

Fuel Pump Wiring Diagram PDF — Complete Diesel Generator Fuel System Electrical Connection Guide

[Free Download - Generator Resource Center](#)

The fuel pump is a vital component in any diesel generator set, responsible for delivering fuel from the storage tank to the engine's injection system at the correct pressure and flow rate. The electrical wiring of the fuel pump system must be carefully designed to ensure reliable fuel delivery unde...

Shandong Huaquan Power Co., Ltd.

Website: www.huaquanpower.com

Email: huaquan@huaquanpower.com

Phone/WhatsApp: +86 15905360672

Fuel Pump Wiring Diagram PDF — Complete Diesel Generator Fuel System Electrical Connection Guide

Introduction

The fuel pump is a vital component in any diesel generator set, responsible for delivering fuel from the storage tank to the engine's injection system at the correct pressure and flow rate. The electrical wiring of the fuel pump system must be carefully designed to ensure reliable fuel delivery under all operating conditions, from cold starts to full-load running. A failure in the fuel pump wiring can lead to engine stalling, failure to start, or — in worst cases — fuel system damage from air ingress or cavitation.

This comprehensive guide covers the complete wiring details for generator fuel pump systems, including the primary electric fuel pump, fuel transfer pump, fuel solenoid valve, fuel level sensors, water-in-fuel sensors, and the controller interface that manages their operation. We provide wiring connection details for both DC-powered fuel pumps (for small to medium generators) and AC-powered fuel transfer pumps (for larger systems with day tanks), along with detailed pin assignments, compatible controllers, and technical specifications.

The fuel pump system wiring must integrate with the generator controller's fuel relay output, which energizes the fuel pump when the engine start sequence is initiated. The controller also monitors fuel level (through a float switch or resistance-type sender), water-in-fuel sensor (for separator warning), and fuel leak detection. Proper wiring ensures that the fuel pump operates only when needed, that low-fuel or water-in-fuel alarms are communicated to the operator, and that the engine receives a consistent fuel supply throughout its operating range.

Fuel Pump Wiring Connection Details

Primary Electric Fuel Pump (DC)

Most diesel generators use a DC electric fuel pump mounted near the engine fuel injection pump, energized by the generator controller.

Fuel Pump Terminal	Function	Connection	Wire Size	Notes
Pump Positive (+)	Power input	From fuel pump relay output	2.5–4.0 mm ²	Fused at 10–20 A
Pump Negative (-)	Ground	Engine block / battery negative	2.5–4.0 mm ²	Direct ground path
Prime Switch +	Manual prime	Pushbutton to battery + (optional)	1.5 mm ²	Momentary contact
Prime Switch -	Ground	Battery negative	1.5 mm ²	Momentary contact

DC Fuel Pump Wiring Configurations:

Configuration A — Controller Relay Control (Standard):

- Controller Fuel Output (Relay NO) → Fuel Pump + (12/24 V)
- Fuel Pump - → Battery Negative / Engine Ground
- The fuel relay is energized when controller enters Pre-Heat or Crank phase
- Pump runs continuously while engine is running (full operating mode)

Configuration B — Controller + Run Feedback (Safety):

- Controller Fuel Output → Run Relay Coil +
- Run Relay Coil – → Battery Negative
- Run Relay NO → Fuel Pump +
- Run Relay COM → Battery Positive
- Fuel Pump – → Battery Negative
- Pump runs only when engine is confirmed running (prevents fuel spill)
- Requires engine run feedback signal from oil pressure switch or magnetic pickup

Configuration C — Timer-Based Priming:

- Controller Fuel Output + Timer Relay → Fuel Pump +
- Timer relay set for 5–10 seconds of pre-prime
- Pump runs before cranking to fill fuel lines
- Continuous pump operation during engine run

Fuel Transfer Pump (AC)

For generators with remote fuel storage or day tanks, an AC-powered fuel transfer pump moves fuel from the main storage tank to the day tank.

Transfer Pump Terminal	Function	Connection	Wire Size	Notes
L (Line)	AC supply phase	From pump starter/contactor	2.5–4.0 mm ²	Via MCB, 6–16 A
N (Neutral)	AC supply neutral	Neutral busbar	2.5–4.0 mm ²	
E (Ground)	Protective earth	Ground busbar	2.5–4.0 mm ²	
Float Switch High	Day tank high level	NC to contactor hold-in	1.5 mm ²	Stops pump at high
Float Switch Low	Day tank low level	NO to contactor start	1.5 mm ²	Starts pump at low

AC Transfer Pump Control Logic:

- When day tank low-level float switch closes (low fuel) → contactor coil energizes → pump runs
- When day tank high-level float switch opens (full) → contactor coil de-energizes → pump stops
- Manual override switch for maintenance/priming
- Pump run-time timer for leak detection (pump running >30 min = alarm)

Fuel Solenoid Valve

A fuel shutoff solenoid is used to block fuel flow when the generator stops, preventing fuel leakage into the engine.

Solenoid Terminal	Function	Connection	Wire Color	Notes
Solenoid +	Energize to run	Pickup from controller fuel output	Red/White	12/24 VDC
Solenoid –	Ground	Battery negative	Black	

| Hold-in terminal | Reduced current | Via dropping resistor (if 3-wire type) | — | Internal pull-in/hold circuit |

2-Wire vs 3-Wire Fuel Solenoids:

- 2-Wire Solenoid: Full battery voltage applied continuously while engine runs. Simpler wiring but higher power consumption and coil heating.
- 3-Wire Solenoid: Uses a pull-in winding (high current) for 1–2 seconds to open, then switches to a hold-in winding (low current). Requires an external or internal hold-in resistor. Common on larger engines (Volvo, MTU, Cummins).

Fuel Level Sensor Wiring

Fuel level monitoring is critical for generator operation. Two common sensor types are used:

Float Switch (Digital):

Terminal	Connection	Normal State	Alarm State
-----	-----	-----	-----
Common	Controller digital input	—	—
Low Fuel NC	NC to ground	Closed (fuel OK)	Open (low fuel)
Low Fuel NO	NO to ground	Open	Closed (low fuel)

Resistance-Type Sender (Analogue):

Terminal	Connection	Resistance Range	Notes
-----	-----	-----	-----
Signal	Controller analogue input	0–190 Ω (empty-full)	Standard sender
Ground	Controller analogue ground/DC–	—	Reference
Supply	5V or 12V reference (if active)	—	For active senders

Water-in-Fuel Sensor:

Terminal	Connection	Normal State	Alarm State
-----	-----	-----	-----
Sensor Output	Controller digital input	NC to ground (closed)	Open (water present)
Ground	Battery negative	—	—
Supply	12/24 VDC	—	For active sensor models

Fuel Pump System Pin Assignments

Generator Controller Fuel-Related I/O

Controller Pin	Function	Connection	Notes
-----	-----	-----	-----
Fuel Output (Relay)	Fuel solenoid + pump power	To fuel relay coil or direct to solenoid/pump	10–15 A rated
Start Output	Starter solenoid	To starter solenoid S terminal	10 A rated
Glow/Preheat Output	Intake heater (if fuel heater)	To glow plug relay for cold start	10 A rated

- | Config Input 1 | Low Fuel Level | NC switch to ground | Low fuel warning |
- | Config Input 2 | Water-in-Fuel | NC switch to ground | Water separator alarm |
- | Config Input 3 | Fuel Leak Detector | NC switch to ground | Leak detection alarm |
- | Analogue Input | Fuel level sender | 0–190 Ω or 4–20 mA | Fuel level % display |

Fuel Pump Relay Wiring

- | Relay Terminal | Connection | Notes |
- |-----|-----|-----|
- | 85 (Coil –) | Controller fuel output or ground | Switched negative or positive |
- | 86 (Coil +) | Battery + or controller fuel output | Opposite of pin 85 |
- | 30 (COM) | Battery positive (+12/24 V) | Fused at 15–20 A |
- | 87 (NO) | Fuel pump positive terminal | Energized when relay on |
- | 87a (NC) | Not used (or for priming lamp) | Optional |

Compatible Fuel Pump Controllers and Components

- | Component | Manufacturer | Type | Voltage | Flow Rate | Pressure | Applications |
- |-----|-----|-----|-----|-----|-----|-----|
- | EP-12A | Airtex | Electric diesel pump | 12 V | 35 GPH (132 L/h) | 7–10 PSI | Small diesels up to 100 kVA |
- | E1F-80191-S | Bosch | Electric diesel pump | 12 V | 70 L/h | 3–5 bar | Common rail diesels |
- | 0500.131.025 | Denso | Electric diesel pump | 12 V | 60 L/h | 4 bar | Toyota/Kubota engines |
- | 443-1015 | Holley | Electric fuel pump | 12 V | 110 GPH (416 L/h) | 7 PSI | Large diesels |
- | C1E-12V | Facet | Solid-state pump | 12 V | 40 L/h | 7 PSI | Generator applications |
- | FEP1604 | Walbro | Electric fuel pump | 12/24 V | 160 L/h | 5–7 bar | High-pressure systems |
- | Tsurumi LTZ-200 | Tsurumi | AC transfer pump | 230 V | 200 L/min | 15 m head | Bulk fuel transfer |
- | TPM-100 | Fill-Rite | AC transfer pump | 230 V | 100 L/min | 2 bar | Day tank transfer |
- | APT-200 | Graco | AC transfer pump | 230 V | 200 L/min | 1.5 bar | Large storage systems |
- | FSM400 | SmartGen | Fuel level monitor | 12/24 V | N/A | N/A | Controller add-on module |
- | GSP-50 | GAC | Fuel pressure switch | 12/24 V | N/A | 5–15 PSI | Low fuel pressure protection |

Fuel Pump Connection Specifications

- | Parameter | DC Fuel Pump (12 V) | DC Fuel Pump (24 V) | AC Transfer Pump (230 V) |
- |-----|-----|-----|-----|
- | Operating Voltage | 10–15 VDC | 20–30 VDC | 220–240 VAC, 50/60 Hz |
- | Current Draw | 3–8 A | 1.5–4 A | 0.5–3 A |
- | Power Consumption | 36–96 W | 36–96 W | 100–700 W |
- | Flow Rate | 30–400 L/h | 30–400 L/h | 50–200 L/min |
- | Discharge Pressure | 1–10 bar | 1–10 bar | 0.5–2 bar |

Max Priming Lift	1–2 m (dry)	1–2 m (dry)	2–5 m
Max Particle Size	10–50 microns	10–50 microns	100–500 microns
Duty Cycle	Continuous (S1)	Continuous (S1)	Intermittent (S3-30%)
IP Rating	IP55–IP67	IP55–IP67	IP54–IP65
Temperature Range	-20°C to +70°C	-20°C to +70°C	-10°C to +60°C
Fuel Compatibility	Diesel, biodiesel up to B20	Diesel, biodiesel up to B20	Diesel, HFO, biodiesel
Fuse Rating (recommended)	15 A	10 A	6–16 A MCB
Cable Size	2.5–4.0 mm²	2.5 mm²	2.5 mm²
Relay Contact Rating	20 A minimum	15 A minimum	Contactor 16 A

Fuel System Wiring Diagram

Standard DC Fuel Pump System Wiring Sequence

Component Wiring Path:

1. Battery Positive (+) → 15 A Fuse → Fuel Pump Relay Pin 30 (COM)
2. Controller Fuel Output (pin 4 or Fuel OUT) → Relay Pin 86 (Coil+)
3. Relay Pin 85 (Coil-) → Battery Negative
4. Relay Pin 87 (NO) → Fuel Pump Positive (+)
5. Fuel Pump Negative (-) → Battery Negative / Engine Ground
6. Fuel Level Sender Signal → Controller Analogue Input
7. Water-in-Fuel Sensor → Controller Digital Input

AC Fuel Transfer Pump Wiring Sequence

Component Wiring Path:

1. AC Supply (L) → MCB (6 A) → Contactor Line Input
2. AC Supply (N) → Neutral Busbar
3. Contactor Output → Fuel Transfer Pump (L and N)
4. Float Switch High (NC) → Contactor Coil Hold Terminal
5. Float Switch Low (NO) → Contactor Coil Start Terminal
6. Contactor Coil (A2) → Neutral
7. Control Transformer (if 230 V → 24 V) for low-voltage float circuit

Download PDF — Fuel Pump Wiring Diagram

![Download PDF]()

Click the button above to download the complete Fuel Pump Wiring Diagram PDF. This downloadable reference includes:

- DC fuel pump wiring diagram (relay-controlled, controller-integrated)
- AC fuel transfer pump wiring with float switch control
- Day tank fuel system complete wiring including transfer pump, level sensors, and alarms
- Fuel solenoid valve wiring (2-wire and 3-wire types)
- Fuel level sensor wiring (float switch, resistance sender, 4–20 mA)
- Water-in-fuel sensor wiring and alarm integration
- Generator controller fuel I/O pin mapping (SmartGen, DeepSea, ComAp)
- Fuel priming circuit for first-start or after filter change
- Fuel leak detection wiring with solenoid valve shutdown
- Cable sizing table for fuel pump power circuits
- Low fuel alarm and shutdown logic circuit
- Multiple-pump wiring for dual fuel systems

The PDF is 2.0 MB, vector graphics, A3 format. Suitable for field printing and includes both English and European standard wiring color coding.

15 Frequently Asked Questions About Fuel Pump Wiring

1. How do I wire a fuel pump that only turns on when the engine is running?

Use the engine run feedback signal to control the fuel pump. Connect the engine oil pressure switch (closed when engine running) or the controller's engine run output to energize a relay that powers the fuel pump. This ensures the pump stops immediately if the engine stalls, preventing fuel leakage. Wire: Controller Run Output → Relay Coil + ; Relay COM → Battery + ; Relay NO → Fuel Pump + ; Fuel Pump – → Ground.

2. Can I use a 12V fuel pump on a 24V battery system?

No. Connecting a 12V pump to a 24V system will cause immediate damage (overheating, burned windings, or fire). However, you can use a 24V-rated fuel pump (available for most flow rates) or use a DC-DC converter (24V to 12V) rated for the pump's current draw. Better to replace with a 24V-rated pump designed for the application.

3. What size wire should I use for a DC fuel pump rated at 8A?

For a 12V DC fuel pump drawing 8A at up to 2 meters from the controller: 2.5 mm² (14 AWG) is sufficient. For runs longer than 2 meters, use 4.0 mm² (12 AWG) to minimize voltage drop. Always fuse the pump's positive supply within 300 mm of the power source at 15 A (for an 8A pump) to protect the wiring.

4. Why does my fuel pump run continuously even after the generator stops?

This is usually caused by: (a) The fuel pump relay being stuck in the energized position (welded contacts), (b) A short circuit in the controller's fuel output transistor, (c) The controller remaining in "run" mode due to a faulty engine run feedback signal, (d) Wiring error — fuel pump powered from battery positive rather than through the relay. Check by disconnecting the relay and verifying pump turns off.

5. What is the correct way to wire a fuel priming switch?

Install a momentary pushbutton (momentary ON, spring-return OFF) in parallel with the controller's fuel relay output. One side of the pushbutton connects to battery positive (fused), the other side connects to the fuel pump positive input. This allows manual priming for filter changes or after running out of fuel. The switch must be

momentary (not maintained) to prevent accidental pump operation.

6. How do I wire a fuel solenoid for a 3-wire pull-in/hold type?

A 3-wire fuel solenoid has three terminals: Pull (+), Hold (+), and Common (-). Connect Pull (+) through an external dropping resistor (typically 5–10 Ω , 50 W) in parallel with the start relay output. Connect Hold (+) directly to the fuel relay output (continuous voltage). Connect Common (-) to battery negative. When engine starts: Pull wire energizes briefly (1–2 seconds) then drops out as start relay de-energizes. Hold wire keeps solenoid open with reduced current.

7. Do I need a fuel return line wiring connection?

The fuel return line is a mechanical (plumbing) connection, not electrical. It returns excess fuel from the engine injection pump and injectors back to the fuel tank. Some advanced systems include a return line check valve or solenoid, but these are typically mechanical. The electrical wiring for return line monitoring would be a fuel flow sensor, if installed.

8. How do I wire the fuel level sender to the generator controller?

Connection depends on sender type: (a) Resistance sender (0–190 Ω): Connect sender signal wire to controller analogue input, ground wire to controller analogue ground. Configure controller for "Fuel Level — Resistance" input type. (b) 4–20 mA sender: Connect sender signal (+) to controller analogue input, sender (-) to controller analogue ground. Provide loop power (12/24 VDC) from controller sensor supply. Configure for 4–20 mA input range.

9. What is the recommended fuel pump fuse rating?

Fuse at 125–150% of the pump's maximum rated current. For a pump rated at 8A, use a 12–15 A fuse. For DC pumps, use fast-blow (AUTO blade or ATO type) fuses. For AC transfer pumps, use a miniature circuit breaker (MCB) with C-curve trip characteristic rated at 1.25x the pump's full load current.

10. Can I control multiple fuel pumps with a single relay?

Yes, multiple pumps can share a single relay if the total current does not exceed the relay's rated contact capacity (typically 20–40 A). Wire each pump in parallel, each with its own inline fuse. Ensure the power supply wire to the relay COM terminal is adequately sized for the total combined current.

11. Why does my fuel pump make a knocking or pulsating noise?

Pulsating noise is normal for diaphragm-type fuel pumps (e.g., Facet solid-state pumps). These pumps deliver fuel in pulses at a rate proportional to the applied voltage. The pulsing action aids in purging air from the fuel lines. If the noise is excessive, check: (a) Pump mounting is on rubber vibration isolators, (b) Fuel lines are securely clamped to prevent vibration transmission, (c) Pump is not air-locked, (d) Voltage to the pump is within specifications.

12. How do I wire a water-in-fuel sensor alarm?

The water-in-fuel sensor (in the fuel/water separator) typically has two wires. Connect one wire to the generator controller's configurable digital input and the other to battery negative (ground). In the controller configuration, set that digital input to "Water in Fuel" or "Fuel Filter Water" function with alarm type set to "Warning" or "Shutdown" depending on criticality. Some sensors are NC (closed = no water) — configure input as NC in controller.

13. What is the correct pump wiring for a day tank transfer system?

Day tank transfer wiring: (1) Fuel transfer pump (AC or DC) controlled by float switches, (2) Low-level float starts pump, high-level float stops pump, (3) Optional manual On-Off-Auto selector switch, (4) Pump run timer (15–30

minutes maximum) as leak detection, (5) High-high level float switch for overflow alarm, (6) Low-low level float switch for empty tank alarm to generator controller. All float switch wiring should be low voltage (24 VAC/VDC) through a control transformer.

14. Can I wire a fuel gauge directly without the generator controller?

Yes. For a standalone fuel level gauge: Connect the gauge's positive terminal to switched ignition +12/24 V, gauge's negative to ground, and gauge's sender terminal to the fuel level sender signal wire. This bypasses the controller and provides a local analog reading. For remote monitoring, wire the sender to both the gauge and the controller in parallel (provided the total circuit resistance is within the sender's specification).

15. How do I test a fuel pump wiring circuit?

Testing procedure: (1) Disconnect fuel pump connector, (2) Set multimeter to DC voltage, (3) Turn generator controller to MANUAL/RUN mode, (4) Measure voltage between pump positive wire and ground — should read battery voltage (~12.6/25.2 V), (5) Measure voltage between pump negative wire and ground — should read 0 V, (6) If no voltage, check fuse and relay operation, (7) If voltage present, connect pump and measure current draw with clamp meter — should match pump specification, (8) If pump runs but no fuel delivery, check for blocked lines, air in system, or pump failure.

Advanced Fuel Pump Wiring Configurations

Dual Fuel (Diesel + Gas) System Wiring

Dual fuel generators can operate on diesel and natural gas or LPG. The fuel pump wiring for dual fuel systems requires additional components and control logic.

Dual Fuel Wiring Components:

1. Diesel fuel pump (standard DC electric pump)
2. Gas fuel solenoid valve (normally closed, energize to open)
3. Gas pressure sensor (4–20 mA or 0–5 V)
4. Fuel mode selector switch (Diesel / Dual / Gas)
5. Dual fuel controller (SmartGen HGM9520 or similar)

Wiring Configuration:

- Generator controller fuel output (diesel) → Diesel pump relay → Diesel fuel pump
- Generator controller auxiliary output 2 (gas) → Gas solenoid relay → Gas solenoid valve
- Gas pressure sensor signal → Controller analogue input 2
- Fuel mode selector switch → Controller configurable input (selects operating mode)

Control Logic for Dual Fuel Wiring:

1. In DIESEL mode: Standard operation — controller fuel output energizes diesel pump only
2. In DUAL mode: Engine starts on diesel (2–5 seconds), then gas solenoid opens and diesel gradually reduces. Both fuel systems operate simultaneously with automatic balancing.
3. In GAS mode (if diesel injection is fully disabled): Gas solenoid opens with start signal, diesel pump is disabled. Requires gas-specific engine timing configuration.

Day Tank Level Control Wiring

Larger generator installations use a day tank (small intermediate fuel tank) fed from a main bulk storage tank. The day tank level control system requires specific wiring.

Day Tank Level Controller Wiring:

Component	Terminal	Connection
Level Controller (e.g., MTS-100)	Power +	12/24 VDC from generator battery
Level Controller	Power –	Battery negative
Level Controller	Sensor Input	Submersible level transmitter (4–20 mA)
Level Controller	Transfer Pump Relay	AC contactor coil for transfer pump
Level Controller	High Alarm Output	Generator controller configurable input
Level Controller	Low Alarm Output	Generator controller configurable input
Level Controller	Output to Generator	Dry contact NO: fuel level sufficient

Wiring the Transfer Pump:

1. Level controller monitors the day tank fuel level via the submersible level transmitter
2. When day tank level drops to 30%, controller energizes the transfer pump relay
3. Transfer pump runs until day tank reaches 80% level
4. Overfill protection (95% level) generates alarm — or separate high-high float switch opens the transfer pump contactor circuit
5. The generator controller receives a "fuel level sufficient" signal from the level controller
6. If the day tank level drops below 15%, the generator controller generates a Low Fuel alarm
7. If the day tank level drops below 10%, the generator controller initiates a controlled shutdown

Fuel Line Heater Wiring (Cold Climate)

In cold climates, diesel fuel can gel in fuel lines and filters. Fuel line heaters and fuel filter heaters prevent this issue.

Fuel Heater Types and Wiring:

Heater Type	Voltage	Power	Wiring	Installation
Inline fuel line heater	12/24 VDC	100–300 W	Relay-controlled, fused at 25 A	Wrapped around fuel line between tank and pump
Fuel filter heater	12/24 VDC	50–150 W	Direct to battery via thermostat and 15 A fuse	Wrapped around spin-on fuel filter
Fuel tank immersion heater	230 VAC	500–2000 W	Thermostat+contactor, via 10–16 A MCB	Inserted through tank top plate

Heater Control Wiring:

1. Install a temperature-actuated thermostat (typically set at 5°C) in the fuel line near the filter
2. Wire the thermostat in series with the heater relay coil

3. When ambient temperature drops below 5°C, thermostat closes → relay energizes → heater activates
4. Use a manual override switch for initial warm-up before generator start
5. Wire the heater through a dedicated fused circuit (separate from the fuel pump circuit)

Fuel Filter Monitoring System Wiring

Modern fuel systems include filter differential pressure monitoring to warn when filters need replacement.

Filter Minder Sensor Wiring:

Sensor Terminal	Connection	Notes
----- ----- -----		
Signal +	Controller analogue input	0–5 V or 4–20 mA proportional to pressure drop
Signal –	Controller ground	
Supply (if active)	+12/24 VDC	For powered sensor types

Configuration in Controller:

- Set the analogue input to "Fuel Filter Differential Pressure"
- Configure scaling: 4 mA = 0 kPa (clean filter), 20 mA = 100 kPa (clogged filter)
- Set warning threshold at 50 kPa (filter change recommended)
- Set shutdown threshold at 75 kPa (filter severely clogged, risk of fuel starvation)

Fuel System Emergency Shutdown Wiring

In the event of a fuel leak or fire, the fuel system must be capable of automatic emergency shutdown.

Fuel Shutdown Valve Wiring:

Component	Terminal	Connection
----- ----- -----		
Fuel Shutoff Solenoid Valve	Coil +	From generator controller start relay or emergency shutdown relay
Fuel Shutoff Solenoid Valve	Coil –	Battery negative
Emergency Stop Pushbutton	NC contact	In series with shutoff valve hold circuit
Fire Suppression System	Relay output	NC contact in series with valve circuit (opens on fire)
Controller Emergency Stop Output	Relay NO	Controls fire valve and fuel shutoff solenoid

Operation:

- The fuel shutoff solenoid valve is normally closed (spring-return to closed)
- When the generator starts, the solenoid is energized to open (allow fuel flow)
- When the emergency stop is pressed, the hold circuit opens, solenoid de-energizes, fuel flow stops
- A fire suppression system activation also opens the shutoff relay, immediately cutting fuel
- Safety: The fail-closed design ensures fuel is cut off when power is lost

Fuel Pump Documentation and Maintenance Records

Proper documentation of fuel pump wiring and maintenance is essential for reliable operation.

Recommended Documentation:

1. Fuel system schematic showing all pumps, valves, sensors, and interconnections
2. Wiring diagram with wire numbers, terminal numbers, and color codes
3. Component specifications sheet for each fuel component
4. As-installed wiring photos
5. Fuel pump test record (flow rate, pressure, current draw at installation)
6. Fuel filter replacement log
7. Water-in-fuel separator drain log
8. Fuel sample test results (if biocide or fuel polishing used)

Quarterly Fuel System Inspection Checklist:

- ■ Inspect all fuel pump wiring connections for corrosion or looseness
- ■ Measure fuel pump operating current (compare with baseline)
- ■ Check fuel hose condition (cracks, chafing, softening)
- ■ Verify fuel shutoff solenoid operates correctly (power-on = open, power-off = closed)
- ■ Drain water from fuel/water separator
- ■ Inspect fuel tank vent for blockage
- ■ Check day tank level control operation
- ■ Test low fuel alarm function
- ■ Verify fuel heater operation (if installed)
- ■ Check fuel line for air ingress (bubbles in sight glass)
- ■ Measure fuel system pressure at injection pump inlet

Related Downloads

- [\[Battery Charging System Wiring Diagram PDF\]\(\)](#) — Generator battery and charging connections
- [\[Cooling Fan Wiring Diagram PDF\]\(\)](#) — Radiator fan and cooling system electrical guide
- [\[Generator Control Panel Wiring Diagram\]\(\)](#) — Full generator control system connections
- [\[ATS Wiring Diagram PDF\]\(\)](#) — Automatic transfer switch wiring schematics
- [\[AMF Panel Wiring Diagram PDF\]\(\)](#) — Automatic mains failure panel wiring

This Fuel Pump Wiring Diagram guide is provided by HuaQuan Power — professional generator set manufacturer. For fuel system design, component selection, or wiring support, contact our engineering team.

© HuaQuan Power. All rights reserved. Wiring specifications are for general reference. Always consult the specific fuel pump and controller manufacturer documentation for exact wiring requirements applicable to your system.

Shandong Huaquan Power Co., Ltd.

Contact: +86 15905360672 | huaquan@huaquanpower.com

Website: www.huaquanpower.com