



Interface specification Profibus/Profinet aicore™ air

Profibus/Profinet parameter specification for the Güntner Motor Management aicore™ air
Applicable for interface modules 5215525 & 5215527

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Version history

Version	Information
01.00.00 - 03.00.00	Internal working versions
04.00.0x	Valid for interface modules 5215381 & 5215378
05.00.00	Revision of data points Valid for interface modules 5215525 & 5215527
05.00.01	Change of product name from "GMMnext" to "aicore™ air"

1 Introduction

This document describes the Profibus and Profinet Communication of the Güntner Motor Management aicore™ air. Communication of the Güntner controller takes place via a gateway from Modbus RTU to Profibus DP or Profinet IO.

The aicore™ air is 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: 5215525
- Profinet IO: 5215527
- Installation kits (depending on the size of the aicore™ air housing):
 - aicore™ air: 5215422 (200) / 5215423 (300) / 5215424 (400)
 - aicore™ air ec: 5215514 (200) / 5215446 (300) / 5215554 (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-202xxxxx.xml"

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

2 Settings

2.1 aicore™ air

The following parameters must be set on the aicore™ air so that communication with the Profibus/Profinet gateway works.

Modbus settings	
Modbus address	1
Baud rate	19200
Framing	8,N,1
Data format	16 bit
Modbus mapping	Standard

2.2 Gateway

The following address setting is possible on the gateway:

Profibus	
Address	Range: 1-126 adjustable via rotary switch

Profinet	
Device name	Default setting: "aicoreair-pn" adjustable via PLC programming software

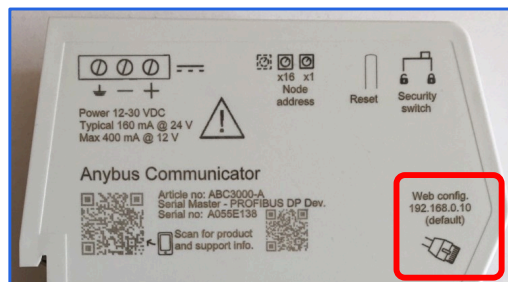
Setting of the Profibus address via rotary switch:

- 1 Disconnect the power supply of the gateway
- 2 Set address with rotary switches (hexadecimal coded, e.g. 126 = 7E)
(rotary switch 1 must always be "0")
When set to "00", the address from the web configuration is used.

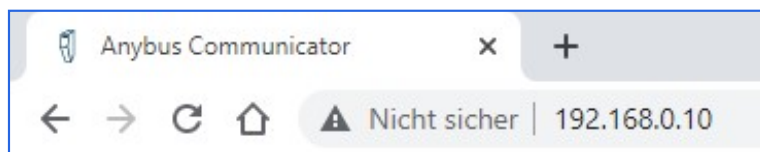


The necessary GSD/GSDML file is included on the gateway and can be downloaded via the web interface:

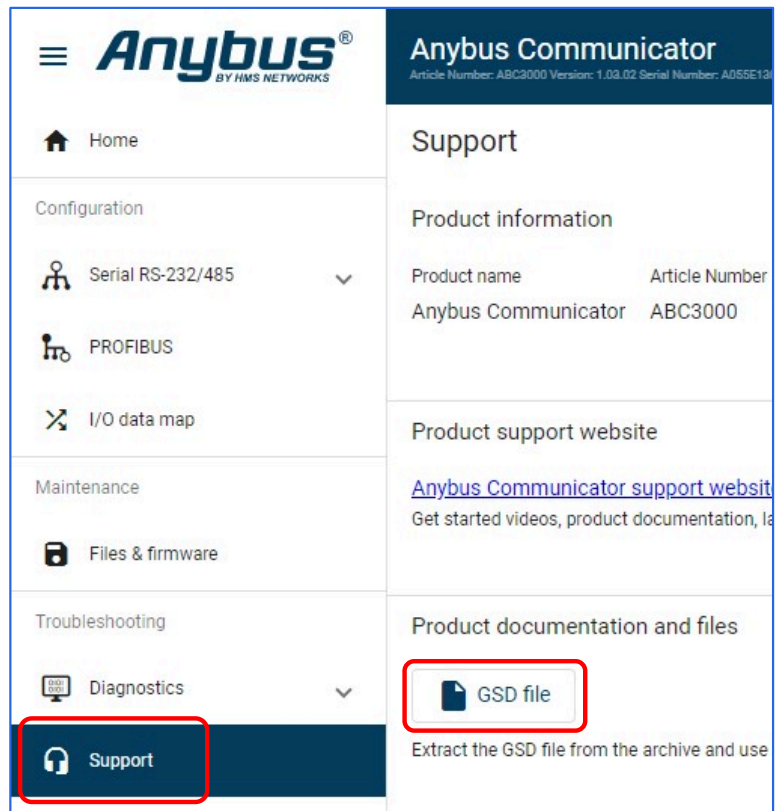
- 1 Connect the power supply of the gateway
- 2 Connection via Ethernet to the configuration port of the gateway



- 3 Calling up the IP address in the web browser (192.168.0.10)



- 4 Open the "Support" menu via the web interface and download the file



2.3 PLC

The following hardware configurations are necessary in the PLC:

Profibus:

- Required GDS file:
 - "HMSA183B.gsd"
- Input modules to be configured (191 bytes):
 - "1 Byte Input Module"
 - "2 Bytes Input Module"
 - "4 Bytes Input Module"
 - "8 Bytes Input Module"
 - "16 Bytes Input Module"
 - "32 Bytes Input Module"
 - "128 Bytes Input Module"
- Output modules to be configured (38 bytes):
 - "2 Bytes Output Module"
 - "4 Bytes Output Module"
 - "32 Bytes Output Module"

Profinet:

- Required GSDML file:
 - "GSDML-Vx.xx-HMS-Anybus-Communicator-202xxxxx.xml"
- Input module to be configured (191 bytes):
 - "IN 0191"
- Output module to be configured (38 bytes):
 - "OUT 0038"

The gateway does not send data to the aicore cyclically. It sends them only in the event of a value change on the part of the PLC.™ air.

If the connection between PLC and gateway is interrupted, the last data are retained in the gateway and thus also remain in the aicore™ air.

3 Data points of the aicore™ air

I/O addresses		Designator	Description
E 0.0	-	internal	---
E 0.1	-	not used	---
... E 3.7			
E 4.0	A 0.0	Manual mode	0 = off, 1 = on
E 4.1	A 0.1	Manual mode: Inverse operation	0 = off, 1 = on
E 4.2	A 0.2	internal	---
E 4.3	A 0.3	Night setback	0 = off, 1 = on
E 4.4	A 0.4	not used	---
... E 4.7	... A 0.7		
E 5.0	A 1.0	Control cycle 1: Setpoint displacement	0 = off, 1 = on
E 5.1	A 1.1	Control cycle 2: Setpoint displacement	0 = off, 1 = on
E 5.2	A 1.2	not used	---
... E 5.7	... A 1.7		
E 6.0	-	Diagnosis: Fan alarm	0 = inactive, 1 = active
E 6.1	-	Diagnosis: Fan alarm (collective message)	0 = inactive, 1 = active
E 6.2	-	Diagnosis: Sensor alarm	0 = inactive, 1 = active
E 6.3	-	Diagnosis: Alarm message (Prio 1)	0 = inactive, 1 = active
E 6.4	-	Diagnosis: Operating message	0 = inactive, 1 = active
E 6.5	-	Diagnosis: Warning message (Prio 2)	0 = inactive, 1 = active
E 6.6	-	Inverse operation active	0 = inactive, 1 = active
E 6.7	-	internal	---
E 7.0	-	Manual mode active	0 = inactive, 1 = active
E 7.1	-	internal	---
E 7.2	-	Night setback active	0 = inactive, 1 = active
E 7.3	-	not used	---
... E 7.7			
E 8.0	-	Control cycle 1: enabled	0 = inactive, 1 = active
E 8.1	-	Control cycle 2: enabled	0 = inactive, 1 = active
E 8.2	-	not used	---
... E 8.7			
E 9.0	-	Maintenance run fan group 1 active	0 = inactive, 1 = active

I/O addresses		Designator	Description
E 9.1	-	Maintenance run fan group 2 active	0 = inactive, 1 = active (only for 2-row units with 2 control cycles and separate assignment of the control cycles to the fan rows "side-by-side")
E 9.2 E 9.3	-	internal	---
E 9.4	-	Control cycle 1: Setpoint displacement active	0 = inactive, 1 = active
E 9.5	-	Control cycle 2: Setpoint displacement active	0 = inactive, 1 = active
E 9.6 ... E 9.7	-	not used	---
E 10.0	-	Control cycle 1: Threshold value active	0 = inactive, 1 = active
E 10.1	-	Control cycle 2: Threshold value active	0 = inactive, 1 = active
E 10.2 ... E 10.7	-	not used	---
E 11.0	-	Fan 1: Alarm	0 = inactive, 1 = active
E 11.1	-	Fan 2: Alarm	0 = inactive, 1 = active
E 11.2	-	Fan 3: Alarm	0 = inactive, 1 = active
E 11.3	-	Fan 4: Alarm	0 = inactive, 1 = active
E 11.4	-	Fan 5: Alarm	0 = inactive, 1 = active
E 11.5	-	Fan 6: Alarm	0 = inactive, 1 = active
E 11.6	-	Fan 7: Alarm	0 = inactive, 1 = active
E 11.7	-	Fan 8: Alarm	0 = inactive, 1 = active
E 12.0	-	Fan 9: Alarm	0 = inactive, 1 = active
E 12.1	-	Fan 10: Alarm	0 = inactive, 1 = active
E 12.2	-	Fan 11: Alarm	0 = inactive, 1 = active
E 12.3	-	Fan 12: Alarm	0 = inactive, 1 = active
E 12.4	-	Fan 13: Alarm	0 = inactive, 1 = active
E 12.5	-	Fan 14: Alarm	0 = inactive, 1 = active
E 12.6	-	Fan 15: Alarm	0 = inactive, 1 = active
E 12.7	-	Fan 16: Alarm	0 = inactive, 1 = active
E 13.0	-	Fan 17: Alarm	0 = inactive, 1 = active
E 13.1	-	Fan 18: Alarm	0 = inactive, 1 = active
E 13.2	-	Fan 19: Alarm	0 = inactive, 1 = active
E 13.3	-	Fan 20: Alarm	0 = inactive, 1 = active
E 13.4	-	Fan 21: Alarm	0 = inactive, 1 = active
E 13.5	-	Fan 22: Alarm	0 = inactive, 1 = active

I/O addresses		Designator	Description
E 13.6	-	Fan 23: Alarm	0 = inactive, 1 = active
E 13.7	-	Fan 24: Alarm	0 = inactive, 1 = active
E 14.0	-	Analogue input 1: Alarm	0 = inactive, 1 = active
E 14.1	-	Analogue input 2: Alarm	0 = inactive, 1 = active
E 14.2	-	Analogue input 3: Alarm	0 = inactive, 1 = active
E 14.3	-	Analogue input 4: Alarm	0 = inactive, 1 = active
E 14.4	-	Analogue input 5: Alarm	0 = inactive, 1 = active
E 14.5 ... E 14.7	-	not used	---
EW 15	AW 2	System of units	1 = SI (°C, bar) 2 = IP (°F, psig)
EW 17	AW 4	Modbus data format	1 = 16 bit (default setting), 2 = 32 bit The 16-bit mode must be active!
EW 19	AW 6	Operating mode	1 = Auto internal 2 = Auto external analogue 3 = Auto external bus 4 = Slave external analogue 5 = Slave external bus
EW 21	AW 8	Inverse operation: Max. control value to enable inverse run	Scaling: 0.01 [%], Value range: 0...99 %
EW 23	AW 10	Manual mode: Control value	Scaling: 0.01 [%], Value range: 0...100 %
EW 25	AW 12	Night setback: Maximum control value	Scaling: 0.01 [%], Value range: 0...100 %
EW 27	AW 14	Control cycle 1: Control value external bus	Scaling: 0.01 [%], Value range: 0...100 %
EW 29	AW 16	Control cycle 2: Control value external bus	Scaling: 0.01 [%], Value range: 0...100 %
EW 31	AW 18	Control cycle 1: Setpoint count	Value range: 1,2
EW 33	AW 20	Control cycle 2: Setpoint count	Value range: 1,2
EW 35	AW 22	Control cycle 1: Pressure setpoint 1	Scaling: 0.01 [bar] / 0.1 [psig], Value range: 0...50 bar / 0...725.188 psig
EW 37	AW 24	Control cycle 2: Pressure setpoint 1	Scaling: 0.01 [bar] / 0.1 [psig], Value range: 0...50 bar / 0...725.188 psig
EW 39	AW 26	Control cycle 1: Pressure setpoint 2	Scaling: 0.01 [bar] / 0.1 [psig], Value range: 0...50 bar / 0...725.188 psig
EW 41	AW 28	Control cycle 2: Pressure setpoint 2	Scaling: 0.01 [bar] / 0.1 [psig], Value range: 0...50 bar / 0...725.188 psig
EW 43	AW 30	Control cycle 1: Temperature setpoint 1	Scaling: 0.01 [°C] / 0.01 [°F], Value range: -30...100 °C / -22...212 °F
EW 45	AW 32	Control cycle 2: Temperature setpoint 1	Scaling: 0.01 [°C] / 0.01 [°F], Value range: -30...100 °C / -22...212 °F

I/O addresses		Designator	Description
EW 47	AW 34	Control cycle 1: Temperature setpoint 2	Scaling: 0.01 [°C] / 0.01 [°F], Value range: -30...100 °C / -22...212 °F
EW 49	AW 36	Control cycle 2: Temperature setpoint 2	Scaling: 0.01 [°C] / 0.01 [°F], Value range: -30...100 °C / -22...212 °F
EW 51	-	Fan group 1: Control value	Scaling: 0.01 [%]
EW 53	-	Fan group 2: Control value	Scaling: 0.01 [%] (only for 2-row units with 2 control cycles and separate assignment of the control cycles to the fan rows "side-by-side")
EW 55	-	Fans: Air volume	Scaling: 0.01 [%]
EW 57	-	Fans: Total power	Scaling: 10 [W]
EW 59	-	Control cycle 1: Fluid dimension	1 = temperature, 2 = pressure
EW 61	-	Control cycle 2: Fluid dimension	1 = temperature, 2 = pressure
EW 63	-	Control cycle 1: Outlet temperature	Scaling: 0.01 [°C] / 0.01 [°F] Only for type "dry cooler"
EW 65	-	Control cycle 2: Outlet temperature	Scaling: 0.01 [°C] / 0.01 [°F] Only for type "dry cooler"
EW 67	-	Control cycle 1: Refrigerant temperature	Scaling: 0.01 [°C] / 0.01 [°F] Only for type "condenser" with defined refrigerant
EW 69	-	Control cycle 2: Refrigerant temperature	Scaling: 0.01 [°C] / 0.01 [°F] Only for type "condenser" with defined refrigerant
EW 71	-	Control cycle 1: Refrigerant pressure	Scaling: 0.01 [bar] / 0.1 [psig] Only for type "condenser"
EW 73	-	Control cycle 2: Refrigerant pressure	Scaling: 0.01 [bar] / 0.1 [psig] Only for type "condenser"
EW 75	-	Control cycle 1: Refrigerant	Only for type "condenser": 1 = bar (not selected), 2 ... = see aicore air operating instructions
EW 77	-	Control cycle 2: Refrigerant	Only for type "condenser": 1 = bar (not selected), 2 ... = see aicore air operating instructions
EW 79	-	Control cycle 1: Current pressure setpoint	Scaling: 0.01 [bar] / 0.1 [psig]
EW 81	-	Control cycle 2: Current pressure setpoint	Scaling: 0.01 [bar] / 0.1 [psig]
EW 83	-	Control cycle 1: Current temperature setpoint	Scaling: 0.01 [°C] / 0.01 [°F]
EW 85	-	Control cycle 2: Current temperature setpoint	Scaling: 0.01 [°C] / 0.01 [°F]
EW 87	-	Ambient humidity	Scaling: 0.01 [%]
EW 89	-	Ambient temperature	Scaling: 0.01 [°C] / 0.01 [°F]
EW 91	-	Wet bulb temperature	Scaling: 0.01 [°C] / 0.01 [°F]

I/O addresses		Designator	Description
EW 93	-	Number of fans	Value range: [1-24]
EW 95	-	Fan 1: Speed	Scaling: 1 [rpm]
EW 97	-	Fan 2: Speed	Scaling: 1 [rpm]
EW 99	-	Fan 3: Speed	Scaling: 1 [rpm]
EW 101	-	Fan 4: Speed	Scaling: 1 [rpm]
EW 103	-	Fan 5: Speed	Scaling: 1 [rpm]
EW 105	-	Fan 6: Speed	Scaling: 1 [rpm]
EW 107	-	Fan 7: Speed	Scaling: 1 [rpm]
EW 109	-	Fan 8: Speed	Scaling: 1 [rpm]
EW 111	-	Fan 9: Speed	Scaling: 1 [rpm]
EW 113	-	Fan 10: Speed	Scaling: 1 [rpm]
EW 115	-	Fan 11: Speed	Scaling: 1 [rpm]
EW 117	-	Fan 12: Speed	Scaling: 1 [rpm]
EW 119	-	Fan 13: Speed	Scaling: 1 [rpm]
EW 121	-	Fan 14: Speed	Scaling: 1 [rpm]
EW 123	-	Fan 15: Speed	Scaling: 1 [rpm]
EW 125	-	Fan 16: Speed	Scaling: 1 [rpm]
EW 127	-	Fan 17: Speed	Scaling: 1 [rpm]
EW 129	-	Fan 18: Speed	Scaling: 1 [rpm]
EW 131	-	Fan 19: Speed	Scaling: 1 [rpm]
EW 133	-	Fan 20: Speed	Scaling: 1 [rpm]
EW 135	-	Fan 21: Speed	Scaling: 1 [rpm]
EW 137	-	Fan 22: Speed	Scaling: 1 [rpm]
EW 139	-	Fan 23: Speed	Scaling: 1 [rpm]
EW 141	-	Fan 24: Speed	Scaling: 1 [rpm]
EW 143	-	Fan 1: Operating hours	Scaling: 1 [h]
EW 145	-	Fan 2: Operating hours	Scaling: 1 [h]
EW 147	-	Fan 3: Operating hours	Scaling: 1 [h]
EW 149	-	Fan 4: Operating hours	Scaling: 1 [h]
EW 151	-	Fan 5: Operating hours	Scaling: 1 [h]
EW 153	-	Fan 6: Operating hours	Scaling: 1 [h]
EW 155	-	Fan 7: Operating hours	Scaling: 1 [h]
EW 157	-	Fan 8: Operating hours	Scaling: 1 [h]
EW 159	-	Fan 9: Operating hours	Scaling: 1 [h]
EW 161	-	Fan 10: Operating hours	Scaling: 1 [h]
EW 163	-	Fan 11: Operating hours	Scaling: 1 [h]

I/O addresses		Designator	Description
EW 165	-	Fan 12: Operating hours	Scaling: 1 [h]
EW 167	-	Fan 13: Operating hours	Scaling: 1 [h]
EW 169	-	Fan 14: Operating hours	Scaling: 1 [h]
EW 171	-	Fan 15: Operating hours	Scaling: 1 [h]
EW 173	-	Fan 16: Operating hours	Scaling: 1 [h]
EW 175	-	Fan 17: Operating hours	Scaling: 1 [h]
EW 177	-	Fan 18: Operating hours	Scaling: 1 [h]
EW 179	-	Fan 19: Operating hours	Scaling: 1 [h]
EW 181	-	Fan 20: Operating hours	Scaling: 1 [h]
EW 183	-	Fan 21: Operating hours	Scaling: 1 [h]
EW 185	-	Fan 22: Operating hours	Scaling: 1 [h]
EW 187	-	Fan 23: Operating hours	Scaling: 1 [h]
EW 189	-	Fan 24: Operating hours	Scaling: 1 [h]