

## Register tables

# RYMASKON<sup>®</sup> 700-Modbus

Room control unit with colour touch screen  
and Modbus connection

Interface for controlling temperature,  
fans, light, A/C (air conditioning) (1 zone) and  
blind (2 zones)



**Modbus Register**

The **RYMASKON 700 Interface** supports the Modbus registers and function codes which are listed in the following. The following are preset in the factory

Baud Rate: 9,600 (register 301)  
 Data Bits: 8  
 Parity: none (register 302)  
 Stop bits: 1 (register 303)  
 Modbus slave address: 1 (register 300)

The parity of the device can be switched between Odd, None and Even. The settable baud rates are 9600, 19200, 38300, 57600, 76800 and 115200 bit/s. The table shows the register offsets starting with 0 (0 base). For example, the temperature recorded with the internal sensor is read out of Modbus register 100 with function code 04. With some Modbus masters, the register value must be increased by 1 (e.g. 1 Base). In this case, enter function code 04 and register 101.

**FUNCTION CODE 01 - READ COILS****FUNCTION CODE 05 - WRITE SINGLE COIL****FUNCTION CODE 15 - WRITE MULTIPLE COILS**

Register	Parameter description	Data Type	Raw Data	Range
100	OFF mode override (last changeover command)		0...1	OFF - ON
101	ECO mode override (last changeover command)		0...1	OFF - ON
102	Display frost protection icon		0...1	OFF - ON
103	Party mode (Boost) override – override icon		0...1	OFF - ON

**FUNCTION CODE 02 - READ DISCRETE INPUTS (Add 10,000 for Modicon Addressing)**

Register	Parameter description	Data Type	Raw Data	Range
100	Digital input status		0...1	OFF - ON
101	Relay output status		0...1	OFF - ON
103	Light switching status		0...1	OFF - ON
104	A/C (air conditioning) switching status		0...1	OFF - ON
105	OFF mode status		0...1	OFF - ON
106	Display block status		0...1	OFF - ON
107	Party mode (Boost) status		0...1	OFF - ON
108	ECO mode status		0...1	OFF - ON
110	Auto fan status (fan in automatic mode)		0...1	OFF - ON

**FUNCTION CODE 04 - READ INPUT REGISTERS (Add 30,000 for Modicon Addressing)**

Register	Parameter description	Data Type	Raw Data	Range
100	Temperature sensor 3 (internal Sensor)	Signed 16 bit	-400...3020	-40.0...150.0 °C (-40.0...302.0 °F)
101	Temperature sensor 1 (RI1 - resistor input 1)	Signed 16 bit	-400...3020	-40.0...150.0 °C (-40.0...302.0 °F)
102	Temperature sensor 2 (RI2 - resistor input 2)	Signed 16 bit	-400...3020	-40.0...150.0 °C (-40.0...302.0 °F)
103	Currently calculated target temperature	Signed 16 bit	-400...3020	-40.0...150.0 °C (-40.0...302.0 °F)
104	Current operating status of the device	Unsigned 16 bit	0...3	0 = Comfort (normal operation) 1 = OFF 2 = Party (Boost)

**FUNCTION CODE 04 - READ INPUT REGISTERS (Add 30,000 for Modicon Addressing)**

Register	Parameter description	Data Type	Raw Data	Range
105	relative humidity measurement (devices with RH option)	Unsigned 16 bit	0...1000	0...100.0 % RH
106	Alarm status	Unsigned 16 bit	0...256	Bit 0 – Internal NTC (1) Bit 1 – RI1 (2) Bit 2 – RI2 (4) Bit 3 – Moisture sensor (8) Bit 4 – DI1 (16) Bit 5 – DI2 (N/A) Bit 6 – Time lost (N/A)
107	Discrete input register (Bit 0 = DI1, Bit1 = Relay, Bit 2 = Holiday etc.)	Unsigned 16 bit	0...65.535	N/A
111	Current fan speed	Unsigned 16 bit	0...6	0...6
112	Operating mode icon status	Unsigned 16 bit	0...3	0 = Auto 1 = Heating 2 = Cooling 3 = Ventilate/Fan
113	CO2 measurement (devices with CO2 option)	Unsigned 16 bit	0...5000	0...5,000 ppm
200	Firmware version	Unsigned 16 bit	N/A	N/A

**FUNCTION CODE 03 - READ HOLDING REGISTERS (For Modicon Addressing Add 40,000)****FUNCTION CODE 06 - WRITE SINGLE HOLDING REGISTER****FUNCTION CODE 16 - WRITE MULTIPLE HOLDING REGISTERS**

Register	Parameter description	Data Type	Raw Data	Range
100	Nominal target temperature	Unsigned 16 bit	0...950	0,0...95.0 (Default 21.0 °C) (°C/°F/%)
101	Setpoint mode <b>NOTE:</b> If parameter is set to 3, set register 168 to 1.	Unsigned 16 bit	0...4	0 = Temperature (default) 1 = Percent 2 = None 3 = Relative temperature 4 = State select
102	Sensor 3 source	Unsigned 16 bit	0...1	0 = Internal sensor (default) 1 = Bus sensor
103	Sensor 3 bus temperature	Signed 16 bit	-580...1220	-58.0...122.0 °C/°F
104	Setpoint lower limit	Unsigned 16 bit	0...950	0.0...95.0 °C/°F/% (Default 14 °C)
105	Setpoint upper limit	Unsigned 16 bit	0...950	0.0...95.0 °C/°F/% (Default 30 °C)
106	Ring colour/ring mode	Unsigned 16 bit	0...10	0 = White 1 = Red 2 = Blue 3 = Green 4 = Orange 5 = Yellow 6 = Magenta 7 = Cyan 8 = Sensor 1 9 = Sensor 2 10 = Sensor 3 (default)
107	Sensor 1 source	Unsigned 16 bit	0...1	0 = RI1 1 = Bus sensor (default)
108	Sensor 1 bus temperature	Signed 16 bit	-580...1220	-58.0...122.0 °C/°F

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**FUNCTION CODE 16 - WRITE MULTIPLE HOLDING REGISTERS**

Register	Parameter description	Data Type	Raw Data	Range
109	Manual fan control <b>NOTE:</b> Pay attention to register 110.	Unsigned 16 bit	0...10	0 = Disabled (default) 1 = 1-setting 2 = 2-setting 3 = 3-setting 4 = 6-setting 5 = 1-setting + Auto 6 = 2-setting + Auto 7 = 3-setting + Auto 8 = 6-setting + Auto 9 = Extended
110	Fan display	Unsigned 16 bit	0...5	0 = Disabled (default) 1 = Line bar + Icon 2 = Line bar 3 = Icon 4 = Colour line bar + Icon 5 = Colour line bar
111	Fan speed override	Unsigned 16 bit	0...6	0...6
112	Enable of operating mode icon for the user on the main screen <b>NOTE:</b> Pay attention to register 124	Unsigned 16 bit	0...6	0 = Disabled (default) 1 = Heating/Cooling 2 = Heating/Cooling/Fan 3 = Auto/Heating/Cooling 4 = Auto/Heating/Cooling/ Fan 5 = Auto/Heating/Fan 6 = Auto/Cooling/Fan
113	Digital input mode	Unsigned 16 bit	0...8	0 = Disabled (no effect) 1 = Closing for ECO (Default) 2 = Opening for ECO 3 = Closing for OFF 4 = Opening for OFF 5 = Closing for Alarm 6 = Bus 7 = Closing for Night
114	Digital input delay	Unsigned 16 bit	0...7200	0...7200 s (default 0 s)
115	Enable function 2 <b>NOTE:</b> If light enabled, pay attention to register 131. If blind 2 enabled, pay attention to registers 416 and 417.	Unsigned 16 bit	0...1	0 = Disabled (default) 1 = Light icon 2 = Blind 2 icon
116	Enable function 1 <b>NOTE:</b> If A/C enabled, pay attention to register 130 If blind 2 enabled, pay attention to registers 410 and 411.	Unsigned 16 bit	0...1	0 = Disabled (default) 1 = A/C system icon 2 = Blind 2 icon
117	Lock mode (See Lock Mode in the operating instructions)	Unsigned 16 bit	0...3	0 = Disabled (default) 1 = Only ON/OFF 2 = Only adjustment 3 = No input
118	Display of °C/°F icon for selecting the temperature units on the main screen	Unsigned 16 bit	0...1	0 = Disabled (default) 1 = Enabled
119	Internal sensor calibration	Signed 16 bit	-100...+100	-10.0...+10.0 °C/°F
120	RI1 sensor calibration	Signed 16 bit	-100...+100	-10.0...+10.0 °C/°F
121	RI2 sensor calibration	Signed 16 bit	-100...+100	-10.0...+10.0 °C/°F
122	RH sensor calibration (devices with RH option)	Signed 16 bit	-100...+100	-10.0...+10.0 % RH

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Register	Parameter description	Data Type	Raw Data	Range
123	RH display (devices with RH option)	Unsigned 16 bit	0...1	0 = Disabled 1 = Enabled (default)
124	Override operating mode icon <b>NOTE:</b> To enable the operating mode icon for the user, the parameter must be set to 0.	Unsigned 16 bit	0...4	0 = No icon (default) 1 = Auto 2 = Heating 3 = Cooling 4 = Ventilation
125	Party mode (Boost) time	Unsigned 16 bit	0...480	0...480 min (default 0) 0 = Disabled
126	Display lighting standby	Unsigned 16 bit	0...20	0...20 (default 5)
127	Relay mode NO/NC: Linked with Party mode (Boost) Bus: Control via the bus <b>NOTE:</b> Pay attention to register 136	Unsigned 16 bit	0...1	0 = NO (normally open, default) 1 = NC (normally closed) 2 = Bus
128	PIN for display block (Lock Mode) (With 0000 no PIN required)	Unsigned 16 bit	0...9999	0000...9999 (Default 0000)
129	PIN for setting mode (With 0000 no PIN required)	Unsigned 16 bit	0...9999	0000...9999 (Default 6666)
130	A/C override <b>NOTE:</b> Register for status change via the bus. Set parameter to 0 for control enable by the user	Unsigned 16 bit	0...2	0 = Enable display control (default) 1 = A/C ON 2 = A/C OFF
131	Light override <b>NOTE:</b> Register for status change via the bus. Set parameter to 0 for control enable by the user	Unsigned 16 bit	0...2	0 = Enable for control via the display (default) 1 = Light ON 2 = Light OFF
132	Display lock override <b>NOTE:</b> Register for status change via the bus. Set parameter to 0 for control enable by the user. Parameter is automatically reset to 0 after the change.	Unsigned 16 bit	0...2	0 = Enable for control via the display (default) 1 = Display locked 2 = Display unlocked
133	OFF icon enable	Unsigned 16 bit	0...1	0 = Disabled (default) 1 = Enabled (main screen)
134	Fan speed "Extended" override (if parameter has been set to "Extended" in register 109) For information see "FAN control" description in the operating instructions.	Unsigned 16 bit	1...8	1 = Register 135 2 = Speed 1 3 = Speed 2 4 = Speed 3 5 = Speed 4 6 = Speed 5 7 = Speed 6 8 = Register 111
135	Fan speed during night operation	Unsigned 16 bit	0...6	0...6
136	Relay override via the bus, directly local, without Party Boost <b>NOTE:</b> Pay attention to register 127	Unsigned 16 bit	0...2	0 = No override (default) 1 = Relay ON 2 = Relay OFF
137	PIN for secondary screen (With 0000 no PIN required)	Unsigned 16 bit	0...9999	0000...9999 (Default 0000)

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**FUNCTION CODE 16 - WRITE MULTIPLE HOLDING REGISTERS**

Register	Parameter description	Data Type	Raw Data	Range
138	Operating language	Unsigned 16 bit	0...9	0 = German (default) 1 = English 2 = French 3 = Spanish 4 = Italian
139	Sensor 1 Text (RI1 / bus) Default 0 = Disabled <b>NOTE:</b> If disabled, no text and measurement displayed for sensor 1	Unsigned 16 bit	0...16	0 = Disabled 1 = Room 2 = Floor 3 = Exterior 4 = Zone 1 5 = Zone 2 6 = Zone 3 7 = Bathroom 8 = Sauna 9 = Bedroom 10 = Kitchen 11 = Cooler 12 = Flow 13 = Hot water 14 = Tank 15 = Pool 16 = Cabin
140	Sensor 2 Text (RI2 / bus) Default: 0 = Disabled <b>NOTE:</b> If disabled, no text and measurement displayed for sensor 2	Unsigned 16 bit	0...15	0 = Disabled 1 = Room 2 = Floor 3 = Exterior 4 = Zone 1 5 = Zone 2 6 = Zone 3 7 = Bathroom 8 = Sauna 9 = Bedroom 10 = Kitchen 11 = Cooler 12 = Flow 13 = Hot water 14 = Tank 15 = Pool 16 = Cabin
141	Sensor 3 Text (internal sensor / bus) Default: 1 = Room <b>NOTE:</b> If disabled, no text and measurement displayed for sensor 3	Unsigned 16 bit	0...15	0 = Disabled 1 = Room 2 = Floor 3 = Exterior 4 = Zone 1 5 = Zone 2 6 = Zone 3 7 = Bathroom 8 = Sauna 9 = Bedroom 10 = Kitchen 11 = Cooler 12 = Flow 13 = Hot water 14 = Tank 15 = Pool 16 = Cabin
142	Sensor 2 source	Unsigned 16 bit	0...1	0 = RI2 1 = Bus sensor (default)
143	Sensor 2 bus temperature	Signed 16 bit	-580...1220	-58.0...122.0 °C/°F
159	Enable ECO icon for cancellation by the user	Unsigned 16 bit	0...1	0 = Enabled (default) 1 = Disabled
160	CO2 calibration (devices with CO2 option)	Signed 16 bit	-5000...+5000	-500...+500 ppm
167	CO2 display (devices with CO2 option)	Unsigned 16 bit	0...1	0 = Enabled (default) 1 = Disabled
168	Setpoint limiting mode	Unsigned 16 bit	0...1	0 = Absolute (default) 1 = Relative
171	Setpoint reset Resets calculated setpoint to the nominal setpoint (short-term action)	Unsigned 16 bit	0...1	0 = Normal 1 = Setpoint reset
172	Night override status The calculated setpoint is restored with parameter 2 (short-term action)	Unsigned 16 bit	0...2	0 = No override 1 = Night ON 2 = Night OFF

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**FUNCTION CODE 16 - WRITE MULTIPLE HOLDING REGISTERS**

Register	Parameter description	Data Type	Raw Data	Range
300	Modbus address	Unsigned 16 bit	0...247	0...247 (default 1)
301	Baud rate	Unsigned 16 bit	0..5	0 = 9600 (default) 1 = 19200 2 = 38400 3 = 57600 4 = 76800 5 = 115200
302	Parity	Unsigned 16 bit	0...2	0 = None (default) 1 = Odd 2 = Even
303	Stop bits	Unsigned 16 bit	0...1	0 = 1 Stop bit (default) 1 = 2 Stop bits
304	Display refresh rate	Unsigned 16 bit	0...2	0 = Fast (default) 1 = Medium 2 = Slow
308	Switch icon for language selection	Unsigned 16 bit	0...1	0 = Disabled (default) 1 = Enabled
400	Reset	Unsigned 16 bit	0...1	0 = Normal 1 = Force reset
401	Save in non-volatile memory	Unsigned 16 bit	0...1	0 = Normal 1 = Update
403	Force factory pre-settings	Unsigned 16 bit	0...1	0 = Normal 1 = Force defaults
410	Blind 1 mode (Pay attention to registers 411 and 116)	Unsigned 16 bit	1...4	1 = 2 Positions (On/Off) 2 = 5 Positions (25% steps) 3 = 11 Positions (10% steps) 4 = Sliding (1% steps)
411	Blind 1 configuration (Pay attention to registers 410 and 116)	Unsigned 16 bit	0...2	0 = Level (up/down) 1 = Tilt (rotation) 2 = Level + Tilt
412	Blind 1 level value	Unsigned 16 bit	0...1000	0...100 %
413	Blind 1 tilt value	Unsigned 16 bit	0...1000	0...100 %
414	Blind 2 level value	Unsigned 16 bit	0...1000	0...100 %
415	Blind 2 tilt value	Unsigned 16 bit	0...1000	0...100 %
416	Blind 2 mode (Pay attention to registers 417 and 115)	Unsigned 16 bit	1...4	1 = 2 Positions (On/Off) 2 = 5 Positions (25% steps) 3 = 11 Positions (10% steps) 4 = Sliding (1% steps)
417	Blind 2 configuration (Pay attention to registers 416 and 115)	Unsigned 16 bit	0...2	0 = Level (up/down) 1 = Tilt (rotation) 2 = Level + Tilt



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