

MT-UPS-3P-480V-500KVA-480V-R1-N3R

500 KVA Uninterruptible Power Supply - 480V 60Hz, 3PH - 500 KW, NEMA 3R

Product ID: 319236



Image: MT-UPS-3P-480V-500KVA-480V-R1-N3R

Larson Electronics LLC manufactures a wide variety of products, including custom built to spec designs. The pictures displayed for this unit are a general representation of form factor for the product line and may not accurately represent this exact configuration in every detail due to custom builds and changes between similar products in our standard catalog. The specifics for this configuration are listed in the specification table and supporting documentation (CAD files, Dimensional Drawing, Name Plate Diagram, Wiring Diagram, etc.). This means that specific details (receptacles, plugs, wires, connections, mounting brackets, external finishes, etc.) may not be accurately represented in images vs specifications. Please review specifications and do not order based solely on images.

MT-UPS-3P-480V-500KVA-480V-R1-N3R Industrial Battery Backup

Unit Type: Uninterruptible Power Supply

Dimensions: 47.24"-W x 43.31"-D x 78.74"-H

Weight: 2551.16 lbs

Input Voltage: 480V AC 3PH, 60Hz single feed + neutral

Output Voltage: 480V AC 3PH, 60Hz single feed + neutral

Output Power Capacity: 500 KW (Modular up to 500 KVA)

Max Configurable Power: 500 KW (Modular up to 500 KVA)

Input Power Factor: 0.99pf @ 100% load

Interrupting Capacity: 65kAIC

Alternative Back-up power technologies: Wet Cell, NiCad, Lithium-ion, Super capacitors

Load Transfer Time: No Break

Output Voltage Distortion: Less Than 3%

Crest Factor: 3:1, Double Conversion Online

Waveform Type: Sine Wave

Battery Type: Valve-regulated Lead Acid (VRLA)

Battery Autonomy: Minimum of 10 minutes at full 500kW load

Recharge Time: Typically around 2 hours, depending on the battery type and load conditions

Battery Specification: 12V, 250AH, 40 ea

Filtering: Full-time Multi-pole Noise Filtering: 0.3% IEEE Surge Let-through: Zero Clamping Response Time

Ratings/Approvals

Features an SKRU (Static Keyed Receptacle Unit) for safe and reliable bypass operation.

Equipped with a DPA (Distributed Parallel Architecture) battery temperature probe

Equipped with an Advanced Network Card (ANC)

Includes a demo license for remote monitoring and connectivity

Electronic interlock with SKRU ensures proper sequencing of switches

Includes Level 1 startup and commissioning to ensure proper installation and initial operation

Interface: DB-9 RS-232 , RJ-45 10/100 Base-T, Smart-Slot

Pre-Installed SmartSlotT Cards: AP9619

Control Panel: LED Status Display with Load and Battery Bar-graphs; On Line, On Battery, Replace Battery, Overload and Bypass Indicators

Audible Alarm: Alarm When on Battery, Distinctive Low Battery Alarm and Overload Continuous Tone Alarm

Emergency Power Off (EPO): Yes

Operating Temp: 0°C to 40°C

Operating/Storage Relative Humidity: 0-95%

Operating Elevation: 0-10,000'

Storage Temp: -15°C to 45°C

Storage Elevation: 0-50,000'

Materials: -

Hardware Material: Zinc Plated Steel

Enclosure Finish: Aluminum Lacquer Paint

Mount: Surface Mount

Input Connections: Hardwire 4-wire (3PH + N)

Output Connections: (1) Hardwire 4-wire (3PH + N) (Battery Backup) ,

Bypass: Internal

All grounding shall comply with state and local codes and meet the minimum requirements of the National Electronic Code section 250

Special Orders - Special Requirements

Contact us for special requirements

Intl: 1-903-270-1187

Toll Free: 1-800-369-6671

Fax: 1-903-765-7664

E-mail: sales@larsonelectronics.com

The MT-UPS-3P-480V-500KVA-480V-R1-N3R is an advanced Industrial Uninterruptible Power Supply (UPS) suitable for demanding environments like data centers, healthcare facilities, and large industrial plants. This UPS unit operates on a three-phase 480V AC supply and features an adaptable design that accommodates both battery and kinetic energy storage systems.

The MT-UPS-3P-480V-500KVA-480V-R1-N3R provides comprehensive battery backup support for essential equipment in industrial and commercial settings. This 500kVA UPS system features a three-phase 480V AC 60Hz input and a three-phase 480V AC, 60Hz output. The unit is equipped with an output power capacity of 500 kW (Modular up to 500 kVA) and supports dynamic ride-through capabilities, allowing it to handle voltage dips of up to -50% without immediate reliance on stored energy.

Key Features: Energy Storage Options: The unit supports both traditional battery storage and kinetic energy storage systems. The battery option uses a maintenance-free sealed lead-acid battery with a suspended electrolyte, designed to be leakproof and reliable. The recharge time for the battery is approximately 2 hours, depending on the load and battery type.

Dynamic Voltage Compensation: This UPS system can manage significant voltage dips without switching to stored energy or generator support, making it highly resilient in fluctuating power conditions.

High Efficiency: The MT-UPS-3P-480V-500KVA-480V-R1-N3R operates with an efficiency of up to 98% in online mode, minimizing energy losses and operational costs.

Control and Monitoring: The UPS features a sophisticated control panel with LED status displays and monitoring graphs, enabling real-time monitoring and configuration. The system supports self-diagnostics and predictive maintenance to ensure continuous operation and reduce the need for frequent shutdowns.

Interfaces: Available interface ports include DB-9 RS-232, RJ-45 10/100 Base-T, and a

Smart-Slot for additional communication options. These interfaces facilitate easy integration with network management systems and remote monitoring solutions.

Input and Output Wiring: The unit accepts hardwire, 4-wire (3PH + N) input connections. It provides similar output connections: (1) Hardwire, 4-wire (3PH + N) (Battery Backup), allowing seamless integration into existing electrical infrastructure.

Noise Filtering and Alarms: The sine-wave UPS includes full-time multi-pole noise filtering and an audible alarm system to signal real-time operational status, low battery, and overload conditions.

Operating Conditions: The unit is designed for optimal performance in varying environmental conditions with an operating temperature range from 0°C to 40°C and can operate at altitudes up to 10,000 feet. It is housed in a weatherproof outdoor enclosure, making it suitable for both indoor and harsh outdoor environments.

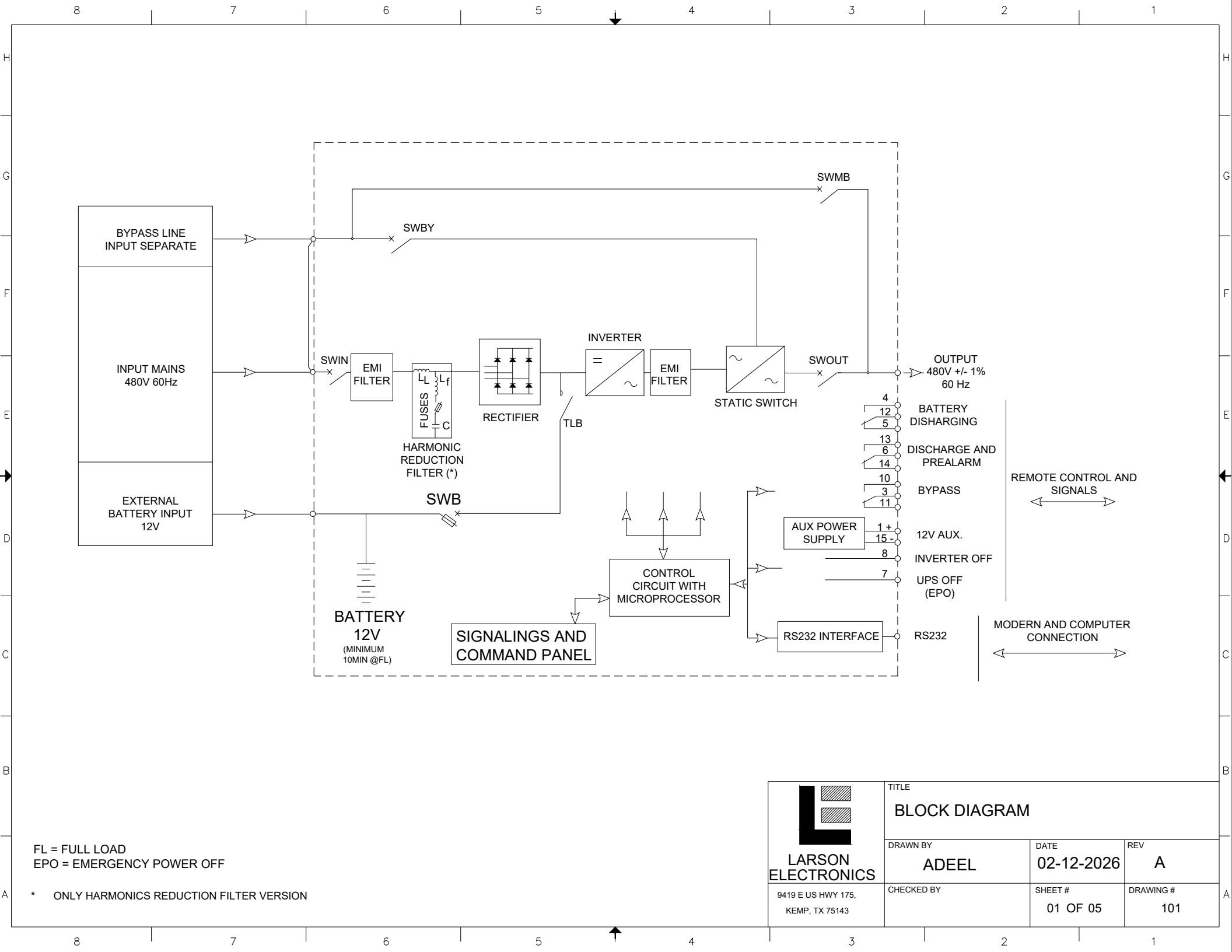
Mounting: The MT-UPS-3P-480V-500KVA-480V-R1-N3R Series UPS is compatible with surface mounting applications, providing flexibility in installation across different facilities

At Larson Electronics, we do more than meet your lighting needs. We also provide replacement, retrofit, and upgrade parts as well as industrial grade power accessories. Our craftsmen can custom build any lighting system and/or accessories to fit the unique demands of your operation. A commitment to honesty, quality, and dependability has made Larson Electronics a leader in the lighting and electronics business since 1973. Contact us today at 800-369-6671 or message sales@larsonelectronics.com for more information about our custom options tailored to meet your specific industry needs.

REV	DESCRIPTION	DATE
A	PRODUCT DESCRIPTION	02/12/2026

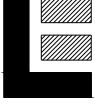
MT-UPS-3P-480V-500KVA-
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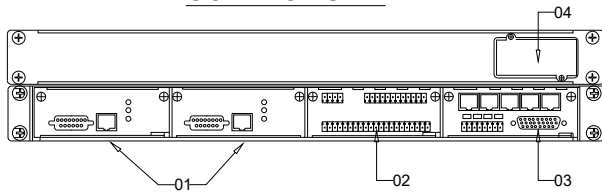


FL = FULL LOAD
EPO = EMERGENCY POWER OFF

* ONLY HARMONICS REDUCTION FILTER VERSION

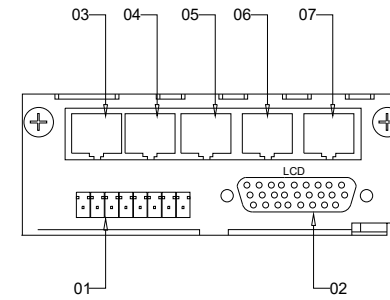
 LARSON ELECTRONICS 9419 E US HWY 175, KEMP, TX 75143	TITLE BLOCK DIAGRAM		
	DRAWN BY ADEEL	DATE 02-12-2026	REV A
	CHECKED BY	SHEET # 01 OF 05	DRAWING # 101

CONTROL UNIT



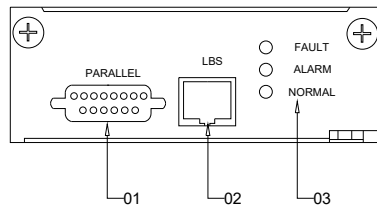
- (1) ECU1/2 : Centralized control unit
- (2) Dry-contact unit
- (3) Monitor unit
- (4) Intelligent slot

MONITOR UNIT



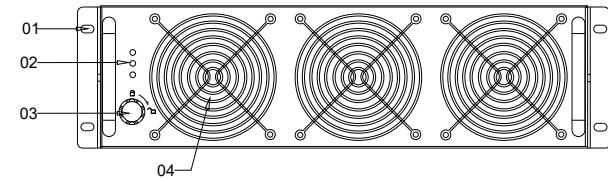
- (1) Input dry contact interface
- (2) LCD communication port
- (3) CAN communication port (for BMS and remote display)
- (4) Monitoring communication port
- (5) Battery temperature detection port
- (6) Protective earth (PE)
- (7) RS 485 communication port

ECU UNIT



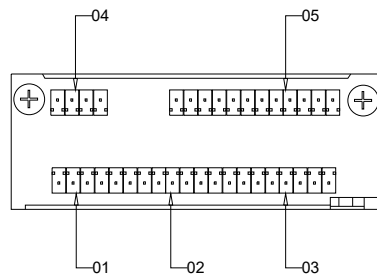
- (1) PARALLEL port
- (2) LBS port
- (3) LED

UPS MODULE

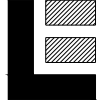


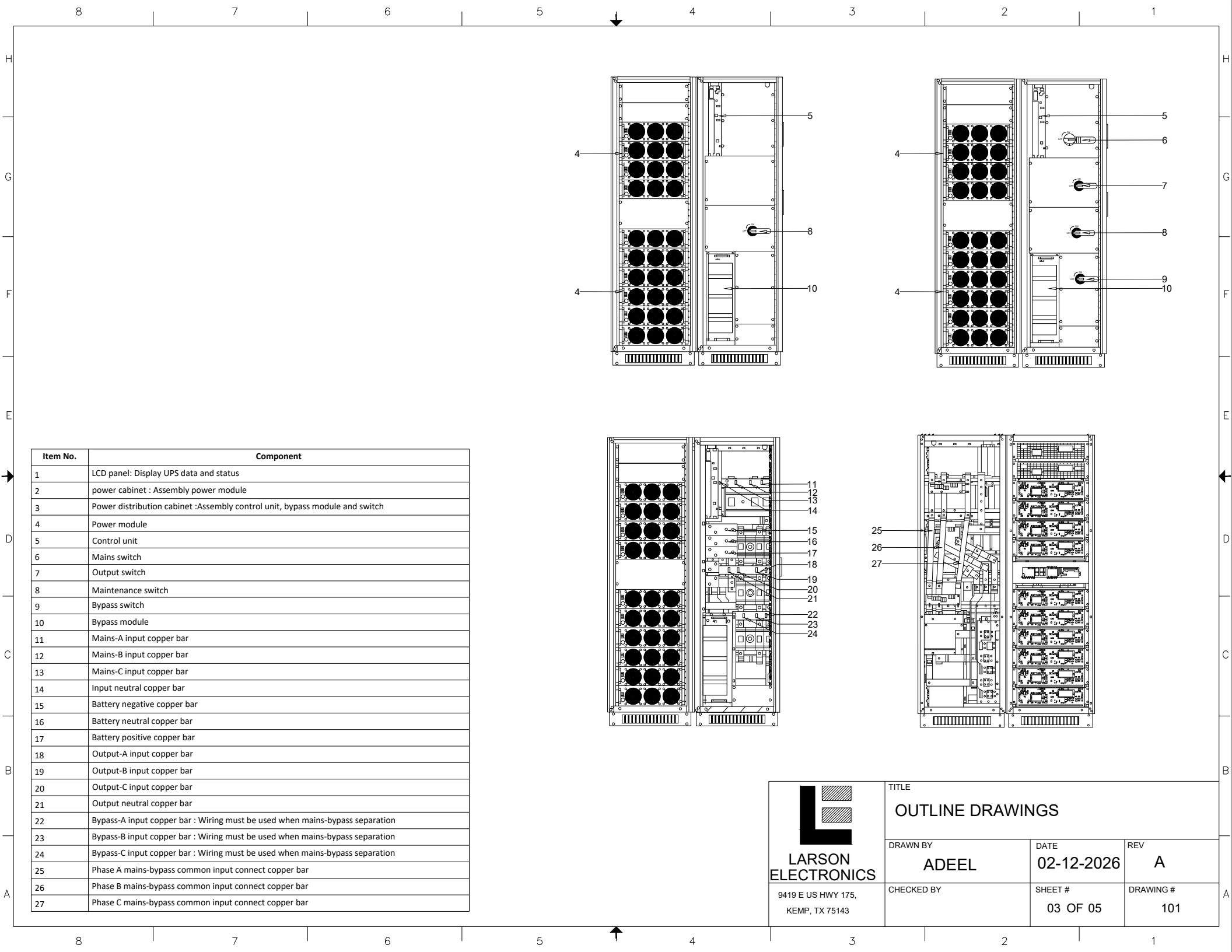
- (1) Module fixing screw
- (2) Status LED indicator
- (3) Module on/off switch
- (4) Cooling fan

DRY CONTACT UNIT



- (1) EPO port
- (2) Switch status interface
- (3) Auxiliary port
- (4) Feedback interface : PIN1_NC, PIN2_NO, PIN4_Common
- (5) Optional dry contact interface

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Item No.	Component
1	LCD panel: Display UPS data and status
2	power cabinet : Assembly power module
3	Power distribution cabinet :Assembly control unit, bypass module and switch
4	Power module
5	Control unit
6	Mains switch
7	Output switch
8	Maintenance switch
9	Bypass switch
10	Bypass module
11	Mains-A input copper bar
12	Mains-B input copper bar
13	Mains-C input copper bar
14	Input neutral copper bar
15	Battery negative copper bar
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18	Output-A input copper bar
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22	Bypass-A input copper bar : Wiring must be used when mains-bypass separation
23	Bypass-B input copper bar : Wiring must be used when mains-bypass separation
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25	Phase A mains-bypass common input connect copper bar
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TITLE

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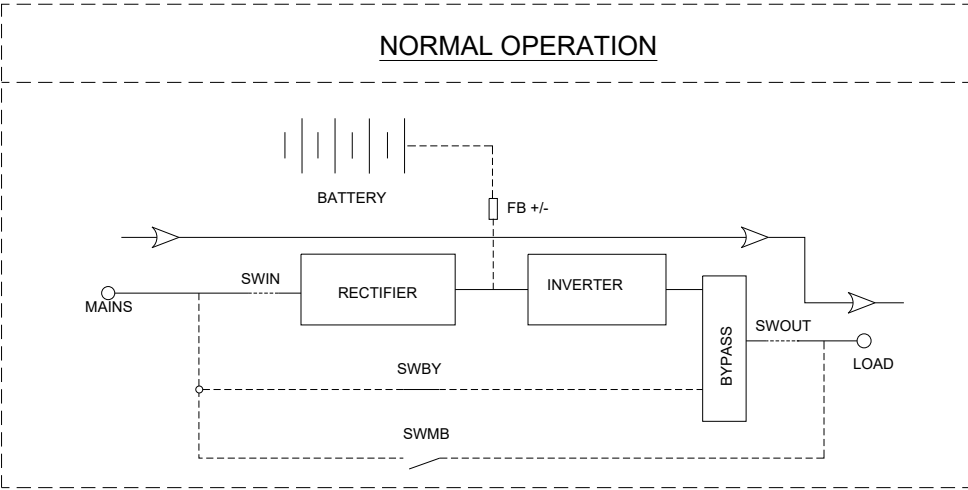
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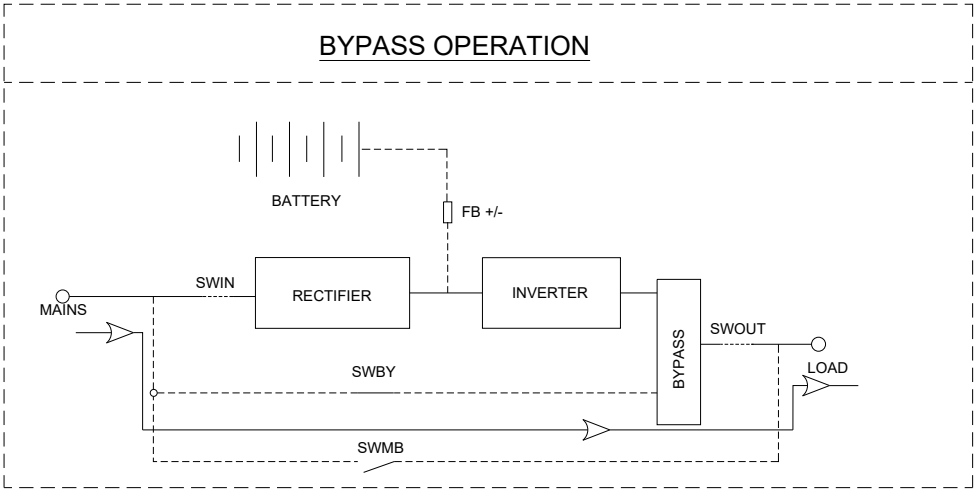
OPERATIONAL PHILOSOPHY

Mode	Condition	Switch Status	Power Source	Indicators	Key Notes
Normal Operation	Mains present, system healthy	SWIN, SWOUT, SWBY Closed; SWMB Open	Mains → Rectifier → Inverter	Green MAINS LED ON; Green OUTPUT LED ON	Rectifier powers inverter and charges batteries simultaneously
Battery Operation	Mains absent or out of acceptable range (blackout, under/over voltage)	SWIN, SWOUT, SWBY, SWB Closed	Battery → Inverter	Green OUTPUT LED ON; Yellow BATTERY LED ON (steady); buzzer intermittent; flashing on low battery	Autonomy displayed on panel; disconnect non-critical loads to extend runtime
Bypass Operation	Mains present, load fed via bypass (manual/auto command, overload, or fault)	SWIN, SWOUT, SWBY, RETE Closed	Mains → Bypass	Green INVERTER LED OFF; Yellow BYPASS LED ON (steady for command, flashing for overload/fault)	Overload requires load reduction; breakers trip if overload persists; SWMB used for maintenance bypass

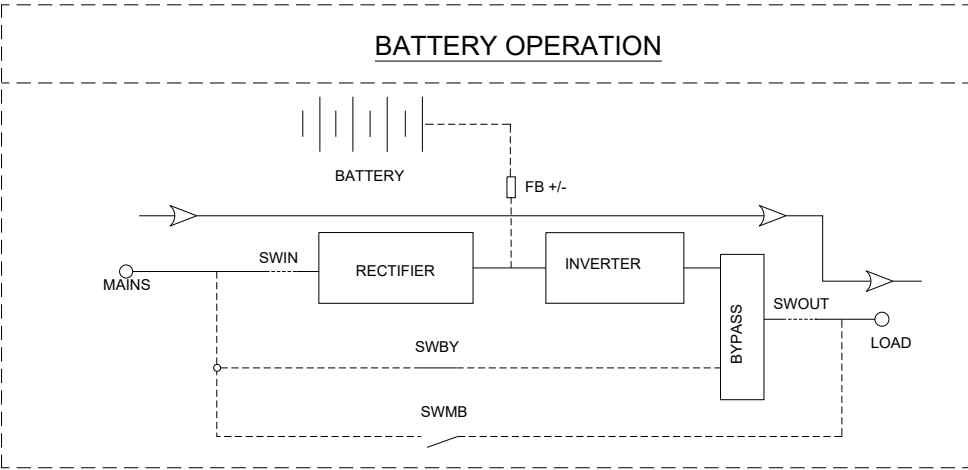
NORMAL OPERATION

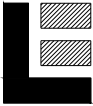


BYPASS OPERATION



BATTERY OPERATION



 LARSON ELECTRONICS 9419 E US HWY 175, KEMP, TX 75143	TITLE OPERATIONAL PHILOSOPHY		
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Parameter	Value
Battery Type	VRLA – Valve-Regulated Lead Acid
Battery Rating	12V, 250Ah per unit
Total Quantity	40 batteries
Approx. DC Bus Voltage	480VDC (40 × 12V)
Autonomy	10 minutes @ full 500kW load
Recharge Time	~2 hours
Temperature Monitoring	Includes DPA temperature probe
Supported Battery Range	36–50 blocks typical

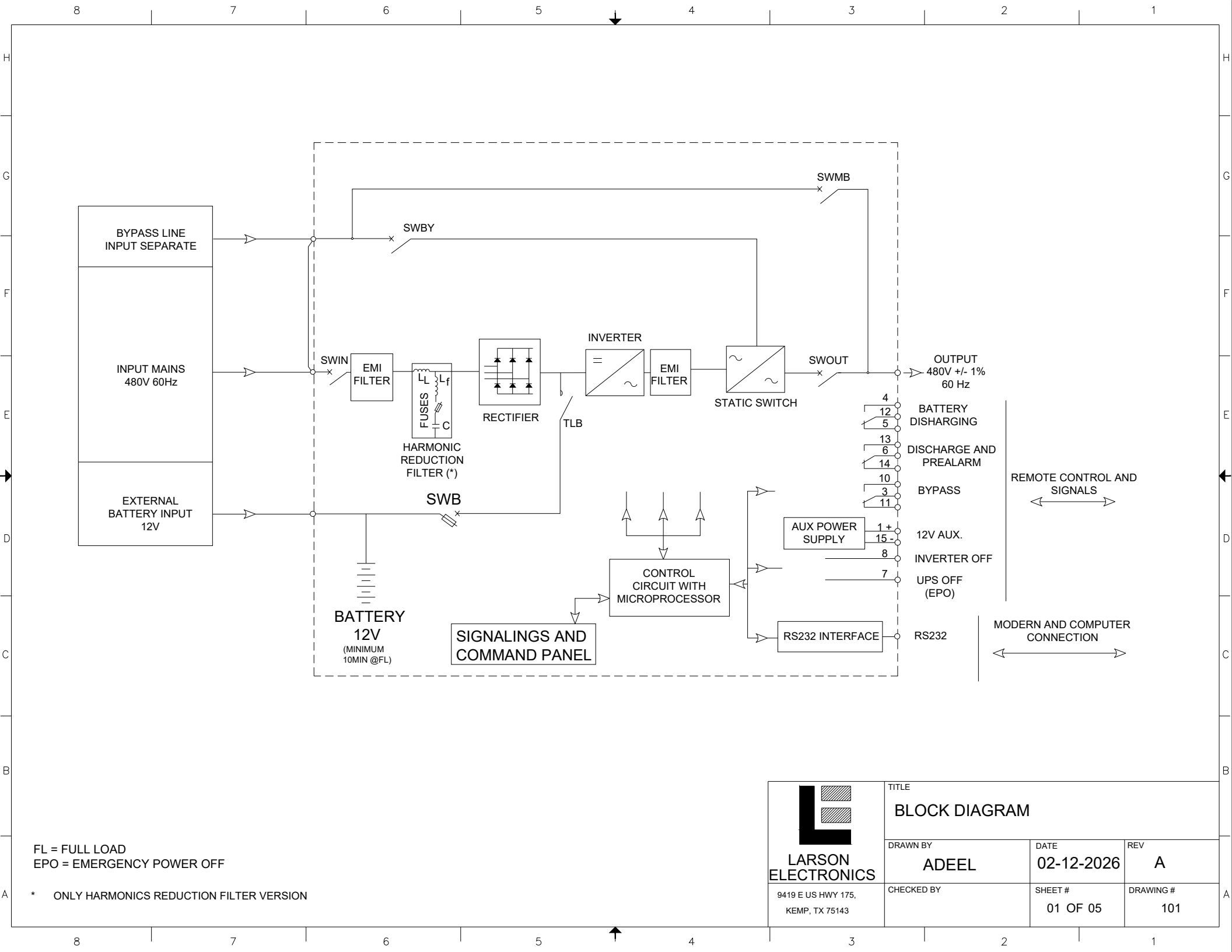
- KEY FEATURES:
- SUPPORTS MULTIPLE ENERGY STORAGE TECHNOLOGIES, INCLUDING CONVENTIONAL BATTERY BANKS AND KINETIC ENERGY SYSTEMS.
 - UTILIZES A SEALED, MAINTENANCE FREE LEAD ACID BATTERY DESIGN WITH IMMOBILIZED ELECTROLYTE TO ENSURE LEAKPROOF AND RELIABLE OPERATION.
 - ENGINEERED FOR HIGH RATE DISCHARGE, SUITABLE FOR CRITICAL LOAD UPS APPLICATIONS.
 - TYPICAL RECHARGE TIME FOR THE BATTERY BANK IS APPROXIMATELY 2 HOURS, DEPENDING ON BATTERY CONDITION AND LOAD PROFILE.
 - INCLUDES INTEGRATED BATTERY TEMPERATURE MONITORING TO ENHANCE CHARGING ACCURACY AND PROLONG BATTERY LIFE.
 - DESIGNED FOR SAFE INDOOR OR OUTDOOR DEPLOYMENT WHEN USED WITH APPROPRIATE ENCLOSURES (E.G., NEMA 3R).
 - PROVIDES STABLE DC BUS PERFORMANCE WITH CONSISTENT DISCHARGE CHARACTERISTICS ACROSS THE ENTIRE AUTONOMY PERIOD.

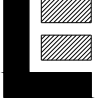
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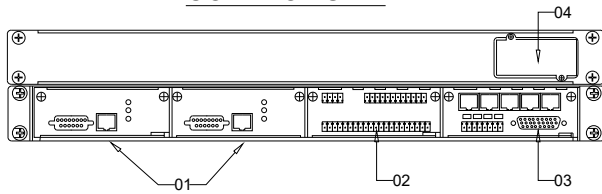
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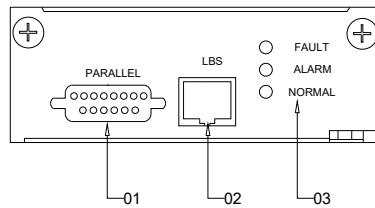
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CONTROL UNIT



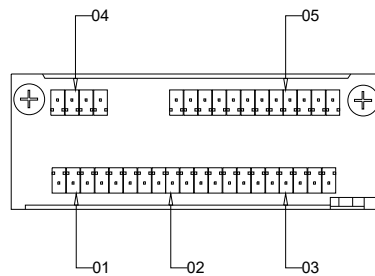
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ECU UNIT



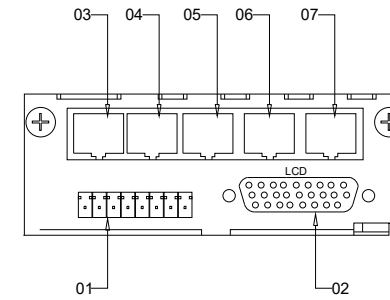
- (1) PARALLEL port
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DRY CONTACT UNIT



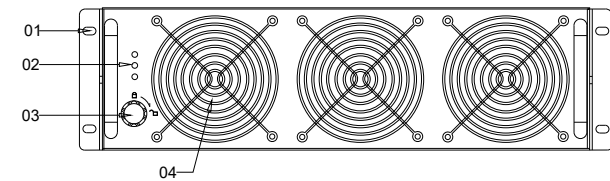
- (1) EPO port
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MONITOR UNIT

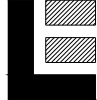


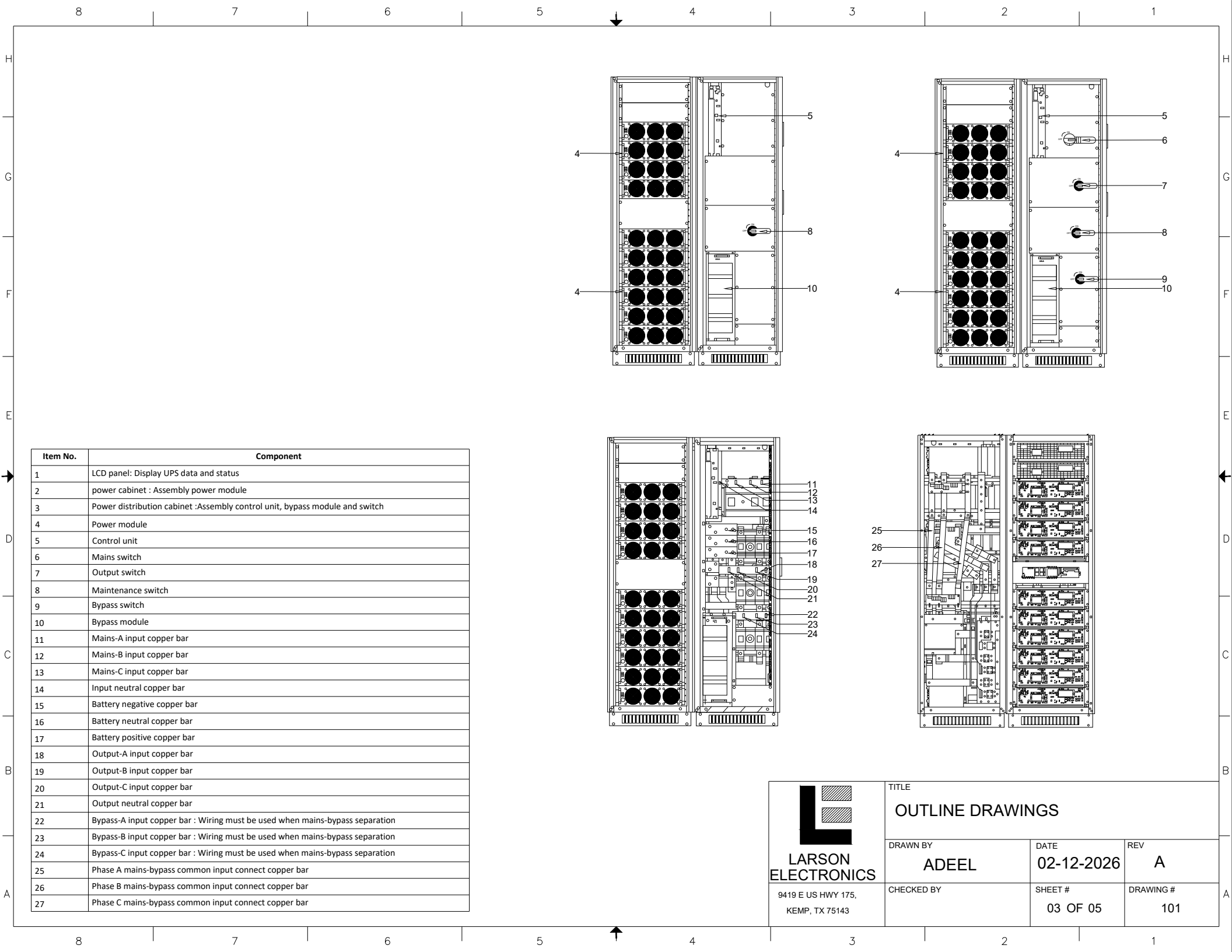
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UPS MODULE



- (1) Module fixing screw
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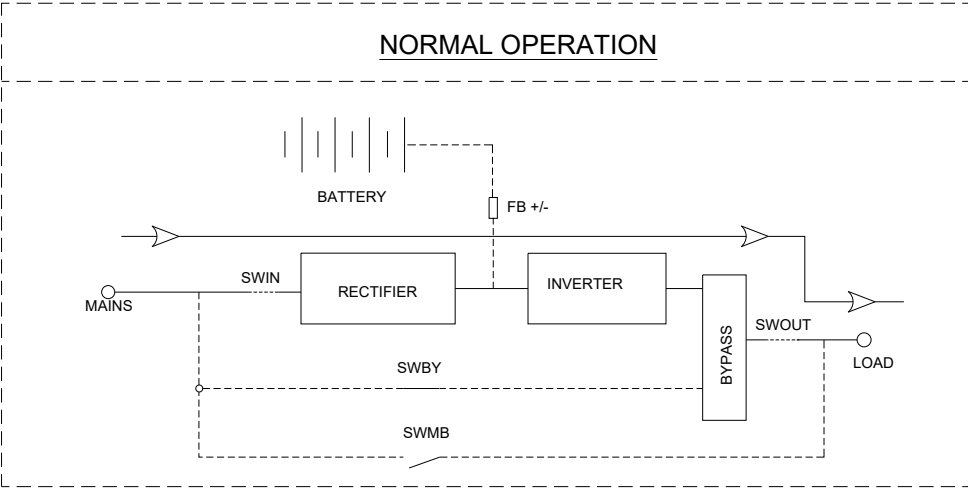
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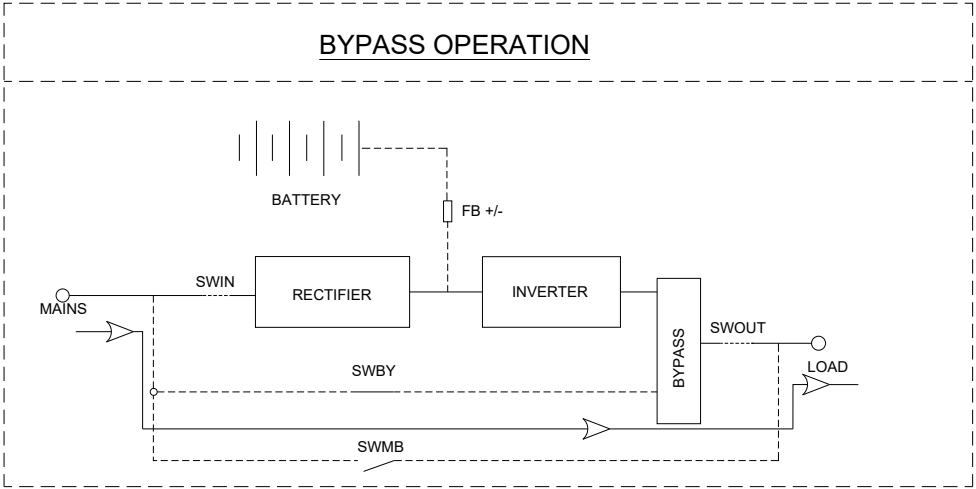
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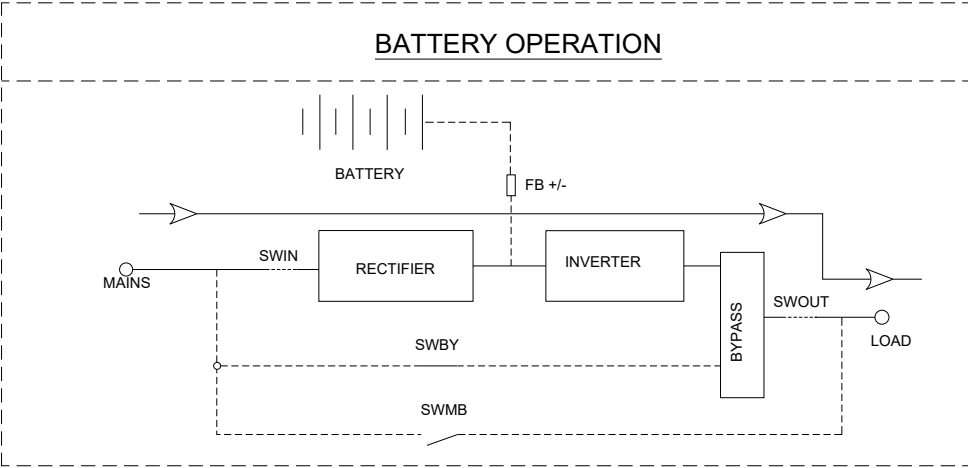
NORMAL OPERATION

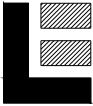


BYPASS OPERATION



BATTERY OPERATION



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Temperature Monitoring	Includes DPA temperature probe
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 LARSON ELECTRONICS 9419 E US HWY 175, KEMP, TX 75143	TITLE BATTERY SPECIFICATIONS		
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Larson Electronics LLC
9419 E US HWY 175, Kemp, TX 75143
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Frequently Asked Questions (FAQ)

There are no Faqs