Fluid Management System

LMS RF High-End System with ZigBee® technology

DESCRIPTION

The Badger Meter Fluid Management System has been designed to control and monitor the consumption and inventory balances of automotive fluid products with minimal installation and programming costs. Badger Meter has used its years of expertise in the automated meter reading market to develop a modular control system using RF communications. The high end system hardware consists of one master keypad and at least one dispense keypad as well as at least one radio frequency (RF) electronic preset meter. The master keypad handles serial communication between the PC or a host server (ERP system) and RF communication to the dispense keypads in the system. The system verifies the operator's pin number and validates the work order number, fluid quantities and the valid hose/meter.

The master keypad can communicate with up to 36 dispense keypads that can be positioned to support the workflow of the facility the best way. Each dispense keypad can control up to 78 feet / 24 meters, for a total of 820 feet / 250 meters. The system supports up to 16 tanks and 16 fluids as a part of the system configuration. The system supports 250 unique operator IDs and pin numbers. The system uses direct sequence spread spectrum RF technology to prevent communication problems with other equipment in the facility. The RF system will look for a clear channel for transmission to insure that there is reliable communications at all times. Communication distances are typically up to 328 feet / 100 meters, but can go up to 984 feet / 300 meters with unobstructed line-of-sight. A remote antenna is available for situations where multiple buildings are involved in the installation.

APPLICATIONS

Typical applications include fleet maintenance shops, industrial assembly, quick lube facilities, automotive dealerships, specialty service and repair shops, construction and mining equipment service centers, additive dispensing.

The PC is used to configure the system, maintain system data and enter work orders. The service desk would use the PC to enter a work order selecting the fluid and quantity required. The PC can stack as many work orders as required, limited only by the disk storage space of the PC. There is no need to predetermine where the work is going to occur. This allows the flexibility to service a vehicle at any open bay and select a meter when the work is going to be performed. When the work order is going to be performed, the service personnel simply enters their pin number, work order and hose that is going to be used at the dispense keypad. Optionally, the system can be connected with an ERP or DMS system via its RS232 interface. The real-time communication is based on an open interface protocol (ASCII-code) and can be easily adapted to local conditions.

CONTAINS FCC ID: S4GEM35XB
FCC CERTIFIED, PART 15, SUBPART C
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.4 GHz

CONTAINS IC: 8735A-EM35XB

FEATURES

- Very low installation costs
- Patented "Lock-Out" to prevent unauthorized dispenses
- Oval gear metering technology
- Measurement in liters, pints, quarts or gallons
- Field replaceable AA batteries in meters
- Control of portable fluid tanks
- Optional internal ticket printer
- Serial port for report printer/ticket printer

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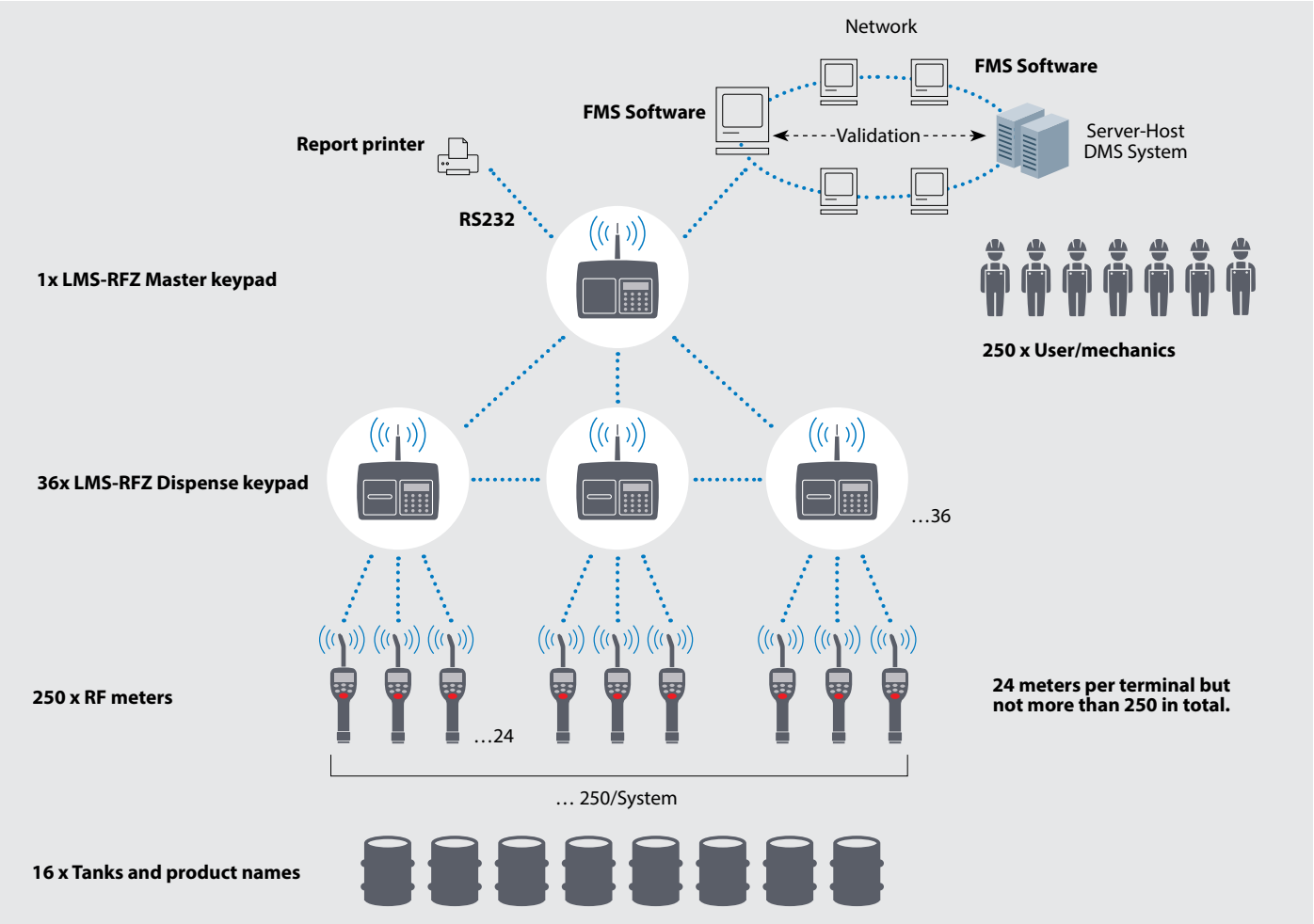
Product Data Sheet

SPECIFICATIONS

Power requirements	100...230 V AC 50/60 Hz	
RF communications	Contains FCC ID: S4GEM35XB FCC certified, part 15, subpart C. This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Contains IC: 8735A-EM35XB	
Operating temperature	14...140 °F	-10...+60 °C
Internal printer paper	White thermal paper roll 2-1/4 in. x 85 ft.. Must have paper in the printer to dispense fluid.	
Protection class	IP42	

The keypad should be mounted upright with the antenna pointing upward, near a 230 V AC electrical outlet, to a structurally sound wall through the two holes on the top of the keypad casting. Height on the wall should be 5...6 inch. Care should be taken to avoid mounting behind any steel objects (tool storage cabinets and metal chain linked fences) that may block the RF communication signal. Care should also be taken to avoid direct, significant heat sources.

PICTORIAL DIAGRAM OF LOGICAL SETUP



* ZigBee® is a trademark of ZigBee® Alliance, Inc.

Control. Manage. Optimize.

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