Analog Capacitive Sensors (cylindrical body style)

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Overview

Cylindrical Analog Capacitive sensors detect dielectric material and change the analog output more when an increasing amount of dielectric material is present.

If you have a 4 to 20 mA (IL4) output sensor then the default output when the active area of the sensor is only exposed to air will be 4 mA. As you increase the amount of material in the sensors detection field, the output will increase towards 20 mA.

LED Color

Analog sensors have a 2 color LED. The LED will either be green or orange (amber) when the sensor is powered on.

1. The Amber LED indicates that the sensor's output is outside of the useable range. On an IL4 sensor this would indicate that not enough material is present and the output will be at the minimum 4 mA. Alternatively, if there is enough material present to fully saturated the sensor's field the output will at the maximum 20 mA.

2. The Green LED indicates that the sensor's output is inside of the useable range. On an IL4 sensor this would indicate that the sensor is outputting a signal between 4 mA and 20 mA.

Adjusting a 4 to 20 mA (IL4) sensor

1. Turning the potentiometer clockwise will make it so that the sensor is more sensitive and therefore requires less material to be in the sensing field for it to be saturated and reach the maximum 20 mA output.

2. Turning the potentiometer counter-clockwise will make it so that the sensor is less sensitive and therefore requires more material to be in the sensing field for it to be saturated and reach the maximum 20 mA output.

3. Please note that not all materials have a high enough dielectric constant or density to fully saturate the sensor's field. In cases with these types of materials the actual usable output signal will only vary between 4 mA and for example 14 mA for a thin piece of cardboard.

    An IL4 can always output a 4 mA signal. It can only output 20 mA when enough material is inserted into the sensor field and the sensor's potentiometer is adjusted clockwise enough to make the sensor sensitive enough.

Adjusting a 20 to 4 mA (IL20) sensor

1. Turning the potentiometer clockwise will make it so that the sensor is more sensitive and therefore requires less material to be in the sensing field for it to be saturated and reach the minimum 4 mA output.

2. Turning the potentiometer counter-clockwise will make it so that the sensor is less sensitive and therefore requires more material to be in the sensing field for it to be saturated and reach the minimum 4 mA output.

3. Please note that not all materials have a high enough dielectric constant or density to fully saturate the sensor's field. In cases with these types of materials the actual usable output signal will only vary between 20 mA and for example 10 mA for a thin piece of cardboard.

   An IL20 can always output a 20 mA signal. It can only output 4 mA when enough material is inserted into the sensor field and the sensor's potentiometer is adjusted clockwise enough to make the sensor sensitive enough.

Adjusting a 0 to 20 mA (IL0) sensor

1. Turning the potentiometer clockwise will make it so that the sensor is more sensitive and therefore requires less material to be in the sensing field for it to be saturated and reach the maximum 20 mA output.

1. Turning the potentiometer counter-clockwise will make it so that the sensor is less sensitive and therefore requires more material to be in the sensing field for it to be saturated and reach the maximum 20 mA output.

1. Please note that not all materials have a high enough dielectric constant or density to fully saturate the sensor's field. In cases with these types of materials the actual usable output signal will only vary between 0 mA and for example 12 mA for a thin piece of cardboard.

   An IL0 can always output a 0 mA signal. It can only output 20 mA when enough material is inserted into the sensor field and the sensor's potentiometer is adjusted clockwise enough to make the sensor sensitive enough.