LIQUID **LC** CONTROLS ®

FlightConnect
Aviation Fueling System

Setup Guide

FlightConnect LCR 600

FlightConnect DMS

FlightConnect Office

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Publication Updates and Translations

The most current English versions of all Liquid Controls publications are available on our web site, **www.lcmeter.com**. It is the responsibility of the local distributor to provide the most current version of LC manuals, instructions, and specification sheets in the required language of the country, or the language of the end user to which the products are shipping. If there are questions about the language of any LC manuals, instructions, or specification sheets, please contact your local distributor.

FlightConnect System Components

LC FLOWMETER
Typically mounted to the back or side of a delivery vehicle, the metering system accurately measures, stops and starts the flow, and preserves the purity of the metered product.

Liquid Controls Positive Displacement Flowmeter Meter

LECTROCOUNT LCR 600
The LectroCount LCR 600 is a microprocessor-based electronic register. The LCR 600 simultaneously gathers metrological data from the meter system during fuelings and runs the FlightConnect fueling software. The LCR 600 can be Weights & Measures approved and mounted directly onto a meter system.

LectroCount LCR 600

DMS (WITH LECTROCOUNT LCR-II)
The DMS is an in-cab computer with a heavy-duty lap pad interface engineered for the harsh environments of the tarmac. The DMS runs the FlightConnect fueling software and captures metrological data from one or two LectroCount LCR-II electronic register.s

DMS and LectroCount LCR-II

FlightConnect System Components (cont'd)

FLIGHTCONNECT FUELING SOFTWARE

FlightConnect fueling software can run on a LectroCount LCR 600 or a DMS in-cab computer in conjunction with a LectroCount LCR-II register. LectroCount electronic registers are Weights & Measures approved and mounted onto the meter. LectroCount registers compile metrological data during custody transfers. The DMS is an in-cab computer with a heavy-duty lap pad interface.

FLIGHTCONNECT OFFICE SOFTWARE

FlightConnect Office includes Flight Connect Read (ACRead.exe), a file conversion program; FlightConnect Edit (ACEdit.exe), a database management interface; and FlightConnect Dispatch (ACDispatch.exe), an interface that configures and wirelessly dispatches scheduled fueling assignments to LCR 600s on the tarmac. If you are using FlightConnect Office on multiple computers, one copy is required for each computer.

DBMANAGER

DBManager serves as a file server/database manager, managing the master database of the fueling system on the office computer (multiple fueling systems if required) and maintaining the databases of the units (DMS and/or LCR 600) in the network. DBManager also includes LCP Setup, a program that configures the office computer for wireless communications, and Office User, a security application that configures user access to FlightConnect Office.

WIRELESS

LC fueling systems can transfer data via a serial output to a device such as a Wifi adaptor, RF transceiver, or cell modem.

Cell Modem

RF Transceivers

USB FLASH MEMORY DEVICE

The USB Flash Memory Device is a data repository that can be used to transfer data between the DMS and computers in the office.

USB Flash Memory Device

FlightConnect Fueling System Overview

The FlightConnect Fueling System is an automated data acquisition and data management system designed for into-plane fueling. FlightConnect spans from the point of delivery to the office PC. FlightConnect fueling software, installed onto an LCR 600 or DMS, automatically captures fueling data on the tarmac and transmits the data to the office. FlightConnect Office receives the data and prepares it for upload into third-party accounting software or a spreadsheet application. The office software also serves as a manager of the FlightConnect database where users can edit, add, or delete data and settings in the FlightConnect network.

FlightConnect Fueling System Functions

- Manual fueling data entry

- Data fields available

• Additive	• Airport Codes (origin and destination)
• Aircraft Type	• Comment
• Customer	• Flight Number
• Fueling Location	• Fuel Type
• Load Location	• Tail Number
• Transaction Type	• 3 Miscellaneous Text Screens (user setup and defined)

- Manage the FlightConnect database on the computer and the DMS and LCR 600 units in the FlightConnect network

- Dispatch fueling assignments to LCR 600 units in the FlightConnect network   *LCR 600 only*

- Convert fuel delivery files for transfer to third-party accounting software or spreadsheet applications (.csv or .xml data formats)

- Validate database changes made in the field   *DMS only*

- Wireless transmission of fueling data

- Configuration of office computers for wireless communication

- Communication test between office computers and the DMS and LCR 600 units

- Database update scheduling

- User, password, and access (to office application software databases) setup

FlightConnect Fueling System Setup Overview

This document is a guide for the complete installation of a FlightConnect Fueling System. It does not provide specific instructions, but it does provide the correct order of installation steps and references to the manuals that contain specific directions.

A FlightConnect Fueling System Setup includes the following steps:

1. Install LC flowmeters

2. Install LCR 600 and DMS (& LCR-II) units

3. Setup LCR 600 & DMS (& LCR-II) Units

4. Install FlightConnect Office & DBManager software

5. Populate FlightConnect database

6. Setup DBManager

7. Setup Office User Rights *optional*

8. Establish Communication - between office and LCR 600 & DMS (& LCR-II) units

9. Populate LCR 600 & DMS Databases

QUALIFIED LC SERVICE PROVIDERS

Portions of the FlightConnect Fueling System installation are complex and require specific technical knowledge and skills. Call Liquid Controls at 1-800-458-5262 or 847-295-1050, and we can recommend a qualified LC service provider to install your FlightConnect Fueling System.

INSTALLATION & SETUP

#1 - Install LC Flowmeters

Before installing electronics, Liquid Controls positive displacement flowmeters must be properly installed into the piping system of the refuellers, hydrant trucks, hydrant carts, or other fueling vehicles. Typically, this step is completed by the OEM that built the fueling vehicle.

Applicable Manuals:

M100-10 (M-MA Flowmeters) *48683*

M100-20 (MS Flowmeters) *500318*

#2 - Install LCR 600 and DMS (& LCR-II) Units

After the flowmeters are installed, the electronics can be mounted and wired onto the fueling vehicle. LCR 600s are typically mounted directly onto the meter; however, they can also be mounted remotely and wired to a POD pulse device mounted onto the flowmeter. DMSs must be installed with an accompanying LCR-II. LCR-IIs can also be mounted directly onto the flowmeter or remotely and wired to a POD.

Applicable Manuals (LCR 600):

EM150-10 (LCR 600 Install) *500355*

Optional: EM300-10 (POD) *500003A*

Applicable Manuals (DMS):

EM150-20 (LCR-II Install) *502060*

EM200-10 (DMS Install) *500343*

Optional: EM300-10 (POD) *500003A*

#3 - Setup LCR 600 & DMS (& LCR-II) Units

Next, the LCR 600 and DMS (and LCR-II) units can be set up for FlightConnect aviation fueling.

This step might include Weights and Measures calibration, which must be completed by a certified technician.

Applicable Manuals (LCR 600):

EM250-10 (LCR 600 FlightConnect) *500390*

Applicable Manuals (DMS):

EM100-11 (LCR-II Setup) *500302*

EM200-11 (DMS Setup) *500342*

EM200-16 (DMS FlightConnect) *500323*

#4 - Install FlightConnect Office & DBManager Software

After the electronics are installed, the Flight Connect Office and DBManager software for the office computer can be installed. Typically, software is installed from a CD-ROM supplied by Liquid Controls.

Applicable Manuals:

EM200-17 (FlightConnect Office) *500324*

EM200-21 (DBManager) *500387*

#5 - Populate FlightConnect Database

After the office software is installed, the FlightConnect master database can be populated with operational details and preferred FlightConnect settings.

Applicable Manuals:

EM200-17 (FlightConnect Office) *500324*

#6 - Setup DBManager

After the master database is populated, the DBManager program can be set up. This involves registering all of the LCR 600 and DMS units in the FlightConnect network, registering the units in the network with the correct master database (more than one FlightConnect database can be created), and scheduling the LCR 600 and DMS database files for updates (according to changes in the FlightConnect master database.

Applicable Manuals):

EM200-21 (DBManager) *500387*

#7 - Setup Office User Rights

After DBManager is setup, users of the office software can be registered and assigned passwords in the Office User Rights program, included in the DBManager software suite.

Applicable Manuals:

EM200-21 (DBManager) *500387*

#8 - Establish Communication - BETWEEN OFFICE AND LCR 600 & DMS (& LCR-II) UNITS

To establish communication between the office computer and the LCR 600 and DMS units in the network, the wireless devices must be physically installed and the communication settings on the computer, LCR 600 (and DMS) units, and the wireless devices must be aligned. The communication settings on the office computer can be set up with LCP Setup program, included in the DBManager software suite. The LCR 600 and DMS software include settings where the communication parameters can be adjusted. To install and set the communication settings for the wireless devices, please refer to the literature for the device.

LC fueling systems can transfer data via a serial output to a device such as a Wifi adaptor, RF transceiver, or cell modem. Cell modems enable long distance wireless data transmissions between LCR 600s and DMSs in the field and computers in the office (cell modems require static IP addresses). Cell modems and service contracts must be purchased separately from a cellular service provider. RF transceivers are designed for short, line-of-sight wireless transmissions of data. Serial Wifi adaptors can be adapted to an existing Wifi network within the customer framework. Wifi range is typically very limited, but can be used if the Fueling System uploads and downloads data from a location that is Wifi -enabled on the users network. Liquid Controls does not provide Wifi adaptors, however your distributor or IT Professional should be able to recommend one. A USB Flash Memory Device can also be used to transfer data between the DMS and computers in the office.

RF Components
A complete RF solution is available from Liquid Controls. Call Liquid Controls at 1-800-458-5262 or 847-295-1050 for more information

Cellular and Wifi Components
Please call Liquid Controls at 1-800-458-5262 or 847-295-1050 for assistance in specifying cellular or Wifi components.

Applicable Manuals:

EM200-21 (DBManager) *500387*

Wireless device manuals

EM250-10 (LCR 600 FlightConnect) *500390* **or** EM200-16 (DMS FlightConnect) *500323*

#9 - Populate LCR 600 & DMS Databases

The last step of FlightConnect installation is the population of the LCR 600 and DMS databases. Typically, the LCR 600 and DMS databases are automatically updated when they establish communication with the office,

USB FlightConnect Database Updates
FlightConnect Fueling Systems using DMS units can update the database (and transmit transaction with a USB memory device) In order to populate the master database in FlightConnect systems using USB memory devices, transfer the .501 and .slf files created by FlightConnect Edit onto the USB device. Take the USB to the DMS and use the **Retrieve Entire Database** *command on the DMS to pull all of the database files onto the DMS.*

LIQUID CONTROLS GROUP IDEX

CORKEN · FAURE HERMAN · LIQUID CONTROLS · SAMPI · SPONSLER · TOPTECH SYSTEMS

LIQUID CONTROLS
105 Albrecht Drive
Lake Bluff, IL 60044
(847) 295-1050

SAMPI
Via Amerigo Vespucci 1
55011 Altopascio (Lucca), Italy
+39 0583 24751

IDEX FLUID AND METERING PVT. LTD.
Survey No. 256, Alindra
Savli GIDC, Manjusar
Dist. Vadodara 391 770
Gujarat, India
+91 2667 662001

LIQUID CONTROLS SPONSLER
105 Albrecht Drive
Lake Bluff, IL 60044
(847) 295-1050

TOPTECH SYSTEMS
1124 Florida Central Parkway
Longwood, FL 32750
(407) 332-1774

Nateus Business Park
Nieuwe Weg 1-Haven 1053
B-2070 Zwijndrecht (Antwerp), Belguim
+32 (0)3 250 60 60

FAURE HERMAN
Route de Bonnetable
B.P. 20154
72406 La Ferté-Bernard Cedex, France
+33 (0)2 43 60 28 60

4702 North Sam Houston Parkway West, Suite 100
Houston, TX 77086
(713) 623-0808

CORKEN
3805 Northwest 36th St.
Oklahoma City, OK 73112
(405) 946-5576