

Pyrometer Data sheet

EL 101 HT infrared non-contact temperature measurements.

Why do I need a pyrometer? Conventionally machines run a heating timer, this sets the amount of time the upper and lower heater spend in the forward position over the material being formed. The longer the time the hotter the material becomes. This gives repeatability to a certain degree but has some inherent floors. As the machine warms up it is necessary to reduce the heating time incrementally otherwise the sheet will overheat, this normally occurs in the first 30 minutes. The heating timer does not account for ambient temperature; in a very cold production environment the material will require more heating as its temperature start point is lower. With experience these variations can be corrected by the operator on the fly, but mistakes can cost time and waste material.

The EL 101 pyrometer is a non-contact temperature sensor that is mounted into the upper heater chassis looking down towards the middle of the material being formed. The amount of time the heaters are over is irrelevant; the pyrometer holds the heaters forward until the desired material temperature is reached. This technique takes away variations in ambient and chassis temperature and giving the machine repeatability. The final temperature is recorded in the M.M.I and can be displayed as a line graph during its cycle.

The pyrometer has a sight tube that passes just beyond the element line. This prevents the unit from picking up false readings directly from the backs of the elements. The sight tube is supplied with an air purge to prevent debris or smoke from clouding the lens. The unit is housed into a custom built water jacket protecting it from the heat of the elements. This is coupled to a water chiller unit that circulates water a constant low temperature. The system uses de-mineralized water to prevent furring and has a 500 micron water filter in line with a flow transducer to give total protection to the unit. The flow transducer gives feed back to the M.M.I to show water flow in Lt/Min. The M.M.I gives warnings of low, critically low or no water flow. Conventional water flow switches fail because the magnetic float has a tendency to stick in the open position. If the system fails to deliver water the heaters automatically shut down to protect the pyrometer. The chiller unit has an additional timer built in to circulate water for 20 minutes after the machine has finished operating. This allows for residual heat to disperse from the chassis whilst still protecting the unit.



This system can be retrofitted to any machine in the market