LPG STORAGE TANKS & OTHER LPG EQUIPMENT

FOR SAFE STORAGE AND DISTRIBUTION OF LPG

KADATEC

COMPANY

We started our business activity in 2006 as sales and developing company in the field of LPG, gradually growing our offer in LPG technologies. In 2011-2012 we built up a new spacious plant for manufacture of LPG storage tanks, with production capacity of 12 000 tanks per year.

Our tanks are manufactured on new and modern machinery (welding machines from Germany, rollers from Switzerland). Thus we achieve manufacturing quality and productivity.

In addition, we offer 100% x-ray of welds by digital radiography (Kodak), which allows digital storage and evidence of radiographic images.

In order to provide complete technological solutions for use of LPG, we represent leading international manufacturers of LPG technologies (Algas-SDI, Corken, Gilbarco Veeder-Root).

We supply our tanks to customers in Western Europe, Eastern Europe, Russia and CIS countries, and the Middle East.

Our commitment to the quality is supported by the fact that we manufacture in a brand new plant on modern machinery, our staff is good trained and long experienced in the field of LPG. Our tanks are manufactured according to AD Merkblatt 2000 and certified according to the European Pressure Equipment Directive 2014/68/EU (modules B+D, HP 0, outside coating according to DIN 4681-3).

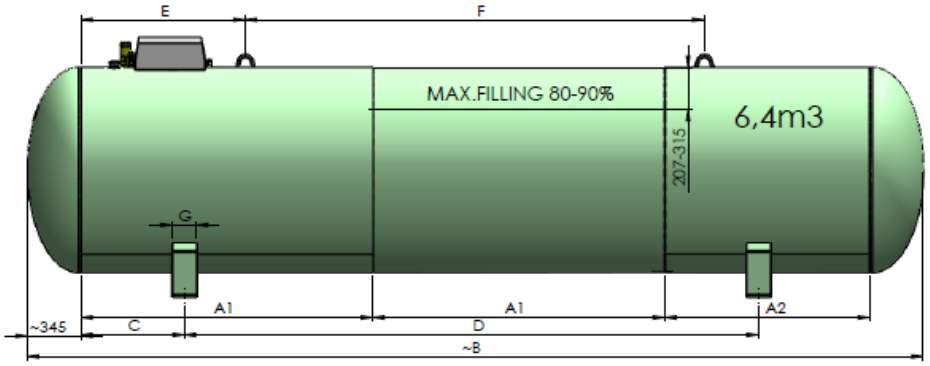
LPG STORAGE TANKS

We manufacture LPG storage tanks in overground and underground versions. Our tanks meet the requirements of European Pressure Equipment Directive 2014/68/EU. The tanks are **CE 1017** marked.
Our storage tanks can be used for domestic heating purposes, for LPG automotive filling and industrial applications.
Our company has 5 special trucks for delivery of storage tanks, three of them are equipped with hydraulic manipulator. Our fleet is specially designed to have the maximum loading capacity.

CE 1017

Capacities	500 - 125 000 liters
Outer diameters	Standard Ø1250 / Ø2000 mm. Other diameters on enquiry
Operating pressure	15,6 bar (other pressures from 12,1 bar to 17,6 bar)
Test pressure	min. 22,3 bar (up to 27 bar)
Operating temperature	Standard -20/+40˚C (other temperature ranges from -40°C to +55°C)
Medium	Liquefied gas DIN 51622 / EN 589
Standard design	according to EN ISO 12542_A1, AD2000, PED 2014/68/EU. Weld joint evaluation AD-HP0
Regulation compliance	European Pressure Equipment Directive 2014/68/EU, modules B/G + D

LPG STORAGE TANKS — OVERGROUND



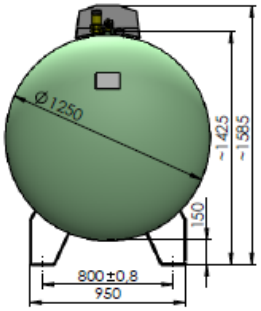


TABLE OF TANK VOLUMES AND BASIC DIMENSIONS

VOLUME (m3)	A1 (mm)	A2 (mm)	QUANTITY A (ks)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	WEIGHT (kg)
0,5 VER.	-	-	0	~660	-	400	350	700	100	185
0,5 HOR.	-	-	0	~1250	-	-	370	740	100	185
1,0	415	-	1	~1100	208	-	215	-	100	270
1,6	890	-	1	~1590	195	500	215	-	100	370
1,8	1050	-	1	~1740	175	700	215	-	100	385
2,1	1250	-	1	~1960	180	900	215	-	100	425
2,3	1500	-	1	~2190	200	1100	215	-	100	455
2,7	1780	-	1	~2480	190	1400	920	-	100	500
3,6	2500	-	1	~3200	250	2000	490	1500	100	640
4,8	1780	-	2	~4250	780	2000	1100	1320	100	805
6,0	1500	-	3	~5160	750	3000	1250	2000	150	975
6,4	1780 (2x)	1250	3	~5500	630	3500	1000	2800	150	1035
7,0	1780	-	3	~6020	910	3500	1300	2600	150	1115
9,1	1780	-	4	~7790	1060	5000	2050	3000	150	1350
10,0	1780 (3x)	1250	5	~8520	930	2x3000	2350	3400	150	1500
10,2	2000	-	4	~8690	860	2x3000	2250	3400	150	1530
11,2	1780	-	5	~9560	1430	2x3000	2750	3300	150	1705
11,5	1500	-	6	~9690	850	2x3500	2490	4000	150	1730
12,8	1780 (5x)	1250	6	~10850	1075	2x4000	2820	4500	150	1930
13,0	1780 (3x)	1250	7	~11020	1130	2x4150	2565	5000	150	1970

DESING OPTIONS

MAX. WORKING PRESSURE	TESTING PRESSURE	MAX. WORKING TEMPERATURES
15,6 BAR	22,3 BAR	-20/+40 °C (-40/+40 °C)
16,7 BAR	23,9 BAR	-20/+45 °C (-40/+45 °C)
17,6 BAR	25,2 BAR	-20/+50 °C (-40/+50 °C)

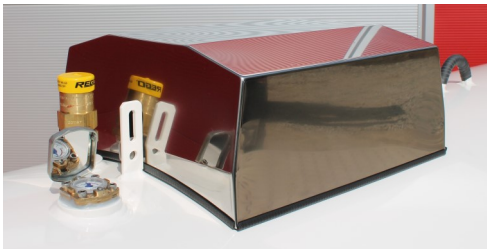
STANDARD DESIGN ACCORDING TO
EN ISO 12542_A1, AD2000,
PED 2014/68/EU

MAXIMUM WORKING PRESSURE: 15,6 bar
TESTING PRESSURE: 22,3 bar
DESIGN WORKING TEMPERATURES: -20/+40°C
MAXIMUM FILLING: 85 %
CORROSION ALLOWANCE: 0 mm
WELD FACTOR: 1
WELDED JOINTS EVALUATION ACCORDING TO AD-HP0

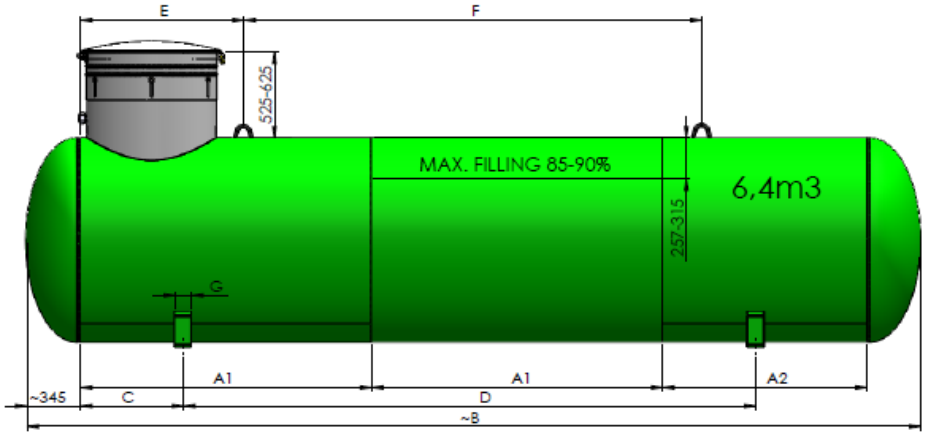
ADDITIONAL WELDING MATERIALS:
WELDS 135 - WIRE 1,2 mm EN ISO 14341_A
WELDS 121 - WIRE 3,0 mm EN ISO 14171_A
WELDS 141 - WIRE 2,0 mm EN ISO 636_A

SURFACE FINISH:
SAND BLASTED Sa 2,5
POLYURETHANE COATING MIN.120µm
RAL 9010 (RAL 6019, RAL 258 010)

Materials	Bottoms: min. thickness 5,7mm, S355J2+N AD/W1; P355N according to DIN 28013 Sheets: min. thickness 5,1mm, S355J2+N AD/W1; P355N according to EN 10025
Welded joints	Evaluation AD-HP0
Surface finish	Sand blasted SA2,5, PU coating min. 120µ
Valves	REGO / SRG / OMECA standard pressure equipment (filler valve, service valve, liquid service valve, 1-2 external relief valves, float gauge)



LPG STORAGE TANKS - UNDERGROUND



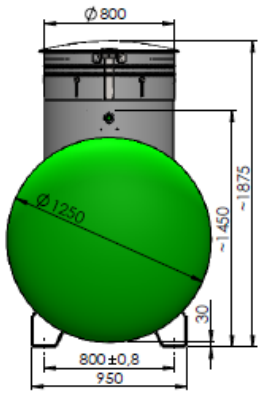


TABLE OF TANK VOLUMES AND BASIC DIMENSIONS

VOLUME (m3)	A1 (mm)	A2 (mm)	QUANTITY A (ks)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	WEIGHT (kg)
1,0	415	-	1	~1100	208	-	215	-	100	290
1,6	890	-	1	~1590	195	500	215	-	100	390
1,8	1050	-	1	~1740	175	700	215	-	100	410
2,1	1250	-	1	~1960	180	900	215	-	100	455
2,3	1500	-	1	~2190	200	1100	215	-	100	485
2,7	1780	-	1	~2480	190	1400	890	-	100	530
3,6	2500	-	1	~3200	250	2000	490	1500	100	670
4,8	1780	-	2	~4250	780	2000	1100	1320	100	840
6,0	1500	-	3	~5160	750	3000	1250	2000	100	1010
6,4	1780 (2x)	1250	3	~5500	630	3500	1000	2800	100	1070
7,0	1780	-	3	~6020	910	3500	1300	2600	100	1150
9,1	1780	-	4	~7790	1060	5000	2050	3000	100	1390
10,0	1780 (3x)	1250	5	~8520	930	2x3000	2350	3400	100	1550
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11,2	1780	-	5	~9560	1430	2x3000	2750	3300	100	1750
11,5	1500	-	6	~9690	850	2x3500	2490	4000	100	1775
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13,0	1780 (3x)	1250	7	~11020	1130	2x4150	2565	5000	100	2015

DESIGN OPTIONS

MAX. WORKING PRESSURE	TESTING PRESSURE	MAX. WORKING TEMPERATURES
12,1 BAR	17,3 BAR	-20/+30 °C (-40/+30 °C)
15,6 BAR	22,3 BAR	-20/+40 °C (-40/+40 °C)
16,7 BAR	23,9 BAR	-20/+45 °C (-40/+45 °C)
17,6 BAR	25,2 BAR	-20/+50 °C (-40/+50 °C)

STANDARD DESIGN ACCORDING TO EN ISO 12542_A1, AD2000, PED 2014/68/EU

MAXIMUM WORKING PRESSURE: 15,6 bar
TESTING PRESSURE: 22,3 bar
WORKING TEMPERATURES: -20/+40°C
MAXIMUM FILLING: 85 %
CORROSION ALLOWANCE: 0 mm
WELD FACTOR MAXIMUM WORKING PRESSURE: 1

WELDED JOINTS EVALUATION ACCORDING TO AD-HP0

ADDITIONAL WELDING MATERIALS:
WELDS 135 - WIRE 1,2 mm EN ISO 14341_A
WELDS 121 - WIRE 3,0 mm EN ISO 14171_A
WELDS 141 - WIRE 2,0 mm EN ISO 636_A

SURFACE FINISH:
SAND BLASTED Sa 2,5
EPOXY COATED MIN.1000µm,
ACCORDING TO DIN 4681/3, ISO TEST 25kV
RAL 6017

Materials	Bottoms: min. thickness 5,7mm, S355J2+N AD/W1; P355N according to DIN 28013 Sheets: min. thickness 5,1mm, S355J2+N AD/W1; P355N according to EN 10025
Welded joints	Evaluation AD-HP0
Surface finish	Sand blasted SA2,5, epoxy anticorrosive coating 1000µm, according to DIN 4681/3, ISO test 25kV
Fittings	REGO / SRG / OMECA standard pressure equipment, adjustable stainless steel hood Ø800mm, H550-650mm

We offer underground tanks with adjustable all-stainless steel hood Ø800mm. The hood is adjustable in height H550-650mm, which is perfect for uneven terrain, and are lockable at 110°.

AUTOGAS FILLING SKIDS — OVERVIEW

We produce 3 versions of autogas compact filling skid:

* with submersible pump Red Jacket/ Ebsray in shaft
* with submersible pump Red Jacket/ Ebsray without shaft
* with external pump Corken/ Ebsray and Siemens motor

All versions are possible in overground or underground execution. As standard we offer units of Ø1250mm (Ø2000mm on customer request).

The units are equipped with:

* KADATEC dispenser in stainless steel, very accurate measurement (0,2%) on principle of mass flow measuring, remote data monitoring.

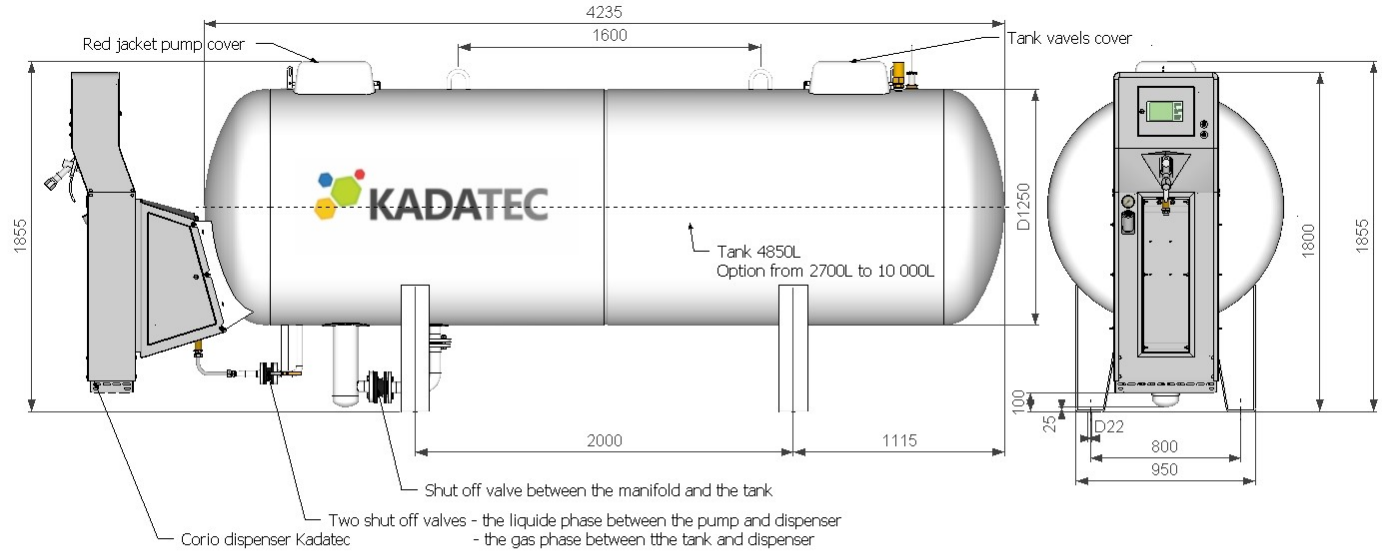
The unit complies with European requirements: PED (Pressure Equipment Directive 2014/68/EU (modules B/G+D), European Directive of measuring instruments 2004/22/EC and ATEX Directive 2014/34/EU.

Autogas filling skids is an ideal solution how to complement the fuel station with LPG fueling technology.

Pump protection *Differpress* protects the Red Jacket pump against the dry running, continuously measures and displays the pressure in the pipeline behind the pump.

Volume tank D1250mm	4 850 l	7 000 l	10 000 l
Max. filling capacity	2 145 kg	2 975 kg	4 420 kg
Max. working pressure	Standard 1,56 MPa		
Max. differential pressure	0,92 MPa		
Max. flow	50 l/min		
Dispensing accuracy	±0,2 %		
Operating temperature	Standard -20/+40 °C		
Electrical connection	3x230/400V AC±15%, 50 Hz / 2,2 kW		
Approvals	EC certificates FTZU 12 ATEX 0080X (Ex II 2G IIA T3) and TCM 141/13-5084		

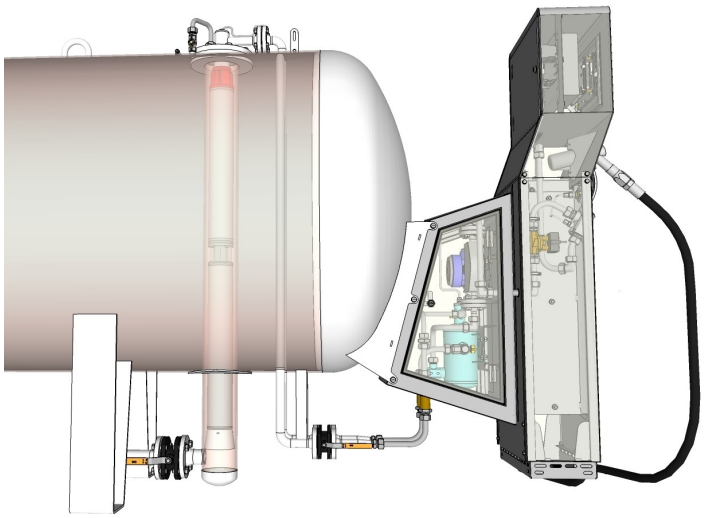
AUTOGAS FILLING SKID WITH RED JACKET PUMP IN SHAFT



Autogas filling skid is an elegant and cost-effective solution, where dispenser and pump are directly mounted on the tank, without supporting frame.

Submersible pump Red Jacket or Ebsray is placed in a protective shaft directly in the tank.

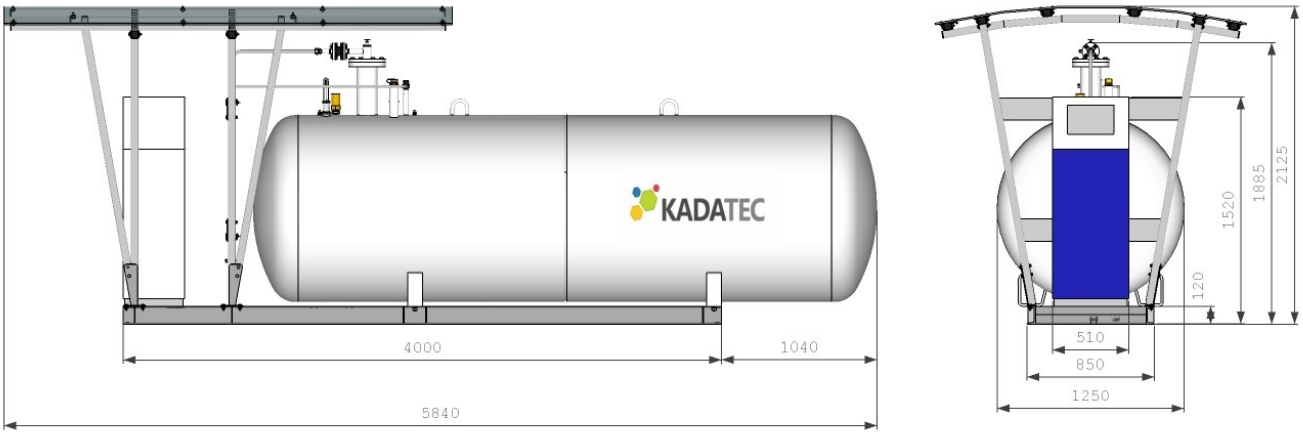
+ With KADATEC dispenser the measurement is performed through mass flow meter with its own temperature compensation, measurement accuracy of 0,2% and accurate information about density and composition of gas.
+ Pump servicing is done without empting the tank: in the shaft the ball valve is closed and the pump can be replaced safely.
+ Pump protection Differpress protects the Red Jacket pump against the dry running, continuously measures and displays the pressure in the pipeline behind the pump.
+ KADATEC dispenser Corio is specially designed for autogas filling skids.



Components:

* Storage tank in overground or underground execution.
* Red Jacket submersible pump type Premier LPG300V17-21 or Ebsray submersible pump RX33, placed in a shaft, with bypass, with pump protection Differpress
* LPG dispenser KADATEC Corio or Corio duo, with a Coriolis mass flow meter LPGmass (dispensing accuracy ±0.2%).
* LPG monitoring system, informing about gas level in the tank.
* Piping, polycarbonate shelter (in case of frame mounting).

AUTOGAS FILLING SKID WITH RED JACKET WITHOUT SHAFT



Autogas filling skid with submersible pump Red Jacket/Ebsray without shaft, with dispenser of any manufacturer, is the cheapest option of the unit. The pump is placed directly in the tank, and for the pump servicing the tank must be emptied.

Components:

* Storage tank in overground or underground execution, Ø1250mm (Ø2000mm)
* Red Jacket submersible pump type Premier LPG300V17-21 or Ebsray RX33, with or without bypass, with pump protection Differpress
* LPG dispenser KADATEC Corio or Corio duo, with a Coriolis mass flow meter LPGmass (dispensing accuracy ±0.2%) or one-hose dispenser of any other manufacturer —it requires frame mounting.
* Piping, polycarbonate shelter (in case of frame mounting).

LPG DISPENSER CORIO / CORIO DUO

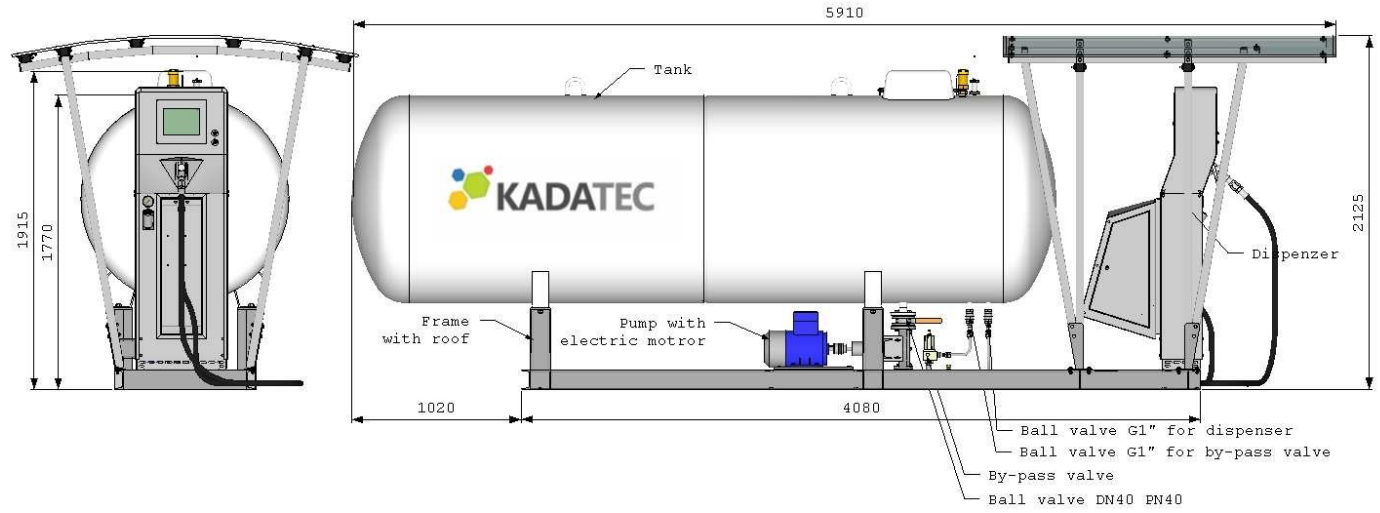
The dispenser Corio has a specially developed design for use on autogas filling skids.
The key element of the dispenser is a mass flow meter with its own temperature compensation, which exactly measures dispensed amount on the principle of Coriolis force. Data from the flow meter is then processed by measuring unit, which transmits it to the fuel station terminal.

<u>Standard functions of dispenser Corio / Corio duo:</u>

* Volume or Price - electronic setting
* ATC - automatic temperature compensation.
* Auto stop at 100% - automatic dispensing stop by full car tank.
* Monitoring system – continuous electronic monitoring of the situation with an acoustic / visual warning.
* Possibility of self-service via GSM mobile operator (payment via mobile phone, NTF technology).

The dispenser is certified according to the European Measuring Equipment Directive 2004/22/EC and ATEX Directive 2014/34/EC.

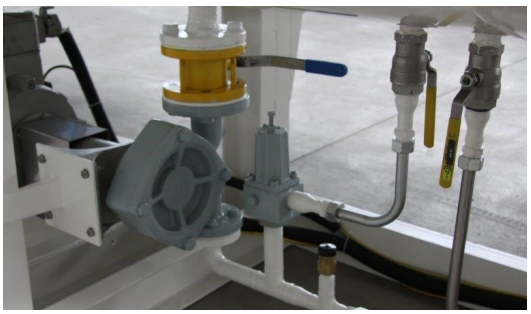
AUTOGAS FILLING SKID ON FRAME WITH CORKEN PUMP



Components:

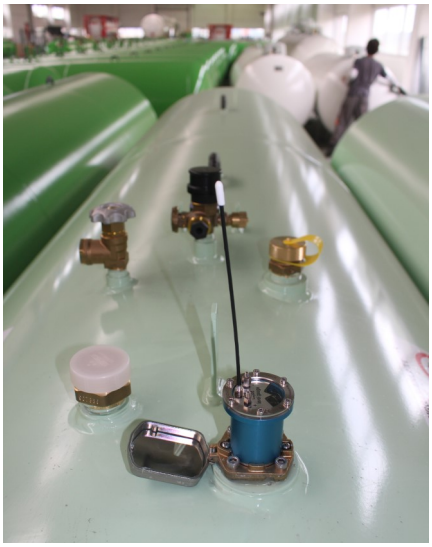
* Storage tank in overground or underground execution, D1250mm (alternative: D1600mm / D2000mm);
* External pump Corken FD075/FD150, or Ebsray RC20/RC25, with bypass;
* LPG dispenser KADATEC Corio or Corio duo, with a Coriolis mass flow meter LPGmass (dispensing accuracy ±0.2%) or one-hose dispenser of any other manufacturer –it requires frame mounting.
* Explosion-proof three-phase asynchronous low-voltage motor Siemens series AOM, 3/4kW or 5,5kW, ex proof design ExdIIB+H2T4Gb;
* Frame, piping, polycarbonate shelter.

The gas station is mounted on the frame. Compact gas station on frame was developed according to the requirement for the compact gas station with an external pump.

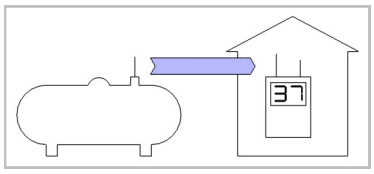


MONITORING SYSTEM FOR LPG STORAGE TANKS

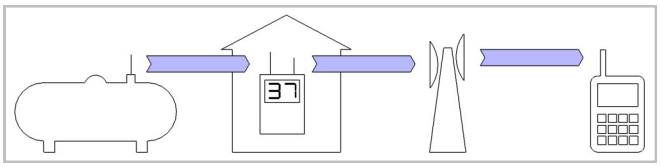
The liquid gas level monitoring system (telemetry) is designed for remote monitoring of gas level in LPG tank and can be used to monitor and manage gas supply. The data are available directly on the mechanical indicator of the transmitter and are transmitted via radio to the receiver display. The kit is composed of transmitter KTX01 and receiver KRX02.



Transmitter environment	Ex-zone 1 or 2
Environment category	II 2G EEx ia IIC T4 -20 Ta +55 °C
Receiver environment	usual
Transmission frequency	433,92 MHz
Transmitter power supply	Internal lithium battery 1 100 mAh (min. 5 years operation)
Receiver power supply	DC 9 V/100 mA or AC adapter
Basic range	100 meters (may be extended)
Sending of information	Every 2 minutes
Certificate	CE-type certificate (ATEX) according to Directive 2014/34/EU



⇒ **BASIC VERSION:** transmission of information about the amount of gas. Information displayed it on the LCD of the receiver as % value of the tank volume.



⇒ **GSM VERSION:** the receiver has additionally an implemented GSM modem, which allows the user to check the gas level with his mobile phone.

To manage multiple tanks and large systems there is a special software available.

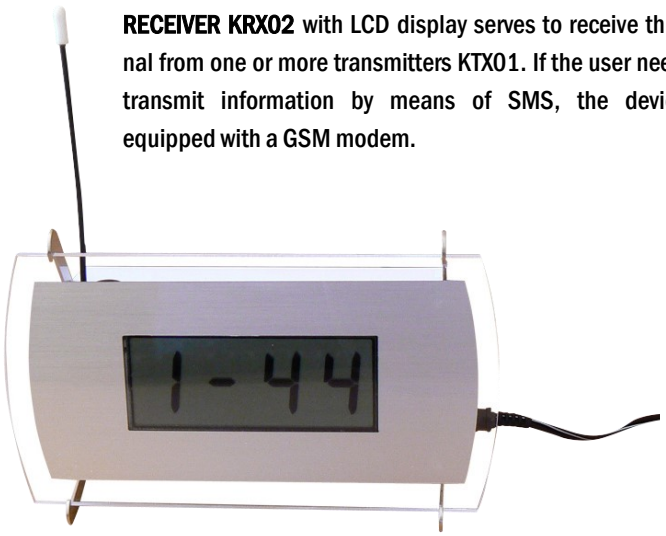
SENDER KTX01 performs digital reading from the level gauge. It is compatible with all types of level gauges. Measurement accuracy is the same as by the mechanic indicator installed on the tank. Sender ensures following functions:

* Indication of the gas level in the tank and radio data transmission
* Monitoring of cathodic protection
* Measurement of ambient temperature and internal battery
* Energy generation from an outside source 1.2 V (cath. protection, solar cell, battery)

\+ Robust waterproof construction

\+ Ultra-low power consumption

RECEIVER KRX02 with LCD display serves to receive the signal from one or more transmitters KTX01. If the user needs to transmit information by means of SMS, the device is equipped with a GSM modem.



TRANSMITTER-RECEIVER KRT01 is used to extend the range or to transmit data under difficult conditions. The device does not require any operating or maintenance. The device is powered by solar cell.

CATHODIC PROTECTION FOR LPG UNDERGROUND TANKS

Active cathodic anticorrosive protection serves to guarantee functional safety and extension of lifetime of steel equipment stored in water or in earth. It is especially suitable for underground LPG storage tanks.

Cathodic protection set includes:

* Galvanic anode (2,0 kg or 4,0 kg net) of magnesium alloy pre-packaged in cotton bag, filled with backfill. Amount of anodes depending on size of steel construction (S1, S2 or S4).
* Connecting box, which connects galvanic anodes with protected construction and which further enables to conduct check measurements.
* Connecting cable (length ca. 6m) links connecting box with protected construction.

Code	Set	Recommended usage
S1	1x anode 2,0kg, 1x 6m cable, connecting box	LPG tank <2700l
S1-0	1x anode 2,0kg, 1x 6m cable	LPG tank <2700l
S2	2x anode 2,0kg, 2x 6m cable, connecting box	LPG tank 2700l - 4800l
S4	4x anode 2,0kg, 4x 6m cable, connecting box	LPG tank >4800l

LARGE STORAGE TANKS UP TO 125M³

Capacities	up to 125 000 liters
Outer diameters	2500 / 2800 mm
Operating pressure	15,6 bar (other pressures possible)
Test pressure	min. 22,3 bar
Operating temperature	-20/+40˚C (other temperature ranges on request)
Medium	Liquefied gas DIN 51622 / EN 589
Manufacturing standard	AD-Merkblatt 2000
Regulation compliance	European Pressure Equipment Directive 2014/68/EU, modules G + D

KADATEC s.r.o.
Industrial zone
257 64 Zdislavice
Czech Republic
Phone: +420 317 705 090
Fax: +420 317 705 071
Mobile: +420 724 850 696
Mailto: kadatec@kadatec.cz

www.kadatec.cz

KADATEC