

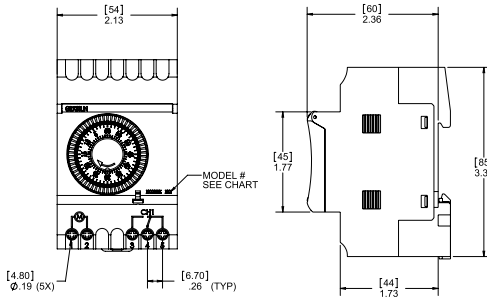
Grässlin Mechanical Time Switches

Cycle Timer Modules

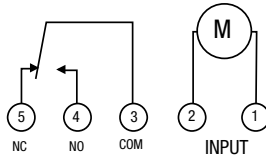


TALENTO121-120

Dimensions



Switch Configuration



Talento 121 Series

16 A, 1-Hour Repeat Cycle Time Switch

The Talento 121 is a synchronous motor driven electromechanical one-hour time switch intended as a low-cost repeat cycle timer for industrial processes and other applications. It provides continuous ON/OFF cycling of a load in a pattern which will repeat every hour. Captive trippers allow setting up to 24 ON and 24 OFF times in 1.25-minute increments over a one-hour period. It may be used in conjunction with a Grässlin 24-hour or 7-day Time Switch to provide repeat cycle timed switching only during selected periods of the day or week. It may be DIN rail mounted, or mounted in a Grässlin indoor or outdoor enclosure.

Features

- 1.25 minute resolution
- Up to 24 ON/OFF times per hour
- Captive trippers
- SPDT 16 A switch
- DIN rail or enclosure mounting
- 3-Way override



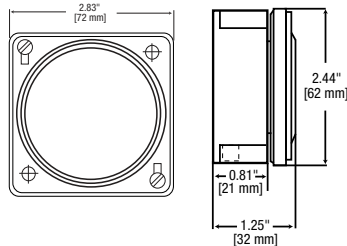
Ratings	
Supply Voltage	120, 208-240 VAC, 60 Hz
Switch Type	SPDT, Isolated Contacts
Resistive	16 A, 125-250 VAC, 60 Hz
Tungsten	750 W, 250 VAC, 60 Hz
Operating Temperature	-13° F to 130° F (-25° C to 55° C)
Operating Humidity	0 to 95% RH, non-condensing
Dimensions H x W x D	3.35" x 2.13" x 2.36" (8.5 mm x 5.4 mm x 6.0 mm)
Wiring Connections	Screw terminals for up to #12 AWG wire
Ship Weight	.66 lbs (.29 kg)
Warranty	1-year limited

Model #	Input Voltage	Mounting	Total Cycle Time	Timing Interval per Tripper
TALENTO121-120	120 VAC, 60 Hz	DIN Rail	1-Hr	1.25-Min
TALENTO121-240	208-240 VAC, 60 Hz	DIN Rail	1-Hr	1.25-Min
GMX121-0-120	120 VAC, 60 Hz	Type 3R Enclosure	1-Hr	1.25-Min

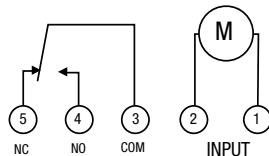


FM1S12HU-120U

Dimensions



Switch Configuration



FM1S12HU-120U

21 A, 12-Hour Repeat Cycle Time Switch

The FM1S12HU-120U is a synchronous motor driven electromechanical 12-hour time switch intended as a low cost repeat cycle timer for industrial processes and other applications. It provides continuous ON/OFF cycling in a pattern which will repeat every 12 hours. Captive trippers allow setting up to 48 ON and 48 OFF times in 7.5 minute increments over a 12-hour period.

Features

- 21 A SPDT switch
- Captive trippers enable up to 48 ON and 48 OFF times in 7.5-minute intervals
- Panel mount



Ratings	
Supply Voltage	120 VAC, 60 Hz
Power Consumption	1 VA
Switch Rating	SPDT
Resistive	21 A, 250 VAC
Inductive	1 HP, 125 VAC; 2 HP, 240 VAC
Tungsten	1350 W, 120 VAC
Dimensions H x W	2.60" x 2.83" (66 mm x 72 mm)
Wiring Connections	¼" quick-connects
Shipping Weight	.15 lbs (.07 kg)
Warranty	1-year limited

Model #	Input Voltage	Total Cycle Time	Timing Interval per Tripper
FM1S12HU-120U	120 VAC, 60 Hz	12-Hr	7.5-Min

Accessories

Clear Dustcover	DC-FME-A
Surface/DIN Rail Mount	FM-SU
Flush Mount Kit	FM-FU
Outdoor Enclosure	E200
Indoor Enclosure	E150

FM1 Series

21 A, 1-Circuit, Panel Mount Timer Modules

The FM1 Series Timer Modules are designed to be integrated inside of a machine control panel, circuit board, or other equipment. They are a simple and low cost alternative for applications that do not require more than 21 A or 2 HP, 240 VAC. The FM1 is designed for 24-hour or 7-day control or overriding a functional typical state of a heating, ventilation, refrigeration, lighting, security, or pump system. The FM1 series is ideal for 12, 24 VAC/VDC, 120 or 208/240VAC single-phase general applications.

Applications

- Commercial refrigeration • Pool & Spa • Ventilation
- Hot water pump circulation • Hydroponic systems
- Lighting panel control • Landscape lighting
- Bug and pest control systems • Aerobic waste water systems

Features

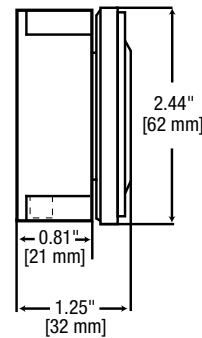
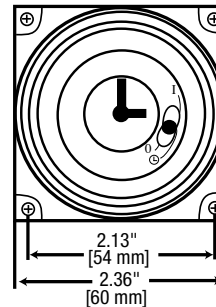
- 21 A SPDT Switch
- Captive trippers with 15-minute intervals on 24-hour models and 2-hour intervals on 7-day models
- 7-Day carry-over battery backup on Q models
- Noise immune – ideal for robust applications
- Synchronous drive or quartz drive Q models with self-recharging battery backup
- True clock face, easy-to-set
- Available with or without override
- Compact size
- Clear plastic cover (DC-FME-A), sold separately below
- Standalone or with indoor/outdoor enclosure, sold separately below



FM1STUZH

Dimensions

FM1 Panel Mount Series

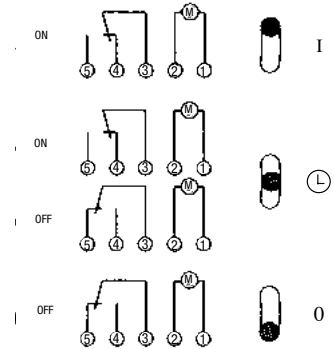


Wiring Diagrams

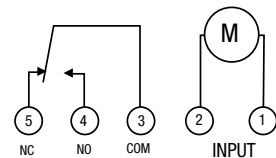
Override Mode

3-Way Manual Override Switch

- I = permanent ON
- L = automatic
- O = permanent OFF



Switch Configuration



Model #	Model #	Voltage	Override	MIN ON/ OFF Time
Synchronous	Quartz w/ Battery Backup			
24-Hour				
FM1STUZ-24U	FM1QTUZ-24U*	24 VAC, 60 Hz	No	15-Min
FM1STUZ-120U	FM1QTUZ-120U*	120 VAC, 60 Hz	No	
FM1STUZ-240U	FM1QTUZ-240U*	208/240 VAC, 60 Hz	No	
FM1STUZ220/50	–	220, 50 Hz	No	
FM1STUZH-24U	FM1QTUZH-24U*	24 VAC, 60 Hz	Yes	
FM1STUZH-120U	FM1QTUZH-120U*	120 VAC, 60 Hz	Yes	
FM1STUZH-240U	–	208/240 VAC, 60 Hz	Yes	
FM1STUZH220/50	–	220, 50 Hz	Yes	
7-Day				
FM1SWUZ-24U	–	24 VAC, 60 Hz	No	2-Hr
FM1SWUZ -120U	FM1QWUZ-120U*	120 VAC, 60 Hz	No	
FM1SWUZ -240U	FM1QWUZ-240U*	208/240 VAC, 60 Hz	No	
FM1SWUZH-24U	–	24 VAC, 60 Hz	Yes	
FM1SWUZH -120U	FM1QWUZH-120U*	120 VAC, 60 Hz	Yes	
FM1SWUZH -240U	FM1QWUZH-240U*	208/240 VAC, 60 Hz	Yes	

*Quartz models operate at 12-24 VDC/VAC, 120, or 208/240 VAC and are Title 20 listed.



Ratings	
Supply Voltage	24, 120, 208/240 VAC, 60 Hz; 220, 50 Hz
Quartz Models	12, 24 VAC/VDC, 120, 208/240 VAC, 50/60 Hz
Power Consumption	1 VA
Switch Type	SPDT
Resistive	21 A, 120-250 VAC
Tungsten	1350 W, 120 VAC
Motor	1 HP, 120 VAC; 2 HP, 250 VAC
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
Battery Backup Option	7-Day carry-over Q Models
Dimensions	2.36" x 2.36" x 1.25"
H x W x D	(60 mm x 60 mm x 32 mm)
Wiring Terminals	¼" quick connect terminals
Shipping Weight	.15 lbs. (.07 kg)
Warranty	1-year limited

Accessories

Clear Dust Cover	DC-FME-A
Surface/DIN Rail Mount	FM-SU
Flush Mount Kit	FM-FU
Outdoor Enclosure	E200
Indoor Enclosure	E150

SPECIFIERS GUIDE

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 _____ (12) (24) VDC, (12) (24) (120) (220) (208/240) VAC, and SPDT switch contacts shall be rated at: • 21 A 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 ON/OFF/AUTO switch. For carry-over, the timer module shall have a quartz drive with 7-day reserve carry-over from a self-recharging battery. Installation for panel mounting.

Grässlin Mechanical Time Switches

Flush or Surface/DIN Rail Mount, 24-Hour



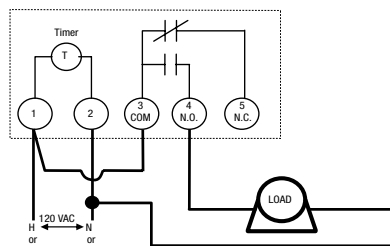
MIL72A



MIL72E

Wiring Diagrams

12-24 VDC & 120 VAC application



MIL72 Series

MIL72 Series

21 A, 1-Circuit, 24-Hour Timer Modules

The MIL72 series time switches are designed to be mounted inside a control panel and can accommodate surface/DIN rail or flush panel mounting. The MIL72 series is a light duty commercial time switch for 12, 24 VAC/VDC, 120 or 208/240 VAC single-phase applications.

Applications

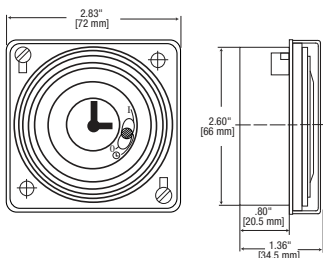
- Commercial refrigeration
- Pumps/motor/fan control
- Hydroponic systems
- Aerobic wastewater treatment systems
- Boilers
- Generator exercising

Features

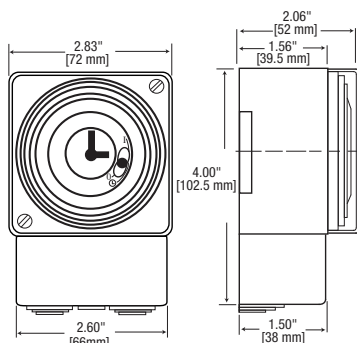
- 21 A SPDT switch
- Synchronous drive or quartz drive (Q models) with self-recharging battery backup
- 7-Day carry-over battery backup on Q models
- Captive trippers with 15-minute intervals
- Available with or without override
- True clock face, easy-to-set
- Clear plastic dust-cover
- Compact size
- Surface/DIN rail or flush mount

Dimensions

MIL72E Flush Mount with Clear Dust Cover



MIL72A Surface Mount/DIN Rail Mount with Clear Dust Cover

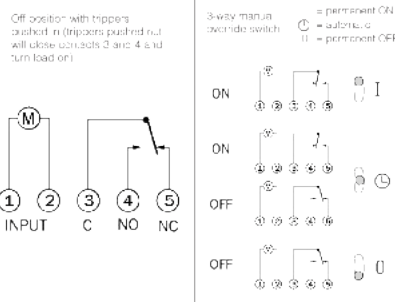


Model # Flush Mount (MIL72E)	Model # Surface Mount/ DIN Rail (MIL72A)	Volts AC	MIN ON/ OFF Time	Override
Synchronous				
MIL72ESTUZ-24	MIL72ASTUZ-24	24 VAC, 60 Hz	15-Min	No
MIL72ESTUZ-120	MIL72ASTUZ-120	120 VAC, 60 Hz		
MIL72ESTUZ-240	MIL72ASTUZ-240	240 VAC, 60 Hz	15-Min	Yes
MIL72ESTUZH-24	MIL72ASTUZH-24	24 VAC, 60 Hz		
MIL72ESTUZH-120	MIL72ASTUZH-120	120 VAC, 60 Hz		
MIL72ESTUZH220	MIL72ASTUZH220	220 VAC, 60 Hz		
MIL72ESTUZH-240	MIL72ASTUZH-240	240 VAC, 60 Hz		
Quartz with Battery Backup				
MIL72EQTUZH-24*	MIL72AQTUZH-24*	24 VAC, 50/60 Hz	15-Min	Yes
MIL72EQTUZH-120*	MIL72AQTUZH-120*	120 VAC, 50/60 Hz		
MIL72EQTUZH-24*	-	24 VAC, 50/60 Hz	15-Min	No
MIL72EQTUZH-120*	MIL72AQTUZH-120*	120 VAC, 50/60 Hz		
MIL72EQTUZH-240*	MIL72AQTUZH-240*	240 VAC, 50/60 Hz		

*Quartz Models operate on 12-24 VDC/VAC, 120 or 208/240 VAC, and 50/60 Hz and are Title 20 listed.

Ratings	
Supply Voltage	24, 120, 220, 208/240 VAC, 60 Hz
Quartz Models	12, 24 VAC/VDC; 120, 208/240 VAC, 50/60 Hz
Power Consumption	
24 VAC	0.1 VA
120 VAC	0.5 VA
240 VAC	1.0 VA
Switch Type	SPDT
Resistive	21 A, 120-250 VAC
Tungsten	1350 W, 120 VAC
Motor	1 HP, 120 VAC; 2 HP, 250 VAC
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
Battery Backup Option	7-Day carry-over Q Models
Dimensions H x W x D	
Surface/DIN rail	4" x 2.83" x 2.06" (102.5 mm x 72 mm x 52 mm)
Flush Mount	2.60" x 2.83" x 1.36" (66 mm x 72 mm x 34.5 mm)
Flush Mount Cutout Dimensions	2 5/8" x 2 5/8" (66 mm x 66 mm)
Wiring Connections	
MIL72A	Screw terminal connections
MIL72E	1/4" quick connects accept up to #12 AWG wire
Shipping Weight	1 lb. (.45 kg)
Warranty	1-year limited

Terminal Connections



SPECIFIERS GUIDE

Furnish and install a Grässlin MIL72 _____ (24-Hour) Time Switch with _____ (15-Minute) interval captive trippers and _____ (Quartz)(Synchronous) drive. Input voltage shall be _____ (12) (24) VDC, (12) (24) (120) (220) (208/240) VAC, and SPDT switch contacts shall be rated at 21A Resistive, 2 HP @ 250 VAC. To set the starting time and provide time indication, the unit shall incorporate an authentic clock face. Installation available for surface, flush and DIN Rail mounting. The time switch shall contain a 3-way ON/OFF/AUTO override. For carry-over: the time switch shall have a quartz drive with 7-Day reserve carry-over from a self-recharging battery.

MIL72 Series

21 A, 1-Circuit, 7-Day Timer Modules

The MIL72 series time switches are designed to be mounted inside a control panel and can accommodate surface/DIN rail or flush panel mounting. The MIL72 series is a light duty commercial time switch for 12, 24 VAC/VDC, 120 or 208/240 VAC single-phase applications.

Applications

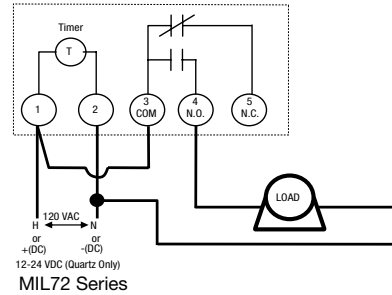
- Generator exercising • Commercial refrigeration
- Pumps/motor/fan control • Hydroponic systems
- Aerobic wastewater treatment systems • Boilers

Features

- 21 A SPDT switch
- Synchronous drive or quartz drive (Q Models) with self-recharging battery backup
- 7-Day carry-over battery backup on Q models
- Captive trippers with 2-hour intervals
- Available with or without override
- True clock face, easy-to-set
- Surface/DIN rail or flush mount
- Clear plastic dust cover
- Compact size

Wiring Diagrams

12-24VDC & 120VAC application



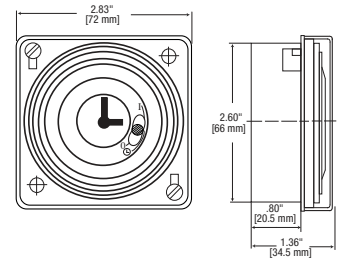
MIL72A



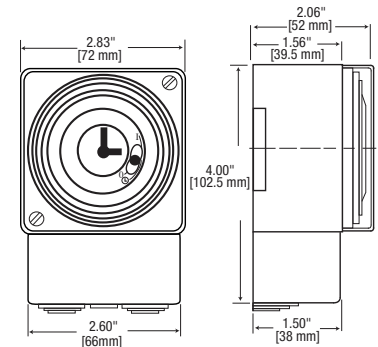
MIL72E

Dimensions

MIL72E Flush Mount with Clear Dust-cover



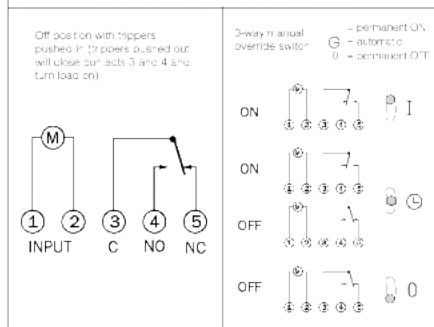
MIL72A Surface Mount with Clear Dust-cover



Model # Flush Mount (MIL72E)	Model # Surface Mount/ DIN Rail (MIL72A)	Volts AC	MIN ON/OFF Time	Override
Synchronous				
MIL72ESWUZ-24	MIL72ASWUZ-24	24 VAC, 60 Hz	2-Hr	No
MIL72ESWUZ-120	MIL72ASWUZ-120	120 VAC, 60 Hz		
MIL72ESWUZ-240	MIL72ASWUZ-240	208/240 VAC, 60 Hz	2-Hr	Yes
MIL72ESWUZH-24	MIL72ASWUZH-24	24 VAC, 60 Hz		
MIL72ESWUZH-120	MIL72ASWUZH-120	120 VAC, 60 Hz		
MIL72ESWUZH-240	MIL72ASWUZH-240	240 VAC, 60 Hz		
Quartz with Battery Backup				
MIL72EQWUZH-24*	MIL72AQWUZH-24*	24 VAC, 50/60 Hz	2-Hr	Yes
MIL72EQWUZH-120*	MIL72AQWUZH-120*	120 VAC, 50/60 Hz		
MIL72EQWUZH-240*	MIL72AQWUZH-240*	240 VAC, 50/60 Hz	2-Hr	No
MIL72EQWUZ-120*	MIL72AQWUZ-120*	120 VAC, 50/60 Hz		
-	MIL72AQWUZ-240*	208/240 VAC, 50/60 Hz		

*Quartz Models operate on 12-24 VDC/VAC, 120 or 208/240 VAC, and 50/60 Hz and are Title 20 listed.

Terminal Connections



SPECIFIERS GUIDE

Furnish and install a Grässlin MIL72 _____ (7-Day) Time Switch with _____ (2-Hour) interval captive trippers and _____ (Quartz)(Synchronous) drive. Input voltage shall be _____ (12) (24) VDC, (12) (24) (120) (220) (208/240) VAC, and SPDT switch contacts shall be rated at 21 A Resistive, 2 HP, 250 VAC. To set the starting time and provide time indication, the unit shall incorporate an authentic clock face. Installation available for surface, flush and DIN Rail mounting. The time switch shall contain a 3-way ON/OFF/AUTO override. For carry-over: the time switch shall have a quartz drive with 7-Day reserve carry-over from a self-recharging battery.



Ratings

Supply Voltage	24, 120, 208/240 VAC, 60 Hz
Quartz Models	12, 24 VAC/VDC; 120, 208/240 VAC, 50/60 Hz
Power Consumption	
24 VAC	0.1 VA
120 VAC	0.5 VA
240 VAC	1.0 VA
Switch Type	SPDT
Resistive	21 A, 120-250 VAC
Tungsten	1350 W, 120 VAC
Motor	1 HP, 120 VAC; 2 HP, 250 VAC
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
Battery Backup Option	7-Day carry-over Q Models
Dimensions H x W x D	
Surface/DIN rail	4" x 2.83" x 2.06" (102.5 mm x 72 mm x 52 mm)
Flush Mount	2.60" x 2.83" x 1.36" (66 mm x 72 mm x 34.5 mm)
Flush Mount Cut Out Dimensions	2 5/8" x 2 5/8" (66 mm x 66 mm)
Wiring Connections	
MIL72A	Screw terminal connections
MIL72E	1/4" quick connects accept up to #12 AWG wire
Shipping Weight	1 lb. (.45 kg)
Warranty	1-year limited

Grässlin Mechanical Time Switches

Enclosed Timer Module, 24-Hour or 7-Day



GMXSW-O-120



GMX Series

21 A, General Purpose, 1-Circuit Time Controls

The GMX series time controls are universal mechanical time switches. They are a low cost alternative for applications that do not require more than 21 A or 2 HP @ 240 VAC. The unit is mounted in a UL Type 1 indoor or Type 3R outdoor plastic enclosure. The GMX is a light-duty commercial time switch ideal for 24, 120 or 208/240 VAC single-phase general applications.

Applications

- Lighting Control • HVAC • Pumps/motor/fan control
- General electrical circuits • Commercial refrigeration

Features

- 21 A SPDT Switch
- UL Type 1 indoor or Type 3R outdoor plastic enclosure
- Manual 3-way override
- Captive trippers with 15-minute intervals on 24-hour models and 2-hour intervals on 7-day models
- True clock face, easy-to-set
- Finger-safe terminals
- Enclosure provides space for field-added contactor or other accessories
- Synchronous drive or quartz drive ("Q" Models) with self-recharging battery backup

Ratings	
Supply Voltage	24, 120, 208/240 VAC, 60 Hz
Quartz Models	12, 24 VAC/VDC, 120, 208/240 VAC, 50/60 Hz
Power Consumption	1 VA
Switch Type	SPDT
Resistive	21 A, 120-250 VAC
Tungsten	1350 W, 120 VAC
Motor	1 HP, 120 VAC; 2 HP, 250 VAC
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
Operating Humidity	0 to 95% non-condensing
Battery Backup Option	7-Day carry-over Quartz Models
Dimensions	
H x W x D	10" x 6 1/2" x 3 3/4" (25.4 cm x 16.5 cm x 9.5 cm)
Wiring Terminals	Screw terminal accepts up to #12 AWG wire
Shipping Weight	2 lbs. (.91 kg)
Warranty	1-year limited

Model # Synchronous	Model # Quartz w/ Battery Backup* (7-Day Carry-over)	Voltage	MIN ON/OFF Time	Enclosure
24-Hour				
GMXST-I-120	GMXQT-I-120*	120 VAC, 60 Hz	15-Min	Type 1 Indoor
GMXST-I-240	**	208/240 VAC, 60 Hz		Type 1 Indoor
GMXST-O-24	**	24 VAC, 60 Hz		Type 3R Rainproof
GMXST-O-120	GMXQT-O-120*	120 VAC, 60 Hz		Type 3R Rainproof
GMXST-O-240	**	208/240 VAC, 60 Hz		Type 3R Rainproof
7-Day				
**	GMXQW-I-24*	24 VAC, 60 Hz	2-Hr	Type 1 Indoor
GMXSW-I-120	**	120 VAC, 60 Hz		Type 1 Indoor
GMXSW-O-24	**	24 VAC, 60 Hz		Type 3R Rainproof
GMXSW-O-120	GMXQW-O-120*	120 VAC, 60 Hz		Type 3R Rainproof
GMXSW-O-240	GMXQW-I-240*	208/240 VAC, 60 Hz		Type 3R Rainproof

*Quartz Models operate on 12-24 VDC/VAC, 120 or 208/240 VAC, and 50/60 Hz and are Title 20 listed.

**Considered upon request.

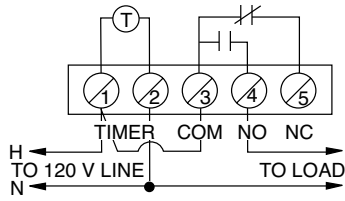
SPECIFIERS GUIDE

Furnish and install a Grässlin GMX____ (24-Hour)(7-Day) Time Switch with _____ (15-Minute)(2-Hour) captive trippers and _____ (Quartz)(Synchronous) drive. Input voltage shall be _____ (12) (24) VDC, (12) (24) (120) (220) (208/240) VAC, and SPDT contacts shall be rated at 21 A, 2 HP @ 240 VAC. To set the starting time and provide time indication, the unit shall have an authentic clock face with hour and minute hands. Enclosure to be _____ (UL Type 1)(UL Type 3R). The time switch shall contain a 3-way ON/OFF/AUTO manual override. The time control shall have a quartz drive with 7-Day reserve carry-over from a self-recharging battery.

Wiring Diagrams

Typical Wiring for GMX Series

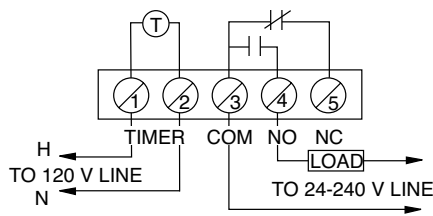
120 V Timer and Load



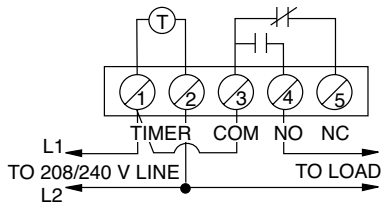
Wiring Diagrams

Typical Wiring for GMX Series

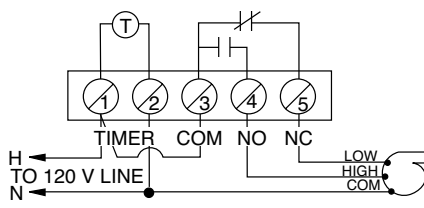
120 V Timer 24-240 V Load



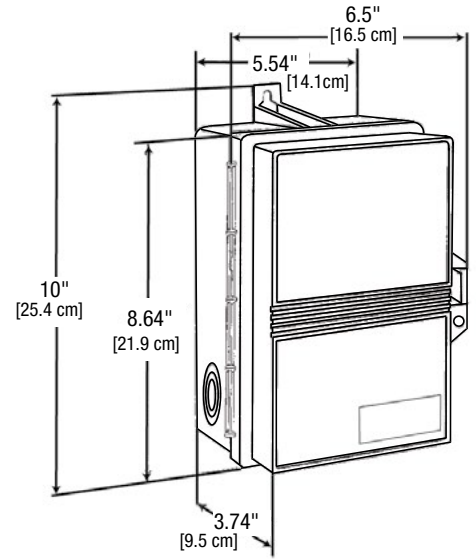
208/240 V Timer and Load



120 V Two Speed Fan

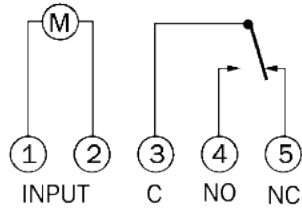


Enclosure Dimensions



Terminal Connections

Off position with trippers pushed in (trippers pushed out will close contacts 3 and 4 and turn load on)



3-way manual override switch
 I = permanent ON
 ⌚ = automatic
 0 = permanent OFF

