

## Specialty Time Switches

Intermatic offers a wide variety of specialty time switches including the GM40, an electromechanical control that can be used for many different applications. You'll also find Short Range Cycle Time Switches and Percentage Cycle Time Switches for applications such as ventilation or misting systems, processing equipment, and feeding equipment. Other specialty controls include Water Heater Time Switches, Mechanical Astronomic Controls, and Irrigation Controls.

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C8835



Ratings	
Switch Type	SPDT
Resistive	20 A, 120-480 VAC, 60 Hz
Motor	1/2 HP, 120 VAC; 1 HP, 240 VAC, 60 Hz
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions H x W x D	7 7/8" x 5 1/8" x 3 3/8" (200 mm x 130.2 mm x 87.3 mm)
Knockout Dimensions Side/Back	(1) 1/2" and 3/4" combination
Bottom	(2) 1/2" and 3/4" combination
Wire Size	#12 - #14 AWG
Warranty	1-year limited

For enclosure line drawings and knockout locations, see pages 164-165.

## C8800 Series

### Short Range Cycle Time Switches

The C8800 Series Short Range Cycle Timers come in various timing durations allowing for unprecedented control for various applications. These time switches can handle resistive loads up to 20 A and electric motor loads up to 1 HP at 240 VAC.

#### Applications

- Ventilating fans • Fogging equipment • Process equipment
- Poultry & livestock feeders • Spraying equipment

#### Features

- Repeat cycling for ON times
- 10 trippers provided
- Dials have 120 slots
- Type 1 indoor metal enclosure

Model #	Clock Motor Voltage	Dial Cycle	Tripper Actuating Time
C8815	125 VAC, 60 Hz	10-Min	5-Sec
C8835	125 VAC, 60 Hz	30-Min	15-Sec
C8845	125 VAC, 60 Hz	4-Hr	120-Sec
C8865	125 VAC, 60 Hz	1-Hr	30-Sec
C8866	208-277 VAC, 60 Hz	1-Hr	30-Sec

NOTE: The life of the switch contacts is affected by the size and type of the controlled load. The expected minimum life at 20 A (resistive) load is 100,000 cycles.

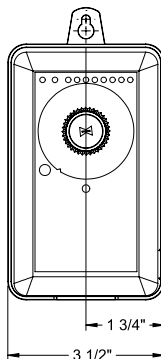
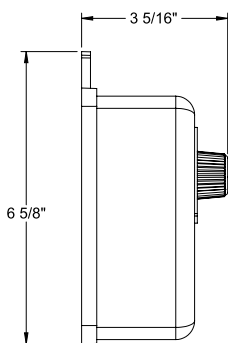
#### Accessories/Replacement

Extra/replacement Trippers	156T1950A
Extra/replacement Switch	133T773A



CT2000

#### Enclosure Dimensions



## CT2000

### Percentage Cycle Time Switch

The CT2000 Percentage Cycle Time Switch is a field adjustable timer, offering true flexibility for repetitive cycle times via an upfront control button. The timer provides repetitive cycling for short-cycle applications. The timer enclosure includes two slotted mounting holes on 5" centers and a 1/2" knockout for conduit connection.

#### Applications

- Ventilating fans • Fogging equipment • Process equipment
- Poultry & livestock feeders • Mist systems

#### Features

- Provides 8 field selectable cycle durations of 30 seconds, 1, 3, 5, 10, 30 minutes and 1 or 4 hours
- Front cover button enables true flexibility for repetitive cycle times
- Temporary and permanent manual overrides
- 30 separate positions enable precise percentage ON time selection
- User settings stored in non-volatile memory
- No DIP switches to program cycle time
- Withstands surges of up to 6,000 VAC
- Type 3R indoor/outdoor aluminum enclosure

Model #	Input Voltage
CT2000	120 or 240 VAC, 60 Hz



Ratings	
Switch Type	SPDT
General Purpose	20 A, 240 VAC, 60 Hz
Resistive	20 A, 120/240 VAC, 28 VDC, 60 Hz
Ballast (Fluorescent)	10 A, 277 VAC, 60 Hz
Tungsten (Incandescent)	5 A, 240 VAC, 60 Hz
Pilot Duty	470 VA, 240 VAC, 60 Hz
Motor	1 HP, 120 VAC; 2 HP, 240 VAC, 60 Hz
Surge Protection	Up to 6,000 VAC
Wire Leads 8"	
Red	#12 AWG
Black	#18 AWG
White	#18 AWG
Warranty	1-year limited

## R8800 and T8800 Series

### Sprinkler/Irrigation Time Switches with 14-Day Skipper

These irrigation timers are designed to permit one to 44 "ON" operations every 24 hours and provide watering increments down to 12 minutes or up to 20 hours and 45 minutes to ensure proper watering increments. These models also allow for biweekly scheduling with the convenient 14-day skipper for maximum water conservation and odd/even day compliance.

#### Applications

- Multistation hydro-indexing valves • Greenhouses • Lawn sprinklers
- Irrigation control • Drip irrigation systems

#### Features

- Up to 44 ON/OFF settings per day
- Water metering increments from 12 minutes to 20 hours and 45 minutes
- 14-Day skipper enables irrigation to be omitted on selected day(s)
- Provides for every other day operation
- ON/OFF/AUTO switch enables shutdown during rainy days and extended watering during dry periods without disturbing the cycle set on dial
- Type 3R plastic indoor/outdoor enclosure



T8845PV

Model #	Switch	Clock Motor Voltage	Load Voltage	Amps (per pole)	HP
<b>Mechanism Only</b>					
T8805M101C	DPST	125 VAC, 60 Hz	125 VAC, 60 Hz	15 A	1/2
R8806M101C	DPST	240 VAC, 60 Hz	240 VAC, 60 Hz	30 A	3
<b>Plastic Type 3R Enclosure</b>					
T8805P101C	SPST	125 VAC, 60 Hz	125 VAC, 60 Hz	15 A	1/2
R8806P101C	DPST	208/277 VAC, 60 Hz	240 VAC, 60 Hz	30 A	3
R8815P101C*	DPST	125 VAC, 60 Hz	120 VAC, 60 Hz	30 A	1 1/2
R8816P101C*	DPST	208/277 VAC, 60 Hz	240 VAC, 60 Hz	30 A	3
T8845PV**	SPST	110/125 VAC, 60 Hz	24 VAC, 60 Hz	20 VA	-

\*Provided with a slide switch to enable/disable a Rain Sensor (not included).

\*\*Includes 24 Volt, 20 VA transformer.

#### Accessories/Replacement

Extra/replacement trippers	156T1950A pack of 12
Extra/replacement switch	133T700A
Additional Skipper Pins	156T1954A pack of 14



Ratings	
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure H x W x D	
Plastic Indoor/Outdoor	10" x 6 1/2" x 4" (254 mm x 165.1 mm x 101.6 mm)
Knockout Dimensions	
Side/Back	(1) 1/2" and 3/4" combination
Bottom	(2) 1/2" and 3/4" combination
Warranty	1-year limited

For enclosure line drawings and knockout locations, see pages 164-165.

# Specialty Time Switches

Grässlin Electromechanical, 24-Hour or 7-Day

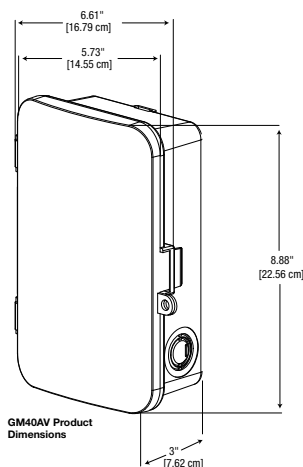


GM40AV



Captive Trippers can't be lost

## Enclosure Dimensions



## GM40AV Series

### 40 A Autovoltage General Purpose Time Control

The GM40AV Time Control is a universal, electromechanical time switch designed for general purpose residential and commercial applications. The robust 40 A time control automatically detects the input voltage without the use of a DIP switch or selector pins. The time control automatically selects any voltage between 120 VAC and 277 VAC. The mechanism is mounted in a compact UL Type 3R outdoor enclosure and can also be easily retrofitted into other Intermatic enclosure types. The time control features a DPDT switching configuration standard (i.e. two normally open and two normally closed contacts).

#### Applications

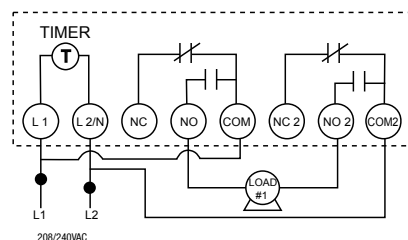
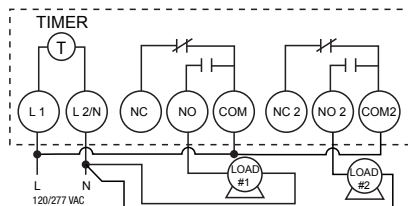
The GM40AV is a robust time switch capable of switching high amperage. Below are examples of the many applications where the GM40AV can be used:

- Lighting control • Access control • Commercial refrigeration
- General electrical circuits • Pumps • Motors • Fan control

#### Features

- Autovoltage selection 120 VAC - 277 VAC
- Captive trippers - trippers cannot be lost
- 40 A rating
- Self-recharging battery backup models; "Q" models feature 7-day carry-over
- Power and status LED indicators
- 24-Hour or 7-day models available
- Up to 48 ON/OFF operations per 24-hour period or 42 ON/OFF operations per week on "W" models
- DPDT switching configuration standard (2 NO and 2 NC Contacts)
- Manual three-way ON/OFF/AUTO override switch
- Easy-to-read clock face
- Type 3R outdoor enclosure

#### Wiring Diagram



Model #	Autovoltage	Switch Type	Enclosure	Battery Backup	Timing
GM40AV	120-277 VAC, 60 Hz	DPDT	Type 3R Outdoor	No	24-Hour, 15-Minute Intervals
GM40AV-Q*	120-277 VAC, 50/60 Hz	DPDT	Type 3R Outdoor	Yes	24-Hour, 15-Minute Intervals
GM40AV-M	120-277 VAC, 60 Hz	DPDT	Mechanism Only	No	24-Hour, 15-Minute Intervals
GM40AV-W	120-277 VAC, 60 Hz	DPDT	Type 3R Outdoor	No	7-Day, 2-Hour Intervals
GM40AV-QW*	120-277 VAC, 50/60 Hz	DPDT	Type 3R Outdoor	Yes	7-Day, 2-Hour Intervals

\*Q models are Title 20 listed.

Ratings	
Supply Voltage	120-277 VAC, 60 Hz (Q Models 50/60 Hz)
Switch Type (2 NO/NC Contacts)	DPDT
Switch Ratings (NO Contacts)	
Resistive	40 A, 120-277 VAC
Ballast	30 A, 120 VAC; 20 A, 277 VAC
Tungsten	15 A, 120 VAC
Pilot Duty	300 VA, 120-240 VAC
Switch Ratings (NC Contacts)	
Resistive	30 A, 120-277 VAC
Ballast	10 A, 277 VAC
Tungsten	2 A, 120 VAC
Motor	
NO	1 HP, 16 FLA, 90 LRA @ 120 VAC; 2 HP, 12 FLA, 52 LRA @ 208-277 VAC
NC	1 HP, 12 FLA, 30 LRA @ 120 VAC; 2 HP, 10 FLA, 30 LRA @ 240 VAC
Operating Temperature	-40° F to 131° F (-40° C to 55° C)
Operating Humidity	0-95% RH, non-condensing
Wiring Terminals	Screw box lug
Electrical Life	50,000 operations at full load
Enclosure Dimensions H x W x D	8.88" x 6.61" x 3" (22.56 mm x 16.79 mm x 7.62 mm)
Shipping Weight	3 lbs.
Warranty	1-year limited

#### SPECIFIERS GUIDE

Furnish and install a Grässlin GM40AV\_\_\_\_\_Auto-Voltage 24-Hour or 7-Day Time Control with captive trippers. Input voltage shall be 120-277 VAC which the unit detects and selects automatically. All units shall incorporate DPDT contacts that shall be rated at 40 A, 2 HP @ 208-277 VAC. To set the starting time and provide time indication, the unit shall have an authentic clock face with hour and minute hands and 15-minute or 2-hour (W models only) interval captive trippers. LED indicators shall provide power and status feedback. The enclosure shall be UL Type 3R suitable for both indoor or outdoor installation. The time switch shall contain a 3-way ON/OFF/AUTO manual override switch. For carry-over: "Q" Models shall have a quartz drive with self-recharging battery backup providing 7-day carry-over.

## V45000 Series

### Astronomic Dial Time Switches with Skipper

The V45000 Series astronomic dial time switches are mechanical time switches with skipper and carry-over features. They automatically adjust to seasonal changes as the days grow shorter or longer, minimizing the time once required of maintenance staff to manually adjust times throughout the year.

#### Applications

- Parking lot lighting • Walkway lighting • Landscape lighting • Store fronts
- Other outdoor lighting applications

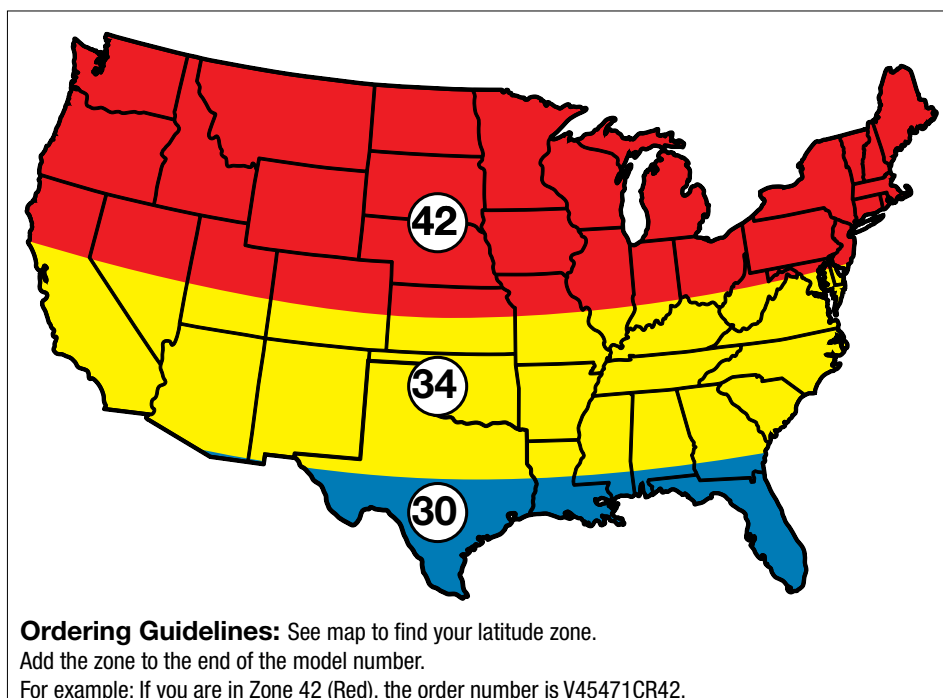
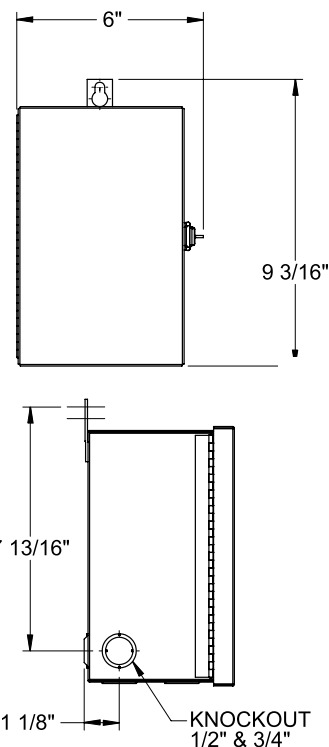
#### Features

- Adjusts for seasonal changes
- 3PST switch configuration
- Three skipper screws furnished
- Independent clock motor terminals
- Only one hour required to rewind the carry-over for every two hours of outage
- Type 3R metal enclosure



V45472CR30

#### Enclosure Dimensions



Latitude	Model #	Carry-over	VAC, 60 HZ
30°	V45471CR30	Yes	120
	V45472CR30	Yes	208-277
	V45471R30	No	120
	V45472R30	No	208-277
34°	V45471CR34	Yes	120
	V45472CR34	Yes	208-277
	V45471R34	No	120
	V45472R34	No	208-277
42° and above	V45471CR42	Yes	120
	V45472CR42	Yes	208-277
	V45471R42	No	120
	V45472R42	No	208-277

Ratings	
Switch Type	3PST
Resistive	40 A, 120-277 VAC
Inductive	20 A, 120-277 VAC, Single Phase
Tungsten	40 A, 120 VAC
Pilot Duty	1000 VA, 120-277 VAC
Motor	2 HP, 120 VAC; 5 HP, 240 VAC
Operating Temperature	32° F to 104° F (0° C to 40° C)
Enclosure	
Dimensions H x W x D	9 3/16" x 6" x 4 7/8" (233.4 mm x 152.4 mm x 123.8 mm)
Enclosure	Type 3R metal, beige finish. Hasp, with hole for lock, holds permanently attached, side-hinged door closed
Knockout Dimensions	Combination 1/2" - 3/4" nominal knockouts, (1) on back and sides, (2) on bottom
Wire Size	#8 - #14 AWG
Warranty	1-year



# Specialty Time Switches

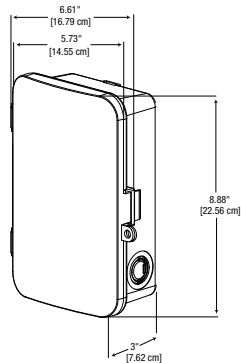
## Grässlin Electromechanical Water Heater Timers

Utilities in many areas of the country offer two electric rates for residential or commercial customers. One rate has the regular daytime electrical rate, the other is the "off-peak" rate. The "off-peak" rate provides customers with lower priced electricity during the nighttime and weekend periods.



WHAVQ4

### Enclosure Dimensions



## WHAVQ Series

### 24-Hour / 7-Day with Battery Backup Autovoltage Electric Water Heater Timers

The WHAVQ series Water Heater Timers are designed for control of residential or commercial electric water heaters up to 10,000 Watts capacity running at 240 VAC. The unit is mounted in a UL Type 3R Outdoor enclosure and can be placed in basements or mechanical rooms.

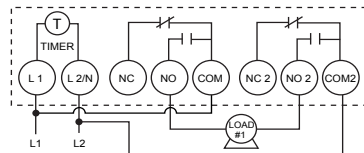
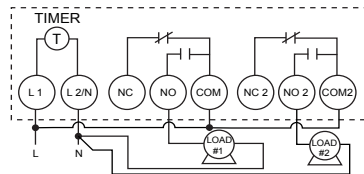
#### Application

These units are designed to save energy and maximize electric heated hot water usage throughout the day. For example, the unit could be programmed to turn ON during periods of high usage such as in the early morning hours and OFF during low demand periods such as late evenings.

#### Features

- 40 A rating
- Captive trippers - cannot be lost
- 24-hour or 7-day models available
- Three-way ON/OFF/AUTO manual override
- Power and status LED indicators
- Self-recharging battery backup with 7-day carry-over
- Rainproof UL Type 3R enclosure
- Saves energy by shutting hot water heaters OFF during "off peak periods"
- Autovoltage selection 120-277 VAC
- Easy-to-read clock face

### Wiring Diagrams



Patent# 6,563,237

Ratings	
Switch Configuration	DPDT (2 NO and 2 NC contacts)
Switch Rating for NO	40 A Resistive, 250 VAC, 10,000 W
Switch Rating for NC	30 A Resistive, 250 VAC, 7,500 W
Operating Temperature	-4° F to 104° F (-20° C to 40° C)
Operating Humidity	0 to 95% RH, non-condensing
Electrical Life	50,000 operations at full load
Reserve Carry-over	7-Day battery backup
Shipping Weight	3 lbs.
Warranty	1-year limited

Model #	Voltage	Output	Timing
WHAVQ4	120-277 VAC, 60 Hz	40 A DPDT	24-Hour with Battery Backup
WHAVQ7	120-277 VAC, 60 Hz	40 A DPDT	7-Day (Skip-a-Day) with Battery Backup

#### SPECIFIERS GUIDE

Furnish and install a Grässlin WHAVQ\_\_\_ electric water heater time switch with captive trippers and a quartz drive with 7-day reserve carry-over from a rechargeable battery. Input voltage shall be 120-277 VAC on all models. Output shall be (DPDT) rated at 40 A, 250 VAC, NO contacts. 30 A, 250 VAC, NC contacts. To set starting time and to provide time indication, the unit shall have an authentic clock face with hour and minute hands. Enclosure shall be UL Type 3R rainproof. For carry-over, the time controls shall have quartz drive with 7-day reserve carry-over from a rechargeable battery.

### EH10 and EH40

#### Electronic Water Heater Time Switches

The EH Series Electronic Time Switches provide control for electric water heaters with to-the-minute accuracy in programming and time-keeping. The use of a water heater timer allows the customer to shift electricity use to "off-peak" time periods in an attempt to reduce utility costs. These time switches can be programmed for repeat daily scheduling, 5-day work week scheduling, weekend scheduling or individual day scheduling. Models are available for both 120 and 240 VAC applications.

#### Applications

- Residential • Institutional • Industrial • Commercial
- Military facilities • Schools

#### Features

- 42 ON/OFF events per week
- 7-day scheduling
- To-the-minute programming and time-keeping accuracy
- External override switch
- LED load indicator
- Replaceable battery backup

Model #	Input Voltage	Switch	Watts	Enclosure
<b>EH10</b>	120 VAC	SPST	3600	Type 1 Indoor Metal
<b>EH40</b>	240 VAC	DPST	7200	Type 1 Indoor Metal



EH10



Ratings	
<b>Switch Rating for EH10</b>	30 A Inductive, 30 A Resistive, 5 A Tungsten, 1 HP, 120 VAC, 60 Hz
<b>Switch Rating for EH40</b>	30 A Inductive, 30 A Resistive, 5 A Tungsten, 1 1/2 HP, 240 VAC, 60 Hz
<b>Metal Indoor</b>	7 7/8" x 5 1/8" x 3 7/16" (200 mm x 130.2 mm x 87.3 mm)
<b>Knockout Dimensions</b>	
<b>Side/Back</b>	1/2" and 3/4" combination
<b>Bottom</b>	(2) 1/2" and 3/4" combination
<b>Warranty</b>	1-year

For enclosure line drawings and knockout locations, see pages 164.

### T104-20 and WH40

#### Mechanical Water Heater Time Switches

With the easy-to-set "Yellow Dial", these time switches allow for basic control of electric hot water heaters. These time switches offer a minimum ON/OFF time of one hour, and are available for 208-250 VAC applications. With the proven reliability of our mechanical line, these time switches provide dependable electric water heater control.

#### Applications

- Residential • Institutional • Industrial • Commercial
- Military facilities • Schools

#### Features

- Three sets of ON/OFF trippers
- Enables shifting electricity use into off-peak hours to reduce energy costs
- Convenient external override switch (WH40 model)

Model #	Switch Type	Clock Motor	Amps per pole	Watts Resistive	External Override
<b>T104-20</b>	DPST	208-250 VAC, 60 Hz	40 A	10000	No
<b>WH40</b>	DPST	208-250 VAC, 60 Hz	40 A	10000	Yes



T104-20



Ratings	
<b>Power Consumption</b>	3 W MAX
<b>Operating Temperature Range</b>	-40° F to 130° F (-40° C to 54° C)
<b>Enclosure</b>	
<b>Metal Indoor</b>	7 7/8" x 5 1/8" x 3 7/16" (200 mm x 130.2 mm x 87.3 mm)
<b>Knockout Dimensions</b>	
<b>Side/Back</b>	1/2" and 3/4" combination
<b>Bottom</b>	(2) 1/2" and 3/4" combination
<b>Warranty</b>	1-year

For enclosure line drawings and knockout locations, see pages 164.