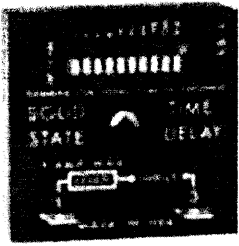


Delay On Make (Operate)

TDU, KSDU Digi-Set

Timing Modules



10

- 2 Universal Voltage Ranges
From 24 ... 240 V AC/DC
- Digital Integrated Circuitry
- Switch Selectable Delays
From 0.1 s ... 2.8 h in 3
Ranges or Factory Fixed
- +/-0.5% Repeat Accuracy
- 1 A Steady - 10 A Inrush
- Totally Solid State and
Encapsulated

Approvals:

Accessories

Female quick connect
P/N: P1015-64 (AWG 14/16)

Quick connect to screw adaptor
P/N: P1015-18

Mounting bracket
P/N: P1023-6

DIN rail P/Ns:
017322005 (Steel)
C103PM (Al)

DIN rail adaptor
P/N: P1023-20

See accessory pages for specifications.

Description

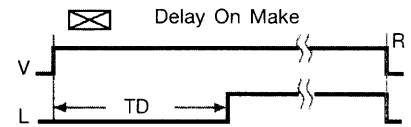
The TDU and KSDU Series are encapsulated solid state delay on make timers that combine digital timing circuitry with universal voltage operation. The TDU offers DIP switch adjustment allowing accurate selection of the time delay over the full time delay range. The KSDU is factory fixed from 0.1 s to 10,230 s and does not include the DIP switch. These series are excellent choices for process control systems and OEM equipment.

Operation

Upon application of input voltage, the time delay begins. The output is de-energized before and during the time delay. At the end of the time delay, the output energizes and remains energized until input voltage is removed.

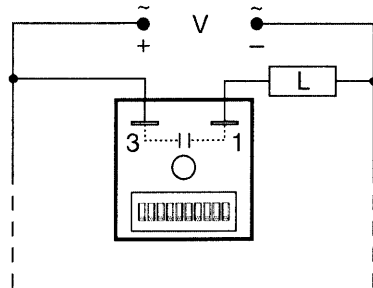
Reset: Removing input voltage resets the time delay and output.

Function



V = Voltage R = Reset TD = Time Delay
L = Load —||— = Undefined time

Connection



Dashed lines are internal connections.
Load may be connected to terminal 3 or 1.
TDU has DIP switch adjustment; KSDU is fixed.

Ordering Table

| TDU | Input Voltage Range | Time Range - Seconds | Part Number |
|---------------|---------------------|----------------------|-------------|
| Series | 24 ... 120 AC/DC | 0.1 ... 102.3 | TDUL3000A |
| | 100 ... 240 AC/DC | 0.1 ... 102.3 | TDUL3001A |
| | 24 ... 120 AC/DC | 1 ... 1023 | TDU3000A |
| | 100 ... 240 AC/DC | 1 ... 1023 | TDU3001A |
| | 24 ... 120 AC/DC | 10 ... 10230 | TDUH3000A |
| | 100 ... 240 AC/DC | 10 ... 10230 | TDUH3001A |

| KSDU | X | X | X |
|---------------|----------------------------|-------------|---|
| Series | Input Voltage Range | Type | Time Delay (Seconds) |
| | -8 - 24 ... 120 V AC/DC | -1 - Fixed | -Specify fixed delay in seconds 0.1 ... 10230 |
| | -9 - 100 ... 240 V AC/DC | | |

Example P/N: KSDU81300, KSDU910.1

Delay On Make (Operate)

TDU, KSDU Digi-Set

Timing Modules

Technical Data

| | | | |
|--|------------------|---|--|
| Time Delay Type | Adjustable (TDU) | Digital integrated circuitry | |
| Range* | | 0.1 ... 102.3 s in 0.1 s increments | |
| | | 1 ... 1023 s in 1 s increments | |
| | Fixed (KSDU) | 10 ... 10230 s in 10 s increments | |
| Repeat Accuracy | | Fixed from 0.1 s ... 10,230 s | |
| Tolerance (Factory Calibration) | | +/-0.5% or 20 ms, whichever is greater | |
| Recycle Time | | +/-10% | |
| Time Delay vs. Temperature & Voltage Input | | ≤ 150 ms | |
| Voltage | | +/-5% | |
| | | 24 ... 120 V AC/DC | |
| Line Frequency | | 100 ... 240 V AC/DC | |
| Tolerance | | 50 ... 60 Hz | |
| Output Type | | +/-20% | |
| Form | | Solid state | |
| Maximum Load Current | | Normally Open, open during timing | |
| Minimum Holding Current | | 1 A steady state, 10 A inrush at 60°C | |
| Voltage Drop | | 40 mA | |
| Protection | | ≅ 2.5 V at 1 A | |
| Circuitry | | Encapsulated | |
| Dielectric Breakdown | | ≥ 2000 V RMS terminals to mounting surface | |
| Insulation Resistance | | ≥ 100 MΩ | |
| Mechanical | | | |
| Mounting | | Surface mount with one #10 (M5 x 0.8) screw | |
| Package | | 2 x 2 x 1.21 in. (50.8 x 50.8 x 30.7 mm) | |
| Termination | | 0.25 in. (6.35 mm) male quick connect terminals | |
| Environmental | | | |
| Operating Temperature | | -40°C ... +60°C | |
| Storage Temperature | | -40°C ... +85°C | |
| Humidity | | 95% relative, non-condensing | |
| Weight | | ≅ 2.4 oz (68 g) | |

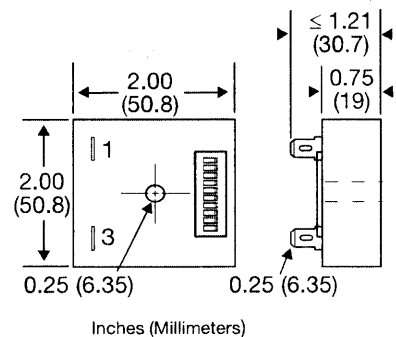
* For CE approved applications, power must be removed from the unit when a switch position is changed.

5

TDU Adjustment

| Digi-Set Binary Switch Operation | | |
|----------------------------------|----------|-----------|
| 0 1 102 3 | 1 1023 | 10 10,230 |
| OFF • ON | OFF • ON | OFF • ON |
| 0.1 | 1 | 10 |
| 0.2 | 2 | 20 |
| 0.4 | 4 | 40 |
| 0.8 | 8 | 80 |
| 1.6 | 16 | 160 |
| 3.2 | 32 | 320 |
| 6.4 | 64 | 640 |
| 12.8 | 128 | 1280 |
| 25.6 | 256 | 2560 |
| 51.2 | 512 | 5120 |
| 0.3 s | 544 s | 3000 s |

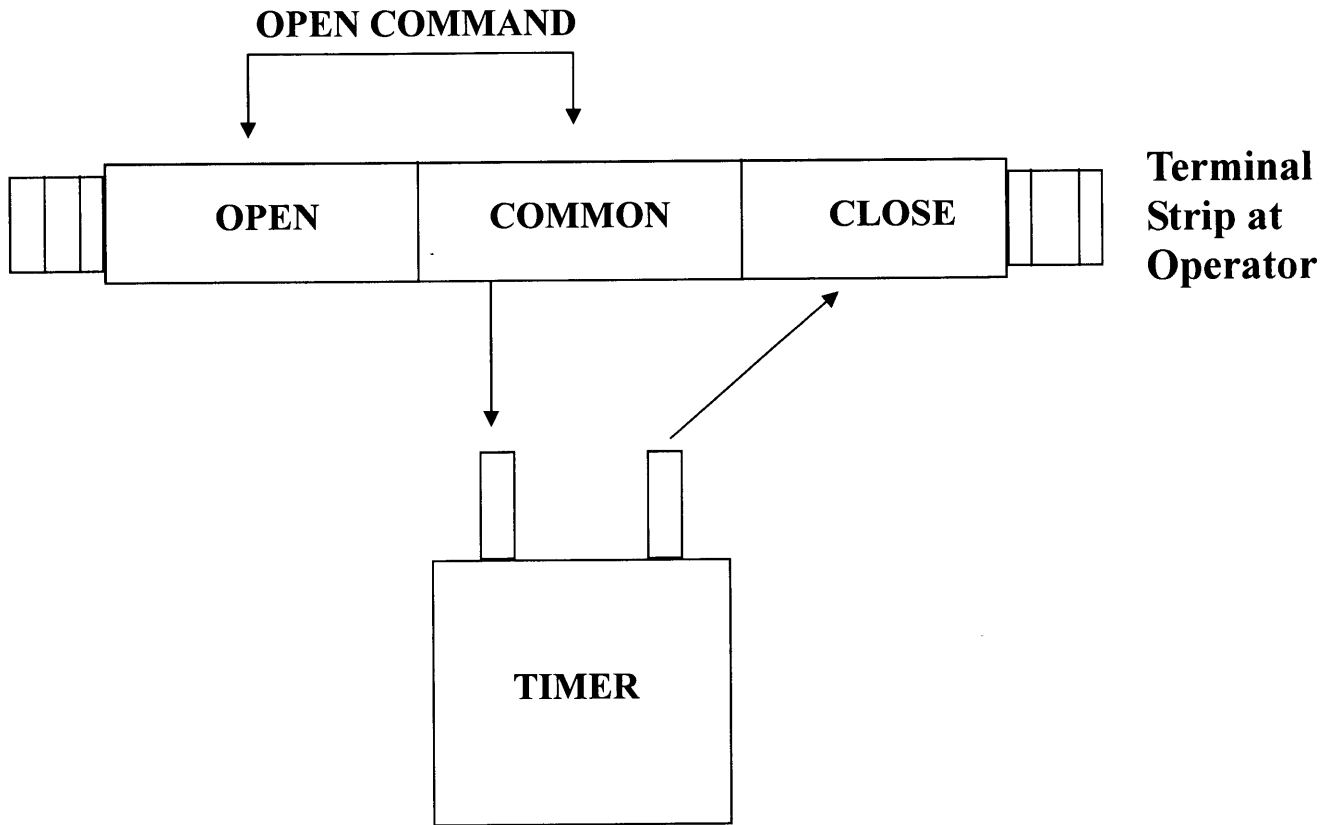
Mechanical View



Adjustment Switches Shown Not Included on KSDU Series.

TDU3000A

TIMER TO CLOSE



19-144 VAC/DC