

RECHNER SENSORS

Application Note 9 Level Detection of Hot Melt Glue



Description:

Level detection of hot melt glue has many technical hurdles that need to be overcome. Most sensors will not work in the extreme heat inside of the melting tank and will not be reliable due to the viscous nature of glue. This is especially true when the machine is turned off and the glue is allowed to harden. This also creates other stresses with expansion and compression of the glue changing states.

The solution is Rechner's KFS series of sensors. These durable sensors are designed to work in direct contact with the glue in extreme temperatures of up to 250°C for PTFE or PEEK housings (200°C for GFK housings) and can ignore massive amounts of glue build-up on the sensor to give you a reliable switching point the very first time you turn your machine on.

Function:

The sensor is mounted in the hot melt glue tank above the melting element. When the level of glue falls below the sensing point of the KFS sensor, a low level signal is sent to ask for more glue pellets.

The electronics for the sensor are kept in a remote location away from the hot melt tank. The adjustment for the KFS sensor is made on this KFA amplifier.

Adjustment of the amplifier takes place only after the KFS probe has been installed (mounted) and all electrical connections have been wired. Ensure that the Grounding Electrode (BE) is grounded to the tank in which the sensor is mounted.

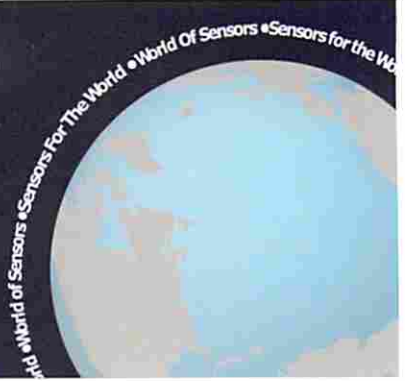
After installation, a 'full adjustment' of the amplifier is done in this order:

1. **Locate the sensitivity adjustment potentiometer** on the amplifier. The actual adjustment potentiometer is recessed and may be located under a metal or plastic screw that is there to keep dust out.
2. **Fully immerse the sensor** up to the switching point in hot melt glue after mounting the sensor in the tank.
3. **Reset the sensor's sensitivity** by turning the potentiometer counter-clockwise 20 full turns, or until the sensor no longer sees the product (whichever comes first).
4. **Adjust the sensor** to the product to be detected by turning the potentiometer clockwise until the sensor sees the product.
5. **Add 1/4 turn for safety** by turning the potentiometer a further 90 degrees clockwise.

Parts Required:

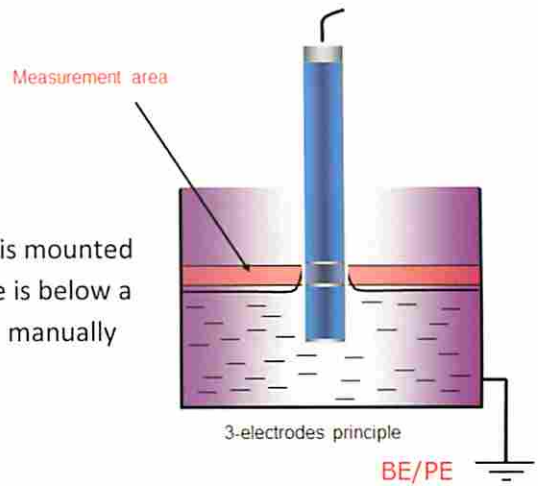
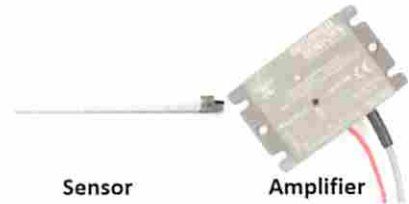
Sensor:	KFS-51-15-150-15-GFK-D16-X0E-Y55	KF0136
Amplifier:	KFA-5-1-L-P-A-Z02-Y50	AF0064
Mounting Adapter:	16mm-3/4"NPT-V4A	SA7004

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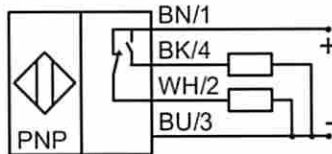
Wiring Diagrams:

1. **Probe installation**
2. **Connect the evaluation unit** (for KFS-5)
3. **Connect the BE-cable !**
4. **Connect the power supply**
5. **Adjustment**
 - Full adjustment



For Hot melt tanks with grid systems, the sensor is mounted above the grid and detects when the level of glue is below a specified height. Refilling is usually accomplished manually or automatically with a short filling timer.

- Brown = (+)
- Black = Normally open output
- White = Normally closed output
- Blue = (-)



NOTE: The BE cable on the amplifier MUST be connected to the metal container that the sensor is mounted in for the sensor to function correctly.

SA7004

- 16mm-3/4" NPT-V4A
- 16mm to 3/4" compression style bushing
- Made of 316 stainless steel

