ATEST GAZ

Reliable and Innovative Gas Detection & Safety Systems

THE UNSURPASSABLY SIMPLEST INSTALLATION

NO FALSE ALARMS AT ALL

COST EFFECTIVENESS

Teta Gas

Two Wire vision!

ADDRESABLE GAS SAFETY SYSTEM FOR CAR PARKS AND HEATING SECTORS

Who we are?

Atest Gaz is the **leading Polish producer** of innovative and reliable Gas Safety Systems and a renowned reference centre in the aforementioned scope, which, through provided services, wide knowledge, long-term experience, and advanced technology, works to ensure **full safety for people, property, and environment.**

In our daily activity we concentrate on measuring the composition of gases, monitoring and detection of hazardous concentrations.

Our specialty are innovative **Gas Safety Systems** providing reliable information on gas hazards or their absence. In other words, systems which ensure the sense of safety when everything is ok and effectively warn in case of hazard.

The mission of Atest Gaz is to ensure our Customers and Users all the comfort resulting from the sense of human life and health safety as well as protection of property and environment from hazards associated with dangerous gases.

The strength of our brand results from everyday work of a qualified and experienced team of specialists – enthusiasts, but also from a multidirectional experience, an access to international know-how, and perfectly developed research and design facilities. As a result, Atest Gaz may offer unique, technologically advanced, innovative, and reliable products, solutions and systems that comprehensively and completely satisfy the individual needs of Clients of both the industrial and civil engineering sector (HVAC).

Małgorzata and Aleksander Pachole

Teta **Gas**

Teta Gas system is a modern Gas Detection System that uses Digital Data Transfer – Teta BUS, which, via a single pair of cables, allows for both supply and addressable communication with the gas detectors. It is intended to provide security of public utility, civil engineering and residential facilities (underground garages, boiler rooms or halls heated with radiators) and protect people staying at such facilities from dangerous gas hazards.

Teta Gas detectors series includes:
- **Teta EcoWent** - used to detect carbon monoxide
- **Teta EcoDet** and **Teta miniDet** - used to detect propane-butane
- **Teta EcoTerm** - used to detect methane

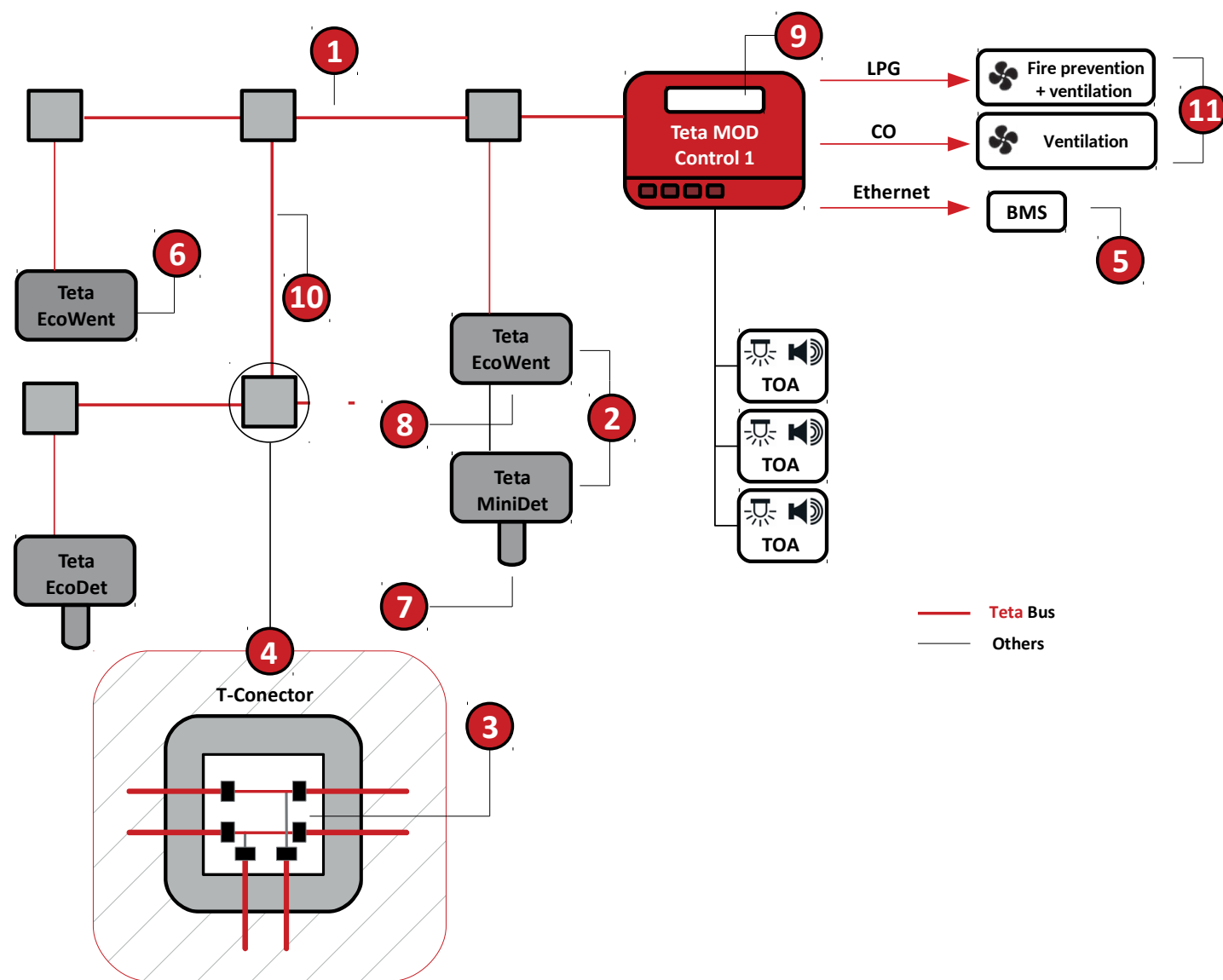**Teta Bus -** Polish technical idea

The concept and design of two-wire **Teta BUS** have been developed entirely by the research and development department of Atest Gaz in collaboration with specialists from the Faculty of Electronics of Silesian University of Technology.

Atest Gaz provides a 5-year warranty for **Teta Gas** series Gas Detectors.

Teta Gas

Two Wire vision!

RELIABILITY	No false alarms at all
INNOVATION	Two wire bus
ECONOMY	Reduction of assembly costs

Teta Gas

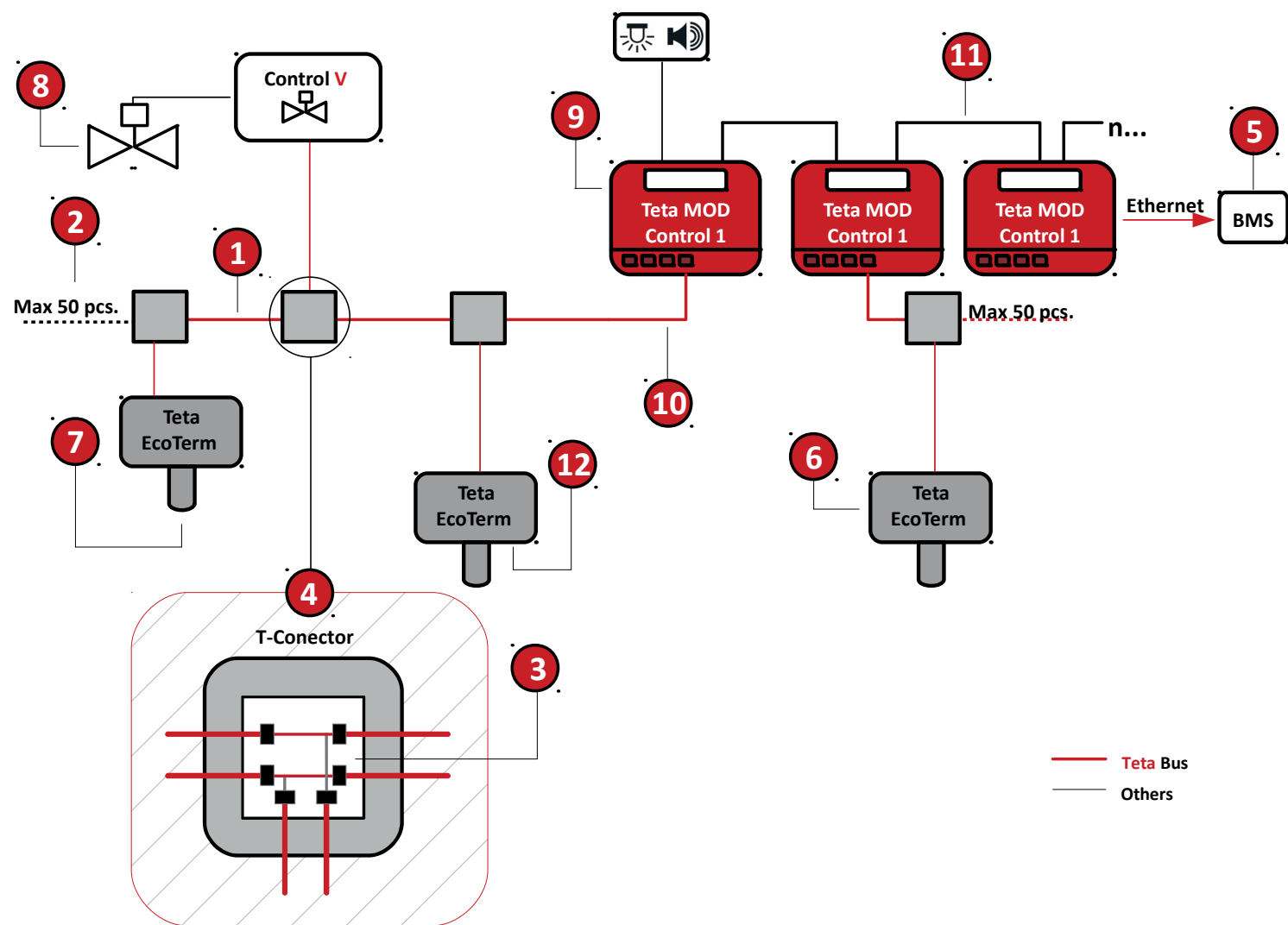Diagram of Gas Safety System for garages and car parks

LPG → Fire prevention + ventilation

CO → Ventilation

Ethernet → BMS

Teta MOD Control 1

Teta EcoWent

Teta EcoWent

Teta MiniDet

Teta EcoDet

TOA

TOA

TOA

T-Conector

— Teta **Bus**

— Others

1 A two-wire BUS

Power supply and data transmission on one, easily accessible two-wire cable, e.g. YDY – no twisted pair cables, shields etc.!

2 100 addressable detectors

Teta Gas system allows connecting up to 100 addressable gas detectors (50 measuring points for CO + LPG) on one bus.

3 Arbitrary polarisation

The system is designed as installer-friendly – it is impossible to make an error during installation.

4 T-conector

The junction box supplied (optional) with the system enables efficient and quick connection of further detectors on the bus (two-wire cable).

5 BMS

A big advantage of the system is its simple integration with BMS (e.g. Ethernet, EIB and other Intelligent Building buses).

6 Unique addressing

A simple and clear method of assigning and verifying detector addresses. Additionally, it is possible to check the status of the given detector on the Control Unit.

7 Catalytic sensor

Catalytic sensor designed for sensing LPG guarantees reliable control of HVAC and alarms warning against a fire or explosion.

8 Electromechanical sensor

Electrochemical sensor used for sensing CO, guarantees stable and false alarm-proof operation which is reflected in reliable control of HVAC and alarms warning against CO poisoning.

9 Identification of a hazardous location

In the event of a gas leak at a facility, the Control Unit allows service technicians to inspect the hazardous location, which significantly affects the response time and simultaneously increases the level of protection of people and property.

10 Flexible architecture

Teta BUS, unlike e.g. a popular RS-485 bus, allows free branching, therefore it is possible to have a low-cost, safe and functional system architecture in a garage.

11 Easy integration

Teta Gas system provides independent alarms and control outputs for each of the gases – this allows splitting signals and selective HVAC control. It is also possible to generate selectively a fire protection signal in the event of LPG leak.

Teta Gas

Diagram of Gas Safety System for **Industrial Halls heated with radiators**

Control **V**

8

2

1

Max 50 pcs.

7

Teta
EcoTerm

9

Teta MOD
Control 1

Teta MOD
Control 1

Teta MOD
Control 1

11

n...

Ethernet

BMS

5

Max 50 pcs.

10

Teta
EcoTerm

12

6

Teta
EcoTerm

4

T-Conector

3

—— **Teta** Bus

—— Others

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10 Reason to choose **Teta Gas** - Industrial Halls

1 **A two-wire BUS**

Power supply and data transmission on one, easily accessible two-wire cable, e.g. YDY – no twisted pair cables, shields etc.!

2 **50 addressable detectors**

Teta Gas system allows connecting up to 50 addressable gas detectors Teta EcoTerm on one bus.

3 **Arbitrary polarisation**

The system is designed as installer-friendly – it is impossible to make an error during installation.

4 **T-conector**

The junction box supplied with the system enables efficient and quick connection of further detectors on the bus (two-wire cable).

5 **BMS**

A big advantage of the system is its simple integration with BMS (e.g. Ethernet, EIB and other Intelligent Building buses).

6 **Green safety light**

Teta EcoTerm is equipped with a high-power LED, which informs about gas hazards or their absence (the correct operation of the system is presented in the green color of the diode). Easy identification of the detector status, even from a distance of a dozen of meters – the only solution with such advantages available in the market!

7 **Catalytic sensor**

Catalytic sensor designed for sensing LPG guarantees reliable control of HVAC and alarms warning against a fire or explosion.

8 **Shut-off valve**

For objects such as boiler rooms, halls where it is required to cut off the gas supply, it is possible to retrofit the Teta Gas system with a suitable shut-off valve with a 12V or 230V coil.

9 **Identification of a hazardous location**

In the event of a gas leak at a facility, the Control Unit allows service technicians to inspect the hazardous location, which significantly affects the response time and simultaneously increases the level of protection of people and property.

10 **Flexible architecture**

Teta BUS, unlike e.g. a popular RS-485 bus, allows free branching, therefore it is possible to have a low-cost, safe and functional system architecture in a garage.

Teta Gas

Two Wire vision!

AG ADDRESSABLE GAS SAFETY SYSTEM FOR CAR PARKS AND HEATING SECTORS   www.atestgaz.pl

Teta EcoWent

Gas Detector

Technical specification

Power supply • V CC • P ZAS (CO) • P ZAS (CO+LPG)	12 – 50 V 0.5 W 1.5 W	
Environment	In-operation	Storage
• Ambient temperatures • Humidity	-20 – 60 ºC 10 – 90% long term 0 – 99% short term	0 – 60 ºC 30 – 90% long term
Detected substance	Carbon monoxide (CO)	
Measuring range	0-300 ppm	
IP	IP 43	
Digital communication parameters • Communication protocol	Teta BUS	
Integrated signalling equipment (visual)	LED indicators and 7-segment display	
Protection class	III	
Cable glands (cable diameter range)	Gland pressed into the installation pipe – diameter of the pipe 16 mm. Glands multiband – diameter of wire 3,5 – 12 mm	
Acceptable cables	0.2 – 2.5 mm² – przewód lity 0.2 – 2.5 mm² – przewód wielodrutowy	
Enclosure material	ABS	
Weight	0.3 kg	
Mandatory periodic inspection	Every 12 months (Calibration Certificate validity)	
Lifetime of consumables	Sensor Circuit PWS-017-CO - 5 years*	
Mounting	4 screw holes 4 mm	

* For operation in dwelling houses, public buildings, car parks and garages

Gas Detector
Teta EcoWent

Teta EcoWent is an addressable Gas Detector for detecting carbon monoxide (CO) concentrations, designed as part of Teta Gas Detection System. The device performs cyclical measurements of gas concentration in the air, then the information on correct operation or exceeding the set thresholds is transmitted to the user by controls flashing on the detector. Communication between the detector and the compatible Control Unit takes place through power supply and signalling bus Teta BUS. The system is designed as installer-friendly – it allows any order of wires during connection of power supply and data bus. Teta EcoWent is compatible with Teta miniDet detectors, thus creating a complete CO and LPG Detection System.

Technical specification

Power supply • V CC • P ZAS	6 V 0.8 W	
Environment	In-operation	Storage
• Ambient temperatures • Humidity	-20 – 60 ºC 10 – 90% long term 0 – 99% short term	0 – 60 ºC 30 – 90% long term
Detected substance	Propane - butane (LPG) (C3H8, C4H10)	
Measuring range	50% DGW	
IP	IP 43	
Digital communication parameters • Communication protocol	Teta BUS	
Protection class	III	
Cable glands (cable diameter range)	Gland pressed into the installation pipe – diameter of the pipe 16 mm. Glands multiband – diameter of wire 3.5 – 12 mm	
Acceptable cables	0.25 – 2.5 mm² – przewód lity 0.25 – 2.5 mm² – przewód wielodrutowy	
Enclosure material	ABS	
Weight	0.3 kg	
Mandatory periodic inspection	Every 12 months (Calibration Certificate validity)	
Lifetime of consumables	Measuring Head MiniPel PWS-016-LPG -5 years *	
Mounting	4 screw holes 4 mm	

* For operation in dwelling houses, public buildings, car parks and garages

Gas Detector
Teta MiniDet

Teta MiniDet is an addressable Measuring Head for detecting propane-butane (LPG), concentrations, designed as part of Teta Gas Detection System. The device is designed for use with gas detector Teta EcoWent - can't be independently connected to the bus Tetabus.The device performs cyclical measurements of gas concentration in the air, then the information on correct operation or exceeding the set thresholds is transmitted to the user by controls flashing on the cooperating detector Teta EcoWent.

Teta EcoDet

Gas Detector

Teta EcoTerm

Gas Detector

Technical specification

Power supply		
• V_{CC} • P_{ZAS}	12 – 48 V 1.5 W	
Environment	In-operation	Storage
• Ambient temperatures • Humidity	-20 – 60 ⁰C 10 – 90% long term 0 – 99% short term	0 – 60 ⁰C 30 – 90% long term
Detected substance	Propane - butane (LPG) (C3H8, C4H10)	
Measuring range	50% DGW	
IP	IP 43	
Digital communication parameters • Communication protocol	Teta BUS	
Integrated signalling equipment (visual)	LED indicators and 7-segment display	
Protection class	III	
Cable glands (cable diameter range)	Gland pressed into the installation pipe – diameter of the pipe 16 mm. Glands multiband – diameter of wire 3.5 – 12 mm	
Acceptable cables	0.2 – 2.5 mm² – przewód lity 0.2 – 2.5 mm² – przewód wielodrutowy	
Enclosure material	ABS	
Weight	0.3 kg	
Mandatory periodic inspection	Every 12 months (Calibration Certificate validity)	
Lifetime of consumables	Measuring Head MiniPel PWS-016-LPG -5 years *	
Mounting	4 screw holes 4 mm	

* For operation in dwelling houses, public buildings, car parks and garages

Gas Detector

Teta EcoDet

Teta EcoDet is an addressable Gas Detector for detecting propane-butane (LPG) concentrations, designed as part of Teta Gas Detection System. The device performs cyclical measurements of gas concentration in the air, then the information on correct operation or exceeding the set thresholds is transmitted to the user by controls flashing on the detector. Communication between the detector and the compatible Control Unit takes place through power supply and signalling bus Teta BUS. The system is designed as installer-friendly – it allows any order of wires during connection of power supply and data bus.

Technical specification

Power supply		
• V_{CC} • P_{ZAS}	12 – 48 V 1,8 W	
Environment	In-operation	Storage
• Ambient temperatures • Humidity • Pressure	-20 – 60 ⁰C 10 – 90% long term 0 – 99% short term 1013 ± 10% hPa	0 – 60 ⁰C 30 – 90% long term
Detected substance	Methane (CH4)	
Measuring range	50% DGW	
IP	IP 43	
Digital communication parameters • Communication protocol	Teta BUS	
Integrated signalling equipment (visual)	LED indicators and 7-segment display	
Protection class	III	
Cable glands (cable diameter range)	Gland pressed into the installation pipe – diameter of the pipe 16 mm. Glands multiband – diameter of wire 3,5 – 12 mm	
Acceptable cables	0,2 – 2,5 mm² – przewód lity 0,2 – 2,5 mm² – przewód wielodrutowy	
Enclosure material	ABS	
Weight	0,3 kg	
Mandatory periodic inspection	Every 12 months (Calibration Certificate validity)	
Lifetime of consumables	Measuring Head MiniPel PWS-016-LPG -5 years *	
Mounting	4 screw holes 4 mm	

* For operation in dwelling houses, public buildings, car parks and garages

Gas Detector

Teta EcoTerm

Teta EcoTerm is an addressable Gas Detector for detecting methane (CH4) concentrations, designed as part of Teta Gas Detection System. The device performs cyclical measurements of gas concentration in the air, then the information on correct operation or exceeding the set thresholds is transmitted to the user by flashing high power LED control on the detector. It is the solution that enables easy identification of the detector status, even from a distance of a dozen of meters – the only solution with such advantages available in the market! The system is designed as installer-friendly – it allows any order of wires during connection of power supply and data bus.

Teta EcoN
Gas Detector

Technical specification

Power supply		
• V_{cc} • $P_{cc}(CO)$ • $P_{cc}(CO+LPG)$	12 – 50 V 0.5 W 1.5 W	
Environment	In-operation	Storage
• Ambient temperatures • Humidity	-20 – 60 ⁰C 10 – 90% long term 0 – 99% short term	0 – 60 ⁰C 30 – 90% long term
Detected substance	Nitrogen dioxide (NO2)	
Measured range	0-10 ppm	
IP	IP 43	
Digital communication parameters • Communication protocol	Teta BUS	
Integrated signalling equipment (visual)	LED indicators and 7-segment display	
Protection class	III	
Cable glands (cable diameter range)	Gland pressed into the installation pipe – diameter of the pipe 16 mm. Glands multiband – diameter of wire 3.5 – 12 mm	
Acceptable cables	0.2 – 2.5 mm^2 – solid wire core 0.2 – 2.5 mm^2 – stranded core	
Enclosure material	ABS	
Weight	0.3 kg	
Mandatory periodic inspection	Every 12 months (Calibration Certificate validity)	
Lifetime of consumables	Sensor Circuit PW-022-NO - 5 years*	
Mounting	4 screw holes 4 mm	

* For operation in dwelling houses, public buildings, car parks and garages

Gas Detector
Teta EcoN

Teta EcoN is an addressable Gas Detector for detecting nitrogen dioxide (NO2) concentrations, designed as part of Teta Gas Detection System. The device performs cyclical measurements of gas concentration in the air, then the information on correct operation or exceeding the set thresholds is transmitted to the user by controls flashing on the detector. Communication between the detector and the compatible Control Unit takes place through power supply and signalling bus Teta BUS. The system is designed as installer-friendly – it allows any order of wires during connection of power supply and data bus

Replaceable electrochemical sensor

Toxic gases are detected by means of electrochemical sensors. It is the solution that is distinguished by high insensitivity to variations of ambient conditions, such as temperature, humidity as well as presence of disturbing gases. As a consequence, the number of false activation of ventilation systems as well as warning and alarm devices is reduced to a minimum (savings of electricity consumption).

- **5 years of warranty**
- **Replaceable module with an electrochemical sensor**
- **Insensitivity to humidity and temperature variation**
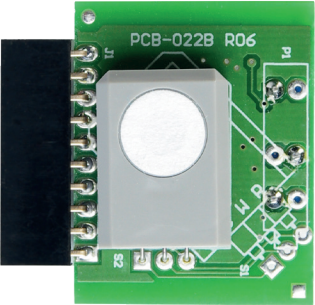
Replaceable catalytic sensor

For detection of flammable gases a catalytic sensor is applied, which guarantees steady operation of the gas detection system with no false alarms. Catalytic sensors are insensitive to humidity, temperature variations and presence of disturbing gases. Owing to such advantages of these sensors the risk of false alarms caused by variations of temperature, high humidity or impact of car exhaust gases is extremely low.

- **5 years of warranty**
- **Steady operation**
- **Insensitivity to humidity and temperature variation**

Teta MOD Control 1
Control Unit Module

TOA
Gas Warning LED Display with Acoustic Signalling

Technical specification

Power supply	
• V_{CC}	15 – 50 V
• Power consumption P_{CC}	2.5 W
Environment	
• Ambient temperatures	0 – 50 °C
• Humidity	10 – 90% long term
	0 – 99% short term
• Pressure	1013 ± 10% hPa
• pH	5,5 – 7
IP	IP 20
Parameters of binary outputs	
• R_{IN}	10 kΩ
• Inactive (not negated)	0 – 1 V
• Active (not negated)	10 – 50 V
	Any polarisation
Digital output parameters	
• Relay	Floating contacts:
	AC1: 230 V ~ / 3 A
	DC1: 230 V / 0.25 A
	DC1: 24 V / 3 A
	Not protected
Digital communication parameters TETA BUS port	
• Communication protocol	RS - 485
GTW port	
• Electric standard	RS - 485
• Communication protocol	Modbus ASCII / RTU, 4800 – 115200 b/s, no parity / even parity/ odd parity, quantity of bits 7/8 (only for Modbus ASCII)
Integrated signalling equipment (visual)	LCD alphanumerical display 2 x 16 LED controls
Integrated signalling equipment (audible)	70 dB, 1 m distance
Protection class	III
Acceptable cables	0.08 – 2.5 mm² (cable lugs 2 x 1 mm² or 2 x 0,75 mm² should be used for double wires)
Enclosure material	Self – extinguishing PPO
Weight	0.4 kg
Mounting	On DIN-35 / TS35 rail

Control Unit Module
Teta MOD Control 1

Control Unit Module Teta MOD Control 1 is a device for controlling gas detectors and for dedicated controlling compatible devices depending on the detected gas, thus creating a unique Gas Detection System that allows connecting up to 100 detectors. Owing to the functionality of automatic supervision of the line and signalling its damage, the system guarantees an unusual for this device group level of safety and comfort of use in this. The Module is compatible with BMS and additionally it can be equipped with UPS system.

Technical specification

Power supply		
• V_{CC}	24 V or 230 V ~	
• Power consumption P_{CC}	< 5 W (when active)	
Environment	In-operation	Storage
• Ambient temperatures	24 V: 5 – 50 ºC	5 – 50 ºC
• Humidity	230 V: 0 – 50 ºC	0 – 50 ºC
IP	IP40	
Integrated signalling equipment (visual)	LED dispaly	
Integrated signalling equipment (audible)	Piezoelectric converter 65dB/1m	
Protection class	I	
Dimensions		
• Height	180 mm	
• Width	420 mm	
• Depth	60 mm	
Text	The letters 35mm, red	
Radio disturbance	Level N	

Gas warning LED display with acoustic signalling
TOA

TOA Gas warning LED displays with acoustic signalling are used for signalling alarm conditions internally in undergro-und car parks. The displays provide warning or informative strings of characters whose content may be standard or customised. The string is displayed after the Gas Detection System senses an alarm condition, flashing with the frequency of 0.5 Hz. The displayed string is accompanied by a pulsing acoustic signal. As it is possible to use TOA displays on walls or ceilings, the signalling system provides an additional source of safety. The displays cannot be used in areas defined as gas explosion hazard zones.

ATEST GAZ

For more details on our devices and other products and services offered by us, visit:

www.atestgaz.com

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