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67007B- 01/14-OSH

OJ Air2 Master

Modbus Protocol
From SW2.68
English

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OJ Air2 Master Controller
RJ12 Modbus/RTU connection

Fig. 1 OJ Air Master, Connector diagram, visual topside down

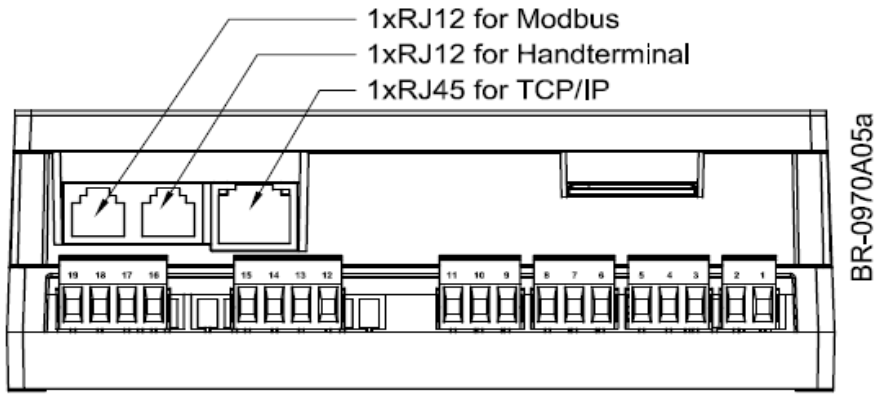


Fig. 2 Configuration for communication via external Modbus

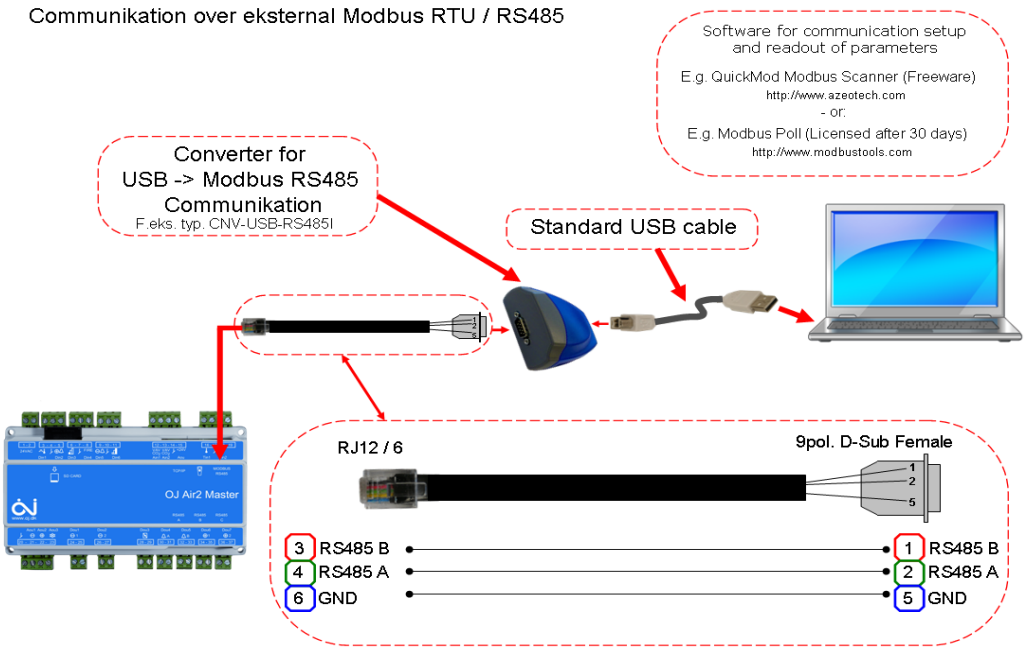
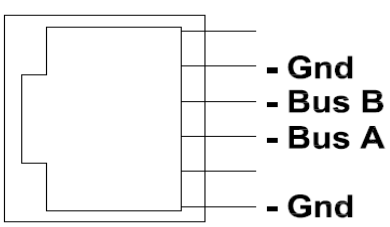


Fig. 3 Modbus RJ12 socket



Modbus RTU/TCP

OJ Air2, Program version 2.68 and later versions

Overview

This Protocol contains all Modbus addresses and registers in the OJ-Air2Master.
Updating of values in the individual registers is dependent on the actual configuration of the air handling unit. It will, for example, be possible to read out hydronic battery temperature register 3x0030 irrespective of whether or not an hydronic battery is installed in the system concerned.
The value will, however, only be used if the associated temperature sensor is installed.
Modbus can access single addresses or several addresses simultaneously, either reading or writing 1-bit or 16-bit values.
A Modbus address contains either a 1-bit value or a 16-bit integer.

Communication

TCP/IP: 1 x 10/100 Mbit Ethernet, RJ45 connector.
Modbus RS485: 1 x external Modbus, RS485, RJ12 connector, which can be set for 9.6 kBd, 19.2 kBd or 38.4 kBd.
Pin1 NC, Pin2 GND, Pin3 RS485 B, Pin4 RS485 A, Pin5 NC, Pin6 GND (see fig. 2).
Hand terminal: 1 x Modbus, RS485, 115 kBd, +24 V DC, RJ12 connector.
RS485 A: Not in use
RS485 B & C: 2 x shared local Modbus, RS485, 38.4 kBd, +24 V DC, RJ12 connector.

Modbus data format

Modbus data types are 1-bit values and 16-bit values.

Modbus Type	Description	Reference
Coil Status (R/W)	Discrete Output	0x
Input Status (R)	Discrete Input	1x
Holding Register (R/W)	16-bit Output Register	4x
Input register (R)	16-bit Input Register	3x

R = Read Only
R/W = Read / Write

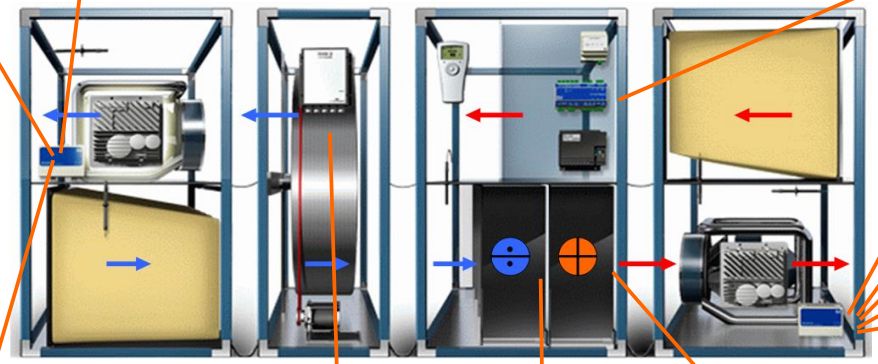
Supported Modbus commands

OJ Air2 supports the following Modbus commands:

Function code	Description
1	Read Coil Status
2	Read Input Status
3	Read Holding Registers
4	Read Input Registers
5	Force Single Coil
6	Preset Single Registers
8	Diagnostics. Sub-function 00 Only - Return Query Data (loop back)
15	Force Multiple Coils
16	Preset Multiple Registers

Actual extract flow [l/s]	3x0009
Extract motor output percentage [1/100%]	3x0083
Setpoint for extract flow, low speed [l/s]	4x0014
Setpoint for extract flow, high speed [l/s]	4x0015

Actual extract duct pressure [Pa]	3x0005
Setpoint for duct pressure, extract, low speed [Pa]	4x0007
Setpoint for duct pressure, extract, high speed [Pa]	4x0008
Inlet filter pressure [Pa]	3x0031
Inlet filter monitor max. alarm limit [Pa]	3x0039



Actual outdoor temp. [1/100°C]	3x0024

Rot. heat exchanger – output percent. [%	3x0092

Actual cooling power [1/100%]	3x0056

Actual heating power [1/100%]	3x0054
Heating relay 1	1x0031
Act. heating bat. temp.[1/100°C]	3x0030

Actual operating mode	3x0001
Operation ON/OFF	1x0001
Extended low speed –> Active	1x0004
Extended high speed –> Active	1x0005
Alarm relay 1 (A-alarm)	1x0035
Alarm relay 2 (B-alarm)	1x0036
Alarm reset signal (AutoReturn to zero)	0x0001

Actual inlet temperature [1/100°C]	3x0020
Control type setting	4x0148
Temperature setpoint for actual control type	4x0149

Extract filter pressure [Pa]	3x0032
Max. alarm limit, extract filter pressure drop [Pa]	3x0040

Actual room temperature [1/100 °C]	3x0025
Actual exhaust temp. [1/100°C]	3x0026
Min. limit, inlet temp. [1/100°C]	4x0150
Max. limit, inlet temp. [1/100°C]	4x0151

Actual inlet duct pressure [Pa]	3x0003
Setpoint for duct pressure, inlet, low speed [Pa]	4x0003
Setpoint for duct pressure, inlet, high speed [Pa]	4x0004

Actual inlet flow [l/s]	3x0007
Inlet motor output percentage [1/100%]	3x0073
Setpoint for inlet flow, low speed [l/s]	4x0011
Setpoint for inlet flow, high speed [l/s]	4x0012

Coil Status (R/W)

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
Alr_Reset		0	0x0001	0	1	Alarm reset signal (AutoReturn to zero)
CoolRecovFunc		1	0x0002	0	1	Cooling recovery: ON/OFF
SN_Func		2	0x0003	0	1	Summer night cooling: ON/OFF
SWTC_Func		3	0x0004	0	1	Summer/winter temp. compensation: ON/OFF
FlwTmpCmpFunc		4	0x0005	0	1	Flow/outdoor temperature compensation: ON/OFF
RecircFunc		5	0x0006	0	1	Recirculation: ON/OFF
CoolFlwForceFc		6	0x0007	0	1	Forced flow with cooling demand: ON/OFF
TimeSw-SumFunc		7	0x0008	0	1	Automatic summer/winter time: ON/OFF
ExtDrfHiPeriod		8	0x0009	0	1	Input for forced high speed
ExtDrfPeriodON		9	0x0010	0	1	Run-on time for forced high speed active
EXC_CCV		10	0x0011	0	1	Rotary heatexchanger, turn ratation direction to counter clock wise (CCW)
ManZeroCali		19	0x0020	0	1	Start manual zero calibration (can be used together with automatic zero calibration) Is automatically reset to zero (OFF) once calibration has been completed
AutoZeroCali		20	0x0021	0	1	Automatic zero calibration: ON/OFF
FiltDynAlrFunc		21	0x0022	0	1	Dynamic filter alarm –> ON/OFF OFF –> static alarm limit (constant) ON –> dynamic alarm limit (limit based on flow)
FiltCalibrate		22	0x0023	0	1	Start filter calibration. Is automatically reset to zero (OFF) once calibration has been completed. NOTE! ONLY IF "DYNAMIC MODE" IS SET
FiltCaliDone		23	0x0024	0	1	Filter calibration completed (valid filter data) NOTE! ONLY IF "DYNAMIC MODE" IS SET

Input Status

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
Operation		0	1x0001	0	1	Operation ON/OFF
ExtStop		1	1x0002	0	1	External stop
ExtHiSpeed		2	1x0003	0	1	External high speed
ExtDrfLoSpeed		3	1x0004	0	1	Extended low speed –> Active
ExtDrfHiSpeed		4	1x0005	0	1	Extended high speed –> Active
ExtBrandStop		5	1x0006	0	1	Status Brandstop input
ElBattPowerRed		9	1x0010	0	1	Power to electric heating battery reduced due to low flow
SN_Drift		10	1x0011	0	1	Summer night cooling is active
SN_Reset		11	1x0012	0	1	Reset parameters for summer night cooling (new calculation is initiated)
SWTC_WintComp		12	1x0013	0	1	Winter temperature compensation is active
SWTC_SumComp		13	1x0014	0	1	Summer temperature compensation is active
SW_Status		14	1x0015	0	1	Summer/winter actual status (SW_Mode = 1..3) OFF –> winter operation ("0") ON –> summer operation ("1")
RecircStatus		15	1x0016	0	1	Recirculation status
EXC_Exercise		16	1x0017	0	1	Exercising heat exchanger –> Active
ExhaustPowRed		17	1x0018	0	1	Signal to cross-flow exchanger reduced (frost protection)
SupDuctMinFlow		18	1x0019	0	1	Inlet duct pressure controller reduced to min. flow
SupDuctMaxFlow		19	1x0020	0	1	Inlet duct pressure controller increased to max. flow
ExtDuctMinFlow		20	1x0021	0	1	Extract duct pressure controller reduced to min. flow
ExtDuctMaxFlow		21	1x0022	0	1	Extract duct pressure controller increased to max. flow
CoolRecovery		22	1x0023	0	1	Cooling recovery –> status
HW_FrosrReg		23	1x0024	0	1	Circulation pump on heating battery: Frost protection –> Active
HW_PumpExer		24	1x0025	0	1	Circulation pump on heating battery: Pump exercising –> Active
CW_PumpExer		25	1x0026	0	1	Circulation pump on cooling battery: Pump exercising –> Active
Heat_FlwDnReg		26	1x0027	0	1	Signal to heating battery reduced (insufficient flow) –> Active
TempRegMinSup		27	1x0028	0	1	"1" when min. inlet temperature control is active. Only active when TempRegMode is 1 or 2 (room temp. control)
TempRegMaxSup		28	1x0029	0	1	"1" when max. inlet temperature control is active. Only active when TempRegMode is 1 or 2 (room temp. control)
BattEXC_Exer		29	1x0030	0	1	Circulation pump on heat recovery battery: Pump exercising –> Active

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
Heat_RE1		30	1x0031	0	1	Heating relay 1
Cool_RE1		31	1x0032	0	1	Cooling relay 1
BattEXC_PumpRE		32	1x0033	0	1	Circulation pump on heat recovery battery: Pump –> Running
AlrActive		33	1x0034	0	1	At least one active alarm
Alr_RE1		34	1x0035	0	1	Alarm relay 1 (A-alarm)
Alr_RE2		35	1x0036	0	1	Alarm relay 2 (B-alarm)
Alr_FireSignal		36	1x0037	0	1	Fire alarm signal (room sensor)
Alr_SmokeSig		37	1x0038	0	1	Smoke/fire alarm signal (duct sensor)
ElBattOverHeat		39	1x0040	0	1	Electric battery: High temperature alarm signal
FiltSupalarm		40	1x0041	0	1	Filter alarm for inlet filter (pressure drop above set limit)
FiltExtalarm		41	1x0042	0	1	Filter alarm for extract filter (pressure drop above set limit)
CExcDeIcing		42	1x0043	0	1	Reduction of cross-flow exchanger due to de-icing; deicing started
ElBat2OverHeat		43	1x0044	0	1	Electric battery 2 - Overheating signal
ElBat2PowerRed		44	1x0045	0	1	Electric battery 2 - Output reduction active due to low flow
SupTempSensErr		49	1x0050	0	1	Inlet temperature sensor – sensor fault
ExtTempSensErr		50	1x0051	0	1	Extract temperature sensor – sensor fault
OutDoorSensErr		51	1x0052	0	1	Outdoor temperature sensor – sensor fault
RoomSensErr		52	1x0053	0	1	Room temperature sensor – sensor fault
ExhaustSensErr		53	1x0054	0	1	Exhaust temperature sensor – sensor fault
HW_SensErr		54	1x0055	0	1	Heating battery temperature sensor – sensor fault
BattEXC_SensEr		55	1x0056	0	1	Heat recovery battery temperature sensor – sensor fault
HW_FrostAlr		56	1x0057	0	1	Heating battery frost alarm
Cool_Sumalarm		59	1x0060	0	1	Cooling shared alarm
Cool_DI1_alarm		60	1x0061	0	1	Cooling digital alarm 1 input
Cool_DI2_alarm		61	1x0062	0	1	Cooling digital alarm 2 input
Cool_DI3_alarm		62	1x0063	0	1	Cooling digital alarm 3 input
Cool_DI4_alarm		63	1x0064	0	1	Cooling digital alarm 4 input
SupmotorON		69	1x0070	0	1	Inlet motor ON/OFF
Supmotoralarm		70	1x0071	0	1	Alarm from inlet motor ON/OFF
FCsupMtrAlrVlo		71	1x0072	0	1	Inlet motor low voltage alarm (only with OJ-FC)
FCsupMtrAlrVHi		72	1x0073	0	1	Inlet motor high voltage alarm (only with OJ-FC)
FCsupMtrAlrIHi		73	1x0074	0	1	Inlet motor high current alarm (only with OJ-FC), motor protection
FCsupMtrAlrTmp		74	1x0075	0	1	Inlet motor temperature alarm (only with OJ-FC)
FCsupMtrAlrPhs		75	1x0076	0	1	Inlet motor phase fault alarm (only with OJ-FC)

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
FCsupMtrAlrRip		76	1x0077	0	1	Inlet motor ripple voltage alarm (only with OJ-FC)
FCsupMtrIHiLim		77	1x0078	0	1	Inlet motor high current limit: short-circuit protection (only with OJ-FC)
ExtmotorON		79	1x0080	0	1	Extract motor ON/OFF (only with OJ-FC)
Extmotoralarm		80	1x0081	0	1	Extract motor alarm ON/OFF (only with OJ-FC)
FCextMtrAlrVlo		81	1x0082	0	1	Extract motor low voltage alarm (only with OJ-FC)
FCextMtrAlrVHi		82	1x0083	0	1	Extract motor high voltage alarm (only with OJ-FC)
FCextMtrAlrIHi		83	1x0084	0	1	Extract motor high current alarm (only with OJ-FC)
FCextMtrAlrTmp		84	1x0085	0	1	Extract motor temperature alarm (only with OJ-FC)
FCextMtrAlrPhs		85	1x0086	0	1	Extract motor phase fault alarm (only with OJ-FC)
FCextMtrAlrRip		86	1x0087	0	1	Extract motor ripple voltage alarm (only with OJ-FC)
FCextMtrIHiLim		87	1x0088	0	1	Extract motor high current limit (only with OJ-FC)
EXC_ON		89	1x0090	0	1	Rotary heat exchanger – motor control ON/OFF (only with OJ-RHX2M)
EXC_Reset		90	1x0091	0	1	Rotary heat exchanger – reset signal (only with OJ-RHX2M)
EXC_Direction		91	1x0092	0	1	Rotary heat exchanger – rotation direction (only with OJ-RHX2M)
EXC_Rotalarm		92	1x0093	0	1	Rotary heat exchanger – rotation alarm (only with OJ-RHX2M)
EXC_Vloalarm		93	1x0094	0	1	Rotary heat exchanger – low voltage alarm (only with OJ-RHX2M)
EXC_VHialarm		94	1x0095	0	1	Rotary heat exchanger – high voltage alarm (only with OJ-RHX2M)
EXC_IHialarm		95	1x0096	0	1	Rotary heat exchanger – high current alarm (only with OJ-RHX2M)
EXC_Tempalarm		96	1x0097	0	1	Rotary heat exchanger – temperature alarm (only with OJ-RHX2M)
EXC_RotSignal		97	1x0098	0	1	Rotary heat exchanger – rotation signal (only with OJ-RHX2M)
EXC_Overload		98	1x0099	0	1	Rotary heat exchanger – torque overload (only with OJ-RHX2M)

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
PH_PowReduce		99	1x0100	0	1	Pre-heating element - Output reduction, low air volume
PHFrostRegAct		100	1x0101	0	1	Pre-heating element - Relay for active heating/cooling
PHHeCoRelay		101	1x0102	0	1	Pre-heating element - Frost protection active
PHFrzAlrCool		102	1x0103	0	1	Pre-heating element - Frost alarm, cooling
PH_Overheat		103	1x0104	0	1	Pre-heating element - Overheating fault
PH_HWBSensErr		104	1x0105	0	1	Pre-heating element - Return sensor - Sensor fault
PHFreezeAlarm		105	1x0106	0	1	Pre-heating element - Frost alarm
HW2SensErr		149	1x0150	0	1	Heating battery 2 - Return sensor - Sensor fault
HW2FrostAlr		150	1x0151	0	1	Heating battery 2 - Frost alarm
HW2FrostReg		151	1x0152	0	1	Heating battery 2 - Frost control active
HW2PumpExer		152	1x0153	0	1	Heating battery 2 - Circulation pump, pump exercising active
Heat_RE2		153	1x0154	0	1	Heating relay 2 (ExtMod-Reserve)
Heat_RE21		154	1x0155	0	1	Heating relay 21 (ExtMod-Reserve)
Heat_RE22		155	1x0156	0	1	Heating relay 22 (ExtMod-Reserve)
Heat_RE23		156	1x0157	0	1	Heating relay 23 (ExtMod-Reserve)
Heat_RE24		158	1x0159	0	1	Heating relay 24 (ExtMod-Reserve)
Heat_RE25		159	1x0160	0	1	Heating relay 25 (ExtMod-Reserve)
AddOnTSens1Err		160	1x0161	0	1	Add on sensor 1 - Sensor fault
AddOnTSens2Err		161	1x0162	0	1	Add on sensor 2 - Sensor fault
AddOnTSens3Err		162	1x0163	0	1	Add on sensor 3 - Sensor fault
AddOnTSens4Err		163	1x0164	0	1	Add on sensor 4 - Sensor fault
HW_StatLuftAlr		164	1x0165	0	1	Status frost thermostat alarm (digital input)
AlrFrzBattEXC		165	1x0166	0	1	Frost alarm fluid-coupled battery (BattEXC)
HumidAlrInp		168	1x0169	0	1	Humidifier alarm status
CombiTSenErr		169	1x0170	0	1	Multi-purpose battery - Return sensor - Sensor fault
CombiFrostAlrH		170	1x0171	0	1	Multi-purpose battery - Frost alarm
CombiFrostReg		171	1x0172	0	1	Multi-purpose battery - Frost protection active
CombiPumpExer		172	1x0173	0	1	Multi-purpose battery - Circulation pump, pump exercising active

Input Registers

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
DriftMode		0	3x0001	0	500	Actual operating mode 000-099: Unit stopped 100-199: Unit in low speed mode 200-299: Unit in high speed mode 300-399: Unit in spec. control mode
SupDuctPa	Pa	2	3x0003	0	2000	Actual inlet duct pressure [Pa]
SupDuctPaRgSet	Pa	3	3x0004	0	2000	Setpoint for inlet duct pressure controller [Pa]
ExtDuctPa	Pa	4	3x0005	0	2000	Actual extract duct pressure [Pa]
ExtDuctPaRgSet	Pa	5	3x0006	0	2000	Setpoint for extract duct pressure controller [Pa]
SupFlow	l/s	6	3x0007	0	30000	Actual inlet flow [l/s]
SupFlowRegSet	l/s	7	3x0008	250	30000	Setpoint for inlet flow controller [l/s]
ExtFlow	l/s	8	3x0009	0	30000	Actual extract flow [l/s]
ExtFlowRegSet	l/s	9	3x0010	0	30000	Setpoint for extract flow controller [l/s]
CO2_ppmMeas	ppm	10	3x0011	0	10000	CO2 concentration recorded by CO2 sensor [ppm]
MtrFanSupVin	%	11	3x0012	0	10000	0-10 V DC signal to inlet motor
MtrFanExtVin	%	12	3x0013	0	10000	0-10 V DC signal to extract motor
FAN_SupPrcMeas	%	13	3x0014	0	10000	Voltage on fan optimizer input: inlet signal [1/100%]
FAN_ExtPrcMeas	%	14	3x0015	0	10000	Voltage on fan optimizer input: extract signal [1/100%]
SupFC_MaxFlow	l/s	15	3x0016	100	30000	Inlet FC max. flow [l/s] / [m3/h]
ExtFC_MaxFlow	l/s	16	3x0017	100	30000	Extract FC max. flow [l/s] / [m3/h]
SupTemp	°C	19	3x0020	0	4000	Actual inlet temperature [1/100°C]
SupTempRegSet	°C	20	3x0021	0	4000	Setpoint for inlet temperature controller [1/100°C]
ExtTemp	°C	21	3x0022	0	4000	Actual extract temperature [1/100°C]
ExtTempRegSet	°C	22	3x0023	10	4000	Setpoint for extract temperature controller [1/100°C]
OutDoorTemp	°C	23	3x0024	0	4000	Actual outdoor temperature [1/100°C]
RoomTemp	°C	24	3x0025	0	4000	Actual room temperature [1/100°C]
ExhaustTemp	°C	25	3x0026	0	4000	Actual exhaust temperature [1/100°C]
TempRegMeas	°C	26	3x0027	0	4000	Temp. recorded by actual temperature controller [1/100°C]
TempRegVal	°C	27	3x0028	0	4000	Control value for actual temperature controller [1/100°C]
BattEXC_Temp	°C	28	3x0029	0	6000	Water battery temperature downstream from heat exchanger [1/100°C]
HW_BattTemp	°C	29	3x0030	0	4000	Actual heating battery temperature [1/100°C]
SupFiltPaAvr	Pa	30	3x0031	0	2000	Inlet filter pressure [Pa]
ExtFiltPaAvr	Pa	31	3x0032	0	2000	Extract filter pressure [Pa]
FiltSupFlowAvr	Pa	32	3x0033	0	2000	
SupMotorSet	%	33	3x0034	0	10000	Inlet motor signal setpoint [%]

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
FiltExtFlowAvr	Pa	34	3x0035	0	2000	
ExtMotorSet	%	35	3x0036	0	10000	Extract motor signal setpoint [%]
FiltSupPaAvr	Pa	36	3x0037	0	3000	Average supfilter-pressure [Pa/30]
FiltExtPaAvr	Pa	37	3x0038	0	3000	Average extfilter-pressure [Pa/30]
FiltSupAlrPa	Pa	38	3x0039	0	100	Inlet filter monitor max. alarm limit [Pa] ONLY IN DYNAMIC MODE ("0" IS STATIC MODE)
FiltExtAlrPa	Pa	39	3x0040	0	100	Extract filter monitor max. alarm limit [Pa] ONLY IN DYNAMIC MODE ("0" IS STATIC MODE)
HP_OutdCoilTmp	°C	40	3X0041	0	4000	Actual outdoor temperature near outdoor heat pump parts [1/100°C]
EXCActualEff	%	41	3X0042	0	10000	Heat exchanger efficiency [1/100%]
AtvSupFCType		42	3X0043	0	30000	Inlet ATV frequency converter - Actual FC type
AtvExtFCType		43	3X0044	0	30000	Exhaust ATV frequency converter - Actual FC type
FlwTmpCmpOut	%	49	3x0050	0	10000	Temp. compensated flow setpoint percentage [1/100%]
SWTC_ActSetOfs	°C	50	3x0051	-1000	1000	Summer/winter temp. compensation of actual setpoint offset [1/100°C]
SN_HeatTime	Sec	51	3x0052	0	30000	SummerNight Time with Heat Demand [sec]
HeatEXCPower	%	52	3x0053	0	10000	Heat exchange controller heating power [1/100%]
HeatPower	%	53	3x0054	0	10000	Actual heating power [1/100%]
CoolPower	%	54	3x0055	0	10000	Cooling controller power [1/100%]
CoolActPower	%	55	3x0056	0	10000	Actual cooling power [1/100%]
CoolFlwForcePw	%	56	3x0057	0	10000	Cooling forced flow power [1/100%]
CoolVin1Alarm	%	57	3x0058	0	10000	Cooling alarm 1 transducer signal [1/100%]
CoolVin2Alarm	%	58	3x0059	0	10000	Cooling alarm 2 transducer signal [1/100%]
CoolVin3Alarm	%	59	3x0060	0	10000	Cooling alarm 3 transducer signal [1/100%]
CoolVin4Alarm	%	60	3x0061	0	10000	Cooling alarm 4 transducer signal [1/100%]
C_LoPress1Bar	bar	61	3x0062	0	10000	Actual low pressure sensor 1 [1/100 bar]
C_HiPress1Bar	bar	62	3x0063	0	10000	Actual high pressure sensor 1 [1/100 bar]
C_LoPress2Bar	bar	63	3x0064	0	10000	Actual low pressure sensor 2 [1/100 bar]
C_HiPress2Bar	bar	64	3x0065	0	10000	Actual high pressure sensor 2 [1/100 bar]
Heat2Power	%	65	3x0066	0	10000	Heating 2 - Regulator power [1/100%]
FCsupMtrType		69	3x0070	0	256	Inlet motor type (only with OJ-FC)
FCsupMtrFC_SW		70	3x0071	0	1000	Inlet motor software version [1/100] (only with OJ-FC)
FCsupMtrIO_SW		71	3x0072	0	1000	Inlet motor IO card software version [1/100] (only with OJ-FC)
FCsupMtrPrcOut	%	72	3x0073	0	10000	Inlet motor output percentage [1/100%] (only with OJ-FC)
FCsupMtrHzOut	Hz	73	3x0074	0	10000	Inlet motor frequency output [1/100 Hz] (only with OJ-FC)
FCsupMtrIout	mA	74	3x0075	0	30000	Inlet motor actual current output [mA] (only with OJ-FC)
FCsupMtrPowOut	W	75	3x0076	0	6000	Inlet motor actual power output [Watt] (only with OJ-FC)
FCsupMtrPrcSet	%	76	3x0077	0	10000	Inlet motor setpoint [%]
SupSFP	J/m3	77	3x0078	0	10000	Specific fan power (SFP), inlet [W·s/m3 = J/m3] (only with OJ-FC)
FCextMtrType		79	3x0080	0	256	Extract motor type (only with OJ-FC)
FCextMtrFC_SW		80	3x0081	0	1000	Extract motor software version [1/100] (only with OJ-FC)
FCextMtrIO_SW		81	3x0082	0	1000	Extract motor IO card software version [1/100] (only with OJ-FC)
FCextMtrPrcOut	%	82	3x0083	0	10000	Extract motor output percentage [1/100%] (only with OJ-FC)

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
FCextMtrHzOut	Hz	83	3x0084	0	10000	Extract motor frequency output [1/100 Hz] (only with OJ-FC)
FCextMtrIout	mA	84	3x0085	0	30000	Extract motor actual current output [mA] (only with OJ-FC)
FCextMtrPowOut	W	85	3x0086	0	6000	Extract motor actual power output [Watt] (only with OJ-FC)
FCextMtrPrcSet	%	86	3x0087	0	10000	Extract motor output setpoint [%]
ExtSFP	J/m3	87	3x0088	0	10000	Specific fan power (SFP), extract [W·s/m3 = J/m3] (only with OJ-FC)
EXC_Type		89	3x0090	0	3	Rotary heat exchanger – motor type (only with OJ RHX2M)
EXC_Software		90	3x0091	0	10000	Rotary heat exchanger – software version [1/100] (only with OJ RHX2M)
EXC_PrcOut	%	91	3x0092	0	10000	Rotary heat exchanger – percentage [1/100%]
EXC_RpmOut	rpm	92	3x0093	0	20000	Rotary heat exchanger – speed output [1/100 rpm]
EXC_Iout	mA	93	3x0094	0	10000	Rotary heat exchanger – actual output [mA] (only with OJ RHX2M)
EXC_Power	W	94	3x0095	0	100	Rotary heat exchanger – output power [W] (only with OJ RHX2M)
EXC_DriftDays	days	95	3x0096	0	32000	Rotary heat exchanger – days of operation (only with OJ RHX2M)
EXC_PrcSet	%	96	3x0097	0	10000	Rotary heat exchanger – percentage setpoint [1/100%] (only with OJ RHX2M)
EXTM1_SW_Ver		99	3x0100	0	10000	Extension module 1 software version [1/100]
EXTM2_SW_Ver		100	3x0101	0	10000	Extension module 2 software version [1/100]
PHWMTemp	°C	101	3x0102	0	10000	Actual temperature of pre-heating element [1/100°C]
PH_HeatPower	%	102	3x0103	0	10000	Actual output of pre-heating element [1/100%]
TimeSw-WeekDay		109	3x0110	0	6	Actual day of the week (0=Mon..6=Sun)
ExtDrfDaysLeft		110	3x0111	0	6	Extended operation, remaining number of days
ExtDrfMinLeft	min	111	3x0112	0	1439	Extended operation, remaining number of minutes
Alr_Released00		119	3x0120	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released01		120	3x0121	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released02		121	3x0122	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released03		122	3x0123	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released04		123	3x0124	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released05		124	3x0125	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released06		125	3x0126	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released07		126	3x0127	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released08		127	3x0128	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released09		128	3x0129	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released10		129	3x0130	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released11		130	3x0131	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released12		131	3x0132	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released13		132	3x0133	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released14		133	3x0134	0	100	Stack for active alarms (0 indicates end of stack)
Alr_Released15		134	3x0135	0	100	Stack for active alarms (0 indicates end of stack)
MasterSW_Ver		139	3x0140	0	30000	Master software version [1/100]
DisplaySW_Ver		140	3x0141	0	30000	Display software version [1/100]

NAME	PREFIX	ADDRESS	REGISTER	MIN	MAX	BEMÆRKNINGER
AlrFireDmpNCls		141	3x0142	0	1	Alarm, Fire damper not closed
AlrFireDmpNOpn		142	3x0143	0	1	Alarm, Fire damper not open
FireDmpTstActv		143	3x0144	0	1	Fire damper test is active
DX_OnTimerRE1	Sec	144	3x0145	0	600	Timer for DX-Cool RE-1 ON-Periode [sec] (ExtMod-Reserve)
DX_OnTimerRE2	Sec	145	3x0146	0	600	Timer for DX-Cool RE-2 ON-Periode [sec] (ExtMod-Reserve)
DX_OnTimerRE3	Sec	146	3x0147	0	600	Timer for DX-Cool RE-3 ON-Periode [sec] (ExtMod-Reserve)
DX_OnTimerRE4	Sec	147	3x0148	0	600	Timer for DX-Cool RE-4 ON-Periode [sec] (ExtMod-Reserve)
HW2BattTemp	°C	149	3x0150	0	4000	Heating 2 - Hydronic battery return temperature [1/100°C]
DX_RestartCnt1		148	3x0149	0	60	Counter for DX-Cool RE-1 starts per hour (ExtMod-Reserve)
DX_RestartCnt3		150	3x0151	0	60	Counter for DX-Cool RE-3 starts per hour (ExtMod-Reserve)
DX_RestartCnt4		151	3x0152	0	60	Counter for DX-Cool RE-4 starts per hour (ExtMod-Reserve)
DX_RestartTim1	Sec	152	3x0153	0	3600	Timer 1 for min. restart period [sec]
DX_RestartTim2	Sec	153	3x0154	0	3600	Timer 2 for min. restart period [sec]
DX_RestartTim3	Sec	154	3x0155	0	3600	Timer 3 for min. restart period [sec]
DX_RestartTim4	Sec	155	3x0156	0	3600	Timer 4 for min. restart period [sec]
FiltSupPrcStat	%	156	3x0157	0	10000	Filter actual alarmstatus for sup-filter [1/100%]
FiltExtPrcStat	%	157	3x0158	0	10000	Filter actual alarmstatus for ext-filter [1/100%]
FiltSupNewPa	Pa	158	3x0159	0	100	Filter pressure for new-filter at actual flow [Pa]
FiltExtNewPa	Pa	159	3x0160	0	100	Filter pressure for new-filter at actual flow [Pa]
AddOnTSensor1	°C	160	3x0161	0	5000	Add on sensor 1 [1/100°C]
AddOnTSensor2	°C	161	3x0162	0	5000	Add on sensor 2 [1/100°C]
AddOnTSensor3	°C	162	3x0163	0	5000	Add on sensor 3 [1/100°C]
AddOnTSensor4	°C	163	3x0164	0	5000	Add on sensor 4 [1/100°C]
ROHStepUpValve	%	164	3x0165	0	10000	Step-up valve - Output [1/100%]
ROHStepOutVDC	mV	165	3x0166	0	10000	Step-up valve - Voltage [1/1000 V]
ROHShuntValve	%	166	3x0167	0	10000	Condenser battery - Output [1/100%]
ROHShuntOutVDC	mV	167	3x0168	0	10000	Shunt valve - Voltage [1/1000 V]
Humid_OutVDC	V	168	3x0169	0	10000	Output to Steam Humidifier [1/1000 V]
Humid_ActRHSup	%	169	3x0170	0	10000	Actual % rel. Huminity Supply
Humid_ActRHExt	%	170	3x0171	0	10000	Actual % rel. Huminity Supply

Holding Registers

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
ManDriftMode		0	4x0001	0	3	0=auto, 1=manual stop, 3=manual low, 3=manual high
MtrRegMode		1	4x0002	0	6	0=pressure, 1=flow, 2=extract slave, 3=inlet slave, 4=external V DC setpoint, 5=fan optimizer inlet/extract, 6=fan optimizer with extract slave
SupDuctPaLoSet	Pa	2	4x0003	0	2000	Setpoint for duct pressure, low inlet [Pa]
SupDuctPaHiSet	Pa	3	4x0004	0	2000	Setpoint for duct pressure, high inlet [Pa]
SupDuctMinFlow	l/s	4	4x0005	0	30000	Min. inlet duct flow [l/s] / [m3/h]
SupDuctMaxFlow	l/s	5	4x0006	0	30000	Max. inlet duct flow [l/s] / [m3/h]
ExtDuctPaLoSet	Pa	6	4x0007	0	2000	Setpoint for low duct pressure, extract [Pa]
ExtDuctPaHiSet	Pa	7	4x0008	0	2000	Setpoint for high duct pressure, extract [Pa]
ExtDuctMinFlow	l/s	8	4x0009	0	30000	Min. extract duct flow [l/s] / [m3/h]
ExtDuctMaxFlow	l/s	9	4x0010	0	30000	Max. extract duct flow [l/s] / [m3/h]
SupLoSpeedSet	l/s	10	4x0011	0	30000	Setpoint for inlet flow, low speed [l/s] / [m3/h]
SupHiSpeedSet	l/s	11	4x0012	0	30000	Setpoint for inlet flow, high speed [l/s] / [m3/h]
ExtLoSpeedSet	l/s	13	4x0014	0	30000	Setpoint for extract flow, low speed [l/s] / [m3/h]
ExtHiSpeedSet	l/s	14	4x0015	0	30000	Setpoint for extract flow, high speed [l/s] / [m3/h]
MtrRegOffset	%	16	4x0017	-5000	5000	Inlet/extract motor offset, slave and CO2 control [1/100%]
CO2_BrugerSetLP	ppm	19	4x0020	0	10000	CO2 control: setpoint for low period (high CO2 value) [ppm]
CO2_BrugerSetHP	ppm	20	4x0021	0	10000	CO2 control: setpoint for high period (high CO2 value) [ppm]
CO2_MinFlow	l/s	21	4x0022	0	30000	CO2 control: min. flow [l/s] / [m3/h]
CO2_MaxFlow	l/s	22	4x0023	0	30000	CO2 control: max. flow [l/s] / [m3/h]
CO2_SupFlwOffs	%	23	4x0024	-5000	5000	CO2 control: inlet flow offset [1/100%]
CO2_AlrLimit	ppm	24	4x0025	100	10000	CO2 concentration alarm limit setpoint [ppm]
CO2_PB	ppm	25	4x0026	10	10000	CO2 control: P-band [ppm]
CO2_I_Time	sec	26	4x0027	10	30000	CO2 control: I-time [sec]
FAN_SupMinFlow	l/s	27	4x0028	0	30000	Fan optimizer inlet control: min. flow [l/s] / [m3/h]
FAN_ExtMinFlow	l/s	29	4x0030	0	30000	Fan optimizer extract control: min. flow [l/s] / [m3/h]
FAN_SupMaxFlow	l/s	28	4x0029	0	30000	Fan optimizer inlet control: max. flow [l/s] / [m3/h]

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
FAN_ExtMaxFlow	l/s	30	4x0031	0	30000	Fan optimizer extract control: max. flow [l/s] / [m3/h]
FAN_ExtFlwOffs	%	31	4x0032	-5000	5000	Fan optimizer extract control: flow offset [1/100%]
SupMtr_I_Time	sec	32	4x0033	5	1000	Inlet motor control: I-time setpoint [sec]
ExtMtr_I_Time	sec	33	4x0034	5	1000	Extract motor control: I-time setpoint [sec]
SupFlowFireSet	%	34	4x0035	0	10000	Inlet motor speed setpoint in case of fire alarm [%]
ExtFlowFireSet	%	35	4x0036	0	10000	Extract motor speed setpoint in case of fire alarm [%]
HS_AfterRunSet		36	4x0037	0	480	Run-on time, high speed [min]
FlwTmpCmpSet	%	39	4x0040	0	5000	Reduction of flow / percentage of setpoint [1/100%]
FlwTmpCmpStart	°C	40	4x0041	-1000	1500	Reduction of flow / start temp. setpoint [1/100°C]
FlwTmpCmpStop	°C	41	4x0042	-3000	-1000	Reduction of flow / stop temp. setpoint [1/100°C]
DXOutTempMin1	°C	42	4x0043	0	4000	Min. outdoor temperature for activating DX relay no. 1
DXOutTempMin2	°C	43	4x0044	0	4000	Min. outdoor temperature for activating DX relay no. 2
DXOutTempMin3	°C	44	4x0045	0	4000	Min. outdoor temperature for activating DX relay no. 3
DXOutTempMin4	°C	45	4x0046	0	4000	Min. outdoor temperature for activating DX relay no. 4
TimeSw-Year		49	4x0050	2000	2099	Actual year
TimeSw-Month		50	4x0051	1	12	Actual month
TimeSw-Date		51	4x0052	1	31	Actual date
TimeSw-Hour	h	52	4x0053	0	23	Actual hour
TimeSw-Minute	min	53	4x0054	0	59	Actual minutes
TimeSw-Second	sec	54	4x0055	0	59	Actual seconds
ExtDrfStartDay		55	4x0056	0	6	Extended operation start – day (0=Mon..6=Sun)
ExtDrfStartMin	min	56	4x0057	0	1439	Extended operation start – time (hours times 60 plus minutes)
ExtDrfStopDay		57	4x0058	0	6	Extended operation stop – day (0=Mon..6=Sun)
ExtDrfStopMin	min	58	4x0059	0	1439	Extended operation stop – time (hours times 60 plus minutes)
TimeSw-DayMode		59	4x0060	0	2	Timer program type (0..2) 0=Mon..Sun, 1=Mon..Fri+weekend, 2=all week
TimeSw-Start00	min	60	4x0061	0	1439	Monday: First period start time [minutes after midnight]
TimeSw-Start01	min	61	4x0062	0	1439	Tuesday: First period start time [minutes after midnight]
TimeSw-Start02	min	62	4x0063	0	1439	Wednesday: First period start time [minutes after midnight]
TimeSw-Start03	min	63	4x0064	0	1439	Thursday: First period start time [minutes after midnight]
TimeSw-Start04	min	64	4x0065	0	1439	Friday: First period start time [minutes after midnight]
TimeSw-Start05	min	65	4x0066	0	1439	Saturday: First period start time [minutes after midnight]
TimeSw-Start06	min	66	4x0067	0	1439	Sunday: First period start time [minutes after midnight]
TimeSw-Start07	min	67	4x0068	0	1439	Monday: Second period start time [minutes after midnight]

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
TimeSw-Start08	min	68	4x0069	0	1439	Tuesday: Second period start time [minutes after midnight]
TimeSw-Start09	min	69	4x0070	0	1439	Wednesday: Second period start time [minutes after midnight]
TimeSw-Start10	min	70	4x0071	0	1439	Thursday: Second period start time [minutes after midnight]
TimeSw-Start11	min	71	4x0072	0	1439	Friday: Second period start time [minutes after midnight]
TimeSw-Start12	min	72	4x0073	0	1439	Saturday: Second period start time [minutes after midnight]
TimeSw-Start13	min	73	4x0074	0	1439	Sunday: Second period start time [minutes after midnight]
TimeSw-Start14	min	74	4x0075	0	1439	Monday: Third period start time [minutes after midnight]
TimeSw-Start15	min	75	4x0076	0	1439	Tuesday: Third period start time [minutes after midnight]
TimeSw-Start16	min	76	4x0077	0	1439	Wednesday: Third period start time [minutes after midnight]
TimeSw-Start17	min	77	4x0078	0	1439	Thursday: Third period start time [minutes after midnight]
TimeSw-Start18	min	78	4x0079	0	1439	Friday: Third period start time [minutes after midnight]
TimeSw-Start19	min	79	4x0080	0	1439	Saturday: Third period start time [minutes after midnight]
TimeSw-Start20	min	80	4x0081	0	1439	Sunday: Third period start time [minutes after midnight]
TimeSw-Start21	min	81	4x0082	0	1439	Monday: Fourth period start time [minutes after midnight]
TimeSw-Start22	min	82	4x0083	0	1439	Tuesday: Fourth period start time [minutes after midnight]
TimeSw-Start23	min	83	4x0084	0	1439	Wednesday: Fourth period start time [minutes after midnight]
TimeSw-Start24	min	84	4x0085	0	1439	Thursday: Fourth period start time [minutes after midnight]
TimeSw-Start25	min	85	4x0086	0	1439	Friday: Fourth period start time [minutes after midnight]
TimeSw-Start26	min	86	4x0087	0	1439	Saturday: Fourth period start time [minutes after midnight]
TimeSw-Start27	min	87	4x0088	0	1439	Sunday: Fourth period start time [minutes after midnight]
TimeSw-Stop00	min	88	4x0089	1	1440	Monday: First period stop time [minutes after midnight]
TimeSw-Stop01	min	89	4x0090	1	1440	Tuesday: First period stop time [minutes after midnight]
TimeSw-Stop02	min	90	4x0091	1	1440	Wednesday: First period stop time [minutes after midnight]
TimeSw-Stop03	min	91	4x0092	1	1440	Thursday: First period stop time [minutes after midnight]
TimeSw-Stop04	min	92	4x0093	1	1440	Friday: First period stop time [minutes after midnight]
TimeSw-Stop05	min	93	4x0094	1	1440	Saturday: First period stop time [minutes after midnight]
TimeSw-Stop06	min	94	4x0095	1	1440	Sunday: First period stop time [minutes after midnight]
TimeSw-Stop07	min	95	4x0096	1	1440	Monday: Second period stop time [minutes after midnight]
TimeSw-Stop08	min	96	4x0097	1	1440	Tuesday: Second period stop time [minutes after midnight]
TimeSw-Stop09	min	97	4x0098	1	1440	Wednesday: Second period stop time [minutes after midnight]
TimeSw-Stop10	min	98	4x0099	1	1440	Thursday: Second period stop time [minutes after midnight]
TimeSw-Stop11	min	99	4x0100	1	1440	Friday: Second period stop time [minutes after midnight]
TimeSw-Stop12	min	100	4x0101	1	1440	Saturday: Second period stop time [minutes after midnight]
TimeSw-Stop13	min	101	4x0102	1	1440	Sunday: Second period stop time [minutes after midnight]

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
TimeSw-Stop14	min	102	4x0103	1	1440	Monday: Third period stop time [minutes after midnight]
TimeSw-Stop15	min	103	4x0104	1	1440	Tuesday: Third period stop time [minutes after midnight]
TimeSw-Stop16	min	104	4x0105	1	1440	Wednesday: Third period stop time [minutes after midnight]
TimeSw-Stop17	min	105	4x0106	1	1440	Thursday: Third period stop time [minutes after midnight]
TimeSw-Stop18	min	106	4x0107	1	1440	Friday: Third period stop time [minutes after midnight]
TimeSw-Stop19	min	107	4x0108	1	1440	Saturday: Third period stop time [minutes after midnight]
TimeSw-Stop20	min	108	4x0109	1	1440	Sunday: Third period stop time [minutes after midnight]
TimeSw-Stop21	min	109	4x0110	1	1440	Monday: Fourth period stop time [minutes after midnight]
TimeSw-Stop22	min	110	4x0111	1	1440	Tuesday: Fourth period stop time [minutes after midnight]
TimeSw-Stop23	min	111	4x0112	1	1440	Wednesday: Fourth period stop time [minutes after midnight]
TimeSw-Stop24	min	112	4x0113	1	1440	Thursday: Fourth period stop time [minutes after midnight]
TimeSw-Stop25	min	113	4x0114	1	1440	Friday: Fourth period stop time [minutes after midnight]
TimeSw-Stop26	min	114	4x0115	1	1440	Saturday: Fourth period stop time [minutes after midnight]
TimeSw-Stop27	min	115	4x0116	1	1440	Sunday: Fourth period stop time [minutes after midnight]
TimeSw-Mode00		116	4x0117	0	2	Monday: First period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode01		117	4x0118	0	2	Tuesday: First period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode02		118	4x0119	0	2	Wednesday: First period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode03		119	4x0120	0	2	Thursday: First period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode04		120	4x0121	0	2	Friday: First period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode05		121	4x0122	0	2	Saturday: First period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode06		122	4x0123	0	2	Sunday: First period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode07		123	4x0124	0	2	Monday: Second period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode08		124	4x0125	0	2	Tuesday: Second period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode09		125	4x0126	0	2	Wednesday: Second period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode10		126	4x0127	0	2	Thursday: Second period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode11		127	4x0128	0	2	Friday: Second period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode12		128	4x0129	0	2	Saturday: Second period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode13		129	4x0130	0	2	Sunday: Second period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode14		130	4x0131	0	2	Monday: Third period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode15		131	4x0132	0	2	Tuesday: Third period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode16		132	4x0133	0	2	Wednesday: Third period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode17		133	4x0134	0	2	Thursday: Third period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode18		134	4x0135	0	2	Friday: Third period operating mode: 0=OFF, 1=low speed, 2=high speed

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
TimeSw-Mode19		135	4x0136	0	2	Saturday: Third period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode20		136	4x0137	0	2	Sunday: Third period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode21		137	4x0138	0	2	Monday: Fourth period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode22		138	4x0139	0	2	Tuesday: Fourth period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode23		139	4x0140	0	2	Wednesday: Fourth period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode24		140	4x0141	0	2	Thursday: Fourth period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode25		141	4x0142	0	2	Friday: Fourth period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode26		142	4x0143	0	2	Saturday: Fourth period operating mode: 0=OFF, 1=low speed, 2=high speed
TimeSw-Mode27		143	4x0144	0	2	Sunday: Fourth period operating mode: 0=OFF, 1=low speed, 2=high speed
TempRegMode		147	4x0148	0	3	0=Inlet, 1-Extract, 2=Room, 3=Inlet/extract differential
TempRegSet	°C	148	4x0149	0	4000	Temperature setpoint for actual control type [1/100°C]
SupTempMinSet	°C	149	4x0150	0	1800	Min. limit inlet temperature [1/100°C]
SupTempMaxSet	°C	150	4x0151	2000	5000	Max. limit inlet temperature [1/100°C]
SupTempDiffSet	°C	151	4x0152	100	1500	Setpoint: Temperature differential between inlet and extract Only relevant when TempRegMode is 3 (inlet/extract differential) (constant inlet/extract - differential temperature control) [1/100°C]
SupTempDiffAlr	°C	155	4x0156	200	1500	Alarm limit for temperature differential between inlet setpoint and actual value [1/100°C]
SupTempPB	°C	156	4x0157	200	4000	P-band for inlet temperature control [1/100°C]
SupTempCool_It	sec	157	4x0158	10	30000	I-time for inlet cooling control [sec]
SupTempEXC_It	sec	158	4x0159	10	30000	I-time for inlet heat exchanger control [sec]
SupTempHeat_It	sec	159	4x0160	10	30000	I-time for inlet heating control [sec]
SupTempDnRegIt	sec	160	4x0161	10	30000	I-time for inlet flow reduction in case of low inlet temperature [sec]
ExtTempDiffAlr	°C	164	4x0165	200	1500	Alarm limit for temperature differential between extract setpoint and actual value [1/100°C]
ExtTempPB	°C	165	4x0166	200	4000	P-band for extract temperature control [1/100°C]
ExtTempCool_It	sec	166	4x0167	10	30000	I-time for extract cooling control [sec]
ExtTempEXC_It	sec	167	4x0168	10	30000	I-time for extract heat exchanger control [sec]
ExtTempHeat_It	sec	168	4x0169	10	30000	I-time for extract heating control [sec]
ExtTempDnRegIt	sec	169	4x0170	10	30000	I-time for extract flow reduction in case of low inlet temperature [sec]
ExtTempHeat2It	sec	170	4x0171	10	30000	I-time for heating 2 control [sec]
ExtTempHP_IT	sec	172	4x0173	10	30000	I-time for heat pump control [sec]
SWTC_WintX1	°C	174	4x0175	-3000	0	Summer/winter temp. comp.: low outdoor temp. setpoint, winter [1/100°C]
SWTC_WintX2	°C	175	4x0176	-1000	1000	Summer/winter temp. comp.: high outdoor temp. setpoint, winter [1/100°C]
SWTC_SumX1	°C	176	4x0177	1000	3000	Summer/winter temp. comp.: low outdoor temp. setpoint, summer [1/100°C]

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
SWTC_SumX2	°C	177	4x0178	2000	4000	Summer/winter temp. comp.: high outdoor temp. setpoint, summer [1/100°C]
SWTC_WintComp	°C	178	4x0179	100	1000	Summer/winter temp. comp.: winter compensation [1/100°C]
SWTC_SumComp	°C	179	4x0180	-1000	1000	Summer/winter temp. comp.: summer compensation [1/100°C]
SW_Mode		184	4x0185	0	4	Summer/winter changeover: 0=OFF (no summer/winter changeover) 1=Changeover determined by outdoor temperature 2=Changeover determined by date 3=Manual summer 4=Manual winter
SW_OutWinterON	°C	185	4x0186	-3000	4000	Outdoor temperature for start of winter operation (SW_Mode = 1) [1/100°C]
SW_OutSummerON	°C	186	4x0187	-3000	4000	Outdoor temperature for start of summer operation (SW_Mode = 1) [1/100°C]
SW_MonthWintON		187	4x0188	7	12	Month for start of winter operation (SW_Mode = 2)
SW_DateWintON		188	4x0189	1	31	Date for start of winter operation (SW_Mode = 2)
SW_MonthSumON		189	4x0190	1	6	Month for start of summer operation (SW_Mode = 2)
SW_DateSumON		190	4x0191	1	31	Date for start of summer operation (SW_Mode = 2)
RecicStartTmp	°C	194	4x0195	500	4000	Startup temperature for recirculation [1/100 °C]
RecicStopTmp	°C	195	4x0196	500	4000	Stop temperature for recirculation [1/100 °C]
SupTempFireAlr	°C	199	4x0200	5000	12000	Setpoint for internal fire alarm in inlet duct [1/100°C]
ExtTempFireAlr	°C	200	4x0201	3500	12000	Setpoint for internal fire alarm in extract duct [1/100°C]
CoolFlwForcePc	%	204	4x0205	0	10000	Increase in fan speed when cooling is active [%]
CoolOutTmpMin	°C	205	4x0206	0	2500	Min. outdoor temperature for start of cooling
CoolSupMinTmp	°C	206	4x0207	0	2500	Min. inlet temperature when cooling is active (only with room temp. control)
SN_ExtTmpStart	°C	209	4x0210	1500	4000	Summer night extract/room temp. start [1/100°C]
SN_ExtTmpStop	°C	210	4x0211	1000	3000	Summer night extract/room temp. stop [1/100°C]
SN_OutTmpStart	°C	211	4x0212	500	2000	Summer night outdoor temp. start [1/100°C]
SN_SupTmpSet	°C	212	4x0213	500	2000	Summer night inlet temp. control setpoint [1/100°C]
SN_StartTid	min	213	4x0214	0	1439	Summer night start [min]
SN_StopTid	min	214	4x0215	0	1439	Summer night stop [min]
ExhaustBypass	°C	219	4x0220	0	2000	Min. exhaust temp setpoint for cross-flow heat exchanger [1/100°C]
ExhaustBypasPB	°C	220	4x0221	200	2000	P-band for bypass control of cross-flow heat exchanger [1/100°C]
CExcDeIcePress	Pa	221	4x0222	10	2500	Setpoint for pressure drop across cross-flow exchanger for start of de-icing [Pa]

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
CExcDeIceTime	Sec	222	4x0223	180	1800	Setpoint for duration of heat exchanger de-icing [sec]
BattEXC_PumpFc		224	4x0225	0	2	Circulation pump mode on heat exchanger battery: 0 –> Pump runs constantly 1 –> Pump runs if heat recovery demand is > 0 (AutoMode) 2 –> Pump runs if outdoor temp. is < temp. setpoint for pump start
BattEXC_PumpSt	°C	225	4x0226	0	4000	Startup temp. setpoint for circulation pump on heat exchanger battery ONLY used if BattEXC_PumpFunc (Address 224) = 2. Pump runs if outdoor temp. is < temp. setpoint for pump start
BattEXC_AlrSet	°C	226	4x0227	0	2000	Temp. differential alarm setpoint for heat exchanger battery Alarm activated if temperature differential (in relation to outdoor temp.) downstream from heat exchanger battery operating at 50% power (or more) is lower than the alarm setpoint
Humid_SupSet	%	227	4x0228	0	10000	Humidity setpoint for selected control type (inlet/exhaust) [1/100%] RH
HW_UpStartPow	%	229	4x0230	0	10000	Heating battery: Startup power setpoint [1/100%]
HW_PumpFunc		230	4x0231	0	2	Circulation pump mode on heating battery: 0 –> Pump runs constantly 1 –> Pump runs if heat demand is > 0 (AutoMode) 2 –> Pump runs if outdoor temp. is < temp. setpoint for pump start
HW_PmpStartTmp	°C	231	4x0232	500	3000	Startup temp. setpoint for circulation pump on heating battery ONLY used if HW_PumpFunc (Address 230) = 2 Pump runs if outdoor temp. is < temp. setpoint for pump start
HW_FrzStopSet	°C	232	4x0233	500	4000	Setpoint for frost protection control when unit is in STOP mode [1/100°C]
HW_FrzDriftSet	°C	233	4x0234	200	2000	Setpoint for frost prot. control when unit is in OPERATING mode [1/100°C]
HW_FreezePB	°C	234	4x0235	200	2000	P-band for frost protection control [1/100°C]
HW_FrzAlrTpSet	°C	235	4x0236	200	2000	Setpoint for frost protection temp. alarm [1/100°C]
HW1PmpStartPrc	%	236	4x0237	0	10000	Heating battery 1 Start circulation pump with %-open valve [1/100%] ONLY used if HW1_PumpFunc (Address 230) = 1 The pump starts when the value is exceeded.
CW_PumpFunc		239	4x0240	0	3	Cooling water pump mode: 0 –> Pump runs constantly 1 –> Pump runs if cooling power is > 0 (AutoMode) 2 –> Pump runs if outdoor temp. > temp. setpoint for pump start
CW_PmpStartTmp	°C	240	4x0241	500	4000	Temp. setpoint for start of cooling battery pump ONLY used if CW_PumpFunc (Address 239) = 2 Pump runs if outdoor temp. is > temp. setpoint for pump start
FanOptSupExtIn	%	241	4x0242	0	10000	External signal GreenZone, inlet [1/100%]
FanOptExtExtIn	%	242	4x0243	0	10000	External signal GreenZone, exhaust [1/100%]

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
FiltSupStatAlr	Pa	244	4x0245	10	500	Alarm limit for pressure drop across intake filter (static mode)
FiltExtStatAlr	Pa	245	4x0246	10	500	Alarm limit for pressure drop across exhaust filter (static mode)
FiltSupDynAlr	%	246	4x0247	1000	10000	Alarm limit for pressure drop across intake filter (dynamic mode)
FiltExtDynAlr	%	247	4x0248	1000	10000	Alarm limit for pressure drop across exhaust filter (dynamic mode)
Alr_MailSetup		249	4x0250	0	3	Alarm email setup 0 –> Emails not sent 1 –> Emails sent for A-alarms 2 –> Emails sent for B-alarms 3 –> Emails sent for A and B-alarms
BrugerRE_Func		250	4x0251	0	2	Alarm relay 2 mode: 0 –> B-alarm 1 –> Low speed indication 2 –> High speed indication
PHStartPrc		251	4x0252	0	30000	Pre-heating element - Start-up output setpoint [1/100%]; when system is in start-up sequence
PHPumpMode		252	4x0253	0	4	Pre-heating element Circulation pump function: 0 –> Pump runs constantly 1 –> Pump runs if heat output is > 0 (AutoMode) 2 –> Pump runs if outdoor temp. is > temp. setpoint for pump start
PHPmpStTmpH		253	4x0254	500	3000	Pre-heating element Start temperature for circulation pump of pre-heating element ONLY used if PHPumpMode (Address 252) = 2 Pump runs if outdoor temp. is < temp. setpoint for pump start
PHStandbyTmp		254	4x0255	500	4000	Pre-heating element Setpoint for frost protection control when system is in STOP mode [1/100°C]
PHFrzDrSetH		255	4x0256	200	2000	Pre-heating element Setpoint for frost protection control when system is in OPERATING mode [1/100°C]
PHeatFrzPB		256	4x0257	200	2000	Pre-heating element P-band for frost protection control [1/100°C]
PHMinAlrFrz		257	4x0258	-4000	10000	Pre-heating element - Frost alarm Setpoint for frost protection temperature alarm [1/100°C]
PHeatSet		258	4x0259	-1000	2000	Pre-heating element - Setpoint inlet duct; behind pre-heating element
HW2UpStartPow		259	4x0260	0	10000	Heating battery 2 - Start-up output setpoint [1/100%]
HW2PumpFunc		260	4x0261	0	3	Heating battery 2 Circulation pump function: 0 –> Pump runs constantly 1 -> Pump runs if heating valve %-open is > value set in address = 262 2 –> Pump runs if outdoor temp. is > temp. setpoint for pump start (address = 261)
HW2PmpStartTmp		261	4x0262	500	3000	Heating battery 2 Start temperature for circulation pump of heating battery 2 ONLY used if WaterPumpFunc (Address 260) = 2 Pump runs if outdoor temp. is < temp. setpoint for pump start

NAME	UNIT	ADDRESS	REGISTER	MIN.	MAX.	REMARKS
HW2PmpStartPrc		262	4x0263	0	10000	Heating battery 2 - Start circulation pump with %-open valve. ONLY used if HW2_PumpFunc (Address 260) = 1 The pump starts when the value is exceeded.
HW2FrzStopSet		263	4x0264	500	4000	Heating battery 2 - Setpoint for frost protection control when unit is in STOP mode [1/100°C]
HW2FrzDriftSet		264	4x0265	200	2000	Heating battery 2 - Setpoint for frost protection control when unit is in OPERATING mode [1/100°C]
HW2FreezePB		265	4x0266	200	2000	Heating battery 2 - P-band for frost protection control [1/100°C]
HW2FrzAlrTpSet		266	4x0267	200	2000	Heating battery 2 - Setpoint for frost protection temperature alarm [1/100°C]
CW_PumpStartPr		267	4x0268	0	10000	Cooling element (hydronic cooling) - Start circulation pump with %-open valve ONLY used if CW_PumpFunc (Address 239) = 1 The pump starts when the value is exceeded.
BattEXCPmpStPr		268	4x0269	0	10000	Heat exchange battery - Start circulation pump with %-open valve. ONLY used if BattEXC_PumpFc (Address 224) = 1 The pump starts when the value is exceeded.
HP_MinOpTemp1		269	4x0270	-4000	4000	Min. outdoor temperature for activating heat pump relay no. 1
HP_MinOpTemp2		270	4x0271	-4000	4000	Min. outdoor temperature for activating heat pump relay no. 2
HP_MinOpTemp3		271	4x0272	-4000	4000	Min. outdoor temperature for activating heat pump relay no. 3
HP_MinOpTemp4		272	4x0273	-4000	4000	Min. outdoor temperature for activating heat pump relay no. 4
CombiUpStPow		274	4x0275	0	10000	Multi-purpose battery - Start-up output setpoint [1/100%]
CombiPumpFunc		275	4x0276	0	3	Multi-purpose battery Circulation pump function: 0 –> Pump runs constantly 1 -> Pump runs if valve %-open is > value set in address = 277 2 –> Pump runs if outdoor temp. is > temp. setpoint for pump start (address = 276)
CombiPmpStTmpH		276	4x0277	500	3000	Multi-purpose battery Start temperature for circulation pump of multi-purpose battery ONLY used if CombiPumpFunc (Address 275) = 2 Pump runs if outdoor temp. is < temp. setpoint for pump start
CombiPmpStPrc		277	4x0278	0	10000	Multi-purpose battery - Start circulation pump with %-open valve ONLY used if CombiPumpFunc (Address 275) = 1 The pump starts when the value is exceeded.
CombFrzStopSet		278	4x0279	500	4000	Multi-purpose battery - Setpoint for frost protection control when system is in Stop mode [1/100°C]
CombFrzDrSetH		279	4x0280	200	2000	Multi-purpose battery - Setpoint for frost protection control when system is in Operating mode [1/100°C]
CombiFrzPB		280	4x0281	200	2000	Multi-purpose battery - P-band for frost protection control [1/100°C]
CombiFrzAlHSet		281	4x0282	200	2000	Multi-purpose battery - Setpoint for frost protection temperature alarm [1/100°C]
BattEXCFrzStop		282	4x0283	-1000	4000	Fluid-coupled battery - Setpoint for frost protection control when unit is in STOP mode [1/100°C]
BattEXCFrzDrf		283	4x0284	-1000	2000	Fluid-coupled battery - Setpoint for frost protection control when unit is in OPERATING mode [1/100°C]
BattEXCFrzePB		284	4x0285	200	2000	Fluid-coupled battery - P-band for frost protection control [1/100°C]
BattEXCFrzASet		285	4x0286	-1000	2000	Fluid-coupled battery - Setpoint for frost protection temperature alarm [1/100°C]