

QuadroSense™ Fence Protection System

Installation Guide and Operating Manual

English version (15.10.2014)

Dear Customer!

Thank you for choosing our product!

Before installation and use, please read this Installation Guide and Operating Manual carefully and thoroughly, so that you can take safe and full advantage of all features of the product.

This manual contains information about the design, operation, application and technical parameters of the **QuadroSense**[™] Fence Protection System. Instructions for its proper installation and use are also included in the manual.

- **Note**: Installation of the product <u>MUST</u> be done by qualified personnel. Installer must follow local laws, statutes and regulations. Manufacturer or retailer will take no responsibility, nor assume any liability, for damage or injury caused by the faulty installation or misuse of the product. <u>ANY</u> modification or maintenance done by unqualified or unauthorized personnel could damage the product.
- **Note**: Manufacturer continually refines the product to ensure optimal performance. Specifications subject to change without notice. As a result, temporary minor discrepancies between the actual device and that described in the contents of this manual may occur. Any such differences will not affect the intended operation of the device.

Disclaimer

The manufacturer/distributor reserves the right to revise any content in this manual at any time. While due diligence has been taken to ensure correct and comprehensive content, the manufacturer/distributor does not warrant or assume any legal liability whatsoever for the failure of any user of the product to follow the instructions, recommendations and guidelines contained in this manual.

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PRODUCT INVENTORY

Item	Quantity
QuadroSense™ signal processing unit	1
Aluminum protective housing	1

Note: Power supply is <u>not included</u>.

Note: Vibration cable is <u>not included</u>, but available separately.

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SUPPORTED DETECTION DEVICES

• Vibration cable (fence protection)

TECHNICAL FEATURES

• QuadroSense[™] is a 4-channel device which detects and processes signals from vibration cables connected to its input channels.

• Breaking or short-circuiting an input channel generates an alarm on the same channel.

• The signal processing unit is tamper-protected. Opening the housing of the unit generates an alarm.

• Using vibration cable only, up to 1000m/3280ft of cable may be used with one QuadroSense[™] unit (250m/820ft per input channel). Using the recommended saw-tooth pattern, it can cover approximately 100m/328ft of fence per channel (for 400m/1312ft total). The vibration cable can be extended, with so-called "DC cable" for signal transmission. A DC cable can transmit the signal up to 500m/1640ft, so the actually-protected fence can be located as far as 500m/1640ft from the QuadroSense[™] unit.

• If an intruder crosses the protected perimeter, the signal processing unit will generate a 2-4 second-long alarm signal.

• The QuadroSense[™] unit can be connected to a computer via a RS-485 port or USB RS-485 interface. The system parameters can be configured, and basic system monitoring done, using the QuadroSense[™] Control Panel software.

- The device is protected against overloads and static charge.
- The device is protected against sunlight, precipitation and dust.

• Most system parameters are stored in protected memory. If the power supply fails, the system will automatically restore the system parameters after power is restored. An events log is also stored in protected memory.

- The device reaches its operational state within 60 seconds of powering up.
- After an alarm is generated, the device returns to normal operation within 20 seconds.

• Power must be supplied to the device by a separate external power source (not included). The input voltage is 9-36 Vdc, the input current is 1A maximum, and the maximum tolerable input voltage fluctuation is 30%. The device is protected against reversed polarity. The power consumption of the device (with the power supply disconnected and the alarm channels switched off) does not exceed 200mA with 12 Vdc input.

• The housing of the signal processing unit is of EMC-supportive aluminum. Its dimensions are 222x145x83mm/8.7x5.7x3.3in.

INSTALLATION AND OPERATION

The power supply connection, input channel connections and alarm relay connections are located within the housing of the signal processing unit (as illustrated below). Insulated cable lead-ins are on the bottom side of the housing. **Note**: Unused cable lead-ins must be insulated with a 30mm/1.25in-long cable led through the lead-in.

The signal processing unit was designed for continuous operation; it remains fully operational within the following weather conditions/thresholds:

- temperature: -40° C/-40° F ... +65° C/149° F;
- 98% relative humidity at +35° C/95° F;
- precipitation: rain, dew, frost, sleet, snow.



INSTALLATION SITE PREPARATION AND MAINTENANCE

When installing a vibration cable, the following area maintenance-related details should be given careful attention:

- The protected segment of the fence must not touch bushes, trees or any other object that might cause movement of the fence in windy conditions;
- Bushes and trees must not be closer than one meter/40in (allowing for falling leaves and branches) to the protected fence segment;
- Snow must be cleared on both sides of the protected fence segment, within a distance of at least one meter/40in.

INSTALLING VIBRATION CABLE

Carefully examine the segment of fence to be protected; where necessary, clear away branches of trees and bushes.

Attach the vibration cable to the fence in a straight line or saw-tooth pattern, as illustrated:



Note: Although a straight-line configuration may prove effective, much depends on the fence type, its material, age, condition, etc.; in certain cases, a saw-tooth pattern configuration may be more effective.

Vibration cable must be attached tightly to the fence, with cable ties every 20-40cm/8-16in along its length, as illustrated below. Cable must not be deformed at attachment points.



One input channel should be used for only one type of fence. If different types of fence must be protected, each type should be allocated a separate channel. Installed lengths of cable must not sag or wave. The fence itself should be sturdy and stable, with no moving or loose parts. Do not install vibration cable at temperatures lower than -10° C/14° F, as cold-stiffened cable may temporarily be unsuitable for installation.

DC cable can be laid either underground or on the fence, but it too must be attached tightly, just like the vibration cable. Be careful not to lay the cable within 50cm/20in of power cables.

The connection of DC cable to vibration cable must be insulated; use a "TEE TUBE", as illustrated below, for such cable connections.

Lead the cable into the housing of the unit through one of the insulated lead-ins, and connect it to the desired input channel.

Connecting the DC cable and vibration cable in the "TEE TUBE":



Connecting the vibration cable and the EOL (End of line) unit in the "TEE TUBE":







SETTING UP THE QUADROSENSE[™] SIGNAL PROCESSING UNIT

Connect a power supply source* to the signal processing unit. The following occurs:

- In the first 30 seconds after powering up, QuadroSense[™] performs a self-diagnostic procedure. During this time all LEDs are lit, all relays are opened, and the alarm/power-supply channels are switched off;

- In the next 10 seconds, QuadroSense[™] checks the state of any connected detectors;

- If QuadroSense[™] receives an alarm signal, or there is a detector fault on any channel, QuadroSense[™] will indicate its status by keeping the corresponding LED lit;

- After all channels have reached stand-by status, the QuadroSense[™] unit begins normal operation - all LEDs are turned off, and all relays are closed.

Connect your computer to the RS-485 port of the signal processing unit.

The main operational functions of the signal processing unit are to receive alarm signals from the connected detectors, and to process a received alarm signal by:

- opening the relays of the corresponding channel;
- transmitting the alarm signal to the computer via RS-485;
- sensing if any channel is disconnected during operation, and transmitting an alarm signal;
- providing continuous power to the detectors;
- ensuring that the detectors maintain a stand-by state.

Note: In case some of the detectors do not reach stand-by status, either the input voltage to the unit should be increased or cable with lower impedance should be used.

* IMPORTANT – PLEASE NOTE: Power supply source <u>MUST</u> be a safety-certified (e.g., UL-listed in USA) and EMC-certified (if necessary; e.g., FCC-compliant in USA) device or facility. Manufacturer assumes NO legal liability WHATSOEVER for ANY damage or injury resulting from failure to use such device or facility.

INSTALLATION OF THE USB-RS485 CONVERTER

For set-up and adjustment of the detector, the following additional items are necessary:

personal computer (Windows[®] operating system)
 Umirs USB-RS485 converter
 mini-USB cable
 software (the latest version of the software can be downloaded at any time at <u>www.umirs.eu</u>)

Connect the USB-RS485 converter to the computer.

The proper device driver(s) for the specific operating system version in use can be determined and downloaded via the following link:

http://www.ftdichip.com/FTDrivers.htm

After successful installation, the COM-port assigned to the converter can be verified.

INSTALLING THE QUADROSENSE[™] CONTROL PANEL SOFTWARE

The set-up of the operational parameters and functions of the QuadroSense[™] unit, the management of the events log, and the monitoring of the system are handled by the QuadroSense[™] Control Panel software. The software runs on the Windows[®] operating system.

Launch the downloaded Setup Wizard.

Choose a language.

- click 'OK' to continue ...

Initiate the installation process.

_

click 'Next' to continue ...







Designate a destination folder for the

software.

- click 'Next' to continue ...

Designate a destination folder in the Start Menu directory for shortcuts to the software.

click 'Next' to continue ...



Create a desktop icon for quick access to the software.

- click the indicated check-box;
- click 'Next' to continue ... _

Proceed to install the software.

- click 'Install' ...

(this may take some moments)

Complete the installation process.

- click 'Finish'.



CONFIGURING THE QUADROSENSE[™] CONTROL PANEL SOFTWARE

Run the program, logging in as 'Administrator' – see '**PROGRAMMING PROCEDURES**' section below.

After successful login, the initial QuadroSense[™] Control Panel software screen then appears.

Navigate to the display screen accessed via the **Configuration** > **Common** tabs to locate the QuadroSense[™] Control Panel configuration wizard Setup section at upper left, then click 'Open':

Quadrosense control panel. Administrator. 2.2.520.120 2014.02.12	
Start Stopped	Sound 🛛 🖓 🔽 Hints 👘 Network address: 1
Input functions Common System Temperature Signaling Logs Search	About
Setup	COM-port
🔦 Wizard	🖗 Choose your COM-port
To open the Wizard, stop the program and click 'Open'.	Connect to:
Open	Detect
A Wizard helps you select the supported input functions and specify the user and administrator passwords.	The window 'Connect to' shows a list of available in your system COM-ports. Button 'Detect' refreshes the list.
History	Select from the list the name of COM-port assigned to the converter RS485, which is connected to the detector.
This window shows the errors in the work program of the selected serial port. Date and time correspond to the current settings of the operating system.	🌯 Port settings
If the number of messages exceeds the value selected in the 'History max length', the window is automatically cleared and all messages are lost.	Rate (bps): 115200 🔻
Service message history	The default baud rate for serial port 115200 bps. Data format
Date: Time: Message:	8N1, flow control is not used.
^	Language To translate the program interface, select your language from the drop-down list and dick 'Change'.
	Choose your language
	Language English 💌
Records: 0 History max length: 1000 Clear window	Change
Input 1 Input 2 Input 3 Input 4 Tests Configuration : 115200 bps	Tx: 0 Rx: 0 Bytes in RxBuf: 0 Bytes in TxBuf: 0 : :

mizaru			
	Control panel configuration wizard version 2.2.520.120 2014.02.12 UMIRS Europe 2014 WWW.Amrs.eu		
		Welcome. Step	1 of
	Welcome to control panel configuration wizard.		
	This program will help you customize control panel on your computer.		
	Select the language to be used during setup and click the button 'Change language'. You can later change the language settings in control panel.		
	Choose your language		
	Language: English		
	English Pycckuŭ		
	Magyar Português		
	Español Český		
	(contraction)		
	To continue, click 'Next'.		

Choose a language.

- click 'Next' to continue ...

Select input function(s).

- click the applicable check-box(es);
- click 'Next' to continue ...



Specify password(s) - optional.

- if desired,
 - type password(s);
 - re-type password(s);
 - click 'Check password';
 - click 'Next' to continue ...
- if not desired,
 - click 'Next' to continue ...

Verify the settings.

- click 'Done' to continue ...

Configuration in progress ...

(this may take some moments)

Complete the configuration process.

- click 'Exit'.

PROGRAMMING PROCEDURES

An RS-485/USB conversion interface, or an RS-485 port on the computer, is necessary for programming the unit. The computer must have at least one COM port (actual, or USB-emulated).

The set-up of the operational parameters and functions of the QuadroSense[™] unit, the management of the events log, and the monitoring of the system are handled by the QuadroSense[™] Control Panel software. The software runs on the Windows[®] operating system. The software does not need installation; it is executed by running the .exe file, or simply clicking its icon. The folder containing the .exe file also contains the following files:

- english.lng : English-language interface; default setting
- russian.lng : Russian-language interface
- magyar.lng : Hungarian-language interface
- portuguese.lng : Portuguese-language interface
- spanish.lng : Spanish-language interface
- czech.lng : Czech-language interface

Connect the data cable to the RS-485 socket of the signal processing unit. Plug the cable into the RS-485/USB conversion interface, or directly into an RS-485 port.

When running the program, the following login window first appears:

Entrance	×	
Umirs Europe 2014	Version 2.2.520.120 2014.02.12	:: 2
0	Login: Administrator	
	OK Cancel	

Note: The default password is "umirs".

After successful login, the QuadroSense[™] Control Panel software initial display screen then appears:

Q Quadrosense control panel. Administrator. 2.2.520.120 2014.02.12	
Start Stopped	👔 🗹 Sound 🛛 ? 🗸 Hints 🔷 Network address: 1
Input functions Common System Temperature Signaling	Logs Search About
Control	
Tinput 1 🔽 Modify	Important! Before setting up the input functions, select the serial port on the tab
Disarmed	Common' and run the program by clicking the 'Start' on the top menu bar.
Function: Disabled	To select the input function check the checkbox 'Madify' then from the drop down list
Apply	select the desired option and confirm by dicking 'Apply'.
Input 2 🔽 Modify	To change the list of available input functions, run the wizard on the tab 'Common'
Disarmed	
Function: Disabled	Detector has four independent inputs, each of which may be running its own function.
Apply	Set the desired function and go to the corresponding inputs for setting the parameters.
Apply	
Tr Input 3 Modify	You can check the status of the serial port on the status bar at the bottom of the main
Disarmed	window. If the parameter 'Rx', showing the number of the received frame is updated, then the program maintains connect with the detector.
Function: Disabled	
Apply	If the checkbox 'Modify' is not checked, then when the program starts for this input in the window 'Function' displays the current entries is started in the detector.
Tuput 4 Modify	the window Function displays the current setting is stored in the detector.
Disarmed	If the settings are correct, you can go directly to the parameters of the detection by
Function: Disabled	selecting the appropriate input tab.
	If needed, use the program bints. To do this, check the checkbox 'Hints' on the top
Appiy	menu bar.
Input 1 Input 2 Input 3 Input 4 Tests Configuration COM	3: 115200 bps Tx: 0 Rx: 0 Bytes in RxBuf: 0 Bytes in TxBuf: 0 : : :

At the bottom of the window, the following tabs are displayed:

Input 1 Input 2 Input 3 Input 4 Tests Configuration

The **Configuration** menu includes tabs to the following sub-menus:

Input functions, Common, System, Temperature, Signaling, Logs, Search, About

When starting the QuadroSense[™] Control Panel software, the **Configuration** > **Input functions** submenu appears first by default.

CONNECTING TO THE QUADROSENSE[™] SIGNAL PROCESSING UNIT

At the Windows[®] control panel, go to port settings.

QuadroSense[™] uses a 8N1 (8 data bits, no parity, 1 stop bit) data transmission format, with no flow control. The port should be set up accordingly. Note the port number.

Navigate to the display screen accessed via the **Configuration > Common** tabs:

Q Quadrosense	control pane	I. Administrator. 2.2.520.12	0 2014.02.12	-						X
Stop	Working			1	v 5	Sound 🛛 🔤	🛛 🔽 Hints	🔁 Ne	etwork address: 1	•
Input functions	Common	System Temperature	Signaling Log	gs Search	Ab	out				
Setup						COM-port				
🔦 Wizard	d					🖗 Choo	se your COM	1-port		
To open the l	Wizard, stop ti	no program and dick 'Open'						-		
To open the t	wizaru, stop u	le program and click Open.					Connect to:	сомз	•	
		Open						Dete	ct	
A Wizard help passwords.	ps you select t	he supported input functions a	and specify the user an	d administrator		The window COM-ports	v 'Connect to' sh Button 'Detect'	ows a list of a refreshes the	available in your syste e list.	em
History	- b		and a stand a section in a section of the			Select from converter F	the list the nam S485, which is c	e of COM-poi connected to	t assigned to the the detector.	
correspond to	o the current s	ettings of the operating syste	selected serial port. Da em.	ate and time		🌯 Port	settings			
If the number automatically	r of messages cleared and a	exceeds the value selected in Il messages are lost.	, the 'History max length	h', the window is			Rate (bps):	115200	•	
Servic	e message	history				The default	baud rate for s	erial port 115	200 bps. Data forma	+
Date:	Time:	Message:				8N1, flow o	ontrol is not use	d.		
2014.10.01	14:00:33	Frame beader error!								
2014, 10, 01,	. 14:00:37	Frame header error!				Language :				
	110115									
2014.10.01.	. 14:01:15	Frame header error!				To translat	e the program in	terface, sele	t your language from	the
2014.10.01. 2014.10.01.	. 14:01:15 . 14:01:54	Frame header error! Frame header error!				To translate drop-down	e the program in list and click 'Cha	terface, sele ange'.	t your language from	n the
2014.10.01. 2014.10.01. 2014.10.01.	. 14:01:15 . 14:01:54 . 14:02:00	Frame header error! Frame header error! Frame header error!				To translate drop-down	e the program in list and click 'Cha	terface, selec ange'.	t your language from	n the
2014.10.01. 2014.10.01. 2014.10.01. 2014.10.01.	. 14:01:15 . 14:01:54 . 14:02:00 . 14:02:20	Frame header error! Frame header error! Frame header error! Frame header error!		E		To translate drop-down	e the program in list and click 'Cha <mark>se your lang</mark>	terface, selec ange'. Juage	t your language from	n the
2014.10.01. 2014.10.01. 2014.10.01. 2014.10.01. 2014.10.01.	. 14:01:15 . 14:01:54 . 14:02:00 . 14:02:20 . 14:02:23	Frame header error! Frame header error! Frame header error! Frame header error! Frame header error!		4 III		To translate drop-down	e the program in list and dick 'Cha se your lang Language	terface, selec ange'. Juage Portugu	ît your language fron Ês ▼	n the
2014.10.01. 2014.10.01. 2014.10.01. 2014.10.01. 2014.10.01. 2014.10.01.	. 14:01:15 . 14:01:54 . 14:02:00 . 14:02:20 . 14:02:23	Frame header error! Frame header error! Frame header error! Frame header error! Frame header error! History max length	: 1000 🔽 📿	E Tlear window		To translat drop-down	e the program in list and click 'Cha se your lang Language	terface, selec ange'. Juage Portugue Char	ês 🔹	n the
2014.10.01. 2014.10.01. 2014.10.01. 2014.10.01. 2014.10.01. 2014.10.01.	. 14:01:15 . 14:01:54 . 14:02:00 . 14:02:20 . 14:02:23	Frame header error! Frame header error! Frame header error! Frame header error! Frame header error! History max length	: 1000 🔻 🖸	E v		To translat drop-down	e the program in list and click 'Cha se your lang Language	terface, seler ange'. Juage Portugu Char	ês 💌	

Find "Choose your COM-port" in the upper right corner of the display.

Select a port number from the drop-down list. If the port number set in the operating system is not present in the drop-down list, click "Detect" to refresh the list of port numbers registered in the QuadroSense[™] Control Panel software, and try selecting the port again.

To complete the connection, click the "Stop" button at the top left corner of the display to show "Start".

The data transmission rate is selected via the drop-down list of the "Port settings" field in the middle right area of the display. The default rate of QuadroSense[™] is 115,200 bps. The rate set in the operating system and in the QuadroSense[™] Control Panel software must be the same; otherwise, a successful connection can not be completed.

The user language is selected via the drop-down list of the "Choose your language" field in the lower right corner of the display; English (default), Russian, Hungarian, Portuguese, Spanish and Czech are available.

SPECIFYING OPERATIONAL PARAMETERS

The system date and time are set, modified and downloaded in the display screen accessed via the **Configuration** > **System** tabs:

Q Quadrosense control panel. Administrator. 2.2.520.120 2014.02	.12				
Stop Working		1 📅 F	🗸 Sound 🛛 🛛 🔽	Hints	Network address: 1
Input functions Common System Temperature Signa	ling Lo	ogs Search	About		
System parameters		State			
B Setup date and time		🕑 Internal st	ate	He	ere are displayed the current ettings of system parameters.
Set date: 2010 + 10 + 31 + <		Time:	16:10:20	т	ne window 'Fail frames' shows
Set time: 13:56:10 - <		Date:	15.07.2013	th ch	e quality of the communication annel with the detector. The
Apply		Version:	8.1 15.07.2013	fra se	ames transmitted through a erial port.
You can set your date and time values to be displayed in the history alarm messages.	of	🕅 Link		In	normal operation, the
You can check the current setting in the windows 'Internal state'.		Connection:	Active	со	nnection must be 'Active'.
To get the current date and time settings from the operating systen click the appropriate buttons and then confirm the changes by clickir 'Apply'.	n, ng the	Fail frames:	0%		
Advanced					
Parameters Modify	Detector between	s can be networked, 1 and 255.	so that each detector	should be assigned	d a unique network address
Network address: 1	To chang and conf	e the network addres irm by clicking 'Apply'.	s, check the checkbo	x 'Modify', then ent	ter the desired address value
Rate: 115200 • bps	After cha 'Network	anging the address of address' on the top r	the detector, it is ne nenu bar. After this,	cessary to adjust th communication with	ne current setting in the the detector should be
Power frequency: 50	restored				
Apply	If necess must sto work.	ary, you can change p the program by click	the speed of informa ing the 'Stop' button	tion exchange over to adjust the speed	r the network. In this case, you d of COM-port, and resume
Input 1 Input 2 Input 3 Input 4 Tests Configuration	COM3:	115200 bps	Tx: 238 Rx: 237	Bytes in RxBuf: 81	1 Bytes in TxBuf: 13 :) :(:)

The date is either user-specified via the "Setup date and time" scroll-box fields in the upper left corner of the display, or system-specified via importing the system date from the computer by clicking the blue arrow button on the right.

The time is either user-specified via the "Setup date and time" scroll-box fields in the upper left corner of the display, or system-specified via importing the system time from the computer by clicking the blue arrow button on the right.

Click the "Apply" button (highlighted in red after modification) below the date and time fields to confirm the changes made.

In the "Internal state" display on the right, the date and time set in the QuadroSense[™] unit are shown.

In the "Link" display on the right, the status of the connection (Active or Disconnected), and the quality of the connection ("Fail frames"), are shown.

QuadroSense[™] units may be networked; each unit in the network should have a different network address. The network address is specified via the drop-down list in the 'Parameters' box at bottom left.

SPECIFYING INPUTS

The detector types connected to the input channels of the unit are specified in the display screen accessed via the **Configuration > Input functions** tabs:

Q Quadrosense control panel. Administrator. 2.2.520.120 2014.02.12	
Stop Working	🔢 🗹 Sound 🛛 🤋 🗹 Hints 🔷 Network address: 1
Input functions Common System Temperature Signaling L	Logs Search About
Control	
Tinput 1 Modify	▲ Important! Before setting up the input functions, select the serial port on the tab
Disarmed	Common' and run the program by dicking the 'Start' on the top menu bar.
Function: Vibration cable	To select the input function check the checkbox 'Modify' then from the drop down list
Apply	select the desired option and confirm by clicking 'Apply'.
Toput 2	
Disarmed	To change the list of available input functions, run the wizard on the tab 'Common'.
Function: Disabled	Detector has four independent inputs, each of which may be running its own function.
Apply	Set the desired function and go to the corresponding inputs for setting the parameters.
Modify	You can check the status of the serial port on the status bar at the bottom of the main
Disarmed	then the program maintains connect with the detector.
Function: Disabled	
Apply	If the checkbox 'Modify' is not checked, then when the program starts for this input in the window 'Function' displays the current setting is stored in the detector.
Tinput 4 Modify	
Disarmed	If the settings are correct, you can go directly to the parameters of the detection by selecting the appropriate input tab.
Function: Disabled	scieding the uppropriate input tabl
Apply	If needed, use the program hints. To do this, check the checkbox 'Hints' on the top
	Inche part
Input 1 Input 2 Input 3 Input 4 Tests Confermation COM2	115200 has Tw. 141 Due 140 Dutes is DuDuff 20 Dutes is TuDuff 45 // // //
	: 115200 0ps 1x: 141 KX: 140 Bytes In RXBUT: 39 Bytes In 1XBUT: 45 :(;) :(

Click the "Modify" check-box of the desired input channel to change its current settings. A dropdown list is then enabled, from which one of the following detector types (or "Disabled", if not used) is selected:

Vibration cable

Frequency detector (currently unavailable; ignore - DO NOT select!) Seismic sensor (currently unavailable; ignore - DO NOT select!) Disabled

Click the "Apply" button below the function field to confirm the change made.

TESTING SYSTEM PHYSICAL CONTROLS

Proper functioning of the system physical controls (relays and LEDs) is verified in the display screen accessed via the **Tests** tab:

Q Quadrosense control pane	I. Administrator. 2.2.520.120 2014.02.12	-					x
Stop Working			📅 🗹 Sound	🛛 🕐 💌 Hir	nts 🛛 🖸 I	Network address: 1	•
Tests 🔬 All tests are done after you are connected to the detector!							
Relays check You can check the connect checkbox 'Modify', then fro the changes by clicking the	ck the n, confirm	Leds check You can check the v 'Modify', then from changes by clicking	vork of the de the drop-dow the button 'A	etector leds. To do n list select the des pply'.	this, check the checkbo sired action, confirm the)X 2	
Relay state to be changed	in accordance with the selected setting.		Led state to be cha	nged in accor	dance with the sele	ected setting.	
Control	Modify		Contro		Г	Modify	
Select rela	ay: Disabled 🔻			Select led:	Disabled	•	
Acti	on: Disconnect 🔹			Action:	Turn off	•	
	Apply				Apply		
State			State		1		
1 channel rela	ay: Connected		1	channel led:	Turned off		
2 channel rela	y: Disconnected		2	channel led:	Turned off		
3 channel rela	y: Disconnected		3	channel led:	Turned off		
4 channel rela	ay: Disconnected		4	channel led:	Turned off		
Cover rela	y: Disconnected						
To exit the relays check in the button 'Apply'. All relay	the drop down list 'Select relay' set 'Disabled' /s must return to its current state.	' and click	To exit the leds che the button 'Apply'.	ck in the drop All leds must r	down list 'Select le eturn to its current	ed' set 'Disabled' and di t state.	dk .
Input 1 Input 2 Input 3	Input 4 Tests Configuration C	COM3: 115200 bps	Tx: 51	Rx: 51 By	tes in RxBuf: 2	Bytes in TxBuf: 0	:) :) :)

Test relays and LEDs before arming the system.

The left area of the display is used for testing the relays.

The right area of the display is used for testing the LEDs.

Click the "Modify" check-box of the desired control. A drop-down list is then enabled from which it may be selected to test the control of an individual channel or of all channels.

After selecting the channel(s) to be tested of the control, the other enabled drop-down list is used to select its (their) desired state.

Click the "Apply" button to confirm the change(s) made.

The status of the control's channels is then displayed in the "State" area below the "Control" area.

After testing is completed, select "Disabled" from the drop-down list and click the "Apply" button to exit from test mode. Unless this is done, the system will not operate properly.

SETTING INPUT CHANNEL PARAMETERS, AND MONITORING INPUTS

The system detection parameters are set, modified and downloaded in the display screens accessed via the **INPUT** (1 - 4) tabs.

VIBRATION CABLE INPUT PARAMETERS

Q Quadrosense control panel. Admini	strator. 2.2.520.120 2014.02.12	
Stop Working		🛐 🔽 Sound 😢 🗹 Hints 🔍 Network address: 1 🕂
Vibration cable Detection parameters Penetration threshold: mkV Penetration duration: S Cutoff frequency: x0.1Hz Gain:	Modify 1450	Parameters copy Legend to Input 2 ▼ Copy penetration thr. Input signal history averaged signal Imput signal history averaged signal Imput signal history max Y, mkV max X, 0.15 Imput signal history select Y; 0 Solo 5000 Imput signal history max Y, mkV max X, 0.15 Imput signal history select Y; 0 Imput signal history select Y; 0
Status parameters	Apply Reset	- 4000
Current state:	Overcome	- 3000 - 2500
Averaged signal: <u>mkv</u>	LF band: HF band: 2725 307	2000
Power noise: mkv	14	-1000 -500
Resistance: <u>kom</u>	1015	alt
Input 1 Input 2 Input 3 Input 4	Tests Configuration	COM3: 115200 bps Tx: 191 Rx: 188 Bytes in RxBuf: 2 Bytes in TxBuf: 29 :(:(:(

Detection is based on movement of the cable, which generates an analog signal.

Movement of the fence can be caused by an actual intrusion, by weather conditions, by ground vibration, and by other factors.

Adjustable operational parameters ("Detection parameters") are shown on the upper left side of the display.

These parameters are adjusted to separate high and low frequencies, and to thereby distinguish between noise and alarm signals. The setting of these parameters highly affects the sensitivity of the system and number of false alarms generated.

Click the "Modify" check-box to change these parameters. The changes may then be downloaded to the QuadroSense[™] unit by clicking the "Apply" button.

Adjustable parameters include the following:

- "Penetration threshold LF": This parameter specifies the minimum level of low-frequency signal that would generate an alarm;
- "Penetration duration LF": This parameter specifies the window of time during which the lowfrequency penetration threshold must be continuously sustained to generate an alarm; an alarm would be generated only if both the low-frequency penetration threshold and the lowfrequency penetration duration were exceeded by the input signal;
- "Penetration threshold HF": This parameter specifies the minimum level of high-frequency signal that would generate an alarm;
- "Penetration duration HF": This parameter specifies the window of time during which the high-frequency penetration threshold must be continuously sustained to generate an alarm; an alarm would be generated only if both the high-frequency penetration threshold and the high-frequency penetration duration were exceeded by the input signal.
- The separation of LF and HF signals is automatically done by the signal processing unit;
- "Cutoff frequency": This parameter instructs the signal processor to ignore signals of a frequency lower than that which is specified;
- "Law": This parameter determines whether only the low-frequency threshold and duration settings are enabled to generate an alarm, whether only the high-frequency threshold and duration settings are enabled to generate an alarm, or whether both are enabled to generate an alarm.

The "Parameters copy" feature enables the replication of parameters from one input channel to another for quick setup.

The "Input signal history" area on the right side of the display enables the use of input signal history to graphically represent characteristic signal shapes and levels.

By pausing the graph, detection levels may be read with the help of the movable markers of the graph.

Note: Signal gain from a fence can be complex, and depends on many factors. Cutting the fence generates HF noise; someone crossing the fence, or trying to lift it, generates LF noise.

VIEWING THE LOG

The QuadroSense[™] Control Panel software provides real-time monitoring of the QuadroSense[™] unit by logging user actions, alarms and other events. The log is used to view and analyze actions taken and events that occurred during operation. The log is stored in protected memory.

The log display screen is accessed via the **Configuration** > **Logs** tabs:

Q Quadrosense control panel. Administrator. 2.2.520.120 2014.02.12			
Stop Working 🗄 🗸 Sound	P Hints Network address: 1		
Input functions Common System Temperature Signaling Logs Search About			
History of operator actions Date: Time: Action: 2014.10.01. 13:56:13 beginning of the program. Access type - administrator 2014.10.01. 13:56:38 Connect to: COM3 2014.10.01. 14:25:11 request to dear the log Save to file: userHistory.txt Save Clear window	In the history of operator actions recorded changes in configuration made by man in the process of working with the program. Date and time correspond to the current settings of the operating system. If necessary, the history of operator actions can be saved to a file. To do this, specify a file name in the 'Save to file' and click 'Save'. To dear the history window of operator actions, click 'Clear window'.		
Alarm history	Alarm log stored in nonvolatile memory of the detector. It		
Records number: 1 Clear Get log	records all events occurring on any of the connected inputs.		
1 16:32:04 2013.07.15 input 1: vibro Overcome Number of entries in the log is displayed in the window Records number'. You can read the log by clicking the button 'Get log' or clear it by clicking the button 'Clear'.			
-	Date and time recorded in the log can be configured in the appropriate windows on the tab 'System'.		
Save to file: alarmHistory.txt Save Clear window	If necessary, alarm log can be saved to a file.		
Input 1 Input 2 Input 3 Input 4 Tests Configuration COM3: 115200 bps Tx: 223	Rx: 221 Bytes in RxBuf: 2 Bytes in TxBuf: 0 :) :) :)		

The memory module is capable of storing up to 256 "Alarm history" events. After logging the 256th event, the QuadroSense[™] Control Panel software deletes the 128 earliest prior logged events, and then resumes logging. Each event is assigned a sequential number up to 65536.

The currently stored logged events are displayed by clicking the "Get log" button; the display is cleared by clicking the "Clear window" button.

The "Records number" field shows the number of events currently stored.

Logs may be saved in a .txt (text) file. The name of the file is specified in the "Save to file" field. Click the "Save" button to save the log.

ADDITIONAL SOFTWARE DISPLAYS/FUNCTIONS

Via the **Configuration > Temperature** tabs:



Manage vibration signal threshold in relation to environmental operating temperature.

Via the **Configuration > Signaling** tabs:

Q Quadrosense	control panel.	Administrat	or. 2.2.520.120 201	4.02.12							X
Start S	topped					E	Sound	I 🛛 🕐 🔽	Hints	Network address:	1
Input functions	Common	System	Temperature	Signaling	Logs	Search	About				
Alarm indicati	ion				1						
🔔 Paran	ieters		Modi	fy							
	Alarm signal (duration: 5	Apply S								
Open relay t	ime when an ala	rm is detected	Ι.								
This setting a	affects the leds.										
Input 1 Input	2 Input 3	Input 4 Te	sts Configuration	:1	15200 bps		Tx: 0	Rx: 0	Bytes in RxBuf: 0	Bytes in TxBuf: 0	1111

Specify the desired duration of open relay state/LED flash in the event of a generated alarm signal.

To change the setting, first click the 'Modify' check-box, then choose a value from the enabled scroll-box.

To activate the specified setting, click 'Apply'.

Via the **Configuration** > **Search** tabs:

Q Quadrosen:	se control pa	nel. Administra	tor. 2.2.52	0.120 2014.02.12			-			
Start Connection lost										
Input function	is Commo	n System	Tempera	ature Signaling	Logs Search	About				
Control -										
Select rate	es:	Results:					Found:2481			
4800	57600	Port	Address	Rate, bps	ID	Status		This tab allows you to detect the		
9600	✓ 115200	COM3	1	115200	Quadrosense	OK		connected sensors.		
19200	230400	COM3	1	115200	Fail frame header			Search enumerates the permitted network		
Star	t search	COM3	1	115200	Fail frame header			addresses of sensors (1-255) at selected		
		COM3	1	115200	Fail frame header			baud rates.		
	Stop	COM3	1	115200	Fail frame header					
Port:	COM3	COM3	1	115200	Fail frame header			Port is selected on the tab 'Common'.		
Address:	255	COM3	1	115200	Fail frame header			During a search, you can not switch to		
Rate:	115200	COM3	1	115200	Fail frame header			other tabs in the program.		
		COM3	1	115200	Fail frame header					
		COM3	1	115200	Fail frame header		_	The result table contains the parameters of		
Clea	r results	COM3 2 115200		115200	Fail frame header			detected sensors.		
	Progress:									
	Log:	Attempting to	open COM?	at 115200 bos				The log shows service messages during the		
	Log.	OK	open coma	ot 115200 bp3			<u></u>	search.		
		Ping all								
		Found address	81					Progress indicates the progress of		
		searching for network addresses on the								
		current baud rate.								
		To connect to the sensor, stop the search								
								and set the baud rate and network		
Cle	Clear log 🗸							address.		
Input 1 Input 2 Input 3 Input 4 Tests Configuration COM3: 115200 bps Tx: 254 Rx: 212 Bytes in RxBuf: 2 Bytes in TxBuf: 0 :(:(:)										

Selectively identify and list connected devices, and view their pertinent details.

Via the **Configuration > About...** tabs:

Q Quadrosense control panel. Adr	ministrator. 2.2.520.120 2014.0	02.12				x
Start Stopped			🔽 Sound 🛛 📿 🖪	🗹 Hints 🛛 🖸	Network address: 1	· ·
Input functions Common S	System Temperature Sig	naling Logs Search	About			
Umirs	QUADROSENSE CONTROL version 2.2.520.120 2014.02. UMIRS Europe 2014 Internet address: www.umirs.eu	L PANEL 12				
# 2.2.520.120 2014.02.12						
Input 1 Input 2 Input 3 Input	ut 4 Tests Configuration	: 115200 bps	Tx: 0 Rx: 0	Bytes in RxBuf: 0	Bytes in TxBuf: 0	:1 :1 :1

View the currently-used version of the software.