

Intermatic FM1STUZH-240U

Intermatic FM1STUZH-240U Electromechanical Timer Module Instruction Manual

Model: FM1STUZH-240U

1. INTRODUCTION

The Intermatic FM1STUZH-240U is a 24-hour electromechanical timer module designed for precise control of electrical loads. This module features a Single-Pole Double-Throw (SPDT) switch with a 21 Amp rating at 240V, making it suitable for various applications such as heating, ventilation, air conditioning, refrigeration, lighting, security, circulating pumps, spas, and other electrical loads requiring 24-hour scheduling. It includes a manual override switch for temporary control.

2. SAFETY INFORMATION

WARNING: Risk of electric shock. This product must be installed by a qualified electrician in accordance with all national and local electrical codes.

- Disconnect power at the circuit breaker or fuse box before installation or servicing.
- Ensure all wiring connections are secure and comply with the device's ratings.
- Do not exceed the maximum load ratings of the timer.
- This timer is designed for indoor or outdoor enclosure mounting. Ensure the enclosure provides adequate protection for the environment.

3. FEATURES

- **Voltage:** 240 VAC
- **Switch Type:** Single-Pole Double-Throw (SPDT)
- **Switch Rating:** 21 Amps Resistive @ 120-250 VAC, 2 HP @ 250 VAC, 1350 W Tungsten @ 240 VAC
- **Timing Intervals:** 96 captive trippers with 15-minute intervals for 24-hour programming.
- **Terminals:** 1/4-inch quick-connect terminals for easy wiring.
- **Drive:** Synchronous drive for reliable timekeeping.
- **Noise Immunity:** Designed to be noise immune, suitable for robust applications.
- **Override:** Integrated manual override switch for temporary ON/OFF control.

- **Cover:** Clear plastic cover for protection and visibility.
- **Compact Design:** Space-saving dimensions for various installations.

4. SPECIFICATIONS

Specification	Value
Model Number	FM1STUZH-240U
Supply Voltage	240 VAC, 60 Hz
Power Consumption	1 VA
Switch Type	SPDT (Single-Pole Double-Throw)
Resistive Rating	21A @ 120-250 VAC
Motor Rating	1 HP @ 120 VAC, 2 HP @ 250 VAC
Tungsten Rating	1350 W @ 240 VAC
Minimum ON/OFF Time	15 Minutes
Wiring Connections	1/4-inch Quick-Connect Terminals
Operating Temperature	-40°F to 185°F (-40°C to 85°C)
Dimensions (H x W x D)	2.36" x 2.36" x 1.25" (60mm x 60mm x 32mm)
Installation	Panel Mount
Battery Backup	None (Synchronous drive)

5. INSTALLATION

The FM1STUZH-240U timer module is designed for panel mounting within an appropriate enclosure. Ensure the enclosure provides adequate protection for the operating environment.

5.1 Mounting

Mount the timer module securely to the panel using appropriate fasteners. Refer to the product dimensions for proper cutout and spacing.

FM1 Series

Panel Mount Timer Modules

The FM1 Series Electromechanical Timer Modules are designed to be placed inside a machine control panel, circuit board, or other equipment. They offer up to 21 Amp switching designed for control of heating, ventilation, air conditioning, refrigeration, lighting, security, circulating pumps, spas, OEM applications, or any electrical load requiring 24-Hour or 7-Day scheduling.

Features

- 21 Amp SPDT Switch
- Captive Trippers with 15-minute intervals on 24-Hour models and 2-hour intervals on 7-Day models
- ¼" quick-connect terminals
- Noise Immune – ideal for robust applications
- Synchronous drive or quartz drive with battery backup
- True clock face, easy-to-set
- Available with or without override
- Compact size
- Clear plastic cover available (DC-FME-A)

Ratings

Size:	2.36" H x 2.36" W x 1.25" D
Supply Voltage:	24, 120, 208/240 VAC, 60 Hz models
Quartz:	12, 24 VAC/DC, 120, 208/240 VAC 50/60 Hz
Power Consumption:	1 VA
Switch Type:	SPDT
Switch Rating:	21A Resistive @ 120-250 VAC 1 HP @ 120 VAC 2 HP @ 250 VAC 1350 W Tungsten @ 240 VAC
Wiring Connections:	¼" quick-connect terminals
Operating Temperature:	-40°F to 185°F (-40°C to 85°C) -4°F to 131°F (-20°C to 55°C) with battery backup
Installation:	Standalone or with Indoor/Outdoor enclosure
Battery Backup Option:	7-Day carryover
Shipping Weight:	.15 lbs.

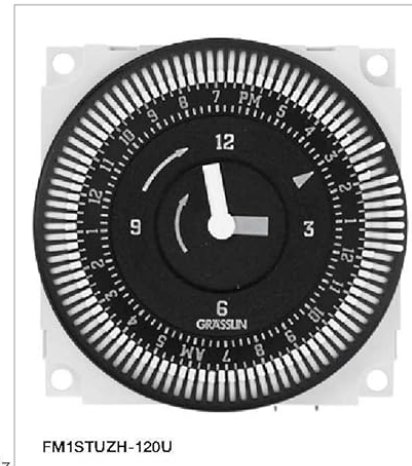
Project: _____

Location: _____

Product Type: _____

Contact/Phone: _____

Model #: _____



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LR3730



Energy Controls

Figure 1: Front view of the FM1STUZH-240U timer module, showing the 24-hour dial and manual override switch.

5.2 Wiring Connections

Before making any connections, ensure power is disconnected at the main circuit breaker. The timer module uses 1/4-inch quick-connect terminals. Refer to the wiring diagram below and the labels on the timer for correct connections.

Model Number	Switch Program	Carryover	Program ON/OFF Every	Minimum ON/OFF Time	Switch Output	
					Type	Rating
FM1 STuZ (synchronous)†	24-Hour	No	15 Minutes	15 Minutes	SPDT	21A Resistive
FM1 SWuZ (synchronous)†	7-Day	No	2 Hours	2 Hours	SPDT	21A Resistive
FM1 QTuZ (quartz)†	24-Hour	7-Day	15 Minutes	15 Minutes	SPDT	21A Resistive
FM1 QWuZ (quartz)†	7-Day	7-Day	2 Hours	2 Hours	SPDT	21A Resistive

†For override switch: Add "H"

*Quartz models operate on 12-24 VAC/VDC, 120 and 208/240 VAC, and 50/60 Hz

Specification

Furnish and install a Grässlin FM1 _____ (24-Hour)(7-Day) timer module with _____ (15-Minute)(2-Hour) interval captive trippers and _____ (Quartz)(Synchronous) drive. Input voltage shall be _____ (24 VAC)(120 VAC) (208/240 VAC) and SPDT switch contacts shall be rated at:

- 21A Resistive
- 2 HP @ 250 VAC

To set the starting time and to provide time indication, the unit shall incorporate an authentic clock face. For override, the timer module shall contain a 3-way OFF/AUTO/ON switch. For carryover, the timer module shall have a quartz drive with 7-Day reserve carryover from a rechargeable battery. Installation for panel mounting.

Diagrams

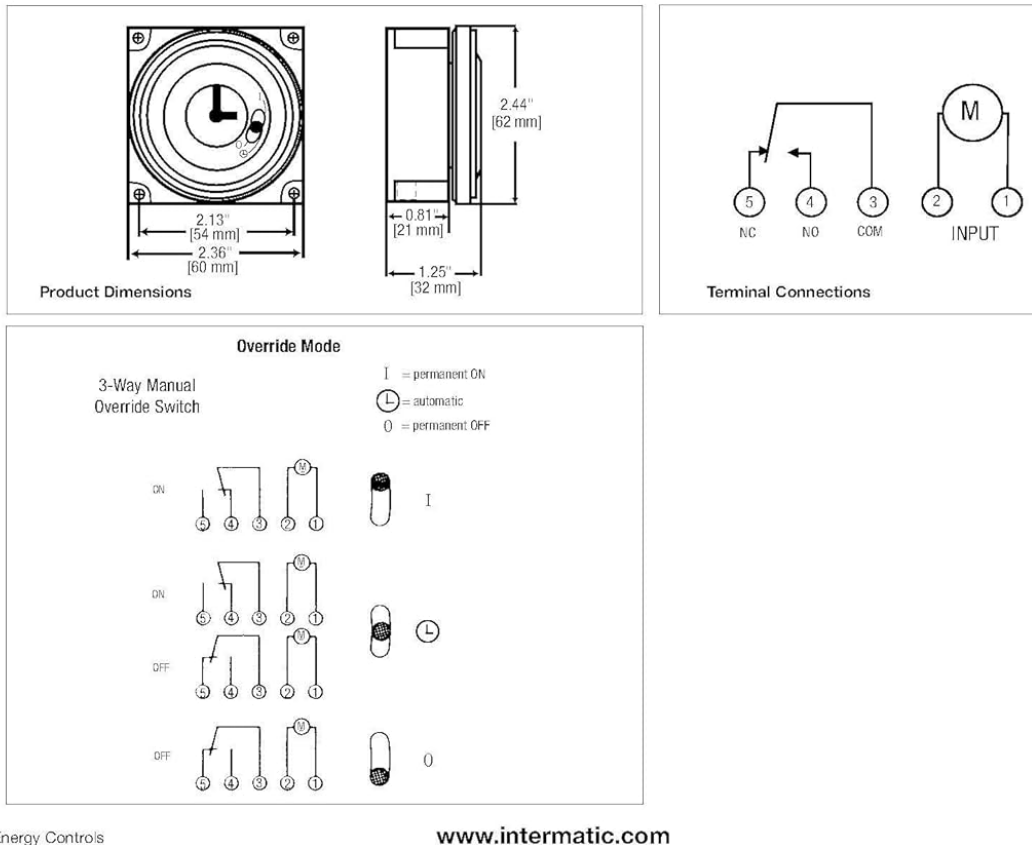


Figure 2: Back view of the FM1STUZH-240U timer module, showing the quick-connect terminals for wiring.

Terminal Connections:

- **INPUT (L1, L2):** Connect the 240 VAC power supply to these terminals.
- **M (Motor):** These terminals are for the internal synchronous motor. Connect the 240 VAC power supply to these terminals as well, typically in parallel with the INPUT terminals.
- **COM (Common):** This is the common terminal for the SPDT switch.
- **NO (Normally Open):** This terminal is connected to COM when the timer is ON.
- **NC (Normally Closed):** This terminal is connected to COM when the timer is OFF.

Connect the load according to your application's requirements, utilizing the COM, NO, and NC terminals as needed. Always verify connections before restoring power.

6. SETUP

6.1 Setting Current Time

1. Rotate the dial clockwise until the current time aligns with the time arrow (indicator mark) on the timer face.
2. The dial is marked in 24-hour format (e.g., 12 = noon, 18 = 6 PM, 24/0 = midnight).

6.2 Setting ON/OFF Times

The timer dial has 96 captive trippers, each representing 15 minutes. To set ON/OFF times:

- Push the trippers outward for the periods you want the load to be ON.
- Leave the trippers inward for the periods you want the load to be OFF.
- Each pushed-out tripper will activate the switch for 15 minutes.

7. OPERATION

7.1 Automatic Operation

Once the current time and ON/OFF trippers are set, the timer will automatically switch the connected load according to the programmed schedule. The dial will continuously rotate, and the internal switch will change state as the trippers engage or disengage.

7.2 Manual Override

The FM1STUZH-240U includes a manual override switch for temporary control of the connected load, independent of the programmed schedule. The override switch has three positions:

- **ON:** Forces the load to remain ON.
- **OFF:** Forces the load to remain OFF.
- **Automatic (Center Position):** Allows the timer to operate according to the programmed schedule.

To use the manual override, simply move the switch to the desired position. Remember to return it to the automatic (center) position for programmed operation to resume.

8. MAINTENANCE

The Intermatic FM1STUZH-240U timer module is designed for long-term, reliable operation with minimal maintenance.

- **Cleaning:** Periodically clean the exterior of the timer with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the clear plastic cover is free from dust or debris that might obstruct visibility.
- **Inspection:** Annually inspect the wiring connections for tightness and signs of wear or corrosion. Ensure the timer dial rotates freely and the trippers engage correctly.
- **Battery:** This synchronous timer model does not utilize a battery backup and therefore requires no battery maintenance or replacement.

Always disconnect power before performing any inspection or cleaning inside the enclosure.

9. TROUBLESHOOTING

If the timer module is not functioning as expected, perform the following basic checks:

- **No Power to Load:**

- Check if the circuit breaker is tripped or the fuse is blown.
- Verify that the timer is receiving 240 VAC power at the INPUT and M terminals.
- Ensure the manual override switch is in the 'Automatic' position.
- Confirm that the ON trippers are correctly set for the desired ON period.
- Check wiring connections to the load (COM, NO, NC terminals).

- **Timer Dial Not Rotating:**

- Verify that the timer is receiving 240 VAC power at the INPUT and M terminals.
- Ensure there are no obstructions preventing the dial from rotating.

- **Incorrect Switching Times:**

- Check that the current time is accurately set on the dial.
- Review the position of the ON/OFF trippers to ensure they correspond to the desired schedule.

- **Manual Override Not Working:**

- Ensure the switch is fully engaged in the ON or OFF position.

If issues persist after performing these checks, it is recommended to contact a qualified electrician or Intermatic customer support for further assistance.

10. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official Intermatic website or contact their customer service department. Keep your purchase receipt as proof of purchase.

- **Manufacturer:** Intermatic Incorporated
- **Website:** www.intermatic.com