

Information

These controllers are designed primarily for use within the plastic injection moulding industry. They should not be used for any other purpose without first consulting a senior engineer from DMS.

The controller should only be used in a dry environment.

The controller should **NOT** be used in an explosive atmosphere.

When in use, this device does not emit noise in excess of 10dB(A).

Refer to the serial plate attached to the controller for confirmation of the supply requirements, etc.

Warning

Always replace ruptured fuses with HRC (High Rupture Current) load fuses. Failure to do so will cause damage to the controller on subsequent fuse failures.

This guide is intended for use with all the HRS-LC range of DMS Controllers. The actual model designation depends on the number of zones wired. E.g. an HRS-LC with 4 zones wired would have a model designation of HRS-4LC.

This guide may be changed and/or updated without notification but will remain applicable to the supplied HRS-LC controller.

Specification

The following are general specifications for the HRS-HL Range, variations may occur with specified options.

Supply voltage:	208-240v single phase 50/60 Hz
Supply Amps:	13 Amps total (7A on HRS-1HL)
Control Method	Closed or Open loop working.
Triac Rating:	15 amps max at 240 v AC.
Zone rating:	Maximum of 6 amps per zone (total not to exceed 13 amps).

Specification (contd)

Overload Protection	High Speed semiconductor fuses.
T/C input:	Iron/Constantine (Fe/Con) type J
Control Range:	0 - 400° Centigrade (Celsius)
Display:	Multiple LEDs
Case:	Metal Case - size dependant on model.

General Description

The HRS-LC can have 1,2 or 4 control zones.

The front of the HRS-LC has a control panel which consists of 7 deviation LEDs, a control knob, a Mode switch and 'Load' and 'Fuse' LED indicators for each zone.

Deviation

LEDs: These indicate the deviation of actual temperature from the set point. They are also used to inform the user about errors. (see LED descriptions)

Control knob This is used to set the required temperature in Auto mode or percentage power in Manual mode. (Note the 400 degree mark equates to 100% power)

Load LED: This LED is lit when power is supplied to the zone.

Fuse LED: This LED is lit if the controller detects that a power output fuse has ruptured.

Mode Switch: This is used to select the working mode of the zone. To the left it selects Auto (Closed-loop) mode. To the right it selects Manual (Open-loop) mode.

On the rear of the panel are the single-phase supply, the load fuses and the 2 metre loom.

Auto - (Closed Loop) Control

Select 'Auto' on the Mode Selector switch (switch to the left position).

Use the control knob to set the required temperature.

Manual - (Open Loop) Control

Select 'Man' on the Mode selection switch (switch to the right position)

Use the control knob to set the required power.

LED Description

-15 flashing	Actual temp is more than 15° C below the set point
-15 steady	Actual temp is less than 15° below set point
-10 steady	Actual temp is less than 10° below set point
-5 steady	Actual temp is less than 5° below set point
0 steady	Actual temp is at set point
5 steady	Actual temp is less than 5° above set point
10 steady	Actual temp is less than 10° above set point
15 steady	Actual temp is less than 15° above set point
15 flashing	Actual temp is more than 15° above set point

Error Messages

Errors are exhibited by flashing pairs of deviation LEDs.

+ 5 and -5	Open Thermocouple
+ 10 and -10	No temperature rise or temperature fall when power supplied. Indicates reversed thermocouple, pinched or faulty wiring or failed thermocouple.
+ 15 and -15	Over temperature. (Max= 400°C)

Wiring Details

As well as connections listed below, an earth connection is included at the tool connector.

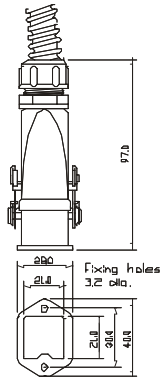
All connections are rated at 10 amps, at 240 v AC.

Normal operating temperature range is -40°C to +125 °C

HRS-1LC

Connections

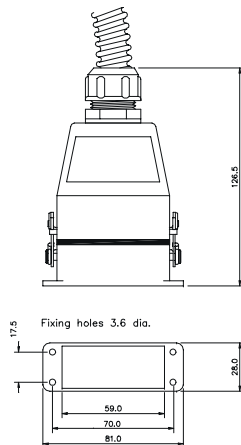
Pin	Zone	Circuit
1	1	T/C+
2	1	T/C-
3	1	Supply
4	1	Return



HRS-2LC

Connections

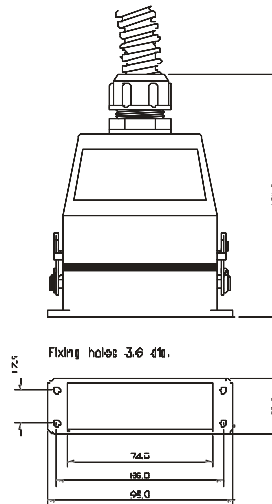
Pin	Zone	Circuit
1	1	T/C+
2	1	T/C-
3	1	Supply
4	1	Return
5		none
6	2	T/C+
7	2	T/C-
8	2	Supply
9	2	Return
10		none



HRS-4LC

Connections

Pin	Zone	Circuit
1	1	T/C+
2	1	T/C-
3	1	Supply
4	1	Return
5	2	T/C+
6	2	T/C-
7	2	Supply
8	2	Return
9	3	T/C+
10	3	T/C-
11	3	Supply
12	3	Return
13	4	T/C+
14	4	T/C-
15	4	Supply
16	4	Return



Equipment failure through mis-wiring

Before you energise the system, pay special attention to how the supply to your controller is wired and how it is connected to the mold.

Errors occur through lack of attention to detail such as:

- incorrect wiring of mains supply phases into the controller
- crossing heater supply feeds with thermocouple detection (although this error can be eliminated by the adoption of PMS Standard connections)

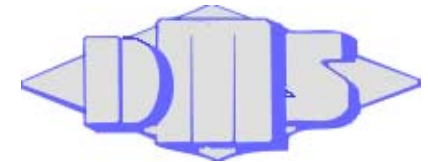
In such cases wiring errors have caused equipment failure.

PMS cannot be responsible for damage caused to the controller by customer wiring and/or connection errors.



HRS-LC User Guide

Revision 1.1 - Issued 11th February 2002



Diemould Service Company Ltd.,
Unit 11, Blenheim Road,
Cressex Industrial Estate,
High Wycombe, Bucks, HP12 3RS, England
Tel: +44 (0)1494 523811 Fax: +44 (0)1494 452898