



ALARM MONITORING & CONTROL SYSTEM

TWCT20

USER MANUAL 1.0.2

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1. ATTENTION



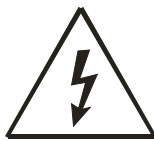
All wireless devices for data transferring are susceptible to interference, which could affect performance



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 TWCT20 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. TWCT20 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 TWCT20 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

TWCT20 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 TWCT20 or be notified on configurable events.

4. TECHNICAL SPECIFICATION

- Supply 24V $\pm 10\%$ $\approx 200\text{mA}$
- Power consumption max 5W
- Wireless modem:
 - Quad Band GSM (850/900/1800/1900MHz)
- 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: 0-20mA
 - Resolution 10bit A/D converter
 - Connectors: terminal blocks
- 4 relay outputs
 - Rated load 240V 50Hz $\sim 7\text{A}$, 24V $\approx 10\text{A}$
 - 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. TWCT20;
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 TWCT20 is light and suitable for fitting with electronic equipments that can hook to the DIN EN 50022.

When a place for TWCT20 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 TWCT20 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.

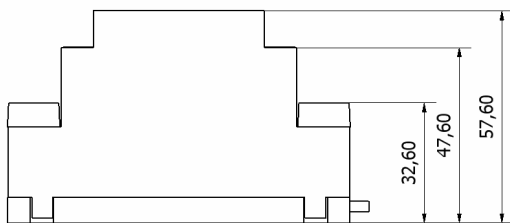


Figure 5.2.1

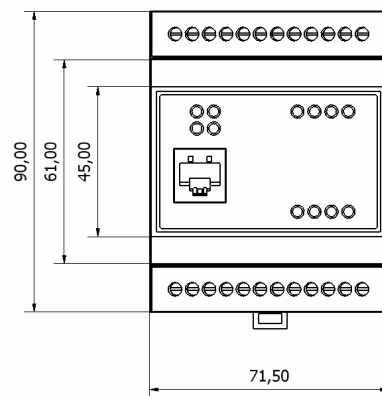


Figure 5.2.2

5.3. FRONT PANEL

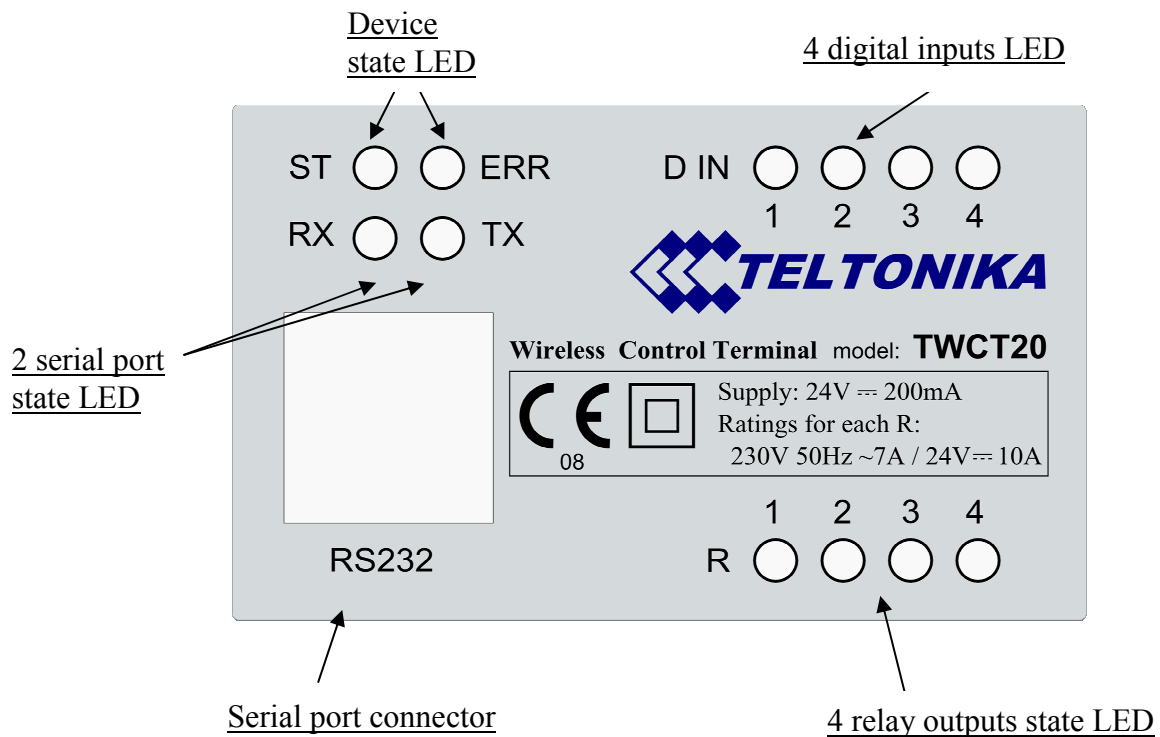


Figure 5.3.1

ST – Power LED turns on when power is applied to TWCT20. 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

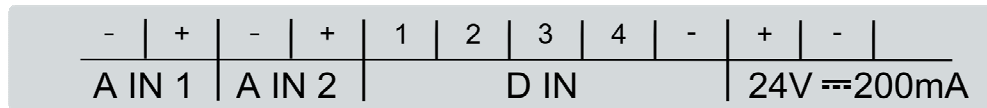


Figure 6.1.1

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 0-20mA in current mode.
A IN 1 +	
A IN 2 -	Analog input 2. Input voltage range is from 0 to 10Vdc in voltage mode or input current range is 0-20mA in current mode.
A IN 2 +	
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.
24V +	Device supply. Voltage is 24V \pm 10% \approx 200mA max. As switched power regulator is used inside, the smaller the voltage, the bigger the current and vice versa (power consumption remains about the same)
24V -	

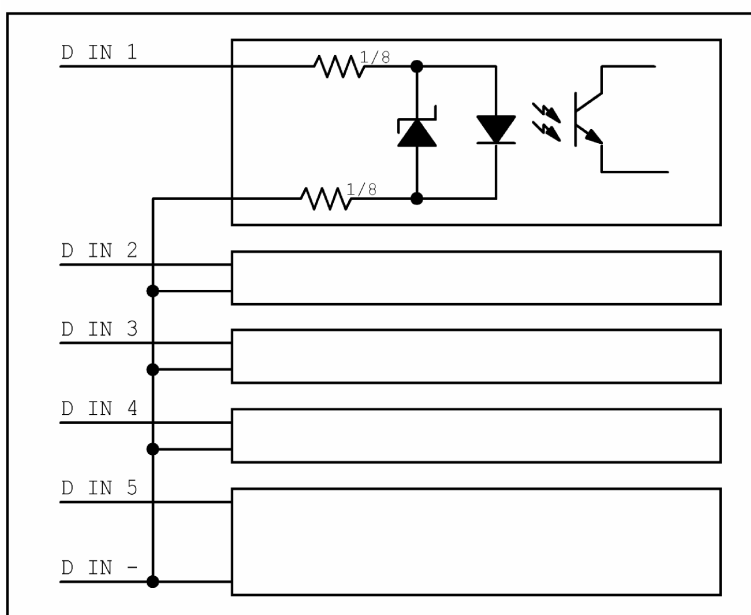


Figure 6.1.2

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.	

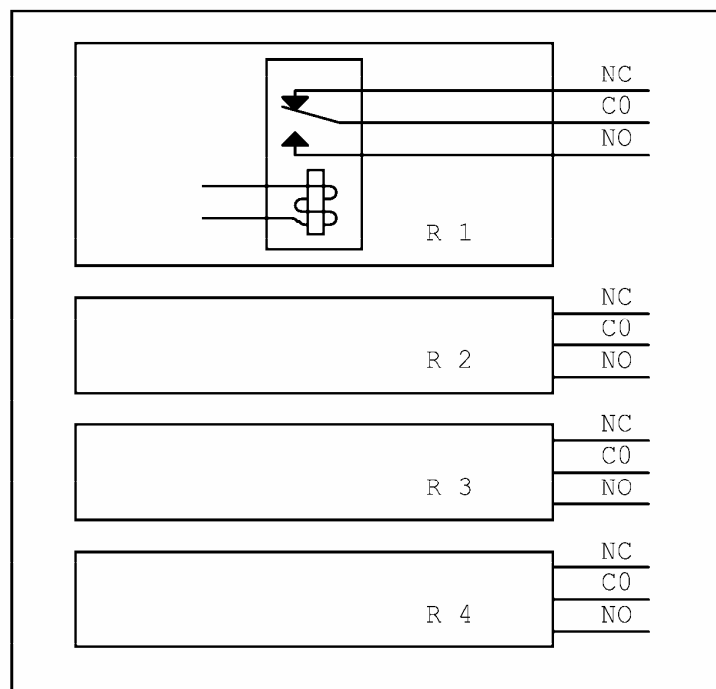


Figure 6.2.2

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 TWCT20 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

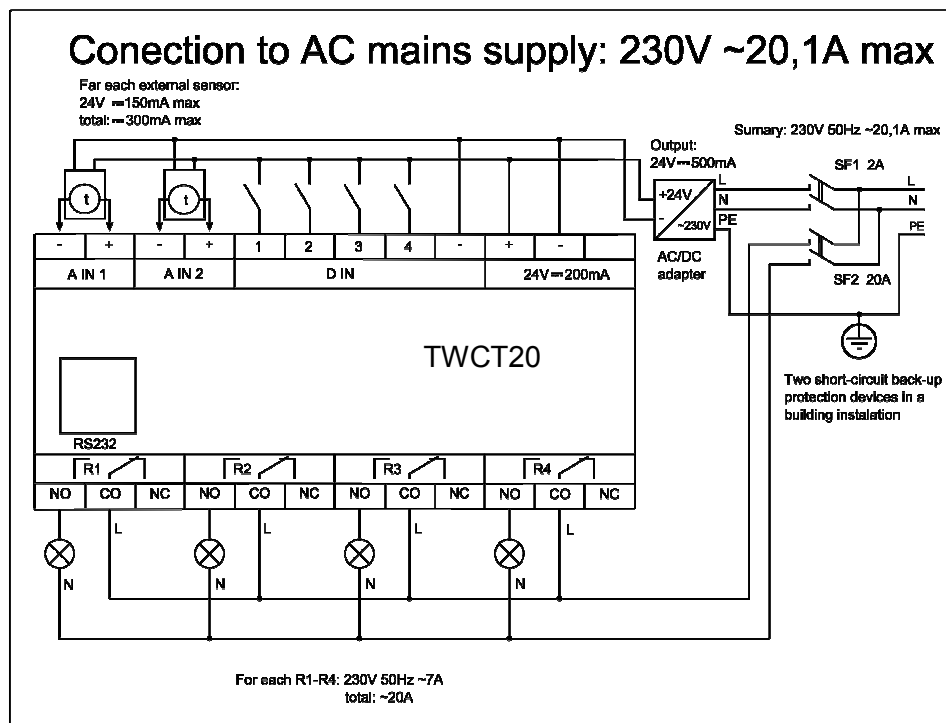


Figure 6.4.1. Sample scheme

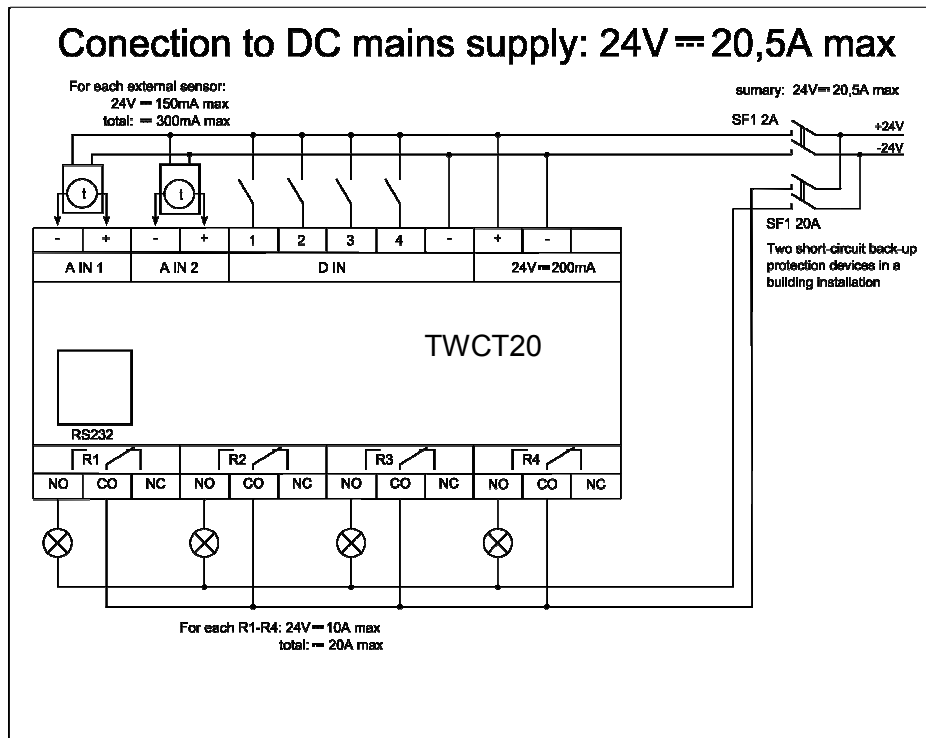


Figure 6.4.2. Sample scheme

7. INSTALLATION AND STARTING

7.1. INSTALLING A SIM CARD

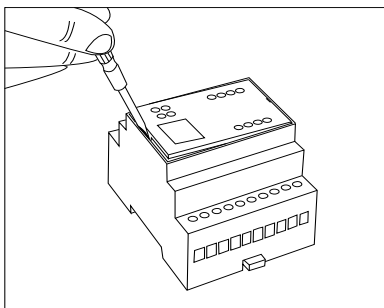


Figure 7.1.1

- 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**).

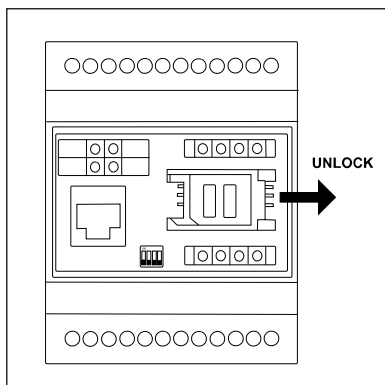


Figure 7.1.2

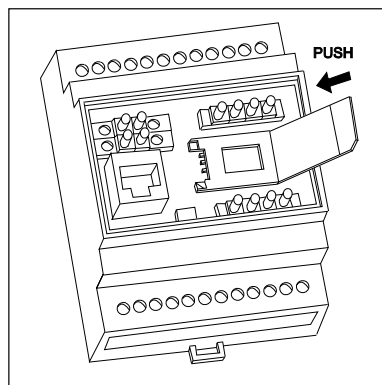


Figure 7.1.3

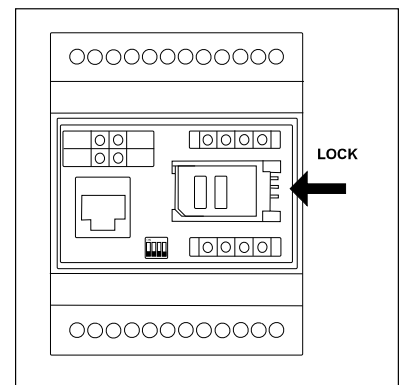


Figure 7.1.4

7.2. DIP SWITCH SETTINGS

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

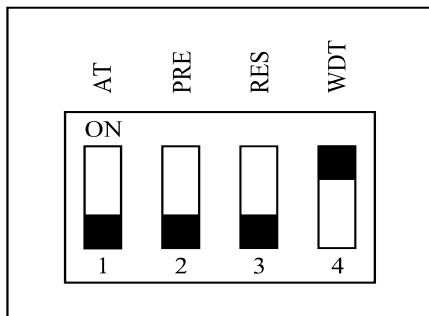


Figure 7.2.1

Table 7.2.1

Switch number	OFF	ON
1	Serial port works in the normal mode	Serial port works in the “AT Command” mode
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 TWCT20 configurations, first is single RS232 connection, which apprized with Server program and second one is via GPRS which done with Mserver program.

PC Connections via RS232:

1. Install TWCT20 for windows. To perform the installation, run the following programs from your CD or download folder TWCT20plusMserver.EXE.
2. Connect PCs serial port to the TWCT20 serial port cable PORT1.
3. After installation you can run the program by clicking SERVER in Start/Programs/Teltonika/TWC T20 directory. To open the program, click the icon on the taskbar.
4. Select serial port number to which TWCT20 is connected then click on Apply.
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 TWCT20 application.
7. You can find possible port to which is connected TWCT20 device by pressing the button *Autodetect*. After you need to select detected COM port with record Box. Sign - (Com2-) – port 2 doesn’t exist. Sign (Com1 Box active) – port 1 exists, connected to TWCT20 and currently it is active. If “..” with COM port number, then the port is busy. Maybe it is opened by another program.

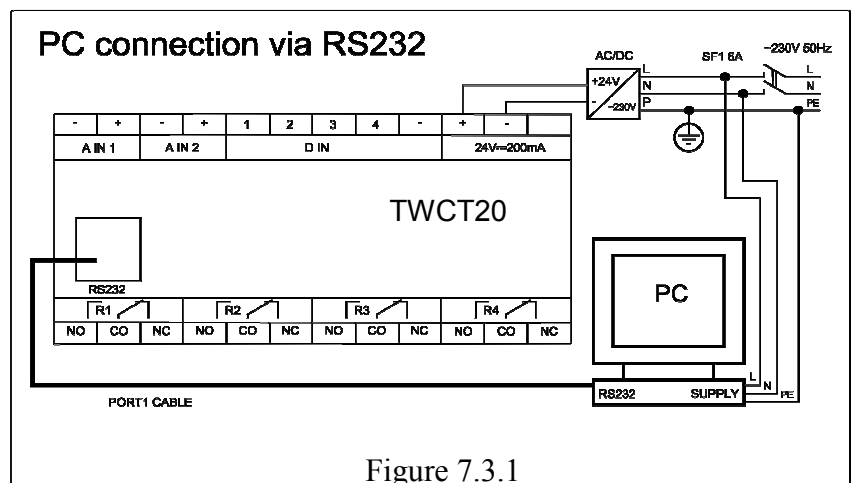


Figure 7.3.1

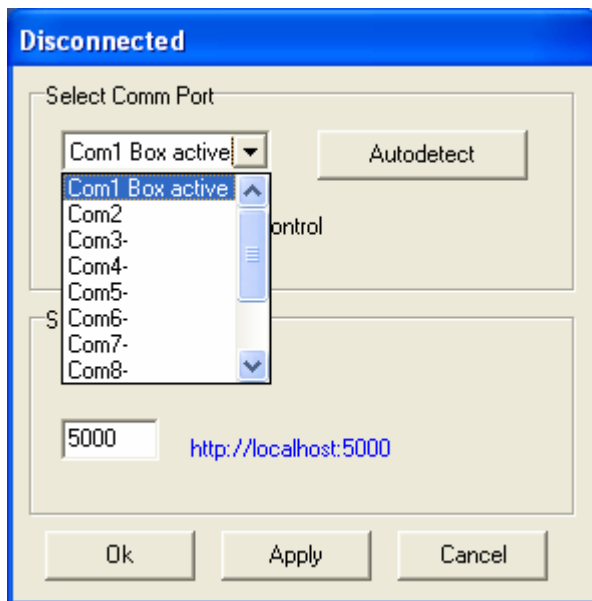


Figure 7.3.1 TWCT20.exe

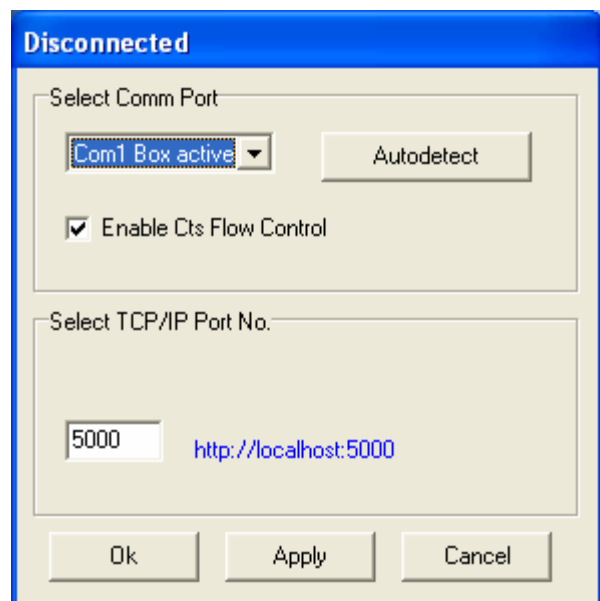


Figure 7.3.2 TWCT20.exe

Note: If Server.exe program is running, to open the computer interface please use the icon from taskbar. Do NOT run Server.exe software one more time from Start/Programs/Teltonika/TWCT20.

PC Connections via GPRS:

To make PC connections via GPRS you need run MServer software, which already placed in Start/Programs/Teltonika/TWCT20 directory after you install TWCT20plusMserver.EXE. MServer program is TWCT20 system ancillary part that is connecting the TWCT20 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 TWCT20 device could connect to.


The sample of the connection:


1. Through local connection, TWCT20 device is configured to accept Short Messages requesting Bridge Connection from one of user's phone number. To do this, after TWCT20 connections via RS232 with Server program, from Settings select the Allowed User (see **Figure 7.3.3**). Then close the Server program.

Bridged Network connection



Figure 7.3.3

2. Run MServer program from Start/Programs/Teltonika/TWCT20 directory as Server program placed. MServer Settings window (see the **Figure 7.3.5**) and Tray picture  will appear. Short Message with text "CONNECT x.x.x.x.:PortNo" is sent to TWCT20 device's phone number. Here x.x.x.x. – external IP address of the computer and PortNo – port number. TWCT20 will try to connect to specified IP address and port number once.

If it succeeds, program Tray icon will turn half green on the left  indicating Bridge Connection established and default Web Browser will be started automatically (if corresponding option is turned on). Web Browser will connect to TWCT20 device through MServer program and user will see WEB interface.

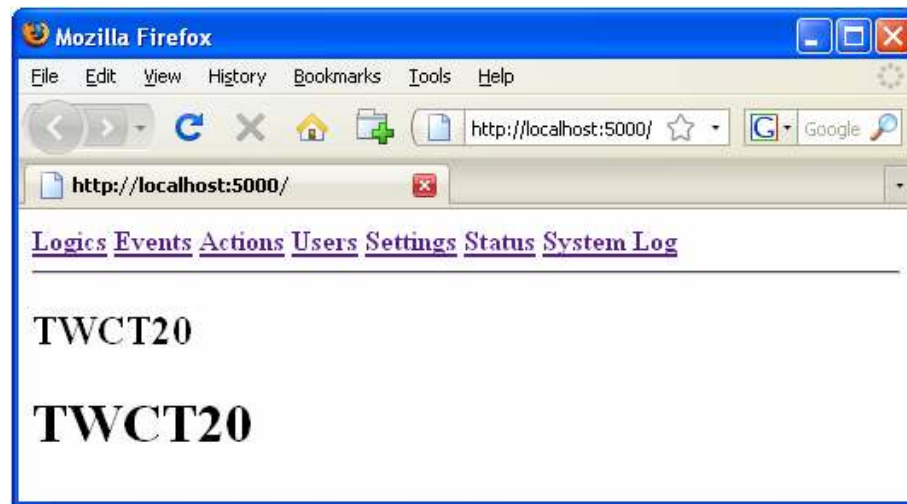


Figure 7.3.4 TWCT20 configuration menu

3. User may disconnect from the TWCT20 device by clicking “Disconnect” button in the Settings window or by closing MServer program.

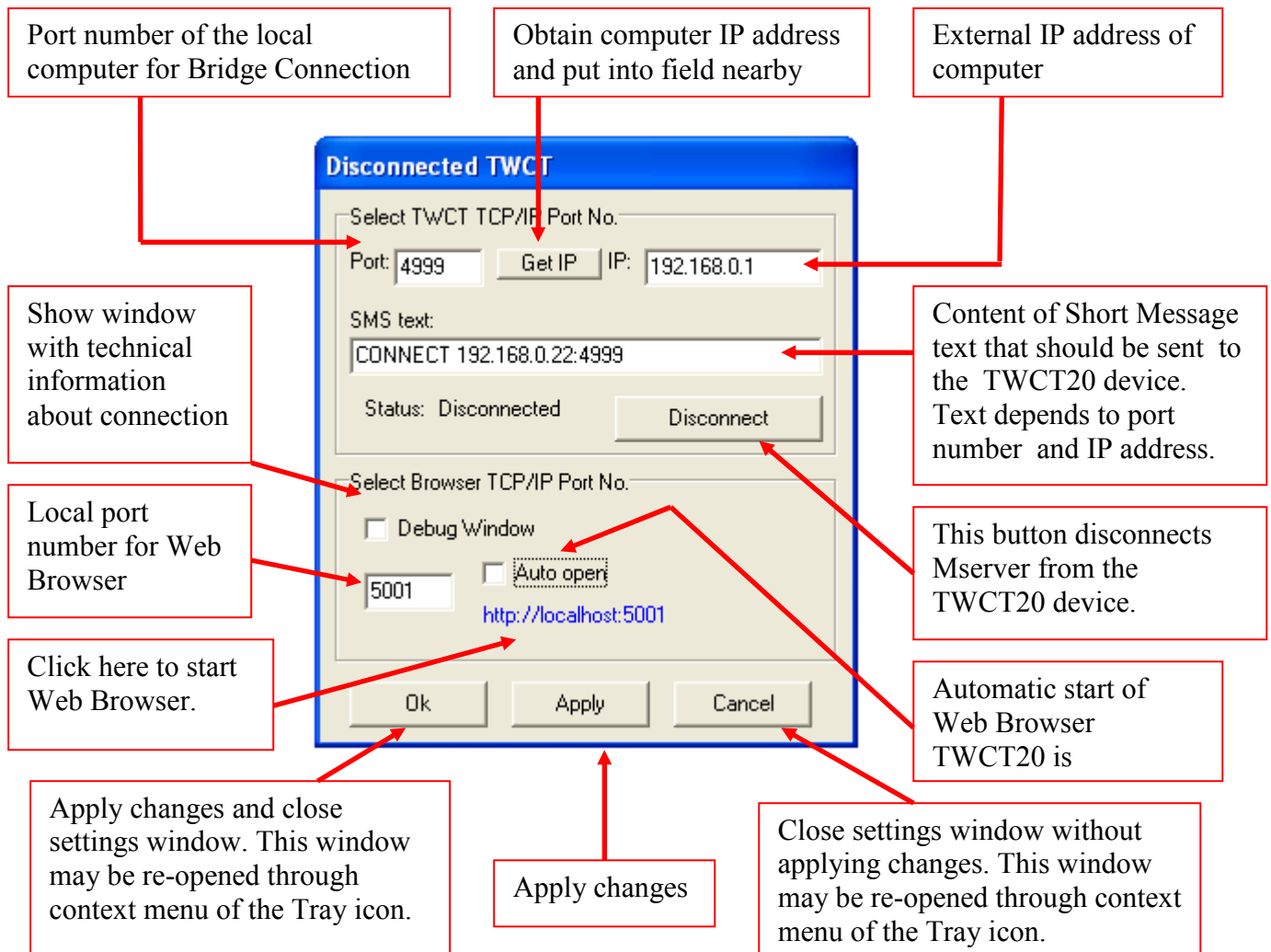


Figure 7.3.5 MServer software

Note: MSever program and Server Program can NOT run in the same time, even they operate in the same time but that is not mean they are working properly.

TRAY ICON MENU

- First item shows the status of the server.
- Second item shows ports used in the local computer.
- Third item if selected will show the settings window.
- Forth item if selected will close MServer program.
- Fifth item shows the version of the program.



PROBLEMS

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



In this case it's necessary to change port number settings by hand in the "mserver.ini" file located in its directory.

- ❖ If TWCT20 is not able to connect to Mserver program, there could be several reasons:
 1. External connection is blocked by the local computer or remote firewall. It must be unblocked for Mserver 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 MServer settings window change the local computer's port number for Bridge Connection to 80 and click the button "Applly". 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' behavior in Skype "Connections" tab.
 3. TWCT20 GSM card supplier doesn't provide network service through GPRS.
 4. There is no GPRS connection.
 5. Wrong TWCT20 GPRS settings (APN, USER, PASSWORD) – usually APN.
 6. IP address of You computer is not permanent (dynamic). It can change each time You are connecting to network and may be different from when You configured MServer. You can find IP address by clicking "Get IP" button.
 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 MServer.

8. DATA CONFIGURATION

Data configuration is executed by the internal WEB server application. You need to connect TWCT20 to PC and the server program should be run.

8.1. APPLICATION'S LOGICAL ELEMENT

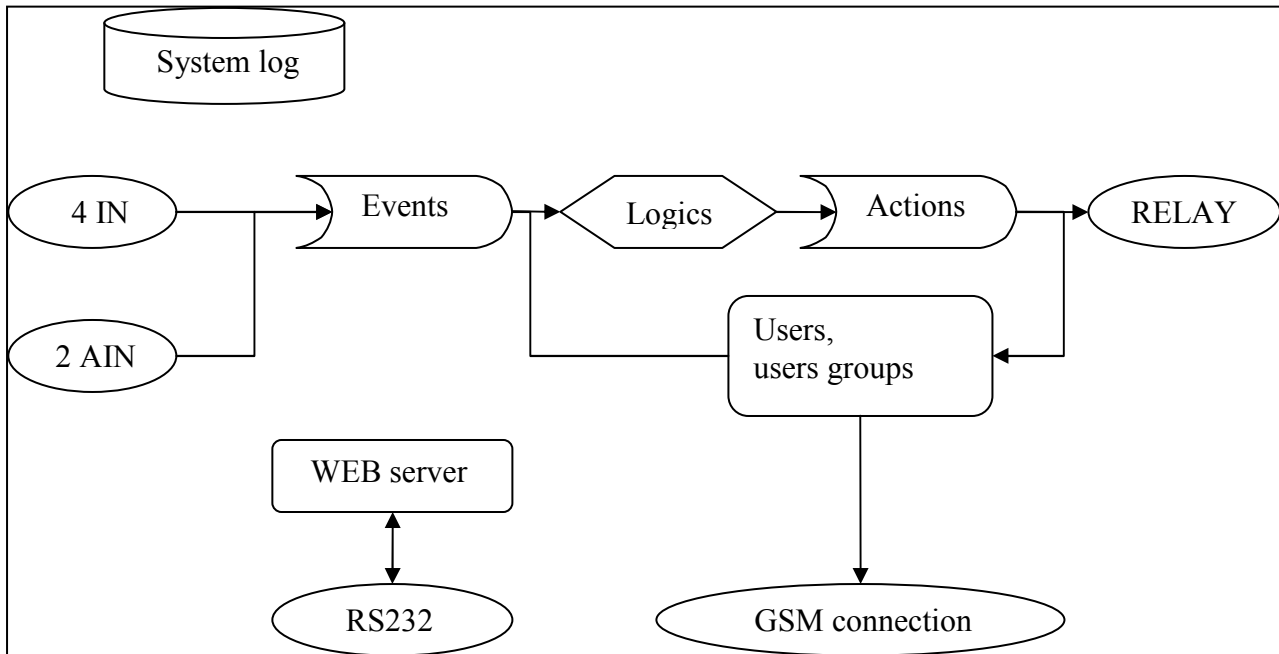


Figure 8.1.1

8.2. FUNCTIONS

TWCT20 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, TWCT20 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

FUNCTION

EVENTS

Din1
Din2
Din3
Din4
calllll
Ain1
Ain2
message
message2
message3

ACTIONS

Rout1
Rout2
Rout3
Rout4
SMS
call
Email

– 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.

– 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.

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

– 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*.

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 TWCT20 is to alert you whenever digital/analog inputs to the TWCT20 cross their predefined value. Events define conditions of the digital inputs (DIN), analog inputs (AIN), received messages, time events and errors.

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](#)

[Tests](#)

Edit EVENT -

NAME

TYPE

AIN

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 UP* or *Analog DOWN* it is not necessary to fill *SETUP TIME*.

← 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*.

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	
DELETE	NEW Analog Event	NEW Digital Event
	NEW Message Event	NEW Timer Event

Picture 8.4.3

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

[Tests](#)

Edit EVENT -

NAME

Din1

TYPE

Digital UP

DIN

1

SETUP TIME (seconds)

0.0

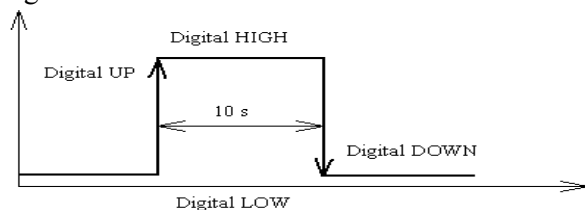
APPLY SUBMIT RESET

← 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 UP* or *Digital DOWN* it is not necessary to fill *SETUP TIME*.

← 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*.

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.

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

[DELETE](#)
[NEW Analog Event](#)
[NEW Digital Event](#)
[NEW Message Event](#)
[NEW Timer Event](#)

Picture 8.4.4

NAME

command

TYPE

SMS

SMS
CALL

USER

Tom

MESSAGE

make call

[APPLY](#)
[SUBMIT](#)
[RESET](#)

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*.

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 TWCT20 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 **NEW Timer Event**. Then you will see the new item “no name” (picture 8.4.6). 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](#)

Picture 8.4.6

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

[Tests](#)

Edit EVENT -

NAME

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.

END TIME

Year: 2008
Month: July
Day: 14
Hour: 9
Minute: 20
Second: 11

← Set the end time of the event.

REPETITION PERIOD

Months:	0
Days:	0
Hours:	0
Minutes:	15
Seconds:	0

← There you can set repetition period. Event can be repeated after few seconds, minutes, hours, days or months.

WEEKDAYS

Monday ☐ ☐ ☐ ☐ ☐ ☒ ☒ Sunday

APPLY SUBMIT RESET

← Set the day (days) of the week, then the event should happen.

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


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 TWCT20 should do at exactly date and time. The device could take Rout actions, make calls, send short messages or e-mails.

ROUT actions

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

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

[Tests](#)

List of ACTIONS

Name	Type
<input type="checkbox"/> noname	ROUT TOGGLE
DELETE	NEW ROUT Action
	NEW Message

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.

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.

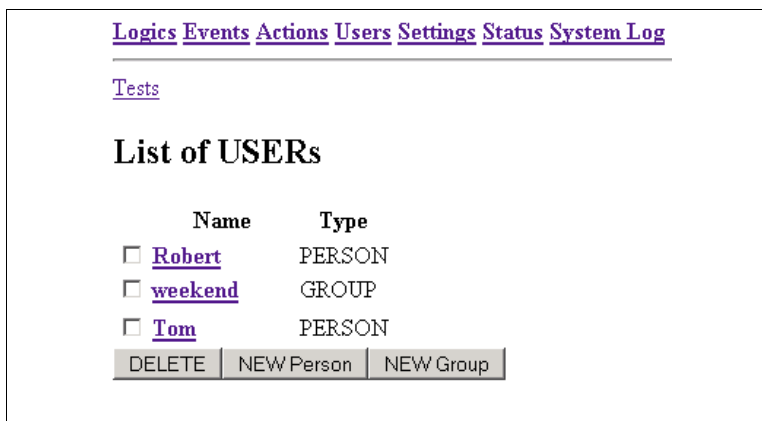
← To the effect that all configurations would be performed, press button *SUBMIT*.

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 TWCT20. The users entered here would have the privileges to receive alarm alerts or control the actions of TWCT20 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 this 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 define 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](#)

[Tests](#)

Settings

Analog inputs

	Mode	Value	Calibrate
Analog Input 1	*VOLTAGE	(13) 0.052 V	0 V 10 V
Analog Input 2	*VOLTAGE	(51) 0.203 V	0 V 10 V

Apply changes

Fault Relay

ROUT Apply changes

Date and Time

Date:

Time:

Apply changes

Timezone and Daylight Saving

Timezone:

Daylight Saving rules:

Apply changes

GSM/GPRS

PIN code:

APN:

Username:

Password:

Authentication method:

Apply changes

E-MAIL

SMTP Server:

Sender address:

Apply changes

Authorization

Username:

Password:

Apply changes

← 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*.

← Changing of PIN or PIN forbid is possible in the PIN item. If it is necessary to protect SIM card in the TWCT20 by PIN number, to area SIM PIN it is written PIN number and it is confirmed by button Store PIN. The TWCT20 then by help written PIN unlock access to SIM card after stand by TWCT20. The Pin number is possible forbid by button Unlock SIM card. In the window it is possible to define *APN*, *Username*, *Password* and *IP address*. 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. If the *IP address* is not filled in, the IP address will be automatically assigned by the operator when establishing the connection.

← You need to fill this information to send e-mail. SMTP server address is given by GSM network provider. Enter the TWCT20 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 TWCT20setting from other people. The changes in Authorization will apply after pressing the *Apply changes* button.

SMS Center Number
Center Number (default:  +370699501115  . Leave empty to use default.):

Bridged Network connection
Allowed user:

Time Synchronization Server
Hostname:
Mode:

[Download configuration](#)

Upload configuration

← 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 need to synchronize time between your computer and state. So fill *Hostname* and *Mode* areas. After this synchronization you get all messages from TWCT20in time. After change press *Apply changes*.

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 TWCT20). 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
<h3>Status</h3> <p> Date: 2004.01.01 Time: 1:24:04 Weekday: Thursday Time zone: 1 Daylight Saving: inactive </p> <hr/> <p> Software Version: TWCT20.02.651 Phone IMEI: 353976010183600 </p> <hr/> <p> Connection Not established SMS_ERR_SIM_CARD </p> <p> Signal quality (0-5): 0 Service: False GPRS network not available </p> <p>Time NOT synchronized</p>

← There you can see the Software Version which is used for TWCT20.

← 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](#)
[Status](#)
[System Log](#)

System LOG

```

2004.01.01 00:00:11 DEVICE VER.: TWCT20.02.651 STARTED: CAUSE_DEFAULT
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 DEVICE VER.: TWCT20.02.651 STARTED: CAUSE_DEFAULT
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: TWCT20syslog 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

TWCT20 - test

☒ DIN 1
☐ DIN 2
☐ DIN 3
☐ DIN 4

ROUT 1 ☐
ROUT 2 ☐
ROUT 3 ☐
ROUT 4 ☐

9.275V (a=1838mV,k0-442,k*-1947)
 AIN 1 ☐ current mode

11.577V (a=1113mV,k0-2258,k*-1269)
 AIN 2 ☐ current mode

Apply

Safety controller

3.937V (a=661) ADC0 mcu

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

Refresh

Restart silent

Restart soft error

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

Picture 8.10.1

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.