

## Step Six: Configure the eDART™ Software

The LQT Module requires eDART™ Release 8.0 or later. Contact RJG Customer Support if a software upgrade is required.

After starting a job the eDART™ Sensor Locations screen will show the LQT as four rows (channels), as shown below:

If the LQT Module has not yet been configured, the four channels will be named “Mold Temperature” with no location entered. You can change the “type” to Barrel Temperature or Dryer Temperature.

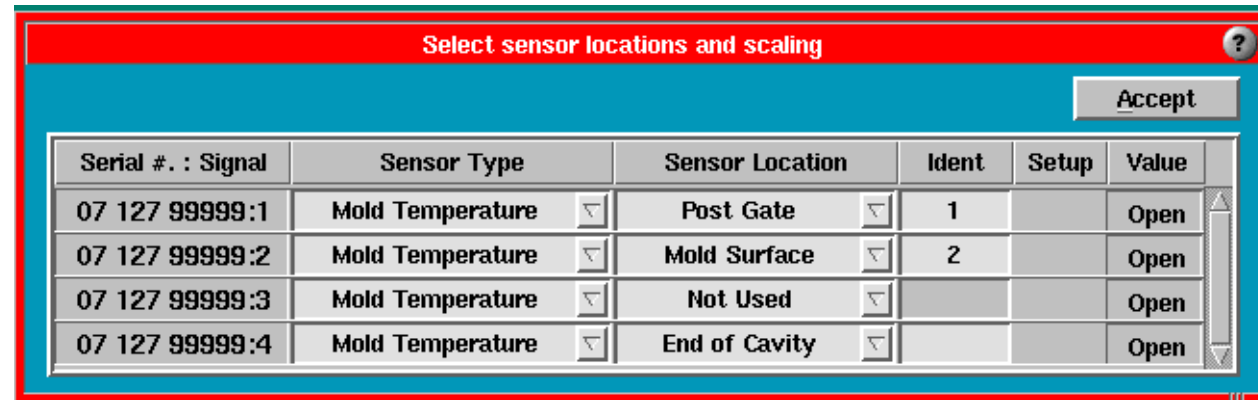


Figure 4: Selection Sensor Location Tool

Once you have selected the type (or left it as Mold Temperature) you can choose locations. The Mold Temperature type includes locations for in the cavity (e.g. End of Cavity), hot runner locations, various surface locations, and “water” (coolant).

Note: Use the in-cavity locations (Post Gate, Mid Cavity, End of Cavity) with flush mount, in-cavity, thermocouples. Use “Mold Surface” for sensors near the outer surface of the mold. As with other multi-location sensors you can enter an ID for each cavity, water circuit etc.

The “Value” column on Sensor Locations shows the temperature in degrees Celsius or “Open” if no sensor is connected.

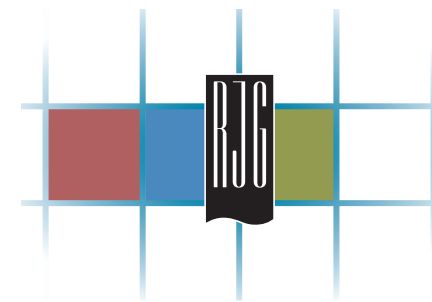
## Explanation of Software Values Computed

For each in-cavity location\* which contains fast changing temperatures, the eDART™ computes a Minimum, a Range, and an Average summary measurement during the cycle. The minimum represents the “real” mold temperature; ie. the surface temperature the melt sees when it arrives at the sensor. The “Range” for a given sensor is the difference between the minimum and the peak. Alarms set around this value may be useful for detecting short shots and sometimes variation in melt temperature.

The slow-moving thermocouple types used with the LQT module are usually not viewed on the Cycle Graph, although they can be viewed there. For these sensor types, such as barrel temperatures or dryer temperatures, the Average value is calculated each cycle. Plot the Average value of these sensors on the Summary Graph to see trends or cyclic behavior.

\* (Post Gate, Mid Cavity, End of Cavity, Sprue, Runner, Nozzle, or Manifold location in Sensor Locations)

For further information please contact RJG Customer Support or visit our website at: [http://rjginc.com/resource\\_product.html](http://rjginc.com/resource_product.html) to obtain detailed manuals



## Lynx Quad Temperature Module

LS-QTTB-J, LS-QTTB-K

### Selection & Installation Guide



## GENERAL DESCRIPTION

The Lynx Quad Temperature (LQT) Module takes inputs from up to four thermocouples for use with the eDART™. The Terminal Block connector model provides input for a broad range of thermocouples.

Two models are available for either Type J or Type K thermocouples (see Specifications table).

## APPLICATIONS

The Terminal Block connector model is used for input of a broad range of thermocouples to the eDART™. These can be used for a wide range of applications including:

- In-cavity temperature monitoring using RJG’s TS-PF03-K sensor (or similar)
- Monitor barrel temperature at different locations (feed throat, nozzle or each of the zones)
- Monitor coolant temperature
- Monitor dryer temperature

## SPECIFICATIONS

Thermocouple Types and Range	
LS-QTTB-J	Type J 0-400 °C (32-752 °F)
LS-QTTB-K	Type K 0-200 °C (32-392 °F) (0-500 °C on special request)
<b>Case Temperature</b>	0-60 °C (32-140 °F)
<b>Accuracy:</b>	±2 °C (±3.6 °F)
<b>Maximum Sample Rate:</b>	500 samples/second each channel

Table 1: Specifications

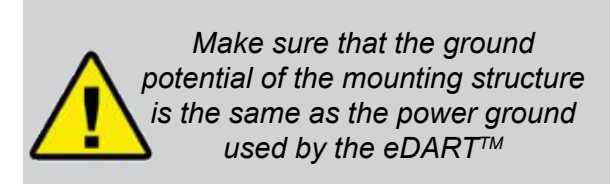
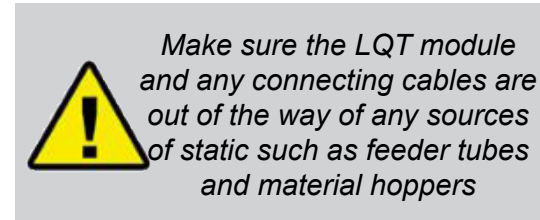
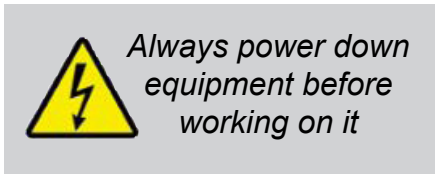
## SAFETY SYMBOLS

These operating instructions must be read, understood and implemented in all respects by all personnel who are responsible for the eDART System™. These operating instructions should be kept available so all personnel can quickly refer to them at any given time.

Please refer to this table if you have any questions regarding the importance or meaning of the safety symbols used in this manual or on the eDART System™.	
	This symbol is used as an operational safety symbol for all work that involves a risk of life and limb for personnel. This symbol also identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss. Where this symbol appears throughout this manual, please exercise particular care and caution while carrying out tasks.
	This symbol is used as an operational safety symbol for all work that involves risk of electrocution. For instance, it can represent areas of high voltage where power should be disconnected in advance of any servicing.

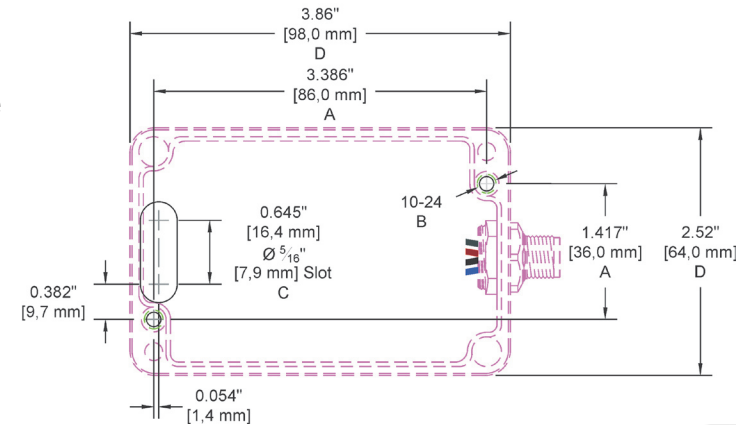
Table 2: Explanation of Symbols

## INSTALLATION IN 6 STEPS



### Step One: Mill Mounting Holes for RJG LQT Module

Figure One shows the dimensions for the mounting holes, overall dimensions and the wire slot on the bottom of the module. This slot is how the thermocouple wires will enter the module. Use the following guidelines when determining the mounting location:



- The RJG LQT Module must be mounted on a frame grounded structure such as the mold, platen or machine to ensure proper operation. If this is not possible, the LQT Module must be grounded to the machine using a grounding strap.
- Do not mount in locations subject to high shock or vibration (such as ejector plates or actuating mold components).
- The module must be mounted to surfaces between 0 - 60 °C (32 - 140 °F).
- Place the module over the area where the wires exit the surface of the mold or panel.

### Step Two: Install Temperature Sensors

For sensor installation, refer to the installation instructions provided by your thermocouple manufacturer. The LQT Module is designed for use with grounded thermocouples. In applications where the entire thermocouple wire is buried inside the mold, unshielded thermocouple wire may be used. However, for any applications where the thermocouple wire is exposed, shielded thermocouples must be used and properly grounded.

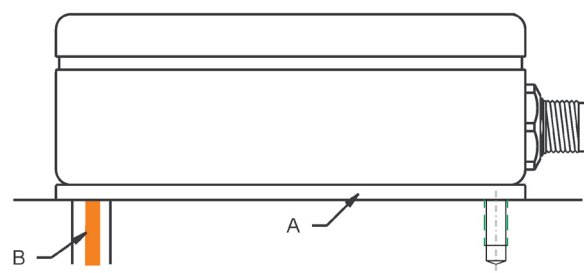


Figure 2:  
A. Mounting Gasket  
B. Thermocouple Wire

### Step Three: Connect RJG Lynx Quad Temperature Module to Temperature Sensors

The thermocouple lead wires are fed through the mounting gasket and then the wire slot in the bottom of the module (see Figure 2).

The two lead wires are connected to the positive and negative terminals for the selected channel (see Figure 3 for connections and Table 3 for difference between wire colors in US and IEC). If shielded thermocouple wire is used, the wire should run under the Shield Plate. Once in place, the Shield Plate should be tightened down to make good contact with the shielded thermocouple wire to reduce RF noise susceptibility. Do not over-tighten as that may crush the wire.

Table 3: Wire color differences between N. America and IEC

Thermocouple Type		Thermocouple Wire Colors	
		North America	IEC 584-3
Type K	+	Yellow	Black
	-	Red	White
Type J	+	White	Green
	-	Red	White
Type N	+	Orange	Pink
	-	Red	White

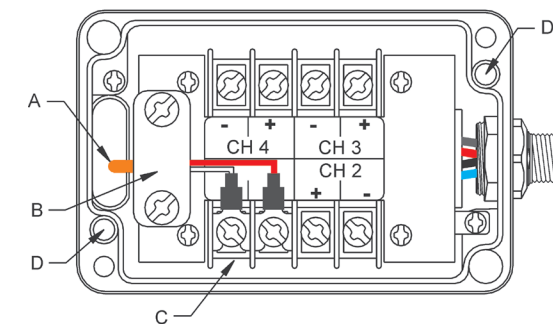


Figure 3:  
A. Thermocouple Wire  
B. Shield Plate  
C. Mounting Terminals  
D. Mounting Screw Location Terminals

### Step Four: Mount the RJG LQT module

Remove the cover plate to bolt the RJG LQT Module to the mounting surface using the two supplied mounting screws. Make sure the mounting gasket is placed between the mounting surface and the LQT Module (refer to Figure 2).

### Step Five: Connect RJG Lynx Quad Temperature Module to the eDART™

Connect the Lynx communication cable between the LQT Module and the eDART™ communications port.