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Transportable fuel filling stations

The fuel filling station "MICROSTA 12" is a transportable micro fuel filling station, mounted in a containerized enclosure.

"MICROSTA 12" is destined to marketing fuels to motor vehicles both in towns, on national roads and at isolated country side, resorts, county roads or inside trading companies for their own stock of motor vehicles.

The micro fuel filling station "MICROSTA 12" consists of all the equipment necessary to simultaneous storage and marketing and of maximum safety conditions for two different types of fuels.

The overall storage capacity of the equipment is 12,000 l, in a tank with two independent and sealed compartments.

The fuel dispenser pump, type ZS - 2402 T20, consisting of two hydraulic units, two hoses, two nozzles, single side display, is produced by "SCHEIDT & BACHMANN" Germany (exclusive supplier ARAL, AGIP, SHELL, etc.).

The automation plant is complex and makes possible the service of the station by only one shift operator.

The atmosphere in the tank's chamber and of the supply pump is watched by eudiometer GMC7022E vapors analysis unit manufactured by Bieler + Lang Germany and by the automatic fire extinction plant.

The room destined to operator personnel allows the control of the whole plant parameters through the control and signal panel, TFAMC, and provides an adequate comfort level due to inner endowments (AI works with thermopan glass, AI horizontal blinds, linoleum, desk, chair, metallic locker).

Vehicles can transport the plant.

The micro fuel filling station "MICROSTA 12" is homologated; favorably confirmed by the Prahova Fire Department and the Office for Environment Protection, Prahova, it is Ex certified by INSEMEX Petrosani, with examination certificate Ex, type no. SECEExNMATEx2000.12008X.

The putting into service of the plant requires a minimum of arrangement of location field: concrete platform, intersection way of vehicle access, earth plug and connection to electricity network of 380 V.

The delivery term of the product is maximum 45 days from contract conclusion.

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FUNCTIONS CARRIED OUT BY THE PRODUCT "MICROSTA 12"

Storage in tank 2x6000 l
Tank loading with two Electro-pump units, which consist of:

- centrifugal pump AC 302, nominal flow 250 l/min.
- electric motors Ex 2.2KW-380V/1500 rpm
- crude filter with metallic screen 150 μ
- hose for oil product circulation, with Cu insertion 2" x 4.0 m
- fast couplings for connection to bulk lorry 3"

Distribution of fuels with double dispenser S&B ZS 2402

- min-max flow 2-50 l/min/station
- delivery hoses SLIMLINE: 1" x 4.0 m
- automatic dispensing valves "ZVA" type 1"
- LCD display 3 registers/6 letters

Measure of liquid level in the tank:

- a. Level measuring tape with optical sighting
- measurement precision 1.65 \div 10 l/mm
- b. Level electronic indicator with LEDs
- reading accuracy 300 \div 400 l/ stage

Controls:

all electric controls are executed from the control and signal panel situated in operator's room
the control of ball-shaped valves is done by actuating levers.

Protection against fires in the chamber of storage tank:

Automatic plant of notification, alarm and fire extinction

- temperature indicator in the chamber of the tank, threshold: 70°C
- light and sound warning
- delay up to general electric disconnection: 15 sec.
- powder and N₂ extinguisher 50 kg
- control equipment for potential explosive environments
- the thermal insulation of walls is made of fireproofed polyurethane

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Measure of potential explosive atmospheres

Bieler + Lang GMC 7022E vapors concentration analysis unit equipped with two 822

Exmess semiconductor sensors

- measurement range: 0 ÷ 90 % LEL
- pre - alarm level, signaling 20 % LEL
- alarm and general electric disconnection level 50 % LEL

Automations:

tank loading is limited to 95 % of max. volume

when the 70°C threshold is reached, the temperature in tank's chamber releases the plant for automatic extinction of the fire.

vapors' concentration over the pre-alarm threshold releases the optical and sound signaling, disconnects the electricity consumers

blockage of delivery during the loading of fuel tank.

Handling of the product can be made by a 12tf auto crane and the device DR 100.

Overall dimensions: Length: 8000mm; Width: 2350mm; Height: 2565mm.

Overall weight without fuel: 6800Kg

Structure of the MICROSTA 12 plant

Electro – pump, gasoline pump-over

Sensor Ch1 measurement of vapor concentration in tank compartment

Electro – pump Diesel oil pump-over

Storage tub for leakage from tank

Tank filling pipes

Gasoline level measurement equipment

Storage tank for fuels

Diesel oil level measurement equipment

Pipes for gasoline circuit

Sensor Ch2 measurement of vapor concentration in supply pump compartment

Automatic fire extinction plant

Fuel dispenser pump

Control and signal panel

Niche for derivation 380V grid

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Delivery parts

1. MICROSTA 12 plant	1pc.
2. Firm and flags	1set
3. Tilting dome	1pc.
4. Fixed dome	1pc.
5. Flag pier	2pcs.
6. Desk	1pc.
7. Chair	1pc.
8. Metallic locker for documents	1pc.
9. Key set	2sets
10. Price stickers	2sets
11. Earth tongs	1pc.
12. Dr100 device	1pc.
13. Cover special wrench	1pc.
14. Connection special wrench	1pc.
15. 2" loading hoses	2pcs.
16. Al horizontal blinds	3pcs.
17. DR100 lifting device	1pc.
18. Tank ventilation pipes	2pcs.

STORAGE/DISPENSING FUEL UNIT

SM 14

The fuel storage and distribution module, SM 14 is especially destined to trading companies for their own Diesel oil tankage, that totally corresponds to the environment protection norms, to the safety against apparition and extinction of fires and labor protection norms.

The resistance structure is made of steel rolled sections and the roof is made of "Isopan", a sandwich made of steel plate with injected polyurethane that provides the thermal protection against solar beams.

The cylindrical tank has the storage capacity of 14,000 l of Diesel oil (optionally there can be made smaller capacities).

The possible fuel leakage from the tank are taken over by the storage tub of leakage and gas exchange during the loading/emptying of the tank is performed by the 1" metallic pipe, equipped with flame arrester.

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The loading of the tank with fuel is effected with the Electro-pump group, filter, 2" hose, which provide a flow of 250 l/min.

The measurement system of the liquid level in the tank is type "measuring tape with optical sighting" which provides a precision of minimum 6 l/indicated mm. The Diesel oil dispenser pump is ZS-2401 type, produced by "SCHEIDT & BACHMANN" Germany.

The electric panels for the control of the whole plant as well as fire extinguish equipment are placed on a separate shelf placed at 4.5 m towards the module.

All electric equipment mounted on the module is in Ex construction.

The module is power supplied from the 380V network and has an installed capacity of 2.8 KW. On the location it is necessary to execute an earth plug with the resistance of 1 ohm and if the conditions require, it is also necessary a lightning protection plant.

The module has an outer protection made of a metallic latticework.

The location of the module requires an area of 3m x 6m, according to the conditions stipulated by the standard CEI 79-17/1996.

FUNCTIONS CARRIED OUT BY "SM 14"

Storage in tank	14,000 l
Tank loading with two Electro-pump groups, which consist of:	
- centrifugal pump AC 302, nominal flow	250 l/min.
- electric motors 100 ASA ExII Bt 4	2.2KW-380V/1500 rpm
- crude filter with metallic screen	150 μ
- hose for oil product circulation, with Cu insertion	2" x 4.0 m
- fast couplings for connection to bulk lorry	3"
Distribution of fuels with distributor Scheidt & Bachmann 2401 Z	
- min-max flow	2 ÷ 75/min/station
- fine filter with metallic screen, reusable	40mm
- delivery hose SLIMLINE:	1" x 4.0 m
- automatic pistol for delivery ZVA oil products	1"
- LCD display	
Measure of liquid level in the tank, level ruler with optical sighting:	
- measurement precision	1.65 ÷ 10 l/mm
- measurement range min/max	100 ÷ 2000 mm
Anticorrosive protection is provided by:	
- inner and outer coating with two ground layers, min 80 μ	
- inner painting of the tank, ground 4906 DIALUC – S.U.A., min 60 μ	
- outer coating with alkyd paint, type DURALCHID, min 60 μ	

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Controls:

- electric controls are executed from the control panel situated in the same structure with the PSI panel, at a distance of $l = 4.5\text{m}$ towards the module
the control of ball-shaped valves is done by actuating levers.

Protection against fires:

powder and N_2 extinguisher

50 kg

PSI board with standard endowment (shovel, pick, bucket, sand box)

the thermal insulation of the roof of the module is made of fireproofed polyurethane
40mm

electric equipment, in dangerous zones (0,I and II) is of type Ex

Local illumination of the module in pumps' area with Ex lamp 2x36W

Automations:

tank loading is mechanically limited by a 2" float valve to 95 %

disconnection of all electric equipment by the drive of button N1 117 Ex

The transportation of the module can be executed by standard means of transport for the load of 6tf.

Handling of the product is performed by a 12tf auto crane and the device DR 100.

Overall dimensions: Length: 5850mm;

Width: 2350mm;

Height: 2450mm.

Overall weight without fuel:

5000Kg.

Structure of SM 14 plant

Vapor evacuation installation

Module resistance structure

Storage leakage tub

Tank 14m^3

Hanger

Manhole

Level measurement mechanism

Diesel oil admission pipe

Supply pump

PSI board

Electric panel

Electric conductors route

Supply hose SLIMLINE

ZVA Supply pistol

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3" coupling to fuel truck

2" tank filling hose

Access step

"Stop damage" button

Loading Electro-pump

Metallic lattice work

Loading pipe of the tank

Delivery parts

SM 14 plant

1pc.

PSI board

1pc.

Key set

2sets

Earth tongs

1pc.

Special wrench for pump cover (for pump over)

1pc.

Special wrench for fuel truck connection

1pc.

2" loading hose

1pc.

Flame arrester and ventilation tank pipe

1pc.

Electric control panel

1pc.



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