

Basic module – Description

URANOS MANAGER



Operating principle

Uranos Manager is the basic module in Netavent's system solutions for laboratory ventilation.

In terms of hardware, Uranos Manager functions as a programmable unit that achieves differentiating functions depending on the software and connected devices.

For the same reason, the appearance of all controllers is the same, as the software is crucial for the product's properties.

Product features

Uranos Manager can act as:

- Fume hood controller – **UFHR** (Uranos Fume Hood Regulator).
- Zone controller – **UZR** (Uranos Zone Regulator).
- Summation unit – **USUP** (Uranos Sum Up Unit).
- Point Extract monitoring – **ULEG** (Uranos Local Exhaust Guard).
- Room pressure controller – **URPR** (Uranos Room Pressure Regulator).

For further description of the above functionality, please refer to the specific brochures for each product.

Connectivity

The basic module has two RS485 network connections, both of which support the **Modbus RTU** protocol. One port functions as a Modbus **Master** and the other as a Modbus **Subunit** ('slave'). In a control system, there can only be one Master connected, but up to 16 Subunits.

The Master is primarily used to communicate with underlying components, while the subunit responds to requests in connection with, among other things, adjustment, monitoring and general control.

Communication

A distinction is made between the levels of Modbus communication in a system.

- External Modbus: Direct communication path with the overall Uranos Manager and a possibly connected BMS/CTS (Building Management System / Central Tilstandskontrol og Styring) system.
- Internal Modbus: The internal communication path between all Uranos Managers and their associated products.

During setup and operation of the basic module, a number of parameters can be set and read. Some parameters relate to the setup and are normally only set once by an installer with in-depth product knowledge. Other parameters are used during operation for monitoring, troubleshooting and override. The connection to the basic module is made via computer either via a service connector in the room or the BMS system.

Technical overview

The specific function of the Uranos Manager is achieved during commissioning, where the relevant software setup is selected. Regardless of the function, the basic module includes a cover box. This contains a DIN rail for mounting the basic module. All connections to the Uranos Manager are with plug-in terminals of the appropriate type, depending on the function.

		4x2xAWG UTP KAT 5 Local / External Modbus RTU				4x2xAWG UTP KAT 5 Local / External Modbus RTU				4x2xAWG UTP KAT 5 For other components for summation etc.	
Slave RJ45				Slave RJ45				Master RJ45			
GND	24 VDC	GND	24 VDC	AI1	GND	24VDC	AI2	GND	24 VDC	AI3	GND
AI4	GND	24 VDC	AI5	GND	24 VDC	AI6	GND	24 VDC	AI7	GND	24 VDC
AI8	GND	24 VDC	AI9	GND	24 VDC	AI10	GND	24 VDC	AI11	GND	24 VDC
AI12	GND	24 VDC	AI13	GND	24 VDC	AI14	GND	24 VDC	AI15	GND	24 VDC
AI16	GND	24 VDC	AI17	GND	24 VDC	AI18	GND	24 VDC	AI19	GND	24 VDC
AI20	GND	24 VDC	AI21	GND	24 VDC	AI22	GND	24 VDC	AI23	GND	24 VDC
AI24	GND	24 VDC	AI25	GND	24 VDC	AI26	GND	24 VDC	AI27	GND	24 VDC
AI28	GND	24 VDC	AI29	GND	24 VDC	AI30	GND	24 VDC	AI31	GND	24 VDC
AI32	GND	24 VDC	AI33	GND	24 VDC	AI34	GND	24 VDC	AI35	GND	24 VDC
AI36	GND	24 VDC	AI37	GND	24 VDC	AI38	GND	24 VDC	AI39	GND	24 VDC
AI40	GND	24 VDC	AI41	GND	24 VDC	AI42	GND	24 VDC	AI43	GND	24 VDC
AI44	GND	24 VDC	AI45	GND	24 VDC	AI46	GND	24 VDC	AI47	GND	24 VDC
AI48	GND	24 VDC	AI49	GND	24 VDC	AI50	GND	24 VDC	AI51	GND	24 VDC
AI52	GND	24 VDC	AI53	GND	24 VDC	AI54	GND	24 VDC	AI55	GND	24 VDC
AI56	GND	24 VDC	AI57	GND	24 VDC	AI58	GND	24 VDC	AI59	GND	24 VDC
AI60	GND	24 VDC	AI61	GND	24 VDC	AI62	GND	24 VDC	AI63	GND	24 VDC
AI64	GND	24 VDC	AI65	GND	24 VDC	AI66	GND	24 VDC	AI67	GND	24 VDC
AI68	GND	24 VDC	AI69	GND	24 VDC	AI70	GND	24 VDC	AI71	GND	24 VDC
AI72	GND	24 VDC	AI73	GND	24 VDC	AI74	GND	24 VDC	AI75	GND	24 VDC
AI76	GND	24 VDC	AI77	GND	24 VDC	AI78	GND	24 VDC	AI79	GND	24 VDC
AI80	GND	24 VDC	AI81	GND	24 VDC	AI82	GND	24 VDC	AI83	GND	24 VDC
AI84	GND	24 VDC	AI85	GND	24 VDC	AI86	GND	24 VDC	AI87	GND	24 VDC
AI88	GND	24 VDC	AI89	GND	24 VDC	AI90	GND	24 VDC	AI91	GND	24 VDC
AI92	GND	24 VDC	AI93	GND	24 VDC	AI94	GND	24 VDC	AI95	GND	24 VDC
AI96	GND	24 VDC	AI97	GND	24 VDC	AI98	GND	24 VDC	AI99	GND	24 VDC
AI100	GND	24 VDC	AI101	GND	24 VDC	AI102	GND	24 VDC	AI103	GND	24 VDC
AI104	GND	24 VDC	AI105	GND	24 VDC	AI106	GND	24 VDC	AI107	GND	24 VDC
AI108	GND	24 VDC	AI109	GND	24 VDC	AI110	GND	24 VDC	AI111	GND	24 VDC
AI112	GND	24 VDC	AI113	GND	24 VDC	AI114	GND	24 VDC	AI115	GND	24 VDC
AI116	GND	24 VDC	AI117	GND	24 VDC	AI118	GND	24 VDC	AI119	GND	24 VDC
AI120	GND	24 VDC	AI121	GND	24 VDC	AI122	GND	24 VDC	AI123	GND	24 VDC
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AI136	GND	24 VDC	AI137	GND	24 VDC	AI138	GND	24 VDC	AI139	GND	24 VDC
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AI144	GND	24 VDC	AI145	GND	24 VDC	AI146	GND	24 VDC	AI147	GND	24 VDC
AI148	GND	24 VDC	AI149	GND	24 VDC	AI150	GND	24 VDC	AI151	GND	24 VDC
AI152	GND	24 VDC	AI153	GND	24 VDC	AI154	GND	24 VDC	AI155	GND	24 VDC
AI156	GND	24 VDC	AI157	GND	24 VDC	AI158	GND	24 VDC	AI159	GND	24 VDC
AI160	GND	24 VDC	AI161	GND	24 VDC	AI162	GND	24 VDC	AI163	GND	24 VDC
AI164	GND	24 VDC	AI165	GND	24 VDC	AI166	GND	24 VDC	AI167	GND	24 VDC
AI168	GND	24 VDC	AI169	GND	24 VDC	AI170	GND	24 VDC	AI171	GND	24 VDC
AI172	GND	24 VDC	AI173	GND	24 VDC	AI174	GND	24 VDC	AI175	GND	24 VDC
AI176	GND	24 VDC	AI177	GND	24 VDC	AI178	GND	24 VDC	AI179	GND	24 VDC
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AI188	GND	24 VDC	AI189	GND	24 VDC	AI190	GND	24 VDC	AI191	GND	24 VDC
AI192	GND	24 VDC	AI193	GND	24 VDC	AI194	GND	24 VDC	AI195	GND	24 VDC
AI196	GND	24 VDC	AI197	GND	24 VDC	AI198	GND	24 VDC	AI199	GND	24 VDC
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AI468	GND	24 VDC	AI469	GND	24 VDC	AI470	GND	24 VDC	AI471	GND	24 VDC
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AI476	GND	24 VDC	AI477	GND	24 VDC	AI478	GND	24 VDC	AI479	GND	24 VDC
AI480	GND	24 VDC	AI481	GND	24 VDC	AI482	GND	24 VDC	AI483	GND	24 VDC
AI484	GND	24 VDC	AI485	GND	24 VDC	AI486	GND	24 VDC	AI487	GND	24 VDC
AI488	GND	24 VDC	AI489	GND	24 VDC	AI490	GND	24 VDC	AI491	GND	24 VDC
AI4											

Technical specifications

Supply voltage	24VDC +/- 10%.
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Power consumption

Typ.	0,1A.
Max.	1,6A.

Analog Inputs

AI1	0 - 10VDC, Ri > 100kΩ.
AI2	0 - 10VDC, Ri > 100kΩ.
AI3	0 - 10VDC, Ri > 100kΩ.
AI4	0 - 10VDC, Ri > 100kΩ.
AI5	0 - 10VDC, Ri > 100kΩ.
Vout AI5	10 VDC, max. 5mA.

Analog Outputs

AO1	0 - 10VDC, max. 5mA.
AO2	0 - 10VDC, max. 5mA.
AO3	0 - 10VDC, max. 5mA.
AO4	0 - 10VDC, max. 5mA, galvanically isolated.

Digital Inputs

DI1	15 V open circuit (pull up), 2 mA closed circuit.
DI2	15 V open circuit (pull up), 2 mA closed circuit.
DI3	15 V open circuit (pull up), 2 mA closed circuit.
DI4	15V open circuit (pull up), 2 mA closed circuit.

Digital Output

DO1	Relay NC, 30 VDC, 0,2A.
DO2	Relay (wolfram) NO, 230VAC, 2A.
DO3	"Open Collector" 24V DC on/off, max. 100 mA.

Panel RS485

Protocol	Modbus RTU.
A	Data +.
B	Data -.
Baud rate	19,2k.
Parity	Even.
Data bits	8 bit.
Stop bits	1.
Power out	15 V DC (9 V DC at backup), max. 0,1 mA.

Master RS485

Protocol	Modbus RTU.
A	Data +.
B	Data -.
Baud rate	115,2k / 19,2K / 9,6k.
Parity	Non / Even / Odd.
Data bits	8 bit.
Stop bits	1 or 2 bit (always 1 bit at Even/Odd parity).
Power out	24 V DC, max. 1,2A.

Sub unit (slave) RS485

Protocol	Modbus RTU.
A	Data +.
B	Data -.
Baud rate	115,2k / 19,2k / 9,6k.
Parity	Non / Even / Odd.
Data bits	8 bit.
Stop bits	1 or 2 bit (always 1 bit at Even/Odd parity).
Request Time ^{*)}	< 20 mS.
Poll Time ^{**)}	> 1 mS.

^{*)} Requests time is defined here as the time from the last byte in a request being received to the start of the first byte in the corresponding response.

^{**)} Poll Time is defined here as the time from when a response is received until the next request is sent.