Using the Teach Functions

The teach functions allow programmable capacitive proximity sensors to "learn" their surroundings. These functions introduce the sensor to its environment and program what objects not to detect. These functions can also be used to adjust the sensitivity of the sensor as needed over time.

There are three different teach functions that can be performed using the programming buttons on the sensor.

- Basic Teach Empty State
- Adjustment Teach Full State
- Adjustment Teach Empty State

Each teach function and accompanying button sequence is discussed in this supplement and is intended for use with the following Capacitive Proximity Sensors:

- CK1-00-2H
- CT1-00-2H
- CTV-00-2M
- CR1-00-2A

Basic Teach Empty State

The Basic Teach function is conducted while the product is absent and is used to tell the sensor which objects in its environment to suppress in order to detect accurately. For example, if used to detect level in a tank then detecting the wall of the tank would not be desired. It is important to note that the Basic Teach Empty State will reset the unit and any previous teach will be deleted.

To perform a Basic Teach, use the following button sequence:

Normally Open Operation (output closes when the tank is full or product is present):

- Press [Out off] for 2s (max 6s) - While pressing the pushbutton the LED flashes slowly. After releasing the pushbutton, the LED extinguishes.

Normally Closed Operation (output opens when the tank is full or product is present):

- Press [Out on] for 2s (max 6s) - While pressing the pushbutton the LED flashes slowly. After releasing the pushbutton, the LED lights continuously.

The unit is now ready for operation. For the detection of media with a low dielectric constant (e.g., plastic granulates or oils) no further setting is required.

Adjustment Teach Full State

The Adjustment Teach Full State is necessary for aqueous media and will optimize the sensitivity of the sensing unit. This function can be repeated at any time and it will not affect any Adjustment Teach Empty State functions that were performed previously.

To perform an Adjustment Teach Full State, first introduce the product to be detected. For example, if detecting tank level, fill the tank until the sensing face of the sensor is covered. With the face covered, the LED should light if using the normally open configuration or extinguish if using the normally closed configuration. Now use the following button sequence to perform the Adjustment Teach Full State:

Normally Open Operation (output closes when the tank is full or product is present):

- Press [Out on] for 6s - While pressing the pushbutton the LED first flashes slowly. After six seconds, the LED flashes more rapidly and after releasing the pushbutton, the LED lights continuously.

Normally Closed Operation (output opens when the tank is full or product is present):

- Press [Out off] for 6s - While pressing the pushbutton the LED first flashes slowly. After six seconds, the LED flashes more rapidly and after releasing the pushbutton, the LED extinguishes.

Adjustment Teach Empty State

The Adjustment Teach Empty State is recommended to compensate for unwanted material that may have built-up on the sensing face over time. This function can be repeated at any time and it will not affect any Adjustment Teach Full State functions that were performed previously.

To perform an Adjustment Teach Empty State, first remove the product being detected. For example, if detecting tank level, empty the tank until the level is below the sensing face of the sensor. With the face clear, the LED should extinguish if using the normally open configuration or light if using the normally closed configuration. Now use the following button sequence to perform the Adjustment Teach Empty State:

Normally Open Operation (output closes when the tank is full or product is present):

- Press [Out off] for 6s - While pressing the pushbutton the LED first flashes slowly. After six seconds, the LED flashes more rapidly and after releasing the pushbutton, the LED extinguishes.

Normally Closed Operation (output opens when the tank is full or product is present):

- Press [Out on] for 6s - While pressing the pushbutton the LED first flashes slowly. After six seconds, the LED flashes more rapidly and after releasing the pushbutton, the LED lights continuously.

Locking/Unlocking

The unit can be electronically locked to protect it against unintentional configurations:

To lock or unlock the unit press [Out on] and [Out off] at the same time for 10s - The LED state (yellow) changes for a short time (i.e., the lit LED goes out briefly or the LED which is not lit lights briefly).

If attempting to perform a teach on the unit and it does not react, it may be locked. Try the above steps to unlock the unit before performing the teach.