



Aromat Corporation - Lighting Division

AID008

*Recommended Troubleshooting Procedures
for
Aromat Metal Halide Electronic Ballasts*

NAIS[®]

The source ...

for Lighting Components and Product Design Expertise for the Luminaire Manufacturer

For more information, call: **1-888-4-AROMAT**

Visit our Web Site: **www.aromat.com**

Aromat Instruction Document: AID008

Recommended Troubleshooting Procedures for Aromat Metal Halide Electronic Ballasts

The following trouble shooting procedure can be used to determine if the ballast is defective or some other problem area exists. As an assistance in understanding the following procedures, some critical operating features of the Aromat NAIS DCP™ Electronic Metal Halide Ballast must be known:

- 1. SHUTDOWN FEATURE:** The NAIS ballast has a **"shutdown"** feature that turns off the ballast output after approximately 30 minutes if a lamp does not start or operate properly. THE INPUT POWER TO THE BALLAST MUST BE RESET (turned off and then back on) to start a new lamp.
- 2. DIFFERENT WIRING DIAGRAM:** The NAIS ballast **CANNOT HAVE THE SCREW-SHELL** of the lampholder connected back to neutral! If either "lamp" lead is shorted or connected to neutral (white or chassis ground), the ballast will fail.
- 3. LAMP COMPATABILITY:** Not all metal halide lamps have been tested on or are compatible with electronic MH ballasts. "Ceramic" arc tube MH lamps from Philips, GE and OSI are recommended. If standard "quartz" lamps are used, both the lamp manufacturer and Aromat must be consulted for "approval" on electronic ballasts.
- 4. THERMAL PROTECTION:** The NAIS ballast has an automatic resetting thermal protector which will turn the ballast off if the fixture becomes overheated.

Recommended troubleshooting sequence:

Problem	Check	Corrective Action
Lamps do not start and known "good" replacement lamp does not start when installed	1. Due to the ballast shutdown feature; the ballast output may be turned off..	Install the new lamps; reset power to see if new lamps come on. Note, lamps that were previously lit may need to cool down before they restrike. This is a typical operational characteristic of metal halide lamps.
	2. Check lamp type; must be the proper wattage and should be the ceramic metal halide type or a "compatible" quartz type.	Replace with approved ceramic type lamps or consult with lamp manufacturer & Aromat to see if lamp is a compatible "quartz" type. MUST RESET POWER TO THE FIXTURE!
	3. Check if input voltage to the fixture or track is within +/- 10% of rated fixture voltage or check to see if actual input voltage matches the rated voltage on the ballast label.	Correct voltage problem. If 277V applied to 120v ballast, internal fuse will blow and ballast must be replaced. Ballast is not warranted for wrong voltage application. Replace the wrong ballast if a 277V ballast is in 120V fixture.
	4. With power turned off to the fixture, measure resistance from both lampholder contacts to "ground". Both of the measurements should be "open" or have very high meg-ohm readings. If a "short" or low ohms are measured, the fixture or lampholder wiring is defective. This will probably damage and/or fail the ballast.	The "short-to-ground" in the fixture must be eliminated before a new ballast can be installed. The ballast is not warranted for a lamp lead to ground short.
Random starting pattern	Lamps that start today and not the next day and vice versa are typically caused by end-of -life lamps or non-compatible lamps.	Replace with approved ceramic type lamps or consult with lamp manufacturer & Aromat to see if lamp is a compatible "quartz" type. MUST RESET POWER TO THE FIXTURE!

Aromat Instruction Document: AID008

Problem	Check	Corrective Action
New lamps operate with bluish hue	Lamps will typically operate with a “cooler” color temperature when driven with significantly lower wattage than rated. For example, a 70W lamp on a 39W ballast will be driven at approximately 40 watts which will make the lamp appear bluish as compared to the normal warm 3000K color.	?? Check the ballast label to see if it is the correct ballast for the lamps. ?? Check to see if the proper voltage ballast is being used. ?? Replace with proper ballast.
Lamp initially starts, but the lamp shuts off after approx. 30 minutes. (Ballast safety shutdown is turning off output)	1. Immediately check to see if an <i>Incandescent</i> (halogen) lamp has been mistakenly used. When halogen PAR type lamps are also used in the same space, they can be easily mistaken for HID PAR lamps. 2. The ballast shutdown feature will turn off the output if lamp is at “end of life”.	1. Replace the <i>Incandescent</i> lamps with the proper HID lamps <u>immediately</u> as they could damage or fail the ballast. 2. Replace the old MH lamp with new one. RESET POWER TO THE FIXTURE if a cold lamp does not start immediately.
Lamp initially starts, but the lamp will cycle on & off . (This is typically caused by the fixture getting too hot; the cycling is due to the functioning of the automatic resetting thermal protector inside the ballast)	1. Check if input voltage to the fixture or track is within +/- 10% of rated fixture/ballast voltage.	Correct the voltage problem
	2. Check if fixture is located in a higher than normal temperature area (near heating ducts, etc.) which can cause the fixture to be hotter than normal & cause the ballast or fixture thermal protector to function.	Move the fixture to a cooler location.
	3. If this is a downlight fixture; check to see if the fixture has an auxiliary backup lamp that is staying “lit”	Remove the auxiliary lamp and check to see if fixture runs properly. If OK, then troubleshoot the defective auxiliary sensing circuit.
	4. If this is a “non-IC” downlight fixture; check to see if “insulation” has been placed around or has fallen down on the fixture. This can cause heat to be trapped around the fixture which then causes either the fixture or the ballast thermal protectors to function.	Remove or space the insulation away from the fixture.
Lamp has noticeable flicker	1. Immediately check to see if an <i>Incandescent</i> (halogen) lamp has been mistakenly used. When halogen PAR type lamps are also used in the same space, they can be easily mistaken for HID PAR lamps.	Replace the <i>Incandescent</i> lamps with the proper HID lamps <u>immediately</u> as they could damage or fail the ballast
	2. If “flicker” is noticed on 277v ballasts; check if a line conditioner is being used in combination with a step-up transformer or variac to convert 120V to 277V. Some instability has been seen in certain line conditioner/regulators when using step-up transformer means.	Bypass the line conditioner and use an UN-regulated 120V power to the step-up means. The DCP electronic HID ballasts have their own internal input regulator circuit so additional line conditioners or regulators are usually not needed.

If the above procedures and corrective actions do not resolve the problem, the ballast may be defective. Call Aromat at (858) 391-9334 and ask for Keith for further warranty service instructions.

The source ...

For Lighting Components and Product Design Expertise for the Luminaire Manufacturer

For more information, call: **1-888-4-AROMAT**

Visit our Web Site: **www.aromat.com**

Initial release:9/17/98

Rev B. 12/17/98 Added “flicker”

REV A: 10/21/98 Added “bluish” lamp section

Rev C. Added “lamp shutoff” after 30min.