

For a **MasterTherm Inverter** heat pump installation, in line with latest regulations a dedicated earth leakage circuit breaker (RCD) needs to be installed. Recommended version is a **Type B 30 mA RCD**.

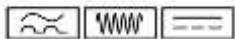
Alternatively an earth connection using a conductor with cross-section 10mm² could be installed but our recommendation is the installation of an RCD. Surge protection devices should be installed according to the latest regulations. The installation should always be carried out to the latest British Standards (BS7671) by a suitably competent and qualified engineer. An installation in a commercial setting may not require an RCD, this should be checked by the installer.

Recommended overload protection (MCB) is as follows:

R410a Models:

BoxAir Inverter Models	No Auxiliary Heater	Auxiliary Heater (kW)
3 x 400v		
BA22I	-	16A type B – 2 x 4.5kW
BA26I	-	20A type B – 2 x 4.5kW
BA30I	-	25A type B – 2 x 6kW
BA37I	-	25A type B – 2 x 7.5kW
BA45I	-	32A type B – 2 x 7.5kW
BA60I	32A type B	40A type B – 2 x 7.5kW
1 x 230v		
BA22I1	16A type B	40A type B - 2 x 4.5kW
BA26I1	20A type B	50A type B - 2 x 4.5kW
BA30I1	25A type B	50A type B - 2 x 4.5kW
BA37I1	32A type B	63A type B - 2 x 4.5kW
BA45I1	32A type B	63A type B - 2 x 4.5kW

AquaMaster Inverter Models	No Auxiliary Heater	Auxiliary Heater (kW)
3 x 400v		
AQ22I	16A type B	20A type B – 1 x 6kW
AQ26I	16A type B	20A type B – 1 x 6kW
AQ30I	16A type B	20A type B – 1 x 6kW
AQ37I	16A type B	20A type B – 1 x 7.5kW
AQ45I	16A type B	25A type B – 1 x 7.5kW
AQ60I	32A type B	40A type B – 1 x 7.5kW
AQ90I	40A type B	50A type B – 1 x 7.5kW
1 x 230v		
AQ17I1	16A type B	-
AQ22I1	16A type B	50A type B – 1 x 6kW
AQ26I1	20A type B	50A type B – 1 x 6kW
AQ30I1	25A type B	63A type B – 1 x 6kW
AQ37I1	32A type B	63A type B – 1 x 6kW
AQ45I1	32A Type B	63A type B – 1 x 6kW



R290 Models (ROUND CABLES ONLY into CONTROL BOARD:

BoxAir Inverter Models	No Auxiliary Heater	Auxiliary Heater (kW)
3 x 400v		
BA22IP	-	16A type B – 1 x 5kW
BA26IP	-	20A type B – 1 x 5kW
BA37IP	-	25A type B – 2 x 7.5kW
BA45IP	-	32A type B – 2 x 7.5kW
BA60IP	-	40A type B – 2 x 7.5kW
BA90IP	40A type B	63A type B – 2 x 15kW
1 x 230v		
BA22IP1	16A type B	32A type B - 1 x 5kW
BA26IP1	20A type B	40A type B – 1 x 5kW
BA30IP1	25A type B	50A type B - 1 x 5kW
BA37IP1	32A type B	50A type B - 1 x 5kW

AquaMaster Inverter Models	No Auxiliary Heater	Auxiliary Heater (kW)
3 x 400v		NOT AVAILABLE
AQ30IP	16A type B	
AQ37IP	20A type B	
AQ45IP	25A type B	
AQ90IP	32A type B & 25A type B	2 x supplies
1 x 230v		
AQ17IP1 & ICP	16A type B	
AQ22IP1 & ICP	16A type B	
AQ30IP1	20A type B	
AQ37IP1	32A type B	

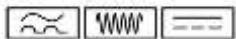
Units with R290 requires special attention. Power supply cable must fit exactly cable bushing with IP68 enclosure installed on the heat pump. After installation, cable fitting must be equal to **IP68**.

WARNING: RISK OF INJURY, DEATH or PROPERTY DAMAGE in case of wrong installation. ROUND cables ONLY are ALLOWED.

NOTE 1: Other Auxiliary Heater capacities are available, please ensure that the electrical supplies and equipment are suitably sized for capacities/demands not noted.

NOTE 2: For the purpose of sizing the Maximum Demand (MD) for a property, in our experience, 50% diversity is sufficient but should always be checked by a qualified engineer against an individual properties load profile.

Any queries please don't hesitate to contact your installation company or MasterTherm UK.



Surge Protection Devices

Domestic (home) properties:

- SPDs are required if:
 - The consequences of a surge would affect **human life**, cause **significant financial loss**, or disrupt **public services**.
- For typical homes, an SPD is **recommended** and **often installed as standard** in modern consumer units, but not legally enforced unless the above risks apply.

2. Surge Protection on Internet/Data Lines

Not strictly required by UK wiring regs, but recommended:

- **BS 7671** focuses on **electrical installations**, not telecom/data lines.
- However, data lines (e.g., Ethernet, coaxial, telephone) **can conduct surges**, especially:
 - If external (e.g. aerials, outdoor cabling, satellite dishes, incoming broadband lines)
 - If there is **equipment sensitive to surges** (e.g. servers, routers, CCTV)

When to consider SPD on internet/data lines:

- In **commercial setups** with expensive IT equipment
- In **rural areas** or **properties with external cable runs**
- If the building is in a **high-lightning-risk area**

In the case of MasterTherm Heat Pumps we require the correct SPDs to be installed in all cases as any surge may cause significant financial loss. If no SPDs are installed then any warranty for electrical issues may be void.

This document supersedes all previous versions.