

MODBUS PROTOCOL SPECIFICATIONS Monobloc A/C

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PROTOCOL FEATURES

It is possible to dialogue with the unit via MODBUS RTU protocol on serial 485.

The RS485 network consists of peripherals connected to each other by a two-wire conductor. A maximum number of 31 peripherals (slaves) can be connected to a single device (master). The number of addressable (slave) peripherals can be limited by the characteristics of the master used.

The choice of materials and the route of the connection are crucial for proper functioning.

The communication cable must be 2-pole x 0.34-0.50mm², shielded, suitable for data transmission (LiYCY type or equivalent).

The connection starts from the control unit (master), reaches the first peripheral device (slave) and continues to the next ones, the peripheral device furthest from the master must be terminated with the 120 Ohm resistor.

The RS485 connection is polarised, respect the 'A-' and 'B+' indications on each connected peripheral device. The route must be away from power conductors and must follow a seamless path.

Under ideal conditions, the maximum link length is 1.2km



Communication must take place with the following characteristics

Baudrate=9600

Databit = 8

Parity=NONE

Stopbit=1

PERMITTED OPERATIONS

Command 03 **Read Holding Registers**

Command 06 **Write Single Register**

Command 16 **Write Multiple Registers**

Registers are understood as WORDS of 16 BITS

The unit is supplied with a pre-set address of 1. This value is contained in register 200 and can be configured as required in accordance with the following.

ADDR	DESCRIPTION	BIT	RANGE	TYPE	MULT	DEFAULT
0200	PRODUCT ADDRESS	-	0...9999	R/W		0001

LIST OF ACCESSIBLE REGISTERS (divided by type of data)

TEMPERATURES						
ADDR	DESCRIPTION	BIT	RANGE	TYPE	MULT	DEFAULT
0000	Room temperature read by the unit	-	-50 ...150°C	R	10	
0004	Outdoor temperature read by the unit	-	-50 ...150°C	R	10	
0008	Tsetpoint	-	15 .. 30°C	R/W	10	

INPUT STATUS						
ADDR	DESCRIPTION	BIT	RANGE	TYPE	MULT	DEFAULT
0011	1 = contact closed 0 = contact opened					
	CONDENSATE WATER ALARM (1=NO ALARM)	BIT00	0 - 1	R		
	PUMP WATER LEVEL (0=ACTIVE)	BIT01	0 - 1	R		
	SYSTEM ENABLE/ENERGY BOOST CONTACT (1=CLOSED)	BIT02	0 - 1	R		
	-	BIT03		R		
	-	BIT04		R		
	-	BIT05		R		
	-	BIT06		R		
	-	BIT07		R		
	-	BIT08		R		
	-	BIT09		R		
	-	BIT10		R		

	-	BIT11		R		
	-	BIT12		R		
	-	BIT13		R		
	-	BIT14		R		
	-	BIT15		R		

MODE OF OPERATION

WARNING!

In order to perform a write to the following register, it is necessary not to modify the bits marked 'Reserved'; it is therefore suggested to read the register before the write operation and leave these bits unchanged. Changing these bits could cause undesired machine behaviour.

MODE OF OPERATION						
ADDR	DESCRIPTION	BIT	RANGE	TYPE	MULT	DEFAULT
0014	1 = enabled 0 = disabled					
	SILENT MODE	BIT00	0 = disabled 1 = enabled	R/W		
	FLAP SWING	BIT01	0 = disabled 1 = enabled	R/W		
	Reserved	BIT02				
	IDU FAN speed	BIT04 BIT03	00=LOW fan 01=MEDIUM fan 10=HIGH fan 11=AUTOMATIC fan	R/W		
	MODE (every data not equal to 000 is similar to the switch button on the remote control)	BIT07 BIT06 BIT05	000 = stand-by 001 = cooling 010 = heating 011 = dehumidify 100 = fan 101 = automatic	R/W		
	ECONOMY	BIT08	1=enable 0=disable (work only in appendix to MODE)	R/W		
	Reserved	BIT09		R/W		
	Reserved	BIT10		R/W		
	Reserved	BIT11		R/W		
	Reserved	BIT12		R/W		

WORKING STATES						
ADDR	DESCRIPTION	BIT	RANGE	TYPE	MULT	DEFAULT
0046	Min Tset in cooling (Minimum allowed Tset)		15 .. 30°C	R/W	10	18°C

0047	Min Tset in heating: (Minimum allowed Tset)		15 .. 30°C	R/W	10	15°C
0048	Max Tset in cooling: Maximum allowed Tset		15 .. 30°C	R/W	10	30°C
0049	Max Tset in heating: Maximum allowed Tse		15 .. 30°C	R/W	10	30°C

WORKING STATES						
ADDR	DESCRIPTION	BIT	RANGE	TYPE	MULT	DEFAULT
0304	ERROR CODE	-	0...9999	R		
0305	PROTECTION CODE	-	0...9999	R		