

## Magnet Mount RTD for Surface Temperature

### APPLICATION

A surface mount temperature sensor is a convenient method to measure process fluids or machinery temperature where immersion style sensors are not possible due to process fluid properties or difficulty creating an insertion hole in the device. Some locations or characteristics of machinery do not allow for mechanical fasteners, and drilling or welding may not be possible or desirable. In those situations a surface mount temperature sensor provides a fast and easy installation.



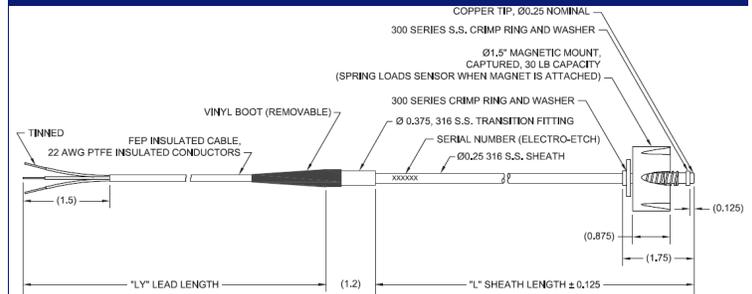
### CHALLENGE

Surface mounted sensors measure the temperature of the surface and not the fluid inside which means some adjustment in the controller or readout device may need to be made. In most cases an offset can be calculated or guessed at to extrapolate the actual fluid temperature. This works well if the ambient conditions are constant. If not, insulation can be added around the sensor to minimize the effects of ambient temperature.

Surface mount temperature sensors may be attached with epoxy, tape or clamps but those require surface preparation for epoxy or tape to stick properly and clamps may be difficult to arrange to hold the sensor securely. Another solution may be needed.



## 23688- "L" - "LY"



### Magnet Mount RTD

### SOLUTION

A convenient solution for some installations is to attach the sensor with a magnet. Although limited to surfaces that are magnetic such as cast iron and steel they still find numerous applications in industry. The preferred style of RTD probe is tip sensitive made of copper or other high thermal conductivity material for improved heat transfer to the sensing element. Spring loading ensures firm contact with the surface. Addition of heat transfer paste may improve accuracy and response time especially if installed on rough surfaces. Accuracy of the measurement can be improved by placing an insulation sleeve over the sensor shielding it from ambient air temperature effects. This is especially necessary if the ambient conditions change frequently and an offset is being used in the readout to adjust for measurement error. Installations that are over 176°F require special magnets that maintain their strength up to 662°F. Standard magnets lose their magnetism at 176°F.

**For more information or assistance with your application contact us at: [info@burnsengineering.com](mailto:info@burnsengineering.com)**