

Application Note 3 Level Control of Plastic Pellets



Description:

KAS Series sensors are used as level detectors in the plastics industry for many operations. Plastic pellets, which form the raw materials for the injection and blow molding industries, can be detected in bins, hoppers, and transfer systems. The signal from the sensors can be used to control bin levels, shut off pneumatic conveyors or operate alarm systems

Function:

The level of plastic pellets in the hopper of an injection molding machine must be kept above a minimum level at all times to prevent voids in the end product. The machine hopper is filled by a pneumatic conveyor system from a large storage silo.

For detection of plastic pellets, it is recommended that the sensors be immersed in the material. The non-flush mount type of the sensor is installed through the wall of the hopper to obtain accurate results. Flush mount style sensors can also be used to detect the level through the wall when the hopper is made out of plastic or glass.

One KA0417 sensor is mounted through the machine hopper wall. The sensor is mounted near the bottom of the feeding hopper and sends a signal to refill the hopper when the plastic pellet level falls below where the sensor is mounted. This ensures that the machine never runs out of material.

When choosing a mounting point for the sensor it is necessary to select a point high enough above the first heater element to keep the sensor temperature below 70 degrees C (158 Degrees F). This ensures proper operation of the sensor at all times.

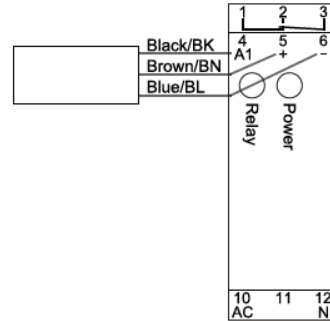
Parts Required:

- | | | |
|---|----------------|---|
| 1 | Relay PSU: | NA7001 (EGI-RLC) |
| 1 | Sensor: | KA0417 (KAS-80-35-A-M32-PPO-Y3-1-NL - M32 diameter)
-OR-
KA0333 (KAS-80-A24-A-M30-PPO-Y3-1-NL - M30 diameter) |
| 1 | 5 Meter Cable: | 0.25SQX4C |

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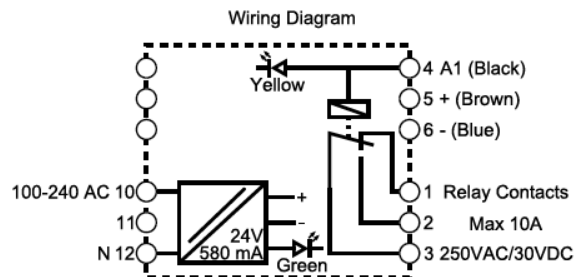


EGI-RLC



Wiring:

- AC power** is wired to terminals 10, and 12.
- The **sensor** is wired to terminals 4, 5, and 6.
- The **low level signal** is wired to terminals 2 and 3.



Adjust the sensor to detect the pellets in the tank:

1. **Locate the sensitivity adjustment potentiometer** on the back of the sensor.
2. **Fully immerse the sensor** into the bulk material.
3. **Reset the sensor's sensitivity** by turning the potentiometer counter-clockwise 20 full turns, or until the sensor no longer sees the product.
4. **Find the switching point of the bulk material** by turning the potentiometer clockwise until the sensor detects the product.
5. **Add 1/4 turn for safety** by turning the potentiometer a further 90 degrees clockwise.