30030066
NILAN - CTS700

Modbus User Guide

Author	Document revision	Status	Last updated	Pages
Artem Kostin	3	Final	20180420	20

Table of Contents

1. Revision history

Date	Author	Comment	Revision	Status
20180228	AKO	Document created	1	Draft
20180301	AKO	Added information about console application	2	Draft
20180420	AKO	Added registers: 20004, 20223	3	Final

2. References

- Modbus protocol specification:
  http://modbus.org/docs/Modbus_Application_Protocol_V1_1b3.pdf

- Modbus over TCP/IP:
  http://modbus.org/docs/Modbus_Messaging_Implementation_Guide_V1_0b.pdf

3. Abbreviations and terms

Abbreviation/term	Description
PLC	Programmable Logic Controller

4. Introduction

This document, the Modbus Model Guide, describe Modbus register model of NILAN CTS-700.

5. General Provisions

In this chapter described general provisions of using Modbus protocol on NILAN CTS-700.

Columns description:

1. Register Number – Contain address of register in Modbus. (See Using PLC).

2. Slave ID – Contain slave address of target board (See System Device Addressing).

3. Function – Short description of register value.

4. R – Read permission ("+" - Reading is allow, "-" - Reading is deny).

5. W – Write permission ("+" - Writting is allow, "-" - Writting is deny).

6. Reset – If marked with "+" value will be applied after restart of the system.

7. Value – Contain all possible value of the register. Some of the register, which has Function "Apply value" must be write with specific key for applying of the parameter.

5.1. Addressing

Modbus client connect to a system using Modbus RTU over TCP/IP. It means that for connect to the system client must establish connection to board's IP address to port **502**
Board's IP address by default set to **192.168.5.107** and can be changed by Modbus (See **Fejl! Henvisningskilde ikke fundet.**) or Touch Display.

5.2. Using PLC

In case using of PLC after connect need read register *20003*. If read data is equal to "**-1**" – *all of the registers number (column 1) must be incremented for 1.* Otherwise – register addressing changes no require.

5.3. System Device Addressing

The CTS-700 can include up-to 3 boards. Due of this to access to them must be used following slave ID:

System	Boards amount	Address
Compact P	1	Compact P - 1
Compact P + GEO	2	Compact P – 1 GEO – 4
Compact P + AIR9	3	Compact P – 1 AIR9 – 4

5.4. Console application

For testing a Modbus register model were implemented console application. It is called Modbus Master Console. The Modbus Master Console provide possibility to read and write data trough Modbus. It is support Modbus functions: 3, 4, 6, 16. For connection should be used Board IP address and Slave board ID according to System Device Addressing. Register number must be used with any changes of address.

6. Modbus Registers Description

6.1. Control registers

Register Number	Slave ID	Function	R	W	Reset	Values
20000	1	Reset target board (reset key: 57005)	-	+		57005 – must be write to restart system
20002	1	PLC clarification of addressing	+	-		Constant value: -1 or 65535
20003	1	PLC clarification of addressing	+	-		Constant value: 0
20004	1	Request saving data flash on both system (reset key: 48815)	-	+		48815 – must be write for storing value in the system

6.2. Ventilation

6.2.1. Filter settings

Register Number	Slave ID	Function	R	W	Reset	Values
20100	1	Set ventilation on pause	+	+		0 - Off; 1 - On

6.2.2. Outdoor air filter

Register Number	Slave ID	Function	R	W	Reset	Values
20102	1	Outdoor air filter Days between filter change	+	+		30 <-> 180
20103	1	Outdoor air filter Days to next filter change	+	-		30 <-> 180

6.2.3. Extract air filter

Register Number	Slave ID	Function	R	W	Reset	Values
20106	1	Extract air filter Days between filter change	+	+		30 <-> 180
20107	1	Extract air filter Days to next filter change	+	-		30 <-> 180

6.2.4. Operation mode

Register Number	Slave ID	Function	R	W	Reset	Values
20120	1	Operating mode	+	+		0 - Auto; 1 - Cooling; 2 - Heating

6.2.5. Fan speed settings

Register Number	Slave ID	Function	R	W	Reset	Values
20140	1	Fan speed level 1 - supply air	+	-		20 <-> 100
20141	1	Fan speed level 1 - extract air	+	-		20 <-> 100
20142	1	Fan speed level 2 - supply air	+	-		20 <-> 100
20143	1	Fan speed level 2 - extract air	+	-		20 <-> 100
20144	1	Fan speed level 3 - supply air	+	-		20 <-> 100
20145	1	Fan speed level 3 - extract air	+	-		20 <-> 100
20146	1	Fan speed level 4 - supply air	+	-		20 <-> 100
20147	1	Fan speed level 4 - extract air	+	-		20 <-> 100

6.2.6. Humidity control

Register Number	Slave ID	Function	R	W	Reset	Values
20160	1	Low humidity level	+	+		15 <-> 45
20161	1	Fan speed at low humidity	+	+		101 - Level 1; 102 - Level 2; 103 - Level 3
20162	1	Fan speed at high humidity	+	+		102 - Level 2; 103 - Level 3; 104 - Level 4
20163	1	Timeout high humidity	+	+		0 <-> 180
20164	1	Average humidity	+	-		0 <-> 100

6.2.7. Active cooling settings

Register Number	Slave ID	Function	R	W	Reset	Values
20180	1	Allow active cooling	+	+		On/Off
20181	1	High fan speed when cooling	+	+		On/Off
20182	1	Fan speed when cooling	+	+		103 - Level 3; 104 - Level 4
20183	1	Minimum cooling supply temp (C)	+	+		5 <-> 30
20184	1	Cooling priority to hot water	+	+		On/Off

20010008E – Standard document template

**Nilan A/S ● Nilanvej 2 ● 8722 Hedensted ● Danmark Tlf +45 76752500 ● Fax +45 76752525 ●
nilan@nilan.dk ● www.nilan.dk**

6.2.8. Ventilation at low outdoor temperature

Register Number	Slave ID	Function	R	W	Reset	Values
20200	1	Low fan speed at low outdoor temperature	+	+		0 - Off; 1 - On
20201	1	Below outdoor temperature	+	+		-20 <-> 10
20202	1	Fan speed at low outdoor temperature	+	+		101 - Level 1; 102 - Level 2;

6.2.9. CO2 control

Register Number	Slave ID	Function	R	W	Reset	Values
20220	1	CO2 level, fan speed 2	+	+		400 <-> 800
20221	1	CO2 level, fan speed 3	+	+		800 <-> 1200
20222	1	CO2 level, fan speed 4	+	+		1200 <-> 1600

6.2.10. After heating element

Register Number	Slave ID	Function	R	W	Reset	Values
20240	1	After heating element type	+	-	-	0 - None; 1 - Water ; 2 - Electrical
20241	1	Min. supply air temperature (C)	+	+		5 <-> 30
20242	1	Max. Supply air temperature (C)	+	+		5 <-> 50

6.2.11. Temperature regulation

Register Number	Slave ID	Function	R	W	Reset	Values
20260	1	Wanted room temperature (C)	+	+		5 <-> 40
20261	1	Summer/winter mode switch (C)	+	+		5 <-> 30
20262	1	Offset Summer/winter switch (C)	+	+		0 <-> 10
20263	1	Master sensor indoor temperature	+	-		0 - T3; 1 - Text
20264	1	Temperature regulation deadband	+	+		0 <-> 10
20266	1	Bypass damper offset (C)	+	+		0 <-> 10
20267	1	Regulation deadband external room heating	+	+		0 <-> 10

6.2.12. Temperature overview

Register Number	Slave ID	Function	R	W	Reset	Values
20280	1	Text room temperature ©	+	-		-40 <-> 160
20281	1	Text room temperature State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20282	1	T1 outdoor air temperature (C)	+	-		-40 <-> 160
20283	1	T1 outdoor air temperature State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing

20284	1	T2 supply air temperature (C)	+	-		-40 <-> 160
20285	1	T2 supply air temperature State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20286	1	T3 extract air, room temperature (C)	+	-		-40 <-> 160
20287	1	T3 extract air, room temperature State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20288	1	T4 discharge air, after heat exchanger (C)	+	-		-40 <-> 160
20289	1	T4 discharge air, after heat exchanger State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20290	1	T5 discharge air, after heat pump (C)	+	-		-40 <-> 160
20291	1	T5 discharge air, after heat pump State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20292	1	T6 evaporator temperature (C)	+	-		-40 <-> 160
20293	1	T6 evaporator temperature State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20294	1	T7 supply air temperature after-heater (C)	+	-		-40 <-> 160
20295	1	T7 supply air temperature after-heater State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20296	1	T8 outdoor air before pre-heater	+	-		-40 <-> 160
20297	1	T8 outdoor air before pre-heater State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20298	1	T9 temperature in water after heater	+	-		-40 <-> 160
20299	1	T9 temperature in water after heater State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing

6.2.13. Frost protection or de-icing

Register Number	Slave ID	Function	R	W	Reset	Values
20300	1	Frost protection	+	-		0 - None; 1 - External/Polar; 2 - EHD; 3 - BAH

6.2.13.1.   External setting:

Register Number	Slave ID	Function	R	W	Reset	Values
20320	1	T8 temperature sensor	+	+		0 - Off; 1 - On

6.2.13.2.   Polar setting:

Register Number	Slave ID	Function	R	W	Reset	Values
20340	1	Start frost protection below (C)	+	+		1.0 <-> 5.0
20341	1	Set point for pre-heater T4 (C)	+	+		1.0 <-> 4.0

6.2.13.3.   EHD setting:

Register Number	Slave ID	Function	R	W	Reset	Values
20360	1	EHD offset (C)	+	+		0 <-> 10
20361	1	EHD hold time (min)	+	+		0 <-> 24
20362	1	EHD stabilisation (min)	+	+		1 <-> 10

6.2.13.4.   BAH setting:

Register Number	Slave ID	Function	R	W	Reset	Values
20380	1	BAH under temperature (C)	+	+		-10 <-> 10
20381	1	BAH above temperature (C)	+	+		15 <-> 35
20382	1	BAH regulation deadband (C)	+	+		0 <-> 10

6.2.14. De-icing heat exchanger

Register Number	Slave ID	Function	R	W	Reset	Values
20400	1	Outdoor temperature for de-icing (C)	+	+		-10 <-> 1
20401	1	Maximum time de-icing (min)	+	+		10 <-> 90
20402	1	Minimum time between de-icing (min)	+	+		15 <-> 180
20403	1	Extract fan speed during de-icing	+	-		1 / 2 / 3 / 4
20404	1	Supply fan speed during de-icing	+	+		0 - Normal; 1 - Extract

6.2.15. De-icing heat pump

Register Number	Slave ID	Function	R	W	Reset	Values
20420	1	Evaporator defrost T6	+	+		0 - Off; 1 - On
20421	1	Maximum time de-icing (min)	+	+		1 <-> 30
20422	1	Minimum time between de-icing (min)	+	+		1 <-> 180
20423	1	Start de-icing (C)	+	+		-15 <-> 0
20424	1	Stop de-icing (C)	+	+		0 <-> 15

6.3. Hot water production

6.3.1.   DHW domestic hot water

6.3.1.1.   Standby functions

Register Number	Slave ID	Function	R	W	Reset	Values
20440	1	Pause hot water production	+	+		0 - Off; 1 - On
20441	1	Pause duration days	+	+		1 <-> 180

6.3.1.2.   Hot water settings

Register Number	Slave ID	Function	R	W	Reset	Values
20460	1	Hot water set point (C)	+	+		10 <-> 60
20461	1	Frost protection hot water tank (C)	+	+		0 - Off; 1 - On
20462	1	El-supplement activated below (C)	+	+		30 <-> 65
20463	1	Scalding protection (C)	+	+		40 <-> 80
20464	1	Electrical supplement heater	+	+		0 - Off; 1 - On

20010008E – Standard document template

Nilan A/S ● Nilanvej 2 ● 8722 Hedensted ● Danmark Tlf +45 76752500 ● Fax +45 76752525 ●
nilan@nilan.dk ● www.nilan.dk

6.3.1.3. Antilegionella settings

Register Number	Slave ID	Function	R	W	Reset	Values
20480	1	Start anti legionella manuel	+	+		0 - Off; 1 - On
20481	1	Automatic anti legionella	+	+		0 - Off; 1 - Weekly; 2 - Monthly
20482	1	Day for antilegionella	+	+		1 <-> 28
20483	1	Time for antilegionella	+	+		0 <-> 23

6.3.1.4. Compressor settings hot water production

Register Number	Slave ID	Function	R	W	Reset	Values
20500	1	Minimum time between start-up	+	-		0 <-> 10
20501	1	Time between stop and start-up	+	-		0 <-> 10

6.3.1.5. Temperature overview

Register Number	Slave ID	Function	R	W	Reset	Values
20520	1	T11 top temperature in DHW water tank (C)	+	-		-40 <-> 160
20521	1	T11 top State in DHW water tank	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20522	1	T12 bottom temperature in DHW water tank (C)	+	-		-40 <-> 160
20523	1	T12 top State in DHW water tank	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing

6.3.2. SHW pre-heating domestic hot water

6.3.2.1. Hot water settings

Register Number	Slave ID	Function	R	W	Reset	Values
20540	4	Wanted water temperature (C)	+	+		10 <-> 45
20541	4	Frostprotection SHW water tank	+	+		0 - Off; 1 - On
20542	4	Minimum water temperature (C)	+	+		10 <-> 50
20543	4	Scalding protection T21 (C)	+	+		40 <-> 90
20544	4	Electrical supplement heater	+	+		0 - Off; 1 - On
20545	4	Maximum heat pump temperature T17 (C)	+	+		40 <-> 55

6.3.2.2. Temperature overview

Register Number	Slave ID	Function	R	W	Reset	Values
20580	4	T21 top temperature in DHW water tank (C)	+	-		-40 <-> 160

20010008E – Standard document template

**Nilan A/S ● Nilanvej 2 ● 8722 Hedensted ● Danmark Tlf +45 76752500 ● Fax +45 76752525 ●
nilan@nilan.dk ● www.nilan.dk**

20581	4	T21 top State in DHW water tank	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20582	4	T22 bottom temperature in DHW water tank (C)	+	-		-40 <-> 160
20583	4	T22 top State in DHW water tank	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing

6.3.3.   DHW supplement domestic hot water

Register Number	Slave ID	Function	R	W	Reset	Values
20584	4	Setpoint supplement heating (C)	+	+		10 <-> 45
20585	4	Maximum heat pump temperature T17 (C)	+	+		40 <-> 55

6.4. Central heating

6.4.1.   Standby functions

Register Number	Slave ID	Function	R	W	Reset	Values
20600	4	Pause central heating	+	+		0 - Off; 1 - On
20601	4	Pause duration (days)	+	+		1 <-> 180
20602	4	Power central heating	+	+		0 - Off; 1 - On

6.4.2.   Cooling and heating at the same time

Register Number	Slave ID	Function	R	W	Reset	Values
20620	4	Cooling and heating at the same time	+	+		0 - Off; 1 - On

6.4.3.   Temperature regulation GEO

Register Number	Slave ID	Function	R	W	Reset	Values
20640	4	Setpoint supply flow temperature (C)	+	+		5 <-> 50
20641	4	Temperature regulation deadband (C)	+	+		0 <-> 5
20642	4	Maximum supply flow (C)	+	+		20 <-> 55
20643	4	Electrical supplement heater	+	+		0 - Off; 1 - On
20644	4	Delay electrical supplement heater (min)	+	+		0 <-> 60
20645	4	T13 brine before evaporator (C)	+	-		-40 <-> 160
20646	4	T13 brine before evaporator State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20647	4	T14 brine after evaporator (C)	+	-		-40 <-> 160
20648	4	T14 brine after evaporator State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20649	4	T16 before condenser (C)	+	-		-40 <-> 160
20650	4	T16 before condenser State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing

20651	4	T17 after condenser (C)	+	-		-40 <-> 160
20652	4	T17 after condenser State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20653	4	T18 supply flow (C)	+	-		-40 <-> 160
20654	4	T18 supply flow State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20655	4	T20 outdoor temperature (C)	+	-		-40 <-> 160
20656	4	T20 outdoor temperature State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing

6.4.4.   Temperature regulation AIR

Register Number	Slave ID	Function	R	W	Reset	Values
20680	4	Setpoint supply flow temperature (C)	+	+		5 <-> 50
20681	4	Temperature regulation deadband (C)	+	+		0 <-> 5
20682	4	T16 before condenser (C)				Not working
20683	4	T16 before condenser State				Not working
20684	4	T17 supply flow outdoor unit (C)	+	-		-40 <-> 160
20685	4	T17 supply flow outdoor unit State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20686	4	T18 supply flow buffer tank (C)	+	-		-40 <-> 160
20687	4	T18 supply flow buffer tank State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20688	4	T20 outdoor temperature (C)	+	-		-40 <-> 160
20689	4	T20 outdoor temperature State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing
20690	4	T23 evaporator (C)	+	-		-40 <-> 160
20691	4	T23 evaporator State	+	-		0 - Ok; 1 - Fault; 2 - Missing; 3 - Missing

6.4.5.   Buffer tank settings

Register Number	Slave ID	Function	R	W	Reset	Values
20700	4	Electrical supplement heater	+	+		0 - Off; 1 - On
20701	4	Maximum buffer temperature (C)	+	+		20 <-> 50
20702	4	Minimum buffer temperature (C)	+	+		10 <-> 50
20703	4	Delay electrical supplement heater	+	+		0 <-> 60

6.4.6.   Outdoor weather compensation

Register Number	Slave ID	Function	R	W	Reset	Values
20720	4	Regulation mode	+	+		0 - Setpoint; 1 - Curve
20721	4	Supply temperature (C) at -20 C outdoor temperature	+	+		0 <-> 50
20722	4	Supply temperature (C) at -10 C outdoor temperature	+	+		0 <-> 50
20723	4	Supply temperature (C) at 0 C outdoor temperature	+	+		0 <-> 50
20724	4	Supply temperature (C) at 10 C outdoor temperature	+	+		0 <-> 50

20725	4	Supply temperature (C) at 20 C outdoor temperature	+	+		0 <-> 50
20726	4	Curve offset	+	+		-10 <-> 10

6.4.7. Hot water production

Register Number	Slave ID	Function	R	W	Reset	Values
20740	4	Hot water production wanted	+	-		0 - Off; 1 - SHW; 2 - DHW
20741	4	Compressor level (%)	+	+		0 <-> 100

6.4.8. Cooling with GEO

Register Number	Slave ID	Function	R	W	Reset	Values
20760	4	Passive cooling	+	+		0 - Off; 1 - On
20761	4	Way of cooling	+	+		0 - Floor; 1 -Fan coils

6.4.9. Cooling with AIR

Register Number	Slave ID	Function	R	W	Reset	Values
20780	4	Cooling	+	+		0 - Off; 1 - On
20781	4	Setpoint cooling (C)	+	+		5 <-> 25

6.4.10. Compressor settings GEO

Register Number	Slave ID	Function	R	W	Reset	Values
20800	4	Time between compressor start (min)	+	-		0 <-> 10
20801	4	Minimum off time (min)	+	-		0 <-> 10
20802	4	Compressor pressure at 0V	+	-		0 <-> 10
20803	4	Compressor pressure at 10V	+	-		0 <-> 10
20804	4	Compressor heating limit	+	-		0 <-> 100
20805	4	Min. control signal compressor (V)	+	-		0 <-> 10
20806	4	Max. control signal compressor (V)	+	-		0 <-> 10

6.4.11. Limited fan speed outdoor unit AIR

Register Number	Slave ID	Function	R	W	Reset	Values
20820	4	Limitation above temp. (C)	+	+		0 <-> 30
20821	4	Limited (%)	+	+		20 <-> 100

6.4.12. De-icing outdoor unit AIR

Register Number	Slave ID	Function	R	W	Reset	Values
20840	4	Forced de-icing	+	+		0 - Off; 1 - On
20841	4	De-icing start temperature (C)	+	+		-10 <-> -1
20842	4	De-icing stop temperature (C)	+	+		-10 <-> 10

20010008E – Standard document template

**Nilan A/S ● Nilanvej 2 ● 8722 Hedensted ● Danmark Tlf +45 76752500 ● Fax +45 76752525 ●
nilan@nilan.dk ● www.nilan.dk**

| 20843 | 4 | Maximum time de-icing (min) | + | + | | 5 <-> 60 |
| 20844 | 4 | Minimum time between de-icing (min) | + | + | | 30 <-> 90 |

6.4.13. Fan settings AIR

Register Number	Slave ID	Function	R	W	Reset	Values
20860	4	Minimum control signal (V)	+	-		0 <-> 10
20861	4	Maximum control signal (V)	+	-		0 <-> 10

6.4.14. Compressor settings AIR

Register Number	Slave ID	Function	R	W	Reset	Values
20880	4	Time between compressor start (min)	+	-		0 <-> 10
20881	4	Minimum off time compressor (min)	+	-		0 <-> 10
20882	4	Low outdoor temperature (C)	+	-		-30 <-> -1
20883	4	Compressor pressure at 0V	+	-		0 <-> 10
20884	4	Compressor pressure at 10V	+	-		0 <-> 10
20885	4	Compressor heating limit	+	-		0 <-> 100
20886	4	Minimum control signal compressor (V)	+	-		0 <-> 10
20887	4	Maximum control signal compressor (V)	+	-		0 <-> 10

6.5. General settings

6.5.1. Language

Register Number	Slave ID	Function	R	W	Reset	Values
20900	1	Change language	+	+		0 – EN 32 – DA 33 – DE 44 – FI 47 – FR 72 – IT 117 – NO 128 - PL

6.5.2. Smart Grid

Register Number	Slave ID	Function	R	W	Reset	Values
21500	1	Smart Grid Enable	+	+	+	0 - Off; 1 - On

6.5.3. Smart Grid Hot water settings

Register Number	Slave ID	Function	R	W	Reset	Values

20010008E – Standard document template

**Nilan A/S • Nilanvej 2 • 8722 Hedensted • Danmark Tlf +45 76752500 • Fax +45 76752525 •
nilan@nilan.dk • www.nilan.dk**

21501	1	Raise hot water temperature (C)	+	+		0 <-> 10
21502	1	Electric supplement heater	+	+		0 - Off; 1 - On

6.5.4. Smart Grid Central heating settings

Register Number	Slave ID	Function	R	W	Reset	Values

6.5.4.1. At low electricity prices

Register Number	Slave ID	Function	R	W	Reset	Values
21503	4	Raise central heating heating temp (C)	+	+		0 <-> 10
21504	4	Electric supplement heater	+	+		0 - Off; 1 - On

6.5.4.2. At overcapacity of electricity

Register Number	Slave ID	Function	R	W	Reset	Values
21505	4	Raise central heating heating temp (C)	+	+		0 <-> 10

6.5.5. Service

Register Number	Slave ID	Function	R	W	Reset	Values
21520	1	System power	+	+		0 - Off; 1 - On

Register Number	Slave ID	Function	R	W	Reset	Values
21580	1	Fire alarm auto reset	+	+		0 - Off; 1 - On
21581	1	Lock user settings	+	+		0 - Off; 1 - On

6.6. Information

6.6.1. Compact P all device data

Register Number	Slave ID	Function	R	W	Reset	Values
21680	1	Product type	+	-		0 – Compact P 1 – Compact P Polar
21770	1	System state	+	-		0 – Auto 1 – Cooling 2 – Heating
21771	1	Supply fan speed	+	-		%
21772	1	Extract fan speed	+	-		%
21773	1	Bypass damper	+	-		0 – Closed 1 – Open
21774	1	After heating element	+	-		%
21775	1	Compressor state	+	-		0 – Off

						100 – On
21776	1	Actual air humidity	+	-		%
21778	1	CO2 level	+	-		ppm
21779	1	Fire alarm	+	-		0 – activated 1 – not activated
21780	1	User programme 1	+	-		0 – Off 1 – On
21781	1	User programme 2	+	-		0 – Off 1 – On
21782	1	User programme 2 out	+	-		0 – Off 1 – On
21783	1	Allow external cooling	+	-		0 – Off 1 – On
21784	1	Allow external heating	+	-		0 – Off 1 – On
21785	1	Anti legionella	+	-		0 – Off 1 – On
21786	1	Heat pump high pressure alarm	+	-		
21787	1	Warm water sacrificial anode	+	-		1 – OK 3 – Failure
21788	1	Warm water electric supply	+	-		0 – Off 1 – On
21789	1	De-icing heat exchanger	+	-		
21790	1	De-icing heat pump	+	-		
21791	1	Four-way valve	+	-		0 – Open 1 – Closed
21792	1	Alarm	+	-		0 – Active 1 – Not active
21793	1	Heating or cooling blocked	+	-		
21794	1	BAH brine pressostat	+	-		
21795	1	Heat valve	+	-		
21796	1	Hot water valve	+	-		

6.6.2. GEO all devices data

Register Number	Slave ID	Function	R	W	Reset	Values
21839	4	Product type	+	-		8 – GEO
21840	4	System state	+	-		0 – Auto 1 – Cooling 2 – Heating
21841	4	Compressor level	+	-		%
21842	4	Brine circulation pump	+	-		%
21843	4	Central heating pump	+	-		%
21844	4	Three-way valve	+	-		0 – Heating 1 – Hot water production
21845	4	Allow external heating	+	-		0 – Allow 1 – Block
21846	4	Allow external cooling	+	-		0 – Allow 1 – Block
21847	4	Heating input	+	-		0 – None 1 – Yes
21848	4	Cooling input	+	-		0 – None 1 – Yes

21850	4	SHW supplement heater	+	-		0 – Off 1 – On
21851	4	GEO supplement heater	+	-		0 – Off 1 – On
21852	4	Cooling circuit pressure	+	-		
21853	4	Flow sensor	+	-		
21854	4	High pressure alarm	+	-		0 – Failure 1 – Ok
21855	4	Low pressure alarm	+	-		0 – Failure 1 – Ok
21856	4	Brine pressure	+	-		0 – Failure 1 - Ok

6.6.3. AIR9 all devices data

Register Number	Slave ID	Function	R	W	Reset	Values
21899	4	Product type	+	-		9 – AIR
21900	4	System state	+	-		0 – Auto 1 – Cooling 2 – Heating
21901	4	Speed evaporator fan	+	-		%
21902	4	Compressor level	+	-		%
21903	4	Circulation pump outdoor unit	+	-		%
21904	4	Central heating pump	+	-		%
21905	4	Three-way valve	+	-		0 – Floor heating 1 – Hot water
21906	4	Allow external heating	+	-		0 – Allow 1 – Block
21907	4	Allow external cooling	+	-		0 – Allow 1 – Block
21908	4	Heating input	+	-		0 – None 1 - Yes
21909	4	Cooling input	+	-		0 – None 1 – Yes
21911	4	SHW sacrificial anode	+	-		
21912	4	SHW supplement heater	+	-		0 – Off 1 – On
21913	4	Buffer tank supplement heater	+	-		0 – Off 1 – On
21914	4	Cooling circuit pressure	+	-		
21915	4	Flow sensor	+	-		

6.7. Alarm list

6.7.1. Alarm list control

Register Number	Slave ID	Function	R	W	Reset	Values
22490	1	Is any alarm or error present	+	-		0 - No, 1 – One or more

						Warning or Error present
22491	1	Reset all warning and alarms.	-	+		The value 48815 must be written to reset all events.

6.7.2. Alarm list

Register Number	Slave ID	Function	R	W	Reset	Values
22500	1, 4	ID000 - (EventNone) Undefined error	+	-		0 - Event isn't present 1 - Event is present
22501	1, 4	ID001 - (EventSystemStart) Unit start up	+	-		0 - Event isn't present 1 - Event is present
22502	1, 4	ID002 - (EventSystemStop) Unit has stopped	+	-		0 - Event isn't present 1 - Event is present
22505	1, 4	ID005 - (DbmRTDBVerisonNotEqual) Error in realtime database (RTDB)	+	-		0 - Event isn't present 1 - Event is present
22507	1, 4	ID007 - (EventFilterINLETWarning) Outdoor air filter must be changed	+	-		0 - Event isn't present 1 - Event is present
22508	1, 4	ID008 - (EventFilterEXTHAUSTWarning) Extract air filter must be changed	+	-		0 - Event isn't present 1 - Event is present
22512	1, 4	ID012 - (EventHeaterOverHeatAlarm) Safety active for electrical after heating surface	+	-		0 - Event isn't present 1 - Event is present
22514	1, 4	ID014 - (EventHeaterFrostWarning) Risk of ice in the water after heating surface	+	-		0 - Event isn't present 1 - Event is present
22515	1, 4	ID015 - (EventHeaterFrostLongAlarm) Increased risk of ice in the water after heating element	+	-		0 - Event isn't present 1 - Event is present
22516	1, 4	ID016 - (EventHeaterFrostAlarm) High risk of ice in the water after heating element	+	-		0 - Event isn't present 1 - Event is present
22518	1, 4	ID018 - (EventCompressorOverSwitch) Too many compressor starts	+	-		0 - Event isn't present 1 - Event is present
22519	1, 4	ID019 - (EventProcInit) Software initialization failure	+	-		0 - Event isn't present 1 - Event is present
22520	1, 4	ID020 - (EventDefrostingTime) De-icing time exceeded	+	-		0 - Event isn't present 1 - Event is present
22521	1, 4	ID021 - (EventFireThermAlarm) Brandindgang aktiveret	+	-		0 - Event isn't present 1 - Event is present
22524	1, 4	ID024 - (EventMainTaskTimeIsExceeded) Too long start-up of a function	+	-		0 - Event isn't present 1 - Event is present
22528	1, 4	ID028 - (EventSlaveFound) Slave device connected	+	-		0 - Event isn't present 1 - Event is present
22529	1, 4	ID029 - (EventSlaveLost) Lost communication with slave device	+	-		0 - Event isn't present 1 - Event is present
22531	1, 4	ID031 - (EventDefrostFail) Failure in de-icing	+	-		0 - Event isn't present 1 - Event is present
22541	1, 4	ID041 - (EventFrostProtection)	+	-		0 - Event isn't present

		Frostprotection hot water tank active				1 - Event is present
22544	1, 4	ID044 - (EventAnodeFail) Failure on anode in domestic hot water tank	+	-		0 - Event isn't present 1 - Event is present
22545	1, 4	ID045 - (EventAntiLegionella) Start anti legionella	+	-		0 - Event isn't present 1 - Event is present
22546	1, 4	ID046 - (EventAntiLegionellaFail) Failure in anti legionella function	+	-		0 - Event isn't present 1 - Event is present
22547	1, 4	ID047 - (EventDefrostFailW) EventDefrostFailW	+	-		0 - Event isn't present 1 - Event is present
22549	1, 4	ID049 - (EventHeatHighPressure) Compressor high pressure alarm	+	-		0 - Event isn't present 1 - Event is present
22562	1, 4	ID062 - (EventRTDBParamWarning) Database errors	+	-		0 - Event isn't present 1 - Event is present
22565	1, 4	ID065 - (EventSlaveTypeWasChangedWarn) Changed type of slave device	+	-		0 - Event isn't present 1 - Event is present
22566	1, 4	ID066 - (EventCompressHighPress) High pressure fault on the compressor	+	-		0 - Event isn't present 1 - Event is present
22567	1, 4	ID067 - (EventCompressLowPress) Lov pressure fault on the compressor	+	-		0 - Event isn't present 1 - Event is present
22568	1, 4	ID068 - (EventNotOptimalSlaveRegulMode) Systems operation conflict !	+	-		0 - Event isn't present 1 - Event is present
22569	1, 4	ID069 - (Event_BAH_Leak) Leaking brine circuit BAH solution	+	-		0 - Event isn't present 1 - Event is present
22573	1, 4	ID073 - (EventLow_T16_T17_atDefrost) T16 or T17 to low at de-icing	+	-		0 - Event isn't present 1 - Event is present
22574	1, 4	ID074 - (EventBrineLeak) Utrathed i GEO brinekredsen	+	-		0 - Event isn't present 1 - Event is present
22575	1, 4	ID075 - (EventDeviceError) Sensor fault	+	-		0 - Event isn't present 1 - Event is present
22577	1, 4	ID077 - (EventKlixonFault) Severe Klixon error	+	-		0 - Event isn't present 1 - Event is present
22578	1, 4	ID078 - (EventKlixonWarning) Klixon failure	+	-		0 - Event isn't present 1 - Event is present
22579	1, 4	ID079 - (EventCompressHighPressWarning) High pressure warning	+	-		0 - Event isn't present 1 - Event is present
22580	1, 4	ID080 - (EventEvapLowTemperature) To low temperature in the evaporator	+	-		0 - Event isn't present 1 - Event is present
22581	1, 4	ID081 - (EventDHW_HeaterWasOn) Electric supplement heater in hot water tank is on	+	-		0 - Event isn't present 1 - Event is present
22582	1, 4	ID082 - (EventDHW_HeaterWasOff) Electric supplement heater in hot water tank is off	+	-		0 - Event isn't present 1 - Event is present
22583	1, 4	ID083 - (EventBufferHeaterWasOn) Electric supplement heater central heating on	+	-		0 - Event isn't present 1 - Event is present
22584	1, 4	ID084 - (EventBufferHeaterWasOff)	+	-		0 - Event isn't present

		Electric supplement heater central heating off				1 - Event is present
22585	1, 4	ID085 - (EventSlaveVersionIncompatible) Slave SW not the same as master	+	-		0 - Event isn't present 1 - Event is present
22586	1, 4	ID086 - (EventSlaveRTDB_Incompatible) Slave RTDB not the same as master	+	-		0 - Event isn't present 1 - Event is present
22587	1, 4	ID087 - (EventHeatPumpOvertemperature) No optimal regulation of slave	+	-		0 - Event isn't present 1 - Event is present
22588	1, 4	ID088 - (EventSGwasTurnedOn) The Smart Grid function was enabled	+	-		0 - Event isn't present 1 - Event is present
22589	1, 4	ID089 - (EventSGwasTurnedOff) The Smart Grid function was disable	+	-		0 - Event isn't present 1 - Event is present
22590	1, 4	ID090 - (EventSGModeChangeToOption1) The Smart Grid Low Consumption Mode was activated.	+	-		0 - Event isn't present 1 - Event is present
22591	1, 4	ID091 - (EventSGModeChangeToOption2) The Smart Grid Normal mode was activated.	+	-		0 - Event isn't present 1 - Event is present
22592	1, 4	ID092 - (EventSGModeChangeToOption3) The Smart Grid Low electricity price mode was activated.	+	-		0 - Event isn't present 1 - Event is present
22593	1, 4	ID093 - (EventSGModeChangeToOption4) The Smart Grid Overcapacity of electricity mode was activated	+	-		0 - Event isn't present 1 - Event is present