

# Astronomical Time Switch *Astro*<sup>®</sup>

- Dynamic and Accurate control based on Astronomical Mathematics
- Sunrise / Sunset or Twilight rise / set trigger
- Yearly programming with Season mode, DST, Offset, OFF hours, Weekly Off features
- Protection against Under Voltage and Over Voltage
- Alternate Mode with Auto Load Changeover feature
- Active Phase selection
- Manual override facility
- Single phase and Three phase versions
- Modbus Communication
- User friendly software for device configuration






## Ordering Information

Cat. No.	Description
T2DDT0	110 - 240 VAC, Astro with Two Independent Channel Output, 2 NO
T3DDT0	110 - 240 VAC, Astro with Three Independent Channel Output, 3 NO
TGDDT6	Windows based Application software for Astro
GFDNN1	USB Interface Cable
GFDNN2S	RS 232 Serial Interface Cable
GFDNN3M	Memory Card

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Cat. No.	T2DDT0	T3DDT0
<b>Parameters</b>		
Supply Voltage (ϕ)	110 - 240 VAC	110 - 240 VAC (3 Phase, 4 Wire)
Supply Variation	-20 % to +10% (of ϕ )	
Frequency	50/60 Hz	
Programming	Based on Latitude/Longitude precise to the minute with time-zone	
Trigger Modes	Sunrise/Sunset or Twilight Rise/Set	
Offset	1 min to 10 hr 59 min (Programmable)	
OFF Hours	Programmable	
Weekly Off	User Defined	
Alternate Mode	Yes	
Seasonal Mode	User Defined	
DST	User Defined	
Number of Operating Modes	3	
Mode Description	<ul style="list-style-type: none"> <li>• AUTO - As per user defined program settings</li> <li>• ON AUTO - Instant ON up to next Auto Event</li> <li>• AUTO OFF - Instant OFF up to next Auto Event</li> </ul>	
Minimum Switching Time	1 min (1s for Pulse)	
Display	Backlit LCD	
Under Voltage Trip Level	N A	0 - 220 V (Settable)
Over Voltage Trip Level	N A	130 - 330 V (Settable)
Trip Time	N A	5 - 16 sec
Recovery Time	N A	1 - 4 sec
Clock Accuracy	± 1 s/day max. over the Operating Temperature range	
Power Reserve from Factory	6 years	
Output	Relay Output	2 NO
	Contact Rating	8A @ 240 VAC & 5A @ 30 VDC (Resistive)
	Electrical Life	1x10 <sup>6</sup>
	Mechanical Life	1x10 <sup>7</sup>
Utilization Category	AC - 15	Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A
	DC - 13	Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.11 A
Operating Temperature	-10°C to + 50°C	
Storage Temperature	-10°C to + 60°C	
Humidity (Non Condensing)	95% (Rh)	
Enclosure	Flame Retardant UL94-V0	
Dimension (W x H x D) (in mm)	72 X 90 X 65	
Weight (unpacked)	190 g	208 g
Mounting	Base / DIN rail	
Certification	  	
Degree of Protection	IP 20 for Terminals, IP 40 for Enclosure	

## EMI / EMC

Harmonic Current Emissions	IEC 61000-3-2
ESD	IEC 61000-4-2
Radiated Susceptibility	IEC 61000-4-3
Electrical Fast Transients	IEC 61000-4-4
Surges	IEC 61000-4-5
Conducted Susceptibility	IEC 61000-4-6
Voltage Dips & Interruptions (AC)	IEC 61000-4-11
Conducted Emission	CISPR 14-1
Radiated Emission	CISPR 14-1

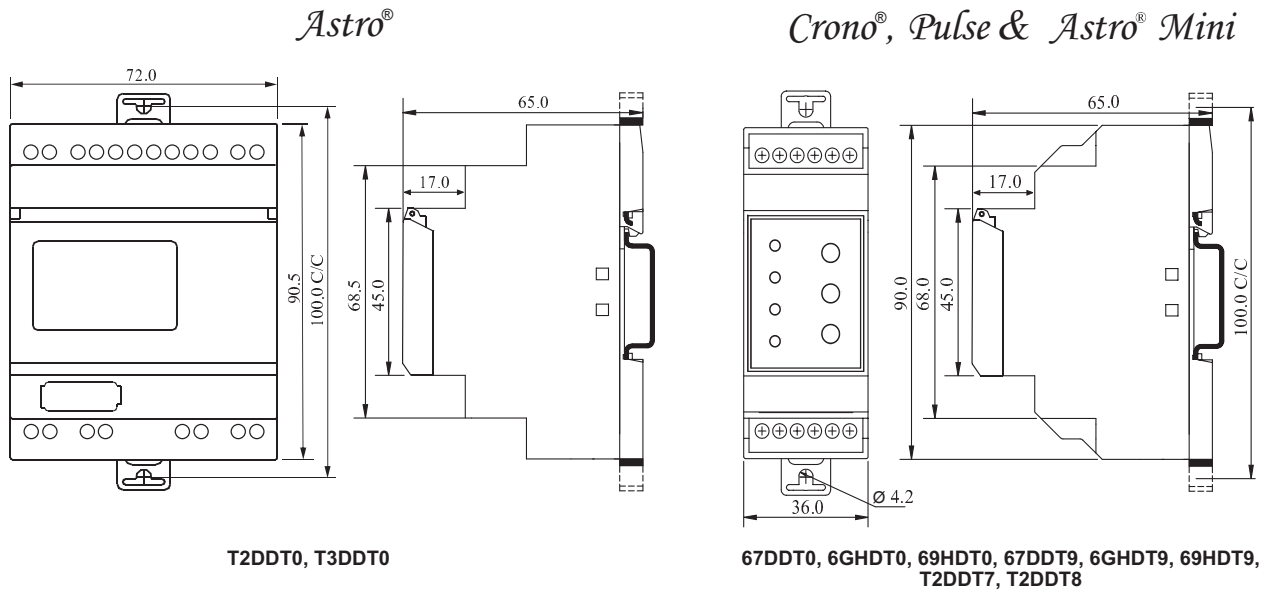
## Environmental

Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6
Repetitive Shock	IEC 60068-2-27
Non-Repetitive Shock	IEC 60068-2-27

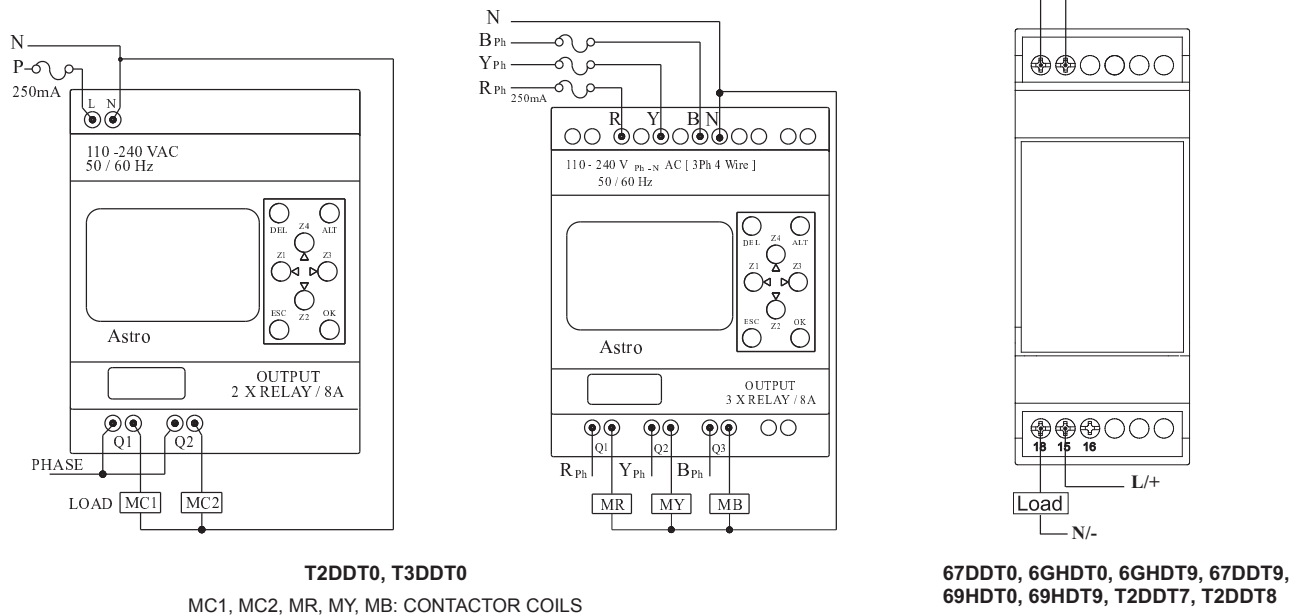
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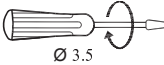

## MOUNTING DIMENSION (mm)



## CONNECTION DIAGRAM



## TERMINAL TORQUE & CAPACITY

	0.54 N.m (6 Lb.in)
	1 x 2.5 mm <sup>2</sup> Solid Wire/Stranded
AWG	1 x 24 to 12

T2DDT0, T3DDT0, T2DDT7, T2DDT8, 67DDT0, 67DDT9