

Motor Control Timers

- Compact 17.5mm wide
- Brown Out Timer with 2 Functions: ON Delay, Interval
- Detects Voltage Dips and Momentary Loss of Supply & Resets the control panel
- Low Power Consumption
- Fast Response Time
- LED indications for Healthy & Unhealthy conditions
- Excellent Noise Immunity to the latest IEC standards



Ordering Information

| Cat. No. | Description |
|----------|-------------------------------------------------------------------------------------------------|
| 17UDT0 | 230 VAC, Brown Out Timer (ON Delay), 1 C/O |
| 17UDT1 | 230 VAC, Brown Out Timer (Interval), 1 C/O |
| 13UDT0 | 110 VAC, Brown Out Timer (ON Delay), 1 C/O |
| 13UDT1 | 110 VAC, Brown Out Timer (Interval), 1 C/O |
| 1FUdT0F | 110 VAC, Brown Out Timer (Normally Energized / ON Delay Mode), Fast Response (5 msec max), 1C/O |
| 1FUdT1F | 110 VAC, Brown Out Timer (Momentary / Pulse Mode), Fast Response (5 msec max), 1C/O |
| 1FUdT2F | 110 VAC, Brown Out Timer (Normally De-energized / Pulse Mode), Fast Response (5 msec max), 1C/O |

Motor Control Timers



| Cat. No. | 17UDT0 | 13UDT1 |
|-------------------------------|---------------------------------------------|----------------------------------------------------------------------|
| Parameters | Brown Out Timer | |
| Timer Description | Brown Out Timer | |
| Modes | ON Delay | Interval |
| Functional Diagram | | |
| Supply Voltage (φ) | 230 VAC | 110 VAC |
| Supply Variation | -30% to +10% | |
| Frequency | 50 Hz | 60 Hz |
| Power Consumption (Max.) | 10 VA | |
| Timing Range | 0.3s to 30s | |
| Initiate Time | Max. 100 ms | |
| Trip Voltage | 168 V (± 5 V) | 82 V (± 5 V) |
| Recovery Voltage | Trip Voltage + 14 V (± 5 V) | Trip Voltage + 14 V (± 5 V) |
| Response Time | 25 ms (Max.) (Voltage Dips & Interruptions) | |
| Setting Accuracy | ± 10% @ 30s & ± 20% @ 0.3s | |
| Repeat Accuracy | ± 1% | |
| Output | Relay Output | 1 C/O |
| | Contact Rating | 5A @ 240 VAC / 28 VDC (Resistive) |
| | Electrical Life | 1x10 ⁵ |
| | Mechanical Life | 1x10 ⁷ |
| Utilization Category | AC - 15 | Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3.0/1.5 A |
| | DC - 13 | Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A |
| Operating Temperature | -10°C to +55°C | |
| Storage Temperature | -15°C to +60°C | |
| Humidity (Non Condensing) | 80% (Rh) | |
| LED Indication | Green | Healthy |
| | Red | Relay ON |
| Enclosure | Flame Retardant UL94-V0 | |
| Dimension (W x H x D) (in mm) | 17.5 X 58.5 X 90 | |
| Weight (unpacked) | 70 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 |

BROWN OUT

A dip in voltage causes electro-mechanical devices such as relays and contactors to drop out and electronic devices such as Timers, Programmable Relays, PLC's remain energized. As a result of this the switch sequence of the panel is lost. This can lock out all or a part of the control system causing the entire system to malfunction.

BROWN OUT TIMER

The 'Brown-Out' Timer also known as 'Mains restoration auto restart timer' is used for detection of voltage dips or momentary loss of supply known as 'Brown out' and initiation of a control panel reset following the Brown out.

Motor Control Timers

- Brown Out Timer with 3 Functions: ON Delay, Interval, Pulse
- Detects Voltage Dips and Momentary Loss of Supply & Resets the control panel
- Low Power Consumption
- Fast Response Time
- LED indications for Healthy & Unhealthy conditions
- Excellent Noise Immunity to the latest IEC standards



Ordering Information

| Cat. No. | Description |
|----------|---------------------------------|
| 23UDT0 | 110 VAC, Brown Out Timer, 1 C/O |
| 27UDT0 | 240 VAC, Brown Out Timer, 1 C/O |

Motor Control Timers



| Cat. No. | 23UDT0 | | 27UDT0 |
|-------------------------------|------------------------------------------------------------|----------------------------------------------------------------------|----------------------|
| Parameters | | | |
| Timer Description | Brown Out Timer | | |
| Modes | ON Delay, Interval, Pulse | | |
| Functional Diagram | | | |
| Supply Voltage (φ) | 110 VAC | | 240 VAC |
| Supply Variation | - 40% to +10% (of φ) | | - 40% to +10% (of φ) |
| Frequency | 50/60 Hz | | 50 Hz |
| Power Consumption (Max.) | 6 VA | | 10 VA |
| Timing Range | 0.3s to 30s | | 0.3s to 30s |
| Initiate Time | Max. 200 ms | | Max. 200 ms |
| Trip Voltage | 81 V (± 6 V) | | 168 V (± 6 V) |
| Recovery Voltage | 96 V (± 4 V) | | 184 V (± 4 V) |
| Response Time | Voltage Interruptions Voltage Dips | 15 ms (Max.) 30 ms (Max.) | |
| Setting Accuracy | ± 5% of Full scale | | |
| Repeat Accuracy | ± 1% | | |
| Output | Relay Output | 1 C/O | |
| | Contact Rating | 5A @ 240 VAC / 28 VDC (Resistive) | |
| | Electrical Life | 1x10 ⁵ | |
| | Mechanical Life | 1x10 ⁷ | |
| Utilization Category | AC - 15 | Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3.0/1.5 A | |
| | DC - 13 | Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A | |
| Operating Temperature | -10°C to +55°C | | |
| Storage Temperature | -10°C to +60°C | | |
| Humidity (Non Condensing) | 95% (Rh) | | |
| LED Indication | Healthy Condition: Flashing, Unhealthy Condition: Blinking | | |
| | Colour | Amber | Red |
| Enclosure | Flame Retardant UL94-V0 | | |
| Dimension (W x H x D) (in mm) | 22.5 X 75 X 100.5 | | |
| Weight (unpacked) | 130 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 |

Motor Control Timers

- Single phase Motor Restart Control Timer with Memory Time
- Under Voltage Trip and ON Delay



Ordering Information

| Cat. No. | Description |
|----------|---------------------------------------------|
| 22LDT0 | 240 VAC, Motor Restart Control Timer, 1 C/O |
| 23LDT0 | 110 VAC, Motor Restart Control Timer, 1 C/O |

UL Approval not applicable for Cat No. 23LDT0

Motor Control Timers



| Cat. No. | 22LDT0 | 23LDT0 |
|-------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------|
| Parameters | | |
| Timer Description | Motor Restart Control Timer | |
| Functional Diagram | <p>t: Power Fail Time; Td: Delay Time; Tm: Memory Time</p> | |
| Supply Voltage (ϕ) | 240 VAC | 110 VAC |
| Supply Variation | - 20% to +10% (of ϕ) | |
| Frequency | 50/60 Hz | |
| Power Consumption (Max.) | 4 VA | |
| Timing Ranges | Memory Time (Tm): 0.2 to 6s, Delay Time (Td): 0.2 to 60s | |
| Trip Voltage | 176 VAC, (± 6 VAC) | 80 VAC, (± 6 VAC) |
| Hysteresis | 4 VAC to 10 VAC | |
| Reset Time | 200 ms (Max.) | |
| Setting Accuracy | $\pm 5\%$ of Full scale | |
| Repeat Accuracy | $\pm 1\%$ | |
| Output | Relay Output | 1 C/O |
| | Contact Rating | 5A @ 240 VAC / 28 VDC (Resistive) |
| | Electrical Life | 1×10^5 |
| | Mechanical Life | 1×10^7 |
| Utilization Category | AC - 15 | Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3.0/1.5 A |
| | DC - 13 | Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A |
| Operating Temperature | -15°C to +60°C | |
| Storage Temperature | -20°C to +70°C | |
| Humidity (Non Condensing) | 95% (Rh) | |
| LED Indication | Green LED \rightarrow Power ON, Red LED \rightarrow Relay ON | |
| Enclosure | Flame Retardant UL94-V0 | |
| Dimension (W x H x D) (in mm) | 22.5 X 75 X 100.5 | |
| Weight (unpacked) | 130 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

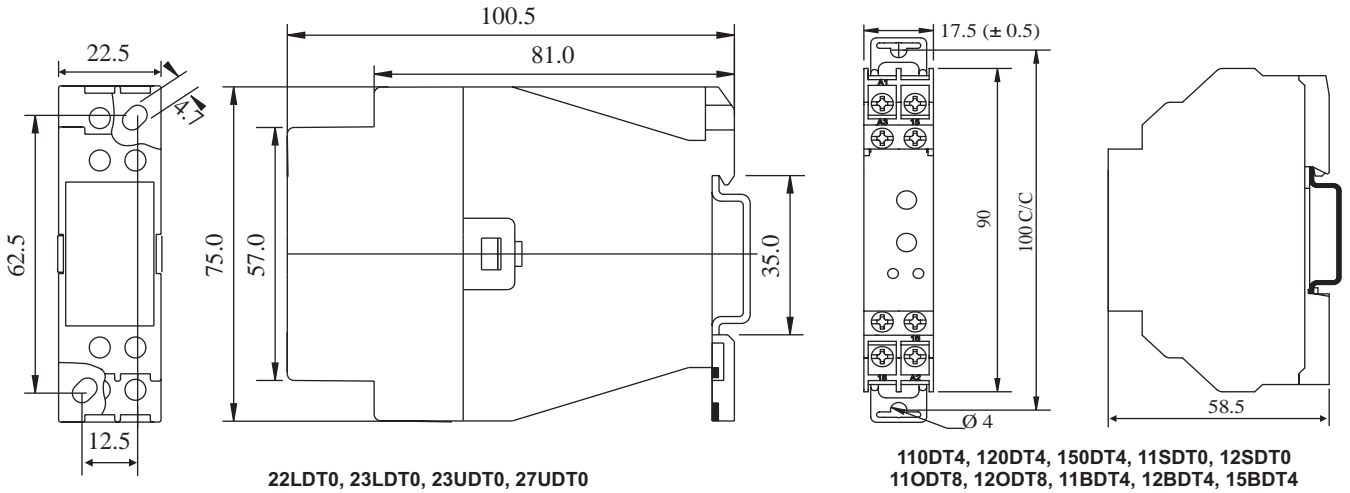
| | |
|----------------------|----------------|
| Cold Heat | IEC 60068-2-1 |
| Dry Heat | IEC 60068-2-2 |
| Vibration | IEC 60068-2-6 |
| Repetitive Shock | IEC 60068-2-27 |
| Non-Repetitive Shock | IEC 60068-2-27 |

WORKING

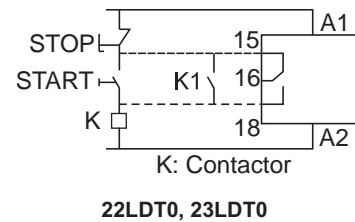
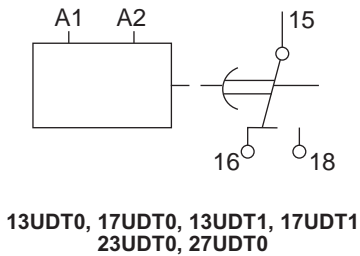
The timer is used for instantaneous or delayed motor startup after a short-time power failure (max. 6 sec). The start occurs immediately if power supply is disrupted for less than 0.2 sec. If the power failure lasts longer, the relay activates its memory for a time that can be set to 0.2 to 6 sec, after which no automatic restart is possible. If power supply is restored while the memory period is elapsing, the relay commands a motor restart with a delay time from power supply restoration that can be set to 0.2 to 60 sec. A system stop cancels the memory function after 50 ms, and therefore the stop signal should be on for at least this time. The relay is non-sensitive to any control voltage fluctuation or disruption during or after the motor stop.

Motor Control Timers

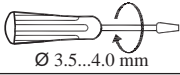

MOUNTING DIMENSION (mm)



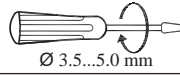

CONNECTION DIAGRAM



TERMINAL TORQUE & TERMINAL CAPACITY

| | |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|  Ø 3.5...4.0 mm | Torque - 0.6 N.m (6 Lb.in) Terminal screw - M3 |
|  | Solid Wire - 1 X 1...4 mm ² |
| AWG | 1 X 18 to 10 |

22LDT0, 23LDT0, 23UDT0, 27UDT0

| | |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------|
|  Ø 3.5...5.0 mm | Torque - 1.1 N.m (10 Lb.in) Terminal screw - M3.5 |
|  | Solid Wire - 2 X 0.2...2.5 mm ² |
| AWG | 1 X 24 to 10 |

13UDT0, 17UDT0, 13UDT1, 17UDT1