

Installation notes for ballast units for metal halide lamps

Connection

Ansorg ballast units of the **type series 27VTE...** are equipped at the primary end with integrated plug-in connectors of the type Wieland GST18i3 (code 1) for tool-free connection to the mains. The jack necessary for connection is **not included in the scope of supply**.

Ballasts of the **type series 27VT...** are equipped at the primary end with flexible connecting leads (cross-section 0.75 mm², length 1.2 m), with the ends of the leads free.

Connection of the luminaire to the ballast unit is effected with both types via a colour-coded (red) plug-in connection.

Mounting

As a matter of principle, ballast units must not be packed in thermally insulating materials (e.g. glass or rock wool, etc.).

The devices are to be mounted with their undersides on a suitable mounting surface. The fixing surface can in normal operation heat up to 90 °C. In the case of a fault this temperature can also be exceeded in spite of internal thermal link. A firm and flat supporting area for good heat dissipation is necessary which is suitable for continuous heating up to at least 90 °C.

In order to ensure functional safety, the ballast units must be placed in an installation space providing sufficient volume. The minimum dimensions for an individual unit are:

	All round	Above
Electronic ballast	0.20 m	0.15 m
Conventional ballast	0.20 m	0.15 m

In combination with a particular luminaire, the appropriate installation dimensions can be seen from the respective mounting instructions for the luminaire concerned.

The spaces between the ballast units should - unless expressly stated otherwise - not be less than 0.20 m.

Generally speaking, for mounting several ballast units at the same place, sufficient ventilation and air venting should be ensured.

The appropriate local standards for the execution of the electrical installation, for fire protection etc. are to be taken into account and to be observed.

Switch-on characteristics, dimensioning of miniature circuit-breakers

Electronic ballasts

For selection of switching devices and protection equipment it is to be taken into account that during switching-on of electronic ballasts a making current pulse of very short duration (smaller than 1 ms) arises. During simultaneous switch-on of several electronic ballasts, under certain circumstances very high making currents flow. The permitted number of electronic ballasts per miniature circuit-breaker is hence. All switching devices and items of protective equipment are to be selected in accordance with the current carrying capacity.

Possible number of electronic ballasts						
Circuit breaker type \ Ballast type	B 10 A	B 16 A	C 10 A	C 16 A	K 10 A	K 16 A
HIT 20 watts	11	18	18	30	27	45
HIT 35 & 70 watts	7	12	12	20	18	30
HIT 150 watts	5	8	8	14	12	20

The above data provide approximate values which can be influenced depending on the equipment. The maximum number applies to simultaneous switching-on. The data are provided for single-pole circuit-breakers, in the case of multi-pole circuit-breakers the number is reduced by 20 %. The circuit impedance taken into account is 400 mΩ (approx. 20 m supply cable [2.5 mm²] from the input to network as far as the distribution board and an additional 15 m as far as the luminaire). A doubling of the current impedance to 800 mΩ increases the possible number of ballasts by 10 %.

Conventional ballasts, compensated

The conventional equipment does not switch on all lamps simultaneously in the first half-wave of the mains sinusoidal oscillation, therefore the current consumption at the moment of switching-on does not correspond to the addition of the individual currents.

Possible number of conventional ballasts						
Circuit-breaker type \ Ballast type	B 10 A	B 16 A	C 10 A	C 16 A	K 10 A	K 16 A
HIT 35 watts	20	28	28	47	43	71
HIT 70 watts	18	25	25	42	38	63
HIT 150 watts	7	10	10	17	15	25

The numbers of units stated here are therefore minimum values. The number of ballasts that can actually be connected is higher, but cannot be determined.

In actual practice and in international comparison further types of miniature circuit-breakers can be found. They differ with regard to the maximum current intensity but also to the response times. The following list compares standard miniature circuit-breakers with one another and makes conversion possible.

B	16 A	100 %
B	10 A	approx. 63 %
C	16 A	approx. 170 %
C	10 A	approx. 104 %
L, I	16 A	approx. 108 %
L, I	10 A	approx. 65 %
G, U, II	16 A	approx. 212 %
G, U, II	10 A	approx. 127 %
K, III	16 A	approx. 254 %
K, III	10 A	approx. 154 %