



ALARM MONITORING & CONTROL SYSTEM

TWCT22

USER MANUAL 1.6

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1 ATTENTION



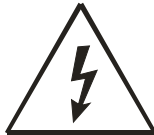
All wireless devices for data transferring are susceptible to interference, which could affect performance



Only qualified personnel may install or repair this product



The device is not water-resistant. Keep it dry.



Do not mount or serve device during a thunderbolt.

2 SAFETY INSTRUCTIONS

This section will provide guidelines on how to use TWCT22 device safely. The device is used in restricted access location. We suggest you to adhere to following recommendations so as to avoid any damage to person or property. You have to be familiar with the safety requirements before you start using the device!



Installation and technical support of the device can be performed only by a qualified personnel or a person who has enough knowledge about this device and safety requirements.



All the associated (interconnected) equipment, PC and power supply units (PSU) shall comply with requirements of standard LST EN 60950-1. TWCT22 can be used for configurations on first (Personal Computer) or second (Notebook) computer safety class.

To avoid mechanical damage of the device, it is recommended to transport the device packed in damage-proof pack. While using the device, place it such that the LEDs are visible to the user. It's because these LEDs provide information about the working modes and conditions of the device.

Signal level of the TWCT22 depends on the environment in which it is working. If the device fails to work properly only qualified personnel may repair this product. We recommend to disconnect the device and forward it to repair centre or to the manufacturer.

Against short-circuit and earth fault shall be provided a two-pole short-circuit back-up protection device in a building installation device. The disconnect device shall have contact separation of at least 3mm. The disconnect device shall be installed near the equipment and shall be easily accessible.

2.1 DISCONNECTIONS FROM THE MAIN SUPPLY

The device is disconnected from the main supply in the following order: primarily peripheral devices are disconnected and lastly the device. For example:

- In the AC main supply the relays circuit is disconnected by short-circuit back-up protection device SF2, later the device and all sensors are disconnected by SF1 (*figure 6.4.1*).
- In the DC main supply the relays circuit is disconnected by SF2, later the device and all sensors are disconnected by SF1 (*figure 6.4.2*).
- When PC is connected to the device, the computer is disconnected firstly and only later SF1 (*figure 7.3.1*).

3 INTRODUCTION

TWCT22 is a compact alarm monitoring and remote control device for electronic equipments with support of Short Messages (SMS), phone calls, e-mails and GPRS connections. The device is configurable through internal WEB server interface via GSM network and RS232 interface. Multiple users can interrogate TWCT22 or be notified on configurable events.

4 TECHNICAL SPECIFICATION

- Supply 11-29V \approx 500mA
- Power consumption max 7W
- Wireless modem:
 - Dual Band GSM 900/1800MHz
- 4 digital inputs
 - Input resistance 10k Ω
 - “0” (false) 0 – 3Vdc
 - “1” (true) 3 - 26Vdc
 - Connector: terminal blocks
- 2 analog inputs.
 - Voltage mode
 - Input resistance 60k Ω
 - Voltage range: 0 – 10Vdc
 - Current mode
 - Input resistance 480 \pm 2%k Ω
 - Current range: 4-20mA
 - Resolution 10bit A/D converter
 - Connectors: terminal blocks
- 4 relay outputs
 - Rated load 240V 50Hz \sim 7A, 24V \approx 10A
 - Total current 20A
 - Connectors: terminal blocks
- Interfaces
 - RS232
 - Speed: 115200 bauds
 - Format: 8 bits
 - Parity: none
 - Stop bits: 1

- Flow control: hardware
- Connector RJ45
- GSM GPRS
- Alarm message service via SMS, E-Mail
- Antenna MMCX connector
- Protocols HTTP and SMTP
- Possible configurations via internal WEB server interface
- Watchdog controller
- Operating temperature range from -20°C to +55°C
- Rel. humidity: 5...95% (non condensing)
- DIN Rail Mounting
- Safety
 - LST EN 60950-1
 - EMC

5 MECHANICAL INTEGRATION

5.1 PACKAGE CONTENTS

- 1 TWCT22;
- 2 Serial cable PORT1 (one connector – female COM port, another – RJ45);
- 3 GSM antenna (MMCX connector);
- 4 The CD with Software and User's Manual.

5.2 DIMENSIONS

The plastic case of TWCT22 is light and suitable for fitting with electronic equipments that can hook to the DIN EN 50022.

When a place for TWCT22 is being planned, it should be considered that GSM antenna, which is supplied in your package, should NOT be placed in metal case. If you plan to mount TWCT22 into a metal case, please mount the antenna outside of the metal case. If cable length is not enough, contact our sales department to order antennas with longer cables.

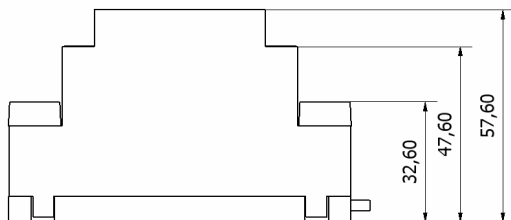


Figure 5.2.1

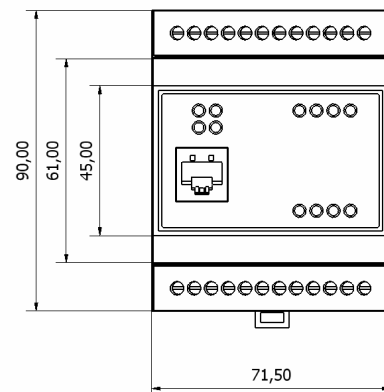


Figure 5.2.2

5.3 FRONT PANEL

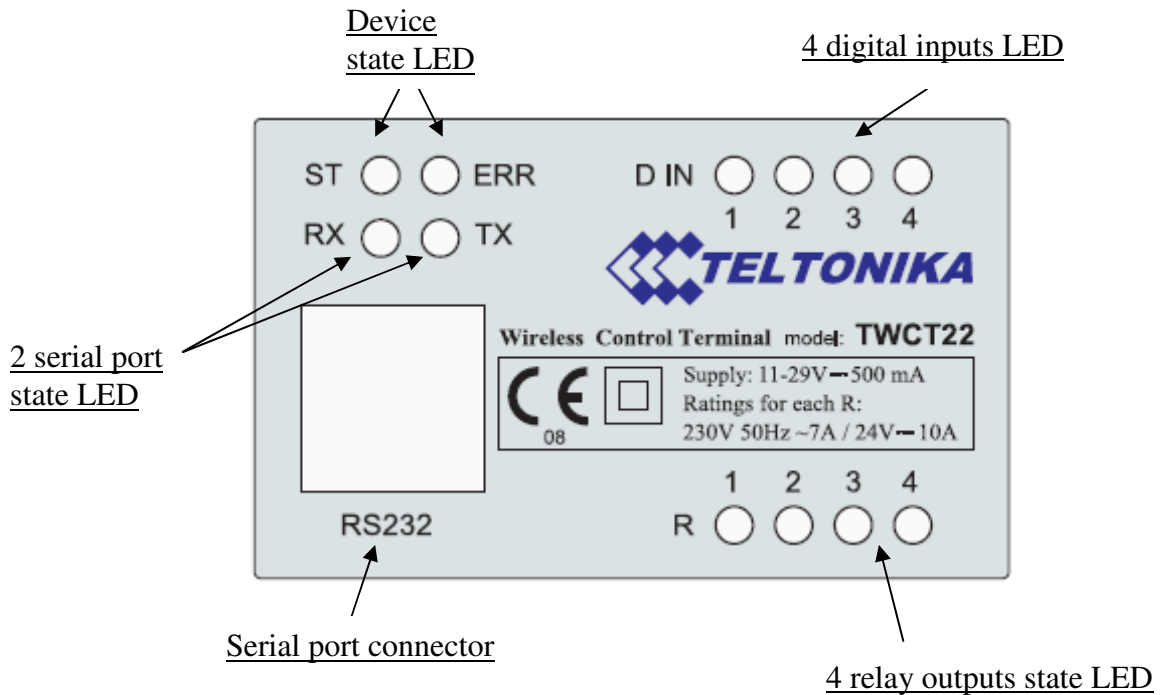


Figure 5.3.1

ST – Power LED turns on when power is applied to TWCT22. It also shows the device’s working status:

- LED ON;
- LED blink low (0.2s ON, 0.6s OFF) – the device is registered in GSM network;
- LED blink high (0.4s ON, 0.4s OFF) – the device transmits data via GSM network.

ERR – Error LED turns on when the device has faulty working conditions.

RX – Indicate the receiving data to the device via serial port.

TX – Indicate the sending data from the device via serial port.

DIN – Indicate the digital input’s voltage “true” level.

ROUT – Indicate the relay output status.

RS232 – Standard serial communication port.

6 CONNECTORS PIN-OUT

6.1 CONNECTORS FRONT UP PIN-OUT



Figure 6.1.1

Table 6.1.1. Connector pin-out

Pin name	Description
A IN 1 -	Analog input 1. Input voltage range is from 0 to 10Vdc in voltage mode or input current range is 4-20mA in current mode.
A IN 1 +	
A IN 1 -	Analog input 2. Input voltage range is from 0 to 10Vdc in voltage mode or input current range is 4-20mA in current mode.
A IN 1 +	
D IN 1	Digital input 1. This input is optically isolated by two different voltage levels: 0...3Vdc – false; 3...26Vdc – true.
D IN 2	Digital input 2. This input is optically isolated by two different voltage levels: 0...3Vdc – false; 3...26Vdc – true.
D IN 3	Digital input 3. This input is optically isolated by two different voltage levels: 0...3Vdc – false; 3...26Vdc – true.
D IN 4	Digital input 4. This input is optically isolated by two different voltage levels: 0...3Vdc – false; 3...26Vdc – true.
D IN -	Digital input ground. It is separated from module ground (power supply, analog input) because digital inputs are optically isolated.
11-29V +	Device supply. Voltage is 11- 29V \pm 10% \approx 500mA. As switched power regulator is used inside, the smaller the voltage, the bigger the current and vice versa (power consumption remains about the same)
11-29V -	

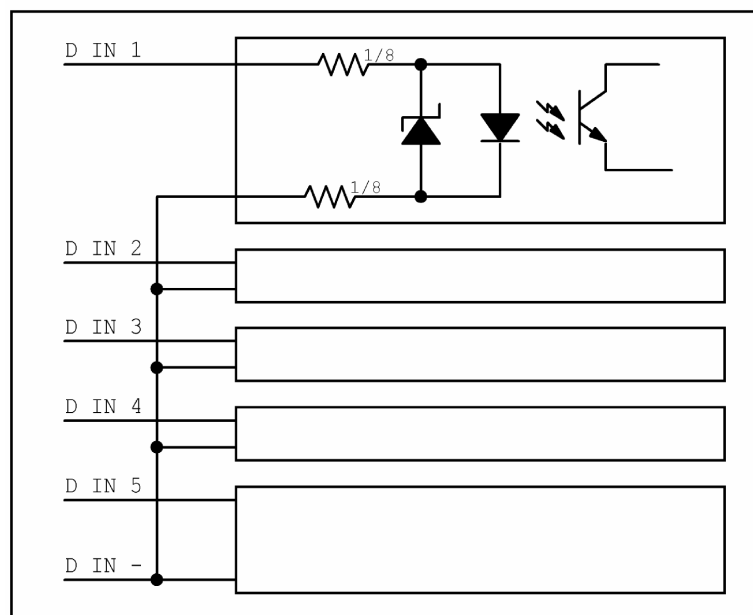


Figure 6.1.2

6.2 CONNECTORS FRONT DOWN PIN-OUT



Figure 6.2.1

Table 6.2.1. Connector pin-out

R1 NO	1 st Relay normally open output.	Rated load 240V 50Hz ~7A, 24V = 10A
R1 CO	1 st Relay common output.	
R1 NC	1 st Relay normally closed output.	
R2 NO	2 nd Relay normally open output.	Rated load 240V 50Hz ~7A, 24V = 10A
R2 CO	2 nd Relay common output.	
R2 NC	2 nd Relay normally closed output.	
R3 NO	3 rd Relay normally open output.	Rated load 240V 50Hz ~7A, 24V = 10A
R3 CO	3 rd Relay common output.	
R3 NC	3 rd Relay normally closed output.	
R4 NO	4 th Relay normally open output.	Rated load 240V 50Hz ~7A, 24V = 10A
R4 CO	4 th Relay common output.	
R4 NC	4 th Relay normally closed output.	

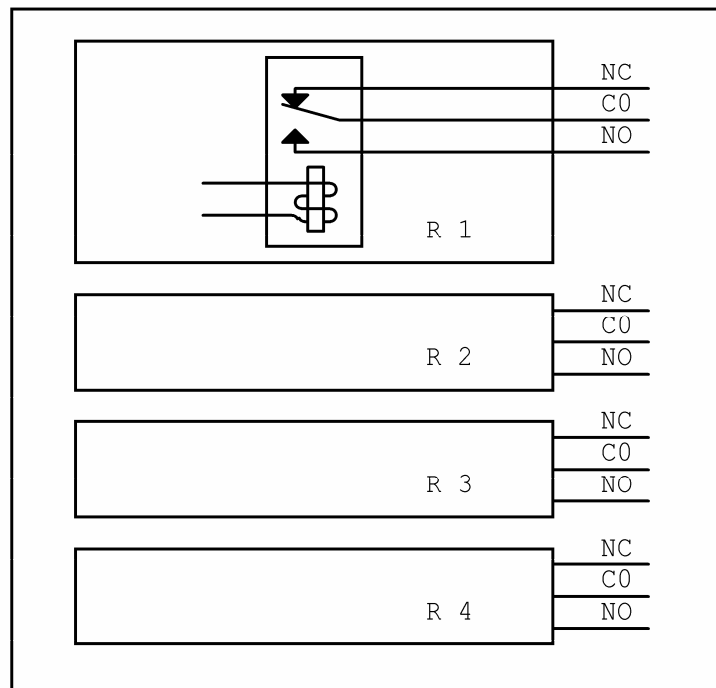


Figure 6.2.2

6.3 SERIAL PORT (RS232 INTERFACE)

Serial port is used for communication with internal WEB server. Internal WEB server allows editing configured data. RS232 port is used just for configurations of TWCT22 and it is not able to communicate with additional devices via RS232 port.

Serial port parameters:

- Interface format RS232C
- Logic levels (RS232C levels)
- Speed: 115200 bauds
- Format: 8 bits
- Parity: none
- Stop bits: 1
- Flow control: hardware



Figure 6.3.1. RJ45 connector

The communication connector is an eight way RJ45 PLUG style connector.

Table 6.3.1. RS232 Connector pin-out

RJ45 Pin number	Description	Direction
1	DSR	Output
2	DCD	Output
3	DTR	Input
4	GND	-
5	RXD	Input
6	TXD	Output
7	CTS	Output
8	RTS	Input

6.4 SAMPLE ELECTRICAL CONNECTION

Connection to AC mains supply ~230VAC

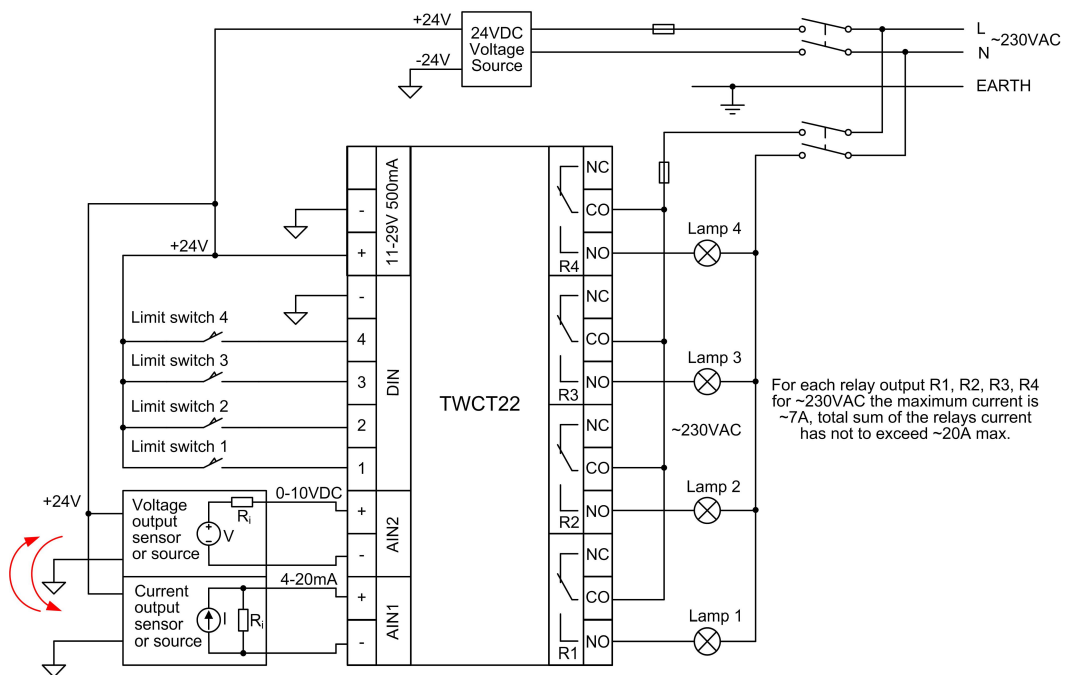
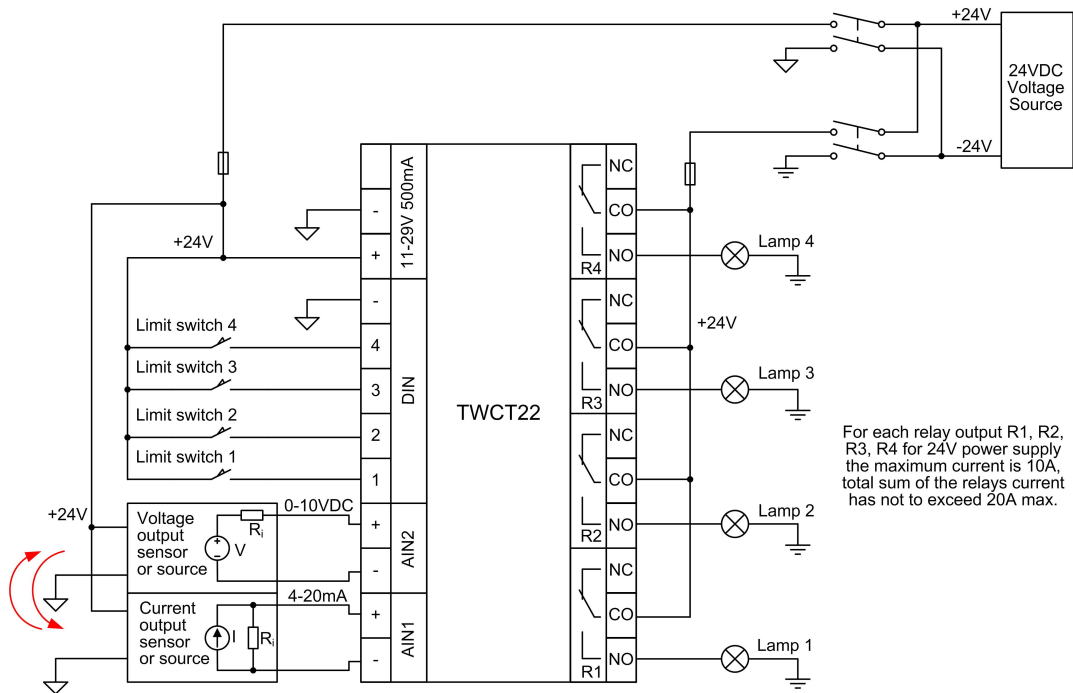


Figure 6.4.1. Sample scheme

Connection to DC power supply +24VDC



For each relay output R1, R2, R3, R4 for 24V power supply the maximum current is 10A, total sum of the relays current has not to exceed 20A max.

Figure 6.4.2. Sample scheme

7 INSTALLATION AND STARTING

7.1 INSTALLING A SIM CARD

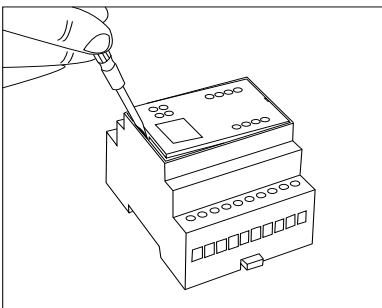


Figure 7.1.1

- Remove the cover with screwdriver (see the *figure 7.1.1*).
- Slide the SIM card holder toward its hinge to unlock it (see the *figure 7.1.2*).
- Lift the SIM card holder.
- Remove your SIM card from the package (your SIM card might be inserted already.)
- Insert the SIM card into the holder so that the notches align (see the *figure 7.1.3*).
- Close the SIM card holder.
- Slide the SIM card holder away from its hinges to lock it (see the *figure 7.1.4*).

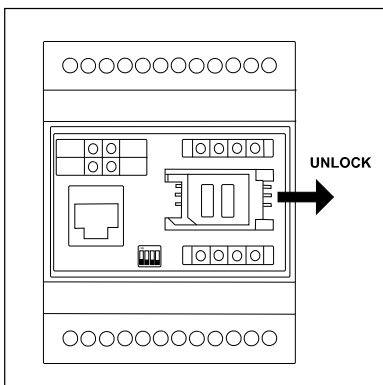


Figure 7.1.2

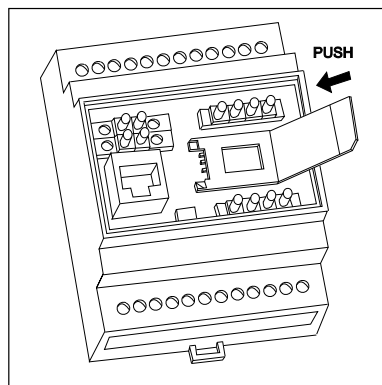


Figure 7.1.3

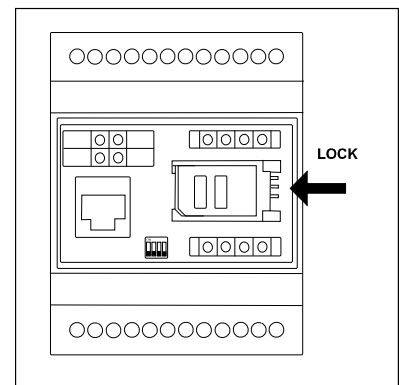


Figure 7.1.4

7.2 DIP SWITCH SETTINGS

Dip switch should be set according the *figure 5.2.1* for the normal working conditions.

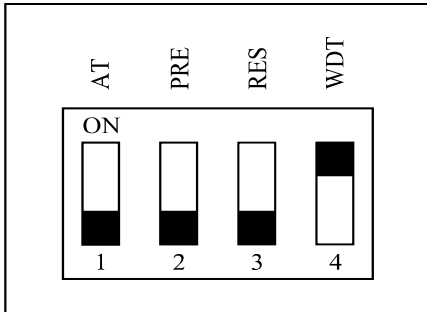


Figure 7.2.1

Table 7.2.1

Switch number	OFF	ON
1	Serial port works in the normal mode	Do not turn it
2	Normal working conditions	Preset factory parameters
3	Normal working conditions	Reset GSM module
4	“Watchdog” off	“Watchdog” on

7.3 CONNECTION TO PC

There are two possible ways to PC connection for TWCT22 configurations, the first is single RS232 connection and the second one is via GPRS, both connections are done with TWCT.EXE program.

7.3.1 PC Connections via RS232:

1. Download TWCT.EXE from your CD on PC in whatever folder. Run TWCT.EXE program by clicking on it.
2. Connect PCs serial port to the TWCT22 serial port cable PORT1/2 as shown below.

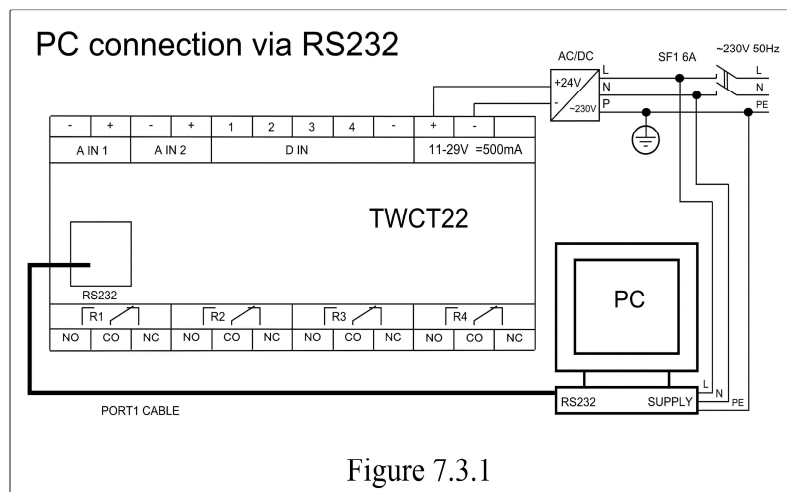


Figure 7.3.1

3. Select RS232 mode (see Fig. 7.3.2)
4. Select serial port number to which TWCT22 is connected.
5. Write to TCP/IP Port number “5000”.
6. Click the link <http://localhost:5000> and Internet explorer window will run automatically. There you will see TWCT22 application.

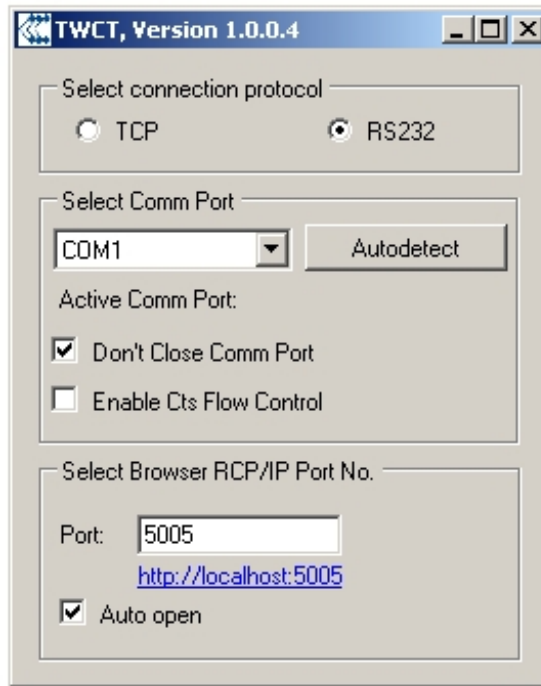


Figure 7.3.2 TWCT.EXE software in RS232 mode

7. You can find possible port to which is connected TWCT22 device by pressing the button *Autodetect* and Internet explorer window will run automatically. If a window (see below) is appeared that means that COM port is opened by another program.



Note: Do NOT run TWCT.EXE software one more time.

7.3.2 PC Connections via GPRS:

To make PC connections via GPRS you need run TWCT.EXE program, which already placed in your PC. TWCT.EXE program is TWCT22 system ancillary part that is connecting the TWCT22 device to the local computer Web Browser through Bridge Connection. This allows to control the device at the distance and to supervise its status. The computer must have externally accessible IP address and opened port number that TWCT22 device could connect to.

The sample of the connection:

1. Through local connection, TWCT22 device is configured to accept Short Messages requesting Bridge Connection from one of user's phone number. To do this, after TWCT22 connections via RS232 with TWCT.EXE, from Settings select the Allowed User (see Figure 7.3.3). Then close the TWCT.EXE program.

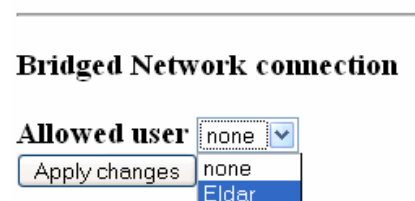


Figure 7.3.3

- Run TWCT.EXE program. Short Message with text “CONNECT x.x.x.x.:PortNo” is sent to TWCT22 device's phone number. Here x.x.x.x. – external IP address of the computer and PortNo – port number. TWCT22 will try to connect to specified IP address and port number once.

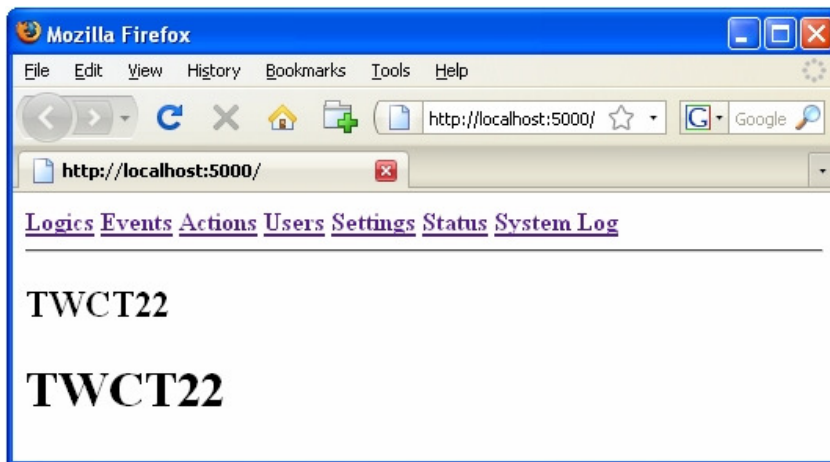


Figure 7.3.4 TWCT22 configuration menu

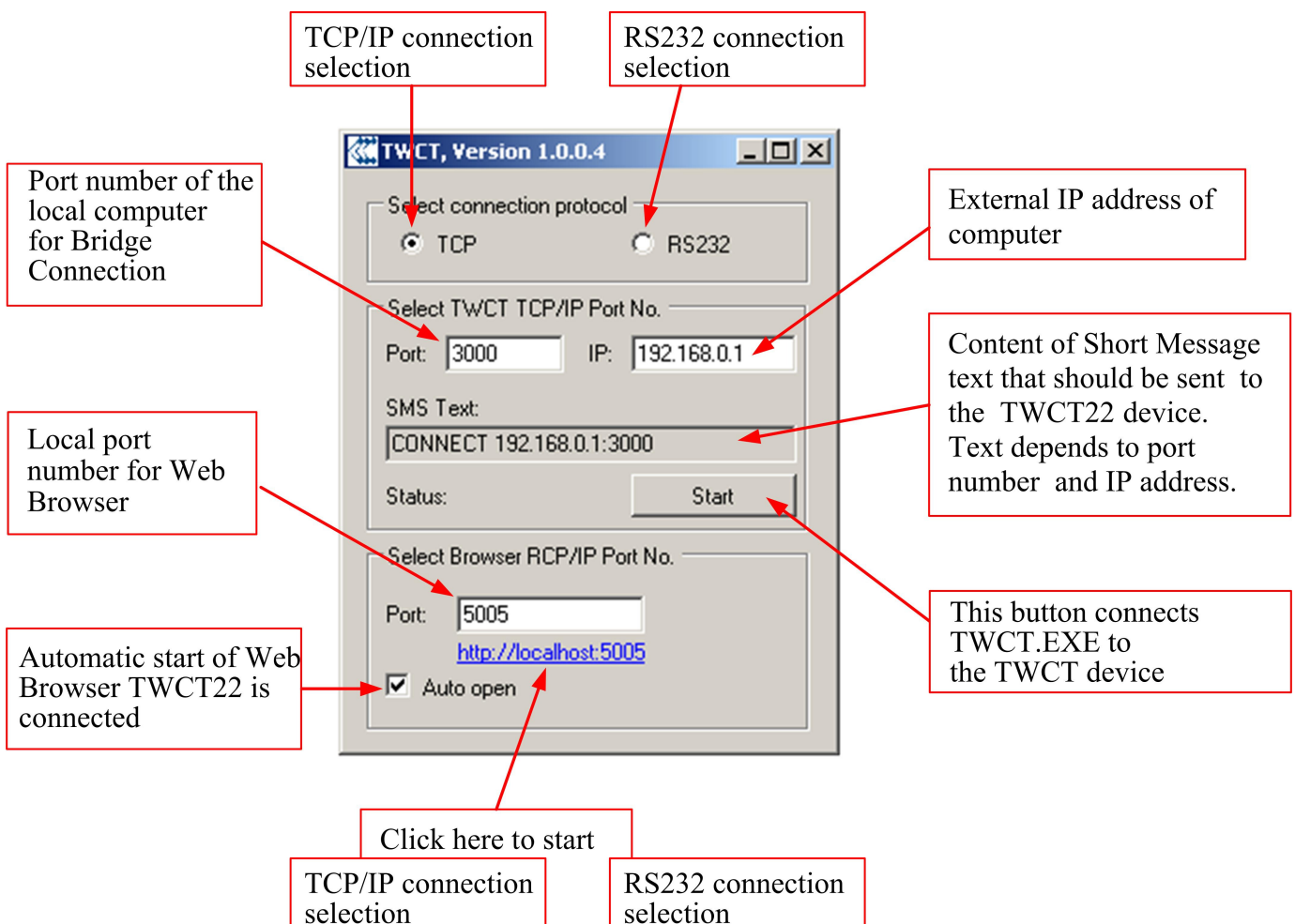


Figure 7.3.5 TWCT.EXE software in TCP mode

PROBLEMS

- ❖ If requested port number for Bridge Connection is used by another program, the TWCT.EXE program will quit working with following message.



In this case it's necessary to change port number settings

- ❖ If TWCT22 is not able to connect to TWCT.EXE program, there could be several reasons:
 1. External connection is blocked by the local computer or remote firewall. It must be unblocked for TWCT.EXE to work properly.
 2. Selected port number blocked by GSM card supplier's firewall. In this case it is advisable to use the port 80 because it's not usually blocked. *Note: If You have Skype program running it should be closed before doing following.* In the TWCT.EXE settings window change the local computer's port number for Bridge Connection to 80 and click the button "Start". Now you can run Skype program again. Skype program uses port 80 only if it's free. If you want to avoid Skype using port 80 change it's behavior in Skype "Connections" tab.
 3. TWCT22 GSM card supplier doesn't provide network service through GPRS.
 4. There is no GPRS connection.
 5. Wrong TWCT22 GPRS settings (APN, USER, PASSWORD) – usually APN.
 6. IP address of your computer is not permanent (dynamic). It can change each time you are connecting to network and may be different from when you configured TWCT.EXE.
 7. Local computer doesn't have external IP address and port number. In this case usually IP address starts with 192 or 172 or 10. It happens when your computer belongs to network with NAT (network address translation) functionality. Ask your network administrator for getting your external IP address and port number that would be redirected to your computer.
 8. Entered Short Message text doesn't correspond to one generate by the TWCT.EXE.

8 DATA CONFIGURATION

Data configuration is executed by the internal WEB server application. You need to connect TWCT22 to PC and the server program should be run.

8.1 APPLICATION'S LOGICAL ELEMENT

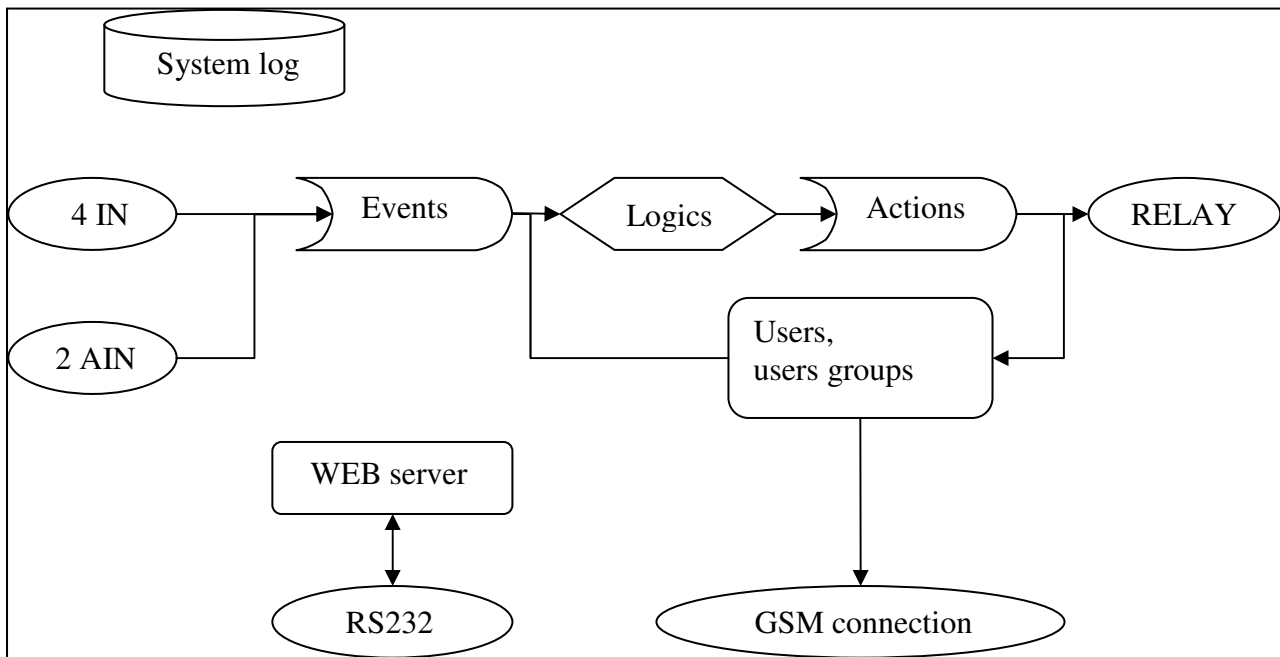


Figure 8.1.1

8.2 FUNCTIONS

TWCT22 is a monitoring and control device for remote objects. Remote commands are described by three definitions: logic (the relationship between elements), event (an occurrence detected by the device) and action (a state or process that is controlled by the device). Events are following occurrences: four digital inputs, two analog inputs, two types of receiving messages (SMS, call). Actions are those possible processes: relay state controlling (on, off, toggle) and sending message (SMS, email, call).

User is authorized person which is allowed to use the device via messages. Users can be jointed into the group.

The device is configurable through internal WEB server interface via GSM network and RS232 interface. System log is the register of the device's status important occurrences.

8.3 LOGICS

Logics link functional elements (N events and M actions) by means of logical function. M actions are executed when either all or one of N events are presented. The execution of function is completed even if the power was lost.

In Picture 1. you can see the example. It shows relationship between *Events* and *Actions*. It means that after call, TWCT22 set light to ROUT 2 and send SMS to users or groups of users. This depends on configuration in menu *Actions* and *Users*.

[Logics](#) [Events](#) [Actions](#) [Users](#) [Settings](#) [Status](#) [System Log](#)

[Tests](#)

Edit LOGIC -

NAME

← It is the name of logic and does not have any effect on operation of logic. It's just for easy identification in case you have more than one action. You are free to give any name using text, numbers, special characters.

FUNCTION

*AND ▾

← Select the type: OR – an action that is produced when one or more events are present, AND – a logical operation that only evaluates as true if all of the events being compared also evaluate as true.

EVENTS

Din1
 Din2
 Din3
 Din4
call
 Ain1
 Ain2
 message
 message2
 message3

← You can create events in menu *Events*. Choose event name. If you want to choose several events, click items together with key „ctrl“.

ACTIONS

Rout1
Rout2
 Rout3
 Rout4
SMS
 call
 Email

← You can create actions in menu *Action*. In this area choose action name. If you want to choose several actions, click item together with key „ctrl“.

← To the effect that all configurations would be performed, press button *SUBMIT*.

APPLY SUBMIT RESET

Picture 8.3.1.

Table 8.3.1 Parameter descriptions

Parameter	Description	Values
Logic name	It's the name of logic and does not have any effect on operation of logic. It's just for easy identification in case you have more than one logic.	Text, numbers, special characters.
Function	Select the type: OR - an action that is produced when one or more events are present, AND - a logical operation that only evaluates as true if all of the events being compared also evaluate as true.	AND, OR
Events	Choose event name. If you want to choose several events, click items together with key "ctrl".	
Actions	Choose action name. If you want to choose several actions, click items together with key "ctrl".	

8.4 EVENTS

One of the main function elements of TWCT22 is to alert you whenever digital/analog inputs to the TWCT22 cross their predefined value. Events define conditions of the digital inputs (DIN), analog inputs (AIN), received messages, time events and errors.

8.4.1 Analog Event

- Press button [NEW Analog Event](#). Then you will see the new item "no name" (picture 8.4.1). Click it and configure parameters.

Logics Events Actions Users Settings Status System Log		
Tests		
List of EVENTS		
Name	Type	State
<input type="checkbox"/> noname	Timer	A F
DELETE	NEW Analog Event	NEW Digital Event
	NEW Message Event	NEW Timer Event

←Letter **A** in column *State* shows, that event is active.

Picture 8.4.1

[Logics](#) [Events](#) [Actions](#) [Users](#) [Settings](#) [Status](#) [System Log](#)

Edit EVENT - Event4

NAME

TYPE

AIN

ACTIVATION SETUP TIME (seconds)

DEACTIVATION SETUP TIME (seconds)

THRESHOLD (V)

GAP

← The name of events does not have any role in execution of the event. It's just used as identification, so you are free to give any name. You are able to use text, numbers, special characters.

← Select the digital type from the list: *Analog UP*, *Analog DOWN*, *Analog HIGH*, *Analog LOW*.

← Choose digital input number (1 or 2).

← The time interval after which the event will be sent to the logic function if the event conditions still exist. Noise cancellation. When *TYPE* is *Analog HIGH* or *Analog DOWN* it is not necessary to fill *SETUP TIME*.

← The time interval after which the event will be sent back for next operation.

← Select the level of the trigger: 0 – 10 V or 0 – 20 mA.

← Select the level of the trigger: 0 – 20 mA.

← To the effect that all configurations would be performed, press button *SUBMIT*.

Picture 8.4.2

- If you want to delete any analog event, mark event's checkbox and press *DELETE*.

8.4.2 Digital Event

- Press button . Then you will see the new item “no name” (picture 8.4.3). Click it and configure parameters.

[Logics](#) [Events](#) [Actions](#) [Users](#) [Settings](#) [Status](#) [System Log](#)

[Tests](#)

List of EVENTS

Name	Type	State
<input type="checkbox"/> noname	Digital UP	

Picture 8.4.3

[Logics](#) [Events](#) [Actions](#) [Users](#) [Settings](#) [Status](#) [System Log](#)

Edit EVENT -

NAME

TYPE

DIN

ACTIVATION SETUP TIME (seconds)

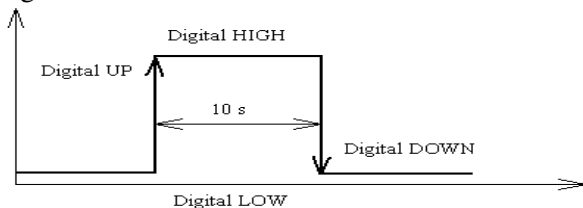
DEACTIVATION SETUP TIME (seconds)

← The name of events does not have any role in execution of the event. It's just used as identification, so you are free to give any name. You are able to use text, numbers, special characters.

← Select the digital type from the list: *Digital UP*, *Digital DOWN*, *Digital HIGH*, *Digital LOW*. Noise cancellation.

← Choose digital input number from 1 to 4.

← The time interval after which the event will be sent to the logic function if the event conditions still exist.



When *TYPE* is *Digital HIGH* or *Digital DOWN* it is not necessary to fill *ACTIVATION SETUP TIME*.

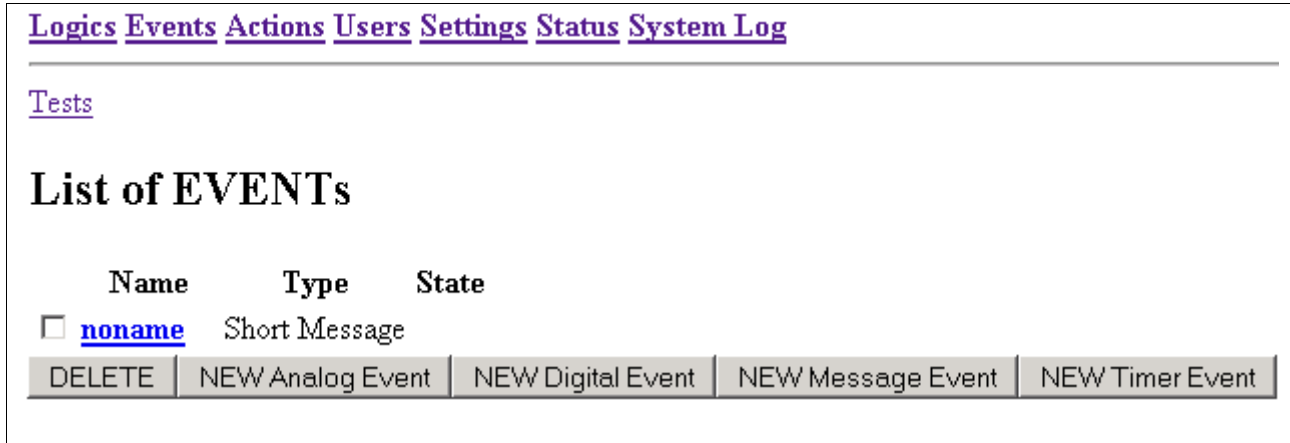
← The time interval after which the event will be sent back for next operation.

To the effect that all configurations would be performed, press button *SUBMIT*.

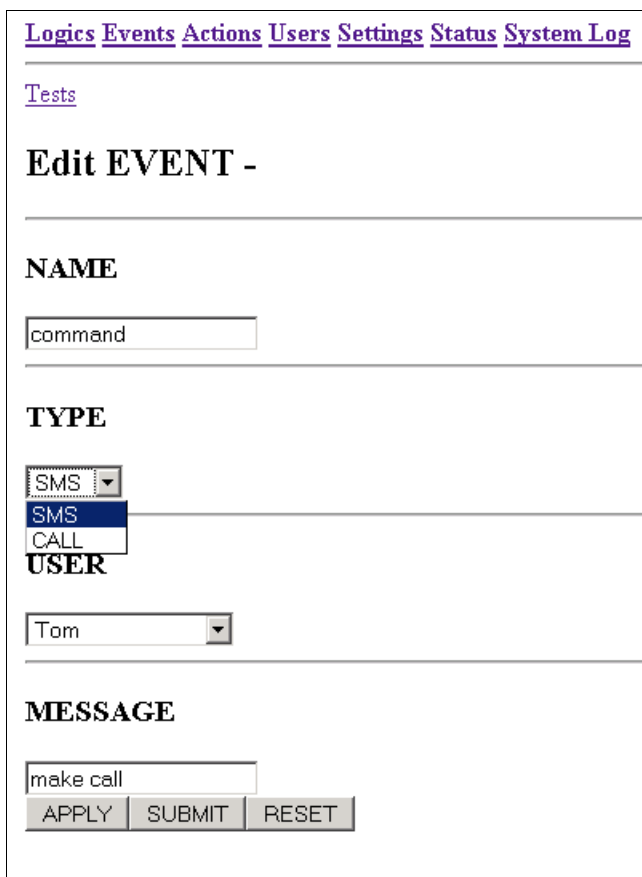
- If you want to delete any digital event, mark event's checkbox and press *DELETE*.

8.4.3 Message Event

- Press button **NEW Message Event**. Then you will see the new item “no name” (picture 8.4.4). Click it and configure parameters.



Picture 8.4.4



Picture 8.4.5

← The name of events does not have any role in execution of the event. It's just used as identification, so you are free to give any name. You are able to use text, numbers, special characters.

← There you can choose the message type: *SMS* or *CALL*.

← Choose the user or group of users who would receive the event. Users and group you can add or delete in menu *USERS*.

← Text message is the event identification. When message type is SMS, short message and text in this area should be the same.

← To the effect that all configurations would be performed, press button *SUBMIT*.

- If you want to delete any message event, mark event's checkbox and press *DELETE*.

8.4.3.1 Special Markers

1. TWCT22 can send SMS message with additional information about IO values.

To get the values of input/output via SMS. You need to create new Message Action and in the text box enter one of the special markers: Special markers shown below:

- a) @A1 - „analog input 1“. Answer will be from 0 to 99 with movable point;
- b) @A2 - „analog input 2“. Answer will be from 0 to 99 with movable point.;
- c) @D1 - „Digital input 1“, Answer will be symbol 0 or 1 (0 – OFF, 1 - ON);
- d) @D2 - „Digital input 2“, Answer will be symbol 0 or 1 (0 – OFF, 1 - ON);
- e) @D3 - „Digital input 3“, Answer will be symbol 0 or 1 (0 – OFF, 1 - ON);
- f) @D4 - „Digital input 4“, Answer will be symbol 0 or 1 (0 – OFF, 1 - ON);
- g) @R1 - „Digital relay output 1“, Answer will be symbol 0 or 1 (0 – OFF, 1 - ON);
- h) @R2 - „Digital relay output 2“, Answer will be symbol 0 or 1 (0 – OFF, 1 - ON);
- i) @R3 - „Digital relay output 3“, Answer will be symbol 0 or 1 (0 – OFF, 1 - ON);
- j) @R4 - „Digital relay output 4“, Answer will be symbol 0 or 1 (0 – OFF, 1 - ON);
- k) @PW - „Mains power voltage“, 0 – 99 with movable point.
- l) @SF – „Device fault status flag“:
 - i. ok – device work good.
 - ii. err – device status fault.
- m) @YY – year, SMS message creation year from 0000 to 9999;
- n) @MM – month, SMS message creation month from 00 to 99;
- o) @DD – day, SMS message creation day from 00 to 99;
- p) @HH – hour, SMS message creation hour from 00 to 99;
- q) @NN – minute, SMS message creation minute from 00 to 99;
- r) @SS – second, SMS message creation second from 00 to 99.

Example:

@A1 V, @R1, @D2, @R2, @PW V, @YY.@MM.@DD

Answer:

7,4 V, 1, 0, 0, 17 V, 2009.11.09

2. Also there is a possibility to change TWCT22 e-mail subject by writing in the Action Message in message field on the first string text:

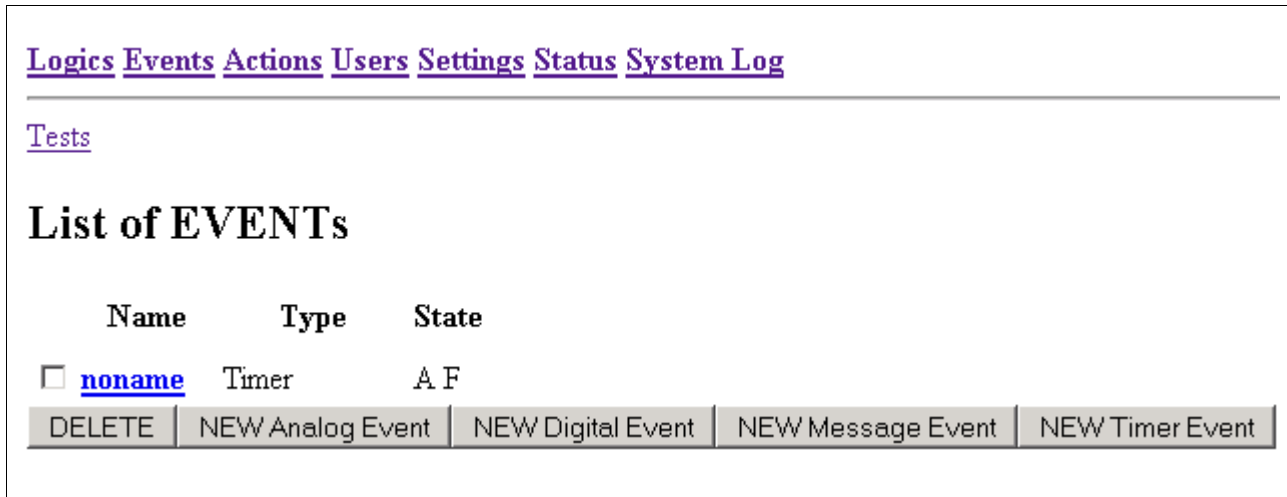
Subject: xxxxxx – there “xxxxxx” is the preferred subject text in e-mail.

Received e-mail will be with subject xxxxxx.

8.4.4 Timer Event

Timer events are used to set exactly time, when some actions should be taken. For example, you are far from place, where the TWCT22 is located. You can get the information about this device condition by SMS, call or e-mail. You just need to set start time, end time and repetition time (if you want that this event should be repeated). Also it is necessary to relate *Event* and *Actions* using *Logics*.

- Press button . Then you will see the new item “no name” (picture 8.4.6). Click it and configure parameters.



Picture 8.4.6



NAME

Event#1

START TIME

Year:

Month:

Day:

Hour:

Minute:

Second:

← The name of events does not have any role in execution of the event. It's just used as identification, so you are free to give any name. You are able to use text, numbers, special characters.

← Set exactly date, then the event should start. You are able to set a time split-second.

<p>END TIME</p> <p>Year: <input type="text" value="2008"/></p> <p>Month: <input type="text" value="July"/></p> <p>Day: <input type="text" value="14"/></p> <p>Hour: <input type="text" value="9"/></p> <p>Minute: <input type="text" value="20"/></p> <p>Second: <input type="text" value="11"/></p> <hr/> <p>REPETITION PERIOD</p> <p>Months: <input type="text" value="0"/></p> <p>Days: <input type="text" value="0"/></p> <p>Hours: <input type="text" value="0"/></p> <p>Minutes: <input type="text" value="15"/></p> <p>Seconds: <input type="text" value="0"/></p> <hr/> <p>WEEKDAYS</p> <p>Monday <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Sunday</p> <p><input type="button" value="APPLY"/> <input type="button" value="SUBMIT"/> <input type="button" value="RESET"/></p>	<p>← Set the end time of the event.</p> <p>← There you can set repetition period. Event can be repeated after few seconds, minutes, hours, days or months.</p> <p>← Set the day (days) of the week, then the event should happen.</p> <p>← To the effect that all configurations would be performed, press button <i>SUBMIT</i>.</p>
---	---

Picture 8.4.7

- If you want to delete any timer event, mark event's checkbox and press *DELETE*.

8.5 ACTIONS

Actions define operations for the device to perform. For example, then you using *Timer Events*, you can set there that TWCT22 should do at exactly date and time. The device could take Rout actions, make calls, send short messages or e-mails.

8.5.1 ROUT actions

- Press button . Then you will see the new item "no name" (picture 8.5.1). Click it and configure parameters.

<p>Logics Events Actions Users Settings Status System Log</p> <hr/> <p>Tests</p> <p>List of ACTIONS</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> noname</td> <td>ROUT TOGGLE</td> </tr> </tbody> </table> <p><input type="button" value="DELETE"/> <input type="button" value="NEW ROUT Action"/> <input type="button" value="NEW Message"/></p>	Name	Type	<input type="checkbox"/> noname	ROUT TOGGLE
Name	Type			
<input type="checkbox"/> noname	ROUT TOGGLE			

Picture 8.5.1

[Logics](#) [Events](#) [Actions](#) [Users](#) [Settings](#) [Status](#) [System Log](#)

[Tests](#)

Edit ACTION -

NAME

TYPE

ROUT

HOLD TIME (seconds)

← It's name of action and does not have any effect on operation of action. It's just for easy identification in case you have more than one action. You are free to give any name using text, numbers, special characters.

← You can select the desired type of the output when the action would be performed: *ON*, *OFF*, *TOGGLE*.

← Choose relay number from 1 to 4.

← This is the time for which the desired output should be held high/low. If "0" is entered, it would mean a permanent change in status of corresponding output.

← To the effect that all configurations would be performed, press button *SUBMIT*.

Picture 8.5.2.

8.5.2 Message

- Press button . Then you will see the new item "no name" (picture 8.5.3). Click it and configure parameters. Default type is *Short Message*. You can change it to *Phone Call* or *E-Mail* during configuration.

[Logics](#) [Events](#) [Actions](#) [Users](#) [Settings](#) [Status](#) [System Log](#)

[Tests](#)

List of ACTIONS

Name	Type
<input type="checkbox"/> noname	Short Message

Picture 8.5.3

[Logics](#) [Events](#) [Actions](#) [Users](#) [Settings](#) [Status](#) [System Log](#)

[Tests](#)

Edit ACTION -

NAME

TYPE

USER/GROUP

MESSAGE

← It's name of action and does not have any effect on operation of action. It's just for easy identification in case you have more than one action. You are free to give any name using text, numbers, special characters.

← Choose the message type to send the alarm: *SMS*, *CALL*, *E-MAIL*.

← Choose the users or groups of users who would receive the alarm. Users and group you can add or delete in menu *USERS*.

← This text message will be sent to the authorized user. Usable values: text and numbers.

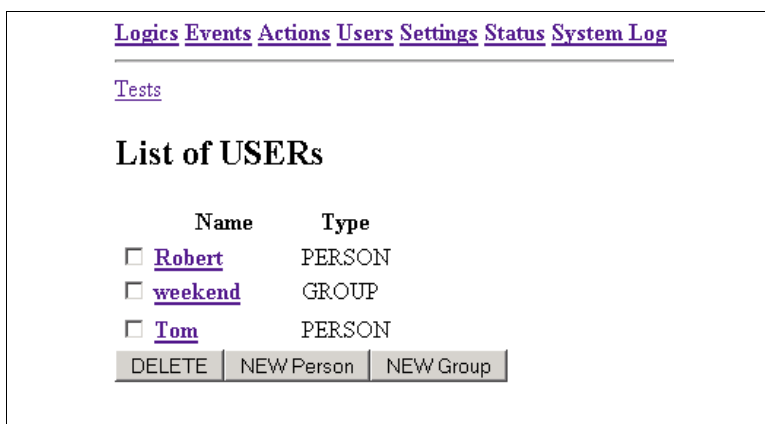
← To the effect that all configurations would be performed, press button *SUBMIT*.

Picture 8.5.4

- If you want to delete any action, mark action's checkbox and press *DELETE*.

8.6 USERS

- User is authorized person which is allowed to use the device TWCT22. The users entered here would have the privileges to receive alarm alerts or control the actions of TWCT22 through short message or Phone calls. User element is made of user name, telephone number and email address. The user list can be edited by adding or deleting users.
- Press the *NEW Person* button to add new user, then enter user name, telephone number and email address. It is not necessary to fill all these parts. When you want to delete any user, select the respective user/users and press *DELETE* button.
- User group is a list of users or groups with assigned name. If you have multiple users and you want to manage/classify them, you have the possibility of creating groups. Only the users defined in "Users" menu can be added in the groups. To start creating groups, click *New Group* button.



Picture 8.6.1

- Whenever a user is deleted, he will be removed from corresponding groups to which he belonged. However if the groups belonged only to a single user, deletion of this user would also result in deletion of corresponding groups.

8.7 SETTINGS

[Logics](#) [Events](#) [Actions](#) [Users](#) [Settings](#) [Status](#) [System Log](#)

Settings

Analog inputs

	Mode	Value	Calibrate
Analog Input 1	*CURRENT	(4) 0.0 mA	0 A 20 mA
Analog Input 2	*CURRENT	(45) 0.0 mA	0 A 20 mA

Fault Relay

ROUT

Date and Time

Date:

Time:

Timezone and Daylight Saving

Timezone:

Daylight Saving rules:

Time Synchronization Server

Hostname:

Mode:

Timeout (hours):

GSM/GPRS

PIN code:

GPRS Off: (disable http server, email, time server, bridged connection)

APN:

Username:

Password:

Authentication method:

Warning: if 'Authentication method' was changed TWCT22 must be restarted for changes to take effect

E-MAIL

SMTP Server:

Sender address:

Authorization

Username:

Password:

← Analog input has two types of mode: *VOLTAGE* and *CURRENT*. Using Calibrate to set voltage or current value as 0V (minimum) or 10V (maximum). For example, 0,052 V you can set as 0V and 0,203 V – as 10V. After all change press *Apply changes*.

← There you can set Fault Relay. Rout number is from 1 to 4. After all change press *Apply changes*.

← In this area set date (YYYY.MM.DD) and time (HH:MM:SS). After all change press *Apply changes*.

← There set Timezone and Daylight Saving. For example, in Lithuania (Europe) timezone is +2. After all change press *Apply changes*.

← NTP time synchronization server settings are needed if you need to synchronize time between TWCT22 time and actual time. So fill *Hostname* and *Mode* areas. After this TWCT22 system time will be synchronized with actual time. After change press *Apply changes*.

← Changing of PIN or PIN forbid is possible in the PIN item. If it is necessary to protect SIM card in the TWCT22 by PIN number, to area SIM PIN it is written PIN number and it is confirmed by button Store PIN. The TWCT22 then by help written PIN unlock access to SIM card after stand by TWCT22. The Pin number is possible forbid by button Unlock SIM card. In the window it is possible to define *GPRS off*, *APN*, *Username*, *Password* and *Authentication method* (*Auto*, *PAP*, *CHAP*, *None*.) If the APN field is not filled in, the APN will be automatically assigned by the IMSI code of the SIM card. If the PLMN is not in book of APN, then will be used default APN „internet“. APN is added of the mobile operator. IP address is automatically assigned by the operator when establishing the GPRS connection. If you don't use the GPRS option, please disable it by placing tick in "GPRS off" checkbox.

← You need to fill this information to send e-mail. SMTP server address is given by GSM network provider. Enter the TWCT22 email name to identify the e-mail's sender in the *Sender address* field. The changes will apply after pressing the *Apply changes* button.

← Write here your *Username* and *Password* in order to protect your TWCT22 setting from other people. The changes in Authorization will apply after pressing the *Apply changes* button.

Dynamic DNS

Enable:

Supported DDNS Service:

Domain:

Username:

Password:

IP Update time:

SMS Center Number

SMS Center Number (default: . Leave empty to use default):

Bridged Network Connection

Allowed User:

Language selection

Language:

Options

Not Show Logic Info

[Download configuration](#)

Upload configuration

← Dynamic DNS settings are used to access TWCT22 from the Internet. Please fill settings if the Dynamic DNS account is used.

IP Update time is accounted in seconds, it cannot be less 300 sec

← In this area you can change SMS Center Number if the default number is not good. For example default number for Bite GSM LT is +370699501115. After change press *Apply changes*.

← There you can set user to whom is allowed Bridged Network connection. After change press *Apply changes*.

← You can choose the language between *English, Spanish* and *German*. After change press *Apply changes*.

← You can upload the configuration settings TWCT22 by uploading a configuration file for example "*Config_xxx.dat*".

Picture 8.7.1

8.8 STATUS

The item *GPRS* in menu contains information about PLMN (code of operator), cell, channel and signal (information by a single application find out on power up TWCT22). In bottom of window hereof windows it is GPRS Connection Log, where there are information about make up GPRS connection and pertinent problems on this formation.

[Logics](#) [Events](#) [Actions](#) [Users](#) [Settings](#) [Status](#) [System Log](#)

Status

Date: 2004.01.01
Time: 1:24:04
Weekday: Thursday
Time zone: 1
Daylight Saving: inactive

Software Version: TWCT22.02.651
Phone IMEI: 353976010183600

Connection
 Not established
 SMS_ERR_SIM_CARD

Signal quality (0-5): 0
 Service: False
 GPRS network not available

Time NOT synchronized

← There you can see the Software Version which is used for TWCT22.

← When you insert a new SIM card, you need to configurate parameters in *Settings*. **SMS_ERR_NEED_PIN_CODE** – this message means that you must to enter in *Settings* a PIN code of your SIM card. **SMS_ERR_CANT_REG_NETWORK** – enter APN in *Settings* area *GSM/GPRS*. **GPRS is not active** – you should restart the device after configuration is saved to it's memory. Just unplug the power source and plug it again.

← When you use *Timer Event*, always check time is synchronized or not. It is necessary for system to work in time. You could synchronize time in *Settings*.

Picture 8.8.1

8.9 SYSTEM LOG

Log is the events registration. There's also the list of errors.

[Logics](#)
[Events](#)
[Actions](#)
[Users](#)
[Settings](#)
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[System Log](#)

System LOG

```

2004.01.01 00:00:11 FFS is available
2004.01.01 00:00:11 FFS free space: 0x0010 01be
2004.01.01 00:00:11 Current directory: \
2004.01.01 00:00:11 FILE: TWCT20syslog 203
2004.01.01 00:00:11 Failed to obtain next file: 0
2004.01.01 01:00:12 SMS_ERR_SIM_CARD
2004.01.01 00:00:02 FFS is available
2004.01.01 00:00:02 FFS free space: 0x0010 01be
2004.01.01 00:00:02 Current directory: \
2004.01.01 00:00:02 FILE:      syslog 540
2004.01.01 00:00:02 Failed to obtain next file: 0
2004.01.01 01:00:03 SMS_ERR_SIM_CARD
                
```

← To see the latest actions – press button *REFRESH*. It is not necessary to contain old information about action, so delete it with button *ERASE*.

Picture 8.9.1

8.10 TESTS

Test describes the device status review. To access into tests menu: <http://localhost:5000/test>

[Logics](#) [Events](#) [Actions](#) [Users](#) [Settings](#) [Status](#) [System Log](#)

TESTS

TWCT22 - test

<input checked="" type="checkbox"/> DIN 1 <input type="checkbox"/> DIN 2 <input type="checkbox"/> DIN 3 <input type="checkbox"/> DIN 4	ROUT 1 <input type="checkbox"/> ROUT 2 <input type="checkbox"/> ROUT 3 <input type="checkbox"/> ROUT 4 <input type="checkbox"/>
---	--

<input type="text" value="9.275V (a=1838mV,k0-442,k*-1947)"/>	AIN 1 <input type="checkbox"/> current mode
<input type="text" value="11.577V (a=1113mV,k0-2258,k*-1269)"/>	AIN 2 <input type="checkbox"/> current mode

Safety controller

<input type="text" value="3.937V (a=661)"/>	ADC0 mcu
<input type="text" value="12.489V (a=350)"/>	ADC1 pwr

- Dip switch „AT“
- Dip switch „Preset“
- Dip switch „wdt“
- Warning U pwr < 10V
- Warning U pwr < 21.6V
- Warning U mcu < 3.3V
- Warning U mcu > 4.2V
- Device fault

← To test relay outputs and analog inputs status just select it and press *Apply* button.

Picture 8.10.1

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9 SUPPORT

Before contacting for support, make sure that you went through the above manual thoroughly. If you are still facing problems, feel free to contact our technical support team at support@teltonika.lt we would be glad to help you.