



### 9. APPLYING POWER AND THE "DOORWAY LEARN" SETTING

**"Doorway Learn" is OFF**  
Ref section 7, Dip Switch Settings.

Upon power ON, the solid green LED turns on indicating that the sensor is in standby mode and ready to detect.

**Presence Detection:** It takes 10s after sensor power up for presence detection to be initiated on all rows of detection.  
If before 10s has elapsed someone walks into the detection area it will take about 5s after the person leaves the detection zone for presence detection to be functional.

**"Doorway Learn" is ON**  
Ref section 7, Dip Switch Settings.

Upon power ON, the Red LED indicates a door open relay output to begin the doorway learn process.

Green LED blinks for about 10s as the "door learn" process is carried out. Door opens/closes.

Door learn process complete, sensor in standby mode.

**CAUTION** **Presence Detection:** During the "Doorway Learn" process the outer 4 rows of detection on the HR100-CT sensor switch from motion detection to presence detection 10s after power ON. The inner "door learn" row of detection will switch from motion to presence detection after the "doorway learn" process is carried out.

**"Doorway Learn" Failure & Recovery:** If a person enters the detection area during the "doorway learn" process it may not be successfully completed. In this case the sensor will carry out the doorway learn process on door activations by a person in order to build an accurate image of the door open and door close position.

**Note** When Doorway Learn is turned ON, the sensitivity level of the inner row of detection is only at maximum when the outer rows of detection are activated.

**General Caution:**  
When carrying out the following work, turn off sensor power.  
※ When the floor condition is changed by placing a mat on the floor etc.  
※ When the detection area pattern or sensor sensitivity is adjusted.

### 10. VERIFICATION OF OPERATION

After installation is completed "walk test" the sensor detection area. If the detection area is not as expected adjust the detection area as referred to in section 8 or increase the rows of detection using Dip switch (X) 3 & 4  
If the detection area is still not as expected then the sensor sensitivity can be increased by turning the potentiometer clockwise. When the sensor detects even though there is nothing in the detection area the sensor sensitivity can be decreased by turning the potentiometer in the anti-clockwise direction.

### 11. TIMING CHART OF EVENTS

**Safety Output Row 1, 2 / Test Input**

T1 : 10±1 [mSec] App  
T2 : 11±1 [mSec] App

**Activation Output Row 2, 3, 4, 5**

### 12. DOOR MAINTENANCE WORK

When carrying out door maintenance work with power applied to the sensor on door controllers that are wired to "test" the sensor ensure to set the dip switches as below.

**Note** Keep in mind to return the dip switch settings to their original state once door maintenance work has been carried out.

Refer to [7.Dip Switch Settings].

### 13. SELF DIAGNOSTICS ERRORS

Technical problems with the HR100-CT sensor are indicated by a flashing Green/Red LED. The frequency of flashing indicates the type of problem as explained below.

Flash Frequency	LED	Cause
Fast	Green Red	Please replace the sensor.
Slow	Green Red	Confirm that the sensitivity potentiometer is set to maximum and re-power the sensor. If the error persists, set Dip Switch (X) 8 to "Low Reflection".

### 14. TROUBLESHOOTING

Problem	LED Status	Possible Cause	Solution	
Door does not open when a person enters the detection area.	OFF	Sensor Connector not connected correctly.	Tighten or reconnect the connector.	
		Incorrect power supply voltage.	Apply proper voltage to the sensor. (AC/DC 12-24V)	
		Incorrect sensor wiring.	Double check sensor wiring.	
Door opens and closes for no apparent reason (Ghosting).	Door Opens RED Door Closes GREEN	Object moving in the detection area.	Remove the moving object from detection area.	
		Sensitivity too high for the installation environment.	Reduce the sensor sensitivity.	
		Dust, frost or water droplet on the sensor lens.	Wipe the sensor lens clean and install a weather cover if necessary.	
		Detection area overlaps with that of another sensor.	Ensure different frequency setting for each sensor.	
		Detection of falling snow, insects, leaves etc.	Turn monitor mode Dip switch (Y) 3 to "Snow".	
When Door opens or closes, LED ORANGE.	ORANGE	Detection row "ROW1" ("ROW2" when "Doorway Learn" is turned ON) is focused too close to the door.	Adjust detection depth of Inner 3 rows away from the door.	
		Detection area changed, while ∞ infinity presence timer setting is in use.	Re-power the sensor or change the presence timer settings to 30 or 60 secs.	
Door opens and remains in the open position.	RED	Incorrect sensor wiring.	Double check sensor wiring.	
		Reflected signal saturation.	Remove highly reflective objects from the detection area, or lower the sensor sensitivity.	
		GREEN/RED FAST FLASH	Internal sensor error.	Replace the sensor.
		GREEN/RED SLOW FLASH	Reflection of the transmitted infrared signal from the floor is too low.	Increase sensor sensitivity or change the "Reflection Diagnostics" Dip switch (X) 8 from "Normal" to "Low Ref".
		ORANGE blinking (Slow)	Door Hold (Dip switch (Y) 4 set to Open).	Turn "Door Hold" Dip switch (Y) 4 to Auto.