

## PURPOSE

P01 relay with built-in GSM communicator is used to remote control via mobile phone. It allows an easy way to manage and monitor outputs status devices connected to the inputs and outputs of the relay.


SMS ALERTS ON MOBILE ABOUT ACTUATION OF INPUT
IN1 ON - high state (voltage) Input 1
IN1 OFF - low state (no voltage) Input 1
IN2 ON - high state (voltage) Input 2
IN2 OFF - low state (no voltage) Input 2
REQUEST ABOUT STATE OF ENTRY AND EXIT
IN1? - query about the state of the input 1(ans: IN1 ON / IN1 OFF)
IN2? - query about the state of the input 2(ans: IN2 ON / IN2 OFF)
OUT1? - query about the state of output 1(ans: OUT1 ON / OUT1 OFF)
OUT2? - queryabout the state of output 2 (ans: OUT2 ON / OUT2 OFF)
PASSWORD ( $4 \div 8$ digits)
If you are working with a password option command must precede password, eg 1234 OUT1 ON.
SMS configuration commands:
PASS ON - with this option with password
PASS OFF - disable the password
PASS ON [ $x x x x x x x x$ ] - set or change the password
[xxxxxxxxxx] - Enter the number of passwords, e.g. 12345678

## INPUTS CONFIGURATION

Set the phone number to which you want to send the message
IN1! [xxxxxxxxx] ON - notification fixed phonenumber with high (voltage)
Inputno. 1
IN1! [xxxxxxxxx] OFF - notice the fixed phonenumber at a low state (no voltage) on the input no. 1
IN1! [xxxxxxxxx] NF - notice the fixed phonenumber about low and high ststus of input no 1
IN2! [xxxxxxxxx] ON - notification fixed phonenumber with high (voltage) Input no. 2
IN2! [xxxxxxxxx] OFF - notice the fixed phonenumber at a low state (no voltage) on the input 2
IN2! [xxxxxxxxx] NF - notice the fixed phonenumber about low and high ststus of input no 2
[xxxxxxxxxx] - provide a phone number with a prefix, such as $+48123456789$

## FUNCTIONING

Relay can operate with any GSM 900/1800 mobile operator (no simlock). In order to operate properly valid SIM card have to be inserted. The relay has two relay outputs for switching ON /OFF of controlled receivers and two high voltage inputs for messages about state changing of controlled receivers. All commands, responses and alerts exchange between mobile phone and relay is carried out using SMS messages.

## I/O DESCRIPTION



COMMANDS AND MESSAGES
SETTING PERMANENT OUTPUTS STATES
OUT1 ON - switch ON output 1
OUT2 ON - switch ON output 2
OUT1 OFF - switch OFF output 1
OUT2 OFF - switch OFF output 2
TEMPORARY SWITCHING of OUTPUT
OUT1 ON S [x] - temporary switching output 1 at time x , where x is in the range $1 \div 300 \mathrm{sec}$
OUT2 ON $S[x]$ - output switch no. 2 time to time $x$, where $x$ is in the range $1 \div 300$ sec
OUT1 ON M [x] - temporary switching output 1 at time x , where xi s in the range $1 \div 600 \mathrm{~min}$
OUT2 ON M $[\mathrm{x}]$ - temporary switching output 1 at time x , where x is in the range $1 \div 600 \mathrm{~min}$
Example:
OUT1ON S 30 - switching output 1 time for 30 seconds.
OUTON M10- switching out one time for 10 minutes.

## AUTOMATIC REPLY

The optional auto-reply on the phone the user with a message that reaches and adoption of SMS
ANSW - request an automatic response. The word served after the main command. the answer is and confirmation of the status of inputs, outputs and functions.
Example
Command: OUT2ON ANSW. Content response: OK OUT2 ON
Command: PASS ON 1234 ANSW. Content response: OK PASS ON 1234
Command:IN1!+48123456789 ANSW. Content response: OKIN1! +48123456789

REDEFINITION OF INPUTS, OUTPUTS AND STATES NAMES
In order to simplify SMS messages used in communication with relay user can add own names for all inputs, outputs and states.
Request for input or output state we create by adding to the defined name of a question mark "?".
Furthermore only ON and OFF commands will be accepted even if other names for states were set.
Redefinitions of names used in SMS Messages:
TEXT! IN1<input1_name><state_ON><state_OFF>
TEXT! IN2 <input2_name><state_ON><state_OFF>
TEXT! OUT1<output1_name><state_ON><state_OFF>
TEXT! OUT2<output2_name><state_ON><state_OFF>
Alternative names can be 10 characters long and cannot have spaces.
Examples
INPUT1
Definition:
Question:
Answer:
OUTPUT2
Definition:
Definition:
Answer:
Answer:
Commends:
text! in1 gate open close
GATE?
GATE OPEN
TEXT! OUT1 pump_ 2 turnedON turnedOFF
pump?
pump turnedO

Warrning! Note that even if user redefine names relay will accept default commands.

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STATUS SIM CARD [USSD]
Execution of maintenance tasks, such as activation and deactivation of services, check the status and recharge of account, etc., using the operator service USSD (Unstructured Supplementary Service Data).
USSD? <USSD code>
In response to a user's phone will come SMS with the response operato which would be consistent with the information given USSD command, such as the current charge state and the expiry date (the content and format of the notification depends on the operator).

Example
USSD? * *1123*12345678909876\# state and the expiry date
individually by mobile network operators.
MEMORY OF OUTPUT
Automatic restoration the status of outputs after the disappearance and when power is restored (restart).
MEMORY ON- on the option.
MEMORY ON -disable option.
CONFIGURATION PARAMETERS
Obtaining configuration information via SMS commands for phone user. CONFIG? - query about configuration parameters example
2. Communication signals by the number of LED flashes STAT: 0.5 s with period 6s (1 blink - SMS input, two blinks -SMS output, three blinks - error SMS output, 6 blinks-Voice connection)

* STAT is off, GSM off - GSM module is not working. Suspension of work function or permanent fault. Make a restart of controller


## WIRING DIAGRAM

Example of connecting the input signal to the input no 1 ( joint 5 ) for the notification of activation.


Example of connecting the receiver to the controlled output 1 forthe remote control.


Example
IN1 +48123456789 NF
IN2 +48987654321 ON
MEMORY OFF
PASS ON 1234
LANGUAGE
The option to select the language for automatic SMS notification.
LANG EN-english
NOTATION
Relay recognizes commands in lowercase and uppercase letters. Also in the case of mixed character command.
Example
Proper record of commands: OUT1ON/out1on/Out1oN
Between the command words combined to put a space. The otherwise, the command will be confusing for the relay and will be ignored.
Example
$\mathrm{OUT1ON}_{4} M_{-} 10$-correctly
OUT1ON_M10 -incorrectly
--space

## LED INDICATION

* U - switched power relay
* STAT blink 0.5 s with period $0,1 \mathrm{~s}$, GSM off- there is no cardSIM
* STAT flashes 0.25 s with period of 0.5 s , GSM off - no SIM cardlogs on to the network operator. With an active SIM card with a PIN code
Deactivate the PIN code for the SIM card used
* STAT flashes 0.5 s with period of 1.0 s , GSM lights on - search GSM network.
* STAT lights on / flashing, GSM blinking - Normal operation:

1. Signalling power range by the number of LED flashes GSM: 0.15 s with period 6s (from 1 to 5 flashes)

## ASSEMBLY AND CONNECTION

1 Turn off the power.
2 Put the relay on the rail in the switchboard
3 Connect the power supply to the relay: Lto terminal 11; N to terminal 12
4 Screw the supplied antenna to the transmitter and attach itto the ground outside the switchgear, the site of GSM.
5 In place of the SIM port thin tool (eg a screwdriver)press the yellow button. Remove the tray, load the SIM card and inserted into the port.
6 Connect the receiver and control input signals in accordance with the description of the I/O connections and examples of implementation
7 Switch on the power supply.

| TECHNICAL DATA |  |
| :---: | :---: |
| supply | 230 V AC |
| inputs |  |
| number | 2 |
| voltage tolerance | $160 \div 260 \mathrm{VAC}$ |
| relay outputs |  |
| number | 2 |
| type | 1NO |
| nominal voltage | 230 VAC |
| current load | <8A |
| ports | SIM |
| power consumption |  |
| standby mode | 1,3W |
| with GSM comunnication | <3W |
| working temperature | $-10 \div 50^{\circ} \mathrm{C}$ |
| connection | screw terminals |
| dimensions | 3 modules ( 52 mm ) |
| fixing | on the rail TH-35 |
|  | $100 \mathrm{~m} /$ lenght $2,5 \mathrm{~m}$ |

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