

Point Extract Monitoring

URANOS LOCAL EXHAUST GUARD

Safe work when using point extracts

Uranos Local Exhaust Guard kan fungere efter to forskellige principper:

1. Flow monitoring.
2. Pressure monitoring

Flow monitoring

Preferably used when each individual local exhaust is to be monitored separately.

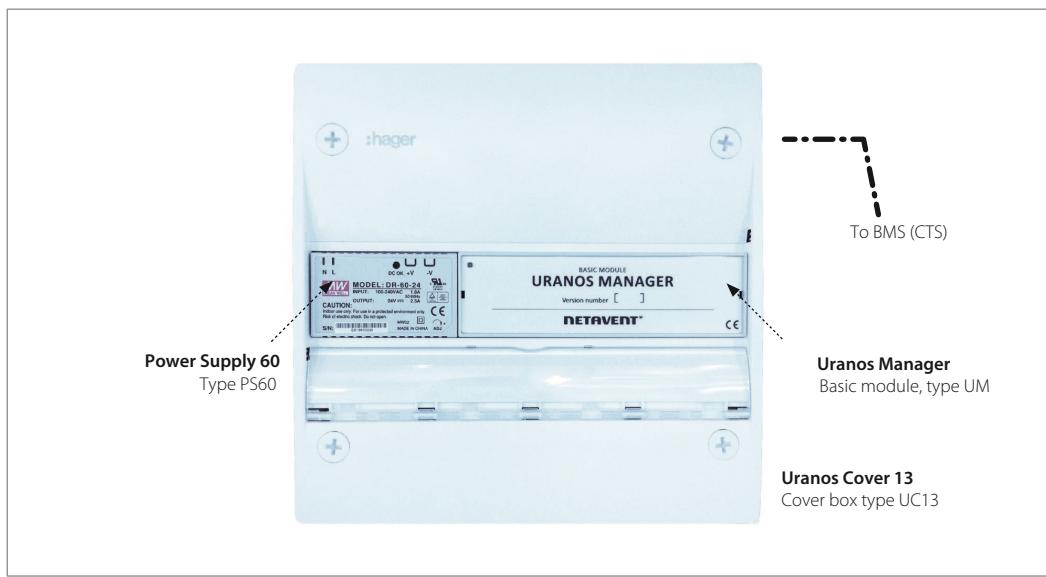
The monitoring shows whether the air velocity in the local exhaust is correct.

Uranos Local Exhaust makes it possible to register very low air velocities in a reliable manner.

Pressure monitoring

Used when multiple local exhausts on a common duct in the same room are to be monitored. The monitoring shows whether the duct pressure in the local exhaust is correct. Uranos Local Exhaust makes it possible to register very low duct pressures in a reliable manner.

In addition, both types can work independently of any control system.



Uranos Local Exhaust Guard. For monitoring local exhaust, there are various panels - not pictured here.
See also the order specification at the end of the brochure.

Beneficial properties

- Provides security for users who use point extracts in their work.
- Panels with LEDs indicate whether the air velocity or duct pressure is correct, as well as the possibility of opening and closing on / off dampers.
- Possibility to open and close up to 4 on/off dampers with joint monitoring via digital inputs.
- Temperature compensated between 18 and 30 °C.
- Easy to commission.
- Can be connected to BMS/CTS monitoring (Building Management Systems / Central Tilstandskontrol og Styring).
- Has an acoustic alarm that can be deactivated and delayed.
- Extra closing function for relay.
- Battery back-up in case of power failure.
- Can be overridden during night stop.

Panels for monitoring point extracts

There are two different types of panels for monitoring the operation of the point extract system. Users can use these to check whether the spot extraction system is working properly and also to reset any alarms. The panels are easy to operate and contribute to a safe and secure working environment.

The operating status of the point extract is displayed via the panel using a green or red diode. The green diode indicates that the spot suction is safe to work on, while the red one alerts about too low speed or duct pressure. The red diode is supplemented by an acoustic alarm (a beep tone), which can be delayed if necessary.

Uranos Local Exhaust Guard has a passive output that can close an external relay in the event of an alarm, which can further trigger a larger light or sound alarm. The monitoring has a built-in, rechargeable battery backup for an acoustic alarm (a constant howling tone) in the event of a power failure.

If the system is stopped, for example at night, Uranos Local Exhaust Guard can be deactivated in various ways to prevent alarms.

Uranos Multi Guard 2 and 3

The panel is available in two different types depending on the type of damper connected.

The panel illustrated at the top right is for point extracts with a regular damper (2), and the panel below is for extract with an on/off damper (3).

The Uranos Multi Guard 3 can be used to control up to four motorized or manual point extracts.

Function description

Pressure low (Red LED)

Blinkende diode og akustisk alarm = Punktsuget funktionsevne er for ukorrekt; Flowet er for lavt.

Pressure OK (Green LED)

Constantly lit LED = The flow is as required.

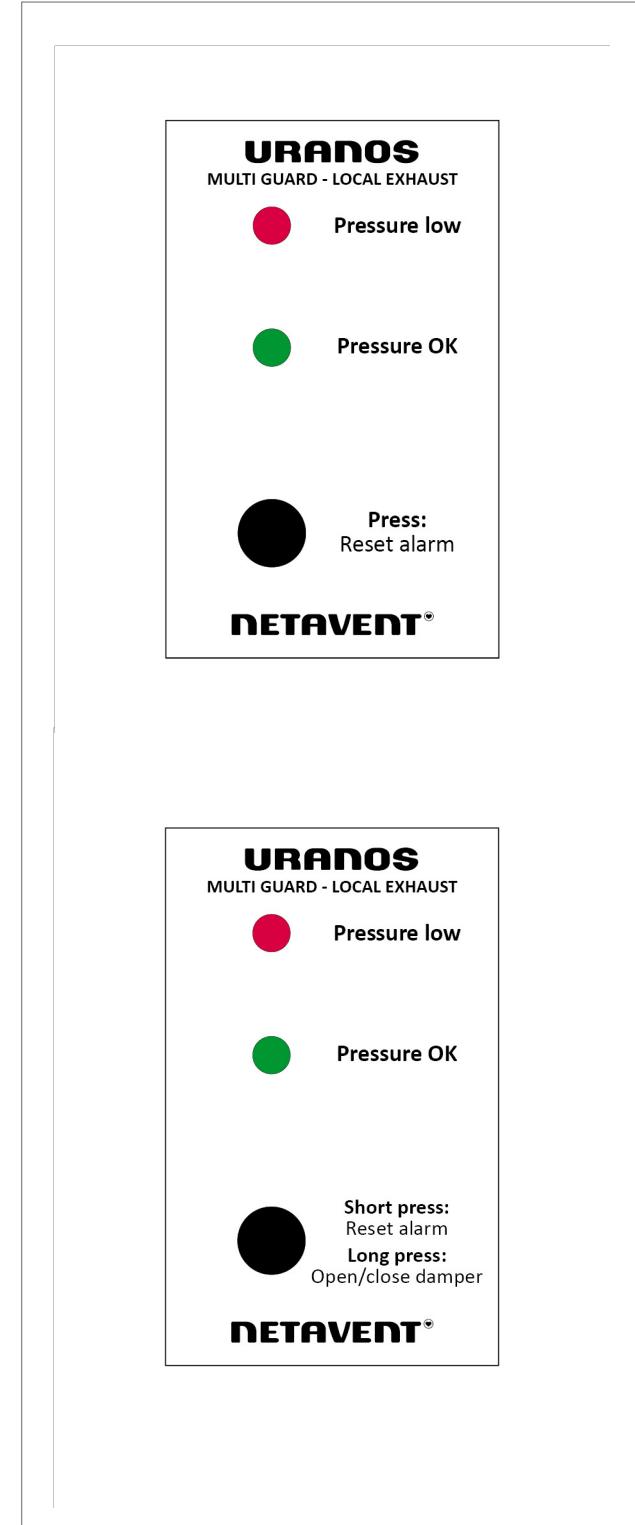
Push button (Black)

• Uranos Multi Guard 2

- "Press: Reset alarm": Med tryk på knappen afstilles den akustiske alarm.

• Uranos Multi Guard 3

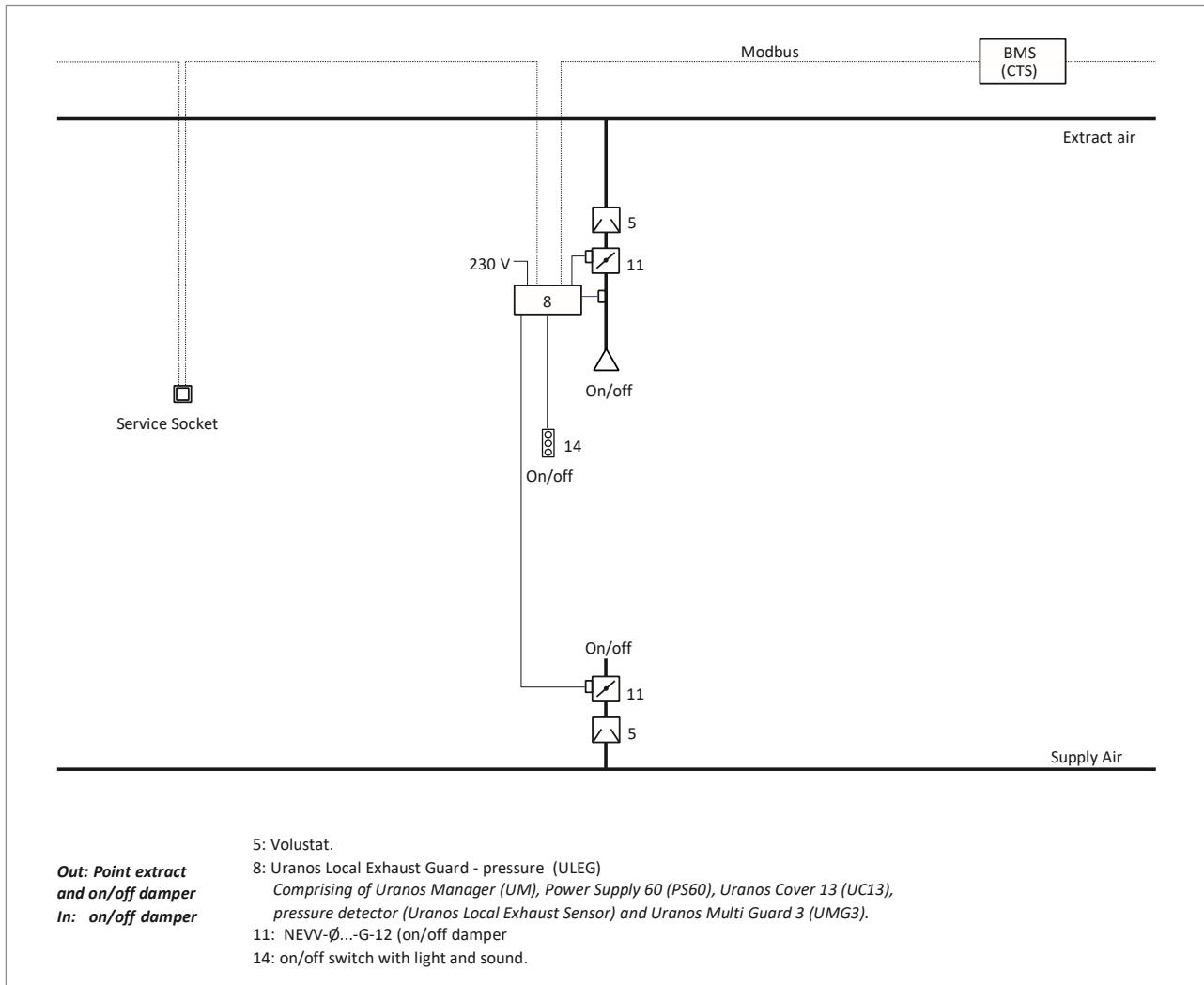
- "Short press: Reset alarm": A short press on the button will silence the acoustic alarm.
- "Long press: Open / close damper": A long press opens and closes the on/off damper.



Uranos Multi Guard 2 og 3 for monitoring Point extracts.

Components – function and interaction

For point extracts with on/off function and monitoring, the following operating principle applies.



Operating principle of Uranos Local Exhaust Guard via pressure measurement, no. 500.

As can be seen from the illustration above, all components are connected to the basic module, Uranos Manager, which is the central unit in the monitoring of the local exhaust.

The basic module has an RS485 interface and all communication with the incoming components takes place via the Modbus RTU protocol.

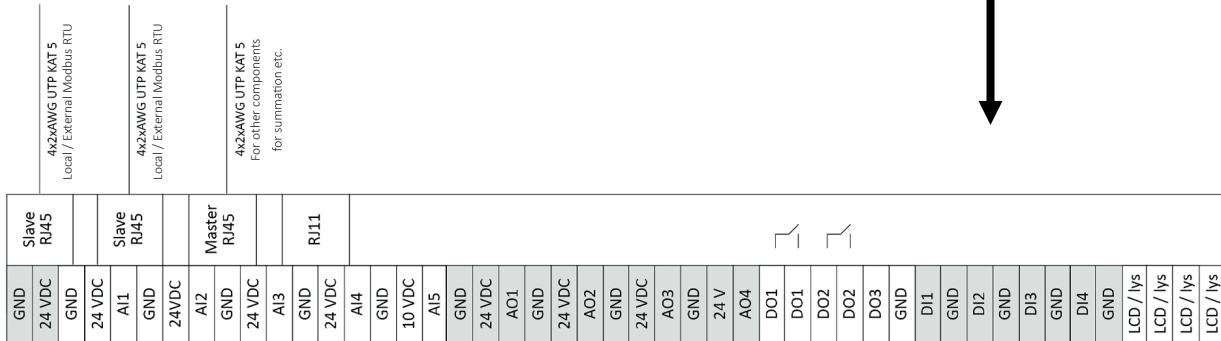
Uranos Local Exhaust Guard can work autonomously, independently of the BMS (CTS), but is prepared for communication with it. The BMS allows for control of all parameters and troubleshooting in the system.

Service on the system can also be carried out via a service socket installed in the room. Connection provides access to operating information and the ability to change the desired parameters.

Wire connections

All components for the point suction monitoring are connected to the basic module, Urano Manager. The illustration shows the layout for connecting the basic module.

For more information on connecting components, please refer to the separate connection diagrams for the point extract monitoring.



Connection layout for Urano Manager.

Dimensions

Below are dimensions for components that can be included in the solution for monitoring point extracts.

URANOS COVER 13	Cover box for basic module and power supply	250 x 250 x 103 mm (HxWxD)
URANOS COVER 10	Cover box for basic module	180 x 218 x 82 mm (HxWxD)
POWER SUPPLY 60	Power supply	93 x 78 x 56 mm (HxWxD)
URANOS MANAGER	Basic module / controller unit	81 x 156 x 58 mm (HxWxD)
URANOS MULTI GUARD 2	User panel for point extracts	71 x 44 mm (HxB)
URANOS MULTI GUARD 3	User panel for point extracts fitted with on/off dampers	71 x 44 mm (HxB)
URANOS LOCAL EXHAUST SENSOR	Pressure sensor 0-2500 PA	36 x 86 x 65mm (HxWxD - Ou outer dimensions) (sensor rod 200mm)
URANOS LOCAL EXHAUST SENSOR	Air velocity sensor 0-20 m/s	36 x 86 x 65 mm (HxWxD - outer dimensions) (sensor rod 200mm)

I øvrigt findes der separate brochurer på alle komponenter.

Technical specifications

Supply voltage	24VDC +/- 10%.
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Power consumption	
Typ.	0,1A.
Max.	1,6A.

Analog Inputs	
AI1	0 - 10VDC, $R_i > 100k\Omega$.
AI2	0 - 10VDC, $R_i > 100k\Omega$.
AI3	0 - 10VDC, $R_i > 100k\Omega$.
AI4	0 - 10VDC, $R_i > 100k\Omega$.
AI5	0 - 10VDC, $R_i > 100k\Omega$.
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.

Order specification

Uranos Local Exhaust Guard

– Point extract monitoring with power supply and user panel with light & sound alarm

Type **ULEG-PS60-UMG2-NDPT** (specified at order placement)

ULEG-PS60-UMG2-NDPT consists of the following products

Designation

Uranos Manager	Basic module / controller unit	UM
Power Supply 60	Power supply	PS60
Uranos Cover 13	Cover for the basic module og Power supply	UC13
Uranos Multi Guard 2	User panel with light & sound alarm	UMG2
Uranos Local Exhaust Sensor	Pressure sensor 0-2500 PA	NDPT

Uranos Local Exhaust Guard

– Point extract monitoring with power supply and user panel with light & sound alarm

Type **ULEG-PS60-UMG2-NAVT** (specified at order placement)

ULEG-PS60-UMG2-NAVT consists of the following products

Designation

Uranos Manager	Basic module / controller unit	UM
Power Supply 60	Power supply	PS60
Uranos Cover 13	Cover for the basic module og Power supply	UC13
Uranos Multi Guard 2	User panel with light & sound alarm	UMG2
Uranos Local Exhaust Sensor	Air velocity sensor 0-20 m/s	NAVT

Uranos Local Exhaust Guard

– Point extract monitoring and user panel with light & sound alarm

Type **ULEG-UMG2-NDPT** (specified at order placement)

ULEG-UMG2-NDPT consists of the following products

Designation

Uranos Manager	Basic module / controller unit	UM
Uranos Cover 10	Cover for the basic module	UC10
Uranos Cover Fill	Extra cover for the casing	UCF
Uranos Multi Guard 2	User panel with light & sound alarm	UMG2
Uranos Local Exhaust Sensor	Pressure sensor 0-2500 PA	NDPT

Uranos Local Exhaust Guard - Point extract monitoring and user panel with light & sound alarm
 Type **ULEG-UMG2-NAVT** (specified at order placement)

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Designation

Uranos Manager	Basic module / controller unit	UM
Uranos Cover 10	Cover for the basic module	UC10
Uranos Cover Fill	Extra cover for the casing	UCF
Uranos Multi Guard 2	User panel with light & sound alarm	UMG2
Uranos Local Exhaust Sensor	Air velocity sensor 0-20 m/s	NAVT

Uranos Local Exhaust Guard - Point extract monitoring with power supply and user panel with light & sound alarm
 Type **ULEG-PS60-UMG3-NAVT** (specified at order placement)

ULEG-PS60-UMG3-NAVT consists of the following products

Designation

Uranos Manager	Basic module / controller unit	UM
Power Supply 60	Power supply	PS60
Uranos Cover 13	Cover for the basic module og Power supply	UC13
Uranos Multi Guard 3	User panel with light & sound alarm (on/off damper)	UMG3
Uranos Local Exhaust Sensor	Air velocity sensor 0-20 m/s	NAVT

Uranos Local Exhaust Guard - Point extract monitoring with power supply and user panel with light & sound alarm
 Type **ULEG-PS60-UMG3-NDPT** (specified at order placement)

ULEG-PS60-UMG3-NDPT consists of the following products

Designation

Uranos Manager	Basic module / controller unit	UM
Power Supply 60	Power supply	PS60
Uranos Cover 13	Cover for the basic module og Power supply	UC13
Uranos Multi Guard 3	User panel with light & sound alarm (on/off damper)	UMG3
Uranos Local Exhaust Sensor	Pressure sensor 0-2500 PA	NDPT

Uranos Local Exhaust Guard - Point extract monitoring and user panel with light & sound alarm
 Type **ULEG-UMG3-NDPT** (specified at order placement)

ULEG-UMG3-NDPT consists of the following products

Designation

Uranos Manager	Basic module / controller unit	UM
Uranos Cover 10	Cover for the basic module	UC10
Uranos Cover Fill	Extra cover for the casing	UCF
Uranos Multi Guard 3	User panel with light & sound alarm (on/off damper)	UMG3
Uranos Local Exhaust Sensor	Pressure sensor 0-2500 PA	NDPT

Uranos Local Exhaust Guard - Point extract monitoring and user panel with light & sound alarm
 Type **ULEG-UMG3-NAVT** (specified at order placement)

ULEG-UMG3-NAVT consists of the following products

Designation

Uranos Manager	Basic module / controller unit	UM
Uranos Cover 10	Cover for the basic module	UC10
Uranos Cover Fill	Extra cover for the casing	UCF
Uranos Multi Guard 3	User panel with light & sound alarm (on/off damper)	UMG3
Uranos Local Exhaust Sensor	Air velocity sensor 0-20 m/s	NAVT



ULEG pressure sensor - NDPT



ULEG air velocity sensor - NAVT