



Interface specification Profibus/Profinet aicore™ air+ GHM spray

Profibus/Profinet parameter specification for the Güntner Motor Management aicore™ airin conjunction with the
Güntner Hydro Management GHM spray
Applicable for interface modules 5215480 & 5215481

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1 Introduction

This document describes the Profibus and Profinet Communication of the Güntner Motor Management aicore™ air in conjunction with the Güntner Hydro Management GHM spray. Communication of the Güntner controllers takes place via a gateway from Modbus RTU to Profibus DP or Profinet IO.

The aicore™ air and GHM spray are available via the gateway as Profibus DP slave or Profinet IO device.

The corresponding modules are available with the following ERP numbers and each consist of the configured gateway and an installation kit:

- Profibus DP: 5215480
- Profinet IO: 5215481
- Installation kits (depending on the size of the aicore™ air housing):
 - aicore™ air: 5215519 (200) / 5215520 (300) / 5215521 (400)
 - aicore™ air ec: 5215532 (200) / 5215533 (300) / 5215558 (400)

For connection to a Profibus/Profinet master, specialist knowledge is required.

Depending on the housing size of the aicore™ air, the Profibus variant requires a straight Profibus connector for space reasons.

The following GSD files are also needed:

- Profibus module: "HMSA183B.gsd"
- Profinet module: "GSDML-Vx.xx-HMS-Anybus-Communicator-202xxxx.xml"

These are available on the gateway and can be downloaded via the web interface (see ["Gateway"](#)).

2 Settings

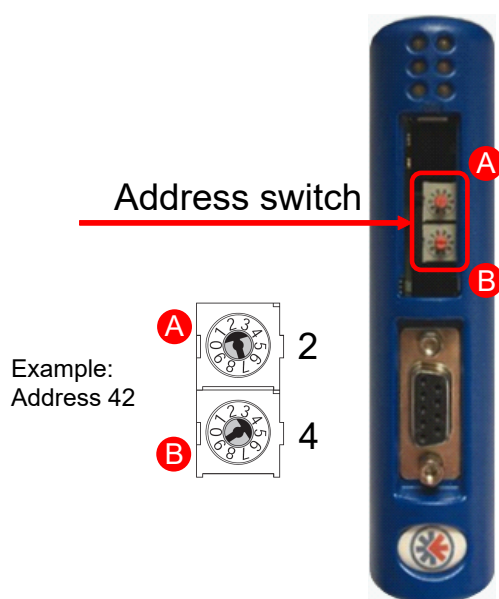
2.1 aicore™ air + GHM spray

Modbus parameters on aicore™ air	see aicore™ air Manual
Modbus address	1
Baud rate	19200
Framing	8,N,1
Data format	16 bit

Modbus parameters on GHMspray	see GHMspray Manual
Modbus address	2
Baud rate	19200
Framing	8,N,1

2.2 Gateway

Profibus parameters at the gateway	
Address	Can be set via address switch (see illustration below)
Protocol	DP-V0



Profibus address = (switch position B * 10) + switch position A

Profinet parameters at the gateway	
Device name	Default "hms", can be set via PLC programming tool
Protocol	DP-V1

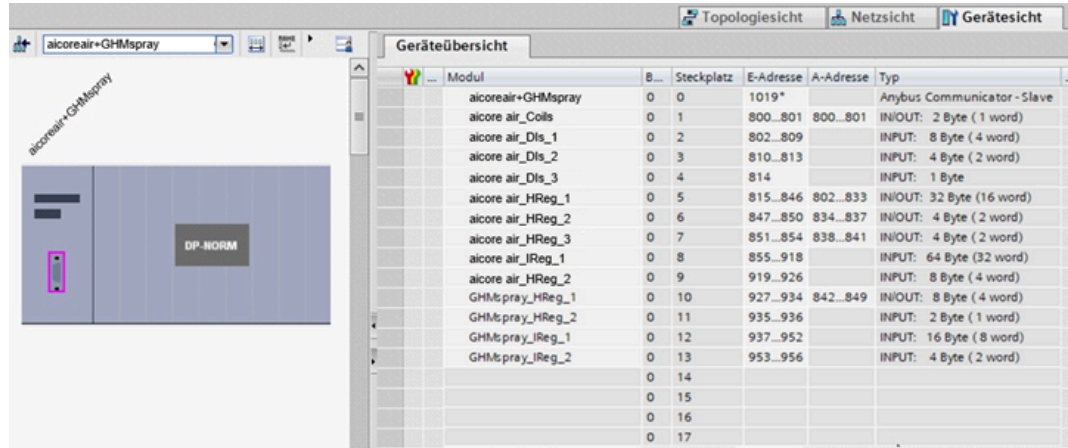
2.3 PLC

Settings on the PLC		
Range	Size	Note
Inputs	157 bytes	Controller for the aicore™ air: – Range: Byte 0-126 – Data: Global parameters as well as control loops 1 & 2 GHM controllerspray: – Range: Byte 127-156
Outputs	50 bytes	Controller for the aicore™ air: – Range: Byte 0-41 – Data: Global parameters as well as control loops 1 & 2 GHM controllerspray: – Range: Byte 42-49
Diagnostics	1 byte	1) Only available with S7-300-CPU. 2) Is automatically assigned "from above" by S7; is used to read diagnostic files with "DPNRM_DG".

(1) Data are transmitted to the controllers only in the event of a change in the value on the PLC side (and not cyclically). If the connection between the PLC and the gateway is interrupted, the last write values will be retained in the gateway. As a result, these values will be kept in the controllers too.

(2) **ATTENTION:** If the CPU switches to the "Stop" state, all PLC outputs will be set to "0" and written to the controllers!

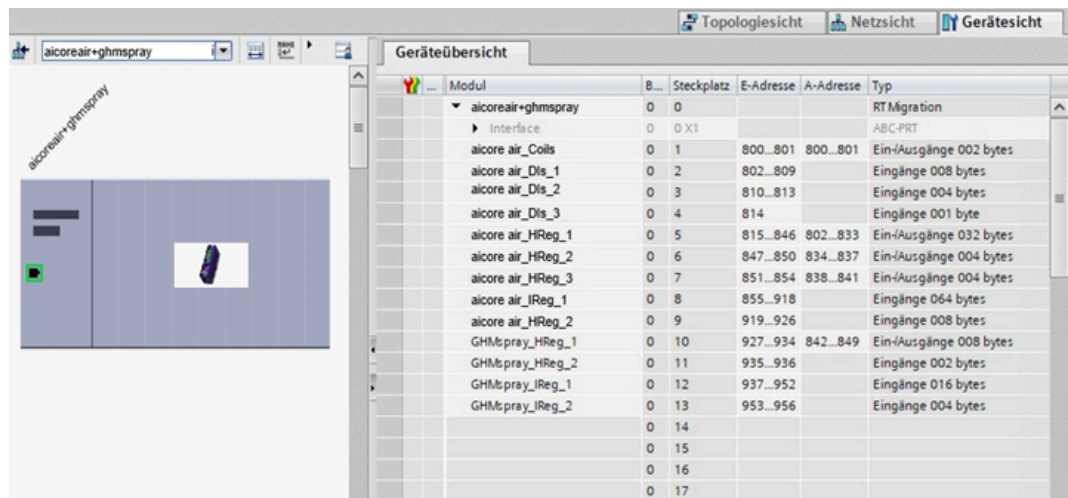
Example PLC settings



Modul	B...	Steckplatz	E-Adresse	A-Adresse	Typ
aicoreair+GHMspray	0	0	1019*		Anybus Communicator - Slave
aicore air_Coils	0	1	800...801	800...801	INI/OUT: 2 Byte (1 word)
aicore air_Dis_1	0	2	802...809		INPUT: 8 Byte (4 word)
aicore air_Dis_2	0	3	810...813		INPUT: 4 Byte (2 word)
aicore air_Dis_3	0	4	814		INPUT: 1 Byte
aicore air_HReg_1	0	5	815...846	802...833	INI/OUT: 32 Byte (16 word)
aicore air_HReg_2	0	6	847...850	834...837	INI/OUT: 4 Byte (2 word)
aicore air_HReg_3	0	7	851...854	838...841	INI/OUT: 4 Byte (2 word)
aicore air_IReg_1	0	8	855...918		INPUT: 64 Byte (32 word)
aicore air_IReg_2	0	9	919...926		INPUT: 8 Byte (4 word)
GHMspray_HReg_1	0	10	927...934	842...849	INI/OUT: 8 Byte (4 word)
GHMspray_HReg_2	0	11	935...936		INPUT: 2 Byte (1 word)
GHMspray_IReg_1	0	12	937...952		INPUT: 16 Byte (8 word)
GHMspray_IReg_2	0	13	953...956		INPUT: 4 Byte (2 word)
	0	14			
	0	15			
	0	16			
	0	17			

Hardware configuration: Profibus

aicore air+ GHMspray = GSD file "Anybus AB 7000" from HMS (Anybus communicator slave): "HMSB1803.gsd"



Modul	B...	Steckplatz	E-Adresse	A-Adresse	Typ
aicoreair+ghmspray	0	0			RT Migration
Interface	0	0 X1			ABC-PRT
aicore air_Coils	0	1	800...801	800...801	Ein-/Ausgänge 002 bytes
aicore air_Dis_1	0	2	802...809		Eingänge 008 bytes
aicore air_Dis_2	0	3	810...813		Eingänge 004 bytes
aicore air_Dis_3	0	4	814		Eingänge 001 byte
aicore air_HReg_1	0	5	815...846	802...833	Ein-/Ausgänge 032 bytes
aicore air_HReg_2	0	6	847...850	834...837	Ein-/Ausgänge 004 bytes
aicore air_HReg_3	0	7	851...854	838...841	Ein-/Ausgänge 004 bytes
aicore air_IReg_1	0	8	855...918		Eingänge 064 bytes
aicore air_IReg_2	0	9	919...926		Eingänge 008 bytes
GHMspray_HReg_1	0	10	927...934	842...849	Ein-/Ausgänge 008 bytes
GHMspray_HReg_2	0	11	935...936		Eingänge 002 bytes
GHMspray_IReg_1	0	12	937...952		Eingänge 016 bytes
GHMspray_IReg_2	0	13	953...956		Eingänge 004 bytes
	0	14			
	0	15			
	0	16			
	0	17			

Hardware configuration: Profinet

aicoreair+ ghmspray = GSD file "Anybus AB 7013" from HMS (RT migration): "GSDML-V2.3-HMS-ABC_PROFINET_IO-20141127.xml"

3 Data points of the aicore™ air+ GHM spray

aicore air

I/O range of the slave on the PLC side			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Input range offset	Output range offset	HW config slot	Modbus data address	Modbus data type	Access size	Designator
0.0	0.0	1	265	Coil	Bit	Manual mode: Manual mode on
0.1	0.1	1	266	Coil	Bit	Manual mode: Inverse operation
0.3	0.3	1	268	Coil	Bit	Night setback: Night setback on
1.0	1.0	1	8133	Coil	Bit	Control cycle 1 setpoint displacement: Setpoint displacement on
1.1	1.1	1	8134	Coil	Bit	Control cycle 2 setpoint displacement: Setpoint displacement on
2.0	-	2	256	Discrete input	Bit	Diagnosis: Fan warning
2.1	-	2	257	Discrete input	Bit	Diagnosis: Fan alarm active
2.2	-	2	258	Discrete input	Bit	Diagnosis: Fan alarm active
2.3	-	2	259	Discrete input	Bit	Diagnosis: Sensor alarm active
2.4	-	2	260	Discrete input	Bit	Diagnosis: Control alarm message (Prio 1): Signal level
2.5	-	2	261	Discrete input	Bit	Diagnosis: control operating message: Signal level
2.6	-	2	262	Discrete input	Bit	Diagnosis: Control warning message (Prio 2): Signal level
2.7	-	2	263	Discrete input	Bit	Inverse operation: Inverse operation active
3.1	-	2	265	Discrete input	Bit	Manual mode: Manual mode active
3.3	-	2	267	Discrete input	Bit	Night setback: Night setback active
3.5	-	2	269	Discrete input	Bit	Subcooler: Subcooler active
4.0	-	2	7171	Discrete input	Bit	Control cycle 1: Release active
4.1	-	2	7172	Discrete input	Bit	Control cycle 2: Release active
5.0	-	2	7186	Discrete input	Bit	Maintenance run fan group 1: Maintenance run active

I/O range of the slave on the PLC side			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Input range offset	Output range offset	HW config slot	Modbus data address	Modbus data type	Access size	Designator
5.4	-	2	7190	Discrete input	Bit	Control cycle 1 setpoint displacement: Setpoint displacement active
5.5	-	2	7191	Discrete input	Bit	Control cycle 2 setpoint displacement: Setpoint displacement active
6.1	-	2	7195	Discrete input	Bit	Control cycle 1 threshold value: Threshold value active
6.2	-	2	7196	Discrete input	Bit	Control cycle 2 threshold value: Threshold value active
6.6	-	2	7200	Discrete input	Bit	Fan 1: Alarm active
6.7	-	2	7201	Discrete input	Bit	Fan 2: Alarm active
7.0	-	2	7202	Discrete input	Bit	Fan 3: Alarm active
7.1	-	2	7203	Discrete input	Bit	Fan 4: Alarm active
7.2	-	2	7204	Discrete input	Bit	Fan 5: Alarm active
7.3	-	2	7205	Discrete input	Bit	Fan 6: Alarm active
7.4	-	2	7206	Discrete input	Bit	Fan 7: Alarm active
7.5	-	2	7207	Discrete input	Bit	Fan 8: Alarm active
7.6	-	2	7208	Discrete input	Bit	Fan 9: Alarm active
7.7	-	2	7209	Discrete input	Bit	Fan 10: Alarm active
8.0	-	2	7210	Discrete input	Bit	Fan 11: Alarm active
8.1	-	2	7211	Discrete input	Bit	Fan 12: Alarm active
8.2	-	2	7212	Discrete input	Bit	Fan 13: Alarm active
8.3	-	2	7213	Discrete input	Bit	Fan 14: Alarm active
8.4	-	2	7214	Discrete input	Bit	Fan 15: Alarm active
8.5	-	2	7215	Discrete input	Bit	Fan 16: Alarm active
8.6	-	2	7216	Discrete input	Bit	Fan 17: Alarm active

I/O range of the slave on the PLC side			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Input range offset	Output range offset	HW config slot	Modbus data address	Modbus data type	Access size	Designator
8.7	-	2	7217	Discrete input	Bit	Fan 18: Alarm active
9.0	-	2	7218	Discrete input	Bit	Fan 19: Alarm active
9.1	-	2	7219	Discrete input	Bit	Fan 20: Alarm active
10.6	-	3	7232	Discrete input	Bit	Fan 1: Warning active
10.7	-	3	7233	Discrete input	Bit	Fan 2: Warning active
11.0	-	3	7234	Discrete input	Bit	Fan 3: Warning active
11.1	-	3	7235	Discrete input	Bit	Fan 4: Warning active
11.2	-	3	7236	Discrete input	Bit	Fan 5: Warning active
11.3	-	3	7237	Discrete input	Bit	Fan 6: Warning active
11.4	-	3	7238	Discrete input	Bit	Fan 7: Warning active
11.5	-	3	7239	Discrete input	Bit	Fan 8: Warning active
11.6	-	3	7240	Discrete input	Bit	Fan 9: Warning active
11.7	-	3	7241	Discrete input	Bit	Fan 10: Warning active
12.0	-	3	7242	Discrete input	Bit	Fan 11: Warning active
12.1	-	3	7243	Discrete input	Bit	Fan 12: Warning active
12.2	-	3	7244	Discrete input	Bit	Fan 13: Warning active
12.3	-	3	7245	Discrete input	Bit	Fan 14: Warning active
12.4	-	3	7246	Discrete input	Bit	Fan 15: Warning active
12.5	-	3	7247	Discrete input	Bit	Fan 16: Warning active
12.6	-	3	7248	Discrete input	Bit	Fan 17: Warning active
12.7	-	3	7249	Discrete input	Bit	Fan 18: Warning active

I/O range of the slave on the PLC side			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Input range offset	Output range offset	HW config slot	Modbus data address	Modbus data type	Access size	Designator
13.0	-	3	7250	Discrete input	Bit	Fan 19: Warning active
13.1	-	3	7251	Discrete input	Bit	Fan 20: Warning active
14.0	-	4	8175	Discrete input	Bit	Analogue input 1: Alarm
14.1	-	4	8176	Discrete input	Bit	Analogue input 2: Alarm
14.2	-	4	8177	Discrete input	Bit	Analogue input 3: Alarm
14.3	-	4	8178	Discrete input	Bit	Analogue input 4: Alarm
14.4	-	4	8179	Discrete input	Bit	Analogue input 5: Alarm
15	2	5	1	Holding register	Word	Standard protocol: System of units
17	4	5	2	Holding register	Word	Standard protocol: Modbus data format
19	6	5	305	Holding register	Word	Control: Operating mode
21	8	5	3826	Holding register	Word	Control cycle 1: Setpoint count
23	10	5	3827	Holding register	Word	Control cycle 2: Setpoint count
25	12	5	4097	Holding register	Word	Inverse operation: Control value
29	16	5	4099	Holding register	Word	Manual mode: Fan control value
31	18	5	4100	Holding register	Word	Night setback: Maximum control value
33	20	5	4101	Holding register	Word	Subcooler: Control value
35	22	5	7762	Holding register	Word	Control cycle 1 master control value: Control value master external bus
37	24	5	7763	Holding register	Word	Control cycle 2 master control value: Control value master external bus
39	26	5	7802	Holding register	Word	Control cycle 1 setpoint 1: Pressure
41	28	5	7803	Holding register	Word	Control cycle 2 setpoint 1: Pressure
43	30	5	7812	Holding register	Word	Control cycle 1 setpoint 1: Temperature

I/O range of the slave on the PLC side			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Input range offset	Output range offset	HW config slot	Modbus data address	Modbus data type	Access size	Designator
45	32	5	7813	Holding register	Word	Control cycle 2 setpoint 1: Temperature
47	34	6	7822	Holding register	Word	Control cycle 1 setpoint 2: Pressure
49	36	6	7823	Holding register	Word	Control cycle 2 setpoint 2: Pressure
51	38	7	7832	Holding register	Word	Control cycle 1 setpoint 2: Temperature
53	40	7	7833	Holding register	Word	Control cycle 2 setpoint 2: Temperature
55	-	8	3969	Input register	Word	Fan 1: Operating hours
57	-	8	3970	Input register	Word	Fan 2: Operating hours
59	-	8	3971	Input register	Word	Fan 3: Operating hours
61	-	8	3972	Input register	Word	Fan 4: Operating hours
63	-	8	3973	Input register	Word	Fan 5: Operating hours
65	-	8	3974	Input register	Word	Fan 6: Operating hours
67	-	8	3975	Input register	Word	Fan 7: Operating hours
69	-	8	3976	Input register	Word	Fan 8: Operating hours
71	-	8	3977	Input register	Word	Fan 9: Operating hours
73	-	8	3978	Input register	Word	Fan 10: Operating hours
75	-	8	3979	Input register	Word	Fan 11: Operating hours
77	-	8	3980	Input register	Word	Fan 12: Operating hours
79	-	8	3981	Input register	Word	Fan 13: Operating hours
81	-	8	3982	Input register	Word	Fan 14: Operating hours
83	-	8	3983	Input register	Word	Fan 15: Operating hours
85	-	8	3984	Input register	Word	Fan 16: Operating hours

I/O range of the slave on the PLC side			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Input range offset	Output range offset	HW config slot	Modbus data address	Modbus data type	Access size	Designator
87	-	8	3985	Input register	Word	Fan 17: Operating hours
89	-	8	3986	Input register	Word	Fan 18: Operating hours
91	-	8	3987	Input register	Word	Fan 19: Operating hours
93	-	8	3988	Input register	Word	Fan 20: Operating hours
95	-	8	4001	Input register	Word	Control cycle 1: Fluid dimension
97	-	8	4002	Input register	Word	Control cycle 2: Fluid dimension
99	-	8	4096	Input register	Word	Humidity: Humidity value
101	-	8	4097	Input register	Word	Ambient temperature: Temperature value
103	-	8	4098	Input register	Word	Fans: Air volume
105	-	8	4099	Input register	Word	Fans: Total power
107	-	8	7468	Input register	Word	Control cycle 1: Current pressure value
109	-	8	7469	Input register	Word	Control cycle 2: Current pressure value
111	-	8	7478	Input register	Word	Control cycle 1: Current pressure setpoint
113	-	8	7479	Input register	Word	Control cycle 2: Current pressure setpoint
115	-	8	7488	Input register	Word	Control cycle 1: Current temperature value
117	-	8	7489	Input register	Word	Control cycle 2: Current temperature value
119	-	9	7498	Input register	Word	Control cycle 1: Current temperature setpoint
121	-	9	7499	Input register	Word	Control cycle 2: Current temperature setpoint
123	-	9	7508	Input register	Word	Control cycle 1 Fans: Control value
125	-	9	7509	Input register	Word	Control cycle 2 Fans: Control value

GHM spray

I/O range of the slave on the PLC side			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Input range offset	Output range offset	HW config slot	Modbus data address	Modbus data type	Access size	Designator
127	42	10	53248	Holding register	Word	Control value external bus
129	44	10	53249	Holding register	Word	Operating mode
131	46	10	53257	Holding register	Word	Setpoint 1
133	48	10	53258	Holding register	Word	Setpoint 2
135	-	11	53289	Holding register	Word	Manual mode
137	-	12	53530	Input register	Word	Status of the digital inputs
139	-	12	53531	Input register	Word	Status of the digital outputs
141	-	12	53533	Input register	Word	Scaled value of AI1
143	-	12	53535	Input register	Word	Scaled value of AI2
145	-	12	53539	Input register	Word	Scaled value of AI4
147	-	12	53540	Input register	Word	Raw value output AO1
149	-	12	53541	Input register	Word	Raw value output AO2
151	-	12	53542	Input register	Word	Control value
153	-	13	53546	Input register	Word	Status of the GIOD's digital outputs
155	-	13	53547	Input register	Word	Fault messages of the GHM spray controller