

VT960i & VT960ii / Corporate monitoring units

Documentation page: <https://vutlan.atlassian.net/wiki/spaces/DEN/pages/2291236920/VT960i+VT960ii+Corporate+monitoring+units>

Product page: <https://vutlan.com/corporate-monitoring-units/154-vt960i-corporate-monitoring-unit.html>



VT960i / Corporate Monitoring System



VT960ii / Corporate Monitoring System

Function and purpose

The unit is used for environmental monitoring (e.g. temperature, humidity, voltage, leakage, smoke, airflow). It is also used as an I/O controller (e.g. door control, fans, generator, control panels, UPS, circuit breakers, alarms). Can use up to 1000 different elements - notifications, triggers, timers, logic schemes, sensors, dry contacts. Has built-in Web interface with virtual sensors, logic schemes, different types of notification, and control panels. Has a slot for an LTE modem and a 2.5" HDD. This is the fastest and most powerful Vutlan monitoring unit.

Two order options:

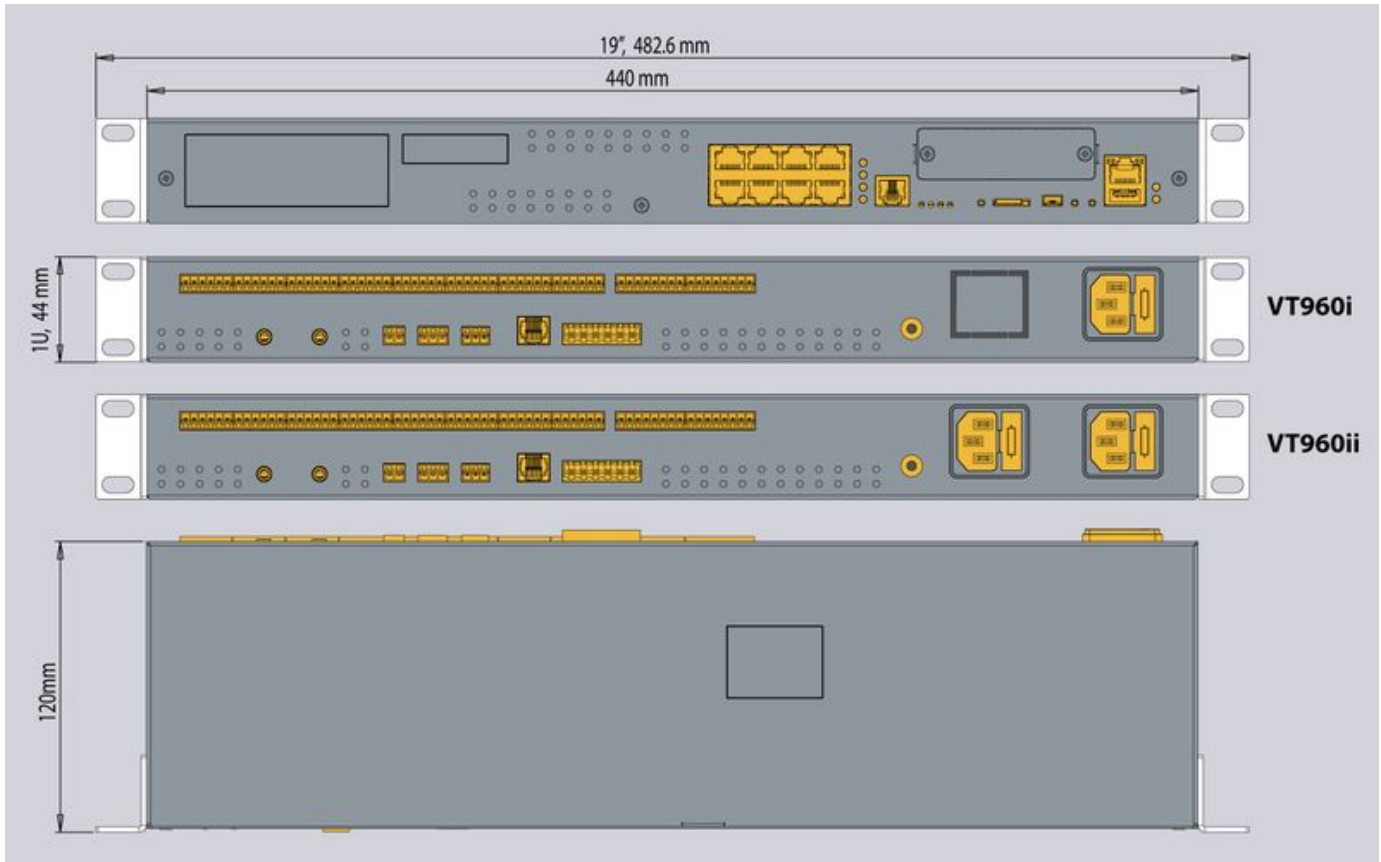
VT900i has only x1 power inlet.

VT900ii has x2 power inlets, providing a redundant power supply for A&B power distribution.

Difference & Dimensions

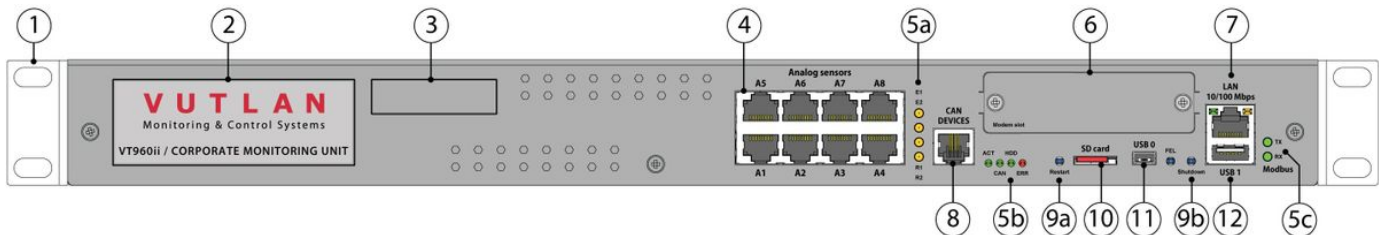
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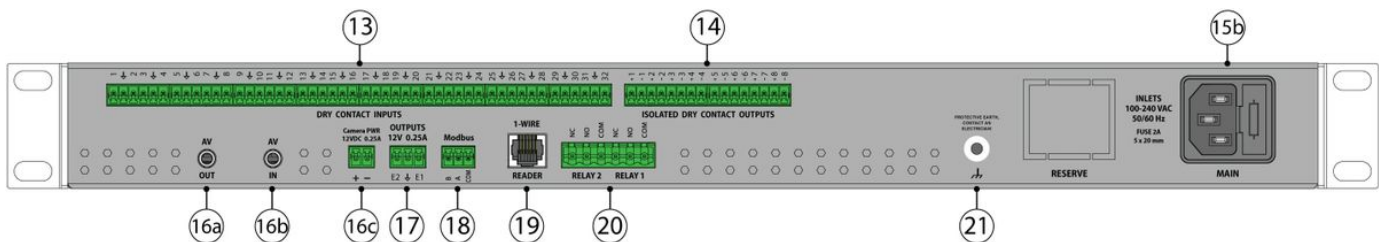


Physical Description

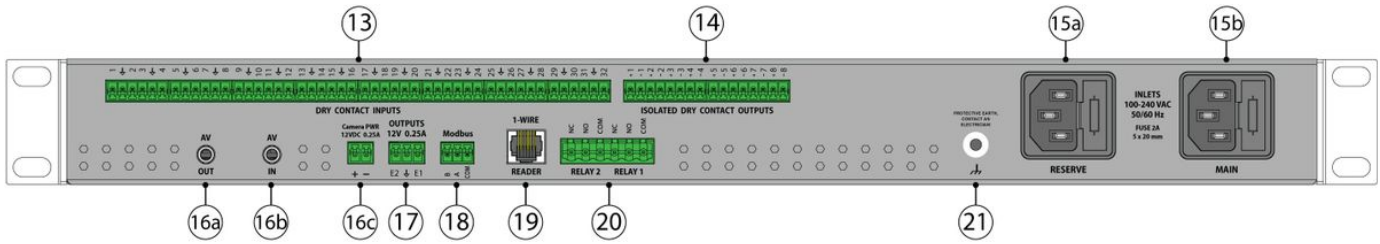
The front panel of VT900i and VT900ii:



VT900i has only x1 power inlet. VT960i back panel:



VT900ii has x2 power inlets, providing a redundant power supply for A&B power distribution. VT960ii back panel:



1. **"1U 19 inch brackets"** - 2x pcs for mounting into a 1U 19" rack slot.
2. **"Logo sticker"** - Displays article number of the monitoring unit.
3. **"Sticker space"** - A place for a sticker, can be used by a user to place an identifier of the system (for example, an IP address).
4. **"Analog sensors: A1..A8"** - 8 RJ12 analog sensor inputs with auto-sensing. Read instructions at ["Analog sensors connection"](#), ["Sensor configuration"](#).
- 5a. **"LEDs: E1, E2"** - status indicators for x2 12V 0.25A outputs at the back of the unit.
 - The LED is ON (orange) - the output is ON (the initial state can be configured).
 - The LED is OFF (orange) - the output is OFF ((the initial state can be configured).

"LEDs: R1, R2" - status indicators for x2 relays at the back of the unit.

 - The LED is ON (orange) - the relay is ON (the initial state can be configured).
 - The LED is OFF (orange) - the output is OFF ((the initial state can be configured).
- 5b. **"LED: ACT"** - green LED indicates appliance system status,

"LED: CAN" - green LED indicates CAN bus status.

 - The LED blinks slowly - nothing is connected
 - The LED blinks fast - configuration is in process
 - The LED glows constantly - connected to CAN devices

"LED: HDD" - green LED indicates 2.5" HDD or SSD status.

"LED: ERR" - red LED indicates error and traffic.

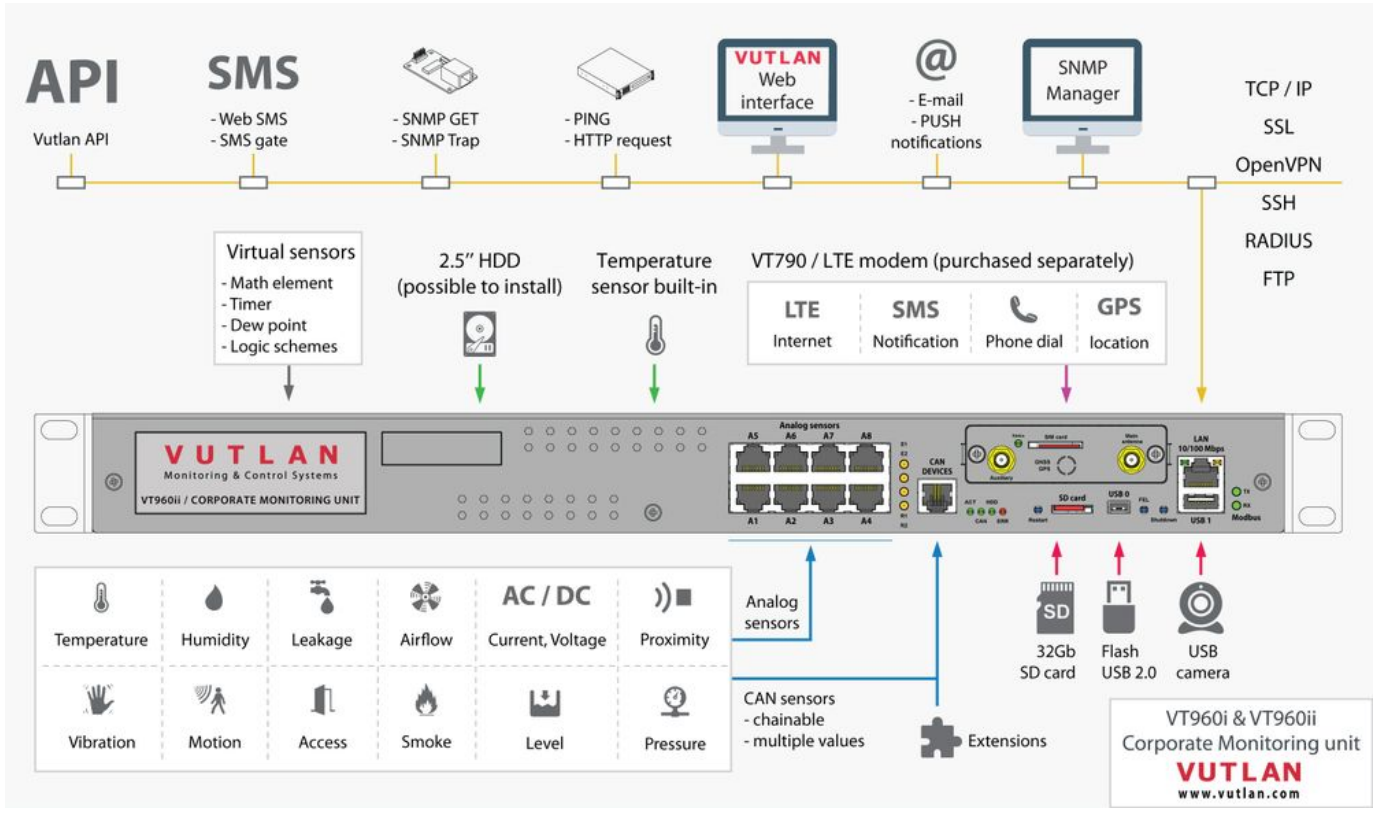
 - the operating mode of the device: If everything is normal, the LED is extinguished, if not - there's a constant glow;
 - software update mode: switches at a rate of 2 times per second;
- 5c. **"LED: TX"** - Modbus data sent activity (Transmission).

"LED: RX" - Modbus data received activity (Receiving).
6. **"Modem slot"** - **"VT790 / LTE modem"** can be installed in this slot. ***This modem is ordered separately.*** Read instructions at ["VT790 / LTE modem"](#), ["LAN, GSM, LTE, RADIUS, DNS, SSL, VPN"](#).
7. **"LAN port"** - Ethernet 10/100 Base-T port, provides an Ethernet connection. Read more in this section ["LAN, GSM, LTE, RADIUS, DNS, SSL, VPN"](#).
 - **"Orange LED"** - orange LED for Ethernet port. Shows network traffic.
 - **"Green LED"** - green LED for Ethernet port. Shows network traffic. Flashes green when the system starts up. Shows the connection state (constant green light - the connection is established, blinking green - the connection attempt).
8. **"CAN DEVICES"** - digital connector RJ12 for the connection of CAN sensors and CAN extensions on a CAN bus, with auto-sensing. Modules can be chain together. Read instructions at ["CAN devices connection"](#), ["Setting up CAN"](#).
9. Buttons
 - 9a. **"Restart"** - the button restarts the appliance. Hold the button for 2 seconds and then let go, the system will restart.
 - 9b. **"FEL"** - user-defined action button. This button is reserved for future functions. It is currently not assigned to any action. Any suggestion is welcome.

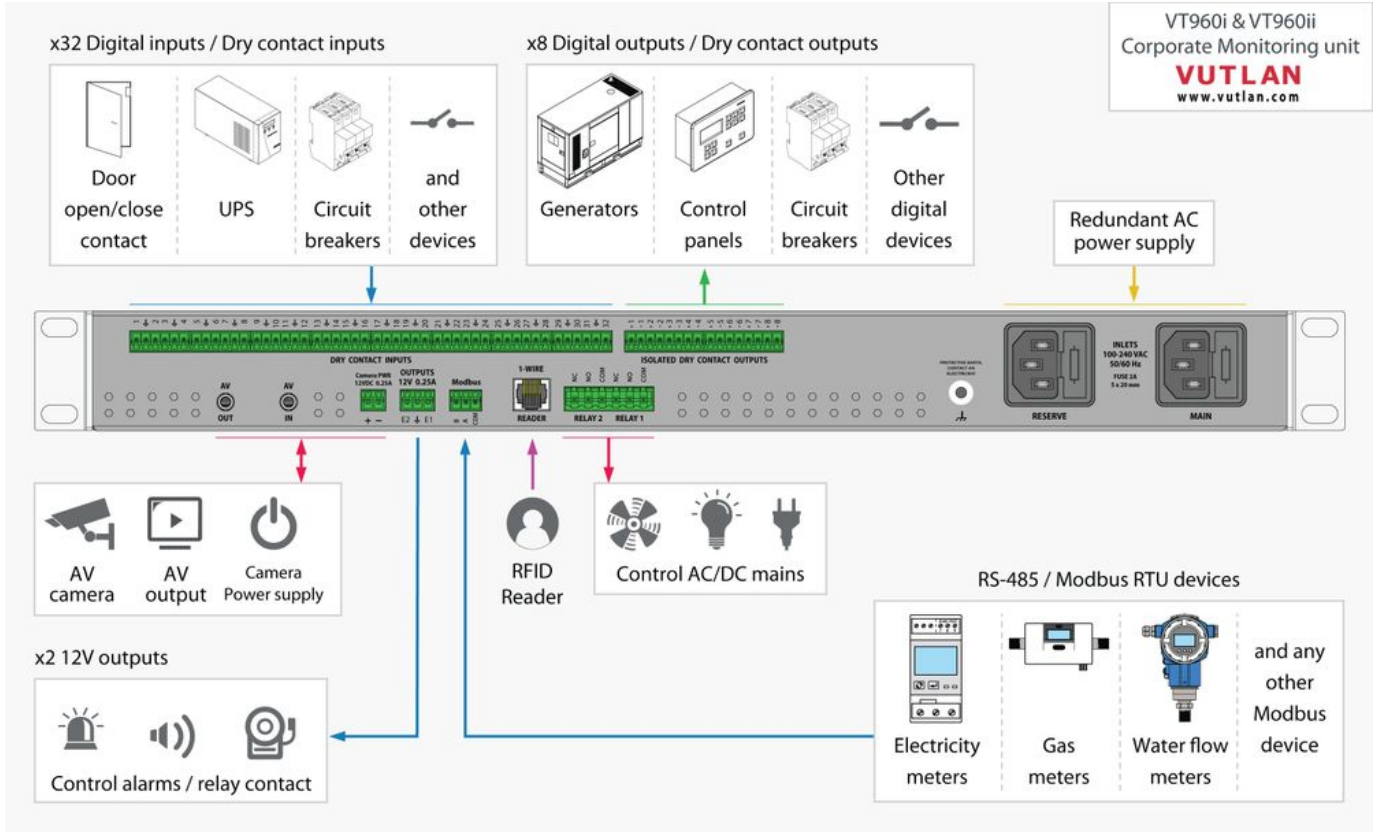
- 9b. **"Shutdown"** - softly shuts down the device. Hold for several seconds and then let go.
10. **"SD card"** - MicroSD card slot with an ejector. The card is needed for data storage or system restore. Read instructions at "[Saving system logs to SD card](#)", "[Restore of the appliance \(for VT900 series\)](#)".
- 11-12. USB ports are needed for USB camera recording, USB Flash for system logs, and system restore. Read instructions at "[Connecting USB camera](#)", "[USB camera settings. How to save a video](#)", "[Saving system logs on USB flash drive](#)", "[USB upgrade or restore of default settings](#)".
- 11. **"USB 0"** - type miniAB USB-port 2.0, required to connect a USB camera.
 - 12. **"USB 1"** - type USB-port 2.0, required to connect a USB camera or a USB Flash card.
13. **"DRY CONTACT INPUTS 1...32"** - Digital inputs (Type IN). Read instructions at "[Connecting dry contacts](#)", "[Dry contacts settings](#)".
14. **"ISOLATED DRY CONTACTS OUTPUTS 1...8"** - Digital outputs 24VDC / 15mA (type OUT). Read instructions at "[Connecting dry contacts](#)", "[Dry contacts settings](#)".
15. **VT900i** has only x1 power inlet. **VT900ii** has x2 power inlets, providing a redundant power supply for A&B power distribution.
- 15a. **"RESERVE"** - Reserve power inlet. 100-240VAC, 50/60Hz, Fuse 2A, Fuse 5x20mm, type C14.
 - 15b. **"MAIN"** - Power inlet. 100-240VAC, 50/60Hz, Fuse 2A, Fuse 5x20mm, type C14.
16. AV camera input, output, and a power supply. Read instructions at "[Connecting hard disk drive](#)", "[AV camera](#)", "[SATA Hard Disk Drive](#)".
- 16a. **"AV OUT"** - Audio / video output. You can connect it to a monitor or other external device.
 - 16b. **"AV IN"** - Audio / video input. Video/audio can be recorded if HDD is installed.
 - 16c. **"DC OUTPUT 12V 0.25A Camera PWR"** - 12V 0.25A output electronic relay terminal.
17. **"OUTPUTS 12V 0.25A"** - 12V 0.25A (for each output) terminals outputs (electronic relay). Read instructions at "[Connecting 12V devices to 12V outputs](#)".
18. **"MODBUS"** - port for connecting Modbus RTU / RS-485 sensors and devices. Read instructions at "[Connecting Modbus RTU sensors to VT336 & VT336PoE](#)", "[Configuring Modbus devices](#)".
18. **"1-WIRE READER"** - For connecting RFID reader or 1-Wire sensors. A serial communication protocol that uses a single data line plus ground reference between master and 1-Wire slave devices. Read instructions at "[Connecting 1-Wire devices](#)", "[Access control](#)", "[Setting up 1-Wire](#)".
20. **"Relays 1, Relay 2"** - NC / NO power relay terminals. Read instructions at "[Connecting NC/NO relays](#)", "[A relay switching \(NC NO\)](#)", "[Relays \(Outlets\) \(SNMP\)](#)".
21. **"Chassis grounding"** - Chassis grounding, M4 thread. Enhances the immunity of the equipment against conducted and radiated RF disturbances. Please contact a professional electrician before connecting it.

Connection overview diagram

The front panel of **VT900i** and **VT900ii**:



The back panel of VT900ii:



Dimensions



VT900i v1.1 corp...t)(drawing)).pdf

Technical details

VT325, VT335, VT825, VT855, VT960i, VT960ii are the monitoring units and can not connect to each other. For scalability please use extension units and embedded boards. All units except VT325 produced in DC / DC version.

- Built-in
- None
- ◇ Extension possible
- ◇ Not extendable

Remote Control	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
Device Management: Web, SNMP, manually via SMS	●	●	●	●	●	●	●
Interface	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
Interface: Access via Internet browsers.	●	●	●	●	●	●	●
LAN: Ethernet 10/100 Mbit	●	●	●	●	●	●	●
OS: Linux	v.5.10	v.5.10	v.5.40	v.3.10	v.3.10	v.3.10	v.3.10
RAM:	1Gb	1Gb	128Mb	64Mb	64Mb	64Mb	64Mb
CPU speed:	1.2 Ghz	1.2 Ghz	600mHz	300mHz	300mHz	300mHz	300mHz
Clock: Built-in clock with time synchronization	●	●	●	●	●	●	●
Watchdog: Built-in watchdog timer	●	●	●	●	●	●	●
Max. amount of sensors: physical sensors, dry contacts, relays	208	288	150	80	60	74	6
Max. amount of elements: notifications, triggers, timers, logic, sensors, dry contacts	2000	2000	1000	500	300	500	500
Protocol support	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
Network protocols: DHCP; HTTP; HTTPS; DynDNS; SSL/TLS; SNMP v1, v2c, v3; SMTP; FTP; Syslog; RADIUS; Modbus RTU; OpenVPN	●	●	●	●	●	●	●
VPN: secure data communications; secure change of connection between LTE and LAN	●	●	●	●	●	●	●
Network protocols: SSH	●	●	□	□	□	□	□

Alerts / Notifications	VT960I	VT960II	VT855	VT825	VT336	VT335	VT325
Alert types: E-mail, FTP log, Syslog, SMTP, SNMP Traps, SMS (Modem is ordered separately), Web-to-SMS, PUSH	•	•	•	•	•	•	•
Maximum number of "mail to" recipients in an E-mail notification:	100	100	20	10	10	10	10
Maximum number of "SMS to" recipients in an SMS notification:	100	100	20	10	10	10	10
Virtual sensors							
Virtual sensors	VT960I	VT960II	VT855	VT825	VT336	VT335	VT325
Pings: Built-in function for server pinging. Test the reach-ability of a hosts an a network.	•	•	•	•	•	•	•
IP cameras: Connect up to x4 IP JPEG cameras	•	•	•	•	•	•	•
Get SNMP: Read data from external equipment via SNMP PDU GET (v1/2c)	•	•	•	•	•	•	•
User keys: Add users who have access using RFID reader.	•	•	•	•	•	•	•
Logic schemes: Used to specify automatic actions to events that occur in the system.	•	•	•	•	•	•	•
Timers: Allows you to plan the events in the system.	•	•	•	•	•	•	•
Triggers: Generate events in the system if logic is triggered.	•	•	•	•	•	•	•
Push notifications	•	•	•	•	•	•	•
SNMP traps	•	•	•	•	•	•	•
Virtual Math element (combine several sensor data and calculate new data)	•	•	•	•	•	•	•
Logic schemes	•	•	•	•	•	•	•
LED indication							
LED indication	VT960I	VT960II	VT855	VT825	VT336	VT335	VT325
LEDs: ACT (green), ERR (red), E1 (yellow), E2 (yellow), CAN (green)	•	•	•	•	•	•	•
LEDs: HDD (green)	•	•	□	□	□	□	□
LEDs: R1, R2 (yellow)	•	•	•	□	□	□	□
Power							
Power	VT960	VT960II	VT855	VT825	VT336	VT335	VT325
Power input AC:	90-230V	90-230V x2	90-230V	90-230V	12V	+12V (VT335)	+12V
Power input DC:	24 ÷ 48V	24 ÷ 48V	24 ÷ 48V	□	□	24 ÷ 48V	□
Fuse: Fuse at the inlet	2A	2A	1A	1A	□	□	□
Max. power consumption:	30W	30W	10W	10W	12W	10W	6W
The maximum current load on the relay:	10A	10A	10A	250mA	250mA	250mA	250mA
Power reservation: built-in voltage monitor, voltage range 9-12.6V.	•	•	•	□	□	□	□
Outputs							
Outputs	VT960I	VT960II	VT855	VT825	VT336	VT335	VT325
Relay outputs: latching relays 240V*10A	2	2	2	□	□	□	□
Relays outputs: 12V 0.25A	2	2	2	2	2	2	2
Max. dry contact outputs (contact closures/digital outputs)	8	8	8	□	□	□	□
Audio output: AV OUT	1	1	□	□	□	□	□
Video output: AV OUT	1	1	□	□	□	□	□

Inputs	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
Analog port: 6P6C for connection of any analog sensor.	8	8	8	8	6	4	2
CAN BUS port: 6P6C port for connection. Max number of devices:	32	32	32	20	20	20	□
Dry contact inputs:	32	32	32	4	4	4	□
Modbus: (Max. 32 sensors, Max. line length 1000m)	1	1	1		•		
Audio Input: AV IN	1	1	□	□	□	□	□
Video Input: AV IN	1	1	□	□	□	□	□
1-Wire extension VT10: Needed for connection of 1-Wire sensors or RFID reader.	1	1	1		□		
Video							
Video	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
Video cameras:	AV, USB, x4 IP	AV, USB, x4 IP	USB, x4 IP	USB, x4 IP	USB, x4 IP	USB, x4 IP	USB, x4 IP
Video power supply: DC 12V 0,25A for analog camera	•	•	□	□	□	□	□
Other connectors							
Other connectors	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
Ethernet port: 10/100Mbit	•	•	•	•	•	•	•
USB 2.0 Type A: (for USB camera or flash drive or Modbus RTU)	1	1	1	□	□	□	□
USB 2.0 Mini A: (for USB camera or flash drive or Modbus RTU)	1	1	1	1	1	1	1
Restart button: restarts the device	•	•	•	•	•	•	•
Switch Normal / Recovery: returns the device to factory settings	□	□	□	•	•	•	•
FEL button: softly restarts SATA drive	•	•	□	□	□	□	□
Shutdown button: Softly shuts down the device.	•	•	□	□	□	□	□
External Memory							
External Memory	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
SD card slot: SD \ HC memory cards up to and inclusive 32Gb. Max. file length 24 hours. Max. The number of files is 10,000. The export of files using the web interface is possible.	•	•	•	•	□	□	□
SATA Drive: 2.5" HDD or SSD (ordered separately)			◇	◇	◇	◇	◇
Extensions (modules are ordered separately)							
Extensions (modules are ordered separately)	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
VT10: 1-Wire board for connecting 1-Wire sensors or RFID reader	□	□	□		◇		
VT18: adds x8 dry contacts inputs, x2 loads (latching relays with LEDs indicators) & x1 12V DC power backup terminal.	□	□	□		◇	◇	◇
VT85: allows to add up to x32 Modbus RTU devices, sensors and meters	□	□	□		◇		
VTX40: Board has x32 dry contact inputs, x8 dry contact outputs.	•	•	•	◇	◇	◇	◇
SATA: 2.5" HDD or SSD (ordered separately)			◇	◇	◇	◇	◇
Modem (extensions)							
Modem (extensions)	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325

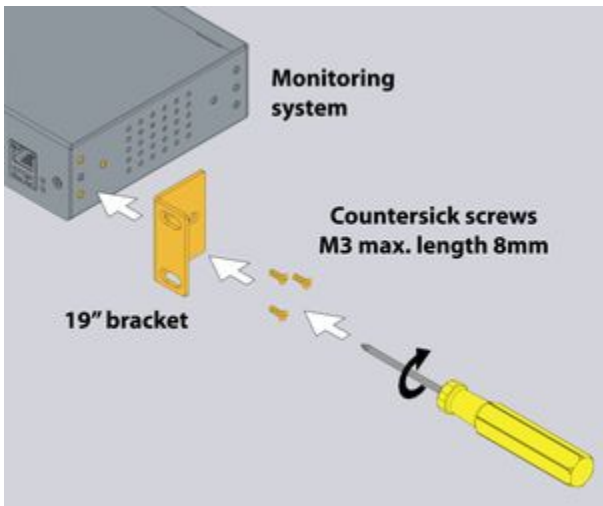
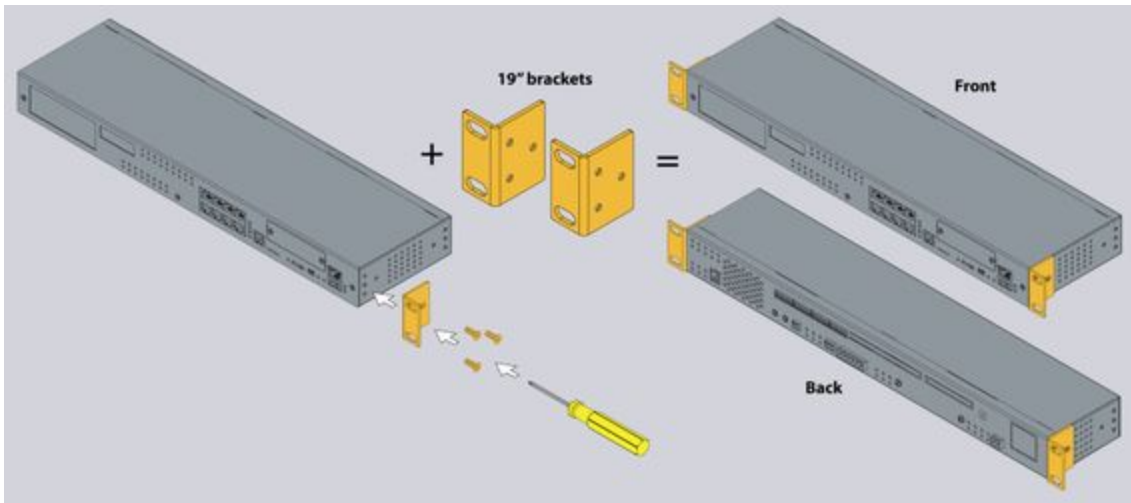
4G LTE modem: VT710, VT760 are ordered separately. Includes only one LTE antenna. The additional extension includes: <ul style="list-style-type: none">• VT6624 / LTE antenna 3dB: Makes 4G signal more stable• VT6691 / GPS antenna 3m 3dBi: Needed for correct time by geographic location	VT790	VT790	VT790	VT760	VT770	VT760	□
2G GSM modem: VT710, VT700 are ordered separately	□	□	VT705	VT700	□	VT700	□
Modem modes: <ul style="list-style-type: none">• Gateway: Internet access using Vutlan unit for other devices on the network• Access: Internet access over LTE• SMS: sending SMS notifications and receiving SMS commands	Gateway / Access / SMS	Gateway / Access / SMS	Gateway / Access / SMS	Access / SMS		Access / SMS	SMS
Embedded sensors	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
Temperature sensor: Accuracy +/- 1 °C. Measures the temperature outside of the enclosure.	•	•	•	•	•	•	•
Power supply voltage sensor: Accuracy (1%)	•	•	•	•	•	•	•
Environmental characteristics	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
Operating temperature: -10 to 80 °C	•	•	•	•	•	•	•
Storage temperature: -25 to 85 °C	•	•	•	•	•	•	•
Operating humidity: 0 to 90 %, non-condensing	•	•	•	•	•	•	•
Storage humidity: 0 to 95 %, non-condensing	•	•	•	•	•	•	•
Other Features	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
Installation:	19" 1U	19" 1U	19" 1U	19" 1U	DIN rail	Desktop	Desktop
Dimensions (L x W x H) in mm:	440*44*120	440*44*120	440*44*90	440*44*80	160*90*58	180*35*80	95*35*80
Weight:	2 kg	2,2 kg	1,5 kg	1,0 kg	0,4 kg	0,7 kg	0,4 kg
External chassis grounding: M4 thread	•	•	•	•	□	•	•
Web interface (general)	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
Access: Three-tier data access with login	•	•	•	•	•	•	•
Multi-language: easy to add new language	•	•	•	•	•	•	•
Sensor graphing:	•	•	•	•	•	•	•
Sensor thresholds: low alarm, low warning, normal, high warning, high alarm	•	•	•	•	•	•	•
Data export: XML, CSV, TXT logs, system settings	•	•	•	•	•	•	•
First-time wizard: Language, Time, Network, SNMP, Users	•	•	•	•	•	•	•
Web interface (panels)	VT960i	VT960ii	VT855	VT825	VT336	VT335	VT325
Dashboard panel:	•	•	•	•	•	•	•

System tree panel: sensors and devices displayed in a hierarchy	•	•	•	•	•	•	•
Event log panel:	500 logs	500 logs	300	200	200	200	200
Logic schemes panel:	•	•	•	•	•	•	•
Cameras panel:	•	•	•	•	•	•	•
Map panel:	•	•	•	•	•	•	•
Users panel: three-level hierarchy (read /write)	•	•	•	•	•	•	•
Access control panel:	•	•	•	•	•	•	•
CAN configuration panel:	•	•	•	•	•	•	•
Multi graphs panel: display multiple sensors on a single graph	•	•	•	•	•	•	•
Supported Vutian environmental sensors							
Temperature, Outdoor Temperature, Humidity, Water leakage, Wind speed meter, Access sensor, Door sensor, Water Level, AC / DC current meters, AC voltage monitor, Smoke detector, Vibration, Motion / PIR, Converter	•	•	•	•	•	•	•

- Built-in None • Extension Not extendable

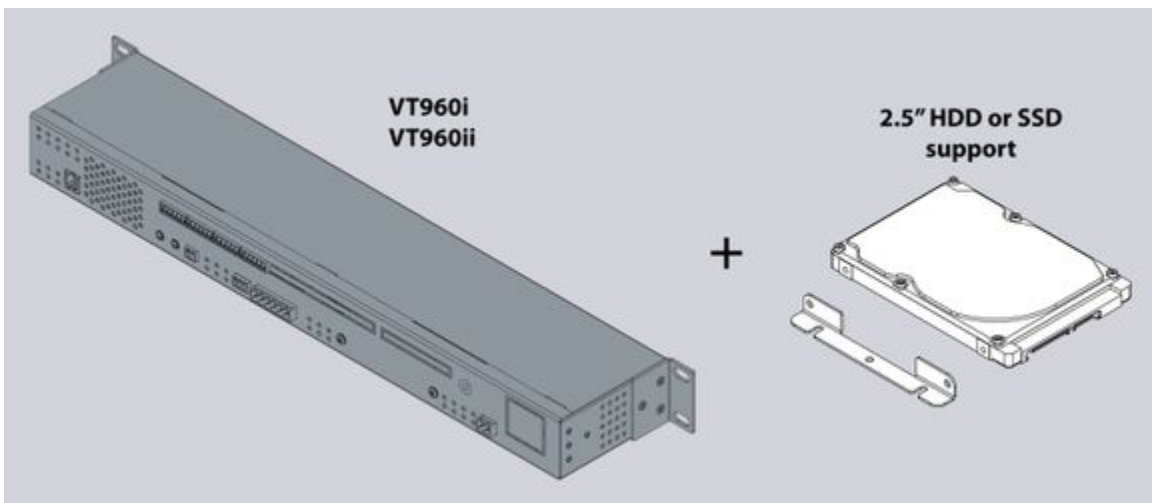
Installing the device into a 19" rack

Use x3 pcs of supplied screws (M3 6mm) for each bracket to fix it on each side of the enclosure as shown in the picture below. The screws and brackets are supplied with the unit.







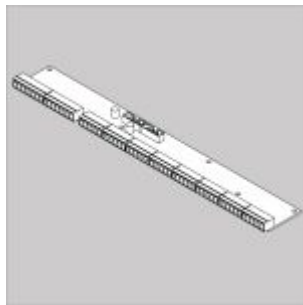
Installing the HDD

You can install a 2.5" HDD inside the unit for recording video and logs. Read the instruction at: ["Connecting hard disk drive"](#), ["SATA Hard Disk Drive"](#), ["AV camera"](#). The HDD is not sold together with the unit by Vutlan. Please purchase it and install on your own.


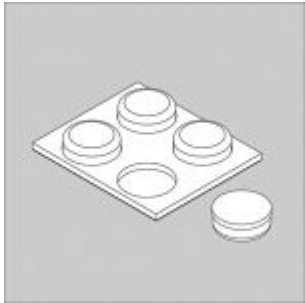
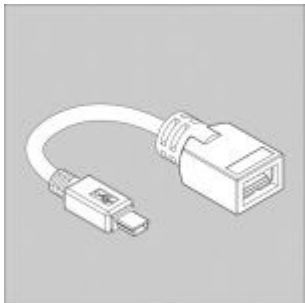


Inventory

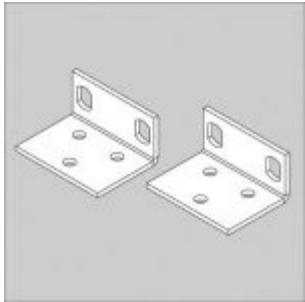
Make sure that the contents of the delivery meet the following configuration. Report a missing or damaged component to your supplier. If damage occurred during transportation, contact the appropriate delivery service.

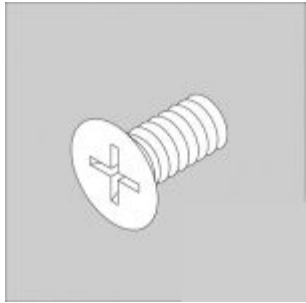
	Package content	Description	VT960i	VT960ii
1		Monitoring unit	1 pc	1 pc
2		EU Schuko C13 0.75 mm ² 230V 10A cable.	1 pcs	2 pcs
3		Configuration manual	1 pcs	1 pcs
4		Warranty card	1 pcs	1 pcs
5		VTx40 / Embedded dry contact board	1 pcs	1 pcs

Transparent bag 100x150mm:

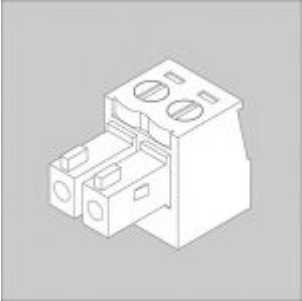
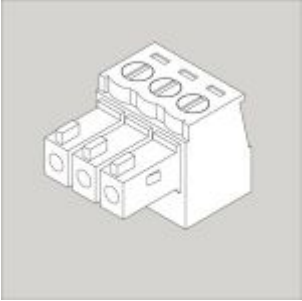
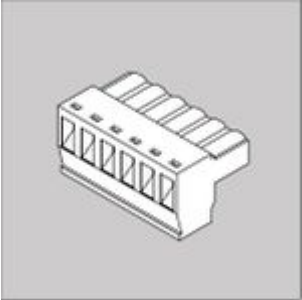
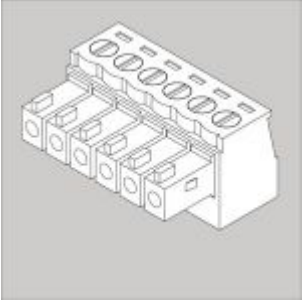
	Package content	Description
1		RJ-45 1m patch cable
2		Self-adhesive rubber foot - 4 pcs
5		USB adapter cable

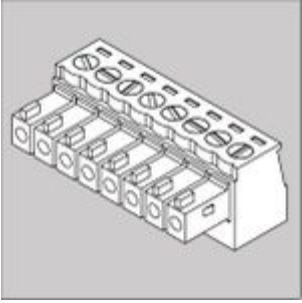
Transparent plastic bag 70x125mm:

	Package content	Description
1		19" rack brackets - 2 pcs
2		M3 x 8mm Phillips flat-head screws - x6 pcs (transparent plastic bag 42x70mm)



Transparent plastic bag XxXmm:

	Package content	Description	One power input	Two power inputs
1		Terminal plug 2 pins, 3.81 mm	1 pcs	1 pcs
2		Terminal plug 3 pins, 3.81 mm	1 pcs	1 pcs
3		Terminal plug 6 pins, 5.08 mm	1 pcs	1 pcs
4		Terminal plug 6 pins, 3.5 mm	8 pcs	8 pcs

5		Terminal plug 8 pins, 3.5 mm	2 pcs	2 pcs
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Device configuration

1. [Initial Configuration \(web interface\)](#)
2. [Configuring \(web interface\)](#)
3. [Upgrade and restore options](#)