Honeywell

INNCOM DIRECT D1-528 THERMOSTAT

INSTALLATION INSTRUCTIONS

ABOUT THIS GUIDE

This Guide provides information about the Installation details of the INNCOM Direct D1-528 thermostat to the system integrator, technicians, and end-users. All the electrical engineers and technicians working with the product must have basic training on HVAC Sensors, Smart sensors, and Room Controllers and their application.

GENERAL SAFETY INFORMATION

Follow the safety instructions provided in this manual while doing any operation such installation, mounting, or starting.

- In the case of any modification, except by Honeywell, the operation and safety warranties become void.
- Observe all applicable local standards and regulations.
- Use only Honeywell supplied or approved accessories.

CERTIFICATION AND REGULATION

Waste Electrical and Electronic Equipment (WEEE)

•At the end of the product life, dispose of the packaging and product in an appropriate recycling center.

- Do not dispose of the device with the usual domestic refuse.
- Do not burn the device.

FCC Part 15 compliant

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference caused by undesired operation.

Power Supply Guidelines and Requirements

D1-528 thermostat uses 24 VAC/VDC power from a UL Listed Class- 2 transformer or IEC 61558 listed transformer.

⚠ WARNING

D1-528 thermostat is a half-wave rectifier device. If we connect it with another half-wave rectifier device or use the same transformer, INNCOM D1-528 thermostat risks being damaged by short with C, COM, GND or other equivalent connections.

INTRODUCTION

D1-528 thermostat utilize a CC2520 2.4 Ghz IEEE 802.15.4 RF transceiver in their role as part of the Integrated Room Automation System (IRAS). The integration of the radio on-board the PCBA, along with other component changes, makes for a simpler, more efficient, and more cost-effective device.

Features

The D1-528 thermostat provides

- Accurate temperature measurement ± 1 °F
- Multiple load actuating options from 24 VAC
- Motion sensor for occupancy detection
- RF transceiver for wireless 2.4 Ghz guestroom and backhaul network communications
- External temperature sensor support.

DIMENSIONS

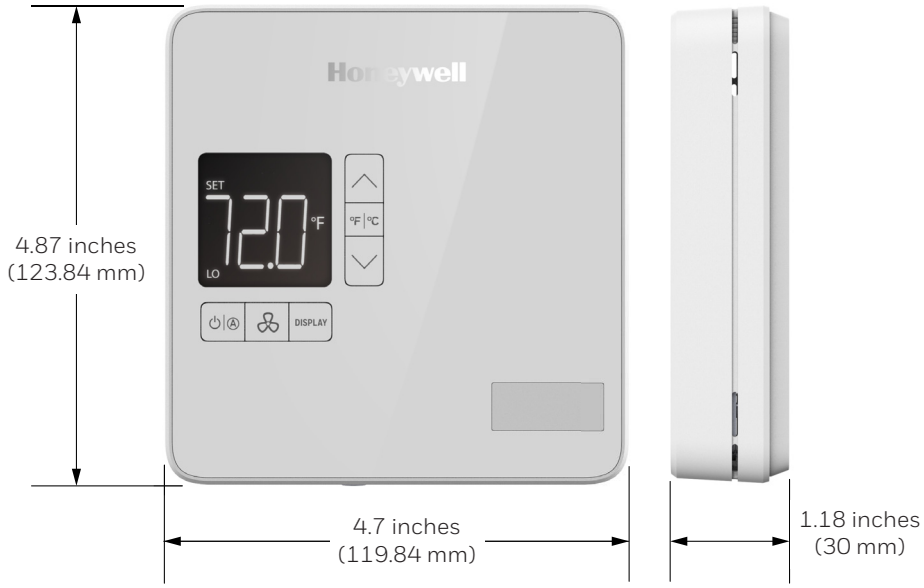

Fig. 1 Dimensions

SYSTEM ARCHITECTURE

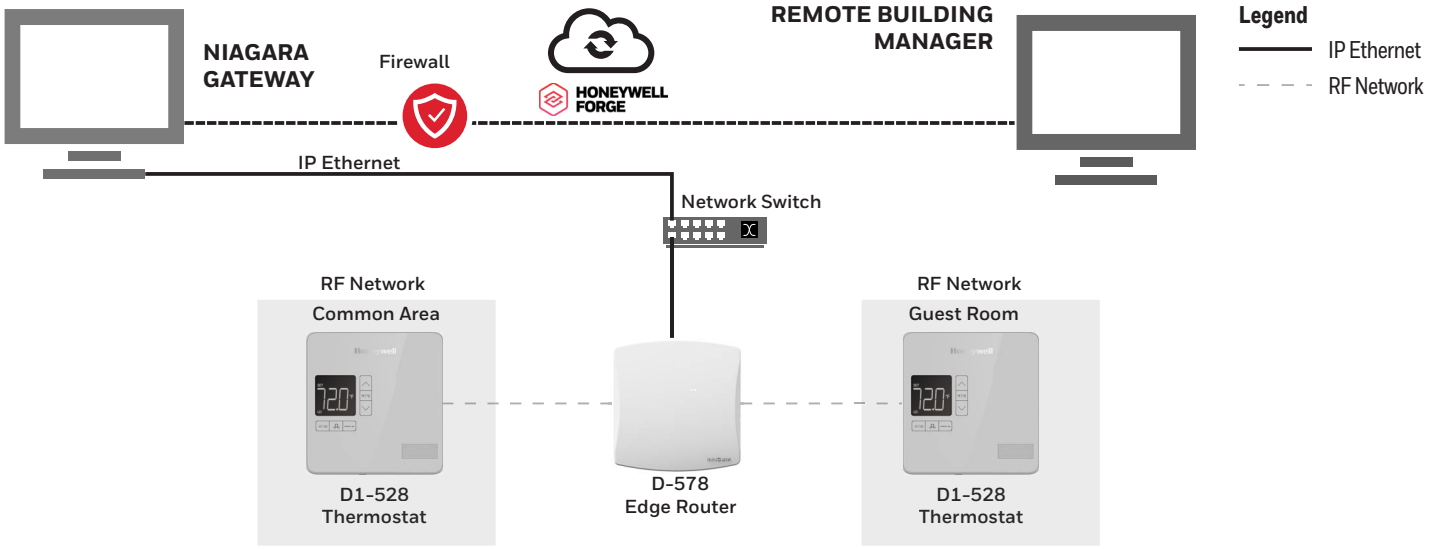

Fig. 2 System Architecture

SPECIFICATIONS

General

Table 1 General Specifications

Parameter	Description
Standard Color Options	White
Thermostat Measurement Range	33 °F to 99 °F (1 °C to 37 °C)
Outdoor Air Temperature Display	0 °F to 99 °F (-18 °C to 37 °C)
Standard Deadband	2 °F (1 °C) between heating and cooling
RF Data Rate	250 kbps
Indoor Range	70 ft - 100 ft+
RF Transmit Power	+17 dBm
RF Receive Sensitivity	-94.6 dBm
Frequency Band	2.4 Ghz
Frequency Channels	11-26
Protocol	802.15.4
Recommended Wire Size	18 gauge

Electrical

Table 2 Electrical Specifications

Parameter	Description
Power Requirements	24 VAC at 50/60 Hz, 24 VDC nominal, 2.4 VA

Sensors

Table 3 Sensors Specifications

Parameter	Description
Temperature	33 °F to 99 °F ± 1.8 °F (1 °C to 37 °C ±1 °C)
Humidity	3 % RH, in range from 30-95 % RH

Table 3 Sensors Specifications

Parameter	Description
PIR (motion)	120° View Angle, 10 M line of sight
Lux (ambient light)	Gamma Value 0.7. Spectral response 550-650 nm

Environmental Specifications

Table 4 Environmental Specifications

Parameter	Description
Ambient Operating Temperature	32 °F to 104 °F (0 °C to 40 °C), 0-95% RH noncondensing
Ambient Storage Temperature	33 °F to 149 °F (1 °C to 65 °C)
Humidity	0-95% RH noncondensing

Weight and Dimensions

Table 5 Weight and Dimensions

Parameter	Description
Dimensions (W x H x D)	4.7 inches x 4.87 inches x 1.18 inches (119.84 mm x 123.84 mm x 30 mm)
Mounting	Standard US Double Gang (4 inches x 4 inches)
Shipping Weight	0.6 lbs (0.27 kg)

Display

Table 6 Display Specifications

Parameter	Description
Display Resolution	Whole degree °F, 0.5 °C (0.1 °F in test mode)
C/F Degrees Display	Flat button on front of lens

Communications

Table 7 Communications Specifications

Parameter	Description
Wireless Communications	ZigBee RF, Deep Mesh
Wired Communications	RS485, S5 bus **NOTE:** RS485 is currently not supported but may be added in the future

Standards and Approvals

Table 8 Standards and Approvals

UL 873, CAN/CSA C22.2 N°24, file #202540	
FCC ID: GTC202150TXR	
IC ID: 1609A-202150TXR	
Prop65	
2011/65/EU	Hazardous substances (RoHS I + II), amended by (EU) 2015/863 (RoHS III)

INSTALLATION

Important Safety Information and Installation Precautions

Read the below instructions carefully for safety and installation.

Local codes and practices

Always install equipment in accordance with the National Electric Code and a in manner acceptable to the local authority having jurisdiction.

Electrostatic sensitivity

This product and its components may be susceptible to Electrostatic Discharge (ESD).

Use appropriate ESD grounding techniques while handling the product. When possible, always run the product by its non-electrical components.

High voltage safety test

Experienced electricians, at first contact, always assume that hazardous voltages may exist in any wiring system. A safety check using a known, reliable voltage measurement or detection device should be made immediately before starting work and when work resumes.

Lightning and high-voltage danger

Most electrical injuries involving low-voltage wiring result from sudden, unexpected high voltages on usually low-voltage wiring. Low-voltage wiring can carry hazardous high voltages under unsafe conditions. Never install or connect wiring or equipment during electrical storms. Improperly protected wiring can have a fatal lightning surge for many miles. All outdoor wiring must be equipped with adequately grounded and listed signal circuit protectors, which must comply with local, applicable codes. Never install wiring or equipment while standing in water.

Wiring and equipment separations

Install all the wiring and controllers to minimize the possibility of accidental contact with other potentially hazardous and disruptive power and lighting wiring. Never place 24 VAC or communications wiring near other bare power wires, lightning rods, antennas, transformers, or steam or hot water pipes. Never place the wire in any conduit, box, channel, duct, or other enclosure containing power or lighting circuits. Always provide adequate separation of communications and another electrical wiring according to code. Keep wiring and controllers at least six feet from large inductive loads (power distribution panels, lighting ballasts, motors, etc.). Failure to follow these guidelines can introduce electrical interference and cause the system to operate erratically.

Warning

By using this Honeywell literature, you agree that Honeywell will have no liability for any damages arising from your use or modification to the literature. You will defend and indemnify Honeywell, its affiliates, and subsidiaries from and against any liability, cost, or damages, including attorneys' fees, arising out of or resulting from any modification to the literature by you.

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⚠ CAUTION

Disconnect the power supply before beginning installation to prevent electrical shock or equipment damage. All wiring must comply with local codes and ordinances.

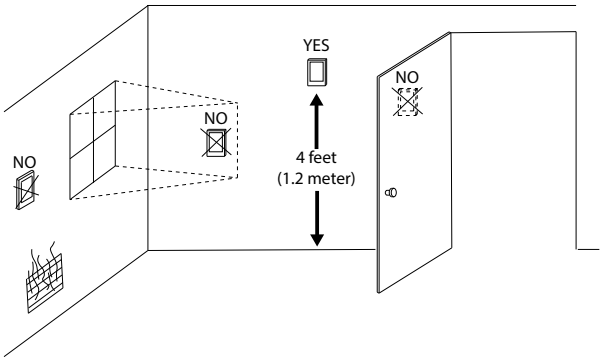
Before Installation

1. A unique network address or Room Identification (RoomID) must be assigned to each thermostat regardless of whether it is installed as a standalone application or as part of a wired (RS485) or wireless (RF) DeepMesh network in a centrally controlled Energy Management System (EMS) using the INNCOM Direct dashboard. A rooms list document is typically provided by Honeywell that lists all rooms and the associated functionality. Refer to the property specific documentation for more information.
2. The D1-528 is configured so that it will not call for heat, cool, or low, medium, and high fan speeds to protect the HVAC equipment when it arrives with default settings from the factory. The installer will need to complete the Initialization steps, or the HVAC configuration will need to be pushed to the thermostat from the engINN commissioning tool after the RoomID has been set in the Parameter Menu.
3. It is assumed that if you have received your D1-528 thermostat and you are ready to begin installation, Honeywell has determined through the sales process that the selected HVAC equipment is compatible with the selected D1-528 thermostat. If you believe this assumption to be incorrect, or you have not validated that the D1-528 is compatible with the selected HVAC equipment, contact our technical support service center prior to installation.
4. Always research thermostat placement carefully before you pull cable. Consult with your system provider on the best placement and follow their

guidance to mount it in a neutral location. The cost of poor thermostat placement is high, both in loss of guest comfort and unnecessary energy costs. Follow these guidelines to determine the appropriate installation location for the thermostat:

- Place thermostats away from windows to avoid bathing the thermostat with solar radiation, which invalidates the unit's temperature sensitivity.
- Never place thermostats on a wall where an open bathroom or closet door will cover them. A covered thermostat will not register the correct room temperature
- Take care to place thermostats out of the Direct line of air movement. A thermostat mounted on a wall Directly across from HVAC discharge vents will be surrounded by air that quickly satisfies the thermostat's guest temperature setting, but not register the room's overall temperature.
- Avoid placing a thermostat on a wall near the fan coil. This causes a waterfall effect of heated or cooled air movement across the thermostat which triggers the HVAC's response to false room temperature readings.
- Beware of value engineering proposals during construction; such as optimizing room wiring to minimize cable runs between thermostats and the HVAC placement. Although this type of value engineering can save money, it often results in higher energy use and compromised guest comfort.

5. Make sure:
   - The thermostat is mounted on the wall with the bottom of the unit about 4-5 feet from the floor.
   - The unit is level
   - The manufacturer's installation instructions are followed.



6. Read instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
7. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
8. It is recommended to keep the device at room temperature for at least 24 hours before applying power. This allows any condensation resulting from low shipping/storage temperatures to evaporate
9. After installation is complete, check product operation as provided in these instructions.

NOTE:
All wiring must agree with applicable codes, ordinances, and regulations as specified in installation wiring diagrams.

Restricting Access to Network

Prevent unauthorized access to the network that the thermostat uses. With any system, preventing physical access to the network and equipment reduces the risk of unauthorized interference. When using open protocols care should be taken to ensure that the physical network is protected from unauthorized access.

Location

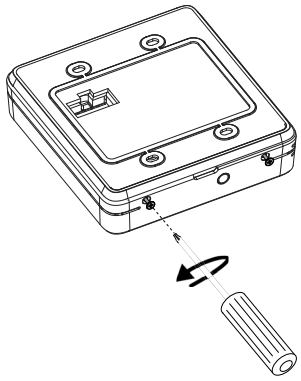
Select a location about 1.5 m (5 ft.) above the floor with good air circulation at average temperature. Do not mount thermostat where it may be affected by

- Drafts or dead spots behind doors or in corners
- Hot or cold air from ducts
- Radiant heat from sun or appliances
- Concealed pipes or chimneys
- Unheated (un-cooled) areas behind the thermostat
- If RF equipped, do not install near other RF sources/transmitters.
- When the thermostat is equipped with PIR, consider 120º view angle, range characteristics, and mounting position for proper coverage.

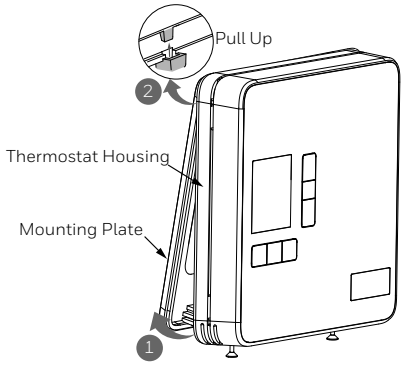
Mounting

INNCOM's DDC thermostats typically mount on a standard double-gang (4 x 4) junction box. If mounted on a single-gang box, the left side (display side) of the D1-528 thermostat overlaps the wall area to the left of the junction box. A low-voltage mounting plate, mud ring, or low-voltage caddy may be used for mounting 24 volt applications.

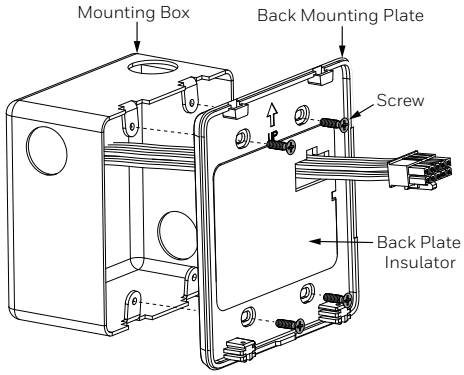
1. Loosen the two screws from the base of the D1-528 thermostat but don't remove them.



2. Pull the bottom of the back-mounting plate slightly away from the Thermostat housing, then pull the Thermostat housing.



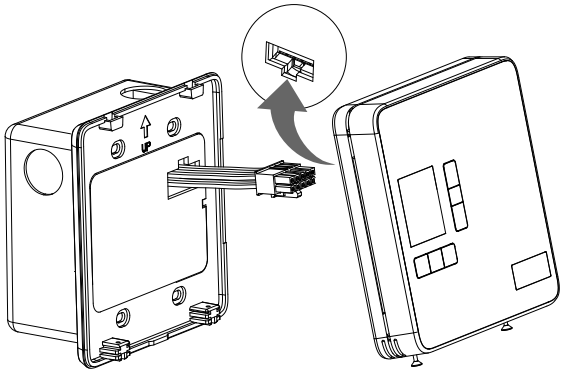
3. Feed wires through the insulator to minimize airflow
4. Attach the back mounting plate to the mounting box using the mounting screws provided. Ensure that the plate is mounted with the raised arrow pointing UP.



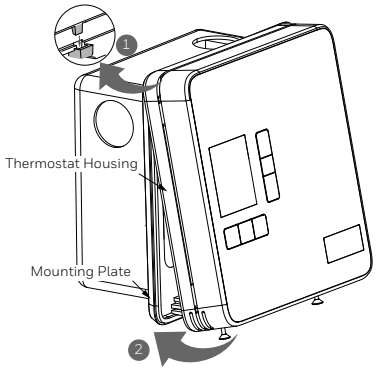
Wiring Connections

The steps below provide an overview of the wiring process. Refer to the as-built wiring diagrams provided for exact details.

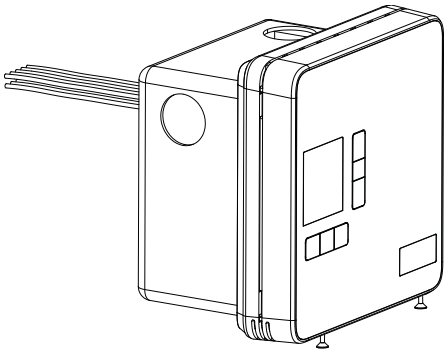
1. If applicable, use wire nuts to connect the 6-pin low-voltage harness wires to the applicable low-voltage communication (if D1-528 thermostat is part of a wired RS485 centrally controlled system), door/window switch, or external PIR wiring within the electrical box. Plug the 6-pin low voltage harness onto the D1-528 thermostat low voltage comm. / device connection header.
2. Use wire nuts to connect the 10-pin wiring harness to the power and valve/fan control signal wires within the electrical box.
3. Plug the pre-wired 10-pin connector into the female receptacle at the back of the D1-528 thermostat.



4. Hook the tabs at the top rear of the D1-528 thermostat housing into the matching depressions at the top of the mounting plate and gently push the bottom of the housing toward the mounting plate until it fits properly.



5. Secure the housing to the mounting plate with the two small screws removed in Step 1 of the Mounting section.



6. Apply power to the D1-528 thermostat by closing the applicable supply breaker. Verify that the D1-528 thermostat powers up. Several values should begin appearing on the LCD display.

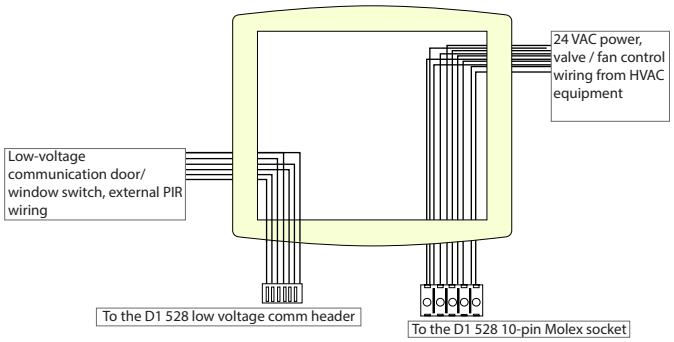


Fig. 3 Electrical Box Connections 24 VAC

Table 9 Low-voltage Connections Table

Wire Color	Female Connector	Male Connector	Function	Description
Brown	1	1	Common	
Red	2	2	12VDC Out/In	12VDC Supply
Orange	3	3	S5 Bus Data Tx/Rx or IN 2	Door, Window, PIR, Other
Yellow	4	4	IN 1	Door, Window, PIR, Other
Green	5	5	NC	
Blue	6	6	NC	

Table 10 24VAC Harness (INNCOM P/N 62-1464 R) Color Code, Pinout, and Typical Functions

Pin	Color	Typical Function
1	Green	Ground
2	Red	24 VAC
3	Black	Common
4	Blue	High Fan
5	Brown	Medium Fan or Second Stage Heat
6	Yellow	Cold Water Valve (FCU) or Compressor Signal (Heat Pump)
7	White	Hot Water Valve (FCU) or Reversing Valve (Heat Pump)
8	Grey	Valve Power

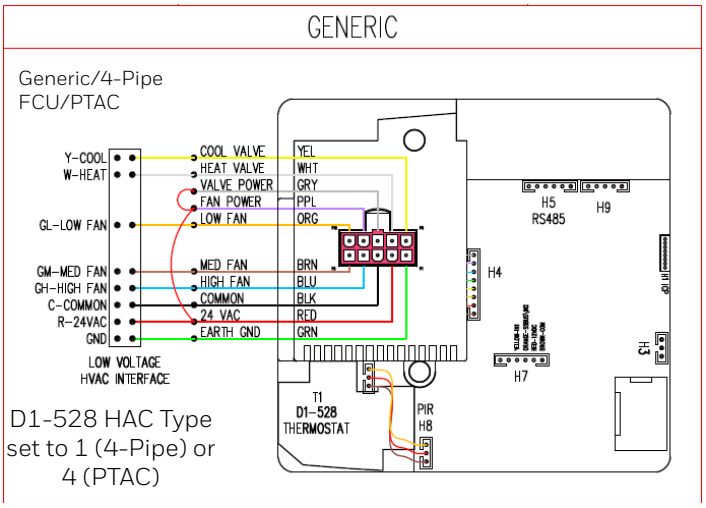
Table 10 24VAC Harness (INNCOM P/N 62-1464 R) Color Code, Pinout, and Typical Functions

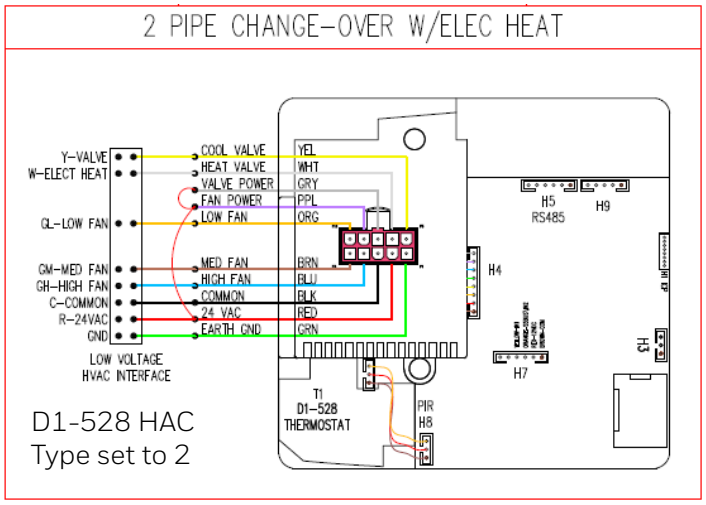
Pin	Color	Typical Function
9	Violet	Fan Power
10	Orange	Low Fan

Power and Actuator Connections

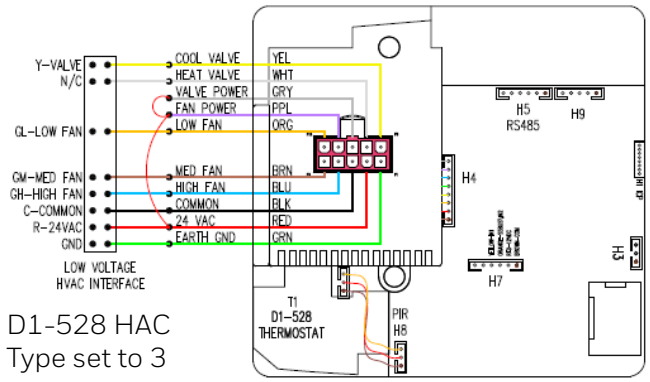
Refer to line voltage connections table

- Use wire nuts to connect the 10-pin wiring harness to the power and valve/fan control signal wires within the electrical box. See pre-defined commissioning document which describes the specific wire connections for the application.
- Plug the pre-wired 10-pin connector into the female receptacle at the back of the D1-528 thermostat.



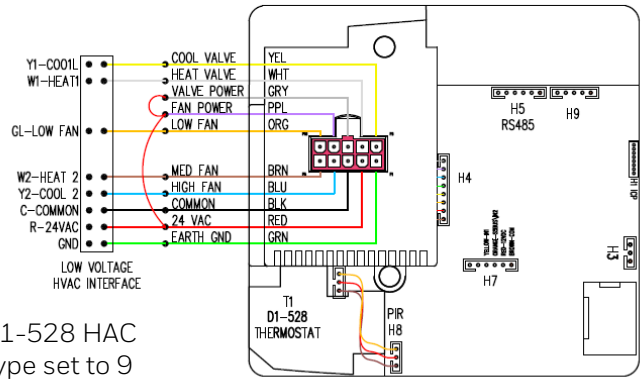


2 PIPE CHANGE-OVER



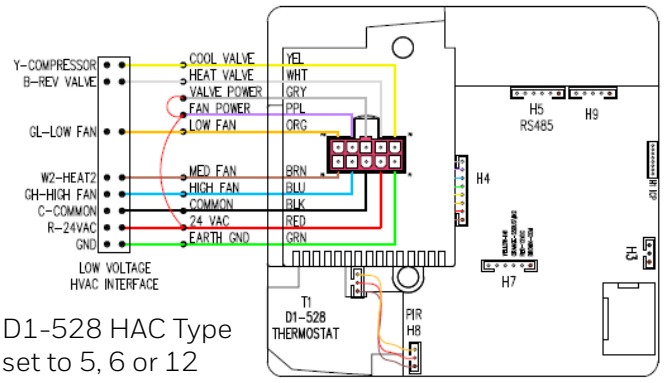
D1-528 HAC
Type set to 3

1 FAN 2 STAGE H/C



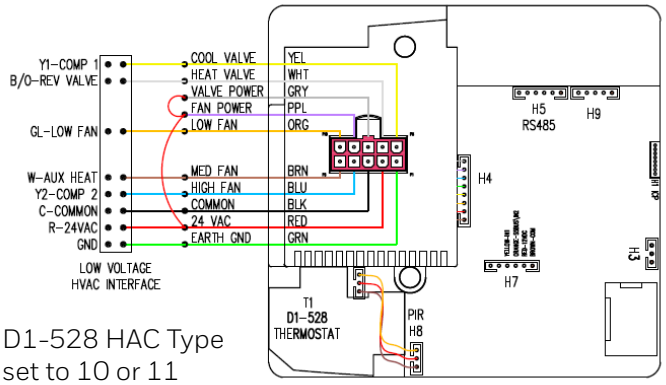
D1-528 HAC
Type set to 9

HPB TWO STAGE HEAT



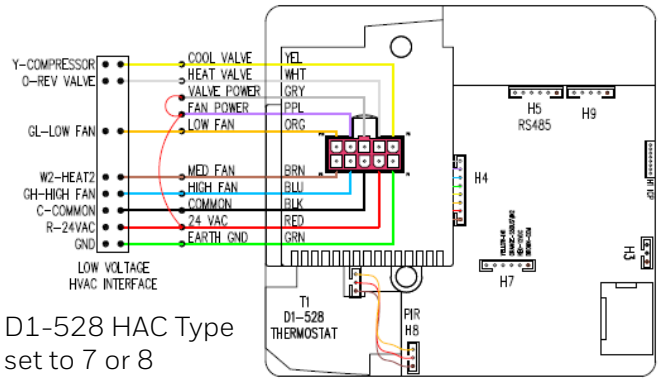
D1-528 HAC Type
set to 5, 6 or 12

1 FAN HP 2 STAGE COMPR AUX HEAT



D1-528 HAC Type
set to 10 or 11

HPO TWO STAGE HEAT



D1-528 HAC Type
set to 7 or 8

GETTING STARTED

Home Screen - User Interface

The D1-528 thermostat user interface contains

1. LCD display
2. Power ON/OFF Button
3. Fan Button
4. Display Button
5. Up arrow Button
6. °F|°C Button
7. Down arrow Button
8. Communicating Dot
9. Occupancy Sensor

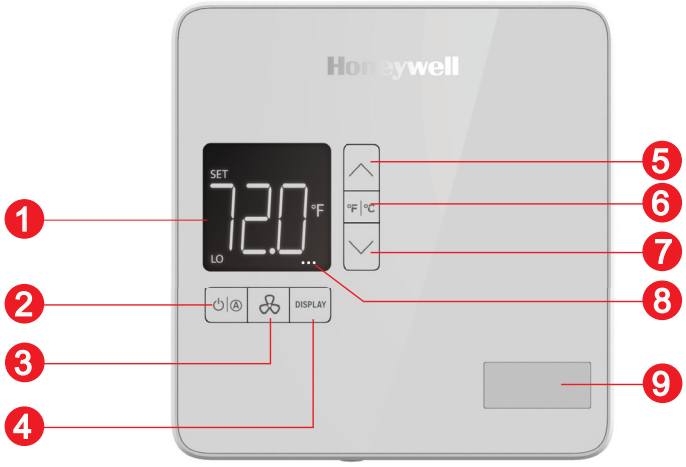


Fig. 4 D1-528 Thermostat User Interface

Table 11 D1-528 Thermostat User Interface

Parameter	Description
LCD display	Displays all the parameters
Power / Auto Button	To toggle to mode from OFF to AUTO mode.
Fan Button	Sets the fan to the desired speed (Low, Med, Hi).
Display Button	Toggles the LCD display between the selected target temperature, room temperature, and room humidity.
Up arrow Button	Increase temperature or displayed parameter value.
°F|°C Button	Toggles temperature readings between Fahrenheit and Celsius.
Down arrow Button	Decrease temperature or displayed parameter value

Table 11 D1-528 Thermostat User Interface

Parameter	Description
D1-528 Communicating Dot	The right 2 dots will always be displayed when the D1- 528 is communicating through the D-578 Edge Router to Niagara. The 3rd left dot will toggle on and off when the D1-528 receives certain periodic broadcast messages sent from Niagara to the rooms. 2 broadcast messages are sent each minute, so you should see the 3rd dot toggle 2 times each minute. If no dots are displayed, the D1-528 is not communicating with Niagara or with the D-578 edge router.
Occupancy Sensor	Detects motion

D1-528 LCD

The D1-528 thermostat device will show different parameter readings on the LCD display.

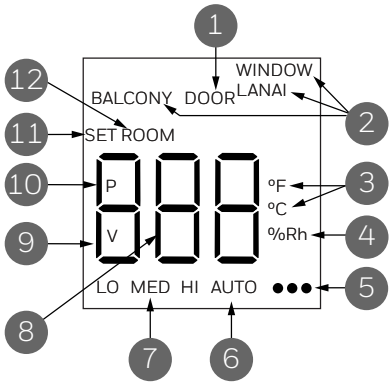


Fig. 5 D1-528 LCD details

The following table provides an overview of all the available segments of the D1-528 thermostat display with its parameter names and units.

Table 12 D1-528 LCD details

Sr No	Parameter Name
1	**Door**: By default this icon will never appear, but the D1-528 can be configured to display DOOR icon when the room entry door is open and being monitored by a door switch connected to a low voltage input on the D1-528 or reported from a battery powered S541.RF door monitor

Table 12 D1-528 LCD details

Sr No	Parameter Name
2	**Balcony, Window, Lanai**: By default the Window and Lanai icons are disabled and the Balcony icon will appear when the Balcony door is opened and being monitored by a door switch connected to a low voltage input on the D1-528 or reported from a battery powered S541.RF balcony door monitor. What icon is displayed (Balcony, Window or Lania) can be configured. The D1-528 will also turn off the room HVAC unit and replace the displayed room target temperature with 3 dashes (- - -)
3	**Temperature Scale**: Displays temperature in Farenheit (°F) or Celcius (°C)
4	**% Rh**: Appears when the Display button has been pressed to splay measured room relative humidity
5	**D1-528 Communicating Dot**: The right 2 dots will always be displayed when the D1-528 is communicating through the D-578 Edge Router to Niagara. The 3rd left dot will toggle on and off when the D1-528 receives certain periodic broadcast messages sent from Niagara to the rooms. 2 broadcast messages are sent each minute, so you should see the 3rd dot toggle 2 times each minute. If no dots are displayed, the D1-528 is not communicating with Niagara or with the D-578 edge router
6	**HVAC Control Mode**: AUTO displayed when HVAC control is in AUTO mode.
7	**FAN Speed**: LO, MI, HI displayed when FAN button has been pressed to select a manual Fan Speed.
8	**Value display section**: The 3 digits display various values depending on selected parameter. By default, measured Room temperature is displayed.
9	**V:** Indicates the value of a selected parameter is being displayed.
10	**P**: Indicates a parameter# is being displayed.
11	**SET**: Indicates the displayed temperature value is the desired target temperature.
12	**Room:** Indicates the measure room temperature is being displayed.

D1-528 Configuration Parameters

The D1-528 has several parameters that can be used to configure, test and troubleshoot the D1-528. The below table lists the available parameters in the D1-528.

Table 13 D1-528 Configuration Parameters

Parameter	Function
rId	Room ID
rCP	Room Copy
HAC	HVAC Type
FAn	Fan Speed
tt	Target Temperature
dLt	Unoccupied Delta
Uot	Unoccupied Time
UrS	Unrented Setback
Urt	Unrented time
PAn	PAN
rF	RF Channel
rbd	Bind Remote Device
Pn6	Ping RF or S5 devices
Ctr	Contractor Mode
LEn	Limited Energy Management
PIr	PIR Motion Test
dor	Door Sensor Test
UIn	Window Sensor Test
rH	Relative Humidity Test
rUn	Adjust inputs, reset, reebot
EEr	Access Local NVRAM
Gr.A	Advance HVAC EMS config
Adr	Teach Address
Io	Teach I/O Map

INITIAL CONFIGURATION

This section describes the initial installation and configuration of new D1-528. If the system is already configured and you need to replace the previously configured D1-528, refer Replacing D1-528.

NOTE:
A new, uninitialized D1-528 by default is set to Room ID 00001, PAN ID 1, RF Channel 20, and has all 5 relay outputs disabled.

NOTE:
To install and configure the D1-528 with the required Room ID, PAN ID and RF or to test the in room functionality, you do not need a PC or Honeywell JACE controller running Niagara Service, Niagara Workbench, Honeywell Remote Building Manager (RBM) or an installed and configured D-578 Edge Router.

NOTE:
To control or view the operation of the D1-528 in a room from RBM, you must have the Niagara service running on a PC or Honeywell JACE controller and the D-578 installed and configured from Niagara Workbench EasyOnBoard feature.

NOTE:
Refer to Honeywell document INNCOM Direct Gateway Configuration Guide - 31-00708 and INNCOM Direct Dashboard User Guide 31-00707 for details of using Niagara Workbench and installing and using Honeywell Remote Building Manager (RBM).

Prerequisites:

- The D1-528 have been installed and powered up.

The initial configuration sequence is:

1. Set the Room ID
2. Room Copy

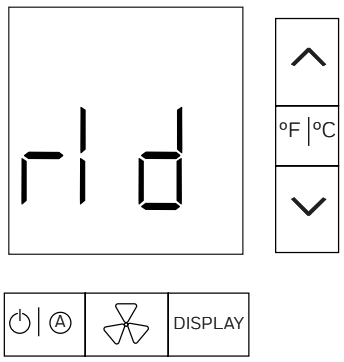
NOTE:
Copy the configuration from the D1-528 that has already been fully configured and proceed from Deploy the Property Key.
Or else, continue with Setup HVAC Type.

3. Setup HVAC Type
4. Setup Fan Speed

NOTE:
Prior to completing Initialization Mode, or pushing the thermostat configuration from INCOMM Direct Dashboard, the thermostat is configured with factory defaults to disable any call for heat, cool, or low, medium and high fan speeds to protect the HVAC equipment.

Set the Room ID

The thermostat will enter Initialization Mode and display **rId** the first time it is turned on.



1. Press the **DISPLAY** button.
   The default 5 digit Room ID value (00001) will scroll across the screen from highest to lowest (left to right most value).

Example of Room ID:

Hi	Med	Lo	Room Id
0	01	01	101
0	20	38	2038
3	40	21	34021

NOTE:
The default Room ID is comprised of three fields: highest digit, middle two digits, and lowest two digits.

Scrolling will stop at the highest digit first. The default value **0** and **HI** will be displayed.

2. Press the **UP/DOWN** arrow button to set the value (range is 0-6).
   For the above 3 examples, you would set the HI value to: 0 - **0**0101, 0 – **0**2038, 3 – **3**4021
3. Press **POWER** to continue.
   The next 2 digits of the Room ID will displayed. 00 and MED will appear.
4. Press the **UP/DOWN** arrow button to set the value (range is 0-99).
   For the above 3 examples, you would set the MED value to: 01 - 0**01**01, 38– 0**20**38, 21 - 3**40**21
5. Press **POWER** to continue.
   The last 2 digits of the Room ID will be displayed. 01 and LOW will appear.
6. Press the **UP/DOWN** arrow button to set the value (range is 0-99).
   For the above 3 examples, you would set the LOW value to: 01 - 001**01**, 38– 020**38**, 21 - 340**21**.

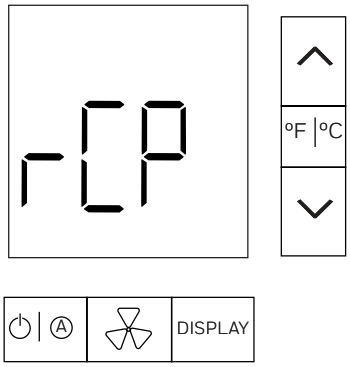
NOTE:
Press the **POWER** button to cycle between the HI, LOW and MED values.

7. Press **DISPLAY** to store the value, when the desired Room ID is defined.
   The D1-528 will beep when the value is stored and the new Room ID number scrolls across the display. Once the scrolling is completed **rCP** is displayed.

Room Copy

If you are configuring the first D1-528 that has a different HVAC type, or you don't want to use the room copy feature, press the **UP** arrow button to skip **rCP** and proceed to the HAC menu. Setup HVAC Type.

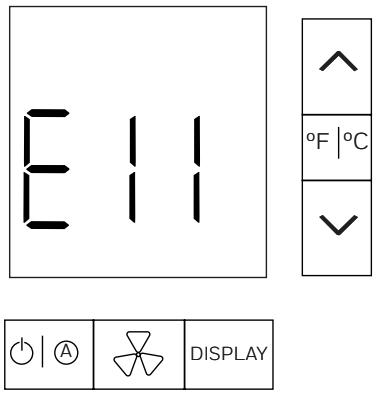
To copy the configuration from the D1-528 that has already been fully configured:



1. Press the **DISPLAY** button.
   The currently set Room ID in the D1-528 minus 1 will scroll across the display, then display 0 _ _ and the HI symbol. For example if you had set the Room ID to 00107, 00106 will scroll on the display.
2. If you want to use the displayed Room ID, press the **DISPLAY** button to start the copy configuration process from the D1-528 displayed room ID then proceed to step 5. Otherwise continue with step 3.
3. Define a different "copy from" Room ID, using the process defined in the "Set the Room ID" section (steps 2-7) to define the copy from Room ID.
4. Press the **DISPLAY** button when the desired "copy from" room id is defined to start copying the configuration from the D1-528 in the "copy from" room.

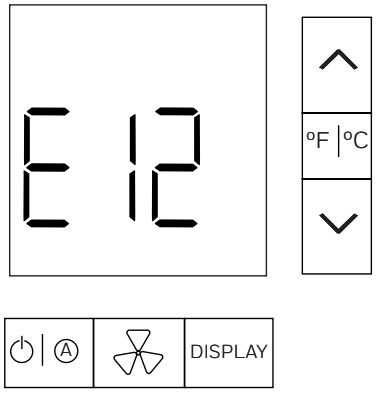
CPy will begin flashing on the D1-528 display.
The D1-528 will begin pinging the "copy from" D1-528 using the Room ID defined to verify it is communicating and set to the same PAN ID and RF Channel.

- If no reply is received from the configured D1-528 after 60 seconds, the D1-528 will beep and display **E11** as error code indicating it never received a reply to the pings and could not start the Room Copy.



Press **POWER** button five times to view the defined copy from Room ID HI, MED and LO values and verify they are correct.
Change any incorrect values, then try the room copy again by pressing **DISPLAY**.

- If a reply is received to the ping, the D1-528 will first read the firmware version of the "copy from D1-528" and begin copying. **CPy** will continue to flash.
  The D1-528 will display "V" to indicate a mismatch in the firmware versions of the two D1-528s and will continue copying.
- If the room copy was interrupted and could not complete, the D1-528 will display an **E12** error code.

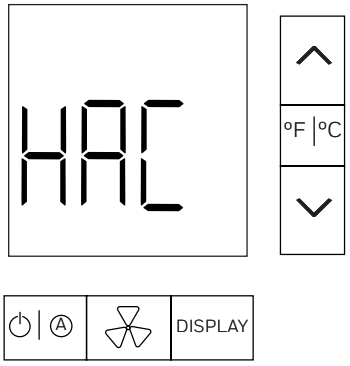


Press **DISPLAY** to start the copy process again. **CPy** will again start to blink on the display.
If the D1-528 just continues to display E12 sometime after starting the Room Copy, the D1-528 is having a problem reliably reading the configuration from the Copy From D1-528. Refer to the Troubleshooting section.

5. When the copy is complete, the D1-528 will beep and the display go blank for 10-15 seconds as the D1-528 resets to commit the changes it made. OFF or the Target Temperature value will be displayed.
   The new D1-528 should now be configured with the same settings as from the configured D1-528 and you should be able to begin using it.

Setup HVAC Type

After the room id is set, press the **UP/DOWN** arrow button to skip **rCp**, **HAC** will appear to set the desired HVAC control type for the D1-528.



1. Press the **DISPLAY** button to enter the HVAC Type menu.
   V and **0** will be displayed.
2. Press the **UP/DOWN** arrow button to set the desired HVAC type, select one of the following options from the table below:

Table 14 Setup HVAC Type

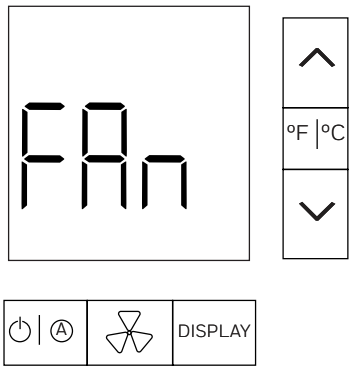
Sr No	HVAC Type
1	FCU-4
2	FCU-2 w/ elec
3	FCU-2 w/o elec
4	PTAC
5	HP-B W2 assist
6	HP-B W2 replace
7	HP-O W2 assist
8	HP-O W2 replace
9	Y1/2 W1/2 G AHU
10	2nd stage Heat Pump B –AHU
11	2nd stage Heat Pump O -AHU
12	PTAC + W1

3. Press **DISPLAY** to set the value.
   The D1-528 beeps to confirm the value has been set.

The display will change to **FAn** indicating you need to select the available fan speeds.

Setup Fan Speed

FAn appears on the D1-528 to set the desired fan speed after the HVAC type is set..



1. Press the **DISPLAY** button.
   V 0 will be displayed.

Press the **UP/DOWN** arrow button to set the fan speed by selecting a value 1, 2 or 3:

Table 15 Fan Speed

Value	Function
1	Low speed (single speed)
2	Low / High
3	Low /Medium / High

Value 1, 2 or 3 (Low, Low/High, Low/Med/High) will be available when using:

1 - FCU-4
2 - FCU-2 with elec heat
3 - FCU-2 without elec heat

Value 1, or 2 (Low, Low/High) will be available when using:

4-PTAC
5-HP-B W2 assist
6-HP-B W2 replace
7-HP-O W2 assist
8-HP-O W2 replace

Value 1 (Low) will be the only option when using:

9-Y1/2W1/2 G AHU
10- 2nd Stage Heat Pump B-AHU
11- 2nd Stage Heat Pump O-AHU

For example, if you have selected HVAC Type 1 FCU-4, Fan speed options 1-Low, 2 -Low/High and 3 – Low/Med/High will be available.

2. Press **DISPLAY** button to store the setting, the D1-528 beeps to confirm it is set.
   The **OUTSIDE** symbol will start blinking on the D1-528 display, indicating that the changes made need to be saved.
3. Press the **F/C** button.
   Str (store) appears on the display indicating that the changes made need to be stored.
4. Press **DISPLAY** button to store the changes.
   D1-528 will reset (the display will go blank then turn back on).

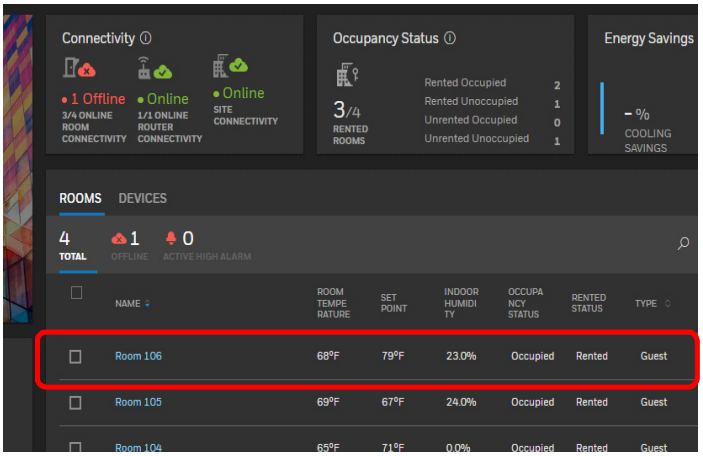
Checking Functionality

1. HVAC: Test cool and heat operations and all available fan speeds
2. PIR (motion sensor:
   Enter Service Parameter mode and go to the Pir parameter and perform the PIR Motion Sensor Test (Plr).
3. If monitoring room entry door position, perform the Entry Door Test. Enter Service Parameter mode and go to the dor parameter and perform the Door Test (dor).
4. If the INNCOM server (or Niagara JACE controller) is installed and running the Niagara Service and the D-578 Edge Router is installed, perform the D1-528 WAN test to verify the D1-528 is communicating with Niagara. Enter Service Parameter mode, go to the rUn menu and execute **Parameter 7:** WAN (Wide Area Network) test.

Go to the next room to configure the D1-528. If this was the last room, go to the next section, Room Configuration Complete.

Room Configuration Complete

The initial installation and configuration of the D1-528's in the rooms is complete. If the INNCOM server PC (or JACE controller) is installed and configured and the D-578 Edge Router has been installed and configured , you can open and log into the Honeywell Remote Building Manager (RBM) site for your installation and see the rooms online. Room 106 is Online in the below example.



Deploy the Property Key

The Unique Property Key for the hotel must be deployed to the D1-528 in all rooms.

Why the Property Key is Required:

If there is a nearby hotel which is also using INNCOM's RF network and RF devices, there is a possibility that interference and crosstalk can occur between the INNCOM RF devices in both hotels. To prevent this a unique automatically generated, hotel specific property key is assigned to the D1-528. Any RF messages sent between the D1-528 and D-578 Edge Router in one hotel contain this unique property key and will be ignored/rejected in any other nearby INNCOM installations.

Configuration at the D-578 Edge Router:

1. Install and power the D-578 Edge Router.
2. Activate Property Key Deployment mode on the D-578.
   This will cause the D-578 to broadcast a unique property key. Any D1-528 that is not using the new property key will automatically switch to it.

To Deploy the Property Key to the D1-528:

> **NOTE:**
> A brief summary of the D-578 installation is provided here. For full details refer to the INNCOM D-578 Edge Router Installation Instructions 31-00720.

1. Start the Niagara service on the INNCOM server PC (or Niagara JACE box if using that) if not running.
2. Install and power the D-578 Edge Router and connect it to the assigned port on the network switch defined by the hotel.
   The D-578 can be powered from an external 12 VDC power supply connected to the 12 VDC jack on the D-578, or powered via PoE (power over ethernet) if the network switch supports PoE.

The D-578 has 2 communication channels.

- A wired UDP Port 23211 network connection that connects the D-578 to the Niagara Gateway/Niagara service running on the INNCOM PC installed at the hotel.
- A wireless ZigBee RF network that connects the D1-528 "Room Gateway" in each room to the D-578.

By default, the D-578 expects to obtain its IP Address automatically from a DHCP server installed on the hotels network.
The yellow D4 LED will blink rapidly, when the D-578 is connected to Niagara.

3. Press the **Blue bind** button 6 times to place the D-578 into Key Distribution Mode.

The D3 Red LED on the D-578 will blink rapidly indicating it is in key distribution mode.

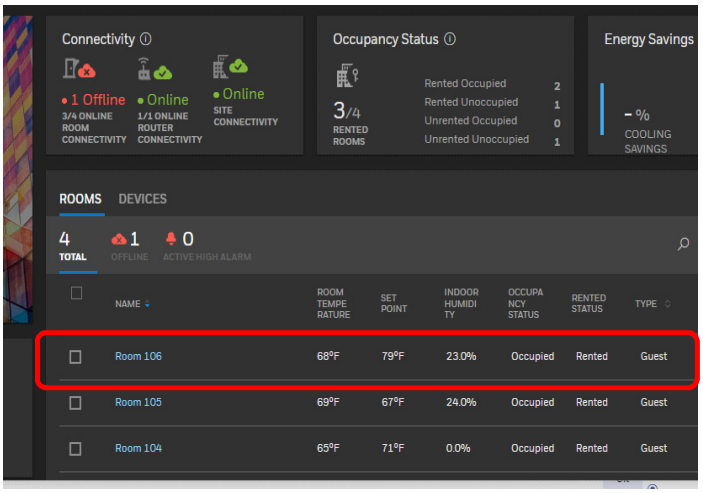
The D-578 will begin to broadcast its unique property key. Any D1-528 that receives this broadcast will immediately adopt and start using the new key.

NOTE:
The D-578 will remain in Key Distribution mode for 10 hours. You can manually exit out of Key Distribution mode by again pressing the Blue Bind button 6 times (press-press-press-press-press-press). The D3 Red LED will stop blinking.

Room Configuration Complete

The initial installation and configuration of the D1-528 in the rooms is complete. If desired, you can log into the Honeywell Remote Building Manager (RBM) site for your installation and see the rooms online. Room 106 is online in the below example.

NOTE:
Refer to Honeywell document INNCOM Direct Dashboard User Guide 31-00707 for more details.



ADVANCED CONFIGURATION

The D1-528 has a Service Parameter mode with several parameters that can be used to configure, test and troubleshoot the D1-528.

NOTE:
These are advanced features and should only be performed by an experienced user.

To enter/access the D1-528 Service Parameter Mode:

1. Press and hold °F|°C for 4 seconds to enter into service mode.
   OR
   Press and hold °F|°C press and release the **POWER** button, press and release the **DISPLAY** button, then release the F/C button.
   This will allow 60 seconds to initiate using a service parameter before the display will time out back to Set temperature.

Entry into the service mode is confirmed when the LCD display shows "**rld**".

2. Press the **UP/DOWN** arrow button to select the desired service parameter item. The below table lists the available service mode parameters.

Table 16. Service Parameter

Parameter	Function
rId	Room ID
rCP	Room Copy
HAC	HVAC Type
FAn	Fan Speed
tt	Target Temperature
dLt	Unoccupied Delta
Uot	Unoccupied Time
UrS	Unrented Setback
Urt	Unrented time
PAn	PAN
rF	RF Channel
rbd	Bind Remote Device
Pn6	Ping RF or S5 devices
Ctr	Contractor Mode
LEn	Limited Energy Management
PIr	PIR Motion Test

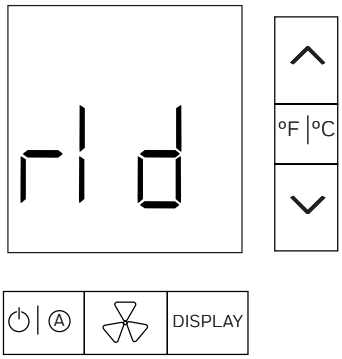
Table 16. Service Parameter

Parameter	Function
dor	Door Sensor Test
UIn	Window Sensor Test
rH	Relative Humidity Test
rUn	Adjust inputs, reset, reebot
EEr	Access Local NVRAM
Gr.A	Advance HVAC EMS config
Adr	Teach Address
Io	Teach I/O Map

Set the Room ID

The Room ID is normally set when the D1-528 is initialized during installation. The Room ID can be set/changed anytime using the rid parameter.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **rid** parameter.



3. Press the **DISPLAY** button.
   The default 5 digit Room ID value (00001) will scroll across the screen from highest to lowest (left to right most value).

NOTE:
The default Room ID is comprised of three fields: highest digit, middle two digits, and lowest two digits.

Scrolling will stop at the highest digit first. The default value 0 and HI will be displayed.

4. Press the **UP/DOWN** arrow button to set the value (range is 0-6).
5. Press **POWER** to continue.
   The next 2 digits of the Room ID will displayed. 00 and MED will appear.
6. Press the **UP/DOWN** arrow button to set the value (range is 0-99).
7. Press **POWER** to continue.
   The last 2 digits of the Room ID will be displayed. 01 and LOW will appear.
8. Press the **UP/DOWN** arrow button to set the value (range is 0-99).

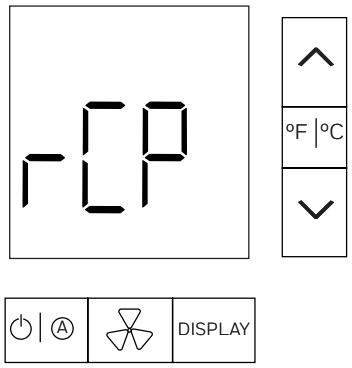
NOTE:
Press the **POWER** button to cycle between the HI, LOW and MED values.

9. Press **DISPLAY** to store the value, when the desired Room ID is defined.
   The D1-528 will beep and the new Room ID number scrolls across the display.

Room Copy

Use rCP to copy a configuration from D1-528 that is configured. This is normally done during initial installation, but can be done at any time.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **rCP** parameter.



3. Press the **DISPLAY** button.
   The currently set Room ID in the D1-528 minus 1 will scroll across the display. For example if you had set the Room ID to 00107, 00106 would scroll on the display.
4. To begin copying from the default displayed Room ID, press the **DISPLAY** button and proceed to step 7. Otherwise continue with step 5.
5. Define a different “copy from” Room ID, using the process defined in the “Set the Room ID” section (steps 2-7) to define the copy from Room ID.
6. Press the **DISPLAY** button when the desired “copy from” Room ID is defined to start copying the configuration from the D1-528 in the “copy from” room.
7. **CPy** will begin flashing on the D1-528 display. The D1-528 will begin pinging the “copy from” D1-528 using the Room ID defined to verify it is communicating.

- If no reply is received from the configured D1-528 after 60 seconds, the D1-528 will beep and display **E11** as error code indicating it never received a reply to the pings.
  Verify you have defined the correct “copy from” Room ID and the D1-528 in the copy from room is installed, powered, and configured correctly, especially its Room ID. Then try the room copy again by pressing the DISPLAY button.
- If a reply is received to the ping, the D1-528 will first read the firmware version of the “copy from” D1-528 and begin copying.
  The D1-528 will display "V" to indicate a mismatch in the firmware versions of the two D1-528s and will continue copying.
  When the copy is complete, the D1-528 will reset, and the D1-528 will beep indicating the copy is complete and reset.
  The new D1-528 should now be configured with the same settings as from the configured D1-528 and you should be able to begin using it.

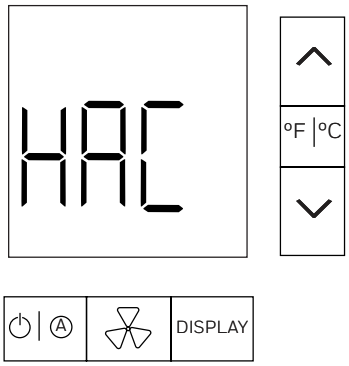
NOTE:
There will be no option to select the HAC (HVAC) or Fan (Fan Speed) configuration after the room copy is performed.

- If the room copy was interrupted and could not complete, the D1-528 will display an **E12** error code for 5 seconds. Retry the Room Copy process by pressing the **DISPLAY** button. **CPy** will again start to blink on the display.
- If the D1-528 continues to display E12 error code, the D1-528 is having a problem reliably reading the configuration from the copy from D1-528. For more information refer to Troubleshooting.

Setup HVAC Type

The HVAC control type is normally set when the D1-528 is initialized during installation. The HVAC control type can be set/changed anytime using the **HAC** parameter.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **HAC** parameter.



3. Press the **DISPLAY** button to enter the HVAC Type menu.
   V and currently selected HVAC type will be displayed.
4. Press the **UP/DOWN** arrow button to choose one of the following options from the table below:

Table 17 Setup HVAC Type

Sr No	HVAC Type
1	FCU-4
2	FCU-2 w/ elec
3	FCU-2 w/o elec
4	PTAC
5	HP-B W2 assist
6	HP-B W2 replace
7	HP-O W2 assist
8	HP-O W2 replace
9	Y1/2 W1/2 G AHU
10	2nd stage Heat Pump B –AHU
11	2nd stage Heat Pump O -AHU
12	PTAC + W1

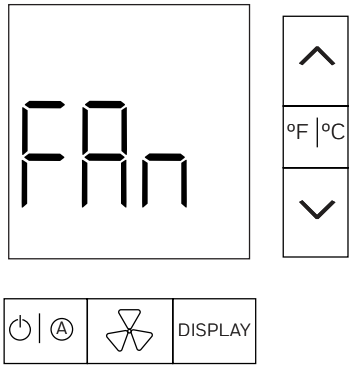
5. Press **DISPLAY** to set the value.
   The D1-528 beeps to confirm the value has been set.
   The D1-528 will display **OUTSIDE** icon indicating it has changes that need to be stored.

NOTE:
The HAC menu will also automatically change to the FAn menu. If you have changed the HAC HVAC type, a different combination of available fan speeds may be required.

Setup Fan Speed

The Fan speed is normally set when the D1-528 is initialized during installation. The Fan speed can be set/changed anytime using the **FAn** parameter.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **FAn** parameter.



3. Press the **DISPLAY** button.
   V 0 will be displayed.
4. Press the **UP/DOWN** arrow button to set the fan speed by selecting a value 1, 2 or 3:

Table 18 Fan Speed

Value	Function
1	Low speed (single speed)
2	Low / High
3	Low /Medium / High

Based on the HVAC type selection from the HAC menu, you will be limited to which of the 3 Fan values can be selected.

Value 1, 2 or 3 (Low, Low/High, Low/Med/High) will be available when using:

1 - FCU-4
2 - FCU-2 with elec heat
3 - FCU-2 without elec heat

Value 1, or 2 (Low, Low/High) will be available when using:

4-PTAC
5-HP-B W2 assist
6-HP-B W2 replace
7-HP-O W2 assist
8-HP-O W2 replace

Value 1 (Low) will be the only option when using:

9-Y1/2W1/2 G AHU
10- 2nd Stage Heat Pump B-AHU
11- 2nd Stage Heat Pump O-AHU

For example, if you have selected HVAC Type 1 FCU-4, Fan speed options 1-Low, 2 -Low/High and 3 – Low/Med/High will be available.

5. Press **DISPLAY** to store the setting, the D1-528 beeps to confirm it is set.
   The **OUTSIDE** symbol will start blinking on the D1-528 display, indicating that the changes made need to be saved/committed.
6. Press the **F/C** button.
   Str (store) appears on the display indicating that the changes made need to be stored.
7. Press **DISPLAY** to store the changes.
   D1-528 will reset (the display will go blank then turn back on).

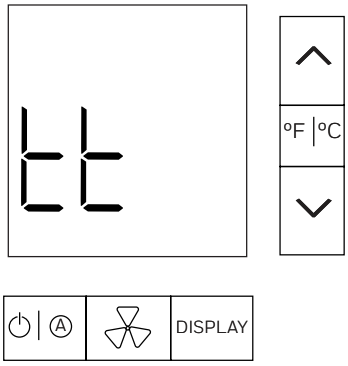
Tune Energy Savings

The **tt**, **dLt**, **Uot**, **UrS** and **Urt** parameters allow you to select 3 different levels of energy savings, Normal, Aggressive or Minimal.

tt (Selectable target temperature range)

Room temperature is maintained between the lower and upper values. The value of tt selects Normal, Aggressive or Minimal energy savings.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **tt** parameter.



3. Press the **DISPLAY** button.
   V and the current selected tt will be displayed.
   1 - Normal is the default value.
4. Press the **UP/DOWN** arrow button to select the desired **tt** value 1,2 or 3 per the table.

Table 19 Selectable target temperature range

Parameter		1	2	3
		Normal	Narrow	Wide
ttt (Target Temperature)	Not in VIP mode	65-80 °F (18-26 °C)	68-76 °F (20-21 °C)	62-85 °F (16-29 °C)
	In VIP mode	62-85 °F (16-29 °C)	65-80 °F (18-26 °C)	60-85 °F (15-29 °C)

For example, if you want to use the Aggressive values, set the **tt** value to 2.

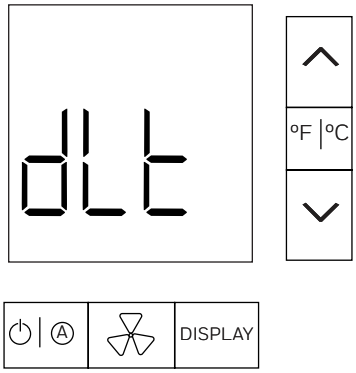
5. Press the **DISPLAY** button to save the value.
   tt will display and the D1-528 will beep and OUTSIDE will start to blink on the display indicating that the value needs to be stored.
6. Press the **F/C** button to save the **tt** value.
   Str will appear.
7. Press the **DISPLAY** button to save the change.
   The D1-528 will reset.

dLt (UnOccupied Delta)

If the room is unoccupied, the D1-528 will use a Normal, Aggressive or Minimal temperature control band to save energy defined in the **dLt** parameter.

- If the room is fully unoccupied, the DeltaUnOccupied values will be used.
- If the room had just been rented but has not become occupied yet, the DeltaJustRented values will be used.
- If the room is occupied, but the room entry door was opened and closed and the D1-528 is timing down the unoccupied timeout scanning for motion the DeltaMotionScan values will be used.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **dLt** parameter.



3. Press the **DISPLAY** button.
   V and the current selected **dLt** value will be displayed. 1 - Normal is the default value.
4. Press the **UP/DOWN** arrow button to select the desired **dLt** value 1,2 or 3 as per the below table.

Table 20 dLt (UnOccupied Delta range)

Parameter		1	2	3
		Normal	Aggressive	Minimal
dLt (Unoccupied Delta)	DeltaUnoccupied	40 °F	60 °F	20 °F
	DeltaJustRented	20 °F	30 °F	10 °F
	DeltaMotionScan	10 °F	15 °F	0 °F

For example, if you wanted to use the minimal **dLt** setting, set the **dLt** value to 3.

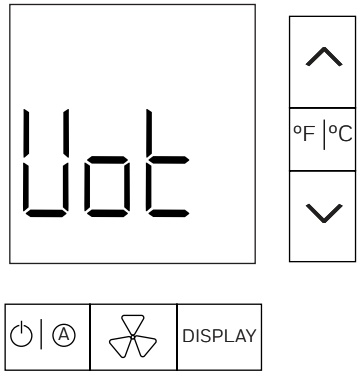
5. Press the **DISPLAY** button to save the value.
   dLt will display and the D1-528 will beep and OUTSIDE will start to blink on the display (if is not already blinking) indicating that the value needs to be stored.
6. Press the **F/C** button to save the **dLt** value.
   Str will appear.
7. Press the **DISPLAY** button to save the change.
   The D1-528 will reset.

Uot (Unoccupied Time)

The **Uot** unoccupied time parameter provides 2 groupings of 3 different unoccupied timeouts to save energy.

- If the D1-528 is actively receiving room entry door position from wired switch connected to an input on the D1-528 or a wireless battery powered S551.RF switch monitor, the D1-528 uses the 10/2, 5/2 or 30 /10 minutes unoccupied timeout defined in Table 21, “Uot (Unoccupied Time) range” ,
  For example, if Uot is set to value 2 and the room enter door opens and closes and no motion is detected, the room will go unoccupied after 5 minutes if the room is Rented or 2 minutes if the room is not rented.
- If room entry door position is not being monitored and only the D1-528 motion sensor is being used for motion only occupancy control logic, the D1-528 uses the 2.5/24.5, 1.5/12.5 or 8.5 /33.5 hour bright/dark motion only timeout defined in table.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **Uot** parameter.



3. Press the **DISPLAY** button.
   V and the current selected **Uot** value will be displayed. 1 - Normal is the default value.
4. Press the **UP/DOWN** arrow button to select the desired **Uot** value 1,2 or 3 as per the below table.

Table 21 Uot (Unoccupied Time) range

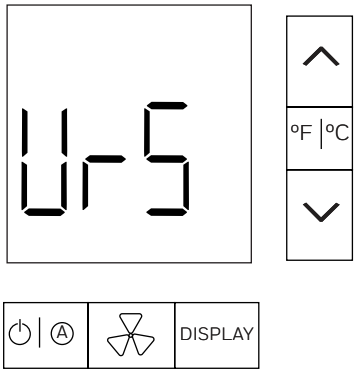
Parameter			1	2	3
Uot (Unoccupied Time)			**Normal**	**Aggressive**	**Minimal**
	Door Switch and Motion	Rented	10 min	5 min	30 min
		Unrented	2 min	2 min	10 min
	Motion Sensor only	Hours Bright	2.5 hrs	1.5 hrs	8.5 hrs
		Hours Dark	24.5 hrs	12.5 hrs	33.5 hrs

5. Press the **DISPLAY** button to save the value.
   Uot will display and the D1-528 will beep and OUTSIDE will start to blink on the display (if is not already blinking) indicating that the value needs to be stored.
6. Press the **F/C** button.
   Str will appear.
7. Press the **DISPLAY** button to save the change.
   The D1-528 will reset.

UrS (Unrented Setback)

The Unrented Setback (UrS) parameter allows the selection of Normal, Aggressive or Minimal savings based on different temperature control bands that become active when the room is unoccupied and unrented.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **UrS** parameter.



3. Press the **DISPLAY** button.
   V and the current selected **UrS** value will be displayed. 1 - Normal is the default value.
4. Press the **UP/DOWN** arrow button to select the desired **UrS** value 1,2 or 3 as per the below table

Table 22 UrS (Unrented Setback range)

Parameter		1	2	3
UrS (Unoccupied Delta)		**Normal**	**Aggressive**	**Minimal**
	Lower	62 °F	60 °F	65 °F
	Upper	80 °F	85 °F	75 °F

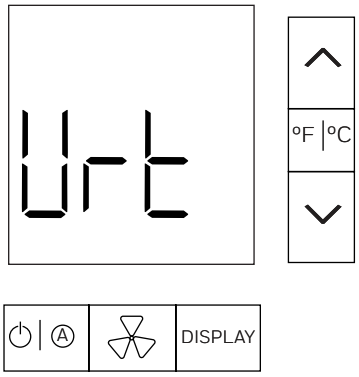
5. Press the **DISPLAY** button to save the value.
   UrS will display and the D1-528 will beep and OUTSIDE will start to blink on the display indicating that the value needs to be stored.
6. Press the **F/C** button and **Str** will appear.
7. Press the **DISPLAY** button to save the change.
   The D1-528 will reset.

Urt (Unrented Time after Unoccupied)

This setting only applies if no PMS is installed at the hotel to rent and unrent rooms. With no PMS, all rooms would normally always be Rented and thus no unrented temperature setback (i.e., a wider temperature control band when unrented) could be used to save energy.

Urt allows the selection of Normal, Aggressive or Minimal savings based on making the room go unrented after the room has been unoccupied for a certain time period.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **Urt** parameter.



3. Press the **DISPLAY** button.
   V and the current selected **Urt** value will be displayed. 1 - Normal is the default value.
4. Press the **UP/DOWN** arrow button to select the desired **Urt** value 1,2 or 3 as per the below table

Table 23 Urt (Unrented Time after Unoccupied range)

Parameter	1	2	3
	Normal	**Aggressive**	**Minimal**
Urt (Unrented Timeout)	8 hrs	4 hrs	16.7 hrs

5. Press the **DISPLAY** button to save the value.
   Urt will display and the D1-528 will beep and OUTSIDE will start to blink on the display indicating that the value needs to be stored.
6. Press the **F/C** button.
   Str will appear.
7. Press the **DISPLAY** button to save the change.
   The D1-528 will reset.

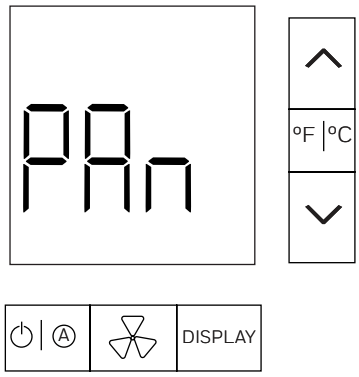
Pan ID (PAn)

The PAN ID in combination with the RF Channel is used to control what D-578 Edge Router a particular room communicates through. The PAN ID can be set to any value 0 to 255. The default PAN ID value is 1.

At any INNCOM Direct installation, one D-578 Edge Router will be installed using PAN ID 1 by default, and all D1-528 devices will also be set to PAN ID 1 by default.

NOTE:
The PAN ID should typically not require changing.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **PAn** parameter.



3. Press the **DISPLAY** button.
   V and the current selected PAN ID value will be displayed. PAN ID 1 is the default value.
4. Press the **UP/DOWN** arrow button to select the desired PAN ID.
5. Press the **DISPLAY** button to store the new PAN ID value.
   The D1-528 will beep and will display **PAn**. OUTSIDE will NOT begin to blink on the display indicating the change needs to be stored like other parameters require.
6. Press the **F/C** button to exit service mode.

RF Channel (rF)

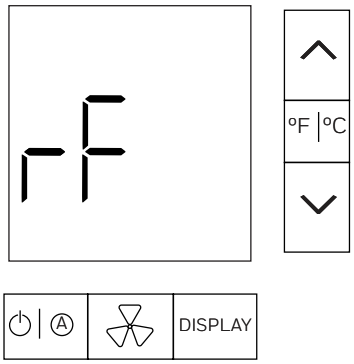
The RF Channel in combination with the PAN ID is used to control what a D-578 Edge Router a particular room communicates through. The RF channel can be set to any value 11 to 26. The default RF channel value is 20. Each RF channel uses a distinct frequency band.

At any INNCOM Direct installation, one D-578 Edge Router will be installed using RF channel 20 by default, and all D1-528 devices will also be set to RF Channel 20 by default.

The RF Channel should typically not require changing.

One reason that would require using a different RF channel is if it is determined there are other RF transmitters installed at the hotel that use the same or close to the INNCOM default RF Channel 20 frequency band. It may be required to use a different RF Channel for the installed D1-528 devices.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **rF** parameter.

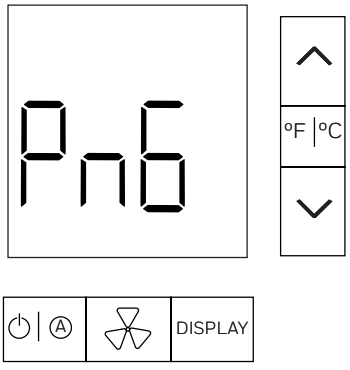


3. Press the **DISPLAY** button.
   V and the current selected RF Channel value will be displayed. RF Channel 20 is the default value.
4. Press the **UP/DOWN** arrow button to select the desired RF channel.
5. Press the **DISPLAY** button to store the new RF Channel value.
   rF will display and the D1-528 will beep and OUTSIDE will start to blink on the display indicating that the value needs to be stored.

Ping Device (Pn6)

Use Pn6 to ping another device in the room from the D1-528. This is done to make sure the D1-528 is communicating with the other device.

1. Press and hold °F | °C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **Pn6** parameter.



3. Press the **DISPLAY** button.
   V 0 will be displayed.
4. Press the **UP/DOWN** arrow button to select the desired P5 address of the device you want to ping.
5. Press the **DISPLAY** button to start.
   The D1-528 will begin to send 4 commands, one after the other, over and over, to read the following from the target device and display the read values. Each time a reply is received from each read command, the D1-528 will beep and display the read value.
   410D - Read Device Type
   410E - Read Major Version
   410F - Read Minor Version
   4145 - Read AGC Level. This will typically be 0.

You need not care about the values that appear. What is important is that you see the reply values appearing and the D1-528 beeping. This indicates the device getting pinged is replying.

If the Address you defined in step 4 remains displayed and you never hear the D1-528 beep, the D1-528 is not getting any replies from the device with the defined Address.

Verify you defined the correct target address, the target actually exists and is powered and configured correctly:

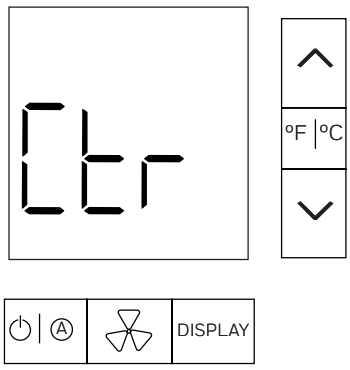
- If pinging an RF device, is it set to the same Room ID, PAN ID, RF Channel as the D1-528
- If pinging a wired S5 bus device, is it correctly connected to the D1-528 S5 bus or the S5 bus of an RF Device set to the same Room ID, PAN ID,RF Channel as the D1-528.

6. Press the **F/C** button to stop and return to Pn6.
7. Press **F/C** again to exit service mode.

Contractor Mode (Ctr)

Contractor mode configures the D1-528 to lock the upper and lower target temperature to 69-75 °F, disable motion only checkout and disables the unoccupied timeout.

1. Press and hold °F | °C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **Ctr** parameter.



3. Press the **DISPLAY** button.
   oFF will appear on the display by default.

To enable Contractor Mode:

a. Press the **UP** arrow button to display **on**.
b. Press **DISPLAY** button.
   The D1-528 will beep, Ctr will appear on the display and OUTSIDE will start blinking on the display indicating that the change needs to be stored.

c. Press the **F/C** button.
Str (store) will be displayed.
d. Press **DISPLAY** to store the change.
The D1-528 will reset.
When the D1-528 starts up, it will display a **P** indicating it is in Contractor mode.

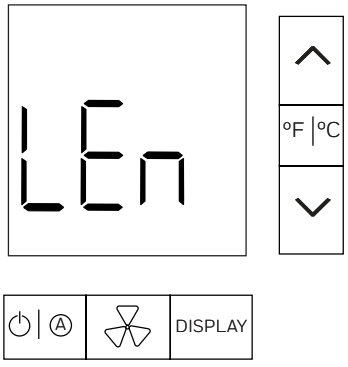
To Disable Contractor Mode:

a. Press the **UP/DOWN** arrow button if **on** is displayed, to change to oFF.
b. Press **DISPLAY** button.
The D1-528 will beep, Ctr will appear on the display and OUTSIDE will start blinking on the display indicating that the change needs to be stored.
c. Press the **F/C** button.
Str (store) will be displayed.
d. Press **DISPLAY** to store the change.
The D1-528 will reset. Contractor Mode is now disabled.

Limited Energy Management Mode LEn

LEM can be enabled in the D1-528 when an important or discriminating guest is checked into a room. A room placed in LEM mode uses expanded target temperature control bands (allows guests to select higher/lower than normal room target temperatures) and does not use larger temperature control bands when the room becomes unoccupied, or the room window or balcony door is open.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **LEn** parameter.



3. Press the **DISPLAY** button.
on will appear on the display by default.
4. Press the **UP/DOWN** arrow button to select between **on** or **oFF**.

To enable LEM mode:

1. Select **on** and press **DISPLAY** button.
The D1-528 will enable LEM mode and beep. **LEn** will appear on the display. LEM mode is enabled and will remain enabled for 72 hours. After 72 hours LEM mode will automatically be disabled. If the room gets unrented during this time, LEM mode will be disabled.

To enable LEM mode (without entering service mode):

LEM can also quickly be enabled without entering service mode by performing the following on the D1-528:

1. Press and hold the **DISPLAY** button.
2. Press and release the **POWER** button
3. Press and release the **UP** arrow button
4. Release the **DISPLAY** button.
LEn will quickly appear in the display indicating LEM mode is active.

To disable LEM mode:

1. Select **oFF** and press **DISPLAY**.
The D1-528 will disable LEM mode and beep. **nor** (normal) will appear. LEM mode is now disabled.

To disable LEM mode (without entering service mode):

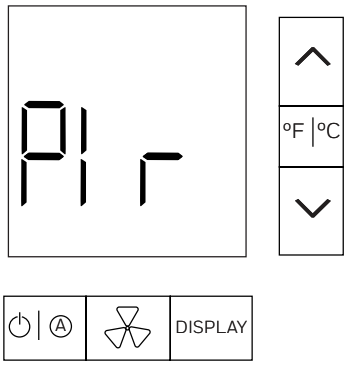
LEM can also quickly be disabled without entering service mode by performing the following button press sequence on the D1-528:

1. Press and hold the **DISPLAY** button.
2. Press and release the **POWER** button.
3. Press and release the **DOWN** arrow button
4. Release the **DISPLAY** button.
nor (normal) will quickly appear in the display indicating LEM mode is disabled.

PIR Motion Sensor Test (Plr)

Use Plr to test the built in motion sensor in the D1-528.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **Plr** parameter.



3. Press the **DISPLAY** button to start the test.
V 0 will appear on the display.

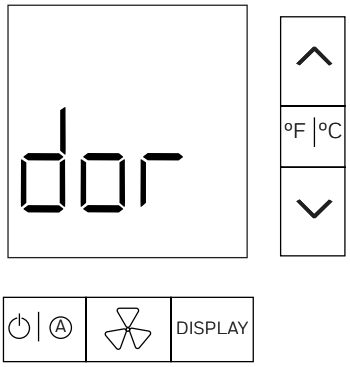
4. Walk around the room and if your motion is detected by the D1-528 motion sensor, the D1-528 will beep and increase the displayed value. As long as you move around to different locations the D1-528 will beep continuously and increase the displayed value. When the motion stops, the beeping will stop and the and the displayed value will remain at its last value. The Plr test will timeout after 60 seconds.

Door Test (dor)

Use dor to test the reporting of room entry door position (if entry door monitoring is required/installed).

NOTE:
A wired door switch must be connected to a low voltage input of the D1-528 or S541.RF wireless battery powered door position sensor installed that has been bound to the same Room ID, PAN ID and RF Channel as the D1-528.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **dor** parameter.



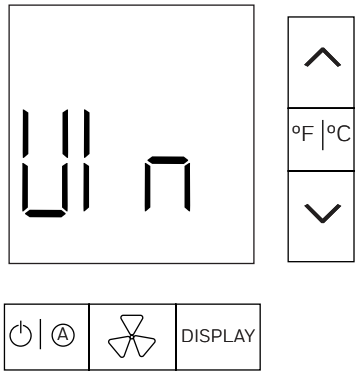
3. Press the **DISPLAY** button to start the door test. **V 0** will appear on the display.
4. Open the door and the D1-528 will show dor at the top of the display and also beep.
5. Close the door and the beeping stops and the display will return to **V X** , where X is the number of times the door was detected open.
   The door test will not automatically time out.
6. Press the **F/C** button to exit service parameter mode.

Window Test (Uln)

Use Uln to test the reporting of Window or Balcony position reporting.

NOTE:
There must be either a wired window/balcony switch connected to a low voltage input of the D1-528 or an S541.RF wireless battery powered door position sensor installed has been configured to report balcony position and that has been bound to the same Room ID, PAN ID and RF Channel as the D1-528.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **Uln** parameter.

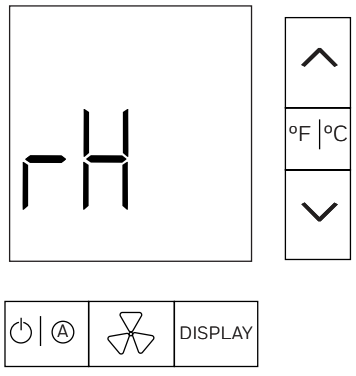


3. Press the **DISPLAY** button start the test. **V 00.h** will appear on the display.
4. Open the window/balcony door and the displayed value will increase by one (i.e., v 01.h) and the D1-528 will continue to beep as long as the window is open.
5. Close the window/balcony and the beeping stops and the display will remain at the last number of detected openings.
   The test will not automatically time out.
6. Press the **F/C** button to exit service parameter mode.

Measured Room Humidity (rH)

Displays the humidity value detected by the built-in humidity sensor in the D1-528.

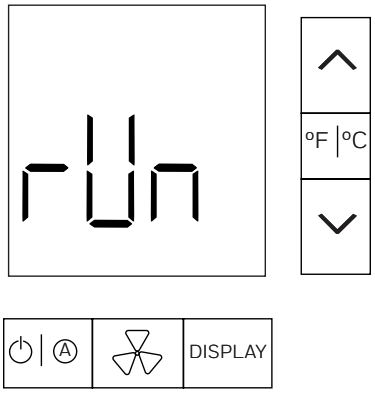
1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **rH** parameter.



3. Press the **DISPLAY** button to start the humidity reporting.
   V XX % RH will appear on the display, where XX is the measured humidity.
   The humidity test will timeout after 60 seconds.

Run Menu Parameters rUn

The D1-528 has Run parameters that let you reset or reboot the D1-528 and perform a range of in room tests. The PIR, Door, Window tests can also be performed as individual tests.



⚠ WARNING

These are advanced features that should only be used by an experienced user. If in doubt, contact INNCOM customer service.

Table 24. Run parameters

Parameter	Value	Function
0	0	Reset the D1-528
	1..255	Reset remote device. The value selected is the P5 address to which the reset command will be sent.
1	N/A	Boot IOMAP 1.
2	N/A	Boot IOMAP 2.
3	N/A	Boot IOMAP 3.
4	0...255	Boot IOMAP. The active IOMap will be set to the value selected.
5	0...999	Incremental reconfiguration. The operation performed will depend on the selected value.
6	N/A	Scroll Versions. Displays the major and minor versions of each bank and the application personality.
7	N/A	WAN communication test. Sends an event to the server. The server in turn will reply with a command that lets the room ID scroll over the display of the Thermostat.

Table 24. Run parameters

Parameter	Value	Function
8	N/A	P5 Address Trace. After executing displays the P5 source address of received packets.
9	1...2555	Edit the NVRAM of a remote device.
11	N/A	Run PIR sensor test. The buzzer will sound as long as there is motion detected and the LCD counts the number of times the application has increased the motion counter.
12	N/A	Run Door Test. The buzzer will sound as long as the door is open and the LCD counts the number of times the door has gone from closed to open.
13	N/A	Run Window Test. The buzzer will sound as long as the window is open and the LCD counts the number of times the window had gone from closed to open.
16	0...255	Open remote bind window. Cause the remote device whose address matches the selected value to open a 120 second window for binding. Before executing, select an address to be taught by selecting the value in the Adr menu and pressing the F/C key.
21	0...31	Process image. After executing flashes the current value of the room's process image at the offset specified by the value.
31	0...25	Miscellaneous functionality.
51	N/A	Read Measured temperature. Read only value shows the measured temperature to the nearest 0.1 °F.
88	0.100	Read Humidity Level. Read only value shows the measured humidity level (%RH).
89	N/A	Read Measured temperature. Read only value shows the measured temperature to the nearest 0.1 °F
255	N/A	Reboot the D1-528

Using the rUn menu:

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **rUn** parameter.
3. Press the **DISPLAY** button.
   P and 0 will appear.
4. Press the **UP/DOWN** arrow button to select the desired parameter value from the rUn menu to test.
5. Press the **DISPLAY** button to initiate.
6. Press the **F/C** button 2 times, to exit out of the rUn menu.

Parameter 0 Value 0: Reset the D1-528

1. With P 0 displayed, press **POWER** button to display V 0. If the displayed value is not **0**, change it to 0.
2. Press **DISPLAY** to execute.
   Rst will appear on the D1-528 display and the D1-528 will RESET

Parameter 0 Value X: Reset remote device that has P5 address X (1-255)

1. With **P 0** displayed, press **POWER** button to display V 0.
2. Set the Value to the P5 address of another in-room device and press **DISPLAY**.
   The D1-528 sends a 420 Reset command to the defined P5 address.

Parameter 1-4: Boot I/O Map 1, 2, 3 or 4 internally in the D1-528. You do not need to press the POWER button to view/set a value. With P on the display, just set the P value to 1-4 and press DISPLAY to execute. The D1-528 will internally activate the defined I/O Map 1, 2, 3 or 4.

You will see the D1-528 Reset.

Parameter 5 Value X: Incremental reconfiguration.

1. With **P 5** displayed, press **POWER** button.
   V and 0 will appear.
2. Set the Value to the built-in incremental I/O Map #, then press **DISPLAY** to execute. The D1-528 will execute the defined I/O Map.

NOTE:
Contact INNCOM Customer service for a list of the available I/O Maps.

Parameter 6: Displays the 4 digit versions of its 5 software banks. With **P 6** displayed, press **DISPLAY** to execute. The 4 digit version x.x.x.x of the BootLoader (bL), IRAS (IrA), CBL32 (CbL), AppMap (APP) and Personality (Per) bank will be displayed.
For example, it would look like the following.

bL 2--- 0--- 2--- 0
IrA 2--- 1--- 0 ---0
CbL 2--- 0 ---1--- 2
APP 2--- 0--- 2--- 0
Per 1--- 0--- 0 ---2

Parameter 7: WAN (Wide Area Network) test.

Use this test to verify that the D1-528 is communicating through the D-528 edge router to Niagara (INNCOM Direct) or TermDMS (IC3).

1. With **P 7** on the display, press **DISPLAY** button to execute the WAN test. don will be appear on the display. The D1-528 will send a 0000C commissioning test request command to the D-578 edge router and Niagara (in a INNCOM Direct installation) or TermDMS (in an IC3 installation). If Niagara/TermDMS has the room online and communicating, a 0000DXXXX scroll Room ID XXXXX message will be sent back to the D1-528 and you should see the 5 digit Room # XXXXX scroll on the display.

This indicates the D1-528 is online.

If don remains on the display and no 5 digit room # scrolls on the display, the D1-528 is not online.
Refer to the Troubleshooting section.

Parameter 8: P5 Address Trace.

Use this to make the D1-528 look at any commands it receives from other devices in the same room and display the “From” address that was in the command.

1. With **P 8** on the display, press **DISPLAY**.
   The D1-528 will emit an audible click and display the from P5 Address of any message it receives (via RF or S5 bus).

For example, there is a device in the same room as the D1-528 with an unknown address. When you press a button on the device to make it send a command, “16” appears on the D1-528 display and the D1-528 clicks. So the device is using P5 address 16.

2. Press the **F/C** button to exit, when finished with the test.

Parameter 9 Value X: View/Edit the NVRAM (non volatile RAM) settings of a remote device.

INNCOM devices have 255 bytes of NVRAM that control certain aspects of the device. You can use the D1-528 Par 9 NVRAM feature to read or change the values of these NVRAM locations of the target device. You can normally do this remotely using RBM or IC3 dialog command, but if this not available you can do this locally in the room using the D1-528.

Before you can use this feature, you must elevate the user access privilege of the D1-528 by executing rUn parameter 31 with value 41:

1. Press and hold °F|°C for 4 seconds to enter into service mode.

2. Press the **DOWN** arrow button to select **rUn** parameter.
3. Press **DISPLAY**.
   P 0 will be displayed.
4. Press the **UP** arrow button to go to P 31, then press **POWER** button to view the value.
5. Press the **UP** arrow button to change the value to 41, then press **DISPLAY**.

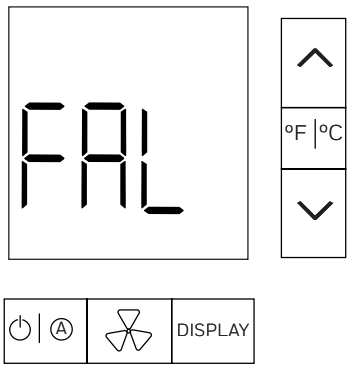
You have now elevated the access rights so that you can use the Par 9 feature.

1. Press **F/C** to return to P 31, then press **DOWN** arrow button and go to P 9.
2. Press **POWER** button to view the value.
   V and 0 will be displayed.
3. Press the **UP/DOWN** arrow buttons to select the address of the room device that you want to view/edit its NVRAM memory settings.
4. With the address defined, press the **DISPLAY** button.
   Pnd (pending) will appear on the display as the D1-528 sends a Ping command to the defined address to verify it is communicating with the target device.

If the target device responded, P 0 will appear on the display indicating it is ready to read NVRAM memory location 0:

1. Press the **UP/DOWN** arrow button to change the displayed P value to select the desired memory location 0-255.
2. Press the **POWER** button to make the D1-528 send a 43500XX read memory location XX, where XX is the hexadecimal value of the 0-255 decimal value you defined.
   Pnd will be displayed while waiting for the reply from the device. If a reply is received, V and the replied value will be displayed in decimal.

If **Pnd** remains on the display, no reply was received from the defined target device. The D1-528 will try to Ping the address 4 times, then give up and display **Fal** (Fail).



Did you define the correct Target address?

Is the Target device installed, powered and set to the correct address?

As an example, you need to read a PC502.4G (address 216) in a room and make sure it does NOT have its Room Gateway related P5 servers enabled. You don't have access to RBM/IC3 dialog commands or other tool, but do have access to the room and the D1-528.

The PC502 Room Gateway server is located in its NVRAM location 218 (0xDA hex) and this needs to be set to 0 (0x00)

1. With P 9 displayed, press **POWER** button to view the value. **V** and **0** will be displayed.
2. Press the **DOWN** arrow button to select 216, the address of the PC502 and press the **DISPLAY** button. Pnd (pending) appears, then P 0 appears indicating the D1-528 could Ping the PC502 using address 216.
3. Press the **DOWN** arrow button to set the P value to 218, the NVRAM location to be read, then press the **POWER** button to read the value of memory location 218.
   Pnd will be displayed and a 43500DA read command will be sent to the PC502 Address 216. If a reply was received it will be displayed. In this case, V 23 appears, indicating the value of NVRAM 218 (0xDA) is 23 (0x17 hex) and the Room Gateway servers are enabled. The value needs to be 0 (0x00).
4. Press the **DOWN** arrow button to change the displayed value to 0, then press the **DISPLAY** button to make the D1-528 send a 43700DA00 command to the PC502 to write NVRAM location 218 (0xDA hex) to 0.
   The display will change back to P 218.
5. Press the **POWER** button to make the D1-528 send the 43500DA read command and verify V 0 appears, indicating the NVRAM location 218 (0xDA hex) was changed to value 0.

EEr – Read and Display NVRAM of the D1-528

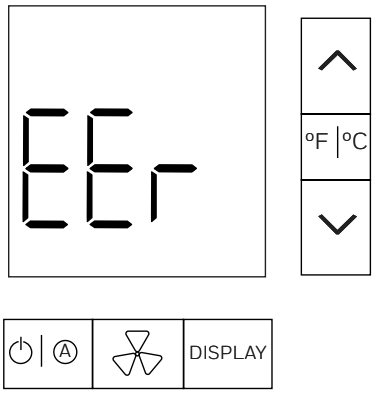
View/Edit the NVRAM (non volatile RAM) settings of the local D1-528. The D1-528 has 255 bytes of NVRAM that control certain aspects of the device.

NOTE:
This option is to view/edit the local 255 NVRAM memory locations of the D1-528, NOT the CBL32 Registry of the D1-528. Refer to the next section 6r.A (Group 9 Registry Access) for that.

By default, you can only view the current value of the selected memory location:

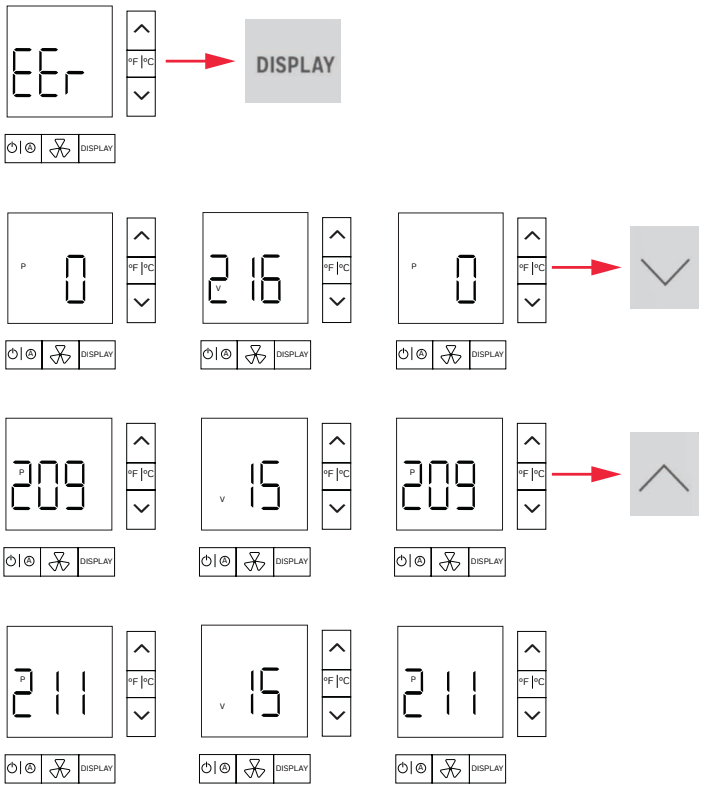
1. Press and hold °F | °C for 4 seconds to enter into service mode.

2. Press the **DOWN** arrow button to select **EEr** parameter.



3. Press **DISPLAY**. P 0 will be displayed. After 2 seconds, the value of NVRAM location 0 will be displayed, then after 2 seconds the display will return to P 0.
4. Press the **UP/DOWN** arrow buttons to set the displayed P value to the desired NVRAM location 0-255, then again after 2 seconds the current value of the selected NVRAM location will be displayed for 2 seconds, then return to displaying the selected P value.
5. If all you wanted to do is view the current value of D1-528 NVRAM locations, then you can exit EEr menu by pressing F/C button 2 times.

As an example, you need to read the value of NVRAM locations 209 and 211 and make sure they are both set to 15 decimal.



If you want to view and edit/change a NVRAM memory location in the D1-528, you need to first enable elevated access for this by executing rUn Parameter 31 with Value 41:

1. Press and hold °F | °C for 4 seconds to enter into service mode.
2. Press the **DOWN** arrow button and select **rUn** parameter.
3. Press **DISPLAY**. P 0 will be displayed.
4. Press the **UP** arrow button to go to P 31, then press **POWER** button to view the value.
5. Press the **UP** arrow button to change the value to 41, then press **DISPLAY**. You have activated elevated privileges that will allow changing the NVRAM values. There will be no beep or other indications.
6. Press **F/C** button 2 times to exit back to rUn menu on the display.

Now return to the EEr parameter menu and change the desired NVRAM location:

1. Press the **UP** arrow button to go to the EEr parameter and press **DISPAY**. P and 0 will be displayed.
2. Press the **UP/DOWN** arrow buttons to set the displayed P value to the desired NVRAM location 0-255, then press **POWER** to display the current value. V XXX will appear when XXX is the current value in decimal of the selected NVRAM location.
3. Press the **UP/DOWN** arrow buttons to set the desired/new value for NVRAM memory location.
4. Press **DISPLAY**. The D1-528 will beep and return to P XX.

6r.A - CBL32 Registry Group 9 Thermo/HVAC Editor

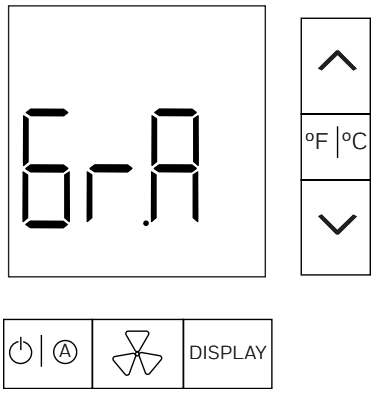
The 6r.A (Registry Group 9Access) service parameter allows you to read and write CBL32 Registry 9:X in the D1-528.

⚠ WARNING

This feature should ONLY be used by an experienced user. Changing CBL32 Registry values incorrectly in the D1-528 can disable features and end up rendering the D1-528 unusable.

1. Press and hold °F | °C for 4 seconds to enter into service mode.

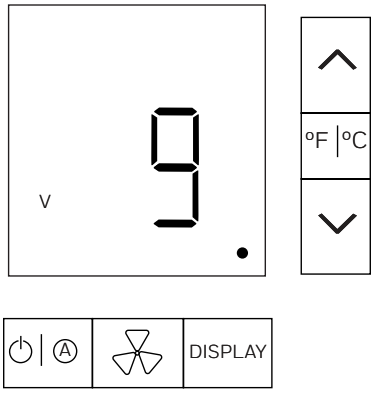
2. Press the **DOWN** arrow button to select **6r.A** parameter.



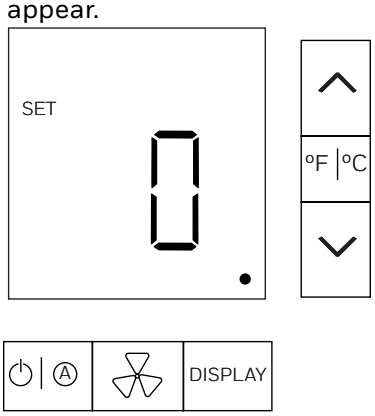
3. Press the **DISPLAY** button.
   V and 7 will appear, indicating Registry Group 7 is selected.

NOTE:

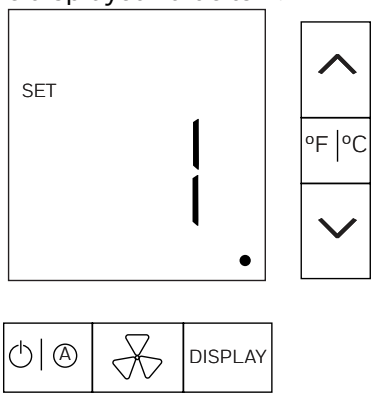
You are supposed to be able to view / edit both 9:X and 7:X:Y Registry's in the D-X47. But as of 4/2024 there is only support for 9:1. You can select 9 or 7 using the Up/Down arrow button, but ONLY 9 is currently supported, so don't select 7.



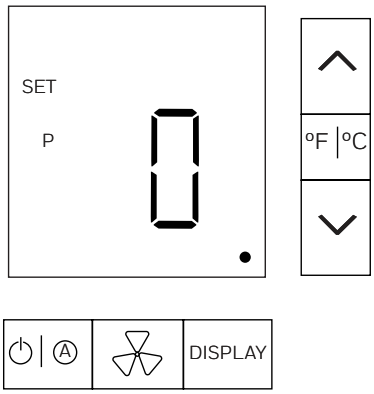
4. With 9 selected, press the **DISPLAY** button and **SET** and **0** will appear.



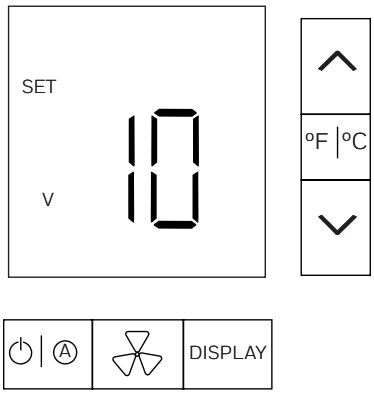
5. Press the **UP/DOWN** arrow button to select the desired 9:X Key.
   For example, if you want to view 9:1 Occupancy, change the displayed value to 1.



6. Press **DISPLAY** when the desired 9:X key selected. SET P 0 will be displayed indicating you have selected 9:X:0:0 index 0 of the defined 9:X registry. If the selected 9:X does exist and **SET P 0** is displayed.



7. Press the **UP/DOWN** arrow button to select the desired index of the selected 9:X registry, then press POWER to display the value of the selected index. For example, if you want to read the value of 9:1:0:8 Min_GuestOccupancyTimeout. Press the **UP** arrow button to change the displayed Set P 0 to Set P 8, then press the **POWER** button to display the value of 9:1:0:8, which is 10 (10 minutes)

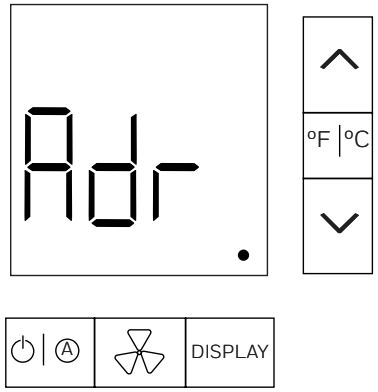


8. If you want to change the value, use the **UP/DOWN** arrow buttons to select the desired value, then press DISPLAY.
   The D1-528 will change the value, revert back to displaying SET P X and **OUTSIDE** will begin to blink on the display indicating a change has been made to a Registry and the change needs to be committed.

Address Parameter (Adr)

Use the Adr parameter to set the address of a target device while at the same time Bind the target device's radio (if applicable) to the D1-528's current RF Room ID, PAN ID and RF Channel.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **Adr** parameter.



3. Press **DISPLAY** button to view the value.
   V 1 will appear by default.
4. Press the **UP/DOWN** and change value to the Address the target should adopt. For example you want to set the address in another room device to 17.

If configuring an address in a CBL32 PC502.4G,CBL32 D454, CBL32 X47, RF Saflok lock or similar device that does not have front facing buttons, and uses a Reverse Bind, press the **POWER** button and **bnd** will appear indicating the D1-528 is now waiting to see a reverse bind request sent from the target device.

These devices use a "Reverse Bind" where you initiate configuration from the target device by pressing a button on the target or use an "Enable" card (Saflok RF Lock) to make the device send a 0x00110 bind request.

1. Press the Bind switch on the target device or for a Saflok RF lock use the RF enable/bind card, to make the target send a 0x00110 Bind Request.
   Upon seeing the Bind Request from the device, the D1-528 will broadcast an RF Teach/Bind and P5 0x00112 Layer-X Bind command containing the defined Address and RF parameters. Any device with a radio will Directly process the RF Teach command. Any S5-bus device connected to an existing RF device will process the P5 0x00112 Layer-X Bind command once it has been "media gateway'ed" from RF onto the S5-bus.
   If the target received the command, it should adopt the defined settings and address and RESET. On startup, the target device should broadcast a "0x00031" Sound Buzzer VFI. If the D1-528 receives this it will beep as feedback that the bind was successful.

If configuring a CBL32 Evora or Modeva, CBL8 S217.RF or L208.RF, or any CBL8 S5 bus device, these get configured with a "Forward Bind" where you initiate the bind/configuration from the D1-528:

1. Prepare the target device:
   - For any CBL32 device that uses a forward bind, place the target device into "Ready to Teach" mode by pressing a button on the target 2 times quickly (Tap-Tap), then press the button for 4-7 seconds. This depends on the target device however and its software revision. Refer to applicable commissioning documentation if in doubt. The button LED's on the device should begin to blink once/minute.
   - For an CBL8 S217.RF, L208.RF or other CBL8 RF device, press a button on the device 3 times (tap-tap-tap) to put the device into "Ready to Teach mode. There will be no visible feedback.
   - For S5-bus connected , non-RF CBL8 devices, they do not need to be placed into a "Ready to Teach" mode.
2. Press **DISPLAY** button on the D1-528. The D1-528 will display **bnd** will send an RF Bind/Teach and a 0x0004B P5 Address Teach command.
   If the target device received the RF Bind/ Address Teach command:
   - For any CBL32 device, the button LEDs will begin to flash 2 times/second.
   - For a CBL8 S217.RF, L208.RF or other CBL8 RF device or S5-bus connected, non-RF CBL8 devices the button LEDs will begin to blink rapidly.
3. Accept the Bind/Teach on the target:
   - For any CBL32 device, press a button on the device 2 times quickly (Tap-Tap), then press the button for 4-7 seconds to accept the Bind. The CBL32 device should RESET and broadcast a "0x00031" Sound Buzzer VFI. If the D1-528 receives this it will beep as feedback that the bind was successful.
   - For a CBL8 S217.RF, L208.RF or other CBL8 RF device or S5-bus connected, non-RF CBL8 devices press any button on the device to accept the bind/configuration. The device should RESET, but will not provide any audible feedback.

IO Map Parameter (Io)

Use the Io parameter to activate an IO Map in a target while at the same time Bind the target device's radio (if applicable) to the D1-528's current RF Room ID, PAN ID and RF Channel.

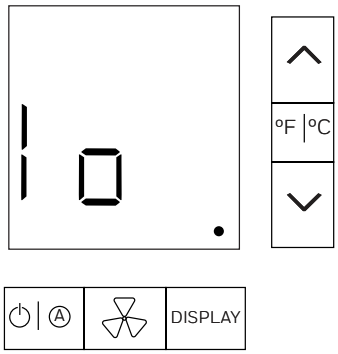
Enter Service Parameter Mode if not already there.

IMPORTANT:
First go to the **Adr** parameter and press **DISPLAY** to view the current Adr parameter value. If a non-zero value is currently stored in the Adr parameter, the RF Bind command sent to configure an I/O map will also set the defined address into the target. Change the displayed Adr value to 0 and press **F/C** button if you do not want an address defined in the Bind command that gets sent.

If you want to set an address and I/O map at the same time, change the Adr parameter value to the desired address and press **F/C** button.

NOTE:
You will typically never do this because most I/O Maps set an address. Setting an address and I/O Map at the same time is typically ONLY done when binding a micro-CBL RF K594/K595 motion sensor or S541.RF configured for balcony door where you have several of these devices installed in the same room and you want to give each a unique address.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
2. Press the **UP/DOWN** arrow button and select **Io** parameter.



3. Press **DISPLAY** to view the value.
   0 will appear by default.
4. Change to the desired I/O Map the target should adopt.

If configuring an address in a CBL32 PC502.4G, CBL32 D454, CBL32 X47, RF Saflok lock or similar device that does not have front facing buttons, and uses a Reverse Bind, press the **POWER** button and **bnd** will appear indicating the D1-528 is now waiting to see a reverse bind request sent from the target device.

A "Reverse Bind" is used for these devices where you initiate configuration from the target device by pressing a button to make the device send a Bind Request.

1. Press the Bind switch on the target device, to make the target send a 0x00110 Bind Request.
   Upon seeing the Bind Request the D1-528 will broadcast an RF Teach/Bind and P5 0x00112 Layer-X Bind command containing the defined I/O Map and RF parameters. Any device with a radio will Directly process the RF Teach command. Any S5-bus device connected to an existing RF device will process the P5 0x00112 Layer-X Bind command once it has been "media gateway'ed" from RF onto the S5-bus.
   If the target received the command, it should adopt the defined settings and I/O Map and RESET. On startup, the target device should broadcast a "0x00031" Sound Buzzer VFI. If the D1-528 receives this it will beep as feedback that the bind was successful.

If configuring a a CBL32 Evora or Modeva, CBL8 S217.RF or L208.RF, or any CBL8 S5 bus device, these get configured with a "Forward Bind" where you initiate the bind/configuration from the D1-528:

1. Prepare the target device:
   - For any CBL32 device that uses a forward bind, place the target device into "Ready to Teach" mode by pressing a button on the target 2 times quickly (Tap-Tap), then press the button for 4-7 seconds. This depends on the target device however and its software revision. Refer to applicable commissioning documentation if in doubt. The button LED's on the device should begin to blink once/minute.
   - For an CBL8 S217.RF, L208.RF or other CBL8 RF device, press a button on the device 3 times (tap-tap-tap) to put the device into "Ready to Teach mode. There will be no visible feedback.
   - For S5-bus connected\, non-RF CBL8 devices, they do not need to be placed into a "Ready to Teach" mode.
2. Press **DISPLAY** button on the D1-528. The D1-528 will send an RF Bind/Teach and a 0x00104 P5 I/O Map Teach command.
   If the target device received the RF Bind/ I/O Map Teach command:
   - For any CBL32 device, the button LEDs will begin to flash 2 times/second
   - For a CBL8 S217.RF, L208.RF or other CBL8 RF device or S5-bus connected non-RF CBL8 devices the button LEDs will begin to blink rapidly.
3. Accept the Bind/Teach on the target:

- For any CBL32 device, press a button on the device 2 times quickly (Tap-Tap), then press the button for 4-7 seconds to accept the Bind. The CBL32 device should RESET and broadcast a “0x00031” Sound Buzzer VFI. If the D1-528 receives this it will beep as feedback that the bind was successful.
- For a CBL8 S217.RF, L208.RF or other CBL8 RF device or S5-bus connected, non-RF CBL8 devices press any button on the device to accept the bind/configuration. The device should RESET, but will not provide any audible feedback.

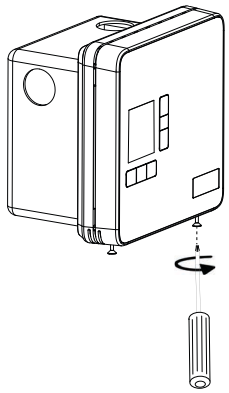
REPLACING D1-528

This section provides information for replacing a D1-528 that were previously installed and working but require replacement.

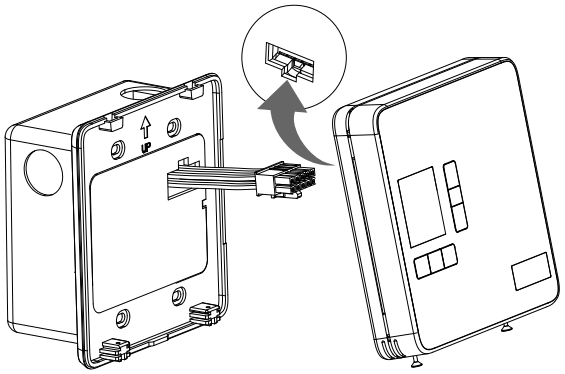
NOTE:
You must replace the D1-528 with another D1-528 thermostat P/N D1-528-24. You can’t replace with a battery powered D1-529 thermostat P/N D1-529-6V

If you have already deployed the property key to all of the installed D1-528’s, the installed D-578 Edge Router must be placed into Property Key Deployment mode to make sure the new D1-528 gets the property key from the D-578 Edge Router.

1. Remove the cover of the D578 edge router and press the Blue bind button switch 6 times (press-press-press-press-press-press) to place it into key deployment mode.
2. The Red D3 LED will begin to rapidly blink. The D-578 will remain in key deployment mode for 10 hours, but you can exit the D-578 out of key deployment mode after configuring the new D1-528 by pressing the Blue bind button switch 6 times again.
3. Disconnect power from the existing D1-528. Open the circuit breaker powering D1-528.
4. Remove the 2 screws that affix the D1-528 to the mounting plate, lift upward and pull the D1-528 off of the mounting plate.



5. Unplug the 10 pin harness, then remove the D1-528.



6. Connect the existing 10 pin harness to the 10 pin connector on the new/replacement D1-528, and power up the D1-528.
   If replacing with an existing, already initialized and configured D1-528 (i.e., from another room or your spares have previously been configured and it is displaying Set and a temperature value), Re-Boot the D1-528 to initial factory state.
   a. Enter service mode by pressing the **F/C** button for 4 seconds. The display will change to rid indicating service mode is entered.
   b. Press the **DOWN** arrow button until the rUn service parameter is reached.
   c. Press **DISPLAY** button. P and 0 will be displayed.
   d. Press the **DOWN** arrow button until P 255 is displayed, then press **DISPLAY** button to initiate the reboot. The D1-528 display will go blank as it reboots. It will take a short time for the D1-528 to start up after the reboot. rid will appear on the display.

Now with either a new out of the box D1-528 or the one you just factory booted, **rId** should be displayed on the D1-528.

7. Do the Initial Configuration.
   It may take 1-2 minutes for the new D1-528 after the start up to receive the property key from the D-578 and to begin communication with the D-578 and Niagara/RBM. Until that occurs, the room will be offline in the RBM.

If you look at the lower right corner of the D1-528 display, there will be NO communication Dots present immediately after the D1-528 started up. But once the D1-528 has received the Property Key and has started to communicate through the D-578 Edge Router, you will initially see the single left most dot appear that toggles on/off 2 times each minute, then the other 2 right most dots will appear and remain after 1-2 minutes. This indicates the D1-528 is communicating through the D1-528 to Niagara and RBM.

An additional way to verify the D1-528 is communicating with Niagara/RBM is to perform a RUN 7 WAN test from the D1-528 service parameter mode.

1. Press and hold °F|°C for 4 seconds to enter into service mode.
   The display will change to **rld** indicating service mode is entered.
2. Press the **UP/DOWN** arrow button and select **rUn** parameter.
3. Press **DISPLAY**. P and 0 will appear.
4. Press the **UP** arrow button and set the **P** value to **7**, then press **DISPLAY** to start the test.

The D1-528 will send a “perform room commissioning test” message to the D-528 edge Router which will get forwarded to Niagara, then Niagara will send back to the room a “Scroll your configured Room ID” command to make the D1-528 scroll its current configured Room ID across its display.

5. Verify the correct Room ID scrolls across the display.
6. With the D1-528 configured and also configured with the property key, turn OFF property key deployment if this was the last/only room that required the configuration.
7. Remove the cover of the D578 edge router and press the Blue bind button switch 6 times (press-press-press-press-press-press) to exit the D578 out of key deployment mode. The Red D3 LED should stop blinking.

Or, if you have other rooms to configure, you can leave key deployment mode active in the D-578. It will automatically timeout after 10 hours.

FACTORY BOOT THE D1-528

NOTE:

Factory Booting the D1-528 will erase any previous configurations, including the property specific Security Key, and the D1-528 will no longer control the connected HVAC unit until you perform/finish the initial initialization of the D1-528. Only Factory boot the D1-528 if instructed to do so.

1. Enter Service Parameter Mode.
2. Press **DOWN** arrow button and go to rUn parameter, then press DISPLAY. P 0 will appear on display.
3. Press **DOWN** arrow button to select P 255, then press **DISPLAY** to initiate the factory reboot.
   rbt will appear briefly on the display, the display will clear, then after a short time rid will appear. rld will appear on the display after the factory boot is complete. You must now perform the Initial Configuration of the D1-528.

TROUBLESHOOTING

Error/Trouble condition	Probable cause	Solution
The D1-528 display is blank/empty, or is cycling on and off during initial installation.	The D1-528 is not powered correctly	• Verify the 10 pin harness is fully connected/plugged into the 10 pin connector on the back of the D1-528. • Verify 24VAC is present/available on the HVAC unit low voltage interface terminal R (24VAC) and C (Common). Is the breaker powering the HVAC unit tripped and needs investigation and needs to be reset. • Verify the Black wire from Pin 3 is connected to C-Common and that the Red wire from Pin 2 is connected to R-24VAC on the low voltage interface of the HVAC unit. • Is the Green Ground correctly connected from the 10 Pin harness pin 1 to the Earth ground of the HVAC unit. • Is the 24VAC transformer in the HVAC unit that is supplying 24VAC to the D1-528 sized correctly? What is the VA rating of the transformer. The INNCOM components require 2.4 VA from the HVAC unit transformer
The D1-528 is displaying a temperature or OFF instead of rid.	The installed D1-528 has already been initialized (possible correctly or incorrectly).	A brand new, out of the box D1-528 should display rid after it powers up, indicating it requires being configured with its unique Room ID and other settings. If this is during initial installation, you should Factory Boot the D1-528 to set it back to default factory settings which will then force you to enter/define the required Room ID, HVAC Type and FAN speeds.

E11 Error code while performing a Room Copy from another room	The D1-528 in the room you are trying to copy from is not powered, or is configured with the wrong Room ID, or is too far away from the “copy to” D1-528, or you defined the wrong copy from Room ID.	• Check if the correct Room ID is defined for the Copy From D1-528 Press the POWER button to display the defined copy from Room ID again and verify it is correct. Press the POWER button to cycle through the HI, LO, MED digits of the Room ID. IF not correct, change it to the correct Room ID, then press DISPLAY to start the room copy again and see if it completes. • Is the D1-528 in the copy from room installed and powered (and also set to the correct Room ID) Make sure the copy from D1-528 is actually installed, powered and configured correctly (especially its Room ID, HVAC type and Fan speeds), then press DISPLAY to start the room copy again and see if it now starts the room copy. • One of the following issues exists: • The copy from D1-528 is installed too far from the copy to D1-528, or there are not enough installed and configured D1-528’s between or near the copy from and copy to D1-528’s. • INNCOMs room RF network is a Mesh network where messages initiated from one device “hop” from radio to radio in other nearby devices until they reach the intended target device. • It not many D1-528’s are installed yet, this could prevent the messages from the copy to D1-528 from ever reaching the copy from D1-528 and starting the room copy. You may need to wait until additional D1-528’s are installed so that a better mesh network exists. • Is there an RF interference source between the copy from and copy to D1-528’s? Like possibly a WiFi access point or other radio transmitter? Is either D1-528 mounted on or near a metal object that could be shielding the RF signals from the D1-528’s • There is a radio hardware issue in the D1-528 in either room. You can try swapping out the D1-528 in the copy to room with a new D1-528 and see if the room copy now works

E12 Error code while performing a Room Copy from another room	The room copy started (so the copy to D1-528 established a connection with the copy from D1-528), but could not finish.	• The copy from D1-528 is installed too far from the copy to D1-528, or there are not enough installed and configured D1-528's between or near the copy from and copy to D1-528's. • INNCOMs room RF network is a Mesh network where messages initiated from one device "hop" from radio to radio in other nearby devices until they reach the intended target device. • If not many D1-528's are installed yet, this could prevent the messages from the copy to D1-528 from reliably reaching the copy from D1-528 and continuing the room copy. You may need to wait until additional D1-528's are installed so that a better mesh network exists. • Is there an RF interference source between the copy from and copy to D1-528's? Like possibly a WiFi access point or other radio transmitter. • Is either D1-528 mounted on or near a metal object that could be shielding the RF signals from the D1-528's? IF these is, is it possible to move/remove it or place the D1-528 at another location • There is a radio hardware issue in the D1-528 in either room. You can try swapping out the D1-528 in the copy to room with a new D1-528 and see if the room copy now works. • If none of the above applies, contact INNCOM Customer Service.
D1-528 thermostat is not controlling the room HVAC unit	Locally at the D1-528 the guest tries to raise or lower target temperature, change the A/C mod, or cycle through the fan speeds and get no response or the incorrect response from the room HVAC unit. The D1-528 is not correctly connected to the HVAC unit.	• The D1-528 thermostat HVAC Type and Fan speeds were incorrectly selected/defined when the D1-528 was initialized. • Its easy to do, so enter service parameter mode and define the HVAC type (HAC) and Fan Speeds (FAn) again and see if that fixes the issue. Make sure you know what the installed HVAC unit requires as far as the required HVAC type and Fan speeds. Refer to the HAC (HVAC Type) and FAn (Fan Speeds) sections of the Advanced Configuration section • Refer to Power and Actuator Connections

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