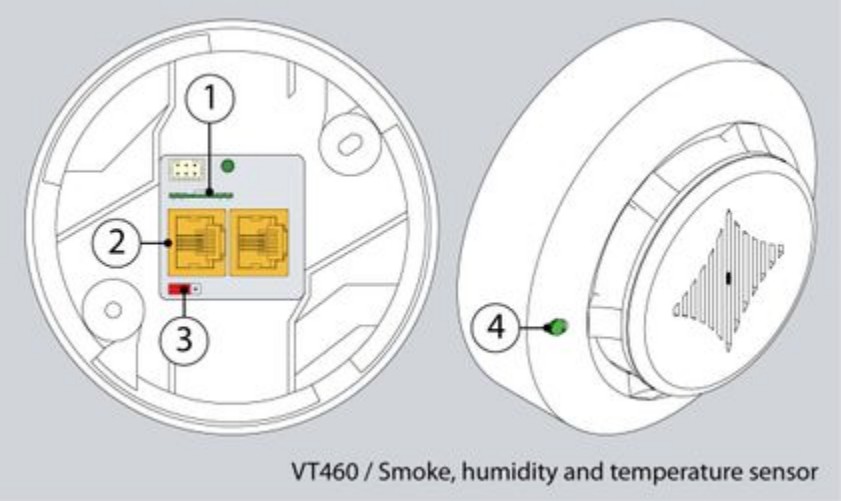
VT460 / Smoke, humidity, temperature sensor

Physical description



From the picture above:

1. Temperature & humidity sensor
2. CAN bus ports
3. Pinheads (3 pins)
4. LED (More info in "LEDs section" in the article: CAN devices connection)

> The sensor can not be used on its own. It must be used together with Vutlan monitoring systems.

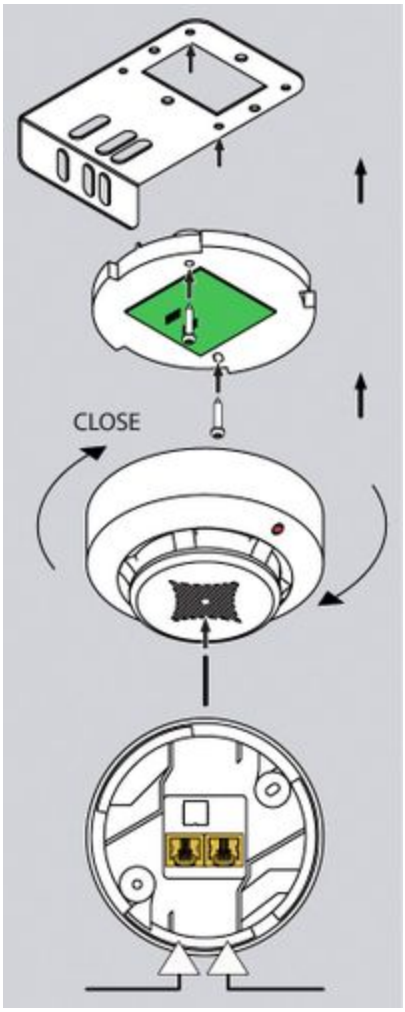
Installation procedure

Notes on assembly

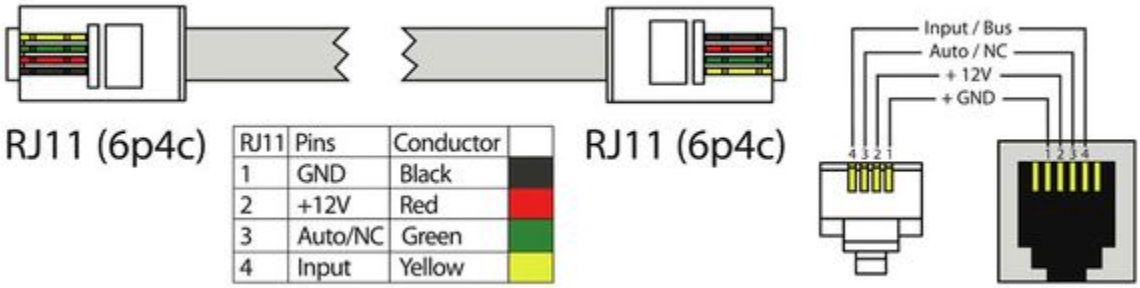
- It is vital to ensure that the smoke alarm is always assembled with the sensor head pointing downwards. In any other position, there is no guarantee that smoke will be detected.
- The smoke alarm must also be positioned so that it is ventilated with an adequate amount of air and the ventilation slots are not covered.

Installation with the mounting plate provided

The sensor is installed using the mounting plate provided.

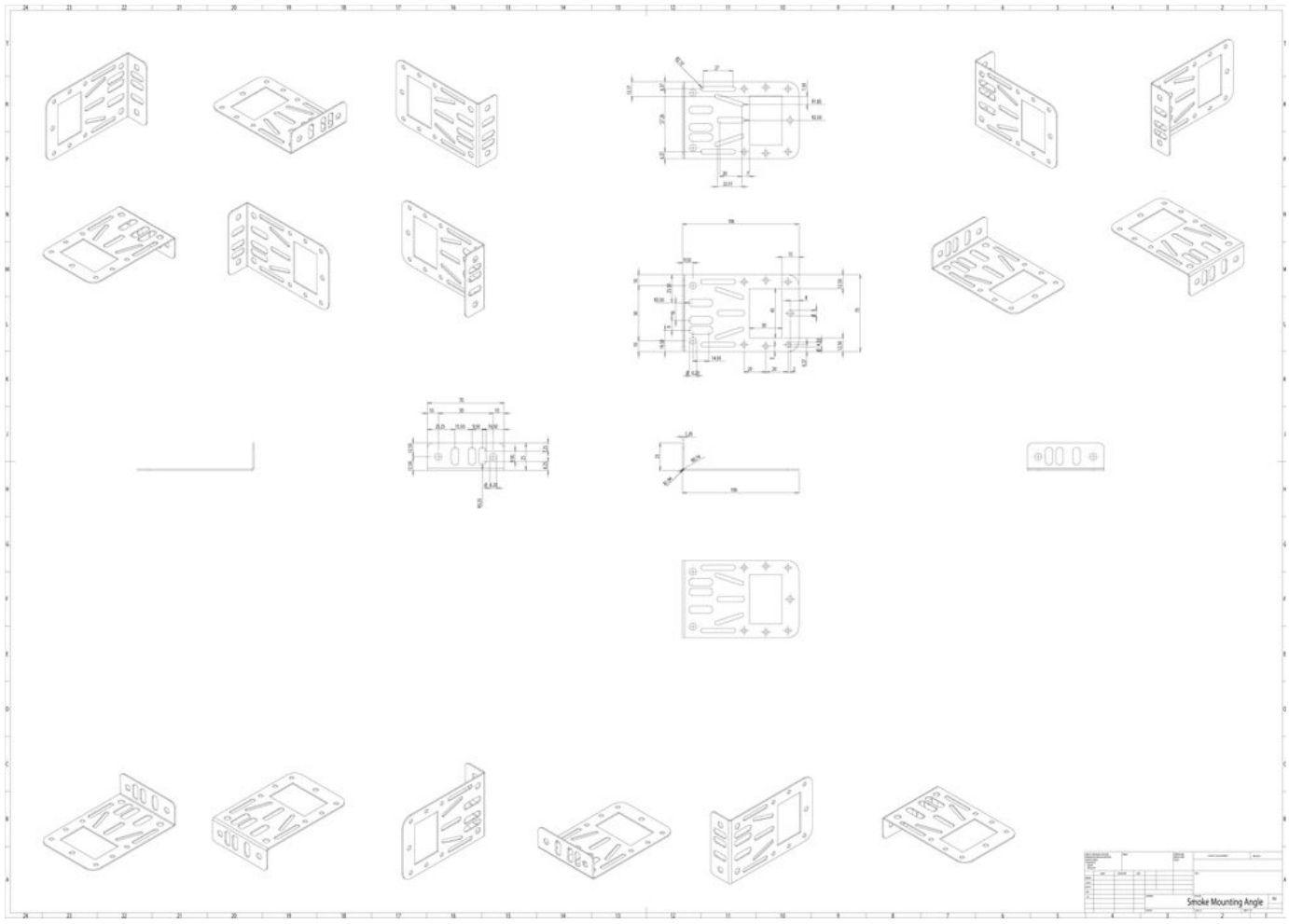


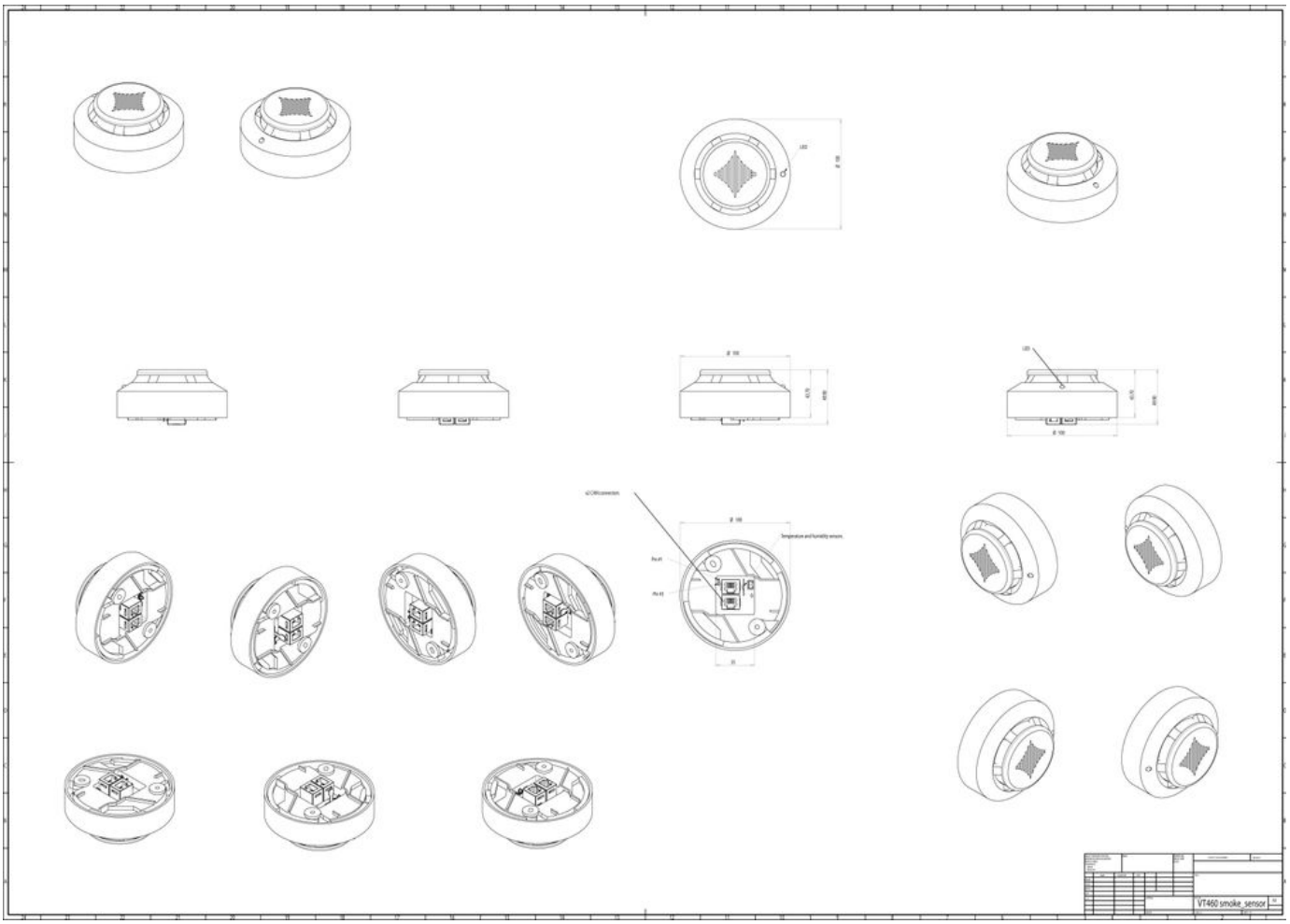
- Uncover the smoke detector head from the base.
- Attach smoke sensor base to the mounting plate using the M4 x 10 screws provided.
- Replace the sensor head onto the base and secure it by twisting until it locks home.
- Secure the mounting plate to the enclosure frame using the 4.8 x 19 screws.
- Remove the red protective cap!



RJ11	Pins	Conductor	
1	GND	Black	
2	+12V	Red	
3	Auto/NC	Green	
4	Input	Yellow	

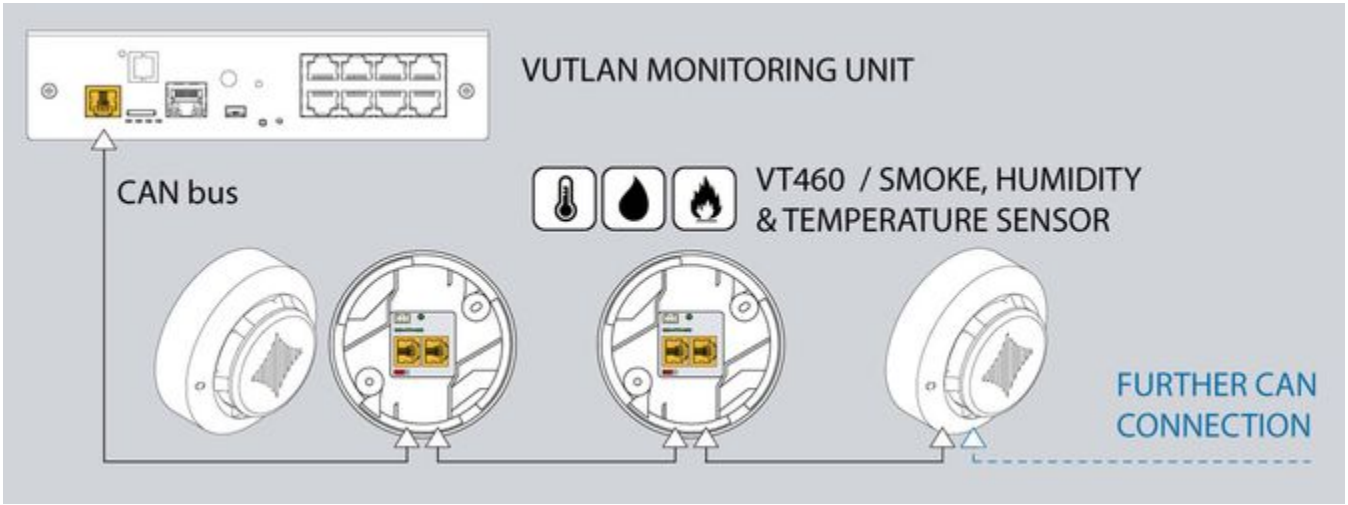
Drawings


Smoke Mounting Angle

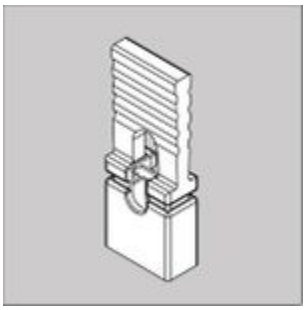


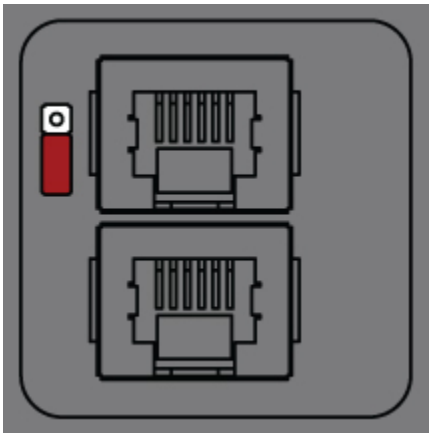
Connecting sensor

Connect one end of the RJ11 / RJ12 cable to the monitoring unit CAN port and the other end to any CAN input of smoke sensor. It is possible to connect up to 10 sensors on one CAN port. To do so connect a new RJ11 cable to a free input of an already connected smoke sensor and the other end to the next smoke sensor in a chain. See the picture below. RJ11 or RJ12 cable pinouts can be found in the picture below. After the system will start, configure the CAN bus, after configuration, the LED on the smoke detector will blink dimly once a second.

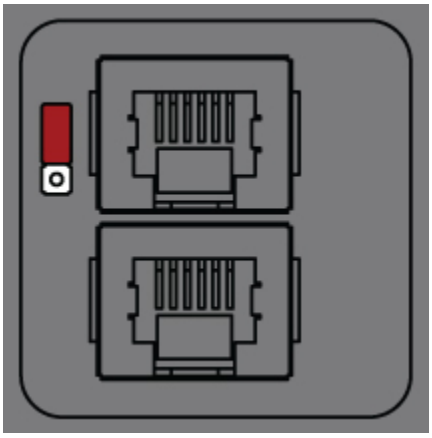


Using the pictures below, install a jumper on VT460.





a) For all sensors except the last sensor in the chain put "pinhead jumper" on pins: 2 and 3. TR is OFF.



b) For the last sensor in the chain put "pinhead jumper" on pins: 1 and 2. TR is ON.

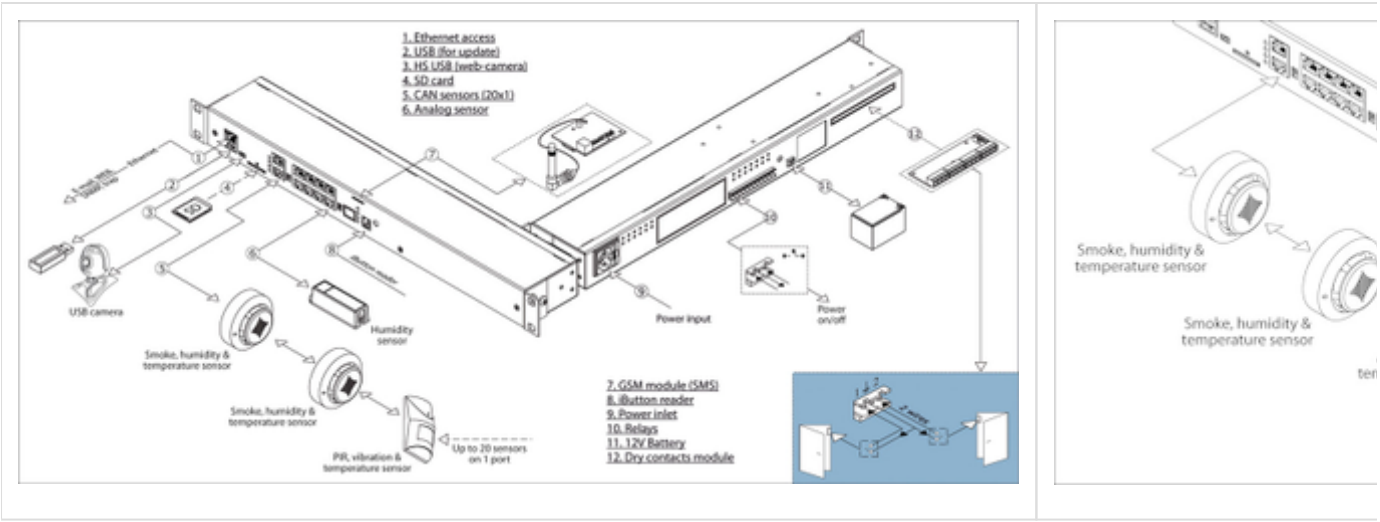
Connecting CAN sensors

CAN sensors and CAN units connection

1. Connect CAN devices to any port CAN1 or CAN2 on the monitoring system using a cable supplied. CAN sensors can also be connected to the port of another CAN sensor or CAN unit which is connected to the CAN bus. Determination of the devices and their connection is done through a web interface.

   > You can connect up to a maximum of x12 CAN sensors and CAN devices together on one CAN bus (approximately)!
   >
   > If you want to connect more than x12 CAN units, you need to use CAN-12V-1A / CAN Power Supply

2. The TR should be "ON" for the last sensor on each bus "CAN 1" and "CAN 2". See section "TR" below.



This procedure applies to the following sensors, which are supported by the appliance and are connected to the CAN ports:

CAN sensors, modules:

- VT408 / Extension unit
- VT430 / Rack control unit
- VT440 / Dry contacts unit
- VT460 / Smoke, humidity, and temperature...
- VT470 / PIR, vibration and temperature sensor
- VT490 / Humidity and temperature sensor
- and other...

CAN extension unit:

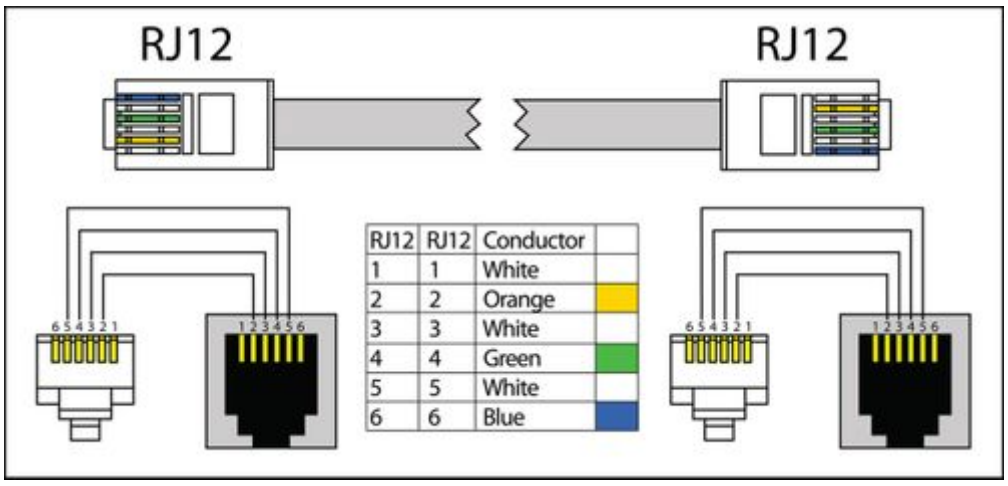
- VT408 / Extension unit

> Read more about Setting up CAN sensors.

Used cable and limit line length

The maximum length of the CAN line in Vutlan monitoring systems is **225 m** due to limitations on the ohmic resistance of cables with RJ12 connectors.

It is advisable to use two or three pairs of cables such as UTP Cat3.5.6 with 24AWG with a copper core. It is possible to use a 4-wire or 6-wire TRONIC or UTP CCA cable, but the maximum CAN line length will be reduced.



RJ12	RJ12	Conductor	
1	1	White	
2	2	Orange	
3	3	White	
4	4	Green	
5	5	White	
6	6	Blue	

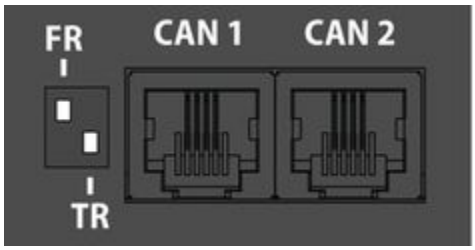
TR termination switch

The last sensor TR switch on a CAN chain must always be terminated, (switched ON). Sensors on a CAN bus that is in the middle should have TR switched OFF.

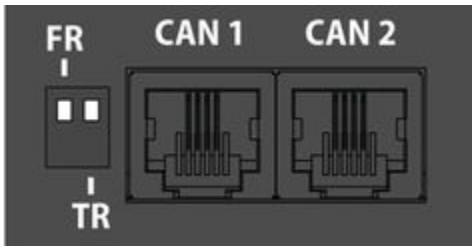
FR should always be OFF.

TR switch is always the DP switch nearest to the CAN bus.

Only older Vutlan models have an FR switch.



pic.1.1: FR is OFF, TR is ON.



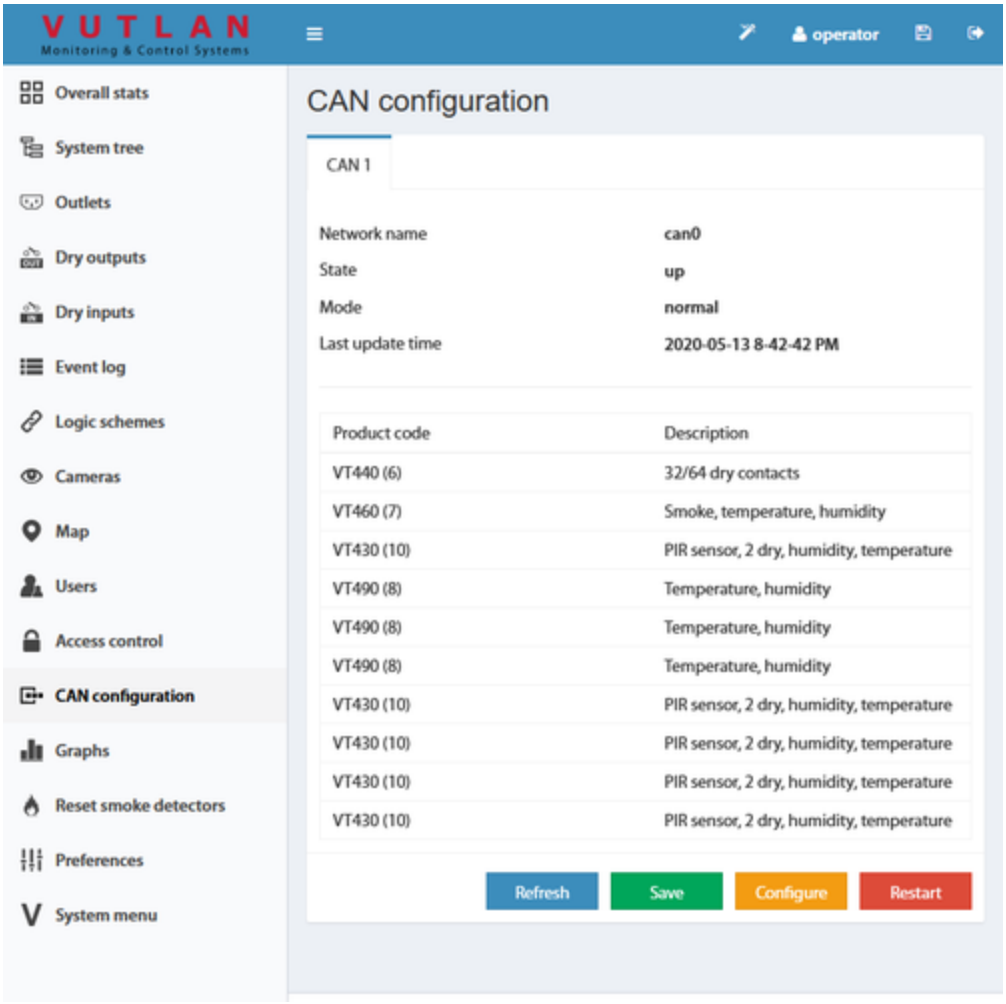
pic.1.2: FR is OFF, TR is OFF.

Adding CAN modules and sensors

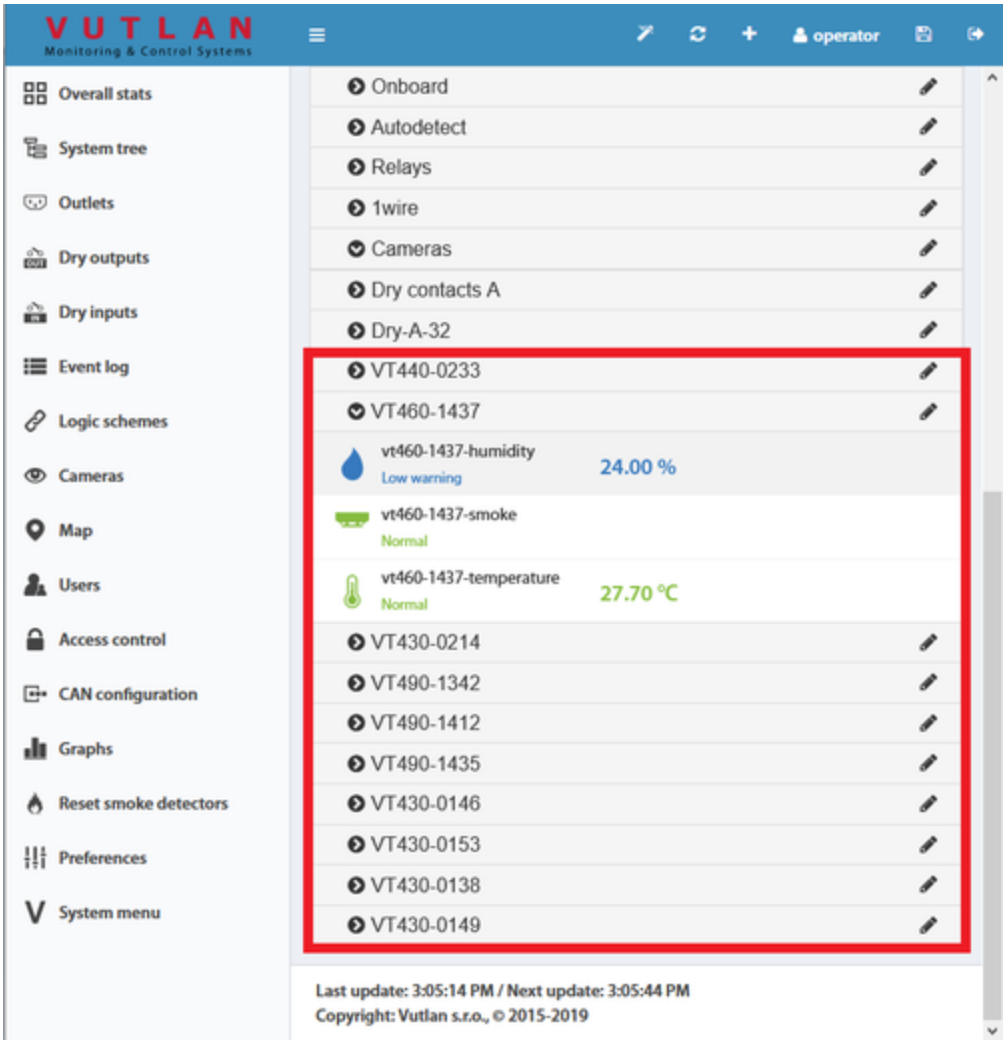
To connect the CAN module or CAN sensor to the CAN bus of the system, go to the interface >> CAN configuration panel >> Select the CAN1 or CAN2 tab (select the connected physical CAN1 or CAN2 port on the master module).

Click the "Configure" button and wait. The system will start CAN bus polling, soon it will display the data lines and write “Done!”. The modules and sensors connected to the CAN input will appear in a tab in the list. Click the Apply button and then Restart.

The green LED "**CAN status**" of the device will light up.



Go to panel "System Tree" to see the new devices or new sensors. The article numbers for CAN devices are VT4xx. If they do not appear, wait, or refresh.



If after clicking the "Configure" button the poll is reset to the phrase "Update", then the line is not connected or the terminators on the bus are not agreed. It is necessary to check and change the condition of the **TR terminators** (See "TR termination switch" section above) on the modules or check and possibly change the **connection cables**.

Warning: If the bus is not matched, that is, there are bad contacts or bad cables, or the TR terminator is in the"**ON**" position on the intermediate devices (position 2 on the VT408), or the line is too short for matching on both CAN end devices, CAN on this line can work malfunctioning or the line as a whole may not function. (CAN line failure may occur if the parallel CR switch is in state 1, must be in OFF).

LEDs

CAN sensors have LEDs that indicate the following states:

- Red continuous light, green flickers - no communication with the master module
- Red continuous light, green is off - there is a connection with the master unit, but is not included in the monitoring system (not configured)
- Red is off, Green continuously light - work as part of a monitoring system
- All LEDs are off: no power or sensor is defective.

Maximum cable length test

Model	Description	50m	100m	150m	200m

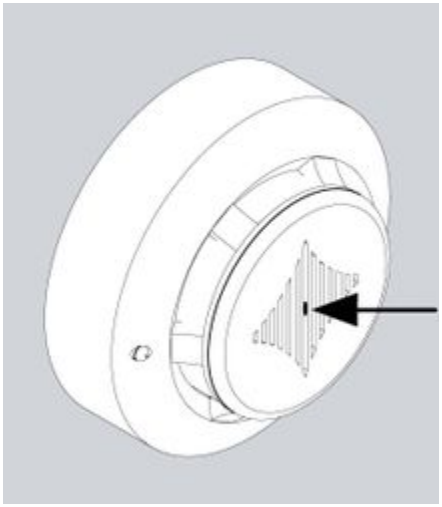
VT408	Sensor extension unit		ok		
VT408DIN			ok		
VT430	Rack control unit		ok		
VT440	Dry contacts unit		ok		
VT460	Smoke, humidity, temperature		ok		
VT490 / VT490i	Dual humidity and temperature sensor / Pressure, humidity & temperature sensor		ok		

see also:

- VT408 / Extension unit
- VT408DIN / Extension unit
- VT430 / Rack control unit
- VT440 / Dry contacts unit
- VT460 / Smoke, humidity, temperature sensor
- VT490 / Humidity and temperature sensor
- VT450 / Pressure, humidity and temperature sensor
- CAN-12V-1A / CAN Power Supply

Testing the smoke sensors

During system operation, take a needle or paper clip and insert it into the hole on the cover of the sensor, try to move it there until the blinking dimly LED will flash brightly. That means that sensor is in a good state. After inspection, return the sensor /s to a normal state. To do this, either disconnect them from the system, or in a system interface, go to the smoke sensors tab, and restart them.



False alarms

Avoid high-frequency noise and the impact of dust on the sensor, the noise and dust cause false alarms.

Technical specifications

VT460	
Dimensions	Ø100×45 mm
Weight	290 g
Inputs	2 x RJ-12
Operating temperature	Min. -10° C, Max.80° C

Operating humidity	Min. 5% - Max. 95% (Non-Condensing)
Power consumption	100 mW
Status Indicators	Red LED
Max. distance m	225 m
HS Code	8531 10 950
Components	Manufactured in E.U.
Special Features	Daisy chain
Mounting	On the ceiling

Safety instructions

- Please observe the valid regulations for installation in the country in which the smoke alarm is installed and operated, and the national regulations for accident prevention. Please also observe any internal company regulations, such as work, operating, and safety regulations.
- The technical specifications and limit values stated must not be exceeded under any circumstances. In particular, this applies to the specified ambient temperature range and IP protection category.
- If a higher IP protection category is required for a special application, the smoke alarm must be installed in an appropriate housing or an appropriate enclosure with the required IP protection category.

Configuring CAN sensors

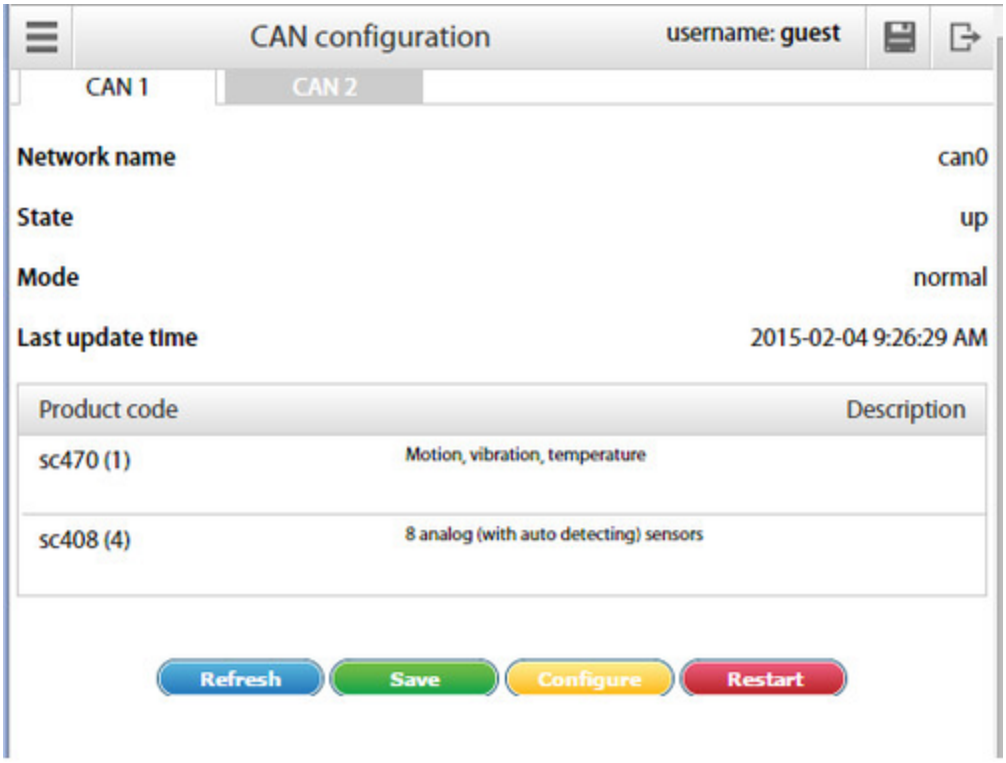
Enable CAN

Inside the web interface of the system go to >> Preferences menu >> Network tab >> Enable CAN >> Save >> Save settings to flash (An icon in the top right corner of the web interface)

Configuration

CAN bus is used for connection of CAN sensors and CAN modules. The device has two independent CAN nodes: CAN1 and AN2.

Before using CAN sensor module, CAN bus must be configured to operate with this CAN sensor module. To configure CAN bus go to "Main menu" >> "CAN" menu, which in turn has two identical tabs - one for each node.

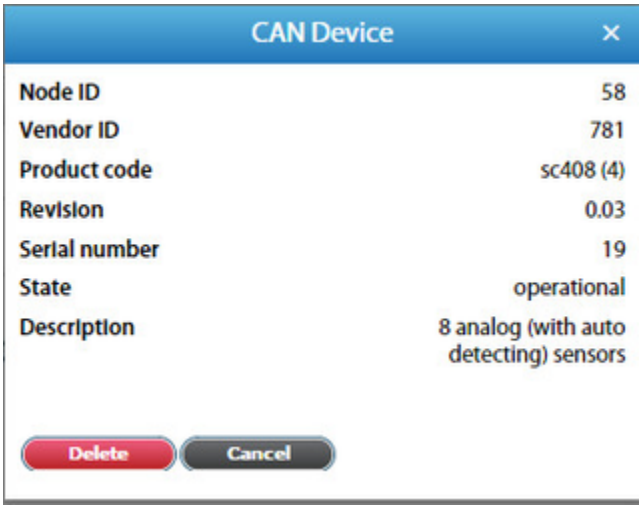


Each station tab contains current information on the status of the node and a list of CAN sensor modules connected to this node.

The following operations can be carried out on the CAN bus node:

- Refresh - updates the current information on the status of the node;
- Configure - launches configuration process of the nodes for CAN sensor modules connected to it, the old configuration is lost
- Save - saves the list of CAN sensor modules in flash memory;
- Restart - restarts the CAN bus node.

To delete a CAN sensor module, click on the desired module. A modal window will pop up. Press "Delete" and confirm.



To set up a CAN bus node for operation with the CAN sensor module, connect CAN module to CAN network and run corresponding configuration procedure in the web interface using the command "Configure". The configuration process is displayed at the bottom of the tab and lasts approx. 2 minutes. Detected modules will be added to the list of modules during the configuration process. After completing configuration the node return s to its normal operation. Sensors of detected CAN modules are added to the tree of elements.

The names of the sensors are automatically set in the form {module name}{serial number}-{type of sensor} and can be edited.

If you need to remove CAN sensor module from the configuration list use command Delete, then use command "Save" to apply the changes you made and restart the node using the command Restart.

- Configuring VT408

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