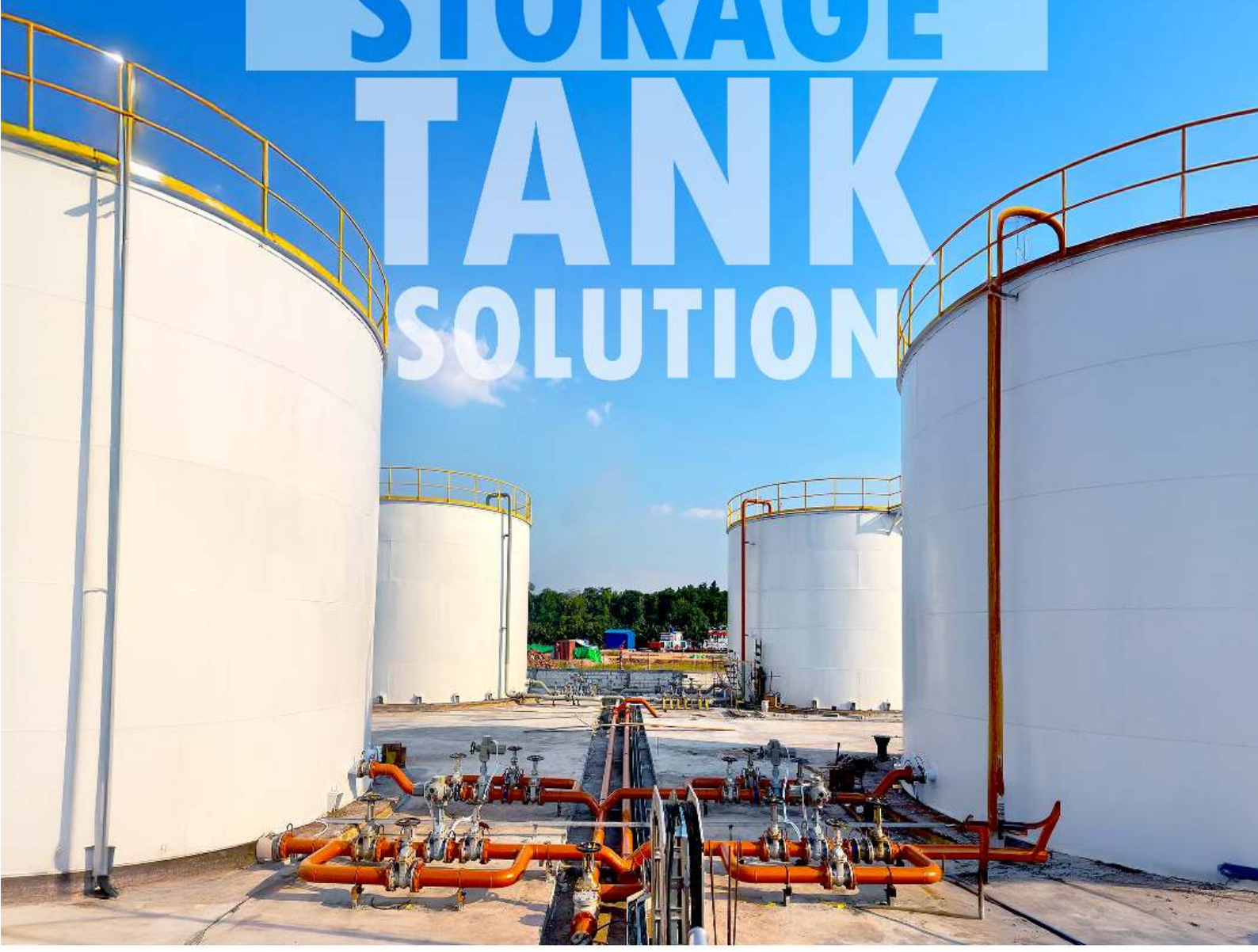
REXLINE ENGINEERING

FUEL STORAGE TANK SOLUTION



ENGINEERING | PROCUREMENT | CONSTRUCTION

Automated fuel terminals, from SPOB unloading to the dispenser nozzle. Designed, fabricated, built and commissioned by Rexline's own teams.

10 to 2,000 kL
Tank capacities, sized to ESDM requirements

Siemens SCADA
One control room, with a live view from your head office

Automatic hydrant
Fire protection built in from day one

REXLINE ENGINEERING



ruck loading gantry and vehicle refuelling canopy at a 4 × 500 kL fuel terminal built by Rexline in Merauke, South Papua

One Contractor, One Control Room From SPOB to Dispenser

PT Rexline Engineering Indonesia designs, fabricates, builds, automates and commissions complete fuel storage and handling terminals for mining, port, industrial and power generation operations across Indonesia. Fuel is pumped straight off the SPOB into an automated tank farm, then loaded into road tankers and dispensed to site vehicles. Every pump, valve, tank level and dispenser runs on one Siemens PLC and SCADA system in the MCC room, your head office can follow the same screens live, and an automatic hydrant system protects the whole site.

10–2,000 kL

Tank capacities, from compact mobile tanks to large vertical storage

1 SCADA

Unloading, storage, truck loading, dispensing and fire status on one Siemens system

Head office

Live levels, flows and alarms at your head office over a secure link

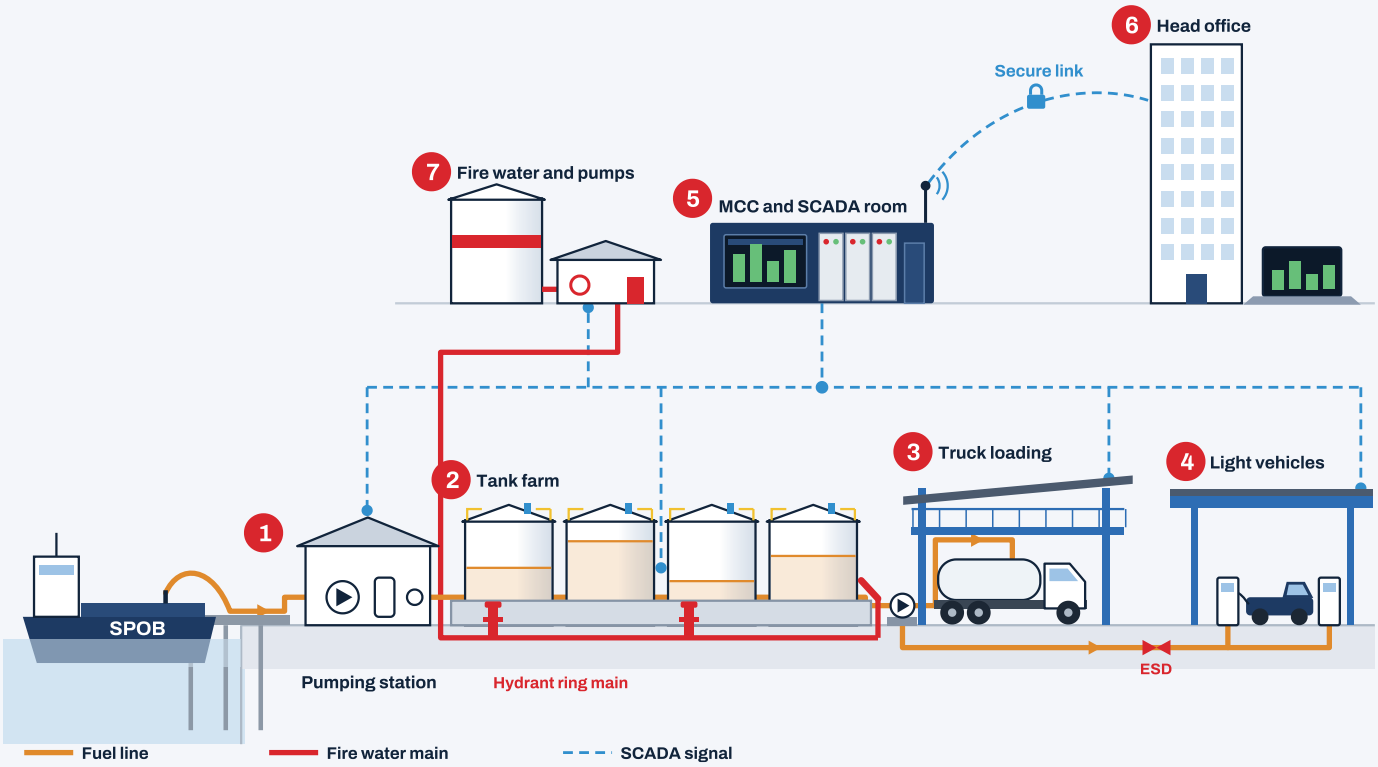
In-house

Designed in Surabaya, fabricated in Lamongan, built and commissioned by our own crews

REXLINE ENGINEERING

How The System Work

Seven parts, one EPC contract and one Siemens SCADA system, all designed, built and commissioned by Rexline.



1 SPOB unloading and pumping station
Rexline's pumps draw fuel straight from the SPOB, then filter and meter it on its way to the tanks.

2 Automated tank farm
Tanks from 10 to 2,000 kL with level transmitters, high-level alarms and motorised valves.

3 Truck loading gantry
Overhead loading bays for road tankers, metered and interlocked.

4 Light vehicle refuelling
Metered dispensers for site vehicles, fed through an emergency shutdown valve.

5 MCC and Siemens SCADA room
One screen starts pumps, moves valves and shows every level, flow and alarm.

6 Head office monitoring
The same live data at your head office over a secure link.

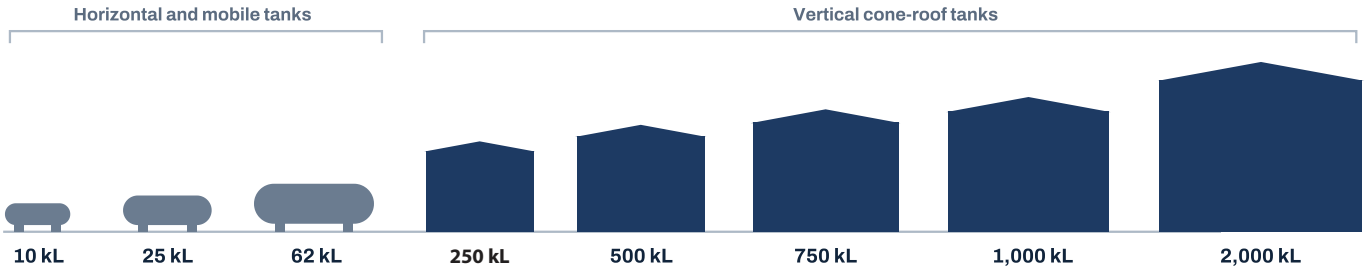
7 Automatic fire protection
Fire water tank, self-starting fire pumps, hydrant ring main, foam and monitors.

All seven parts come under one EPC contract, with one Rexline team responsible from design to handover.

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Any Capacity, From 10 KL to 2,000 KL

Compact and mobile tanks for small or relocatable operations, vertical cone-roof tanks for bulk storage. Each tank is sized to your consumption and delivery pattern, and specified to ESDM requirements and your project specification.



Drawn to one scale by volume to show the range. Final dimensions are set by the design for each site.

Counted in 24 kL road-tanker loads	1 load	21 loads	42 loads	83 loads
	fills a 25 kL mobile tank	fill a 500 kL tank	fill a 1,000 kL tank	fill a 2,000 kL tank



Mobile container tanks with a covered dispensing point



Vertical cone-roof tanks with stairways and roof handrails

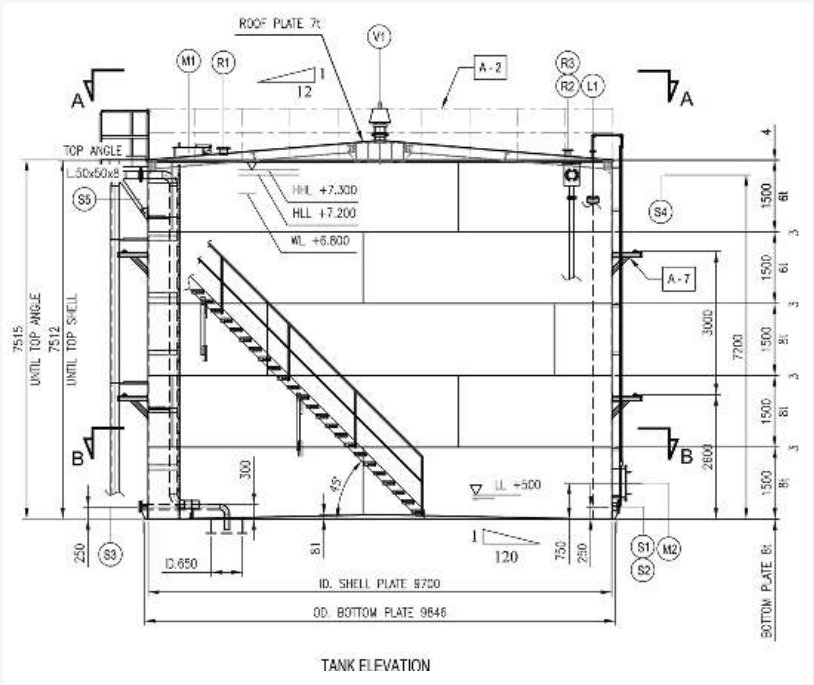
Typical tank features

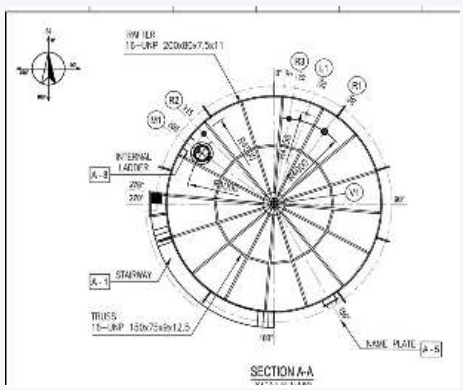
- Vertical tanks designed to API 650 Carbon
- steel shell with corrosion allowance Fixed
- cone roof with roof handrail Stairway and
- roof access platform Internal and external
- fuel-grade coatings
- Manholes, nozzles, vents and flame arrestors
- Level transmitter and high-level alarms
- Overfill protection with motorised valves
- Bund wall and secondary containment

REXLINE ENGINEERING

Engineered to API 650, Drawn In-House

An extract from the general arrangement of a 500 kL diesel tank designed by Rexline's Engineering Division. Our tanks are engineered, detailed and checked like this before fabrication starts in Lamongan.





500 m³
usable capacity

9.7 × 7.5 m
diameter and shell height

API 650
13th edition design code

Tank elevation and roof framing plan from Rexline drawing REI-029-M-GA-240, fuel storage tank T-101, 500 kL.

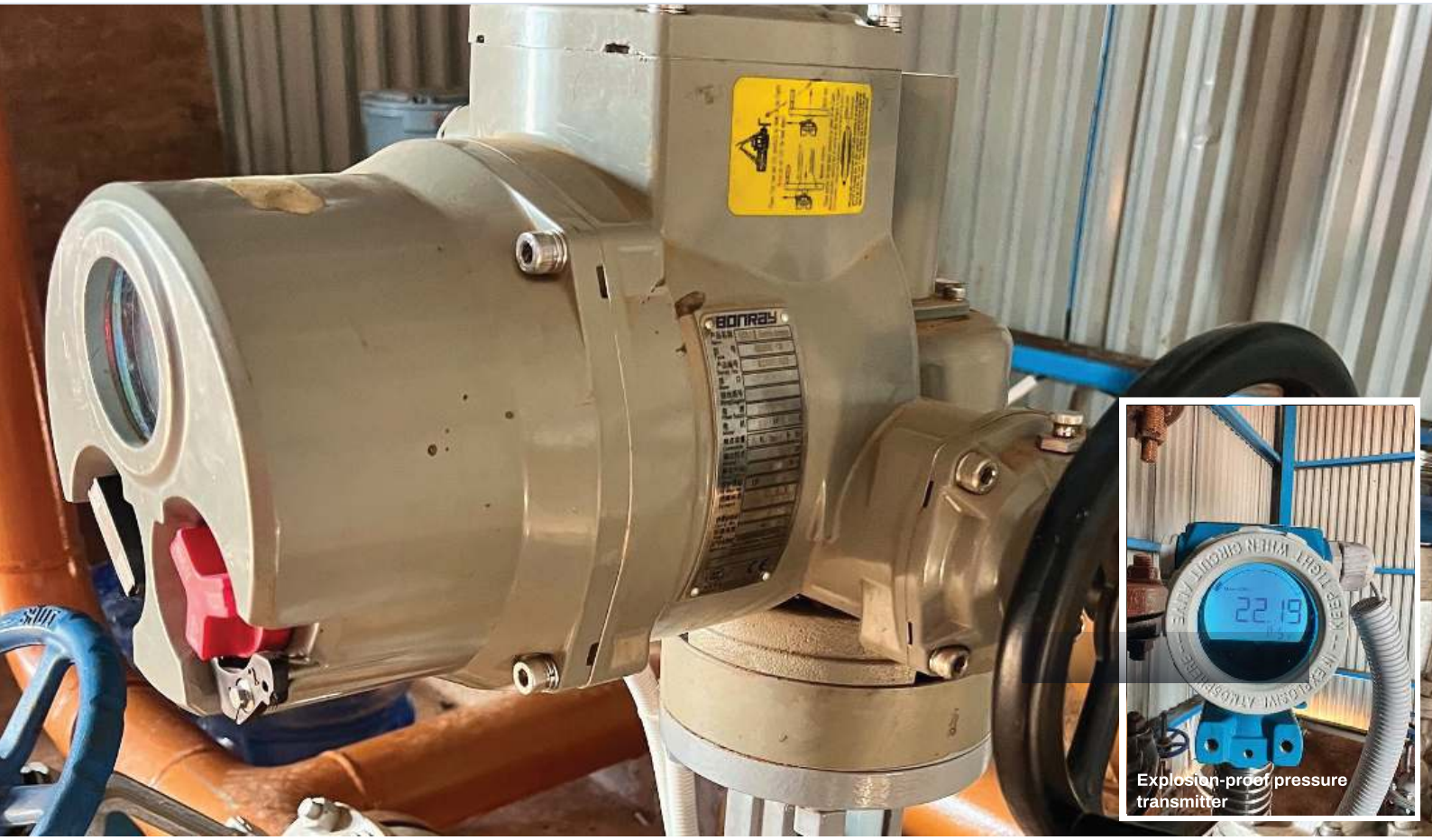
Design data

Design code	API 650, 13th edition
Product	Diesel B40, specific gravity 0.88
Usable capacity	500 m³
Tank size	9,700 mm ID × 7,512 mm shell height
Shell	8 mm lower three courses, 6 mm upper two
Bottom and roof	8 mm bottom; 7 mm cone roof at 1:12 on rafters and trusses, no centre column
Corrosion allowance	2 mm on shell, bottom and roof
Design loads	Wind 144 km/h; seismic Ss 0.12, S1 0.07; 45 °C
Materials	ASTM A36 plate; A106 Gr B pipe; A105 flanges
Tests	Full-water hydrotest; spot radiography
Coating	Sa 2½ blast; external 315 µm three-coat system; internal 75 µm primer
Weights	Empty 22 t; operating 495 t; hydrotest 558 t

Nozzles and accessories

V1	Breather valve with emergency venting, DN200
M1 M2	Roof and shell manholes, DN600
R2	Gauge pole with slot dipping device, DN100
R3	Radar level nozzle, DN100
L1	Level gauge, DN25
S6	Level switch, DN50
S5 S1	Product inlet and outlet, DN150, with spares R1 and S2
S4	Foam chamber, DN150
S3 A-6	Drain, DN100, with drain sump
A-1 A-2	Spiral stairway and roof handrail
A-3	16 anchor chairs
A-4	Earthing lugs
A-8	Internal ladder

REXLINE ENGINEERING



Explosion-proof pressure transmitter

1

SPOB Unloading

Fuel comes straight off the SPOB

Rexline's unloading pumps draw your fuel directly from the SPOB at the jetty and deliver it, filtered and metered, into the tank farm. The operator starts, watches and stops each transfer from the SCADA screen.

What's included

- Unloading pumps in a duty and standby arrangement
- Suction strainer and filter with differential-pressure monitoring
- Flow meter with live flow on the SCADA screen
- Pressure switches and explosion-proof pressure transmitters
- Motorised valves opened and closed from SCADA
- Emergency shutdown valves on the transfer line
- Jetty hose connection, pipeline, supports and expansion loops



SPOB at the jetty
Tanker barge alongside, hose connection to shore

PS-001
Pressure switch protecting the pump

P-101
Unloading pump, started from SCADA

DPT-101
Filter with differential-pressure transmitter

FT-101
Flow transmitter, live flow in L/min

MOV-001 to MOV-004
Motorised inlet valve on each tank

T-001 to T-004
Storage tanks with level transmitters

The transfer line as configured on the SCADA of the Merauke terminal, with its instrument tags.







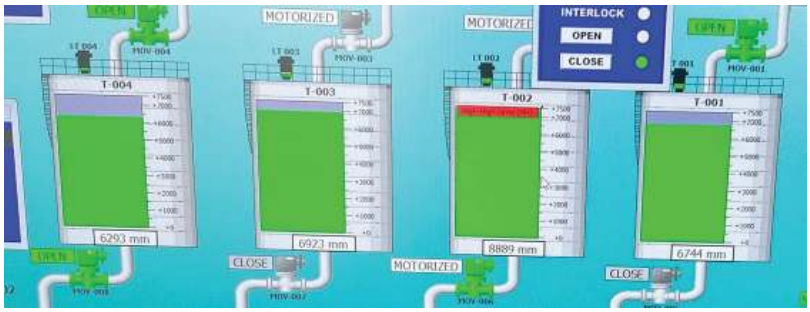


2

Tank Farm

Every tank on one screen

Each tank carries a level transmitter, high and high-high level alarms and motorised inlet and outlet valves, all wired to the Siemens PLC. The operator sees every level in real time, and interlocks stop filling before a tank can overfill.



SCADA storage view on the Merauke terminal: live level in millimetres for each tank, with a high-high alarm showing on T□002.



500 kL tank with roof handrail, inside the bund wall

- Tanks from 10 to 2,000 kL, horizontal or vertical
- Level transmitter on every tank
- High and high-high level alarms with interlocks
- Motorised inlet and outlet valves
- Manifold, pipe trench and cable trays
- Bund wall and secondary containment
- Stairways, roof handrails and access platforms
- Fuel-grade internal and external coatings

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3

Truck Loading

Road tankers loaded fast and safe

A dedicated loading pump feeds the overhead gantry, where each bay fills a road tanker through a metered loading arm. Earthing and bonding, automatic shut-off and interlocks protect every load.

What's included

- Overhead gantry with loading arms or hoses
- Dedicated loading pump and motorised valve
- Flow meters and batch controllers Automatic
- shut-off and interlocks
- Earthing and bonding for every truck
- Spill containment and drip trays
- Platform, stairs and handrails under a roof



Overhead loading from the gantry platform



Refuelling at the dispenser island, with the truck loading gantry behind

4

Vehicle Refuelling

Vehicles refuelled and recorded

Metered dispensers under a steel canopy serve light vehicles and service trucks. They draw from the tank farm through an emergency shutdown valve, and the litres issued at each dispenser show on SCADA.

What's included

- Metered dispensers, sized to your fleet
- Supply from the farm through an emergency shutdown valve
- Litres per dispenser shown on SCADA
- Steel canopy with lighting over the islands
- Fire extinguishers at the islands
- Spill containment and drainage
- Driver identification and authorisation, where required



Refuelling canopy with metered dispensers



Dispenser, meter and controls in a container unit for mobile-tank sites

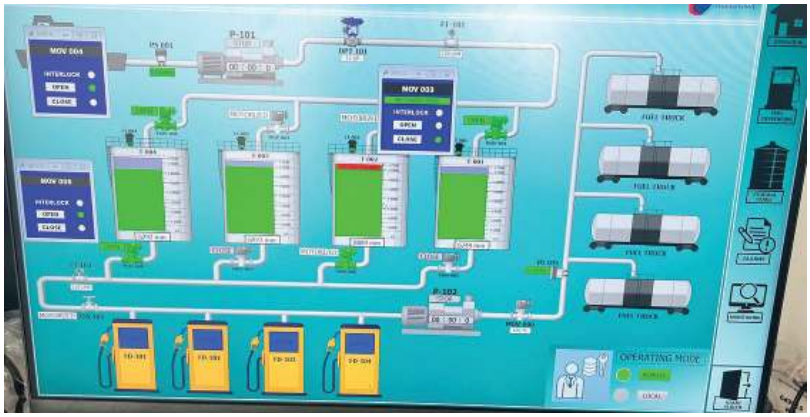


5

Control Room

One screen runs the terminal

The MCC and the Siemens PLC and SCADA sit together in one air-conditioned control room. From one workstation the operator starts the pumps, opens and closes every motorised valve, and watches every level, flow and alarm. A panel-mounted HMI gives the same view at the MCC.



SCADA overview on the Merauke terminal: SPOB unloading pump, four tanks, truck loading and four dispensers on one screen.



Local HMI on the PLC panel, with power and fault lamps

On screen, live

- Tank levels and high-high alarms
- Valve positions and interlocks
- Flow in litres per minute
- Litres issued per dispenser
- Pump status and run timers
- Remote and local operating modes

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6

Head Office

Watch your fuel from head office

The SCADA that runs the terminal also serves its data over a secure link, so your head office sees the same levels, flows and alarms as the operator on site.

Head office

Live tank levels, flows and alarms, with history and reports, on authorised computers at your head office.

Secure internet link

Control room

Siemens SCADA workstation with the terminal's own screens

Overview · Storage tanks · Fuel dispensing · Alarms · Monitoring

PLC network

PLC and MCC

Siemens PLC and motor control centre: pump starters and sequencing, valve interlocks and emergency shutdown logic.

Field cabling

- Level transmitters
- Pressure and differential-pressure transmitters
- Flow meters
- Motorised valves
- Unloading and loading pumps
- Emergency shutdown valve
- Dispensers and loading bays
- Fire pumps and detection

Remote or local



Every pump and valve runs in Remote, from the SCADA workstation, or Local, at the panel. The mode shows on screen.

Control stays on site

The Siemens PLC keeps the terminal running if the head-office link drops. The link carries monitoring and reports, with access set by your IT policy.

What head office sees

- Stock level in every tank
- Flow on the unloading and loading lines
- Litres issued at each dispenser
- Alarm and event history



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Hydrant pillar, hose cabinet and fire water main at a horizontal tank farm built by Rexline

7

Fire Protection

Fire protection that starts itself

A pressurised hydrant ring main surrounds the tank farm. When a hydrant or monitor opens, the fire pumps start automatically, and the status of the whole fire system shows on SCADA with the rest of the terminal.

1 Prevent

- High and high-high level alarms
- Overfill interlocks on tank inlets
- Earthing and bonding at loading points
- Automatic shut-off at the gantry

2 Detect

- Flame and gas detection
- Smoke and heat detectors
- Fire alarm and notification
- Fire system status on SCADA

3 Suppress

- Fire water storage tank
- Electric and diesel fire pumps, duty and standby, with automatic start
- Hydrant ring main, hydrants and hose reels
- Monitor nozzles for tank and bund protection
- Fixed foam pourers and foam chambers

4 Contain and shut down

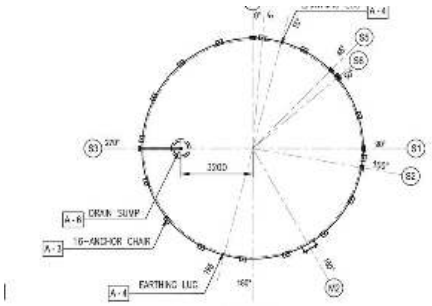
- Emergency shutdown valves
- Emergency stop stations
- Bund walls and secondary containment
- Spill containment and drip trays



REXLINE ENGINEERING

Design, Fabricated, Build and Commissioned by Rexline

Rexline is one of the few contractors in Indonesia that delivers a complete fuel terminal with its own people, from the first drawing to a live SCADA screen. One team carries the job from start to finish, so nothing falls between contractors.



1 Engineering

Process design, tank and structural calculations, P&IDs, electrical and control design, from our Surabaya office.



2 Fabrication

Shell plates, roofs, piping spools and steelwork from our own fabrication facility in Lamongan.



3 Construction

Foundations, tank erection, piping and civil works by our own site crews.



4 Automation

Control panels, Siemens PLC and SCADA engineered and programmed by our own team.



5 Commissioning

Hydrostatic tests, loop checks, and cold and hot commissioning.



6 Handover and support

Operator training, as-built drawings, O&M manuals, PHO and FHO support.

One contract, one schedule

No separate tank, piping, electrical and automation contracts for you to coordinate.

Nothing lost between packages

The team that designs a tank also wires the level transmitter that protects it.

Support from the builders

Faults are traced by the people who built and programmed the system.

REXLINE ENGINEERING

From Tank Pad to Live Terminal

Our crews take each tank from bare ground to mechanical completion. Every tank is hydrostatically tested before it goes into service.



1 Tank pad prepared and compacted



2 Foundation and ring beam works



3 Shell erection



4 Roof rafters fitted inside the shell



5 Crane lifts for the roof and upper courses



6 Tanks erected and coated, ready for testing

REXLINE ENGINEERING

Complete Scope, One Contract

Rexline delivers the full civil, mechanical, electrical, instrumentation, automation and fire and safety scope, with the engineering behind it.

Engineering

- PFDs and P&IDs
- General arrangement drawings
- Civil and structural calculations
- Electrical single-line diagrams
- PLC and SCADA architecture
- Fire and safety philosophy

Civil

- Tank foundations and ring beams
- Bund walls and containment slabs
- Pump house, fire pump house and control room
- Pipe racks, sleepers and trenches
- Roads, drainage and hardstands

Mechanical

- Tank fabrication and erection
- Pump and equipment installation
- Piping fabrication and erection
- Valve installation and alignment
- Hydrostatic and pressure testing

Electrical and instrumentation

- Power distribution and cabling
- MCC and PLC panels
- Instrument installation and calibration
- Earthing and lightning protection
- Area and emergency lighting

Automation

- Siemens PLC programming
- SCADA screens, alarms and trends
- Head-office remote monitoring
- Data logging and reports

Fire and safety

- Fire water tank and fire pumps
- Hydrant ring main and monitors
- Foam systems for tanks
- Flame, gas, smoke and heat detection
- Emergency shutdown system

Commissioning and handover Pre-commissioning and inspection, mechanical completion, cold and hot commissioning, integrated fire and safety tests, performance testing, operator training, as-built drawings and O&M manuals, PHO and FHO support.

Built to API 650, ESDM and SNI

Codes and standards

- API 650, 13th edition, welded steel tanks for oil storage
- Kementerian ESDM requirements for fuel storage installations
- SNI 1729 : 2020, steel structures
- SNI 1726 : 2019, earthquake-resistant design
- SNI 1727 : 2020, minimum design loads
- SNI 03-1745, standpipe and hose systems
- SNI 03-3985, fire detection and alarm systems
- SNI 03-3989, automatic sprinkler systems
- SNI ISO 12944, protective paint systems for steel Relevant
- SNI and international codes for piping, welding, electrical and instrumentation, and your project specification

Where our fuel systems work

- Mining: coal, nickel, gold and copper operations Ports
- and jetty terminals: SPOB and tanker unloading
- Power generation: fuel supply for power plants and gensets
- Sugar and agro-industry: harvest fleets and mills
- Fertiliser and process plants
- Remote depots and logistics hubs

Our commitment

Safe, automated and regulation-compliant fuel storage and handling facilities, engineered to protect people, assets and operations and to keep your fuel supply reliable.

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