

Status Indicators

Trip	Fast Flash: (x2/s): An Earth Trip has been detected. Press Stop to clear. Slow Flash: (x0.5/s): A short-circuit has been detected. Press Stop to clear.	Steady: Output trip—no current was detected after the ignition period. Press Stop to Clear.
Over-temp	Flashing: The output bridge module is too hot. Press Stop to clear (will only clear if the ballast has cooled sufficiently).	Steady: The Power Module is too hot. Press Stop to clear (will only clear if the ballast has cooled sufficiently).
Fault	Flashing: There is a fault on the Bridge Module. Seek technical assistance.	Steady: There is a fault on the Power Module. Seek technical assistance.

Troubleshooting

Bear in mind the ballast is part of a system which on the output side includes cabling, the luminaire, the HMI lamp (bulb/globe), and a high voltage ignitor. On the input side there is often a network of cables, connectors and circuit breakers. All components in the system need to be correctly maintained to ensure reliable operation. Particular care needs to be taken with the ignitor and High Tension leads in the head as these can feed dangerous voltages back to the ballast. A faulty ignitor can damage multiple ballasts if it is simply moved from ballast to ballast without attempting to identify the root cause of a problem.

Symptom	Action
Started LED flashes when Start pressed	This indicates there is a break in the safety loop. With an ARRI fixture the rocker switch may be in the off position. Check the lamp door is closed, and that the head feeder connectors are fully mated.
Earth Trip (see above)	May be a flashover to ground in the light head. Most likely to happen when the lamp is hot but indicates the High Tension leads need some attention
Short Circuit (see above)	May be caused by a short on the head feeder cable. Try replacing this cable.
Output Trip (see above)	After the ignition period no current was detected—this could be because the lamp is end of life. Inspect the lamp and see if it appears damaged or aged. If a hot strike was being attempted then the lamp may strike successfully once it has cooled.
Fault LED (see above)	This would be caused by internal fault on the ballast. This may be cured by exchanging the faulty module, but this should be carried out by a service technician.
Overtemp	If the ballast is reporting overtemp then check that the air inlets and outlets are not blocked. The ballast should be protected from direct sunlight, and be raised up from ground level where the air can be hotter. Leave the fans running to allow the ballast to cool. Once it reaches normal temperature the overtemp LED will clear.
Light Flickers	This may be arc movement—try using a higher output frequency, or use the tuning functions if operating in 1000Hz mode.



EB960P Electronic Ballast *Operating Guide*



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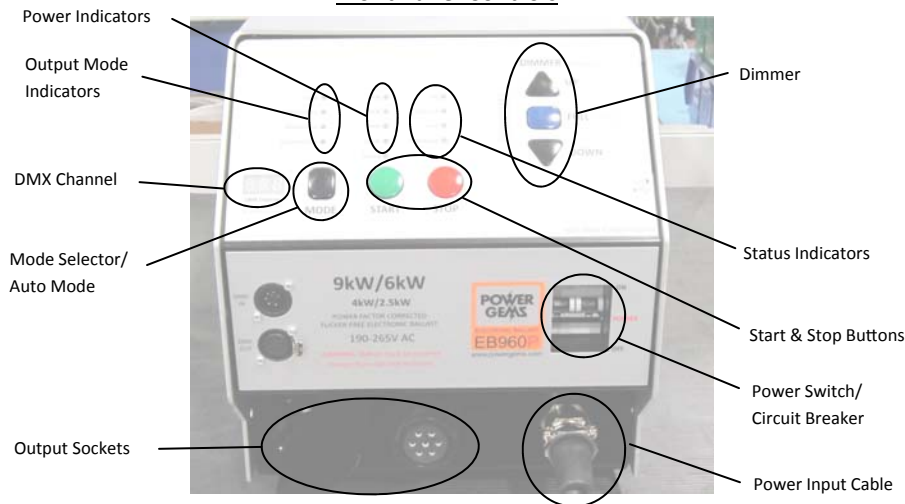
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Front Panel Controls



Quick Start

Connect to an AC supply. Plug the fixture into the output connector, switch on the ballast at the Power Switch and then press the Start button. The lamp should strike and will then take a couple of minutes to come up to full power. If there is a problem the ballast will indicate this on the front panel LEDs.

Power In

The ballast should be connected to an AC mains supply in the range 195-265V. In the case of a supply undervoltage the ballast will keep running but below 165V it will reduce its output power in order to keep the lamp lit. If the supply reaches around 125V the ballast will switch off. Supply over-voltages should be avoided as they can damage the ballast.

The Green/Yellow Earth wire in the mains cable must be connected to supply earth to ensure operator safety.

Output Connectors

The output connectors vary depending on the individual configuration. A label placed above each output connector indicates the type and power of light fixture it is suitable for. Only one lamp may be connected at a time. The ballast will automatically sense which socket is in use and supply the appropriate power.

Start & Stop

The ballast can be started using the front panel controls, the buttons or switches on the light head, or remotely using DMX. When using ARRI fixtures the ballast can be stopped and started from the head using the rocker switch. For safety if the ballast is powered up with the rocker switch closed the head will not start until the Start button is pressed or the rocker switch is opened and re-closed.

Auto Start

The ballast can be set to start as soon as power is applied by putting into 'Auto Mode'. To do this hold the Mode button for 5 seconds until the 'Auto' LED lights up at the corner of the display. Repeat the process to take the ballast out of Auto Mode. The auto mode setting is remembered at power-off.

DMX

The DMX active LED will illuminate when a DMX signal is detected. The Start and Dimmer buttons will not function in DMX mode. The DMX base channel is indicated on the display and this channel controls dimming. The next channel up controls ballast ON/OFF—setting a value above 50% switches the ballast on. To change DMX channel hold down the Stop button and adjust using the Up and Down buttons.

Dimmer

Varies lamp power between 40-100%. The dimmer will not operate until the lamp has warmed up.

Power Indicators

These LEDs show the current output power. If the ballast is sensing between two different lamp powers a lower power lamp may not be indicated until the lamp has come up to operating temperature

Mode Selector

The ballast offers 4 output frequency settings. 3 of these modes offer flicker-free light, and 'Silent' is a low-noise setting but the light output is not flicker-free and the camera should be set up accordingly. During normal operation there can be a degree of movement in the arc of the lamp which can be picked up by the camera. Selecting a higher operating frequency can reduce the amount of arc movement.

The highest frequency mode available on the ballast is the 1000Hz mode which can be helpful in providing the most stable arc for High Speed Filming. However there is the possibility with this mode that 'acoustic resonance' in the lamp causes significant instability and some manual tuning of the running frequency may be required. To do this hold down the Start button and use the Up and Down buttons to adjust the frequency whilst looking for the most stable light output. The operating frequency can be adjusted in the range 900-1100Hz.

Auto Scan

In 1000Hz mode the ballast can automatically tune the operating frequency rather than using manual tuning as above. To get the best results with automatic tuning the lamp should be up to full operating temperature (run for more than 20 minutes). Hold down the Start button and then press the Full button for 2 seconds. The display will change to a rotating pattern, and you will hear the ballast scanning through the operating frequency range. The full scan takes about 100 seconds. At the end of the scan period the ballast moves to the frequency which showed the best stability. In some cases a small manual frequency adjustment may be required. To abort the scan at any point press Start and Full for 2 seconds.

Volt Drop Compensation

The ballast measures the volt drop in the cable between the ballast and the light fixture. This allows the power loss in the cable to be calculated. The output power is then increased by this amount so the lamp running power remains at the rated value no matter what head lead length is used.