Usage Manual

ETEK®

ETEK ELECTRIC

MODULAR STYLE
TIME DELAY RELAYS

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Thank you for choosing EK Series Star-Delta Time Dealy Relays.
Please read thismanual before installation, operation and maintenance.

STANDARD AND QUALITY CERTIFICATES

CE RoHS

FEATURES	BENEFITS
Up to 10 Functions	5 Timing Functions Controlled via Supply Voltage 4 Timing Functions Controlled via Trigger Input 1 Timing Function of Memory Latching Relay
Broad Timing Range (from 0.1 sec to 10 days)	Meets Most Timing Requirements
Contact Configuration	SPDT or DPDT
Universal Power Supply	12 to 240 VAC/VDC
2 LED Status Indicators	Indicates Coil Status at a Glance
Only 17.5 mm Wide	Ideal for Tight Spaces
DIN Rail Mountable	Easy Installation I No Tools
RoHS Compliant	Environmentally Friendly

SPECIFICATIONS

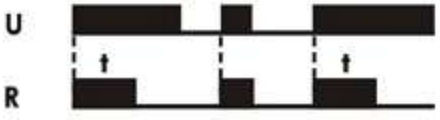
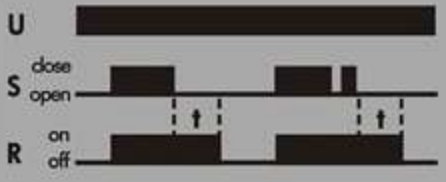
OUTPUT CHARACTERISTICS	
Number and type of contacts	SPDT or DPDT
Contact material	Silver alloy
Current rating	15 A @ 240 VAC,24 VDC
Switching voltage	240 V 50/60 Hz
	24 VDC
	1/2 HP @ 120 V 50/60 Hz
	1 HP @ 240 V 50/60 Hz
	B300 pilot duty

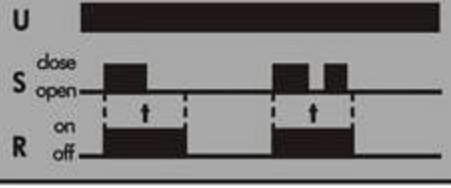
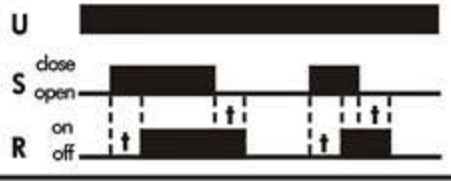
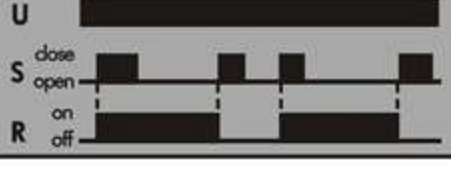
Minimum switching requirement		100 mA
Indication		Red LED
INPUT CHARACTERISTICS		
Voltage range		12 to 240 V 50/60 Hz/VDC
Operating range (% of nominal)		85% to 110%
Maximum consumption		3 VA (AC)
		1.7 W (DC)
Indication		Green LED
TIMING CHARACTERISTICS		
Functions available		10
Time scales		10
Time ranges		0.1 sec to 10 days
Tolerance (mechanical setting)		5%
Repeatability (constant voltage and temperature)		0.2%
Reset time (maximum)		150 ms
Trigger pulse length (minimum)		50 ms
PERFORMANCE CHARACTERISTICS		
Electrical life (operations @ rated current)		100,000 cycles (resistive)
Mechanical life (unpowered)		10,000,000 cycles
Dielectric strength	Input to contacts	2500 VAC
	Between open contacts	1000 VAC
Terminal wire capacity		14 AWG (2.1 mm^2)
Terminal torque (maximum)		7.1 lbf in (0.8 Nm)

ENVIRONMENT		
Product certifications		CE, RoHS, CB
Ambient air temperature Around the device	Storage	-30 to +70 °C (-22 to +158 °F)
	Operation	-20 to +55 °C (-4 to +131 °F)
Degree of protection		IP 20
Weight		65 grams (2.3 oz)

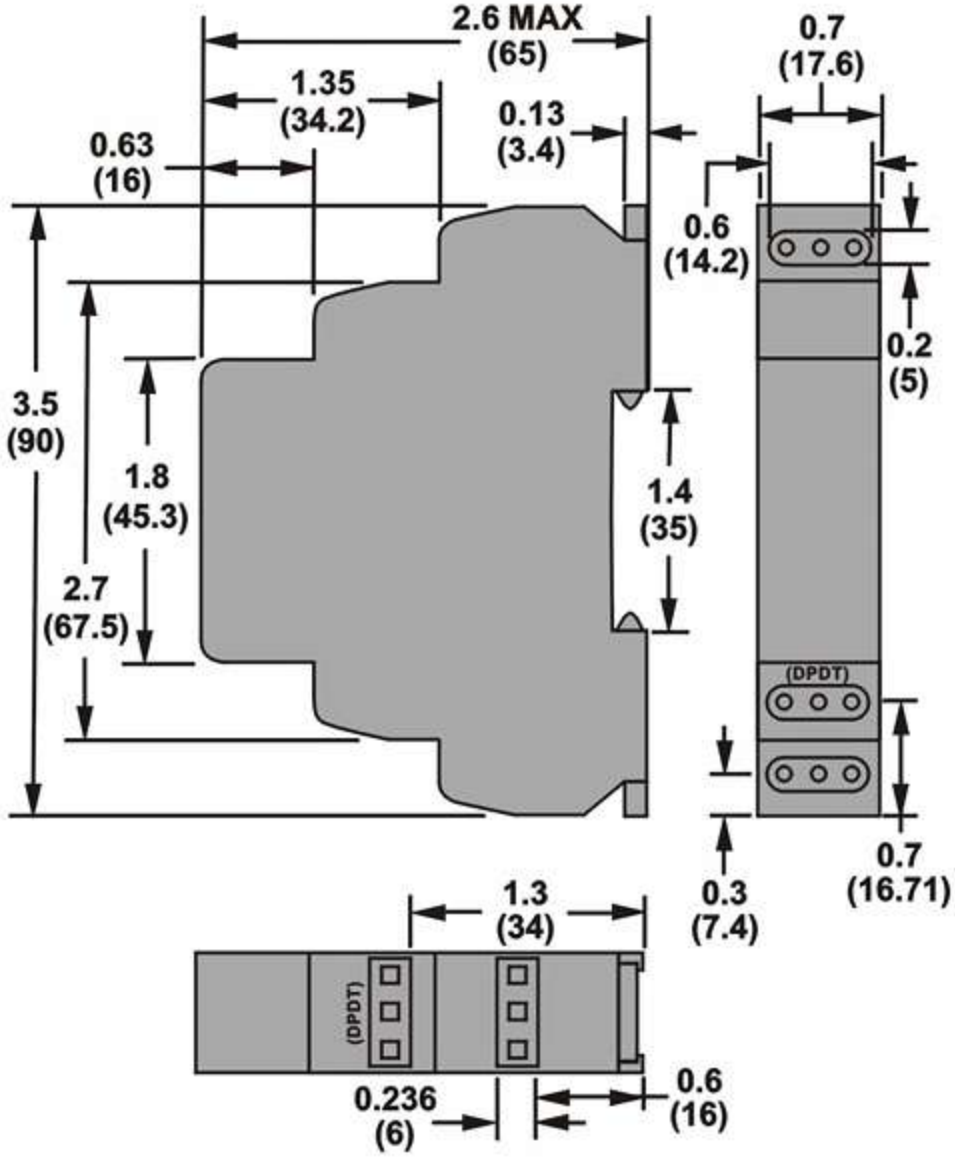
RELAY CONTACT 15 A	LOAD				
		AC1	AC3	AC15	DC1 (24/110/220 V)
AgNi	1000 W	4000 VA	0.9 kW	750 VA	15 A/0.5 A/0.35 A

FUNCTION

Function	Operation	Timing Chart
A. **ON DELAY** Power On	When the input voltage **U** is applied, timing delay **t** begins. Relay contacts **R** change state after time delay is complete. Contacts **R** return to their shelf state when input voltage **U** is removed. Trigger switch is not used in this function.	
B. **REPEAT CYCLE** Starting Off	When input voltage **U** is applied, time delay **t** begins. When time delay **t** is complete, relay contacts **R** change state for time delay **t**. This cycle will repeat until input voltage **U** is removed. Trigger switch is not used in this function.	
C. **INTERVAL** Power On	When input valtage **U** is applied, relay contacts R change state immediately and timing cycle begins. When time delay is complete, contacts return to shelf state. When input voltage **U** is removed, contacts will also return to their shelf state. Trigger switch is not used in this furiction.	
D. **OFF DELAY** S Break	Input voltage **U** must be applied continuously. When trigger **S** is closed, relay contacts **R** change state. When trigger **S** is opened, delay **t** begins. When delay **t** is complete, contacts **R** return to their shelf state. If trigger **S** is closed before time delay **t** is complete, then time is reset. When trigger S is opened, the delay begins again, and relay contacts remain in their energized state, If input voltage **U** is removed, relay contacts **R** return to their shelf state.	
E. **RETRIGGERABLE ONE SHOT**	Upon application of input voltage **U**, the relay is ready to accept trigger signal **S**. Upon applicotion of the trigger signal **S**, the relay cantacts **R** transfer and the preset time **t** begins. At the end of the preset time **t**, the relay contacts **R** refurn to their normal condition unless the trigger signal **S** is opened and closed prior to time out **t** (before preset time elapses). Continuous cycling of the trigger signal **S** at a rate faster than the preset time will cause the relay contads **R** to remain closed. If input voltage **U** is removed, relay contacts **R** return to their shelf state.	
F. **REPEAT CYCLE** Starting On	When input voltage **U** is applied, relay contacts **R** change state immediately and time delay **t** begins. When time delay **t** is complete, contacts return to their shelf state for time delay **t**. This cycle will repeat until input voltage **U** is removed. Trigger switch is not used in this function.	

G. **PULSE** **GENERATOR**	Upon application of input voltaga **U**, a single output pulse of 0.5 seconds is delivered to relay after time delay **t**. Power must be removed and reapplied to repeat pulse. Trigger switch **S** is not used in this fundion.	
H. **ONE SHOT**	Upon application of input voltage **U**, the relay is ready to accept trigger signal **S**. Upon application of the trigger signal **S**, the relay contacts **R** trabsfer and the preset time **t** begins. During time-out, the trigger signal **S** is ignored. The relay resets by applying the trigger signal S when the relay is not energized.	
I. **ON/OFF** **DELAY** S Make/Break	Input voltage **U** must be applied continuously. When trigger **S** is closed, time delay **t** begins. When time delay **t** is complete, relay contacts **R** change state and remain transferred until trigger **S** is opened. If input voltage **U** is removed, relay contacts **R** return to their shelf state.	
J. **MEMORY** **LATCH** S Make	Input voltage **U** must be applied continuously. Output changes state with every trigger **S** closure. If input voltage **U** is removed, relay contacts **R** return to their shelf state.	

DIMENSIONS INCHES (MILLIMETERS)



WIRING DIAGRAMS