UG8-ED-230 UNIGUARD DUCT SMOKE DETECTOR WITH DISPLAY

Optical stand alone smoke detector for duct installation. Sampling tube included. Rotates 360°. With relays for smoke alarm, contamination, electronic airflow and failure. Display showing contamination and Modbus RTU.

CE

TECHNICAL DATA

Supply voltage:	230V AC ±10% No polarity sensitivity
Detector type:	Optical EVC-PR-DA
Max power consumption:	100 mA
Modbus communication:	RS485
Operating temperature:	-20°C to +55°C
Humidity:	Max. 95% RH
Duct airspeed range:	1 to 20 m/s
Approvals:	CE, VdS, EN54-27
Relay outputs:	Potential-free
Smoke alarm relays:	1 change-over relay 250V, 8A and 1 breaking relay 250V, 8A
Service and Low flow alarm:	1 breaking relay 250V, 1A
System failure alarm:	1 breaking relay 250V, 1A
Smoke detector LED:	Yellow – Service alarm (contamination) Red – Smoke alarm
Circuit board LED:	Green – Normal drift Flashing yellow – System failure Yellow – Low airflow
Enclosure:	PC/ABS
Venturi tube:	PC/ABS or aluminium
Protection class:	IP65

EXAMPLE OF ORDER

Item code	Designation
UG8-ED-230	Duct smoke detector 230V AC Stand-alone with Display. including sampling tube PST195 (195 mm), rotation and mounting device.

ACCESSORIES*

Item code	Designation
ST280	Sampling tube length: 280 mm
ST580	Sampling tube length: 580 mm
ST-EXTEND	Extension of sampling tube ST, 1.06M
UG-MB-8	Mounting bracket (for insulated/ circular ducts)
UG-COVER-75	Insulation cover (for mounting outdoors, in cold attics etc.)

*Sold separately.

FEATURES

- **Sampling Tube for all ducts over 200 mm included**
- **Single tube system**
- **IP65 dust and waterproof**
- **Easy installation**
- **360° mounting possibilities**
- **Patent pending rotation & mounting device**
- **Automatic sensitivity adjustment**
- **Contamination alarm**
- **Built in alarm-relays**
- **4 relay contacts**
- **Easy service and maintenance**
- **Test port for aerosol spray on cover**
- **Electronic airflow indicator**
- **Display for contamination indication**
- **Modbus communication**

FUNCTION

The UG8 Uniguard has been developed to measure smoke in ventilation ducts and consists of a smoke detector and duct enclosure system, specially-designed for optimal airflow through the smoke detector. Combined with the Venturi tube, it is possible to detect smoke without the need to cover the entire diameter of the ventilation duct.

The UG8 can be mounted on either side of the duct. The UG8 comes a rotating section that, together with your chosen Venturi tube, is mounted on the ventilation duct. It also has a “FLOW arrow” for easy installation in the correct direction for the airflow. The direction of the arrow should correspond with the direction of the airflow in the duct. The patent-pending detector enclosure with cable inputs and reset button can be rotated in any direction to suit the characteristics of the mounting location. Both the smoke detector chamber and connection chamber covers have snap locks for quick access.

Relays:

- Two **alarm relays** to, for example, control fire protection dampers or to start/stop the ventilation fans.
- A **service alarm relay and low-flow alarm relay**, which indicate when maintenance is needed before a false alarm occurs, as well as that the airflow in the duct is low or that the UG8 is mounted at an unsuitable place in the duct.
- A **system failure relay**, which indicates failures in the smoke detector circuit.

The UG8-ED-230 has a display showing the detector’s contamination level as a percentage. When the detector activates service/contamination alarm, “SA” appears on the display instead of a percentage.

Other displays:

“AL” = smoke alarm

“LF” = low airflow alarm

“--” = system failure/detector removed

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MODBUS RTU communication (read only)

Using Modbus, detector status, contamination value and low air flow alarms can be viewed.

Communication settings are set using the push button located on the right-hand side of the display. For more information, read: Modbus COMMUNICATION.

The detector has an intelligent monitoring circuit that constantly checks and adjusts the sensitivity for optimum functionality throughout its service life. When the detector can no longer compensate for contamination and starts to approach a false alarm, a service alarm will be indicated.

The detector is fitted with a bayonet mount, making it easy to fit and remove. If a system failure occurs in the UG8, e.g. if a detector is removed, a yellow LED on the circuit board will start to flash and the system failure relay will be disabled. In the event of a system failure, other relays will also be disabled.

The UG8 can be used with Calectro's new PST195 sampling tube or with the aluminium type ST280 and ST580 Venturi tubes, as well as the extension tube ST-EXTEND.

BASIC PRINCIPLES OF PLACEMENT

In order for the airflow through the Uniguard to be representative of the airflow in the ventilation duct, the Uniguard and its tube should be placed as an airflow meter would be. See the installation guide supplied with the product.
You can also use national or local rules for mounting in accordance with "Methods for measuring airflow in ventilation installations".

INSTALLATION

The PST195 tube, which must not be cut, can be used down to a duct diameter of 200 mm without mounting brackets. STx pipes made of aluminium can be cut in order to adjust them to the ventilation duct. Hole size ø 38 mm. For insulated, round and small ducts, mounting brackets are used and in this case, the hole size is ø 51 mm.

MAINTENANCE

The detector has an intelligent control circuit. The circuit adjusts the sensitivity so the detector can function as best as possible for its entire lifetime. Once the control circuit has reached its maximum sensitivity compensation for contaminants and starts to reach a false alarm, a service alarm is indicated. The life of the smoke detector can be extended by cleaning the detector once a year using a vacuum cleaner.

AIRFLOW CONTROL

The detector has an electronic airflow control. When the detector is properly mounted, the yellow "low flow" LED goes out. This function is a simple confirmation that the airflow from the duct is actually moving through the UG8. For special mountings, the airflow control can be disabled by mounting on the jumper (factory setting) placed on the main circuit board, to the right of the reset button.

SIMPLE FUNCTION TEST

After setup, the smoke detector should be tested. The test, for example, can be carried out using our SOLO A5 test spray. Use the test hole in the cover. **Do not forget to replace the plastic plug after the test.**

NB! When mounted outdoors or in non-insulated attics, etc. where there is a risk of condensation, the detector must be insulated against the ambient air using, for example, Calectro's UG-COVER-75 protective cover. Install a sign indicating the presence of a concealed smoke detector.

FUNCTION

Normal operating mode:	During normal operations, all relays are activated and the connection chamber cover lights up green.
Smoke alarm:	The detector LED lights up red.
Resetting:	Press the reset button to reset the detector to normal operating mode. Alternatively, reset it using a short circuit between terminals 9 and 10.
Service alarm:	When the detector detects smoke or is contaminated, the detector's LED will first light up yellow before the alarm goes off with a red light. If the detector is contaminated, a yellow light appears. This is an optical indication (a pre-alarm or service alarm) meaning that the detector is contaminated and that it may give a false alarm in the future if it is not cleaned or replaced.
Fault:	If a failure occurs in the internal smoke detector circuit, or if the smoke detector is removed, the connection chamber cover will flash yellow for system failure and the relays for the smoke alarm, service alarm and system failure alarm will be disabled.
Low airflow:	The connection chamber cover lights up yellow (and the relays is disabled) if the air speed in the duct is low, if the UG8 is mounted at an unsuitable place in the duct or if the UG8 is very contaminated. Check that smoke detection is working by pumping smoke (i.e. from a smoke machine) into the ventilation duct and see whether the UG8 indicates a smoke alarm.

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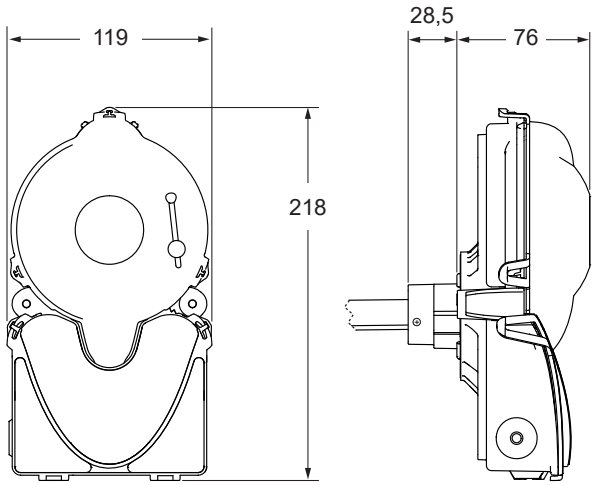
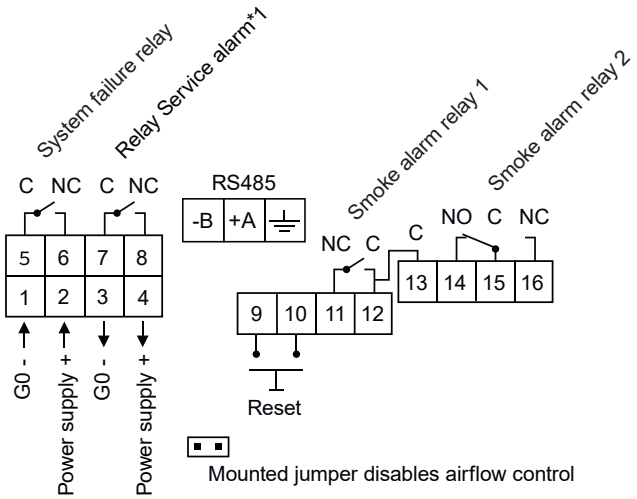
DIMENSIONS

(mm)



CIRCUIT DIAGRAM



The relays are displayed in alarm mode, as they are in the event of a power outage.

MODBUS SETTINGS USING PUSH BUTTONS

for UG8-ED-24, UG8-ED-230, UG8-ZD-24 and UG8-ZD-230

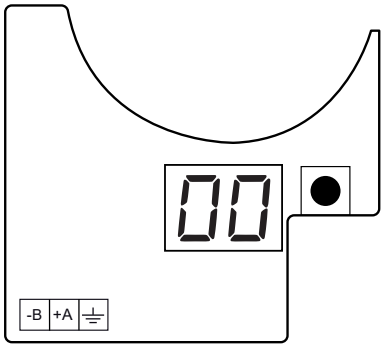
CE

MODBUS COMMUNICATION

To the right of the display on the raised circuit board, there is a push button, which is used to configure the Modbus communication.

Press and hold down the button for approx. two seconds to enter the setup. The current communication (.0 to .b) is shown first, flashing. A “short” press changes the communication setting (up one in the list). There are 12 different options. See the table COMMUNICATION SETTINGS. Press and hold down the button for approx. two seconds to confirm the choice. Now, the address (ID) that has been set (1-64) is shown instead. A “short” press switches (steps up) address. There are 64 different options. Press and hold down the button for approx. two seconds to confirm the address settings.
Please note that both the communication settings and the address must be confirmed within 10 seconds for them to be saved, after which [--] is shown on the display. If this is not done, both the communication setting and the address will revert to their previous setting.

Example image, current contamination value



COMMUNICATION SETTINGS

Communication settings	Baud rate	Parity	Number of stop bits
.0	9600	None	1
.1	9600	None	2
.2	9600	Even	1
.3	9600	Odd	1
.4	19200	None	1
.5	19200	None	2
.6	19200	Even	1
.7	19200	Odd	1
.8	38400	None	1
.9	38400	None	2
.A	38400	Even	1
.b	38400	Odd	1

MODBUS CONNECTION

The Modbus connection is made via three terminal blocks on the circuit board.

From left:

1. -B
2. +A
3. GND

MODBUS SETTINGS USING PUSH BUTTONS

for UG8-ED-24, UG8-ED-230, UG8-ZD-24 and UG8-ZD-230

CE

MODBUS REGISTER

Discrete inputs (1x)	Function	Value range	Read / Write
1x0001	Installed detector	0 or 1	R
1x0002	Smoke alarm	0 or 1	R
1x0003	Service alarm	0 or 1	R
1x0004	Low airflow alarm	0 or 1	R
1x0005	Contamination value	0 to ”service alarm”	R

Holding reg. (4x)	Function	Value range	Read / Write
4x0001	Installed detector	0.1	R
4x0002	Smoke alarm	0.1	R
4x0003	Service alarm	0.1	R
4x0004	Low airflow alarm	0.1	R
4x0005	Contamination value	0, to “service alarm”	R
4x0007	Manual relay control	0/1234 (*1)	R/W
4x0008	Alarm reset	0/1234 (*2)	R/W

(*1) “1234” set the smoke alarm relays in alarm status, “0” set the smoke alarm relays in normal operating status.

(*2) “1234” resets the smoke detector, then the value goes automatically back to “0”.