COOLAUTOMATION

THE INTERNET OF CLIMATE

Quick Installation Guide

CoolPlug / CooLinkHub

HVAC Bridge

Contents

Safety Guidelines, Warnings and Cautions

Read and understand the following guidelines to ensure safe installation.

> ⚠️ Failure to follow these **WARNINGS** may result in injury or death

This equipment is to be installed by an accredited electrician or equivalent technical person, as per these installation instructions.

Read the installation instructions before connecting the system to the power source.

All electrical work must be performed by a licensed technician, according to local regulations.

Ultimate disposal of this product should be handled according to all national laws and regulations.

Installation of the equipment must comply with local and national electrical legislation for the installation of electric equipment.

Do not install the devices outdoors or exposed to direct solar radiation, water, high relative humidity, or dust.

Install the equipment only in a restricted access location.

When wall mounting, be sure to fix firmly on a stable surface and in accordance with the instructions below.

When DIN rail mounting, fix the devices properly to the DIN rail following the instructions below.

When mounting on DIN rail inside a metallic cabinet be sure to properly connect to the ground.

Unplug from power when connecting the wires.

Pay attention to the polarity of power and communication cables during connection.

Disconnect power of any bus or communication cable before connecting the system.

Cautions

Failure to follow these CAUTIONs may result in serious injury.

Do not allow children to play with the CoolPlug or CooLinkHub.

Do not disassemble, modify, or repair the CoolPlug or CooLinkHub. Unauthorized modifications or repairs may result in electric shock or fire. For support, contact CoolAutomation.

Do not expose the CoolPlug or CooLinkHub, to moisture. Water can damage the CoolPlug or CooLinkHub resulting in an electrical components failure, electric shock or fire.

Do not use flammable materials (e.g. hairspray or insecticide) near the CoolPlug or CooLinkHub. Do not clean with organic solvents such as paint thinner.

Use only a dry cloth to wipe if necessary. The maximum voltage that can be directly applied to the CooLinkHub is 24V DC.

Do not plug into AC110V or AC220V.

DO NOT INSTALL the COOLINKHUB or COOLPLUG IN THE FOLLOWING LOCATIONS:

a) Where mineral oil mist or oil spray or vapor is produced, such as in a kitchen. Plastic parts may deteriorate and fall off.

b) Where corrosive gas, such as sulfurous acid gas, is produced.

c) Near machinery emitting electromagnetic waves. Electromagnetic waves may disturb or damage the operation of the CooLinkHub.

d) Where flammable gas may leak, where there is carbon fiber or ignitable dust suspensions in the air, or where volatile flammables such as thinner or gasoline are handled. Operating the CooLinkHub or CoolPlug in such conditions may cause a fire.

e) In high temperature areas or near any flame.

f) In moist areas, or where there is exposure to water.

CoolPlugs and CooLinkHub

System Overview

The CoolPlugs & CooLinkHub solution allows seamless integration of Split, Multi-Split and Mini-Split HVAC units with Home Automation, BMS and Smart IOT products and services; or full control and monitoring, using a standalone CoolAutomation cloud-based App (ControlApp).

Once connected, it allows full control of the indoor unit including the following functions: on/off, operation mode (cool/heat/fan/dry/auto), set points, adjust fan speed and activate swivel.

The solution allows bidirectional communication with the indoor unit for receiving error codes from the unit as well as feedback about actual status of the HVAC unit. CoolPlug connects directly to the HVAC indoor unit on one end, and to the CooLinkHub on the other.

CooLinkHub - aggregates multiple CoolPlug devices and provides wide interface options for controlling and monitoring each of the CoolPlugs, either over the wired network (PBUS) or a proprietary wireless mesh network.
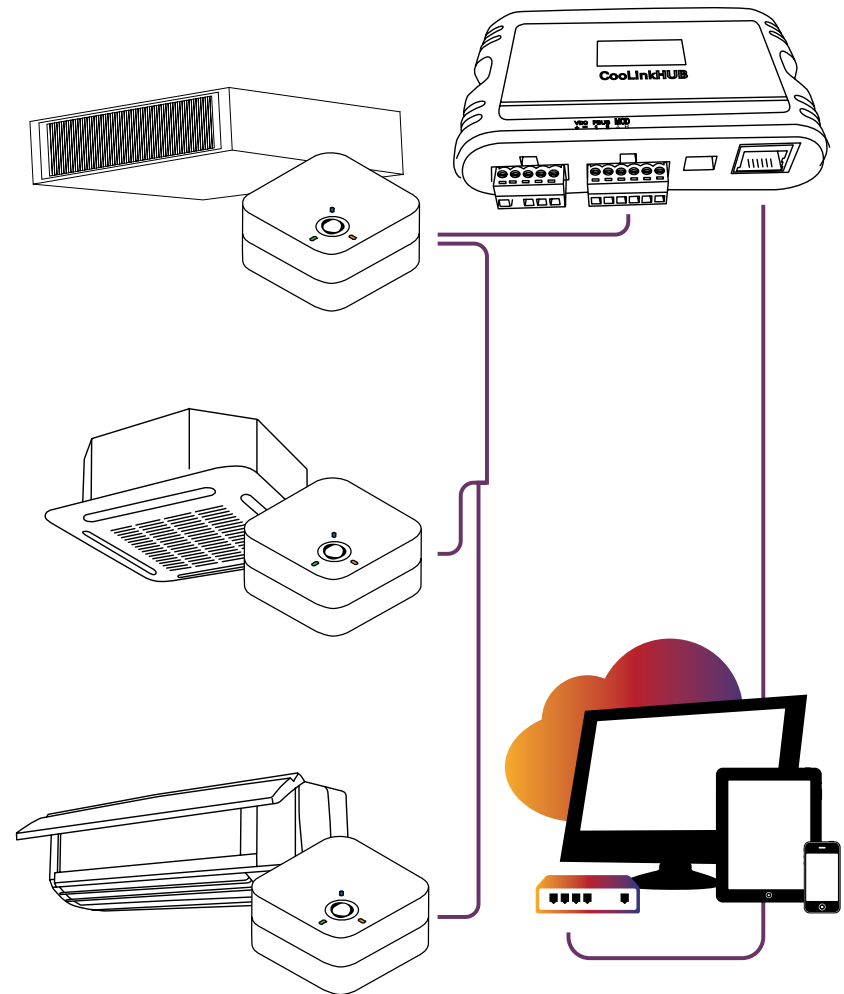
Wired connection - PBUS (PlugBus) Topology

The PBUS is CoolAutomation's proprietary Bus, running on a shielded twisted pair cable (20-24AWG).

The PBUS utilizes daisy chain network topology. No loops are allowed.

Up to 10 CoolPlugs can be connected to a single CooLinkHub.

PBUS - Daisy Chain

PBUS cable - 2 wire, shielded, twisted pair 20-24 AWG

CoolRemote App

Internet

Router

ModBus TCP
BACnet IP

CAT 5

Home Automation system/BMS
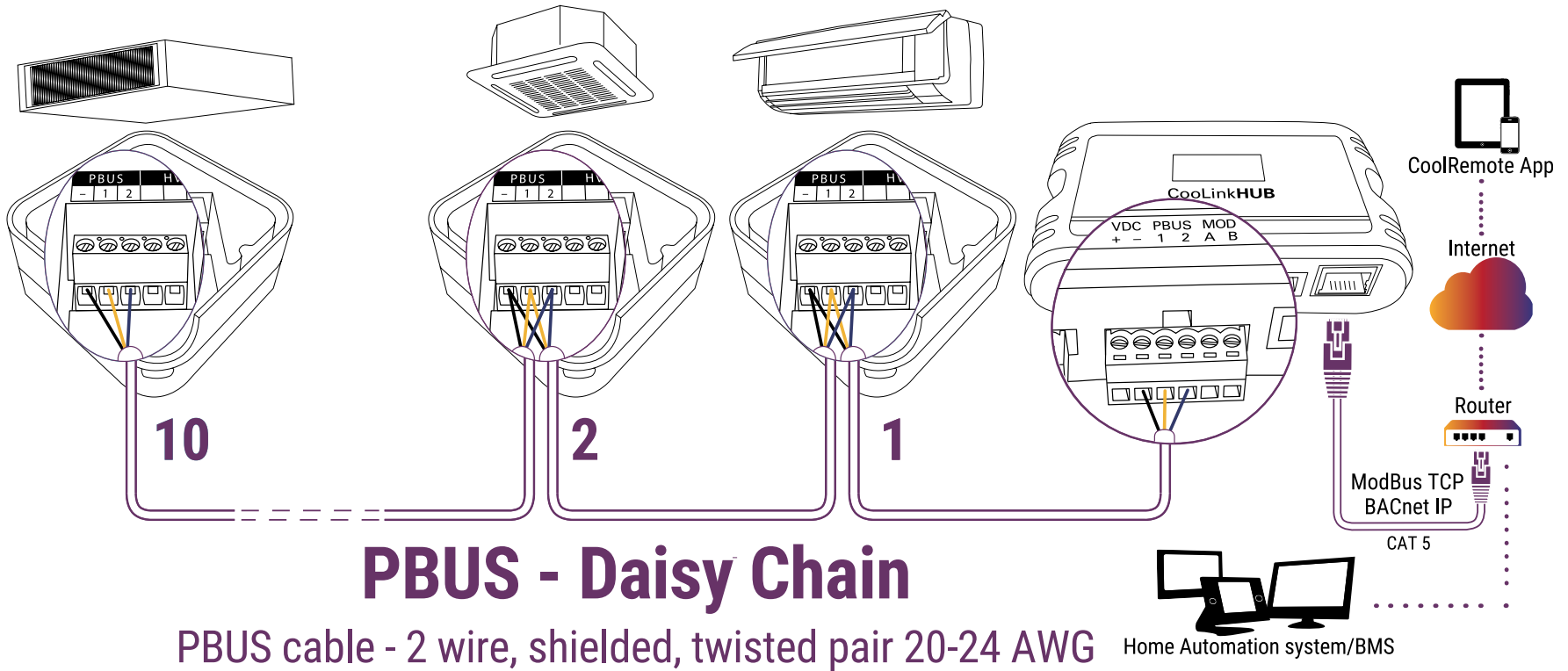
Wireless connection - PBUS (PlugBus) Topology

WRLS Cool Plugs and WRLS CooLinkHub communicate with each other using CoolAutomation's 2.4 GHz proprietary and secured **mesh** network.

Each WRLS CooLinkHub creates a network and automatically connects to all paired devices within this network (WRLS CoolPlugs). Paring of the WRLS CoolPlugs with the specific WRLS CooLinkHub can be factory pre-set (prior to shipment) or configured locally (please refer to pairing instructions at page 35).

Up to 10 CoolPlug devices can be connected to a single CooLinkHub.

The recommended distance between each of the two devices (CoolPlug/ CooLinkHub) is up to 20m (50 ft) line of sight. Please note, that concrete walls, ceilings and other types of obstacles or noise caused from electro-magnetic fields (generated by power cables or other sources), can significantly impact signal strength and will result in reduced distance.

The network topology is a mesh type network, meaning that each device acts as a receiver and a transmitter, and repeats the signal. For planning purposes, make sure you have connectivity between each of the two devices (CoolPlug with its neighbor CoolPlug, or CoolPlug with the CooLinHub).
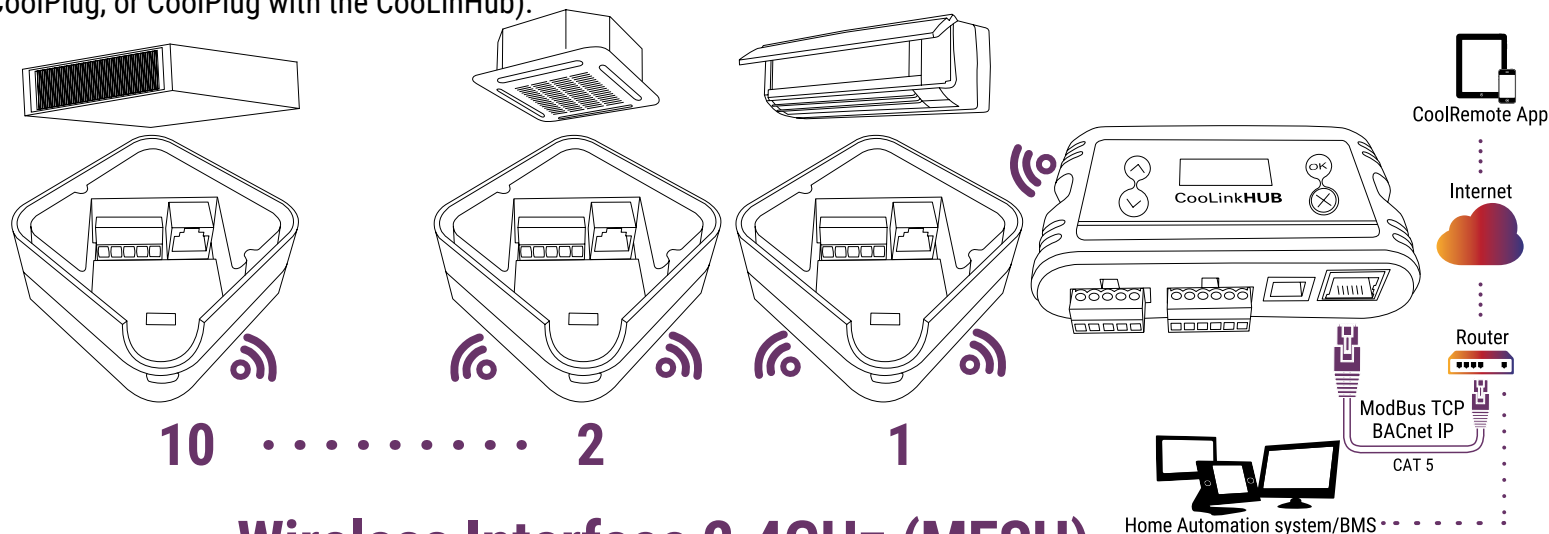
Wireless Interface 2.4GHz (MESH)

CoolPlug Models

CoolPlug models are HVAC manufacturer specific. Each CoolPlug has a small round sticker with letters on its back (DK, DKS, etc.) indicating the HVAC manufacturer that the CoolPlug is compatible with.

CoolPlug Model	HVAC Vendor	Cable included	Terminals/comments
HVAC DK	Daikin	S21, S21 narrow	S21, P1 P2, S403
HVAC DKS	Daikin Siesta Series	Siesta	
HVAC SA TO PN	Sanyo | Toshiba | Panasonic		A B, R1 R2
HVAC PN CAPRA	Panasonic Capra	CAPRA	CN-CNT
HVAC FJ	Fujitsu/General	FJ003	2 wires, 3 wires
HVAC ME	Mitsubishi Electric	CN105	CN105, 1 2
HVAC MH	Mitsubishi Heavy		2 wires only
HVAC HT	Hitachi		VRF only
HVAC MD	Midea		X Y E
HVAC LG	LG	LG split cable	
HVAC GR	Gree		GMV5 VRF only
HVAC GRTS	Gree	4 wire x 4	4 wires, 2 wires
HVAC SM	Samsung		4 wires, 2 wires

What is in the box?

CoolPlug

• CoolPlug device

• Flat plastic back plate

• DIN rail plastic back plate

• 2 sticky bands

• 2 magnets

CooLinkHub

• CooLinkHub device

• USB cable

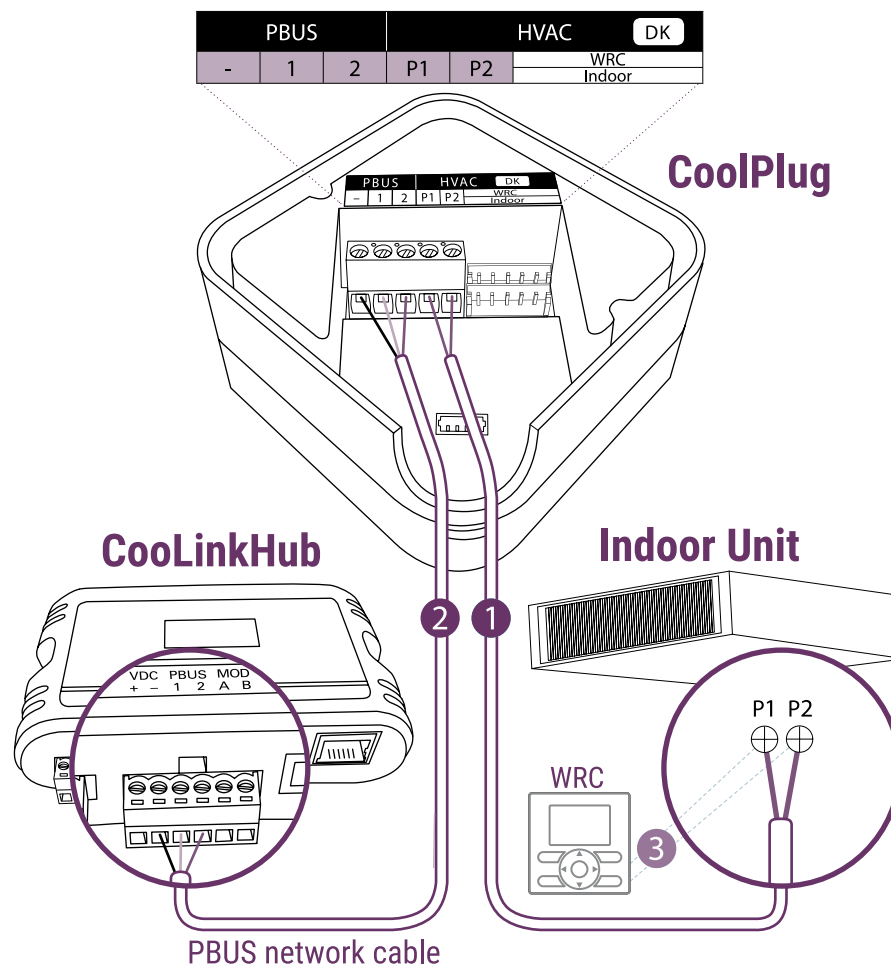• RS-232 cable (optional)

• RJ45 Ethernet cable

* Cables - only for specific brands. See table on P.8 above.

** For Midea wireless model - Power Adapter may be included if ordered seperately.

Connecting CoolPlug DK (Daikin)

DK (Daikin) – When connecting to P1 P2

❶ Connecting the CoolPlug to the Daikin unit

Connect the CoolPlug's [P1], [P2] terminals to the [P1], [P2] terminals on the indoor unit. Use the HVAC manufacturer's Installation Manual for instructions on the location of P1 P2 terminals on the Daikin unit.

❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on page 35.

Wired Mode: Connect the signal wires of the PBUS cable coming from the [VDC-], [1] and [2] terminals on the CooLinkHub to the corresponding [-], [1] and [2] terminals on the CoolPlug, respectively.

Please refer to the PBUS connection diagram on page 6.

❸ Optional: Connect the Wired Remote Controller (WRC) in parallel with CoolPlug.

PBUS			HVAC		DK
-	1	2	P1	P2	WRC Indoor

CoolPlug

CooLinkHub

Indoor Unit

VDC PBUS MOD
+ − 1 2 A B

P1 P2

WRC

PBUS network cable

* The connection is nonpolar.

** Master/Slave configuration will be done by the CoolPlug automatically.

Connecting CoolPlug DK (Daikin)

DK (Daikin) – When connecting to s21 (Old Rev.)
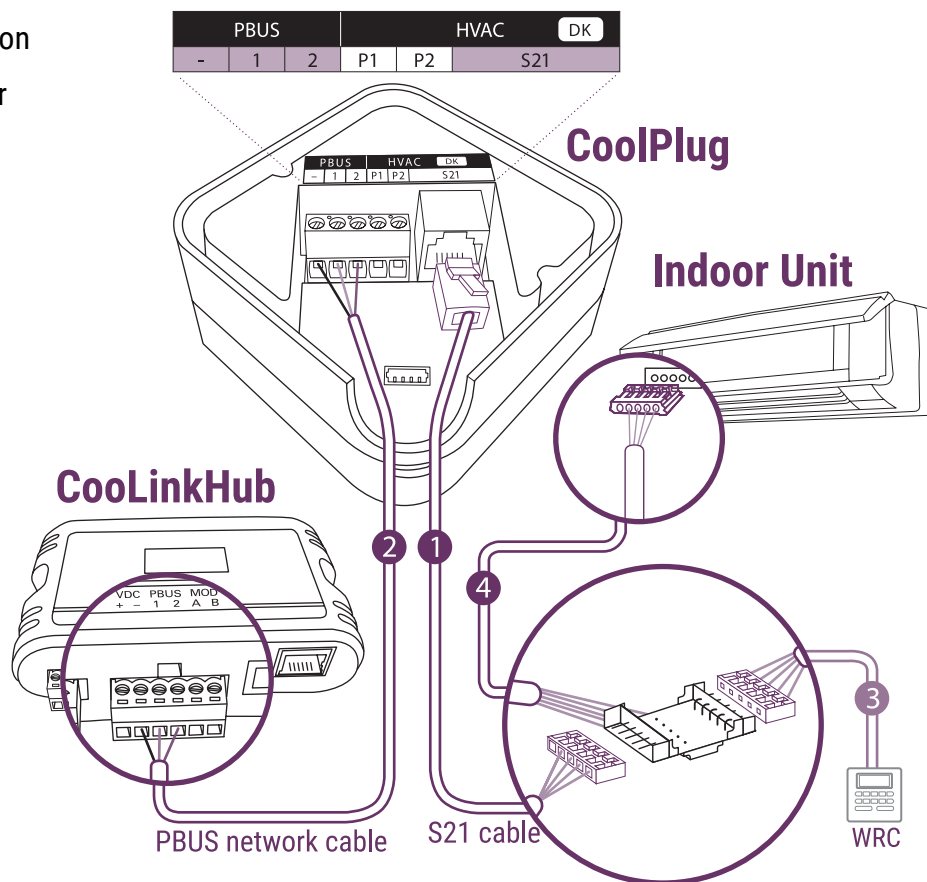
① Connecting the CoolPlug to the Daikin unit

Connect the S21 cable supplied with the CoolPlug, between the CoolPlug RJ-11 connector and the S21 port on the indoor unit's PCB. Use Daikin's installation manual for the location of the S21 socket on the Daikin indoor PCB.

② Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on .
Wired Mode: Connect the signal wires of the PBUS cable between CoolPlug terminals [-], [1] and [2], and CooLinkHub terminals [VDC-], [1] and [2], respectively. Please refer to the PBUS connection diagram on .

③ Optional: For connecting the Daikin Wired Remote controller (WRC) in parallel with CoolPlug, the S21 Splitter **④** is required. (This part can be purchased from CoolAutomation).

* Master/Slave configuration will be done by the CoolPlug automatically.

*** A different Daikin version might have a smaller 5 pin connector, in that case use **EKRS 21 adapter**.*

Connecting CoolPlug DK (Daikin)

DK (Daikin) – When connecting to S21 (New Rev. started from Q4 2021)

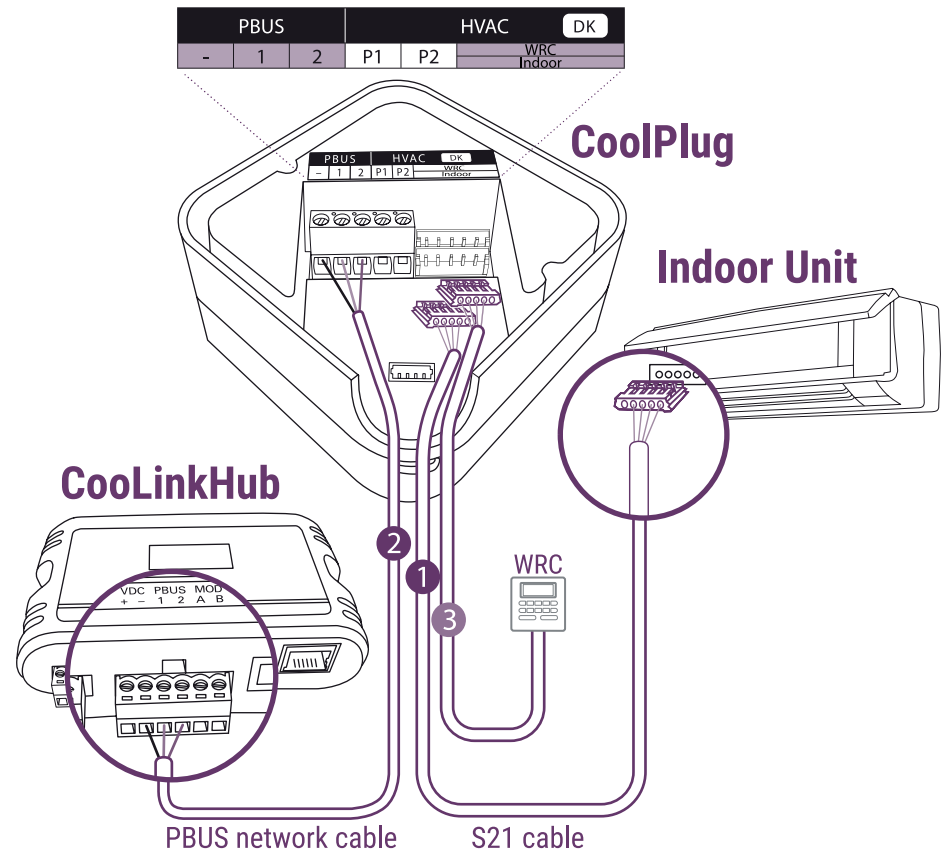**1** Connecting the CoolPlug to the Daikin unit.

Connect the S21 cable supplied with the CoolPlug, between the CoolPlug **Indoor** connector (bottom S21 socket on CoolPlug) and the S21 port on the indoor unit's PCB. Use Daikin's installation manual for the location of the S21 socket on the Daikin indoor PCB.

2 Connecting the CoolPlug to the CooLinkHub.

Wireless Mode: Check the devices were paired successfully. See how to pair on .
Wired Mode: Connect the signal wires of the PBUS cable between CoolPlug terminals [-], [1] and [2], and CooLinkHub terminals [VDC-], [1] and [2], respectively. Please refer to the PBUS connection diagram on .

3 Optional: For connecting the Daikin Wired Remote Controller connect the cable from controller to CoolPlug **WRC** (Wired Remote Controller) **socket** (top S21 socket).

* On Some Daikin indoor models, you will need the cable with the smaller 5 pin S21 connector. This cable is also provided with the CoolPlug as an option were needed.

Connecting CoolPlug DK (Daikin)

DK (Daikin) – When connecting to S403 using KRP980B1

1 Connecting the CoolPlug to the Daikin unit.

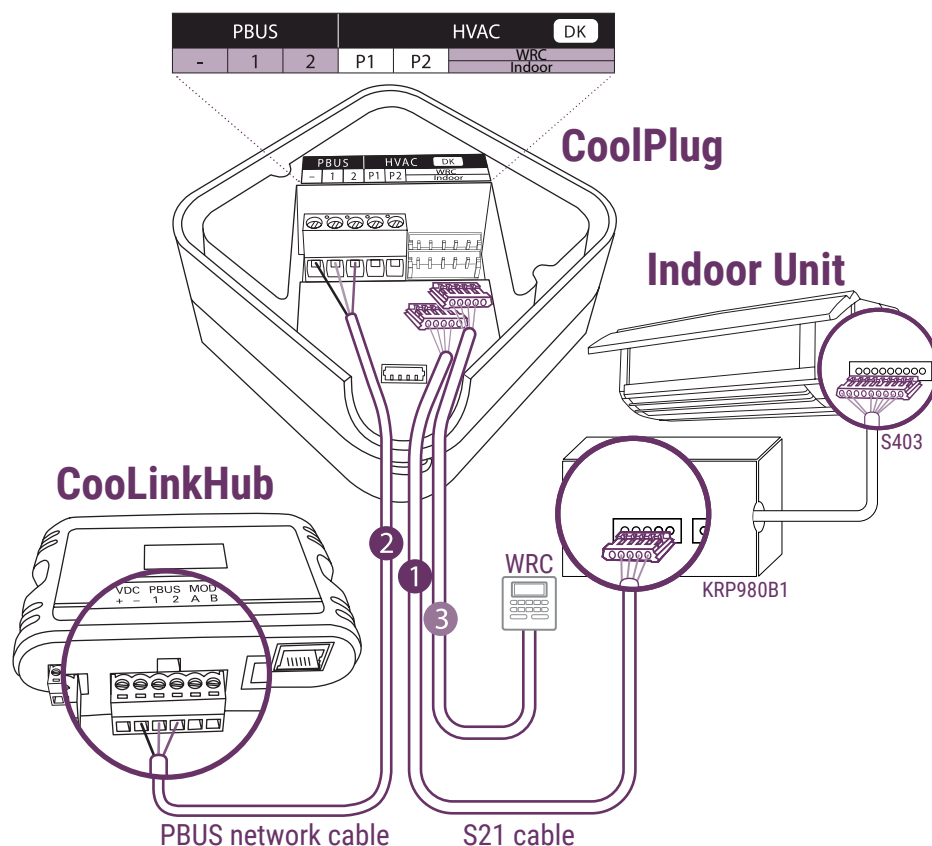Connect the S21 cable supplied with the CoolPlug, between the CoolPlug **Indoor** connector (bottom S21 socket on CoolPlug) and the S21 port on **KRP980B1 adapter's** PCB. Use Daikin's installation manual to install **KRP980B1 adapter** into the Daikin indoor unit. Connect adapter to the S403 socket inside.

2 Connecting the CoolPlug to the CooLinkHub.

Wireless Mode: Check the devices were paired successfully. See how to pair on .
Wired Mode: Connect the signal wires of the PBUS cable between CoolPlug terminals [-], [1] and [2], and CooLinkHub terminals [VDC-], [1] and [2], respectively. Please refer to the PBUS connection diagram on .

3 Optional: To connect the Daikin Wired Remote Controller connect the cable from controller to CoolPlug **WRC** (Wired Remote Controller) **socket** (top S21 socket).

* KRP980B1 adapter should be purchased seperately from your Daikin rep.

CoolPlug

Indoor Unit

S403

CooLinkHub

WRC

KRP980B1

PBUS network cable   S21 cable

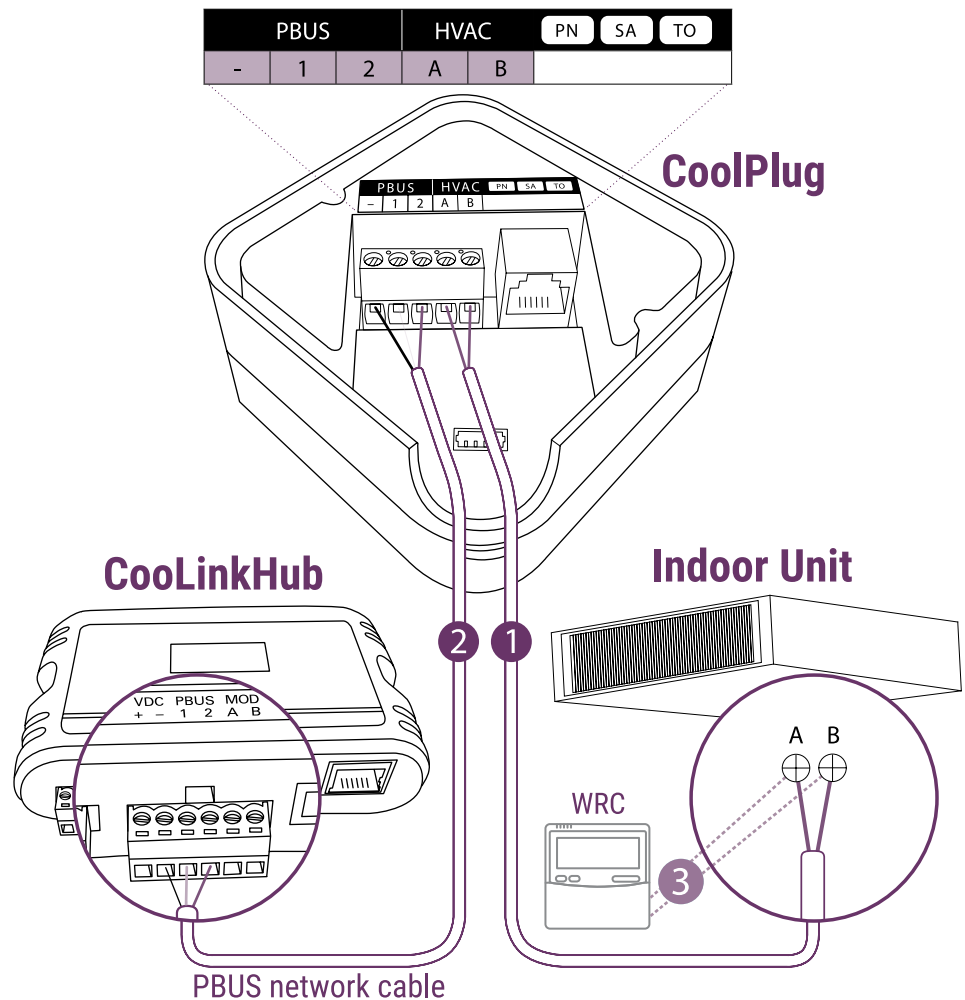# Connecting CoolPlug DK (Daikin)

DKS (Daikin) − Siesta Series

❶ Connecting the CoolPlug to the Daikin Indoor Unit
Connect the cable (supplied with the CoolPlug) to
the port labeled "Indoor" on the CoolPlug and the
corresponding connector on the indoor unit.
Use Daikin's Installation Manual for instructions on
where to connect to on the Daikin indoor PCB.

❷ Connecting the CoolPlug to the CooLinkHub
Wireless Mode: Check the devices were paired
successfully. See how to pair on page 35.
Wired Mode: Connect the signal wires of the PBUS
cable, using [VDC-], [1] and [2] terminals on the
CooLinkHub, to the corresponding [-], [1] and [2]
terminals on the CoolPlug.
Please refer to the PBUS connection diagram on page 6.

❸ Optional: Connect the wired remote to the WRC socket
on the CoolPlug. The cable is supplied with the WRC.
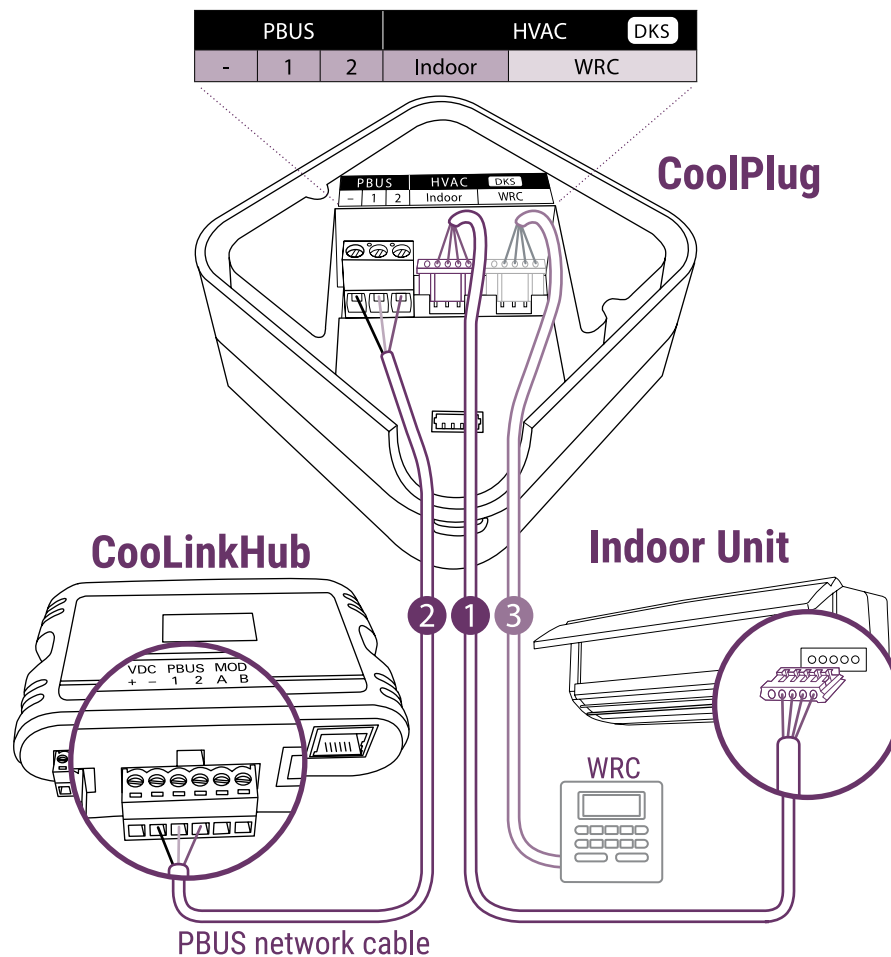
Connecting CoolPlug PN|SA|TO

CoolPlug Panasonic/Sanyo/Toshiba

❶ Connecting the CoolPlug to the PN/SA/TO Indoor Unit
Connect the CoolPlug's [A], [B] terminals to [A], [B]
terminals to the indoor unit (Sanyo/Toshiba) or to [R1],
[R2] (Panasonic). Use HVAC manufacturer's Installation
Manual for instructions on finding those terminals on
the indoor unit PCB.

❷ Connecting the CoolPlug to the CooLinkHub
Wireless Mode: Check the devices were paired
successfully. See how to pair on .
Wired Mode: Connect the signal wires of the PBUS
cable coming from the [VDC-], [1] and [2] terminals on
the CooLinkHub to the corresponding [-], [1] and [2]
terminals on the CoolPlug.
Please refer to the PBUS connection diagram on .

❸ Optional: Connect the wired remote to the WRC socket
on the CoolPlug. The cable is supplied with the WRC.

* The connection is nonpolar.

*** Master/Slave configuration will be done by the CoolPlug
automatically.*

Connecting CoolPlug PN|SA|TO

CoolPlug Panasonic CAPRA

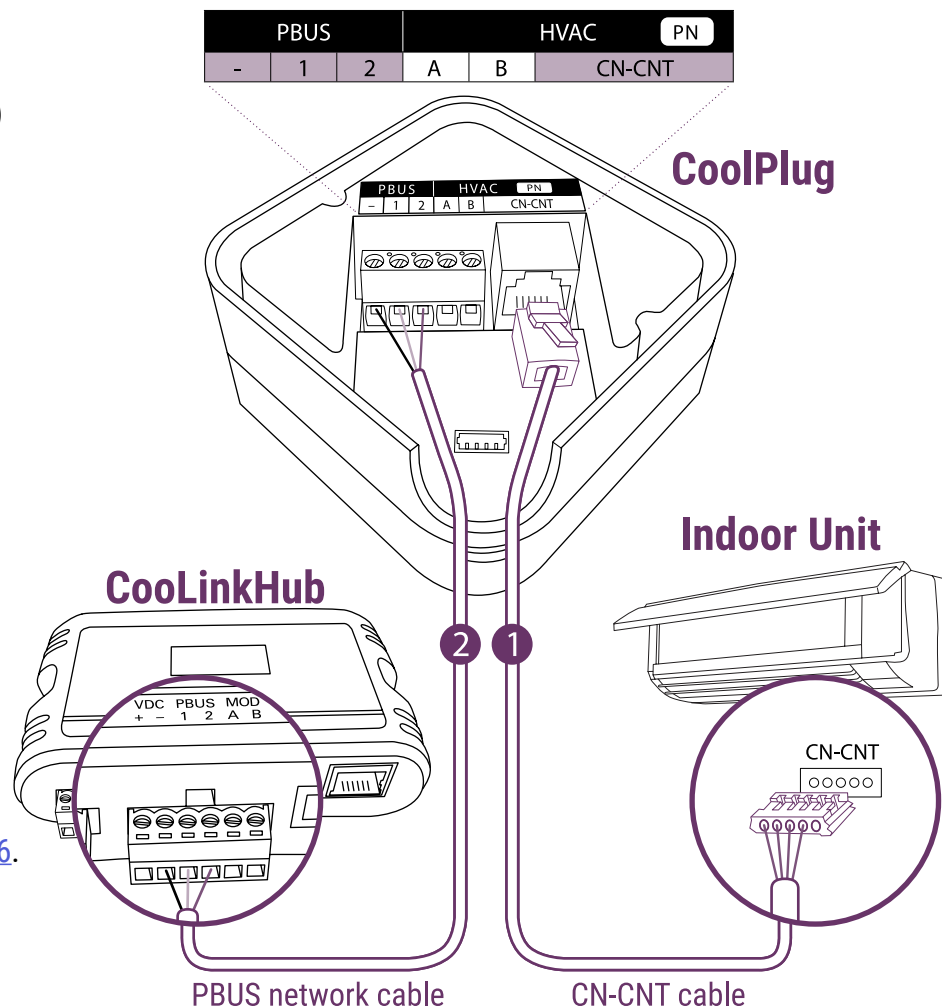❶ Connecting the CoolPlug to the Panasonic units with CAPRA connectors

Connect the CAPRA cable (supplied with the CoolPlug) between the CoolPlug RJ-11 connector (CN - CNT) and the CN - CNT port on the indoor unit's PCB. Use HVAC manufacturer's installation manual for location of CN - CNT connector on the indoor unit's PCB.

❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on .

Wired Mode: Connect the signal wires of the PBUS cable coming from the [VDC-], [1] and [2] terminals on the CooLinkHub to the corresponding [-], [1] and [2] terminals on the CoolPlug.

Please refer to the PBUS connection diagram on .

PBUS			HVAC		PN
-	1	2	A	B	CN-CNT

CoolPlug

Indoor Unit

CooLinkHub

VDC PBUS MOD
+ − 1 2 A B

PBUS network cable

CN-CNT cable

CN-CNT

Connecting CoolPlug FJ

FJ (Fujitsu/General) - Option 1: 3 wires

❶ Connecting the CoolPlug to the Fujitsu Indoor Unit

Connect the CoolPlug's [W1], [B|Y], [R|Y] terminals to corresponding terminals on the indoor unit, keeping the wiring consistent by colors.
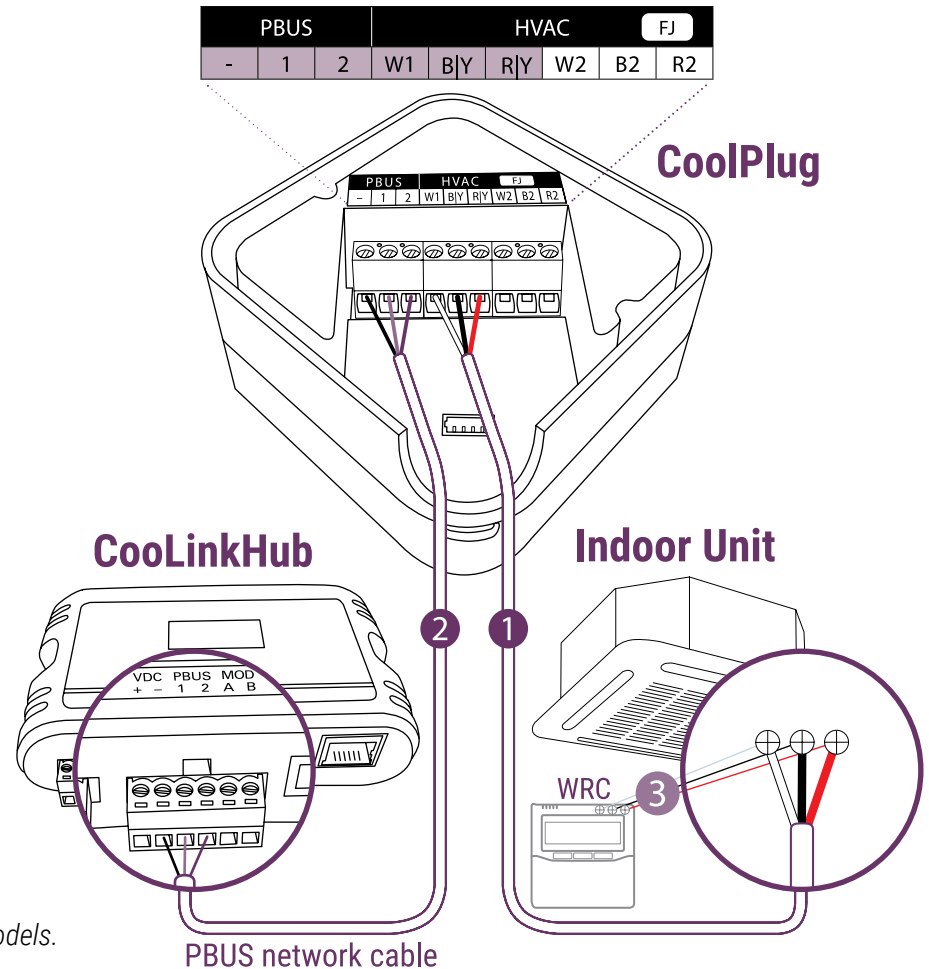
❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on .

Wired Mode: Connect the signal wires of the PBUS cable, using the [VDC-], [1] and [2] terminals on the CooLinkHub, to the corresponding [-], [1] and [2] terminals on the CoolPlug.

Please refer to the PBUS connection diagram on .

❸ Optional: Connect the Wired Remote Controller (WRC) in parallel with CoolPlug.

PBUS			HVAC					FJ
-	1	2	W1	B|Y	R|Y	W2	B2	R2

CoolPlug

CooLinkHub

Indoor Unit

VDC PBUS MOD
+ − 1 2 A B

WRC

PBUS network cable

** For indoor units that work with **APG000** or compatible WRC models.*

** Room temperature will not be shown if original WRC is not connected.

*** Reset power of the Fujitsu Indoor unit, once the CoolPlug is installed.

**** Master/Slave configuration will be done by the CoolPlug automatically.
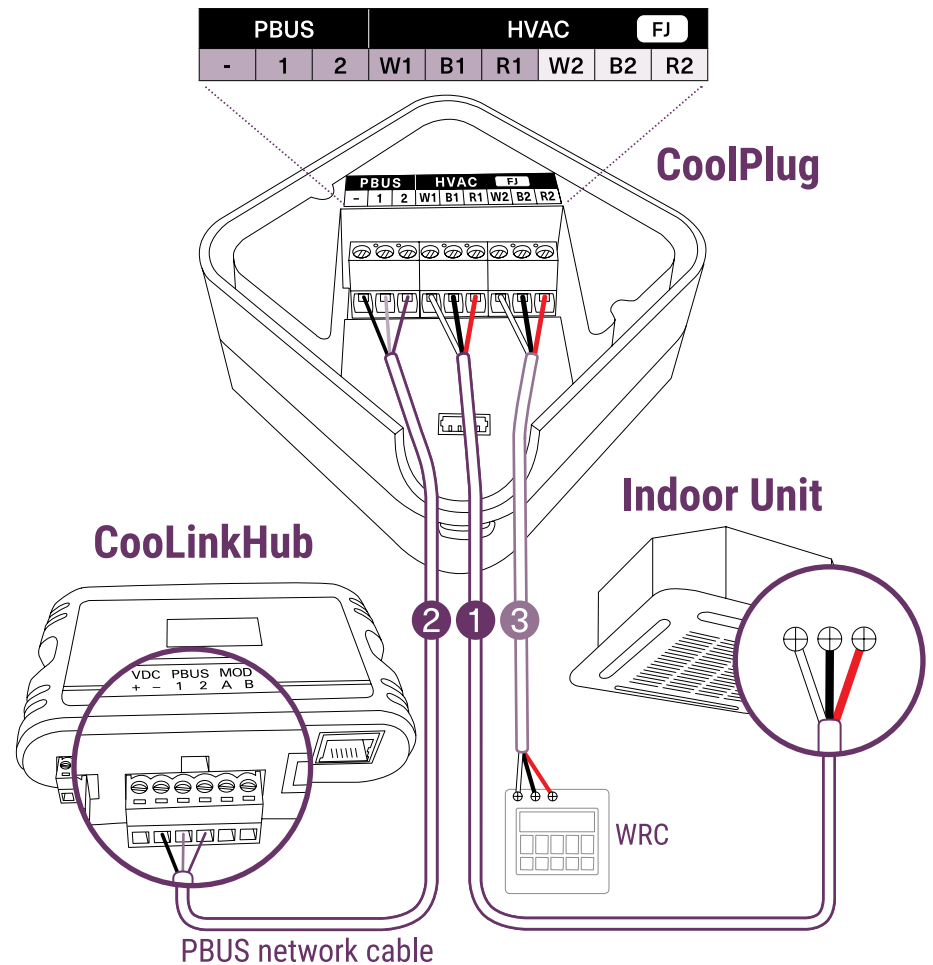
Connecting CoolPlug FJ

FJ (Fujitsu/General) - Option 2: 3 wires

❶ Connecting the CoolPlug to the Fujitsu Indoor Unit

Connect the CoolPlug's [W1], [BIY], [RIY] terminals to the corresponding terminals (for WRC) on the indoor unit. Use Fujitsu's Installation manual for instructions on how to locate those terminals for WRC.

❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on .
Wired Mode: Connect the signal wires of the PBUS cable from the [VDC-], [1] and [2] terminals on the CooLinkHub to the corresponding [-], [1] and [2] terminals on the CoolPlug.
Please refer to the PBUS connection diagram on .

❸ Optional: Connect CoolPlug's [W2], [B2], [R2] terminals to the Fujitsu Wired Remote Controller (WRC).

** For indoor units that work with **EZ-099** or compatible type wired remote controllers.*

** Reset power of AC indoor unit, once the CoolPlug is installed.

*** Room temperature will not be presented if original WRC is not connected.

PBUS			HVAC					FJ
-	1	2	W1	B1	R1	W2	B2	R2

CoolPlug

Indoor Unit

CooLinkHub

WRC

PBUS network cable

Connecting CoolPlug FJ

FJ (Fujitsu/General) - Option 3: **2 wires**

❶ Connecting the CoolPlug to the Fujitsu Indoor Unit

Connect the CoolPlug's [B1/Y], [R1/Y] terminals to the Y1 Y2 terminals on the indoor unit accordingly.

❷ Connecting the CoolPlug to the CooLinkHub

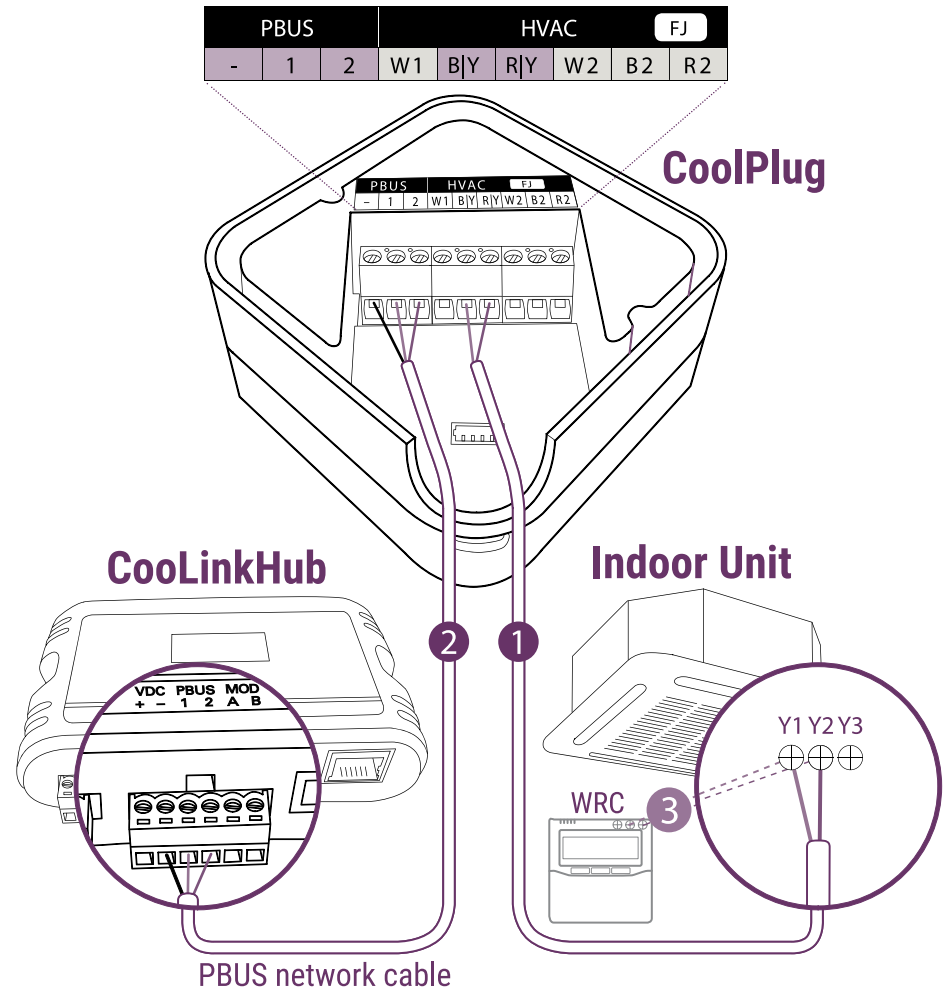Wireless Mode: Check the devices were paired successfully. See how to pair on .
Wired Mode: Connect the signal wires of the PBUS cable, using the [VDC-], [1] and [2] terminals on the CooLinkHub, to the corresponding [-], [1] and [2] terminals on the CoolPlug. Please refer to the PBUS connection diagram on .

❸ Optional: Connect the Wired Remote Controller (WRC) in parallel with CoolPlug.

* Reset power of AC indoor unit, once the CoolPlug is installed.

** If indoor unit has V1, V2, V3 terminals, connect the CoolPlug and WRC to terminals V1, V2.

*** The connection is nonpolar.

**** Master/Slave configuration will be done by the CoolPlug automatically.

PBUS			HVAC					FJ
-	1	2	W 1	B|Y	R|Y	W 2	B 2	R 2

CoolPlug

CooLinkHub

Indoor Unit

VDC PBUS MOD
+ − 1 2 A B

Y1 Y2 Y3

WRC

PBUS network cable

Connecting CoolPlug FJ

FJ (Fujitsu/General) - Option 4: Wall mounted units - 3 wires to adapter

❶ Connecting the CoolPlug to the Fujitsu **UTY-XCBXZ1/UTY-XCBXZ2/UTY- TWBXF adapter**

Connect the FJ-003 cable supplied with the CoolPlug to [W1], [B|Y], [R|Y] ports on the the CoolPlug side, and the 5 pin cable connector to the UTY-XCBXZ1/UTY-XCBXZ2/UTY- TWBXF adapter.
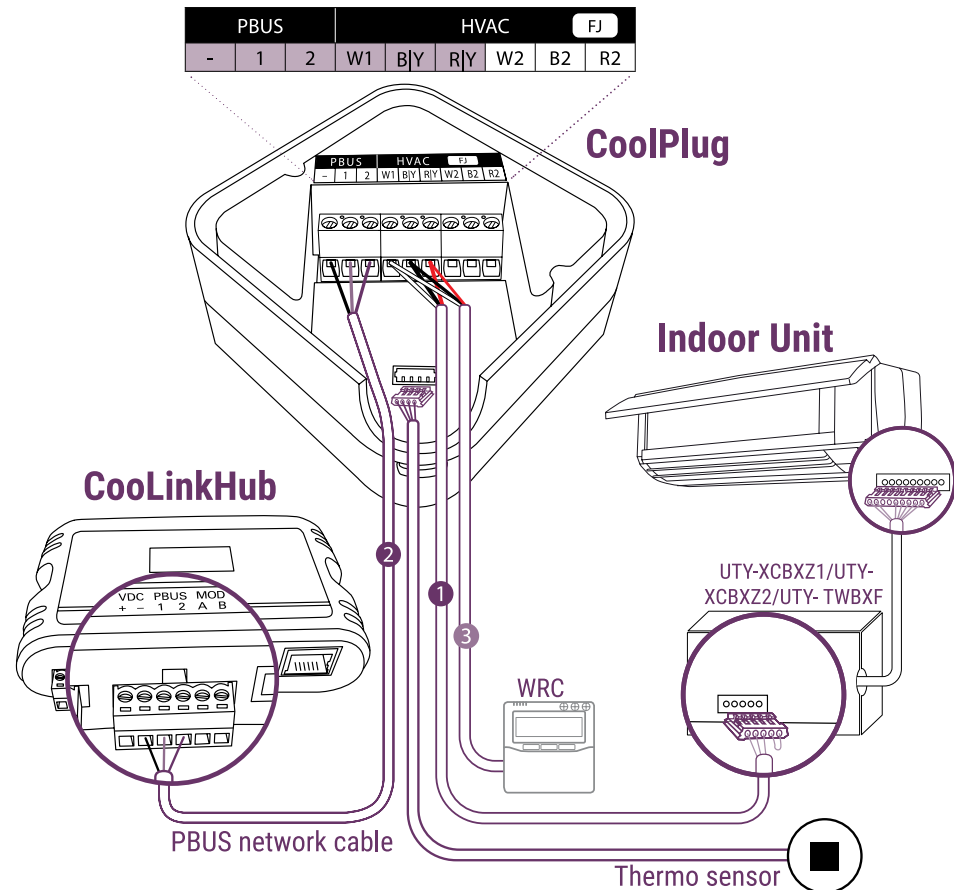
❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on .

Wired Mode: Connect the signal wires of the PBUS cable, using the [VDC-], [1] and [2] terminals on the CooLinkHub, to the corresponding [-], [1] and [2] terminals on the CoolPlug.

Please refer to the PBUS connection diagram on .

❸ Optional: Connect the Wired Remote Controller (WRC) in parallel with CoolPlug.

* To get the room temperature use external Thermo sensor.
The sensor is purchased separately from CoolAutomation.

PBUS			HVAC						FJ
-	1	2	W1	B|Y	R|Y	W2	B2	R2	

CoolPlug

Indoor Unit

CooLinkHub

UTY-XCBXZ1/UTY-XCBXZ2/UTY- TWBXF

WRC

PBUS network cable

Thermo sensor

Connecting CoolPlug ME (Mitsubishi Electric)

ME (Mitsubishi Electric) – When connecting to [1] [2]

❶ Connecting the CoolPlug to the Mitsubishi Indoor Unit

Connect terminals HVAC [1] [2] to [1], [2] terminals on indoor unit accordingly. Use HVAC manufacturer's installation manual for location of [1] [2] terminals on the Mitsubishi indoor unit.

❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on .
Wired Mode: Connect the signal wires of the PBUS cable, using [VDC-], [1] and [2] terminals on the CooLinkHub to the corresponding [-], [1] and [2] terminals on the CoolPlug.
Please refer to the PBUS connection diagram on .

❸ Optional: Connect the Wired Remote Controller (WRC) in parallel with the CoolPlug.

* The connection is nonpolar.

** Master/Slave configuration will be done by the CoolPlug automatically.
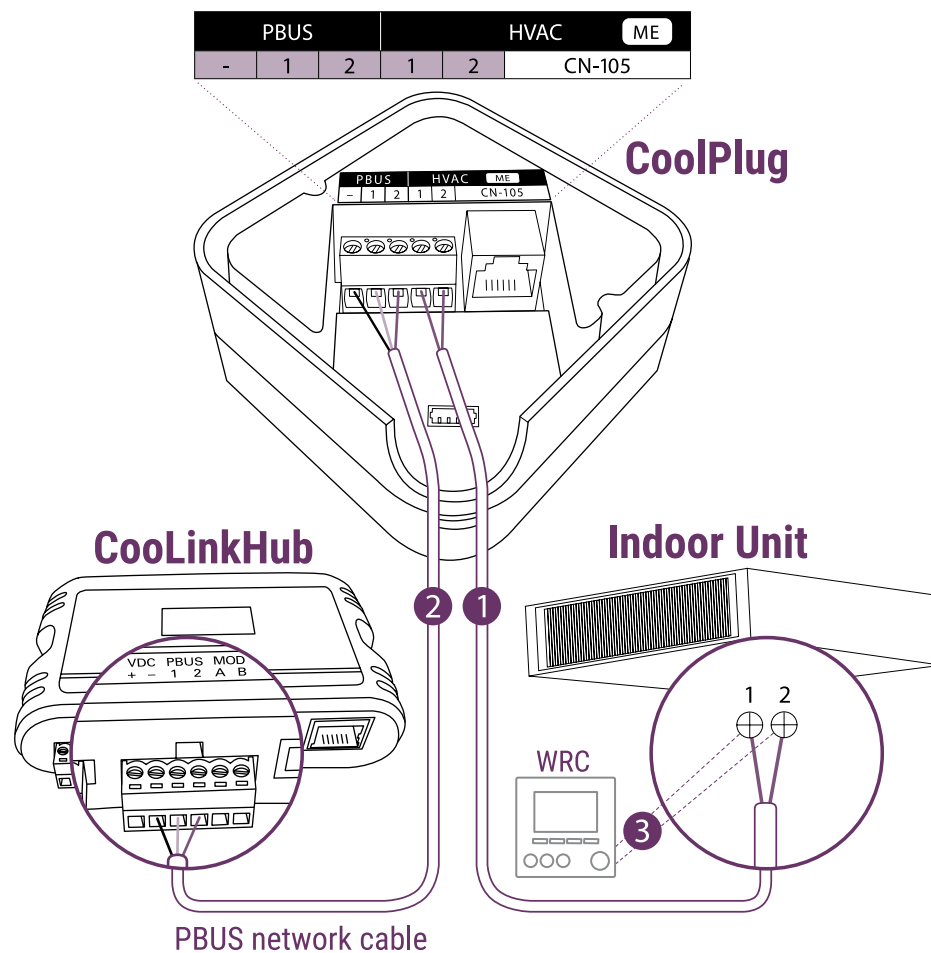
⚠️ Both PBUS and HVAC line have the same terminal labels [1] and [2] , but they belong to different networks. They should not be interchanged.

PBUS			HVAC		ME
-	1	2	1	2	CN-105

CoolPlug

CooLinkHub

VDC PBUS MOD
+ – 1 2 A B

Indoor Unit

1 2

WRC

PBUS network cable

Connecting CoolPlug ME (Mitsubishi Electric)

ME (Mitsubishi Electric) – When connecting to CN-105

❶ Connecting the CoolPlug to the Mitsubishi Electric
Indoor Unit

Connect the CN-105 cable (supplied with the CoolPlug)
between the CoolPlug RJ-11 connector and the CN-105
port on the indoor unit's PCB. Use the manufacturer's
installation manual for the location of the CN105
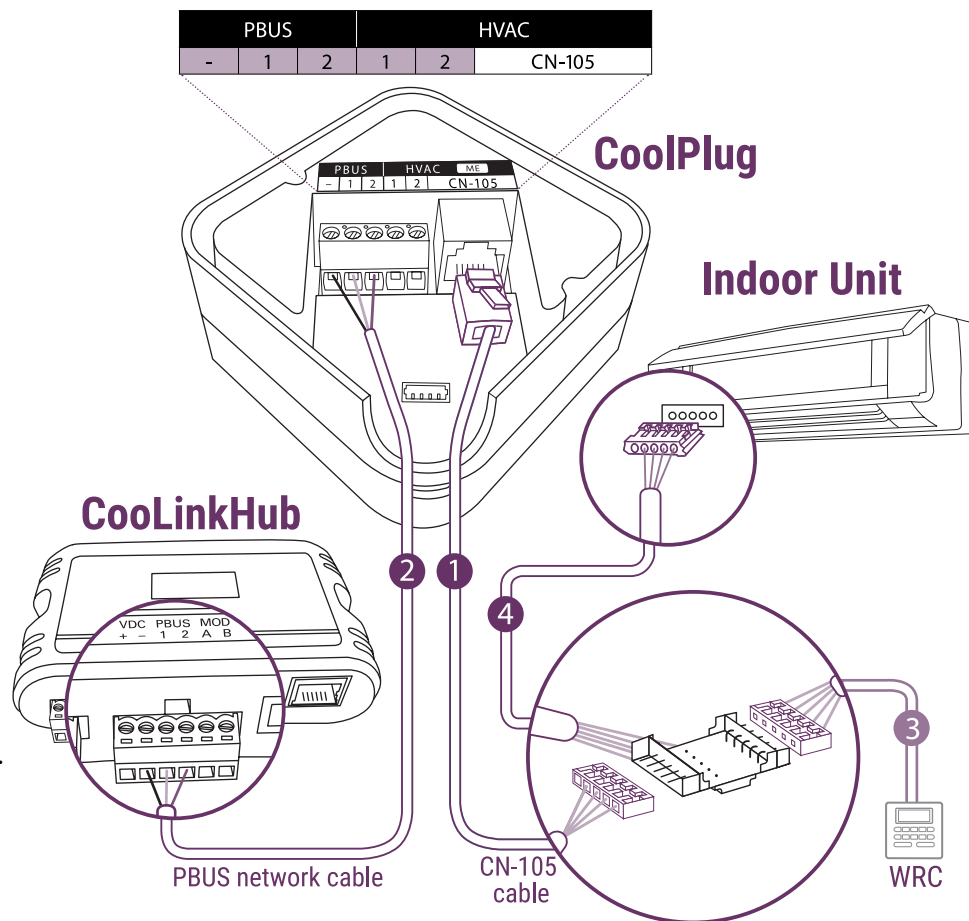connector on the PCB of the indoor unit.

❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired
successfully. See how to pair on .
Wired Mode: Connect the signal wires of the PBUS
cable, using the [VDC-], [1] and [2] terminals on the
CooLinkHub, to the corresponding [-], [1] and [2]
terminals on the CoolPlug.
Please refer to the PBUS connection diagram on .

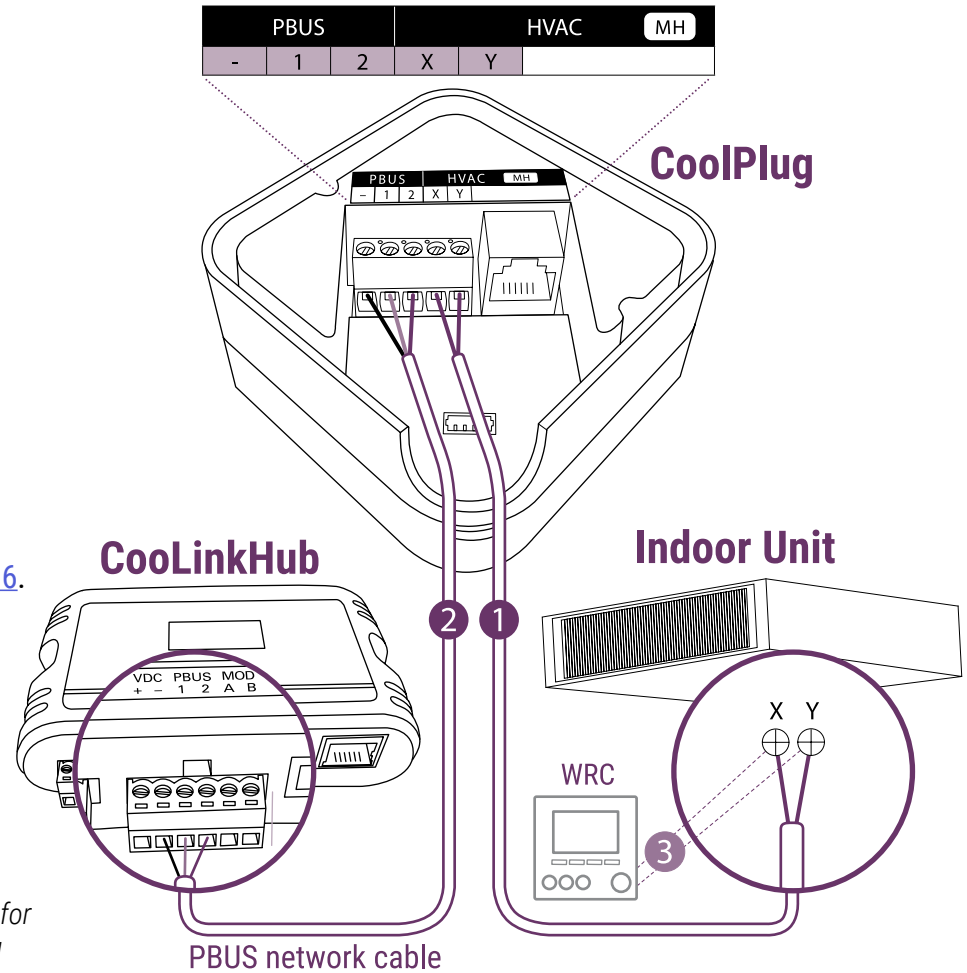**❸** Optional: For connecting the Wired Remote Controller
(WRC) in parallel mode with CoolPlug, the CN105
Splitter **❹** is required. (This part can be purchased
from CoolAutomation).

*** Master/Slave configuration will be done by the CoolPlug
automatically.*

PBUS			HVAC		
-	1	2	1	2	CN-105

CoolPlug

Indoor Unit

CooLinkHub

PBUS network cable

CN-105 cable

WRC

Connecting CoolPlug MH (Mitsubishi Heavy)

❶ Connecting the CoolPlug to the Mitsubishi Heavy Indoor Unit

Connect the CoolPlug's [X] [Y] terminals to the [X], [Y] terminals on the indoor unit accordingly. Use the manufacturer's installation manual for the location of the [X] [Y] terminals on the indoor unit.

❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on .
Wired Mode: Connect the signal wires of the PBUS cable, using the [VDC-], [1] and [2] terminals on the CooLinkHub to the corresponding [-], [1] and [2] terminals on the CoolPlug.
Please refer to the PBUS connection diagram on .

❸ Optional: WRC can be connected in parallel to the CoolPlug.

* The connection is nonpolar.
** Master/Slave configuration will be done by the CoolPlug automatically.
*** Some of the wall mounted series do not have terminals for WRC. To have CoolPlug connected to this unit, an additional (SC-BIK-E) adapter might be required. This adapter can be purchased locally from any Mitsubishi Heavy distributor.
**** When using E-BIK-S adapter, it will only work when WRC is also connected.

PBUS			HVAC		MH
-	1	2	X	Y	

CoolPlug

CooLinkHub

VDC PBUS MOD
+ - 1 2 A B

Indoor Unit

X   Y

WRC

PBUS network cable

Connecting CoolPlug HT (Hitachi)

❶ Connecting the CoolPlug to the Hitachi indoor unit (for VRF indoor units only)

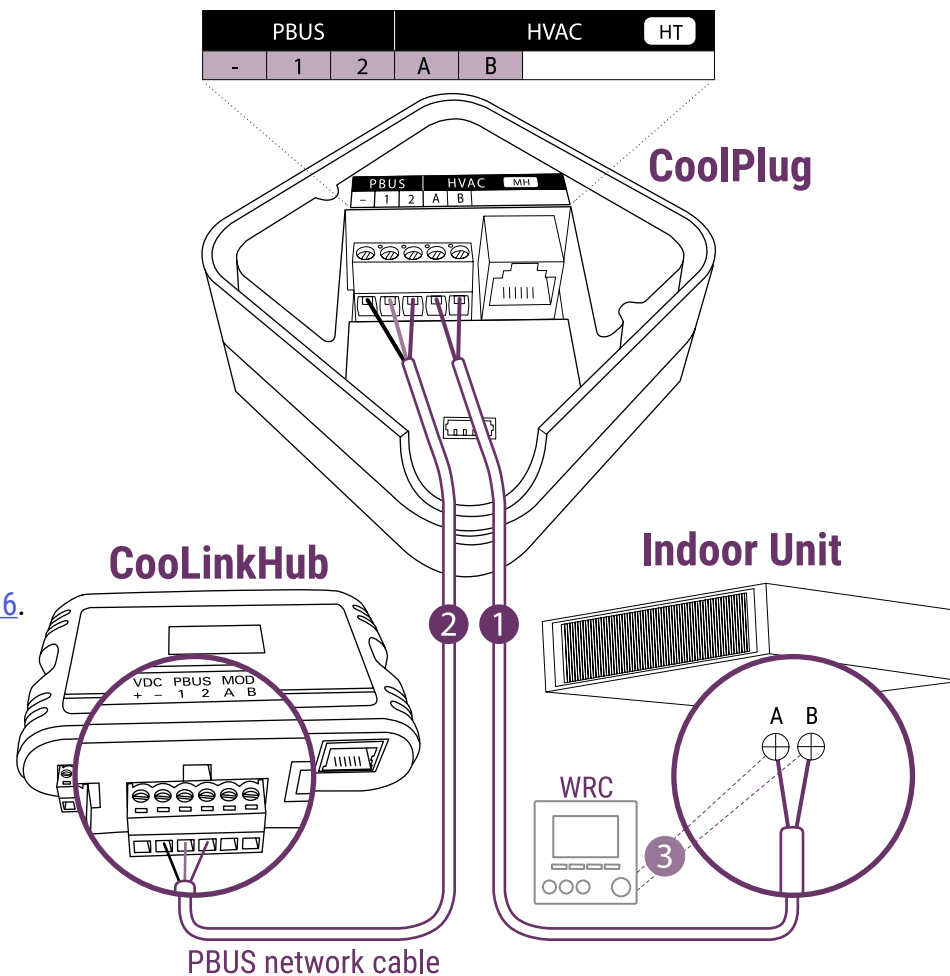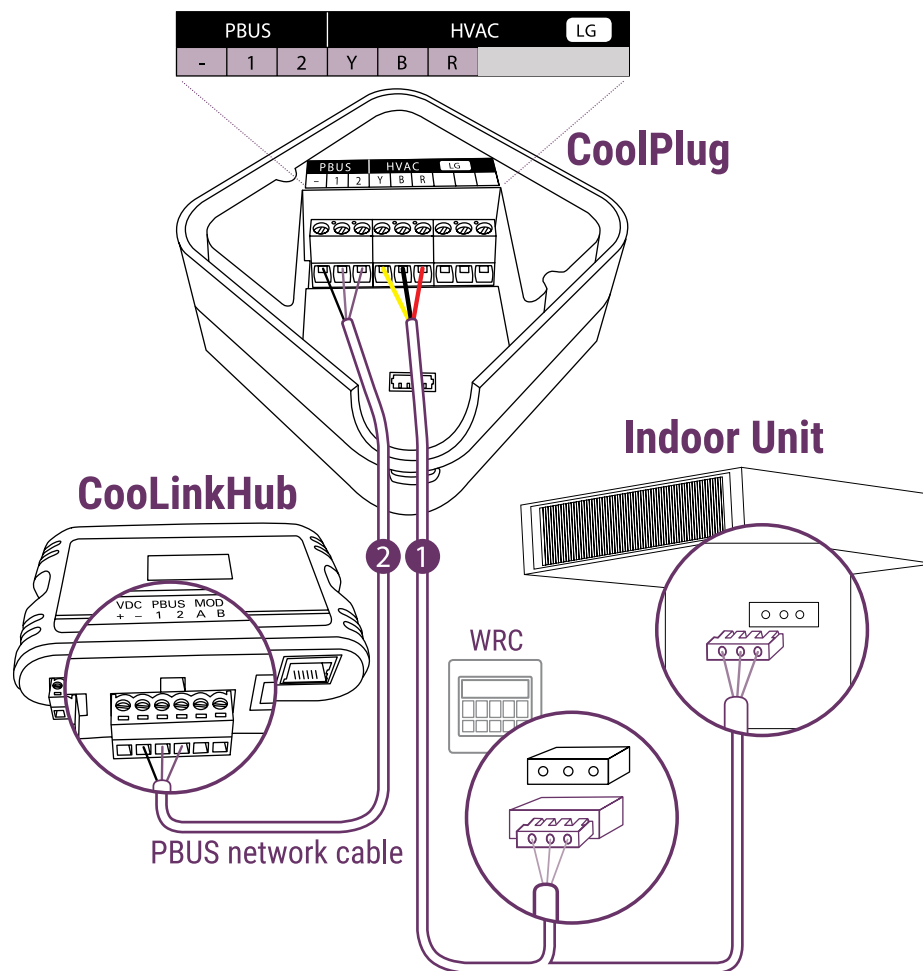Connect the CoolPlug's [A] [B] terminals to the [A], [B] terminals on the indoor unit accordingly.

❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on page 35.
Wired Mode: Connect the signal wires of the PBUS cable coming from the [VDC-], [1] and [2] terminals on the CooLinkHub to the corresponding [-], [1] and [2] terminals on the CoolPlug.
Please refer to the PBUS connection diagram on page 6.

❸ Optional: WRC can be connected in parallel to the CoolPlug.

CoolPlug

CooLinkHub

Indoor Unit

WRC

PBUS network cable

* The connection is nonpolar.

** Master/Slave configuration will be done by the CoolPlug automatically.

Connecting CoolPlug LG (LG)

❶ Connecting the CoolPlug to the Indoor unit

Connect the cable (supplied with the CoolPlug) between the CoolPlug [Y] [B] [R] and CN-REMO on the indoor unit's PCB or on the cable. Use the HVAC manufacturer's installation manual to locate the required terminals on the indoor.

❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on .
Wired Mode: Connect the signal wires of the PBUS cable between CoolPlug terminals [-], [1] and [2], and CooLinkHub terminals [VDC-], [1] and [2], respectively. Please refer to the PBUS connection diagram on .

❸ Optional: Connect the Wired Remote Controller (WRC) to the connector on the cable supplied with CoolPlug.

PBUS			HVAC			LG
-	1	2	Y	B	R	

CoolPlug

Indoor Unit

CooLinkHub

VDC PBUS MOD
+ - 1 2 A B

WRC

PBUS network cable

Connecting CoolPlug MD (Midea)

(Midea VRF or CAC only, except of Midea MV6 series)

❶ Connecting the CoolPlug to the Indoor unit

Connect the CoolPlug's [X] [Y] [E] terminals to the [X] [Y] [E] terminals on the indoor unit accordingly. Note, that [E] terminal in CoolPlug stands for electrical COMMON and is located on the right side of CoolPlug's terminal. Use the HVAC manufacturer's installation manual to find the corresponding terminals on the indoor unit.

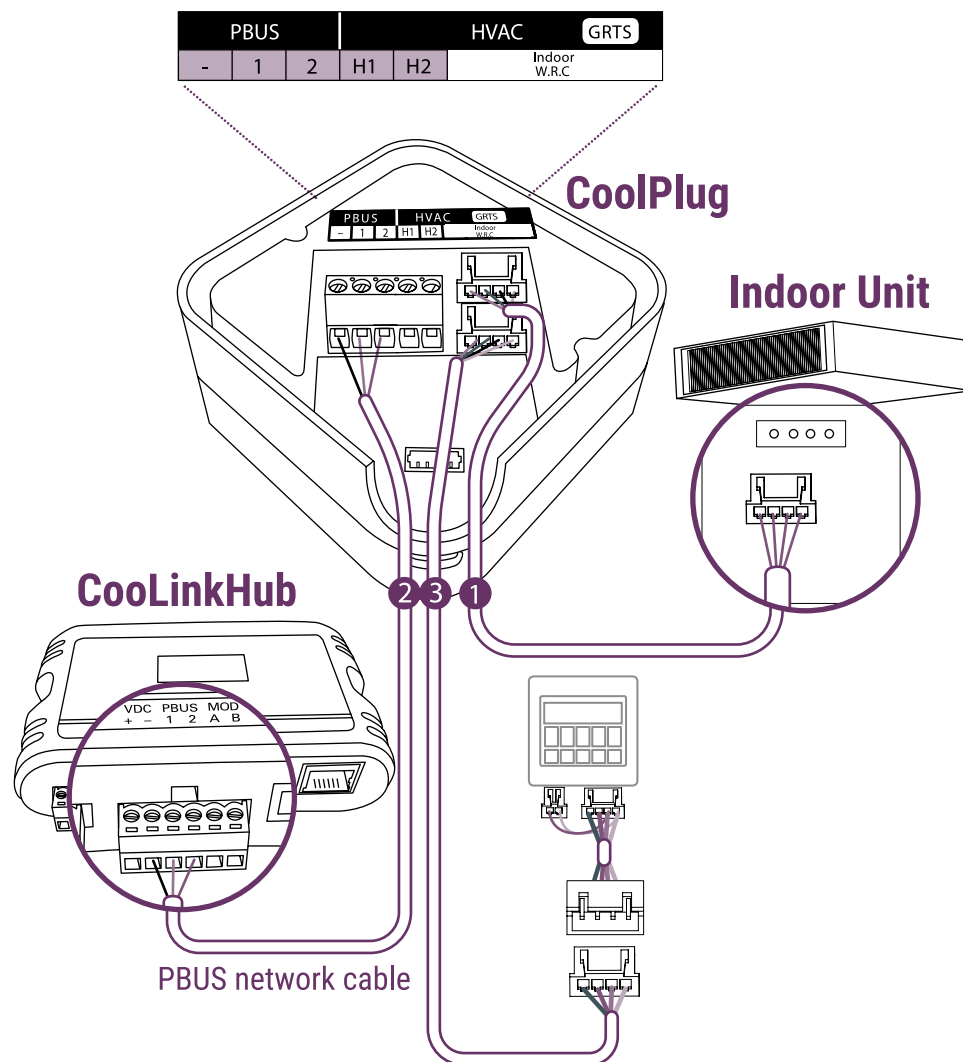**❷ Connecting the CoolPlug to the CooLinkHub**

Wireless Mode: Check the devices were paired successfully. See how to pair on .
Wired Mode: Connect the signal wires of the PBUS cable between CoolPlug terminals [-], [1] and [2], and CooLinkHub terminals [VDC-], [1] and [2], respectively. Please refer to the PBUS connection diagram on .

* CoolPlug MD is not powered directly from the HVAC indoor unit, so external 12Vdc power supply is required.

** Wired version - CoolPlug is powered by power supply from CooLinkHub (Figure 1 below).

*** Wireless version - with external power supply (figure 2 below).

Figure 1 – CoolPlug powered by CooLinkHub
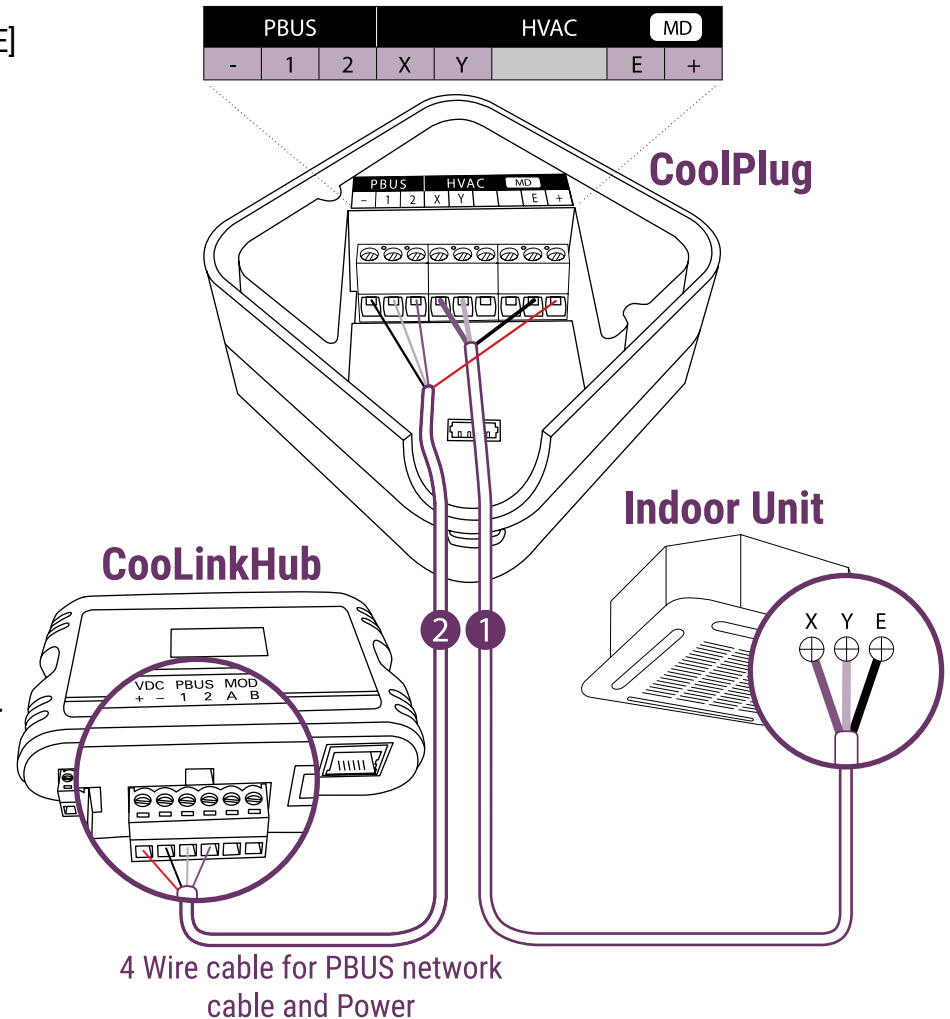
Figure 2 – CoolPlug WRLS - with individual external power supply

PBUS			HVAC				MD
-	1	2	X	Y		E	+

CoolPlug

CooLinkHub
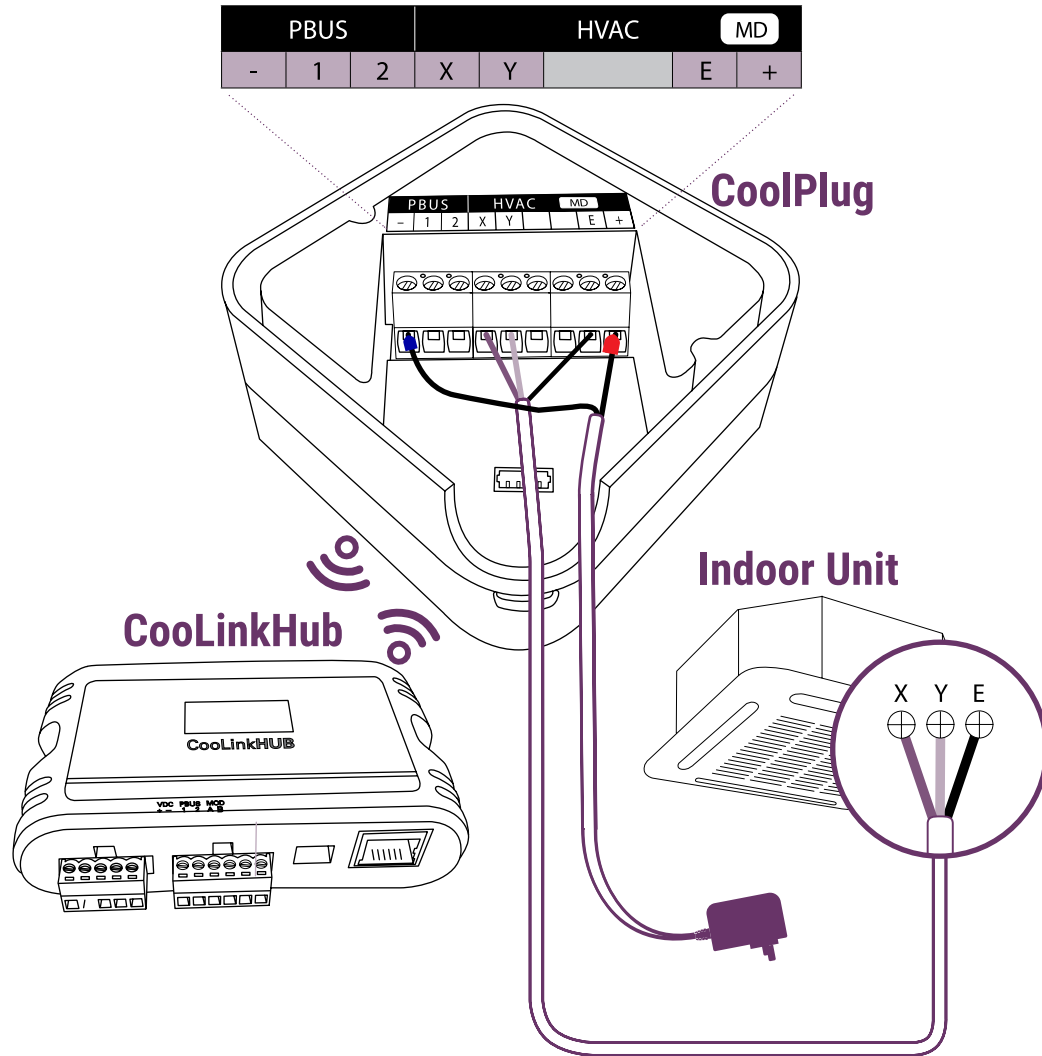
Indoor Unit

Connecting CoolPlug GRTS (Gree)

Gree GRTS - Option 1: When WRC connects to Indoor Units Board

❶ Connecting the CoolPlug HVAC Line to the Gree Indoor Unit

Connect the cable (supplied with the CoolPlug) between the CoolPlug Indoor connector and the connector on the indoor unit's PCB. Use the HVAC manufacturer's Installation manual for the location of the connector on the indoor unit's PCB.

❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on .
Wired Mode: Connect the signal wires of PBUS cable between the CoolPlug terminals [-], [1] and [2], and the CooLinkHub terminals [VDC-], [1] and [2], respectively. Please refer to the PBUS connection diagram on .

❸ Connecting the CoolPlug to the WRC

Connect the short cable (supplied with the CoolPlug) to 2 connectors on the WRC ports. Connect the long WRC cable (supplied with the WRC) to the other end of the short cable on one side, and to the CoolPlug on the other.

PBUS			HVAC		GRTS
-	1	2	H1	H2	Indoor W.R.C

CoolPlug

Indoor Unit

CooLinkHub

VDC PBUS MOD
+ − 1 2 A B

PBUS network cable

Connecting CoolPlug GRTS (Gree)

Gree GRTS - Option 2: When WRC Connects to Indoor Unit Cable

❶ Connecting the CoolPlug HVAC line to the Gree Indoor Unit

Connect the cable (supplied with the CoolPlug) between the CoolPlug Indoor connector and the connector on the indoor unit's cable. Use the HVAC manufacturer's Installation Manual for the location of the required socket on the indoor unit.
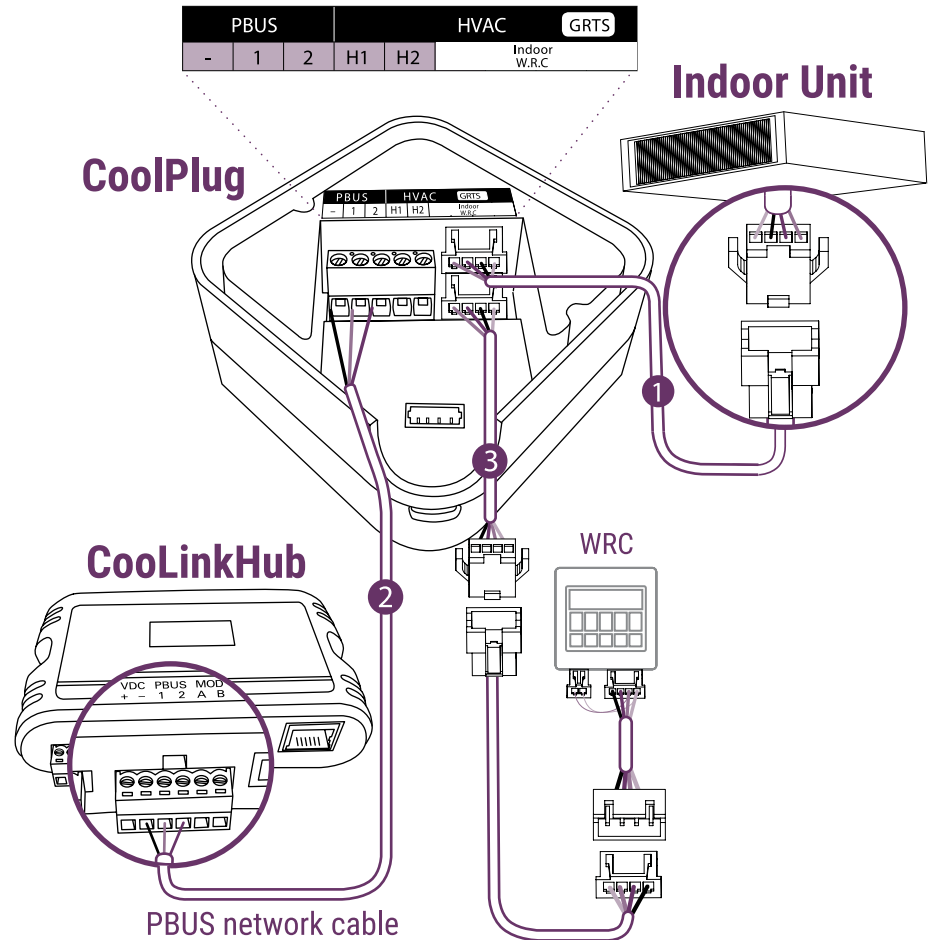
❷ Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on page 35.
Wired Mode: Connect the signal wires of the PBUS network cable between CoolPlug terminals [-], [1] and [2], and CooLinkHub terminals [VDC-], [1] and [2], respectively.
Please refer to the PBUS connection diagram on page 6.

❸ Connecting the CoolPlug to the WRC

Connect the short cable (supplied with the WRC) between the 2 WRC ports. Connect the long WRC cable to the connector of the adapter cable supplied with the CoolPlug. Then connect the CoolPlug adapter to the CoolPlug WRC port.

Indoor Unit

CoolPlug

CooLinkHub

WRC

PBUS network cable

Connecting CoolPlug GRTS (Gree)

Gree GRTS - Option 3: 2 wires

① Connecting the CoolPlug HVAC line to the Gree Indoor
Unit
Connect the CoolPlug's [H1] [H2] terminals to terminals
[H1] and [H2] on the indoor unit PCB accordingly. Use
the HVAC manufacturer's Installation Manual for the
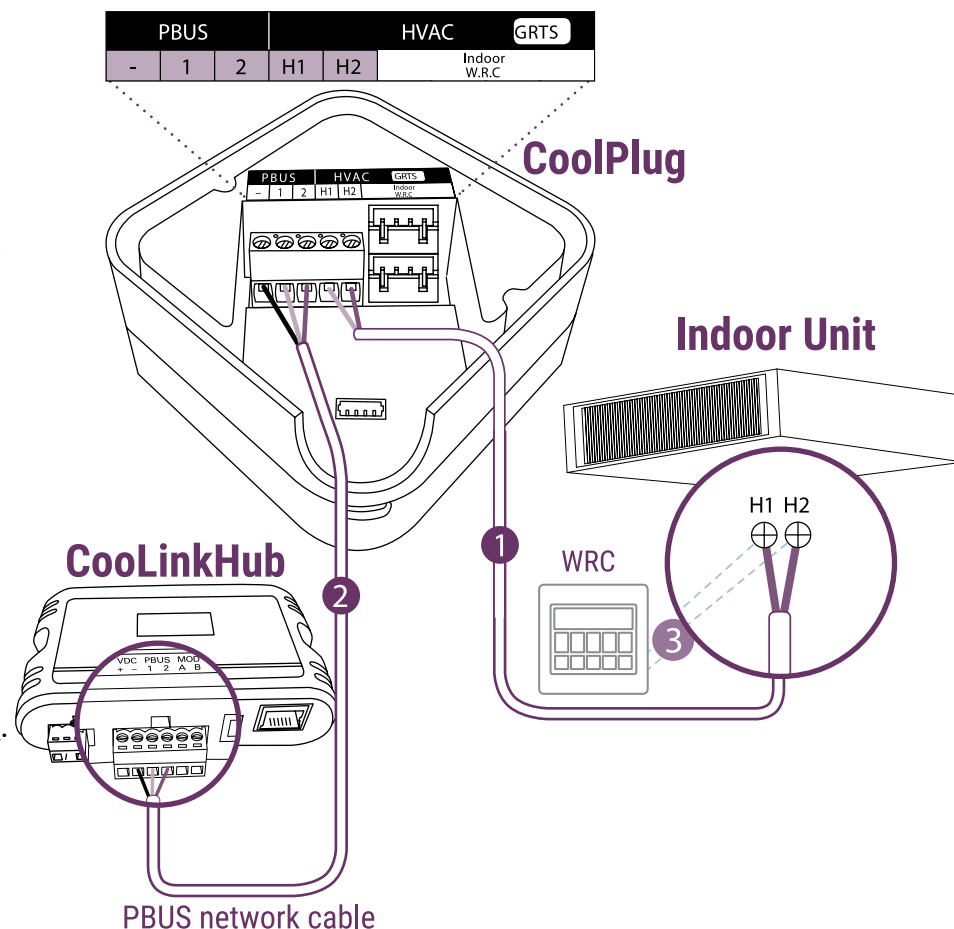location of the connection terminals on the indoor PCB.

② Connecting the CoolPlug to the CooLinkHub
Wireless Mode: Check the devices were paired
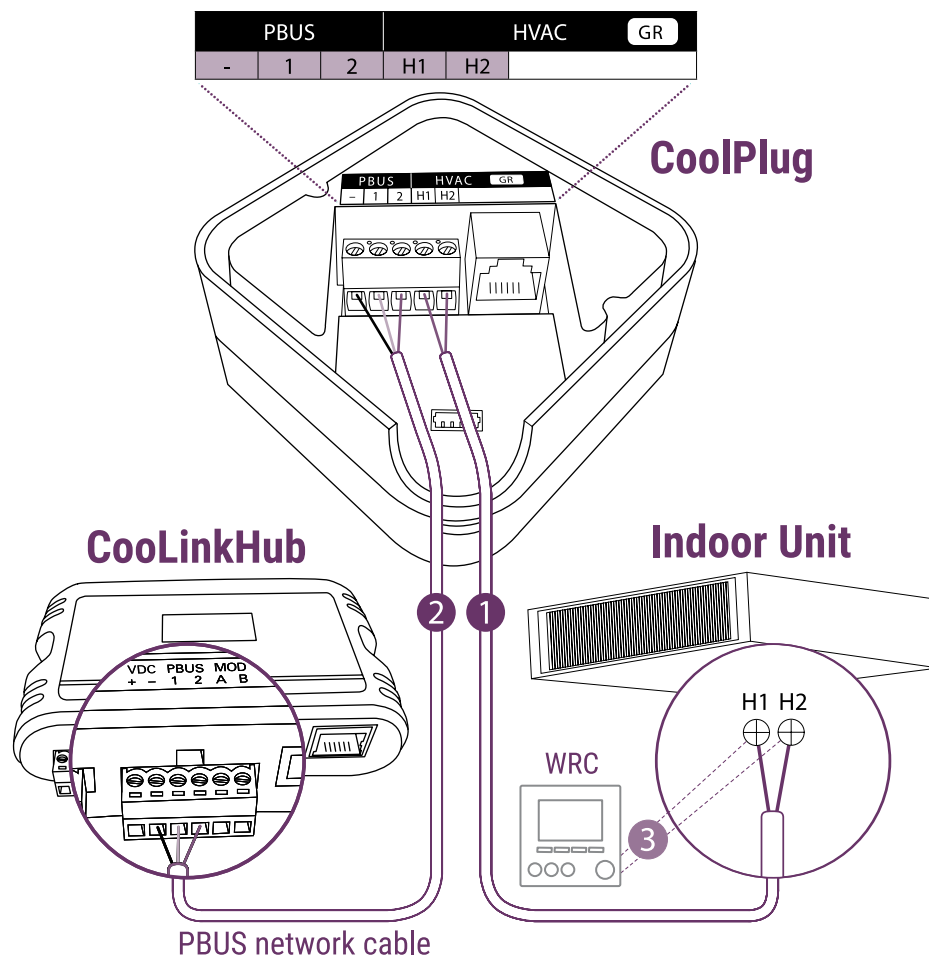successfully. See how to pair on page 35.
Wired Mode: Connect the signal wires of the PBUS
network cable, using [VDC-], [1] and [2] terminals on
the CooLinkHub to the corresponding [-], [1] and [2]
terminals on the CoolPlug.
Please refer to the PBUS connection diagram on page 6.

③ Optional: Connect the WRC by [H1] [H2] terminals in
parallel to the CoolPlug.
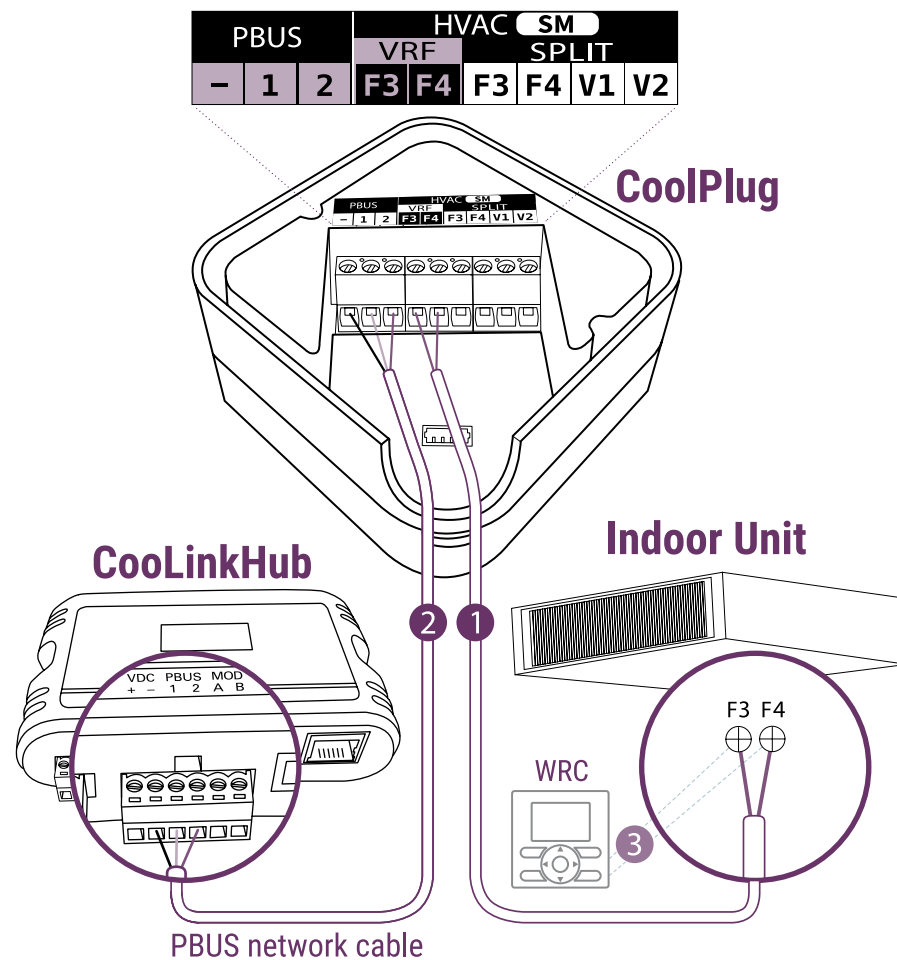
* The connection is nonpolar.

*** Master/Slave configuration will be done by the CoolPlug
automatically.*

CoolPlug

Indoor Unit

CooLinkHub

WRC

H1 H2

PBUS network cable

Connecting CoolPlug GR (Gree VRF GMV5)

Gree VRF GMV5 only

1 Connecting the CoolPlug HVAC line to the Gree Indoor Unit

Connect the CoolPlug's [H1] [H2] terminals to terminals [H1] and [H2] on the indoor unit PCB accordingly. Use the HVAC manufacturer's Installation Manual for the location of the connection terminals on the indoors PCB.

2 Connecting the CoolPlug to the CooLinkHub

Wireless Mode: Check the devices were paired successfully. See how to pair on page 35.
Wired Mode: Connect the signal wires of the PBUS network cable, using [VDC-], [1] and [2] terminals on the CooLinkHub to the corresponding [-], [1] and [2] terminals on the CoolPlug.
Please refer to the PBUS connection diagram on page 6.

3 Optional: Connect the WRC by [H1] [H2] terminals in parallel to the CoolPlug.

* The connection is nonpolar.

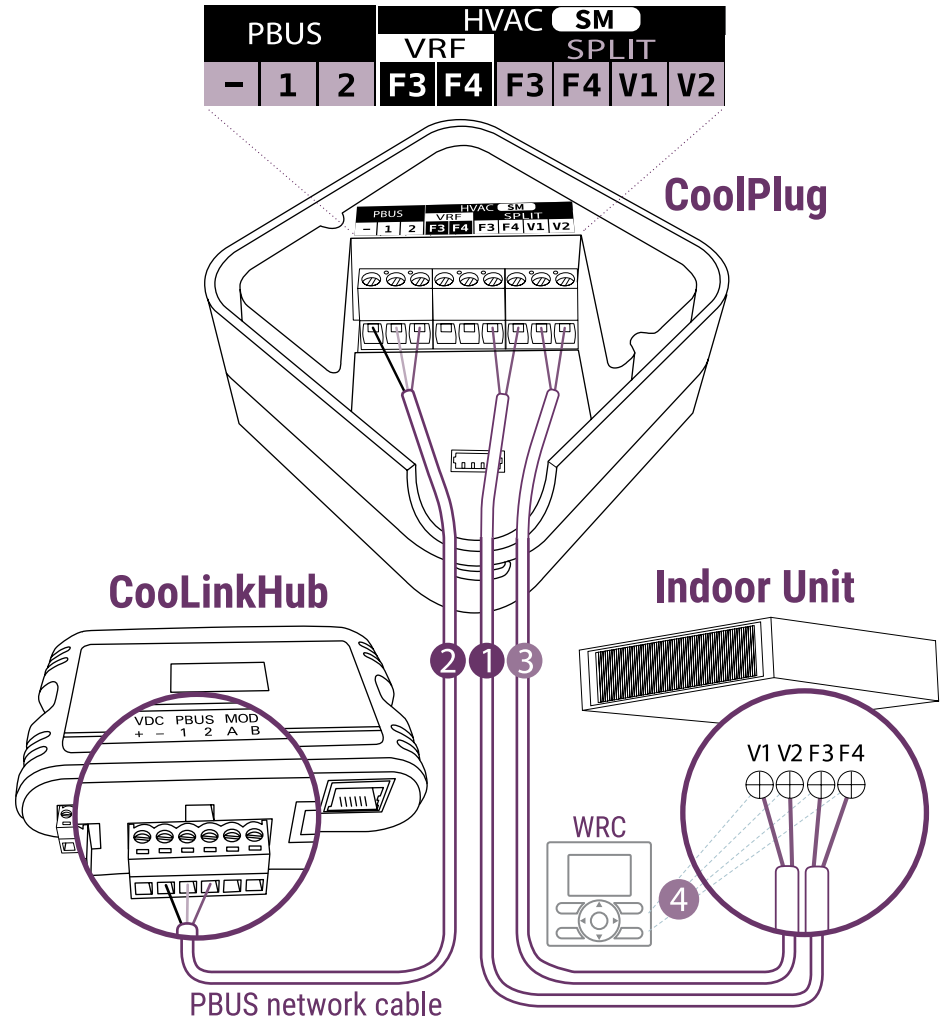*** Master/Slave configuration will be done by the CoolPlug automatically.*

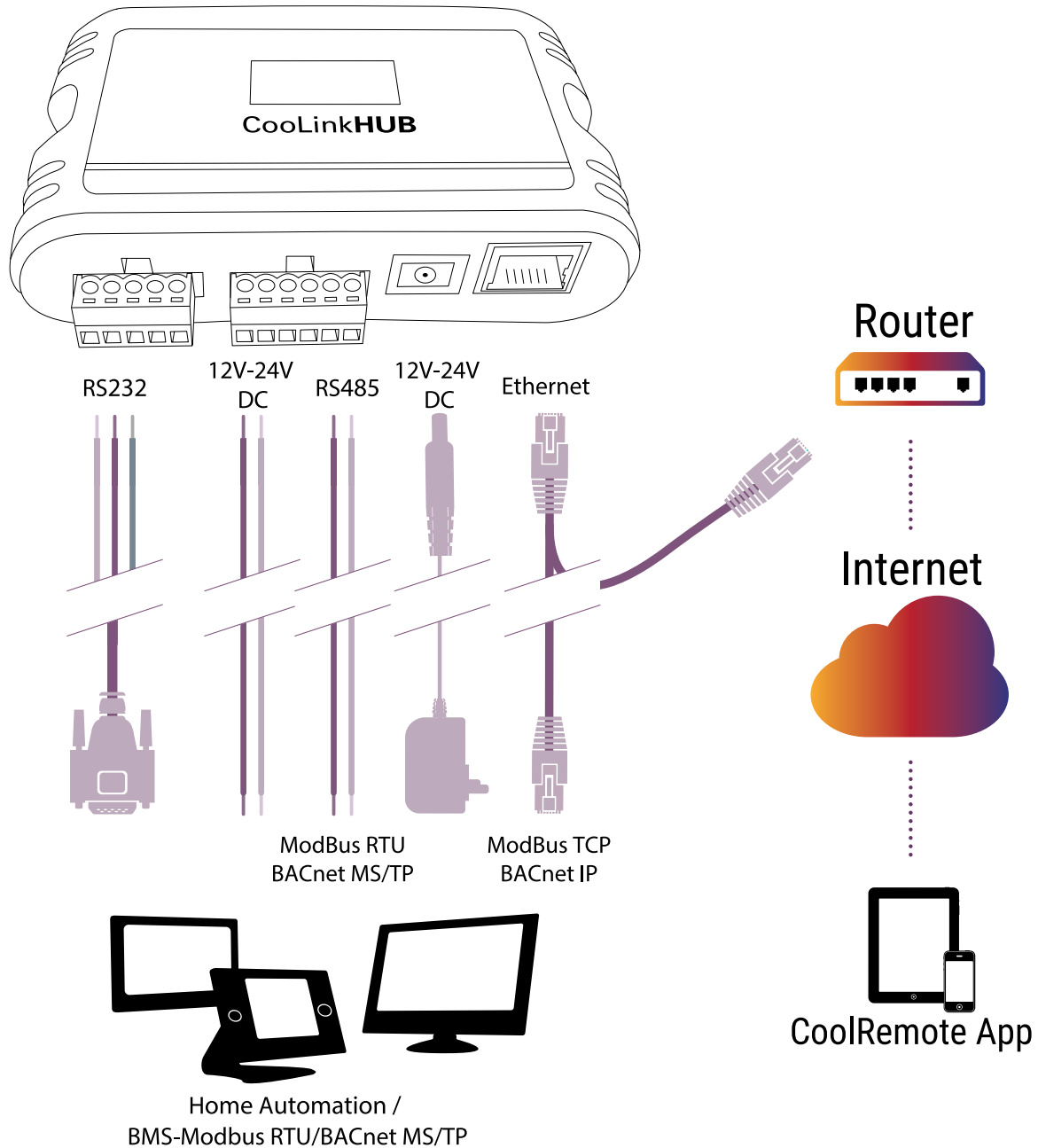# Connecting CoolPlug SM (Samsung)

Samsung - Option 1: **2 wires**

1 Connecting the CoolPlug to the Samsung unit

Connect the CoolPlug's VRF [F3], [F4] terminals to
the [F3], [F4] terminals on the indoor unit. Use HVAC
manufacturer's Installation Manual for instructions on
the location of [F3], [F4] terminals on the Samsung unit.

2 Connecting the CoolPlug to the CooLinkHUB

Wireless Mode: Check the devices were paired
successfully. See how to pair on page 35.
Wired Mode: Connect the signal wires of the PBUS
cable coming from the [VDC-], [1] and [2] terminals on
the CooLinkHUB to the corresponding [-], [1] and [2]
terminals on the CoolPlug, respectively.
Please refer to the PBUS connection diagram on page 6.

3 Optional: Connect WRC in parallel with CoolPlug.

* The connection is nonpolar.

*** Master/Slave configuration will be done by the CoolPlug
automatically.*

Connecting CoolPlug SM (Samsung)

Samsung - Option 2: **4 wires**

1 Connecting the CoolPlug to the Samsung indoor unit

Connect the CoolPlug's SPLIT [F3] [F4] terminals to the [F3] [F4] terminals on the indoor unit accordingly, andCoolPlug's [V1] [V2] terminals to the[V1] [V2] terminals on the indoor unit. Use HVAC manufacturer's Installation Manual for instructions on the location of [F3][F4] and [V1] [V2]terminals on the Samsung unit.

2 Connecting the CoolPlug to the CooLinkHUB

Wireless Mode: Check the devices were paired successfully. See how to pair on .

Wired Mode: Connect the signal wires of the PBUS cable coming from the [VDC-], [1] and [2] terminals on the CooLinkHUB to the corresponding [-], [1] and [2] terminals on the CoolPlug, respectively.

Please refer to the PBUS connection diagram on .

3 Optional: Connect WRC in parallel with the CoolPlug.

* The paired connections(F3/F4 and V1/V2) are nonpolar.

** Master/Slave configuration will be done by the CoolPlug automatically.

Connecting Home Automation, BMS & Control App

CoolLinkHUB

RS232 | 12V-24V DC | RS485 | 12V-24V DC | Ethernet

ModBus RTU
BACnet MS/TP

ModBus TCP
BACnet IP

Router

Internet

CoolRemote App

Home Automation /
BMS-Modbus RTU/BACnet MS/TP

Control App

Connect the device to the Internet for registration and setup.

Option A – Automatic process

1. Scan the QR code from the type label to auto fill-in all the CooLinkHub details for the Control App.
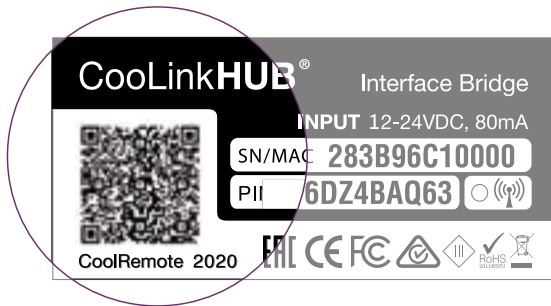
2. Register your username (email) and password to remotely control and monitor all of your connected HVAC units.

Option B – Manual process

1. Open: https://control.coolremote.net/device-registration. Enter the CooLinkHub SN number and PIN code, printed on the sticker.
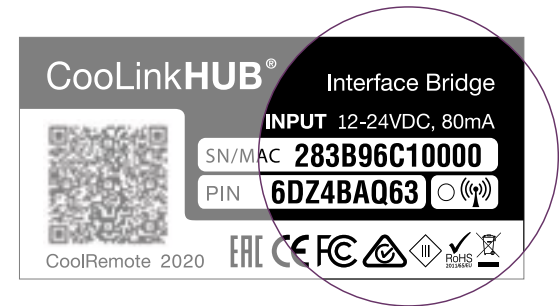
2. Register your username (email) and password to remotely control and monitor all of your connected HVAC units.

CoolPlug Operation

CoolPlug Indicators

The three LEDs that surround the CoolPlug's push-button provide information about the CoolPlug configuration and status. The CoolPlug is powered on, the Firmware version is displayed by flashing LEDs followed by the operational state of the system.
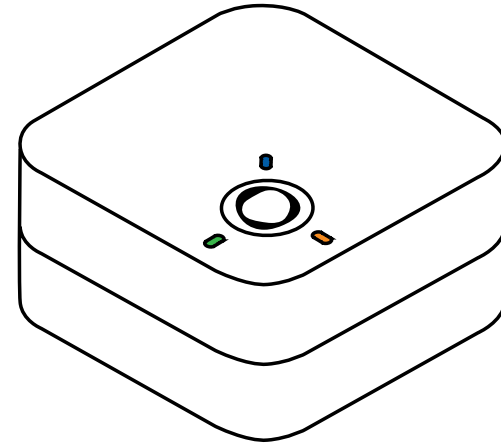
CoolPlug Normal Operation

In normal operation the blue LED blinks periodically. The green and amber/red LEDs are not lit.

1

Infrequent blinking

not lit

not lit

2   **3**
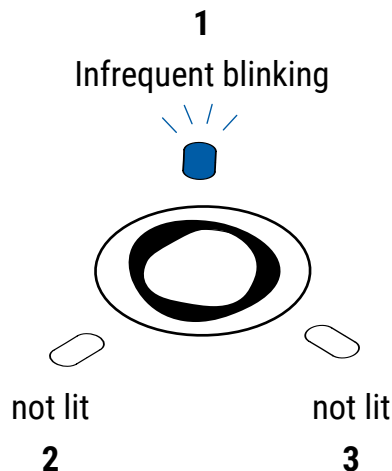
Pic.	LED's Color	Normal operation	Problems	
		LED OFF	LED ON	LED blinking
2	**Green**	HVAC Line OK	HVAC Line not connected	HVAC Line errors
3	**Amber**	PBUS OK	PBUS not connected	PBUS errors
		(for wired connection only)		
3	**Red**	Wireless OK	Wireless no connected	Look on <u>page 35</u>
		(for wireless connection only)		
1	**Blue**	Blinks infrequently twice **HVAC is ON**		
		Blinks infrequently **HVAC is ON**		

Determining the CoolPlug UID

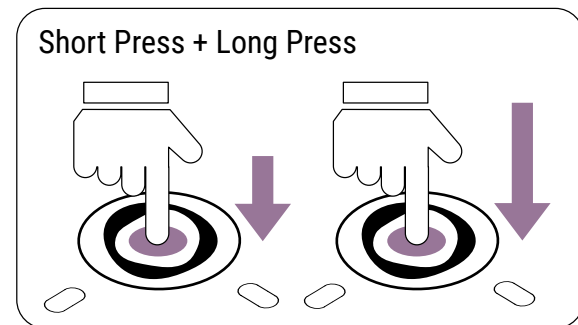The CoolPlug UID is flashed after one 'Short' press on the CoolPlug push-button.
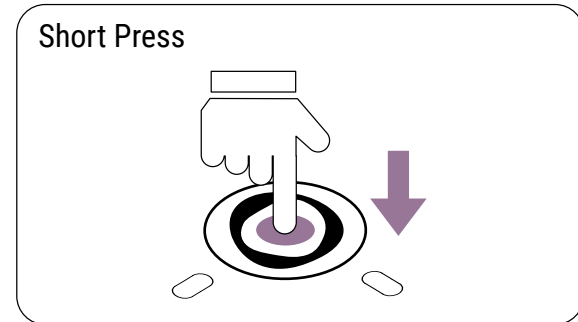
Short Press

Toggling the HVAC ON/OFF

Toggle the HVAC state ON/OFF with one 'Long' press for 2-3 seconds on the CoolPlug push-button.
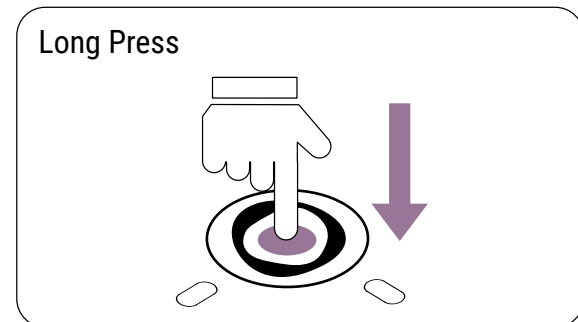
Long Press

Resetting the CoolPlug

Reset the CoolPlug with one 'Short' press followed by one 'Long' press on the CoolPlug push-button.

Short Press + Long Press

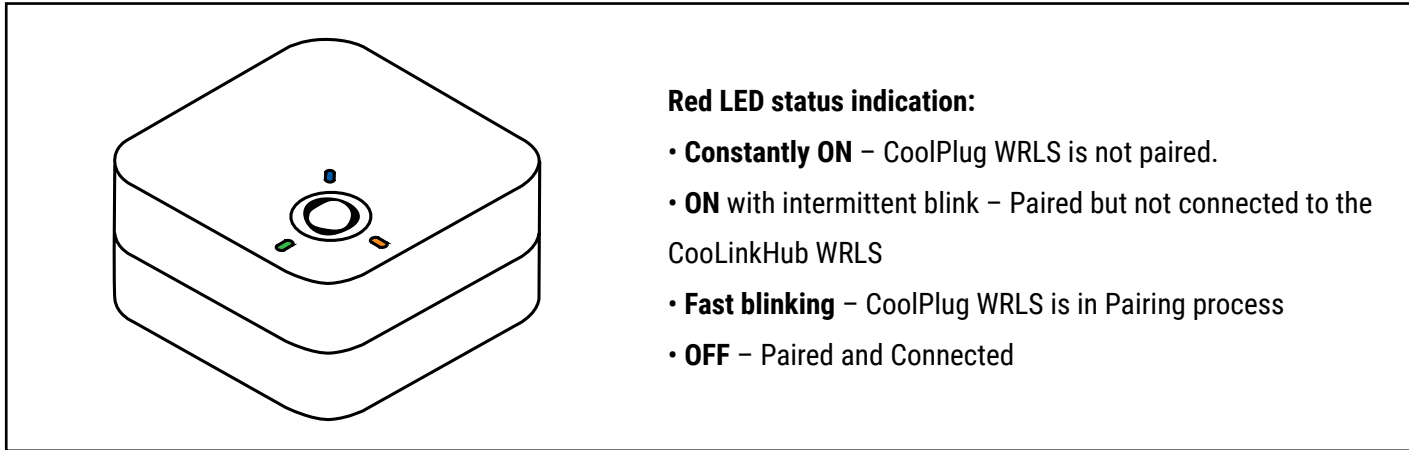# Wireless CoolPlug & CooLinkHub – Installation Guidelines

Important Notes:

1. To successfully pair the CooLinkHub Wireless (WRLS) to the CoolPlug Wireless (WRLS) they must be in line of sight proximity one to the other (no more than three meters).

2. The CoolPlug WRLS is powered from the HVAC terminal. It can also be powered via USB during the setup process (either from a PC or the CooLinkHub WRLS).

3. The CooLinkHub WRLS can connect simultaneously to both wired and wireless CoolPlug units.

## How to pair and connect a CoolPlug WRLS with the CooLinkHub WRLS

1. On the CooLinkHub WRLS, press the OK button.

2. The CoolPlug WRLS is powered from the HVAC terminal. It can also be powered via USB during the setup process (either from a PC or the CooLinkHub WRLS).

	Up button	OK	OK button
	Down button		Exit or Cancel button

3. With the up/down arrow buttons, select the Wireless option.

▶Wireless
Reset

4. Press the **OK** button. A new options menu is displayed on the screen.

5. With the arrow buttons select the **Pair** option.
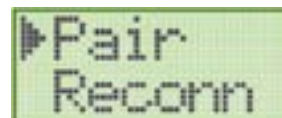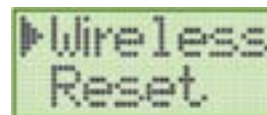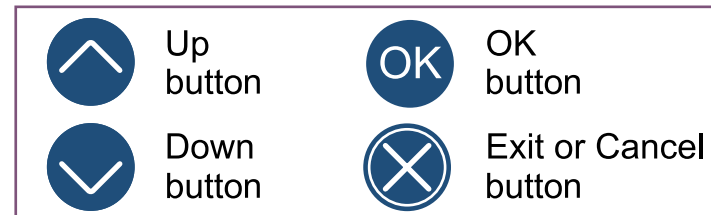
▶Pair
Reconn

6 On the CoolPlug WRLS, press the button **five times** (take 1 second between consecutive presses). A fast blinking red light is displayed while pairing to the CooLinkHub WRLS.

Red LED status indication:

• **Constantly ON** – CoolPlug WRLS is not paired.

• **ON** with intermittent blink – Paired but not connected to the CooLinkHub WRLS

• **Fast blinking** – CoolPlug WRLS is in Pairing process

• **OFF** – Paired and Connected

7 On the CooLinkHub WRLS, press the OK button.

8 When pairing is complete, the red LED turns off.

9 When pairing is complete, the CoolPlug WRLS immediately tries to connect to the CooLinkHub WRLS.

10 Once the connection is successful, the number of connected CoolPlugs WRLS is displayed on the screen in L5 GXXX, where XXX denotes a number (in the image below XXX=5).


11 The devices are now paired and connected.
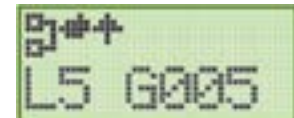
Rebuilding the wireless mesh network

In some cases, rebuilding the mesh network topology may be required. For example, when changing the position of the number of CoolPlugs WRLS.

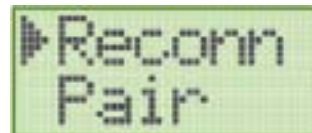To ensure the network is built in the most optimal way, follow the reconnection procedure:

To reconnect all paired devices to the wireless network mesh:

❶ On the CooLinkHub WRLS, press the **OK** button. An options menu is displayed on the screen.
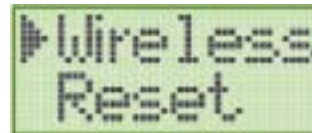
❷ With the arrow buttons select the **Wireless** option.

❸ Press the **OK** button. A new options menu is displayed on the screen.

❹ With the arrow buttons select the **Reconn** option.

❺ Press the **OK** button.

❻ Upon successful reconnection, the expected number of CPs is displayed on the screen in L5 GXXX (as in the image below).
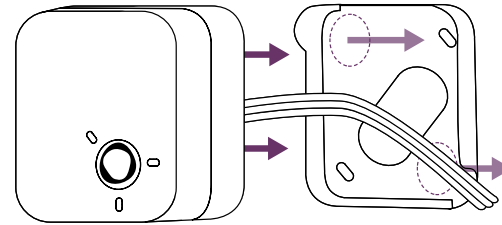

 * To reconnect devices, no actions need to be performed on the CoolPlug WRLS devices.

Mounting the CoolPlug

On a Metal Surface

The CoolPlug flat back plate has place for two sticky bands that allow you to mount it on the plastic or stick two magnets for mounting it on any metal surface.
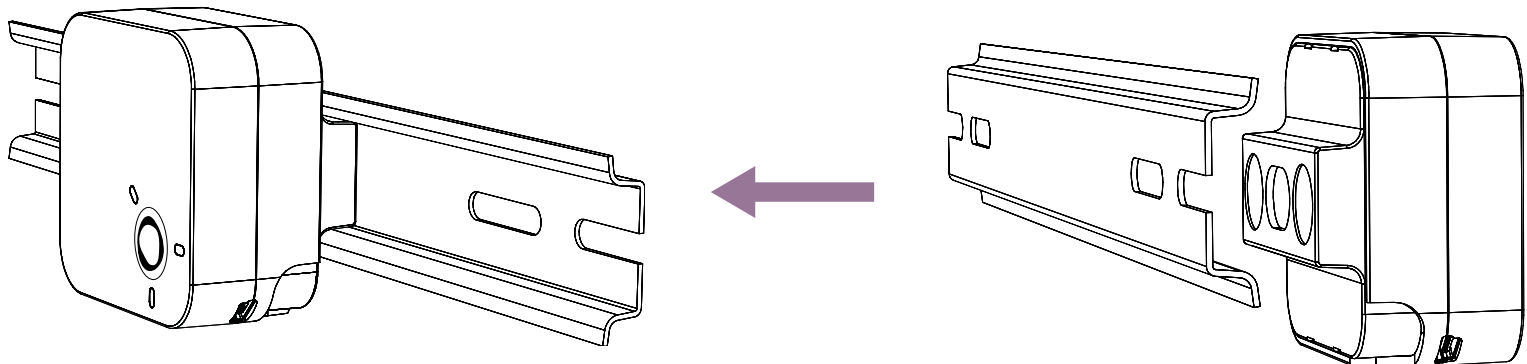
On the Wall

Attach the CoolPlug back plate to the wall, using screws as shown. The wires can be inserted through the hole in the center of the cover or from the side as shown.
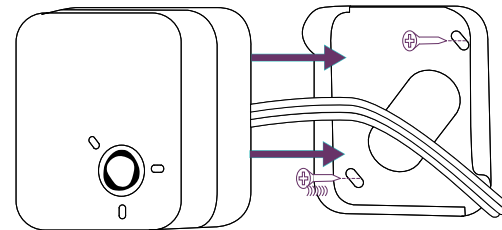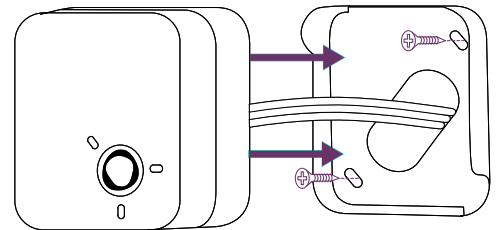
On a DIN Rail

Use the DIN rail back plate of the CoolPlug to attach it to the DIN rail utilizing magnets.

Need more help?

Visit us at: https://coolautomation.com/support