## Astronomical Time Switch Astro® Mini

- · Astronomical Time Switch in 35mm
- Latitude/Longitude precise to the minute with time zone
- Sunrise/Sunset or Twilight rise/set trigger modes
- Ease of Programming & Navigation

- DST, Offset, OFF Hours, Weekly OFF features
- 12/24 Hour display format
- 6 years Battery reserve
- Easy Manual Override & Keypad Lock feature
- · Ideal for Outdoor & Street lighting applications



### **Ordering Information**

Cat. No. Description

T2DDT7 110 - 240 VAC, Astro Mini, 1 C/O

T2DDT8 110 - 240 VAC, Astro Mini, 1 C/O (With Pre-defined City codes)

# Astronomical Time Switch Astro® Mini



| OutputElectrical Life $3x10^4$ Mechanical Life $5x10^4$ Utilization CategoryAC - 15<br>DC - 13Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 AOperating Temperature-10°C to + 55°CStorage Temperature-10°C to + 60°CHumidity (Non Condensing)95% (Rh)LED IndicationRed LED → Relay ONEnclosureFlame Retardant UL94-V0Dimension (W x H x D) (in mm)36 X 90 X 65Weight (unpacked)110 gMountingBase / DIN rail  | Cat. No.                   | T2DDT7  |  |  |
|--|----------------------------|---|--|--|
| Supply Variation   | Parameters                 |   |  |  |
| Frequency  | Supply Voltage (中)         | 110 - 240 VAC   |  |  |
| Power Consumption Programming Based on Latitude/Longitude precise to the minute with time-zone  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 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  Minimum Switching Time 1 min Display 3 Lines Text LCD Clock Accuracy Power Reserve from Factory Relay Output Contact Rating Uchyot Contact Rating Defactical Life Mechanical Life Mechanical Life Mechanical Life St10°  Utilization Category Corporating Temperature Lore To Rated Voltage (Ue): 120/240 V, Rated Current (le): 3/1.5 A Rated Voltage (Ue): 24/125/250 V, Rated Current (le): 2.0/0.22/0.11 A  Operating Temperature -10°C to + 55°C Humidity (Non Condensing) LED Indication Red LED → Relay ON Enclosure Flame Retardant UL94-V0 Dimension (W x H x D) (in mm) Weight (unpacked) Mounting Base / DIN rail   | Supply Variation           | -20 % to +10% (of 中)  |  |  |
| Programming Based on Latitude/Longitude precise to the minute with time-zone 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 3  Description of Modes ONAUTO Instant ON up to next Auto Event  AUTO OFF Instant OFF up to next Auto Event  AUTO OFF Instant ON up to next Auto Event  AUTO OFF Instant ON up to next Auto Event  AUTO OFF Instant ON up to next Auto Event  AUTO OFF Instant ON up to next Auto Event  AUTO OFF Instant ON up to next Auto Event  AUTO OFF Instant ON up to next Auto Event  AUTO OFF Instant ON up to next Auto Event  AUTO OFF Instant ON up to next Auto Event  AUTO OFF Instant ON up to next Auto Event  AUTO OFF Ins                    | Frequency                  | 50/60 Hz  |  |  |
| 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         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           Minimum Switching Time         1 min           Display         3 Lines Text LCD           Clock Accuracy         ± 2 s/day max. over the Operating Temperature range           Power Reserve from Factory         6 Years           Relay Output         1 C/O           Output         1 C/O           Contact Rating Electrical Life Mechanical Life         5x10 <sup>4</sup> Mechanical Life         5x10 <sup>4</sup> Utilization Category Electrical Life Mechanical Life         5x10 <sup>4</sup> Utilization Category Electrical Life Mechanical Life         5x10 <sup>4</sup> Operating Temperature Storage Temperature         -10°C to + 55°C           Storage Temperature         -10°C to + 55°C           Humidity (Non Condensing)         95% (Rh)           LED Indication         Red LED → Relay ON           Flame Retardant U  | Power Consumption          | 6 VA  |  |  |
| Offset         00 to 99 minutes (Programmable)           OFF Hours         Programmable           Weekly Off         User Defined           DST         User Defined           Number of Operating Modes         3           Description of Modes         • AUTO - As per user defined program settings • ON AUTO - Instant ON up to next Auto Event           Minimum Switching Time         1 min           Display         3 Lines Text LCD           Clock Accuracy         ± 2 s/day max. over the Operating Temperature range           Power Reserve from Factory         6 Years           Relay Output         1 C/O           Output         1 CA           Mechanical Life         3x10'           Mechanical Life         5x10'           Utilization Category         AC - 15 DC - 13         Rated Voltage (Ue): 120/240 V, Rated Current (le): 3/1.5 A           Utilization Temperature         -10°C to + 55°C           Storage Temperature         -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)         110 g           Mounting         <   | Programming                | Based on Latitude/Longitude precise to the minute with time-zone  |  |  |
| OFF Hours         Programmable           Weekly Off         User Defined           DST         User Defined           Number of Operating Modes         3           Description of Modes         • AUTO - As per user defined program settings • ON AUTO - Instant ON up to next Auto Event           Minimum Switching Time         1 min           Display         3 Lines Text LCD           Clock Accuracy         ± 2 s/day max, over the Operating Temperature range           Power Reserve from Factory         6 Years           Relay Output         1 C/O           Contact Rating         16A (For 'NO') & 5A (For 'NC') @ 240 VAC / 24 VDC (Resistive), Inductive (cos ø = 0.6) :- 6 A @ 250 (accuracy)           Utilization Category         AC - 15 DC - 13 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 + 55°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)         110 g           Mounting         Base / DIN rail   | Trigger Modes              |   |  |  |
| Veekly Off   | Offset                     | 00 to 99 minutes (Programmable)   |  |  |
| DST User Defined  Number of Operating Modes  Description of Modes  | OFF Hours                  | Programmable  |  |  |
| Number of Operating Modes       3         Description of Modes       • AUTO - As per user defined program settings • ON AUTO - Instant ON up to next Auto Event         Minimum Switching Time       1 min         Display       3 Lines Text LCD         Clock Accuracy       ± 2 s/day max. over the Operating Temperature range         Power Reserve from Factory       6 Years         Relay Output       1 C/O         Contact Rating       16A (For 'NO') & 5A (For 'NC') @ 240 VAC / 24 VDC (Resistive), Inductive (cos ø = 0.6) :- 6 A @ 250 (Resistive)         Electrical Life       3x10°         Mechanical Life       5x10°         Utilization Category       AC - 15 (DC - 13)       Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A         Utilization Temperature       -10°C to + 55°C         Storage Temperature       -10°C to + 55°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)       110 g         Mounting       Base / DIN rail   | Weekly Off                 | User Defined  |  |  |
| Pescription 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  Minimum Switching Time 1 min Display 3 Lines Text LCD Clock Accuracy ± 2 s/day max. over the Operating Temperature range  Power Reserve from Factory 6 Years Relay Output 1 C/O Contact Rating 16A (For 'NO') & 5A (For 'NC') @ 240 VAC / 24 VDC (Resistive), Inductive (cos ø = 0.6):- 6A @ 25 Per Contact Rating Electrical Life 3x10 <sup>4</sup> Mechanical Life 5x10 <sup>4</sup> Utilization Category AC - 15 Acted Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.11 A  Operating Temperature -10°C to +55°C Storage Temperature -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) 110 g Mounting Base / DIN rail   | DST                        | User Defined  |  |  |
| Instant ON up to next Auto Event AUTO OFF - Instant ON up to next Auto Event    AUTO OFF - Instant OFF up to next Auto Event   | Number of Operating Modes  | 3   |  |  |
| Display  Clock Accuracy  Power Reserve from Factory  Relay Output  Contact Rating  Display  AC - 15  Correct Torrect Storage Temperature  Storage Temperature  Condition  Condition  Contact Rating  Display  AC - 15  Contact Rating  Display  AC - 15  Contact Rating  Ac - 15  Rated Voltage (Ue): 120/240 V, Rated Current (le): 3/1.5 A  Rated Voltage (Ue): 24/125/250 V, Rated Current (le): 2.0/0.22/0.11 A  Coperating Temperature  Storage Temperature  -10°C to + 55°C  -10°C to + 60°C  Humidity (Non Condensing)  95% (Rh)  LED Indication  Red LED $\rightarrow$ Relay ON  Flame Retardant UL94-V0  Dimension (W x H x D) (in mm)  36 X 90 X 65  Weight (unpacked)  Mounting  Base / DIN rail   | Description of Modes       | ON AUTO - Instant ON up to next Auto Event  |  |  |
| Clock Accuracy $\pm 2$ s/day max. over the Operating Temperature range  Power Reserve from Factory 6 Years  Relay Output 1 C/O  Output $E = 0$ 16A (For 'NO') & 5A (For 'NC') @ 240 VAC / 24 VDC (Resistive), Inductive (cos $\emptyset = 0.6$ ) :- 6 A @ 250 $E = 0$ 250 $E = 0$ 16A (For 'NO') & 5A (For 'NC') @ 240 VAC / 24 VDC (Resistive), Inductive (cos $\emptyset = 0.6$ ) :- 6 A @ 250 $E = 0$ 250 | Minimum Switching Time     | 1 min   |  |  |
| Power Reserve from Factory  Relay Output  Output  Relay Output  Output  Output  Electrical Life  Mechanical Life  To Contact Rating  Electrical Life  To Striph  AC - 15  Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.11 A  Operating Temperature  Storage Temperature  Flame Retardant UL94-V0  Dimension (W x H x D) (in mm)  To Contact Rating  AC - 15  Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.11 A  Poperating Temperature  Flame Retardant UL94-V0  Dimension (W x H x D) (in mm)  To Contact Rating  AC - 15  Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.11 A  Poperating Temperature  Flame Retardant UL94-V0  Dimension (W x H x D) (in mm)  To Contact Rating  AC - 15  Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 3/1.5 A  Rated Voltage (Ue): 20/0.22/0.11 A  Poperating Temperature  Flame Retardant UL94-V0  Dimension (W x H x D) (in mm)  To Contact Rating  AC - 15  Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 3/1.5 A  Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Poperating Temperature  Flame Retardant UL94-V0  Dimension (W x H x D) (in mm)  To Contact Rating (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Poperating Temperature  Flame Retardant UL94-V0  Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Flame Retardant UL94-V0  Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Flame Retardant UL94-V0  Rated Voltage (Ue): 120/240 V, Rated Current (                    | Display                    | 3 Lines Text LCD  |  |  |
|  | Clock Accuracy             | ± 2 s/day max. over the Operating Temperature range   |  |  |
| Output $Output$ $Out$                   | Power Reserve from Factory | 6 Years   |  |  |
| Cutput<br>Electrical Life $3x10^4$<br>Mechanical Life $5x10^4$ Utilization CategoryAC - 15<br>DC - 13Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A<br>Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.11 AOperating Temperature<br>Storage Temperature-10°C to + 55°C<br>-10°C to + 60°CHumidity (Non Condensing)95% (Rh)LED IndicationRed LED → Relay ONEnclosureFlame Retardant UL94-V0Dimension (W x H x D) (in mm)36 X 90 X 65Weight (unpacked)110 gMountingBase / DIN rail  | Relay Output               | 1 C/O   |  |  |
| Electrical Life $3x10^\circ$ Mechanical Life $5x10^4$ Utilization Category $AC - 15$ DC - 13 Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A  Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.11 A  Operating Temperature $-10^\circ$ C to + 55°C  Storage Temperature $-10^\circ$ 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) $36 \times 90 \times 65$ Weight (unpacked) $110 \text{ g}$ Base / DIN rail  |                            | 16A (For 'NO') & 5A (For 'NC') @ 240 VAC / 24 VDC (Resistive), Inductive (cos ø = 0.6) :- 6 A @ 250 VAC |  |  |
| Utilization CategoryAC - 15<br>DC - 13Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A<br>Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.11 AOperating Temperature<br>Storage Temperature-10°C to + 55°C<br>-10°C to + 60°CHumidity (Non Condensing)95% (Rh)LED IndicationRed LED → Relay ONEnclosureFlame Retardant UL94-V0Dimension (W x H x D) (in mm)36 X 90 X 65Weight (unpacked)110 gMountingBase / DIN rail   | Electrical Life            | *****   |  |  |
| Operating Temperature Storage Temperature Humidity (Non Condensing) ED Indication Enclosure Dimension (W x H x D) (in mm)  Mounting  PC - 13  Rated Voltage (Ue): 24/125/250 V, Rated Current (le): 2.0/0.22/0.11 A  -10°C to + 55°C -10°C to + 60°C  Humidity (Non Condensing) 95% (Rh)  Red LED $\rightarrow$ Relay ON  Flame Retardant UL94-V0  Dimension (W x H x D) (in mm) 36 X 90 X 65  Weight (unpacked)  Base / DIN rail  |                            | ******  |  |  |
| Operating Temperature Storage Temperature Storage Temperature Humidity (Non Condensing)  LED Indication Enclosure Dimension (W x H x D) (in mm)  Mounting  Rated Voltage (Ue): 24/125/250 V, Rated Current (le): 2.0/0.22/0.11 A  -10°C to + 55°C -10°C to + 60°C  Humidity (Non Condensing)  95% (Rh)  Red LED $\rightarrow$ Relay ON  Flame Retardant UL94-V0  Dimension (W x H x D) (in mm)  36 X 90 X 65  Weight (unpacked)  110 g  Base / DIN rail  | Litilization Category      | 0 ( )   |  |  |
| Storage Temperature -10°C to + 60°C  Humidity (Non Condensing)  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)  Mounting Base / DIN rail  | DC - 13                    |   |  |  |
| 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)       110 g         Mounting       Base / DIN rail   |                            |   |  |  |
| 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)       110 g         Mounting       Base / DIN rail  | * '                        | 17.7.17.17.17.17  |  |  |
| Enclosure Flame Retardant UL94-V0  Dimension (W x H x D) (in mm) 36 X 90 X 65  Weight (unpacked) 110 g  Mounting Base / DIN rail   | , ( ),                     | · ·   |  |  |
| Dimension (W x H x D) (in mm) 36 X 90 X 65  Weight (unpacked) 110 g  Mounting Base / DIN rail  |                            | ,   |  |  |
| Weight (unpacked)  Mounting  Base / DIN rail   |                            |   |  |  |
| Mounting Base / DIN rail   | , , , , ,                  |   |  |  |
| ·  |                            |   |  |  |
| Contification  | Mounting                   | Base / UIN rail   |  |  |
| Certification (Rolls Compliant   | Certification              | CE Vicatio Compilant  |  |  |
| Degree of Protection IP 20 for Terminals, IP 40 for Enclosure  | Degree of Protection       | IP 20 for Terminals, IP 40 for Enclosure  |  |  |

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|    |   |   |   |

| 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**

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