

To	ABC electricity distribution 99 West St, Imaginary Town, ZZ99 9AA	DNO or IDNO abcd@wxyz.com	Form B
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Use this form to apply to connect new or additional heat pump equipment rated up to 75A per phase that does not meet the requirements of standards BS EN 61000-3-2 and BS EN 61000-3-3 but meets the requirement of BS EN 61000-3-11 or BS EN 61000-3-12¹.

For appliances that meet the requirements of standards BS EN 61000-3-2 and BS EN 61000-3-3 use Form A. For all other situations use Form C.

The application must be made in advance of connection.

Please note that the normal standard of service for approval of connection are as follows:

- 25 working days - Properties with potentially disruptive loads
- 35 working days - Properties requiring high voltage network works.

Please note any reinforcement costs may be recharged to the customer.

Electricity Customer at site	
Customer contact telephone	
Site address	
Post Code	
MPAN - Unique identifying number for electricity meter at property	

Existing Space & Water Heating System				Electric/Gas/Oil/LPG/Other			OIL	
If Electric then please complete the following:								
Existing space & water heating equipment	Direct acting heaters ²	Storage heaters ³	Hot water immersion heaters		Heat pump system			Other Inc. Flow Boilers
	kVA	kVA	Main	Boost	Compressor	Boost	Back-up	
			kVA	kVA	kVA	kVA	kVA	kVA

Existing space & water heating equipment to be retained	Direct acting heaters ²	Storage heaters ³	Hot water immersion heaters		Heat pump system			Other Inc. Flow Boilers
	kVA	kVA	Main	Boost	Compressor	Boost	Back-up	
			kVA	kVA	kVA	kVA	kVA	kVA

New space & water heating equipment	Direct acting heaters ²	Storage heaters ³	Hot water Immersion heaters		Heat pump system			Other Inc. Flow Boilers
	kVA	kVA	Main	Boost	Compressor	Boost	Back-up	
			kVA	kVA	2.01 kVA	kVA	6.2 kVA	kVA

Heat pump system details	Manufacturer	Stiebel Eltron
	Type reference	WPL 25 AS
Operating Voltage (V):	230Volts	
Phases (1 or 3)	1	
Heat pump system maximum electrical power requirement	14 kVA	
Note: heaters not fitted in the heat pump unit to boost hot water temp or as a back up should be recorded as new equipment above or as existing equipment to be retained below as appropriate.		

Required Maximum Capacity for Whole Customer Installation	kVA
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¹ The manufacturer must verify this.

² Direct acting heaters are permanently connected to the mains (e.g. fixed convector or fixed panel heaters).

³ Storage heaters retain heat inside the storage heater, are charged over night to store heat and release heat during the day. Storage heaters often use Economy 7 electricity tariff at night.

I confirm that the electrical installation noted above will be installed and commissioned as noted above and that the equipment meets the requirements of BS EN 61000-3-12 and BS EN 61000-3-11 for harmonic emissions and voltage change. The customer at the above address has been advised that commissioning of the installation may only take place when the Network Operator has completed any reinforcement works the supply network requires.

Name		Signed		Date	09/10/18
On behalf of Installer					
Accreditation / Qualification					
Installer address					
Post code					
Contact person			Telephone number		
E-mail address					

Heat Pump System Power Quality Data (essential)

Note: The manufacturer may need to be consulted to complete this technical data.

Heat pump system details	Manufacturer	Stiebel Eltron
	Type reference	WPL 25 AS

EC Declaration of Conformity	Attach the manufacturer's EC Declaration of Conformity as produced in association with the EMC Directive	Attached?
		Yes/No?

Power Quality. Harmonics. This information should be provided by the manufacturer of a heat pump system whose tests should be carried out as specified in BS EN 61000-3-12. Note that this is equivalent to IEC 61000-3-12.					
Manufacturer states Heat Pump System meets technical requirements of EN/IEC 61000-3-2?					No
Note: Where the heat pump system meets the technical requirements of BS EN/IEC 61000-3-2 then there is no need to complete the rest of this table.					
Manufacturer states Heat Pump System complying with EN/IEC 61000-3-12?					Yes
Manufacturer states Heat Pump System complies with EN/IEC 61000-3-12 provided that the short-circuit power S_{sc} is greater than or equal to xx. If yes then complete S_{sc} value below.					Yes/No
State minimum 3-phase supply short circuit level, S_{sc} , required to allow connection under EN 61000-3-12				kVA	
Rated Current, I_{equ}	37	A	Limit in EN 61000-3-12		
Reference Current, I_{ref}	17.94	A			
Operating Voltage (V):	230	V			
Phases	1	1 or 3			
Harmonic	Measured current (A)	Current as % of I_{ref}		1 phase (I_h/I_{ref})	3 phase balanced (I_h/I_{ref})
2	0.227	-84.2		8%	8%
3	0.282	-92.7		21.6%	Not stated
4	0.096	-86.7		4%	4%
5	0.224	-88.4		10.7%	10.7%
6	0.051	-89.4		2.67%	2.67%
7	0.125	-90.4		7.2%	7.2%
8	0.035	-90.4		2%	2%
9	0.103	-84.9		3.8%	8%
10	0.024	-91.8		1.6%	1.6%
11	0.075	-86.6		3.1%	3.1%
12	0.019	-91.9		1.33%	1.33%
13	0.017	-95.1		2%	2%
THC	0.425	2.37	A	23% of I_{ref}	13% of I_{ref}
PWHC	(0)	0		23% of I_{ref}	22% of I_{ref}

Power Quality. Voltage fluctuations and Flicker. The tests/calculations should be carried out by the heat pump manufacturer or their designate, with typical worst case cycling on and off.						
The results should be normalised to the standard source impedance Zref, if this results in figures above the limits set in EN 61000-3-3 then a suitable Maximum source Impedance Zmax should be identified as required by EN 61000-3-11.						
Manufacturer states Heat Pump System meets technical requirements of EN/IEC 61000-3-3?						No
Note: Where the heat pump system meets the technical requirements of BS EN/IEC 61000-3-3 then there is no need to complete the rest of this table.						
Manufacturer states Heat Pump System complying with EN/IEC 61000-3-11 provided that the source impedance is no more than Z _{max} ?						Yes
Manufacturer states Heat Pump System complying with BS EN/IEC 61000-3-11 provided that service current capacity ≥100A per phase?						Yes
	d _{max}	d _c	d(t)	T _{max} (8 new)	P _{st}	P _{it} 2 hours
Measured Values at test impedance						
Normalised to standard impedance		-5.47	0	n.a.	1.101	1.101
Normalised to required maximum impedance						
Limits set under BS EN 61000-3-11 & 61000-3-3	6%	3.3%	3.3%	500ms	1.0	0.65
Z test	R	0.4	ohms	X	0.25	ohms
Z ref	R	0.24 * 0.4 ^ 0.48 #	ohms	X	0.15 * 0.25 ^ 0.3 #	ohms
Z max	R	0.181	ohms	X	j0.113	ohms

8 T max applied to comply with new revision

* Applies to three phase heat pump systems

^ Applies to single phase heat pump systems

Applies to interphase connected heat pump systems using two phases on a three phase system

Note: Z_{max} must take account of multiple devices using the scaling down detailed in EN 61000-3-11 Section 6.2.2.

DNO Comments - to be completed by DNO representative following application		Yes/No
As a DNO representative, I give, in principle, permission for the connection of these heat pump units. If no, see comments below.		
Comments (Use separate sheet if necessary)		
Signed:	Contact:	Date: