

Bivocom TG451 DI DO port Instruction

Bivocom TG451 include 2 DI (Digital Input) and 2 DO (Relay Output). For the DI, it support 0-30V input, that 0-3VDC or dry contact connection as logic 0, while 5-30VDC or dry contact disconnection as logic 1. For the DO, it is used for Relay combination (K+, K-), the maximum range of switch is Up to 5A and 30VDC/250VAC.

TG451 support getting alarm from DI change (low level to high level, or opposite). And support read DI status and write/control DO (Relay) from server remotely following Modbus RTU protocol.

1. Configure the Alarm setting

TG451 support getting alarm though reporting data to server, or sending SMS when DI status changed, Go into the TG451 web UI>>Advanced>>DI DO page, enable alarm, input the necessary server address, port, and select protocol accordingly. You are able to customize the Register Packet, Heartbeat package, etc.

- > View
- > Setup
- > Secure
- > VPN
- ✓ **Advanced**
 - Send SMS
 - Static Routes
 - Serial Communication
 - DI DO**
 - Oray
 - Traffic Meter
 - GPS Location
 - BS Location
 - Dynamic DNS
 - SNMP
 - DHCP and DNS
- > **Administrate**
- Logout

DI DO Control

DI status

DI0 Status	DI1 Status
0	0

Relay0 Setting Close Open

Relay1 Setting Close Open

Enable Alarm Enable Disable

Server Address

Server Port

Protocol ▼

Register Packet ⓘ Maximum 64 Bytes Ascii

Customed Heartbeat ⓘ Maximum 64 Bytes Ascii

Heartbeat Interval ⓘ 0 Means Not To Send

Device ID ⓘ One Byte Only

Enable Short Message Alarm

Also it support enable SMS alarm, to configure the SMS alarm, please “Enable Short Message Alarm” then select the alarm condition from “low level to high level” or “high level to low level”, and configure the target phone number and Message content.

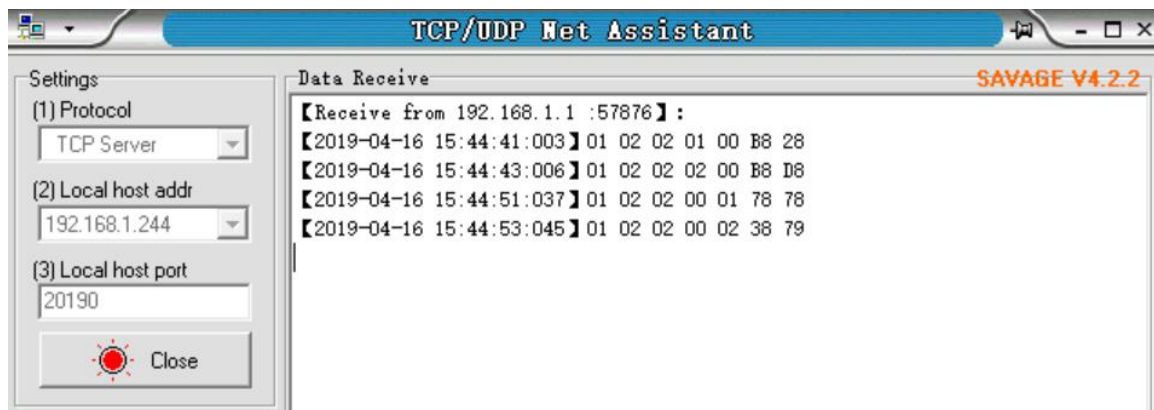
Enable Short Message Alarm

Alarm Type

Phone Number

Message Content Maximum 63 English Character

Once the DI0 DI1 status changed from low level to high level, or opposite, the TG451 will post a data following Modbus RTU protocol to the server, like below example.



Also if enabled SMS alarm, the target number will received an alarm message accordingly.

2. Read DI and write/control DO from server via Modbus RTU

Bivocom TG451 support read DI status and write/control DO/Relay from server remotely following Modbus RTU protocol.

For DI, it use 02 function code to read its value, while use 06 function code for DO/Relay control. The below table shows the corresponding command and responds,

	Command from server	Responds from TG451
Read DI 0 status	01 02 00 00 00 01 B9 CA	01 02 01 00 A1 88 (if DI0=0) 01 02 01 01 60 48 (if DI0=1)
Read DI 1 status	01 02 00 01 00 01 E8 0A	01 02 01 00 A1 88 (if DI1=0) 01 02 01 01 60 48 (if DI1=1)
Control DO/K0 as Close	01 06 00 00 00 01 48 0A	01 06 00 00 00 01 48 0A
Control DO/K0 as Open	01 06 00 00 00 00 89 CA	01 06 00 00 00 00 89 CA
Control DO/K1 as Close	01 06 00 01 00 01 19 CA	01 06 00 01 00 01 19 CA
Control DO/K1 as Open	01 06 00 01 00 00 D8 0A	01 06 00 01 00 00 D8 0A