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# FXM HP 650

## Rugged UPS Module



- 650W/VA UPS designed to operate in extreme environments and provide maximum flexibility
- Advanced next-generation control and monitoring platform with high resolution color touchscreen LCD display with advanced local UI
- Built-in data loggers to monitor performance logs, user configurable alarms and advanced equation editing for custom data and actions
- Integrated USB host for local firmware upgrades, configuration updates, backup, restoration and cloning
- Wide range Automatic Voltage Regulation (AVR) lengthens battery life by providing protection without transferring to backup mode during voltage surge or sag
- Independently programmable control and reporting dry contacts allow monitoring and controlling of key functions

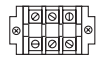

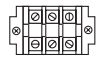


**The FXM HP UPS continues the longstanding excellence in Battery Backup Systems by ensuring equipment in security, communications, traffic, industrial environments, and many other critical applications remains safe and protected from power disturbances and outages.**

Thanks to its powerful programmable temperature compensated battery charger, the FXM UPS is capable of providing the runtime and extended battery life you need. The FXM HP colored LCD touchscreen display provides access to multiple configurable tabs for quick system status, overview and configuration without the need of a laptop.

Multiple communication ports including two Ethernet connections permits simultaneous local craft access as well as permanent LAN/WAN connectivity. A USB key may also be used to quickly backup and restore site configuration settings and data logs. Enhanced security using modern encryption technology ensures proper authentication and privacy for remote connection with the UPS. Environmental conditions and other equipment can be monitored via a single IP interface via CAN port using Alpha® Analog Digital Input Output (ADIO) devices.

# FXM HP 650-24 Rugged UPS Module

Electrical	
<b>120VAC Model</b>	
<b>Battery:</b>	<b>String Voltage:</b> 24VDC <b>Battery Breaker Rating:</b> 80A <b>Maximum Charging Current:</b> 10A
<b>Input:</b>	<b>Nominal Voltage:</b> 120VAC <b>Voltage Range:</b> 85 to 171VAC <b>Frequency:</b> 50Hz or 60Hz (Autodetect Frequency is the default configuration, can also be manually configured.) ±5% <b>Maximum Current:</b> 8.25A (@Nominal voltage and max battery charging current) <b>AC Breaker Rating:</b> 10A
<b>Output:</b>	<b>Waveform:</b> Pure sinewave <b>Nominal Voltage:</b> 120VAC <b>Voltage Regulation:</b> ±10% on line mode, ±2% on inverter mode <b>Power at 55°C:</b> 650VA/Watts@60Hz <b>Frequency:</b> Output frequency = Input frequency <b>Frequency Tolerance, Backup Mode:</b> ±0.3 Hz
<b>230VAC Model</b>	
<b>Battery:</b>	<b>String Voltage:</b> 24VDC <b>Battery Breaker Rating:</b> 80A <b>Maximum Charging Current:</b> 10A
<b>Input:</b>	<b>Nominal Voltage:</b> 210/220/230/240VAC <b>Voltage Range:</b> 153 to 322VAC <b>Frequency:</b> Nominal: 50Hz or 60Hz (Autodetect Frequency is the default configuration, can also be manually configured.) ±5% <b>Maximum Current:</b> 4.4A (@ Nominal voltage and max battery charging current) <b>Input Breaker Rating:</b> 5.5A
<b>Output:</b>	<b>Waveform:</b> Pure sinewave <b>Nominal voltage:</b> 210/220/230/240VAC (same as input) <b>Voltage regulation:</b> ±10% on line mode, ±2% on inverter mode <b>Power at 55°C:</b> 650VA/Watts@230/240V <b>Frequency:</b> Output frequency = Input frequency <b>Frequency Tolerance:</b> Backup Mode: ±0.3 Hz
Communication Interface	
<b>Protocol:</b>	<b>SNMP:</b> SNMP v3 via Ethernet. Compatible with subscription and discovery services <b>TCP/IP:</b> IPv4 or IPv6 <b>Email:</b> SMTP via Ethernet
<b>Security:</b>	<b>Password:</b> 256-bit Encryption <b>Secured Web Interface:</b> SSL for HTTPS
<b>Display:</b>	Full graphic LCD, 480x272 pixels, Resistive touch screen
<b>Ports:</b>	<ul style="list-style-type: none"> <li>2 x RJ45: Ethernet</li> <li>1 x RJ11: Battery Temperature Compensation</li> <li>1 x RJ12: for Alpha CAN devices</li> <li>1 x USB-A: For upgrades or file management via a standard USB flash drive</li> <li>1 x USB-Mini B: For soft shutdown using MegaTec protocol complaint client</li> </ul>
<b>Indicators:</b>	<ul style="list-style-type: none"> <li>Solid Green: Line Mode,</li> <li>Flashing Green: Inverter mode</li> <li>Yellow/Amber: Minor alarms</li> <li>Red: Major/Critical alarms</li> </ul>
<b>Dry Contacts:</b>	Programmable NO/NC (250VAC, 1A)*, 3 user inputs, ATS
<b>Factory Default:</b>	<ul style="list-style-type: none"> <li>C1: On Battery</li> <li>C2, C3: Low Battery + No Line</li> <li>C4: Load Shed Timer 1</li> <li>C5: Alarm</li> <li>C6*: 24VDC @ 500mA</li> <li>C7: User Inputs                             <ul style="list-style-type: none"> <li>S1: Self test</li> <li>S2: User Input</li> <li>S3: Shutdown(EPO)</li> </ul> </li> <li>C8: ATS (24VDC @10mA)</li> </ul>
* C6 is factory configurable only	

Mechanical	
<b>Dimensions:</b>	<b>mm:</b> 89H x 432W x 229D <b>inches:</b> 3.47H x 17W x 9DD
<b>Weight:</b>	11.3kg/25lbs
Environmental	
<b>Operating Temp Range*:</b>	-40 to 74°C (-40 to 165°F)
<b>Humidity:</b>	Up to 95% (non condensing)
<b>Altitude (m/ft):</b>	Up to 3700 (12,000)**
<b>Audible noise @ 25°C***:</b>	45dBa @ 1 meter (39in)
<b>MTBF (hours):</b>	250K + as per Telcordia SR-332, 100% duty cycle, full load, @ 40°C
<b>BTU/Hr:</b>	<b>Normal mode:</b> 13.26Watts/45.26BTU/HR
	<b>Backup mode:</b> <b>120VAC Model:</b> 205.15Watts/700BTU/HR <b>230VAC Model:</b> 205Watts/699.49BTU/HR
*120VAC/60Hz module derates after 55°C (131°F). 230VAC module derates after 55°C (131°F) @220/230/240V. Derates 1.4% per °C past listed temperature range until a maximum of 74°C. Refer to manual for non listed voltage settings. **Derates 2°C per 300m (1000ft) above 1400m (4500ft) *** Measured at 25°C ambient temperature	
Performance	
<b>Typical Transfer Time:</b>	<5ms
<b>Load Crest Factor:</b>	3:1 (load dependent)
<b>Lightning/Surge Protection:</b>	ANSI/IEEE C62.41.2-2002, Criteria A & B
*At nominal AC Input, full load and at 25°C ambient temperature	
Power Connector Options	
<b>120VAC, 24VDC Battery Bus Models</b>	
<b>Input:</b>	<b>Output:</b>
<b>Standard (0170023-002)</b>  Terminal Block	 Terminal Block
<b>230VAC, 24VDC Battery Bus Models</b>	
<b>Standard (0170023-201)</b>  Terminal Block	 Terminal Block
Agency Compliance	
<b>Electrical Safety:</b>	UL 1778, CAN/CSA-C22.2 No. 107.3, EN 62040-1**
<b>Marks:</b>	
<b>EMC:</b>	CFR Title 47 FCC Part 15 – Class A, ICES-003 – Class A, EN 62040-2 – UPS Category C2**
<b>RoHS:</b>	Yes
**Applies to 230VAC version only	



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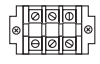


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02/2021  
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# FXM HP 650-48 Rugged UPS Module

Electrical	
<b>120VAC Model</b>	
<b>Battery:</b>	<b>String Voltage:</b> 48VDC <b>Battery Breaker Rating:</b> 50A <b>Maximum Charging Current:</b> 10A
<b>Input:</b>	<b>Nominal Voltage:</b> 120VAC <b>Voltage Range:</b> 85 to 171VAC <b>Frequency:</b> 50Hz or 60Hz (Autodetect Frequency is the default configuration, can also be manually configured.) ±5% <b>Maximum Current:</b> 10.5A (@ Nominal voltage and max battery charging current) <b>AC Breaker Rating:</b> 15A
<b>Output:</b>	<b>Waveform:</b> Pure sinewave <b>Nominal Voltage:</b> 120VAC <b>Voltage Regulation:</b> ±10% on line mode, ±2% on inverter mode <b>Power at 55°C:</b> 650W/VA <b>Frequency:</b> Output frequency = Input frequency <b>Frequency Tolerance, Backup Mode:</b> ±0.3 Hz
Communication Interface	
<b>Protocol:</b>	<b>SNMP:</b> SNMP v3 via Ethernet. Compatible with subscription and discovery services <b>TCP/IP:</b> IPv4 or IPv6 <b>Email:</b> SMTP via Ethernet
<b>Security:</b>	<b>Password:</b> 256-bit Encryption <b>Secured Web Interface:</b> SSL for HTTPS
<b>Display:</b>	Full graphic LCD, 480x272 pixels, Resistive touch screen
<b>Ports:</b>	<ul style="list-style-type: none"> <li>• 2 x RJ45: Ethernet</li> <li>• 1 x RJ11: Battery Temperature Compensation</li> <li>• 1 x RJ12: for Alpha CAN devices</li> <li>• 1 x USB-A: For upgrades or file management via a standard USB flash drive</li> <li>• 1 x USB-Mini B: For soft shutdown using MegaTec protocol compliant client</li> </ul>
<b>Indicators:</b>	<ul style="list-style-type: none"> <li>• Solid Green: Line Mode,</li> <li>• Flashing Green: Inverter mode</li> <li>• Yellow/Amber: Minor alarms</li> <li>• Red: Major/Critical alarms</li> </ul>
<b>Dry Contacts:</b>	Programmable NO/NC (250VAC, 1A)*, 3 user inputs, ATS
<b>Factory Default:</b>	<ul style="list-style-type: none"> <li>• C1: On Battery</li> <li>• C2, C3: Low Battery + No Line</li> <li>• C4: Load Shed Timer 1</li> <li>• C5: Alarm</li> <li>• C6*: 48VDC @ 500mA</li> <li>• C7: User Inputs                             <ul style="list-style-type: none"> <li>• S1: Self test</li> <li>• S2: User Input</li> <li>• S3: Shutdown(EPO)</li> </ul> </li> <li>• C8: ATS (48VDC @ 10mA )</li> </ul>
* C6 is factory configurable only	

Mechanical	
<b>Dimensions:</b>	<b>mm:</b> 89H x 432W x 229D <b>inches:</b> 3.47H x 17W x 9D
<b>Weight:</b>	11.3kg (25lbs)
Environmental	
<b>Operating Temp Range*:</b>	-40 to 74°C (-40 to 165°F)
<b>Humidity:</b>	Up to 95% (non condensing)
<b>Altitude (m/ft):</b>	Up to 3700 (12,000)**
<b>Audible noise @ 25°C***:</b>	45dBa @ 1 meter (39in)
<b>MTBF (hours):</b>	250K + as per Telcordia SR-332, 100% duty cycle, full load, @ 40°C
<b>BTU/Hr:</b>	<b>Normal mode:</b> 13.5Watts/46.06BTU/HR
	<b>Backup mode:</b> 110Watts/375BTU/HR
**120VAC module derates after 55°C (131°F). Derates 1.4% per °C past listed temperature range until a maximum of 74°C. ***Derates 2°C per 300m (1000ft) above 1400m (4500ft) *** Measured at 25°C ambient temperature	
Performance	
<b>Typical Output Voltage THD (resistive load):</b>	<3%
<b>Typical Efficiency* (resistive load):</b>	>98%
<b>Typical Transfer Time:</b>	<5ms
<b>Load Crest Factor:</b>	3:1 (load dependent)
<b>Lightning/Surge Protection:</b>	ANSI/IEEE C62.41.2:2002, Criteria A & B
*At nominal AC Input, full load and at 25°C ambient temperature	
Power Connector Options	
<b>120VAC Model</b>	
<b>Input:</b>	<b>Output:</b>
<b>Standard 0170023-101</b>	 Terminal Block
	 Terminal Block
Agency Compliance	
<b>Electrical Safety:</b>	UL 1778, CAN/CSA-C22.2 No. 107.3
<b>Marks:</b>	
<b>EMC:</b>	CFR Title 47 FCC Part 15 – Class A, ICES-003 – Class A
<b>RoHS:</b>	Yes



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