



GSM Remote Control Unit

TGR10 TGR10G

Features

- Quad Band GSM module
- SMS controlled
- Relay / Digital Telemetry Outputs
- Digital Inputs
- Alarm sensor management
- DIN Rail or Wall Mounting
- Accumulator connection
- 'G' versions - GPS module for position management and alarming

Advanced System

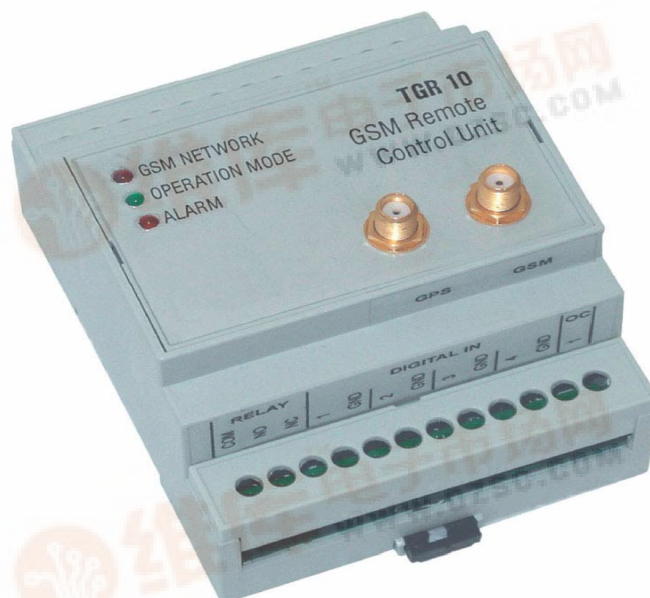
Additional feature:

- Temperature measuring and management

Reference System

Additional features:

- Temperature measuring and management
- PC Remote / Local Management



The TGR10 is a highly efficient GSM remote controller specially designed to use as stand-alone unit or in combination with other video surveillance or alarm equipment. The Built-in Quad Band GSM module enables simple and easy control and management of complete electrical and electronic equipment using a GSM mobile phone. The units feature a fitted relay to enable remote control of electrical devices, for example air-conditioning and heating. The controller can also be connected to other alarm equipment and additional sensors to be used in a variety of applications including remote intruder, fire surveillance, voltage and temperature measuring and management.

The systems telemetry outputs are controlled with SMS text messages. The digital inputs can be configured to send SMS text messages to a mobile phone on change of status. This can be used for remote sensor management and alarming.

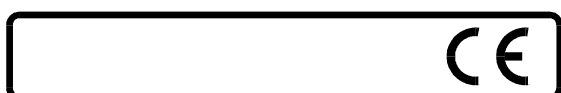
The advanced system also features an I2C interface for connection of temperature sensors. The reference system also features an I2C interface, along with an RS232 interface, enabling remote or local control of the unit from a PC.

Ordering Information

Part Number	Description
TGR10-B	GSM Remote Control Unit, Basic Version
TGR10-A	GSM Remote Control Unit, Advanced Version
TGR10-R	GSM Remote Control Unit, Reference Version
TGR10G-B	GSM Remote Control Unit with GPS Receiver, Basic Version,
TGR10G-A	GSM Remote Control Unit with GPS Receiver, Advanced Version
TGR10G-R	GSM Remote Control Unit with GPS Receiver, Reference Version

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PREFACE

The TGR 10 is a GSM remote controller specially designed to use as stand-alone unit or in the combination with other video surveillance or alarm equipment. Built-in GSM module with different interfaces enable simple and easy control and management of electrical, electronic and other equipment through GSM mobile phone. Built-in relay enables remote control of household and other devices as are air-conditioning and heating. The connections with other alarm equipment and additional sensors enable remote intruder and fire surveillance and temperature measuring and management.

The control of the unit is possible by the help of SMS text messages. Alarming is possible by receiving the SMS text messages or by alarm calls or by the combination of both of them. Programming is possible by the help of SMS text messages or with PC by the help of RS-232 serial interface.

This GSM remote control unit comes in three versions, Basic, Advance and Reference, every model is available also with GPS receiver.

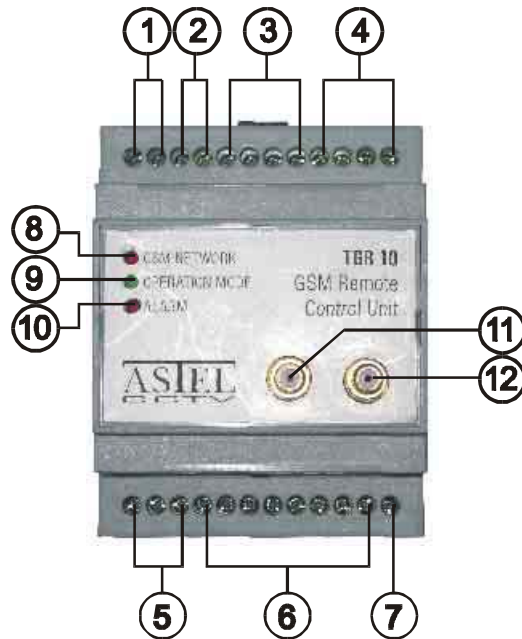
FEATURES

- built-in GSM module with SIM interface
- built-in GPS module for position management and alarming***
- SMS control (alarms, relays, etc)
- temperature measuring and management*
- analog voltage measuring and management*
- alarm sensor management
- PC remote and local management**
- accumulator connection
- standard casing for EN 60715 TH35 DIN rails

PRECAUTIONS

- The remote control unit has to be installed and used in accordance with the instructions of this manual only.
- The power supply has to be disconnected before installation.
- Avoid using the remote control unit under the presence of appliances generating strong magnetic fields like radar, wheather station and in places subject to direct sunlight.
- Do turn power off immediately and refer servicing to qualified service personnel if the remote control unit does not operate normally following the operating instructions.

CONTROLS AND CONNECTORS



(1) DC

Terminal block to connect DC power supply.

(2) ACCU

Terminal block to connect Accumulator power supply.

(3) I2C*

Terminal block to connect I2C control equipment.

(4) RS-232**

Terminal block to connect RS-232 control equipment.

(5) RELAY*

Terminal block to connect different devices.

(6) DIGITAL IN

Terminal block to connect 2 or 4* different sensors.

(7) OC*

Terminal block to connect 1* or 2** different relays or other control units.

(8) GSM NETWORK LED

LED to show the status of GSM module. LED blinks fast when no network is searched, LED blinks slow when full service is registered. When the call is active LED permanently lights.

(9) OPERATION MODE LED

LED to show the status of the device, blinks in normal operation.

(10) ALARM LED

LED to show the alarm status, lights when alarm occurs.

(11) GPS antenna***

SMA connector to connect GPS antenna.

(13) GSM antenna

SMA connector to connect GSM antenna.

INSTALLATION

All the diagrams in this manual show the installation of the GSM Remote Control Unit, model TGR 10G Reference.

Note:

- ***The main DC power supply has to be switched off before installation.***
- ***Also refer to the instruction manual of the equipment to be connected.***
- ***The total power consumption of all sensors, relays and other devices supplied from the unit has not exceed 500mA.***

Avoid the installation in extremely hot and cold places and near appliances generating strong magnetic fields. The installation have to be realize by a qualified personel.

Note:

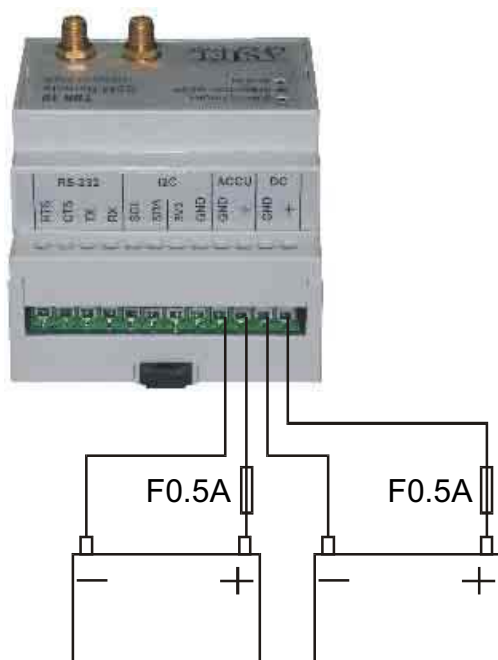
- *The GSM and GPS antennas have to be connected before the unit is switched-on.*
- *The SIM card have to be inserted before the unit is switched-on. The SIM location 3 (password) has to be empty. The PIN code request have to be disabled.*

DC power supply and Accumulator connection

The power supply have to be connected to the DC terminal block connector with right polarity and protected with a fuse (not included). The power supply voltage have to be from 12VDC. The back-up accumulator have to be connected to the ACCU terminal block connector with right polarity and also protected with a fuse (not included).

Note:

- ***The declared accumulator voltage have to be the same as the DC power supply voltage.***



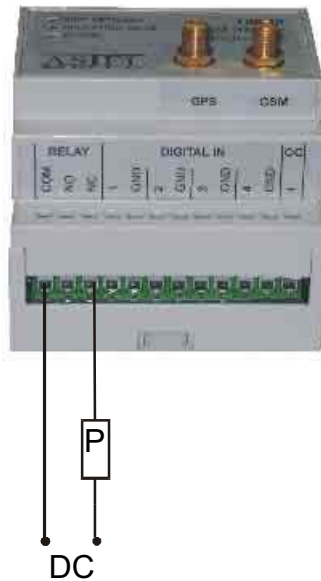
Control connections

Relays connection

The relay control outputs are suitable to control different household and other devices as are air-conditioning and heating, connected directly or through external relays. The relay has NO and NC contacts.

Note:

- *The total DC current consumption of connected equipment to each relay must not exceed 1A when the equipment are controlled directly from the unit. The maximum voltage connected to the relays must not exceed 30V.*

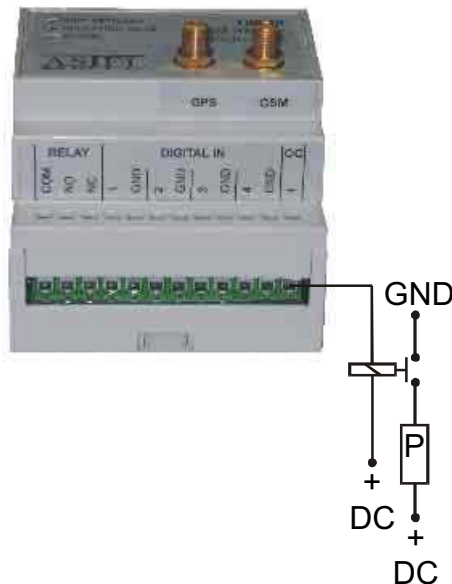


Digital outputs connection*

The digital output is suitable to control different household and other devices connected through external relays.

Note:

- *The total DC current consumption of each connected relay must not exceed 100mA.*



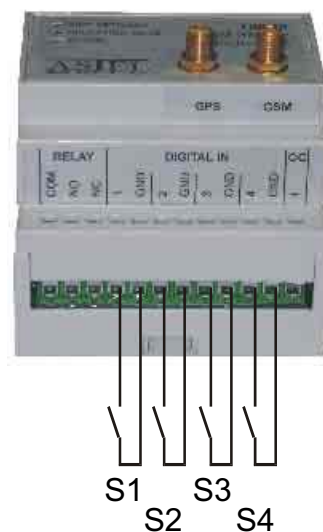
Alarm connections

Digital inputs connection

The digital inputs are suitable to connect two or four* different sensors like IR intruder sensors, smoke sensors, water inlet sensors (floating switches) with NO or NC contacts. The sensors can be supplied directly from the unit and connected to one of +ACCU terminal block.

Note:

- *The total power consumption of each sensor supplied from the unit must not exceed 100mA.*



Other connections

I2C bus connection*

The unit is designed to connect the temperature sensor for temperature measuring and alarming or to connect the other devices using the I2C protocol.

Note:

- *Only the devices using I2C protocol can be connected to the I2C interface.*



RS-232 connection**

The unit is designed to connect also the devices using the RS-232 serial interface control like personal computer or other devices.

Note:

- *Only the devices using RS-232 serial interface can be connected to the RS-232 port.*



INSTRUCTIONS

Login

The default setting of password is 1234.

To send the password

PWDxxxx x=1..9

PWD1234 (if the password is 1234)

(PWD instruction should be uppercase, other instructions uppercase or lowercase)

PWD1234_instr1_instr2_instr3

(first should be sent the password then space and then instructions)

To change the password

NPWxxxx x=1..9

NPW2222 (if the new password is 2222)

Controls

Relays

To receive a status of relays:

REL

Received SMS:

NAME

REL1:REL1:ON

To switch-on the relay:

RELxON x=1

REL1ON (to switch-on the relay 1)

To switch-off the relay:

RELxOFF x=1

REL1OFF (to switch-off the relay 1)

To switch-on the relay for selected time duration:

RELxONhh.mm.ss x=1
 hh=0..24
 mm=0..60
 ss=0..59

REL1ON12.10.00 (to switch-on the relay for 12 hours, 10 minutes)

To switch-on the relay when alarm occurs:

RELxALMhh.mm.ss x=1
hh=0..24
mm=0..59
ss=0..59

REL2ALM00.10.30 (switching-on the relay 2 for 10 minutes, 30 seconds)

To confirm the alarm by switching-off the relay

RELxALM x=1

REL1ALM (temporary switching-off the relay)

To switch-on audio or other indication when alarming is enabled/disabled:

RELxREM x=1

REL2REM (to switch-on audio or other indication on the relay)

Digital outputs*

To receive a status of open-collector outputs:

OCE

Received SMS:

NAME
OCE1:OCE1:ON

To switch-on the open-collector output

OCExON x=1

OCE1ON (to switch-on the open-collector output)

To switch-off the open-collector output

OCExOFF x=1

OCE1OFF (to switch-off the open-collector output)

To switch-on the open-collector for selected time duration:

OCExONhh.mm.ss x=1
hh=0..24
mm=0..60
ss=0..59

OCE1ON12.10.00 (to switch-on the open-collector for 12 hours, 10 minutes)

To switch-on audio indication when alarming is enabled/disabled:

OCExREM x=1

OCE1REM (to switch-on audio indication on the open-collector output)

Alarms

Digital inputs

To receive alarm status on digital inputs:

ADS

Received SMS:

NAME

ALM:

D1:IN1:REM

D2:IN2:REM

D3:IN3:ON*

D4:IN4:OFF*

(when switching-on/off of alarming is enabled by the help of the digital inputs D1 in D2)

To enable alarms on digital inputs:

ADSxxxx x=1 or 0

ADS0010 (to enable alarm on digital input 3)

To receive alarm triggering on digital inputs:

ADT

Received SMS:

NAME

TRG:

D1:REM

D2:REM

D3:HIGH*

D4:LOW*

(when switching-on/off of alarming is enabled by the help of the digital inputs D1 in D2)

To define alarm triggering on digital inputs:

ADTxxxx x=1 or 0

1- to activate the alarm when the input is high – open contact

0- to activate the alarm when the input is low – close contact

ADT0010 (3. – high inputs, 1.,2.,4. - low inputs)

Alarming:

Received SMS:

NAME

ALARM:IN4:LOW

Temperature sensors*

- connected to the I2C interface

To receive alarm status on temperature sensors:

ATS

Received SMS:

NAME

ALM:

T1:TEMP1:OFF

To enable alarms on temperature sensors:

ATSx x=1

ATS1 (to enable alarm on the temperature sensor)

To receive alarm triggering on temperature sensors:

ATT

Received SMS:

NAME

TRG:

T1:Low:20.0C

High:30.0C

To define alarm triggering on temperature sensors:

ATTxsnn.n.snn.n x=1
 s=L or H
 nn.n= number with decimal point

ATT1L10.5H20.5

(to activate the alarm when temperature on sensor 1 is lower than 10.5C and higher than 20.5C)

Alarming:

Received SMS:

NAME

ALARM:TEMP1:21.0C

GPS receiver***

To receive alarm status on pre-defined positions:

AGS

Received SMS:

NAME

ALM:

P1:POS1:ON

P2:POS2:OFF

P3:POS3:OFF

P4:POS4:ON

To enable alarms on pre-defined positions:

AGSxxxx x=1 or 0

AGS1001 (to enable GPS alarm on position 1 and 4)

To receive alarm triggering on pre-defined positions:

AGT

Received SMS:

NAME

TRG:

P1:Out:0.25km

P2:In:0.20km

P3:In:0.20km

P4:In:0.30km

To define distances and mode for alarm triggering:

AGTxsn.nnu x=1..4
 s=I or O (IN or OUT)
 n.nn=number, max. 9.99
 u=k or n or m (km, nm, m)

AGT100.25k

(to activate the alarm when the distance from position 1 is longer than 0.25 km)

AGT4I0.30k

(to activate the alarm when the distance to position 4 is shorter than 0.30 km)

To receive pre-defined positions for alarm triggering:

AGC

Received SMS:

NAME

POS:

P1:Lat:45,45.281N
Lon:013,49.892E

P2:Lat:0
Lon:0

P3:Lat:0
Lon:0

P4:Lat:45,48.390N
Lon:013,48.300E

To define positions for alarm triggering:

AGCxann,nn.nnnbnnn,nn.nnn x=1..4
 a=n,s
 b=e,w
 n=1-9

AGC1n45,45.281e013,49.892 (position 1 is 45,45.281N in 013,49.892E)

To avtomatically insert the alarm position by the help of momentary position:

AGMx x=1..4

AGM1 (to avtomatically insert momentary position to alarm position P1)

Alarming:

Received SMS:

NAME

ALARM:GPS.POS1:OUT

GPS receiver status:

Received SMS:

NAME

GPS:UNLOCKED (when at least one AGS is ON and GPS signal is unlocked)

Received SMS:

NAME

GPS:LOCKED (when at least one AGS is ON and GPS signal is repeatedly locked)

Other alarm functions

To generally switch-on the alarming:

ALMON

(the delay time of alarming is reset)

To generally switch-off the alarming:

ALMOFF

To generally switch-on the alarming with delay:

ALMONhh.mm.ss hh=0..24
 mm=0..59
 ss=0..59

ALMON00.02.30 (the delay of alarming for 2 minutes, 30 seconds)
(when the alarming is switched-on/off by the remote control the delay time remains the same)

To enable the switching-on/off of alarming by the remote control on the inputs D1 and D2:

REMDON

REMDON (switching-on/off of alarming is enabled)

To disable the switching-on/off of alarming by the remote control on the inputs D1 and D2:

REMDOFF

REMDOFF (switching-on/off of alarming is disabled)

To check the remote control status:

REM

Received SMS:

NAME

REMOTE ALARMS :

DIG:OFF (switching-on/off of alarming is disabled by the help of the digital inputs D1 in D2)

To receive alarm status:

ALM

Received SMS:

NAME

ALARMS:ON (the alarming is switched-on)

NAME

ALARMS:ON.DEL:00.02.30

(the alarming is switched-on with delay of 2 minutes and 30 seconds)

To check alarmed functions:

ALMCHK

Received SMS:

NAME

ALARM:IN3:LOW

Received SMS:*

NAME

ALARM:TEMP1:38.5C

Received SMS:***

NAME

ALARM:GPS.POS1:OUT

Alarm set-up

To set-up the alarming of the unit:

- Write the GSM numbers for receiving SMS to the SIM card location from 43 to 52.
- Write the phone numbers for calling to the SIM card location from 90 to 99.**
- Write the location of the first GSM number for receiving SMS to the SIM card location 8.
- Write the location of the last GSM number for receiving SMS to the SIM card location 9.
- Write the location of the first phone number for calling to the SIM card location 1.**
- Write the location of the last phone number for calling to the SIM card location 2.**
- Set all the alarms status and triggering by instructions *ADS*, *ADT*, *AAS**, *AAT**, *ATS**, *ATT** and on the models with GPS receiver also by the *AGS****, *AGT****, *AGC**** or *AGMx****.
- When the remote control is used set the switching-on/off of alarming by instruction *REMDON* and audio or other indication by instructions *RELxREM* or *OCExREM**.
- When the relays are used with alarming set the relay time by instruction *RELxALM*.
- Switch-on the alarming by instructions *ALMON* or *ALMONhh.mm.ss* or with remote control.

Other functions

To receive the status of digital inputs:

DIG

Received SMS:

NAME

D1:IN1:REM

D2:IN2:REM

D3:IN3:LOW*

D4:IN4:HIGH*

To receive the temperature on the temperature sensors:

TMP*

Received SMS:

NAME

T1:TEMP1:23.5C

To receive the momentary GPS position:

GPS***

Received SMS:

NAME

Lat:45,45.281N

Lon:013,49.892E

Altitude: 288.3m

To receive status of the digital inputs, the voltage on the analog inputs, the temperature on the temperature sensors and momentary GPS position:

SMS*

To receive GSM operator, signal, power supply voltage, accumulator voltage, GPS receiver status and software version:

MON

To define the GSM tel. number to which the SMS answer of requested instruction would be sent:

FWDx_instr x=GSM tel. number

FWD0038641123456_rel (to send the relay status on GSM tel. number 0038641123456)

To write the number to the location on the SIM card

PBWs&x& s=location on the SIM card
 x=number

PBW55&0038641123456& (to write the number 0038641123456 on the location 55)

To write the name to the location on the SIM card

PBWs&&n s=location on the SIM card
 n=name

PBW55&&kiko (to write the name KIKO on the location 55)

To write the name and number to the location on the SIM card

PBWs&x&n s=location on the SIM card
 x=number
 n=name

PBW55&0038641123456&kiko
(to write the number 0038641123456 and name KIKO on the location 55)

To delete the contents on the location on the SIM card

PBWs&& s=location on the SIM card

PBW55&& (to delete the contents on the location 55)

To receive the contents on the location on the SIM card

PBRs s=location on the SIM card

PBR55 (to receive the contents on the location 55)

SIM card locations

s&x&n s=location on the SIM card
 x=number
 n=name

Location (s):

1	&location of the first call number&	&0& - no call**
2	&location of the last call number&**	
3	password (4 digits)	
4	reserved	
5	reserved	
6	reserved	
7	reserved	
8	&location of the first SMS number&	&0& - no SMS
9	&location of the last SMS number&	
10	reserved	
11	&&IN1	
12	&&IN2	
13	&&IN3	
14	&&IN4	
15	reserved	
16	reserved	
17	reserved	
18	reserved	
19	&&REL1	
20	reserved	
21	reserved	
22	reserved	
23	&&OC1*	
24	reserved	
25	reserved	
26	reserved	
27	&&TEMP1*	
28	reserved	
29	reserved	
30	&&NAME	
31	reserved	
32	reserved	
33	reserved	
34	reserved	
35	reserved	
36	reserved	
37	reserved	
38	reserved	
39	reserved	
40	&&ACCU	
41	&&DC	
42	reserved	
43	&SMS number 1&	
44	&SMS number 2&	
45	&SMS number 3&	
46	&SMS number 4&	
47	&SMS number 5&	

48 &SMS number 6&
49 &SMS number 7&
50 &SMS number 8&
51 &SMS number 9&
52 &SMS number 10&
53 reserved
54 reserved
55 &&POS1***
56 reserved
57 &&POS2***
58 reserved
59 &&POS3***
60 reserved
61 &&POS4***
... reserved
90 &call number 1&*
91 &call number 2&*
92 &call number 3&*
93 &call number 4&*
94 &call number 5&*
95 &call number 6&*
96 &call number 7&*
97 &call number 8&*
98 &call number 9&*
99 &call number 10&*



GSM Remote Control Unit

TGR10
TGR10G

Technical Specifications

Basic, Advanced and Professional

Enclosure	DIN Rail – EN 60715 TH35
Dimensions	70 x 90 x 70 mm
Weight	160g
Power supply	12Vdc
Current Consumption	Idle: 32-38mA, Relay Energised: 70mA
Accumulator (option)	1, the same voltage as power supply
Digital inputs	2, NO, TTL, 12V
Relays	1, NO/NC/COM
GSM module	
Quad-band	E-GSM-900, GSM-850 DCS-1800, PCS-1900
SIM card interface	3V
Antenna connector	SMA
GPS module*	
GPS receiver	20-parallel channel GPS receiver
Sensitivity	-159 dBW
Antenna connector	SMA
Antenna Power Supply	3-5 Vdc

* Only 'G' models

Advanced and Reference

Digital inputs	4, NO, TTL, 12V
Digital outputs	1, open-collector
Temperature sensor interface	1, I2C interface

Reference

PC Serial Interface	1, RS-232/RS-485
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Accessories

Part Number	Description
TGR-TT02	Temperature Sensor - Temperature from -55°C to +125°C ($\pm 1^\circ\text{C}$ at 30°C), with 5m length cable
TGR-TIR01	IR Intruder Sensor - 9-14.5 Vdc, indoor, cover area 7.6 x 7.6m at height of 2.4m, 360°, 30 areas, temperature compensation, LED indicator
TGR-TIR02	IR Intruder Sensor - 12 Vdc, outdoor, cover area 12 x 15m, day and night mode, -20 - +50°C, temperature compensation, LED indicator
TGR-TF01	Smoke Sensor - 12-24 Vdc, LED indicator,
TGR-TW01	Water Inlet Sensor - Floating switch, for TGR series Remote Control Units.
TGR-TAGM 01	GSM antenna - Stubby, frequency range GSM 900MHz, GSM 1800MHz, gain 2,5dB, with SMA connector
TGR-TAGM 02	GSM antenna - Frequency range GSM 900MHz, GSM 1800MHz, gain 0dB, with 3m cable length and SMA connector
TGR-TAGP 01	GPS antenna - 3.3-4.5Vdc, center frequency 1575,42MHz, with 5m cable length and SMA connector
TGR-TAC12	Accumulator - 12V/7.2Ah

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