



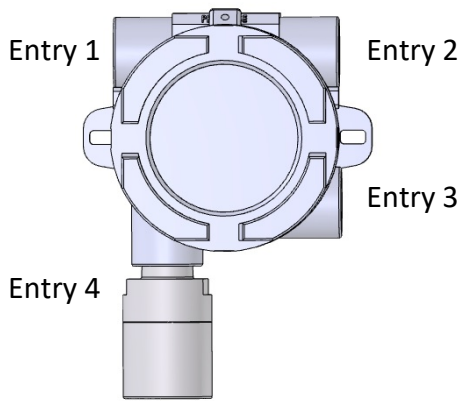
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PLEASE SCAN
FOR DETAILED INFORMATION
AND
PQ SERIES USER MANUAL

PRS-QIG-PQ-EN-Rev.02-04.2023



SPECIFICATIONS



Type	Entry 1	Entry 2	Entry 3	Entry 4
TYPE 1	1/2" NPT	1/2" NPT	1/2" NPT	3/4" NPT
TYPE 2	3/4" NPT	3/4" NPT	3/4" NPT	3/4" NPT
TYPE 3	M20	M20	M20	3/4" NPT

Detector type is determined upon order. Default type is 1.

Electrical Specifications:

PQD/PQN Input	12 to 28VDC (24VDC nominal)
Max Power	Max 4 Watts. at 24VDC
Current output	1-22mA
Fault	1.0 - 3.5 mA (adjustable) (2mA default)
Warm-Up	1.0 - 3.5 mA (adjustable) (3mA default)
Inhibit	1.0 - 3.5 mA (adjustable) (3mA default)
Calibration mode	1.0 - 3.5 mA (adjustable) (3mA default)
Normal gas measurement	4.0 mA to 20.0 mA
Over range	20.0 - 22.0 mA (adjustable) (22mA default)
Under range	Fault signal (1.0 - 3.5 mA - adjustable)
Terminals	3 x and 2x terminals suitable for wire diameters 0.5 mm ² to 2.5 mm ² (20AWG to 13AWG). Use Copper Conductors Only!
Relays	Optional 3 x (1.25A 30VDC). Selectable normally open or normally closed (switch) and de-energized.
Communication	RS485, Modbus RTU

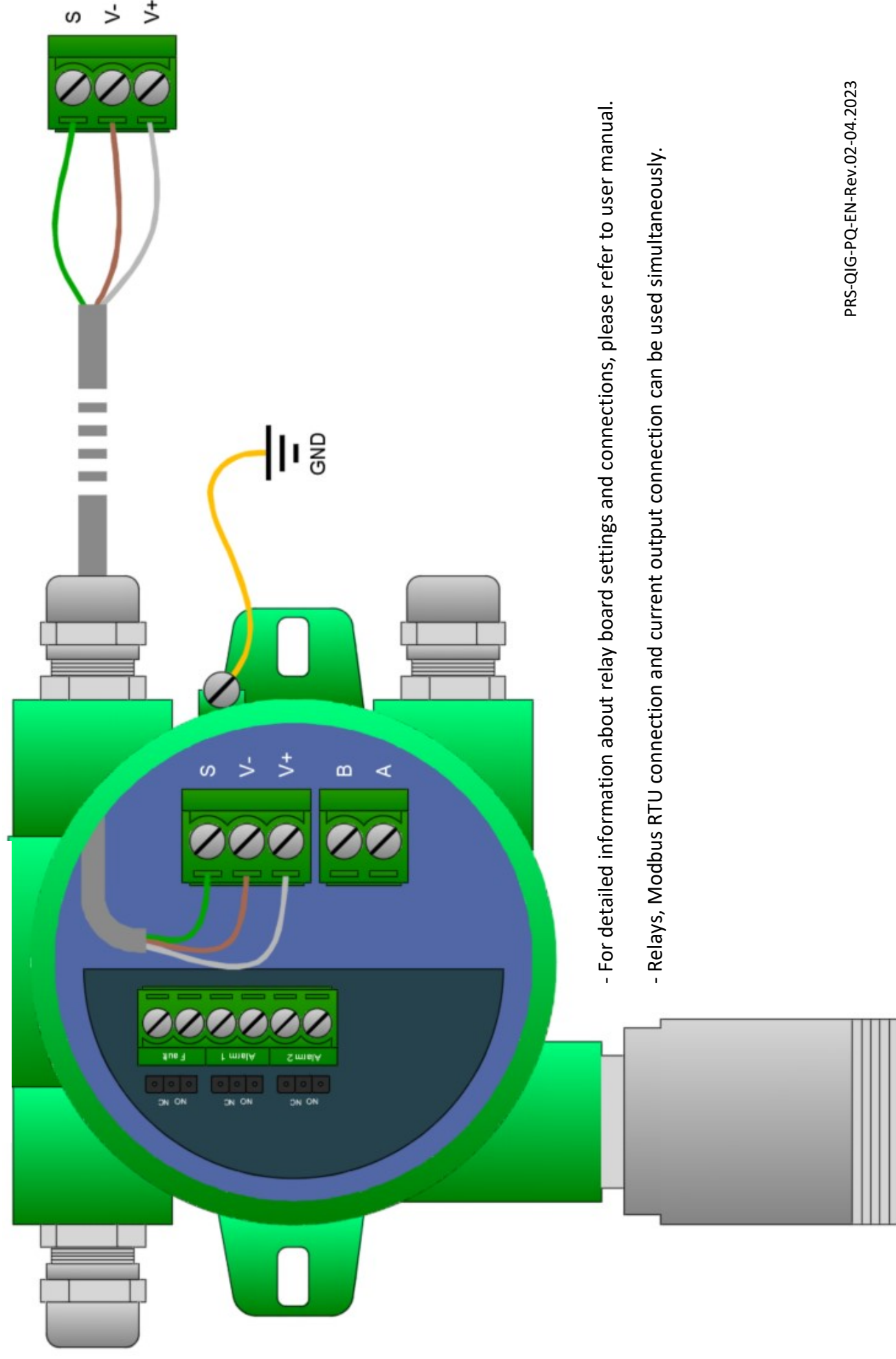
Environmental Specifications:

IP Rating	IP65 in accordance with EN60529:1992
Operating Temperature	-40°C to +70°C / -40°F to +158°F – For explosion protection
Operating Humidity	Continuous 20-90%RH (non condensing)
Operating Pressure	80-120kPa
Storage Conditions	-30°C to +70°C (-22°F to +158°F) Detectors must be re-calibrated if not installed more than 3 months
Operating Altitude	0-2500m
Use	Indoor and Outdoor

CURRENT OUTPUT CONNECTION

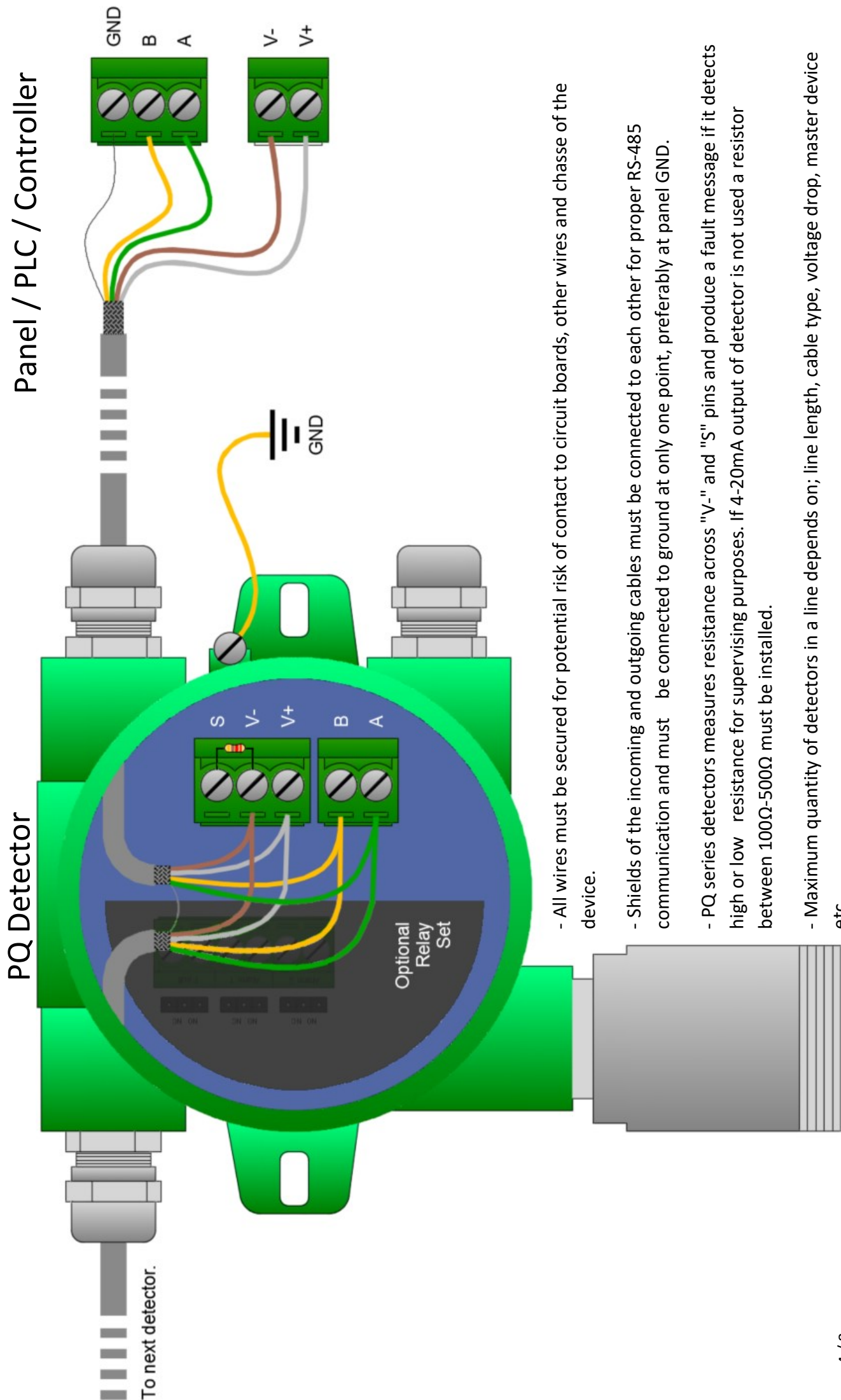
PQ Detector

Panel / PLC / Controller



- For detailed information about relay board settings and connections, please refer to user manual.
- Relays, Modbus RTU connection and current output connection can be used simultaneously.

MODBUS RTU(RS-485) CONNECTION



SAFETY INSTRUCTIONS FOR HAZARDOUS AREA INSTALLATION

Prosense PQ series gas detectors are projected and built according to ATEX Directive 2014/34/EU with reference to standard IEC EN 60079-0, IEC EN 60079-1, IEC EN 60079-30, IEC EN 60079-29-1. "ATEX", by the French "ATmosphere EXplosible", provides the technical requirements to be applied to equipment intended for use in potentially explosive atmospheres. The Prosense PQ series gas detectors must be installed and maintenance according to the suitable standards for electrical application in potentially explosive atmospheres (example: EN 60079-14, EN 60079-17 or other national standards).

Read this instruction first and keep this instruction manual always available.

The following instructions apply to equipment covered by ATEX/IECEx/UKEX/UL certificate number:


1- PQ Series gas detectors for monitoring a very wide range of toxic and flammable gases and oxygen. PQ series are available as Flameproof (Ex db/tb) detectors suitable for use in Zone 1/2 and Zone 21/22 hazardous areas.

Device category 2GD, Identification II 2GD

Ex db IIC T6 Gb (Tamb = -40 °C ÷ +70 °C) – For explosion protection

(Tamb = -20 °C ÷ +60 °C) – For performance requirements

Ex tb IIIC T85oC Db

It means:  (European Community logo for ATEX applications) – group II (potentially explosive atmospheres – surface application – OTHER than mines)

Category 2GD (G => Gas D=>Dust) – Zone 1 and Zone 2 /Zone 21 and Zone 22

Ex db => protection mode: explosion proof enclosure

IIC => define kind of gases

T6 => Temperature class -- Maximum allowable surface temperature.

IP 65 => Mechanical protection degree – protection against solid, dust and liquid.

2. Suitably trained personnel shall carry out installation in accordance with applicable code practice.

3. The electrical devices must be grounded using their grounding connections. The grounding connection must be ATEX/IECEx/UKEX/UL certified, suitable for the application required, substances, maximum superficial temperature, and ambient temperature.

4. The user should guarantee periodical cleaning of the places where dust can storage to avoid the piling up to 5 mm.

5. The user should not repair this equipment.

6. The user should guarantee the keeping of the safety characteristic of the device after maintenance of repairing.

SAFETY INSTRUCTIONS FOR HAZARDOUS AREA INSTALLATION

7. If the equipment is likely to come into contact with aggressive substances, it is responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.

Aggressive substances: example Acids, liquid, gases with can affected metals

8. To guarantee the respect of the protection degree cable glands, blanking elements and thread adapters shall be certified Ex components according to protection “db” and a blanking element shall not be used with an adapter.

9. Sinter replacement shall be done by an approved technical service personal according to PQ Series user manual “Sinter replacement” procedure (PRS-UM-PQ-EN-Rev.03-02.2019 page 45).

10. O-ring is made of Silicone and continuous operating temperature is -50C to 105C

11. If temperature exceeds 70°C at entry or 80°C at branching point use suitably rated cable and cable glands or conductors in conduit.

12. Thickness of outer painting is between 40 µm – 180 µm.

13. Maximum power consumption of the detector with optional boards installed is $P_{max}=4W$ where $I_{max}=335mA$ and $V_{max}=24VDC$.

14. All electrical connections should be made in accordance with any relevant local or national legislation, standards or codes of practice. Prosense detectors can operate between 12 - 24 VDC. The connection, grounding, cabling details are explained in this guide at relevant sections.

WARRANTY STATEMENT

All products are designed and manufactured to the latest internationally recognized standards by Prosense under a Quality Management system that is ISO 9001 certified. As such Prosense warrants its products against defective parts and workmanship and will repair or (at its option) replace any instruments which are or may become defective under proper use within 12 months from date of shipment from Prosense Technology. The Product will be returned repaired or replaced if it is determined by Prosense that the part failed due to defective materials or workmanship. Warrant is only valid if product is shipped prepaid to Prosense at Kartal, Istanbul TURKEY, in a package equal to or in the original container accompanied by a detailed description of any issue. Prosense reserves the right to charge for any site attendance where any fault is not found with the equipment in case return of goods is not practicable. Prosense shall not be liable for any loss or damage whatsoever or howsoever occasioned which may be a direct or indirect result of the use or operation of the Contract Goods by the Buyer or any Party.

This warranty covers instrument and parts sold to the Buyer only by authorized distributors, dealers and representatives as appointed by Prosense Technology. The warranties set out in this clause are not pro rata, i.e. the initial warranty period is not extended by virtue of any works carried out there under.

Exclusions

If gas sensors are part of the Product, the gas sensor is covered by a twelve (12) month limited warranty of the manufacturer. The gas sensors are covered by this limited warranty is subject to inspection by Prosense for extended exposure to excessive gas concentrations if a claim by the user is made under this limited warranty. Should such inspection indicate that the gas sensor has been expended rather than failed prematurely, this limited warranty shall not apply to the Product.

This limited warranty does not cover consumable items, such as batteries, or items subject to wear or periodic replacement, including lamps, fuses, valves, vanes, sensor elements, cartridges, sinters or filter elements. This warranty does not cover damage caused by accident, abuse, abnormal operating conditions or poisoning of sensor.

Warranty Limitation and Exclusion

Prosense will have no further obligation under this limited warranty. All warranty obligations of Prosense are void in below cases:



- if the Product has been subject to abuse, misuse, negligence, or accident
- if the Distributor or User fails to perform any of the duties set forth in this limited warranty
- if the Product has not been operated in accordance with instructions
- if the Product serial number has been removed or altered

EU Declaration of Conformity

Prosense Teknoloji San Ltd. Şti declares the PQ series products to be in accordance with the following standards and directives.

Name and address of Manufacturer: **Prosense Teknoloji San Ltd Şti**
Cumhuriyet Mah. Mermer Sok No:16
34876 - Kartal – İstanbul – Türkiye

Description of Device: PQ Series Fixed Type Gas Detector

Ex Designation:  **II 2 G Ex db IIC T6 Gb**
 **II 2 D Ex tb IIIC T85°C Db**

Applied Harmonized international standards:

EN/IEC 60079-0:2018 Equipment – General requirements
EN/IEC 60079-1:2014 Equipment protection by flameproof enclosures ‘d’
EN/IEC 60079-31:2014 Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure “t”
EN/IEC 60079-29-1:2016 Gas detectors – Performance requirements of detectors for flammable gases
EN/IEC 50270:2015 Electromagnetic compatibility - Electrical apparatus for the detection and measurement of combustible gases, toxic gases and oxygen
EN/IEC 50271:2018 Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen - Requirements and tests for apparatus using software and/or digital technologies

Applied European Directives:

2014/34/EU ATEX Directive
2014/30/EU Electromagnetic Compatibility (EMC) Directive

Each PQ Series gas detector device which the Production Quality Assurance procedures and Type Examination procedures have been applied has been shown to conform to an approved Type and to the applicable classification rules and essential principles before being supplied. This declaration is being made on the basis of the following certificates:

Quality Management Certificate: **18ISO0073**
Production Quality Assurance Certificate: **ExVeritas 18PQAN0072**
ATEX Type Examination Certificate: **UL 21 ATEX 2656X**
IECEx Certificate of Conformity: **IECEx ULD 21.0033X**
Performance approval (EN/IEC 60079-29-1): **FTZU 18 ATEX 0086**

Authorised Signatory: **Firat Celep**
Production Manager

Date: **12.10.2022**

