

DIGITAL TIME SWITCH

Ordering Information:

Crono

67DDT0

6GHDT0

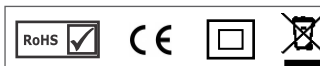
69HDT0

Pulse

67DDT9

6GHDT9

69HDT9



FEATURES:

- Easy text LCD interface for daily / weekly programming
- 12 / 24 hour clock selection using keypad
- Highly accurate RTC with low drift.
- Flexibility of writing 25 ON/OFF & 16 ON programs for Crono & Pulse respectively.
- Easy to reset & Manual override.
- Available with DST feature.
- 6 years battery back-up.
- Weekend Exclusion Programming (FRI-SAT, SAT-SUN).
- Keypad Lock available.
- CRONO: Ideal for lighting applications like street lighting.
- PULSE: Ideal for siren or bell applications.

CAUTION:

- Installation should be done by skilled electrician only.
- Heavy Inductive loads should be equipped with interference suppressors like varistors, RC snubbers.
- Use of contactors is recommended if load exceeds the contact rating. Please see Inductive load category.
- Non- Rechargeable Battery Disposal: As per the applicable regulations in country and state, by authorized, professional disposal firms knowledgeable in Federal, State or Local requirements of hazardous waste treatment & transportation.

NOTE:

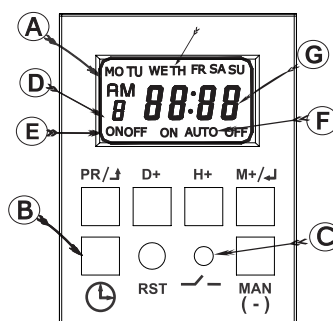
- **IMPORTANT:** IF DST applicable, First Set Date, then Set DST & then set the Real Time Clock.
- **IMPORTANT:** When user presses key in program edit mode, it comes to Run mode.
- **Battery Mode:** Key sensing may be slower so please make sure that, any key is pressed for at least 1 sec.
- Product innovation being a continuous process, we reserve the right to alter specifications without any prior notice.
- User is recommended to ensure the suitability of the product for the intended application
- GIC will also provide separate time switch for Non-Inrush application if customer wants.

*For optimum battery life, Store product in cool & dry environment.

KEY FUNCTIONS:

PR / ↕	Program key to view & edit programs & As ESC Key
D+	Day selection & Also as an Date/DST Increment key
H+	Hour Increment & Also as an Date/DST Decrement key
M+ / ↕	For Crono: To increment Minute For Pulse: To set Pulse duration Also as an ENTER key
(H+)+(M+)	To enter in DATE / DST mode
RST	Reset programs & settings in the device.
MAN (-)	Manual key for overriding. Also to decrement D/H/M in program mode
Ⓛ	Clock Key, to set the clock
CLK + MAN	To set 12/ 24h clock mode
CLK + PR	To Lock / Un-lock keypad

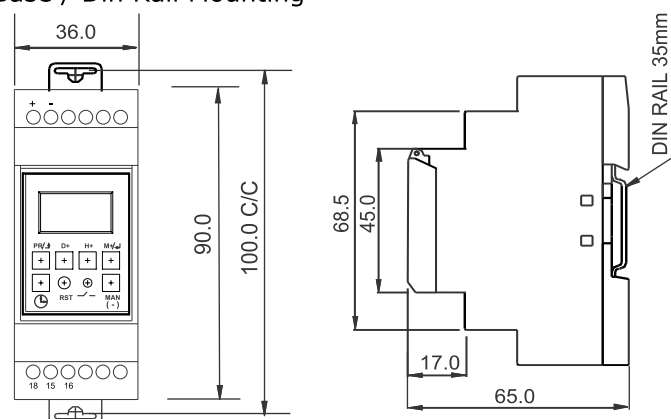
FRONTVIEW:



- A - LCD
- B - Keypad
- C - Relay 'ON / OFF' LED Indication.
- D - Program Number
- E - Relay Status
- F - Mode
- G - HR : MIN
- H - Day













OVERALL DIMENSIONS:

Base / Din Rail Mounting



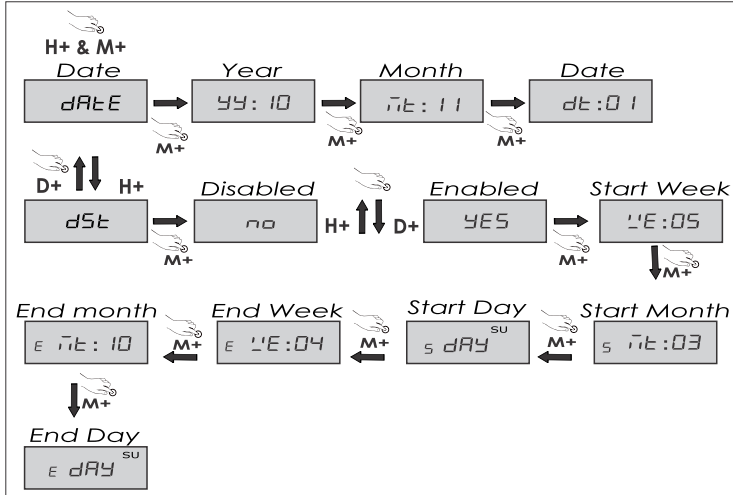
CLOCKSETTING:

Figure 1

 	Press clock key  & MAN key simultaneously to toggle between 12/24 hour clock mode. AM/PM
 	Keep the Clock key  pressed & then press the D+ key to set day. MO/ TU/ WE/ TH/ FR/ SA/ SU
 	Keep the Clock key  pressed, then press the H+ key to set hour. 00-23 - in 24 Hour Mode 01-12 - in 12 Hour Mode
 	Keep the clock key  pressed, then press M+ key to set min. 00- 59

DST & DATE SETTINGS:

Figure 2



- During Run mode, press H+ with M+ to enter 'dATE' menu. Press M+ to enter this menu. Edit YY, MT & DT using D+ or H+.
- 'dATE' menu is being displayed, press H+ or D+ to select DST & press M+ to enter its menu.
- User can enter DST & Date as shown in the figure 2 above.
- For this,
 - D+ key is used to increment the parameter value
 - H+ key is used to decrement the parameter value
 - M+ key is used to save the current parameter value
 - PR key is used to escape to previous parameter screen
- During DST period 'd' will appear at bottom left corner of the screen & day will be updated according to current date. No need to set day manually by pressing CLK & D+ key.

Note:

1. DATE & DST must be set in regions where DST is observed. When DST is enabled LCD shows 'd' at the left corner.
2. DST Start / End: Clock is rolled over from '02:00' to '03:00' at start and is rolled over from '03:00' to '02:00' at end.
3. If user edits the clock within DST end ambiguous period (2:00AM to 2:59AM), on DST end day, say at 2:30AM, DST will become OFF immediately.
4. In case, when user goes ahead from Non-DST to DST period by changing Date; clock is moved one hour ahead (DST offset-1 hour). Similarly, clock come back 1 hour when user come back form DST to Non-DST period by changing Date.

MANUAL OVERRIDE & MODEDESCRIPTION:

Press MAN key to toggle between-



1. **AUTO:** As per set program.



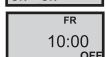
2. **ON AUTO:** Manual ON up to next ON event. (Not Applicable for Pulse)



3. **AUTO OFF:** Manual OFF up to next OFF event. (Not Applicable for Pulse)



4. **ON:** Manual ON (Continuous).



5. **OFF:** Manual OFF (Continuous).

PROGRAMMING DETAILS:

Program Description (Crono):

25ON/OFFPrograms																								
1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H	J	L	n	P	q	T	u	Y

Program Description (Pulse): With Common Pulse 'P'

Pulse	16 ONPrograms															
PL	0	1	2	3	4	5	6	7	8	9	A	b	C	d	E	F

Program Description (Pulse): With Individual Pulse


16 ONPrograms (As 'Prg/Pulse') with very 1st common pulse P																			
PL	0	PL	1	PL	2	PL	3	PL	4	PL	5	PL	6	PL	7	PL	8	PL	9

16 ONPrograms (As 'Prg/Pulse') with very 1st common pulse																								
PL	A	PL	b	PL	C	PL	d	PL	E	PL	F	PL												

How to Delete the Program?

1. To delete single program, go to respective program, press H+ until '--' hr comes & press M+ until '--' min comes on LCD. '--:--' displayed on LCD indicates empty program.
2. To delete/reset all the programs & settings, press RST key.

KEYPAD LOCK(🔒):

To lock the keypad, press the '

FREQUENTLY ASKED QUESTIONS:

Q. In event of power failure, do I lose all my programs?

A. No, because battery has a reserve of approx 6 yr at operating temperature. In absence of power, we can program the device as per requirement. However, during power fail, relay or LED will not operate but the relay status can be observed on LCD screen.

Q. How to use Manual override? When is it applicable?

A. Press MAN key to toggle to ON Auto, Auto OFF, ON or OFF mode. (Refer Mode Description). It is used if user requires an immediate ON or OFF of the relay.

Q. Can I select any day in the week as my weekly OFF?

A. Yes, when in PR mode, toggle by pressing D+ & MAN (-) or D+ key respectively to select individual holiday selection.

Q. What should I do to remove all programs & reset RTC?

A. Press RST key. All programs will get deleted, RTC will be reset to 00:00 & Default day as Monday.

Q. How do I change clock format from 12 h to 24 h?

A. Press & MAN key simultaneously to switch clock format from 12h to 24h & vice-versa.

Q. How does ON AUTO & AUTO OFF feature help?

A. ON AUTO / AUTO OFF feature bypass the current program & continues with the next program. ON AUTO mode returns back to AUTO mode at next programmed ON Time. AUTO OFF mode returns back to AUTO mode at next programmed OFF Time. In this way, one can override the relay to switch ON/OFF without affecting the further programs.

Crono™ PROGRAMMINGEXAMPLES :

Ex 1: Relay ON at 18.00 & OFF at 6.30 from Monday to Sunday (Program For Whole Week).

Steps:

Screen 1



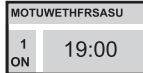
After power ON, screen 1 will be displayed

Screen 2



Set the current time(e.g.10:00), Day(e.g. Friday) & Relay mode(e.g. AUTO) as per CLOCK setting & mode function
 PR -> Press PR to enter in ON time program.

Screen 3



Press D+ stepwise for day selection as given below. Mon to Sun is default setting so no need to press any key

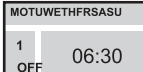
- 1) **MO TU WE TH FR SA SU** (All week days)
- 2) **MO TU WE TH FR SA** (Exclude Sunday)
- 3) **MO TU WE TH FR** (ExcludeWeek-ends)
- 4) **MO TU WE TH SU** (Exclude Friday & Saturday)
- 5) **SA SU**
- 6) **FR SA**] (OnlyWeekends)
- 7) **TU WE TH FR SA SU** (Excludeanysingleday)
- 8) **MO/TU/WE/TH/FR/SA/SU** (IncludeSingleday)
- 9) **MO WE FR**
- 10) **TU TH SA**] (ExcludeAlternateday)

Screen 4



Press H+ to edit & increment the hour as & if needed, use MAN (-) key to decrement hours. Set the time to 18:00.
 PR -> Press PR to switch in OFF time program.

Screen 5



Press H+ continuous to set the hour as 18:00. Use MAN (-) key to decrement hours

Example2: 3 Different programs for whole week

RELAY ON	RELAY OFF
Program 1: 20:45 (MO-FR)	06:30 (SA)
Program 2: 19:00 (SA)	06:30 (SU)
Program 3: 18:15 (SU)	06:30 (MO)

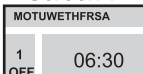
Steps: Set the clock as explained in screen 1 & 2 above

Screen 6



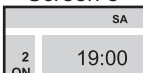
Press D+ 3 times to select MO-FR. Set ON time as 20:45 by using H+ & M+ key.
 PR -> Press PR to switch in OFF time.

Screen 7



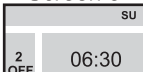
Press D+ once to select MO-SA. Set OFF time as 06:30 by using H+ & M+ key.
 PR -> Press PR to enter in 2nd program.

Screen 8



Press D+ continuous to select SA. Set ON time as 19:00 by using H+ & M+ key.
 PR -> Press PR to switch in OFF time.

Screen 9



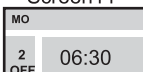
Press D+ continuous to select SU. Set OFF time as 06:30 by using H+ & M+ key.
 PR -> Press PR to enter in 3rd program.

Screen10



Press D+ continuous to select SU. Set ON time as 18:15 by using H+ & M+ key.
 PR -> Press PR to switch in OFF time.

Screen11



Press D+ continuous to select MO. Set OFF time as 06:30 by using H+ & M+ key.
 PR -> Press PRG once.

To save & exit the program, press **Ⓛ** key

Pulse: PROGRAMMING EXAMPLES

Ex. 1: Programming For Fixed Pulse Time

Screen12



Press M+ continuous to set any pulse duration from 1 to 59 s. E.g. 10s. This fixed pulse duration will be applicable to all 16 programs
 PR -> Press PR once to enter pulse duration.

Ex. 2: Programming For Individual Pulse Times

Screen13



In this case, user has to first set the ON time & then pulse duration for the same Press PRG two times to enter in ON time for program '0'. Set the ON time (20:00) & day with the help of H+/M+/D+ keys

Screen14



Set the pulse 0 (for program 0) for duration of 05 by pressing M+ key.
 PR -> Press PR once to enter pulse duration.

Screen15



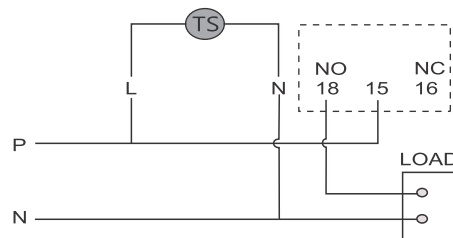
Set the ON time (21:00) & day with the help of H+/M+/D+ keys
 PR -> Press PR once to enter in program 1

Screen16

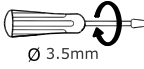



Set pulse 1 (for program 1) for duration of 07 by pressing M+ key.
 PR -> Press PR once to enter pulse duration

CONNECTION DIAGRAM:



TERMINAL DETAILS:

 Ø 3.5mm	0.54 N.m(6lb.in)
	1 x 2.5mm Solid wire
AWG	1 x 24 to 12

Use Copper Conductors Only, 60/75°C.

TECHNICAL SPECIFICATIONS:

	Crono			Pulse		
	67DDT0	6GHDT0	69HDT0	67DDT9	6GHDT9	69HDT9
Supply Characteristics:						
Supply Voltage (Φ)	110 to 240 VAC	24 VDC	12 VDC	110 to 240 VAC	24 VDC	12 VDC
Supply Variation	-20% to +10% (of Φ)					
Power Consumption (Max.)	4 VA	1 VA	1 VA	4 VA	1 VA	1 VA
Operating Frequency	50/60 Hz	N.A	N.A	50/60 Hz	N.A	N.A
Battery Backup	Approx. 6 years running reserve at 20 °C ambient temperature.					
Functional Characteristics:						
Display	3 Line Text LCD					
LED Indications (Red)	Relay ON: LED ON, Relay OFF: LED OFF					
Number of Programs	25 ON/OFF			16 ON		
Hour Setting	00-23 for 24h clock & 00-12 for 12h clock mode					
Clock Resolution (Minimum)	1 minute					
Pulse Duration	N.A			01-59 sec.		
Clock Mode	Either 12h (AM/PM) or 24 h Clock					
Reset	Resets all programs and clock					
Day Setting	Monday to Sunday					
Day Selection	Monday to Sunday, Monday to Saturday, Monday to Friday, Friday to Saturday, Saturday to Sunday, Individual Holiday, Individual day, Alternate week-day					
Clock Accuracy	+/- 2 s/day max. over the operating temp. range					
Number of keys	6 keys with 1 recessed reset button					
Relay Output Characteristics:						
Contact Arrangement	1 C/O (SPDT)					
Contact Rating	16 A (NO) & 5 A (NC) @ 240 VAC/24 VDC (Resistive)					
Utilization Category (AC-15) at +85° C	Ue Rated Voltage (V): 250 (Inductive @ Cos Ø = 0.6) Ie Rated Current (A): 6.0					
Utilization Category (DC-13) at +85° C	Ue Rated Voltage (V): 24 / 250 Ie Rated Current (A): 2.0 / 0.2					
Incandescent Lamps	1000 W					
Contact Material	AgSnO ²					
Minimum Switching Load	40 mA at 24 VDC					
Electrical Life	30,000 cycles @ rated load					
Minimum Switching Time	1 min			1 sec.		
Environmental Characteristics:						
Operating Temperature	-10° C to +55° C					
Storage Temperature	-10° C to +60° C *					
Humidity	5 to 95% Rh (Without condensation)					
Maximum Operating Altitude	2000 m					
Pollution Degree	2					
Degree of Protection	IP-20 for Terminals; IP-40 for Enclosure					
Enclosure	Flame Retardant UL-94V0					
Other Characteristics:						
Mounting	Base / Din Rail					
Weight (Un-packed)	110 g max.					
Operating Position	Any					
EMI/EMC Compliance:						
Harmonic Current Emissions	IEC 61000-3-2 Class A					
Voltage Flicker & Fluctuation	IEC 61000-3-3 Class A					
ESD	IEC 61000-4-2 Level II					
Radiated Susceptibility	IEC 61000-4-3 Level III					
Electrical Fast Transients	IEC 61000-4-4 Level IV					
Surge	IEC 61000-4-5 Level IV (For 67DDT0/T9) , Level I (For 6GHDT0/T9,69HDT0/T9)					
Conducted Susceptibility	IEC 61000-4-6 Level III					
Power Frequency Magnetic Field	IEC 61000-4-8 Class 4					
Voltage Dips & Interruption (AC)	IEC 61000-4-11 Class B					
Voltage Dips & Interruption (DC)	IEC 61000-4-29 Class B					
Conducted Emission	CISPR 11 Class B					
Radiated Emission	CISPR 11 Class A					
Safety Compliance:						
Test Voltage (Input & Output)	IEC 60947-5-1 2.5 kV					
Impulse Voltage (Input & Output)	IEC 60947-5-1 Level IV					
Single fault	IEC 61010-1					
Insulation Resistance	UL 508 >50 kohm					
Leakage Current	UL 508 <3.5 mA					

	Crono			Pulse		
	67DDT0	6GHDT0	69HDT0	67DDT9	6GHDT9	69HDT9
Environmental Compliance:						
Cold Heat	IEC 60068-2-1					
Dry Heat	IEC 60068-2-2					
Vibration	IEC 60068-2-6 5 g					
Repetitive Shock	IEC 60068-2-27 40 g, 6 ms					
Non-repetitive Shock	IEC 60068-2-27 30 g, 15 ms					

E-Waste
Regulatory
notice:
Kindly treat,
recycle or
dispose of this
equipment in an
environmentally sound
manner after End of Life, as
per WEEE
(Waste Electrical and
Electronic Equipment)
regulations;
or hand it over to General
Industrial Controls Pvt. Ltd,
through website
[https://www.gicindia.com/
get-in-touch/](https://www.gicindia.com/get-in-touch/)

