POWER DISTRIBUTION SYSTEM DOCUMENTATION

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NaviFloor Robotics, Inc.

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1. OVERVIEW AND SCOPE

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1. This Power Distribution System Documentation ("Documentation") descri

2. This Documentation serves as the authoritative reference for power distrib

2. DEFINITIONS

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1. "Charging Station" means any Company-approved power delivery unit de

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2. "Distribution Network" means the complete power delivery infrastructure

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3. "Power Management System" or "PMS" means the proprietary software a

3. POWER DISTRIBUTION SPECIFICATIONS

1. Main Power Requirements

- Input Voltage: 380-480V AC, 3-phase

- Frequency: 50/60 Hz ±1%

- Maximum Facility Load: 250 kVA per deployment

- Power Factor: >0.95 at rated load

2. Charging Station Specifications

- Output Voltage: 48V DC

Maximum Current: 80A per station

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Charging Capacity: Up to 4 AMRs simultaneously

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Protection Class: IP54

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Operating Temperature: 0°C to 40°C

4. SAFETY AND PROTECTION SYSTEMS

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1. Circuit Protection

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Main Circuit Breakers: 400A thermal-magnetic

- Individual Station Breakers: 100A with electronic trip
- Ground Fault Protection: Class A (4-6mA) per station
- Surge Protection: Type 2 SPD at distribution panel

- 2. Emergency Systems
- Emergency Power Off (EPO) switches at strategic locations
- Automatic fire detection interface
- Battery thermal monitoring

Charging station isolation capability

5. COMPLIANCE AND CERTIFICATION

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1. Regulatory Standards

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UL 1741 compliance for power conversion equipment

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IEEE 1547 for grid interconnection

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NFPA 70 (National Electric Code) adherence

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EN 61000-6-2 EMC immunity standard

2. Required Inspections

- Quarterly thermal imaging of main connections

- Semi-annual load testing and calibration

- Annual third-party safety certification

- Monthly visual inspection documentation

6. MONITORING AND CONTROL

- 1. Power Management System Features

- Real-time power consumption monitoring
- Dynamic load balancing
- Predictive maintenance alerts
- Remote shutdown capability
- Usage analytics and reporting

- 2. Integration Requirements
- Building Management System (BMS) interface

Fleet Management System connectivity

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Cloud-based monitoring platform

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Emergency response system integration

7. INSTALLATION AND MAINTENANCE

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1. Installation Requirements

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Licensed electrical contractor certification

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Company-certified technician supervision

- Pre-installation site survey
- Post-installation validation testing

2. Maintenance Protocols

- Monthly preventive maintenance schedule
- Quarterly system performance analysis
- Semi-annual firmware updates
- Annual comprehensive system audit

8. LIABILITY AND WARRANTY

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1. The Company warrants the Power Distribution System against defects in r

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2. This warranty excludes damage caused by improper installation, unauthori

9. PROPRIETARY NOTICE

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10. DOCUMENT CONTROL

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