LFC 6000 and LFC Enterprise software

Control fluids with your management software programs
Control fluids with your management software programs

The Lincoln LFC 6000 fluid inventory control and management system and LFC Enterprise software are designed to accurately track, monitor and dispense fluids in vehicle service applications. Utilizing a standard Internet browser to access the software, this fluid management system provides a significant savings by operating up to 50 sites with one server installation.

LFC 6000 system advantages:
- Saves money and time by accurately tracking and accounting for dispensed fluids
- Provides reliable interface with multiple management software programs
- Manages up to 50 sites with one central server installation
- User interface for dispensing, configuring and tracking is accessible throughout the web browser
- Measures any type of oil, grease, transmission fluid or windshield washer fluid
- Multiple report generating options available to track dispenses by user, RO, product, etc.
- Controller has one Ethernet connection and “talks” to server computer; can add optional switch to connect additional units
- Electric bypass measures what is dispensed in bypass mode

Dispense points, such as hose reels, are locked out by solenoids. Each dispense request opens up a solenoid valve, activating a green ready light to indicate that the dispense is ready to proceed.

System provides ability to start a dispense from a shop PC.

All transactions can be viewed from any network computer.

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LFC 6000 tracks fluids accurately and efficiently

The LFC 6000 is a versatile system that can adapt to any location. Based on an Ethernet network, the system enables fast, easy and 100% reliable communication, which is key when the control system interfaces with a management system. Network connections are easy; simply connect the controller with the Cat 5 or Cat 6 Ethernet cable.

For a stand-alone system, the LFC controller can be wired on its own network; separate from the site’s existing network. This offers an easy deployment and avoids any security concerns.

For a more advanced setup, each LFC controller can be connected over your existing network. The controller has a unique MAC address and IP address that allows the unit to route information over an existing network to the PC running the system. The unit comes preconfigured with a static IP address but can be used in dynamic IP mode if running a DHCP server. This method can save on wiring costs and helps a site maintain complete control of its components.
Complete lubrication solutions for vehicle service facilities

**Diaphragm pump**
Diaphragm pumps are ideal for transferring used fluids from collection equipment to bulk storage locations. Pump sizes from 1/4 to 1 in (6.35 to 25.4 mm) can quickly transfer used oil, transmission fluid, coolant, windshield washer solvent, and other light fluids.

**Thermal relief kits**
Model 282876
Thermal relief valves prevent system damage by temperature-induced pressure spikes. Various models with different pressure ratings are available.

**Ready lights**
Model 500083
A ready light is used so that mechanic knows hose reel is ready to dispense.

**PowerMaster III**
Model 2014
Heavy-duty 12:1 pump for delivering engine and transmission lubricants, etc., over long distances. Suitable for simultaneous dispensing.*

**PowerMaster III**
Model 2010
Heavy-duty 50:1 chassis grease pump for 400 lb (181 kg) drum.

**Low-level cutoff**
Model 82439
A low-level cutoff is recommended for all pumps using a fluid control system to prevent air from getting into the fluid line.

**Air solenoid**
Model 282886-A
Optional safety feature used to activate air to the pump. Can use one per system or one per pump. Varying sizes based on pump inlet size.

**Tank level probe**
Model 500267
The LFC 6000 controller’s ultrasonic sensor simultaneously monitors up to six tanks of any size or shape.

**Used fluid drains**
Lincoln offers portable used fluid equipment in a wide range of configurations, capacities, materials, and colors. Drains and evacuators are available for collecting used fluids under lift-mounted vehicles or by dipstick tube extraction.

*Maximum pumping distances and flow rates for single and simultaneous dispenses should be calculated using Lincoln’s Vehicle Service Planning Manual. Contact your local Lincoln representative for details.
Control valves
Lincoln has a complete line of standard and high-flow control valves and meters. These or any existing units can be used.

Heavy-duty hose reels
Model 7335-B
Various-sized single- and dual-arm reels are available with different hose sizes and pressure ratings.

Combo kit
Model 343683
Fluid Solenoid Valve and Pulse Meter Kit for Oil, Automatic Transmission Fluid (ATF) and Petroleum-Based Fluids

PMV pumps
Model V450400000
Medium-duty 50:1 chassis grease pump for 400 lb (181 kg) drum.

Model V406000000
Medium-duty 6:1 pump is available for delivering engine and transmission lubricants, etc. over moderate distances. Suitable for simultaneous dispensing.*

LFC 6000 controller
Model 500200
Controller has one Ethernet connection and “talks” to server computer. Monitors six dispense points and six tanks. Additional units can be connected using an optional switch (model 500211).

Decorative overhead cabinets
These cabinets give the shop a clean, modern look.

LFC Enterprise software
Model 500234
User interface for dispensing, configuring and tracking is accessible via web browser on a standard PC, laptop or tablet. One server installation operates up to 50 sites. All software comes from one source for simple IT support, backup and reporting.

Series 20, 25 and 40 pumps
Medium-duty 3:1 and 5:1 pumps for delivering engine and transmission lubricants, etc. over moderate distances. Best for single- or limited-volume, simultaneous dispensing.*
Software and interface capabilities

LFC Enterprise software

Lincoln LFC Enterprise software is used with LFC 6000 hardware to accurately track, monitor and dispense fluids using your Enterprise dealer management system. The LFC 6000 fluid management system utilizes a standard Internet browser to access the software and can operate up to 50 sites with one server installation, which can deliver substantial savings.

LFC Enterprise software advantages:
• All software comes from one source for simple IT support, backup and reporting
• No need to install software on multiple PCs
• Integration of Enterprise Resource Planning (ERP) provides accurate tracking with no missed steps

LFC Enterprise software features:
• Compatible with LFC 6000 and LFC 5000 hardware
• Software on one server operates up to 50 sites
• Runs as a Windows service so user does not need to be logged into PC for it to work
• Provides four levels of access: system administrator, site administrator, manager and technician
• Offers security protocols across the network
• User interface for dispensing, configuring and tracking is accessible throughout the web browser
• Can use the site’s SQL database or use SQL Express
• Can be installed on a server for multi-site usage or on a standard PC for the traditional LFC 5000 setup

Interface capabilities

The LFC 6000 interfaces with fleet and dealer management systems by providing:
• Validation of unique fields that are configurable in system setup, such as work order, line number and equipment number
• Validation of fluid type and quantity for work order or equipment number
• Direct billing to accounting and inventory systems with five different rounding and pricing methods
• Export of more than 15 fields after each transaction
• Available interfaces include CDK Dealer Services, AssetWorks, Procede Software, TMW, Faster, Veeder–Root and more
• Group preload capabilities include:
  – Preloading up to five different fields for system to verify before a dispense is accepted
  – Preloading fluid types and quantities to work order or equipment number to verify mechanic’s dispense request
  – Initiating one dispense request to multiple hoses with preset quantities from a single field
LFC Enterprise and LFC 6000 technical data

**Server installation requirements**

- Windows Server 2008 R2 or above
- Dedicated or virtualized server
- Internet Information Services (IIS) version 7.5 or above
- .NET version 4.5.2 or above
- .NET version 3.5.x enabled (Windows feature that can be turned on or off)
- TCP ports open for our intranet website – 80 or 81 or 82 for the web client
  - if HTTPS or other secure access technology is used:
    - for SSL – 443/8443/8444
    - for web – API required
- Our web server must only be accessible on your internal Intranet. Any connection to the Internet must be secured through a VPN
- SQL Server 2008 R2* or above, or SQL Express 2012 or above, or SQL 2012 Standard or above
- An SQL instance name of “SKFFLUIDCONTROL” for our use is preferred, but not required
- Dispense units communicate via TCP/IP and appear as TCP/IP servers at TCP ports 60000-60019. We also use TCP port 5000 on rare occasions (LFC 6000 tank monitoring hardware may eventually use TCP ports 60021-60026)

**PC installation requirements**

- Windows Professional Edition – Windows 7 or 8.1 or 10
- A computer program is available to check the PC for the following requirements and update the PC to these requirements if necessary
- Internet Information Services (IIS) version 7.5 or above
- .NET version 4.5.2 or above
- .NET version 3.5.x enabled (Windows feature that can be turned on or off)
- 6 – 8 GB real or virtual RAM (multi-site requirement)
- 4 GB real or virtual RAM (single site)
- 2 – 4 real or virtual CPUs (multi-site)
- 2 real or virtual CPUs (single site)
- 64 bit operating system
- TCP ports open for our intranet website – 80 or 81 or 82 for the web client
- Our web server must only be accessible on your internal Intranet. Any connection to the Internet must be secured through a VPN
- An SQL instance name of “SKFFLUIDCONTROL” for our use is preferred, but not required
- Dispense units communicate via TCP/IP and appear as TCP/IP servers at TCP ports 60000-60019. We also use TCP port 5000 on rare occasions (our LFC6000 tank monitoring hardware may eventually use TCP ports 60021-60026)

**Client requirements (user PCs, laptops or tablets)**

- Any PC, laptop or tablet that supports one of the browsers below is acceptable
  - Internet Explorer version 10 or 11
  - Google Chrome
  - Microsoft Edge
  - Safari

**Report capability**

- Reports can be run from the central database using the following filters

<table>
<thead>
<tr>
<th>End date</th>
<th>Fluid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site(s)</td>
<td>State description</td>
</tr>
<tr>
<td>User</td>
<td>Status description</td>
</tr>
<tr>
<td>Hose</td>
<td>HW status code</td>
</tr>
<tr>
<td>Tank</td>
<td></td>
</tr>
</tbody>
</table>

**System specifications**

- Dispense points per controller: 6 (6 valve outputs and 6 pulse switch inputs)
- Tank level sensor inputs per controller: 6
- Max. controllers per site: 50
- Max. dispense points per site: 300
- Max. sites per software installation: 50
- Max. dispense points per software installation: 15,000
- Master air solenoid output per system: 1 per tank
**Electrical specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller supply voltage</td>
<td>100 to 240 V AC, 50/60 Hz</td>
</tr>
<tr>
<td>Max controller supply current</td>
<td>4.5 A</td>
</tr>
<tr>
<td>Dispense valve output voltage</td>
<td>24 V</td>
</tr>
<tr>
<td>Max. dispense valve output current</td>
<td>1.85 A</td>
</tr>
<tr>
<td>Pulse meter switch input voltage</td>
<td>24 V</td>
</tr>
<tr>
<td>Pulse meter switch input current</td>
<td>5.1 mA</td>
</tr>
<tr>
<td>Pulse meter switch power requirement</td>
<td>125 mW</td>
</tr>
</tbody>
</table>

**Wiring**

The LFC 6000 provides spring loaded wire to board connections on the internal control PCB for the purpose of wiring electrical connections from the controller to external electronic devices. The following cable options are available for those wiring purposes:

- 500232-100: 100 ft (30.5 m) roll of 4 conductor 18 AWG shielded cable
- 500232-250: 250 ft (76 m) roll of 4 conductor 18 AWG shielded cable
- 500232-500: 500 ft (152 m) roll of 4 conductor 18 AWG shielded cable

**Tank level probe specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Mounting requirements</td>
<td>3/4 or 2 in NPT bung</td>
</tr>
<tr>
<td>Tank depth range</td>
<td>8 to 86 in (200 to 2184.4 mm)</td>
</tr>
<tr>
<td>Data cable (included)</td>
<td>49 ft (15 m)</td>
</tr>
</tbody>
</table>

Please contact:

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PUB LS/P2 16990 EN · September 2020