

EK012 – Temperature-/light relay

Kit description:

EK012 is a temperature or light activated relay and can be used for temperature control (thermostat) or as a light switch (dusk light) depending on which sensor is used. The sensor is sold separately and can be either an NTC resistor or a light dependent resistor (CdS) with a nominal value between 10 and 100 kohm. The threshold where the relay is activated can be set with one of the two board mounted potentiometers. The other potentiometer is used for trimming the load resistance for the sensor and should be set to roughly the same resistance as the sensor. To prevent the relay from entering an unstable state, a hysteresis is implemented. The hysteresis is set by the resistor R3. To reduce or completely remove the hysteresis, change the resistor to a higher value or omit the resistor. The connector for the sensor is a Molex KK 2.54mm. A mating connector with wires is sold separately (part.no. 41002820).






- * Supply voltage: 12VDC
- * Current draw: 41mA (relay active) / 2mA (relay inactive)
- * Relay contact: 1-pole SPDT / 10A 250VAC, 10A 30VDC
- * Dimensions: 48.26 x 38.1mm
- * Mounting holes: c-c 34.29 x 33.02mm, \varnothing 2.54mm

Assembly guide:

Before you begin mounting components, make sure the board is free from damage and scratches. Make sure all the components are included and are of correct value. Compare with the component list!

Begin mounting the lowest components and work your way up to the largest. IC sockets, resistors, ceramic capacitors and diodes go first. Electrolytic capacitors, connectors and potentiometers go last. Some components are polarized and must be mounted in the right way. Please observe the markings on the board!

Component list:

RefDes	Value	Qty.	Part.no.	
CON1	5mm 1x2p	1	41010753	
CON2	5mm 1x3p	1	41010754	
Sensor	2.54mm 1x2p	1	41002777	
C1	100 uF	1	40520007	
C2	100 nF	1	41003038	
R1, R2	10 kohm	2	40811410	
R3	100 kohm	1	40811510	
R4	1 kohm	1	40811310	
D1	1N4004	1	40310004	
K1	SPDT 12V	1	40230002	
LD1	3mm green	1	41004450	
U1	LM311	1	41013750	
U1	DIP-8	1	40410008	
VR1	10 kohm	1	41013760	
VR2	100 kohm	1	41013765	

Schematic:

