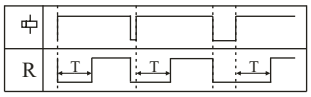
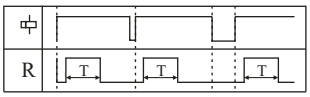
Motor Control Timers

- Compact 17.5mm wide
- Brown Out Timer with many functional options
- Detects Voltage Dips and Momentary Loss of Supply & Resets the control panel
- Low Power Consumption
- Fast Response Time
- 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			
Timer Description		**Brown Out Timer**	
Modes		ON Delay	Interval
Functional Diagram			
Supply Voltage (⏚)		160-250 VAC	75-125 VAC
Supply Variation		-30% to +10%	
Frequency		50 Hz	60 Hz
Power Consumption (Max.)		10 VA	4 VA
Timing Range		0.3s to 30s	
Initiate Time		Max. 100 ms	
Trip Voltage		170 V (± 5 V)	88 V (± 5 V)
Recovery Voltage		Trip Voltage + 14 V (± 5 V)	Trip Voltage + 94 V (± 5 V)
Response Time		20 ms (max)	
Setting Accuracy Repeat Accuracy		± 10% @ 30s & ± 20% @ 0.3s ± 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): 240/125 VAC, Rated Current (Ie): 1.3/2.5 A	
	DC - 13	Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A	
Operating Temperature Storage Temperature		-10°C to +55°C -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)		75 gm	
Mounting		Base / DIN rail	
Certification		CE 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

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.

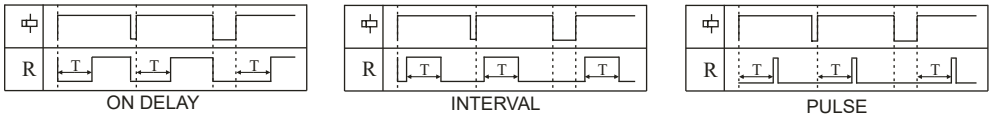
Motor Control Timers

- 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 with 3 Functions, 1 C/O
27UDT0	240 VAC, Brown Out Timer with 3 Functions, 1 C/O

Motor Control Timers

Cat. No.			23UDT0	27UDT0
Parameters				
Timer Description			**Brown Out Timer**	
Modes			ON Delay, Interval, Pulse	
Functional Diagram			 ON DELAY / INTERVAL / PULSE	
Supply Voltage (⏚)			110 VAC	240 VAC
Supply Variation			- 40% to +10% (of ⏚)	
Frequency			50/60 Hz	50 Hz
Power Consumption (Max.)			2 VA	4 VA
Timing Range			0.3s to 30s	
Initiate Time			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		15 ms (Max.)	
	Voltage Dips		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): 240/125 VAC, Rated Current (Ie): 1.3/2.5 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)			80%	
LED Indication			Healthy Condition: Green LED On, Unhealthy Condition: Green LED Flashing slow	
	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			CE 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

Motor Control Timers

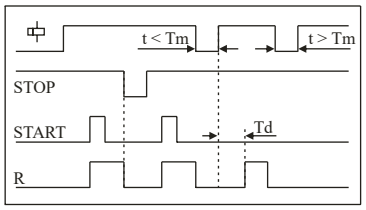
- Single phase Motor Restart Control Timer with Memory Time
- Under Voltage Trip and ON Delay

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		 t: Power Fail Time; Td: Delay Time; Tm: Memory Time	
Supply Voltage (⏚)		240 VAC	110 VAC
Supply Variation		- 20% to +10% (of ⏚)	
Frequency		50/60 Hz	
Power Consumption (Max.)		4 VA	2 VA
Timing Ranges		Memory Time (Tm): 0.2 to 6s, Delay Time (Td): 0.2 to 60s	
Trip Voltage		176 VAC, (± 6VAC)	80 VAC, (± 6VAC)
Hysterisis		10 VAC (Max.)	
Reset Time		200 ms (Max.)	
Setting Accuracy Repeat Accuracy		± 5% of Full scale ± 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): 230/125 V, Rated Current (Ie): 1.3/2.5 A	
	DC - 13	Rated Voltage (Ue): 250/120/24 V, Rated Current (Ie): 0.1/0.22/2 A	
Operating Temperature Storage Temperature		-15°C to +60°C -20°C to +70°C	
Humidity (Non Condensing)		95% (Rh)	
LED Indication		Green LED → Power ON, Red LED → 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		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

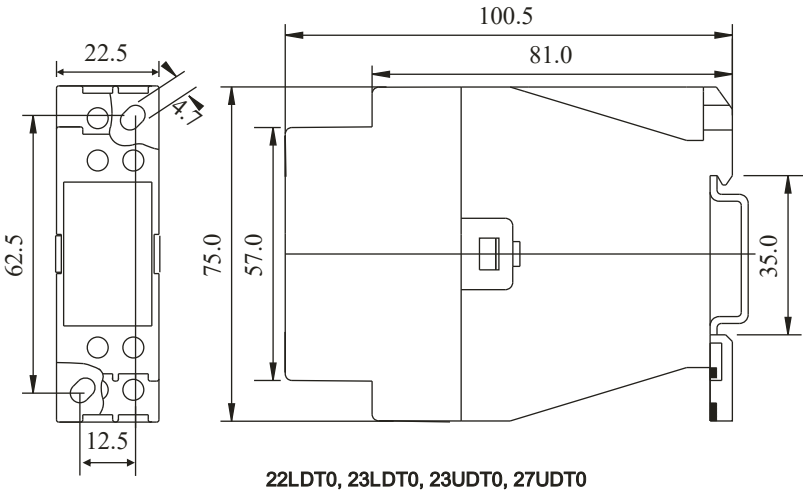
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6
Repetitive Shock	IEC 60068-2-27
Non-Repetitive Shock	IEC 60068-2-27

WORKING

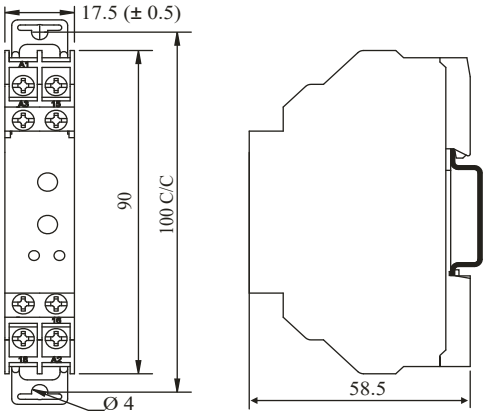
The timer is used for instantaneous or delayed motor startup after a short-time power failure (max. 6 sec). The start occurs immediately if power supply is disrupted for less than 0.2 sec. If the power failure lasts longer, the relay activates its memory for a time that can be set to 0.2 to 6 sec, after 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)

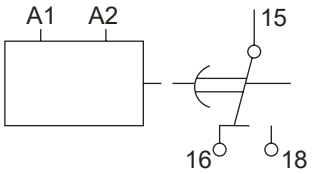


22LDT0, 23LDT0, 23UDT0, 27UDT0

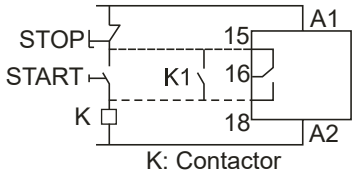


17UDT0, 17UDT1, 13UDT0, 13UDT1
1FUDT0F, 1FUDT1F, 1FUDT2F

CONNECTION DIAGRAM



13UDT0, 17UDT0, 13UDT1, 17UDT1
23UDT0, 27UDT0



K: Contactor

22LDT0, 23LDT0

TERMINAL TORQUE & TERMINAL 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

22LDT0, 23LDT0, 23UDT0, 27UDT0

Ø 3.5 mm....5.0mm	0.80 N.m (7.1 Lb.in)
	2 x 2.5 mm^2 Solid/Stranded Wire
AWG	2 x 20 to 14

13UDT0, 17UDT0, 13UDT1, 17UDT1