TIME SWITCHES

Analog Time Switch

Digital Time Switch Weekly

Digital Time Switch Astronomical

Analog Time Switch

- Modular construction
- Inbuilt over-ride facility
- High switching capacity
- Tamper proof sealing
- Daily/Weekly programming

Ordering Information

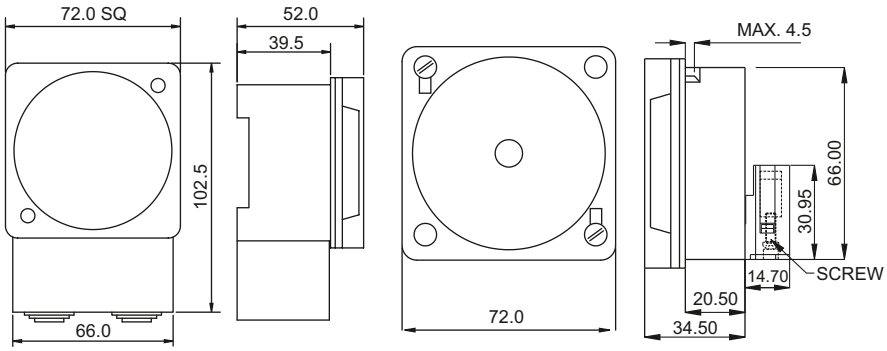
Cat. No.	Description
J648B1	FM/1 QT 240 VAC, Daily Dial, Base / DIN Mounting*
J848B1	FM/1 QW 240 VAC, Weekly Dial, Base / DIN Mounting*
J638B1	FM/1 QT 110 VAC, Daily Dial, Base / DIN Mounting*
J838B1	FM/1 QW 110 VAC, Weekly Dial, Base / DIN Mounting*
S648B1	FM/1 SYNCHRON 240V AC, Daily, Base Mounting

Note : For Flush Mounting model and Module, replace B by F and M in Cat. No. respectively.

Analog Time Switch

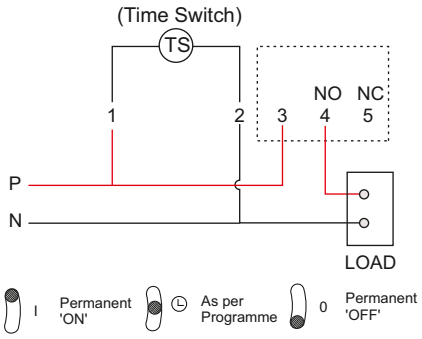
Cat. No.		J648B1
Parameters		
Supply Voltage ⏚		240 VAC
Frequency		50/60 Hz
Power Consumption (Max.)		2 VA
Accuracy		± 1.5 s/day at 20°C
Relay Output		1 C/O
Contact Rating	Resistive	16A @ 250 VAC, 0.25A @ 220VDC
	Inductive (cosø = 0.6)	8A @ 250 VAC, 0.1A @ 220 VDC
	Incandescent Lamp	1350 W
Shortest Switching Time	Daily	15min
	Weekly	2h
Power reserve		150h
Memory locations		N. A.
Storage Temperature		- 20°C to + 55°C
Manual Over-ride		Provided
Mounting		Flush, Base / DIN rail
Weight (unpacked)		185 g
Certification		CE
Degree of Protection		IP50 for front panel

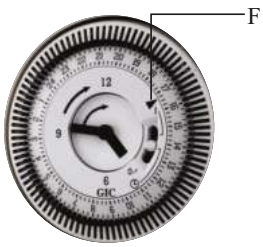
MOUNTING DIMENSION (mm)



Base Mounting Flush Mounting

CONNECTION DIAGRAM





TIME SETTING:

Rotate the switching Dial in clockwise direction until the current time (day / time incase of weekly model) is almost opposite to the marking arrow F. For fine adjustment rotate the minute hand in the clockwise direction until the clock shows the current time.

PROGRAMMING:

Required Switch ON time is set on the Switching Dial by radially pulling outwards the corresponding black segments. Each segment on daily dial corresponds to 15 mins. & on weekly Dial corresponds to 2 hours.

TERMINAL TORQUE & CAPACITY

Ø 3.5 mm....4.0mm	0.60 N.m (6 Lb.in)
	1 x 4.0 mm^2 Solid/Stranded Wire
AWG	1 x 20 to 10

*Products available for sale only in selected Countries

Digital Time Switch Weekly

- LCD Display with Green backlight
- Precise time Programming for Daily / Weekly / Pulse switching
- Bar graph showing Daily program
- 50 ON/OFF programs, 10 Holiday Programs
- Settable DST feature & Password protection
- 16A Single and Dual relay outputs
- Two Separate Relay outputs with independent Programming
- 12/24 Hour Display Format
- 6 Years Battery reserve
- Simple reset & Manual Override
- Service / Load hours measurement
- Compliant with IEC 60730-2-7

Ordering Information

Cat. No.	Description
WT1SCDS	240 VAC, Digital Time Switch - Crono Pro, 1 C/O
WT2DCDS	110-240 VAC, Digital Time Switch - Crono Pro, 2 C/O
67DDT0	110 - 240 VAC, Digital Time Switch - Crono, 1 C/O
6GHDT0	24 VDC, Digital Time Switch - Crono, 1 C/O
69HDT0	12 VDC, Digital Time Switch - Crono, 1 C/O
67DDT9	110 - 240 VAC, Digital Time Switch - Pulse, 1 C/O
6GHDT9	24 VDC, Digital Time Switch - Pulse, 1 C/O
69HDT9	12 VDC, Digital Time Switch - Pulse, 1 C/O

Digital Time Switch Weekly

Cat. No.	WT1SCDS (Crono® Pro)	67DDT0 (Crono®)
Parameters		
Supply Voltage	240 VAC	110 - 240 VAC
Supply Variation	-20 % to +10%	
Frequency	50/60 Hz	
Power Consumption (Max.)	6 VA	4 VA
Number of Programs	50 Each channel + 10 for Holiday	25 ON/OFF Programs
Minimum Switching Time	1 sec	1 min
Pulse Duration	1 - 59 sec	N A
Number of Operating Modes	5	
Description of Modes	• AUTO - Program Run • ON AUTO - Instant ON up to next Auto Event • AUTO OFF - Instant OFF up to next Auto Event • ON - Continuous ON • OFF - Continuous OFF	
Display	LCD with backlight	
DST	Programmable	
Clock Accuracy	± 0.5 s/day max. over the Operating Temperature range	± 2 s/day max. over the Operating Temperature range
Power Reserve from Factory	6 Years	
Output – Relay Output	1 C/O	
Output – Contact Rating	16 A (NO) & 16 A (NC) @ 240 VAC/24 VDC (Resistive)	16A (For 'NO') & 5A (For 'NC') @ 240 VAC / 24 VDC (Resistive), Inductive (cos ø = 0.6):- 6 A @ 250 VAC
Output – Electrical Life	$5x10^4$	$3x10^4$
Output – Mechanical Life	$5x10^4$	
Utilization Category	Max switching : 16 A (NO & NC) at 250 VAC, Cos Ö = 1	AC - 15 Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A
	Min Switching: 10 A (NO & NC) at 250 VAC, Cos Ö = 0.6	DC - 13 Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.11 A
Operating Temperature	-10°C to + 55°C	-10°C to + 55°C
Storage Temperature	-20°C to + 70°C	-10°C to + 60°C
Humidity (Non Condensing)	95% (Rh)	
LED Indication	Red LED → Relay ON	
Enclosure	Flame Retardant UL94-V0	
Dimension (W x H x D) (in mm)	36 X 90 X 65	
Weight (unpacked) Approx.	110 g	
Mounting	DIN rail	Base / DIN rail
Certification	CE, cULus LISTED, RoHS Compliant	
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

Applications	Ideal for Lighting applications like street lighting, Advertising Displays, Glowsigns. Also can be used for Air conditioners / Coolers, Geysers, conveyors, pumps etc.	Ideal for Siren, Bell applications

Digital Time Switch Astronomical

- LCD Display with Green backlight
- Precise time programming for Astro / Daily / Weekly / Pulse / Cyclic switching
- Latitude / Longitude Database for 45 Countries and 280 cities
- Settable Latitude / Longitude precise to the minute with time zone
- Sunrise/Sunset or Twilight rise/set trigger modes
- Ease of Day selection in Weekly programming
- 50 ON/OFF programs, 10 Holiday Programs
- Settable DST feature & Password protection
- 16A Single and Dual relay outputs
- Two Separate Relay outputs with independent Programming
- 12/24 Hour Display Format
- 6 Years Battery reserve
- Simple Reset & Manual Override
- Service/Load hours measurement

Ordering Information

Cat. No.	Description
AT1SCDS	240 VAC, Digital Time Switch - Astro Pro+, 1 C/O
AT2DCDS	110-240 VAC, Digital Time Switch - Astro Pro+, 2 C/O
AS1SCDS	240 VAC, Digital Time Switch - Astro Pro, 1 C/O
AS2DCDS	110-240 VAC, Digital Time Switch - Astro Pro, 2 C/O
T2DDT7	110 - 240 VAC, Digital Time Switch - Astro Mini, 1 C/O
T2DDT8	110 - 240 VAC, Digital Time Switch - Astro Mini, 1 C/O (With Pre-defined City codes)

Digital Time Switch Astronomical

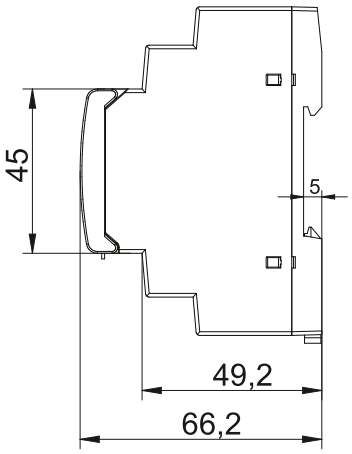
Cat. No.	AT1SCDS (Astro Pro+)	AS1SCDS (Astro Pro)	T2DDT7 (Astro Mini)
Parameters			
Supply Voltage (⏚)	240 VAC		110 - 240 VAC
Supply Variation	-20 % to +10% (of ⏚)		
Frequency	50/60 Hz		
Power Consumption	6 VA		
Programming	Latitude / Longitude Database for 45 Countries and 280 cities		Based on Latitude/Longitude precise to the minute with time-zone
	Precise time Programming for Daily / Weekly / Pulse / Cyclic switching	NA	NA
Number of Programs	50 Each channel + 10 for Holiday	NA	NA
Trigger Modes	Sunrise/Sunset or Twilight Rise/Set		
Offset	00 to 99 minutes (Programmable)		
OFF Hours	Programmable		
Weekly Off	User Defined		
DST	User Defined		
Number of Operating Modes	5		3
Description of Modes	• AUTO - As per user defined program settings • ON AUTO - Instant ON up to next Auto Event • AUTO OFF - Instant OFF up to next Auto Event • ON - Continuous ON • OFF - Continuous OFF		• AUTO - As per user defined program settings • ON AUTO - Instant ON up to next Auto Event • AUTO OFF - Instant OFF up to next Auto Event
Minimum Switching Time	1 min (1s for Pulse)	1 min	1 min
Display	LCD with backlight		3 Lines Text LCD
Clock Accuracy	± 0.5 s/day max. over the Operating Temperature range		± 2 s/day max. over the Operating Temperature range
Power Reserve from Factory	6 Years		
Output – Relay Output	1 C/O		
Output – Contact Rating	16 A (NO) & 16 A (NC) @ 240 VAC/24 VDC (Resistive)		16A (NO) & 5A (NC) @ 240 VAC / 24 VDC (Resistive)
Output – Electrical Life	$5x10^4$		$3x10^4$
Output – Mechanical Life	$5x10^4$		$5x10^4$
Utilization Category – AC - 15	16 A (NO & NC) at 250 VAC, Cos Ø = 1		Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A
Utilization Category – DC - 13	10 A (NO & NC) at 250 VAC, Cos Ø = 0.6		Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.11 A
Operating Temperature Storage Temperature	-15°C to + 55°C -20°C to + 70°C		-10 C to + 55 C -10 C to + 60 C
Humidity (Non Condensing)	95% (Rh)		
LED Indication	Indication on LCD		Red LED → Relay ON
Enclosure	Flame Retardant UL94-V0		
Dimension (W x H x D) (in mm)	36 X 90 X 65		
Weight (unpacked)	110 g		
Mounting	DIN rail		Base / DIN rail
Certification	CE RoHS Compliant		
Degree of Protection	IP 20 for Terminals, IP 40 for Enclosure		

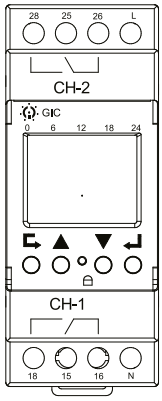
EMI / EMC		Environmental	
Harmonic Current Emissions	IEC 61000-3-2	Cold Heat	IEC 60068-2-1
ESD	IEC 61000-4-2	Dry Heat	IEC 60068-2-2
Radiated Susceptibility	IEC 61000-4-3	Vibration	IEC 60068-2-6
Electrical Fast Transients	IEC 61000-4-4	Repetitive Shock	IEC 60068-2-27
Surges	IEC 61000-4-5	Non-Repetitive Shock	IEC 60068-2-27
Conducted Susceptibility	IEC 61000-4-6		
Voltage Dips & Interruptions (AC)	IEC 61000-4-11		
Conducted Emission	CISPR 14-1		
Radiated Emission	CISPR 14-1		

Applications	Street lighting applications in cities, industrial townships, university campuses Lighting automation in sports complex, hotels, parks & other outdoor applications.

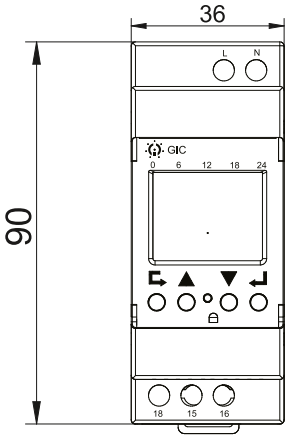
Digital Time Switch *Crono® Pro* & *Astro® Pro*

MOUNTING DIMENSION (mm)





DOUBLE CHANNEL

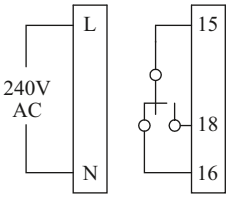


SINGLE CHANNEL

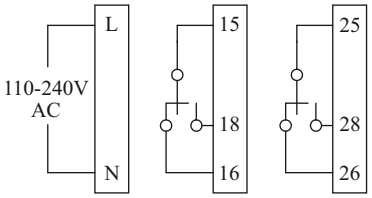
CONNECTION DIAGRAM

Digital Time Switch *Crono® Pro*

A) 1 CH Device

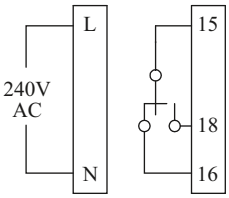


B) 2 CH Device

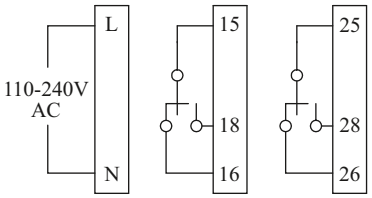


Digital Time Switch *Astro® Pro*

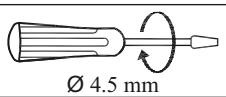
A) 1 CH Device



B) 2 CH Device



TERMINAL TORQUE & CAPACITY

 Ø 4.5 mm	0.5 N.m (4.4 Lb.in)
	1 x 4.0 mm^2 Solid/Stranded Wire
AWG	26 to 10

Digital Time Switch Astronomical

- 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

Digital Time Switch Astronomical

Cat. No.			T2DDT0	T3DDT0
Parameters				
Supply Voltage (⏚)			110 - 240 VAC	110 - 240 VAC (3 Phase, 4 Wire)
Supply Variation			-20 % to +10% (of ⏚)	
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 23 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			• AUTO - As per user defined program settings • ON AUTO - Instant ON up to next Auto Event • AUTO OFF - Instant OFF up to next Auto Event	
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 for UV/OV			N A	2 - 5 sec
Recovery Time			N A	10 - 20 sec
Clock Accuracy			± 1 s/day max. over the Operating Temperature range	
Power Reserve from Factory			6 years	
Output	Relay Output		2 NO	3 NO
	Contact Rating		8A @ 240 VAC & 5A @ 30 VDC (Resistive)	
	Electrical Life		$1x10^5$	
	Mechanical Life		$1x10^7$	
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 Storage Temperature			-10°C to + 50°C -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 67	
Weight (unpacked)			190 g	208 g
Mounting			Base / DIN rail	
Certification			CE cULus LISTED RoHS Compliant	
Degree of Protection			IP 20 for Terminals, IP 40 for Enclosure	

EMI / EMC

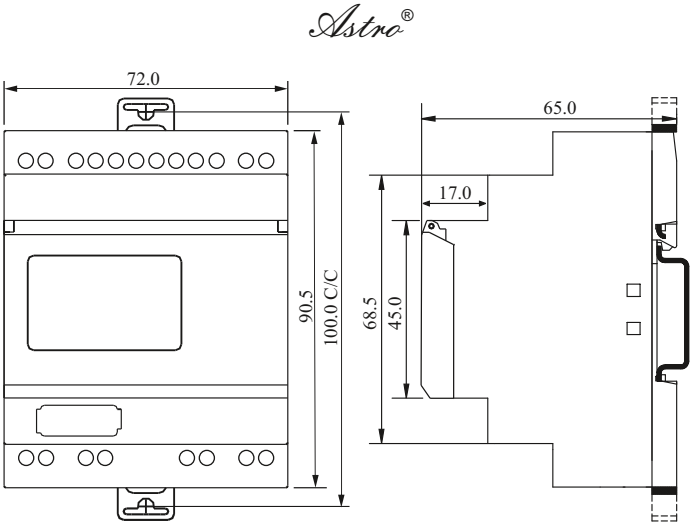
Harmonic Current Emissions	IEC 61000-3-2
ESD	IEC 61000-4-2
Radiated Susceptibility	IEC 61000-4-3
Electrical Fast Transients	IEC 61000-4-4
Surges	IEC 61000-4-5
Conducted Susceptibility	IEC 61000-4-6
Voltage Dips & Interruptions (AC)	IEC 61000-4-11
Conducted Emission	CISPR 14-1
Radiated Emission	CISPR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

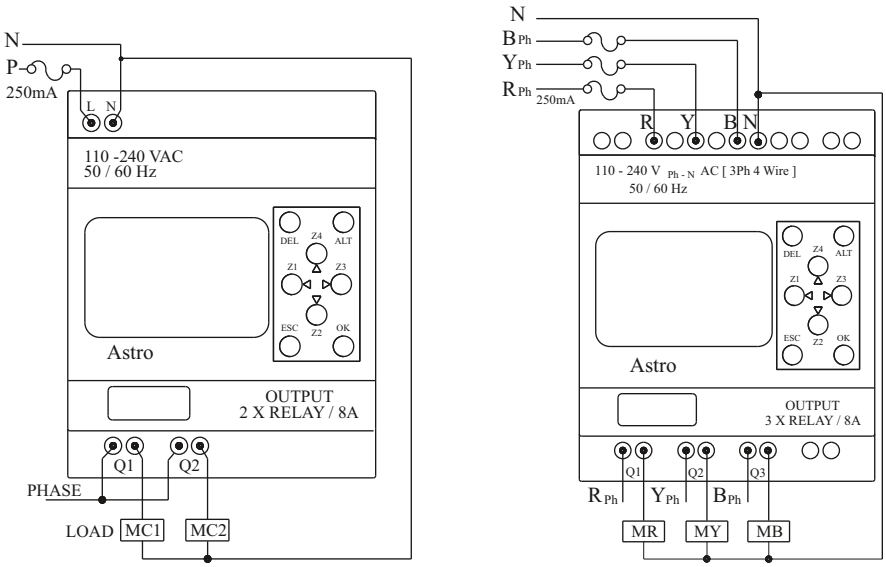
Digital Time Switch Astronomical

MOUNTING DIMENSION (mm)



T2DDT0, T3DDT0

CONNECTION DIAGRAM



T2DDT0, T3DDT0

MC1, MC2, MR, MY, MB: CONTACTOR COILS

TERMINAL TORQUE & CAPACITY

Ø 3.5	0.54 N.m (6 Lb.in)
	1 x 2.5 mm^2 Solid Wire/Stranded
AWG	1 x 24 to 12

T2DDT0, T3DDT0