



AlphaLimpet

PROGRAMMABLE ELECTRICAL HEATER

INTELLIGENT, PROGRAMMABLE HEATER THAT PROVIDES ACCURATE TEMPERATURE CONTROL FOR INDUSTRIAL EQUIPMENT, SUCH AS PUMPS, VALVES AND METERS

The patented **Limpet** heating system consists of a compact, intelligent, microprocessor-controlled and waterproof heating module that can be fitted on a wide range of equipment to provide heat for industrial processes or frost protection.

The **AlphaLimpet™** is attached to the equipment using a profiled aluminium adaptor block that transmits the heat into the workpiece body, as well as acting as a heat storage device. The system is designed to help ensure that in the event that a liquid that requires heating stops flowing through the equipment, it does not become too viscous and block the flow. The **AlphaLimpet** can be supplied in either 110Vac or 230Vac versions and can deliver up to 120W.

Applications

- Process industries
- Food & beverage
- Pharmaceutical
- Chemical
- Cosmetics
- Frost protection

Advantages

- No control panel required
- Accurate temperature control
- Compact design
- IP67 rating
- Low power consumption

ALPHALIMPET FEATURES

The main features of the patented **AlphaLimpet** heating system are as follows:

Operation:

- Adjustable temperature range up to 80°C.
- 110 / 230 Volts ac; up to 120W power output.
- IP67 flexible conduit, Phoenix connectors or IP68 glands for power in.
- An insulated jacket is essential for maximum performance and even temperature distribution.

Programmable:

- A programmable control board is mounted inside the device.
- Removable IP-rated top plate giving user access to a simple temperature adjustment setting using two rotary switches. This would normally be done during installation (factory pre-set is 40°C unless otherwise requested).
- Fully user-programmable, multi-mode operation using a 6-way DIP switch.
- Temperature ramp rate control for sensitive applications.
- Internal programming LED indicator. This confirms correct programming and then indicates that the unit is operating.
- External power and supervision status LED.

Robust Construction:

- The product is sealed to ensure that all the connections and components are waterproof.
- Robust IP67-rated aluminium case.

Heat Transfer through Profiled Adaptor Block:

- An aluminium adaptor block pre-profiled to fit onto the equipment (user to specify equipment diameter or profile).
- T-nuts are used to secure the AlphaLimpet onto the adaptor block and stainless steel straps or bolts are used to secure the adaptor block on to the equipment body.

Available in several different configurations:

- The AlphaLimpet is available in several different configurations. There are currently 4: Series 1, 3, 5 & 7.
- Please see next pages for further details.
- There are three different connection options: conduit, Phoenix or gland. The standard lengths are 75cm, 50cm and 100cm respectively. Conduit connections are provided with a 1m length of mains cable. For non-standard lengths, please use the options in the Ordering Information.

TECHNICAL INFORMATION

- Dimensions: 176mm long (excluding connectors) x 63mm wide x 52mm high.
- Voltage: 110Vac or 230Vac.
- Power rating: up to 120W.
- Temperature range: 0°C to 80°C.
- Ambient: -30°C to +50°C.

ORDERING INFORMATION

AlphaLimpet

Model	
AL	
Series	
1	
3	
5	
7	
Code Voltage	
11	110 Vac
23	230 Vac
Connections	
Code Type	
C	Conduit: standard 75cm
P	Phoenix: standard 50cm
G	Gland: standard 100cm
Supervisory Port	
Code Type	
0	None
S	Yes
External sensor	
Code Type	
-	None
/S	Control Loop 2
/T	Thermowell
/A	Ambient
AL	5 11 C 0 /A Example

Cable Connections (non-standard)

Code Type	
C	Conduit: standard 75cm *
P	Phoenix: standard 50cm
G	Gland: standard 1m
C or G optional lengths (m)	
1.0	
1.5	
2.0	
3.0	
4.0	
P Extra-long (cm)	
150	
C	100 Example

* For conduit the mains cable will be 20cm longer

Adaptor Blocks

Model	
AB	
Pipe Diameter	
00	Flat
50	mm
76	
80	
100	
120	
Other	Custom - Specify diameter in mm
Length Type	
250	Standard in mm
Other	Custom - Specify diameter in mm
AB	80 250 Example

ALPHALIMPET CONFIGURATIONS

The **AlphaLimpet** is currently available in four different configurations as follows:

Series 1:

- A stand-alone, single-channel unit with power in only and an option for a supervisory port.
- Used in the majority of heating applications where only one source of heat is required.
- Figure 1 shows a Series 1 AlphaLimpet attached to an aluminium Adaptor Block.

Series 3:

- This has an additional power output which can be useful for slaving extra heat to other areas.
- The power out is not constant but mimics the power delivered to the AlphaLimpet's own heater. This type of secondary heater is called a Slave Unit and a BetaLimpet or MicroLimpet can be used in this way.
- A typical arrangement with a Series 3 AlphaLimpet driving a BetaLimpet slave is shown in Figure 2.

Series 5:

- The Series 5 is like the Series 1 (with its internal heater and sensor) but also has the additional capability to connect an extra external micro-sensor. This enables the Limpet to heat to a programmable set point when the external temperature drops below a different programmable set temperature.
- This setup can be very useful for several applications, such as a frost stat (mounted in air) or a remote temperature monitor (e.g., for monitoring a cooler part of the system, such as liquid in a heated pipe).
- A typical arrangement with a Series 5 AlphaLimpet is shown in Figure 3.

Series 7:

- Please see next page.

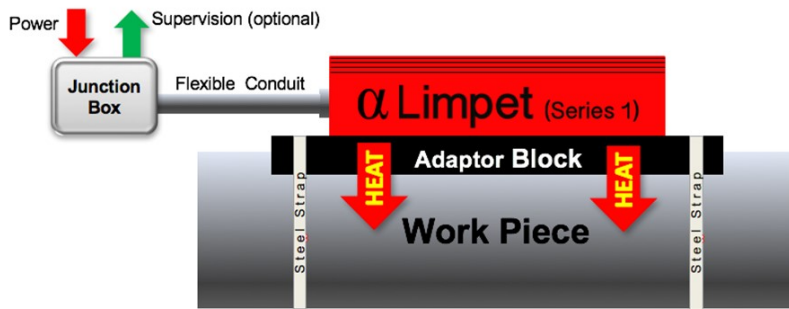


Figure 1 — Typical Series 1 AlphaLimpet application

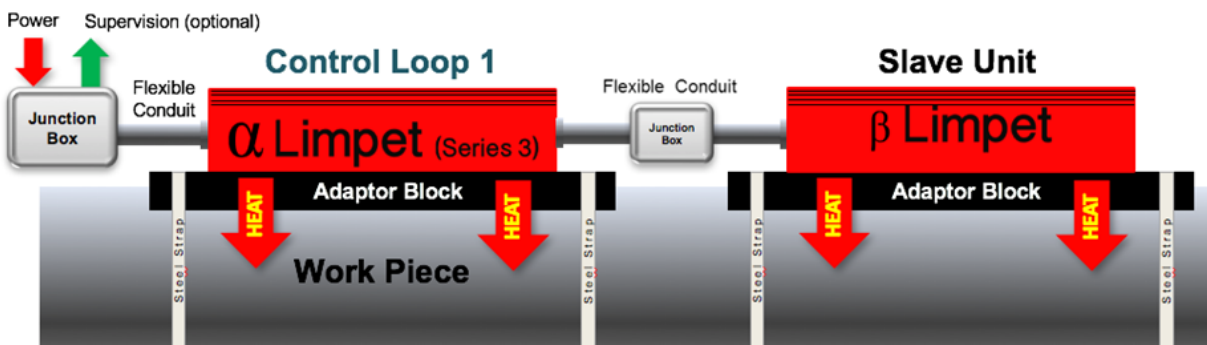


Figure 2 — Typical Series 3 AlphaLimpet application with "slave" BetaLimpet

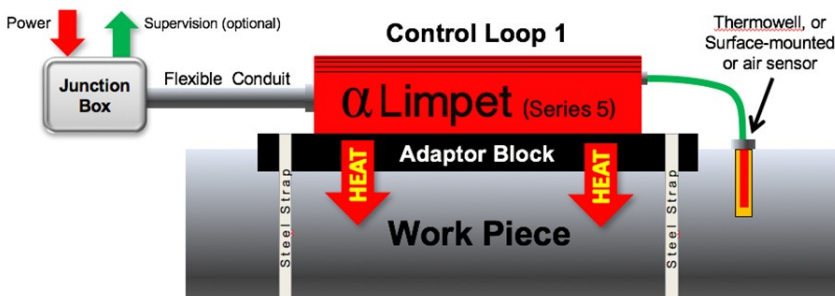


Figure 3—Typical Series 5 AlphaLimpet application with a second control loop connected to an external sensor

ALPHALIMPET CONFIGURATIONS (Continued)

Series 7:

- The Series 7 has full twin-heating ability (internal heater with internal sensor and external heater with external sensor).
- This application is for special circumstances and provides two independent control loops, which can both be set to the same temperature, or if desired, to two different temperature set-points.
- A typical arrangement with a Series 7 AlphaLimpet and BetaLimpet is shown in Figure 4.

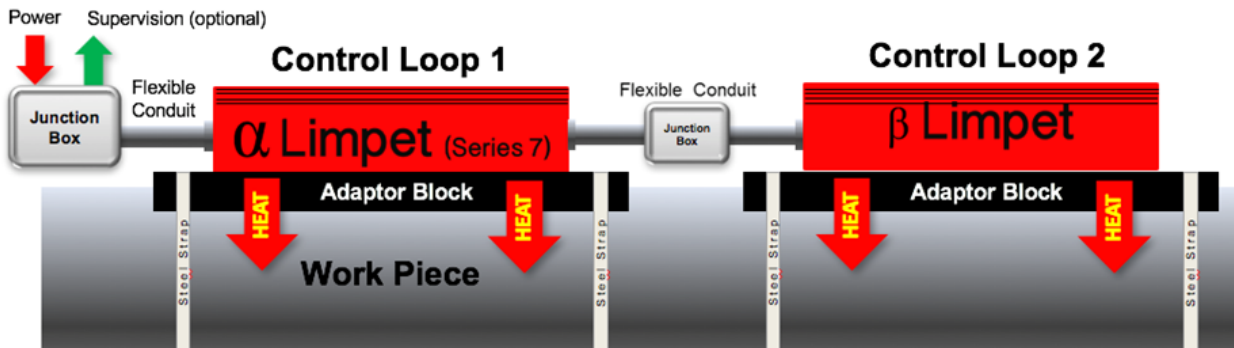


Figure 4 — Typical Series AlphaLimpet application with second control loop in a BetaLimpet

- Alternatively, if the situation arises, the second control loop sensor can be used as an external sensor instead of using the sensor built in to the BetaLimpet, as shown in Figure 5 below.

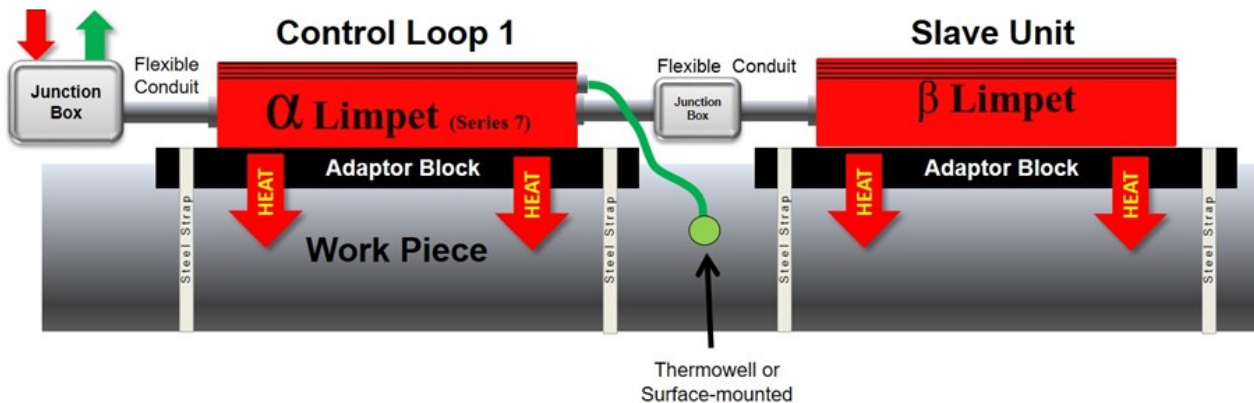


Figure 5 — Series 7 AlphaLimpet driving a slave BetaLimpet and with a second control loop connected to an external sensor

MOUNTING DETAILS

Tee nuts (supplied with the product) are used to secure the AlphaLimpet to an adaptor block or workpiece.

The positions of the M5 screw holes are shown here.

