Programming manual

V1.0

Gateway

BUSing-DKAC-D

Index

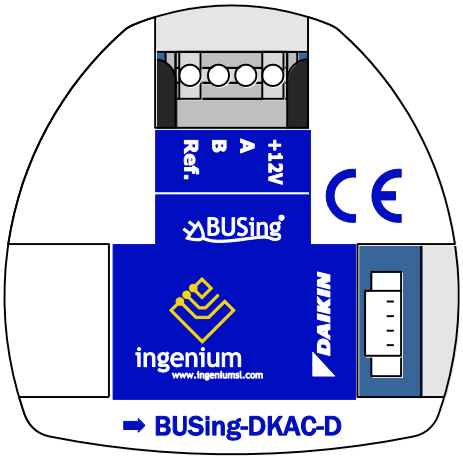
1 GENERAL DESCRIPTION

The BUSing-DKAC-D gateway allows direct communication from a BUSing® protocol installation with compatible Daikin® climate units. This makes it easy to control the machine from BUSing screens, web servers or the Ingenium app available for mobile devices (iOS and Android) with a fully graphical and visual interface.

Apart from reading ambient temperature, set point temperature may be consulted and modified, as well as indicating to the machine its mode of operation and fan speed.

Each gateway will allow the control of an internal Daikin® climate unit, to which is connected directly through a supplied connector, to S21 connection from indoor unit. The maximum distance of the wire between the unit and gateway is 1 m.

To ensure compatibility of the gateways, contact the technical service or consult the compatibility table.

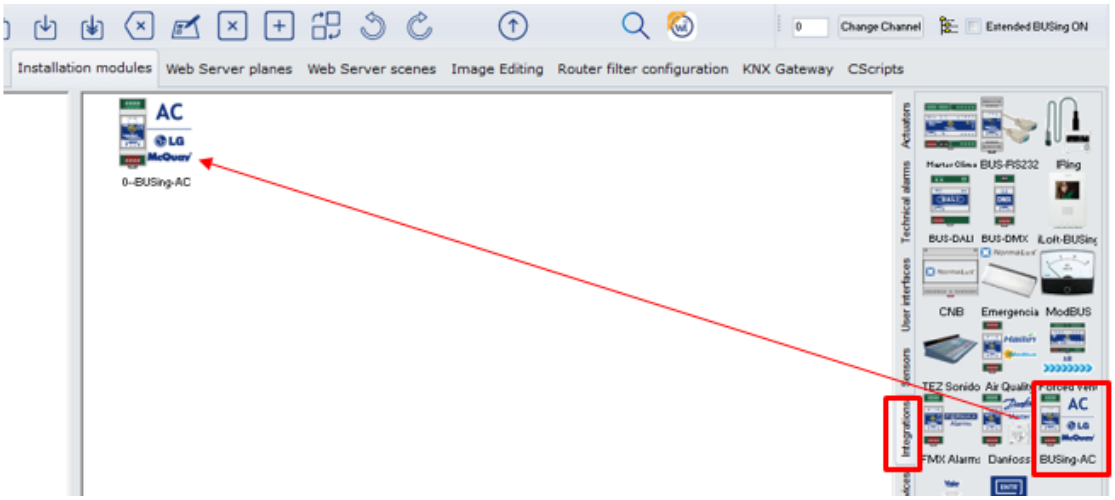


2 TECHNICAL DESCRIPTION

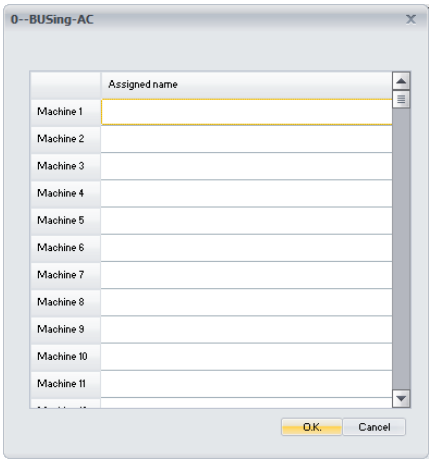
- Gateway for integration of Daikin HV AC® air conditioning system and BUSing® protocol.
- Allows control of one indoor Daikin unit (check compatibility table)
- Direct communication through S21 connector, through a wire supplied with the gateway.
- Maximum distance between gateway and unit is 1 m.
- Daikin® unit does not notify ambient temperature.
- Control and monitoring of the status and operating modes of the Daikin climate machine.
    - On/Off machine
    - Consignment temperature
    - Modes of operation
    - Machine speed
- Mounting next to the climate unit or integrated into the ceiling.
- It allows control from BUSing® screens, web servers or the free Ingenium App.

3 PROGRAMMING OF THE DEVICE

From the Development System (SIDE) BUSing-AC node must be inserted in the integrations tab, in the address wanted the gateway to have.

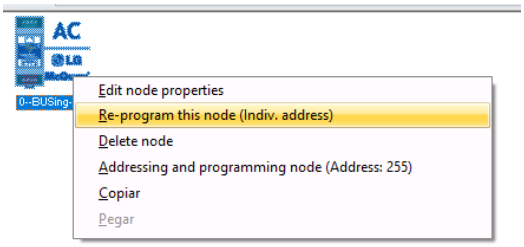


By double-clicking or right-clicking on the icon, and accessing its properties, a window will open like the following:



The only thing that needs to be programmed in this part, is to name the machine 1, which will be the one appearing, when linking it, on the graphical interfaces. The rest of the machines will not be used, as this gateway can only control one climate unit.

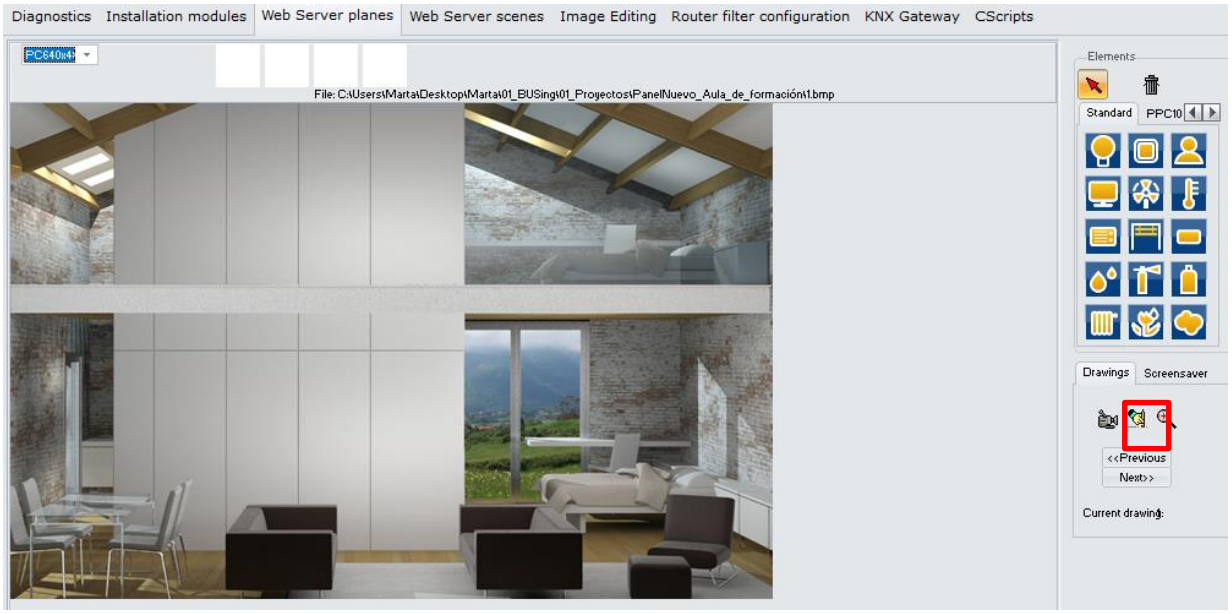
Once entered in the BUSing project and having only connected to the BUS this computer, the device should be addressed, right click on it and select *Program this node by appearing the* property screen on which you must click on programming. You can also right-click: *Direct and program node.*



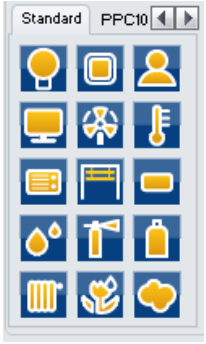
3.1 POINT TO POINT CONTROL IN PPL

To be able to control the machine it will be necessary to include a thermostat icon on one of the graphical interfaces or web server of BUSing®, and make a point-to-point link. The following example is about Ethbus3 or PPL.

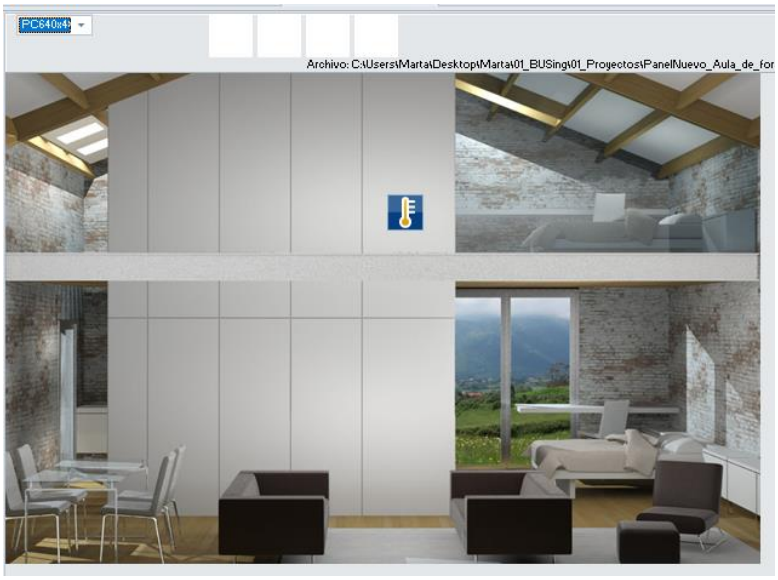
In the *Web Server Planes tab, with* a previously added plane, through the red icon, located on the right side:



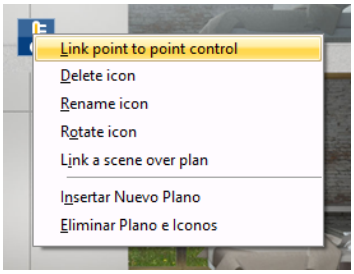
Click on a thermometer icon, available in the icon battery on the right. Next, with the mouse you click on the part of the plane you want to incorporate this icon:



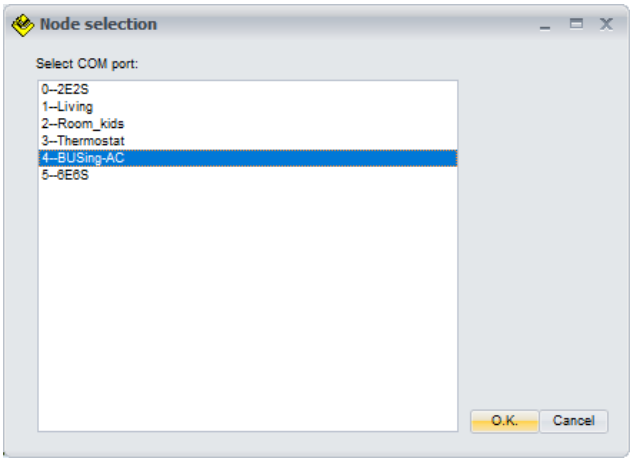
And the map would look like:



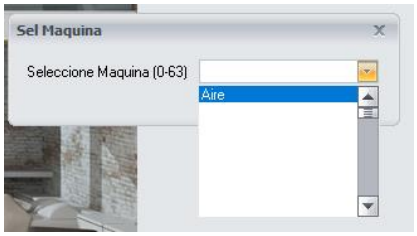
The next step will be to make a point-to-point link of the thermostat icon with the AC gateway. To do this, you must right click on the icon and select the option *Link control point-to-point.*



When clicking on this option, a window will appear like the next one, with all the nodes added to our *project (in Installation Modules).* Select the corresponding node for AC gateway, in the case of the example, node 4 and press Ok.

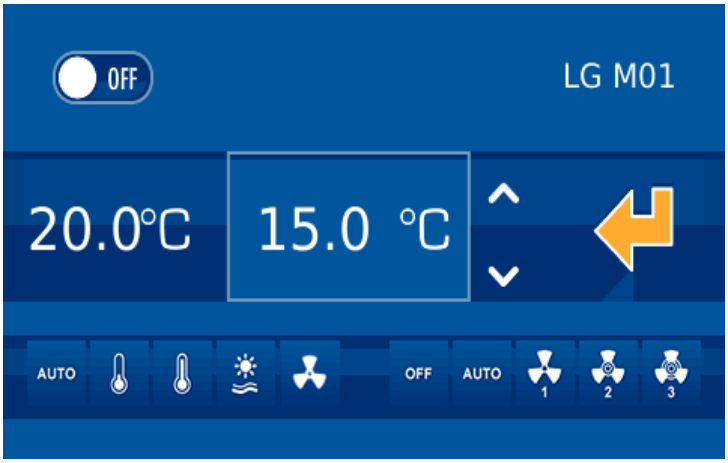


Again, a window will appear to select the Daikin machine to add. It is reminded that this gateway only controls 1 indoor climate unit, so only the first machine should be selected, though 0 to 63 machines are available. This is because that BUSing-AC icon added in *Installation Modules serves to program* other BUSing AC gateways that can control more than one AC unit.



Once pressed Ok, the point-to-point control of the gateway would already be linked with its corresponding icon on the PPL. For further information regarding programming a PPL, check its programming manual.

Once downloaded the programming to the screen or webserver, the graphic interface for this device would look like the following:



On the left side, the ambient temperature can be read, the next value in the rectangle is the setpoint temperature. Finally, at the left bottom are the available modes of the AC unit, and on the right side the speed.

4 TABLE OF COMPATIBILITY

Compatible models always refer to indoor units, not references to outdoor plus indoor units.

Line	Indoor unit model	Adaptator
Ururu Sarara	FTXR 28/42/50 E	-
	FTXZ 25/35/50 N	-
Ururu Sarara Multi	CTXU 25/35/42/50 G	-
Emura	FTXG-C/E/JW/JS/JA/LW/LS	-
	FTXJ-L/M/MS/MW	-
	CTXG 50 E/J	-
Wall / Siesta	ATX 50 E	-
	ATX 20/25/35 JV	KRP980B1
	ATX 20/25/35 KV	-
	ATX 20/25/35 J/J2/J3/K	KRP980B1
	ATXL 25/35 JV/J2V	KRP980B1
	ATXM 20/25/35/50 M	-
	ATXP 20/25/35 KV	-
	ATXS-C/D/E/G	-
	ATXS 20/25 K	KRP980B1
	ATXS 35/50 K	-
	ATXS 20/25/35 KV	KRP067A41
Wall Mounted	ATKS 20/25/35 C/D/E	-
	ATXG 25/35/50 C/E	-
	CDXS 50/60 BVM	-
	CTXA 15 A	-
	CTXA - AW/AS/AT	EKRS21
	CTXM 15 M	-
	CTXS 15/35 K	KRP980B1
	CTXS 07/09/12 LVJU	-
	CTXS - L	-
	FT 50/60 FVM	-

	FT 25/35 JV1A	-
	FT 50/60 GAVEA	-
	FTDK 50/60/71 FV/GV	-
	FTK 20/25/35 GV/JV	KRP980B1
	FTK 50/60/71 GV	-
	FTK - NMVJU	KRP067A41
	FTK - N	KRP067A41
	FTKD 50/60/71 B	-
	FTKD 50/60 BVM	
	FTKD 50/60/71 BVMA	-
	FTKD 50/60/71 BVMS	-
	FTKD 50/60/71 BVMT	-
	FTKD 25/35 D	-
	FTKD50/60/71 F	-
	FTKD 15/18/24/28 GV	-
	FTKE 25/35 BVM	-
	FTKE 25/35 G	-
	FTKN 09/12 NMVJU	KRP067A41
	FTKN-N	KRP067A41
	FTKS B/C/D/E/F/G/H/J/K/L	-
	FTN 50/60 E/F/J	-
	FTS 50/60 B	-
	FTY 50/60 GAV1A	-
	FTYS 50/60 BVMS	-
	FTX 20/25/35 GV/JV/J2/J3/K	KRP980B1
	FTX 50/60/71 GV	-
	FTX 50/60/71 K	KRP980B1
	FTX 20/25/35/50/60/1 KV	-
	FTX LVMA	-
	FTX NMVJU	KRP067A41

	FTX N	KRP067A41
	FTXA 20/25/35/42/50 A	-
	FTXA AW/AS/AT	EKRS21
	FTXB 20/25/35/50/60 C	KRP980B1
	FTXC 25/35/50/60 B	-
	FTXD 18/24/28 B	-
	FTXD 50/60/71 B	-
	FTXD 25/35 D	-
	FTXD 50/71 JV	-
	FTXE 25/35/50/60/71 BVMA	-
	FTXE 25/35 BVM	-
	FTXG 20/25/35/50 L	-
	FTXJ 25/35/50 PVMA	-
	FTXL 20/25/35 G	-
	FTXL 20/25/35 JV/J2V	KRP980B1
	FTXLS 25/35 K/K3	-
	FTXM 20/25 K	KRP980B1
	FTXM 35/42/50 K	-
	FTXM - M	-
	FTXM - RVMZ	KRP067A41
	FTKN 09/12 JEVJU	KRP980B1
	FTXN 09/12 JEVJU	KRP980B1
	FTXN 09/12 KEVJU	KRP980
	FTXN 15/18/24 KVJU	-
	FTXN 09/12 NMVJU	KRP067A41
	FTXP 20/25/35 KV	-
	FTXS – B/C/D/E/F/H/J	-
	FTXS 60/71 G	-
	FTXS 20/25 K	KRP980B1
	FTXS 35/42/50 K	-

	FTXS - DVJU	-
	FTXS - HVJU	-
	FTXS - LVJU	-
	FTXS - L	-
	FTYN 50/60 E/F	-
Floor	FVKS 25/35/50 B	-
	FVXG 25/35/50 K	-
	FVXM 25/35/50 F	-
	FVXS 25/35/50 B/F	-
	FVXS - NVJU	-
	FVXS - N	-
Floor - Ceiling	FLX 50/60 A	-
	FLXS 25/35/50/60 B/GV	-
	FLK 25/35/50/60 A	-
	FLKS 25/35/50/60 B	-
	FVXS 25/35/50 B	-
Duct Low Silhouette	CDKD 25/35/50/60 C	-
	CDKD 25/35 CVM	-
	CDKD 25/35 EAVM	-
	CDXS 25/35/50/60 C	-
	CDXS - EAVMA	-
	CDXS – E	-
	FDKS - CVMA	-
	FDKS 25/35 EAVMB	-
	FDKS 25/35/50/60 CAVMB	-
	FDKS – C/E	-
	FDXS - C/E2	-
	FDXS 09/12 L	-
Slim Duct	CDXS 25/18/24 LVJU	-
	FDXS 09/12 DVJU	-

	FDXS 09/12 LVJU	-
	FLX 50/60 AVMA	-
Cora	FTXM 20/25/35/46 QVMA	KRP067A41
	FTXM 50/60/71 QVMA	KRP980B2
	FTKM 20/25/35/46 QVMA	KRP067A41
	FTKM 50/60/71 QVMA	KRP980B2
	FTKM 33 NV2S	-
	FTKM 09/12 SV2S	KRP067A41
	FTKM 18 SV2S	KRP980B2
	FTXM 85/95 PVMA	-
	FTKM 18/24/28 PVMK	-
	FTKXM 18/24/28 PVMK	-
US7	FTXZ 25/35/50 NV1B	-
Zena	FTXJ 25/35/50 PVMAW	-
	FTXJ 25/35/50 PVMAS	-

Any AC model not included on this list, might not be compatible.

Ingenium cannot guarantee that this document has no writing or composition errors, as well as similar problems.

5 RECORDS THAT SUPPORTS

5.1 RAM

Command	Data 1	Data 2	Description
Read / Write	0	0-3	0 = Deactivate control of the machine. 3 = On machine. 2 = Off machine.
Read/ Write	1	0-68	Ventilation speed and operating mode. Data 2 = 0-4: Fan off. Data 2 = 16: Low ventilation (Low)/Cold mode (Cool). Data 2 = 17: Low ventilation (Low)/Dry mode. Data 2 = 18: Low ventilation (Low)/Ventilation-only mode (Fan). Data 2 = 19: Low ventilation (Low)/Auto mode. Data 2 = 20: Low ventilation (Low)/Heat mode. Data 2 = 32: Medium ventilation (Medium)/Cold mode (Cool). Data 2 = 33: Medium ventilation (Medium)/Dry mode. Data 2 = 34: Medium ventilation (Medium)/Ventilation-only mode (Fan). Data 2 = 35: Medium ventilation/automatic mode (Auto). Data 2 = 36: Medium ventilation (Medium)/Heat mode. Data 2 = 48: High ventilation (High)/Cold mode (Cool). Data 2 = 49: High ventilation (High)/Dry mode. Data 2 = 50: High ventilation (High)/Ventilation-only mode (Fan). Data 2 = 51: High ventilation (High)/Auto mode. Data 2 = 52: High ventilation (High)/Heat mode. Data 2 = 64: Automatic ventilation (Auto)/Cold mode (Cool). Data 2 = 65: Automatic ventilation (Auto)/Dry mode. Data 2 = 66: Automatic ventilation (Auto)/Ventilation-only mode (Fan). Data 2 = 67: Automatic ventilation (Auto)/Auto mode (Auto). Data 2 = 68: Automatic ventilation (Auto)/Heat mode.
Read / Write	2	1-16	Consignment temperature in ºC = Data 2 + 15
Read	3	102-132	Temperature measured ºC = (164 – data 2)/2
Read	4	0 - 7	Only Daikin: Slats movement. Data 2 = 0 – 3; slats position. Data 2 = 7; free movement of slats.

Write	5**	**	Only Daikin: Errores de la máquina.

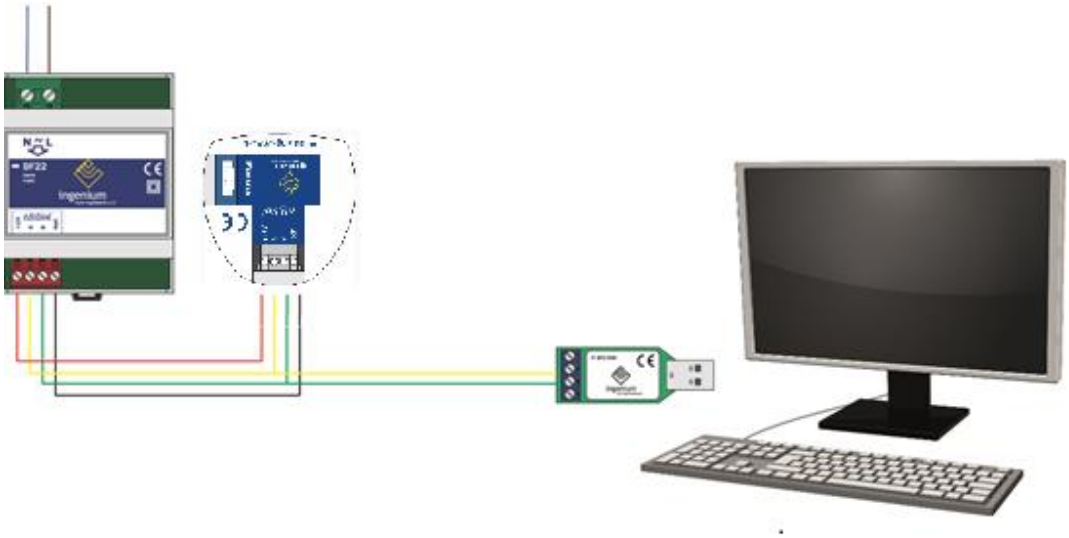
**Note: The machine errors are sent from the Gateway to itself with telegrams. This telegram cannot be sent to the Gateway.

5.2 EEPROM

Command	Data 1	Data 2	Description
ReadEeprom	0	0 - 255	Device BUSING® address.
WriteEeprom	20	0 / ≠ 0	Only Daikin: Data 2 = 0 gateway in slave mode Data 2 ≠ 0 gateway in master mode

6 DATA DOWNLOADING

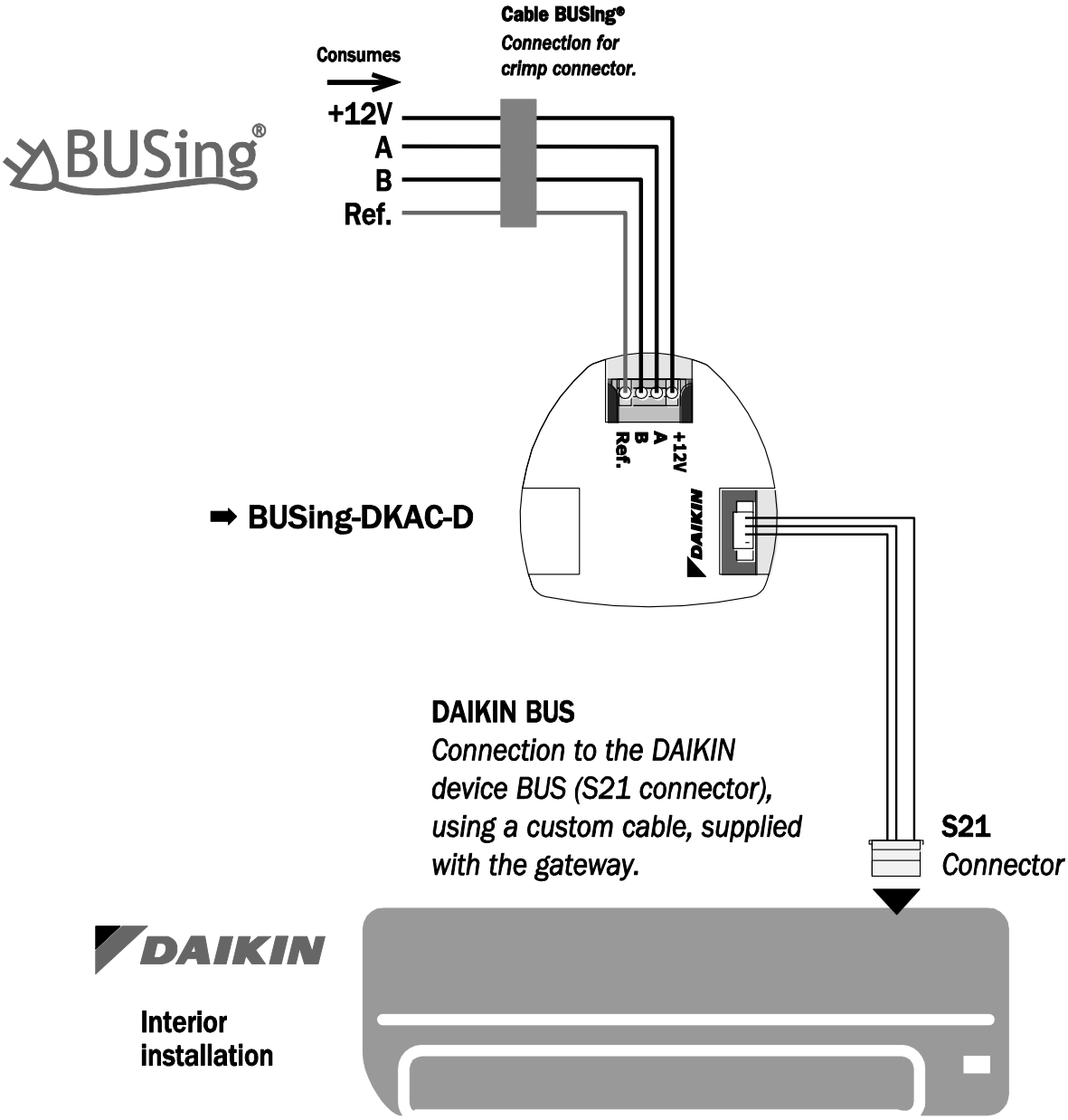
Previously we have to have the BUSing-DKAC-D gateway properly connected as follows:



NOTE:IT IS NOT NECESSARY TO PLACE THE POWER SUPPLY IF THERE IS SUFFICIENT VOLTAGE IN THE INSTALLATION TO POWER IT. IT COULD BE THAT THE POWER COMES FROM OTHER EQUIPMENT LIKE 6E6S, 4E4S... ETC.

The only information to be turned to the gateway is the BUSing address. If you click on the icon *to reprogramme this node, no* window will appear to confirm the programming, since the name assigned to machine 1 in the gateway properties is necessary for point-to-point control linking on a screen/web server.

7 WIRING


Cable BUSing®
Connection for
crimp connector.
Consumes
+12V
A
B
Ref.
BUSing®
Ref.
B
A
+12V
DAIKIN
➡ BUSing-DKAC-D
DAIKIN BUS
Connection to the DAIKIN
device BUS (S21 connector),
using a custom cable, supplied
with the gateway.
S21
Connector
DAIKIN
Interior
installation

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