#585
USER'S GUIDE

PRESENCE SENSOR

DESCRIPTION

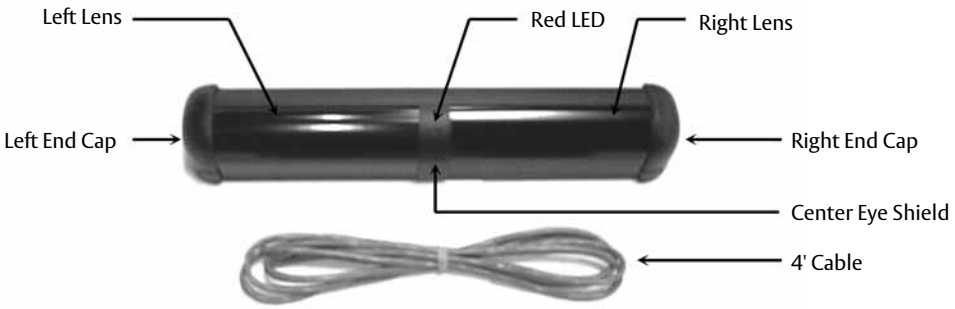
The Norton #585 Presence Sensor is a self-monitored ready overhead-mounted diffused active infrared sensing device that provides detection for the triggering of automatic swing door safety functions. This sensor is designed for use with all of Norton Low Energy Operators.

Full adjustability is achieved with the use of a hand-held remote control (optional accessory - specify part number 585REM to order). This allows alteration of all of the available functions as well as for inquiry of existing settings. Should the need arise; the #585 may also be tuned by means of two sensor-mounted buttons contained on the PC Board within the unit. With these two buttons, the #585 field of detection can be altered without the use of the hand-held remote.

TECHNICAL SPECIFICATIONS

Installation Height - Variable	9'-0" max. (Recommended 6'-6" to 8'-0")
Mounting Angles	+5°, +10° (factory default setting: +5°)
Power Supply	12 to 24 V AC / DC +/- 10%
Frequency	50-60 Hz
Output	Max. Voltage at contacts: 60V DC / 125V AC
	Max. Current at contacts: 1 A
	Max. switching power: 30 W (DC), 60 VA (AC)
Relay Hold Time	0.5 to 9 seconds
Operating Temperature	-22°F to +140°F
Immunity	Immune to electrical and radio frequency interference
Cable	4'- six conductor cable
Weight	1lb. 11 oz. (765g)
Dimensions	11.8"L (305 mm.) x 1.9"H (51 mm.) x 1.9"W (46 mm.)
Material	Aluminum & ABS plastic
Housing Color	Black anodized aluminum

COMPONENT ID



INSTALLATION TIPS

- The sensor must be firmly fastened to prevent vibration.

- The sensor must not have any unwanted objects likely to move or vibrate in its path.

- The sensor should be mounted flush with bottom of door header.

SAFETY PRECAUTIONS

- Shut off all power going to the header before attempting any wiring procedures.
- Maintain a clean & safe environment when working in public areas.
- Constantly be aware of pedestrian traffic around the door area.
- Always stop pedestrian traffic through the doorway when performing testing that may result in unexpected reactions by the door.
- Always check placement of all wiring and components before powering up to insure that moving door parts will not catch any wires and cause damage to equipment.

MECHANICAL INSTALLATION – PREPARATION

To prepare the #585 for mounting to the header, perform the following:

a) Remove both end caps from the #585 (Picture 1). Each is attached by one Phillips head screw.

b) Remove both lenses from #585 by simply sliding them out at each end (Picture 2).

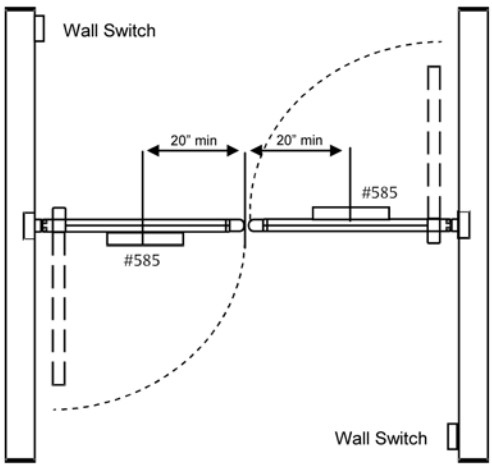
c) Remove the center eye shield (Picture 3) (take care not to damage the light tube on the inner side of the shield). Simply pull out from the top end and rotate out as shown below.

d) Slide the PCB out of the extrusion and set it aside (Picture 4).

MECHANICAL INSTALLATION – PLACEMENT OF THE SENSOR

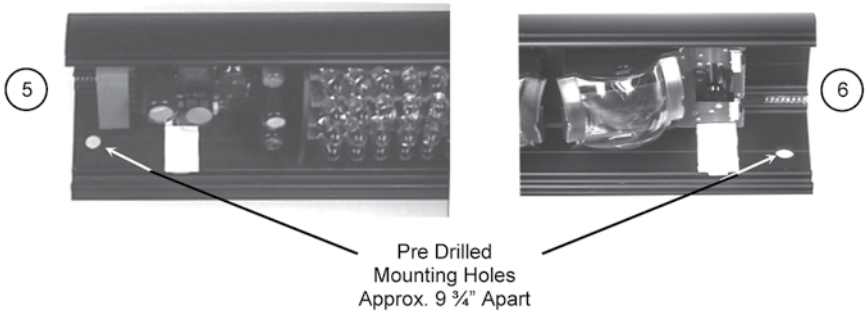
Remember these guidelines when installing a #585:

- The #585 should be mounted at a height range of 6'6" to 8'. Maximum mounting height is 9'.
- The #585 should be mounted above the door on the swing side.
- The #585 shall be mounted flush with the bottom of the frame. This is absolutely necessary to allow the detection pattern to reach back through the threshold area when the #585 is in the open door position.
- For SINGLE DOOR APPLICATIONS, the #585 should be mounted at the center of the door opening. However, if this is not possible, the unit may be installed off-center. In such cases, pattern location will have to be altered for proper placement of the field of detection. Try to avoid mounting locations that may pose potential problems such as directly over a door arm.
- For DOUBLE-EGRESS APPLICATIONS, one #585 should be mounted over each swing-path. There should be at least 40" of separation between the 2 #585's when measured between the centerline of each sensor.
- CAUTION: FOR ALL APPLICATIONS, REFER TO THE PATTERN CHARTS FOR WIDTH AND DEPTH IN THE APPLICABLE SECTION OF THIS GUIDE. PATTERNS SHALL BE ADJUSTED TO ACHIEVE MAXIMUM DETECTION ZONES, AND SHALL BE IN COMPLIANCE WITH ALL APPLICABLE SAFETY STANDARDS (I.E. ANSI A156.10).

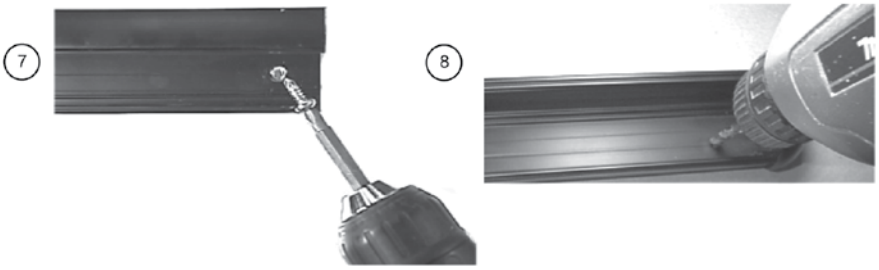


MECHANICAL INSTALLATION

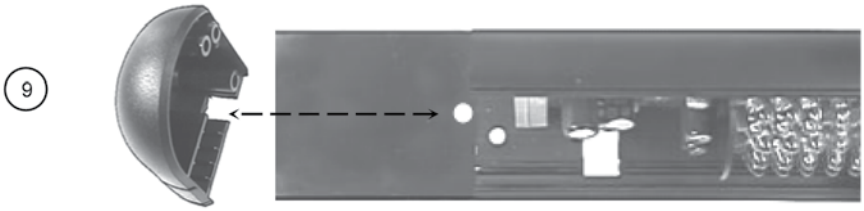
1. The extrusion has pre-drilled mounting holes at each end (Pictures 5 & 6).



2. Hold the #585 up to the pre-determined location, and attach using the 2 self-drilling screws that are included with the package (Picture 7). It may be necessary to pre-drill a pilot hole (Picture 8) in the header for ease of screw installation. Ensure that #585 is mounted securely at each end.

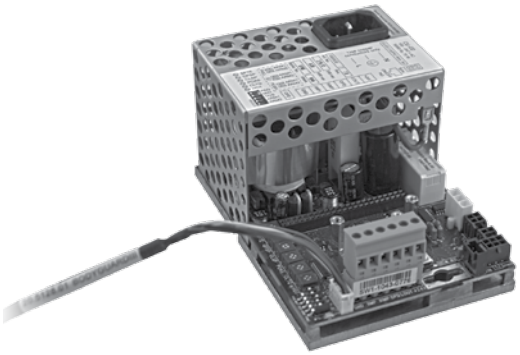


3. If #585 is mounted directly to door header, and cabling is to pass directly into header, drill a ¼" hole next to the #585's left side end cap to allow wire passage into header (Picture 9). The wire passage hole should be in a location that aligns with the cut out in the end cap (Picture 9).



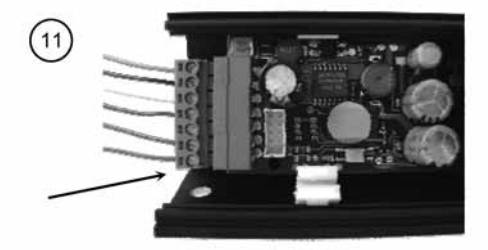
ELECTRICAL INSTALLATION AND CABLING

1. Once the #585 is securely attached to header simply plug and play.



ELECTRICAL INSTALLATION AND CABLING (CONTINUED)

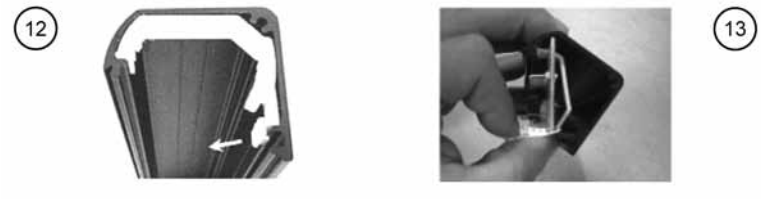
2. Attach the terminal block to the #585 (Picture 11).



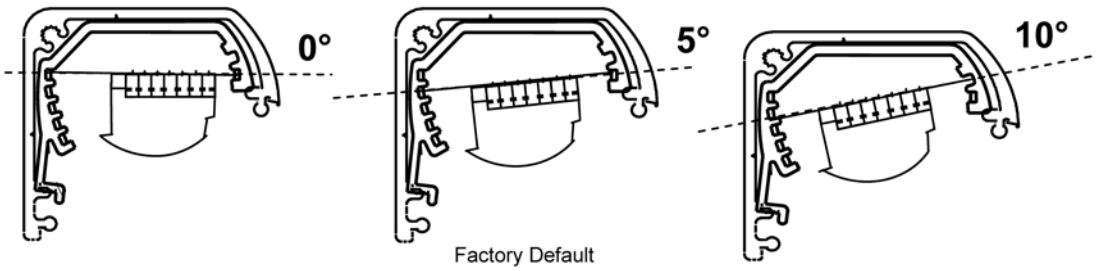
3. With the terminal block attached to the #585, feed the opposite end of the cable through the previously drilled wire passage hole, and on into the header. Pull the cable all the way through and route it to the location of the automatic door control. Refer to the respective User's Guide for the product you are interfacing with. Ensure a dedicated power source of 12 or 24 VAC / DC +/- 10%.

MECHANICAL ADJUSTMENTS

1. Once all installation, wiring and cabling procedures have been completed, mechanical adjustments can be made. Please note that further adjustments may be required after powering and walk testing the detection field.
2. Aside from placement on the header, the only mechanical adjustment that may be made to the sensor is the angle adjustment. The #585 is factory pre-set to the +5º position, but may be reduced to a 0º position or increased to a 10º position. The greater the angle, the farther from the door the pattern will be. The 0º angle should only be used when the #585 is mounted to a soffit above the door that extends out from the face of the safety side of the door – in this case, the 0º setting would improve the location of the detection field across the threshold area of the doorway. It is recommended that for most applications, the unit be powered and walk tested at the pre-set 5º angle. After walk testing, if the detection field needs to be changed, then proceed with changes to the angle setting as shown below.
3. To change the angle setting the end caps, lenses, and center eye shield must be removed (as shown on page 2). The terminal block must also be removed if it has been wired. Once removed release the white clips, as shown below, and rotate outward to remove the PCB (Pictures 12 & 13).



4. Once the PCB is completely removed from the housing, the angle position may be changed. There are two clips per #585 and the angle must match for each clip on the same PCB. The positions are shown below.



5. Slide the left and right lens back into place (Picture 14) and proceed with power-up procedures. Leave the end caps off until all final adjustments have been made.

POWER-UP PROCEDURES

1. Upon completion of mechanical and electrical installation, apply 12 to 24 V AC / DC +/- 10% to the #585, with the door in the closed position. The #585 will flash a green LED at a rate of 2 Hz, then it will expire upon a successful set-up in the door-closed position.

   NOTE: If applying the #585 to a door control that requires a learn cycle upon powering, it is recommended to allow the doors to complete a learn cycle before applying power to the #585.

2. Activate the door to the full open position. Upon completion of the set-up for the door-open position, the doors will begin closing. Normal operation should resume thereafter. Proceed with fine-tuning to insure compliance with all applicable safety standards (i.e. ANSI A156.10). If set-up is unsuccessful, refer to the Troubleshooting Guide at the end of this Users Guide.

HELPFUL HINT:

#1: Once the sensor is powered up, and completes a setup for the closed door position, activate the door to the open position as indicated above. During this first opened cycle, if the sensor does not begin to flash green once the door is full open, a data problem is highly likely. If the door opened and the sensor stayed red, in detection, it probably did not get the correct data signal from the respective lockout module. As a preliminary check to the troubleshooting, be sure to check that the voltage from the motor (at the red and black wire of the lockout) has at least 10 volts DC. A voltage that is too low may not be recognized by the lockout.

#2: If the door goes to the open position and a setup is completed successfully, but then the door begins to close and immediately recycles open, it is possible that the #585's detection of the closing door is causing a recycle.

DUEL EGRESS: REDUCING CROSS TALK

Perform the following set up using #585's remote control to reduce cross talk between duel egress applications. Refer to the figure on page 2 to ensure the two #585's are installed with at least 40" of separation when measured between the centerline of each sensor.

1. Place doors in the hold open position. Unlock sensor and set open door Pattern Depth to 5 (Medium Pattern). This sequence will turn off threshold IR while door is in open position. This function should be changed on both sensors:

2. The infrared frequency function may need to be changed. Change frequency on one of the sensors:

3. Change to a different mode in applications where high gloss floors or multiple doors are installed in vestibules.

   Change sensor one to:

   Change sensor two to:

UNIVERSAL REMOTE CONTROL

The #585 is fully compatible with the Remote Control (part # 585REM) as shown on page 7. Use of the remote control should be conducted within 10' – 15' of the sensor, and the remote should be pointed directly at the sensor when used. Refer to the 'Programming Guide' in the following section for each parameter and its values.

Additional program notes:

1. The #585 is capable to have two patterns (door closed and door open) that are independently adjustable. Thus, when programming, it is necessary to adjust the pattern for door closed, and then to adjust the pattern again when the door is open. The following functions may be independently adjusted for each door position.

    - Sensitivity
    - Pattern Width
    - Pattern Depth

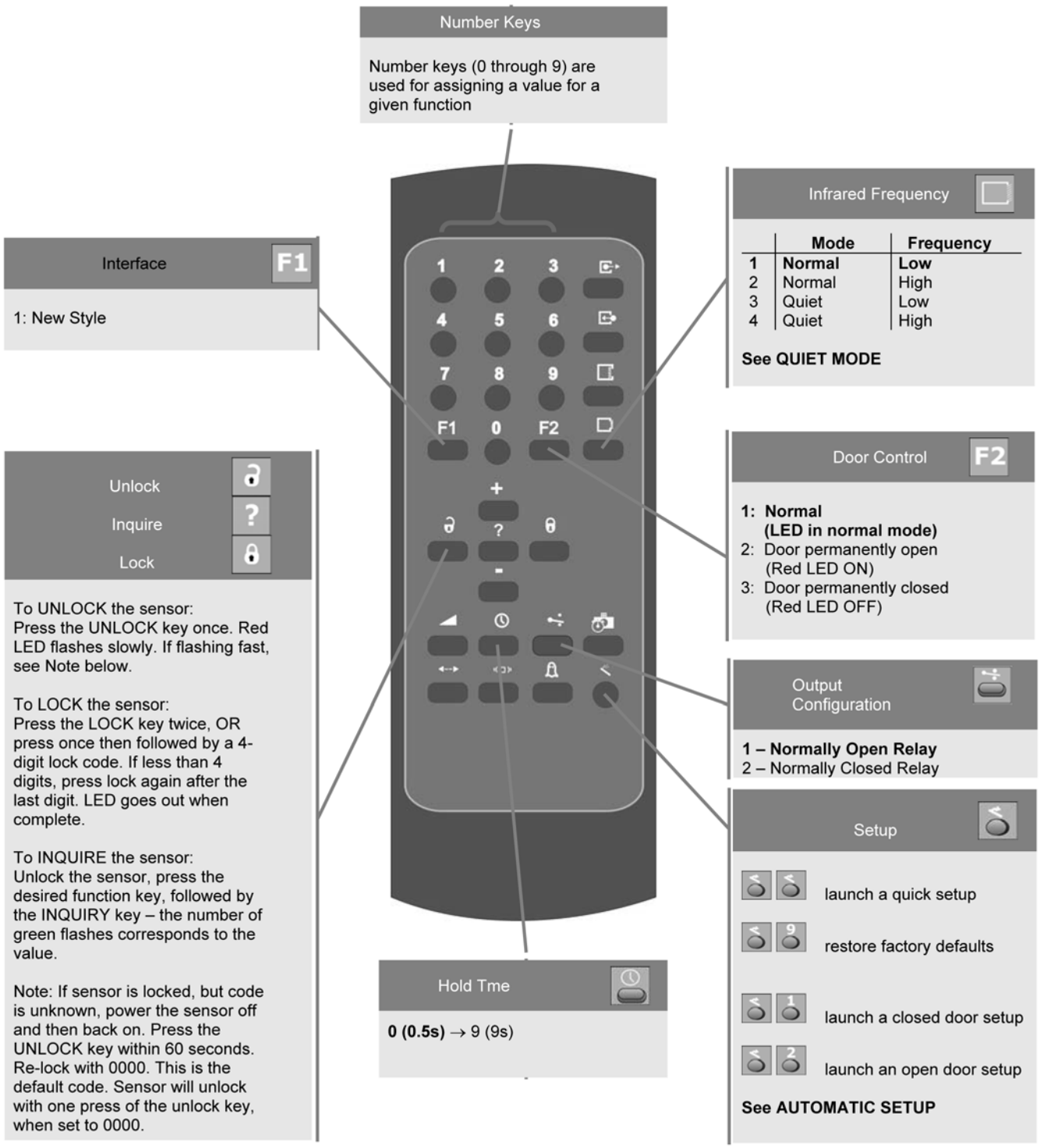
2. The following functions apply to both door closed and door open positions:

    - Automatic Learn Time
    - Immunity
    - Frequency
    - Output Configuration
    - Door Control Mode
    - Hold Time
    - Interface Type

3. The immunity modes include Medium (Rain) and High (Snow). During these modes, learn time of the sensor will not be affected. These modes affect the interpretation of the objects in the field of detection relative to the background.

4. MP mode is set to a default of '0' which allows #585 to operate normally with any control.

585REM - REMOTE CONTROL PROGRAMMING GUIDE
GENERAL FUNCTIONS



AUTOMATIC SETUP: When performing an automatic setup (setup key pressed twice in a row), the sensor will begin to flash green during the door closed position, and will continue to do so until the door is activated to the open position. The LED will then go out and the door will close. The LED will flash green again at the closed position until a setup is complete. Upon the next activation, the sensor will launch another setup for the open door position, and will begin normal operation thereafter.

QUIET MODE: The QUIET mode uses a different pulsing pattern to avoid interference with other infrared systems. The NORMAL mode transmits more energy and detects slightly in a more crisp fashion. The NORMAL mode is recommended for installations with only one door.

PROGRAMMING GUIDE – PATTERN ADJUSTMENTS

Besam CUP-MP

0: Normal
1 : MP mode
2 : Record mode

Sensitivity Door Open-Closed

0 (min) → **9** (max) **(default 7 for door open, default 6 for door closed)**

Automatic Learn Time

0: 30 seconds
1: 1 minute
2: 2 minutes
3: 3 minutes
4: 5 minutes
5: 7 minutes
6: 10 minutes
7: 15 minutes
8: 10 seconds
9: Infinity – no learn

Pattern Width Door Open or Closed

1 : Wide (closed door)
2 : Middle (open door)
3 : Asymmetric Left Narrow
4 : Asymmetric Right Narrow
5 : Narrow Left
6 : Narrow Right
7 : Asymmetric Left Wide
8 : Asymmetric Right Wide
9 : Center Narrow

See PATTERN WIDTH or DEPTH

Immunity

1: Low (Normal)
2 : Medium - Rain (Disregards more floor disturbances)
3 : High - Snow (Disregards greatest floor disturbances)

Pattern Depth

1: Deep – Threshold ON
2 : Medium – Threshold ON (open)
3 : Limited – Threshold ON
4 : Deep – Threshold OFF
5 : Medium – Threshold OFF (closed)
6 : Limited – Threshold OFF

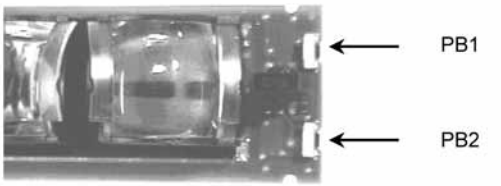
See THRESHOLD
See PATTERN WIDTH or DEPTH

THRESHOLD: The Threshold is always OFF when the door is closed.

PATTERN WIDTH OR DEPTH: When pattern width or depth is changed, a setup of the new pattern size will automatically be triggered once a value key has been pressed.

MANUAL (NON-REMOTE) SET-UP

Without the Remote Control, the #585 may be set up using the manual push buttons (see diagram below) located under the right end cap. ONLY THE SENSITIVITY, RELAY MODE, AUTO-LEARN TIME, PATTERN WIDTH, AND PATTERN DEPTH MAY BE ADJUSTED WITH THE MANUAL PUSH BUTTONS. To adjust the #585, complete the following:



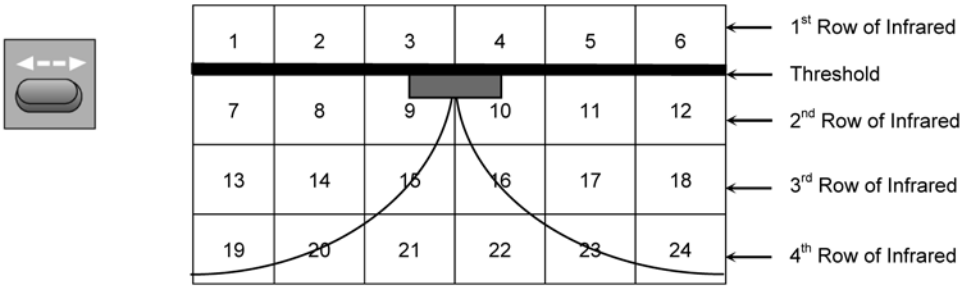
1. To start the set-up process, press PB1 (for less than 2 seconds)
   - The set-up function will be launched according to the current door position. The green LED will flash at 2+/- Hz for 10 seconds. This LED will stop flashing once a successful set-up is achieved.
   - If there is an interruption to the field of detection during this procedure, the green LED will flash at a slower rate. Press PB1 to re-launch the set-up.
2. To change the detector's parameters, press PB1 (for more than 2 seconds), then release.
3. Press either PB1 or PB2. The LED will immediately flash red, followed by a sequence of green flashes.
4. The red flashes indicate the parameter and the green flashes indicate the setting of the particular parameter.

   NOTE: Pressing PB1 will toggle between the parameters and pressing PB2 will toggle between the range of adjustments for that particular setting. Once you achieve the highest adjustment, the value will roll over to the lowest setting, upon the next press of PB2. A zero value will result in no flash of the LED. To exit manual set-up, simply wait 20 seconds or press PB1 for more than 2 seconds. Replace the right end cap back on the #585.

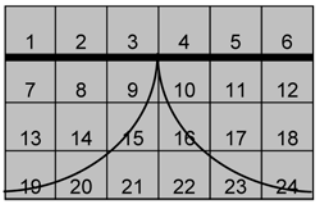
   - Use the chart below as a reference for the manual set-up process.

RED LED STATUS	PARAMETER	DESCRIPTION	GREEN LED STATUS
1 Red Flash	1	Sensitivity (Door open)	0 – 9 Green Flashes (default = 7)
2 Red Flashes	2	Sensitivity (Door closed)	0 – 9 Green Flashes (default = 6)
3 Red Flashes	3	Output Configuration	1 – 2 Green Flashes (default = 1)
4 Red Flashes	4	Auto Learn Time	0 – 9 Green Flashes (default = 0)
5 Red Flashes	5	Pattern Width (Door Open)	0 – 9 Green Flashes (default = 2)
6 Red Flashes	6	Pattern Width (Door Closed)	0 – 9 Green Flashes (default = 1)
7 Red Flashes	7	Pattern Depth (Door Open)	1 – 6 Green Flashes (default = 1)
8 Red Flashes	8	Pattern Depth (Door Closed)	1 – 6 Green Flashes (default = 1)

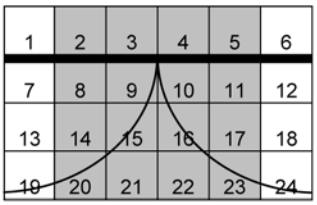
#585 WIDTH PATTERNS



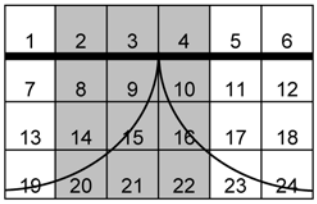
(1) Wide Pattern



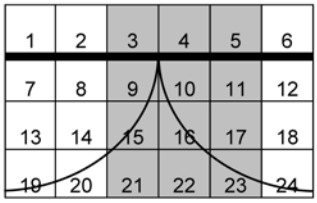
(2) Middle Pattern



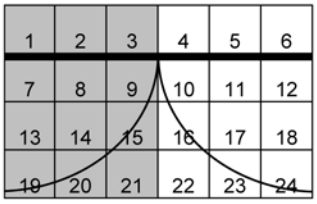
(3) Asymmetric Left Narrow



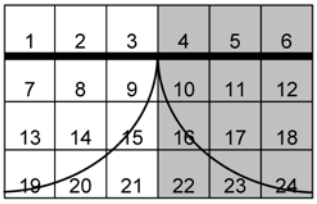
(4) Asymmetric Right Narrow



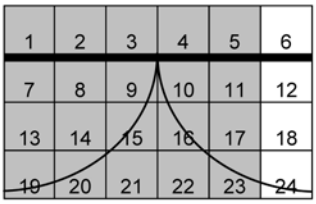
(5) Left Narrow



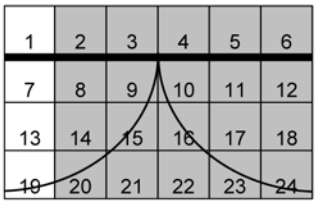
(6) Right Narrow



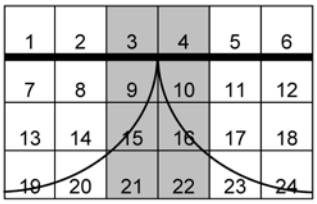
(7) Asymmetric Left Wide



(8) Asymmetric Right Wide



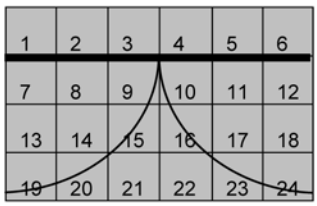
(9) Center Narrow



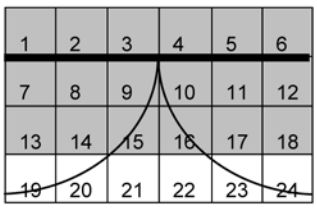
#585 DEPTH PATTERNS

Row 1 (spots 1 through 6), remain on, even during the closed door position

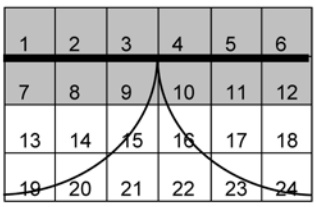
(1) Deep



(2) Middle



(3) Limited

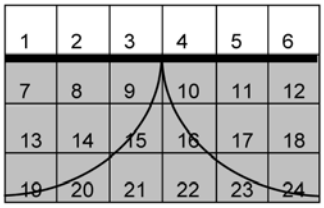


NOTE: When the #585 is mounted at 7', each block on the pattern charts shown above equates to a size of approximately 14" x 14". Pattern sizes shown are only as an approximation. Always walk-test the pattern once complete, to insure compliance with all applicable safety and performance standards.

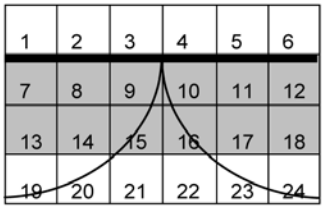
#585 DEPTH PATTERNS - CONT.

Row 1 (spots 1 through 6), are on during open door position and off during closed door position.

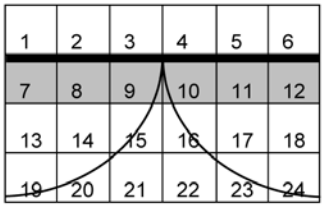
(4) Deep Without Row 1



(5) Middle Without Row 1



(6) Limited Without Row 1



TROUBLE-SHOOTING

Problem	Probable Cause	Corrective Action
#585 will not set upon initial powering	1. Improper input voltage 2. #585 is in detection 3. Potential interferences from high intensity lighting.	1. Check terminals 1 & 2 for proper voltage. 24 V AC/DC + 10%. 2. Make certain that the field of detection is all clear during the set-up and that all lenses are installed on the #585. If detection is encountered upon initial set-up, the #585 will continuously flash Green at + 2 Hz. The #585 will also not set-up if permanent stationary objects are extremely close to the sensor. Ensure that, not only is the detection field all clear, but that the sensor is mounted properly (using the #585 mounting block if NECESSARY). 3. Ensure that no high intensity lighting is in the immediate area of the sensor.
Door will not open once set-up has been completed.	1. #585 is in detection. 2. Improper wiring. 3. Improper relay output configuration.	1. Ensure that there is no detection occurring at the #585. If the Red LED is on steady, there is detection. Make sure there have been no changes in the field of detection since set-up. If permanent changes have occurred, launch a new set-up and re-test door. CAUTION: THERE POSSIBLY MAY BE NO SAFETY ON THE DOOR WHEN THIS TEST IS PERFORMED. 2. Remove the output wires (common, normally open, normally closed) from the #585. Activate the door control, if the door opens, the fault exists with #585 or related wiring. If door does not open, the faults may exist with the door control or it's related wiring. 3. Ensure proper relay output setting. Refer to page 7. Typically, relay setting should be 'Normally Open'. This means the relay would close upon detection.

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#585 repeatedly relearns the environment with each door position.	1. Data polarity at the #585 is incorrect.	1. Allow the door to open in the automatic mode. Unlock the #585 and launch a setup by pressing the Setup key, followed by the number 2. If the sensor does not begin flashing green, and instead goes back to a red indication, improper data exists. 2. Check for proper polarity at terminal 6 and 7. The negative wire from the lockout (white) should be connected to terminal 6, and the red/white striped wire from the lockout should connect at terminal 7. • HELPFUL HINT: If faulty data is suspected, simply power the door to the open position (by activation OR with the use of a hold open switch). While the door is open, unlock the #585, and press the setup key, followed by the number 2. If the sensor goes back to a red LED (as opposed to flashing the green LED to indicate a setup), there is a strong probability that the data is incorrect.
#585 not reacting to the remote control.	1. Batteries in the remote control are dead. 2. Distance between sensor and remote is too far.	1. Replace batteries in the remote control. 2. Move in closer to the sensor when programming. 3. If remote control fails, manual programming procedures may have to be used (See Pg. 9).