Guide
HygroMatik BACnet MSTP
FlexLine

October 2018

Table of content

1. General

This document is only valid in conjunction with the operating instructions for the control of the unit. Obey all safety notes for use of HygroMatik units. You will find the safety notes in chapter 2 of the user manual delivered with the unit.

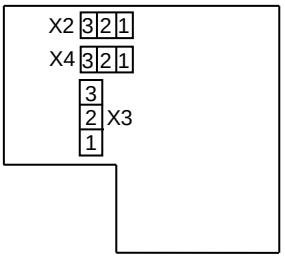
Format: Big-Endian; Baud rate: Baud rate is 19200

Settings of interface: 8-N-1; Data Bits: 8. Parity: None. Stop: 1

Bacnet_MacID = 1 (default); Bacnet_Instance = 1 (default); Bacnet_MaxMaster = 127 (default);

2. Interface

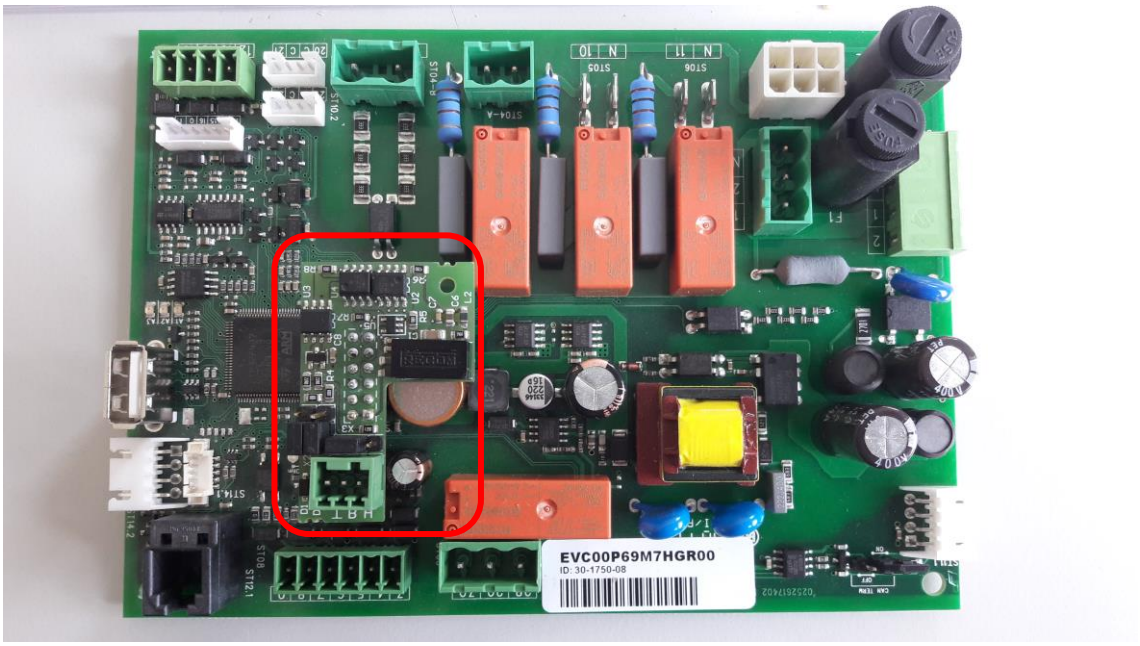
2.1. Interface EIA-485 E-2525174 (galvanically isolated)



Pin	X2	X3	X4
3			
2	Pull up 5V	120ohm	Pull down GND
1			

2.2. Plug for A.B and C E-2526102

Plug 3-core Phönix
FK-MC05/3-ST-2.5



3. BACnet Device

3.1. Device

BACNET DEVICE

Vendor Name :	HYGROMATIK GMBH
Vendor ID :	1031
Object Name :	HygroMatik GmbH
Location :	FlexLine
Description :	
Application Software Revision :	2.1.110
Database Revision :	0
APDU Timeout (ms) :	3000
APDU Retries Number :	1
Reboot Password :	
Adjust Priority :	16
Override Priority :	8

3.2. Analog Values read only

Idx	Entity	Description	UM	object-type	COV	I.R.	N.C.	Time Delay	Dead Band	Low Limit	High Limit	Notify Type	Limit Enable	Event Enable
0	RO_Main_st	Main State of unit	No units	2	0	No	NONE	0	0	0	0	Alarm (0)	-	-
1	RO_Err_st	Error state of unit	No units	2	0	No	NONE	0	0	0	0	Alarm (0)	-	-
2	RO_Err_st_Cyl1	Error State of cylinder 1	No units	2	0	No	NONE	0	0	0	0	Alarm (0)	-	-
3	RO_State_Cyl1	State of cylinder 1	No units	2	0	No	NONE	0	0	0	0	Alarm (0)	-	-
4	RO_Service_st_Cyl1	Service state cylinder 1	No units	2	0	No	NONE	0	0	0	0	Alarm (0)	-	-
5	RO_STEAM_kghAct	Actual steam output	Kilograms per hour	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
6	RO_STEAM_kghActCyl1	Actual output cylinder 1	Kilograms per hour	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
7	RO_prcDemandExt	Actual external demand	Percent	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
8	RO_PI_prcDemand	Demand of PI controller	Percent	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
9	RO_SPA_prcDemand	Demand of unit SPA mode	Percent	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
10	RO_prcDemandLim	Actual limited demand	Percent	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
11	RO_HUMIDITY_PI_prcSet	Set point for humidity	Percent relative humidity	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-

Idx	Entity	Description	UM	object-type	COV	I.R.	N.C.	Time Delay	Dead Band	Low Limit	High Limit	Notify Type	Limit Enable	Event Enable
12	RO_HUMIDITY_PI_prcAct	Actual humidity	Percent relative humidity	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
13	RO_HUMIDITY_PI_prcMaxAct	Actual humidity	Percent relative humidity	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
14	RO_HUMIDITY_PI_prcSetMax	Set point for r.h. max.	Percent relative humidity	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
15	RO_SPA_tSet	Set point for steam bath	Degrees Celsius	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
16	RO_SPA_tAct	Steam bath temperature	Degrees Celsius	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
17	RO_SPA_tAct1	Steam bath temperature 1	Degrees Celsius	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
18	RO_SPA_tAct2	Steam bath temperature 2	Degrees Celsius	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
19	RO_EL_CYLINDER1_iAct	Actual current cylinder 1	Amperes	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
20	RO_INPUTS_ST0916_mm	Water level cylinder 1	Millimeters	2	0	No	NONE	0	0	0	0	Alarm (0)	-	-
21	RO_Err_st_Cyl2	Error State of cylinder 2	No units	2	0	No	NONE	0	0	0	0	Alarm (0)	-	-
22	RO_State_Cyl2	State of cylinder 2	No units	2	0	No	NONE	0	0	0	0	Alarm (0)	-	-
23	RO_Service_st_Cyl2	Service state cylinder 2	No units	2	0	No	NONE	0	0	0	0	Alarm (0)	-	-
24	RO_STEAM_kghActCyl2	Steam output cylinder 2	Kilograms per hour	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
25	RO_EL_CYLINDER2_iAct	Actual current cylinder 2	Amperes	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
26	RO_EXTENSION_ONE_CYLINDER_ST0616_mmAct	Water level cylinder 2	Millimeters	2	0	No	NONE	0	0	0	0	Alarm (0)	-	-

3.3. Analog value read write

Idx	Entity	Description	UM	object -type	COV	I.R.	N.C.	Time Delay	Dead Band	Low Limit	High Limit	Notify Type	Limit Enable	Event Enable
27	MAIN_prcDemandMax	Limitation output of unit	Percent	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
28	HUMIDITY_PI_prcSetNormal	Humidity set PI control	Percent relative humidity	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
29	HUMIDITY_PI_prcHystDehumidify	Dehumidifying Hysterese	Percent relative humidity	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
30	HUMIDITY_PI_prcHystECO	Humidity hyst PI control	Percent relative humidity	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
31	HUMIDITY_PI_prcKP	KP of PI r.h. controller	No units	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
32	HUMIDITY_PI_prcKI	KI of PI r.h. controller	No units	2	0	No	NONE	0	0	0	0	Alarm (0)	-	-
33	SPA_tSetNormal	Set point of steam bath	Degrees Celsius	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
34	SPA_tHystSet	Hysteresis of set point	Degrees Kelvin	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
35	SPA_tHystECO	Hysteresis Eco mode	Degrees Kelvin	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-
36	SPA_tHystTempMax	Hysteresis max temp error	Degrees Kelvin	2	0.0	No	NONE	0	0.0	0.0	0.0	Alarm (0)	-	-

3.4. Binary Input

Idx	Entity	Name	Description	Inactive Text	Active Text	object-type	Polarity	I.R.	N.C.	Time Delay	Alarm Value	Notify Type	Event Enable
0	RO_bInterlock_HW	COM_bInterlock_HW	State of interlock 230V	OFF	ON	3	Normal (0)	No	NONE	0	Inactive (0)	Alarm (0)	-
1	RO_bInterlock_SW	RO_bInterlock_SW	value of SW interlock	OFF	ON	3	Normal (0)	No	NONE	0	Inactive (0)	Alarm (0)	-

3.5. Binary Output

Idx	Entity	Name	Description	Inactive Text	Active Text	object-type	Polarity	I.R.	N.C.	Time Delay	Feedback Value	Notify Type	Event Enable
0	RW_bInterlock	RW_bInterlock	Software interlock	OFF	ON	4	Normal (0)	No	NONE	0	Inactive (0)	Alarm (0)	-

4. Units

4.1. State (RO_Main_st)

For detailed description please have a look at the FlexLine documentation.

Value	Description
00	Initialization
01	Safety_interlock_open
02	No_Demand
03	Humidification
04	Runtime_limitation
05	Remote off
06	-
07	Standby_heating_heating
08	Standby_heating_interval
09	No_demand_ECO
10	Humidification_ECO
11	Timer_steam_off
12	Display_steam_off
13	Weeckly_timer_steam_off
14	Digital_input_steam_off
30	Filling
60	Start_blow-down
61	Part._blow-down
62	Full_blow-down
63	Dilution
64	Max._current_blow-down
65	Max._level_blow-down
66	Standby_blow-down
67	Dead_leg_flushing
68	Manual_blow-down
81	Part._blow-down_pending
82	Full_blow-down_pending
90	Cylinder_full
270	Service
900	Diagnosis
999	Fault

4.2. Error (RO_Err_st)

For detailed description please have a look at the FlexLine documentation.

Value	Description
000	No_fault
001	Plug_ST09
024 / 025	Input_resistance_OC, Input_resistance_SC
029	Internal
030	Filling_valve 1
061	Part._blow-down
062	Full_blow-down
063	Blow-down_dilution
064	Max._current_blow-down
065	Max._level_blow-down
066	Standby_blow-down
067	Start_blow-down
090	Cylinder_full
091	Current_measurement
092	Main_contactor_current
093	Main_contactor_cyl._full
120	Thermoswitch
121	Water_level_sensor
122	Max.-level
123	Steam_down_time
124	Relay_main_contactor
210	Humidity_sensor
211	Humidity_sensor 2
240	Temp._sensor_miss
241	Temp._sensor_broken
242	Temperature_max
243	Temp._sensor 2_miss
244	Temp._Sensor 2_broken
245	Temp._deviation

4.3. Service (RO_Service_Cyl…)

For detailed description please have a look at the FlexLine documentation.

Value	Description
0	No_service_msg.
1	Steam_amount_counter
2	Cycles_main_contactor 1
3	Cycles_main_contactor 2
4	Cycles_main_contactor 3
5	Cycles_main_contactor 4
6	Cycles_main_contactor 5
11	Warning_electrodes
12	Warning_pump
13	Warning_valve