

INT-DES-100 / 105 / 106 / 240

Micro-Wave Technology Occupancy Sensor

General:

Intrutech Energy Saving Occupancy Detectors Family - INT-DES provides optimal and cost-effective solution for reducing energy costs and enhancing the functionality of air-conditioning systems and lighting apparatus.

The INT-DES is wall or ceiling mount occupancy sensor designed for medium-sized rooms up to 100 square meter to detect human presence and when the room is occupied.

The INT-DES is based on the Micro-Wave Doppler motion sensing technology operates at X-Band or K-Band spectrum that provides extreme sensitivity and reliability for control of air-conditioners, lighting and other devices in the room.

The INT-DES detector holds dry contact relays activated at ON position as long as there is human presence in the room, and open the contact after a pre-defined period when there is nobody in the room.

- The INT-DES has a GREEN LED that blinks for 2 sec. every time the INT-DES detects movement in the room to indicate human presence.
- The INT-DES has a RED LED which blinks every 0.5 sec. during the OFF delay time and lit constantly when delay time finished and the load is switched off.
- The potentiometer on the INT-DES controls the detection sensitivity (Doppler). Rotate clockwise to increase the sensitivity.
- The INT-DES's dip-switch controls the settings as explained in table 2.
- The INT-DES has two inputs:
 - DOOR – this input is connected to the door magnet (N.C.) connected to GND in its other side.
 - Disable – GND in this input disables the INT-DES and prevents the relay from closing regardless of the DOOR input (terminal) status.

Available Models:

- **INT-DES-106** - 10.687GHz Micro-Wave based Occupancy sensor
- **INT-DES-105** - 10.525GHz Micro-Wave based Occupancy sensor
- **INT-DES-100** - 9.9GHz Micro-Wave based Occupancy sensor
- **INT-DES-240** - 24.125GHz Micro-Wave based Occupancy sensor

INT-DES terminals block connections

Connector	Description
+ 12V -	Power supply to the detector. Voltage range is 10VDC to 16VDC.
IN (*)	Enable - Bypass Input, connecting GND in this terminal will enable the load activation Regardless of the movement in the room.
GND	Identical to the "-" terminal. For installer comfort.
DIS (*)	Disable Input - GND in this terminal disables the <i>INT-DES</i> and prevent it from closing the relay regardless of the motion sensing status. When the <i>INT-DES</i> is disabled both LED's blink together once every half a second.
RELAY	These are the relay terminals. These terminals are connected to the alarm system.

* In case of GND connected to IN and DIS inputs, the *INT-DES* is DISABLED (DIS is stronger).

INT-DES setting

- The INT-DES has dip-switch that controls the settings as explained in table 2.



Switch	Writing	Meaning																																				
1,2,3	3 alarm delay switches	These switches set the period of time allowed for a person to be inside the room (since the last door activity):																																				
		<table border="1"> <thead> <tr> <th>Duration</th> <th>Switch 1 (lowest)</th> <th>Switch 2</th> <th>Switch 3</th> </tr> </thead> <tbody> <tr> <td>5 min.</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>7.5 min.</td> <td>OFF</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>10 min.</td> <td>OFF</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>12.5 min.</td> <td>OFF</td> <td>ON</td> <td>ON</td> </tr> <tr> <td>15 min.</td> <td>ON</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>20 min.</td> <td>ON</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>25 min.</td> <td>ON</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>30 min.</td> <td>ON</td> <td>ON</td> <td>ON</td> </tr> </tbody> </table>	Duration	Switch 1 (lowest)	Switch 2	Switch 3	5 min.	OFF	OFF	OFF	7.5 min.	OFF	OFF	ON	10 min.	OFF	ON	OFF	12.5 min.	OFF	ON	ON	15 min.	ON	OFF	OFF	20 min.	ON	OFF	ON	25 min.	ON	ON	OFF	30 min.	ON	ON	ON
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4	MW mode H-L	OFF- low sensitivity for movement detection ON- high sensitivity for movement detection																																				
5	ON delay L-S	Set up time delay for Load activation when motion is detected after shutoff ON = Short time – 1 second for light systems control OFF = Long time – 4 minutes for Air-conditioner control																																				
6	LED	Switch ON enables LED activity. Installer mode.																																				

SPECIFICATIONS

Sensing

Sensor Technology: Micro-Wave Doppler motion Technology, X-Band (9.9GHz 10.525GHz 10.687GHz) K-Band (24.125GHz)

Auto-Adjustment: Microprocessor-based self-adaptive

Coverage Area: up to 100 sq. m.

Coverage Pattern: 90 degrees

LED Indicators

Red LED, indicates relay (load) status

Green LED, indicates motion detection

Controls (On-Board)

Potentiometer SENS adjust the sensitivity of Micro-Wave motion sensor Range: 25% to 100% (50% factory default)

Jumper J1 (12V) – Use to connect the 12V supply voltage to COMMON terminal of the relay so only one wire can be use for load connection.

DIP Switch A: (1) 6-position DIP switch:

Dip 1, 2 & 3 - Use for setting delay time for load switch off.

Dip 4 - Set Microwave sensitivity.

Dip 5 - Set up ON delay time

Dip 6 - Disables both LED indicators

Power and Control Connections

1 - Power: (1) Red, 24 AWG; +12 Volt DC power input

2 - Common: (1) Black, 24 AWG; Power and control signal common

3 - Enable Input

4 - Control signals common

5 – Disable Input

Relay / Load Connections

NC – This is the Normally Close pin of the relay

COM – This is the Normally Close pin of the relay (when Jumper 12V is on - this Pin will be constantly connected to the 12V input power).

NO – This is the Normally Open of the relay (when Jumper 12V is on - this Pin will be supply 12V when motion no motion is detected for the preset Delay time).

Working Temperature: -10° to +50°C

Humidity: 0% to 95% RH (non-condensing)

Power Requirements:

Current Consumption: 40 mA @ 24 Volts DC

Housing Construction: High-impact injection-molded plastic, white

* The INT-DES detectors require INT-PS-CB power supply and load control box (sold separately).

