0x00	HardwareType	Information about hardware type and it's version. Description is split between <MSB> <LSB>. <MSB> PCB name. 0x00 - T-Box <LSB> PCB version. PCB version is described by BCD code. e.g. for 1.0 version <LSB> = 0x10.															
0x01	SoftType	Information about software type. Information about program type and it's version. Description is split between <MSB> <LSB>. <MSB> software version 0x00 - T-Box <LSB> software programming options (implemented for future use) <table border="1"> <tr> <td><LSB></td><td>Option name</td><td>Description</td></tr> <tr> <td>0x02</td><td>MAIN</td><td>Main program version</td></tr> </table>	<LSB>	Option name	Description	0x02	MAIN	Main program version									
<LSB>	Option name	Description															
0x02	MAIN	Main program version															
0x02	ConnectionCnt	Connection count. Increased each time register is read. First query always returns value 0x01. If registry value equals 0xFFFF before the query next one will be equal to 0x00. Monitoring this register enables system diagnostics (e.g. if the program was not deployed second time after voltage shortage).															
0x03	SoftVer	Software version. <table border="1"> <tr> <th>Bits</th><th>Range</th><th>Description</th></tr> <tr> <td>0-3</td><td>0x1 / 0xF</td><td>TAG</td></tr> <tr> <td>4-7</td><td>0x0 / 0xF</td><td>MINOR</td></tr> <tr> <td>8-11</td><td>0x0 / 0xF</td><td>MAJOR</td></tr> <tr> <td>12-15</td><td>0x00</td><td>Reserved</td></tr> </table>	Bits	Range	Description	0-3	0x1 / 0xF	TAG	4-7	0x0 / 0xF	MINOR	8-11	0x0 / 0xF	MAJOR	12-15	0x00	Reserved
Bits	Range	Description															
0-3	0x1 / 0xF	TAG															
4-7	0x0 / 0xF	MINOR															
8-11	0x0 / 0xF	MAJOR															
12-15	0x00	Reserved															
0x05	TempTBox	Temperature measured by build-in T-Box sensor.															
0x06	TempT4Ave	Mean temperature measured by all T4 sensors connected to DRV. <table border="1"> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>-350</td><td>35,0</td><td>Minimal value</td></tr> <tr> <td>350</td><td>35,0</td><td>Maximal value</td></tr> <tr> <td>0x7000</td><td>-</td><td>Short circuit</td></tr> <tr> <td>0x7FFF</td><td>-</td><td>PT1000 sensor not connected</td></tr> </table>	Value	Temperature	Description	-350	35,0	Minimal value	350	35,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature	Description															
-350	35,0	Minimal value															
350	35,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x10	DrvCount	DRV count connected to T-Box. Range from 0 to 31															

0x11	Drv01GroupId	Single DRV identifier. Modbus address 0x01. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0</td><td>Non</td><td>No DRV connected</td></tr> <tr> <td>1</td><td>GroupOxen</td><td>DRV - Oxen</td></tr> <tr> <td>2</td><td>GroupKm</td><td>DRV - KM</td></tr> <tr> <td>3</td><td>GroupElis</td><td>DRV - ELIS</td></tr> <tr> <td>4</td><td>GroupElisDuo</td><td>DRV - ELIS DUO</td></tr> <tr> <td>5</td><td>GroupLeoV</td><td>DRV - V</td></tr> <tr> <td>6</td><td>GroupLeoM</td><td>DRV - M</td></tr> <tr> <td>7</td><td>GroupLeoD</td><td>DRV - D</td></tr> </table> <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0100</td><td>0x013F</td></tr> <tr> <td>Holding registers</td><td>0x0100</td><td>0x013F</td></tr> </table>	Value	Name	Description	0	Non	No DRV connected	1	GroupOxen	DRV - Oxen	2	GroupKm	DRV - KM	3	GroupElis	DRV - ELIS	4	GroupElisDuo	DRV - ELIS DUO	5	GroupLeoV	DRV - V	6	GroupLeoM	DRV - M	7	GroupLeoD	DRV - D	Address space	First address	Last address	Input registers	0x0100	0x013F	Holding registers	0x0100	0x013F
Value	Name	Description																																				
0	Non	No DRV connected																																				
1	GroupOxen	DRV - Oxen																																				
2	GroupKm	DRV - KM																																				
3	GroupElis	DRV - ELIS																																				
4	GroupElisDuo	DRV - ELIS DUO																																				
5	GroupLeoV	DRV - V																																				
6	GroupLeoM	DRV - M																																				
7	GroupLeoD	DRV - D																																				
Address space	First address	Last address																																				
Input registers	0x0100	0x013F																																				
Holding registers	0x0100	0x013F																																				
0x12	Drv02GroupId	Single DRV identifier. Modbus address 0x02. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0140</td><td>0x017F</td></tr> <tr> <td>Holding registers</td><td>0x0140</td><td>0x017F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0140	0x017F	Holding registers	0x0140	0x017F																											
Address space	First address	Last address																																				
Input registers	0x0140	0x017F																																				
Holding registers	0x0140	0x017F																																				
0x13	Drv03GroupId	Single DRV identifier. Modbus address 0x03. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0180</td><td>0x01BF</td></tr> <tr> <td>Holding registers</td><td>0x0180</td><td>0x01BF</td></tr> </table>	Address space	First address	Last address	Input registers	0x0180	0x01BF	Holding registers	0x0180	0x01BF																											
Address space	First address	Last address																																				
Input registers	0x0180	0x01BF																																				
Holding registers	0x0180	0x01BF																																				
0x14	Drv04GroupId	Single DRV identifier. Modbus address 0x04. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x01C0</td><td>0x01FF</td></tr> <tr> <td>Holding registers</td><td>0x01C0</td><td>0x01FF</td></tr> </table>	Address space	First address	Last address	Input registers	0x01C0	0x01FF	Holding registers	0x01C0	0x01FF																											
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Input registers	0x01C0	0x01FF																																				
Holding registers	0x01C0	0x01FF																																				

0x15	Drv05GroupId	Single DRV identifier. Modbus address 0x05. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0200</td><td>0x023F</td></tr> <tr> <td>Holding registers</td><td>0x0200</td><td>0x023F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0200	0x023F	Holding registers	0x0200	0x023F
Address space	First address	Last address									
Input registers	0x0200	0x023F									
Holding registers	0x0200	0x023F									
0x16	Drv06GroupId	Single DRV identifier. Modbus address 0x06. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0240</td><td>0x027F</td></tr> <tr> <td>Holding registers</td><td>0x0240</td><td>0x027F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0240	0x027F	Holding registers	0x0240	0x027F
Address space	First address	Last address									
Input registers	0x0240	0x027F									
Holding registers	0x0240	0x027F									
0x17	Drv07GroupId	Single DRV identifier. Modbus address 0x07. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0280</td><td>0x02BF</td></tr> <tr> <td>Holding registers</td><td>0x0280</td><td>0x02BF</td></tr> </table>	Address space	First address	Last address	Input registers	0x0280	0x02BF	Holding registers	0x0280	0x02BF
Address space	First address	Last address									
Input registers	0x0280	0x02BF									
Holding registers	0x0280	0x02BF									
0x18	Drv08GroupId	Single DRV identifier. Modbus address 0x08. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x02C0</td><td>0x02FF</td></tr> <tr> <td>Holding registers</td><td>0x02C0</td><td>0x02FF</td></tr> </table>	Address space	First address	Last address	Input registers	0x02C0	0x02FF	Holding registers	0x02C0	0x02FF
Address space	First address	Last address									
Input registers	0x02C0	0x02FF									
Holding registers	0x02C0	0x02FF									
0x19	Drv09GroupId	Single DRV identifier. Modbus address 0x09. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0300</td><td>0x033F</td></tr> <tr> <td>Holding registers</td><td>0x0300</td><td>0x033F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0300	0x033F	Holding registers	0x0300	0x033F
Address space	First address	Last address									
Input registers	0x0300	0x033F									
Holding registers	0x0300	0x033F									
0x1A	Drv10GroupId	Single DRV identifier. Modbus address 0x0A. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0340</td><td>0x037F</td></tr> <tr> <td>Holding registers</td><td>0x0340</td><td>0x037F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0340	0x037F	Holding registers	0x0340	0x037F
Address space	First address	Last address									
Input registers	0x0340	0x037F									
Holding registers	0x0340	0x037F									

0x1B	Drv11GroupId	Single DRV identifier. Modbus address 0x0B. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0380</td><td>0x03BF</td></tr> <tr> <td>Holding registers</td><td>0x0380</td><td>0x03BF</td></tr> </table>	Address space	First address	Last address	Input registers	0x0380	0x03BF	Holding registers	0x0380	0x03BF
Address space	First address	Last address									
Input registers	0x0380	0x03BF									
Holding registers	0x0380	0x03BF									
0x1C	Drv12GroupId	Single DRV identifier. Modbus address 0x0C. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x03C0</td><td>0x03FF</td></tr> <tr> <td>Holding registers</td><td>0x03C0</td><td>0x03FF</td></tr> </table>	Address space	First address	Last address	Input registers	0x03C0	0x03FF	Holding registers	0x03C0	0x03FF
Address space	First address	Last address									
Input registers	0x03C0	0x03FF									
Holding registers	0x03C0	0x03FF									
0x1D	Drv13GroupId	Single DRV identifier. Modbus address 0x0D. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0400</td><td>0x043F</td></tr> <tr> <td>Holding registers</td><td>0x0400</td><td>0x043F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0400	0x043F	Holding registers	0x0400	0x043F
Address space	First address	Last address									
Input registers	0x0400	0x043F									
Holding registers	0x0400	0x043F									
0x1E	Drv14GroupId	Single DRV identifier. Modbus address 0x0E. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0440</td><td>0x047F</td></tr> <tr> <td>Holding registers</td><td>0x0440</td><td>0x047F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0440	0x047F	Holding registers	0x0440	0x047F
Address space	First address	Last address									
Input registers	0x0440	0x047F									
Holding registers	0x0440	0x047F									
0x1F	Drv15GroupId	Single DRV identifier. Modbus address 0x0F. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0480</td><td>0x04BF</td></tr> <tr> <td>Holding registers</td><td>0x0480</td><td>0x04BF</td></tr> </table>	Address space	First address	Last address	Input registers	0x0480	0x04BF	Holding registers	0x0480	0x04BF
Address space	First address	Last address									
Input registers	0x0480	0x04BF									
Holding registers	0x0480	0x04BF									
0x20	Drv16GroupId	Single DRV identifier. Modbus address 0x10. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x04C0</td><td>0x04FF</td></tr> <tr> <td>Holding registers</td><td>0x04C0</td><td>0x04FF</td></tr> </table>	Address space	First address	Last address	Input registers	0x04C0	0x04FF	Holding registers	0x04C0	0x04FF
Address space	First address	Last address									
Input registers	0x04C0	0x04FF									
Holding registers	0x04C0	0x04FF									

0x21	Drv17GroupId	Single DRV identifier. Modbus address 0x11. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0500</td><td>0x053F</td></tr> <tr> <td>Holding registers</td><td>0x0500</td><td>0x053F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0500	0x053F	Holding registers	0x0500	0x053F
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Input registers	0x0500	0x053F									
Holding registers	0x0500	0x053F									
0x22	Drv18GroupId	Single DRV identifier. Modbus address 0x12. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0540</td><td>0x057F</td></tr> <tr> <td>Holding registers</td><td>0x0540</td><td>0x057F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0540	0x057F	Holding registers	0x0540	0x057F
Address space	First address	Last address									
Input registers	0x0540	0x057F									
Holding registers	0x0540	0x057F									
0x23	Drv19GroupId	Single DRV identifier. Modbus address 0x13. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0580</td><td>0x05BF</td></tr> <tr> <td>Holding registers</td><td>0x0580</td><td>0x05BF</td></tr> </table>	Address space	First address	Last address	Input registers	0x0580	0x05BF	Holding registers	0x0580	0x05BF
Address space	First address	Last address									
Input registers	0x0580	0x05BF									
Holding registers	0x0580	0x05BF									
0x24	Drv20GroupId	Single DRV identifier. Modbus address 0x14. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x05C0</td><td>0x05FF</td></tr> <tr> <td>Holding registers</td><td>0x05C0</td><td>0x05FF</td></tr> </table>	Address space	First address	Last address	Input registers	0x05C0	0x05FF	Holding registers	0x05C0	0x05FF
Address space	First address	Last address									
Input registers	0x05C0	0x05FF									
Holding registers	0x05C0	0x05FF									
0x25	Drv21GroupId	Single DRV identifier. Modbus address 0x15. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0600</td><td>0x063F</td></tr> <tr> <td>Holding registers</td><td>0x0600</td><td>0x063F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0600	0x063F	Holding registers	0x0600	0x063F
Address space	First address	Last address									
Input registers	0x0600	0x063F									
Holding registers	0x0600	0x063F									
0x26	Drv22GroupId	Single DRV identifier. Modbus address 0x16. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0640</td><td>0x067F</td></tr> <tr> <td>Holding registers</td><td>0x0640</td><td>0x067F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0640	0x067F	Holding registers	0x0640	0x067F
Address space	First address	Last address									
Input registers	0x0640	0x067F									
Holding registers	0x0640	0x067F									

0x27	Drv23GroupId	Single DRV identifier. Modbus address 0x17. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0680</td><td>0x06BF</td></tr> <tr> <td>Holding registers</td><td>0x0680</td><td>0x06BF</td></tr> </table>	Address space	First address	Last address	Input registers	0x0680	0x06BF	Holding registers	0x0680	0x06BF
Address space	First address	Last address									
Input registers	0x0680	0x06BF									
Holding registers	0x0680	0x06BF									
0x28	Drv24GroupId	Single DRV identifier. Modbus address 0x18. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x06C0</td><td>0x06FF</td></tr> <tr> <td>Holding registers</td><td>0x06C0</td><td>0x06FF</td></tr> </table>	Address space	First address	Last address	Input registers	0x06C0	0x06FF	Holding registers	0x06C0	0x06FF
Address space	First address	Last address									
Input registers	0x06C0	0x06FF									
Holding registers	0x06C0	0x06FF									
0x29	Drv25GroupId	Single DRV identifier. Modbus address 0x19. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0700</td><td>0x073F</td></tr> <tr> <td>Holding registers</td><td>0x0700</td><td>0x073F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0700	0x073F	Holding registers	0x0700	0x073F
Address space	First address	Last address									
Input registers	0x0700	0x073F									
Holding registers	0x0700	0x073F									
0x2A	Drv26GroupId	Single DRV identifier. Modbus address 0x1A. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0740</td><td>0x077F</td></tr> <tr> <td>Holding registers</td><td>0x0740</td><td>0x077F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0740	0x077F	Holding registers	0x0740	0x077F
Address space	First address	Last address									
Input registers	0x0740	0x077F									
Holding registers	0x0740	0x077F									
0x2B	Drv27GroupId	Single DRV identifier. Modbus address 0x1B. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0780</td><td>0x07BF</td></tr> <tr> <td>Holding registers</td><td>0x0780</td><td>0x07BF</td></tr> </table>	Address space	First address	Last address	Input registers	0x0780	0x07BF	Holding registers	0x0780	0x07BF
Address space	First address	Last address									
Input registers	0x0780	0x07BF									
Holding registers	0x0780	0x07BF									
0x2C	Drv28GroupId	Single DRV identifier. Modbus address 0x1C. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x07C0</td><td>0x07FF</td></tr> <tr> <td>Holding registers</td><td>0x07C0</td><td>0x07FF</td></tr> </table>	Address space	First address	Last address	Input registers	0x07C0	0x07FF	Holding registers	0x07C0	0x07FF
Address space	First address	Last address									
Input registers	0x07C0	0x07FF									
Holding registers	0x07C0	0x07FF									

0x2D	Drv29GroupId	Single DRV identifier. Modbus address 0x1D. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0800</td><td>0x083F</td></tr> <tr> <td>Holding registers</td><td>0x0800</td><td>0x083F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0800	0x083F	Holding registers	0x0800	0x083F																								
Address space	First address	Last address																																	
Input registers	0x0800	0x083F																																	
Holding registers	0x0800	0x083F																																	
0x2E	Drv30GroupId	Single DRV identifier. Modbus address 0x1E. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0840</td><td>0x087F</td></tr> <tr> <td>Holding registers</td><td>0x0840</td><td>0x087F</td></tr> </table>	Address space	First address	Last address	Input registers	0x0840	0x087F	Holding registers	0x0840	0x087F																								
Address space	First address	Last address																																	
Input registers	0x0840	0x087F																																	
Holding registers	0x0840	0x087F																																	
0x2F	Drv31GroupId	Single DRV identifier. Modbus address 0x1F. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Input registers</td><td>0x0880</td><td>0x08BF</td></tr> <tr> <td>Holding registers</td><td>0x0880</td><td>0x08BF</td></tr> </table>	Address space	First address	Last address	Input registers	0x0880	0x08BF	Holding registers	0x0880	0x08BF																								
Address space	First address	Last address																																	
Input registers	0x0880	0x08BF																																	
Holding registers	0x0880	0x08BF																																	
0x40	GroupCount	DRV group count connected to T-Box.																																	
0x41	Group01Id	First DRV group identifier. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0</td><td>Non</td><td>No DRV connected</td></tr> <tr> <td>1</td><td>GroupOxen</td><td>DRV - Oxen</td></tr> <tr> <td>2</td><td>GroupKm</td><td>DRV - KM</td></tr> <tr> <td>3</td><td>GroupElis</td><td>DRV - ELIS</td></tr> <tr> <td>4</td><td>GroupElisDuo</td><td>DRV - ELIS DUO</td></tr> <tr> <td>5</td><td>GroupLeoV</td><td>DRV - V</td></tr> <tr> <td>6</td><td>GroupLeoM</td><td>DRV - M</td></tr> <tr> <td>7</td><td>GroupLeoD</td><td>DRV - D</td></tr> </table> <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Holding registers</td><td>0x1000</td><td>0x10FF</td></tr> </table>	Value	Name	Description	0	Non	No DRV connected	1	GroupOxen	DRV - Oxen	2	GroupKm	DRV - KM	3	GroupElis	DRV - ELIS	4	GroupElisDuo	DRV - ELIS DUO	5	GroupLeoV	DRV - V	6	GroupLeoM	DRV - M	7	GroupLeoD	DRV - D	Address space	First address	Last address	Holding registers	0x1000	0x10FF
Value	Name	Description																																	
0	Non	No DRV connected																																	
1	GroupOxen	DRV - Oxen																																	
2	GroupKm	DRV - KM																																	
3	GroupElis	DRV - ELIS																																	
4	GroupElisDuo	DRV - ELIS DUO																																	
5	GroupLeoV	DRV - V																																	
6	GroupLeoM	DRV - M																																	
7	GroupLeoD	DRV - D																																	
Address space	First address	Last address																																	
Holding registers	0x1000	0x10FF																																	
0x42	Group02Id	Second DRV group identifier. <table> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> <tr> <td>Holding registers</td><td>0x1100</td><td>0x11FF</td></tr> </table>	Address space	First address	Last address	Holding registers	0x1100	0x11FF																											
Address space	First address	Last address																																	
Holding registers	0x1100	0x11FF																																	

0x43	Group03Id	Third DRV group identifier.						
		<table><tr><th>Address space</th><th>First address</th><th>Last address</th></tr><tr><td>Holding registers</td><td>0x1200</td><td>0x12FF</td></tr></table>	Address space	First address	Last address	Holding registers	0x1200	0x12FF
		Address space	First address	Last address				
Holding registers	0x1200	0x12FF						
0x44	Group04Id	Fourth DRV group identifier.						
		<table><tr><th>Address space</th><th>First address</th><th>Last address</th></tr><tr><td>Holding registers</td><td>0x1300</td><td>0x13FF</td></tr></table>	Address space	First address	Last address	Holding registers	0x1300	0x13FF
		Address space	First address	Last address				
Holding registers	0x1300	0x13FF						
0x45	Group05Id	Fifth DRV group identifier.						
		<table><tr><th>Address space</th><th>First address</th><th>Last address</th></tr><tr><td>Holding registers</td><td>0x1400</td><td>0x14FF</td></tr></table>	Address space	First address	Last address	Holding registers	0x1400	0x14FF
		Address space	First address	Last address				
Holding registers	0x1400	0x14FF						
0x46	Group06Id	Sixth DRV group identifier.						
		<table><tr><th>Address space</th><th>First address</th><th>Last address</th></tr><tr><td>Holding registers</td><td>0x1500</td><td>0x15FF</td></tr></table>	Address space	First address	Last address	Holding registers	0x1500	0x15FF
		Address space	First address	Last address				
Holding registers	0x1500	0x15FF						
0x47	Group07Id	Seventh DRV group identifier.						
		<table><tr><th>Address space</th><th>First address</th><th>Last address</th></tr><tr><td>Holding registers</td><td>0x1600</td><td>0x16FF</td></tr></table>	Address space	First address	Last address	Holding registers	0x1600	0x16FF
		Address space	First address	Last address				
Holding registers	0x1600	0x16FF						
0x48	Group08Id	Eight DRV group identifier.						
		<table><tr><th>Address space</th><th>First address</th><th>Last address</th></tr><tr><td>Holding registers</td><td>0x1700</td><td>0x17FF</td></tr></table>	Address space	First address	Last address	Holding registers	0x1700	0x17FF
		Address space	First address	Last address				
Holding registers	0x1700	0x17FF						

Device Groups

This chapter is meant to be used with BMS work mode parameter set up to 0x02.

Indirect access to DRV settings via groups. T-Box settings are unblocked and can be freely modified by BMS. Group mean types of products connected to T-Box (Leo D, Leo V, Leo M, Leo KM, ELiS, DUO, OXeN). Every change in (for example) OXeN group will modify settings for all OXeN's connected to single T-Box.

Single driver settings are read only.

Every single device group controlled by T-Box is identified by group identifier.

GroupId

Value	Name	Description
0	Non	No DRV connected
1	GroupOxen	DRV - Oxen
2	GroupKm	DRV - KM
3	GroupElis	DRV - ELIS
4	GroupElisDuo	DRV - ELIS DUO
5	GroupLeoV	DRV - V
6	GroupLeoM	DRV - M
7	GroupLeoD	DRV - D

DrvGroup Header

Modbus Holding Registers Header

Address	Name	Description						
0x00	DrvGroup_Id	Group identifier. Read only						
0x01	Zone_Id	Zone group identifier. <table> <tr> <th>Value</th><th>Zone</th><th>Description</th></tr> <tr> <td>0x01</td><td>Zone01</td><td></td></tr> </table> Read only	Value	Zone	Description	0x01	Zone01	
Value	Zone	Description						
0x01	Zone01							
0x02	Rsv	Reserved Read only						
0x03	Rsv	Reserved Read only						

Group Elis

Modbus Holding Registers

Data:

Address	Name	Description															
0x04	WorkMode	Work mode <table> <tr> <th>Value</th><th>Work status</th><th>Description</th></tr> <tr> <td>0</td><td>WM_NS</td><td>Read only</td></tr> <tr> <td>1</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>2</td><td>WM_HEAT</td><td>Heat mode</td></tr> <tr> <td>3</td><td>WM_VENT</td><td>Ventilation mode</td></tr> </table>	Value	Work status	Description	0	WM_NS	Read only	1	WM_OFF	Device off	2	WM_HEAT	Heat mode	3	WM_VENT	Ventilation mode
Value	Work status	Description															
0	WM_NS	Read only															
1	WM_OFF	Device off															
2	WM_HEAT	Heat mode															
3	WM_VENT	Ventilation mode															
0x05	CurtainFanSpeedRef	Forcing fan speed (S1, S2, S3). AC Fan - 3 steps. <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															
0x06	CurtainHeatRef	Forcing T input (only for curtain setup). Read only															
0x07	ContactDoor	Forcing DC input Read only															
0x08	CurtainProgram	Curtain program setting. <table> <tr> <th>Value</th><th>Setting</th><th>Description</th></tr> <tr> <td>0</td><td>CURT_PRG_NS</td><td>No forcing</td></tr> <tr> <td>1</td><td>CURT_PRG_K1</td><td>Forcing SW3 to value K1</td></tr> <tr> <td>2</td><td>CURT_PRG_K2</td><td>Forcing SW3 to value K2</td></tr> </table>	Value	Setting	Description	0	CURT_PRG_NS	No forcing	1	CURT_PRG_K1	Forcing SW3 to value K1	2	CURT_PRG_K2	Forcing SW3 to value K2			
Value	Setting	Description															
0	CURT_PRG_NS	No forcing															
1	CURT_PRG_K1	Forcing SW3 to value K1															
2	CURT_PRG_K2	Forcing SW3 to value K2															

0x09	CurtainFanIdleRef	Stand-by fan operation. AC Fan - 3 steps. <table><tr><th>Value</th><th>Gear</th><th>Description</th></tr><tr><td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr><tr><td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr><tr><td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr><tr><td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr></table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															
0x0A	FanIdleDelay	Time delay of stand-by fan operation. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0..65534</td><td>Delay in seconds</td></tr><tr><td>65535</td><td>Infinite</td></tr></table>	Value	Description	0..65534	Delay in seconds	65535	Infinite									
Value	Description																
0..65534	Delay in seconds																
65535	Infinite																
0x0B	ValveIdleDelay	Time delay of valve in stand-by fan operation. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0..65534</td><td>Delay in seconds</td></tr><tr><td>65535</td><td>Infinite</td></tr></table> Condition: ValveIdleDelay<FanIdleDelay	Value	Description	0..65534	Delay in seconds	65535	Infinite									
Value	Description																
0..65534	Delay in seconds																
65535	Infinite																

Group ElisDuo

Modbus Holding Registers

Data:

Address	Name	Description															
0x04	WorkMode	Work mode <table> <tr> <th>Value</th><th>Work status</th><th>Description</th></tr> <tr> <td>0</td><td>WM_NS</td><td>Read only</td></tr> <tr> <td>1</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>2</td><td>WM_HEAT</td><td>Heat mode</td></tr> <tr> <td>3</td><td>WM_VENT</td><td>Ventilation mode</td></tr> </table>	Value	Work status	Description	0	WM_NS	Read only	1	WM_OFF	Device off	2	WM_HEAT	Heat mode	3	WM_VENT	Ventilation mode
Value	Work status	Description															
0	WM_NS	Read only															
1	WM_OFF	Device off															
2	WM_HEAT	Heat mode															
3	WM_VENT	Ventilation mode															
0x05	CurtainFanSpeedRef	Forcing curtain fan speed (S1, S2, S3). AC Fan - 3 steps. <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															
0x06	CurtainHeatRef	Forcing T input (only for curtain setup). Read only															
0x07	HeaterFanRef	Forcing heater fan speed (S1, S2, S3). AC Fan - 3 steps. <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															
0x08	ContactDoor	Forcing DC input Read only															

0x09	CurtainProgram	Curtain program setting.
0x0A	CurtainFanIdleRef	Stand-by fan operation (curtain). AC Fan - 3 steps.
0x0B	HeaterFanIdleRef	Stand-by fan operation (heater). AC Fan - 3 steps.
0x0C	FanIdleDelay	Time delay of stand-by fan operation.
0x0D	ValveIdleDelay	Time delay of valve in stand-by fan operation. Condition: ValveIdleDelay<FanIdleDelay

Group KM

Modbus Holding Registers

Data:

Address	Name	Description																		
0x04	WorkMode	Work mode <table> <tr> <th>Value</th><th>Work mode</th><th>Description</th></tr> <tr> <td>0</td><td>WM_NS</td><td>Read only</td></tr> <tr> <td>1</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>2</td><td>WM_HT</td><td>Heat mode</td></tr> <tr> <td>3</td><td>WM_COOL</td><td>Cool mode</td></tr> <tr> <td>4</td><td>WM_VENT</td><td>Ventilation mode</td></tr> </table>	Value	Work mode	Description	0	WM_NS	Read only	1	WM_OFF	Device off	2	WM_HT	Heat mode	3	WM_COOL	Cool mode	4	WM_VENT	Ventilation mode
Value	Work mode	Description																		
0	WM_NS	Read only																		
1	WM_OFF	Device off																		
2	WM_HT	Heat mode																		
3	WM_COOL	Cool mode																		
4	WM_VENT	Ventilation mode																		
0x05	DamperForceMode	Damper forcing mode. <table> <tr> <th>Value</th><th>Work mode</th><th>Description</th></tr> <tr> <td>0</td><td>DAMPER_FMD_NS</td><td>Read only</td></tr> <tr> <td>1</td><td>DAMPER_FMD_OFF</td><td>Forcing mode off</td></tr> <tr> <td>2</td><td>DAMPER_FMD_ON</td><td> Depends on air draw temperature: if (T1 < DamperForceTempRef) { DamperLevelRef = DamperForceRef; } </td></tr> </table>	Value	Work mode	Description	0	DAMPER_FMD_NS	Read only	1	DAMPER_FMD_OFF	Forcing mode off	2	DAMPER_FMD_ON	Depends on air draw temperature: if (T1 < DamperForceTempRef) { DamperLevelRef = DamperForceRef; }						
Value	Work mode	Description																		
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0x06	DamperForceTempRef	Target temperature value to open damper in forcing mode. (work mode DamperForceMode == DAMPER_FMD_ON). <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal value</td></tr> <tr> <td>150</td><td>15,0</td><td>Maximal value</td></tr> </table>	Value	Temperature	Description	50	5,0	Minimal value	150	15,0	Maximal value									
Value	Temperature	Description																		
50	5,0	Minimal value																		
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0x07	DamperForceLevelRef	Target temperature value to open damper. (work mode DamperMode == DAMPER_FMD_ON) condition: Temp < DamperForceTempRef <table> <tr> <th>Value</th><th>Damper airflow regulation [%]</th><th>Description</th></tr> <tr> <td>0</td><td>0</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100</td><td>Maximal value</td></tr> </table>	Value	Damper airflow regulation [%]	Description	0	0	Minimal value	100	100	Maximal value									
Value	Damper airflow regulation [%]	Description																		
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0x08	DamperLevelRef	Damper settings: <table> <tr> <th>Value</th><th>Damper airflow regulation [%]</th><th>Description</th></tr> <tr> <td>0</td><td>0</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100</td><td>Maximal value</td></tr> </table>	Value	Damper airflow regulation [%]	Description	0	0	Minimal value	100	100	Maximal value															
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0x09	FanEffRef	Fan settings: EC Fan - speed variable in range 0 - 100% <table> <tr> <th>Value</th><th>Fan speed</th><th>Description</th></tr> <tr> <td>0</td><td>0%</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100%</td><td>Maximal value</td></tr> </table> AC Fan - 3 steps. <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Fan speed	Description																								
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67..100	FAN_SPEED3	Third step																								
0x0A	FanRoofForceEffRef	Forcing fan roof efficiency (FanRoofForceEffRef will be added to FanEffRef). <table> <tr> <th>Value</th><th>Fan efficiency</th><th>Description</th></tr> <tr> <td>-100</td><td>-100</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100</td><td>Maximal value</td></tr> </table>	Value	Fan efficiency	Description	-100	-100	Minimal value	100	100	Maximal value															
Value	Fan efficiency	Description																								
-100	-100	Minimal value																								
100	100	Maximal value																								
0x0B	FanRoofMode	Fan roof work mode. <table> <tr> <th>Value</th><th>Work mode</th><th>Description</th></tr> <tr> <td>0</td><td>FR_MD_NS</td><td>Read only.</td></tr> <tr> <td>1</td><td>FR_MD_01</td><td>Fan roof efficiency depended on DamperLevelRef and FanEffRef.</td></tr> <tr> <td>2</td><td>FR_MD_02</td><td>Fan roof efficiency depended on DamperLevelRef.</td></tr> </table>	Value	Work mode	Description	0	FR_MD_NS	Read only.	1	FR_MD_01	Fan roof efficiency depended on DamperLevelRef and FanEffRef.	2	FR_MD_02	Fan roof efficiency depended on DamperLevelRef.												
Value	Work mode	Description																								
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1	FR_MD_01	Fan roof efficiency depended on DamperLevelRef and FanEffRef.																								
2	FR_MD_02	Fan roof efficiency depended on DamperLevelRef.																								
0x0C	ThermostatModeState	Thermostatic mode. <table> <tr> <th>Value</th><th>Work mode</th><th>Description</th></tr> <tr> <td>1</td><td>THERMO_MD_ON</td><td>Thermostatic mode on</td></tr> <tr> <td>2</td><td>THERMO_MD_OFF</td><td>Thermostatic mode off</td></tr> </table>	Value	Work mode	Description	1	THERMO_MD_ON	Thermostatic mode on	2	THERMO_MD_OFF	Thermostatic mode off															
Value	Work mode	Description																								
1	THERMO_MD_ON	Thermostatic mode on																								
2	THERMO_MD_OFF	Thermostatic mode off																								

0x0D	ThermostatModeFanEffRef	Fan settings for thermostatic mode. EC Fan - speed variable in range 0 - 100% <table border="1" data-bbox="503 226 865 373"> <thead> <tr> <th>Value</th><th>Fan speed</th><th>Description</th></tr> </thead> <tbody> <tr> <td>0</td><td>0%</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100%</td><td>Maximal value</td></tr> </tbody> </table> AC Fan - 3 steps. <table border="1" data-bbox="503 436 881 682"> <thead> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> </thead> <tbody> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </tbody> </table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
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Group LeoD

Modbus Holding Registers

Data:

Address	Name	Description															
0x04	WorkMode	Work mode. <table> <tr> <th></th><th>Work state</th><th>Description</th></tr> <tr> <td>1</td><td>WM_OFF</td><td>Desertification on</td></tr> <tr> <td>2</td><td>WM_AUTO_DEPEND</td><td>Work mode AUTO</td></tr> <tr> <td>3</td><td>WM_AUTO_INDEPEND</td><td>Work mode AUTO</td></tr> <tr> <td>4</td><td>WM_MANUAL</td><td>Automatic cooling</td></tr> </table>		Work state	Description	1	WM_OFF	Desertification on	2	WM_AUTO_DEPEND	Work mode AUTO	3	WM_AUTO_INDEPEND	Work mode AUTO	4	WM_MANUAL	Automatic cooling
	Work state	Description															
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0x06	DestTempRef	Target value for lunching desertification mode. <table> <tr> <th>Value</th><th>Temperature [°C]</th><th>Description</th></tr> <tr> <td>0</td><td>0,0</td><td>Minimal value</td></tr> <tr> <td>100</td><td>10,0</td><td>Maximal value</td></tr> </table> Condition: $\text{DestTempRef} > T_d - T_m$ T_d – temperature value measured near desertificator (T3 sensor). T_m – temperature value measured in the room (TLeadVal or T4 - depends on the TleadSensorSelect register value).	Value	Temperature [°C]	Description	0	0,0	Minimal value	100	10,0	Maximal value						
Value	Temperature [°C]	Description															
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100	10,0	Maximal value															
0x07	WorkModeTempRef	Target value for desertification in MANUAL mode. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal value</td></tr> <tr> <td>450</td><td>45,0</td><td>Maximal value</td></tr> </table>	Value	Temperature	Description	50	5,0	Minimal value	450	45,0	Maximal value						
Value	Temperature	Description															
50	5,0	Minimal value															
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Group LeoM

Modbus Holding Registers

Data:

Address	Name	Description																								
0x04	WorkMode	Work mode. <table> <tr> <th>Value</th><th>Work state</th><th>Description</th></tr> <tr> <td>0</td><td>WM_DEF</td><td>Default value after power reset</td></tr> <tr> <td>1</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>2</td><td>WM_HT_AUTO</td><td>Automatic heating</td></tr> <tr> <td>3</td><td>WM_HT_MANUAL</td><td>Manual heating</td></tr> <tr> <td>4</td><td>WM_COOL_AUTO</td><td>Automatic cooling</td></tr> <tr> <td>5</td><td>WM_COOL_MANUAL</td><td>Manual cooling</td></tr> <tr> <td>6</td><td>WM_VENT</td><td>Ventilation</td></tr> </table>	Value	Work state	Description	0	WM_DEF	Default value after power reset	1	WM_OFF	Device off	2	WM_HT_AUTO	Automatic heating	3	WM_HT_MANUAL	Manual heating	4	WM_COOL_AUTO	Automatic cooling	5	WM_COOL_MANUAL	Manual cooling	6	WM_VENT	Ventilation
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0x06	DestModeForce	Desertification work mode. <table> <tr> <th>Value</th><th>Desertification work mode</th><th>Description</th></tr> <tr> <td>1</td><td>DEST_MD_OFF</td><td>Off</td></tr> <tr> <td>2</td><td>DEST_MD_AUTO_DEPEND</td><td>Work mode AUTO</td></tr> <tr> <td>3</td><td>DEST_MD_AUTO_INDEPEND</td><td>Work mode AUTO</td></tr> </table>	Value	Desertification work mode	Description	1	DEST_MD_OFF	Off	2	DEST_MD_AUTO_DEPEND	Work mode AUTO	3	DEST_MD_AUTO_INDEPEND	Work mode AUTO												
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0x07	DestTempRef	Target value for lunching desertification mode. <table> <tr> <th>Value</th><th>Temperature [°C]</th><th>Description</th></tr> <tr> <td>0</td><td>0,0</td><td>Minimal value</td></tr> <tr> <td>100</td><td>10,0</td><td>Maximal value</td></tr> </table> Condition: $\text{DestTempRef} > T_d - T_m$ T_d – temperature value measured near desertificator (T3 sensor). T_m – temperature value measured in the room (TLeadVal or T4 - depends on the TleadSensorSelect register value).	Value	Temperature [°C]	Description	0	0,0	Minimal value	100	10,0	Maximal value															
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0x08	DestStratTimeDelay	Maximal start time delay of a heater after desertification condition is met. Not used.									
0x09	ModeAuto_FanEffRefMin	Minimal fan efficiency and fan efficiency after attaining target temperature in AUTO mode. EC Fan - speed variable in range 0 - 100% <table border="1"> <thead> <tr> <th>Value</th><th>Fan speed</th><th>Description</th></tr> </thead> <tbody> <tr> <td>0</td><td>0%</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100%</td><td>Maximal value</td></tr> </tbody> </table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value
Value	Fan speed	Description									
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0x0A	ModeAuto_FanEffRefMax	Maximal fan efficiency in AUTO mode. EC Fan - speed variable in range 0 - 100% <table border="1"> <thead> <tr> <th>Value</th><th>Fan speed</th><th>Description</th></tr> </thead> <tbody> <tr> <td>0</td><td>0%</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100%</td><td>Maximal value</td></tr> </tbody> </table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value
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Value	Fan speed	Description									
0	0%	Minimal value									
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Group LeoV

Modbus Holding Registers

Data:

Address	Name	Description																								
0x04	WorkMode	Work mode. <table> <tr> <th>Value</th><th>Work state</th><th>Description</th></tr> <tr> <td>0</td><td>WM_DEF</td><td>Default value after power reset</td></tr> <tr> <td>1</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>2</td><td>WM_HT_AUTO</td><td>Automatic heating</td></tr> <tr> <td>3</td><td>WM_HT_MANUAL</td><td>Manual heating</td></tr> <tr> <td>4</td><td>WM_COOL_AUTO</td><td>Automatic cooling</td></tr> <tr> <td>5</td><td>WM_COOL_MANUAL</td><td>Manual cooling</td></tr> <tr> <td>6</td><td>WM_VENT</td><td>Ventilation</td></tr> </table>	Value	Work state	Description	0	WM_DEF	Default value after power reset	1	WM_OFF	Device off	2	WM_HT_AUTO	Automatic heating	3	WM_HT_MANUAL	Manual heating	4	WM_COOL_AUTO	Automatic cooling	5	WM_COOL_MANUAL	Manual cooling	6	WM_VENT	Ventilation
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0x07	DestTempRef	Target value for lunching desertification mode. <table> <tr> <th>Value</th><th>Temperature [°C]</th><th>Description</th></tr> <tr> <td>0</td><td>0,0</td><td>Minimal value</td></tr> <tr> <td>100</td><td>10,0</td><td>Maximal value</td></tr> </table> Condition: $\text{DestTempRef} > T_d - T_m$ T_d – temperature value measured near desertificator (T3 sensor). T_m – temperature value measured in the room (TLeadVal or T4 - depends on the TleadSensorSelect register value).	Value	Temperature [°C]	Description	0	0,0	Minimal value	100	10,0	Maximal value						
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Single devices

Single Drivers register maps.

Single Header

Holding Registers

Data:

Address	Name	Description																											
0x00	Rsv	Reserved.																											
0x01	SoftType	Enables software setup. Information about program type and it's version. Description is split between <MSB> <LSB>. <MSB> software version <table> <tr> <th><MSB></th><th>Name</th><th>Description</th></tr> <tr> <td>0x01</td><td>OXEN</td><td>Software for OXEN</td></tr> <tr> <td>0x02</td><td>CURTAIN</td><td>Software for curtain</td></tr> <tr> <td>0x03</td><td>KM</td><td>Software for mixing chamber</td></tr> <tr> <td>0x04</td><td>LEO</td><td>Software for heater</td></tr> <tr> <td>0x05</td><td>DESTRATIFICATION UNIT</td><td>Software for desertification unit</td></tr> <tr> <td>0x06</td><td>CURTAIN_HEATER</td><td>Software for curtain-heater</td></tr> </table> <LSB> software programming options (implemented for future use). <table> <tr> <th><LSB></th><th>Soft name</th><th>Description</th></tr> <tr> <td>0x02</td><td>MAIN</td><td>Main software version</td></tr> </table>	<MSB>	Name	Description	0x01	OXEN	Software for OXEN	0x02	CURTAIN	Software for curtain	0x03	KM	Software for mixing chamber	0x04	LEO	Software for heater	0x05	DESTRATIFICATION UNIT	Software for desertification unit	0x06	CURTAIN_HEATER	Software for curtain-heater	<LSB>	Soft name	Description	0x02	MAIN	Main software version
<MSB>	Name	Description																											
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0x02	CURTAIN	Software for curtain																											
0x03	KM	Software for mixing chamber																											
0x04	LEO	Software for heater																											
0x05	DESTRATIFICATION UNIT	Software for desertification unit																											
0x06	CURTAIN_HEATER	Software for curtain-heater																											
<LSB>	Soft name	Description																											
0x02	MAIN	Main software version																											
0x02	Not in use	Reserved.																											
0x03	Not in use	Reserved.																											

Input Registers

(READ ONLY)

Data:

Address	Name	Description
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0x00	HardwareType	Information about hardware type and it's version. Description is split between <MSB> <LSB>. <MSB> PCB name. <table><tr><th><MSB></th><th>PCB Name</th><th>Description</th></tr><tr><td>0x01</td><td>DRV_OXEN</td><td>OXEN driver</td></tr><tr><td>0x02</td><td>DRV_ELIS</td><td>ELIS driver</td></tr><tr><td>0x03</td><td>DRV_KM</td><td>KM driver</td></tr><tr><td>0x04</td><td>DRV_M</td><td>M driver</td></tr><tr><td>0x05</td><td>DRV_V</td><td>V driver</td></tr></table> <LSB> PCB version. PCB version is described by BCD code. e.g. for 1.0 version <LSB> = 0x10.	<MSB>	PCB Name	Description	0x01	DRV_OXEN	OXEN driver	0x02	DRV_ELIS	ELIS driver	0x03	DRV_KM	KM driver	0x04	DRV_M	M driver	0x05	DRV_V	V driver			
<MSB>	PCB Name	Description																					
0x01	DRV_OXEN	OXEN driver																					
0x02	DRV_ELIS	ELIS driver																					
0x03	DRV_KM	KM driver																					
0x04	DRV_M	M driver																					
0x05	DRV_V	V driver																					
0x01	SoftType	Information about software type. Information about program type and it's version. Description is split between <MSB> <LSB>. <MSB> software version <table><tr><th><MSB></th><th>Name</th><th>Description</th></tr><tr><td>0x01</td><td>OXEN</td><td>Software for OXEN</td></tr><tr><td>0x02</td><td>CURTAIN</td><td>Software for curtain</td></tr><tr><td>0x03</td><td>KM</td><td>Software for mixing chamber</td></tr><tr><td>0x04</td><td>LEO</td><td>Software for heater</td></tr><tr><td>0x05</td><td>DESTRATIFICATOR</td><td>Software for desertification unit</td></tr><tr><td>0x06</td><td>CURTAIN_HEATER</td><td>Software for curtain-heater</td></tr></table> <LSB> software programming options (implemented for future use)	<MSB>	Name	Description	0x01	OXEN	Software for OXEN	0x02	CURTAIN	Software for curtain	0x03	KM	Software for mixing chamber	0x04	LEO	Software for heater	0x05	DESTRATIFICATOR	Software for desertification unit	0x06	CURTAIN_HEATER	Software for curtain-heater
<MSB>	Name	Description																					
0x01	OXEN	Software for OXEN																					
0x02	CURTAIN	Software for curtain																					
0x03	KM	Software for mixing chamber																					
0x04	LEO	Software for heater																					
0x05	DESTRATIFICATOR	Software for desertification unit																					
0x06	CURTAIN_HEATER	Software for curtain-heater																					
0x02	ConnectionCnt	Connection count. Increased each time register is read. First query always returns value 0x01. If register value equals 0xFFFF before the query, next one will be equal to 0x00. Monitoring this register enables system diagnostics (e.g. if the program was not deployed second time after voltage shortage).																					
0x03	SoftVer	Software version. <table><tr><th>BIT</th><th>Description</th></tr><tr><td>0...3</td><td>TAG</td></tr><tr><td>4...7</td><td>MINOR</td></tr><tr><td>8...11</td><td>MAJOR</td></tr><tr><td>12...15</td><td>Not in use</td></tr></table>	BIT	Description	0...3	TAG	4...7	MINOR	8...11	MAJOR	12...15	Not in use											
BIT	Description																						
0...3	TAG																						
4...7	MINOR																						
8...11	MAJOR																						
12...15	Not in use																						

Single Elis

Holding Registers

Data:

Address	Name	Description															
0x04	WorkMode	Work mode <table> <tr> <th>Value</th><th>Work status</th><th>Description</th></tr> <tr> <td>0</td><td>WM_NS</td><td>Read only</td></tr> <tr> <td>1</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>2</td><td>WM_HEAT</td><td>Heat mode</td></tr> <tr> <td>3</td><td>WM_VENT</td><td>Ventilation mode</td></tr> </table>	Value	Work status	Description	0	WM_NS	Read only	1	WM_OFF	Device off	2	WM_HEAT	Heat mode	3	WM_VENT	Ventilation mode
Value	Work status	Description															
0	WM_NS	Read only															
1	WM_OFF	Device off															
2	WM_HEAT	Heat mode															
3	WM_VENT	Ventilation mode															
0x05	CurtainFanSpeedRef	Forcing fan speed (S1, S2, S3). DRV switch SW3 = C (curtain). AC Fan - 3 steps. <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															
0x06	CurtainHeatRef	Forcing T input. DRV switch SW3 = C (curtain). <table> <tr> <th></th><th>Name</th><th>Description</th></tr> <tr> <td>0</td><td>HEAT_NS</td><td>Read only</td></tr> <tr> <td>1</td><td>HEAT_ON</td><td>ON</td></tr> <tr> <td>2</td><td>HEAT_OFF</td><td>OFF</td></tr> </table>		Name	Description	0	HEAT_NS	Read only	1	HEAT_ON	ON	2	HEAT_OFF	OFF			
	Name	Description															
0	HEAT_NS	Read only															
1	HEAT_ON	ON															
2	HEAT_OFF	OFF															
0x07	HeaterFanSpeedRef	Forcing fan speed (S1, S2, S3). DRV switch SW3 = H (heater). AC Fan - 3 steps. <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															

0x08	HeaterHeatRef	Forcing T input. DRV switch SW3 = H (heater). <table> <tr> <th></th><th>Name</th><th>Description</th></tr> <tr> <td>0</td><td>HEAT_NS</td><td>Read only</td></tr> <tr> <td>1</td><td>HEAT_ON</td><td>ON</td></tr> <tr> <td>2</td><td>HEAT_OFF</td><td>OFF</td></tr> </table>		Name	Description	0	HEAT_NS	Read only	1	HEAT_ON	ON	2	HEAT_OFF	OFF
	Name	Description												
0	HEAT_NS	Read only												
1	HEAT_ON	ON												
2	HEAT_OFF	OFF												
0x09	ContactDoor	Forcing Contact Door. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0</td><td>DOOR_NS</td><td>Not set</td></tr> <tr> <td>1</td><td>DOOR_OPEN</td><td>Forcing open contact door signal</td></tr> <tr> <td>2</td><td>DOOR_CLOSE</td><td>Forcing close contact door signal</td></tr> </table>	Value	Name	Description	0	DOOR_NS	Not set	1	DOOR_OPEN	Forcing open contact door signal	2	DOOR_CLOSE	Forcing close contact door signal
Value	Name	Description												
0	DOOR_NS	Not set												
1	DOOR_OPEN	Forcing open contact door signal												
2	DOOR_CLOSE	Forcing close contact door signal												
0x0A	Tref	Target temperature. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal Value</td></tr> <tr> <td>450</td><td>45,0</td><td>Maximal Value</td></tr> </table>	Value	Temperature	Description	50	5,0	Minimal Value	450	45,0	Maximal Value			
Value	Temperature	Description												
50	5,0	Minimal Value												
450	45,0	Maximal Value												
0x0B	TLeadVal	Lead temperature sensor value. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>-600</td><td>-60,0</td><td>Minimal Value</td></tr> <tr> <td>600</td><td>60,0</td><td>Maximal Value</td></tr> </table>	Value	Temperature	Description	-600	-60,0	Minimal Value	600	60,0	Maximal Value			
Value	Temperature	Description												
-600	-60,0	Minimal Value												
600	60,0	Maximal Value												
0x0C	TLeadSensorSelect	Lead temperature sensor selection. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>1</td><td>TSL_TLEAD</td><td>Value sent by ModBus (TLeadVal)</td></tr> <tr> <td>3</td><td>TSL_T4</td><td>DRV temperature sensor (T4 connector)</td></tr> </table>	Value	Name	Description	1	TSL_TLEAD	Value sent by ModBus (TLeadVal)	3	TSL_T4	DRV temperature sensor (T4 connector)			
Value	Name	Description												
1	TSL_TLEAD	Value sent by ModBus (TLeadVal)												
3	TSL_T4	DRV temperature sensor (T4 connector)												
0x0D	CurtainProgram	Curtain program setting. <table> <tr> <th>Value</th><th>Setting</th><th>Description</th></tr> <tr> <td>0</td><td>CURT_PRG_NS</td><td>No forcing</td></tr> <tr> <td>1</td><td>CURT_PRG_K1</td><td>Forcing SW3 to value K1</td></tr> <tr> <td>2</td><td>CURT_PRG_K2</td><td>Forcing SW3 to value K2</td></tr> </table>	Value	Setting	Description	0	CURT_PRG_NS	No forcing	1	CURT_PRG_K1	Forcing SW3 to value K1	2	CURT_PRG_K2	Forcing SW3 to value K2
Value	Setting	Description												
0	CURT_PRG_NS	No forcing												
1	CURT_PRG_K1	Forcing SW3 to value K1												
2	CURT_PRG_K2	Forcing SW3 to value K2												

0x0E	CurtainFanIdleRef	Stand-by fan operation for curtain. AC Fan - 3 steps. <table><tr><th>Value</th><th>Gear</th><th>Description</th></tr><tr><td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr><tr><td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr><tr><td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr><tr><td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr></table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															
0x0F	HeaterFanIdleRef	Stand-by fan operation for heater. AC Fan - 3 steps. <table><tr><th>Value</th><th>Gear</th><th>Description</th></tr><tr><td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr><tr><td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr><tr><td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr><tr><td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr></table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															
0x10	FanIdleDelay	Time delay of stand-by fan operation. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0..65534</td><td>Delay in seconds</td></tr><tr><td>65535</td><td>Infinite</td></tr></table>	Value	Description	0..65534	Delay in seconds	65535	Infinite									
Value	Description																
0..65534	Delay in seconds																
65535	Infinite																
0x11	ValveIdleDelay	Time delay of valve in stand-by fan operation. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0..65534</td><td>Delay in seconds</td></tr><tr><td>65535</td><td>Infinite</td></tr></table> Condition: ValveIdleDelay<FanIdleDelay.	Value	Description	0..65534	Delay in seconds	65535	Infinite									
Value	Description																
0..65534	Delay in seconds																
65535	Infinite																
0x12	AntifreezeWareHouseOn	Antifreeze work mode. <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x01</td><td>WM_ON</td><td>ON</td></tr><tr><td>0x02</td><td>WM_OFF</td><td>OFF</td></tr></table>	Value	Name	Description	0x01	WM_ON	ON	0x02	WM_OFF	OFF						
Value	Name	Description															
0x01	WM_ON	ON															
0x02	WM_OFF	OFF															
0x13	AntifreezeWareHouseTempRef	Target temperature to enable antifreeze. <table><tr><th>Value</th><th>Temperature</th><th>Description</th></tr><tr><td>50</td><td>5,0</td><td>Minimal value</td></tr><tr><td>150</td><td>15,0</td><td>Maximal value</td></tr></table>	Value	Temperature	Description	50	5,0	Minimal value	150	15,0	Maximal value						
Value	Temperature	Description															
50	5,0	Minimal value															
150	15,0	Maximal value															

Input Registers

(READ ONLY)

Data:

Address	Name	Description															
0x04	T3	Temperature measured by T3 sensor (air after water heat exchanger). <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>-350</td><td>-35,0</td><td>Minimal value</td></tr> <tr> <td>350</td><td>35,0</td><td>Maximal value</td></tr> <tr> <td>0x7000</td><td>-</td><td>Short circuit</td></tr> <tr> <td>0x7FFF</td><td>-</td><td>PT1000 sensor not connected</td></tr> </table>	Value	Temperature	Description	-350	-35,0	Minimal value	350	35,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature	Description															
-350	-35,0	Minimal value															
350	35,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x05	T4	Temperature measured by T4 sensor (air before water heat exchanger). <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>-350</td><td>35,0</td><td>Minimal value</td></tr> <tr> <td>350</td><td>35,0</td><td>Maximal value</td></tr> <tr> <td>0x7000</td><td>-</td><td>Short circuit</td></tr> <tr> <td>0x7FFF</td><td>-</td><td>PT1000 sensor not connected</td></tr> </table>	Value	Temperature	Description	-350	35,0	Minimal value	350	35,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature	Description															
-350	35,0	Minimal value															
350	35,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x06	CurtainFanSpeed	Curtain fan speed (S1, S2, S3). AC Fan - 3 steps. <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															
0x07	ValveState	Valve state. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>VALVE_IDLE</td><td>Valve in stand by mode (for 3-way valves)</td></tr> <tr> <td>0x01</td><td>VALVE_OPEN</td><td>Opening valve</td></tr> <tr> <td>0x02</td><td>VALVE_CLOSE</td><td>Closing valve</td></tr> </table>	Value	Name	Description	0x00	VALVE_IDLE	Valve in stand by mode (for 3-way valves)	0x01	VALVE_OPEN	Opening valve	0x02	VALVE_CLOSE	Closing valve			
Value	Name	Description															
0x00	VALVE_IDLE	Valve in stand by mode (for 3-way valves)															
0x01	VALVE_OPEN	Opening valve															
0x02	VALVE_CLOSE	Closing valve															
0x08	HeaterFanSpeed	Heater fan speed (S1, S2, S3). AC Fan - 3 steps. <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															

0x09	ContactDoor	Contact door state. <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x01</td><td>DOOR_OPEN</td><td>Door open</td></tr><tr><td>0x02</td><td>DOOR_CLOSE</td><td>Door close</td></tr></table>	Value	Name	Description	0x01	DOOR_OPEN	Door open	0x02	DOOR_CLOSE	Door close											
Value	Name	Description																				
0x01	DOOR_OPEN	Door open																				
0x02	DOOR_CLOSE	Door close																				
0x0A	HeaterDetect	Heater detection procedure (ELIS-DUO). <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>HEATER_DT_NS</td><td>Detection procedure not commenced</td></tr><tr><td>0x01</td><td>HEATER_DT_FAIL</td><td>Heater not detected</td></tr><tr><td>0x02</td><td>HEATER_DT_PASS</td><td>Heater detected</td></tr></table>	Value	Name	Description	0x00	HEATER_DT_NS	Detection procedure not commenced	0x01	HEATER_DT_FAIL	Heater not detected	0x02	HEATER_DT_PASS	Heater detected								
Value	Name	Description																				
0x00	HEATER_DT_NS	Detection procedure not commenced																				
0x01	HEATER_DT_FAIL	Heater not detected																				
0x02	HEATER_DT_PASS	Heater detected																				
0x0B	AntifreezeState	Information about antifreeze (8 bits for respected mode). <table><tr><th>Value 15..8 bit</th><th>Value 7..0 bit</th><th>Antifreeze</th><th>Description</th></tr><tr><td>0x01</td><td>-</td><td>Warehouse</td><td>Normal work mode.</td></tr><tr><td>0x02</td><td>-</td><td>Warehouse</td><td>Antifreeze enabled (user parameters overwritten).</td></tr><tr><td>-</td><td>0x01</td><td>Water Exchanger</td><td>Normal work mode.</td></tr><tr><td>-</td><td>0x02</td><td>Water Exchanger</td><td>Antifreeze enabled (user parameters overwritten).</td></tr></table>	Value 15..8 bit	Value 7..0 bit	Antifreeze	Description	0x01	-	Warehouse	Normal work mode.	0x02	-	Warehouse	Antifreeze enabled (user parameters overwritten).	-	0x01	Water Exchanger	Normal work mode.	-	0x02	Water Exchanger	Antifreeze enabled (user parameters overwritten).
Value 15..8 bit	Value 7..0 bit	Antifreeze	Description																			
0x01	-	Warehouse	Normal work mode.																			
0x02	-	Warehouse	Antifreeze enabled (user parameters overwritten).																			
-	0x01	Water Exchanger	Normal work mode.																			
-	0x02	Water Exchanger	Antifreeze enabled (user parameters overwritten).																			
0x0C	FuseState	Fuse state for 3V fans, information can be read from 4 bits (11..8 bit). <table><tr><th>Value 11..8 bit</th><th>Description</th></tr><tr><td>0x00</td><td>Read only</td></tr><tr><td>0x01</td><td>Fuse state - working</td></tr><tr><td>0x02</td><td>Fuse state - blown</td></tr></table> Example: Fuse state 3V fan: working (0x1) Register value: 0x0010 Fuse state 3V fan: blown (0x2) Register value: 0x0020	Value 11..8 bit	Description	0x00	Read only	0x01	Fuse state - working	0x02	Fuse state - blown												
Value 11..8 bit	Description																					
0x00	Read only																					
0x01	Fuse state - working																					
0x02	Fuse state - blown																					
0x0D	CurtainElectricpower	Electric heater power. <table><tr><th>Value</th><th>Name</th><th>L2 output</th><th>L1 output</th></tr><tr><td>0x00</td><td>ELECTRIC_POWER_0</td><td>OFF</td><td>OFF</td></tr><tr><td>0x01</td><td>ELECTRIC_POWER_1</td><td>OFF</td><td>ON</td></tr><tr><td>0x02</td><td>ELECTRIC_POWER_2</td><td>ON</td><td>ON</td></tr></table> L1, L2 outputs are located on VALVE connector.	Value	Name	L2 output	L1 output	0x00	ELECTRIC_POWER_0	OFF	OFF	0x01	ELECTRIC_POWER_1	OFF	ON	0x02	ELECTRIC_POWER_2	ON	ON				
Value	Name	L2 output	L1 output																			
0x00	ELECTRIC_POWER_0	OFF	OFF																			
0x01	ELECTRIC_POWER_1	OFF	ON																			
0x02	ELECTRIC_POWER_2	ON	ON																			

Single KM

Holding Registers

Data:

Address	Name	Description																		
0x04	WorkMode	Work mode <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0</td><td>WM_NS</td><td>Read only</td></tr> <tr> <td>1</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>2</td><td>WM_HT</td><td>Heat mode</td></tr> <tr> <td>3</td><td>WM_COOL</td><td>Cool mode</td></tr> <tr> <td>4</td><td>WM_VENT</td><td>Ventilation mode</td></tr> </table>	Value	Name	Description	0	WM_NS	Read only	1	WM_OFF	Device off	2	WM_HT	Heat mode	3	WM_COOL	Cool mode	4	WM_VENT	Ventilation mode
Value	Name	Description																		
0	WM_NS	Read only																		
1	WM_OFF	Device off																		
2	WM_HT	Heat mode																		
3	WM_COOL	Cool mode																		
4	WM_VENT	Ventilation mode																		
0x05	AntiFreezeWareHouseOn	Enables/disables warehouse antifreeze mode. 0 - disable 1..65535 - enable																		
0x06	AntifreezeWareHouseTempRef	Target temperature to enable warehouse antifreeze. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal value</td></tr> <tr> <td>150</td><td>15,0</td><td>Maximal value</td></tr> </table>	Value	Temperature	Description	50	5,0	Minimal value	150	15,0	Maximal value									
Value	Temperature	Description																		
50	5,0	Minimal value																		
150	15,0	Maximal value																		
0x07	DamperForceMode	Damper forcing mode. <table> <tr> <th>Value</th><th>Work mode</th><th>Description</th></tr> <tr> <td>0</td><td>DAMPER_FMD_NS</td><td>Read only</td></tr> <tr> <td>1</td><td>DAMPER_FMD_OFF</td><td>Forcing mode off</td></tr> <tr> <td>2</td><td>DAMPER_FMD_ON</td><td> Depends on air draw temperature: if (T1 < DamperForceTempRef) <pre>{ DamperLevelRef = DamperForceRef; }</pre> </td></tr> </table>	Value	Work mode	Description	0	DAMPER_FMD_NS	Read only	1	DAMPER_FMD_OFF	Forcing mode off	2	DAMPER_FMD_ON	Depends on air draw temperature: if (T1 < DamperForceTempRef) <pre>{ DamperLevelRef = DamperForceRef; }</pre>						
Value	Work mode	Description																		
0	DAMPER_FMD_NS	Read only																		
1	DAMPER_FMD_OFF	Forcing mode off																		
2	DAMPER_FMD_ON	Depends on air draw temperature: if (T1 < DamperForceTempRef) <pre>{ DamperLevelRef = DamperForceRef; }</pre>																		
0x08	DamperForceTempRef	Target temperature to force damper (work mode DamperForceMode == DAMPER_FMD_ON). <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal value</td></tr> <tr> <td>150</td><td>15,0</td><td>Maximal value</td></tr> </table>	Value	Temperature	Description	50	5,0	Minimal value	150	15,0	Maximal value									
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50	5,0	Minimal value																		
150	15,0	Maximal value																		

0x09	DamperForceLevelRef	Target temperature value to open damper. (work mode DamperMode == DAMPER_FMD_ON) condition: Temp < DamperForceTempRef <table><tr><th>Value</th><th>Damper airflow regulation [%]</th><th>Description</th></tr><tr><td>0</td><td>0</td><td>Minimal value</td></tr><tr><td>100</td><td>100</td><td>Maximal value</td></tr></table>	Value	Damper airflow regulation [%]	Description	0	0	Minimal value	100	100	Maximal value															
Value	Damper airflow regulation [%]	Description																								
0	0	Minimal value																								
100	100	Maximal value																								
0x0A	DamperLevelRef	Damper position. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Minimal value</td></tr><tr><td>100</td><td>Maximal value</td></tr></table>	Value	Description	0	Minimal value	100	Maximal value																		
Value	Description																									
0	Minimal value																									
100	Maximal value																									
0x0B	FenEffRef	Fan efficiency setting. EC Fan - speed variable in range 0 - 100% <table><tr><th>Value</th><th>Fan speed</th><th>Description</th></tr><tr><td>0</td><td>0%</td><td>Minimal value</td></tr><tr><td>100</td><td>100%</td><td>Maximal value</td></tr></table> AC Fan - 3 steps. <table><tr><th>Value</th><th>Gear</th><th>Description</th></tr><tr><td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr><tr><td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr><tr><td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr><tr><td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr></table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Fan speed	Description																								
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Value	Gear	Description																								
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1..33	FAN_SPEED1	First step																								
34..66	FAN_SPEED2	Second step																								
67..100	FAN_SPEED3	Third step																								
0x0C	FanRoofForceEffRef	Forcing fan roof ventilator speed (efficiency will be increased by FanRoofForceEffRef). <table><tr><th>Value %</th><th>Description</th></tr><tr><td>-10</td><td>Minimal value</td></tr><tr><td>10</td><td>Maximal value</td></tr></table>	Value %	Description	-10	Minimal value	10	Maximal value																		
Value %	Description																									
-10	Minimal value																									
10	Maximal value																									
0x0D	Tref	Target temperature. <table><tr><th>Value</th><th>Temperature</th><th>Description</th></tr><tr><td>50</td><td>5,0</td><td>Minimal Value</td></tr><tr><td>450</td><td>45,0</td><td>Maximal Value</td></tr></table>	Value	Temperature	Description	50	5,0	Minimal Value	450	45,0	Maximal Value															
Value	Temperature	Description																								
50	5,0	Minimal Value																								
450	45,0	Maximal Value																								
0x0E	TLeadVal	Lead temperature sensor value. <table><tr><th>Value</th><th>Temperature</th><th>Description</th></tr><tr><td>-600</td><td>-60,0</td><td>Minimal Value</td></tr><tr><td>600</td><td>60,0</td><td>Maximal Value</td></tr></table>	Value	Temperature	Description	-600	-60,0	Minimal Value	600	60,0	Maximal Value															
Value	Temperature	Description																								
-600	-60,0	Minimal Value																								
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0x0F	TLeadSensorSelect	Leading sensor select. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>TSL_TNS</td><td>Read only</td></tr> <tr> <td>0x01</td><td>TSL_TLEAD</td><td>Temperature value transmitted via Modbus.</td></tr> <tr> <td>0x03</td><td>TSL_T4</td><td>Temperature measured by T4 sensor (air before water heat exchanger).</td></tr> </table>	Value	Name	Description	0x00	TSL_TNS	Read only	0x01	TSL_TLEAD	Temperature value transmitted via Modbus.	0x03	TSL_T4	Temperature measured by T4 sensor (air before water heat exchanger).												
Value	Name	Description																								
0x00	TSL_TNS	Read only																								
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0x03	TSL_T4	Temperature measured by T4 sensor (air before water heat exchanger).																								
0x10	FanRoofMode	Fan roof work mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>FR_MD_NS</td><td>Ready only</td></tr> <tr> <td>0x01</td><td>FR_MD_01</td><td>Depends on damper position (DamperLevelRef) and fan efficiency settings (FanEffRef)</td></tr> <tr> <td>0x02</td><td>FR_MD_02</td><td>Depends on damper position (DamperLevelRef)</td></tr> </table>	Value	Name	Description	0x00	FR_MD_NS	Ready only	0x01	FR_MD_01	Depends on damper position (DamperLevelRef) and fan efficiency settings (FanEffRef)	0x02	FR_MD_02	Depends on damper position (DamperLevelRef)												
Value	Name	Description																								
0x00	FR_MD_NS	Ready only																								
0x01	FR_MD_01	Depends on damper position (DamperLevelRef) and fan efficiency settings (FanEffRef)																								
0x02	FR_MD_02	Depends on damper position (DamperLevelRef)																								
0x11	FilterTimeCntRst	Filter time reset. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>FLT_CNT_RST_NS</td><td>Read only - set after filter reset</td></tr> <tr> <td>0x01</td><td>FLT_CNT_RST</td><td>Filter time reset. (FilterWorkTime in Input Registers is set to 0)</td></tr> </table>	Value	Name	Description	0x00	FLT_CNT_RST_NS	Read only - set after filter reset	0x01	FLT_CNT_RST	Filter time reset. (FilterWorkTime in Input Registers is set to 0)															
Value	Name	Description																								
0x00	FLT_CNT_RST_NS	Read only - set after filter reset																								
0x01	FLT_CNT_RST	Filter time reset. (FilterWorkTime in Input Registers is set to 0)																								
0x12	ThermostatModeState	Enable/disable thermostat mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x01</td><td>THERMO_MD_ON</td><td>Thermostat mode enabled</td></tr> <tr> <td>0x02</td><td>THERMO_MD_OFF</td><td>Thermostat mode disabled</td></tr> </table>	Value	Name	Description	0x01	THERMO_MD_ON	Thermostat mode enabled	0x02	THERMO_MD_OFF	Thermostat mode disabled															
Value	Name	Description																								
0x01	THERMO_MD_ON	Thermostat mode enabled																								
0x02	THERMO_MD_OFF	Thermostat mode disabled																								
0x13	ThermostatModeFanEffRef	Fan efficiency setting for thermostat mode. EC Fan - speed variable in range 0 - 100% <table> <tr> <th>Value</th><th>Fan speed</th><th>Description</th></tr> <tr> <td>0</td><td>0%</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100%</td><td>Maximal value</td></tr> </table> AC Fan - 3 steps. <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Fan speed	Description																								
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67..100	FAN_SPEED3	Third step																								

Input Registers

(READ ONLY)

Data:

Address	Name	Description		
0x04	T1	Temperature measured by T1 sensor (fresh air temperature).		
			Temperature	Description
		-500	-50,0	Minimal value
		1000	100,0	Maximal value
		0x7000	-	Short circuit
		0x7FFF	-	PT1000 sensor not connected
0x05	T3	Temperature measured by T3 sensor (air after water heat exchanger).		
			Temperature	Description
		-500	-50,0	Minimal value
		1000	100,0	Maximal value
		0x7000	-	Short circuit
		0x7FFF	-	PT1000 sensor not connected
0x06	T4	Temperature measured by T4 sensor (air before water heat exchanger).		
			Temperature	Description
		-500	-50,0	Minimal value
		1000	100,0	Maximal value
		0x7000	-	Short circuit
		0x7FFF	-	PT1000 sensor not connected
0x07	T5	Temperature measured by T5 sensor (water exchanger temperature).		
			Temperature	Description
		-500	-50,0	Minimal value
		1000	100,0	Maximal value
		0x7000	-	Short circuit
		0x7FFF	-	PT1000 sensor not connected
0x08	ExternalGasDetect_TH1	External gas detector signal - first threshold.		
		Value	Description	
		0x00	Gas concentration below first threshold	
		0x01	Gas concentration exceeds first threshold	
0x09	ExternalGasDetect_TH1	External gas detector signal - second threshold.		
		Value	Description	
		0x00	Gas concentration below second threshold	
		0x01	Gas concentration exceeds second threshold	

0x0A	ExternalGasDetect_val	Gas concentration value - 0-10V DC input (gas detector scaling information required). <table><tr><th>Value</th><th>Voltage</th><th>Description</th></tr><tr><td>0</td><td>0,0</td><td>Minimal value</td></tr><tr><td>100</td><td>10,0</td><td>Maximal value</td></tr></table>	Value	Voltage	Description	0	0,0	Minimal value	100	10,0	Maximal value															
Value	Voltage	Description																								
0	0,0	Minimal value																								
100	10,0	Maximal value																								
0x0B	FanRoof_TK	TK signal from fan roof. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Temperature below safe limit.</td></tr><tr><td>0x02</td><td>Temperature above safe limit.</td></tr></table>	Value	Description	0x01	Temperature below safe limit.	0x02	Temperature above safe limit.																		
Value	Description																									
0x01	Temperature below safe limit.																									
0x02	Temperature above safe limit.																									
0x0C	FanEff	Fan efficiency. EC Fan - speed variable in range 0 - 100% <table><tr><th>Value</th><th>Fan speed</th><th>Description</th></tr><tr><td>0</td><td>0%</td><td>Minimal value</td></tr><tr><td>100</td><td>100%</td><td>Maximal value</td></tr></table> AC Fan - 3 steps. <table><tr><th>Value</th><th>Gear</th><th>Description</th></tr><tr><td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr><tr><td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr><tr><td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr><tr><td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr></table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Fan speed	Description																								
0	0%	Minimal value																								
100	100%	Maximal value																								
Value	Gear	Description																								
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1..33	FAN_SPEED1	First step																								
34..66	FAN_SPEED2	Second step																								
67..100	FAN_SPEED3	Third step																								
0x0D	FanUvoEff	Roof fan efficiency. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Minimal value</td></tr><tr><td>100</td><td>Maximal value</td></tr></table>	Value	Description	0	Minimal value	100	Maximal value																		
Value	Description																									
0	Minimal value																									
100	Maximal value																									
0x0E	DamperLevel	Damper position. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Minimal value</td></tr><tr><td>100</td><td>Maximal value</td></tr></table>	Value	Description	0	Minimal value	100	Maximal value																		
Value	Description																									
0	Minimal value																									
100	Maximal value																									
0x0F	DamperForceState	Forcing state for damper in mode DamperForceMode == DAMPER_FMD_ON <table><tr><th>Value</th><th>Condition</th></tr><tr><td>0x01</td><td>Temp >= DamperForceTempRef</td></tr><tr><td>0x02</td><td>Temp < DamperForceTempRef</td></tr></table>	Value	Condition	0x01	Temp >= DamperForceTempRef	0x02	Temp < DamperForceTempRef																		
Value	Condition																									
0x01	Temp >= DamperForceTempRef																									
0x02	Temp < DamperForceTempRef																									

0x10	AntiFreezeState	Information about antifreeze (8 bits for respected mode). <table><tr><th>Value</th><th>Value 7..0 bit</th><th>Antifreeze</th><th>Description</th></tr><tr><td>0x01</td><td>-</td><td>Warehouse</td><td>Normal work mode</td></tr><tr><td>0x02</td><td>-</td><td>Warehouse</td><td>Antifreeze enabled (user parameters overwritten)</td></tr><tr><td>-</td><td>0x01</td><td>Water Exchanger</td><td>Normal work mode</td></tr><tr><td>-</td><td>0x02</td><td>Water Exchanger</td><td>Antifreeze enabled (user parameters overwritten)</td></tr></table>	Value	Value 7..0 bit	Antifreeze	Description	0x01	-	Warehouse	Normal work mode	0x02	-	Warehouse	Antifreeze enabled (user parameters overwritten)	-	0x01	Water Exchanger	Normal work mode	-	0x02	Water Exchanger	Antifreeze enabled (user parameters overwritten)
Value	Value 7..0 bit	Antifreeze	Description																			
0x01	-	Warehouse	Normal work mode																			
0x02	-	Warehouse	Antifreeze enabled (user parameters overwritten)																			
-	0x01	Water Exchanger	Normal work mode																			
-	0x02	Water Exchanger	Antifreeze enabled (user parameters overwritten)																			
0x11	FilterWorkTime	Filter work time. FilterWorkTime = 5 * FilterWorkTime (min) <table><tr><th>Value</th><th>Work time (min)</th><th>Description</th></tr><tr><td>0</td><td>0</td><td>Minimal value</td></tr><tr><td>65535</td><td>5*65535</td><td>Maximal Value</td></tr></table>	Value	Work time (min)	Description	0	0	Minimal value	65535	5*65535	Maximal Value											
Value	Work time (min)	Description																				
0	0	Minimal value																				
65535	5*65535	Maximal Value																				
0x12	FilterPreasureSwitchState	Filter pressure state. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Not connected</td></tr><tr><td>0x01</td><td>Connected - good condition</td></tr><tr><td>0x02</td><td>Connected - bad condition</td></tr></table>	Value	Description	0x00	Not connected	0x01	Connected - good condition	0x02	Connected - bad condition												
Value	Description																					
0x00	Not connected																					
0x01	Connected - good condition																					
0x02	Connected - bad condition																					
0x13	FanEcConnect	Information about EC Fan connection. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Not connected</td></tr><tr><td>0x02</td><td>Connected</td></tr></table>	Value	Description	0x01	Not connected	0x02	Connected														
Value	Description																					
0x01	Not connected																					
0x02	Connected																					
0x14	FuseState	Fuse state for EC/3V/Roof fans, information can be read from 4 bits. <table><tr><th>Bits</th><th>Description</th></tr><tr><td>3..0</td><td>Roof fan</td></tr><tr><td>4..7</td><td>EC fan</td></tr><tr><td>8...11</td><td>3V fan</td></tr></table> <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Read only</td></tr><tr><td>0x01</td><td>Fuse state - working</td></tr><tr><td>0x02</td><td>Fuse state - blown</td></tr></table> Example: Fuse state 3V fan: working (0x1) Register value: 0x0010 Fuse state 3V fan: blown (0x2) Register value: 0x0020	Bits	Description	3..0	Roof fan	4..7	EC fan	8...11	3V fan	Value	Description	0x00	Read only	0x01	Fuse state - working	0x02	Fuse state - blown				
Bits	Description																					
3..0	Roof fan																					
4..7	EC fan																					
8...11	3V fan																					
Value	Description																					
0x00	Read only																					
0x01	Fuse state - working																					
0x02	Fuse state - blown																					

0x15	ValveState	Valve state.<table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>VALVE_IDLE</td><td>Valve in stand by mode (for 3-way valves)</td></tr><tr><td>0x01</td><td>VALVE_OPEN</td><td>Opening valve</td></tr><tr><td>0x02</td><td>VALVE_CLOSE</td><td>Closing valve</td></tr></table>	Value	Name	Description	0x00	VALVE_IDLE	Valve in stand by mode (for 3-way valves)	0x01	VALVE_OPEN	Opening valve	0x02	VALVE_CLOSE	Closing valve
Value	Name	Description												
0x00	VALVE_IDLE	Valve in stand by mode (for 3-way valves)												
0x01	VALVE_OPEN	Opening valve												
0x02	VALVE_CLOSE	Closing valve												

Single LeoD

Holding Registers

Data:

Address	Name	Description															
0x04	WorkMode	Work mode. <table> <tr> <th></th><th>Work state</th><th>Description</th></tr> <tr> <td>1</td><td>WM_OFF</td><td>Desertification on</td></tr> <tr> <td>2</td><td>WM_AUTO_DEPEND</td><td>Work mode AUTO</td></tr> <tr> <td>3</td><td>WM_AUTO_INDEPEND</td><td>Work mode AUTO</td></tr> <tr> <td>4</td><td>WM_MANUAL</td><td>Automatic cooling</td></tr> </table>		Work state	Description	1	WM_OFF	Desertification on	2	WM_AUTO_DEPEND	Work mode AUTO	3	WM_AUTO_INDEPEND	Work mode AUTO	4	WM_MANUAL	Automatic cooling
	Work state	Description															
1	WM_OFF	Desertification on															
2	WM_AUTO_DEPEND	Work mode AUTO															
3	WM_AUTO_INDEPEND	Work mode AUTO															
4	WM_MANUAL	Automatic cooling															
0x05	FanEffRef	AC Fan - 3 steps. <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															
0x06	CurtainHeatRef	Forcing T input. DRV switch SW3 = C (curtain). <table> <tr> <th></th><th>Name</th><th>Description</th></tr> <tr> <td>0</td><td>HEAT_NS</td><td>Read only</td></tr> <tr> <td>1</td><td>HEAT_ON</td><td>ON</td></tr> <tr> <td>2</td><td>HEAT_OFF</td><td>OFF</td></tr> </table>		Name	Description	0	HEAT_NS	Read only	1	HEAT_ON	ON	2	HEAT_OFF	OFF			
	Name	Description															
0	HEAT_NS	Read only															
1	HEAT_ON	ON															
2	HEAT_OFF	OFF															
0x07	Tref	Target temperature. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal Value</td></tr> <tr> <td>450</td><td>45,0</td><td>Maximal Value</td></tr> </table>	Value	Temperature	Description	50	5,0	Minimal Value	450	45,0	Maximal Value						
Value	Temperature	Description															
50	5,0	Minimal Value															
450	45,0	Maximal Value															
0x0B	TLeadVal	Lead temperature sensor value. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>-600</td><td>-60,0</td><td>Minimal Value</td></tr> <tr> <td>600</td><td>60,0</td><td>Maximal Value</td></tr> </table>	Value	Temperature	Description	-600	-60,0	Minimal Value	600	60,0	Maximal Value						
Value	Temperature	Description															
-600	-60,0	Minimal Value															
600	60,0	Maximal Value															

0x08	TLeadSensorSelect	Lead temperature sensor selection. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>1</td><td>TSL_TLEAD</td><td>Value sent by ModBus (TLeadVal)</td></tr> <tr> <td>3</td><td>TSL_T4</td><td>DRV temperature sensor (T4 connector)</td></tr> </table>	Value	Name	Description	1	TSL_TLEAD	Value sent by ModBus (TLeadVal)	3	TSL_T4	DRV temperature sensor (T4 connector)
Value	Name	Description									
1	TSL_TLEAD	Value sent by ModBus (TLeadVal)									
3	TSL_T4	DRV temperature sensor (T4 connector)									
0x09	DestModeForce	Forcing desertification mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0</td><td>0,0</td><td>Minimal value</td></tr> <tr> <td>100</td><td>10,0</td><td>Maximal value</td></tr> </table> Condition: $DestTempRef > T_d - T_m$ T_d - temperature measured near the ceiling (T3 sensor), T_m - temperature measured in the room (TLeadVal or T4 sensor - depends on TLeadSensorSelect settings).	Value	Name	Description	0	0,0	Minimal value	100	10,0	Maximal value
Value	Name	Description									
0	0,0	Minimal value									
100	10,0	Maximal value									
0x0A	WorkModeTempRef	Target temperature value near the ceiling in manual mode. Condition $WorkModeTempRef > Leading$ sensor value. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal value</td></tr> <tr> <td>450</td><td>45,0</td><td>Maximal value</td></tr> </table>	Value	Temperature	Description	50	5,0	Minimal value	450	45,0	Maximal value
Value	Temperature	Description									
50	5,0	Minimal value									
450	45,0	Maximal value									

Input Registers

(READ ONLY)

Data:

Address	Name	Description															
0x04	T3	Temperature measured by T3 sensor (temperature measured near the ceiling). <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>-350</td><td>-35,0</td><td>Minimal value</td></tr> <tr> <td>350</td><td>35,0</td><td>Maximal value</td></tr> <tr> <td>0x7000</td><td>-</td><td>Short circuit</td></tr> <tr> <td>0x7FFF</td><td>-</td><td>PT1000 sensor not connected</td></tr> </table>	Value	Temperature	Description	-350	-35,0	Minimal value	350	35,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature	Description															
-350	-35,0	Minimal value															
350	35,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															

0x05	T4	Temperature measured by T4 sensor (temperature measured in the room). <table><tr><th>Value</th><th>Temperature</th><th>Description</th></tr><tr><td>-350</td><td>35,0</td><td>Minimal value</td></tr><tr><td>350</td><td>35,0</td><td>Maximal value</td></tr><tr><td>0x7000</td><td>-</td><td>Short circuit</td></tr><tr><td>0x7FFF</td><td>-</td><td>PT1000 sensor not connected</td></tr></table>	Value	Temperature	Description	-350	35,0	Minimal value	350	35,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature	Description															
-350	35,0	Minimal value															
350	35,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x06	FanEff	Fan speed (S1, S2, S3). AC Fan - 3 steps. <table><tr><th>Value</th><th>Gear</th><th>Description</th></tr><tr><td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr><tr><td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr><tr><td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr><tr><td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr></table>	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	Fan off															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															
0x07	DestStatus	Desertification condition. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Condition (destTemp > Td - Tm) and (Tz > Tm) not met</td></tr><tr><td>0x02</td><td>Condition (destTemp > Td - Tm) and (Tz > Tm) not met</td></tr></table> Tz - target room temperature (Tref) Td - temperature measured near the ceiling (T3 sensor), Tm - temperature measured in the room (TLeadVal or T4 sensor - depends on TLeadSensorSelect settings).	Value	Description	0x01	Condition (destTemp > Td - Tm) and (Tz > Tm) not met	0x02	Condition (destTemp > Td - Tm) and (Tz > Tm) not met									
Value	Description																
0x01	Condition (destTemp > Td - Tm) and (Tz > Tm) not met																
0x02	Condition (destTemp > Td - Tm) and (Tz > Tm) not met																
0x08	FuseState	Fuse state for 3V fans, information can be read from 4 bits (11..8 bit). <table><tr><th>Value 11..8 bit</th><th>Description</th></tr><tr><td>0x00</td><td>Read only</td></tr><tr><td>0x01</td><td>Fuse state - working</td></tr><tr><td>0x02</td><td>Fuse state - blown</td></tr></table> Example: Fuse state 3V fan: working (0x1) Register value: 0x0010 Fuse state 3V fan: blown (0x2) Register value: 0x0020	Value 11..8 bit	Description	0x00	Read only	0x01	Fuse state - working	0x02	Fuse state - blown							
Value 11..8 bit	Description																
0x00	Read only																
0x01	Fuse state - working																
0x02	Fuse state - blown																

Single LeoM&V

Holding Registers

Data:

Address	Name	Description																								
0x04	WorkMode	Work mode. <table> <tr> <th>Value</th><th>Work state</th><th>Description</th></tr> <tr> <td>0</td><td>WM_DEF</td><td>Default value after power reset</td></tr> <tr> <td>1</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>2</td><td>WM_HT_AUTO</td><td>Automatic heating</td></tr> <tr> <td>3</td><td>WM_HT_MANUAL</td><td>Manual heating</td></tr> <tr> <td>4</td><td>WM_COOL_AUTO</td><td>Automatic cooling</td></tr> <tr> <td>5</td><td>WM_COOL_MANUAL</td><td>Manual cooling</td></tr> <tr> <td>6</td><td>WM_VENT</td><td>Ventilation</td></tr> </table>	Value	Work state	Description	0	WM_DEF	Default value after power reset	1	WM_OFF	Device off	2	WM_HT_AUTO	Automatic heating	3	WM_HT_MANUAL	Manual heating	4	WM_COOL_AUTO	Automatic cooling	5	WM_COOL_MANUAL	Manual cooling	6	WM_VENT	Ventilation
Value	Work state	Description																								
0	WM_DEF	Default value after power reset																								
1	WM_OFF	Device off																								
2	WM_HT_AUTO	Automatic heating																								
3	WM_HT_MANUAL	Manual heating																								
4	WM_COOL_AUTO	Automatic cooling																								
5	WM_COOL_MANUAL	Manual cooling																								
6	WM_VENT	Ventilation																								
0x05	AntifreezeWareHouseOn	Antifreeze work mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x01</td><td>WM_ON</td><td>ON</td></tr> <tr> <td>0x02</td><td>WM_OFF</td><td>OFF</td></tr> </table>	Value	Name	Description	0x01	WM_ON	ON	0x02	WM_OFF	OFF															
Value	Name	Description																								
0x01	WM_ON	ON																								
0x02	WM_OFF	OFF																								
0x06	AntifreezeWareHouseTempRef	Target temperature to enable antifreeze. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal value</td></tr> <tr> <td>150</td><td>15,0</td><td>Maximal value</td></tr> </table>	Value	Temperature	Description	50	5,0	Minimal value	150	15,0	Maximal value															
Value	Temperature	Description																								
50	5,0	Minimal value																								
150	15,0	Maximal value																								

0x07	FanEffRef	Fan efficiency setting. EC Fan - speed variable in range 0 - 100% <table> <tr> <th>Value</th><th>Fan speed</th><th>Description</th></tr> <tr> <td>0</td><td>0%</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100%</td><td>Maximal value</td></tr> </table> AC Fan - 3 steps. <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td>Fan off</td></tr> <tr> <td>1..33</td><td>FAN_SPEED1</td><td>First step</td></tr> <tr> <td>34..66</td><td>FAN_SPEED2</td><td>Second step</td></tr> <tr> <td>67..100</td><td>FAN_SPEED3</td><td>Third step</td></tr> </table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value	Value	Gear	Description	0	FAN_SPEED0	Fan off	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Fan speed	Description																								
0	0%	Minimal value																								
100	100%	Maximal value																								
Value	Gear	Description																								
0	FAN_SPEED0	Fan off																								
1..33	FAN_SPEED1	First step																								
34..66	FAN_SPEED2	Second step																								
67..100	FAN_SPEED3	Third step																								
0x08	Tref	Target temperature. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal Value</td></tr> <tr> <td>450</td><td>45,0</td><td>Maximal Value</td></tr> </table>	Value	Temperature	Description	50	5,0	Minimal Value	450	45,0	Maximal Value															
Value	Temperature	Description																								
50	5,0	Minimal Value																								
450	45,0	Maximal Value																								
0x09	TLeadVal	Lead temperature sensor value. <table> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> <tr> <td>-600</td><td>-60,0</td><td>Minimal Value</td></tr> <tr> <td>600</td><td>60,0</td><td>Maximal Value</td></tr> </table>	Value	Temperature	Description	-600	-60,0	Minimal Value	600	60,0	Maximal Value															
Value	Temperature	Description																								
-600	-60,0	Minimal Value																								
600	60,0	Maximal Value																								
0x0A	TleadSensorSelect	<table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>TSL_TNS</td><td>Read only</td></tr> <tr> <td>0x01</td><td>TSL_TLEAD</td><td>Temperature value transmitted via Modbus</td></tr> <tr> <td>0x03</td><td>TSL_T4</td><td>Temperature measured by T4 sensor (air before water heat exchanger)</td></tr> </table>	Value	Name	Description	0x00	TSL_TNS	Read only	0x01	TSL_TLEAD	Temperature value transmitted via Modbus	0x03	TSL_T4	Temperature measured by T4 sensor (air before water heat exchanger)												
Value	Name	Description																								
0x00	TSL_TNS	Read only																								
0x01	TSL_TLEAD	Temperature value transmitted via Modbus																								
0x03	TSL_T4	Temperature measured by T4 sensor (air before water heat exchanger)																								
0x0B	DestModeForce	Forcing destratification mode for destratificator <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x01</td><td>DEST_MDF_OFF</td><td>Turn Off</td></tr> <tr> <td>0x02</td><td>DEST_MDF_ON</td><td>Turn On</td></tr> </table>	Value	Name	Description	0x01	DEST_MDF_OFF	Turn Off	0x02	DEST_MDF_ON	Turn On															
Value	Name	Description																								
0x01	DEST_MDF_OFF	Turn Off																								
0x02	DEST_MDF_ON	Turn On																								

0x0C	DestMode	Desertification work mode. <table> <tr> <th>Value</th><th>Desertification work mode</th><th>Description</th></tr> <tr> <td>1</td><td>DEST_MD_OFF</td><td>Off</td></tr> <tr> <td>2</td><td>DEST_MD_AUTO_DEPEND</td><td>Work mode AUTO</td></tr> <tr> <td>3</td><td>DEST_MD_AUTO_INDEPEND</td><td>Work mode AUTO</td></tr> </table>	Value	Desertification work mode	Description	1	DEST_MD_OFF	Off	2	DEST_MD_AUTO_DEPEND	Work mode AUTO	3	DEST_MD_AUTO_INDEPEND	Work mode AUTO
Value	Desertification work mode	Description												
1	DEST_MD_OFF	Off												
2	DEST_MD_AUTO_DEPEND	Work mode AUTO												
3	DEST_MD_AUTO_INDEPEND	Work mode AUTO												
0x0D	DestTempRef	Target value for lunching desertification mode. <table> <tr> <th>Value</th><th>Temperature [°C]</th><th>Description</th></tr> <tr> <td>0</td><td>0,0</td><td>Minimal value</td></tr> <tr> <td>100</td><td>10,0</td><td>Maximal value</td></tr> </table> Condition: $\text{DestTempRef} > T_d - T_m$ T_d – temperature value measured near deserticator (T3 sensor). T_m – temperature value measured in the room (TLeadVal or T4 - depends on the TleadSensorSelect register value).	Value	Temperature [°C]	Description	0	0,0	Minimal value	100	10,0	Maximal value			
Value	Temperature [°C]	Description												
0	0,0	Minimal value												
100	10,0	Maximal value												
0x0E	DestStratTimeDelay	Not in use.												
0x0F	ModeAuto_FanEffRefMin	Minimal fan efficiency in AUTO mode. EC Fan - speed variable in range 0 - 100% <table> <tr> <th>Value</th><th>Fan speed</th><th>Description</th></tr> <tr> <td>0</td><td>0%</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100%</td><td>Maximal value</td></tr> </table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value			
Value	Fan speed	Description												
0	0%	Minimal value												
100	100%	Maximal value												
0x10	ModeAuto_FanEffRefMax	Maximal fan efficiency in AUTO mode. EC Fan - speed variable in range 0 - 100% <table> <tr> <th>Value</th><th>Fan speed</th><th>Description</th></tr> <tr> <td>0</td><td>0%</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100%</td><td>Maximal value</td></tr> </table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value			
Value	Fan speed	Description												
0	0%	Minimal value												
100	100%	Maximal value												
0x11	ModeManual_FanEffRef	Fan efficiency after attaining target temperature in MANUAL mode. EC Fan - speed variable in range 0 - 100% <table> <tr> <th>Value</th><th>Fan speed</th><th>Description</th></tr> <tr> <td>0</td><td>0%</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100%</td><td>Maximal value</td></tr> </table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value			
Value	Fan speed	Description												
0	0%	Minimal value												
100	100%	Maximal value												

Input Registers

(READ ONLY)

Data:

Address	Name	Description
0x04	T3	Temperature measured by T3 sensor (air after water heat exchanger).
0x05	T4	Temperature measured by T4 sensor (air before water heat exchanger).
0x06	FanEff	EC Fan - Revolutions per minute (rpm).
0x07	AntifreezeState	Information about antifreeze (8 bits for respected mode).

0x08	DestStatus	Destratification status: (destDtemp > Td - Tm) and (Tz >Tm) Tz-room setting temp. (value from Tref register) Td-temp. measured at destratificator (temp. value from T3 sensor) Tm-temp. measured into room (value from TLeadVal or T4 - depending on settings in TleadSensorSelect register) <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Condition (destDtemp > Td - Tm) and (Tz >Tm) not fullfilled</td></tr><tr><td>0x02</td><td>Condition (destDtemp > Td - Tm) and (Tz >Tm) fullfilled</td></tr></table>	Value	Description	0x01	Condition (destDtemp > Td - Tm) and (Tz >Tm) not fullfilled	0x02	Condition (destDtemp > Td - Tm) and (Tz >Tm) fullfilled										
Value	Description																	
0x01	Condition (destDtemp > Td - Tm) and (Tz >Tm) not fullfilled																	
0x02	Condition (destDtemp > Td - Tm) and (Tz >Tm) fullfilled																	
0x09	FanEcConnect	EC Fan and DRV M connection status. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Fan not connected</td></tr><tr><td>0x02</td><td>Fan connected</td></tr></table>	Value	Description	0x01	Fan not connected	0x02	Fan connected										
Value	Description																	
0x01	Fan not connected																	
0x02	Fan connected																	
0x0A	FuseState	Fuse state for EC/3V/Roof fans, information can be read from 4 bits. <table><tr><th>Bit</th><th>Description</th></tr><tr><td>3..0</td><td>Roof fan</td></tr><tr><td>4..7</td><td>EC fan</td></tr><tr><td>8...11</td><td>3V fan</td></tr></table> <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Read only</td></tr><tr><td>0x01</td><td>Fuse state - working</td></tr><tr><td>0x02</td><td>Fuse state - blown</td></tr></table> Example: Fuse state 3V fan: working (0x1) Register value: 0x0010 Fuse state 3V fan: blown (0x2) Register value: 0x0020	Bit	Description	3..0	Roof fan	4..7	EC fan	8...11	3V fan	Value	Description	0x00	Read only	0x01	Fuse state - working	0x02	Fuse state - blown
Bit	Description																	
3..0	Roof fan																	
4..7	EC fan																	
8...11	3V fan																	
Value	Description																	
0x00	Read only																	
0x01	Fuse state - working																	
0x02	Fuse state - blown																	
0x0B	ValveState	Valve state. <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>VALVE_IDLE</td><td>Valve in stand by mode (for 3-way valves)</td></tr><tr><td>0x01</td><td>VALVE_OPEN</td><td>Opening valve</td></tr><tr><td>0x02</td><td>VALVE_CLOSE</td><td>Closing valve</td></tr></table>	Value	Name	Description	0x00	VALVE_IDLE	Valve in stand by mode (for 3-way valves)	0x01	VALVE_OPEN	Opening valve	0x02	VALVE_CLOSE	Closing valve				
Value	Name	Description																
0x00	VALVE_IDLE	Valve in stand by mode (for 3-way valves)																
0x01	VALVE_OPEN	Opening valve																
0x02	VALVE_CLOSE	Closing valve																

Single OXEN

Holding Register

DATA:

Address	Name	Description																
0x00	Config1	Configuration register no. 1.																
		<table><tr><th>BIT</th><th>Name</th><th>Description</th></tr><tr><td rowspan="4">0</td><td rowspan="4">Filter work time RST</td><td>Filter work time reset.</td></tr><tr><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Place holder.</td></tr><tr><td>0x01</td><td>Reset filter counter (Sets address 0x09 to 0x000).</td></tr></table></td></tr><tr><td>2..15</td><td>-</td><td>Not used.</td></tr></table>	BIT	Name	Description	0	Filter work time RST	Filter work time reset.	<table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Place holder.</td></tr><tr><td>0x01</td><td>Reset filter counter (Sets address 0x09 to 0x000).</td></tr></table>	Value	Description	0x00	Place holder.	0x01	Reset filter counter (Sets address 0x09 to 0x000).	2..15	-	Not used.
		BIT	Name	Description														
		0	Filter work time RST	Filter work time reset.														
				<table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Place holder.</td></tr><tr><td>0x01</td><td>Reset filter counter (Sets address 0x09 to 0x000).</td></tr></table>	Value			Description	0x00	Place holder.	0x01	Reset filter counter (Sets address 0x09 to 0x000).						
				Value	Description													
0x00	Place holder.																	
0x01	Reset filter counter (Sets address 0x09 to 0x000).																	
2..15	-	Not used.																
0x01	Config2	Not used.																
0x02	FanEffRef_1	Fan efficiency setting in group I (supply fans).																
		EC Fan - speed variable in range 0 - 100%																
		<table><tr><th>Value</th><th>Fan speed</th><th>Description</th></tr><tr><td>0</td><td>0%</td><td>Minimal value</td></tr><tr><td>100</td><td>100%</td><td>Maximal value</td></tr></table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value							
		Value	Fan speed	Description														
0	0%	Minimal value																
100	100%	Maximal value																
0x03	FanEffRef_2	Fan efficiency setting in group II (exhaust fans).																
		EC Fan - speed variable in range 0 - 100%																
		<table><tr><th>Value</th><th>Fan speed</th><th>Description</th></tr><tr><td>0</td><td>0%</td><td>Minimal value</td></tr><tr><td>100</td><td>100%</td><td>Maximal value</td></tr></table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value							
		Value	Fan speed	Description														
0	0%	Minimal value																
100	100%	Maximal value																
0x04	OxenState	Work state.																
0x05	OxenMode	Work mode.																
0x06	TempRef	Target temperature.																
		<table><tr><th>Value</th><th>Temperature [C]</th><th>Description</th></tr><tr><td>50</td><td>5,0</td><td>Minimal Value</td></tr><tr><td>450</td><td>45,0</td><td>Maximal Value</td></tr></table>	Value	Temperature [C]	Description	50	5,0	Minimal Value	450	45,0	Maximal Value							
		Value	Temperature [C]	Description														
		50	5,0	Minimal Value														
450	45,0	Maximal Value																

0x07	TLeadVal	Lead temperature sensor value. <table> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> <tr> <td>-500</td><td>-50,0</td><td>Minimal Value</td></tr> <tr> <td>1500</td><td>150,0</td><td>Maximal Value</td></tr> </table>	Value	Temperature [C]	Description	-500	-50,0	Minimal Value	1500	150,0	Maximal Value						
Value	Temperature [C]	Description															
-500	-50,0	Minimal Value															
1500	150,0	Maximal Value															
0x08	TempIn	Not used.															
0x09	TempOut	Not used.															
0x0A	RegParam_K	Not used.															
0x0B	RegParam_T	Not used.															
0x0C	TleadSensorSelect	Lead temperature sensor selection. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>T_NS</td><td>Read only</td></tr> <tr> <td>0x01</td><td>T_LEAD</td><td>Value sent by ModBus (TLeadVal)</td></tr> <tr> <td>0x02</td><td>TSL_T3</td><td>DRV temperature sensor (T3 connector)</td></tr> <tr> <td>0x03</td><td>TSL_T4</td><td>DRV temperature sensor (T4 connector)</td></tr> </table>	Value	Name	Description	0x00	T_NS	Read only	0x01	T_LEAD	Value sent by ModBus (TLeadVal)	0x02	TSL_T3	DRV temperature sensor (T3 connector)	0x03	TSL_T4	DRV temperature sensor (T4 connector)
Value	Name	Description															
0x00	T_NS	Read only															
0x01	T_LEAD	Value sent by ModBus (TLeadVal)															
0x02	TSL_T3	DRV temperature sensor (T3 connector)															
0x03	TSL_T4	DRV temperature sensor (T4 connector)															
0x0D	OxenElectricWorkMode	Not used.															
0x0E	OxenElectricPtcPower_ref	Not used.															
0x0F	PtcRegTempLow	Not used.															
0x10	PtcRegTempHi	Not used.															

Input Register

(READ ONLY)

DATA:

Address	Name	Description																																																															
0x00	Staus1	Status register no 1. <table> <tr> <th>BIT</th><th>Name</th><th>Description</th></tr> <tr> <td>0..3</td><td>WorkMode</td><td> Oxen work mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>IDLE</td><td>Initial value after supplying voltage</td></tr> <tr> <td>0x01</td><td>INIT</td><td>Oxen initialization</td></tr> <tr> <td>0x02</td><td>READY</td><td>Oxen ready</td></tr> </table> </td></tr> <tr> <td>4..5</td><td>OxenType</td><td> Oxen Type. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>NONE</td><td>Type not identified</td></tr> <tr> <td>0x01</td><td>COLD</td><td>Cold OXEN</td></tr> <tr> <td>0x02</td><td>ELECTRIC</td><td>Electric OXEN</td></tr> <tr> <td>0x03</td><td>HOT</td><td>Water OXEN</td></tr> </table> </td></tr> <tr> <td>6..7</td><td>AfWaterEx</td><td> Water exchanger antifreeze information. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>OFF</td><td>Normal work mode</td></tr> <tr> <td>0x01</td><td>ON</td><td>Antifreeze enabled (user parameters overwritten)</td></tr> </table> </td></tr> <tr> <td>8 .. 9</td><td>AfHeatCrossEx</td><td> Heat cross exchanger antifreeze information. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>OFF</td><td>Normal work mode</td></tr> <tr> <td>0x01</td><td>ON</td><td>Antifreeze enabled (user parameters overwritten)</td></tr> </table> </td></tr> <tr> <td>10..15</td><td>-</td><td>Not used</td></tr> </table>	BIT	Name	Description	0..3	WorkMode	Oxen work mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>IDLE</td><td>Initial value after supplying voltage</td></tr> <tr> <td>0x01</td><td>INIT</td><td>Oxen initialization</td></tr> <tr> <td>0x02</td><td>READY</td><td>Oxen ready</td></tr> </table>	Value	Name	Description	0x00	IDLE	Initial value after supplying voltage	0x01	INIT	Oxen initialization	0x02	READY	Oxen ready	4..5	OxenType	Oxen Type. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>NONE</td><td>Type not identified</td></tr> <tr> <td>0x01</td><td>COLD</td><td>Cold OXEN</td></tr> <tr> <td>0x02</td><td>ELECTRIC</td><td>Electric OXEN</td></tr> <tr> <td>0x03</td><td>HOT</td><td>Water OXEN</td></tr> </table>	Value	Name	Description	0x00	NONE	Type not identified	0x01	COLD	Cold OXEN	0x02	ELECTRIC	Electric OXEN	0x03	HOT	Water OXEN	6..7	AfWaterEx	Water exchanger antifreeze information. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>OFF</td><td>Normal work mode</td></tr> <tr> <td>0x01</td><td>ON</td><td>Antifreeze enabled (user parameters overwritten)</td></tr> </table>	Value	Name	Description	0x00	OFF	Normal work mode	0x01	ON	Antifreeze enabled (user parameters overwritten)	8 .. 9	AfHeatCrossEx	Heat cross exchanger antifreeze information. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>OFF</td><td>Normal work mode</td></tr> <tr> <td>0x01</td><td>ON</td><td>Antifreeze enabled (user parameters overwritten)</td></tr> </table>	Value	Name	Description	0x00	OFF	Normal work mode	0x01	ON	Antifreeze enabled (user parameters overwritten)	10..15	-	Not used
BIT	Name	Description																																																															
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10..15	-	Not used																																																															
0x01	Status2	Not used.																																																															

0x02	T1	Temperature measured by T1 sensor (fresh air temperature). <table> <tr> <th></th><th>Temperature</th><th>Description</th></tr> <tr> <td>-500</td><td>-50,0</td><td>Minimal value</td></tr> <tr> <td>1000</td><td>100,0</td><td>Maximal value</td></tr> <tr> <td>0x7000</td><td>-</td><td>Short circuit</td></tr> <tr> <td>0x7FFF</td><td>-</td><td>PT1000 sensor not connected</td></tr> </table>		Temperature	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
	Temperature	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x03	T2	Temperature measured by T2 sensor (air near fan extraction). <table> <tr> <th></th><th>Temperature</th><th>Description</th></tr> <tr> <td>-500</td><td>-50,0</td><td>Minimal value</td></tr> <tr> <td>1000</td><td>100,0</td><td>Maximal value</td></tr> <tr> <td>0x7000</td><td>-</td><td>Short circuit</td></tr> <tr> <td>0x7FFF</td><td>-</td><td>PT1000 sensor not connected</td></tr> </table>		Temperature	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
	Temperature	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x04	T3	Temperature measured by T3 sensor (air after water heat exchanger). <table> <tr> <th></th><th>Temperature</th><th>Description</th></tr> <tr> <td>-500</td><td>-50,0</td><td>Minimal value</td></tr> <tr> <td>1000</td><td>100,0</td><td>Maximal value</td></tr> <tr> <td>0x7000</td><td>-</td><td>Short circuit</td></tr> <tr> <td>0x7FFF</td><td>-</td><td>PT1000 sensor not connected</td></tr> </table>		Temperature	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
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1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x05	T4	Temperature measured by T4 sensor (air before water heat exchanger). <table> <tr> <th></th><th>Temperature</th><th>Description</th></tr> <tr> <td>-500</td><td>-50,0</td><td>Minimal value</td></tr> <tr> <td>1000</td><td>100,0</td><td>Maximal value</td></tr> <tr> <td>0x7000</td><td>-</td><td>Short circuit</td></tr> <tr> <td>0x7FFF</td><td>-</td><td>PT1000 sensor not connected</td></tr> </table>		Temperature	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
	Temperature	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x06	T5	Temperature measured by T5 sensor (water exchanger temperature). <table> <tr> <th></th><th>Temperature</th><th>Description</th></tr> <tr> <td>-500</td><td>-50,0</td><td>Minimal value</td></tr> <tr> <td>1000</td><td>100,0</td><td>Maximal value</td></tr> <tr> <td>0x7000</td><td>-</td><td>Short circuit</td></tr> <tr> <td>0x7FFF</td><td>-</td><td>PT1000 sensor not connected</td></tr> </table>		Temperature	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
	Temperature	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															

0x07

Outputs

Outputs status.

BIT	Name	Description												
0	Damper	Damper state. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Closed</td></tr><tr><td>0x01</td><td>Opened</td></tr></table>	Value	Description	0x00	Closed	0x01	Opened						
Value	Description													
0x00	Closed													
0x01	Opened													
1	Bypass	Bypass state. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Closed</td></tr><tr><td>0x01</td><td>Opened</td></tr></table>	Value	Description	0x00	Closed	0x01	Opened						
Value	Description													
0x00	Closed													
0x01	Opened													
2..3	Valve	Valve state. <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>IDLE</td><td>IDLE state (3-way valve)</td></tr><tr><td>0x01</td><td>OPEN</td><td>Opening valve</td></tr><tr><td>0x02</td><td>CLOSE</td><td>Closing valve</td></tr></table>	Value	Name	Description	0x00	IDLE	IDLE state (3-way valve)	0x01	OPEN	Opening valve	0x02	CLOSE	Closing valve
Value	Name	Description												
0x00	IDLE	IDLE state (3-way valve)												
0x01	OPEN	Opening valve												
0x02	CLOSE	Closing valve												
4..15	-	Not used												

0x08	Inputs	Inputs status. <table> <tr> <th>BIT</th><th>Name</th><th>Description</th></tr> <tr> <td>0</td><td>NP_IN1</td><td>Non-potential input state IN1</td></tr> <tr> <td>1</td><td>NP_IN2</td><td>Non-potential input state IN2</td></tr> <tr> <td>2</td><td>NP_IN3</td><td>Non-potential input state IN3</td></tr> <tr> <td>3</td><td>SW1_P5</td><td>SW1 switch state, position 5</td></tr> <tr> <td>4</td><td>SW1_P4</td><td>SW1 switch state, position 4</td></tr> <tr> <td>5</td><td>SW1_P3</td><td>SW1 switch state, position 3</td></tr> <tr> <td>6</td><td>SW1_P2</td><td>SW1 switch state, position 2</td></tr> <tr> <td>7</td><td>SW1_P1</td><td>SW1 switch state, position 1</td></tr> </table> Non-potential inputs state: <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0</td><td>CLOSE</td><td>Short circuit</td></tr> <tr> <td>1</td><td>OPEN</td><td>Open</td></tr> </table> Switch states: <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0</td><td>OFF</td><td>Switch in OFF position</td></tr> <tr> <td>1</td><td>ON</td><td>Switch in ON position</td></tr> </table>	BIT	Name	Description	0	NP_IN1	Non-potential input state IN1	1	NP_IN2	Non-potential input state IN2	2	NP_IN3	Non-potential input state IN3	3	SW1_P5	SW1 switch state, position 5	4	SW1_P4	SW1 switch state, position 4	5	SW1_P3	SW1 switch state, position 3	6	SW1_P2	SW1 switch state, position 2	7	SW1_P1	SW1 switch state, position 1	Value	Name	Description	0	CLOSE	Short circuit	1	OPEN	Open	Value	Name	Description	0	OFF	Switch in OFF position	1	ON	Switch in ON position
BIT	Name	Description																																													
0	NP_IN1	Non-potential input state IN1																																													
1	NP_IN2	Non-potential input state IN2																																													
2	NP_IN3	Non-potential input state IN3																																													
3	SW1_P5	SW1 switch state, position 5																																													
4	SW1_P4	SW1 switch state, position 4																																													
5	SW1_P3	SW1 switch state, position 3																																													
6	SW1_P2	SW1 switch state, position 2																																													
7	SW1_P1	SW1 switch state, position 1																																													
Value	Name	Description																																													
0	CLOSE	Short circuit																																													
1	OPEN	Open																																													
Value	Name	Description																																													
0	OFF	Switch in OFF position																																													
1	ON	Switch in ON position																																													
0x09	FilterWorkTime	Filter work time. <table> <tr> <th>Value</th><th>[min]</th><th>Description</th></tr> <tr> <td>0</td><td>5 * 0</td><td>Minimal value</td></tr> <tr> <td>65534</td><td>5 * 65534</td><td>Maximal value</td></tr> </table>	Value	[min]	Description	0	5 * 0	Minimal value	65534	5 * 65534	Maximal value																																				
Value	[min]	Description																																													
0	5 * 0	Minimal value																																													
65534	5 * 65534	Maximal value																																													
0x0A	FansEff_1	Fan efficiency in group I (supply fans). EC Fan - speed variable in range 0 - 100% <table> <tr> <th>Value</th><th>Fan speed</th><th>Description</th></tr> <tr> <td>0</td><td>0%</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100%</td><td>Maximal value</td></tr> </table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value																																				
Value	Fan speed	Description																																													
0	0%	Minimal value																																													
100	100%	Maximal value																																													
0x0B	FansEff_2	Fan efficiency setting in group II (exhaust fans). EC Fan - speed variable in range 0 - 100% <table> <tr> <th>Value</th><th>Fan speed</th><th>Description</th></tr> <tr> <td>0</td><td>0%</td><td>Minimal value</td></tr> <tr> <td>100</td><td>100%</td><td>Maximal value</td></tr> </table>	Value	Fan speed	Description	0	0%	Minimal value	100	100%	Maximal value																																				
Value	Fan speed	Description																																													
0	0%	Minimal value																																													
100	100%	Maximal value																																													

0x0C	OxenElectric_PtcPower	Not used.
0x0D	OxenElectric_PtcTk	Not used