



CrossEGAUGE Presentation

By **CROSSE**COM



Fuelling Excellence in RFID Solutions and Retail Automation



A grayscale image of a city skyline at night, with numerous skyscrapers illuminated and their lights reflecting on a body of water in the foreground. The image is semi-transparent, allowing the text to be overlaid.

CrossEGAUGE

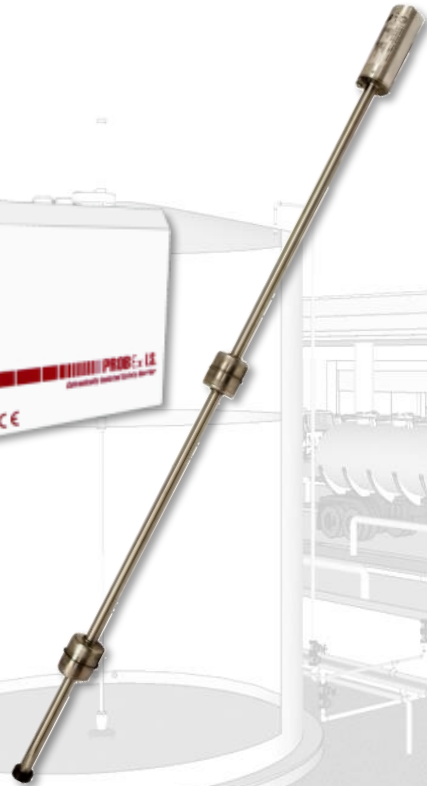
Automatic Tank Gauging System



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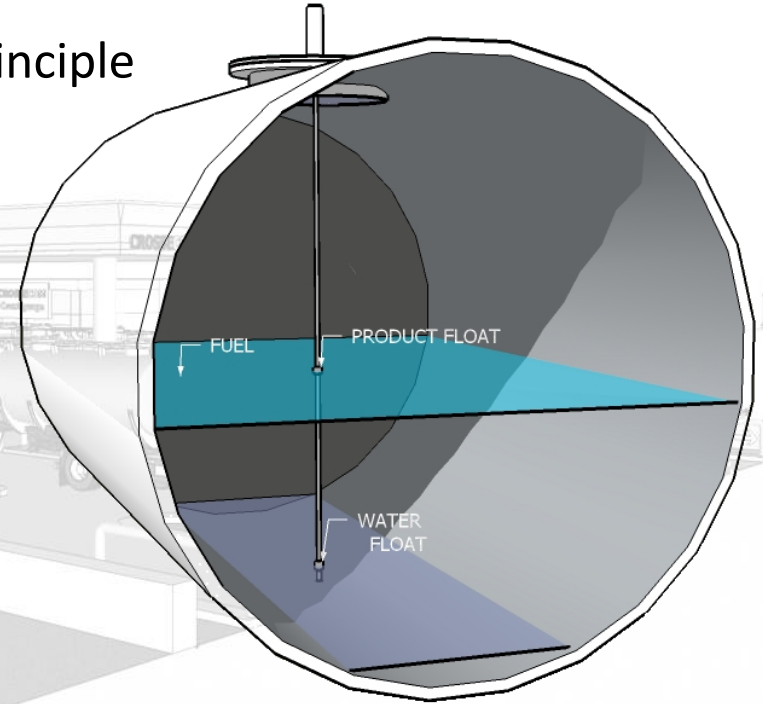
Introduction








- ✓ Fuel Level Monitoring
- ✓ Water Level Monitoring
- ✓ Fuel Delivery Monitoring
- ✓ Interface Level Monitoring
- ✓ Temperature Measurement

Product Features

- ✔ Utilizing Field Proven Magnetostrictive Principle
- 📋 Incorporating Intrinsic Safety Regulation
- 📁 Designed for Storage Tanks
- 🚚 Designed for Automotive Fuels
- 📐 Provides 3-in-1 Measurement



Product Features

-  Minimum Scheduled Maintenance or Recalibration
-  Utilizes a 4-Wire, Multi-Drop Power & Data Bus RS-485 Network
-  RS-485 Network allows longer cable runs for more tank & longer distance
-  Feature 2 Different Operation Mode – Smart & Console
-  Connect to CrossEGAUGE Head Office System via 3G network - Optional

Product Features



Connect to existing control system using industry standard interface protocol via RS232 - Optional



Enable Multiple CrossEGAUGE Site Monitoring via Head Office System



Easy Monitoring from Anywhere through Secure Website



Monitors up to 6 Tank Probes



Simplify Connectivity



Product Technology

Level Measurement Parameters

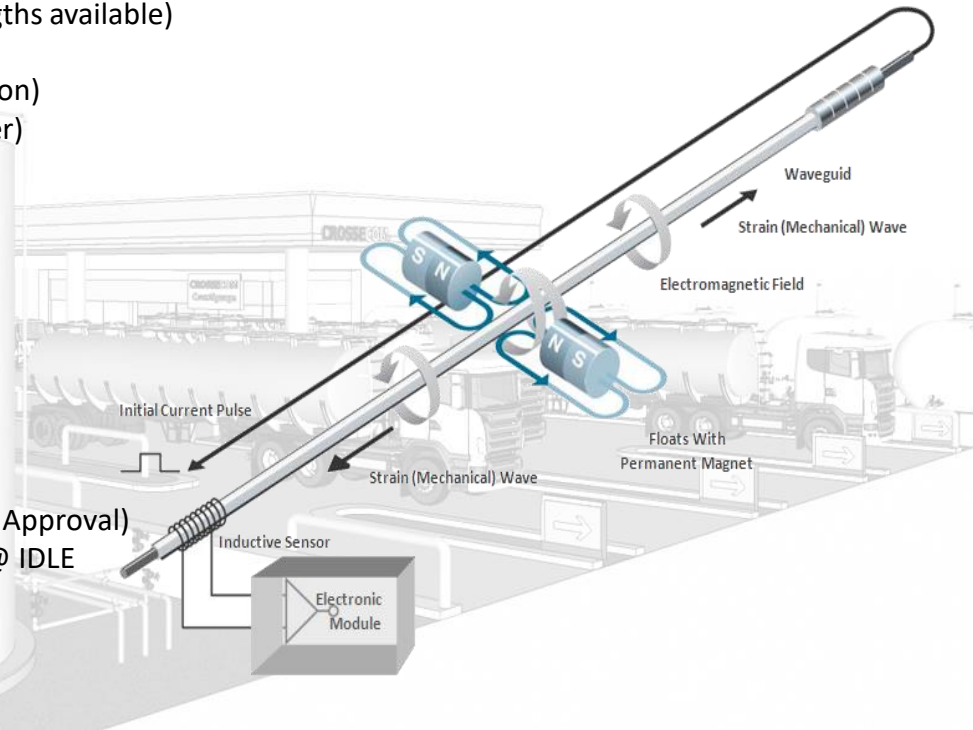
Probe Length	Up to 5.6 meters custom (Standard lengths available)
Float Count	2: Product & Water (STD Version) Up to 4: Density Applications (EXT Version)
Resolution	0.08 mm or %0.004 F.S. (which is greater)
Accuracy	0.5 mm or %0.02 F.S. (which is greater)
Top Dead Band	0 mm (With supplied floats)
Bottom Dead Band	0 mm (With supplied floats)

Temperature Measurement Parameters

Sensor Count	4
Resolution	0.1° C / Sensor
Accuracy	0.33° C / Sensor (@ 30° C)
Protocol	Proprietary Binary Digital over RS485.

Electronics

Supply Voltage	6-12 Volts (Limited to 10 volts for ATEX Approval)
Current Consumption	1. Passive & Console Mode Max. 3mA @ IDLE 2. Smart Mode Max. 100uA @ IDLE
Fail Safe	High, Full Scale
Reverse Protection	Series Diode
Transient Protection	Line to Ground surge suppression



Product Technology

Specification

Mounting	Fitting to flange with 2inch Cast Polyamide Reduction (zone1) Fitting to flange with 2inch Riser Cap (zone0)
Float styles	Stainless steel 1.4404/316L
Connection	5-Pin M12 connector
Pressure rating	Up to 10 bars on stainless steel float
Humidity	0 to 100% relative humidity, no condensing
Safety Approvals	FTZU 10 ATEX 0250X
Explosion Protection	Ex II ½ G Ex ia IIA T5

Temperature requirements

Storage temperature	-30° ... +70°C
Operating temperature	-30° ... +70°C

Intrinsically Safe Entity Parameters

Input Capacitance	9uF
Input Inductance	Negligible
Max. Input Power	0.6 W
Max. Input Current	0.24A
Max. Input Voltage	10

Materials / Mechanics

Sensor Head	Anodized Aluminium wetted parts Stainless steel 316L
Sealing	IP 68
Sensor outer pipe	Stainless steel 1.4404/316L Ø16mm x 1,5mm



Product Technology

Flexible PVDF Low Voltage Magnetostrictive Sensor

PVDF (Kynar) Material

Measuring range up to 20m. Consult factory for longer lengths

Multi-variable

- o Level
- o Interface
- o Temperature

Product Differentiators

Patented "High Resolution" digital probe with 0.00025 cm

Compact design with integral electronics

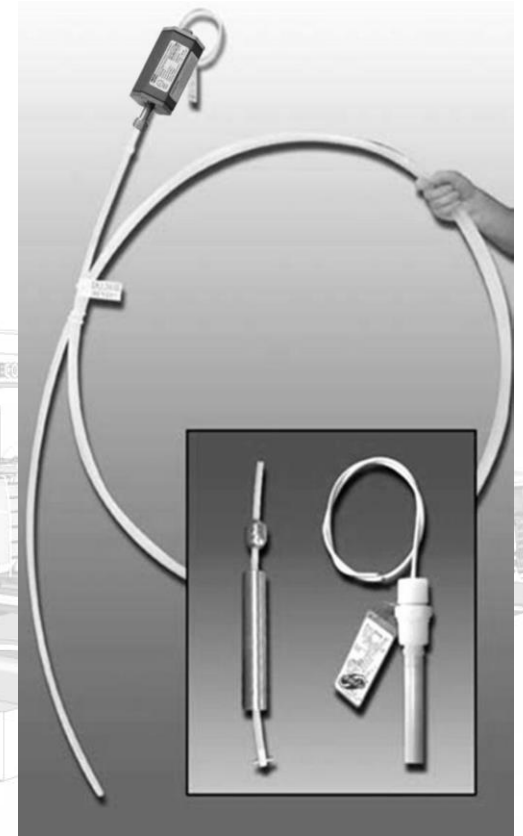
Light weight and easy to install

Low power budget suitable for wireless applications

Multivariable output

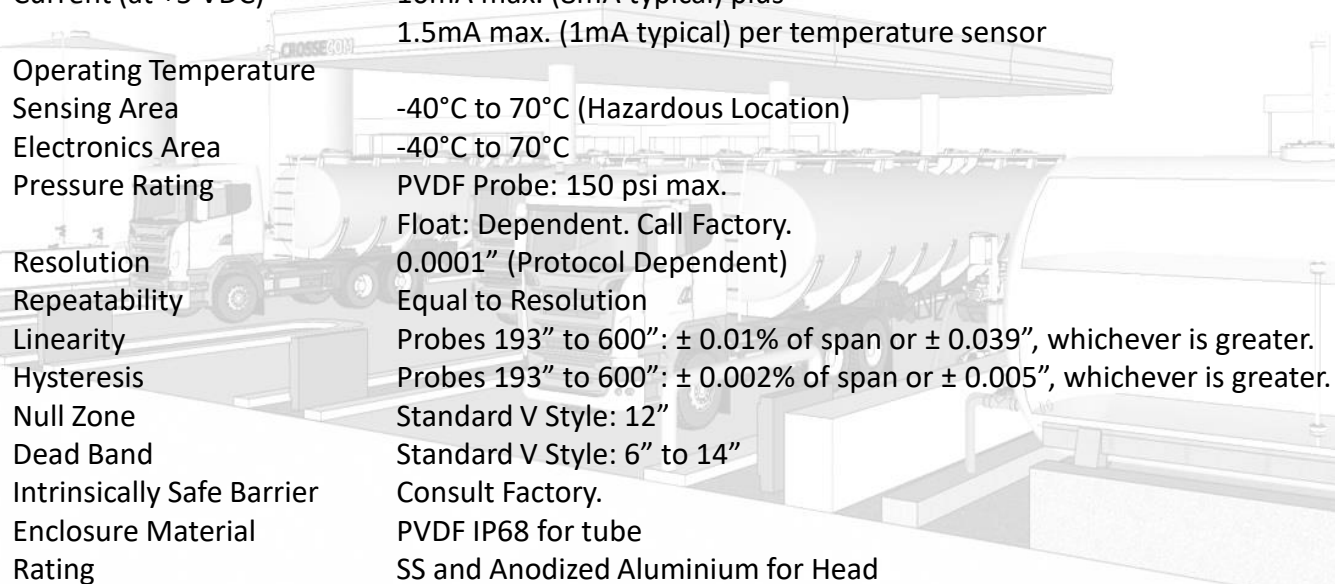
- o Product level
- o Interface level
- o Temperature

No maintenance required



Product Technology

Specification



Power Supply Voltage	+5 VDC \pm 10% typical (+3.7 VDC min.)
Current (at +5 VDC)	10mA max. (8mA typical) plus 1.5mA max. (1mA typical) per temperature sensor
Operating Temperature	
Sensing Area	-40°C to 70°C (Hazardous Location)
Electronics Area	-40°C to 70°C
Pressure Rating	PVDF Probe: 150 psi max. Float: Dependent. Call Factory.
Resolution	0.0001" (Protocol Dependent)
Repeatability	Equal to Resolution
Linearity	Probes 193" to 600": \pm 0.01% of span or \pm 0.039", whichever is greater.
Hysteresis	Probes 193" to 600": \pm 0.002% of span or \pm 0.005", whichever is greater.
Null Zone	Standard V Style: 12"
Dead Band	Standard V Style: 6" to 14"
Intrinsically Safe Barrier	Consult Factory.
Enclosure Material	PVDF IP68 for tube
Rating	SS and Anodized Aluminium for Head



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Product Technology

Probe Length 47" to 600"
25" to 192"

Probes available in 1" increments.
Consult Factory for longer lengths.

Hazardous Areas Approvals

FM

-40° O Tamb O 70° C Class I, II, III, Div. 1

Groups C, D, E, F, G, T4

Class I, Div. 2

Groups A, B, C, D, T4

Class I, Zone 0, AEx ia IIB T4

ATEX

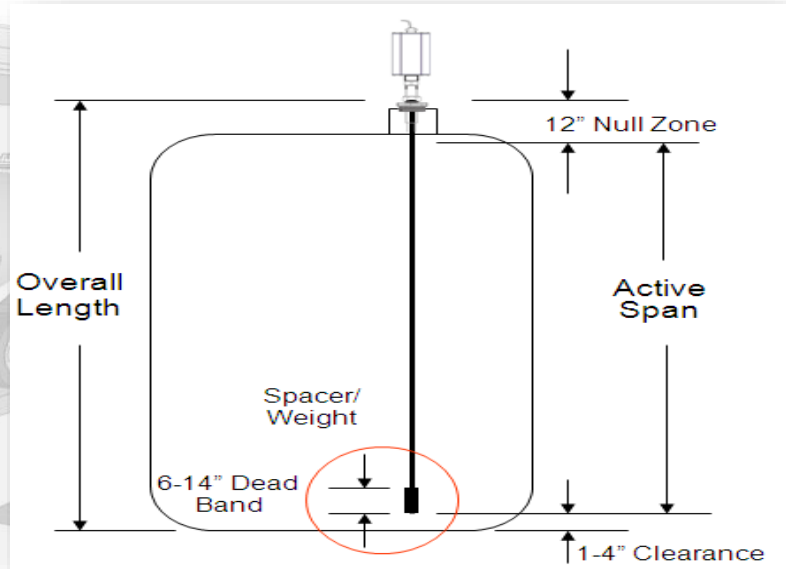
Ex ia IIB T4

NEMKO 05 ATEX 1219X 0344 II 1G

Specifications are subject to change without notice. Patented

Intrinsically Safe Entity Parameters

Vmax	I _{max}	PI	CI	LI
7.93 V	280mA	1.0 W	30.1μF	0μH



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Product Technology

ProbeX I.S.

Probe Communication Unit & IS Barrier Galvanically Isolated







- Power Supply
- IS Barrier
- RS232 – RS485 Interface Unit
- Easy installation
- Up to 6 Probes
- Separation of each Probe
- Provide Galvanically Isolated Supply to each Probe
- Compatible with *Mag-STAR* probes



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System Feature

-  Displays amount of Fuel storage in liter and mm units
-  Displays amount of Fuel delivered in liter and mm units
-  Displays amount of Water in liter and mm units
-  Displays temperature of Fuel in tank
-  Send alert when Fuel in tank reaches a user defined level
-  Generates an alarm

System Feature



Fuel inventory management at site / area / zone



Plan tanker daily fuel delivery trip by site / area / zone



Easy and accurate reporting by site / area / zone



Proactive / advance fuel ordering and forecasting



Tank leakage detection



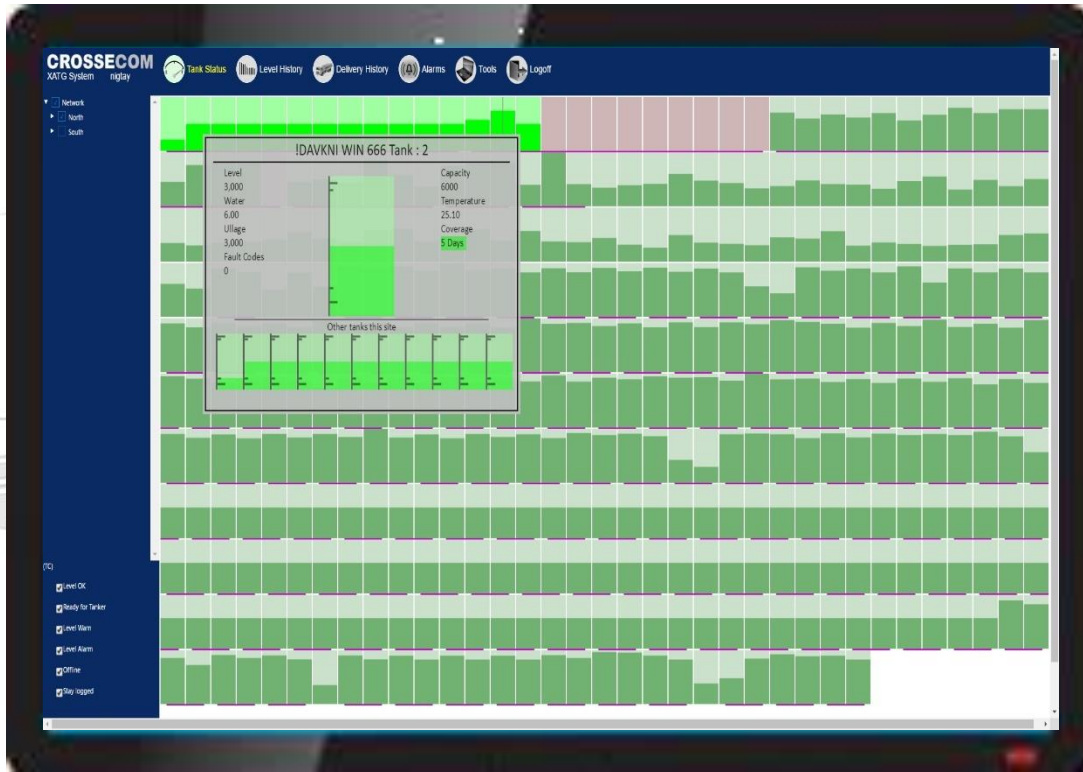
Secured website, Encrypted data, Multi level user login.

System Feature



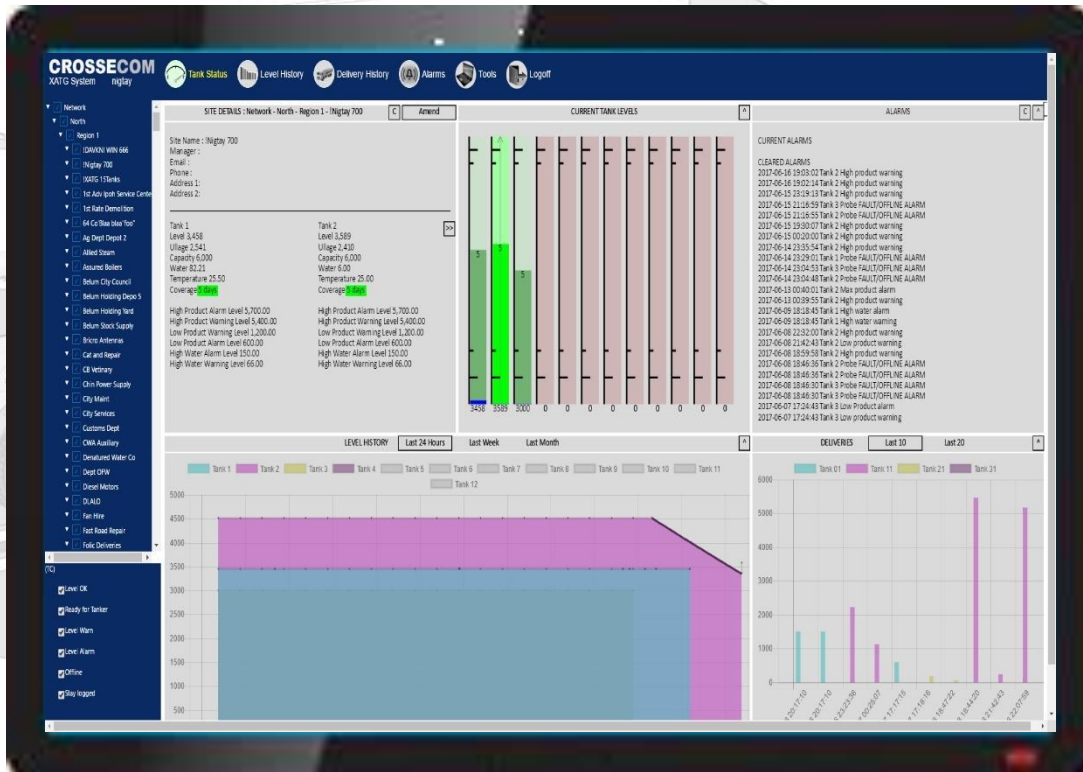
- ✓ Multiple site views
- ✓ Fuel level status
- ✓ Demographic setup
- ✓ By region or zone
- ✓ Designated login
- ✓ Data security

System Feature



- ✓ Specific site view
- ✓ Fuel level indicator
- ✓ Water level indicator
- ✓ Ullage level indicator
- ✓ Coverage available
- ✓ Temperature

System Feature



- ✓ Multi tank monitoring
- ✓ Individual tank level
- ✓ Alarm history records
- ✓ Tank level history
- ✓ - by day/week/month
- ✓ Fuel delivery chart



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System Feature

CROSSECOM
XAI G System nlgay

Tank Status | Level History | Delivery History | Alarms | Tools | Logout

Search Options

Level History Results

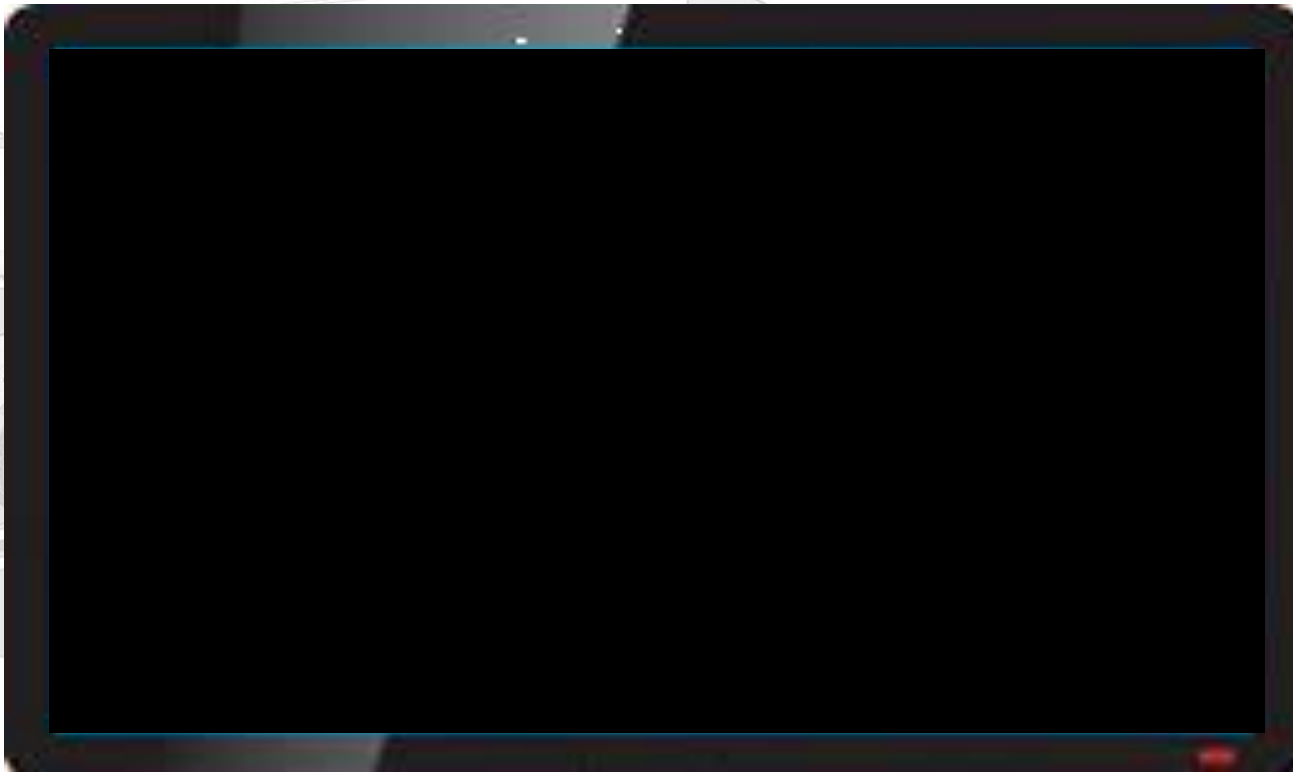
Show: 25 (user default) entries

Date Stamp	Tank No	Probe Status	Volume TC	Product Height	Capacity	Water Volume	Water Height	Temperature	Site Name	Node	Grade
2017-06-12 10:30:29	2	4	3028.48	50.892	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:31:29	2	4	3024.01	50.817	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:32:28	2	4	3019.49	50.741	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:33:29	2	4	3014.97	50.664	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:34:29	2	4	3010.45	50.589	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:35:29	2	4	3005.92	50.513	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:36:29	2	4	3001.28	50.435	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:37:29	2	4	2997.17	50.366	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:38:29	2	4	2991.70	50.273	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:39:30	2	4	2987.12	50.197	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:40:28	2	4	2982.66	50.122	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:41:28	2	4	2978.13	50.045	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:42:28	2	4	2973.57	49.970	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:43:29	2	4	2969.86	49.907	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:44:29	2	4	2964.68	49.820	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:45:28	2	4	2959.86	49.739	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:46:28	2	4	2955.22	49.660	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:47:30	2	4	2950.52	49.582	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:48:28	2	4	2945.76	49.501	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:49:29	2	4	2941.12	49.423	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:50:29	2	4	2936.48	49.345	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:51:28	2	4	2931.72	49.266	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:52:28	2	4	2926.96	49.185	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL
2017-06-12 10:53:28	2	4	2922.67	49.114	6000.00	6.00	0.100	25.000	nlgay 700	Region 1	DSL

- ✓ Searchable reports
- ✓ - Fuel level
- ✓ - Fuel delivery
- ✓ - Alarm
- ✓ - Audit history
- ✓ - Others



CrossEGAUGE Site View – Fuel Storage Depot



- ✓ Vertical Tower Tank
- ✓ Above Ground Tank
- ✓ Under Ground Tank
- ✓ Temp Storage Tank
- ✓ Other Tank



Benefit of CrossEGAUGE



Improve customer confidence



Increase market share due to improved service



Capable of 24 X 7 tank monitoring








Accurate and reliable data for reports and accounting

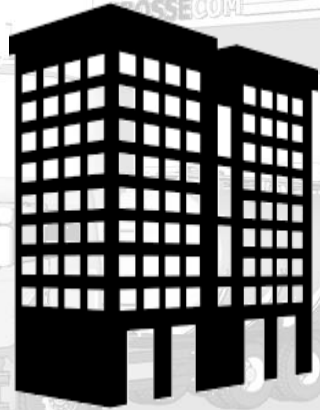


Reduced errors due to minimised human intervention

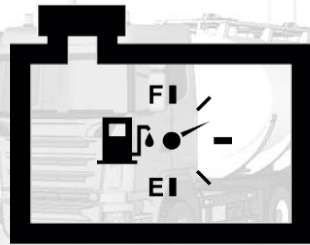
Benefit of CrossEGAUGE

-  Reduced disputes on fuel delivery and receiving
-  Reduction in manpower requirements
-  Elimination of manual tank dips, avoid accident
-  Increase work place safety requirements
-  Interface to Crossecom Fuel Management System

Benefit of CrossEGAUGE



Operation



CrossEGAUGE



Productivity



Profitability

Crossecom (Australia) Pty Ltd

Over 25 years of Retail Fuel Industry Experience

Clients to have used Crossecom systems since 1984 include:

Bechtel (Malaysia)
Singapore Petroleum Corporation
Shell (Singapore)
BP (Singapore and Malaysia)
BH Petrol (Malaysia)
Hindustan Petroleum Corporation (India)
ESSO (Australia, Singapore and Malaysia)

Emarates Petroleum (Dubai)
Kuwait National Petroleum Corporation
JomoGAS (Jordan)
Conoco (Malaysia)
Duty Free Stores (Okinawa)
Public Bank Berhad (Malaysia)
American Express (Malaysia)

Our products and services include:

Retail Automation - ISSAS
Point of Sale Hardware and Software - TouchPOS, FuelPOS
Protection of goods in storage and transit - CrossESEAL
Radio Frequency Identification (RFID) - FastFILL Automated Fuelling System
Latest;
CheckFILL- Patented Technology for NGV/CNG Industry
visit us on: www.crossecom.com.au



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Thank You



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