

# Koyo Digital Timers

## Overview

Koyo digital timers offer flexible features at a great price. A large, easy to read display is offered in a small 1/16 DIN size. The large, bright red LED display has a 12 mm character display height which allows it to be seen easily from a distance and at an angle. In addition, set values use a green LED display to differentiate from timing values. Basic function settings are made with digital switches. Detailed settings are selected with digital keys, so operation is easy.

## Features

- Tamper-proof: key protection can be set for individual keys to prevent a malfunction or tampering
- Battery-less memory retention: EEPROM is used to retain values in memory, so there is no need for battery maintenance
- Maintenance has been reduced via removable terminals. After wiring, the terminal cover provides a safe barrier for worry-free use
- Power source for a DC sensor: you can source the power for the sensor from the built-in power source which supplies 60 mA at 24 VDC
- Wide operating AC voltage range of 85-264 VAC
- Various types of time ranges: covers ten types of time ranges with times of 0.001 second to 999.9 hours
- Five types of operating modes: settings of on-delay, off-delay, one-shot, accumulation and flicker
- Flush door/panel mounting
- Display of elapsed time/remaining time
- IP65 protective structure: front cover panel is made of a clear membrane, so operation with wet or dirty hands can be worry-free
- Fully CE and UL compliant



KT-V4S-D



KT-V4S-C-D

Product Selection Guide					
Part Number	Description	Number of Digits	Source Voltage	Time Range	Price
KT-V4S-D*	Digital timer with 10 types of time ranges (see specifications). Input power is 100-240 VAC. UL and CSA approved.	4	100-240 VAC	0.001 second to 999.9 hours	<--->
KT-V4S-C-D*	Digital timer with 10 types of time ranges (see specifications). Input power is 12-24 VDC. UL and CSA approved		12-24 VDC		<--->
Accessories					
Part Number	Description				Price
PANEL-16	Mounting clip for 1/16th DIN timers and temperature/process controllers, for door (flush) mounting. 5 clips per package				<--->

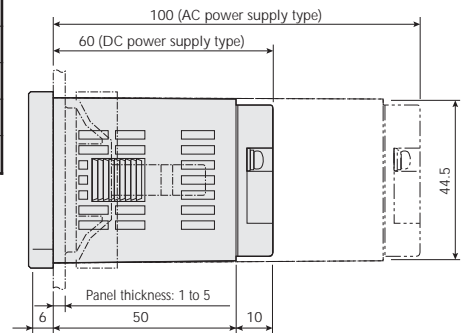
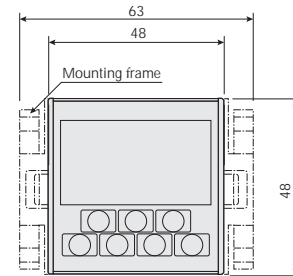
\* Units ship with a PANEL-16 mounting clip for door (flush) mounting, only one required.

- PLC Overview
- DL05/06 PLC
- DL105 PLC
- DL205 PLC
- DL305 PLC
- DL405 PLC
- Field I/O
- Software
- C-more HMIs
- Other HMI
- AC Drives
- Motors
- Steppers/Servos
- Motor Controls
- Proximity Sensors
- Photo Sensors
- Limit Switches
- Encoders
- Current Sensors
- Pushbuttons/Lights
- Process
- Relays/Timers
- Comm.
- TB's & Wiring
- Power
- Circuit Protection
- Enclosures
- Appendix
- Part Index

# Koyo Digital Timers Specifications

General Specifications		
<b>Power</b>	<b>AC Power</b>	<b>DC Power</b>
<b>Part Number</b>	KT-V4S-D	KT-V4S-C-D
<b>Approvals</b>	UL listed, CSA listed	UL recognized only with Class II power supply; CSA: EN61010-1 and EMI: EN55-11, EMS: EN50082-2. If product has DC power supply, an EMI/EMC filter must be installed on the power supply.
<b>Source Voltage</b>	100-240 VAC	12-24 VDC
<b>Permitted Power Fluctuation</b>	85-264 VAC	10-26.4 VDC
<b>Power Consumption</b>	Approx. 11 VA	Approx. 4 W
<b>Sensor Power</b>	24 VDC (20-28 V) 60 mA (less than 10%p-p ripple noise)	N/A
<b>Memory Backup upon Power Failure</b>	EEPROM writing up to 100,000 times; Memory duration: 10 years	
<b>Ambient Temperature</b>	-10-50°C (14 to 122°F)	
<b>Storage Temperature</b>	-20-70°C (-4 to 158°F) (with no icing)	
<b>Ambient Humidity</b>	35-85% RH non-condensing	
<b>Withstand Voltage</b>	2 kVAC for one minute	
<b>Vibration Resistance</b>	Durability: Displacement amplitude 0.5mm 10-55 Hz along three axes Operating vibration: Displacement amplitude 0.35mm 10-55 Hz along three axes	
<b>Impact Resistance</b>	Durability: 490 m/s <sup>2</sup> along three axes Operating impact: 98 m/s <sup>2</sup> along three axes	
<b>Noise Resistance</b>	AC power between terminals ±1.5 kV (pulse width 1µs and rise time 1ns)	DC power between terminals ± 1.0 kV (pulse width 1 µs and rise time 1 ns)
<b>Protective Structure</b>	IP65 (front panel only) when mounted in appropriate enclosure	
<b>Weight</b>	Approx. 150 grams (5.291 oz.)	Approx. 110 grams (3.88 oz.)
<b>Terminals</b>	<b>Conforming wiring</b>	0.25-1.65 mm <sup>2</sup> 24 to 16 gauge
	<b>Permitted Torque</b>	0.5 Nm (.369 ft./lbs.)

## Dimensions (mm)



	Depth dimension
DC power supply type	66mm
AC power supply type	106mm

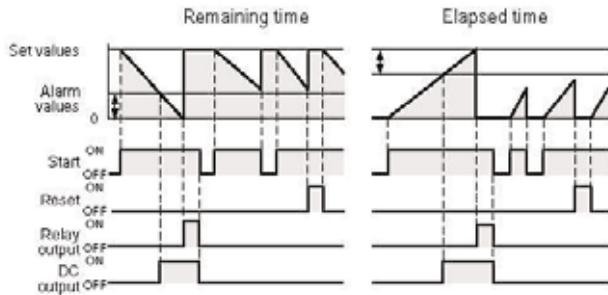
**Note: Depth dimension includes front panel**

Performance Specification	
<b>Category</b>	Timer
<b>Operational Format</b>	On-delay, off-delay, one-shot, accumulator, and flicker (with alarm output)
<b>Number of Digits</b>	4 digits
<b>Display</b>	Current values: red LED, character height 12 mm; Preset value: green LED, character height: 7mm
<b>Time Range</b>	0.001s-9.999s/0.01s-99.99s/0.1s-999.9 s/1s-9999 s/1 s-99 min 59 s/1 min-9999 min/1 h-9999 h/1 min-99 h 59 min/0.1 min-999.9 min/0.1h-999.9 h
<b>Display</b>	Elapsed time/remaining time
<b>Timer Precision</b>	0.013% or ±15 ms (using large values)
<b>Input</b>	Input logic: negative logic (no voltage input) positive logic (voltage input)
	Input resistance: positive logic 15 kΩ; negative logic 3.3 kΩ (AC power)/1.8 kΩ (DC power)
	Input voltage: "L" 0-3V "H" 7-30 V
<b>Start Input Response</b>	Less than 15 ms/5 ms/1 ms
<b>External Reset</b>	Min. signal amplitude 5 ms
<b>Output</b>	DC output: NPN open collector output/24 V 100 mA. Withstand voltage 35 V. Residual voltage less than 1.5 V
	Relay output: 1 SPDT 220 VAC 2 A (resistive load)
<b>Output Duration (flicker)</b>	10-9990 ms variable every 10 ms
<b>Installation</b>	1/16 DIN flush door/panel mount

# Koyo Digital Timers Timing and Wiring Diagrams

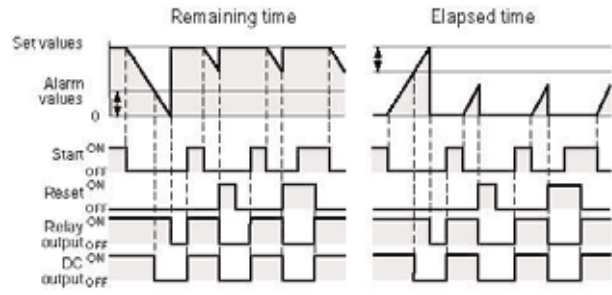
## On-delay

Alarm setting SW 1 2  
OFF OFF



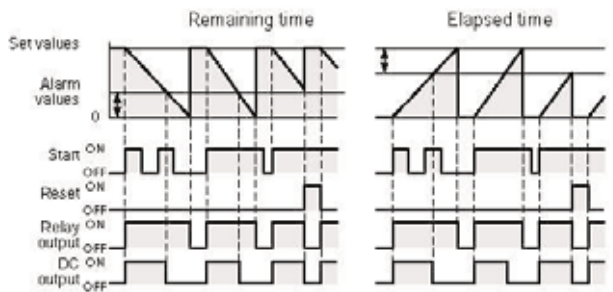
## Off-delay

SW 1 2  
OFF ON



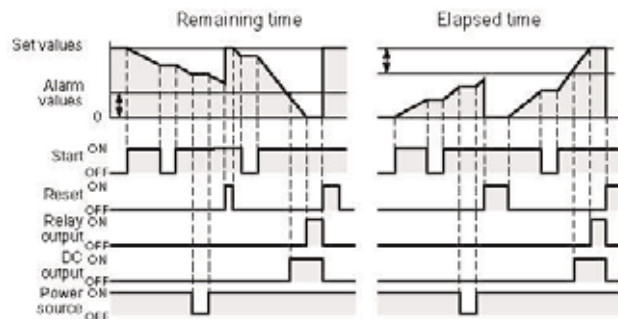
## One-shot

SW 1 2  
ON OFF



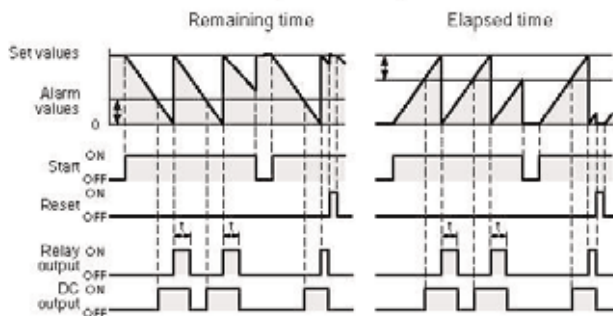
## Accumulation

SW 1 2  
ON ON



## Flicker

(in Setup mode)



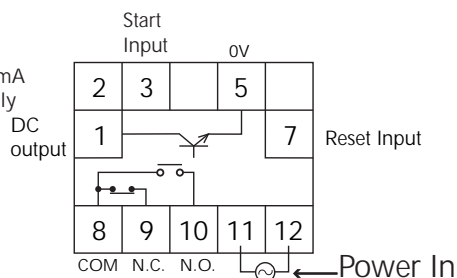
When alarm settings are 0, the DC output is the same as the output operations for a relay output.

Note: Alarm settings should be less than preset values. Using alarm settings with values that exceed preset values will result in measurement values of 0 and the alarm output (DC output) will come ON.

Note: Output duration is variable from 0-9990 ms. (Default: 100 ms)

### KT-V4S-D

24VDC, 60mA  
Sensor supply



### KT-V4S-C-D

