



monitoring • measurements • automation

We protect everything that is important

"We are extremely proud that we may provide our expertise and experience to constantly improve safety every day."





Safety in Ex zones

"Every day we protect the lives and the health of thousands of Customers and Employees in the industry trade, in refineries and petrol stations. We monitor the critical elements of the system by creating a safe and a friendly environment."





Tank Robot measurement and monitoring system

Constant measurement of the quantity of fuel in tanks and detection of leaks.



Most important features:

- QGC - QUICK GLANCE SYSTEM all important information on one screen embedded printer
- product quantity measurement
- product temperature measurement
- temperature adjustment of product quantity
- automatic delivery detection
- water quantity measurement
- signaling low or high product, high water, delivery
- probe failure signaling
- optical sensor activation signaling for liquids or vapor (hydrocarbons, alcohols etc.)
- sensor failure signaling
- remote notification about events
- control over external devices -
- access via a website from any place
- cooperation with master systems



Tank Robot is an easy-to-use controller for the measurement system for the quantity of liquid products and the detection of leaks. Thanks to its 10" color touch display you may clearly see the current stock, sensor statuses, the history of deliveries, alarms etc. As a standard, the Tank Robot's central unit may be connected to 1 to 8 magnetostrictive measurement probes or analog probes with outputs 4..20 mA, or sensors (e.g. vapor sensors, optical sensors).

Apart from the measurement of stock in tanks, where the following information is displayed: the filling height of the product, product volume, product volume converted to 15°C, product temperature, level and volume of water, it may also serve as an alarming system for overflow, as well as a safety system controlling, for example, a stop valve, a gate or another device with the use of REL0 and REL1 relays (appropriate connectors TBR0 and TBR1) + the possibility to connect an 8-channel I/O module.

Access to information as well as the configuration of the system is intuitive due to its touch display and graphic interface. Shortcuts to basic functions, without the need to use the menu, make it easy to print out the current condition of the tank, a delivery or a warning. Alarms are always visible, even after shutdown, until the cause for alarm ceases.

It is possible to create numerous user accounts with access limited to basic functions, and the login system makes it easy to check a user's activity history. Tank Robot enables remote notification about alarms (e.g. with text messages via a GSM module), and online access in order to remotely read the current readings of probes and sensors.

The central unit has an embedded printer for reports.

Tank Ranger 4 measurement and monitoring system

Constant measurement of the quantity of fuel in tanks and the detection of leaks.



Most important features:

- product quantity measurement
- product temperature measurement
- temperature adjustment of product quantity
- automatic delivery detection
- water quantity measurement
- signaling low or high product, high water, delivery
- probe failure signaling
- optical sensor activation signaling for liquids or vapor (hydrocarbons, alcohols etc.)
- sensor failure signaling
- remote notification about events
- control over external devices



Tank Ranger 4 supports 1 to 8 magnetostrictive measurement probes or analog probes (4..20 mA, MODBUS), as well as 1 to 8 various types of sensors manufactured by the company Petroster-Serwis.

It also serves as an alarming system for overflow, as well as a safety system controlling, for example, a stop valve, a gate, a unit or another device.

It cooperates with building automation master systems, fire-safety systems and serves as a safety system. A printer for reports is available as an option.

Depending on the program's settings, an alarm causes the activation of light signaling (a lamp) or acoustic signaling (a buzzer), or the printout of an alarm report. Depending on the program's configuration, the alarm may also cause the activation of 1 to 10 relays which enable the control over other external devices. An alarm situation may also be signaled with a text message via a GSM module, or read via a web browser.

Tank Ranger 4S measurement system

Constant measurement of the quantity of fuel in tanks.



Most important features:

- product quantity measurement
- product temperature measurement
- temperature adjustment of product quantity
- automatic delivery detection
- water quantity measurement
- signaling low or high product, high water, delivery
- probe failure signaling
- remote notification about events
- control over external devices



Tank Ranger 4S may be connected to 1 to 8 magnetostrictive measurement probes or analog probes (4..20 mA, MODBUS). The central unit may also be equipped with a printer for reports. It also serves as an alarming system for overflow, as well as a safety system controlling, for example, a stop valve, a gate, a unit or another device.

Any information regarding the operation of the central unit may be displayed on an alphanumeric LCD display. A keyboard may be used to access this information. It cooperates with building automation master systems, fire-safety systems and serves as a safety system.

Depending on the program's settings, an alarm causes the activation of light signaling (a lamp) or acoustic signaling (a buzzer), or the printout of an alarm report. Depending on the program's configuration, the alarm may also cause the activation of 1 to 10 relays which enable the control over other external devices.

An alarm situation may also be signaled with a text message via a GSM module, or read via a web browser.

Tank Ranger 5 monitoring system

Constant detection of leaks



ATEX approved, certification
number KDB 05ATEX204X

Certification body: Central Mining
Institute

EN 60079-0:2012 + A11:2013

EN 60079-11:2012

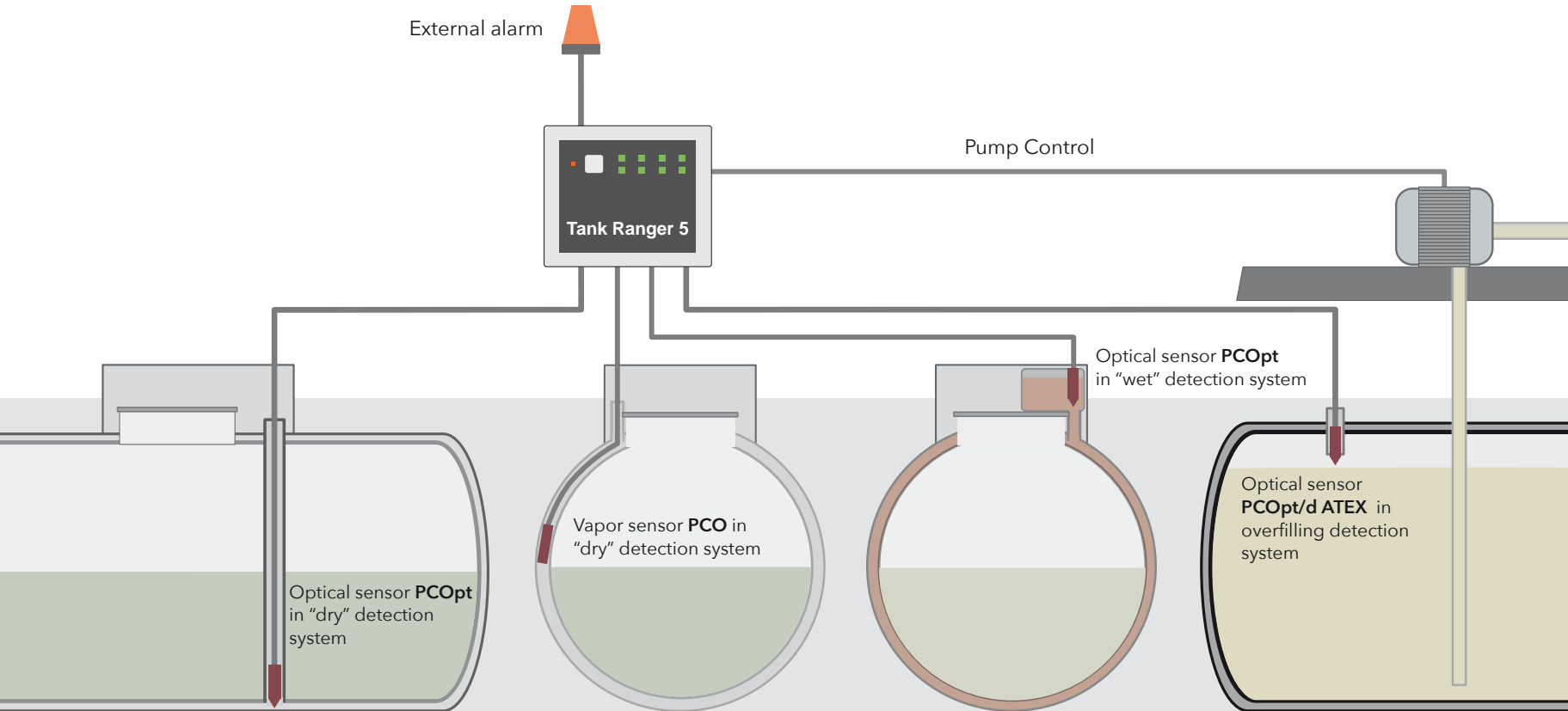


Tank Ranger 5 is a clear, easy-to-use and trouble-free system for the detection of leaks adjusted to continuous operation, monitoring the tightness of tanks, pipelines, fuel and industrial systems. It also serves as an alarming system for overflow, as well as a safety system controlling, among others, a stop valve, a fan, a gate or another device.

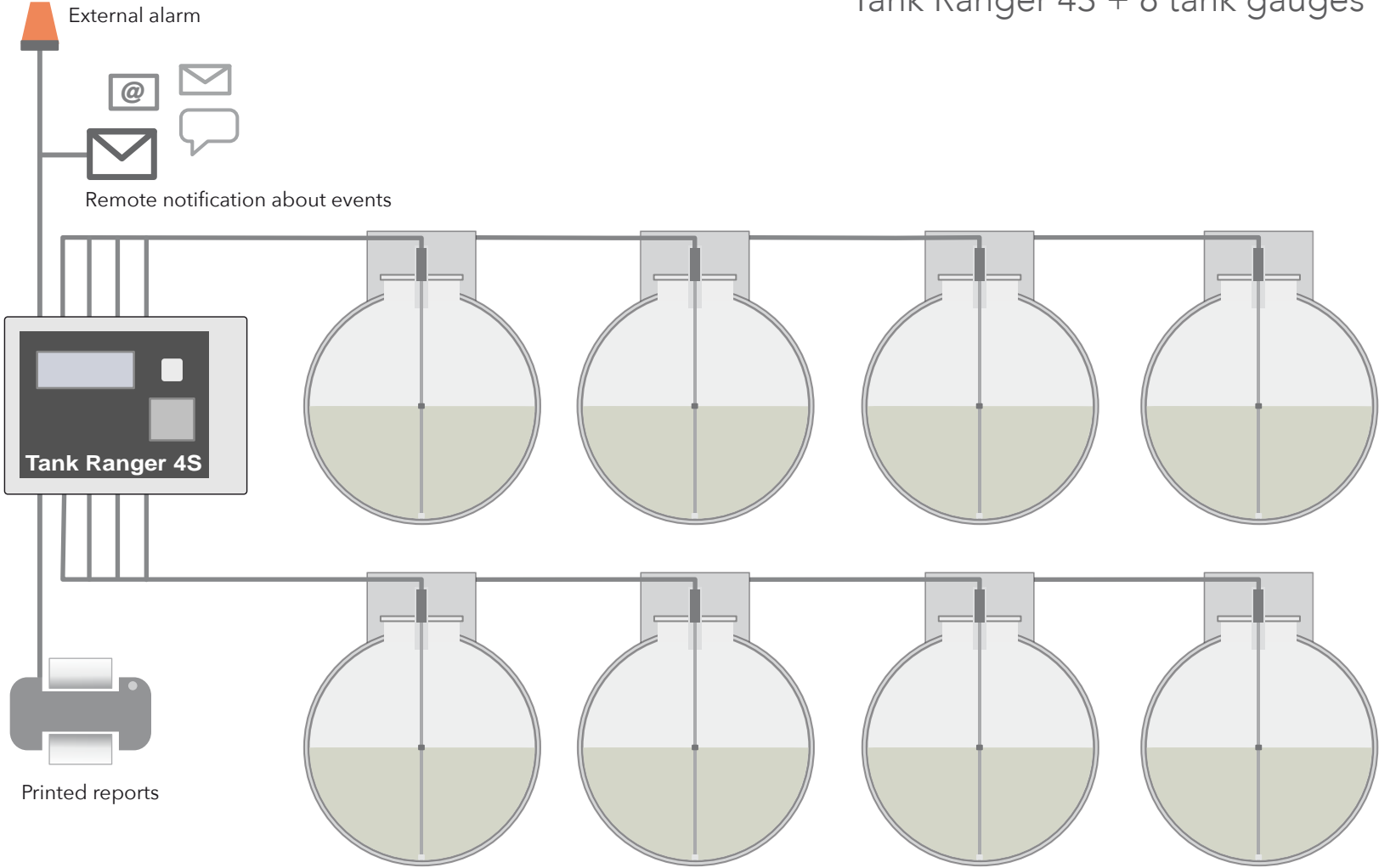
- it supports up to 4 various types of detection sensors
- it may operate in dry or wet systems
- it has an embedded visual and acoustic alarm
- as a standard, it can control 2 external devices

Measurement and monitoring system

Tank Ranger 5 + 4 sensors



Tank Ranger 4S + 8 tank gauges



Vapor sensors PCO, PCO/d ATEX, PCO/vr





PCO - vapor sensor for oil-derivative products, most popular sensor for leak detection systems. Used in "dry" detection systems, can be placed in piezometers at one-mantle tanks, in the vicinity of pipelines or in the space between the mantles of two-mantle tanks. It can also be located on any dry base.

PCO/d - vapor sensor for oil-derivative products, ATEX certified. Most popular sensor for leak detection systems. Used in "dry" detection systems, can be placed in piezometers at one-mantle tanks, in the vicinity of pipelines or in the space between the mantles of two-mantle tanks. ATEX approved, EX number: KDB 16ATEX0009.



PCO/vr - vapor sensor dedicated to different producers of central units.

Vapor sensor for oil-derivative products compatible with other most common systems on market. Affordable alternative for well-known brands dedicated for maintenance companies

Vapor sensors

The features of vapor sensors manufactured by Petroster-Serwis make it possible to use them both for oil-derivative products, as well as chemical and aggressive products. The sensors handle vapors from oil derivatives, methane, propane, butane, alcohols, organic solvents and various types of liquids.

All sensors have 12V power supply and operate at temperatures from -30°C to +50°C. They are connected via a 3-strand cable (PWR, SIG, GND). The activated alarm depends on the sensor's and the central unit's settings, it may apply, for instance, to a leak, explosive atmosphere and many other configurations.

The sensors are covered by a 24-month guarantee from the manufacturer.

Vapor sensors available:

- oil-derivative products vapor sensor – PCO
- vapor sensor ATEX certified – PCO/d
- vapor sensor compatible with other systems – PCO/vr
- LPG sensor – PCG
- ethyl alcohol – PCA
- carbon monoxide sensor – PCC
- esters sensor – PCOes
- ammonia sensor – PCOam
- hydrogen sulfide sensor - PCOsw
- ethanol sensor – PCOet

Vapor sensor	PCO	PCO/d	PCO/vr
Length:	73 mm	75 mm	75 mm
Diameter:	15 mm	18 mm	22 mm
Power Supply (acceptable parameters):	12V DC, 60 mA	U _{imax} = 16 V DC P _{imax} = 1.3 W I _{imax} = 0.35 A	U _{imax} = 12 V DC P _{imax} = 0.15 W I _{imax} = 0.012 A
Internal electric parameters:	—	C _{imax} = 330 pF L _{imax} = 2.1 μH	—
Output (acceptable parameters):	—	C _{omax} = 2.2 μF L _{omax} = 4.9 mH	—
SIG Output (max parameters):	—	U _{omax} = 5.73 V DC I _{omax} = 1.47 mA	—
Temperature:	-30 °C .. +50 °C	-20 °C .. +40 °C	-20 °C .. +40 °C
WE/EX certification:	—	KDB 16ATEX0009	—
ATEX parameters:	—	II 2G Ex d ib IIC T4 Gb	—
Products detected :	oil-derivative products	oil-derivative products, LPG, alcohols, natural gas	
Cable length:	3 m	3 m	3 m
Intrinsically safe barrier cables::	Cable Marking:	Cable Color :	Terminal TLS:
PWR	(1)	Brown	V (Vapor) or F: Black
SIG	(2)	Black	G (GND): Blue
GND	(3)	Blue	W: Brown

Optical sensors for liquids PCOpt, PCOpt/d ATEX, PCOpt/s



PCOpt - **optical sensor for liquids**, basic sensor that detects appearance or disappearance of any kind of liquid. Used in "wet" detection systems, can be placed in piezometers at one-mantle tanks, in the vicinity of pipelines or in the space between the mantles of two-mantle tanks.



PCOpt/d - **optical sensor for liquids**, detects appearance or disappearance of any kind of liquid. ATEX certified, installed in potentially explosive atmospheres, ATEX number KDB 10ATEX053X.



PCOpt/s - **selective optical sensor for liquids**, can distinguish different types of liquids, mainly water from oil-derivative products. Makes it possible to assess the threat even in case of high groundwater level.



Optical sensors for liquids

The features of optical sensors for liquids manufactured by Petroster-Serwis make it possible to use them both for oil-derivative products, as well as water, chemical and aggressive liquids. The sensors handle any liquid and may operate in two modes: the alarm status is the appearance of liquid, and the alarm status is the sudden lack of liquid.

Optical sensors may also be used as level sensors, threshold sensors, alarm sensors for the high filling of the tank, low product etc.

All sensors have 12V power supply and operate at temperatures from -30°C to $+50^{\circ}\text{C}$. They are connected via a 3-strand cable (PWR, SIG, GND). The activated alarm depends on the sensor's and the central unit's settings, it may apply, for instance, to a leak, overflow and many other configurations.

The sensors are covered by a 24-month guarantee from the manufacturer.

Optical sensor	PCOpt	PCOpt/d	PCOpt/s
Length:	66 mm	68 mm	85 mm
Diameter:	12 mm	18 mm	18 mm
Power Supply (acceptable parameters):	12 V DC, 40 mA	Uzmax = 16 V DC Pimax = 1.3 W limax = 0.35 A	Uzmax = 16 V DC Pimax = 1.3 W limax = 0.35 A
Internal electric parameters:	—	Cimax = 4.75 uF Limax = negligible	—
Temperature:	-30 °C .. +50 °C	-30 °C .. +50 °C	-30 °C .. +50 °C
WE/EX certification:	—	KDB 10ATEX053X	—
ATEX parameters:	—	II 1G Ex ia IIA T4 Ga -30 °C ≤ Ta ≤ +50 °C	—
Products detected:	Liquids	Liquids	Liquids
Cable length:	15 m	15 m	15 m
Intrinsically safe barrier cables:	Cable Color :	Cable Color :	Cable Color :
PWR	Brown	Brown	Brown
SIG	Black	Black	Black
GND	Blue	Blue	Blue

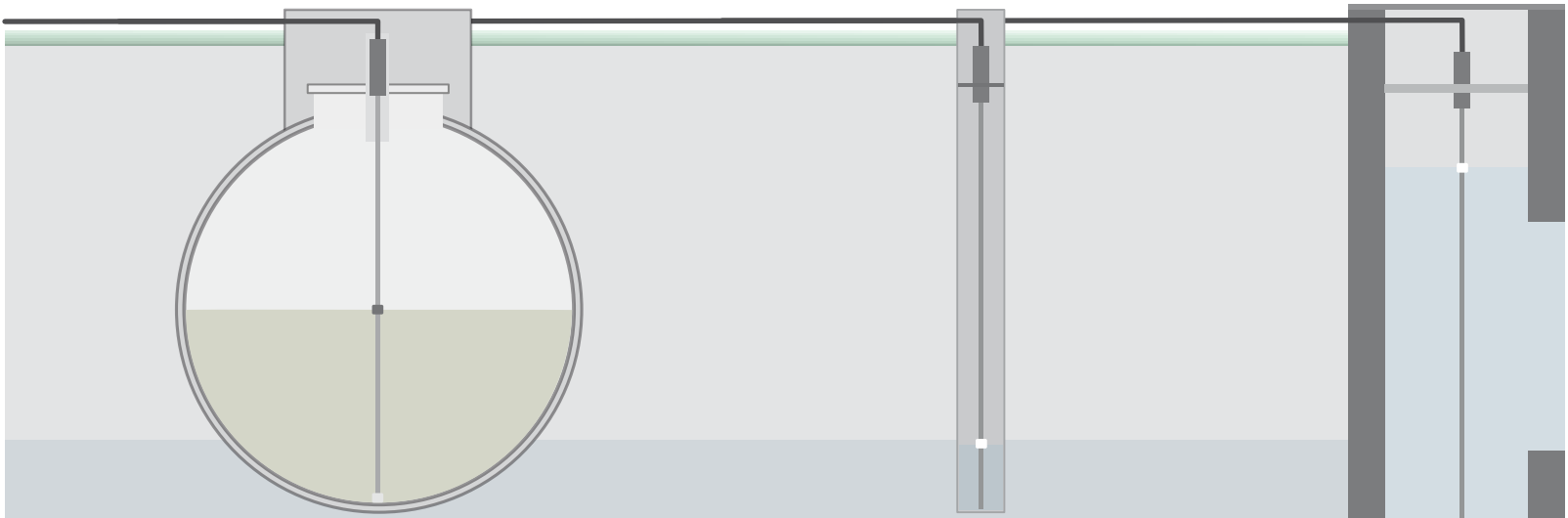
The PSM-xx magnetostrictive probe



The **PSM-xx** magnetostrictive probe is a device measuring the quantity of fuel and water in non-pressurized tanks. It provides such parameters as: product height, product temperature, water level.

The head is made from aluminum, while the measurement part is made from stainless steel, which provides trouble-free operation for various media. Possible applications, apart from the basic one (measurement of stock on petrol stations) - measuring the filling of tanks in the chemical and food industry, serving as a sight tube in reservoirs and fuel generators, piezometric wells, in places threatened with a high level of water with a possibility of remotely reading the water level and signaling alarm statuses.

The PSMxx probe meets the metrological requirements and each copy is subject to verification in our laser measuring position.



Measurement and monitoring system

Technical Data and Product Comparison .



product and water quantity measurement



liquid detection



vapor detection



alarm signaling



remote notification about events



control over external devices



ATEX approval

The PSMxx magnetostrictive probe

Maximum length	6 m
Housing	IP67
Temperatures	-40°C - 120°C
Voltage Uo	15,5 V
Power Io	347 mA
Capacity Co	10µF
Inductance Lo	1,7 mH
Lo/Ro ratio	210 µF
Capacity Ci	100 nµ
Inductance Li	negligible

Model name	Tank Ranger 5	Tank Ranger 4	Tank Ranger 4S	Tank Robot
Height:	180 mm	252 mm	252 mm	215 mm
Width:	210 mm	392 mm	392 mm	310 mm
Depth:	83 mm	175 mm	175 mm	105 mm
Temperature Range:	-30 °C .. +50 °C	-30 °C .. +50 °C	-30 °C .. +50 °C	-30 °C .. +50 °C
Standard Alarms	4 LED lights 1 built-in sound alarm	1 built-in light 1 built-in sound alarm	1 built-in light 1 built-in sound alarm	visual on screen 1 built-in sound alarm
Number of external/com outputs:	Optional: 1 external sound alarm (12V) 1 external light alarm (12V) 1 cancel alarm button	10 relays: 8 programmable, 2 dedicated to external light and sound alarm		
Intrinsically safe barrier				
Height:		119 mm		
Width:		25 mm		
Depth:		82 mm		
Power supply:		18,7 V DC, 6 W		
ATEX/UE certification:		KDB 05ATEX204X		
ATEX parameters:		II (1) G [Ex ia Ga] IIA, -30 °C ≤ Ta ≤ +50 °C		
Temperature Range:		-30 °C .. +50 °C		
Power Output parameters:		Uwy=15.5 VDC, Iwy=347 mA, Pwy=1.28 W		
Control Output parameters:		Uwy=5.93V DC, Iwy=62 mA, Pwy=91 mW		

Measurement and monitoring system

● Standard ● Optional ○ N/A

Tank Ranger 4	Tank Ranger 4S	Tank Ranger 5	Tank Robot	Features:
16 / 16	12 / 0	0 / 4	8 / 8	Maximum Probes (Gauges) / Sensors number
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pressure probes
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Magnetostrictive probes
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Radar probes
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other brands' probes compatibility
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Optical sensor for liquids
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Vapor sensor
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Separator sensor
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Selective optical sensor for liquids
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Other brands' sensor compatibility
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Automated deliveries
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Product and water quantity measurement
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fuel theft alarm
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tightness inspection tests
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Autocalibration

Tank Ranger 4	Tank Ranger 4S	Tank Ranger 5	Tank Robot	Features:
<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	LCD Screen: standard / touch
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Power supply 240V 50Hz 50W
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Light / sound alarm
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	RS232 / RS485 / Ethernet / USB
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Input/output module – 12 relays
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	POS protocol (VR, PV4, MODBUS RTV)
optional	optional	<input type="checkbox"/>	optional	4...20mA Output module
optional	optional	<input type="checkbox"/>	optional	PC/MAC software
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Temperature range -30 + 50C
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ATEX certification
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	External safety systems connection
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Password protection
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Diversion protection
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Cable cut protection
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Built-in license software included
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Bureau of Weights and Measures certification
optional	optional	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Printer

Fuel Distribution System AUDIS



AUDIS is a fuel distribution system using contactless or chip cards with full records of transactions and with the differentiation of the vehicle and the driver. A stand-alone version is available, or it may be installed in a device.

The AUDIS software enables the operation of more than one position, and it may be fully customized due to its configuration options and additional functions. The AUDIS system enables support for numerous petrol stations via central software providing the User with 100% control over distributed fuel.

A printer is available as an option.

Refinery and Petrol Station maintenance



We have been present on the Polish market for over twenty years, supporting our Customers with our vast experience and expertise to ensure continuous and trouble-free operation on petrol stations with liquid fuels.

We provide comprehensive services for electronic devices from all manufacturers - systems measuring the quantity of fuel in tanks, the detection of leaks as well as self-operating fueling systems.

We specialize in services for liquid-fuel measuring systems and LPG systems.

Our laboratory is equipped with a laser interferometer and cooperates with the Polish Central Office of Measures to calibrate measurement probes.

We listen to our Customers and we try to meet their needs, changing legal acts, official requirements.

Every day we try to do our duties as best as we can.

We support the designers



Are you a designer? Do you draw up designs related to industrial systems in a comprehensive manner? Are you looking for information about measurement systems, leak detection systems? If your answer is YES, you certainly value your time and you need:

ready-made CAD files with functional drawings of products

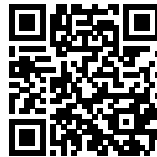
accurate technical and functional information

assistance in a comprehensive preparation of a system's functionalities

information about possible requirements regarding process or explosive safety, or EX directives

you will find it at:

<http://petroster-serwis.pl/en-tankranger/>



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