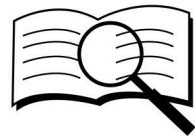




## TORK GA 20 TYPE GAS ALARM DEVICE & GL.01 EX PROOF SENSOR HOUSING USER MANUAL



Read the instructions before use !

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## 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 (CH<sub>4</sub>), propane (C<sub>3</sub>H<sub>8</sub>) and butane (C<sub>4</sub>H<sub>10</sub>) or mixture of these gasses. Natural gas is methane gas. LPG is made of butane gas, propane gas or mixture of these two gasses. When the gas alarm device is supplied with 230V AC 50/60Hz voltage, green LED lights. 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 visual and 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. From the output 230V AC voltage and current lower form 7A can be supplied.

This system consists 3(three) parts.

- 1. Main Body:** Sensor is connected to this body with a cable. Visual and audible alarm is in it. This body is **not ex proof and must not be used in explosive area. This is the GA 20 Gas Alarm Device.**
- 2. Cable:** Cable connects the sensor to the body with a connector. On request it can be produced in different lengths. It's not ex proof in standard production but on request it can be ex proof.
- 3. Gas Sensor with Ex Proof Housing:** Sensor is covered with an ex proof housing. This part must be mounted in explosive area.

Ex proof sensor housing and cable is together GL.01 Ex Proof Sensor Housing.

## BASIC INFORMATION

Gas leakage sensor with ex proof housing, is designed for alerting if there is any leakage of LPG or natural gas on potentially explosive areas like an industrial kitchen or on a boiler room. 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 or vapor 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.

- 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 gas alarm device with ex proof sensor housing is used in industrial kitchens and boiler rooms or like these explosive areas.

## TECHNICAL SPECIFICATIONS

Detecting Gasses	Natural Gas(methane), LPG(Liquefied Petroleum Gas)
Device Type	A type(Visual alarm, audible alarm and output signal)
Visual Warning	Green-System Active, Red-Alarm, Yellow-Fault
Sensor Type	Semiconductor ( 5V±0,1)
Body Material	ABS
Calibration Time	1,5 minutes
Reaction Time	<10 seconds
Audible Warning	Piezoelectric Buzzer
Volume:	85dB
Operating Voltage	230VAC +- %10, 50/60Hz
Output Signal(Relay Contact)	230V AC 7A NO
Power Consumption	3W
Operating Area	Industrial Kitchens and Boiler Rooms
Sensor Protection Class	II G Ex mb IIB T6 IP65
Operating Temperature	-10°C....+50°C
Relative Humidity	0-95%
Body Dimensions	60mm x 100mm x 45mm
Estimated Device Life	5 years

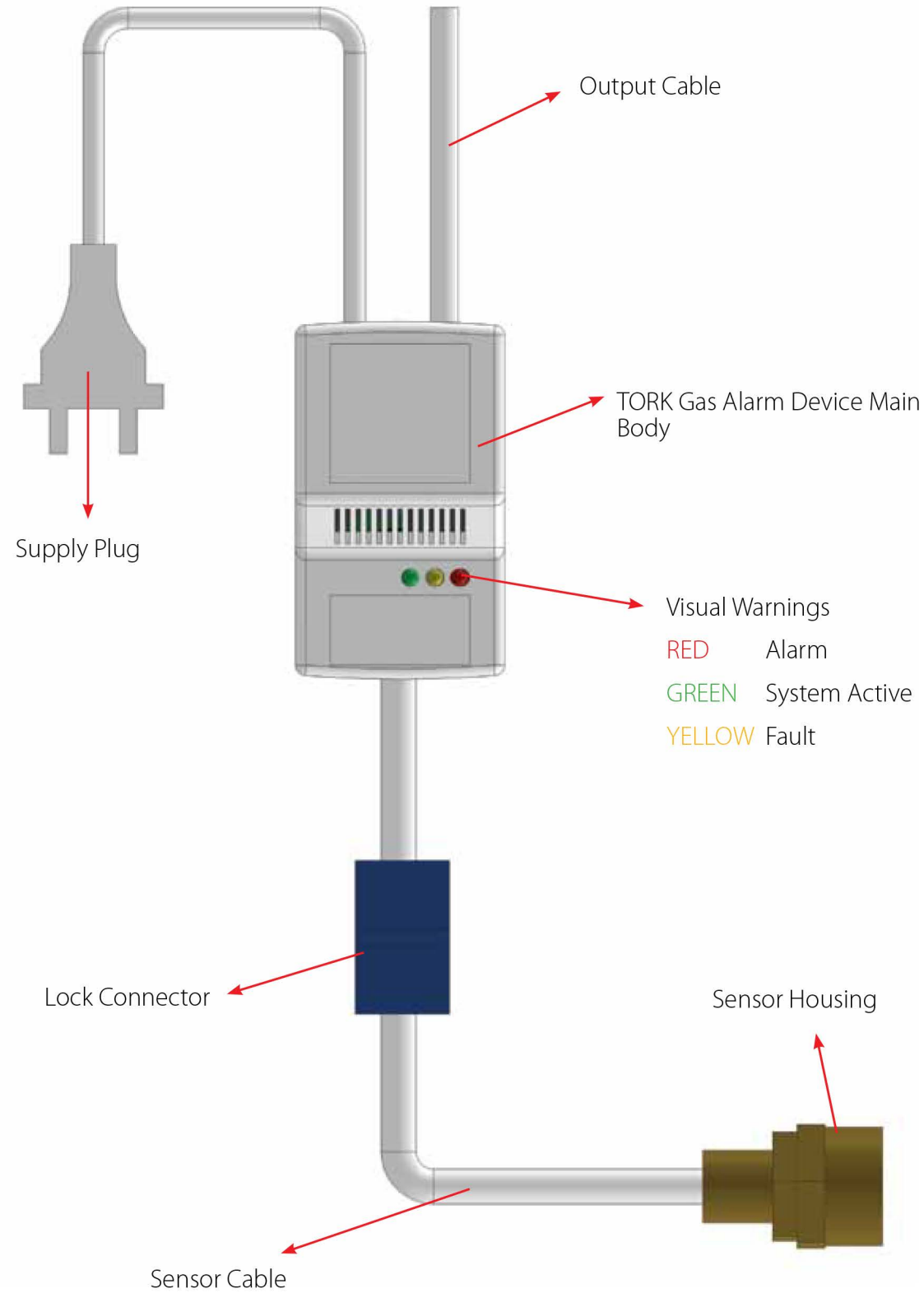
Reference Standards: TS EN 50194-1, TS EN 60079-0, TS EN 60079-18

Table 1. Technical specifications.

Cable Length [m]	Cable Cross Section [mm <sup>2</sup> ] X3	Resistance [ohm]	Voltage Drop [V]	Current [V]
5	0,5	0,178	0,0267	0,15
10	0,5	0,356	0,0534	0,15
15	0,5	0,534	0,0801	0,15
20	0,5	0,712	0,1068	0,15

Table 2. Voltage drops of different sensor cable lengths





## MOUNTING

Device must be mounted like in the Fig 1.



**DEVICE MUST BE MOUNTED BY AN EXPERT!**

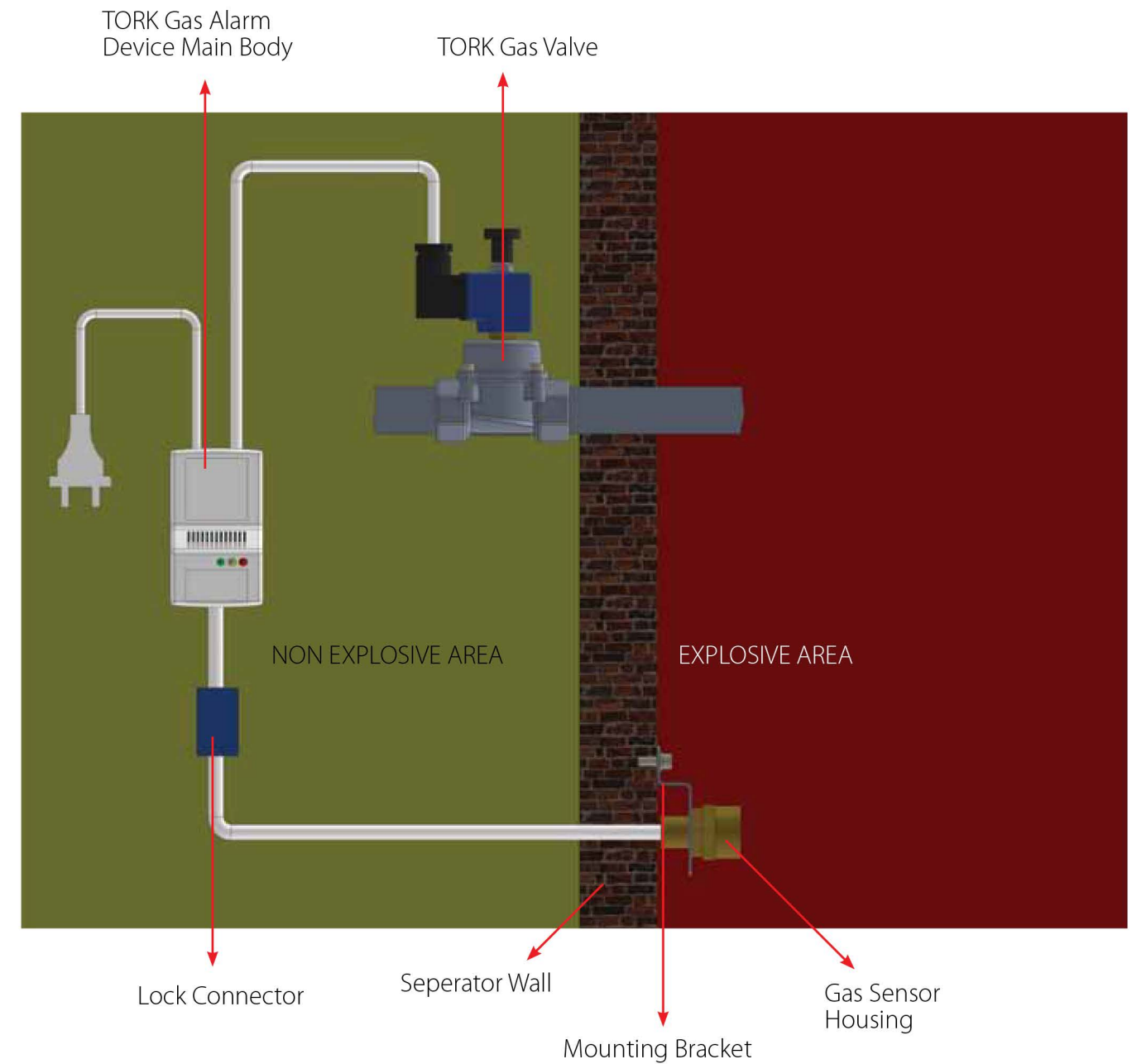


Fig 1. Installation of Gas Alarm Device with Ex Proof Sensor Housing



## Mounting Steps

- The main body must be installed in non explosive area.
- A hole on the wall must be drilled with 22 bore bit.
- The cable must be passed through the hole in the wall and the sensor housing must be installed in this hole with its bracket. After installation the hole's sealing must be provided.
- For bracket mounting use the accessories coming with the product(bolts and dowels for walls, bolts, nuts and washers for boilers).
- The cable in the non explosive area must be fixed to the wall with cable clamps.
- The cable must be fastened up to the main body with its connector.

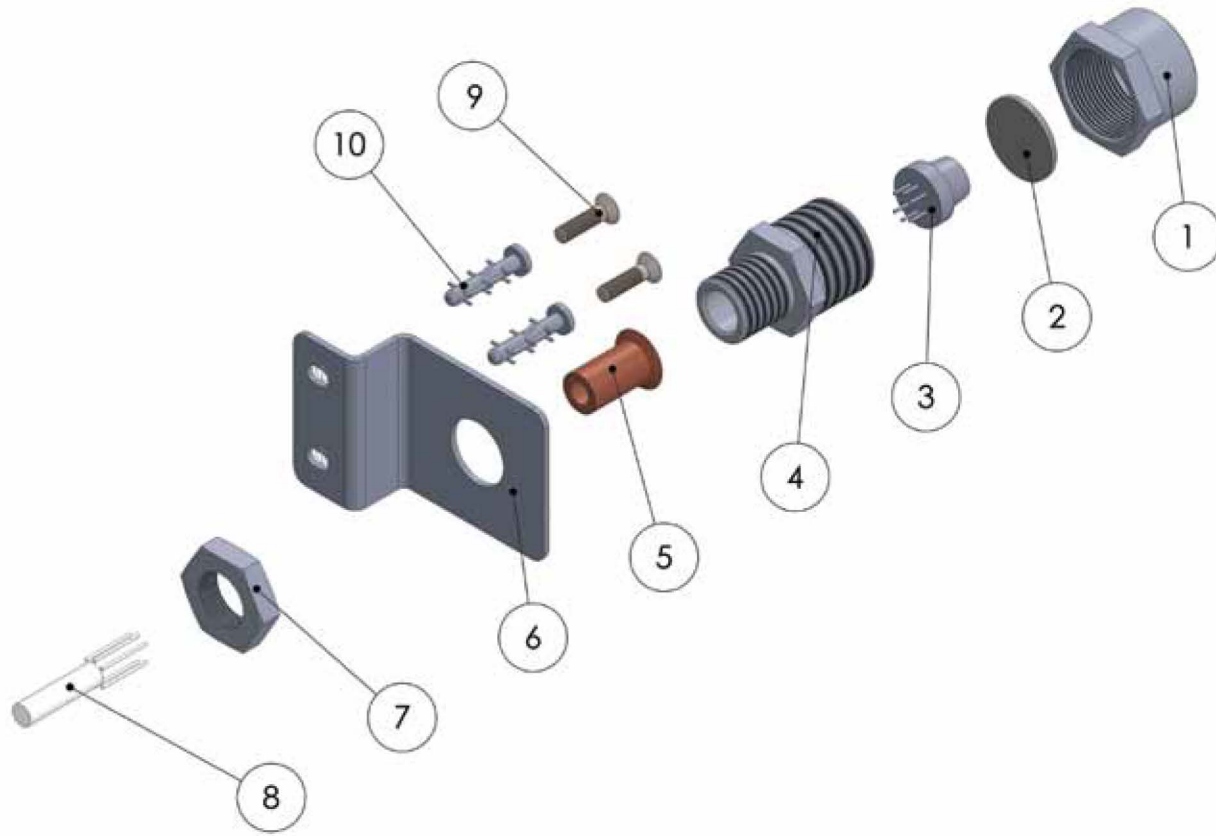


Fig 2. Exploded drawing of sensor housing and accessories.

10	DOWEL	PLASTIC	2
9	SCREW DIN 97	STAINLESS STEEL	2
8	CABLE		1
7	BRACKET NUT	BRASS	1
6	BRACKET	GALVANIZED SHEET	1
5	RESIN		1
4	SENSOR HOUSING BODY	BRASS	1
3	SENSOR		1
2	FILTER	STAINLESS STEEL	1
1	SENSOR HOUSING COVER	BRASS	1
<b>NO</b>	<b>PART NAME</b>	<b>MATERIAL</b>	<b>QUANTITY</b>

Table 3. Part list of the exploded drawing.



Cable (if it's not ex proof) and main body must be in the non explosive area! If you want to use ex proof cable, device can be produced with an ex proof cable on your request.



Changing on the cable can be done by only producer firm. If you have a request about changing cable type (ex proof or etc) or cable length apply to the company.



If the sensor is not mounted as in the Fig 1, it's not proper to the ex proof conditions and it doesn't provide the safety!



**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.

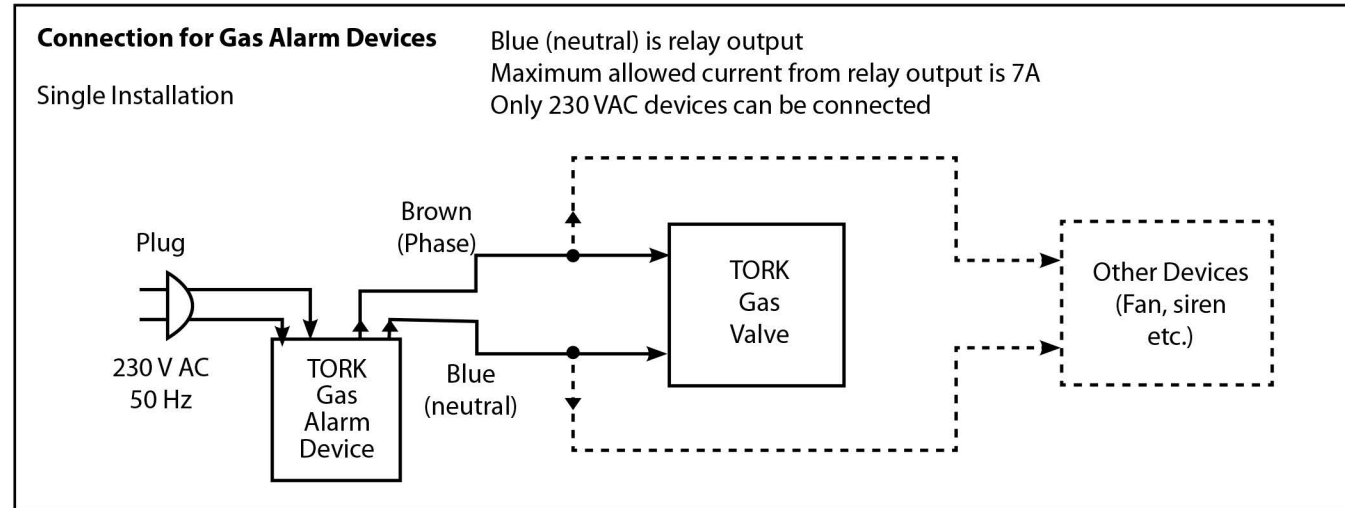


Fig 3. Single Electrical Connection of Gas Alarm Device

## Multi Electrical Connection

This installation is done when more than one device will be mounted.

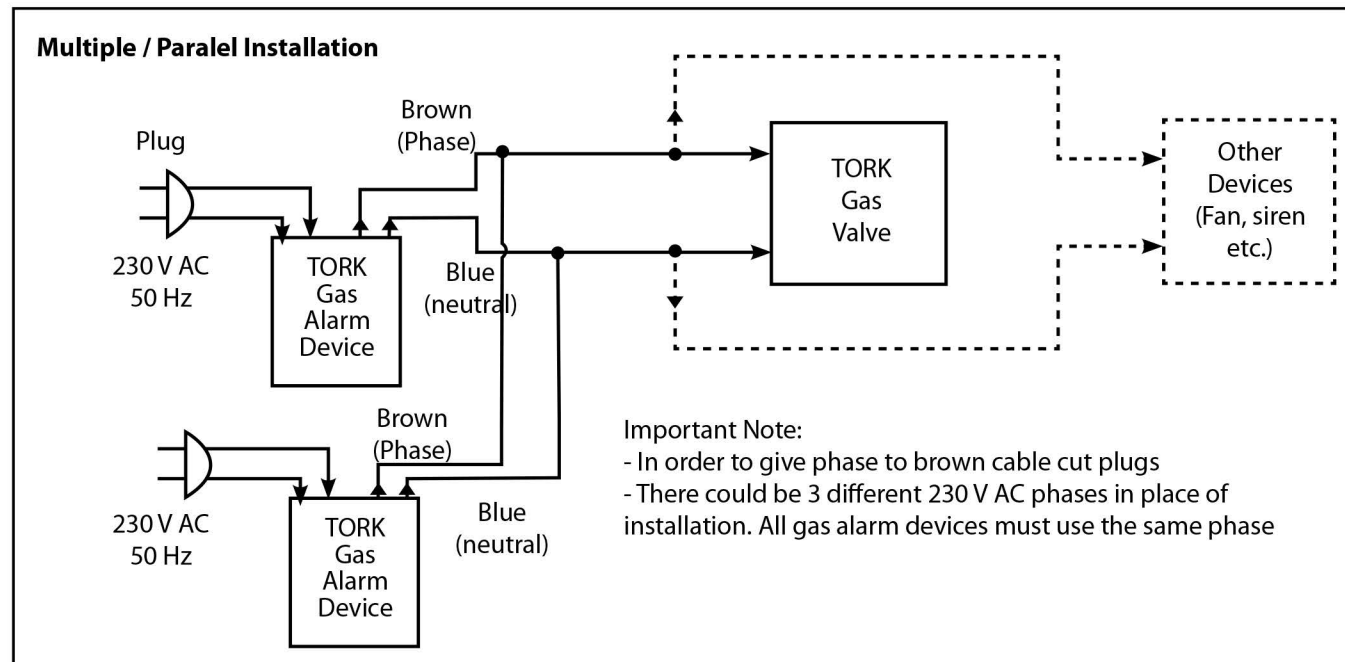


Fig 4. Multi Electrical Connection of Gas Alarm Devices

## Mounting Warnings



**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.

Don't put any stuff in front of the sensor, prevent from blocking the sensor.

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.
- If relay output cable will not be used, don't open the isolation on its ending.
- 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 main body and gas 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.

If YELLOW LED lights the sensor is faulted and the device must be send to the authorized service.

## 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.

## 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.

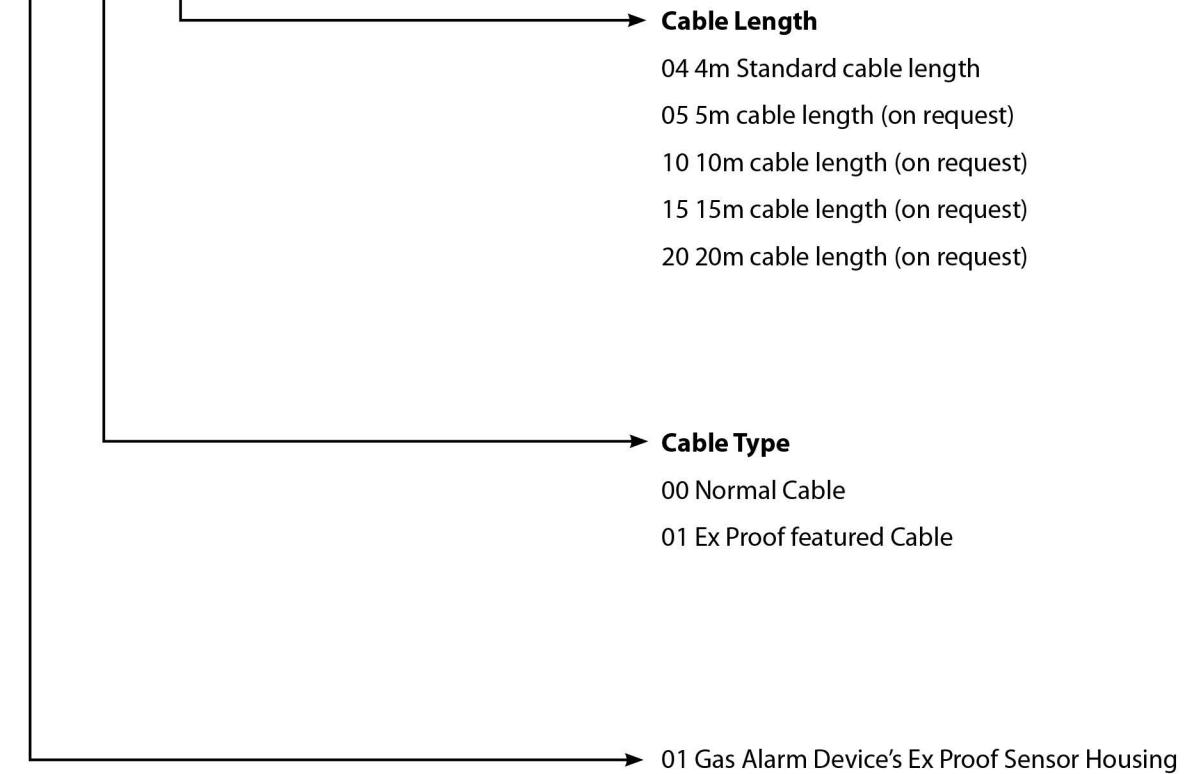
Device must be used under conditions given at label on the tailboard and user manual. It's under warranty cover if only used in these conditions.

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.

## HOW TO ORDER

GL.01 Ex Proof Sensor Housing must be used only GA 20 Gas Alarm Device.

### GL 01.00.04



## FIRM INFORMATIONS

SMS SANAYİ MALZEMELERİ  
ÜRETİM VE SATIŞI A.Ş.

Y. Dudullu, Bostancı Yolu Kuru Sk. No:16  
Ümraniye 34776 İstanbul Turkey  
Tel:+90-216 364 34 05  
Faks:+90-216 364 37 57  
e-posta: tork@sms-tork.com.tr  
www.sms-tork.com.tr / www.sms-tork.com

## PRODUCER FIRM

Tasarım Elektronik ve LED Aydınlatma

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Kocaeli Turkey  
Tel: +90-262 655 90 94  
Fax: +90-262 655 84 02  
info@tasarim-elektronik.com



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

Issue Date and Number: 28.11.2013-41513

Date of Validity: 22.07.2013

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 MALZEMELERİ ÜRETİM VE SATIŞI A.Ş.

Central Address : Y.Dudullu, Bostancı Yolu Kuru Sk. No: 16, 34776 Ümraniye İstanbul-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

Minimum Repair Period : 20 Workdays

Name of Seller Firm :

Address :

Tel :

Fax :

Date and Number of Bill :

PETEK ECE TIRYAKIOĞLU  
In the Name of Ministry.  
VICE GEN. DIRECT

This document can be justified from [www.sanayi.gov.tr](http://www.sanayi.gov.tr) internet address

SMS-TORK Endüstriyel Otomasyon Ürünleri San. Tic. Ltd. Şti.

[www.smstork.com](http://www.smstork.com)

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BRANCH OFFICE Bostancı Yolu Kuru Sok. No16/3 Y. Dudullu Ümraniye İstanbul - TURKEY P +90 216 364 34 05 F +90 216 364 37 57

**AT UYGUNLUK BEYANI**

Elektro Manyetik Uyumluluk Direktifi 2004/108/AT (EMC) ve Alçak Gerilim Yönetmeliği 2006/95/EEC LVD göre According to Electromagnetic Compatibility Directive (EMC) 2004/108/EC and Low Voltage Directive (LVD) 2006/95/EEC

**Üretici/Manufacturer : SMS Sanayi Malzemeleri Üretim ve Satışı A.Ş.**  
Y. Dudullu, Bostancı Yolu Kuru Sk. No:16,  
34776 Ümraniye İstanbul - Türkiye

**Ticari Marka/Trade Mark : TORK**

**Ürünler/ Products : GA 20 (Doğalgaz ve LPG için ) tipi gaz alarm cihazı/ GA 20 (for Natural gas and LPG) type of gas alarm dedector**

**Uyumlu direktifler/According to standards:** Elektromanyetik Uyumluluk Direktifi 2004/108/AT (EMC) ve Alçak Gerilim Yönetmeliği 2006/95/EEC (LVD) 2006/95/EEC

**Uyumlu Standartlar / According to Standards:** EN 60335-1:2002, TS EN 50194-1, TS EN 50270 2006, EN 61000-3-2:2006, EN 61000-3-3:1995+A1:2001, EN 61-4-5:2006, EN 61-4-8:1993+A1:2001, EN 61000-4-11:2004, EN 61000-4-3, EN 61000-4-2, EN 61000-4-4, EN 61000-4-6, EN 55022, TS EN 60079-0, TS EN 60079-18

**Uygulanan Diğer Onaylar/ Other Applicable Approvals:** TÜV Rheinland tarafından onaylanan EN ISO 9001-2000/Certificate of Approval,

En ISO 9001-2000 TÜV Rheinland

**Beyan / Declaration:** İmalatçı firma olarak CE ile işaretlenmiş yukarıdaki ürünlerimizin bu belgede belirttiğimiz direktif ve standartlara revizyonlarıyla birlikte uygun olduğunu beyan ederiz./As Manufacturer company declares that the items which signal with CE are convenient to standards and directives including their amendments. Ürünün bir sistemle entegre olarak ya da diğer bir birimle birleştirilerek kullanıldığı durumlarda direktiflerle uyumluluk yalnızca ürünü kapsar. Sistem üreticisi sistemin tamamının direktiflere uyumluluğundan sorumludur. Onayımız alınmadan cihaz üzerinde değişiklik yapıldığında bu beyan geçerli değildir./The compliance with Directives applies only to the product if the product is integrated in a system or combined with other units. The system manufacturer is responsible for the compliance of the complete system with Directives. By altering the device without approval the declaration would invalidate.

**ÜRETİCİ / MANUFACTURER**

**Yetkili ad ve soyad/ Authorized Name:** Enver KAYA

**Yetkili İmza/ Authorized signed:** Kaşe İmza Logosu

**Ünvanı/Title:** Genel Müdür / General Manager

**Tarih/ Issue Date:** 25.03.2013

SMS-TORK Endüstriyel Otomasyon Ürünleri San. Tic. Ltd. Şti.

[www.smstork.com](http://www.smstork.com)

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## WARRANTY CONDITIONS

1. If there is a fault caused by the production, the manufacturer will repair or replace the defective product in its sole discretion.
2. The warranty period is two (2) years and starts from the date of delivery of the product to consumers.
3. All products, including all sub-parts, covered by our warranty.
4. The maximum repair time is one (1) month and starts from the products' arrival date to SMS factory.
5. Within the warranty period, both in material and workmanship, as well as in case of manufacturing defects, products will be repaired without any charge under any name (labor costs, or the cost of replaced parts).
6. During the warranty period, provided that the products will be exchanged free of charge if the fault is sourced by production.
7. Damages caused by the using of the product contrary to the points listed in the operating instructions are excluded from warranty coverage.
8. If there are complaints about the product please contact customer relations manager firstly.
9. For return or repair-maintenance of products send them to the factory to the customer relations department.
10. If products come to the factory, it doesn't mean acceptance of return and received by officers. Returns accepted, with the approval of the examination will be only after the relevant department managers.
11. Consult to General Directorate of Consumer and Competition Protection of the Ministry Industry and Commerce of Turkey about the issues may arise with warranty certificate.

## EXCLUSIONS OF WARRANTY (USAGE DEFECTS)

1. Malfunctions occurring after the expiration of the statutory warranty,
2. The faults caused by improper use of the product by the user, (improper using to the instruction manual),
3. Any relevant malfunctions caused by other equipment in use,
4. Changes and damages not caused by the product manufacturer; for example, the case of the opening of the product by not authorized workshops,
5. All failures depend on the system (electricity, air, etc),
6. Failures depend on the intervention of unauthorized service,
7. Products with damaged or destroyed warranty label,
8. In case of damage to outer surface of the product,
9. The faults in the caused by falling, hit, etc,
10. Faults occurred on dusty, damp, extreme heat or cold environments,
11. Faults caused by natural disasters such as flood, fire, earthquake, lightning, etc,
12. Faults caused by electrostatic discharge (ESD) damage.





## WARRANTY CERTIFICATE

Manufacturer : SMS SANAYİ MALZEMELERİ ÜRETİM VE SATIŞI A.Ş.  
Adres : Head Office: Bostancı Yolu Kuru Sokak No:16 Yukarı Dudullu  
34776 Ümraniye İstanbul TURKEY  
Tel: +90 216 364 34 05 Fax: +90 216 364 37 57  
Plant: İMES OSB. 5. Cadde No: 6 Çerkeşli OSB Mah. Dilovası Kocaeli TURKEY  
Tel: +90 262 290 20 20 Fax: +90 262 290 20 21

Product : GAS ALARM DEVICE

Trade Mark : TORK

Model : .....

Serial Number : .....

Delivery Place & Date : .....

Warranty Period : 2 Years

Max. Repair Time : 20 working days

Seller / Distributor : .....

Address : .....

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.....

### Seller / Distrubutor Representative

Name / Surname:

Title:

Date:

Signature:

Signature:







**HEAD OFFICE** Bostancı Yolu Cad, Kuru Sok, No16 Y. Dudullu, 34776 Ümraniye İstanbul - TURKEY

**FACTORY** İMES O.S.B. 5. Cad, No6 Çerkeşli O.S.B. Mah, Dilovası Kocaeli - TURKEY

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