



Building Management System and T-Box integration

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Modbus Documentation

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
7	Addressing convention	Register address starting from 0
8	Data type	Unsigned Int16 (if not stated otherwise)

MODBUS functions:

Read Holding Register	0x03
Read Input Register	0x04
Write Single Register	0x06
Write Multiple Registers	0x10
Read / Write Multiple Register	0x17

Quick Start (CLICK!):

- [DRV-ELIS & DRV-SLIM](#)
- [DRV-D](#)
- [DRV-KM](#)
- [DRV-V&M](#)
- [DRV-OXEN](#)
- [DRV-R](#)
- [DRV-R KM](#)
- [DRV-EL](#)
- [DRV-COOL](#)

(version 1.0.33)

T-BOX settings

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 border="1"> <thead> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> </thead> <tbody> <tr> <td>Input registers</td><td>0x01C0</td><td>0x01FF</td></tr> <tr> <td>Holding registers</td><td>0x01C0</td><td>0x01FF</td></tr> </tbody> </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	AntifreezeWareHous eEnable	Enables/disables warehouse antifreeze mode. 0 - disable 1..65535 - enable									
0x08	AntifreezeWareHous eTempRef	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"> <thead> <tr> <th><LSB></th><th>Option name</th><th>Description</th></tr> </thead> <tbody> <tr> <td>0x02</td><td>MAIN</td><td>Main program version</td></tr> </tbody> </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"> <thead> <tr> <th>Bits</th><th>Range</th><th>Description</th></tr> </thead> <tbody> <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> </tbody> </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"> <thead> <tr> <th>Value</th><th>Temperature</th><th>Description</th></tr> </thead> <tbody> <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> </tbody> </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>0x00</td><td>Non</td><td>No DRV connected</td></tr> <tr><td>0x01</td><td>GroupOxen</td><td>DRV - Oxen</td></tr> <tr><td>0x02</td><td>GroupKm</td><td>DRV - KM</td></tr> <tr><td>0x03</td><td>GroupElis</td><td>DRV - ELIS</td></tr> <tr><td>0x04</td><td>GroupElisDuo</td><td>DRV - ELIS DUO</td></tr> <tr><td>0x05</td><td>GroupLeoV</td><td>DRV - V</td></tr> <tr><td>0x06</td><td>GroupLeoM</td><td>DRV - M</td></tr> <tr><td>0x07</td><td>GroupLeoD</td><td>DRV - D</td></tr> <tr><td>0x0C</td><td>GroupRobur</td><td>DRV-R</td></tr> <tr><td>0x0D</td><td>GroupRoburKM</td><td>DRV-R-KM</td></tr> <tr><td>0x0E</td><td>GroupLeoEL</td><td>DRV-EL</td></tr> <tr><td>0x14</td><td>GroupLeoDEC</td><td>DRV-D EC</td></tr> <tr><td>0x15</td><td>GroupRoburNext</td><td>DRV-ROBUR NEXT</td></tr> <tr><td>0x16</td><td>GroupRoburNextKM</td><td>DRV-ROBUR NEXT KM</td></tr> <tr><td>0x17</td><td>GroupLeoCool</td><td>DRV-COOL</td></tr> <tr><td>0x18</td><td>GroupCube</td><td>DRV-CUBE</td></tr> <tr><td>0x19</td><td>GroupSlim</td><td>DRV-SLIM</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	0x00	Non	No DRV connected	0x01	GroupOxen	DRV - Oxen	0x02	GroupKm	DRV - KM	0x03	GroupElis	DRV - ELIS	0x04	GroupElisDuo	DRV - ELIS DUO	0x05	GroupLeoV	DRV - V	0x06	GroupLeoM	DRV - M	0x07	GroupLeoD	DRV - D	0x0C	GroupRobur	DRV-R	0x0D	GroupRoburKM	DRV-R-KM	0x0E	GroupLeoEL	DRV-EL	0x14	GroupLeoDEC	DRV-D EC	0x15	GroupRoburNext	DRV-ROBUR NEXT	0x16	GroupRoburNextKM	DRV-ROBUR NEXT KM	0x17	GroupLeoCool	DRV-COOL	0x18	GroupCube	DRV-CUBE	0x19	GroupSlim	DRV-SLIM	Address space	First address	Last address	Input registers	0x0100	0x013F	Holding registers	0x0100	0x013F
Value	Name	Description																																																															
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0x01	GroupOxen	DRV - Oxen																																																															
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0x03	GroupElis	DRV - ELIS																																																															
0x04	GroupElisDuo	DRV - ELIS DUO																																																															
0x05	GroupLeoV	DRV - V																																																															
0x06	GroupLeoM	DRV - M																																																															
0x07	GroupLeoD	DRV - D																																																															
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0x0D	GroupRoburKM	DRV-R-KM																																																															
0x0E	GroupLeoEL	DRV-EL																																																															
0x14	GroupLeoDEC	DRV-D EC																																																															
0x15	GroupRoburNext	DRV-ROBUR NEXT																																																															
0x16	GroupRoburNextKM	DRV-ROBUR NEXT KM																																																															
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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																																																						
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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																																																						
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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									
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
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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									
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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
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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
Address space	First address	Last address									
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 border="1"> <thead> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> </thead> <tbody> <tr><td>0x00</td><td>Non</td><td>No DRV connected</td></tr> <tr><td>0x01</td><td>GroupOxen</td><td>DRV - Oxen</td></tr> <tr><td>0x02</td><td>GroupKm</td><td>DRV - KM</td></tr> <tr><td>0x03</td><td>GroupElis</td><td>DRV - ELIS</td></tr> <tr><td>0x04</td><td>GroupElisDuo</td><td>DRV - ELIS DUO</td></tr> <tr><td>0x05</td><td>GroupLeoV</td><td>DRV - V</td></tr> <tr><td>0x06</td><td>GroupLeoM</td><td>DRV - M</td></tr> <tr><td>0x07</td><td>GroupLeoD</td><td>DRV - D</td></tr> <tr><td>0x0C</td><td>GroupRobur</td><td>DRV-R</td></tr> <tr><td>0x0D</td><td>GroupRoburKM</td><td>DRV-R-KM</td></tr> <tr><td>0x0E</td><td>GroupLeoEL</td><td>DRV-EL</td></tr> <tr><td>0x14</td><td>GroupLeoDEC</td><td>DRV-D EC</td></tr> <tr><td>0x15</td><td>GroupRoburNext</td><td>DRV-ROBUR NEXT</td></tr> <tr><td>0x16</td><td>GroupRoburNextKM</td><td>DRV-ROBUR NEXT KM</td></tr> <tr><td>0x17</td><td>GroupLeoCool</td><td>DRV-COOL</td></tr> <tr><td>0x18</td><td>GroupCube</td><td>DRV-CUBE</td></tr> <tr><td>0x19</td><td>GroupSlim</td><td>DRV-SLIM</td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> </thead> <tbody> <tr> <td>Holding registers</td><td>0x1000</td><td>0x10FF</td></tr> </tbody> </table>	Value	Name	Description	0x00	Non	No DRV connected	0x01	GroupOxen	DRV - Oxen	0x02	GroupKm	DRV - KM	0x03	GroupElis	DRV - ELIS	0x04	GroupElisDuo	DRV - ELIS DUO	0x05	GroupLeoV	DRV - V	0x06	GroupLeoM	DRV - M	0x07	GroupLeoD	DRV - D	0x0C	GroupRobur	DRV-R	0x0D	GroupRoburKM	DRV-R-KM	0x0E	GroupLeoEL	DRV-EL	0x14	GroupLeoDEC	DRV-D EC	0x15	GroupRoburNext	DRV-ROBUR NEXT	0x16	GroupRoburNextKM	DRV-ROBUR NEXT KM	0x17	GroupLeoCool	DRV-COOL	0x18	GroupCube	DRV-CUBE	0x19	GroupSlim	DRV-SLIM	Address space	First address	Last address	Holding registers	0x1000	0x10FF
Value	Name	Description																																																												
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0x02	GroupKm	DRV - KM																																																												
0x03	GroupElis	DRV - ELIS																																																												
0x04	GroupElisDuo	DRV - ELIS DUO																																																												
0x05	GroupLeoV	DRV - V																																																												
0x06	GroupLeoM	DRV - M																																																												
0x07	GroupLeoD	DRV - D																																																												
0x0C	GroupRobur	DRV-R																																																												
0x0D	GroupRoburKM	DRV-R-KM																																																												
0x0E	GroupLeoEL	DRV-EL																																																												
0x14	GroupLeoDEC	DRV-D EC																																																												
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0x19	GroupSlim	DRV-SLIM																																																												
Address space	First address	Last address																																																												
Holding registers	0x1000	0x10FF																																																												
0x42	Group02Id	Second DRV group identifier. <table border="1"> <thead> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> </thead> <tbody> <tr> <td>Holding registers</td><td>0x1100</td><td>0x11FF</td></tr> </tbody> </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 border="1"> <thead> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> </thead> <tbody> <tr> <td>Holding registers</td><td>0x1200</td><td>0x12FF</td></tr> </tbody> </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 border="1"> <thead> <tr> <th>Address space</th><th>First address</th><th>Last address</th></tr> </thead> <tbody> <tr> <td>Holding registers</td><td>0x1300</td><td>0x13FF</td></tr> </tbody> </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						

Single Devices

Single Drivers register maps.

- Holding registers included in this chapter are meant to be used with BMS work mode parameter set to 0x01.
- Input registers included in this chapter can be read with no regards to BMS work mode.

Holding Registers - Header

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 EC</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> <tr> <td>0x07</td><td>HEATER_AC</td><td>Software for heater AC</td></tr> <tr> <td>0x0B</td><td>LEO COOL</td><td>Software for cooler AC</td></tr> <tr> <td>0x0C</td><td>SLIM</td><td>Software for curtain</td></tr> <tr> <td>0x10</td><td>ROBUR_KM</td><td>Software for Robur mixing chamber</td></tr> <tr> <td>0x11</td><td>ROBUR</td><td>Software for Robur heater</td></tr> <tr> <td>0x14</td><td>PSENS</td><td>Software for Psensor</td></tr> <tr> <td>0x15</td><td>CUBE</td><td>Software for Cube</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 EC	0x05	DESTRATIFICATION UNIT	Software for desertification unit	0x06	CURTAIN_HEATER	Software for curtain-heater	0x07	HEATER_AC	Software for heater AC	0x0B	LEO COOL	Software for cooler AC	0x0C	SLIM	Software for curtain	0x10	ROBUR_KM	Software for Robur mixing chamber	0x11	ROBUR	Software for Robur heater	0x14	PSENS	Software for Psensor	0x15	CUBE	Software for Cube	<LSB>	Soft name	Description	0x02	MAIN	Main software version
<MSB>	Name	Description																																																
0x01	OXEN	Software for OXEN																																																
0x02	CURTAIN	Software for curtain																																																
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0x04	LEO	Software for heater EC																																																
0x05	DESTRATIFICATION UNIT	Software for desertification unit																																																
0x06	CURTAIN_HEATER	Software for curtain-heater																																																
0x07	HEATER_AC	Software for heater AC																																																
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0x10	ROBUR_KM	Software for Robur mixing chamber																																																
0x11	ROBUR	Software for Robur heater																																																
0x14	PSENS	Software for Psensor																																																
0x15	CUBE	Software for Cube																																																
<LSB>	Soft name	Description																																																
0x02	MAIN	Main software version																																																
0x02	Not in use	Reserved.																																																
0x03	Not in use	Reserved.																																																

Input Registers Header

(READ ONLY)

Data:

Address	Name	Description																																										
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> <tr> <td>0x06</td><td>PSENS</td><td>Psensor</td></tr> <tr> <td>0x07</td><td>CUBE</td><td>CUBE 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	0x06	PSENS	Psensor	0x07	CUBE	CUBE driver																		
<MSB>	PCB Name	Description																																										
0x01	DRV_OXEN	OXEN driver																																										
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0x04	DRV_M	M driver																																										
0x05	DRV_V	V driver																																										
0x06	PSENS	Psensor																																										
0x07	CUBE	CUBE 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 EC</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> <tr> <td>0x07</td><td>HEATER_AC</td><td>Software for heater AC</td></tr> <tr> <td>0x0B</td><td>LEO COOL</td><td>Software for cooler AC</td></tr> <tr> <td>0x0C</td><td>SLIM</td><td>Software for curtain</td></tr> <tr> <td>0x10</td><td>ROBUR_KM</td><td>Software for Robur mixing chamber</td></tr> <tr> <td>0x11</td><td>ROBUR</td><td>Software for Robur heater</td></tr> <tr> <td>0x14</td><td>PSENS</td><td>Software for Psensor</td></tr> <tr> <td>0x15</td><td>CUBE</td><td>Software for Cube</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 EC	0x05	DESTRATIFICATION UNIT	Software for desertification unit	0x06	CURTAIN_HEATER	Software for curtain-heater	0x07	HEATER_AC	Software for heater AC	0x0B	LEO COOL	Software for cooler AC	0x0C	SLIM	Software for curtain	0x10	ROBUR_KM	Software for Robur mixing chamber	0x11	ROBUR	Software for Robur heater	0x14	PSENS	Software for Psensor	0x15	CUBE	Software for Cube
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0x14	PSENS	Software for Psensor																																										
0x15	CUBE	Software for Cube																																										

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											

DRV-ELIS & DRV-SLIM

Chapter includes BMS information about air curtains from ELIS and SLIM family in single mode.

Quick Start in single mode:

Mode	Address (HR)	Name	Set value	Description
Ventilation	0x04	WorkMode	0x03	Device starts ventilating (fan efficiency - med). Condition: door contact contactors closed.
	0x05	CurtainFanSpeedRef	66	
	0x0D	CurtainProgram	2	Check temperature sensors, fuse, antifreeze otherwise.
Heating mode	0x04	WorkMode	0x02	Device starts heating (fan efficiency - high, opening valve actuator) target temperature to attain = 40°C.
	0x05	CurtainFanSpeedRef	100	
	0x0A	Tref	400	Check temperature sensors, fuse, antifreeze otherwise.

Single mode using T-BOX as a gate:

DRV-ELIS 10 (physical address set on a PCB board)

Address shift for device no. 10 -> 0x03C0 (*Input Register 0x1A* from System settings - *_Input Registers*)

Mode	Shifted address	Value Change
Ventilation	0x0344 (0x04+0x0340)	0x00 -> 0x03
	0x0345 (0x05+0x0340)	0 -> 66
	0x034D (0x0D+0x0340)	0 -> 2

Input Registers DRV-ELIS & DRV-SLIM

Data:

(READ ONLY)

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). <i>AC Fan - 3 steps.</i> <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). <i>AC Fan - 3 steps.</i> <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>-</td><td>0x01</td><td>Warehouse</td><td>Normal work mode.</td></tr><tr><td>-</td><td>0x02</td><td>Warehouse</td><td>Antifreeze enabled (user parameters overwritten).</td></tr><tr><td>0x01</td><td>-</td><td>Water Exchanger</td><td>Normal work mode.</td></tr><tr><td>0x02</td><td>-</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: 0x100 Fuse state 3V fan: blown (0x2) Register value: 0x200	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></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								
Value	Name	L2 output	L1 output																			
0x00	ELECTRIC_POWER_0	OFF	OFF																			
0x01	ELECTRIC_POWER_1	OFF	ON																			

Holding Registers DRV-ELIS & DRV-SLIM

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). <i>AC Fan - 3 steps.</i> <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	T input state. DRV switch SW3 = C (curtain). READ ONLY <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). <i>AC Fan - 3 steps.</i> <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	T input state. DRV switch SW3 = H (heater). READ ONLY <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	Not used	Not used															
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. <i>AC Fan - 3 steps.</i> <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. <i>AC Fan - 3 steps.</i> <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															

DRV-D

Chapter includes BMS information about destratification units from LEO D family in single mode.

Quick Start in single mode:

Mode	Address (HR)	Name	Set value	Description
Work mode manual	0x04	WorkMode	0x04	Device starts ventilating (fan efficiency - high).
	0x05	FanEffRef	100	Check temperature sensors, fuse otherwise.
	0x0B	WorkModeTempRef	50	

Single mode using T-BOX as a gate:

DRV-D 20 (physical address set on a PCB board)

Address shift for device no. 20 -> 0x05C0 (*Input Register 0x24* from System settings - *_Input Registers*)

Mode	Shifted address	Set value
Work mode manual	0x05C4 (0x04+0x05C0)	0x04
	0x05C5 (0x05+0x05C0)	100
	0x05CB (0x0B+0x05C0)	50

Input Registers DRV-D

Data:

(READ ONLY)

Address	Name	Description
0x04	T3	Temperature measured by T3 sensor (temperature measured near the ceiling).
0x05	T4	Temperature measured by T4 sensor (temperature measured in the room).
0x06	FanEff	Fan speed (S1, S2, S3).
		AC Fan - 3 steps.
0x07	DestStatus	Desertification condition.

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: 0x100 Fuse state 3V fan: blown (0x2) Register value: 0x200	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									

Holding Registers DRV-D

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 off</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>Work mode MANUAL</td></tr> </table>		Work state	Description	1	WM_OFF	Desertification off	2	WM_AUTO_DEPEND	Work mode AUTO	3	WM_AUTO_INDEPEND	Work mode AUTO	4	WM_MANUAL	Work mode MANUAL
	Work state	Description															
1	WM_OFF	Desertification off															
2	WM_AUTO_DEPEND	Work mode AUTO															
3	WM_AUTO_INDEPEND	Work mode AUTO															
4	WM_MANUAL	Work mode MANUAL															
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	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															
0x07	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)															

0x0A	DestTempRef	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: $\text{DestTempRef} > T_d - T_m$ 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									
0x0B	WorkModeTempRef	Target temperature value near the ceiling in manual mode. Condition $\text{WorkModeTempRef} > \text{Leading sensor value}$. <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									

DRV-KM

Chapter includes BMS information about mixing chamber units from LEO KM family in single mode.

Quick Start in single mode:

Mode	Address (HR)	Name	Set value	Description
Heating mode	0x04	WorkMode	0x02	Device starts heating (fan efficiency - low / 10%, opening valve actuator) target temperature to attain 40°C.
	0x0B	FenEffRef	10	
	0x0D	Tref	400	Check temperature sensors, fuse, thermostat otherwise.

Single mode using T-BOX as a gate:

DRV-KM 10 (physical address set on a PCB board)

Address shift for device no. 10 -> 0x03C0 (*Input Register 0x1A* from System settings - *_Input Registers*)

Mode	Shifted address	Value Change
Heating mode	0x0344 (0x04+0x0340)	0x02
	0x034B (0x0B+0x0340)	10
	0x034D (0x0D+0x0340)	400

Holding Registers DRV-KM

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. 1 - disable 2 - 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: <i>if</i> ($T1 < \text{DamperForceTempRef}$) <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: <i>if</i> ($T1 < \text{DamperForceTempRef}$) <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: <i>if</i> ($T1 < \text{DamperForceTempRef}$) <pre>{ DamperLevelRef = DamperForceRef; }</pre>																		
0x08	DamperForceTempRef	Target temperature to force damper (work mode <code>DamperForceMode == DAMPER_FMD_ON</code>). <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>150</td><td>15,0</td><td>Maximal value</td></tr> </table>	Value	Temperature	Description	-100	-10,0	Minimal value	150	15,0	Maximal value									
Value	Temperature	Description																		
-100	-10,0	Minimal value																		
150	15,0	Maximal value																		

0x09	DamperForceLevelRef	Damper position (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																								
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																								
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												
600	60,0	Maximal Value												
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												
0x01	TSL_TLEAD	Temperature value transmitted via Modbus.												
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. <i>EC Fan - speed variable in range 0 - 100%</i> <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> <i>AC Fan - 3 steps.</i> <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																								

Input Registers DRV-KM

Data:

(READ ONLY)

Address	Name	Description
0x04	T1	Temperature measured by T1 sensor (fresh air temperature).
0x05	T3	Temperature measured by T3 sensor (air after water heat exchanger).
0x06	T4	Temperature measured by T4 sensor (air before water heat exchanger).
0x07	T5	Temperature measured by T5 sensor (water exchanger temperature).
0x08	ExternalGasDetect_TH1	External gas detector signal - first threshold.

0x09	ExternalGasDetect_TH2	External gas detector signal - second threshold. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Gas concentration below second threshold</td></tr><tr><td>0x01</td><td>Gas concentration exceeds second threshold</td></tr></table>	Value	Description	0x00	Gas concentration below second threshold	0x01	Gas concentration exceeds 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. <i>EC Fan - speed variable in range 0 - 100%</i> <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> <i>AC Fan - 3 steps.</i> <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																								
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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 15...8</th><th>Value 7..0 bit</th><th>Antifreeze</th><th>Description</th></tr><tr><td>-</td><td>0x01</td><td>Warehouse</td><td>Normal work mode</td></tr><tr><td>-</td><td>0x02</td><td>Warehouse</td><td>Antifreeze enabled (user parameters overwritten)</td></tr><tr><td>0x01</td><td>-</td><td>Water Exchanger</td><td>Normal work mode</td></tr><tr><td>0x02</td><td>-</td><td>Water Exchanger</td><td>Antifreeze enabled (user parameters overwritten)</td></tr></table>	Value 15...8	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	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><thead><tr><th>Bits</th><th>Description</th></tr></thead><tbody><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></tbody></table> <table><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><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></tbody></table> Example: Fuse state 3V fan: working (0x1) Register value: 0x100 Fuse state 3V fan: blown (0x2) Register value: 0x200	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><thead><tr><th>Value</th><th>Name</th><th>Description</th></tr></thead><tbody><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></tbody></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																

DRV-M&V

Chapter includes BMS information about heat units from LEO M&V family in single mode.

Quick Start in single mode:

Mode	Address (HR)	Name	Set value	Description
Ventilation	0x04	WorkMode	0x06	Device starts ventilating (fan efficiency - med / 50%).
	0x07	FanEffRef	50	Check temperature sensors, fuse otherwise.
Manual heating	0x04	WorkMode	0x03	Device starts heating (fan efficiency - low / 20%, opening valve actuator)
	0x07	FanEffRef	20	target temperature to attain = 40°C.
	0x08	Tref	400	Check temperature sensors, fuse otherwise.

Single mode using T-BOX as a gate:

DRV-V/M 31 (physical address set on a PCB board)

Address shift for device no. 31 -> 0x0880(*Input Register 0x2F* from System settings - _Input Registers)

Mode	Shifted address	Set value
Manual heating	0x0884 (0x04+0x0880)	0x03
	0x0887 (0x07+0x0880)	20
	0x0888 (0x08+0x0880)	400

Holding Registers DRV-M&V

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. <i>EC Fan - speed variable in range 0 - 100%</i> <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> <i>AC Fan - 3 steps.</i> <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																								

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	Destratification work mode. <table> <tr> <th>Value</th><th>Destratification 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	Destratification 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	Destratification 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 [K]</th><th>Description</th></tr> <tr> <td>0</td><td>0,0</td><td>Minimal value</td></tr> <tr> <td>50</td><td>5,0</td><td>Default value</td></tr> <tr> <td>100</td><td>10,0</td><td>Maximal value</td></tr> </table> <i>Condition:</i> $DestTempRef > Td - Tm$ <i>Td</i> – temperature value measured near desertificator (T3 sensor). <i>Tm</i> – temperature value measured in the room (TLeadVal or T4 - depends on the <i>TleadSensorSelect</i> register value).	Value	Temperature [K]	Description	0	0,0	Minimal value	50	5,0	Default value	100	10,0	Maximal value
Value	Temperature [K]	Description												
0	0,0	Minimal value												
50	5,0	Default value												
100	10,0	Maximal value												

0x0E	DestStratTimeDelay	Not in use.									
0x0F	ModeAuto_FanEffRefMin	Minimal fan efficiency in AUTO mode. <i>EC Fan - speed variable in range 0 - 100%</i> <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. <i>EC Fan - speed variable in range 0 - 100%</i> <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. <i>EC Fan - speed variable in range 0 - 100%</i> <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 DRV-M&V

Data:

(READ ONLY)

Address	Name	Description																					
0x04	T3	Temperature measured by T3 sensor (air after water heat exchanger). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected						
Value	Temperature [C]	Description																					
-500	-50,0	Minimal value																					
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>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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected						
Value	Temperature [C]	Description																					
-500	-50,0	Minimal value																					
1000	100,0	Maximal value																					
0x7000	-	Short circuit																					
0x7FFF	-	PT1000 sensor not connected																					
0x06	FanEff	EC Fan - Revolutions per minute (rpm). <table><tr><th>Value [rpm]</th><th>Description</th></tr><tr><td>0</td><td>Minimal value</td></tr><tr><td>3000</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 [rpm]	Description	0	Minimal value	3000	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 [rpm]	Description																						
0	Minimal value																						
3000	Maximal value																						
Value	Gear	Description																					
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1..33	FAN_SPEED1	First step																					
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0x07	AntifreezeeState	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>-</td><td>0x01</td><td>Warehouse</td><td>Normal work mode.</td></tr><tr><td>-</td><td>0x02</td><td>Warehouse</td><td>Antifreeze enabled (user parameters overwritten).</td></tr><tr><td>0x01</td><td>-</td><td>Water Exchanger</td><td>Normal work mode.</td></tr><tr><td>0x02</td><td>-</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).																				

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 fulfilled</td></tr><tr><td>0x02</td><td>Condition (destDtemp > Td - Tm) and (Tz >Tm) fulfilled</td></tr></table>	Value	Description	0x01	Condition (destDtemp > Td - Tm) and (Tz >Tm) not fulfilled	0x02	Condition (destDtemp > Td - Tm) and (Tz >Tm) fulfilled										
Value	Description																	
0x01	Condition (destDtemp > Td - Tm) and (Tz >Tm) not fulfilled																	
0x02	Condition (destDtemp > Td - Tm) and (Tz >Tm) fulfilled																	
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: 0x100 Fuse state 3V fan: blown (0x2) Register value: 0x200	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
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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				
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DRV-OXEN

Chapter includes BMS information about ventilation units from OXEN family in single mode.

Quick Start in single mode:

Mode	Address (HR)	Name	Set value	Description
Ventilation	0x02	FanEffRef_1	100	Device starts ventilating (fan efficiency - 100%).
	0x03	FanEffRef_2	100	Check temperature sensors, fuse, antifreeze otherwise.
	0x04	OxenState	3	

Single mode using T-BOX as a gate:

DRV-OXEN 10 (physical address set on a PCB board)

Address shift for device no. 10 -> 0x03C0 (*Input Register 0x1A* from System settings - *_Input Registers*)

Mode	Shifted address	Set value
Ventilation	0x0342 (0x02+0x0340)	100
	0x0343 (0x03+0x0340)	100
	0x0344 (0x04+0x0340)	3

Holding Registers DRV-OXEN

DATA:

Address	Name	Description															
0x00	Config1	Configuration register no. 1. <table><thead><tr><th>BIT</th><th>Name</th><th>Description</th></tr></thead><tbody><tr><td>0</td><td>Filter work time RST</td><td> Filter work time reset. <table><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>0x00</td><td>Place holder.</td></tr><tr><td>0x01</td><td>Reset filter counter (Sets address 0x09 to 0x000).</td></tr></tbody></table></td></tr><tr><td>2..15</td><td>-</td><td>Not used.</td></tr></tbody></table>	BIT	Name	Description	0	Filter work time RST	Filter work time reset. <table><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>0x00</td><td>Place holder.</td></tr><tr><td>0x01</td><td>Reset filter counter (Sets address 0x09 to 0x000).</td></tr></tbody></table>	Value	Description	0x00	Place holder.	0x01	Reset filter counter (Sets address 0x09 to 0x000).	2..15	-	Not used.
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Value	Description																
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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><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															
0	0%	Minimal value															
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0x03	FanEffRef_2	Fan efficiency setting in group II (exhaust fans). EC Fan - speed variable in range 0 - 100% <table><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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0x04	OxenState	Work state. <table><thead><tr><th>Value</th><th>Name</th><th>Description</th></tr></thead><tbody><tr><td>0</td><td>OX_OFF</td><td>Oxen off</td></tr><tr><td>1</td><td>OX_ON</td><td>Oxen on</td></tr><tr><td>2</td><td>OX_ON</td><td>Oxen on</td></tr><tr><td>3</td><td>OX_ON</td><td>Oxen on</td></tr></tbody></table>	Value	Name	Description	0	OX_OFF	Oxen off	1	OX_ON	Oxen on	2	OX_ON	Oxen on	3	OX_ON	Oxen on
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0	OX_OFF	Oxen off															
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3	OX_ON	Oxen on															
0x05	OxenMode	Work mode.															
0x06	TempRef	Target temperature. <table><thead><tr><th>Value</th><th>Temperature [C]</th><th>Description</th></tr></thead><tbody><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></tbody></table>	Value	Temperature [C]	Description	50	5,0	Minimal Value	450	45,0	Maximal Value						
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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)
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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 Registers DRV-OXEN

DATA:

(READ ONLY)

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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
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0x01	Status2	Not used.																																																															

0x02	T1	Temperature measured by T1 sensor (fresh air temperature). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
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0x04	T3	Temperature measured by T3 sensor (air after water heat exchanger). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
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0x06	T5	Temperature measured by T5 sensor (water exchanger temperature).																																							
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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). <i>EC Fan - speed variable in range 0 - 100%</i> <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). <i>EC Fan - speed variable in range 0 - 100%</i> <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									

DRV-R

Chapter includes BMS information about gas heaters units from ROBUR family in single mode.

Quick Start in single mode:

Mode	Address (HR)	Name	Set value	Description
Ventilation (summer)	0x04	WorkMode	0x02	Device starts ventilating. Check temperature sensors, fuse otherwise.
Heating mode (winter)	0x04	WorkMode	0x03	Device starts heating, target temperature to attain 40°C.
	0x0E	Tref	400	Check temperature sensors, fuse, thermostat, STB alarm otherwise.

Single mode using T-BOX as a gate:

DRV-R 10 (physical address set on a PCB board)

Address shift for device no. 10 -> 0x03C0 (*Input Register 0x1A* from System settings - _Input Registers)

Mode	Shifted address	Set value
Ventilation	0x0344 (0x04+0x0340)	0x02

Holding Registers DRV R

DATA:

Address	Parameter	Description																		
0x04	WorkMode	Work mode. <table> <tr> <th>Value</th><th>Work state</th><th>Description</th></tr> <tr> <td>0x00</td><td>WM_NS</td><td>Read only</td></tr> <tr> <td>0x01</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>0x02</td><td>WM_SUMMER</td><td>Summer mode (ventilation)</td></tr> <tr> <td>0x03</td><td>WM_WINTER_THERMO</td><td>Winter mode (heating), thermostatic mode</td></tr> <tr> <td>0x04</td><td>WM_WINTER_CONT</td><td>Winter mode (heating), continuous mode</td></tr> </table>	Value	Work state	Description	0x00	WM_NS	Read only	0x01	WM_OFF	Device off	0x02	WM_SUMMER	Summer mode (ventilation)	0x03	WM_WINTER_THERMO	Winter mode (heating), thermostatic mode	0x04	WM_WINTER_CONT	Winter mode (heating), continuous mode
Value	Work state	Description																		
0x00	WM_NS	Read only																		
0x01	WM_OFF	Device off																		
0x02	WM_SUMMER	Summer mode (ventilation)																		
0x03	WM_WINTER_THERMO	Winter mode (heating), thermostatic mode																		
0x04	WM_WINTER_CONT	Winter mode (heating), continuous mode																		
0x05	AntifreezeWareHouseOn	Enables/disables warehouse antifreeze mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x01</td><td>ON</td><td>Enable</td></tr> <tr> <td>0x02</td><td>OFF</td><td>Disable</td></tr> </table>	Value	Name	Description	0x01	ON	Enable	0x02	OFF	Disable									
Value	Name	Description																		
0x01	ON	Enable																		
0x02	OFF	Disable																		
0x06	AntifreezeWareHouseTempRef	Target temperature to enable warehouse antifreeze. <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>100</td><td>10,0</td><td>Default value</td></tr> <tr> <td>150</td><td>15,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	50	5,0	Minimal value	100	10,0	Default value	150	15,0	Maximal value						
Value	Temperature [C]	Description																		
50	5,0	Minimal value																		
100	10,0	Default value																		
150	15,0	Maximal value																		
0x0C	GasAlarmReset	Robur gas/flame alarm reset. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>RO</td><td>Read only</td></tr> <tr> <td>0x01</td><td>ON</td><td>Sending reset signal (continuously)</td></tr> <tr> <td>0x02</td><td>OFF</td><td>Stop sending reset signal</td></tr> </table> Note: default reset time should not exceed 5 seconds (change the register to 0x02 afterwards).	Value	Name	Description	0x00	RO	Read only	0x01	ON	Sending reset signal (continuously)	0x02	OFF	Stop sending reset signal						
Value	Name	Description																		
0x00	RO	Read only																		
0x01	ON	Sending reset signal (continuously)																		
0x02	OFF	Stop sending reset signal																		
0x0E	Tref	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>250</td><td>25,0</td><td>Default 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	250	25,0	Default value	450	45,0	Maximal value						
Value	Temperature [C]	Description																		
50	5,0	Minimal value																		
250	25,0	Default value																		
450	45,0	Maximal value																		

0x0F	TLeadVal	Lead temperature sensor value.  Data type: Signed Int16 <table> <tr> <th>Value</th><th>Temperature [C]</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 [C]	Description	-600	-60,0	Minimal value	600	60,0	Maximal value			
Value	Temperature [C]	Description												
-600	-60,0	Minimal value												
600	60,0	Maximal value												
0x10	TleadSensorSelect	Lead 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 (room temperature)</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 (room temperature)
Value	Name	Description												
0x00	TSL_TNS	Read only												
0x01	TSL_TLEAD	Temperature value transmitted via Modbus												
0x03	TSL_T4	Temperature measured by T4 sensor (room temperature)												
0x12	STBTemperatureAlarmOn	Target temperature to invoke STB alarm state (<i>Input Register 0x12</i>). <i>Alarm occurs when set value is greater then T3 (Input Register 0x05)</i> Default value ensures error occurrence before real STB Robur alarm (which needs manual reset from heater control box). <table> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> <tr> <td>810</td><td>81,0</td><td>Minimal value</td></tr> <tr> <td>900</td><td>90,0</td><td>Default value</td></tr> <tr> <td>1200</td><td>120,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	810	81,0	Minimal value	900	90,0	Default value	1200	120,0	Maximal value
Value	Temperature [C]	Description												
810	81,0	Minimal value												
900	90,0	Default value												
1200	120,0	Maximal value												
0x13	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)												
0x14	STBTemperatureAlarmOff	Target temperature to reset STB alarm state (<i>Holding Register 0x0C</i>). Reset is possible If set value is greater then T3 (<i>Input Register 0x05</i>). <table> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> <tr> <td>610</td><td>61,0</td><td>Minimal value</td></tr> <tr> <td>800</td><td>80,0</td><td>Maximal value</td></tr> </table> Additional condition: STB_T_OFF < STB_T_REF	Value	Temperature [C]	Description	610	61,0	Minimal value	800	80,0	Maximal value			
Value	Temperature [C]	Description												
610	61,0	Minimal value												
800	80,0	Maximal value												

0x15	STBAlarmReset	STB Alarm reset. <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x01</td><td>ON</td><td>Reset alarm on</td></tr><tr><td>0x02</td><td>OFF</td><td>Reset alarm off</td></tr></table> If STB_T < STB_T_OFF register will be set to 0x02 (OFF) STB_T - T3 (<i>Input Register 0x03</i>) STB_T_OFF - STBTemperatureAlarmOff (<i>Holding Register 0x14</i>)	Value	Name	Description	0x01	ON	Reset alarm on	0x02	OFF	Reset alarm off
Value	Name	Description									
0x01	ON	Reset alarm on									
0x02	OFF	Reset alarm off									

Input Registers DRV-R

DATA:

(READ ONLY)

Address	Parameter	Description															
0x05	T3  Data type: Signed Int16	Temperature measured by T3 sensor (air extraction temperature).															
		<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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
		Value	Temperature [C]	Description													
		-500	-50,0	Minimal value													
		1000	100,0	Maximal value													
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x06	T4  Data type: Signed Int16	Temperature measured by T4 sensor (room temperature).															
		<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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
		Value	Temperature [C]	Description													
		-500	-50,0	Minimal value													
		1000	100,0	Maximal value													
		0x7000	-	Short circuit													
0x7FFF	-	PT1000 sensor not connected															
0x08	ExternalGasDetectTH1	External gas detector signal - first threshold. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Gas concentration below threshold</td></tr><tr><td>0x01</td><td>Gas concentration exceeds threshold</td></tr></table>	Value	Description	0x00	Gas concentration below threshold	0x01	Gas concentration exceeds threshold									
Value	Description																
0x00	Gas concentration below threshold																
0x01	Gas concentration exceeds threshold																
0x09	ExternalGasDetectTH2	External gas detector signal - second threshold. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Gas concentration below threshold</td></tr><tr><td>0x01</td><td>Gas concentration exceeds threshold</td></tr></table>	Value	Description	0x00	Gas concentration below threshold	0x01	Gas concentration exceeds threshold									
Value	Description																
0x00	Gas concentration below threshold																
0x01	Gas concentration exceeds threshold																
0x0A	ExternalGasDetectVal	Gas concentration value - 0-10V DC input (gas detector scaling information required).															
0x0F	AntifreezeStateWarehouse	Information about warehouse antifreeze state. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Normal work mode</td></tr><tr><td>0x02</td><td>Antifreeze enabled (user parameters overwritten)</td></tr></table>	Value	Description	0x01	Normal work mode	0x02	Antifreeze enabled (user parameters overwritten)									
Value	Description																
0x01	Normal work mode																
0x02	Antifreeze enabled (user parameters overwritten)																

0x10	FuseState	Fan roof fuse state. <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>	Value	Description	0x00	Read only	0x01	Fuse state - working	0x02	Fuse state - blown				
Value	Description													
0x00	Read only													
0x01	Fuse state - working													
0x02	Fuse state - blown													
0x11	GasAlarmState	Robur alarm (gas/flame). Read from clamp no.6 (connection terminal inside Robur heater). <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x01</td><td>ON</td><td>Alarm dedcted</td></tr><tr><td>0x02</td><td>OFF</td><td>No alarm</td></tr></table>	Value	Name	Description	0x01	ON	Alarm dedcted	0x02	OFF	No alarm			
Value	Name	Description												
0x01	ON	Alarm dedcted												
0x02	OFF	No alarm												
0x12	STBAlarmState	Air extraction temperature alarm (STB). <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>NC</td><td>PT1000 sensor not connected</td></tr><tr><td>0x01</td><td>ON</td><td>STB alarm detected (T3 >= T_STB_REF)</td></tr><tr><td>0x02</td><td>OFF</td><td>STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))</td></tr></table>	Value	Name	Description	0x00	NC	PT1000 sensor not connected	0x01	ON	STB alarm detected (T3 >= T_STB_REF)	0x02	OFF	STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))
Value	Name	Description												
0x00	NC	PT1000 sensor not connected												
0x01	ON	STB alarm detected (T3 >= T_STB_REF)												
0x02	OFF	STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))												
0x13	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												

DRV-R KM

Chapter includes BMS information about robur mixing chambers units from ROBUR family in single mode.

Quick Start in single mode:

Mode	Address (HR)	Name	Set value	Description
Ventilation (summer)	0x04	WorkMode	0x02	Device starts ventilating. Check temperature sensors, fuse otherwise.
Heating mode (winter)	0x04	WorkMode	0x03	Device starts heating, target temperature to attain 40°C.
	0x0E	Tref	400	Check temperature sensors, fuse, thermostat, STB alarm otherwise.

Single mode using T-BOX as a gate:

DRV-R KM 10 (physical address set on a PCB board)

Address shift for device no. 10 -> 0x03C0 (*Input Register 0x1A* from System settings - _Input Registers)

Mode	Shifted address	Set value
Ventilation (summer)	0x0344 (0x04+0x0340)	0x02

Holding Registers DRV-R KM

DATA:

Address	Parameter	Description																		
0x04	WorkMode	Work mode. <table> <tr> <th>Value</th><th>Work state</th><th>Description</th></tr> <tr> <td>0x00</td><td>WM_NS</td><td>Read only</td></tr> <tr> <td>0x01</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>0x02</td><td>WM_SUMMER</td><td>Summer mode (ventilation)</td></tr> <tr> <td>0x03</td><td>WM_WINTER_THERMO</td><td>Winter mode (heating), thermostatic mode</td></tr> <tr> <td>0x04</td><td>WM_WINTER_CONT</td><td>Winter mode (heating), continuous mode</td></tr> </table>	Value	Work state	Description	0x00	WM_NS	Read only	0x01	WM_OFF	Device off	0x02	WM_SUMMER	Summer mode (ventilation)	0x03	WM_WINTER_THERMO	Winter mode (heating), thermostatic mode	0x04	WM_WINTER_CONT	Winter mode (heating), continuous mode
Value	Work state	Description																		
0x00	WM_NS	Read only																		
0x01	WM_OFF	Device off																		
0x02	WM_SUMMER	Summer mode (ventilation)																		
0x03	WM_WINTER_THERMO	Winter mode (heating), thermostatic mode																		
0x04	WM_WINTER_CONT	Winter mode (heating), continuous mode																		
0x05	AntifreezeWareHouseOn	Enables/disables warehouse antifreeze mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x01</td><td>ON</td><td>Enable</td></tr> <tr> <td>0x02</td><td>OFF</td><td>Disable</td></tr> </table>	Value	Name	Description	0x01	ON	Enable	0x02	OFF	Disable									
Value	Name	Description																		
0x01	ON	Enable																		
0x02	OFF	Disable																		
0x06	AntifreezeWareHouseTempRef	Target temperature to enable warehouse antifreeze. <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>100</td><td>10,0</td><td>Default value</td></tr> <tr> <td>150</td><td>15,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	50	5,0	Minimal value	100	10,0	Default value	150	15,0	Maximal value						
Value	Temperature [C]	Description																		
50	5,0	Minimal value																		
100	10,0	Default value																		
150	15,0	Maximal value																		
0x07	DamperForceMode	Damper forcing mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>DAMPER_FMD_NS</td><td>Read only</td></tr> <tr> <td>0x01</td><td>DAMPER_FMD_OFF</td><td>Forcing mode off</td></tr> <tr> <td>0x02</td><td>DAMPER_FMD_ON</td><td> Depends on air draw temperature: <pre> if (T1 < DamperForceTempRef) { DamperLevelRef = DamperForceRef; } </pre> </td></tr> </table>	Value	Name	Description	0x00	DAMPER_FMD_NS	Read only	0x01	DAMPER_FMD_OFF	Forcing mode off	0x02	DAMPER_FMD_ON	Depends on air draw temperature: <pre> if (T1 < DamperForceTempRef) { DamperLevelRef = DamperForceRef; } </pre>						
Value	Name	Description																		
0x00	DAMPER_FMD_NS	Read only																		
0x01	DAMPER_FMD_OFF	Forcing mode off																		
0x02	DAMPER_FMD_ON	Depends on air draw temperature: <pre> if (T1 < DamperForceTempRef) { DamperLevelRef = DamperForceRef; } </pre>																		

0x08	DamperForceTempRef	Target temperature to force damper (work mode DamperForceMode == DAMPER_FMD_ON). Combined with T1 (fresh air temperature - <i>Input Register 0x04</i>). <table><tr><th>Value</th><th>Temperature [C]</th><th>Description</th></tr><tr><td>-100</td><td>-10,0</td><td>Minimal value</td></tr><tr><td>0</td><td>0</td><td>Default value</td></tr><tr><td>150</td><td>15,0</td><td>Maximal value</td></tr></table>	Value	Temperature [C]	Description	-100	-10,0	Minimal value	0	0	Default value	150	15,0	Maximal value
Value	Temperature [C]	Description												
-100	-10,0	Minimal value												
0	0	Default 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>10</td><td>Maximal value</td></tr></table>	Value	Damper airflow regulation [%]	Description	0	0	Minimal value	100	10	Maximal value			
Value	Damper airflow regulation [%]	Description												
0	0	Minimal value												
100	10	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	DamperContLevelRef	Damper position when: WorkMode == WM_WINTER_CONT. <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													
0x0C	GasAlarmReset	Robur gas/flame alarm reset. <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>RO</td><td>Read only</td></tr><tr><td>0x01</td><td>ON</td><td>Sending reset signal (continuously)</td></tr><tr><td>0x02</td><td>OFF</td><td>Stop sending reset signal</td></tr></table> Note: default reset time should not exceed 5 seconds (change the register to 0x02 afterwards).	Value	Name	Description	0x00	RO	Read only	0x01	ON	Sending reset signal (continuously)	0x02	OFF	Stop sending reset signal
Value	Name	Description												
0x00	RO	Read only												
0x01	ON	Sending reset signal (continuously)												
0x02	OFF	Stop sending reset signal												
0x0D	FanRoofForceEffRef	Forcing fan roof ventilator speed (efficiency will be increased by FanRoofForceEffRef). <table><tr><th>Value[%]</th><th>Description</th></tr><tr><td>-100</td><td>Minimal value</td></tr><tr><td>0</td><td>Default value</td></tr><tr><td>100</td><td>Maximal value</td></tr></table>	Value[%]	Description	-100	Minimal value	0	Default value	100	Maximal value				
Value[%]	Description													
-100	Minimal value													
0	Default value													
100	Maximal value													

0x0E	Tref	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>250</td><td>25,0</td><td>Default 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	250	25,0	Default value	450	45,0	Maximal value
Value	Temperature [C]	Description												
50	5,0	Minimal value												
250	25,0	Default value												
450	45,0	Maximal value												
0x0F	TLeadVal  Data type: Signed Int16	Lead temperature sensor value. <table> <tr> <th>Value</th><th>Temperature [C]</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 [C]	Description	-600	-60,0	Minimal value	600	60,0	Maximal value			
Value	Temperature [C]	Description												
-600	-60,0	Minimal value												
600	60,0	Maximal value												
0x10	TleadSensorSelect	Lead 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 (room temperature)</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 (room temperature)
Value	Name	Description												
0x00	TSL_TNS	Read only												
0x01	TSL_TLEAD	Temperature value transmitted via Modbus												
0x03	TSL_T4	Temperature measured by T4 sensor (room temperature)												
0x11	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)												
0x12	STBTemperatureAlarmOn	Target temperature to invoke STB alarm state (<i>Input Register 0x12</i>). <i>Alarm occurs when set value is greater than T3 (Input Register 0x05)</i> Default value ensures error occurrence before real STB Robur alarm (which needs manual reset from heater control box). <table> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> <tr> <td>810</td><td>81,0</td><td>Minimal value</td></tr> <tr> <td>900</td><td>90,0</td><td>Default value</td></tr> <tr> <td>1200</td><td>120,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	810	81,0	Minimal value	900	90,0	Default value	1200	120,0	Maximal value
Value	Temperature [C]	Description												
810	81,0	Minimal value												
900	90,0	Default value												
1200	120,0	Maximal value												

0x13	FilterTimeCntRst	Filter time reset. <table border="1"> <thead> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> </thead> <tbody> <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> </tbody> </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)									
0x14	STBTemperatureAlarmOff	Target temperature to reset STB alarm state (<i>Holding Register 0x0C</i>). Reset is possible If set value is greater then T3 (<i>Input Register 0x05</i>). <table border="1"> <thead> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> </thead> <tbody> <tr> <td>610</td><td>61,0</td><td>Minimal value</td></tr> <tr> <td>800</td><td>80,0</td><td>Maximal value</td></tr> </tbody> </table> Additional condition: STB_T_OFF < STB_T_REF	Value	Temperature [C]	Description	610	61,0	Minimal value	800	80,0	Maximal value
Value	Temperature [C]	Description									
610	61,0	Minimal value									
800	80,0	Maximal value									
0x15	STBAlarmReset	STB Alarm reset. <table border="1"> <thead> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> </thead> <tbody> <tr> <td>0x01</td><td>ON</td><td>Reset alarm on</td></tr> <tr> <td>0x02</td><td>OFF</td><td>Reset alarm off</td></tr> </tbody> </table> If STB_T < STB_T_OFF register will be set to 0x02 (OFF) STB_T - T3 (<i>Input Register 0x03</i>) STB_T_OFF - STBTemperatureAlarmOff (<i>Holding Register 0x14</i>)	Value	Name	Description	0x01	ON	Reset alarm on	0x02	OFF	Reset alarm off
Value	Name	Description									
0x01	ON	Reset alarm on									
0x02	OFF	Reset alarm off									

Input Registers DRV-R KM

DATA:

(READ ONLY)

Address	Parameter	Description															
0x04	T1  Data type: Signed Int16	Temperature measured by T1 sensor (fresh air temperature). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature [C]	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x05	T3  Data type: Signed Int16	Temperature measured by T3 sensor (air extraction temperature). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature [C]	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x06	T4  Data type: Signed Int16	Temperature measured by T4 sensor (room temperature). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature [C]	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x07	T5  Data type: Signed Int16	Temperature measured by T5 sensor (not used in Robur devices). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature [C]	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															

0x08	ExternalGasDetectTH1	External gas detector signal - first threshold. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Gas concentration below threshold</td></tr><tr><td>0x01</td><td>Gas concentration exceeds threshold</td></tr></table>	Value	Description	0x00	Gas concentration below threshold	0x01	Gas concentration exceeds threshold
Value	Description							
0x00	Gas concentration below threshold							
0x01	Gas concentration exceeds threshold							
0x09	ExternalGasDetectTH2	External gas detector signal - second threshold. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Gas concentration below threshold</td></tr><tr><td>0x01</td><td>Gas concentration exceeds threshold</td></tr></table>	Value	Description	0x00	Gas concentration below threshold	0x01	Gas concentration exceeds threshold
Value	Description							
0x00	Gas concentration below threshold							
0x01	Gas concentration exceeds threshold							
0x0A	ExternalGasDetectVal	Gas concentration value - 0-10V DC input (gas detector scaling information required).						
0x0B	FanRoofTK	Thermocontact 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	FanRoofEff	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							
0x0D	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							
0x0E	DamperForceState	<i>Forcing state for damper in mode DamperForceMode == DAMPER_FMD_ON</i> <table><tr><th>Value</th><th>Condition</th></tr><tr><td>0x01</td><td>T4 >= DamperForceTempRef</td></tr><tr><td>0x02</td><td>T4 < DamperForceTempRef</td></tr></table>	Value	Condition	0x01	T4 >= DamperForceTempRef	0x02	T4 < DamperForceTempRef
Value	Condition							
0x01	T4 >= DamperForceTempRef							
0x02	T4 < DamperForceTempRef							

0x0F	AntifreezeStateWarehouse	Information about warehouse antifreeze state. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Normal work mode</td></tr><tr><td>0x02</td><td>Antifreeze enabled (user parameters overwritten)</td></tr></table>	Value	Description	0x01	Normal work mode	0x02	Antifreeze enabled (user parameters overwritten)						
Value	Description													
0x01	Normal work mode													
0x02	Antifreeze enabled (user parameters overwritten)													
0x10	FuseState	Fan roof fuse state. <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>	Value	Description	0x00	Read only	0x01	Fuse state - working	0x02	Fuse state - blown				
Value	Description													
0x00	Read only													
0x01	Fuse state - working													
0x02	Fuse state - blown													
0x11	GasAlarmState	Robur alarm (gas/flare). Read from clamp no.6 (connection terminal inside Robur heater). <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x01</td><td>ON</td><td>Alarm dedcted</td></tr><tr><td>0x02</td><td>OFF</td><td>No alarm</td></tr></table>	Value	Name	Description	0x01	ON	Alarm dedcted	0x02	OFF	No alarm			
Value	Name	Description												
0x01	ON	Alarm dedcted												
0x02	OFF	No alarm												
0x12	STBAlarmState	Air extraction temperature alarm (STB). <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>NC</td><td>PT1000 sensor not connected</td></tr><tr><td>0x01</td><td>ON</td><td>STB alarm detected (T3 >= T_STB_REF)</td></tr><tr><td>0x02</td><td>OFF</td><td>STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))</td></tr></table>	Value	Name	Description	0x00	NC	PT1000 sensor not connected	0x01	ON	STB alarm detected (T3 >= T_STB_REF)	0x02	OFF	STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))
Value	Name	Description												
0x00	NC	PT1000 sensor not connected												
0x01	ON	STB alarm detected (T3 >= T_STB_REF)												
0x02	OFF	STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))												
0x13	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												

DRV-EL

Chapter includes BMS information about electric heaters from LEO EL family in single mode.

Quick Start in single mode:

Mode	Address (HR)	Name	Set value	Description
Ventilation	0x04	WorkMode	0x04	Device starts ventilating (fan efficiency - low).
	0x07	FanEffRef	33	Check temperature sensors, fuse, thermostat otherwise.
Manual Heating	0x04	WorkMode	0x03	Device starts heating (fan efficiency - low, heating - first power setting) target temperature to attain 40°C.
	0x07	FanEffRef	33	
	0x08	Tref	400	
	0x0F	ElectricHeaterPTCPower	0x02	Check temperature sensors, fuse, thermostat otherwise.

Single mode using T-BOX as a gate:

DRV-EL 12 (physical address set on a PCB board)

Address shift for device no. 12 -> 0x03C0 (*Input Register 0x1C* from System settings - *_Input Registers*)

Mode	Shifted address	Set value
Ventilation	0x03C4 (0x04+0x03C0)	0x04
	0x03C7 (0x07+0x03C0)	33

Holding Register DRV-EL

Data:

Address	Name	Description																					
0x04	WorkMode	Work mode. <table> <tr> <th>Value</th><th>Work status</th><th>Description</th></tr> <tr> <td>0x00</td><td>WM_TS</td><td>TS</td></tr> <tr> <td>0x01</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>0x02</td><td>WM_AUTO</td><td>Automatic mode</td></tr> <tr> <td>0x03</td><td>WM_HEAT</td><td>Manual heating</td></tr> <tr> <td>0x04</td><td>WM_VENT</td><td>Ventilation</td></tr> <tr> <td>0x05</td><td>WM_RAW</td><td>Raw. <i>Not used.</i></td></tr> </table>	Value	Work status	Description	0x00	WM_TS	TS	0x01	WM_OFF	Device off	0x02	WM_AUTO	Automatic mode	0x03	WM_HEAT	Manual heating	0x04	WM_VENT	Ventilation	0x05	WM_RAW	Raw. <i>Not used.</i>
Value	Work status	Description																					
0x00	WM_TS	TS																					
0x01	WM_OFF	Device off																					
0x02	WM_AUTO	Automatic mode																					
0x03	WM_HEAT	Manual heating																					
0x04	WM_VENT	Ventilation																					
0x05	WM_RAW	Raw. <i>Not used.</i>																					
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 [C]</th><th>Description</th></tr> <tr> <td>50</td><td>5,0</td><td>Minimal value</td></tr> <tr> <td>100</td><td>10,0</td><td>Default value</td></tr> <tr> <td>150</td><td>15,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	50	5,0	Minimal value	100	10,0	Default value	150	15,0	Maximal value									
Value	Temperature [C]	Description																					
50	5,0	Minimal value																					
100	10,0	Default value																					
150	15,0	Maximal value																					
0x07	FanEffRef	Fan efficiency setting. <i>AC Fan - 3 steps.</i> <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	Tref	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>250</td><td>25,0</td><td>Default 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	250	25,0	Default value	450	45,0	Maximal value									
Value	Temperature [C]	Description																					
50	5,0	Minimal value																					
250	25,0	Default value																					
450	45,0	Maximal value																					

0x09	TLeadVal	Lead temperature sensor value.  Data type: Signed Int16 <table> <tr> <th>Value</th><th>Temperature [C]</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 [C]	Description	-600	-60,0	Minimal value	600	60,0	Maximal value			
Value	Temperature [C]	Description												
-600	-60,0	Minimal value												
600	60,0	Maximal value												
0x0A	TleadSensorSelect	Lead 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 (room temperature)</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 (room temperature)
Value	Name	Description												
0x00	TSL_TNS	Read only												
0x01	TSL_TLEAD	Temperature value transmitted via Modbus												
0x03	TSL_T4	Temperature measured by T4 sensor (room temperature)												
0x0B	DestModeForce	Forcing destratification mode for destratificator. <table> <tr> <th>Value</th><th>Temperature [K]</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	Temperature [K]	Description	0x01	DEST_MDF_OFF	Turn off	0x02	DEST_MDF_ON	Turn on			
Value	Temperature [K]	Description												
0x01	DEST_MDF_OFF	Turn off												
0x02	DEST_MDF_ON	Turn on												
0x0C	DestMode	Destratification work mode. <table> <tr> <th>Value</th><th>Destratification 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	Destratification 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	Destratification 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 lunched destratification mode. <table> <tr> <th>Value</th><th>Temperature [K]</th><th>Description</th></tr> <tr> <td>0</td><td>0,0</td><td>Minimal value</td></tr> <tr> <td>50</td><td>5,0</td><td>Default value</td></tr> <tr> <td>100</td><td>10,0</td><td>Maximal value</td></tr> </table> <i>Condition:</i> $DestTempRef > T_d - T_m$ T_d – temperature value measured near destratificator (T3 sensor). T_m – temperature value measured in the room (TLeadVal or T4 - depends on the <i>TleadSensorSelect</i> register value).	Value	Temperature [K]	Description	0	0,0	Minimal value	50	5,0	Default value	100	10,0	Maximal value
Value	Temperature [K]	Description												
0	0,0	Minimal value												
50	5,0	Default value												
100	10,0	Maximal value												
0x0E	DestStratTimeDelay	Not in use.												

0x0F	ElectricHeaterPTCPower	Electric heater power for LEO EL L in manual heating work mode. (SW3.5 = K1) <table><tr><th>Value</th><th>L2 State</th><th>L1 State</th><th>Description</th></tr><tr><td>0x01</td><td>OFF</td><td>OFF</td><td>Off</td></tr><tr><td>0x02</td><td>OFF</td><td>ON</td><td>1 heat setting</td></tr><tr><td>0x03</td><td>ON</td><td>OFF</td><td>2 heat setting</td></tr><tr><td>0x04</td><td>ON</td><td>ON</td><td>3 heat setting</td></tr></table> Electric heater power for LEO EL S in manual heating work mode. (SW3.5 = K2) <table><tr><th>Value</th><th>L2 State</th><th>L1 State</th><th>Description</th></tr><tr><td>0x01</td><td>OFF</td><td>OFF</td><td>Off</td></tr><tr><td>0x02</td><td>OFF</td><td>ON</td><td>1 heat setting</td></tr><tr><td>0x03</td><td>ON</td><td>ON</td><td>2 heat setting</td></tr><tr><td>0x04</td><td>ON</td><td>ON</td><td>2 heat setting</td></tr></table>	Value	L2 State	L1 State	Description	0x01	OFF	OFF	Off	0x02	OFF	ON	1 heat setting	0x03	ON	OFF	2 heat setting	0x04	ON	ON	3 heat setting	Value	L2 State	L1 State	Description	0x01	OFF	OFF	Off	0x02	OFF	ON	1 heat setting	0x03	ON	ON	2 heat setting	0x04	ON	ON	2 heat setting
Value	L2 State	L1 State	Description																																							
0x01	OFF	OFF	Off																																							
0x02	OFF	ON	1 heat setting																																							
0x03	ON	OFF	2 heat setting																																							
0x04	ON	ON	3 heat setting																																							
Value	L2 State	L1 State	Description																																							
0x01	OFF	OFF	Off																																							
0x02	OFF	ON	1 heat setting																																							
0x03	ON	ON	2 heat setting																																							
0x04	ON	ON	2 heat setting																																							
0x10	ModeAuto_FanEffRef	Fan efficiency after attaining target temperature in AUTO mode. 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																																								
0x11	ModeManual_FanEffRef	Fan efficiency after attaining target temperature in MANUAL mode 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																																								

Input Register DRV-EL

(READ ONLY)

Data:

Address	Name	Description															
0x04	T3  Data type: Signed Int16	Temperature measured by T3 sensor (air near the ceiling).															
		<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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
		Value	Temperature [C]	Description													
		-500	-50,0	Minimal value													
		1000	100,0	Maximal value													
		0x7000	-	Short circuit													
0x7FFF	-	PT1000 sensor not connected															
0x05	T4  Data type: Signed Int16	Temperature measured by T4 sensor (room temperature).															
		<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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
		Value	Temperature [C]	Description													
		-500	-50,0	Minimal value													
		1000	100,0	Maximal value													
		0x7000	-	Short circuit													
0x7FFF	-	PT1000 sensor not connected															
0x06	FanEff	Fan efficiency.															
		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	AntifreezeState	Information about antifreeze.															
		<table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Normal work mode.</td></tr><tr><td>0x02</td><td>Antifreeze enabled (user parameters overwritten).</td></tr></table>	Value	Description	0x01	Normal work mode.	0x02	Antifreeze enabled (user parameters overwritten).									
		Value	Description														
		0x01	Normal work mode.														
0x02	Antifreeze enabled (user parameters overwritten).																

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 fulfilled</td></tr><tr><td>0x02</td><td>Condition (destDtemp > Td - Tm) and (Tz >Tm) fulfilled</td></tr></table>	Value	Description	0x01	Condition (destDtemp > Td - Tm) and (Tz >Tm) not fulfilled	0x02	Condition (destDtemp > Td - Tm) and (Tz >Tm) fulfilled										
Value	Description																	
0x01	Condition (destDtemp > Td - Tm) and (Tz >Tm) not fulfilled																	
0x02	Condition (destDtemp > Td - Tm) and (Tz >Tm) fulfilled																	
0x09	ThermalContactState	Thermal contact state. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Overheat alarm</td></tr><tr><td>0x02</td><td>Normal work</td></tr></table> IF 0x09 = 0x01 user parameters are overwritten: • <i>HR 0x07 FanEffRef = 100</i> • <i>HR 0x0F ElectricHeaterPTCPower = 0</i> Overwrite discontinues when temperature inside the heater drops below safe limits.	Value	Description	0x01	Overheat alarm	0x02	Normal work										
Value	Description																	
0x01	Overheat alarm																	
0x02	Normal work																	
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: 0x100 Fuse state 3V fan: blown (0x2) Register value: 0x200	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	PTCHeaterPowerState	Electric heater power for LEO EL L in manual heating work mode. (SW3.5 = K1) <table><tr><th>Value</th><th>L2 State</th><th>L1 State</th><th>Description</th></tr><tr><td>0x01</td><td>OFF</td><td>OFF</td><td>Off</td></tr><tr><td>0x02</td><td>OFF</td><td>ON</td><td>1 heat setting</td></tr><tr><td>0x03</td><td>ON</td><td>OFF</td><td>2 heat setting</td></tr><tr><td>0x04</td><td>ON</td><td>ON</td><td>3 heat setting</td></tr></table> Electric heater power for LEO EL S in manual heating work mode. (SW3.5 = K2) <table><tr><th>Value</th><th>L2 State</th><th>L1 State</th><th>Description</th></tr><tr><td>0x01</td><td>OFF</td><td>OFF</td><td>Off</td></tr><tr><td>0x02</td><td>OFF</td><td>ON</td><td>1 heat setting</td></tr><tr><td>0x03</td><td>ON</td><td>ON</td><td>2 heat setting</td></tr><tr><td>0x04</td><td>ON</td><td>ON</td><td>2 heat setting</td></tr></table>	Value	L2 State	L1 State	Description	0x01	OFF	OFF	Off	0x02	OFF	ON	1 heat setting	0x03	ON	OFF	2 heat setting	0x04	ON	ON	3 heat setting	Value	L2 State	L1 State	Description	0x01	OFF	OFF	Off	0x02	OFF	ON	1 heat setting	0x03	ON	ON	2 heat setting	0x04	ON	ON	2 heat setting
Value	L2 State	L1 State	Description																																							
0x01	OFF	OFF	Off																																							
0x02	OFF	ON	1 heat setting																																							
0x03	ON	OFF	2 heat setting																																							
0x04	ON	ON	3 heat setting																																							
Value	L2 State	L1 State	Description																																							
0x01	OFF	OFF	Off																																							
0x02	OFF	ON	1 heat setting																																							
0x03	ON	ON	2 heat setting																																							
0x04	ON	ON	2 heat setting																																							
0x0C	ElectricHeaterType	Electric heater type. <table><tr><th>Value</th><th>Description</th><th>SW3.5 position</th></tr><tr><td>0x01</td><td>2 heat steps (LEO EL S)</td><td>K2</td></tr><tr><td>0x02</td><td>3 heat steps (LEO EL L)</td><td>K1</td></tr></table>  SW3.5 - 5th pole of dip switch no. 3 (SW3 on PCB Board). Factory set compatible with device.	Value	Description	SW3.5 position	0x01	2 heat steps (LEO EL S)	K2	0x02	3 heat steps (LEO EL L)	K1																															
Value	Description	SW3.5 position																																								
0x01	2 heat steps (LEO EL S)	K2																																								
0x02	3 heat steps (LEO EL L)	K1																																								

DRV-R NEXT

Chapter includes BMS information about gas heaters units from ROBUR family in single mode.

Quick Start in single mode:

Mode	Address (HR)	Name	Set value	Description
Ventilation (summer)	0x04	WorkMode	0x02	Device starts ventilating. Check temperature sensors, fuse otherwise.
Heating mode (winter)	0x04	WorkMode	0x03	Device starts heating, target temperature to attain 40°C.
	0x0E	Tref	400	Check temperature sensors, fuse, thermostat, STB alarm otherwise.

Single mode using T-BOX as a gate:

DRV-R 10 (physical address set on a PCB board)

Address shift for device no. 10 -> 0x03C0 (*Input Register 0x1A* from System settings - _Input Registers)

Mode	Shifted address	Set value
Ventilation	0x0344 (0x04+0x0340)	0x02

Holding Registers DRV-R NEXT

DATA:

Address	Parameter	Description																		
0x04	WorkMode	Work mode. <table> <tr> <th>Value</th><th>Work state</th><th>Description</th></tr> <tr> <td>0x00</td><td>WM_NS</td><td>Read only</td></tr> <tr> <td>0x01</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>0x02</td><td>WM_HEAT_AUTO</td><td>Automatic heating</td></tr> <tr> <td>0x03</td><td>WM_HEAT_MANUAL</td><td>Manual heating</td></tr> <tr> <td>0x04</td><td>WM_VENTILATION</td><td>Ventilation</td></tr> </table>	Value	Work state	Description	0x00	WM_NS	Read only	0x01	WM_OFF	Device off	0x02	WM_HEAT_AUTO	Automatic heating	0x03	WM_HEAT_MANUAL	Manual heating	0x04	WM_VENTILATION	Ventilation
Value	Work state	Description																		
0x00	WM_NS	Read only																		
0x01	WM_OFF	Device off																		
0x02	WM_HEAT_AUTO	Automatic heating																		
0x03	WM_HEAT_MANUAL	Manual heating																		
0x04	WM_VENTILATION	Ventilation																		
0x05	AntifreezeWareHouseOn	Enables/disables warehouse antifreeze mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x01</td><td>ON</td><td>Enable</td></tr> <tr> <td>0x02</td><td>OFF</td><td>Disable</td></tr> </table>	Value	Name	Description	0x01	ON	Enable	0x02	OFF	Disable									
Value	Name	Description																		
0x01	ON	Enable																		
0x02	OFF	Disable																		
0x06	AntifreezeWareHouseTempRef	Target temperature to enable warehouse antifreeze. <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>100</td><td>10,0</td><td>Default value</td></tr> <tr> <td>150</td><td>15,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	50	5,0	Minimal value	100	10,0	Default value	150	15,0	Maximal value						
Value	Temperature [C]	Description																		
50	5,0	Minimal value																		
100	10,0	Default value																		
150	15,0	Maximal value																		
0x0C	GasAlarmReset	Robur gas/flame alarm reset. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>RO</td><td>Read only</td></tr> <tr> <td>0x01</td><td>ON</td><td>Sending reset signal (continuously)</td></tr> <tr> <td>0x02</td><td>OFF</td><td>Stop sending reset signal</td></tr> </table> Note: default reset time should not exceed 5 seconds (change the register to 0x02 afterwards).	Value	Name	Description	0x00	RO	Read only	0x01	ON	Sending reset signal (continuously)	0x02	OFF	Stop sending reset signal						
Value	Name	Description																		
0x00	RO	Read only																		
0x01	ON	Sending reset signal (continuously)																		
0x02	OFF	Stop sending reset signal																		
0x0E	Tref	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>250</td><td>25,0</td><td>Default 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	250	25,0	Default value	450	45,0	Maximal value						
Value	Temperature [C]	Description																		
50	5,0	Minimal value																		
250	25,0	Default value																		
450	45,0	Maximal value																		

0x0F	TLeadVal	Lead temperature sensor value.  Data type: Signed Int16 <table> <tr> <th>Value</th><th>Temperature [C]</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 [C]	Description	-600	-60,0	Minimal value	600	60,0	Maximal value			
Value	Temperature [C]	Description												
-600	-60,0	Minimal value												
600	60,0	Maximal value												
0x10	TleadSensorSelect	Lead 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 (room temperature)</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 (room temperature)
Value	Name	Description												
0x00	TSL_TNS	Read only												
0x01	TSL_TLEAD	Temperature value transmitted via Modbus												
0x03	TSL_T4	Temperature measured by T4 sensor (room temperature)												
0x12	STBTemperatureAlarmOn	Target temperature to invoke STB alarm state (<i>Input Register 0x12</i>). <i>Alarm occurs when set value is greater then T3 (Input Register 0x05)</i> Default value ensures error occurrence before real STB Robur alarm (which needs manual reset from heater control box). <table> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> <tr> <td>810</td><td>81,0</td><td>Minimal value</td></tr> <tr> <td>900</td><td>90,0</td><td>Default value</td></tr> <tr> <td>1200</td><td>120,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	810	81,0	Minimal value	900	90,0	Default value	1200	120,0	Maximal value
Value	Temperature [C]	Description												
810	81,0	Minimal value												
900	90,0	Default value												
1200	120,0	Maximal value												
0x13	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)												
0x14	STBTemperatureAlarmOff	Target temperature to reset STB alarm state (<i>Holding Register 0x0C</i>). Reset is possible If set value is greater then T3 (<i>Input Register 0x05</i>). <table> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> <tr> <td>610</td><td>61,0</td><td>Minimal value</td></tr> <tr> <td>800</td><td>80,0</td><td>Maximal value</td></tr> </table> Additional condition: STB_T_OFF < STB_T_REF	Value	Temperature [C]	Description	610	61,0	Minimal value	800	80,0	Maximal value			
Value	Temperature [C]	Description												
610	61,0	Minimal value												
800	80,0	Maximal value												

0x15	STBAlarmReset	STB Alarm reset. <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x01</td><td>ON</td><td>Reset alarm on</td></tr><tr><td>0x02</td><td>OFF</td><td>Reset alarm off</td></tr></table> If STB_T < STB_T_OFF register will be set to 0x02 (OFF) STB_T - T3 (<i>Input Register 0x03</i>) STB_T_OFF - STBTemperatureAlarmOff (<i>Holding Register 0x14</i>)	Value	Name	Description	0x01	ON	Reset alarm on	0x02	OFF	Reset alarm off
Value	Name	Description									
0x01	ON	Reset alarm on									
0x02	OFF	Reset alarm off									
0x16	ContModeFanSpeedRef	Fan efficiency setting after attaining target temperature. <table><tr><th>Value</th><th>Description</th></tr><tr><td>100</td><td>Fan ON</td></tr><tr><td>0</td><td>Fan OFF</td></tr></table>	Value	Description	100	Fan ON	0	Fan OFF			
Value	Description										
100	Fan ON										
0	Fan OFF										
0x17	GasBurnerLvlRef	Gas burning setting (valid for manual heating). <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Read Only</td></tr><tr><td>0x01</td><td>First step</td></tr><tr><td>0x02</td><td>Second step</td></tr></table>	Value	Description	0x00	Read Only	0x01	First step	0x02	Second step	
Value	Description										
0x00	Read Only										
0x01	First step										
0x02	Second step										

Input Registers DRV-R NEXT

DATA:

(READ ONLY)

Address	Parameter	Description															
0x05	T3  Data type: Signed Int16	Temperature measured by T3 sensor (air extraction temperature). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature [C]	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x06	T4  Data type: Signed Int16	Temperature measured by T4 sensor (room temperature). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature [C]	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x08	ExternalGasDetectTH1	External gas detector signal - first threshold. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Gas concentration below threshold</td></tr><tr><td>0x01</td><td>Gas concentration exceeds threshold</td></tr></table>	Value	Description	0x00	Gas concentration below threshold	0x01	Gas concentration exceeds threshold									
Value	Description																
0x00	Gas concentration below threshold																
0x01	Gas concentration exceeds threshold																
0x09	ExternalGasDetectTH2	External gas detector signal - second threshold. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Gas concentration below threshold</td></tr><tr><td>0x01</td><td>Gas concentration exceeds threshold</td></tr></table>	Value	Description	0x00	Gas concentration below threshold	0x01	Gas concentration exceeds threshold									
Value	Description																
0x00	Gas concentration below threshold																
0x01	Gas concentration exceeds threshold																
0x0A	ExternalGasDetectVal	Gas concentration value - 0-10V DC input (gas detector scaling information required).															
0x0F	AntifreezeStateWarehouse	Information about warehouse antifreeze state. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Normal work mode</td></tr><tr><td>0x02</td><td>Antifreeze enabled (user parameters overwritten)</td></tr></table>	Value	Description	0x01	Normal work mode	0x02	Antifreeze enabled (user parameters overwritten)									
Value	Description																
0x01	Normal work mode																
0x02	Antifreeze enabled (user parameters overwritten)																

0x10	FuseState	Fan roof fuse state. <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>	Value	Description	0x00	Read only	0x01	Fuse state - working	0x02	Fuse state - blown				
Value	Description													
0x00	Read only													
0x01	Fuse state - working													
0x02	Fuse state - blown													
0x11	GasAlarmState	Robur alarm (gas/flame). Read from clamp no.6 (connection terminal inside Robur heater). <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x01</td><td>ON</td><td>Alarm dedcted</td></tr><tr><td>0x02</td><td>OFF</td><td>No alarm</td></tr></table>	Value	Name	Description	0x01	ON	Alarm dedcted	0x02	OFF	No alarm			
Value	Name	Description												
0x01	ON	Alarm dedcted												
0x02	OFF	No alarm												
0x12	STBAlarmState	Air extraction temperature alarm (STB). <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>NC</td><td>PT1000 sensor not connected</td></tr><tr><td>0x01</td><td>ON</td><td>STB alarm detected (T3 >= T_STB_REF)</td></tr><tr><td>0x02</td><td>OFF</td><td>STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))</td></tr></table>	Value	Name	Description	0x00	NC	PT1000 sensor not connected	0x01	ON	STB alarm detected (T3 >= T_STB_REF)	0x02	OFF	STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))
Value	Name	Description												
0x00	NC	PT1000 sensor not connected												
0x01	ON	STB alarm detected (T3 >= T_STB_REF)												
0x02	OFF	STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))												
0x13	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												

DRV-R KM NEXT

Chapter includes BMS information about robur mixing chambers units from ROBUR family in single mode.

Quick Start in single mode:

Mode	Address (HR)	Name	Set value	Description
Ventilation (summer)	0x04	WorkMode	0x02	Device starts ventilating. Check temperature sensors, fuse otherwise.
Heating mode (winter)	0x04	WorkMode	0x03	Device starts heating, target temperature to attain 40°C.
	0x0E	Tref	400	Check temperature sensors, fuse, thermostat, STB alarm otherwise.

Single mode using T-BOX as a gate:

DRV-R KM 10 (physical address set on a PCB board)

Address shift for device no. 10 -> 0x03C0 (*Input Register 0x1A* from System settings - _Input Registers)

Mode	Shifted address	Set value
Ventilation (summer)	0x0344 (0x04+0x0340)	0x02

Holding Registers DRV-R KM NEXT

DATA:

Address	Parameter	Description																		
0x04	WorkMode	Work mode. <table> <tr> <th>Value</th><th>Work state</th><th>Description</th></tr> <tr> <td>0x00</td><td>WM_NS</td><td>Read only</td></tr> <tr> <td>0x01</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>0x02</td><td>WM_HEAT_AUTO</td><td>Automatic heating</td></tr> <tr> <td>0x03</td><td>WM_HEAT_MANUAL</td><td>Manual heating</td></tr> <tr> <td>0x04</td><td>WM_VENTILATION</td><td>Ventilation</td></tr> </table>	Value	Work state	Description	0x00	WM_NS	Read only	0x01	WM_OFF	Device off	0x02	WM_HEAT_AUTO	Automatic heating	0x03	WM_HEAT_MANUAL	Manual heating	0x04	WM_VENTILATION	Ventilation
Value	Work state	Description																		
0x00	WM_NS	Read only																		
0x01	WM_OFF	Device off																		
0x02	WM_HEAT_AUTO	Automatic heating																		
0x03	WM_HEAT_MANUAL	Manual heating																		
0x04	WM_VENTILATION	Ventilation																		
0x05	AntifreezeWareHouseOn	Enables/disables warehouse antifreeze mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x01</td><td>ON</td><td>Enable</td></tr> <tr> <td>0x02</td><td>OFF</td><td>Disable</td></tr> </table>	Value	Name	Description	0x01	ON	Enable	0x02	OFF	Disable									
Value	Name	Description																		
0x01	ON	Enable																		
0x02	OFF	Disable																		
0x06	AntifreezeWareHouseTempRef	Target temperature to enable warehouse antifreeze. <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>100</td><td>10,0</td><td>Default value</td></tr> <tr> <td>150</td><td>15,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	50	5,0	Minimal value	100	10,0	Default value	150	15,0	Maximal value						
Value	Temperature [C]	Description																		
50	5,0	Minimal value																		
100	10,0	Default value																		
150	15,0	Maximal value																		
0x07	DamperForceMode	Damper forcing mode. <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>DAMPER_FMD_NS</td><td>Read only</td></tr> <tr> <td>0x01</td><td>DAMPER_FMD_OFF</td><td>Forcing mode off</td></tr> <tr> <td>0x02</td><td>DAMPER_FMD_ON</td><td> Depends on air draw temperature: <pre> if (T1 < DamperForceTempRef) { DamperLevelRef = DamperForceRef; } </pre> </td></tr> </table>	Value	Name	Description	0x00	DAMPER_FMD_NS	Read only	0x01	DAMPER_FMD_OFF	Forcing mode off	0x02	DAMPER_FMD_ON	Depends on air draw temperature: <pre> if (T1 < DamperForceTempRef) { DamperLevelRef = DamperForceRef; } </pre>						
Value	Name	Description																		
0x00	DAMPER_FMD_NS	Read only																		
0x01	DAMPER_FMD_OFF	Forcing mode off																		
0x02	DAMPER_FMD_ON	Depends on air draw temperature: <pre> if (T1 < DamperForceTempRef) { DamperLevelRef = DamperForceRef; } </pre>																		

0x08	DamperForceTempRef	Target temperature to force damper (work mode DamperForceMode == DAMPER_FMD_ON). Combined with T1 (fresh air temperature - <i>Input Register 0x04</i>). <table><tr><th>Value</th><th>Temperature [C]</th><th>Description</th></tr><tr><td>-100</td><td>-10,0</td><td>Minimal value</td></tr><tr><td>0</td><td>0</td><td>Default value</td></tr><tr><td>150</td><td>15,0</td><td>Maximal value</td></tr></table>	Value	Temperature [C]	Description	-100	-10,0	Minimal value	0	0	Default value	150	15,0	Maximal value
Value	Temperature [C]	Description												
-100	-10,0	Minimal value												
0	0	Default 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>10</td><td>Maximal value</td></tr></table>	Value	Damper airflow regulation [%]	Description	0	0	Minimal value	100	10	Maximal value			
Value	Damper airflow regulation [%]	Description												
0	0	Minimal value												
100	10	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	DamperContLevelRef	Damper position when: WorkMode == WM_WINTER_CONT. <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													
0x0C	GasAlarmReset	Robur gas/flame alarm reset. <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>RO</td><td>Read only</td></tr><tr><td>0x01</td><td>ON</td><td>Sending reset signal (continuously)</td></tr><tr><td>0x02</td><td>OFF</td><td>Stop sending reset signal</td></tr></table> Note: default reset time should not exceed 5 seconds (change the register to 0x02 afterwards).	Value	Name	Description	0x00	RO	Read only	0x01	ON	Sending reset signal (continuously)	0x02	OFF	Stop sending reset signal
Value	Name	Description												
0x00	RO	Read only												
0x01	ON	Sending reset signal (continuously)												
0x02	OFF	Stop sending reset signal												
0x0D	FanRoofForceEffRef	Forcing fan roof ventilator speed (efficiency will be increased by FanRoofForceEffRef). <table><tr><th>Value[%]</th><th>Description</th></tr><tr><td>-100</td><td>Minimal value</td></tr><tr><td>0</td><td>Default value</td></tr><tr><td>100</td><td>Maximal value</td></tr></table>	Value[%]	Description	-100	Minimal value	0	Default value	100	Maximal value				
Value[%]	Description													
-100	Minimal value													
0	Default value													
100	Maximal value													

0x0E	Tref	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>250</td><td>25,0</td><td>Default 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	250	25,0	Default value	450	45,0	Maximal value
Value	Temperature [C]	Description												
50	5,0	Minimal value												
250	25,0	Default value												
450	45,0	Maximal value												
0x0F	TLeadVal  Data type: Signed Int16	Lead temperature sensor value. <table> <tr> <th>Value</th><th>Temperature [C]</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 [C]	Description	-600	-60,0	Minimal value	600	60,0	Maximal value			
Value	Temperature [C]	Description												
-600	-60,0	Minimal value												
600	60,0	Maximal value												
0x10	TleadSensorSelect	Lead 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 (room temperature)</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 (room temperature)
Value	Name	Description												
0x00	TSL_TNS	Read only												
0x01	TSL_TLEAD	Temperature value transmitted via Modbus												
0x03	TSL_T4	Temperature measured by T4 sensor (room temperature)												
0x11	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)												
0x12	STBTemperatureAlarmOn	Target temperature to invoke STB alarm state (<i>Input Register 0x12</i>). <i>Alarm occurs when set value is greater than T3 (Input Register 0x05)</i> Default value ensures error occurrence before real STB Robur alarm (which needs manual reset from heater control box). <table> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> <tr> <td>810</td><td>81,0</td><td>Minimal value</td></tr> <tr> <td>900</td><td>90,0</td><td>Default value</td></tr> <tr> <td>1200</td><td>120,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	810	81,0	Minimal value	900	90,0	Default value	1200	120,0	Maximal value
Value	Temperature [C]	Description												
810	81,0	Minimal value												
900	90,0	Default value												
1200	120,0	Maximal value												

0x13	FilterTimeCntRst	Filter time reset.		
		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)
0x14	STBTemperatureAlarmOff	Target temperature to reset STB alarm state (Holding Register 0x0C).		
		Reset is possible If set value is greater then T3 (Input Register 0x05).		
		Value	Temperature [C]	Description
		610	61,0	Minimal value
		800	80,0	Maximal value
Additional condition:				
STB_T_OFF < STB_T_REF				
0x15	STBAlarmReset	STB Alarm reset.		
		Value	Name	Description
		0x01	ON	Reset alarm on
		0x02	OFF	Reset alarm off
		If STB_T < STB_T_OFF register will be set to 0x02 (OFF)		
STB_T - T3 (Input Register 0x03)				
STB_T_OFF - STBTemperatureAlarmOff (Holding Register 0x14)				
0x16	ContModeFanSpeedRef	Fan efficiency setting after attaining target temperature.		
		Value	Description	
		100	Fan ON	
		0	Fan OFF	
0x17	GasBurnerLvIRef	Gas burning setting (valid for manual heating).		
		Value	Description	
		0x00	Read Only	
		0x01	First step	
		0x02	Second step	

Input Registers DRV-R KM NEXT

DATA:

(READ ONLY)

Address	Parameter	Description															
0x04	T1  Data type: Signed Int16	Temperature measured by T1 sensor (fresh air temperature). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature [C]	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x05	T3  Data type: Signed Int16	Temperature measured by T3 sensor (air extraction temperature). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature [C]	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x06	T4  Data type: Signed Int16	Temperature measured by T4 sensor (room temperature). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature [C]	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x07	T5  Data type: Signed Int16	Temperature measured by T5 sensor (not used in Robur devices). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature [C]	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															

0x08	ExternalGasDetectTH1	External gas detector signal - first threshold. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Gas concentration below threshold</td></tr><tr><td>0x01</td><td>Gas concentration exceeds threshold</td></tr></table>	Value	Description	0x00	Gas concentration below threshold	0x01	Gas concentration exceeds threshold
Value	Description							
0x00	Gas concentration below threshold							
0x01	Gas concentration exceeds threshold							
0x09	ExternalGasDetectTH2	External gas detector signal - second threshold. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Gas concentration below threshold</td></tr><tr><td>0x01</td><td>Gas concentration exceeds threshold</td></tr></table>	Value	Description	0x00	Gas concentration below threshold	0x01	Gas concentration exceeds threshold
Value	Description							
0x00	Gas concentration below threshold							
0x01	Gas concentration exceeds threshold							
0x0A	ExternalGasDetectVal	Gas concentration value - 0-10V DC input (gas detector scaling information required).						
0x0B	FanRoofTK	Thermocontact 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	FanRoofEff	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							
0x0D	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							
0x0E	DamperForceState	<i>Forcing state for damper in mode DamperForceMode == DAMPER_FMD_ON</i> <table><tr><th>Value</th><th>Condition</th></tr><tr><td>0x01</td><td>T4 >= DamperForceTempRef</td></tr><tr><td>0x02</td><td>T4 < DamperForceTempRef</td></tr></table>	Value	Condition	0x01	T4 >= DamperForceTempRef	0x02	T4 < DamperForceTempRef
Value	Condition							
0x01	T4 >= DamperForceTempRef							
0x02	T4 < DamperForceTempRef							

0x0F	AntifreezeStateWarehouse	Information about warehouse antifreeze state. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Normal work mode</td></tr><tr><td>0x02</td><td>Antifreeze enabled (user parameters overwritten)</td></tr></table>	Value	Description	0x01	Normal work mode	0x02	Antifreeze enabled (user parameters overwritten)						
Value	Description													
0x01	Normal work mode													
0x02	Antifreeze enabled (user parameters overwritten)													
0x10	FuseState	Fan roof fuse state. <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>	Value	Description	0x00	Read only	0x01	Fuse state - working	0x02	Fuse state - blown				
Value	Description													
0x00	Read only													
0x01	Fuse state - working													
0x02	Fuse state - blown													
0x11	GasAlarmState	Robur alarm (gas/flare). Read from clamp no.6 (connection terminal inside Robur heater). <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x01</td><td>ON</td><td>Alarm dedcted</td></tr><tr><td>0x02</td><td>OFF</td><td>No alarm</td></tr></table>	Value	Name	Description	0x01	ON	Alarm dedcted	0x02	OFF	No alarm			
Value	Name	Description												
0x01	ON	Alarm dedcted												
0x02	OFF	No alarm												
0x12	STBAlarmState	Air extraction temperature alarm (STB). <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>NC</td><td>PT1000 sensor not connected</td></tr><tr><td>0x01</td><td>ON</td><td>STB alarm detected (T3 >= T_STB_REF))</td></tr><tr><td>0x02</td><td>OFF</td><td>STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))</td></tr></table>	Value	Name	Description	0x00	NC	PT1000 sensor not connected	0x01	ON	STB alarm detected (T3 >= T_STB_REF))	0x02	OFF	STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))
Value	Name	Description												
0x00	NC	PT1000 sensor not connected												
0x01	ON	STB alarm detected (T3 >= T_STB_REF))												
0x02	OFF	STB alarm not detected (T3 <= (T_STB_REF - 1 [K]))												
0x13	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												

DRV-COOL

Chapter includes BMS information about cooling units from LEO COOL family in single mode.

Quick Start in single mode:

Mode	Address (HR)	Name	Set value	Description
Ventilation	0x04	WorkMode	0x06	Device starts ventilating (fan efficiency - med / 50%).
	0x07	FanEffRef	50	Check temperature sensors, fuse otherwise.
Manual cooling	0x04	WorkMode	0x05	Device starts cooling (fan efficiency - low / 20%, opening valve actuator)
	0x07	FanEffRef	20	target temperature to attain = 20°C.
	0x08	Tref	200	Check temperature sensors, fuse otherwise.

Single mode using T-BOX as a gate:

DRV-COOL 31 (physical address set on a PCB board)

Address shift for device no. 31 -> 0x0880(*Input Register 0x2F* from System settings - _Input Registers)

Mode	Shifted address	Set value
Manual cooling	0x0884 (0x04+0x0880)	0x05
	0x0887 (0x07+0x0880)	20
	0x0888 (0x08+0x0880)	200

Holding Registers DRV-COOL

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. <i>AC Fan - 3 steps.</i> <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td><i>0</i></td><td><i>FAN_SPEED0</i></td><td><i>Fan off</i></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	<i>0</i>	<i>FAN_SPEED0</i>	<i>Fan off</i>	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step									
Value	Gear	Description																								
<i>0</i>	<i>FAN_SPEED0</i>	<i>Fan off</i>																								
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	Reserved	Not used.															
0x0C	Reserved	Not used.															
0x0D	Reserved	Not used.															
0x0E	Reserved	Not used.															
0x0F	ModeAuto_FanEffRefMin	Minimal fan efficiency in AUTO mode. <i>AC Fan - 3 steps.</i> <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	ModeAuto_FanEffRefMax	Maximal fan efficiency in AUTO mode. <i>AC Fan - 3 steps.</i> <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															

0x11	ModeManual_FanEffRef	Fan efficiency after attaining target temperature in MANUAL mode. <i>AC Fan - 3 steps.</i> <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td><i>FAN_SPEED0</i></td><td><i>Fan off</i></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	<i>FAN_SPEED0</i>	<i>Fan off</i>	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	<i>FAN_SPEED0</i>	<i>Fan off</i>															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															

Input Registers DRV-COOL

Data:

(READ ONLY)

Address	Name	Description															
0x04	Reserved	Not used.															
0x05	T4	Temperature measured by T4 sensor (air before water heat exchanger). <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>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>	Value	Temperature [C]	Description	-500	-50,0	Minimal value	1000	100,0	Maximal value	0x7000	-	Short circuit	0x7FFF	-	PT1000 sensor not connected
Value	Temperature [C]	Description															
-500	-50,0	Minimal value															
1000	100,0	Maximal value															
0x7000	-	Short circuit															
0x7FFF	-	PT1000 sensor not connected															
0x06	FanEff	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	AntifreezeState	Warehouse antifreeze state. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x01</td><td>Normal work mode.</td></tr><tr><td>0x02</td><td>Antifreeze enabled (user parameters overwritten).</td></tr></table>	Value	Description	0x01	Normal work mode.	0x02	Antifreeze enabled (user parameters overwritten).									
Value	Description																
0x01	Normal work mode.																
0x02	Antifreeze enabled (user parameters overwritten).																
0x08	Reserved	Not used.															
0x09	Reserved	Not used.															

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: 0x100 Fuse state 3V fan: blown (0x2) Register value: 0x200	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																

DRV-CUBE

Chapter includes BMS information about rooftop units CUBE family in single mode.

Quick Start in single mode:

Address (HR)	Name	Set value	Description
0x04	WorkMode	0x02	Device starts ventilating (fan efficiency - 100%).
0x05	fan_eff	100	Recirculation mode- AUTO.
0x08	recirculation_mode	0x00	Work mode NW - AUTO.
0x0C	work_mode_NW	0x00	Target temperature settings - 22°C.
0x01	temperature_ref	220	Check temperature sensors, fuse otherwise.

Single mode using T-BOX as a gate:

DRV-CUBE 31 (Cube devices addressing is beeing done by service during first startup)

Address shift for device no. 31 -> 0x0880(*Input Register 0x2F* from System settings - _Input Registers)

Shifted address	Set value
0x0884 (0x04+0x0880)	0x02
0x0885 (0x05+0x0880)	100
0x0888 (0x08+0x0880)	0x00

Holding Registers DRV-CUBE

Data:

Address	Name	Description												
0x04	WorkMode	Work mode settings <table> <tr> <th>Value</th><th>Work status</th><th>Description</th></tr> <tr> <td>1</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>2</td><td>WM_ON</td><td>Device on</td></tr> <tr> <td>3</td><td>WM_THERM</td><td>Device Therm</td></tr> </table>	Value	Work status	Description	1	WM_OFF	Device off	2	WM_ON	Device on	3	WM_THERM	Device Therm
Value	Work status	Description												
1	WM_OFF	Device off												
2	WM_ON	Device on												
3	WM_THERM	Device Therm												
0x05	fan_eff	<i>Fan efficiency setting - variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Fan efficiency</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 efficiency	Description	0	0%	Minimal value	100	100%	Maximal value			
Value	Fan efficiency	Description												
0	0%	Minimal value												
100	100%	Maximal value												
0x06	fan_eff_CO2_I	Fan efficiency settings for CO2 sensor stage 1 - <i>variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Fan efficiency</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 efficiency	Description	0	0%	Minimal value	100	100%	Maximal value			
Value	Fan efficiency	Description												
0	0%	Minimal value												
100	100%	Maximal value												
0x07	fan_eff_CO2_II	Fan efficiency settings for CO2 sensor stage 2 - <i>variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Fan efficiency</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 efficiency	Description	0	0%	Minimal value	100	100%	Maximal value			
Value	Fan efficiency	Description												
0	0%	Minimal value												
100	100%	Maximal value												
0x08	recirculation_mode	Recirculation mode settings <table> <tr> <th>Value</th><th>Recirculation Mode</th><th>Description</th></tr> <tr> <td>0</td><td>RM_AUTO</td><td>Auto mode</td></tr> <tr> <td>1</td><td>RM_MANUAL</td><td>Manual mode</td></tr> </table>	Value	Recirculation Mode	Description	0	RM_AUTO	Auto mode	1	RM_MANUAL	Manual mode			
Value	Recirculation Mode	Description												
0	RM_AUTO	Auto mode												
1	RM_MANUAL	Manual mode												

0x09	recirculation_value	Recirculation value - <i>variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Recirculation value</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	Recirculation value	Description	0	0%	Minimal value	100	100%	Maximal value
Value	Recirculation value	Description									
0	0%	Minimal value									
100	100%	Maximal value									
0x0A	recirculation_value_CO2_I	Recirculation value for CO2 sensor stage 1 - <i>variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Recirculation value</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	Recirculation value	Description	0	0%	Minimal value	100	100%	Maximal value
Value	Recirculation value	Description									
0	0%	Minimal value									
100	100%	Maximal value									
0x0B	recirculation_value_CO2_II	Recirculation value for CO2 sensor stage 2 - <i>variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Recirculation value</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	Recirculation value	Description	0	0%	Minimal value	100	100%	Maximal value
Value	Recirculation value	Description									
0	0%	Minimal value									
100	100%	Maximal value									
0x0C	work_mode_NW	Work mode NW (swirl diffuser) <table> <tr> <th>Value</th><th>Work Mode</th><th>Description</th></tr> <tr> <td>0</td><td>WM_NW_AUTO</td><td>Auto mode</td></tr> <tr> <td>1</td><td>WM_NW_MANUAL</td><td>Manual mode</td></tr> </table>	Value	Work Mode	Description	0	WM_NW_AUTO	Auto mode	1	WM_NW_MANUAL	Manual mode
Value	Work Mode	Description									
0	WM_NW_AUTO	Auto mode									
1	WM_NW_MANUAL	Manual mode									
0x0D	swirl_diffuser_level	Swirl diffuser level <table> <tr> <th>Value</th><th>Swirl diff. level</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	Swirl diff. level	Description	0	0%	Minimal value	100	100%	Maximal value
Value	Swirl diff. level	Description									
0	0%	Minimal value									
100	100%	Maximal value									
0x0E	Htg_swirl_diffuser_level	Swirl diffuser level in heating mode <table> <tr> <th>Value</th><th>Swirl diff. level</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	Swirl diff. level	Description	0	0%	Minimal value	100	100%	Maximal value
Value	Swirl diff. level	Description									
0	0%	Minimal value									
100	100%	Maximal value									

0x0F	Clg_swirl_diffuser_level	Swirl diffuser level in cooling mode <table> <tr> <th>Value</th><th>Swirl diff. level</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	Swirl diff. level	Description	0	0%	Minimal value	100	100%	Maximal value			
Value	Swirl diff. level	Description												
0	0%	Minimal value												
100	100%	Maximal value												
0x10	temperature_ref	Target temperature settings <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												
0x11	temperature_room	Room 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												
0x12	room_sensor_selection	Room sensor selection <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x03</td><td>RS_LOCAL</td><td>Temperature measured by the Cube sensor (room temperature)</td></tr> <tr> <td>0x01</td><td>RS_TBOX</td><td>Temperature measured by the Tbox sensor</td></tr> </table>	Value	Name	Description	0x03	RS_LOCAL	Temperature measured by the Cube sensor (room temperature)	0x01	RS_TBOX	Temperature measured by the Tbox sensor			
Value	Name	Description												
0x03	RS_LOCAL	Temperature measured by the Cube sensor (room temperature)												
0x01	RS_TBOX	Temperature measured by the Tbox sensor												
0x13	CO2_status	Status CO2 <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>CO2_STAT_OK</td><td>CO2 status OK</td></tr> <tr> <td>0x01</td><td>CO2_STAT_L1</td><td>CO2 level 1</td></tr> <tr> <td>0x02</td><td>CO2_STAT_L2</td><td>CO2 level 2</td></tr> </table>	Value	Name	Description	0x00	CO2_STAT_OK	CO2 status OK	0x01	CO2_STAT_L1	CO2 level 1	0x02	CO2_STAT_L2	CO2 level 2
Value	Name	Description												
0x00	CO2_STAT_OK	CO2 status OK												
0x01	CO2_STAT_L1	CO2 level 1												
0x02	CO2_STAT_L2	CO2 level 2												
0x14	CO2_source	Source CO2 <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>CO2_SOURCE_LOCAL</td><td>CO2 local source - Cube sensor</td></tr> <tr> <td>0x01</td><td>CO2_SOURCE_TBOX</td><td>CO2 Tbox source</td></tr> </table>	Value	Name	Description	0x00	CO2_SOURCE_LOCAL	CO2 local source - Cube sensor	0x01	CO2_SOURCE_TBOX	CO2 Tbox source			
Value	Name	Description												
0x00	CO2_SOURCE_LOCAL	CO2 local source - Cube sensor												
0x01	CO2_SOURCE_TBOX	CO2 Tbox source												

Input Registers DRV-CUBE

Data:

(READ ONLY)

Address	Name	Description									
0x09	ambient_temp_value	Outside temperature <table> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> <tr> <td>-640</td><td>-64,0</td><td>Minimal value</td></tr> <tr> <td>640</td><td>64,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	-640	-64,0	Minimal value	640	64,0	Maximal value
Value	Temperature [C]	Description									
-640	-64,0	Minimal value									
640	64,0	Maximal value									
0x0A	supply_temp_value	Supply air temperature <table> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> <tr> <td>-640</td><td>-64,0</td><td>Minimal value</td></tr> <tr> <td>640</td><td>64,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	-640	-64,0	Minimal value	640	64,0	Maximal value
Value	Temperature [C]	Description									
-640	-64,0	Minimal value									
640	64,0	Maximal value									
0x0B	return_temp_value	Exhaust air temperature <table> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> <tr> <td>-640</td><td>-64,0</td><td>Minimal value</td></tr> <tr> <td>640</td><td>64,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	-640	-64,0	Minimal value	640	64,0	Maximal value
Value	Temperature [C]	Description									
-640	-64,0	Minimal value									
640	64,0	Maximal value									
0x0C	water_temp_value	Water exchanger temperature <table> <tr> <th>Value</th><th>Temperature [C]</th><th>Description</th></tr> <tr> <td>-640</td><td>-64,0</td><td>Minimal value</td></tr> <tr> <td>1500</td><td>150,0</td><td>Maximal value</td></tr> </table>	Value	Temperature [C]	Description	-640	-64,0	Minimal value	1500	150,0	Maximal value
Value	Temperature [C]	Description									
-640	-64,0	Minimal value									
1500	150,0	Maximal value									
0x0D	temperature_room	Room 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									

0x0E	recirculation_damper_level	recirculation damper level <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	swirl_diffuser_position	Swirl diffuser 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													
0x10	rotary_level	Rotary heat exchanger level <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													
0x11	fan_supply_flow	Fan supply flow <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													
0x12	gas_heating_value	Gas heating value <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													
0x13	CO2_status	Status CO2 <table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>CO2_STAT_OK</td><td>CO2 status OK</td></tr><tr><td>0x01</td><td>CO2_STAT_L1</td><td>CO2 level 1</td></tr><tr><td>0x02</td><td>CO2_STAT_L2</td><td>CO2 level 2</td></tr></table>	Value	Name	Description	0x00	CO2_STAT_OK	CO2 status OK	0x01	CO2_STAT_L1	CO2 level 1	0x02	CO2_STAT_L2	CO2 level 2
Value	Name	Description												
0x00	CO2_STAT_OK	CO2 status OK												
0x01	CO2_STAT_L1	CO2 level 1												
0x02	CO2_STAT_L2	CO2 level 2												

0x14	Rooftop_work_mode	Rooftop work mode <table> <tr> <th>Value</th><th>Work status</th><th>Description</th></tr> <tr> <td>1</td><td>RT_WM_VENT</td><td>Ventilation</td></tr> <tr> <td>2</td><td>RT_WM_HTG</td><td>Heating</td></tr> <tr> <td>3</td><td>RT_WM_HTGREC</td><td>Heating with recovery</td></tr> <tr> <td>4</td><td>RT_WM_CLG</td><td>Cooling</td></tr> <tr> <td>5</td><td>RT_WM_CLGREC</td><td>Cooling with recovery</td></tr> </table>	Value	Work status	Description	1	RT_WM_VENT	Ventilation	2	RT_WM_HTG	Heating	3	RT_WM_HTGREC	Heating with recovery	4	RT_WM_CLG	Cooling	5	RT_WM_CLGREC	Cooling with recovery																		
Value	Work status	Description																																				
1	RT_WM_VENT	Ventilation																																				
2	RT_WM_HTG	Heating																																				
3	RT_WM_HTGREC	Heating with recovery																																				
4	RT_WM_CLG	Cooling																																				
5	RT_WM_CLGREC	Cooling with recovery																																				
0x15	Rooftop_current_work_mode	Rooftop current work mode <table> <tr> <th>Value</th><th>Work status</th><th>Description</th></tr> <tr> <td>1</td><td>WM_STOP</td><td>Stop</td></tr> <tr> <td>2</td><td>WM_FREEZ</td><td>Freez</td></tr> <tr> <td>3</td><td>WM_OFF</td><td>Off</td></tr> <tr> <td>4</td><td>WM_STARTUP</td><td>StrtUp</td></tr> <tr> <td>5</td><td>WM_ECO</td><td>Eco</td></tr> <tr> <td>6</td><td>WM_CMFRT</td><td>Cmfrt</td></tr> <tr> <td>7</td><td>WM_CO2</td><td>CO2</td></tr> <tr> <td>7</td><td>WM_THMST</td><td>Thmst</td></tr> <tr> <td>9</td><td>WM_NGHTCLG</td><td>NghtClg</td></tr> <tr> <td>10</td><td>WM_OVRRUN</td><td>OvrRun</td></tr> <tr> <td>11</td><td>WM_DEFROST</td><td>DeFrost</td></tr> </table>	Value	Work status	Description	1	WM_STOP	Stop	2	WM_FREEZ	Freez	3	WM_OFF	Off	4	WM_STARTUP	StrtUp	5	WM_ECO	Eco	6	WM_CMFRT	Cmfrt	7	WM_CO2	CO2	7	WM_THMST	Thmst	9	WM_NGHTCLG	NghtClg	10	WM_OVRRUN	OvrRun	11	WM_DEFROST	DeFrost
Value	Work status	Description																																				
1	WM_STOP	Stop																																				
2	WM_FREEZ	Freez																																				
3	WM_OFF	Off																																				
4	WM_STARTUP	StrtUp																																				
5	WM_ECO	Eco																																				
6	WM_CMFRT	Cmfrt																																				
7	WM_CO2	CO2																																				
7	WM_THMST	Thmst																																				
9	WM_NGHTCLG	NghtClg																																				
10	WM_OVRRUN	OvrRun																																				
11	WM_DEFROST	DeFrost																																				
0x16	Alarm	Alarm <table> <tr> <th>Value</th><th>Work status</th><th>Description</th></tr> <tr> <td>0</td><td>AL_OK</td><td>OK</td></tr> <tr> <td>1</td><td>AL_MAINTENANCE</td><td>Maintenance</td></tr> <tr> <td>2</td><td>AL_WARNING</td><td>Warning</td></tr> <tr> <td>3</td><td>AL_FAULT</td><td>Fault</td></tr> <tr> <td>4</td><td>AL_DANGER</td><td>Danger</td></tr> </table>	Value	Work status	Description	0	AL_OK	OK	1	AL_MAINTENANCE	Maintenance	2	AL_WARNING	Warning	3	AL_FAULT	Fault	4	AL_DANGER	Danger																		
Value	Work status	Description																																				
0	AL_OK	OK																																				
1	AL_MAINTENANCE	Maintenance																																				
2	AL_WARNING	Warning																																				
3	AL_FAULT	Fault																																				
4	AL_DANGER	Danger																																				

0x17	room_temp_sensor_status	Room temp sensor status								
		<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>OK</td></tr><tr><td>1</td><td>no sensor</td></tr><tr><td>5</td><td>Short circuit</td></tr></table>	Value	Description	0	OK	1	no sensor	5	Short circuit
Value	Description									
0	OK									
1	no sensor									
5	Short circuit									

Device Groups

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						

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
0x00	Non	No DRV connected
0x01	GroupOxen	DRV - Oxen
0x02	GroupKm	DRV - KM
0x03	GroupElis	DRV - ELIS
0x04	GroupElisDuo	DRV - ELIS DUO
0x05	GroupLeoV	DRV - V
0x06	GroupLeoM	DRV - M
0x07	GroupLeoD	DRV - D
0x0C	GroupRobur	DRV-R
0x0D	GroupRoburKM	DRV-R-KM

0x0E	GroupLeoEL	DRV-EL
0x14	GroupLeoDEC	DRV-D EC
0x15	GroupRoburNext	DRV-ROBUR NEXT
0x16	GroupRoburNextKM	DRV-ROBUR NEXT KM
0x17	GroupLeoCool	DRV-COOL
0x18	GroupCube	DRV-CUBE
0x19	GroupSlim	DRV-SLIM

Group DRV-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). <i>AC Fan - 3 steps.</i> <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td>0</td><td>FAN_SPEED0</td><td><i>Fan off</i></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	<i>Fan off</i>	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	FAN_SPEED0	<i>Fan off</i>															
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). <i>Read only</i>															
0x07	ContactDoor	Forcing DC input <i>Read only</i>															
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. <i>AC Fan - 3 steps.</i> <table><tr><th>Value</th><th>Gear</th><th>Description</th></tr><tr><td>0</td><td><i>FAN_SPEED0</i></td><td><i>Fan off</i></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	<i>FAN_SPEED0</i>	<i>Fan off</i>	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	<i>FAN_SPEED0</i>	<i>Fan off</i>															
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 DRV-ELIS Duo

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). <i>AC Fan - 3 steps.</i> <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). <i>AC Fan - 3 steps.</i> <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. <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															
0x0A	CurtainFanIdleRef	Stand-by fan operation (curtain). <i>AC Fan - 3 steps.</i> <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															
0x0B	HeaterFanIdleRef	Stand-by fan operation (heater). <i>AC Fan - 3 steps.</i> <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															
0x0C	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																
0x0D	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 DRV-D

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 off</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>Work mode MANUAL</td></tr> </table>		Work state	Description	1	WM_OFF	Desertification off	2	WM_AUTO_DEPEND	Work mode AUTO	3	WM_AUTO_INDEPEND	Work mode AUTO	4	WM_MANUAL	Work mode MANUAL
	Work state	Description															
1	WM_OFF	Desertification off															
2	WM_AUTO_DEPEND	Work mode AUTO															
3	WM_AUTO_INDEPEND	Work mode AUTO															
4	WM_MANUAL	Work mode MANUAL															
0x05	FanEffRef	Fan efficiency setting. 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	DestTempRef	Target value for lunching desertification mode. <table> <tr> <th>Value</th><th>Temperature [K]</th><th>Description</th></tr> <tr> <td>0</td><td>0,0</td><td>Minimal value</td></tr> <tr> <td>50</td><td>5,0</td><td>Default value</td></tr> <tr> <td>100</td><td>10,0</td><td>Maximal value</td></tr> </table> Condition: $DestTempRef > Td - Tm$ Td – temperature value measured near desertificator (T3 sensor). Tm – temperature value measured in the room (TLeadVal or T4 - depends on the <i>TLeadSensorSelect</i> register value).	Value	Temperature [K]	Description	0	0,0	Minimal value	50	5,0	Default value	100	10,0	Maximal value			
Value	Temperature [K]	Description															
0	0,0	Minimal value															
50	5,0	Default value															
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															
450	45,0	Maximal value															

Group DRV-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: <i>if</i> ($T1 < \text{DamperForceTempRef}$) <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: <i>if</i> ($T1 < \text{DamperForceTempRef}$) <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: <i>if</i> ($T1 < \text{DamperForceTempRef}$) <pre>{ DamperLevelRef = DamperForceRef; }</pre>																		
0x06	DamperForceTempRef	Target temperature value to open damper in forcing mode. (work mode <i>DamperForceMode</i> == <i>DAMPER_FMD_ON</i>). <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	DamperForceLevelRef	Target temperature value to open damper. (work mode <i>DamperMode</i> == <i>DAMPER_FMD_ON</i>) condition: $\text{Temp} < \text{DamperForceTempRef}$ <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																		

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															
Value	Damper airflow regulation [%]	Description																								
0	0	Minimal value																								
100	100	Maximal value																								
0x09	FanEffRef	Fan settings: <i>EC Fan - speed variable in range 0 - 100%</i> <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> <i>AC Fan - 3 steps.</i> <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																								
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																								
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.																								
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	ThermostatModeFan EffRef	Fan settings for thermostatic mode. <i>EC Fan - speed variable in range 0 - 100%</i> <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> <i>AC Fan - 3 steps.</i> <table border="1"> <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
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																								

Group DRV-M

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
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	FanEffRef	Fan efficiency setting. <i>EC Fan - speed variable in range 0 - 100%</i> <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																								
0x06	DestModeForce	Destratification work mode. <table> <tr> <th>Value</th><th>Destratification 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	Destratification 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	Destratification work mode	Description																								
1	DEST_MD_OFF	Off																								
2	DEST_MD_AUTO_DEPEND	Work mode AUTO																								
3	DEST_MD_AUTO_INDEPEND	Work mode AUTO																								
0x07	DestTempRef	Target value for lunching desertification mode. <table> <tr> <th>Value</th><th>Temperature [K]</th><th>Description</th></tr> <tr> <td>0</td><td>0,0</td><td>Minimal value</td></tr> <tr> <td>50</td><td>5,0</td><td>Default value</td></tr> <tr> <td>100</td><td>10,0</td><td>Maximal value</td></tr> </table> <i>Condition:</i> $DestTempRef > Td - Tm$ Td – temperature value measured near desertificator (T3 sensor). Tm – temperature value measured in the room (TLeadVal or T4 - depends on the <i>TleadSensorSelect</i> register value).	Value	Temperature [K]	Description	0	0,0	Minimal value	50	5,0	Default value	100	10,0	Maximal value												
Value	Temperature [K]	Description																								
0	0,0	Minimal value																								
50	5,0	Default value																								
100	10,0	Maximal value																								

0x08	DestStratTimeDelay	Maximal start time delay of a heater after desertification condition is met. <i>Not used.</i>									
0x09	ModeAuto_FanEffRef Min	Minimal fan efficiency and fan efficiency after attaining target temperature in AUTO mode. <i>EC Fan - speed variable in range 0 - 100%</i> <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									
0x0A	ModeAuto_FanEffRef Max	Maximal fan efficiency in AUTO mode. <i>EC Fan - speed variable in range 0 - 100%</i> <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	ModeManual_FanEffRef	Fan efficiency after attaining target temperature in MANUAL mode. <i>EC Fan - speed variable in range 0 - 100%</i> <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									

Group DRV-V

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
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	FanEffRef	Fan efficiency setting. <i>AC Fan - 3 steps.</i> <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	DestModeForce	Destratification work mode. <table> <tr> <th>Value</th><th>Destratification 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	Destratification 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	Destratification work mode	Description																								
1	DEST_MD_OFF	Off																								
2	DEST_MD_AUTO_DEPEND	Work mode AUTO																								
3	DEST_MD_AUTO_INDEPEND	Work mode AUTO																								

0x07	DestTempRef	Target value for lunning desertification mode. <table> <tr> <th>Value</th><th>Temperature [K]</th><th>Description</th></tr> <tr> <td>0</td><td>0,0</td><td>Minimal value</td></tr> <tr> <td>50</td><td>5,0</td><td>Default value</td></tr> <tr> <td>100</td><td>10,0</td><td>Maximal value</td></tr> </table> <i>Condition:</i> $DestTempRef > Td - Tm$ Td – temperature value measured near desertificator (T3 sensor). Tm – temperature value measured in the room (TLeadVal or T4 - depends on the <i>TleadSensorSelect</i> register value).	Value	Temperature [K]	Description	0	0,0	Minimal value	50	5,0	Default value	100	10,0	Maximal value			
Value	Temperature [K]	Description															
0	0,0	Minimal value															
50	5,0	Default value															
100	10,0	Maximal value															
0x08	DestStratTimeDelay	Maximal start time delay of a heater after desertification condition is met. <i>Not used.</i>															
0x09	ModeAuto_FanEffRef Min	Minimal fan efficiency and fan efficiency after attaining target temperature in AUTO mode. <i>AC Fan - 3 steps.</i> <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	ModeManual_FanEffRef	Fan efficiency after attaining target temperature in MANUAL mode. <i>AC Fan - 3 steps.</i> <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															

Group DRV-OXEN

Modbus Holding Registers

Data:

Address	Name	Description															
0x04	FansEffRef_1	Fan efficiency setting in group I.															
		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															
Note: FansEffRef_1 = FansEffRef_2																	
0x05	FansEffRef_2	Fan efficiency setting in group II.															
		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															
0x06	OxenState	Work status.															
		<table><tr><th>Value</th><th>Work status</th><th>Description</th></tr><tr><td>0</td><td>OXEN_ST_OFF</td><td>Device off</td></tr><tr><td>1</td><td>OXEN_ST_ECO</td><td>Device on</td></tr><tr><td>2</td><td>OXEN_ST_CALENDAR</td><td>Device on</td></tr><tr><td>3</td><td>OXEN_ST_COMFORT</td><td>Device on</td></tr></table>	Value	Work status	Description	0	OXEN_ST_OFF	Device off	1	OXEN_ST_ECO	Device on	2	OXEN_ST_CALENDAR	Device on	3	OXEN_ST_COMFORT	Device on
		Value	Work status	Description													
		0	OXEN_ST_OFF	Device off													
		1	OXEN_ST_ECO	Device on													
		2	OXEN_ST_CALENDAR	Device on													
3	OXEN_ST_COMFORT	Device on															
0x07	OxenMode	Work mode (bypass) .															
		<table><tr><th>Value</th><th>Work status</th><th>Description</th></tr><tr><td>0</td><td>OXEN_MD_AUTO</td><td>Automatic adjustment (automatic adjustment)</td></tr><tr><td>1</td><td>OXEN_MD_WINTER</td><td>Winter adjustment (bypass off)</td></tr><tr><td>2</td><td>OXEN_MD_SUMMER</td><td>Summer adjustment (bypass on)</td></tr></table>	Value	Work status	Description	0	OXEN_MD_AUTO	Automatic adjustment (automatic adjustment)	1	OXEN_MD_WINTER	Winter adjustment (bypass off)	2	OXEN_MD_SUMMER	Summer adjustment (bypass on)			
		Value	Work status	Description													
		0	OXEN_MD_AUTO	Automatic adjustment (automatic adjustment)													
		1	OXEN_MD_WINTER	Winter adjustment (bypass off)													
2	OXEN_MD_SUMMER	Summer adjustment (bypass on)															
0x08	RegParam_K	Adjustment (regulator) gain (OXEN HOT).															
		<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Minimal value</td></tr><tr><td>1000</td><td>Maximal value</td></tr></table>	Value	Description	0	Minimal value	1000	Maximal value									
		Value	Description														
		0	Minimal value														
1000	Maximal value																

0x09	RegParam_T	Doubling time for adjustment (regulator) (OXEN HOT).	
		Value	Description
		0	Minimal value
		1000	Maximal value

Group DRV-EL

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>0x00</td><td>WM_TS</td><td>TS</td></tr> <tr> <td>0x01</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>0x02</td><td>WM_AUTO</td><td>Automatic mode</td></tr> <tr> <td>0x03</td><td>WM_HEAT</td><td>Manual heating</td></tr> <tr> <td>0x04</td><td>WM_VENT</td><td>Ventilation</td></tr> <tr> <td>0x05</td><td>WM_RAW</td><td>Raw. <i>Not used.</i></td></tr> </table>	Value	Work status	Description	0x00	WM_TS	TS	0x01	WM_OFF	Device off	0x02	WM_AUTO	Automatic mode	0x03	WM_HEAT	Manual heating	0x04	WM_VENT	Ventilation	0x05	WM_RAW	Raw. <i>Not used.</i>
Value	Work status	Description																					
0x00	WM_TS	TS																					
0x01	WM_OFF	Device off																					
0x02	WM_AUTO	Automatic mode																					
0x03	WM_HEAT	Manual heating																					
0x04	WM_VENT	Ventilation																					
0x05	WM_RAW	Raw. <i>Not used.</i>																					
0x05	FanSpeedRef	Fan efficiency setting. <i>AC Fan - 3 steps.</i> <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	DestModeForce	Destratification work mode. <table> <tr> <th>Value</th><th>Destratification 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	Destratification 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	Destratification work mode	Description																					
1	DEST_MD_OFF	Off																					
2	DEST_MD_AUTO_DEPEND	Work mode AUTO																					
3	DEST_MD_AUTO_INDEPEND	Work mode AUTO																					

0x07	DestTempRef	Target value for lunching desertification mode. <table><tr><th>Value</th><th>Temperature [K]</th><th>Description</th></tr><tr><td>0</td><td>0,0</td><td>Minimal value</td></tr><tr><td>50</td><td>5,0</td><td>Default value</td></tr><tr><td>100</td><td>10,0</td><td>Maximal value</td></tr></table> <i>Condition:</i> <i>DestTempRef > Td – Tm</i> <i>Td</i> – temperature value measured near desertificator (T3 sensor). <i>Tm</i> – temperature value measured in the room (TLeadVal or T4 - depends on the <i>TleadSensorSelect</i> register value).	Value	Temperature [K]	Description	0	0,0	Minimal value	50	5,0	Default value	100	10,0	Maximal value								
Value	Temperature [K]	Description																				
0	0,0	Minimal value																				
50	5,0	Default value																				
100	10,0	Maximal value																				
0x08	DestStratTimeDelay	Maximal start time delay of a heater after desertification condition is met. <i>Not used.</i>																				
0x09	Electric heater PTC power EL L	Electric heater power for LEO EL L in manual heating work mode. (SW3.5 = K1) <table><tr><th>Value</th><th>L2 State</th><th>L1 State</th><th>Description</th></tr><tr><td>0x01</td><td>OFF</td><td>OFF</td><td>Off</td></tr><tr><td>0x02</td><td>OFF</td><td>ON</td><td>1 heat setting</td></tr><tr><td>0x03</td><td>ON</td><td>OFF</td><td>2 heat setting</td></tr><tr><td>0x04</td><td>ON</td><td>ON</td><td>3 heat setting</td></tr></table>	Value	L2 State	L1 State	Description	0x01	OFF	OFF	Off	0x02	OFF	ON	1 heat setting	0x03	ON	OFF	2 heat setting	0x04	ON	ON	3 heat setting
Value	L2 State	L1 State	Description																			
0x01	OFF	OFF	Off																			
0x02	OFF	ON	1 heat setting																			
0x03	ON	OFF	2 heat setting																			
0x04	ON	ON	3 heat setting																			
0x0A	Electric heater PTC power EL S	Electric heater power for LEO EL S in manual heating work mode. (SW3.5 = K2) <table><tr><th>Value</th><th>L2 State</th><th>L1 State</th><th>Description</th></tr><tr><td>0x01</td><td>OFF</td><td>OFF</td><td>Off</td></tr><tr><td>0x02</td><td>OFF</td><td>ON</td><td>1 heat setting</td></tr><tr><td>0x03</td><td>ON</td><td>ON</td><td>2 heat setting</td></tr><tr><td>0x04</td><td>ON</td><td>ON</td><td>2 heat setting</td></tr></table>	Value	L2 State	L1 State	Description	0x01	OFF	OFF	Off	0x02	OFF	ON	1 heat setting	0x03	ON	ON	2 heat setting	0x04	ON	ON	2 heat setting
Value	L2 State	L1 State	Description																			
0x01	OFF	OFF	Off																			
0x02	OFF	ON	1 heat setting																			
0x03	ON	ON	2 heat setting																			
0x04	ON	ON	2 heat setting																			
0x0B	ModeAuto_FanEffRefMin	Minimal fan efficiency and fan efficiency after attaining target temperature in AUTO mode. <i>AC Fan - 3 steps.</i> <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																				

0x0C	ModeManual_FanEffRef	Fan efficiency after attaining target temperature in MANUAL mode. <i>AC Fan - 3 steps.</i> <table> <tr> <th>Value</th><th>Gear</th><th>Description</th></tr> <tr> <td><i>0</i></td><td><i>FAN_SPEED0</i></td><td><i>Fan off</i></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	<i>0</i>	<i>FAN_SPEED0</i>	<i>Fan off</i>	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
<i>0</i>	<i>FAN_SPEED0</i>	<i>Fan off</i>															
1..33	FAN_SPEED1	First step															
34..66	FAN_SPEED2	Second step															
67..100	FAN_SPEED3	Third step															

Group DRV-R NEXT

Holding Registers

Address	Parameter	Description																		
0x04	WorkMode	Work mode. <table><tr><th>Value</th><th>Work state</th><th>Description</th></tr><tr><td>0x00</td><td>NS</td><td>Read only</td></tr><tr><td>0x01</td><td>OFF</td><td>Device off</td></tr><tr><td>0x02</td><td>HEAT_AUTO</td><td>Automatic mode</td></tr><tr><td>0x03</td><td>HEAT_MANUAL</td><td>Manual heating</td></tr><tr><td>0x04</td><td>VENT</td><td>Ventilation mode</td></tr></table>	Value	Work state	Description	0x00	NS	Read only	0x01	OFF	Device off	0x02	HEAT_AUTO	Automatic mode	0x03	HEAT_MANUAL	Manual heating	0x04	VENT	Ventilation mode
Value	Work state	Description																		
0x00	NS	Read only																		
0x01	OFF	Device off																		
0x02	HEAT_AUTO	Automatic mode																		
0x03	HEAT_MANUAL	Manual heating																		
0x04	VENT	Ventilation mode																		
0x0C	STB Temperature Alarm On	Target temperature to invoke STB alarm state (<i>Inpur Register 0x12</i>). If > T3 alarm occurs. Default value ensures error occurrence before real STB Robur alarm (which needs manual reset from heater control box). <table><tr><th>Value</th><th>Temperature [K]</th><th>Description</th></tr><tr><td>810</td><td>81,0</td><td>Minimal value</td></tr><tr><td>900</td><td>90,0</td><td>Default value</td></tr><tr><td>1200</td><td>120,0</td><td>Maximal value</td></tr></table>	Value	Temperature [K]	Description	810	81,0	Minimal value	900	90,0	Default value	1200	120,0	Maximal value						
Value	Temperature [K]	Description																		
810	81,0	Minimal value																		
900	90,0	Default value																		
1200	120,0	Maximal value																		
0x0D	STB Temperature Alarm Off	Target temperature to reset STB alarm state (<i>Inpur Register 0x12</i>). If > T3 alarm occurs. <table><tr><th>Value</th><th>Temperature [K]</th><th>Description</th></tr><tr><td>610</td><td>61,0</td><td>Minimal value</td></tr><tr><td>800</td><td>80,0</td><td>Maximal value</td></tr></table> Additional condition: STB_T_OFF < STB_T_REF	Value	Temperature [K]	Description	610	61,0	Minimal value	800	80,0	Maximal value									
Value	Temperature [K]	Description																		
610	61,0	Minimal value																		
800	80,0	Maximal value																		
0x0E	Continuos Mode Fan Speed Ref	Fan speed after attaining target temperature <table><tr><th>Value</th><th>Description</th></tr><tr><td>100</td><td>Fan on</td></tr><tr><td>0</td><td>Fan off</td></tr></table>	Value	Description	100	Fan on	0	Fan off												
Value	Description																			
100	Fan on																			
0	Fan off																			

0x0F	Gas Burner Level Ref	Gas heater power in manual heating work mode. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Read only</td></tr><tr><td>0x01</td><td>Gas burner first step</td></tr><tr><td>0x02</td><td>Gas burner second step</td></tr></table>	Value	Description	0x00	Read only	0x01	Gas burner first step	0x02	Gas burner second step
Value	Description									
0x00	Read only									
0x01	Gas burner first step									
0x02	Gas burner second step									

Group DRV R KM NEXT

Holding Registers

Address	Parameter	Description																		
0x04	WorkMode	Work mode.																		
		<table><tr><th>Value</th><th>Work state</th><th>Description</th></tr><tr><td>0x00</td><td>NS</td><td>Read only</td></tr><tr><td>0x01</td><td>OFF</td><td>Device off</td></tr><tr><td>0x02</td><td>HEAT_AUTO</td><td>Automatic heating mode</td></tr><tr><td>0x03</td><td>HEAT_MANUAL</td><td>Manual heating mode</td></tr><tr><td>0x04</td><td>VENT</td><td>Ventilation mode</td></tr></table>	Value	Work state	Description	0x00	NS	Read only	0x01	OFF	Device off	0x02	HEAT_AUTO	Automatic heating mode	0x03	HEAT_MANUAL	Manual heating mode	0x04	VENT	Ventilation mode
		Value	Work state	Description																
		0x00	NS	Read only																
		0x01	OFF	Device off																
		0x02	HEAT_AUTO	Automatic heating mode																
		0x03	HEAT_MANUAL	Manual heating mode																
0x04	VENT	Ventilation mode																		
0x05	DamperForceMode	Damper forcing mode.																		
		<table><tr><th>Value</th><th>Name</th><th>Description</th></tr><tr><td>0x00</td><td>DAMPER_FMD_NS</td><td>Read only</td></tr><tr><td>0x01</td><td>DAMPER_FMD_OFF</td><td>Forcing mode off</td></tr><tr><td>0x02</td><td>DAMPER_FMD_ON</td><td>Depends on air draw temperature: <i>if</i> ($T1 < \text{DamperForceTempRef}$) { <i>DamperLevelRef</i> = <i>DamperForceRef</i>; }</td></tr></table>	Value	Name	Description	0x00	DAMPER_FMD_NS	Read only	0x01	DAMPER_FMD_OFF	Forcing mode off	0x02	DAMPER_FMD_ON	Depends on air draw temperature: <i>if</i> ($T1 < \text{DamperForceTempRef}$) { <i>DamperLevelRef</i> = <i>DamperForceRef</i> ; }						
		Value	Name	Description																
		0x00	DAMPER_FMD_NS	Read only																
		0x01	DAMPER_FMD_OFF	Forcing mode off																
0x02	DAMPER_FMD_ON	Depends on air draw temperature: <i>if</i> ($T1 < \text{DamperForceTempRef}$) { <i>DamperLevelRef</i> = <i>DamperForceRef</i> ; }																		
0x06	DamperForceTempRef	Target temperature to force damper (work mode <code>DamperForceMode == DAMPER_FMD_ON</code>). Combined with T1 (fresh air temperature - <i>Input Register 0x04</i>). <table><tr><th>Value</th><th>Temperature [K]</th><th>Description</th></tr><tr><td>-100</td><td>-10,0</td><td>Minimal value</td></tr><tr><td>0</td><td>0</td><td>Default value</td></tr><tr><td>150</td><td>15,0</td><td>Maximal value</td></tr></table>	Value	Temperature [K]	Description	-100	-10,0	Minimal value	0	0	Default value	150	15,0	Maximal value						
Value	Temperature [K]	Description																		
-100	-10,0	Minimal value																		
0	0	Default value																		
150	15,0	Maximal value																		
0x07	DamperForceLevelRef	Target temperature value to open damper. (work mode <code>DamperMode == DAMPER_FMD_ON</code>) condition: <code>Temp < DamperForceTempRef</code>																		
		<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																			

0x08	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													
0x09	DamperContLevelRef	Damper position when: WorkMode == WM_WINTER_CONT. <table><tr><th>Value[%]</th><th>Description</th></tr><tr><td>0</td><td>Minimal value</td></tr><tr><td>30</td><td>Default value</td></tr><tr><td>100</td><td>Maximal value</td></tr></table>	Value[%]	Description	0	Minimal value	30	Default value	100	Maximal value				
Value[%]	Description													
0	Minimal value													
30	Default value													
100	Maximal value													
0x0A	FanRoofForceEffRef	Forcing fan roof ventilator speed (efficiency will be increased by FanRoofForceEffRef). <table><tr><th>Value[%]</th><th>Description</th></tr><tr><td>-100</td><td>Minimal value</td></tr><tr><td>0</td><td>Default value</td></tr><tr><td>100</td><td>Maximal value</td></tr></table>	Value[%]	Description	-100	Minimal value	0	Default value	100	Maximal value				
Value[%]	Description													
-100	Minimal value													
0	Default value													
100	Maximal value													
0x0B	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)												
0x0C	STBTemperatureAlarmOn	Target temperature to invoke STB alarm state (Inpur Register 0x12). If > T3 alarm occurs. Default value ensures error occurrence before real STB Robur alarm (which needs manual reset from heater control box). <table><tr><th>Value</th><th>Temperature [K]</th><th>Description</th></tr><tr><td>810</td><td>81,0</td><td>Minimal value</td></tr><tr><td>900</td><td>90,0</td><td>Default value</td></tr><tr><td>1200</td><td>120,0</td><td>Maximal value</td></tr></table>	Value	Temperature [K]	Description	810	81,0	Minimal value	900	90,0	Default value	1200	120,0	Maximal value
Value	Temperature [K]	Description												
810	81,0	Minimal value												
900	90,0	Default value												
1200	120,0	Maximal value												

0x0D	STBTemperatureAlarm Off	Target temperature to reset STB alarm state (<i>Input Register 0x12</i>). If > T3 alarm occurs. <table><tr><th>Value</th><th>Temperature [K]</th><th>Description</th></tr><tr><td>610</td><td>61,0</td><td>Minimal value</td></tr><tr><td>800</td><td>80,0</td><td>Maximal value</td></tr></table> Additional condition: STB_T_OFF < STB_T_REF	Value	Temperature [K]	Description	610	61,0	Minimal value	800	80,0	Maximal value
Value	Temperature [K]	Description									
610	61,0	Minimal value									
800	80,0	Maximal value									
0x0E	Continuos Mode Fan Speed Ref	Fan speed after attaining target temperature. <table><tr><th>Value</th><th>Description</th></tr><tr><td>100</td><td>Fan on</td></tr><tr><td>0</td><td>Fan off</td></tr></table>	Value	Description	100	Fan on	0	Fan off			
Value	Description										
100	Fan on										
0	Fan off										
0x0F	Gas Burner Level Ref	Gas heater power in manual heating work mode. <table><tr><th>Value</th><th>Description</th></tr><tr><td>0x00</td><td>Read only</td></tr><tr><td>0x01</td><td>Gas burner first step</td></tr><tr><td>0x02</td><td>Gas burner second step</td></tr></table>	Value	Description	0x00	Read only	0x01	Gas burner first step	0x02	Gas burner second step	
Value	Description										
0x00	Read only										
0x01	Gas burner first step										
0x02	Gas burner second step										

Group DRV-COOL

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
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	FanEffRef	Fan efficiency setting. <i>AC Fan - 3 steps.</i> <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	Reserved.	Not used.																								
0x07	Reserved.	Not used.																								
0x08	Reserved.	Not used.																								
0x09	ModeAuto_FanEffRefMin	Minimal fan efficiency and fan efficiency after attaining target temperature in AUTO mode. <i>AC Fan - 3 steps.</i> <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	ModeManual_FanEffRef	Fan efficiency after attaining target temperature in MANUAL mode. <i>AC Fan - 3 steps.</i> <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															

Group DRV-SLIM

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). <i>AC Fan - 3 steps.</i> <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. <i>AC Fan - 3 steps.</i> <table><tr><th>Value</th><th>Gear</th><th>Description</th></tr><tr><td>0</td><td><i>FAN_SPEED0</i></td><td><i>Fan off</i></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	<i>FAN_SPEED0</i>	<i>Fan off</i>	1..33	FAN_SPEED1	First step	34..66	FAN_SPEED2	Second step	67..100	FAN_SPEED3	Third step
Value	Gear	Description															
0	<i>FAN_SPEED0</i>	<i>Fan off</i>															
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 DRV-CUBE

Modbus Holding Registers

Data:

Address	Name	Description												
0x04	work_mode	Work mode settings <table> <tr> <th>Value</th><th>Work status</th><th>Description</th></tr> <tr> <td>1</td><td>WM_OFF</td><td>Device off</td></tr> <tr> <td>2</td><td>WM_ON</td><td>Device on</td></tr> <tr> <td>3</td><td>WM_THERM</td><td>Device Therm</td></tr> </table>	Value	Work status	Description	1	WM_OFF	Device off	2	WM_ON	Device on	3	WM_THERM	Device Therm
Value	Work status	Description												
1	WM_OFF	Device off												
2	WM_ON	Device on												
3	WM_THERM	Device Therm												
0x05	fan_eff	Fan efficiency setting - <i>variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Fan efficiency</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 efficiency	Description	0	0%	Minimal value	100	100%	Maximal value			
Value	Fan efficiency	Description												
0	0%	Minimal value												
100	100%	Maximal value												
0x06	fan_eff_CO2_I	Fan efficiency settings for CO2 sensor stage 1 - <i>variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Fan efficiency</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 efficiency	Description	0	0%	Minimal value	100	100%	Maximal value			
Value	Fan efficiency	Description												
0	0%	Minimal value												
100	100%	Maximal value												
0x07	fan_eff_CO2_II	Fan efficiency settings for CO2 sensor stage 2 - <i>variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Fan efficiency</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 efficiency	Description	0	0%	Minimal value	100	100%	Maximal value			
Value	Fan efficiency	Description												
0	0%	Minimal value												
100	100%	Maximal value												
0x08	recirculation_mode	Recirculation mode settings <table> <tr> <th>Value</th><th>Recirculation Mode</th><th>Description</th></tr> <tr> <td>0</td><td>RM_AUTO</td><td>Auto mode</td></tr> <tr> <td>1</td><td>RM_MANUAL</td><td>Manual mode</td></tr> </table>	Value	Recirculation Mode	Description	0	RM_AUTO	Auto mode	1	RM_MANUAL	Manual mode			
Value	Recirculation Mode	Description												
0	RM_AUTO	Auto mode												
1	RM_MANUAL	Manual mode												

0x09	recirculation_value	Recirculation value - <i>variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Recirculation value</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	Recirculation value	Description	0	0%	Minimal value	100	100%	Maximal value
Value	Recirculation value	Description									
0	0%	Minimal value									
100	100%	Maximal value									
0x0A	recirculation_value_CO2_I	Recirculation value for CO2 sensor stage 1 - <i>variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Recirculation value</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	Recirculation value	Description	0	0%	Minimal value	100	100%	Maximal value
Value	Recirculation value	Description									
0	0%	Minimal value									
100	100%	Maximal value									
0x0B	recirculation_value_CO2_II	Recirculation value for CO2 sensor stage 2 - <i>variable in range 0 - 100%</i> <table> <tr> <th>Value</th><th>Recirculation value</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	Recirculation value	Description	0	0%	Minimal value	100	100%	Maximal value
Value	Recirculation value	Description									
0	0%	Minimal value									
100	100%	Maximal value									
0x0C	work_mode_NW	Work mode NW (swirl diffuser) <table> <tr> <th>Value</th><th>Work Mode</th><th>Description</th></tr> <tr> <td>0</td><td>WM_NW_AUTO</td><td>Auto mode</td></tr> <tr> <td>1</td><td>WM_NW_MANUAL</td><td>Manual mode</td></tr> </table>	Value	Work Mode	Description	0	WM_NW_AUTO	Auto mode	1	WM_NW_MANUAL	Manual mode
Value	Work Mode	Description									
0	WM_NW_AUTO	Auto mode									
1	WM_NW_MANUAL	Manual mode									
0x0D	swirl_diffuser_level	Swirl diffuser level <table> <tr> <th>Value</th><th>Swirl diff. level</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	Swirl diff. level	Description	0	0%	Minimal value	100	100%	Maximal value
Value	Swirl diff. level	Description									
0	0%	Minimal value									
100	100%	Maximal value									
0x0E	Htg_swirl_diffuser_level	Swirl diffuser level in heating mode <table> <tr> <th>Value</th><th>Swirl diff. level</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	Swirl diff. level	Description	0	0%	Minimal value	100	100%	Maximal value
Value	Swirl diff. level	Description									
0	0%	Minimal value									
100	100%	Maximal value									

0x0F	Clg_swirl_diffuser_level	Swirl diffuser level in cooling mode <table> <tr> <th>Value</th><th>Swirl diff. level</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	Swirl diff. level	Description	0	0%	Minimal value	100	100%	Maximal value			
Value	Swirl diff. level	Description												
0	0%	Minimal value												
100	100%	Maximal value												
0x10	temperature_ref	Target temperature settings <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												
0x11	temperature_room	Room 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												
0x12	room_sensor_selection	Room sensor selection <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x03</td><td>RS_LOCAL</td><td>Temperature measured by the Cube sensor (room temperature)</td></tr> <tr> <td>0x01</td><td>RS_TBOX</td><td>Temperature measured by the Tbox sensor</td></tr> </table>	Value	Name	Description	0x03	RS_LOCAL	Temperature measured by the Cube sensor (room temperature)	0x01	RS_TBOX	Temperature measured by the Tbox sensor			
Value	Name	Description												
0x03	RS_LOCAL	Temperature measured by the Cube sensor (room temperature)												
0x01	RS_TBOX	Temperature measured by the Tbox sensor												
0x13	CO2_status	Status CO2 <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>CO2_STAT_OK</td><td>CO2 status OK</td></tr> <tr> <td>0x01</td><td>CO2_STAT_L1</td><td>CO2 level 1</td></tr> <tr> <td>0x02</td><td>CO2_STAT_L2</td><td>CO2 level 2</td></tr> </table>	Value	Name	Description	0x00	CO2_STAT_OK	CO2 status OK	0x01	CO2_STAT_L1	CO2 level 1	0x02	CO2_STAT_L2	CO2 level 2
Value	Name	Description												
0x00	CO2_STAT_OK	CO2 status OK												
0x01	CO2_STAT_L1	CO2 level 1												
0x02	CO2_STAT_L2	CO2 level 2												
0x14	CO2_source	Source CO2 <table> <tr> <th>Value</th><th>Name</th><th>Description</th></tr> <tr> <td>0x00</td><td>CO2_SOURCE_LOCAL</td><td>CO2 local source - Cube sensor</td></tr> <tr> <td>0x01</td><td>CO2_SOURCE_TBOX</td><td>CO2 Tbox source</td></tr> </table>	Value	Name	Description	0x00	CO2_SOURCE_LOCAL	CO2 local source - Cube sensor	0x01	CO2_SOURCE_TBOX	CO2 Tbox source			
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