

Modbus register tables

RYMASKON® 1000 Interface & Controller

Interface/Room Controller for controlling temperature, fans, light and sun protection (2 zones)

Room control unit with colour TFT display and capacitive keys (touch keys),
RS485 interface, galvanically isolated, Modbus (RTU) or W-Modbus (Wireless)



Information register

FUNCTION CODE 03 - READ HOLDING REGISTERS

Default Holding Address	Parameter description	Register Name	Access	Value	Range
Device information					
2000	Device Type	Device_Type_2000	r	0...4	0..2 = internally assigned 3 = RYMASKON 130x interface, no control outputs 4 = RYMASKON 140x interface, no control outputs 1000 = RYMASKON 131xC, 230V Controller, 1AO 2R0, Temp-Control 1001 = RYMASKON 132xC, 24V Controller, 3AO, Temp-Control 1002 = RYMASKON 136xC, 24V Controller, 2AO 2DO, Temp-Control 1003 = RYMASKON 143xC, 24V Controller, 3AO, Temp- and Fan-Control 1004 = RYMASKON 144xC, 230V Controller, 5RO, Temp- and Fan-Control 1005 = RYMASKON 145xC, 230V Controller, 1AO 2RO, Temp- and Fan-Control 1006 = RYMASKON 146xC, 24V Controller, 2AO 2DO, Temp- and Fan-Control
2001	Firmware	Firmware_2001	r	1011...9999	1011...9999
2002	Prod. Date (month/year) e.g. 1024 = October 24	ProdDate_2002	r	123...1260	123...1260
2003	Operation Days (in days)	OperationDays_2003	r	0...15000	0...15000 days
2004	Bus Address	BusAddress_2004	r	1...247	1...247 (default 1)
2005	Baudrate	Baudrate_2005	r	0...4	0 = 9600 Bd 1 = 19200 Bd (default) 2 = 38400 Bd 3 = 57600 Bd 4 = 115200 Bd
2006	Parity / Stop Bits	Parity_StopBits_2006	r	0...3	0 = None (none, 1 stop bit) 1 = EVEN (even, default) 2 = ODD (odd) 3 = None (none, 2 stop bits)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
3749	Fan Control	Fan_Control_3749	r	0...1	0 = no fan control 1 = with fan control
4200	Sun Protect circuits	SP_NumOfCircuits_4200	r	0...2	0 = no sun protect adjustment 1 = 1 sun protect circuit 2 = 2 sun protect circuits
5300	Light Circuits	L_NumOfCircuits_5300	r	0...2	0 = no light adjustment 1 = 1 light circuit 2 = 2 light circuits
2025	Internal Error bit 0= external temperature sensor error (NTC10K) bit 1= I2C communication error	InternalError_2025_bitField InternalError_TempS2Ext_2025_bit0 InternalError_I2CCommun_2025_bit1	r	0...1	0 = no error (default) 1 = error

Data register

Data register parameters are stored in the volatile memory (RAM).

The values are reset to their default after the unit is restarted.

Some parameters can have values saved in the configuration register for restore after the unit is restarted (e.g. setpoint temperature)

FUNCTION CODE 03 - READ HOLDING REGISTERS

FUNCTION CODE 06 - WRITE SINGLE HOLDING REGISTER

FUNCTION CODE 16 - WRITE MULTIPLE HOLDING REGISTERS

Default Holding Address	Parameter description	Register Name	Access	Value	Range	Mapping	Default Input-Register	Default Coil-Register
Sensor data								
100	Temp Sensor 1 int. value	TempS1Int_Value_100	r	-200...1220	-20.0...50.0°C (0.0...122.0 °F)	Input	1	
101	Humidity Sensor 1 int. Value	HumS1Int_Value_101	r	0...1000	0.0...100.0 % RH	Input	2	
102	CO2 Sensor 1 int. value	CO2S1Int_Value_102	r	0...2000	0...2000 ppm	Input	3	
103	VOC Sensor 1 int. value ppb	VOCS1Int_ppb_Value_103	r	0...2383	0...2383 ppb	Input	4	
104	VOC Sensor 1 int.value %	VOCS1Int_%_Value_104	r	0...100	0...100 %	Input	5	
106	Temp Sensor 2 ext. value	TempS2Ext_Value_106	r	-200...1220	-20.0...50.0°C (0.0...122.0 °F)	Input	7	
120	Temp Sensor 3 bus value	TempS3Bus_Value_120	r/w	-200...1220	-20.0...50.0°C (0.0...122.0 °F)			
121	Humidity Sensor 2 bus value	HumS3Bus_Value_121	r/w	0...1000	0.0...100.0 % RH			
122	CO2 Sensor 2 bus value	CO2S2Bus_Value_122	r/w	0...5000	0...5000 ppm			
123	VOC Sensor 2 bus value	VOCS2Bus_Value_123	r/w	0...60000	0...60000 ppb			
124	PM Sensor 2 bus value	PMS2Bus_Value_124	r/w	0...1000	0...1000 µg/m³			
125	Pressure Sensor 2 bus value Unit is set via address 2816	PressureS2Bus_Value_125	r/w	mbar, hPa and Pa 0...10000 inWC 0...50000	mbar, hPa und Pa 0...10000 inWC 0...500			
126	D1 Input Status	D1Input_Status_126	r	0...1	0 = DI1 open (default) 1 = DI1 closed	Input	11	
127	D2 Input Status	D2Input_Status_127	r	0...1	0 = DI2 open (default) 1 = DI2 closed	Input	12	
300	CO2 Sensor 1 int. reset auto zero After ON, the unit switches back to OFF automatically	CO2S1Int_ResetAutozero_300	r/w	0...1	0 = OFF 1 = ON			
302	CO2 Sensor 1 int. auto calibration	CO2S1Int_AutoCalibr_302	r/w	0...1	0 = OFF 1 = ON (default)			

Default Holding Address	Parameter description	Register Name	Access	Value	Range	Mapping	Default Input-Register	Default Coil-Register
Room climate data								
400	Temp Setpoint (Default changes automatically when the temperature unit is set in address 2010)	Setpoint_Temp_400	r/w	0...1220	-20.0...50.0 °C (0.0...122.0 °F) default 21.0 °C (70.0 °F)			
401	Temp Setpoint Offset	Setpoint_Temp_Offset_401	r/w	-180...180	-18.0...18.0 °C/°F (default 0 °C/°F)			
402	Temp Setpoint Absolute (Temp Setpoint + Temp Setpoint Offset)	Setpoint_Temp_Absolut_402	r	-180...1400	-18.0...140.0 °C/°F	Input	8	
403	Temp Setpoint Offset Min-Max (Default changes automatically when the temperature unit is set in address 2010) The set value applies in both positive and negative directions.	Setpoint_Temp_Offset_MinMax_403	r/w	0...180	0.0...18.0 °C/°F (default 3 °C / 6 °F)			
404	OpMode Status Feedback from the BMS for display The icon turns blue when cooling The icon turns red when heating The icon turns grey when off <u>Controller:</u> For controller devices, switching between operating modes is linked to the controllers. As soon as the BMS takes over control of the outputs (addresses 1608-1612), the 404 is decoupled from the internal controllers and the BMS must write the operating mode status (404) itself.	OpMode_Status_404	r/w	0...2	0 = Off (default) 1 = Cooling 2 = Heating	Input	9	
405	Presence Status <u>Controller:</u> When presence status changes from 1 to 0, the setpoint temp offset is reset to 0° (401 = 0). See also description address 8001.	Presence_Status_405	r	0...1	0 = unoccupied 1 = occupied (default)	Coil		1
406	Fan Auto Mode <u>Manual/Auto activation through:</u> a) touch keys on unit (Manual = off or 1-5 , Auto = A) b) BMS <u>Controller with fan control (RYM 14xxC):</u> If the BMS takes over the outputs for the fan (1613, 1615), the fan buttons on the device remain active. Pressing the buttons causes a change in 406 and 407, but no change to the fan outputs.	Fan_AutoMode_406	r/w	0...1	0 = Manual 1 = Auto (default)	Coil		196

Default Holding Address	Parameter description	Register Name	Access	Value	Range	Mapping	Default Input-Register	Default Coil-Register
407	Fan Level The value must be specified by the BMS in Auto mode (address 406 = 1) <u>Controller with fan control (RYM 14xxC):</u> a) If address 8031=1 (factory setting), the fan output follows the heating and cooling output (e.g.: 50% heating output --> 50% fan output). If fan level OFF is selected in manual mode, the controller switches off the heating and cooling outputs. b) In automatic mode (address 406 = 1), the fan level (address 407) is specified by the controller. c) If the BMS wants to take over control of the fan outputs, this is done in address 1613 or 1615. The internal controller for the fan outputs is switched off and the display (address 406 + 407) is separated from the outputs and the internal controller. When taking over the fan outputs (1613, 1615), the BMS must also write to addresses 406 and 407. The fan buttons on the device remain active. Pressing the buttons causes a change in 406 and 407, but no change to the fan outputs.	Setpoint_Fan_Level_407	r/w	0...5	0 = Off 1 = Level 1 (Default) 2 = Level 2 3 = Level 3 4 = Level 4 5 = Level 5	Input	10	
408	Header Icon/Status	HeaderIconStatus_408_bitField						
	bit 0 = frost protection	HeaderIconStatus_FrostProtection_408_bit0	r	0/1	0 = inactive (default) 1 = active	Coil		2
	bit 1 = window contact	HeaderIconStatus_WindowContact_408_bit1	r	0/1	0 = inactive (default) 1 = active	Coil		3
	bit 2 = dew point (condensation)	HeaderIconStatus_DewPoint_408_bit2	r	0/1	0 = inactive (default) 1 = active	Coil		4
	bit 3 = ECO	HeaderIconStatus_ECO_408_bit3	r	0/1	0 = inactive (default) 1 = active	Coil		5
	bit 4 = Error	HeaderIconStatus_Error_408_bit4	r	0/1	0 = inactive (default) 1 = active	Coil		6
	bit 5 = Config Mode	HeaderIconStatus_ConfigMode_408_bit5	r	0/1	0 = inactive (default) 1 = active	Coil		7
409	Room Climate Controlled By BMS	RCBBMS_409_bitField						
	Through activation, the user cannot use the buttons to adjust the setpoint temperature, fan and presence.							
	bit 0 = temp lock	RCBBMS_Temp_Lock_409_bit0	r/w	0/1	0 = inactive (default) 1 = active	Coil		12
	bit 1 = fan lock	RCBBMS_Fan_Lock_409_bit1	r/w	0/1	0 = inactive (default) 1 = active	Coil		13
	bit 2 = presence lock	RCBBMS_Presence_Lock_409_bit2	r/w	0/1	0 = inactive (default) 1 = active	Coil		14

Default Holding Address	Parameter description	Register Name	Access	Value	Range	Mapping	Default Input-Register	Default Coil-Register
410	Presence Modbus	Presence_Mod_410	r/w	0...2	0 = unoccupied 1 = occupied 2 = occupied via unit (default)			
411	Header Icon Modbus	HeaderIconModbus_411_bitField						
	bit 0 = frost protection	HeaderIconModbus_FrostProtection_411_bit0	r/w	0/1	0 = inactive (default) 1 = active	Coil		200
	bit 1 = window contact	HeaderIconModbus_WindowContact_411_bit1	r/w	0/1	0 = inactive (default) 1 = active	Coil		201
	bit 2 = dew point (condensation)	HeaderIconModbus_DewPoint_411_bit2	r/w	0/1	0 = inactive (default) 1 = active	Coil		202
	bit 3 = ECO	HeaderIconModbus_ECO_411_bit3	r/w	0/1	0 = inactive (default) 1 = active	Coil		203
	bit 4 = Error	HeaderIconModbus_Error_411_bit4	r/w	0/1	0 = inactive (default) 1 = active	Coil		204
	bit 5 = Config Mode	HeaderIconModbus_ConfigMode_411_bit5	r/w	0/1	0 = inactive (default) 1 = active	Coil		205
412	Enable Presence DI (Default is set via 3801)	Enable_PresenceDI_412	r/w	0...1	0 = disable 1 = enable (default)	Coil		199
413	Enable Icons DI (Default is set via 3802)	Enable_IconDI_413_bitField						
	bit 0 = frost protection	Enable_FrostProtectionDI_413_bit0	r/w	0/1	0 = disable 1 = enable (default)	Coil		210
	bit 1 = window contact	Enable_WindowContactDI_413_bit1	r/w	0/1	0 = disable 1 = enable (default)	Coil		211
	bit 2 = dew point (condensation)	Enable_DewPointDI_413_bit2	r/w	0/1	0 = disable 1 = enable (default)	Coil		212
	bit 3 = ECO	Enable_ECODI_413_bit3	r/w	0/1	0 = disable 1 = enable (default)	Coil		213
	bit 4 = Error	Enable_ErrorDI_413_bit4	r/w	0/1	0 = disable 1 = enable (default)	Coil		214

Default Holding Address	Parameter description	Register Name	Access	Value	Range	Mapping	Default Input-Register	Default Coil-Register
Sun protection data								
700	Sun protect auto mode Auto mode: Keys/buttons are deactivated. Sun protection is exclusively adjusted via the BMS	SP_AutoMode_700_bitField						
	bit 0 = Sun protect 1	SP1_AutoMode_700_bit0	r/w	0/1	0 = Auto mode inactive (default) 1 = Auto mode active	Coil		96
	bit 2 = Sun protect 2	SP2_AutoMode_700_bit1	r/w	0/1	0 = Auto mode inactive (default) 1 = Auto mode active	Coil		97
720	Sun protect 1 key status	SP1_KeyStatus_720	r/w	0...6	0 = no key pressed (default) 1 = down short press 2 = down long press 3 = up short press 4 = up long press 5 = down pressed (only mode hold key) 6 = up pressed (only mode hold key)	Input	13	
721	Sun protect 1 position value	SP1_Position_Value_721	r/w	0...1000	0.0...100.0 % (default 0%)	Input	14	
722	Sun protect 1 angle value	SP1_Angle_Value_722	r/w	-180...180	-180°...180° (default 0°)	Input	15	
730	Sun protect 2 key status	SP2_KeyStatus_730	r/w	0...6	0 = no key pressed (default) 1 = down short press 2 = down long press 3 = up short press 4 = up long press 5 = down pressed (only mode hold key) 6 = up pressed (only mode hold key)	Input	16	
731	Sun protect 2 position value	SP2_Position_Value_731	r/w	0...1000	0.0...100.0 % (default 0%)	Input	17	
732	Sun protect 2 angle value	SP2_Angle_Value_732	r/w	-180...180	-180°...180° (default 0°)	Input	18	

Default Holding Address	Parameter description	Register Name	Access	Value	Range	Mapping	Default Input-Register	Default Coil-Register
Light data								
1100	Light auto mode Auto mode: Keys/buttons are deactivated, buttons are greyed out. Light is exclusively adjusted via the BMS bit 0 = Light 1	L_AutoMode_1100_bitField						
	bit 1 = Light 2	L1_AutoMode_1100_bit0	r/w	0/1	0 = Auto mode inactive (default) 1 = Auto mode active	Coil		116
		L2_AutoMode_1100_bit1	r/w	0/1	0 = Auto mode inactive (default) 1 = Auto mode active	Coil		117
1102	Light status bit 0 = Light 1	L_LightStatus_1102_bitField						
	bit 1 = Light 2	L1_LightStatus_1102_bit0	r/w	0/1	0 = Light off (default) 1 = Light on	Coil		136
		L2_LightStatus_1102_bit1	r/w	0/1	0 = Light off (default) 1 = Light on	Coil		137
1120	Light 1 key status	L1_KeyStatus_1120	r/w	0...6	0 = no key pressed (default) 1 = down short press 2 = down long press 3 = up short press 4 = up long press 5 = down pressed (only mode hold key) 6 = up pressed (only mode hold key)	Input	73	
1121	Light 1 dimm value	L1_Dimm_Value_1121	r/w	0...100	0...100 % (default 0%)	Input	74	
1130	Light 2 key status	L2_KeyStatus_1130	r/w	0...6	0 = no key pressed (default) 1 = down short press 2 = down long press 3 = up short press 4 = up long press 5 = down pressed (only mode hold key) 6 = up pressed (only mode hold key)	Input	79	
1131	Light 2 dimm value	L2_Dimm_Value_1131	r/w	0...100	0...100 % (default 0%)	Input	80	
Date / time data								
2018	Time Hour (winter time)	Date_Time_2018-2023	r/w	00...23	default 12			
2019	Time Minute (winter time)		r/w	00...59	default 00			
2020	Time Seconds (winter time)		r/w	00...59	default 00			
2021	Date Day		r/w	01...31	default 01			
2022	Date Month		r/w	01...12	default 01			
2023	Date Year		r/w	23...99	default 23			

Default Holding Address	Parameter description	Register Name	Access	Value	Range	Mapping	Default Input-Register	Default Coil-Register
Data control - Controller variants only (RYM 13xxC and RYM 14xxC)								
1600	Change-Over Status The Change-Over status is specified via a switching contact at the DI input, via an external or bus temperature sensor. Configuration takes place at address 8054. With the Change-Over Modbus parameter (address 1602), the BMS can revoke the authorisation to change the Change-Over status via DI / Temp and specify the cooling or heating mode itself. When using the Change-Over function, the heating and cooling outputs are controlled in parallel with the same heating or cooling output, with the exception of when using the secondary control loop (see address 8044).	ChangeOver_Status_1600	r	0...2	0 = Change-Over inactive (default) 1 = Cooling Mode (Heating blocked) 2 = Heating Mode (Cooling blocked)	Input	193	
1602	Change-Over Modbus Change-Over setting via the bus. 0...2: DI cooling/heating is suppressed 3: DI cooling/heating takes over again <u>Note:</u> Note address 8054 (if Change-Over via DI/Temp is set here)	ChangeOver_Modbus_1602	r/w	0...3	0 = Change-Over inactive 1 = Cooling Mode (Heating blocked) 2 = Heating Mode (Cooling blocked) 3 = Change-Over by DI/Temp (default)			
1607	Controller OpMode <u>Note:</u> The parameter Controller OpMode is used to set how the outputs are controlled by the internal controller. The BMS can override each output individually using the Output...Controlled By BMS parameters (addresses 1608-1612). If the parameter =0 (Off), frost and heat protection remain active. The value after device restart (default) is specified via address 8053.	ContrOpMode_Setpoint_1607	r/w	0...3	0 = OFF 1 = Cooling Auto (Heating blocked) 2 = Heating Auto (Cooling deaktiviert) 3 = Cooling and Heating Auto	Input	198	
1608	AO Output Heating BMS Contr. Controller with 0-10V outputs for heating/cooling If the BMS takes over the AO Heating output, the operating mode (heating/cooling) for the display must be specified in address 404.	AO_OutHeat_BMSContr_1608	r/w	-1...1000	0...10V -1 = internal controller active (default)	Input	199	
1609	AO Output Cooling BMS Contr. Controller with 0-10V outputs for heating/cooling If the BMS takes over the AO cooling output, the operating mode (heating/cooling) for the display must be specified in address 404.	AO_OutCool_BMSContr_1609	r/w	-1...1000	0...10V -1 = internal controller active (default)	Input	200	

Default Holding Address	Parameter description	Register Name	Access	Value	Range	Mapping	Default Input-Register	Default Coil-Register
1610	AO Output 6-Way-Valve BMS Contr. Controller with 0-10V outputs for 6-way valve. If the BMS takes over the AO 6-way valve output, the operating mode (heating/cooling) for the display must be specified in address 404.	AO_Out6WayValve_BMSContr_1610	r/w	-1...1000	0...10V -1 = internal controller active (default)	Input	201	
1611	RO/DO Output Heating BMS Contr. Controller with RO or DO outputs for heating/cooling If the BMS takes over the RO or DO heating output, the operating mode (heating/cooling) for the display must be specified in address 404.	RODO_OutHeat_BMSContr_1611	r/w	-1...1	0 = RO / DO Heating open 1 = RO / DO Heating closed -1 = internal controller active (default)	Input	202	
1612	RO/DO Output Cooling BMS Contr. Controller with RO or DO outputs for heating/cooling If the DMS takes over the RO or DO cooling output, the operating mode (heating/cooling) for the display must be specified in address 404.	RO/DO_OutCool_BMSContr_1612	r/w	-1...1	0 = RO / DO Cooling open 1 = RO / DO Cooling closed -1 = internal controller active (default)	Input	203	
1613	AO Output Fan BMS Contr. Controller with 0-10V outputs for fans If the BMS takes over the AO fan output, the fan operating mode and fan speed for the display must be specified in addresses 406 and 407. The fan buttons on the device remain active. Pressing the buttons causes a change in 406 and 407, but no change to the fan outputs.	AO_OutFan_BMSContr_1613	r/w	-1...1000	0...10V -1 = internal controller active (default)	Input	204	
1615	RO/DO Output Fan BMS Contr. Controller with RO or DO outputs for fans If the BMS takes over the RO fan outputs, the fan operating mode and fan speed for the display must be specified in addresses 406 and 407. The fan buttons on the device remain active. Pressing the buttons causes a change in 406 and 407, but no change to the fan outputs.	RO/DO_OutFan_BMSContr_1615	r/w	-1...3	0 = OFF 1 = Level 1 2 = Level 2 3 = Level 3 -1 = internal controller active (default)	Input	205	

Default Holding Address	Parameter description	Register Name	Access	Value	Range	Mapping	Default Input-Register	Default Coil-Register
1616	Controller Setpoint Temp (T_{Setpoint Contr}) The controller setpoint is written here from the active controller.	Controller_Setpoint_Temp_1616	r	0...1220	0...122,0 °C/°F (default 21°C / 70°F)	Input	206	
1617	AO Heating	AO_Heat_Value_1617	r	0...1000	0...10V	Input	207	
1618	AO Cooling	AO_Cool_Value_1618	r	0...1000	0...10V	Input	208	
1619	AO 6-Way-Valve	AO_6WayValve_Value_1619	r	0...1000	0...10V	Input	209	
1620	RO/DO Heating	RODO_Heat_Value_1620	r	0...1	0 = open 1 = closed	Input	210	
1621	RO/DO Cooling	RODO_Cool_Value_1621	r	0...1	0 = open 1 = closed	Input	211	
1622	AO Fan	AO_Fan_Value_1622	r	0...1000	0...10V	Input	212	
1623	RODO Fan	RODO_Fan_Level_1623	r	0...3	0 = all Relays open (fan off) 1 = Relay 1 closed (fan level 1) 2 = Relay 2 closed (fan level 2) 3 = Relay 3 closed (fan level 3)	Input	213	

Data register

Parameters of the configuration register are stored in the non-volatile memory (EEPROM).
 These parameters may only be changed while the device is being configured and not during operation.
 These values are retained after the unit is restarted.

FUNCTION CODE 03 - READ HOLDING REGISTERS

FUNCTION CODE 06 - WRITE SINGLE HOLDING REGISTER

FUNCTION CODE 16 - WRITE MULTIPLE HOLDING REGISTERS

Default Holding Address	Parameter description	Register Name	Access	Value	Range
General configuration					
2008	PIN for the display menu (with 0000, no PIN is necessary)	PIN_2008	r/W	0000...9999	0000...9999 (default 1111)
2009	Language	Language_2009	r/w	0...5	0 = German 1 = English (default) 2 = Spanish 3 = French 4 = Italian 5 = Russian
2010	Temp Unit When changing to °F, note/check/change the following addresses: 2314, 2315, 2914, 2915, 3014, 3015, 3600, 3603, 3604, Additionally for controller: 8000, 8006, 8007, 8008, 8009, 8013, 8045, 8051, 8055, 8056	Temp_Unit_2010	r/w	0...1	0 = °F 1 = °C (default)
2011	Display Brightness (when active)	Display_Brightness_2011	r/w	0...100	0 = auto (default) 1...100 %
2012	Screen Saver Timeout Time after which the screen saver is activated (If deactivated, the service life of the display is shortened)	ScreenSaver_Timeout_2012	r/w	0...60	0 = deactivated 1...60 = 1...60s (default 20s)
2013	Save To NVRAM (EEPROM) Must be carried out after configuration is complete. Unit performs a restart.	SaveToEEPROM_2013	r/w	0...1	0 = normal (default) 1 = save

Default Holding Address	Parameter description	Register Name	Access	Value	Range
2015	Time Format	Time_Format_2015	r/w	0...2	0 = 12h (am/pm) 1 = 24h (default) 2 = nothing displayed
2016	Date Format	Date_Format_2016	r/w	0...2	0 = week day DD.MM. (default) 1 = week day MM.DD 2 = nothing displayed
2017	Summer Time Region (Summer / Winter) Information: In Europe, 1 hour ahead on the last Sunday in March and 1 hour back on the last Sunday in October, both at 2:00 a.m. In the USA, 1 hour ahead on the second Sunday in March and 1 hour back on the first Sunday in November, both at 2:00 a.m. Winter time is the leading variable	Time_SetSummerWinter_2017	r/w	0...2	0 = Europe 1 = USA 2 = no time change (default, winter time)
2024	Darkmode	Display_Darkmode_2024	r/w	0...1	0 = Light display mode (default) 1 = Dark display mode (darkmode)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
Sensor configuration					
2300 - 2311	Temp Sensor 1 int. Label	TempS1Int_Label_2300-2311	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Raum English: Room Spanish: Habitación French: Locaux Italian: Camera Russian: комната	
2312	Temp Sensor 1 int. Offset	TempS1Int_Offset_2312	r/w	-200...200	-20°...+20° (default 0)
2313	Temp Sensor 1 int. Averaging Time	TempS1Int_AveragingTime_2313	r/w	0...3	0 = 4s (default) 1 = 8s 2 = 16s 3 = 32s
2314	Temp Sensor 1 int. Colour Scale Start (Default changes automatically when the temperature unit is set in address 2010)	TempS1Int_ColourScale_Start_2314	r/w	0...1220	0...122,0 °C/°F (default 16°C / 61°F)
2315	Temp Sensor 1 int. Colour Scale End (Default changes automatically when the temperature unit is set in address 2010)	TempS1Int_ColourScale_End_2315	r/w	0...1220	0...122,0 °C/°F (default 24°C / 82°F)
2317	Temp Sensor 1 int. Enable in Sensor Menu	TempS1Int_EnableInSensorMenu_2317	r/w	0...1	0 = disable (default) 1 = enable
2318	Temp Sensor 1 int. Show Colour Scale	TempS1Int_EnableColourScale_2318	r/w	0...1	0 = disable 1 = enable (default)
2400 - 2411	Humidity Sensor 1 int. Label	HumS1Int_Label_2400-2411	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Raum English: Room Spanish: Habitación French: Locaux Italian: Camera Russian: комната	
2412	Humidity Sensor 1 int. Offset	HumS1Int_Offset_2412	r/w	-200...200	-20...+20 % (default 0)
2413	Humidity Sensor 1 int. Averaging Time	HumS1Int_AveragingTime_2413	r/w	0...3	0 = 4s (default) 1 = 8s 2 = 16s 3 = 32s
2414	Humidity Sensor 1 int. Colour Scale Start	HumS1Int_ColourScale_Start_2414	r/w	0...1000	0...100,0 % RH (default 0)
2415	Humidity Sensor 1 int. Colour Scale End	HumS1Int_ColourScale_End_2415	r/w	0...1000	0...100,0 % RH (default 100)
2417	Humidity Sensor 1 int. Enable in Sensor Menu	HumS1Int_EnableInSensorMenu_2417	r/w	0...1	0 = disable 1 = enable (default)
2418	Humidity Sensor 1 int. Show Colour Scale	HumS1Int_EnableColourScale_2418	r/w	0...1	0 = disable 1 = enable (default)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
2500 - 2511	CO2 Sensor 1 int. Label	CO2S1Int_Label_2500-2511	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Raum English: Room Spanish: Habitación French: Locaux Italian: Camera Russian: комната	
2512	CO2 Sensor 1 int. Offset	CO2S1Int_Offset_2512	r/w	-500...500	-500...+500 ppm (default 0)
2513	CO2 Sensor 1 int. Averaging Time	CO2S1Int_AveragingTime_2513	r/w	0...3	0 = 4s (default) 1 = 8s 2 = 16s 3 = 32s
2514	CO2 Sensor 1 int. Colour Scale Start	CO2S1Int_ColourScale_Start_2514	r/w	0...2000	0...2000 ppm (default 0)
2515	CO2 Sensor 1 int. Colour Scale End	CO2S1Int_ColourScale_End_2515	r/w	0...2000	0...2000 ppm (default 2000)
2517	CO2 Sensor 1 int. Enable in Sensor Menu	CO2S1Int_EnableInSensorMenu_2517	r/w	0...1	0 = disable 1 = enable (default)
2518	CO2 Sensor 1 int. Show Colour Scale	CO2S1Int_EnableColourScale_2518	r/w	0...1	0 = disable 1 = enable (default)
2600 - 2611	VOC Sensor 1 int. Label	VOCS1Int_Label_2600-2611	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Raum English: Room Spanish: Habitación French: Locaux Italian: Camera Russian: комната	
2613	VOC Sensor 1 int. Averaging Time	VOCS1Int_AveragingTime_2613	r/w	0...3	0 = 4s (default) 1 = 8s 2 = 16s 3 = 32s
2614	VOC Sensor 1 int. Colour Scale Start	VOCS1Int_ColourScale_Start_2614	r/w	0...30000	0...100 % (default 0%)
2615	VOC Sensor 1 int. Colour Scale End	VOCS1Int_ColourScale_End_2615	r/w	0...30000	0...100 % (default 100%)
2617	VOC Sensor 1 int. Enable in Sensor Menu	VOCS1Int_EnableInSensorMenu_2617	r/w	0...1	0 = disable 1 = enable (default)
2618	VOC Sensor 1 int. Show Colour Scale	VOCS1Int_EnableColourScale_2618	r/w	0...1	0 = disable 1 = enable (default)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
2900 - 2911	Temp Sensor 2 ext. Label	TempS2Ext_Label_2900-2911	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Aussen English: Outdoor Spanish: Exterior French: extérieure Italian: esterna Russian: снару́жи	
2912	Temp Sensor 2 ext. Offset	TempS2Ext_Offset_2912	r/w	-200...200	-20°...+20° (default 0)
2913	Temp Sensor 2 ext. Averaging Time	TempS2Ext_AveragingTime_2913	r/w	0...3	0 = 4s (default) 1 = 8s 2 = 16s 3 = 32s
2914	Temp Sensor 2 ext. Colour Scale Start (Default changes automatically when the temperature unit is set in address 2010)	TempS2Ext_ColourScale_Start_2914	r/w	0...1220	0...122,0 °C/°F (default 16°C / 61°F)
2915	Temp Sensor 2 ext. Colour Scale End (Default changes automatically when the temperature unit is set in address 2010)	TempS2Ext_ColourScale_End_2915	r/w	0...1220	0...122,0 °C/°F (default 24°C / 82°F)
2917	Temp Sensor 2 ext. Enable in Sensor Menu	TempS2Ext_EnableInSensorMenu_2917	r/w	0...1	0 = disable 1 = enable (default)
2918	Temp Sensor 2 ext. Show Colour Scale	TempS2Ext_EnableColourScale_2918	r/w	0...1	0 = disable 1 = enable (default)
3000 - 3011	Temp Sensor 3 bus Label	TempS3Bus_Label_3000-3011	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Aussen English: Outdoor Spanish: Exterior French: extérieure Italian: esterna Russian: снару́жи	
3014	Temp Sensor 3 bus Colour Scale Start (Default changes automatically when the temperature unit is set in address 2010)	TempS3Bus_ColourScale_Start_3014	r/w	0...1220	0...122,0 °C/°F (default 16°C / 61°F)
3015	Temp Sensor 3 bus Colour Scale End (Default changes automatically when the temperature unit is set in address 2010)	TempS3Bus_ColourScale_End_3015	r/w	0...1220	0...122,0 °C/°F (default 24°C / 82°F)
3017	Temp Sensor 3 bus Enable in Sensor menu	TempS3Bus_EnableInSensorMenu_3017	r/w	0...1	0 = disable 1 = enable (default)
3018	Temp Sensor 3 bus Show Colour Scale	TempS3Bus_EnableColourScale_3018	r/w	0...1	0 = disable 1 = enable (default)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
3100 - 3111	Humidity Sensor 2 bus Label	HumS2Bus_Label_3100-3111	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Aussen English: Outdoor Spanish: Exterior French: extérieure Italian: esterna Russian: снару́жи	
3114	Humidity Sensor 2 bus Colour Scale Start	HumS2Bus_ColourScale_Start_3114	r/w	0...1000	0...100.0 % RH (default 0)
3115	Humidity Sensor 2 bus Colour Scale End	HumS2Bus_ColourScale_End_3115	r/w	0...1000	0...100.0 % RH (default 100)
3117	Humidity Sensor 2 bus Enable in Sensor menu	HumS2Bus_EnableInSensorMenu_3117	r/w	0...1	0 = disable 1 = enable (default)
3118	Humidity Sensor 2 bus Show Colour Scale	HumS2Bus_EnableColourScale_3118	r/w	0...1	0 = disable 1 = enable (default)
3200 - 3211	CO2 Sensor 2 bus Label	CO2S2Bus_Label_3200-3211	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Aussen English: Outdoor Spanish: Exterior French: extérieure Italian: esterna Russian: снару́жи	
3214	CO2 Sensor 2 bus Colour Scale Start	CO2S2Bus_ColourScale_Start_3214	r/w	0...5000	0...5000 ppm (default 0)
3215	CO2 Sensor 2 bus Colour Scale End	CO2S2Bus_ColourScale_End_3215	r/w	0...5000	0...5000 ppm (default 2000)
3217	CO2 Sensor 2 bus Enable in Sensor Menu	CO2S2Bus_EnableInSensorMenu_3217	r/w	0...1	0 = disable 1 = enable (default)
3218	CO2 Sensor 2 bus Enable in Sensor Menu	CO2S2Bus_EnableColourScale_3218	r/w	0...1	0 = disable 1 = enable (default)
3300 - 3311	VOC Sensor 2 bus Label	VOCS2Bus_Label_3300-3311	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Aussen English: Outdoor Spanish: Exterior French: extérieure Italian: esterna Russian: снару́жи	
3314	VOC Sensor 2 bus Colour Scale Start	VOCS2Bus_ColourScale_Start_3314	r/w	0...60000	0...60000 (default 0)
3315	VOC Sensor 2 bus Colour Scale End	VOCS2Bus_ColourScale_End_3315	r/w	0...60000	0...60000 (default 100)
3316	VOC Sensor 2 bus unit	VOCS2Bus_Unit_3316	r/w	0...1	0 = ppb 1 = % (default)
3317	VOC Sensor 2 bus Enable in Sensor Menu	VOCS2Bus_EnableInSensorMenu_3317	r/w	0...1	0 = disable 1 = enable (default)
3318	VOC Sensor 2 bus Show Colour Scale	VOCS2Bus_EnableColourScale_3318	r/w	0...1	0 = disable 1 = enable (default)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
3400 - 3411	PM Sensor 2 bus Label	PMS2Bus_Label_3400-3411	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Aussen English: Outdoor Spanish: Exterior French: extérieure Italian: esterna Russian: снаружи	
3414	PM Sensor 2 bus Colour Scale Start	PMS2Bus_ColourScale_Start_3414	r/w	0...1000	0...1000 µg/m³ (default 0)
3415	PM Sensor 2 bus Colour Scale End	PMS2Bus_ColourScale_End_3415	r/w	0...1000	0...1000 µg/m³ (default 1000)
3417	PM Sensor 2 bus Enable in Sensor Menu	PMS2Bus_EnableInSensorMenu_3417	r/w	0...1	0 = disable 1 = enable (default)
3418	PM Sensor 2 bus Show Colour Scale	PMS2Bus_EnableColourScale_3418	r/w	0...1	0 = disable 1 = enable (default)
3500 - 3511	Pressure 2 bus Label	PressureS2Bus_Label_3500-3511	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Aussen English: Outdoor Spanish: Exterior French: extérieure Italian: esterna Russian: снаружи	
3514	Pressure 2 bus Colour Scale Start	PressureS2Bus_ColourScale_Start_3514	r/w	0...10000	0...10000 (default = 1000 hPa)
3515	Pressure 2 bus Colour Scale End	PressureS2Bus_ColourScale_End_3515	r/w	0...10000	0...10000 (default = 1050 hPa)
3516	Pressure 2 bus Unit	PressureS2Bus_Unit_3516	r/w	0...3	0 = Pa 1 = hPa (default) 2 = mbar 3 = inWC
3517	Pressure 2 bus Enable in Sensor Menu	PressureS2Bus_EnableInSensorMenu_3517	r/w	0...1	0 = disable 1 = enable (default)
3518	Pressure 2 bus Show Colour Scale	PressureS2Bus_EnableColourScale_3518	r/w	0...1	0 = disable 1 = enable (default)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
Room climate configuration					
3600	Temp Setpoint Offset Step Size (Default changes automatically when the temperature unit is set in address 2010)	Setpoint_Temp_Offset_StepSize_3600	r/w	0...3	0 = 0,1° 1 = 0,2° 2 = 0,5° (default, bei °C) 3 = 1° (default °F)
3601	Display OpMode	OpMode_Display_3601	r/w	0...2	0 = disabled Icon 1 = enabled Icon with color change in red, blue, gray (default) 2 = enabled Icon without color change (gray only)
3602	Display Temp Setpoint (default: Temp Setpoint Absolute = Temp Setpoint + Offset) If set to Alternative and the temperature value is adjusted by the user, the display switches to Temp Setpoint Absolute for a moment and then switches back to Alternative. With Alternative, even the red/blue/grey temperature ICON of the operating mode is hidden. It is displayed again when the setpoint temperature is adjusted.	Setpoint_Temp_Display_3602	r/w	0...14	0 = nothing displayed 1 = Temp Setpoint Absolute (default) 2 = Temp Setpoint Offset Alternative: 3 = Display Humidity Sensor 1 int 4 = Display CO2 Sensor 1 int 5 = Display VOC Sensor 1 int ppb 6 = Display VOC Sensor 1 int % 7 = reserved 8 = Display Temp Sensor 2 ext 9 = Display Temp Sensor 3 Bus 10 = Display Humidity Sensor 2 Bus 11 = Display CO2 Sensor 2 Bus 12 = Display VOC Sensor Bus ppb 13 = Display PM Sensor 2 Bus 14 = Display Pressure Sensor 2 Bus
3603	Temp Setpoint After Reboot (Default changes automatically when the temperature unit is set in address 2010) The configuration selected here specifies the Temp Setpoint in address 400 after the <u>unit is restarted</u> .	Setpoint_Temp_AfterReboot_3603	r/w	0...1220	0...122,0 °C/°F (default 21°C / 70°F)
3604	Temp Setpoint Offset Min-Max After Reboot (Default changes automatically when the temperature unit is set in address 2010) Set value applies in both positive and negative directions The configuration selected here specifies the Temp Setpoint in address 403 after the <u>unit is restarted</u> .	Setpoint_Temp_Offset_MinMax_AfterReboot_3604	r/w	0...180	0...18,0 °C/°F (default 3°C / 6°F)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
3650	Current Temp Mapping Note: If the external temperature sensor is selected here, 3900 is <u>not</u> automatically changed by the device. Address 3900 must also be set to external temperature sensor.	CurrentTemp_Mapping_3650	r/w	0...2	0 = internal temperature sensor (default) 1 = external temperature sensor (input must be configured accordingly) 2 = Bus
3651	Display Current Temp	CurrentTemp_Display_3651	r/w	0...13	0 = nothing displayed 1 = Display Current Temp (default) 2 = Display Humidity Sensor 1 int 3 = Display CO2 Sensor 1 int 4 = reserved 5 = Display VOC Sensor 1 Int % 6 = reserved 7 = reserved 8 = reserved 9 = Display Humidity Sensor 2 Bus 10 = Display CO2 Sensor 2 Bus 11 = Display VOC Sensor Bus ppb 12 = Display PM Sensor 2 Bus 13 = Display Pressure Sensor 2 Bus
3750 - 3761	Fan Label	Fan_Label_3750-3761	r/w	Max. 12 characters. One register in UTF 16 format, Latin and Cyrillic alphabet per character Default: German: Raum English: Room Spanish: Habitación French: Locaux Italian: Camera Russian: комната	
3762	Number of Fan Steps	Fan_NumberOfSteps_3762	r/w	1...5	1 = 1 2 = 1 - 2 3 = 1 - 2 - 3 4 = 1 - 2 - 3 - 4 5 = 1 - 2 - 3 - 4 - 5 (Default)
3763	Enable Fan Auto/Off	Fan_EnableAutoOff_3763	r/w	0...3	0 = disable 1 = OFF 2 = Auto 3 = Auto + OFF (Default)
3764	Display Fan In Temp Menu Units with fan adjustment...Default = 1 Units without fan adjustment...Default = 0	Fan_DisplayInTempMenu_3764	r/w	0...1	0 = disabled (default) 1 = enabled

Default Holding Address	Parameter description	Register Name	Access	Value	Range
3800	Presence Function	Presence_Function_3800	r/w	0...2	0 = (default) If Presence Status is "unoccupied", the touch keys for temperature, fan and light/sun protection are blocked for value change . Navigation through all menus and waking up from the screen saver are retained. Changing Presence Status to "occupied" and enabling all keys for value change is carried out by presence touch key, by bus or by configured DI input. 1 = If Presence Status is "unoccupied", all buttons remain active (value change and navigation through the menus). Pressing any touch key changes the status to "occupied". 2 = If Presence Status is "unoccupied", the touch keys for temperature, fan and light/sunshade as well as the sensor touch key remain full active (changing values and navigating through the menus). The Presence Status remains "unoccupied" until the presence button, bus or a configured DI input changes to "occupied".
3801	Presence Enable DI Reboot The configuration selected here specifies the status of the Presence Enable DI in address 412.	Enable_PresenceDI_Reboot_3801	r/w	0...1	0 = disable 1 = enable (default)
3802	Icon Enable DI Reboot The configuration selected here specifies the status of the Icon Enable DI in address 413.	Enable_IconDI_Reboot_3802_bitField			
	bit 0 = frost protection	Enable_FrostProtectionDI_3802_bit0	r/w	0/1	0 = disable 1 = enable (default)
	bit 1 = window contact	Enable_WindowContactDI_3802_bit1	r/w	0/1	0 = disable 1 = enable (default)
	bit 2 = dew point	Enable_DewPointDI_3802_bit2	r/w	0/1	0 = disable 1 = enable (default)
	bit 3 = ECO	Enable_ECODI_3802_bit3	r/w	0/1	0 = disable 1 = enable (default)
	bit 4 = error	Enable_ErrorDI_3802_bit4	r/w	0/1	0 = disable 1 = enable (default)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
Input configuration					
3900	Input 1 Config DI1 for potential-free contact or external temperature sensor (NTC10K) <u>Controller:</u> Change-Over is activated/deactivated in address 8054. If the Change-Over is configured via DI1 or via temperature limits, it is not possible to change the value in address 3900 via the BMS.	Input1_Config_3900	r/w	Interface: 0...16 Controller 0...18	0 = deactivated (default) 1 = External temperature sensor NTC10K 2 = DI as pure bus value 3 = DI window contact NO contact 4 = DI window contact NC contact 5 = DI dew point monitors NO contact 6 = DI dew point monitors NC contact 7 = DI presence contact NO contact 8 = DI presence contact NC contact 9 = DI keycard NO contact 10 = DI keycard NC contact 11 = DI alarm NO contact 12 = DI alarm NC contact 13 = DI antifreeze protection NO contact 14 = DI antifreeze protection NC contact 15 = DI ECO NO contact 16 = DI ECO NC contact 17 = Change Over - Cooling (Contact open), Heating (contact closed) 18 = Change Over - Heating (Contact open), Cooling (contact closed)
3901	Input 2 Config DI2 for potential-free contact or 230V input on 230V devices <u>Controller:</u> Change-Over is activated/deactivated in address 8054. If the Change-Over is configured via DI2, it is not possible to change the value in address 3901 via the BMS.	Input2_Config_3901	r/w	Interface: 0...16 Controller 0...18	0 = deactivated (default) 1 = reserved 2 = DI as pure bus value 3 = DI window contact NO contact 4 = DI window contact NC contact 5 = DI dew point monitors NO contact 6 = DI dew point monitors NC contact 7 = DI presence contact NO contact 8 = DI presence contact NC contact 9 = DI keycard NO contact 10 = DI keycard NC contact 11 = DI alarm NO contact 12 = DI alarm NC contact 13 = DI antifreeze protection NO contact 14 = DI antifreeze protection NC contact 15 = DI ECO NO contact 16 = DI ECO NC contact 17 = Change Over - Cooling (Contact open), Heating (contact closed) 18 = Change Over - Heating (Contact open), Cooling (contact closed)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
Sun protection configuration					
4201	Sun protect display If the display is deactivated, the user moves on sight (view of sun protection)	SP_Display_4201	r/w	0...1	0 = Position and angle shown on the display deactivated 1 = Position and angle shown on the display activated (default)
4250 - 4261	Sun Protect 1 Label	SP1_Label_4250-4261	r/w	Max. 10 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Blind English: Blind Spanish: Persiana French: Store Italian: Persiana Russian: жалюзи	
4263	Sun Protect 1 OpMode <u>Short-long key press (for fast bus line)</u> A short or long key press (long > 1s) is recorded in the "Key Status" data register. After reading, the BMS must write the value "not pressed" back to the "Key Status" data register. The BMS writes the position and angle back to the "Value" data register to be shown on the display. <u>Hold key press (for fast bus line)</u> The button press is recorded in the "Key Status" data register up until the user releases the button. After the button is released, RYMASKON resets the value back to "not pressed". The BMS writes the position and angle back to the "Value" data register to be shown on the display. <u>Setpoint mode</u> If the user presses one of the two buttons, the position and angle are written directly to the "Value" data register and shown on the display. The BMS receives the position as a setpoint value.	SP1_OpMode_4263	r/w	0...2	0 = short-long key (default) 1 = hold key 2 = setpoint mode
4264	Sun Protect 1 Type	SP1_Type_4264	r/w	0...2	0 = Sun protection position 1 = Slat angle 2 = Sun protection position + slat angle (default)
4265	Sun Protect 1 Position Step Size	SP1_PositionStepSize_4265	r/w	1...1000	0.1... 100% (default 0.5%)
4266	Sun Protect 1 Angle Step Size	SP1_AngleStepSize_4266	r/w	1...90	1... 90° (default 10°)
4267	Sun Protect 1 Position Min	SP1_PositionMin_4267	r/w	0...100	0...100 % (default 0%)
4268	Sun Protect 1 Position Max	SP1_PositionMax_4268	r/w	0...100	0...100 % (default 100%)
4269	Sun Protect 1 Angle Min	SP1_AngleMin_4269	r/w	-90...90	-90°...90° (default 0°)
4270	Sun Protect 1 Angle max	SP1_AngleMax_4270	r/w	-90...90	-90°...90° (default 80°)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
4300 - 4311	Sun Protect 2 Label	SP2_Label_4300-4311	r/w	Max. 10 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Blind English: Blind Spanish: Persiana French: Store Italian: Persiana Russian: жалюзи	
4313	Sun Protect 2 OpMode <u>Short-long key press (for fast bus line)</u> A short or long key press (long > 1s) is recorded in the "Key Status" data register. After reading, the BMS must write the value "not pressed" back to the "Key Status" data register. The BMS writes the position and angle back to the "Value" data register to be shown on the display. <u>Hold key press (for fast bus line)</u> The button press is recorded in the "Key Status" data register up until the user releases the button. After the button is released, RYMASKON resets the value back to "not pressed". The BMS writes the position and angle back to the "Value" data register to be shown on the display. <u>Setpoint mode</u> If the user presses one of the two buttons, the position and angle are written directly to the "Value" data register and shown on the display. The BMS receives the position as a setpoint value.	SP2_OpMode_4313	r/w	0...2	0 = short-long key (default) 1 = hold key 2 = setpoint mode
4314	Sun Protect 2 Type	SP2_Type_4314	r/w	0...2	0 = Sun protection position 1 = Slat angle 2 = Sun protection position + slat angle (default)
4315	Sun Protect 2 Position Step Size	SP2_PositionStepSize_4315	r/w	1...1000	0.1... 100% (default 0.5%)
4316	Sun Protect 2 Angle Step Size	SP2_AngleStepSize_4316	r/w	1...90	1... 90° (default 10°)
4317	Sun Protect 2 Position Min	SP2_PositionMin_4317	r/w	0...100	0...100 % (default 0%)
4318	Sun Protect 2 Position Max	SP2_PositionMax_4318	r/w	0...100	0...100 % (default 100%)
4319	Sun Protect 2 Angle Min	SP2_AngleMin_4319	r/w	-90...90	-90° ...90° (default 0°)
4320	Sun Protect 2 Angle Max	SP2_AngleMax_4320	r/w	-90...90	-90° ...90° (default 80°)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
Light configuration					
5301	Light display If the display is deactivated, the user moves on sight (view of lamps)	L_Display_5301	r/w	0...1	0 = Display of the dimming value or ON/OFF on the display deactivated 1 = Display of the dimming value or ON/OFF on the display activated (default)
5350-5361	Light 1 Label	L1_Label_5350-5361	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Licht English: Light Spanish: Luz French: Éclairage Italian: Luce Russian: свет	
5363	Light 1 Dimmable	L1_Dimmable_5363	r/w	0...1	0 = Light dimming deactivated 1 = Light dimming activated (default)
5364	Light 1 OpMode <u>Short-long key press (for fast bus line)</u> A short or long key press (long > 1s) is recorded in the "Key Status" data register. After reading, the BMS must write the value "not pressed" back to the "Key Status" data register. The BMS writes the dimming value to the "Value" data register to be shown on the display. <u>Hold key press (for fast bus line)</u> The button press is recorded in the "Key Status" data register up until the user releases the button. After the button is released, RYMASKON resets the value back to "not pressed". The BMS writes the dimming value to the "Value" data register to be shown on the display. <u>Setpoint mode</u> If the user presses one of the two buttons, the dimming value is written directly to the "Value" data register and shown on the display. The BMS receives the light intensity (dimming value) as a setpoint value.	L1_OpMode_5364	r/w	0...2	0 = short-long key (default) 1 = hold key 2 = setpoint mode
5368	Light 1 Dimm Step Size	L1_DimmStepSize_5368	r/w	1...100	1... 100% (default 10%)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
5400-5411	Light 2 Label	L2_Label_5400-5411	r/w	Max. 12 characters. One register in UTF16 format, Latin and Cyrillic alphabet per character Default: German: Licht English: Light Spanish: Luz French: Éclairage Italian: Luce Russian: cбер	
5413	Light 2 Dimmable	L2_Dimmable_5413	r/w	0...1	0 = Light dimming deactivated 1 = Light dimming activated (default)
5414	Light 2 OpMode <u>Short-long key press (for fast bus line)</u> A short or long key press (long > 1s) is recorded in the "Key Status" data register. After reading, the BMS must write the value "not pressed" back to the "Key Status" data register. The BMS writes the dimming value to the "Value" data register to be shown on the display. <u>Hold key press (for fast bus line)</u> The button press is recorded in the "Key Status" data register up until the user releases the button. After the button is released, RYMASKON resets the value back to "not pressed". The BMS writes the dimming value to the "Value" data register to be shown on the display. <u>Setpoint mode</u> If the user presses one of the two buttons, the dimming value is written directly to the "Value" data register and shown on the display. The BMS receives the light intensity (dimming value) as a setpoint value.	L2_OpMode_5414	r/w	0...2	0 = short-long key (default) 1 = hold key 2 = Setpoint mode
5418	Light 2 Dimm Step Size	L2_DimmStepSize_5418	r/w	1...100	1... 100% (default 10%)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
Controller configuration					
8000	Setpoint_TempShift_Unocc_8000 When the Presence Status is unoccupied, the setpoint temperature (address 400) is increased (cooling mode, address 1600=1 or 1607=1) or decreased (heating mode, address 1600=2 or 1607=2) by this value. If the device is set to heating/cooling mode (1600 = 0 and 1607 = 3) and the presence status is set to unoccupied, the dead zone is set to twice this value. After returning to the presence status occupied, the original values for the setpoint temperature and dead zone are reactivated.	Setpoint_TempShift_Unocc_8000	r/w	0...180	0...18 °C/F° (default 0°C / 0°F)
8001	Setpoint Temp Offset Presence Change When presence status is set to unoccupied, the controller sets the setpoint offset to 0 (401=0).	Setpoint_Temp_Offs_PresChange_8001	r/w	0...1	0 = Reset Setpoint Temp Offset (default) 1 = Reset Setpoint Temp Offset when unoccupied and restore when occupied
8002	Setpoint Temp Offset Presence Change 0: If ECO is active (408 bit 3 = 1), the dead zone ECO is switched on. The presence status (405) has no influence on the dead zone. 1: If ECO is active (408 bit 3 = 1) and the presence status is occupied, the dead zone comfort is switched on. If the presence status is unoccupied again, the dead zone ECO is switched on again.	Occupied_OverrECO_8002	r/w	0...1	0 = Presence has no effect on ECO 1 = Presence (occupied) overrides ECO mode (default)
8003	Controller Typ Heating	ContrTyp_Heating_8003	r/w	0...1	0 = PI controller (default) 1 = ON/OFF controller
8004	Controller Typ Cooling	ContrTyp_Cooling_8004	r/w	0...1	0 = PI controller (default) 1 = ON/OFF controller
8005	PWM Cycle Time	PWM_CycleTime_8005	r/w	5...60	5...60 minutes (default 30 minutes)
8006	Dead Band Comfort (PI Temp Control Loop) Note: The dead zone only affects the control when the device is set to heating/cooling mode (1600 = 0 and 1607 = 3). (Default changes automatically when the temperature unit is set in address 2010).	DeadBand_Comfort_8006	r/w	0...270	0...27,0 °C/F° (default 1°C / 2°F)
8007	Dead Band ECO (PI Temp Control Loop) Note: The dead zone only affects the control when the device is set to heating/cooling mode (1600 = 0 and 1607 = 3). If ECO mode is activated, the dead zone of the controller is set to the value configured here. The setpoint offset remains unchanged as long as presence detection is not activated. (Default changes automatically when the temperature unit is set in address 2010).	DeadBand_ECO_8007	r/w	0...270	0...27,0 °C/F° (default 4°C / 7°F)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
8008	Hysteresis Temp Control (ON/OFF Temp Control Loop) (Default changes automatically when the temperature unit is set in address 2010)	Hyst_TempContr_8008	r/w	0...270	0...27,0 °C/F° (default 1°C / 2°F)
8009	Proportional Band Xp Cooling (Default changes automatically when the temperature unit is set in address 2010)	PropBand_XpCool_8009	r/w	1...270	0,1...27,0 °C/F° (default 2°C / 4°F)
8010	Reset Time Ti Cooling If the reset time is set to 0, the PI controller becomes a P controller.	ResetTime_Ti_Cool_8010	r/w	0...1200	0...1200 minutes (default 20 minutes)
8011	Manipulated Variable Min. Cooling	ManipVarMin_Cool_8011	r/w	0...100	0...100% (default 0%)
8012	Manipulated Variable Max. Cooling	ManipVarMax_Cool_8012	r/w	0...100	0...100% (default 100%)
8013	Proportional Band Xp Heating (Default changes automatically when the temperature unit is set in address 2010)	PropBand_XpHeat_8013	r/w	1...270	0,1...27,0 °C/F° (default 2°C / 4 °F)
8014	Reset Time Ti Heating If the reset time is set to 0, the PI controller becomes a P controller.	ResetTime_Ti_Heat_8014	r/w	0...1200	0...1200 minutes (default 20 minutes)
8015	Manipulated Variable Min. Heating	ManipVarMin_Heat_8015	r/w	0...100	0...100% (default 0%)
8016	Manipulated Variable Max. Heating	ManipVarMax_Heat_8016	r/w	0...100	0...100% (default 100%)
8018	Y Min Deviation PI Temp Control Loop Min. control variable change for PI in temperature control If the control variable change defined here between two control loops is not exceeded, the analogue output remains at the previous value. 0=inactive Note: Only applies to PI controllers	Y_MinDev_PIControlLoop_8018	r/w	0...100	0...10 % (default 0,2 %)
8019	Manipulated Variable Min. Behavior	ManipVarMin_Behave_8019	r/w	0...1	0 = At least the set minimum value is applied as heating/cooling power to the output (default) 1 = Heating/cooling power is only applied to the output from the set minimum value.

Default Holding Address	Parameter description	Register Name	Access	Value	Range
8020	Output 6-Way-Valve Ranges 8, 9, 10 and 11 do not apply to RYMASKON 143xC.	Out6WayValve_8020	r/w	0...11	0 = 6-way valve inactive (default) 1 = 6-way valve general 2 = cooling...heating = 2...10 V (e.g. Belimo) 3 = heating...cooling = 2...10 V (e.g. Belimo, inverted) 4 = cooling...heating = 0...10 V (DN15, e.g. Sauter) 5 = heating...cooling = 0...10 V (DN15, e.g. Sauter, inverted) 6 = cooling...heating = 0...10 V (DN20, e.g. Sauter) 7 = heating...cooling = 0...10 V (DN20, e.g. Sauter, inverted) 8 = 0...100% heating = 0...10 V 9 = 0...100% cooling = 0...10 V 10 = 0...100% heating = 10...0 V 11 = 0...100% cooling = 10...0 V
8021	6-Way-Valve Generic Cooling 100%	6WayValveGen_Cool100%_8021	r/w	0...1000	0...10,0V (default 2,0 V)
8022	6-Way-Valve Generic Cooling 0%	6WayValveGen_Cool0%_8022	r/w	0...1000	0...10,0V (default 5,0 V)
8023	6-Way-Valve Generic Heating 100%	6WayValveGen_Heat100%_8023	r/w	0...1000	0...10,0V (default 7,0 V)
8024	6-Way-Valve Generic Heating 0 %	6WayValveGen_Heat0%_8024	r/w	0...1000	0...10,0V (default 10,0 V)
8025	AO Direction Heating RYM 132xC / 136xC / 143xC	AODirection_Heating_8025	r/w	0...1	0 = 0...10 V (NC actuators, default) 1 = 10...0 V (NO actuators)
8026	AO Direction Cooling RYM 132xC / 136xC / 143xC	AODirection_Cooling_8026	r/w	0...1	0 = 0...10 V (NC actuators, default) 1 = 10...0 V (NO actuators)
8027	Wirkrichtung RODO Heizen RYM 131xC / 144xC / 145xC / 146xC	RODODirection_Heating_8027	r/w	0...1	0 = Normally open (NC actuators, default) 1 = Normally closed (NO actuators)
8028	RODO Direction Heating RYM 131xC / 144xC / 145xC	RODODirection_Cooling_8028	r/w	0...1	0 = Normally open (NC actuators, default) 1 = Normally closed (NO actuators)
8029	RODO Min. Runtime Heat/Cool (Heat pump function) This parameter only applies in ON/OFF control. The digital heating or cooling output RO/DO remains in the ON state for the minimum running time after switching on, regardless of the heating or cooling output of the controller. If a switchover between heating and cooling occurs during active monitoring of the minimum running time, the outputs are switched over immediately and monitoring of the running time is restarted. 0 = Function deactivated	RODO_MinRuntime_HeatCool_8029	r/w	0...120	0...120 minutes (default 0 minutes)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
8030	Delay Switch Heat/Cool (Heat pump function) The switch between the two control sequences, heating and cooling, is delayed. The heating or cooling output is only enabled after the time has elapsed. 0 = Function deactivated	DelaySwitch_Heat/Cool_8030	r/w	0...900	0...900 s (default 0s)
8031	Fan Mapping For 4...9, observe RCV regulation	FanMapping_8031	r/w	0...9	0 = no assignment to a controller 1 = cooling and heating (default) 2 = cooling 3 = heating 4 = humidity (internal sensor) 5 = humidity (external sensor) 6 = CO2 (internal sensor) 7 = CO2 (external sensor) 8 = VOC % (internal sensor) 9 = VOC (external sensor)
8032	AO Fan Min. Note: If a value > 0 is selected, the fan will blow even without a heating/cooling or RCV request.	AO_FanMin_8032	r/w	0...1000	0...10V (default 0V)
8033	AO Fan Max.	AO_FanMax_8033	r/w	0...1000	0...10V (default 10V)
8034	Fan Manipulated Variable Start Heating/cooling or RCV output at which the fan should start.	Fan_ManipVar_Start_8034	r/w	0...30	0-30 % (default 0%)
8035	Fan StartUp Time For safe fan start-up. The fan runs at 100% from standstill for the duration of the start-up time. After that, the fan is controlled via the controller or via the Modbus specification. Note: The function is deactivated with 0s.	Fan_StartUpTime_8035	r/w	0...25	0...25s (default 1s)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
8036	Fan FollowUp Time When the controller switches from an active controller state (heating/cooling) to standby mode, or when a user or the BMS switches off the fan, the fan continues to run for the set follow-up time. Note: The function is deactivated with 0s.	Fan_FollowUpTime_8036	r/w	0...500	0...500s (default 1s)
8037	Fan Gradient AO Only applies to ON/OFF control of heating and cooling output. (Default changes automatically when the temperature unit is set in address 2010) When the ON/OFF controller is active, the value parameterised here is the deviation of the setpoint from the actual value at which the fan output reaches 100%. Below this value, the fan output is calculated linearly to the deviation.	FanGradient_AO_8037	r/w	0...360	0...36 °C/°F (default 4°C / 7°F)
8038	Delta T Fan Level 1 RO (Difference between setpoint and current temperature) Please note: - If the value is set to 0, the fan starts running as soon as a heating or cooling request is made. - If the value is set to > 0, the fan does not start when a heating or cooling request occurs, but only when the difference between the setpoint and current temperature configured here is reached (+0.3° hysteresis). Only applies to controllers with relays for fans Address 2000 = 1004 (if the temperature unit is set to °F, the limit may need to be adjusted here)	DeltaT_FanLevel1RO_8038	r/w	0...360	0...36 °C/°F (default 0°C / 0°F)
8039	Delta T Fan Level 2 RO (Difference between setpoint and current temperature) Only applies to controllers with relays for fans Address 2000 = 1004 (Default changes automatically when temperature unit is set to °F – deviating entries must be re-entered after C/F change)	DeltaT_FanLevel2RO_8039	r/w	0...360	0...36 °C/°F (default 2°C / 4°F)
8040	Delta T Fan Level 3 RO (Difference between setpoint and current temperature) Only applies to controllers with relays for fans Address 2000 = 1004 (Default changes automatically when temperature unit is set to °F – deviating entries must be re-entered after C/F change)	DeltaT_FanLevel3RO_8040	r/w	0...360	0...36 °C/°F (default 4°C / 7°F)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
8041	Frost Protection (Default changes automatically when temperature unit is set to °F – deviating entries must be re-entered after C/F change)	Frost_Protection_8041	r/w	0...600	0...60,0 °C/°F (default 8°C / 46°F)
8042	Heat Protection (Default changes automatically when temperature unit is set to °F – deviating entries must be re-entered after C/F change)	Heat_Protection_8042	r/w	0...1400	0...140,0 °C/°F (default 35°C / 95°F)
8043	2. Control Sensor Mapping Auxiliary control circuit for temperature control Note: If the external temperature sensor is selected here, 3900 is not automatically changed by the device. Address 3900 must also be set to external temperature sensor.	2.ContrLoop_SensMapping_8043	r/w	1...2	1 = external temperature sensor (default) 2 = bus temperature sensor
8044	2. Control Loop Type Only possible in Change-Over mode (address 1600 = 1 / 2) The second control circuit is controlled by the cooling output. For proper functioning, both control circuits must be 2-pipe systems with a common Change-Over. The setpoint is linked to the setpoint of the main control circuit, but can be shifted by a constant offset (address 8049).	2.ContrLoopType_8044	r/w	0...2	0 = PI controller 1 = ON/OFF controller 2 = secondary control loop inactive (default)
8045	2. Control Loop Proportional Band Xp (Default changes automatically when the temperature unit is set in address 2010)	2.ContrLoop_PropBandXp_8045	r/w	1...270	0,1...27,0 °C/°F (default 2°C / 4°F)
8046	2. Control Loop Reset Time Ti If the reset time is set to 0, the PI controller becomes a P controller.	2.ContrLoop_ResTimeTi_8046	r/w	0...1200	0...1200 minutes (default 20 minutes)
8047	2. Control Loop Manipulated Variable Min	2.ContrLoop_ManipVariableMin_8047	r/w	0...100	0...100% (default 0%)
8048	2. Control Loop Manipulated Variable Max	2.ContrLoop_ManipVariableMax_8048	r/w	0...100	0...100% (default 100%)
8049	2. Control Loop Setpoint Temp Offset Defines the setpoint temperature of the second control loop from the setpoint temperature of the first control loop using this offset.	2.ContrLoop_SetTempOffset_8049	r/w	-250...250	-25,0...25,0 °C/°F (default 0°C / 0°F)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
8050	Underfloor Heat Protection Sensor If the limit value (address 8051) is exceeded, the device reduces the heating output to 0%. Note: If the external temperature sensor is selected here, 3900 is not automatically changed by the device. Address 3900 must also be set to external temperature sensor.	UnderfloorHeatProtection_Sensor_8050	r/w	0...2	0 = none (Temp limit for underfloor heating inactive, default) 1 = external temperature sensor 2 = bus temperature sensor
8051	Underfloor Heat Protection Limit Limit value for switching off the heating output (Default changes automatically when the temperature unit is set in address 2010)	UnderfloorHeatProtection_Limit_8051	r/w	0...1220	0...122,0 °C/°F (default 34°C / 93°F)
8052	Anti-Jam (Valve Protection) If the heating/cooling valves are not activated during the set time, the device briefly activates the valves to prevent them from sticking. The heating and cooling output is activated for 5 minutes (valve open). The 6-way valve is set to 10V for 5 minutes and then to 0V for 5 minutes (0=deactivated).	Anti-Jam_8052	r/w	0...60	0... 60 days (default 3 days)
8053	Controller OpMode After Reboot The configuration selected here specifies the operating mode in address 1607 when the <u>device is restarted</u> . e.g.: If there is a power failure and the power is switched back on after a considerable period of time.	ContrOpMode_AfterReboot_8053	r/w	0...3	0 = OFF 1 = Cooling Auto (Heating blocked) 2 = Heating Auto (Cooling deaktiviert) 3 = Cooling and Heating Auto (default)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
8054	Cange-Over_DI-Temp If 8054 = 1, the device writes a 17 to 3900 (plausibility check with 3900). If 8054 = 2, the device writes an 18 to 3900 (plausibility check with 3900). If 8054 = 3, then the device writes a 17 to 3901 (plausibility check with 3901). If 8054 = 4, then the device writes an 18 to 3901 (plausibility check with 3901). If 8054 = 5, then the device writes a 1 to 3900 (plausibility check with 3900).	CangeOver_DITemp_8054	r/w	0...6	0 = Change-Over inactive (default) 1 = DI 1 - Cooling (Contact open), Heating (contact closed) 2 = DI 1 - Heating (Contact open), Cooling (contact closed) 3 = DI 2 - Cooling (Contact open), Heating (contact closed) 4 = DI 2 - Heating (Contact open), Cooling (contact closed) 5 = external temperature sensor 6 = bus temperature sensor
8055	Cange-Over Temp Cooling Note: The Change-Over DI / Temp parameter (address 8054) must be configured to external temperature sensor or bus temperature. At the value set here (or lower), the device automatically switches the change-over to cooling mode (address 1600 = 1). (Default changes automatically when the temperature unit is set in address 2010)	CangeOver_TempCooling_8055	r/w	0...1220	0...122,0 °C/°F (default 22°C / 72°F)
8056	Change-Over Temp Heating Note: The Change-Over DI / Temp parameter (address 8054) must be configured to external temperature sensor or bus temperature. At the value set here (or higher), the device automatically switches the change-over to heating mode (address 1600 = 2). (Default changes automatically when the temperature unit is set in address 2010)	CangeOver_TempHeating_8056	r/w	0...1220	0...122,0 °C/°F (default 25°C / 77°F)

Default Holding Address	Parameter description	Register Name	Access	Value	Range
8200	Setpoint RCV	Setpoint_RCV_8200	r/w	0...30.000	0...30.000 (default 1000)
8201	Control Type RCV Only applies to controllers with AO output for fans. Controllers with RO/DO outputs for fans are controlled using switching thresholds (address 8205 - 8207).	ContrTyp_RCV_8201	r/w	0...1	0 = PI controller (default) 1 = ON/OFF controller
8202	Proportional Band Xp RCV	PropBand_XpRCV_8202	r/w	1...10.000	1...10.000 (default 100)
8203	Reset Time Ti RCV If the reset time is set to 0, the PI controller becomes a P controller.	ResetTime_Ti_RCV_8203	r/w	0...60.000	0...60.000 s (default 420 s)
8204	Hysteresis RCV Control	Hyst_RCVContr_8204	r/w	0...30.000	0...30.000 (default 50)
8205	Delta RCV Fan Level 1 RO (Difference between setpoint and current RCV) 0: Fan stage 1 is switched on as soon as (setpoint - current) > 0 Only applies to controllers with RO/DO outputs for fans	DeltaRCV_FanLevel1RO_8205	r/w	0...30.000	0...30.000 (default 0)
8206	Delta RCV Fan Level 2 RO (Difference between setpoint and current RCV) Only applies to controllers with RO/DO outputs for fans	DeltaRCV_FanLevel2RO_8206	r/w	0...30.000	0...30.000 (default 100)
8207	Delta RCV Fan Level 3 RO (Difference between setpoint and current RCV) Only applies to controllers with RO/DO outputs for fans	DeltaRCV_FanLevel3RO_8207	r/w	0...30.000	0...30.000 (default 200)
8209	Y_RCV Min Deviation PI Contol Loop Min. control variable change PI for RCV control loop If the control variable change defined here between two control loops is not exceeded, the analogue output remains at the previous value. 0=inactive Note: Only applies to PI controllers	YRCV_MinDev_PIContolLoop_8209	r/w	0...500	0...50 % (default 5 %)

Input register

FUNCTION CODE 04 - READ INPUT REGISTER

Default Input-Register	Parameter description	Access	Value	Range
Sensor input				
1	Temp Sensor 1 int. value	r	-200...1220	-20...50°C (0...122,0 °F)
2	Humidity Sensor 1 int. Value	r	0...1000	0 to 100.0 % RH
3	CO2 Sensor 1 int. value	r	0...2000	0...2000 ppm
4	VOC Sensor 1 int. value ppb	r	0...30000	0...30000 ppb
5	VOC Sensor 1 int.value %	r	0...100	0...100 %
7	Temp Sensor 2 ext. value	r	-200...1220	-20...50°C (0...122,0 °F)
11	D1 Input Status	r	0...1	0 = DI1 open (default) 1 = DI1 closed
12	D2 Input Status	r	0...1	0 = DI2 open (default) 1 = DI2 closed
Room climate input				
8	Temp Setpoint Absolute	r	0...1220	-18...60°C (0...140°F)
9	OpMode Status	r	0...2	0 = Off (default) 1 = Cooling 2 = Heating
10	Fan Level	r	0...5	0 = Off 1 = Level 1 (Default) 2 = Level 2 3 = Level 3 4 = Level 4 5 = Level 5

Default Input-Register	Parameter description	Access	Value	Range
Sun protection input				
13	Sun protect 1 key status	r	0...6	0 = Button not pressed (default) 1 = DOWN button pressed briefly 2 = DOWN button pressed and held down 3 = UP button pressed briefly 4 = UP button pressed and held down 5 = DOWN button pressed (only mode hold key) 6 = UP button pressed (only mode hold key)
14	Sun protect 1 position value	r	0...1000	0.0...100.0 % (default 0%)
15	Sun protect 1 angle value	r	-180...180	-180°...180° (default 0°)
16	Sun protect 2 key status	r	0...6	0 = Button not pressed (default) 1 = DOWN button pressed briefly 2 = DOWN button pressed and held down 3 = UP button pressed briefly 4 = UP button pressed and held down 5 = DOWN button pressed (only mode hold key) 6 = UP button pressed (only mode hold key)
17	Sun protect 2 position value	r	0...1000	0.0...100.0 % (default 0%)
18	Sun protect 2 angle value	r	-180...180	-180°...180° (default 0°)
Light input				
73	Light 1 key status	r	0...6	0 = Button not pressed (default) 1 = DOWN button pressed briefly 2 = DOWN button pressed and held down 3 = UP button pressed briefly 4 = UP button pressed and held down 5 = DOWN button pressed (only mode hold key) 6 = UP button pressed (only mode hold key)
74	Light 1 dimm value	r	0...100	0...100 % (default 0%)
79	Light 2 key status	r	0...6	0 = Button not pressed (default) 1 = DOWN button pressed briefly 2 = DOWN button pressed and held down 3 = UP button pressed briefly 4 = UP button pressed and held down 5 = DOWN button pressed (only mode hold key) 6 = UP button pressed (only mode hold key)
80	Light 2 dimm value	r	0...100	0...100 % (default 0%)

Default Input-Register	Parameter description	Access	Value	Range
Input Controller				
193	Change-Over Status The Change-Over status indicates whether the controllers are in the externally enforced heating or cooling mode or whether this mode is inactive.	r	0...2	0 = Change-Over inactive (default) 1 = Cooling Mode (Heating blocked) 2 = Heating Mode (Cooling blocked)
198	Controller OpMode The Controller OpMode parameter is used to set how the outputs are controlled by the internal controller.	r	0...3	0 = OFF 1 = Cooling Auto (Heating blocked) 2 = Heating Auto (Cooling deaktiviert) 3 = Cooling and Heating Auto
199	AO Output Heating BMS Contr. With this register value, the BMS can define the output value itself.	r	-1...1000	0...10V -1 = internal controller active (default)
200	AO Output Cooling BMS Contr. With this register value, the BMS can define the output value itself.	r	-1...1000	0...10V -1 = internal controller active (default)
201	AO Output 6-Way-Valve BMS Contr With this register value, the BMS can define the output value itself.	r	-1...1000	0...10V -1 = internal controller active (default)
202	RO/DO Output Heating BMS Contr. With this register value, the BMS can define the output value itself.	r	-1...1	0 = RO / DO Heating open 1 = RO / DO Heating closed -1 = internal controller active (default)
203	RO/DO Output Cooling BMS Contr. With this register value, the BMS can define the output value itself.	r	-1...1	0 = RO / DO Cooling open 1 = RO / DO Cooling closed -1 = internal controller active (default)
204	AO Output Fan BMS Contr. With this register value, the BMS can define the output value itself.	r	-1...1000	0...10V -1 = internal controller active (default)
205	RO/DO Output Fan BMS Contr. With this register value, the BMS can define the output value itself.	r	-1...1	0 = OFF 1 = Level 1 2 = Level 2 3 = Level 3 -1 = internal controller active (default)

Default Input-Register	Parameter description	Access	Value	Range
206	Controller Setpoint Temp The active control setpoint from the active controller is written here.	r	0...1220	0...122,0 °C/°F
207	AO Heating	r	0...1000	0...10V
208	AO Cooling	r	0...1000	0...10V
209	AO 6-Way-Valve	r	0...1000	0...10V
210	RO/DO Heating	r	0...1	0 = open 1 = closed
211	RO/DO Cooling	r	0...1	0 = open 1 = closed
212	AO Fan	r	0...1000	0...10V
213	RODO Fan	r	0...3	0 = all Relays open (fan off) 1 = Relay 1 closed (fan level 1) 2 = Relay 2 closed (fan level 2) 3 = Relay 3 closed (fan level 3)

Coil register

FUNCTION CODE 01 - READ COIL REGISTERS

FUNCTION CODE 05 - WRITE SINGLE COIL REGISTER

FUNCTION CODE 15 - WRITE MULTIPLE COIL REGISTERS

Default Coil-Register	Parameter description	Access	Value	Range
Room climate coils				
1	Presence Status	r	0...1	0 = unoccupied 1 = occupied (default)
2	Header Icon Frost Protection	r	0...1	0 = inactive (default) 1 = active
3	Header Icon Window Contact	r	0...1	0 = inactive (default) 1 = active
4	Header Icon Dew Point (condensation)	r	0...1	0 = inactive (default) 1 = active
5	Header Icon ECO	r	0...1	0 = inactive (default) 1 = active
6	Header Icon Error	r	0...1	0 = inactive (default) 1 = active
7	Header Icon Config Mode	r	0...1	0 = inactive (default) 1 = active
12	Temp Lock (active Temp Lock deactivated touch keys)	r/w	0...1	0 = inactive (default) 1 = active
13	Fan Lock (active Fan Lock deactivated touch keys)	r/w	0...1	0 = inactive (default) 1 = active
14	Presence Lock (active Presence Lock deactivated touch keys)	r/w	0...1	0 = inactive (default) 1 = active

Default Coil-Register	Parameter description	Access	Value	Range
196	Fan Auto Mode <u>Manual/Auto activation through:</u> a) touch keys on unit (Manual = off or 1-5 , Auto = A) b) BMS	r/w	0...1	0 = Manual 1 = Auto (default)
199	Presence Enable DI <i>(Default is set via 3801)</i>	r/w	0...1	0 = disable 1 = enable
200	Icon Modbus frost protection	r/w	0...1	0 = inactive (default) 1 = active
201	Icon Modbus window contact	r/w	0...1	0 = inactive (default) 1 = active
202	Icon Modbus dew point (condensation)	r/w	0...1	0 = inactive (default) 1 = active
203	Icon Modbus ECO	r/w	0...1	0 = inactive (default) 1 = active
204	Icon Modbus Error	r/w	0...1	0 = inactive (default) 1 = active
205	Icon Modbus Config Mode	r/w	0...1	0 = inactive (default) 1 = active
210	Icon DI frost protection <i>(Default is set via 3802)</i>	r/w	0...1	0 = disable 1 = enable
211	Icon DI window contact <i>(Default is set via 3802)</i>	r/w	0...1	0 = disable 1 = enable
212	Icon DI dew point <i>(Default is set via 3802)</i>	r/w	0...1	0 = disable 1 = enable
213	Icon DI ECO <i>(Default is set via 3802)</i>	r/w	0...1	0 = disable 1 = enable
214	Icon DI Error <i>(Default is set via 3802)</i>	r/w	0...1	0 = disable 1 = enable

Default Coil-Register	Parameter description	Access	Value	Range
Sun protection coils				
96	Sun Protect 1 automatic (touch keys deactivated when automatic is active)	r/w	0...1	0 = automatic inactive (default) 1 = automatic active
97	Sun Protect 2 automatic (touch keys deactivated when automatic is active)	r/w	0...1	0 = automatic inactive (default) 1 = automatic active
Light coils				
116	Light 1 automatic (touch keys deactivated when automatic is active)	r/w	0...1	0 = automatic inactive (default) 1 = automatic active
117	Light 2 automatic (touch keys deactivated when automatic is active)	r/w	0...1	0 = automatic inactive (default) 1 = automatic active
136	Light 1 status	r/w	0...1	0 = Light off (default) 1 = Light on
137	Light 2 status	r/w	0...1	0 = Light off (default) 1 = Light on

Diagnostics

FUNCTION CODE 08 - Diagnostics

Sub Function Code	Parameter	Data Type	Response
00	Return Query Data (Loopback)		Echo data
01	Restart Communications Option (Reset Listen Only Mode)		Echo message
04	Force Listen Only Mode		No response
10	Clear Counters and Diagnostic Register		Echo message
11	Return Bus Message Count	Unsigned 16 bit	All valid bus messages
12	Return Bus Communication Error Count (Parity, CRC, frame error, etc.)	Unsigned 16 bit	Faulty bus messages
13	Return Bus Exception Error Count	Unsigned 16 bit	Error counter
14	Return Slave Message Count	Unsigned 32 bit	Slave messages
15	Return Slave No Response Count	Unsigned 32 bit	Broadcast messages (address 0)

Report Slave ID

FUNCTION CODE 17 - Report Slave ID

Byte no.	Parameter	Data Type	Response
00	Byte Count	Unsigned 8 bit	6
01	Slave ID (Device Type)	Unsigned 8 bit	4 = On-wall Interface 5 = In-wall Interface 6 = Controller 3AO 7 = Controller 2AO+2DO 8 = Controller 230V 1AO+2DO 9 = Controller 230V 5DO
02	Slave ID (Device Class)	Unsigned 8 bit	110 = RYMASKON
03	Run Indicator Status	Unsigned 8 bit	255 = RUN, 0 = STOP
04	FW version number (release)	Unsigned 8 bit	1...9
05	FW version number (version)	Unsigned 8 bit	1...99
06	FW version number (Index)	Unsigned 8 bit	1...9

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