

Electronic ballast operating principle

This series of electronic ballast has six models, power 16W~40W. The circuit of the unit comprises EMC filter & AC/DC transfer circuit, DC/AC high frequency transfer circuit, High frequency booster circuit, Control circuit and Protection circuit for lamp abnormality.

1 .EMC filter & AC/DC transfer circuit: It comprises C3, L1, D~D4, C4, and C6; The EMC filter remove high frequency noise and interferences which were from network supply and this ballast. In the AC/DC transfer circuit a 120VAC input is rectified by the diode D1~D4 to a DC voltage.

2. DC/AC high frequency transfer circuit: It comprises Q1, R8, Q2 and R9; it converts the DC voltage into a high frequency AC voltage that is 20-30 kHz.

3. High frequency booster circuit: It comprises L2 and C10; it boosts the high frequency AC voltage high enough to start the lamp, it stabilities the lamp current when the lamp is operating.

4. Control circuit: It comprises T1 (A、B、C)、R6 and R7; It supplies high frequency control signal for DC/AC high frequency transfer circuit.

5. Protection circuit for lamp abnormality: It comprises C11 ,R13,D9~D10,R12,C8, TH1,C7, and Z1; it supplies signal for control circuit to let the DC/AC high frequency transfer circuit stop working when the lamp become abnormality (end of life, dropout or break).