DIGITEN DFC15F1608

DIGITEN Water Flow Control LCD Display User Manual

Brand: DIGITEN | **Model:** DFC15F1608

1. Product Overview

The DIGITEN DFC15 Water Flow Control LCD Display is designed for precise monitoring and control of liquid flow. This device integrates a flow sensor, a temperature sensor, and an LCD display unit to provide real-time data and enable quantitative control of fluid dispensing.
Key functionalities include:

- **Quantitative Control:** Automatically shuts off the solenoid valve when the preset flow volume is reached.
- **Flow Rate Monitoring:** Displays the real-time volume of liquid passing per minute.
- **Versatile Sensor Compatibility:** Works with various hall effect flow sensors by adjusting the K value.
- **Volume Unit Selection:** Allows display in Liters or Gallons.
- **Water Meter Functionality:** Can be used to measure total water volume.
- **Adjustable Accuracy:** Calibration through K parameter adjustment.
- **Temperature Monitoring:** Includes a temperature sensor to measure liquid temperature.
- **Easy-to-Read Display:** Front-panel LCD shows total volume, flow rate, and sensed temperature clearly, with custom icons indicating controller status.

Figure 1: Overview of the DIGITEN Water Flow Control LCD Display, G2" Flow Sensor, 12V Power Adapter, and Temperature Sensor.

2. Package Contents

Please verify that all items listed below are included in your package:

- 1 x DFC15 Controller
- 1 x G2" Flow Sensor
- 1 x AC100-240V Power Adapter
- 1 x Temperature Sensor
- 1 x Instruction Manual (this document)

Figure 2: All components included in the DIGITEN Water Flow Control System package.

3. Technical Specifications

Parameter	Specification
Controller Power Requirement	12VDC
Power Adapter Input	100-240VAC
Power Adapter Output	12VDC, max 2A
Adapter Lead Length	1m
Measuring Accuracy	±1%
Output for Solenoid Valve	12VDC, max 5A
Temperature Sensor Range	0-120°C / 32-212°F

Parameter	Specification
Temperature Sensor Type	NTC3950, M8 thread
Temperature Sensor Accuracy	±1°C / ±1°F
Max Total Volume	999999 G/L
Quantitative Range	0-9999 G/L
Flow Range (G2" Sensor)	10-200 L/min
Cable Length	1m
Operation Environment Temperature	0-50°C / 32-122°F
Operation Environment Humidity	<85% Relative Humidity
Item Model Number	DFC15F1608
Package Dimensions	8.5 x 4.65 x 4.41 inches
Item Weight	1.41 Pounds

Figure 3: Front view of the DFC15 Controller with approximate dimensions.

4. Setup and Installation

Follow these steps to properly set up your DIGITEN Water Flow Control System:

1. **Install the Flow Sensor:** Integrate the G2" flow sensor into your water line. Ensure the flow direction matches the arrow indicated on the sensor body. The sensor has G2" male threads for connection.
2. **Connect the Flow Sensor to the Controller:** The flow sensor has a cable with a connector. Plug this connector into the corresponding port on the DFC15 controller.

Figure 4: Close-up view of the G2" Flow Sensor.

3. **Connect the Temperature Sensor (Optional):** If using, connect the NTC3950 temperature sensor to its designated port on the controller. This sensor is typically used to measure the liquid temperature.
4. **Connect the Solenoid Valve (Optional):** If you intend to use the quantitative control feature, connect your 12VDC solenoid valve to the controller's solenoid output terminals. Ensure correct polarity. The controller can output up to 5A for the solenoid valve.

5. **Connect the Power Adapter:** Plug the 12VDC power adapter into the power input jack on the DFC15 controller. Then, plug the AC power adapter into a standard 100-240VAC wall outlet.

Figure 5: The 12VDC power adapter for the DFC15 controller.

6. **Wiring Diagram Reference:** Refer to the wiring diagram below for a visual guide to connections.

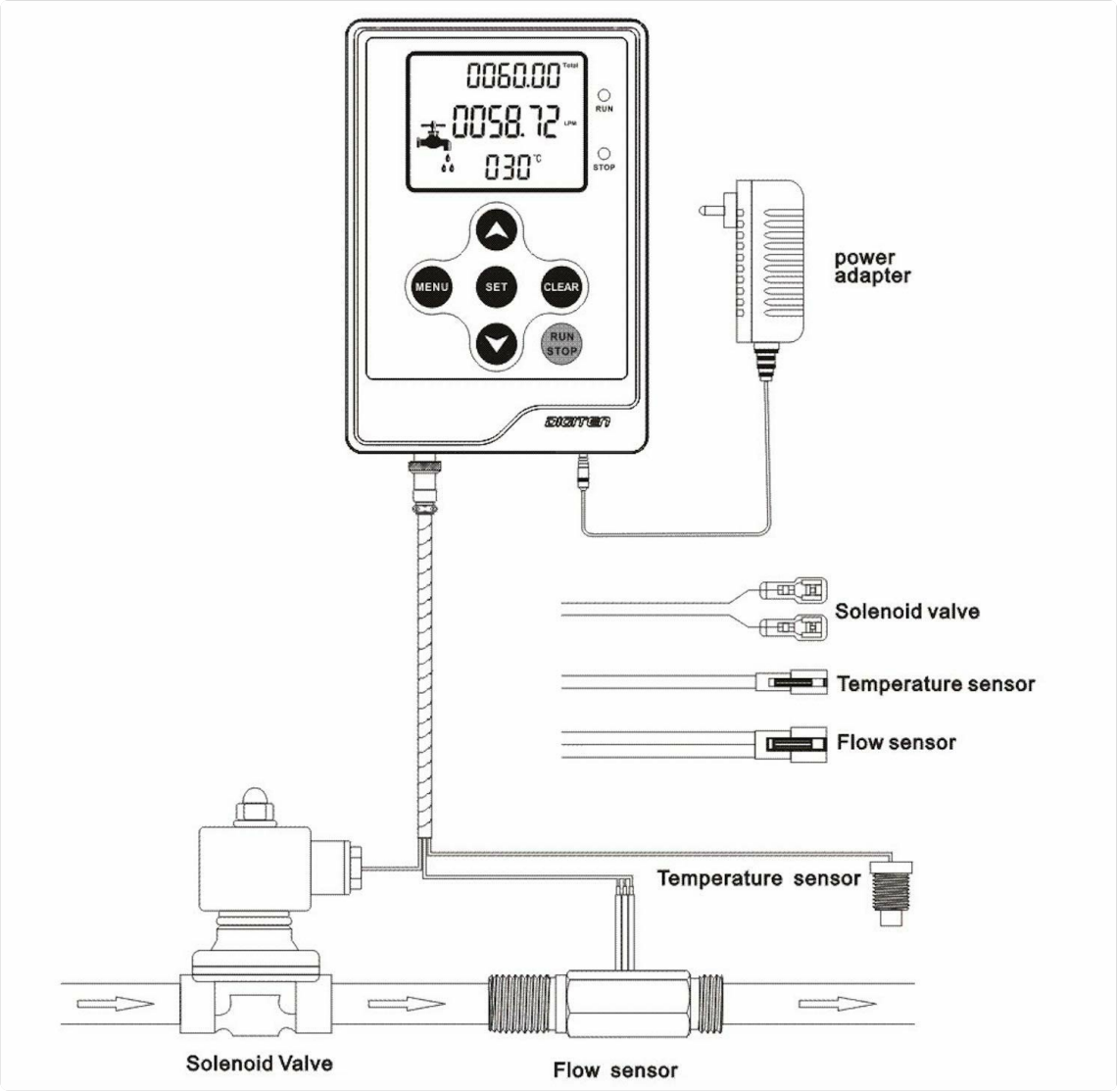

Figure 6: Detailed wiring diagram showing connections for the DFC15 controller, flow sensor, temperature sensor, and solenoid valve.

5. Operating Instructions

The DFC15 controller features an intuitive LCD display and several control buttons:

- **MENU Button:** Accesses various settings and configuration options.
- **SET Button:** Confirms selections or enters editing mode for parameters.
- **CLEAR Button:** Resets values or clears current settings.
- **Up/Down Arrows:** Navigate through menus or adjust numerical values.
- **RUN/STOP Button:** Initiates or halts the flow control process.

5.1. Basic Display Information

The main screen typically displays:

- **Top Line:** Total accumulated volume (e.g., 0003.98 L).
- **Middle Line:** Real-time flow rate (e.g., 0009.60 L/min).

- **Bottom Line:** Current liquid temperature (e.g., 027 °C).
- **Indicators:** "RUN" and "STOP" LEDs indicate the current operational status.

5.2. Setting Quantitative Control

To set a specific volume for automatic shut-off:

1. Press the **MENU** button to enter the settings menu.
2. Navigate using the Up/Down arrows to find the "Quantitative Control" or "Set Volume" option.
3. Press **SET** to enter the value editing mode.
4. Use the Up/Down arrows to adjust the desired volume.
5. Press **SET** again to confirm the value.
6. Press **MENU** to exit the settings.
7. Press **RUN** to start the flow. The controller will automatically stop the flow when the set volume is reached.

5.3. Adjusting K Value for Accuracy

The K value is crucial for accurate flow measurement. It represents the number of pulses per liter (or gallon) generated by the flow sensor. This value may need adjustment based on the specific flow sensor used or for calibration.

1. Press the **MENU** button.
2. Navigate to the "K Value" or "Calibration" setting.
3. Press **SET** to modify the value.
4. Adjust the K value using the Up/Down arrows. Refer to your flow sensor's specifications for its nominal K value. Fine-tune as needed by comparing measured volume with actual dispensed volume.
5. Press **SET** to save the new K value.

5.4. Changing Volume Unit (L/Gal)

To switch between Liters (L) and Gallons (G):

1. Press the **MENU** button.
2. Locate the "Unit" or "Volume Unit" option.
3. Press **SET** and use the Up/Down arrows to select "L" or "G".
4. Press **SET** to confirm.

6. Maintenance

Proper maintenance ensures the longevity and accuracy of your DIGITEN Water Flow Control System:

- **Cleaning:** Regularly wipe the LCD display and controller housing with a soft, dry cloth. Avoid using abrasive cleaners or solvents.
- **Sensor Inspection:** Periodically check the flow sensor for any debris or blockages that might affect

its accuracy. If necessary, carefully clean the sensor according to its specific cleaning instructions (refer to the flow sensor's manual if available).

- **Connections:** Ensure all electrical connections remain secure and free from corrosion.
- **Storage:** If storing the unit for an extended period, disconnect power and store in a dry, temperate environment.

7. Troubleshooting

If you encounter issues with your DIGITEN Water Flow Control System, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Display is blank or not powering on.	No power, faulty adapter, loose connection.	Check power adapter connection to controller and wall outlet. Ensure outlet has power. Test adapter if possible.
Flow rate or total volume reading is inaccurate.	Incorrect K value, debris in flow sensor, sensor installed incorrectly.	Calibrate the K value (refer to Section 5.3). Inspect flow sensor for obstructions and ensure it's installed with correct flow direction.
Quantitative control does not stop flow.	Solenoid valve not connected, faulty solenoid valve, incorrect wiring.	Verify solenoid valve connection and wiring (refer to Section 4 and Figure 6). Test solenoid valve independently if possible. Ensure quantitative value is set correctly.
Temperature reading is incorrect or absent.	Temperature sensor not connected, faulty sensor.	Check temperature sensor connection to the controller. Ensure the sensor is properly immersed in the liquid if measuring liquid temperature.

If the problem persists after attempting these solutions, please contact customer support.

8. Warranty and Support

DIGITEN provides a one-year warranty for any quality-related issues with this product. Please retain your proof of purchase for warranty claims.
For technical support, troubleshooting assistance, or warranty inquiries, please visit the official DIGITEN website or contact their customer service department. Contact information can typically be found on the product packaging or the brand's official online store page.
We are committed to providing reliable products and personalized service to our customers.