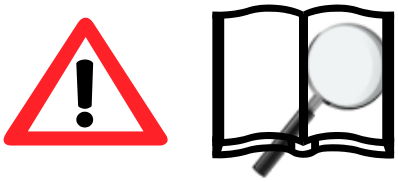
SMS Sanayi Malzemeleri Üretim ve Satışı A.Ş.

TORK GA 21 EX PROOF TYPE GAS ALARM DEVICE



READ THE INSTRUCTIONS BEFORE USE

CONTENTS

OPERATING PRINCIPLE 3

BASIC INFORMATIONS 3

OPERATING AREAS 3

TECHNICAL SPECIFICATIONS 4

MOUNTING 5

Mounting Steps 6

Warnings for Mounting 7

Parallel (Multi) Mounting 8

Single Electrical Connection 8

Multi Electrical Connection 9

WARNINGS 10

MAINTENANCE 11

TROUBLESHOOTING 11

CARRYING 11

HOW TO ORDER 11

WARANTEE 11

FIRM INFORMATIONS 12

OPERATING PRINCIPLE

Gas alarm device is a gadget detecting the explosive gasses in environment. Ingredients of the detected gasses can be one of these gasses; methane (CH4), propane (C3H8) and butane (C4H10) or mixture of these gasses. Natural gas is mostly methane gas. LPG is made of butane gas, propane gas is mixture of these two gasses. After 1.5 minutes calibrating time (sensor's heating time), device gets active. Before calibrating time is up, don't use any testing gas. After calibrating time, if there is any gas leakage over the limits, the sensor detects the gas in 10 seconds at the latest and gives an audible alarm. As long as the gas leakage is upper levels, device goes on to giving alarm. When the leakage level is lower than alarm level, device change to normal condition instinctively, gets ready to detect. If there is no electricity, device does not work. If closing the gas valve or aspirating the gas is wanted when the alarm condition, the output relay of the gas alarm device can be used for it.

BASIC INFORMATION

Ex proof gas alarm device, is designed for alerting if there is any leakage of LPG or natural gas on potentially explosive areas like industrial kitchens, boiler rooms, gasoline stations etc. It's a continuous working and installed on constant place device. Because of its relay output other devices like solenoid valve, aspirator, siren etc. can be controlled. The minimum concentration of a particular combustible gas necessary to support its combustion in air is defined as the Lower Explosive Limit (LEL) for that gas. LEL value of natural gas is %5 and LPG's LEL value is %2. Before LEL values not reaching these levels' one fifth, gas alarm device detects the leakage and gives alarm.

If gas level in the environment wanted to be observed, devices 4- 20 mA output can be used. According to gas level in the environment, device's 4- 20 mA output gives signal between 4 – 20 mA.

• Alarm level for natural gas is % 0.5 or 5000ppm (parts per million).

• Alarm level for LPG is %0.3 or 3000ppm (parts per million).

OPERATING AREAS

The ex proof gas alarm device is used in industrial kitchens, boiler rooms, gasoline stations or like these explosive areas.

TECHNICAL SPECIFICATIONS

<table>
<tr><td colspan="2">Detecting Gasses:</td><td>Natural Gas, LPG (Liquefied Petroleum Gas)</td></tr>
<tr><td colspan="2">Sensor Type:</td><td>Semiconductor (5V±0,1)</td></tr>
<tr><td colspan="2">Main Body Material:</td><td>Aluminium</td></tr>
<tr><td colspan="2">Operating Voltage:</td><td>12 - 24V AC/DC</td></tr>
<tr><td rowspan="3">Output Signal:</td><td>Contact of Relay 1</td><td rowspan="3">7A 28VDC-5A 240VAC (dry contact)
7A 28VDC-5A 240VAC (dry contact)

4-20mA</td></tr>
<tr><td>Contact of Relay 2</td></tr>
<tr><td>Analog Output Signal</td></tr>
<tr><td colspan="2">Power Consumption:</td><td>4W</td></tr>
<tr><td colspan="2">Noise Level:</td><td>85 dB</td></tr>
<tr><td colspan="2">Audible Alarm:</td><td>Piezoelectric Buzzer</td></tr>
<tr><td colspan="2">Response Time:</td><td>< 10 second</td></tr>
<tr><td colspan="2">Calibration Time</td><td>1,5 min.</td></tr>
<tr><td colspan="2">Operating Temperature:</td><td>-10 °C…+50°C</td></tr>
<tr><td colspan="2">Relative Humidity:</td><td>0-95%</td></tr>
<tr><td colspan="2">Protection Class:</td><td>II G Ex d IIB T6 IP65</td></tr>
<tr><td rowspan="3">Switch Positions (DSW1):</td><td>I_OUT(ON)
I_OUT(OFF)</td><td>4-20 mA Analog Output Signal is Active
4-20 mA Analog Output Signal is Pasive</td></tr>
<tr><td>ALARM(ON)
ALARM(OFF)</td><td>Alarm can ve active
Alarm can’t be active</td></tr>
<tr><td>I_OUT(ON)
ALARM(ON)</td><td>Alarm and 4-20 mA Analog Output Signal is Active</td></tr>
<tr><td>I_OUT(OFF)
ALARM(OFF)</td><td>Alarm and 4-20 mA Analog Output Signal is Pasive</td></tr>
<tr><td colspan="2">Sensor Sensitivity Setting:</td><td>0 V - 3,5 V</td></tr>
<tr><td colspan="2">4-20 mA Analog Output Signal (ZERO)-(Span) Setting :</td><td>Lower limit setting with ZERO potentiometer
Higher limit setting with Span potentiometer</td></tr>
<tr><td colspan="2">Operating Areas:</td><td>industrial kitchens, boiler rooms, gasoline stations or like these explosive areas.</td></tr>
<tr><td colspan="2">Earthquake Sensor (Optional):</td><td>Senses the vibration during the earthquake and activates the alarm and relay output during 30 seconds.</td></tr>
</table>

Referance Standarts: TS EN 50194-1, TS EN 60079-0, TS EN 60079-1, TS12884

MOUNTING

Device must be mounted according to the dimensions in the Fig 1.

DEVICE MUST BE MOUNTED BY AN EXPERT!

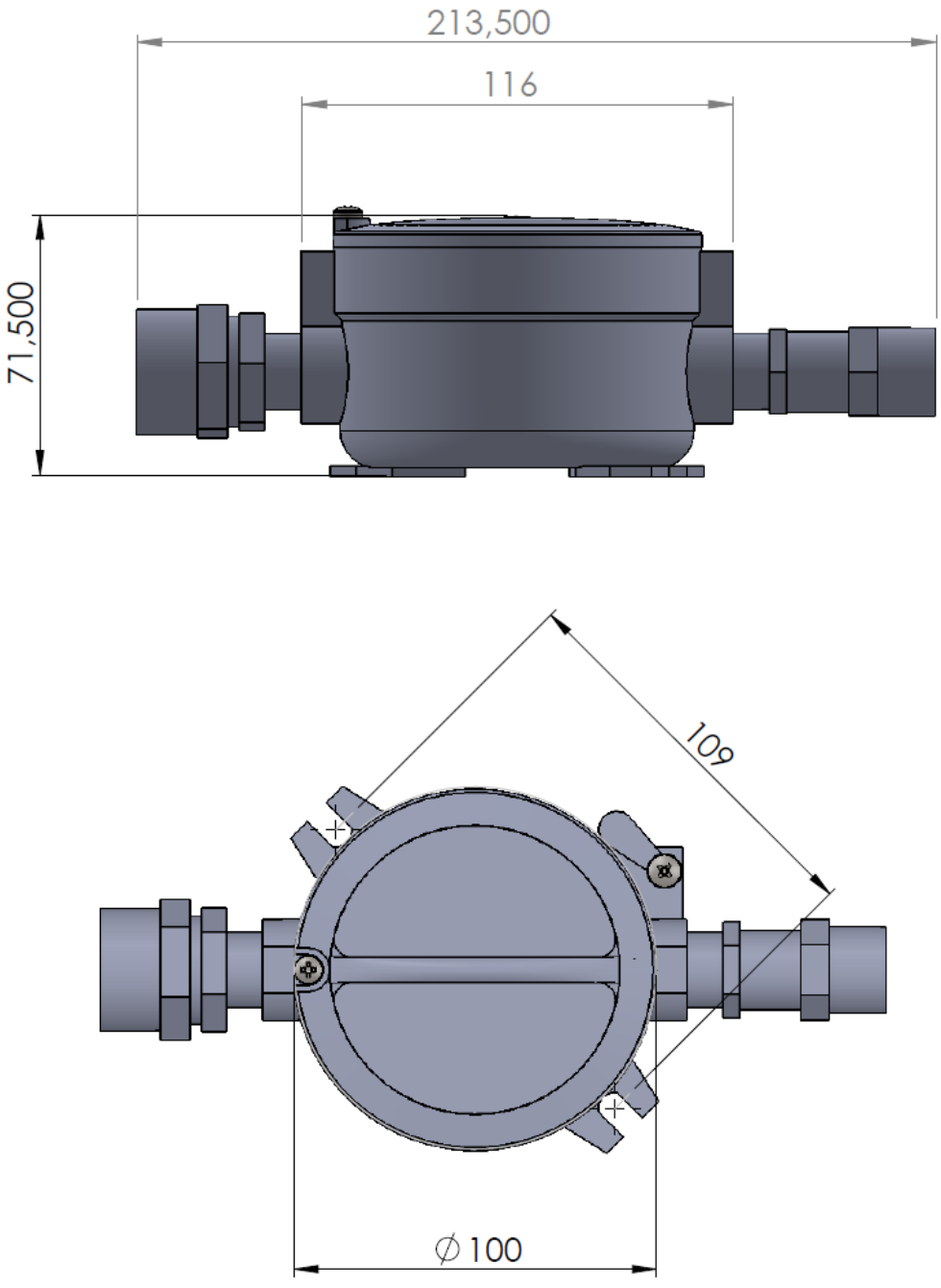


Fig 1. Installation of gas alarm device in explosion proof body

Mounting Steps

- The device must be installed in explosive area.
- For mounting screw holes must be used.

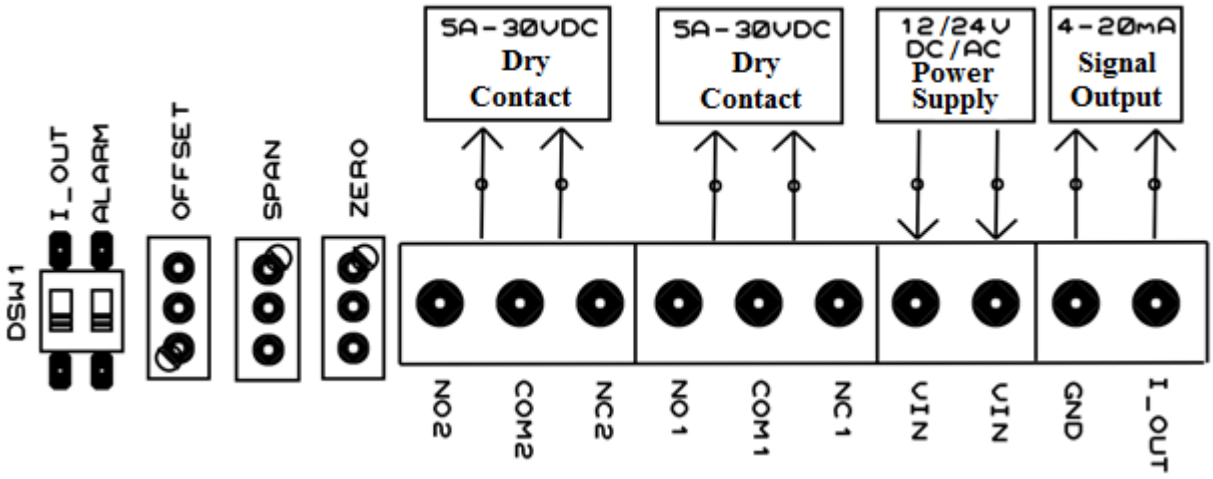


Fig 2. Wiring Schema

NC1 and NC2 are the Normally Closed terminals of the relays. The device wanted switched off during the alarm condition must be connected to these terminals.

NO1 and NO2 are the Normally Open terminals of the relays. The device wanted switched on during the alarm condition must be connected to these terminals.

COM1 and COM2 are the common terminals of the relays. The given voltage from COM is come out from NO or NC terminals according to the condition.

With taken signal from the 4 – 20 mA output, gas level in the environment can be observe until %20 LEL. Device is set to %10 - %13 LEL in factory settings.

With the Zero-Span potentiometers, 4 – 20 mA output can be set. While the lower limit current is setting with ZERO potentiometer, upper limit current can be set with Span potentiometer.

With the OFFSET potentiometer alarm sensitivity can be set. This setting can be change with sensor type and sensitivity.

Earthquake sensor (VIB_SENSOR) is optional. It senses the vibration during the earthquake and activates the alarm and relay output during 30 seconds.

DSW1 contains 2 switches as “I_OUT” and “ALARM”. When I_OUT switch is on, 4 – 20 mA output signal is active; when the ALARM switch is on, device can give audible alarm.

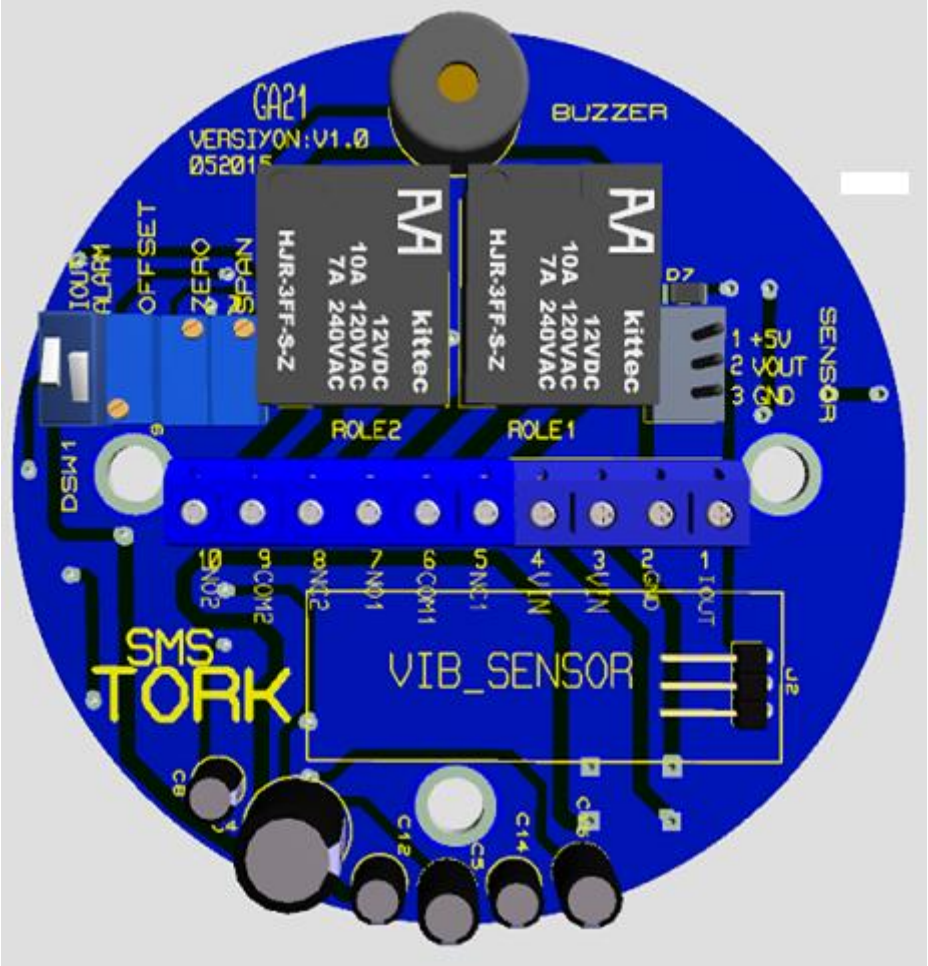


Fig 3. PCB view

Warnings for Mounting

Natural Gas

Natural gas is lighter than air. During the leakage natural gas rises up to ceiling and gathers there. So gas alarm sensor must be mounted 5-15cm down from ceiling and projective 1-2m away from leakage supply. This place must be higher than the highest door or window opening.

LPG

LPG is heavier than air. During the leakage LPG goes down and spread to floor. So gas alarm sensor must be mounted 15-25cm higher from the floor and projective 1-2m away from leakage supply. This place must be away from doors or windows.

Parallel (Multi) Mounting

Collecting more than one gas alarm device's output signals and connect to devices wanted to control automatically, is parallel mounting. You can use the Fig 4 for parallel mounting.

Single Electrical Connection

This installation is done when only one device will be mounted as in the **Fig 4.**

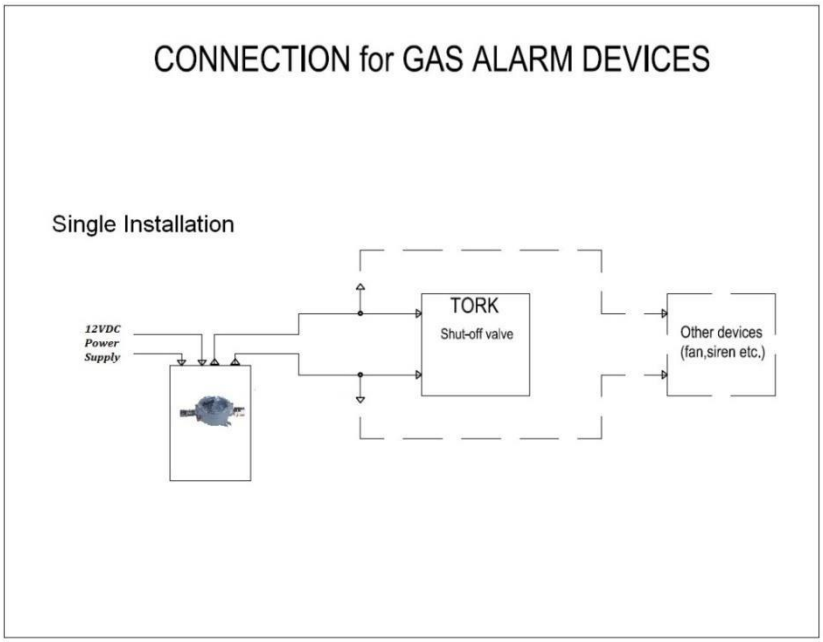


Fig 4. Single electrical connection of Gas Alarm Device

Multi Electrical Connection

This installation is done when more than one device will be mounted as in the **Fig 5.**

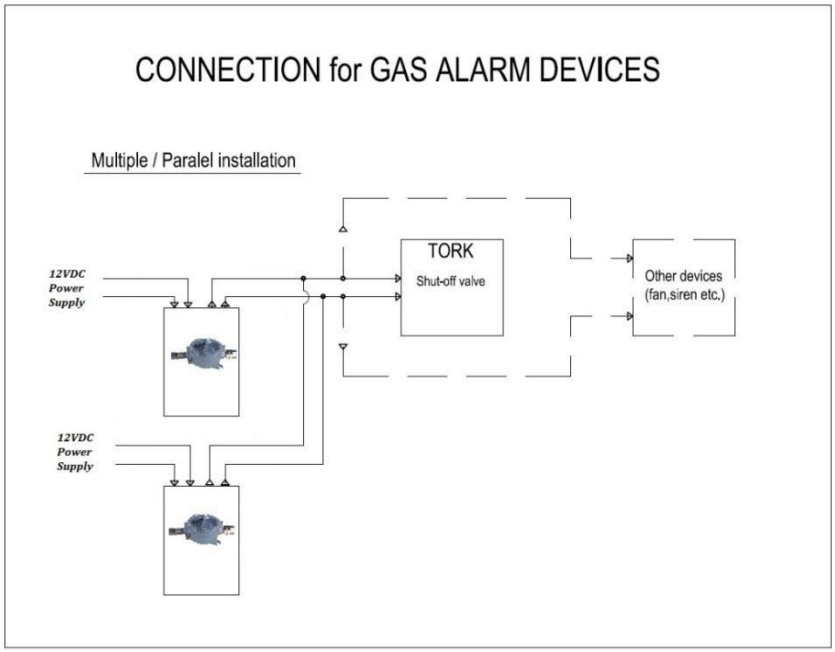


Fig 5. Multi Electrical Connection of Gas Alarm Devices

Sensor must not be mounted to these places below!

Over to the stoves,

Over to the cowls,

Near to the aspirators,

Closed places like cabins,

Steamy places,

Too hot places. The sensor works up to 50 °C ambient temperature. Don't mount the sensor hotter places than this ambient temperature.

One gas alarm sensor can protect 50m2 area. For separated areas, even if a small wall, must be used different gas alarm sensors.

WARNINGS

During the alarm condition actions be taken are below.

• Calm down.

• Don’t use any electric device. Don’t on or off any of them.

• Don’t plug, unplug any electric device.

• By opening doors and windows, ventilate the area.

• Don’t use any matches and lighter.

• Don’t use the door bell. Never let anybody use it.

• Close the gas valve starting with the nearest one.

• According to flame risk don’t use any mobile phone or walky talky.

• Get contact with the expert gas distribution company in proper place.

• If there is any fire deflate it.

If there is a flaming on natural gas, it is useless, also dangerous that trying to deflate the flame without closing the valve. If you smell the gas without alarm, follow the warnings up without waiting the alarm. Despite to preventions, if gas alarm goes on and the alarm reason can’t be found, empty out the area. To check the fittings, to make them safe and to required repair get in contact with the gas distributor company or get in contact with 7/24 accessible natural gas emergency.

If the gas concentration decrease the under the alarm level, alarm sound will be cut off instinctively.

• Alcohol and such as stuff steams, sprays, high density smoke, lighter gas, pungent cleaning materials can confuse the gas alarm sensor and reason wrong alarm.

• Device’s main body must not be opened. Otherwise there can be a shock and device can work irregular.

• During operation the operating conditions must be exactly followed, like technical specifications, operating temperature and pressure.

• Before the installation, control the device whether any damage on it. Before the giving energy to the device control all the installation.

MAINTENANCE

The device must be controlled once in a year at least. For testing, don't release the gas to all of the area. Otherwise it can be dangerous. The device sensor must be cleaned with a soft cloth or brush and non alcoholic cleaning materials.

TROUBLESHOOTING

If too many current pass from the output more than the limits, the output of the device can be damaged. In these conditions device must be send to the authorized service. This condition is not under warranty cover.

CARRYING

Device must be carried with its own carton box. During the carrying too many weight as damaging the device, must not be put on the device's box.

HOW TO ORDER

GA **21** Gas Alarm Device in Ex Proof Aluminum Housing

WARANTEE

The warranty of usage is 2(two) years beginning from the selling date, according to the production faults. Service and spare parts are covered by producer firm. If device is not used under the conditions given at order, it's not under warranty. And if the device's body is opened by no authorized person, again it's not under warranty.

Device must be used under conditions given at label on the tailboard and user manual. It's under warranty cover if only used in these conditions.

For taking advantage of warranty, apply to the firm with confirmed warranty certificate in warranty period. If the device will be sent with cargo; explanation of plaint, copy of the warranty certificate, your contact address and phone number must be added. Round-trip costs belong to the customer.

FIRM INFORMATIONS

SMS SANAYI MALZEMELERI

URETIM VE SATISI A.S.

Y. Dudullu, Bostanci Yolu Kuru Sk. No:16

Umraniye 34776 Istanbul

Tel: +90-216 364 34 05

Fax: +90-216 364 37 57

E-mail: tork@sms-tork.com.tr

www.sms-tork.com

Factory Address: Cerkesli OSB Mah. IMES 5. Cadde No:6 Dilovası IMES OSB Kocaeli/ TURKEY

Tel: +90 262 290 20 20

Fax: +90 262 290 20 21

T.R. MINISTRY OF INDUSTRY AND COMMERCE CONSUMER AND COMPETITION PROTECTION GENERAL DIRECTORATE

Issue Date and Number: 28.11.2013-41513

Date of Validity: 28.11.2015

In the usage of this document it permitted, according to the law about Protection of Consumer with number 4077; and as regards implemented regulations, Regulations of Guarantee Certificate Application Principles, according to this law, by T.R. Ministry of Industry and Commerce Consumer and Competition Protection General Directorate.

Producer and Importer Firm's

Name: SMS SANAYI MALZEMELERI URETIM VE SATISI A.S.

Central Address: Y.Dudullu, Bostancı Yolu Kuru Sk. No: 16, 34776 Umraniye Istanbul-TURKEY

Tel: 0216 364 34 05

Fax: 0216 364 37 57

Type of Product: Gas Alarm Device

Brand Name: TORK

Cost:

Banderol and Serial No:

Delivery Date and Place:

Warranty Period: 2 Years

Maximum Repair Period: 20 Workdays

Name of Seller Firm:

Adress:

Tel:

Fax:

Date and Number of Bill:

PETEK ECE TİRYAKİOĞLU

In the Name of Ministry

VICE GEN. DIRECT.

This document can be justified from www.tuketici.gov.tr internet address.


TÜRK STANDARDLARI ENSTİTÜSÜ
İMALATA YETERLİLİK BELGESİ
T.C.
SANAYİ VE TİCARET BAKANLIĞI
GARANTİ BELGESİ
SATIŞ SONRASI HİZMETLERİ
TÜRK LOYDU
TYPE APPROVAL CERTIFICATE
TÜV CERT
ZERTIFIKAT
Certificate
CERTIFICADO ◆ CERTIFICAT
Certificate
Standard ISO 9001:2008
Certificate Holder: SMS Sanayi Malzemeleri Üretim ve Satışı A.Ş.
Scope: Design, Manufacturing and Sales of Actuators, Solenoid Valves, Pneumatic Piston Valves, Switchboxes and Pulse Valves
Validity: The certificate is valid from 2010-06-30 until 2013-05-27
First certification 2004
Istanbul, 2010-06-30
TÜVRheinland
Precisely Right.