

ARC KEEPER®

AK175PRB, AK250PRB, AK400PRB
Probe-Start HID Backup Ballast

PHILIPS bodine

A Division Of Philips Electronics North America Corporation

Arc Maintenance Device for High Intensity Discharge lamps

Product Summary

UL LISTED/CSA CERTIFIED

Factory or Field Installation
(Indoor and Damp)



Initial Power Output

20% to 30% of Nominal Power

Arc Maintenance Time

2 Minutes Continuous

Full Warranty

5 Years (NOT pro-rata)

Maximum Input Electrical Rating

AK175PRB & AK250PRB
120 VAC, 600 mA, 6.0 W,
50/60 Hz, or 277 VAC,
800 mA, 10.0 W, 50/60 Hz

AK400PRB
120 VAC, 310 mA, 4.0 W,
50/60 Hz, or 277 VAC,
320 mA, 4.0 W, 50/60 Hz

Battery

Field-Replaceable, High-Temperature,
Maintenance-Free Nickel-Cadmium Battery
7- to 10-Year Life Expectancy

Battery Charging Current

AK175PRB & AK250PRB: 167 mA
AK400PRB: 120 mA

Charging Indicator Light

LED

Temperature Rating (Ambient)

0°C to +55°C (32°F to 131°F)

Dimensions

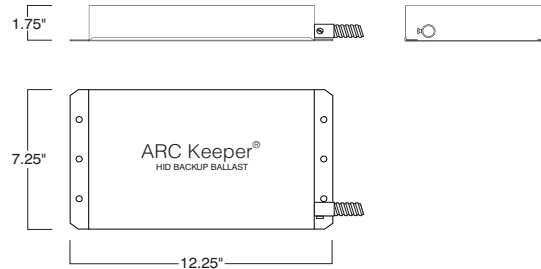
12.25" x 7.25" x 1.75"
(311 mm x 184 mm x 44 mm)

Weight

6.5 lbs. (2.9 kg)

Mounting Holes

A total of six holes, 0.25 inches in diameter each, are provided for mounting. Three holes spaced 1.725 inches apart (center to center) are located on each end of the unit. Hole spacing between the ends is 11.69 inches (center to center).



APPLICATION

The ARC Keeper is a battery-operated backup ballast that catches and maintains the arc of one metal halide HID lamp during AC power sags, interruptions or failure. The ARC Keeper device works in conjunction with standard constant wattage autotransformer (CWA) magnetic ballasts. The ARC Keeper detects AC power line disturbances and operates the HID lamp with sufficient power to keep the lamp arc from extinguishing during power line disturbances. The lamp arc, in a typical HID lamp, will extinguish if an AC power failure persists for more than four milliseconds. The ARC Keeper detects AC power line disturbances, then supplies supplemental power to the lamp within approximately two milliseconds, thereby maintaining the lamp arc. The ARC Keeper Model AK175PRB operates one (M57) 175 W or energy-saving 150 W metal halide probe-start lamp, the Model AK250PRB operates one (M58) 250 W or energy-saving 225 W metal halide probe-start lamp and the Model AK400PRB operates one (M59) 400 W or energy-saving 360 W metal halide probe-start lamp. The ARC Keeper is for use with Listed indoor or damp location fixtures. It is not suitable for wet or hazardous locations. The ARC Keeper may be used with an auxiliary generator. The ARC Keeper's two-minute time limit allows more than ample time for an auxiliary generator to pick up and support the metal halide lamp for emergency lighting purposes.

OPERATION

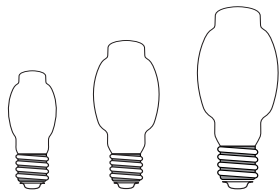
During normal operation, the battery charger supplies charging current to the battery while the AC power line voltage monitor monitors the line voltage waveform. The CWA magnetic ballast is allowed to operate the lamp as normal. When there is a voltage sag, power interruption or failure of the AC power normally supplied to the CWA magnetic ballast, the ARC Keeper will detect this problem and respond within approximately two milliseconds. The ARC Keeper will apply high-frequency power to the lamp to supplement the low-frequency 60 Hz power normally supplied to the lamp by the CWA magnetic ballast. In this manner, the lamp arc is maintained and kept from extinguishing. When the AC power interruption event is over, the ARC Keeper will withdraw supplemental high-frequency power from the lamp only after the AC power line has stabilized. When AC power is restored and deemed stable, the ARC Keeper returns to the monitoring mode as well as the battery-charging mode. If, on the other hand, there is a long-term power failure such that the power failure persists for more than two minutes, the ARC Keeper inverter ballast will operate the lamp arc for two minutes maximum, then turn off. A full 24 hours of charge is required for full recharge. During day-to-day normal operation, the ARC Keeper will not try to maintain the lamp arc immediately when the lamp is first turned on; rather, there will be a five-minute delay before ARC Keeper will attempt to "catch" the arc. This delay allows the lamp to warm up each time it is turned on from a cold start. If the wall switch is turned off, in order to turn the lamp off, the ARC Keeper will recognize that switched power has been turned off but unswitched power is still applied. The ARC Keeper device will release control of the arc and allow the lamp to turn off as intended, then return to battery-charging mode.

Specifiers Reference

Project _____ Type _____ Model No. _____
Comments _____

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INSTALLATION

The ARC Keeper must be powered from the same branch circuit for both the switched and unswitched hot leads. The CWA magnetic ballast is fed from the ARC Keeper. The ARC Keeper may be installed in close proximity to the fixture or remote from the fixture. See Table 1 for remote distances.

SPECIFICATION

Arc maintenance shall be provided by using one Philips Bodine ARC Keeper Model (AK175PRB, AK250PRB or AK400PRB) used in conjunction with one (M57, M58 or M59) constant wattage auto-transformer (CWA) magnetic ballast and one compatible (175 W or energy-saving 150 W; 250 W or energy-saving 225 W; or 400 W or energy-saving 360 W) metal halide probe-start lamp. The ARC Keeper backup ballast shall consist of EMI filters; a rechargeable, high-temperature 7.2 V, 2.3 Ah (in 175 & 250 W version) or 12 V, 1.5 Ah (in 400 W version) nickel-cadmium battery; a battery charger; a high-frequency inverter ballast; an AC power line voltage monitor; control circuitry; and a low-pass filter network contained in one 12 1/4" x 7 1/4" x 1 3/4" white metal case. A solid-state charging indicator light, which is an integral part of the ARC Keeper unit, is provided to monitor the charger to indicate the presence of battery charging current. Installation hardware shall be provided. See Table 2 for the ARC Keeper lamp loads and run times. The ARC Keeper shall have a maximum input power of 6 W at 120 VAC, 50/60 Hz and 10 W at 277 VAC, 50/60 Hz. The ARC Keeper shall be UL Listed, CSA Certified, suitable for damp location installation and warranted for five years from date of purchase.

WARRANTY

The ARC Keeper is warranted for a full five (5) years from date of purchase. This warranty covers only properly installed Philips Bodine backup ballasts used under normal conditions. For the warranty period, Philips Emergency Lighting will, at its option, repair or replace without charge a defective backup ballast, provided it is returned to the factory transportation prepaid and our inspection determines it to be defective under terms of the warranty. Repair or replacement, as stated above, shall constitute the purchaser's exclusive warranty, which does not extend to transportation, installation, labor or any other charges; nor does it apply to any equipment of another manufacturer used in conjunction with the backup ballast.

UL, CSA and CODE COMPLIANCE

The probe-start ARC Keeper has been tested by Underwriters Laboratories in accordance with the standards set forth in UL 924, "Auxiliary Lighting and Power Equipment," and by the Canadian Standards Association (CSA) in accordance with the standards set forth in C22.2 No. 141, "Unit Equipment for Emergency Lighting." The ARC Keeper is UL Listed and CSA Certified for factory or field installation.

Table 1 - Remote Distance

Model	Maximum Remote Distance From Lamp
AK175PRB	30 Feet
AK250PRB	50 Feet
AK400PRB	80 Feet

Table 2 - Lamp Run Time

Model	Lamp Type	Run Time
AK175PRB	175 W or energy saving 150 W Probe-Start MH (M57)	2 Minutes
AK250PRB	250 W or energy saving 225 W Probe-Start MH (M58)	2 Minutes
AK400PRB	400 W or energy saving 360 W Probe-Start MH (M59)	2 Minutes

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