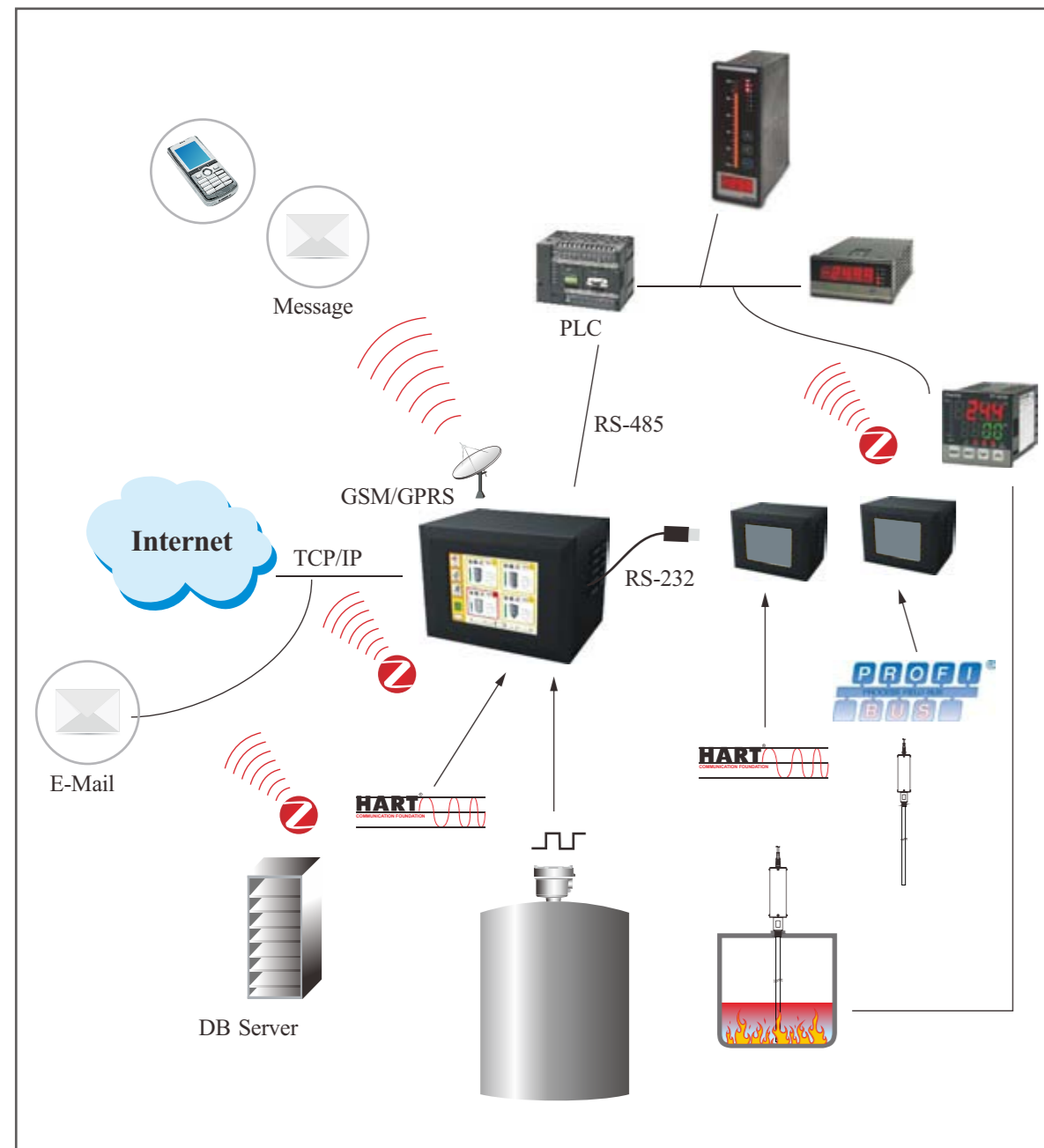
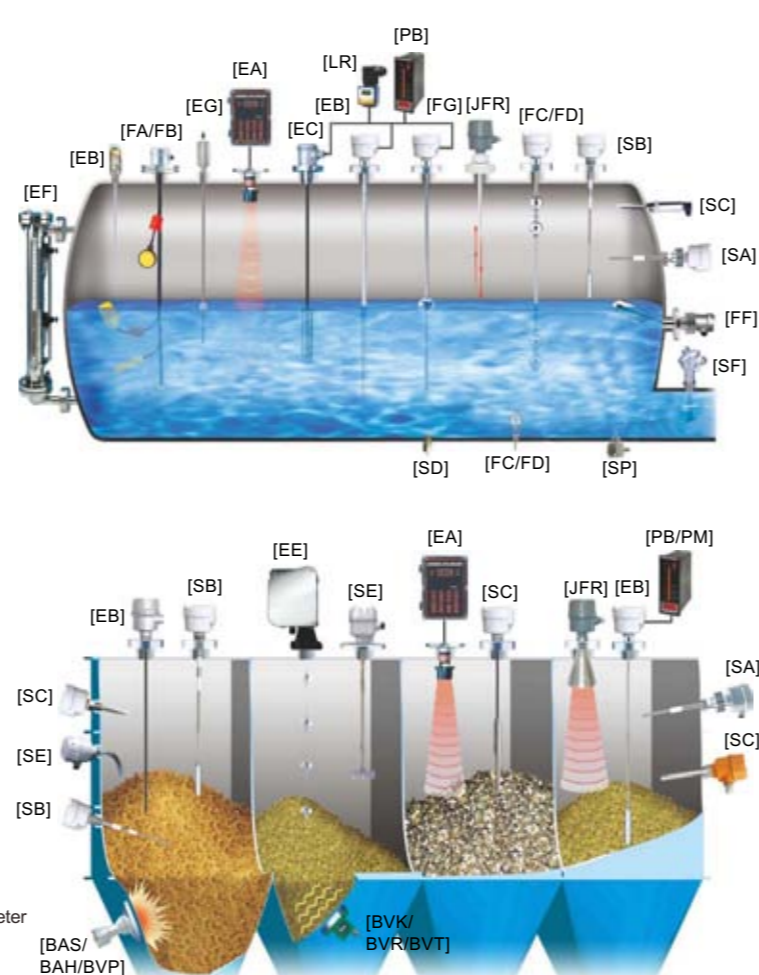


INTERNET CONNECTION (BASIC APPLICATION)

LMS-20 offers various communication solutions, which includes Internet, Ethernet, RS-485, RS-232, ZigBee, GPRS. Asset management, risk management, status analysis are all equipped to improve monitoring. All measured data will be transmitted to the staff by mobile phone message or email.


EXAMPLES OF TANK-MOUNTING

- [FC/FD] Mini Float/Magnetic Float Level Switch
- [FG] Magnetic Float Level Transmitter
- [FF] Side Mounting Float Switch
- [FA/FB] Cable Float Level Switch
- [SP] Thermal Dispersion Flow Switch
- [SF] Paddle Flow Switch
- [SD] Optical Level Switch
- [SE] Rotary Paddle Level Switch
- [SA] Capacitance Level Switch
- [EC] Pressure Level Transmitter
- [LR] Loop Power Indicator
- [SC] Vibrating Probe Level Switch
- [SC] Tuning Fork Level Switch
- [EB] RF-Capacitance Level Transmitter
- [SB] RF-Capacitance / Admittance Level Switch
- [EG] Magnetostrictive Level Transmitter
- [EF] By-Pass Level Transmitter
- [MEF] Mini By-Pass Level Transmitter
- [EA] Ultrasonic Level Transmitter
- [JFR] FMCW Radar Level Transmitter
- [EE] Electromechanical Level Measuring System
- [ED] Speed Monitor
- [SRT/SRS] Conveyor Belt Misalignment Switch & Safety Cable Pull Switch
- [PB/PM] Microprocessor Based Bargraphic Display Scaling Meter
- [BRD/AE] Valve and Controller for Dust Collector System
- [BAS/BAH/BVP] Air Hammer
- [BVK/BVR/BVT] Pneumatic Vibrator


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Distributor:

PRODUCT DESCRIPTION

Cost cutting has become one of the biggest issues for process plant owners due to the price fluctuation of global raw material. Thus, managing material inventory effectively will help the plant owners to increase profit.

The LMS-20 uses the powerful ARM embedded system to perform smart monitoring of the tanks. Collected data can be transmitted via different communication protocol.


FEATURE

- ARM embedded system
- Touch screen LCD monitor with status indication of 4 tanks
- Data management center to monitor large amount of tanks
- Real time tank monitoring chart
- Auto calculation with non-linear compensation of different tank shapes
- Smart GSM auto messaging system to inform on-site status
- System connection via RS-485, RS-232, ZigBee
- Support communication protocol Modbus/ RTU
- Status notification via mobile phone
- Option of remote PC based management system for status monitoring
- Option of powerful web server
- Parameter setting and simulating tests
- Option of powerful firewall to filter MAC code, UP address, and log in record
- Option of 128 bits gold key system for security purpose
- Option of communication protocol of DeviceNet, PROFIBUS, CANopen, Ethernet/IP Modbus/TCP

SPECIFICATION

Power Supply	100~240Vac, 50~60Hz ± 10%
Power Frequency	100Va (Max.)
Operation Mode	Touch Screen
Dimension	280 x 211 x 210 (L x W x H) mm
Monitor	8" Color LCD 800 x 600 pixel
Printer	32 thermal Printer ESC/ POS command (Option)
Communication Protocol	RS232 、 Ethernet 、 USB
Wireless Communication	Communication module capable of sending mobile message (option)
Data Record	SD card supports 1G byte
Tank Expansion	500 Tanks
Min. Liquid Level Measurement	Depend on type of sensor selected (magnetostrictive transmitter: 5cm)
RS-485 Communication Module	Expansion module card used, each card supports up to 4 magnetostrictive transmitters. (V+ / V- / TR+ / TR-)
DI Input Module	Expansion module card used, each card supports up to 4 sets of input. (V+ / IN+ / IN-)
DO Output Module	Expansion module card used, each card supports up to 4 sets of output. (NO / NC / COM)
Operating Temperature	-20~45°C
Operating Humidity	<90%@25°C(Anti-Dew)
EMS Tolerance	Based on IEC61326 standards
Approvals	CE 、 (FCC 、 UL 、 FM 、 ATEX) Pending


Level Measurement System


visit our website



SOFTWARE FUNCTION DESCRIPTION

- Monitor up to 500 tanks
- Leakage detection
- Function of material name setup, high/low level alarm, sensor position, tank quantity, liquid level, volume setup, temperature.
- Water and oil level interface measuring with parameter setup
- Auto Conversion from liquid level to actual volume with simple setup

Tank Parameter Setup

Alarm, output, and input parameter setup.



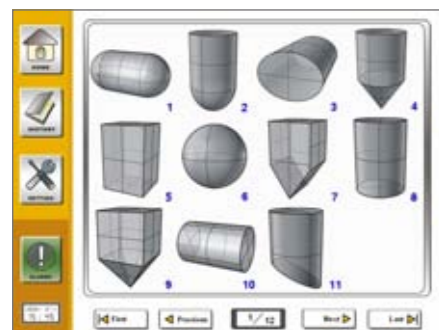
Material Name Input

User can enter the name of material in each tank.



Tank Shape Input

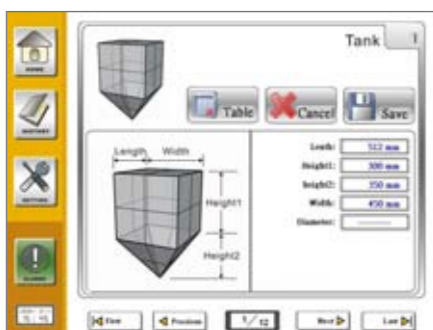
This function allows you to choose the correct tank shape for accurate volume calculation.



- Alarm setup for high/low liquid level and leakage.
- Accurate record of tank historical data, alarm report, shift change report, offloading report.
- Print-out of inventory status, shift change time, load/unload time.
- Remote control of the system to monitor field status, and set up each function with user's authorization.

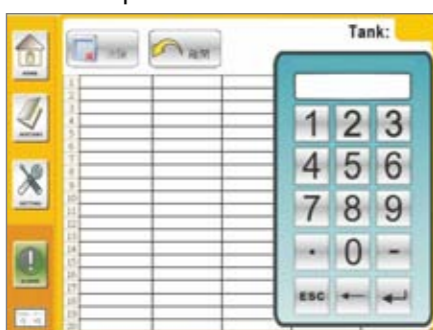
Tank Dimension Input

System will calculate the volume automatically after input of tank dimension.



Tank Capacity Setup

User can manually input value of height v.s volume parameter to convert into correct volume via the system when the tank shape can not be found from the selection.



Compensation Value Input

This function compensates the gap between the lowest point of level sensor and tank bottom.



Maximum Fuel Level Input

High fuel level alarm setup. Alarm will trigger when fuel level exceeds this set value.



Minimum Level Input

Low fuel level alarm setup. Alarm will trigger when liquid level goes lower than this set value.



Maximum Level Input

High liquid level alarm setup. Alarm will trigger when liquid level exceeds this set value.



Shift Change Report

Auto-calculation and record of shift change condition.



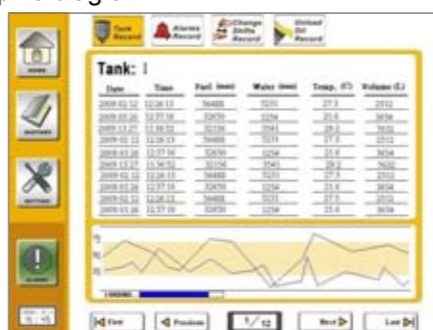
Fuel Offload

Auto-calculation and record of offload condition.



Tank Record

The record shows the last 570 pieces of historical data with graphic diagram.



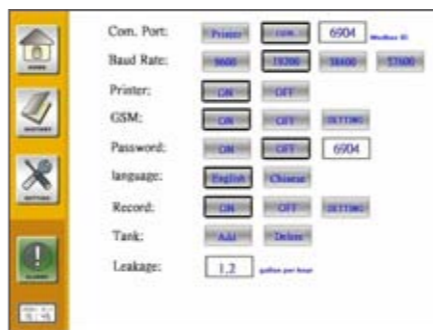
Alarm Record

Complete alarm record including time and event.



System Setup

System control parameter setup including language, communication, and record.



EXPANSION CARD



General Analog Input Module

Support 4 sets of independent analog input channel for industrial application. Two wire loop powered design, this module allows the user to change input signal type via software.

- Thermocouple: K, J, R, S, B, T, E, N
- Resistor: PT-100, JPT100
- DC Current: 0~20mA, 4~20mA
- DC Voltage: 0~100mV, 0~1V, 0~5V, 1~5V, 0~10V, 2~10V
- Loop-power supply: isolation 24V/50mA
- High accuracy of 0.3%, with temp. compensation and improving signal drifting
- Sampling Rate: 12 Hz / per channel
- Modify input signal via software

Digital Communication RS-485 Module

Support 4-channel RS-485 communication protocol with isolation structure to prevent disturbance between circuit and module. With 8051 high speed core, it improves system stability.

- High speed MCU with highest baudrate of 57600bps.
- 4 sets of communication port
- Support RTU/ ASC II communication mode
- Support communication format Data: 8bit
Parity: none
Stop bit: 1



Digital Input Module

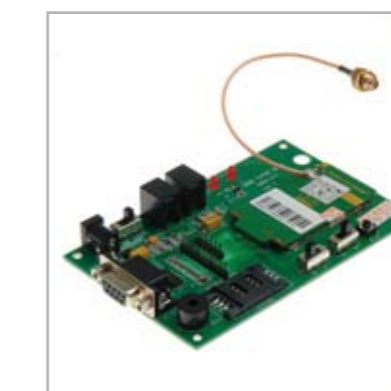
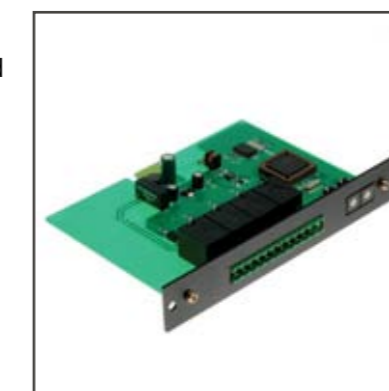
It can be wired up to 4 sets of NPN contacts with 12V to start up the switch. Optical coupler is used to prevent disturbance between circuit and channel. NPN mode

- 10mA/12V power to start up different technology of switches.
- Optical coupler to enhance isolation ability.

Digital Output Module

It can be wired up to 4 sets of contacts for NC/ NO control. Optical coupler and relay are used for dual isolation to avoid damage of sudden voltage and enhance system stability.

- 4 sets of relay output
- Contact capacity 10A/ 250V
- Contact form SPDT (1C)



GSM Module

This is a GSM/GPRS compatible module with optimized antenna to enhance reception. It will also auto-adjust output consumption for energy saving and decreasing RF wave.

- Support GSM/ GPRS 850, 900, 1800, 1900 mode
- Power Consumption: 2W MAX

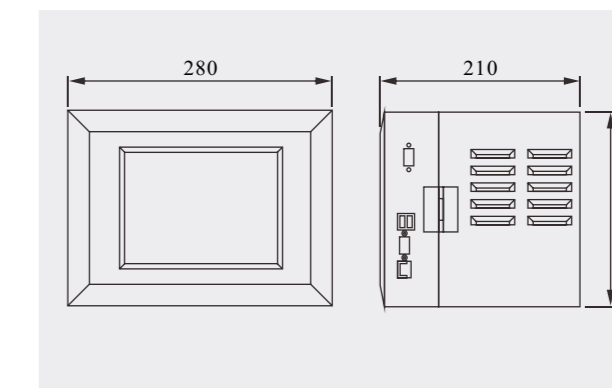
ZigBee Module

ZigBee is the best solution for short range wireless communication in the current market. No adaptor needed to transmit RS485 to Zigbee.

- Frequency: 2.4G Hz
- Output TX: 50mW
- Mode: Dual Mode
- Largest Transmission Speed: 115Kbps
- Power Consumption: 1.5W
- Working Temperature: 0~50°C
- Weight: 168g



DIMENSION



ORDERING INFORMATION

LMS-20-□S-□□□□-□

M: Main Monitoring Unit
S: Expansion Unit

S: AC Voltage

Number of RS485 Input Card
(Each card supports 4 sensors)

Number of Analog Input Card
(Each card supports 4 sensors)

Number of Digital Input Card
(Each card supports 4 sensors)

Number of Relay output Card
(Each card supports 4 sensors)

G: GSM Communication

* There are total 8 expansion card slot.