



EVO D PH

Use and maintenance manual
Original instructions

Release nr.: 01/2011

Validity from: 01/2011

MODBUS RTU-TCP EVO D PH

ELECTRONIC BOARD: LAYOUT

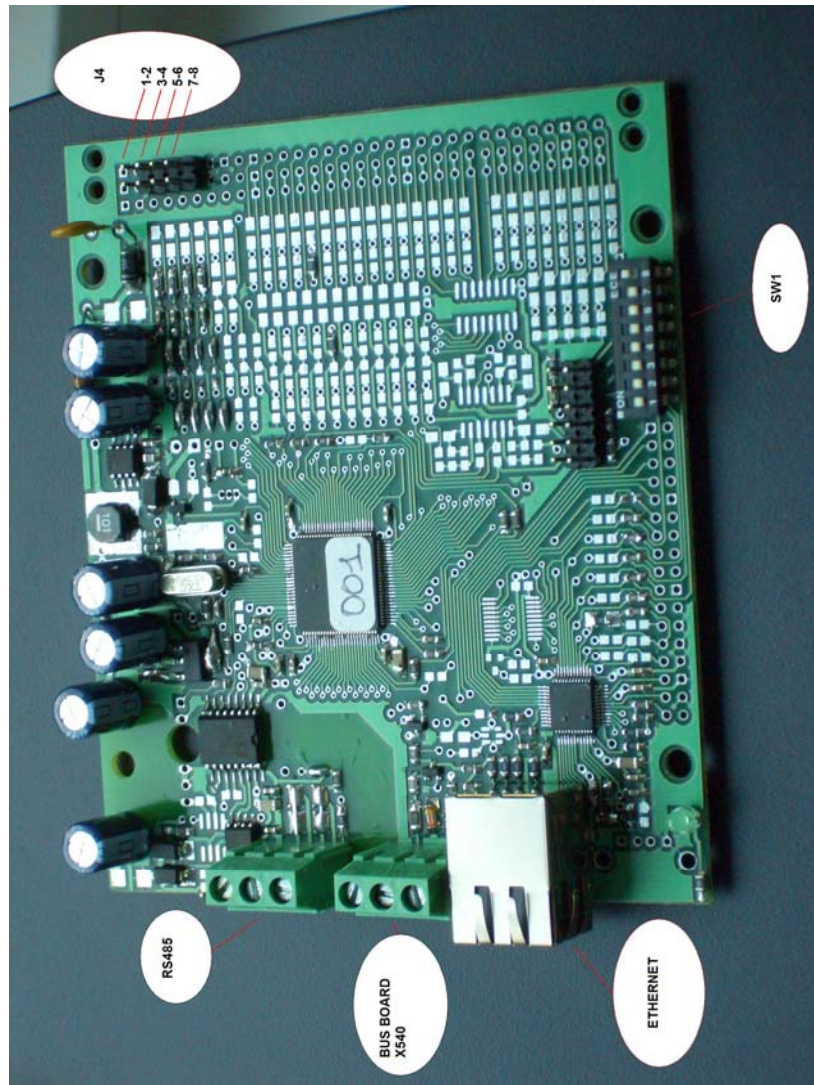


Figure 1

HOLDING REGS ADDRES	WORD ID	FORMAT	R/W	POWERUP AND AFTER DISCONNECTION VALUES
		B0 3 TX_FAIL	R	
		B0 4 FILTERS_FAIL	R	
		B0 5 FANS_FAIL	R	
		B0 6 AUTO_FAIL	R	
		B0 7 TI_FAIL	R	
		B0 8 COMM_X531_FAIL	R	
		B0 9 TW_FAIL	R	
		B1 0 TW_LOW	R	
850 2	BAUDRATE	100 BIT/SEC	R/ W	AT POWER UP IS 96 (9600 BIT/S) DISCONNECT NOT CAUSE THE LOSS OF THE MODIFIED VALUE
850 3	TIMEOUT	(SEC.) 65535 DISABLE DISCONNECT		AT POWER UP IS 10 (10 SEC.) DISCONNECT NOT CAUSE THE LOSS OF THE MODIFIED VALUE

PROTOCOL: MODBUS- RTU / MODBUS- TCP

MODBUS-RTU:

Baud Rate: 9600 bit/s,
1 stop bit,
parity even,
disconnection after 10 seconds without access to the holding registers (modified by MODBUS)

MODBUS-TCP

Baud- Rate:10/100 Mbit/s,
Automatic baud rate trading,
Auto-MDIX (automatic swap for crossing cable),
disconnection after 10 seconds without access to the holding registers (modified by MODBUS)
Maximum number of concurrent connections : 8
Default addresses:
IP:192.168.0.243
MASK: 255.255.255.0
GATEAWAY: 192.168.0.1

1.1 Addressing the electronic board MODBUSRTU:

The address of the electronic board is an eight digit binary number, so are available up to 256 addresses. The address composition is made by the micro-switches of **SW1** (see Figure 1), in accordance with the following specification:

Bit-address_0: switch S1.1 (OFF= 0, ON =1)
Bit-address_1: switch S1.2 (OFF= 0, ON =1)
Bit-address_2: switch S1.3 (OFF= 0, ON =1)
Bit-address_3: switch S1.4 (OFF= 0, ON =1)
Bit-address_4: switch S1.5 (OFF= 0, ON =1)
Bit-address_5: switch S1.6 (OFF= 0, ON =1)
Bit-address_6: switch S1.7 (OFF= 0, ON =1)
Bit-address_7: switch S1.8 (OFF= 0, ON =1)

ETHERNET:

Is possible to change the IP address in two different way:

_SOFTWARE:

Setting all switches of **SW1** to ON and connecting the electronic board to a Ethernet point it will be able to communicate with a pc by "TELNET".
Open "HYPER TERMINAL " (only for windows) on your machine and set the data connections to TCP\IP , address 192.168.0.243 ,port 23.
Press enter ,will appear a mask displaying data like the normal control panel , enter in menu installer and at the bottom of it at voice IP you can set the address that you desire.

HARDWARE:

Is possible an hardware-forcing of IP addresses using jumpers **J4** of the electronic board. An IP address is composed by four fields (A.B.C.D) , by inserting jumper in 1-2 of **J4** (before power-up the electronic board) you will

set field A , the number that you want to override is settable by switches of **SW1**.

So inserting jumper on 3-4 of **SW1** you will set field B , on 5-6 field C , on 7-8 field D. For example if you want set address 1.1.1.1 when unit is off put jumper on 1-2 of **J4** and **SW1** with the first switch to on (1) . Power-up the unit and so the first field is writed, turn-off and move the jumper to 3-4 , the switch **SW1** remain the same cause we want to write another 1 , instead if we wanted to write another number we had to change positions of it. Repeat the same procedure for field C and D. Is important to remember that **SW1** is in binary mode, so the first switch ON means 2^0,the second 2^1, the third 2^2 and so on. For example if you want to write number 5 you have to convert it in binary mode (101 : 1*2^0+0*2^1+1*2^2=5) and set to ON the first switch ,to OFF the second and to ON the third.

TRANSACTION TABLE

The configuration parameters, the set point, the input signals, the working states and the alarms, are accessible as holding registers (word 16 bit access). **BXX** is the XXth bit of a word (XX is a value from 00 up to 15). **R** is indicating a only readable word, **R/W** is indicating a readable and writable word.

HOLDING REGS ADDRES	WORD ID	FORMAT	R/W	POWERUP AND AFTER DISCONNECTIO N VALUES
		4		
		B0 5 FANS_FAIL	R	
		B0 6 AUTO_FAIL	R	
		B0 7 TI_FAIL	R	
		B0 8 COMM_X531_FAIL	R	
		B0 9 TW_FAIL	R	
		B1 0 TW_LOW	R	
121	TEMP_E		R	(0.1 °C)
122	TEMP_R		R	(0.1 °C)
123	TEMP_X		R	(0.1 °C)
124	TEMP_I		R	(0.1 °C)
125	TEMP_W		R	(0.1 °C)
126	STATE_FLAGS	B0 0 BYPASS	R	
		B0 4 NOFROST ACTIVE	R	
		B0 5 EXT_DI_HUMIDITY	R	
		B0 6 EXT_DI_PIR_MIN	R	
		B0 7 EXT_DI_REMOTE_OFF	R	
		B0 8 HEAT_1	R	
		B0 9 HEAT_2	R	
		B1 0 TEMP_W_LOW	R	
		B1 1 EXT_DI_SUMMER	R	
127	SPEED_C_VALUE		R	IF FANS_FAIL_TACH IS SET TO 1 RPM, OTHERWISE %
128	SPEED_D_VALUE		R	IF FANS_FAIL_TACH IS SET TO 1 RPM, OTHERWISE %
129	AUTO_INPUT_VALUE		R	%
130	ALLARMI	B0 0 COM_X540_FAIL	R	
		B0 1 TE_FAIL	R	
		B0 2 TR_FAIL	R	

HOLDING REGS ADDRES	WORD ID	FORMAT	R/W	POWERUP AND AFTER DISCONNECTIO N VALUES		
		B0 6	AUTO_FAIL	R		
		B0 7	TI_FAIL	R		
		B0 8	COMM_X531_FAIL	R		
		B0 9	TW_FAIL	R		
		B1 0	TW_LOW	R		
UNIT_2_DATA	101	TEMP_E	(0.1 °C)	R		
	102	TEMP_R	(0.1 °C)	R		
	103	TEMP_X	(0.1 °C)	R		
	104	TEMP_I	(0.1 °C)	R		
	105	TEMP_W	(0.1 °C)	R		
	106	STATE_FLAGS	B0 0	BYPASS	R	
			B0 4	NOFROST ACTIVE	R	
			B0 5	EXT_DI_HUMIDITY	R	
			B0 6	EXT_DI_PIR_MIN	R	
			B0 7	EXT_DI_REMOTE_OFF	R	
			B0 8	HEAT_1	R	
			B0 9	HEAT_2	R	
			B1 0	TEMP_W_LOW	R	
			B1 1	EXT_DI_SUMMER	R	
	107	SPEED_C_VALUE	IF FANS_FAIL_TACH IS SET TO 1 RPM, OTHERWISE %	R		
108	SPEED_D_VALUE	IF FANS_FAIL_TACH IS SET TO 1 RPM, OTHERWISE %	R			
109	AUTO_INPUT_VALUE	%	R			
110	ALLARMI	B0 0	COM_X540_FAIL	R		
		B0 1	TE_FAIL	R		
		B0 2	TR_FAIL	R		
		B0 3	TX_FAIL	R		
		B0	FILTERS_FAIL	R		

HOLDING REGS ADDRES	WORD ID	FORMAT	R/W	POWERUP AND AFTER DISCONNECTIO N VALUES		
CONFIGURATION	1	SW_PN_0	SW TYPE 0	R		
	2	SW_PN_1	SW TYPE 1	R		
	3	SW_PN_2	SW VER 0	R		
	4	SW_PN_3	SW VER 1	R		
	5	REMOTE_CONTROL	B0 0	DEV ICE RESET (1=RESET)	R/W	1 ON POWERUP, LAST SET VAULE AFTER DISCONNECTIO N
			B0 1	TERMINAL_ACTIVE (1=ACTIVE)	R	
			B0 2	TERM_RES_485_ACTIVE (1=ACTIVE)	R	
			B1 3	CMD DEVICE RESET (1=RESET)	R/W	0
	6	UNIT_N	N	R		
	7	CONFIG_FLAGS_1	B0 0	HEAT: 0=HEAT_NONE, 1=HEAT_BY_EL_ONOFF, 2=HEAT_BY_2_EL_ONOFF, 3=HEAT_BY_W_ONOFF, 4=HEAT_BY_EL_MOD, 5=HEAT_BY_W_MOD	R	
			B0 1			
			B0 2			
			B0 3		MODULE_FLAG	R
B0 4			AUTO: 0= AUTO_NONE, 1=AUTO_CO2_VOC 2=AUTO_RH 3=AUTO_EXT		R/W	SET VALUE IN PROG. MODE
B0 5						
B0 6			FILTERS_ALARM: 0=FLITERS_ALARM_NONE, 1=FILTERS_ALARM_PRESSURE , 2=FILTERS_ALARM_HOURS	R		
B0 7						
B0 8			FANS_FAIL: 0=FANS_FAIL_NONE, 1=FANS_FAIL_PRESSURE, 2=FANS_FAIL_TACH	R		
B0 9						
B1 0	BYPASS: 0=BYPASS_NONE, 1=BYPASS_UNIVERSAL_SEASO N, 2= BYPASS_UNIVERSAL_ON_OFF	R				
B1 1						
B1 2	ANTI_ICE: 0=ANTI_ICE_BY_NONE, 1=ANTI_ICE_BY_SPEED, 2=ANTI_ICEBY_HEAT	R				
B1 3						
B1 4	PRESS_REG	R				

HOLDING REGS ADDRES	WORD ID	FORMAT	R/W	POWERUP AND AFTER DISCONNECTION VALUES
		B15 COOLING	R	
8	CONFIG_FLAGS_2	B00 HW_TYPE: 0=HW_X540U0_U1_U2, 1=HW_X540U3, 2=HW_X540U3_X531U0	R	
		B01 EXT_DO: 0=EXT_DO_HEAT, 1=EXT_DO_NOFROST, 2=EXT_DO_FAN_ON	R	
		B04 EXT_DI: 0=EXT_DI_UNUSED_TACH, 1=EXT_DI_HUMIDITY, 2=EXT_DI_PIR, 3=EXT_DI_BOOST, 4=EXT_DI_REMOTE, 5=EXT_DI_SUMMER	R	
9	AUTO_MIN_VALUE	0 - 99 (1 %)	R/W	SET VAL.IN PROG. MODE
10	AUTO_MAX_VALUE	1- 100 (1 %)	R/W	SET VALUE IN PROG. MODE
11	BYPASS-MIN-VALUE	120 - 180 (0,1 °C)	R/W	SET VALUE IN PROG. MODE
12	BYPASS-MAX-VALUE	200 - 300 (0,1 °C)	R/W	SET VALUE IN PROG. MODE
13	SPEED_RANGE	50- 100 (1 %)	R/W	SET VALUE IN PROG. MODE
14	SPEED_BALANCE	80- 125 (1 %)	R/W	SET VALUE IN PROG. MODE
15	MIN_SP_TI_INV	160 - 200 (0,1 °C)	R/W	SET VALUE IN PROG. MODE
16	MIN_SP_TI_EST	200 - 240 (0,1 °C)	R/W	SET VALUE IN PROG. MODE
17	MAX_SP_TI	280 - 320 (0,1 °C)	R/W	SET VALUE IN PROG. MODE
18	VALVE_TIME	60-600 (1 SEC)	R/W	SET VALUE IN PROG. MODE
19	PRESET_TIMER	60-14400 (1 SEC)	R/W	SET VALUE IN PROG. MODE
	PARAMETER_FLAGS	B00 SEASON: 0=SEASON_ND, 1=SEASON_WINTER, 2=SEASON_SUMMER	R/W	SET VALUE IN PROG. MODE
		B01 BYPASS: 0=BAYPASS_AUTO, 1=BYPASS_OFF, 2=BYPASS_ON	R/W	SET VALUE IN PROG. MODE
51	SPEED_SET_POINT	0-100 %, 101=AUTO FOR	R/W	SET VALUE IN

HOLDING REGS ADDRES	WORD ID	FORMAT	R/W	POWERUP AND AFTER DISCONNECTION VALUES
		VARIABLE SPEED VERSION, 105=AUTO FOR THREE SPEEDS VERSION	W	PROG. MODE
52	TEMPERATURE_SET_POINT	50 - 300 (0,1 °C), 48=OFF	R/W	SET VALUE IN PROG. MODE
53	TIMER	0-14400 (1 SEC)	R/W	
81	TEMP_E	(0.1 °C)	R	
82	TEMP_R	(0.1 °C)	R	
83	TEMP_X	(0.1 °C)	R	
84	TEMP_I	(0.1 °C)	R	
85	TEMP_W	(0.1 °C)	R	
86	STATE_FLAGS	B00 BYPASS	R	
		B04 NOFROST ACTIVE	R	
		B05 EXT_DI_HUMIDITY	R	
		B06 EXT_DI_PIR_MIN	R	
		B07 EXT_DI_REMOTE_OFF	R	
		B08 HEAT_1	R	
		B09 HEAT_2	R	
		B10 TEMP_W_LOW	R	
		B11 EXT_DI_SUMMER	R	
87	SPEED_C_VALUE	IF FANS_FAIL_TACH IS SET TO 1 RPM, OTHERWISE %	R	
88	SPEED_D_VALUE	IF FANS_FAIL_TACH IS SET TO 1 RPM, OTHERWISE %	R	
89	AUTO_INPUT_VALUE	%	R	
90	ALLARMI	B00 COM_X540_FAIL	R	
		B01 TE_FAIL	R	
		B02 TR_FAIL	R	
		B03 TX_FAIL	R	
		B04 FILTERS_FAIL	R	
		B05 FANS_FAIL	R	