

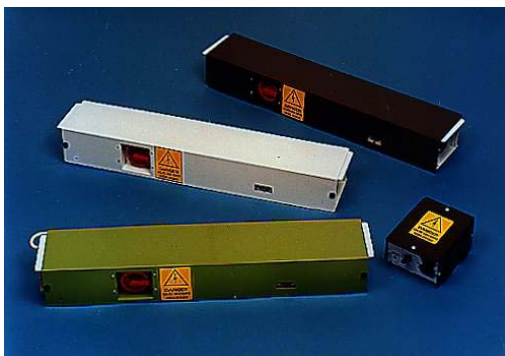
**RADFORD**  
**RETAIL SYSTEMS**  
**CONTROL SYSTEMS DIVISION**

Product Guide



## Cabinet Controllers

### RAC Range



#### MK11 Cabinet Chassis:

Electric Defrost  
Hot Gas Defrost  
Satisfaction Relay defrost

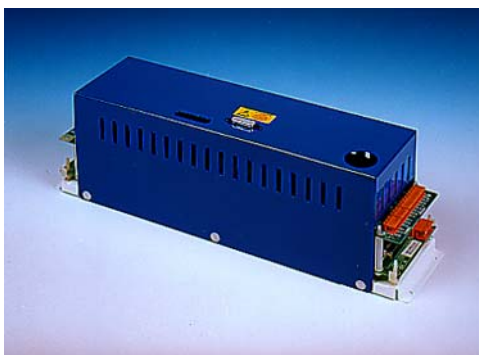
#### Note:

These controllers require Block Probe ASY12841  
These controllers require HHU ASY10243B (EMACS)



#### RAC Modules

RAC Singer Controller (White lid) – ASY12012  
RAC Three Phase Single Comp (White lid) – ASY12644  
RAC Three Phase Twin Comp (White lid) – ASY12644  
RAC Danfoss Controller (Black lid) – ASY14070



#### RAC Modules

RAC Stepper Controller (Blue lid) – ASY12657

#### **Description**

RAC Singer Controller (White lid)  
RAC Three Phase Single Comp (White lid)  
RAC Three Phase Twin Comp (White lid)  
RAC Danfoss Controller (Black lid)  
RAC Stepper Controller (Blue lid)  
EMACS Hand Held Unit

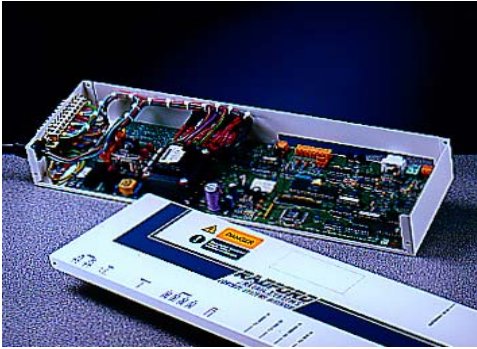
#### **Part Number**

ASY12012  
ASY12644  
ASY12644  
ASY14070  
ASY12657  
ASY10243B

#### **Software Version**

CC10:22 – 10:28  
TP3:01 – 3:03  
TP2:01 – 2:03  
VCCP1:02  
VCCS12:08 – 12:16

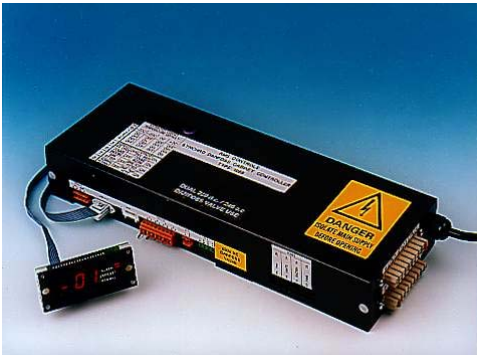
## Syncro/GPCC95 Range



### Syncro/GPCC95

The Syncro controller has three boards.  
The GPCC95 controller has one board.

Description	Part Number
Syncro Controller	ASY14047
GPCC95	ASY14741



### Software Versions

VCC3:04 – 3:06  
VCC6:02 – 6:08  
VCC9:04 Full Glass Door

Note:

These controllers require Thermistor Probe THERVAR5K8M  
These controllers require HHU ASY01087 (Syncro)

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## CCM98 Controller Range



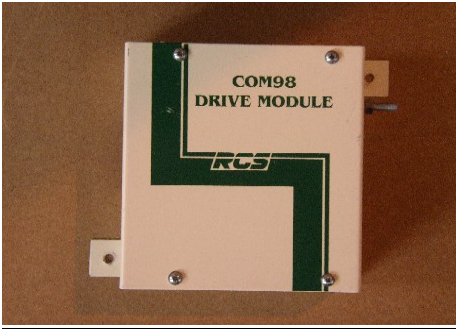


### **CCM98 Controller**

<b>Description</b>	<b>Part Number</b>
CCM98	ASY01673

Note:

These controllers require Thermistor Probe THERVAR5K8M  
These controllers require HHU ASY01087 (Syncro)



### **COM98 Drive Module**

Part Number: ASY01675



### **CGM98 Drive Module**

Part Number: ASY01676



### **CDM98 Drive Module**

Part Number: ASY01671

## Minor Controller



### Minor Controller

#### Software Versions

HSKY19 - 25

Note:

These controllers require Thermistor Probe THERVAR5K8M  
These controllers require HHU ASY06038A (Phoenix)

#### **Description**

Minor Off Cycle  
Minor Assisted  
Minor Assisted for external contactor

#### **Part Number**

ASY06000  
ASY06035A  
ASY06035B

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## Major Controller



### Major Controller

#### Software Versions

NMAJ0012 -0025

Note:

These controllers require Thermistor Probe THERVAR5K8M  
These controllers require HHU ASY06038A (Phoenix)

#### **Description**

Major Assisted  
Major Assisted for external contactor  
Major Off Cycle

#### **Part Number**

ASY06272A  
ASY06272B  
ASY06276A

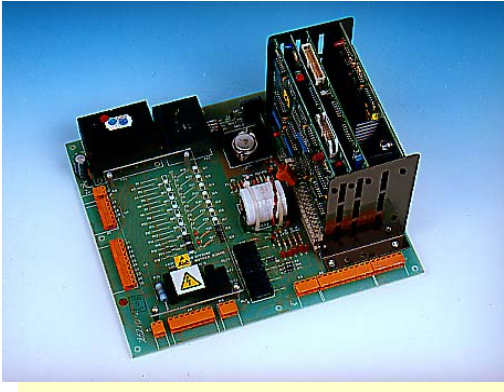
**NOTE: THE PART NUMBER AND DESCRIPTION CAN BE FOUND ON ALL UNITS**

### Damage

Please be advised that Radford Control Systems accepts no responsibility for damage to units damaged on site or in transit from site. In these cases the units will not be repaired until an order has been raised by the contractor for the repairs to the unit.

## Cold Store Controllers

### RAC Range



#### MK2 Cold Store

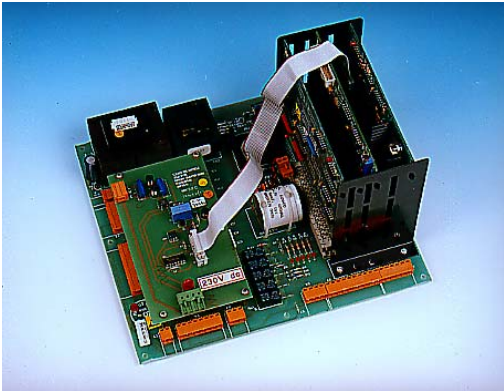
##### Software Version

CS104 – 109

##### Note:

These controllers require Block Probe ASY12841  
These controllers require HHU ASY10243B  
(EMACS)

Dimensions 24x27x13.5cm



#### MK2 Danfoss Cold Store

##### Software Version

CS500

##### Note:

These controllers require Block Probe ASY12841  
These controllers require HHU ASY10243B  
(EMACS)

Dimensions 24x27x13.5cm



### RAC Cold Store Alarm Unit

#### Software Version

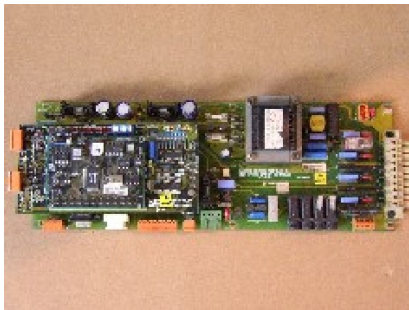
AU0.13

##### Note:

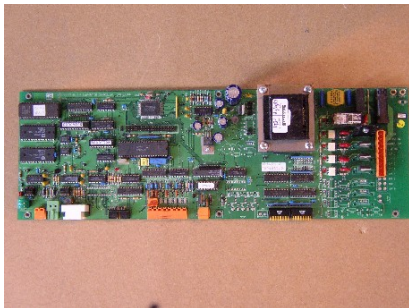
These controllers require Block Probe ASY12841  
These controllers require HHU ASY10243B (EMACS)

<b>Description</b>	<b>Part Number</b>
Mk2 Electronics Complete	ASY10405
MK2 Motherboard (No boards fitted)	ASY10411
MK2 CPU Board	ASY10551
MK2 TT Board	ASY10516
MK2 Valve Drive Board	ASY10511
MK2 O/P Board	ASY10839
MK2 Danfoss Cold Store Complete	ASY13065
RAC Cold Store Alarm Unit	ASY10780

## **Syncro/GPC95 Range**



Dimensions 31.5x13.5x5cm



Dimensions 13.5x13.5x5cm

### **Syncro/GPCC95**

The Syncro controller has three boards.  
The GPCC95 controller has one board.

<b>Description</b>	<b>Part Number</b>
Syncro Controller	ASY14047
GPCC95	ASY14741

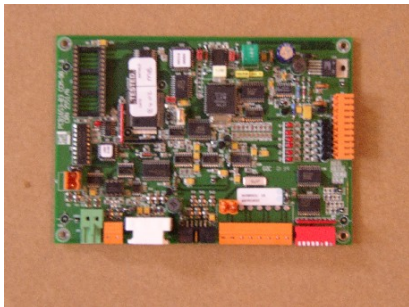
### **Software Versions**

VCS10:01 – 10:07

Note:

These controllers require Thermistor Probe THERVAR5K8M  
These controllers require HHU ASY01087 (Syncro)

## **CSM98 Cold Store Controller**

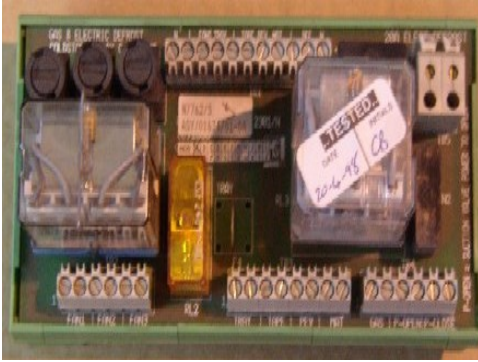


### **CSM98 Controller**

<b>Description</b>	<b>Part Number</b>
CSM98	ASY01653

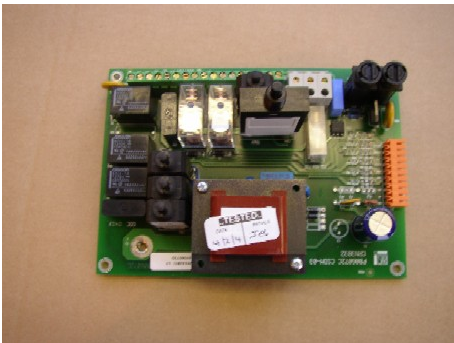
Note:

These controllers require Thermistor Probe THERVAR5K8M  
These controllers require HHU ASY01087 (Syncro)



**Cold Store IWB Board**

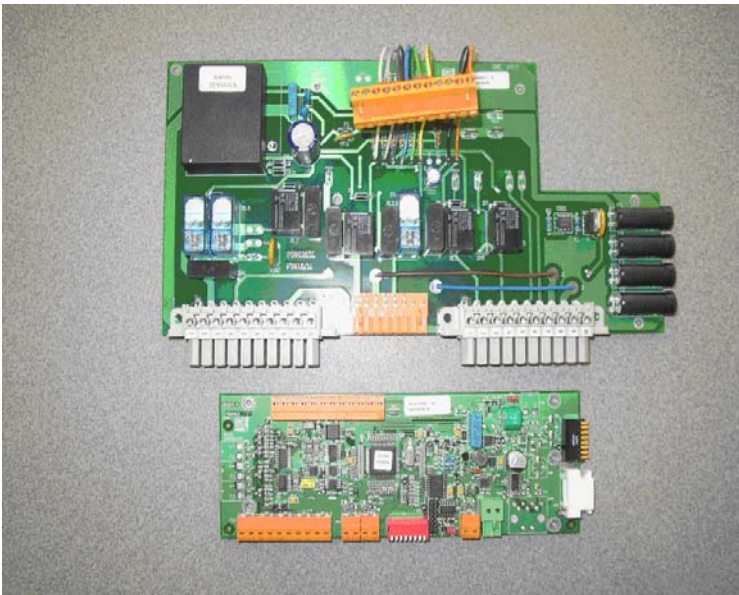
Part Number: ASY01634



**Cold Store Drive Board**

Part Number: ASY06072

**Major Cold Store Controller**



**Major Cold Store Controller**

**Software Versions**

MAJ0025 – 0037

**Description**

Major Controller  
Major Drive Board

**Part Number**

ASY06082  
ASY06267A

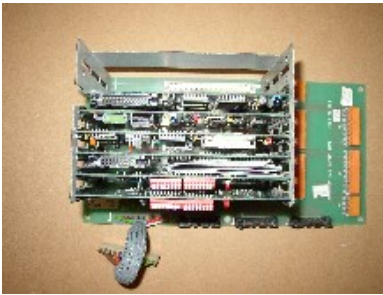
**Note:**

These controllers require Thermistor Probe  
THERVAR5K8M

These controllers require HHU  
ASY06038A (Phoenix)

## Pak Controllers

### XL Range



#### MK1 Pak Controller

Software Version VPak04:03/VPak06:00

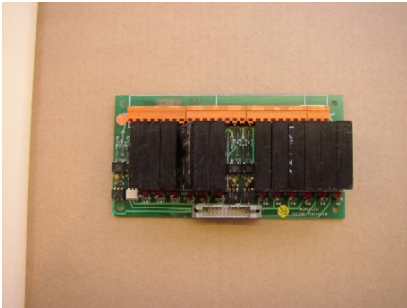
Note:

These Paks require Suction Transducer TP100P01

These Paks require Discharge Transducer TP300P01

These Paks require Block Probe ASY12841

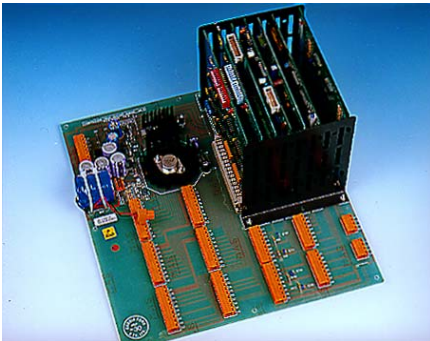
These Paks require HHU ASY10243B (EMACS)



#### MK1 AC O/P Board

This board has 8 relays

Dimensions 8.5x16cm



#### MK2 Pak Controller

Software Version VPak04:03/VPak06:00

Software Version VPak05:05 – 05:11 (Dampers Control)

Note:

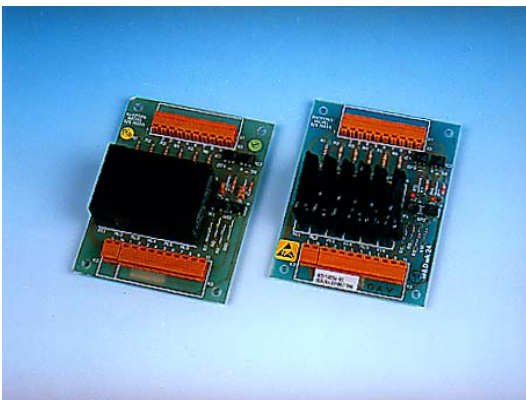
These Paks require Suction Transducer TP100P01

These Paks require Discharge Transducer TP300P01

These Paks require Block Probe ASY12841

These Paks require HHU ASY10243B (EMACS)

Dimensions 30x28x13.5cm



#### MK2 AC I/O Board

This board has 6 relay outputs and 2 inputs

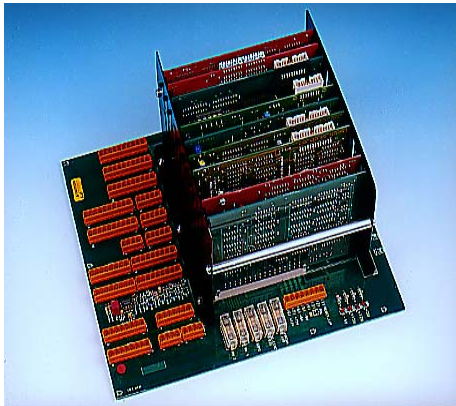
Dimensions 9x12cm

<b>Description</b>	<b>Part Number</b>
MK1 Electronics Complete	ASY10456
MK1 Motherboard Only	ASY10446
MK1 AC O/P Board	ASY10458
MK2 Electronics Complete	ASY10612
MK2 Motherboard Only	ASY10558
XL CPU Board	ASY10552
XL Front Panel Board	ASY10443
XL PT Board	ASY10440
XL TT Board	ASY10516
XL Damper Drive Board	ASY12134
XL AC I/O Board	ASY10556
XL Display Board	ASY10449

Note: MK1 Paks use the same boards as the MK2 Paks with the exception of the AC I/O Boards.

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### Screw Pak Range



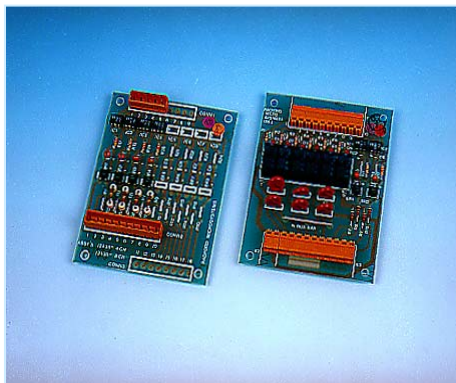
Dimensions 29.5x25x13.5cm

### Screw & Compound Pak

Software Version: Screw Pak SP0031 – 0033  
Compound Pak V1:04

#### Note:

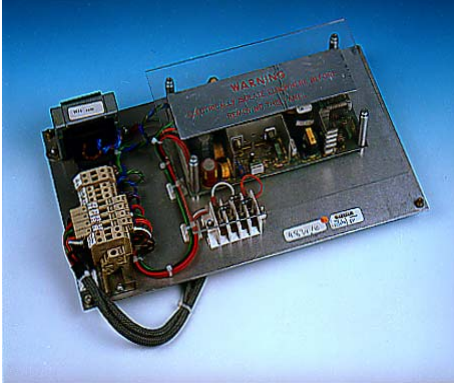
These Paks require Suction Transducer TP100P01  
These Paks require Discharge Transducer TP300P01  
These Paks require Block Probe ASY12841  
These Paks require HHU ASY10243B (EMACS)



Dimensions 9x12

### Screw & Compound AC I/O & I/P Boards

Left: AC I/P Board has 4 Inputs  
Right: AC I/O Board has 6 Outputs and 2 Inputs



## Screw & Compound PSU

### **Description**

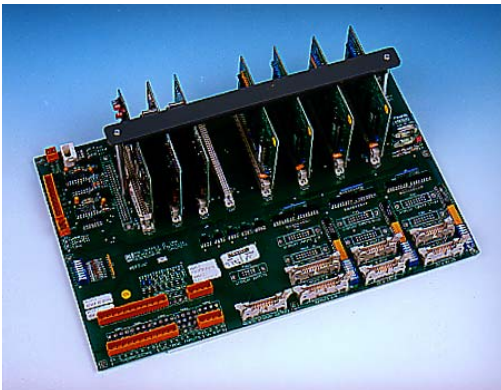
Screw Pak Complete  
 Screw Pak Motherboard  
 Screw Pak I/O Board  
 Screw Pak O/P Drive Board  
 Screw Pak F/P Drive Board  
 Screw Pak CPU Board  
 Compound Pak Board  
 Screw Pak ADC/PT Board  
 Screw Pak TT Board  
 Screw Pak Valve Drive Board  
 Screw Pak 3 Channel Board  
 Screw Pak AC I/O Board  
 Screw Pak I/P Board  
 Screw Pak PSU

### **Part Number**

ASY12507  
 ASY12480  
 ASY12500  
 ASY12490  
 ASY10442  
 ASY12481  
 ASY12481B  
 ASY10439  
 ASY10516  
 ASY12501  
 ASY12482  
 ASY10865  
 ASY12438  
 ASY12512

Note: Compound Paks use the same boards as the Screw Pak with the exception of the CPU which has different software.

## 94 Series Range



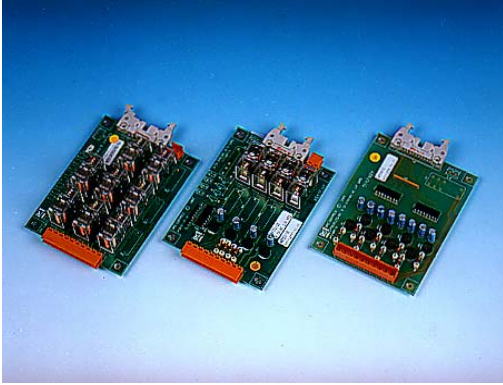
Dimensions 35x23x10cm

### 94 Series Pak & Condenser

Software Version: VPak00:07 – 01:00  
 VFan00:05  
 VWC01:00

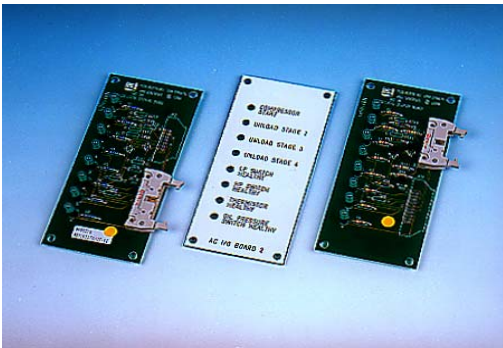
#### Note:

These Paks require Suction Transducer TP100P01  
 These Paks require Discharge Transducer TP300P01  
 These Paks require Thermistor Probe THERVAR5K8M  
 These Paks require HHU ASY01087 (Syncro)



### 94 Series Pak & Condenser

Left: 8 Channel Output Board  
 Middle: 4 Channel Output Board  
 Right: 8 Channel Input Board



### 94 Series Pak & Condenser

Left: Compressor LED Display Board  
 Middle: Compressor Mask  
 Right: Electronics LED Display Board



### 94 Series Pak & Condenser PSU

Note: 94 Series can accommodate a 97 Series PSU  
 Part Number: PSU0166001

#### **Description**

94 Series Complete  
 94 Series Motherboard  
 94 Series Pak CPU Board  
 94 Series Condenser Board  
 94 Series Water Chiller Board  
 94 Series Analogue Input Board  
 94 Series Analogue Output Board  
 94 Series Digital I/O Board  
 94 Series Thermistor Board  
 94 Series 8 Channel O/P Board  
 94 Series 8 Channel I/P Board  
 94 Series 4 Channel O/P Board  
 94 Series Display Board  
 94 Series PSU

#### **Part Number**

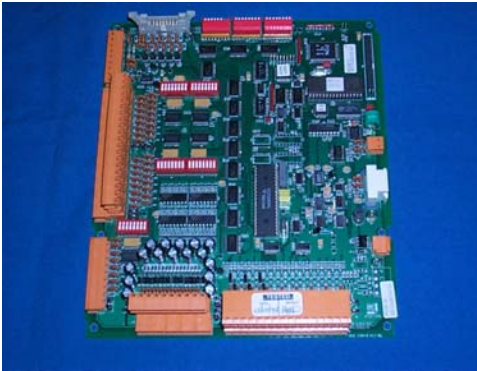
ASY14635  
 ASY14334  
 ASY14334  
 ASY14294  
 ASY14334WC  
 ASY01158  
 ASY01030  
 ASY01156  
 ASY01147  
 ASY14355  
 ASY14356  
 ASY14357  
 ASY01157  
 ASYSMLC75R3

## Motherboard Card Allocation

Slot	CPU	ASY01147	ASY01158	ASY01030	ASY01156	ASY01156	ASY01156	ASY01156
Pak/DX	YES	YES	YES	NO	YES	YES	YES	YES
Fan	YES	YES	YES	NO	NO	NO	YES	NO
WC	YES	YES	YES	YES	YES	NO	YES	YES

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### 97 Series Range



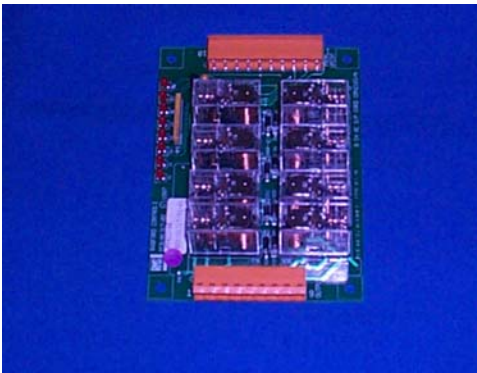
Dimensions 21x25x3cm

#### 97 Series Pak

Software Version: NPak00:03 – 01:00  
 Npak02:02 – 02:12

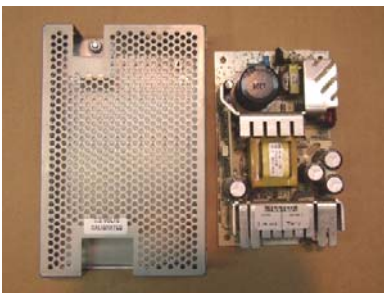
#### Note:

These Paks require Suction Transducer TPHUBA100  
 These Paks require Discharge Transducer TPHUBA200  
 These Paks require Thermistor Probe THERVAR5K8M  
 These Paks require HHU ASY06038A (Phoenix)



#### 97 Series Output Board

This board has 8 relays.



#### 97 Series PSU

<b>Description</b>	<b>Part Number</b>
97 Series Pak Board	ASY01362B
97 Series 8 Channel Output Board	ASY01317A
97 Series Display Board	ASY01465A
97 Series PSU	PSU0166001

Note:

Version NPAK00:03 – 01:00 uses a 94 Series Display Board ASY01157.

## **Return of Pack Controllers.**

Please ensure that the pack controllers are returned with a complete compliment of boards or just the motherboards on there own.

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## **Damage**

Please be advised that Radford Control Systems accepts no responsibility for damage to units damaged on site or in transit from site. In these cases the units will not be repaired until an order has been raised by the contractor for the repairs to the unit.

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## **Hand Held Units**



### **Emacs Hand Held Unit**

Part Number: ASY10247B

For use with any product that uses a Block Style Probe ASY12841



### **Syncro Hand Held Unit**

Part Number: ASY01087

For use with any product that uses a Thermistor Style Probe THERVAR5K8M apart from the Major and Minor range.



### **Phoenix Hand Held Unit**

Part Number: ASY06038A

For use with the Major and Minor range.

## **Returns Policy**

All Hand Held units must be returned with there cables attached.

Damage:-

Please be advised that Radford Control Systems accepts no responsibility for damage to units damaged on site or in transit from site. In these cases the units will not be repaired until an order has been raised by the contractor for the repairs to the unit.

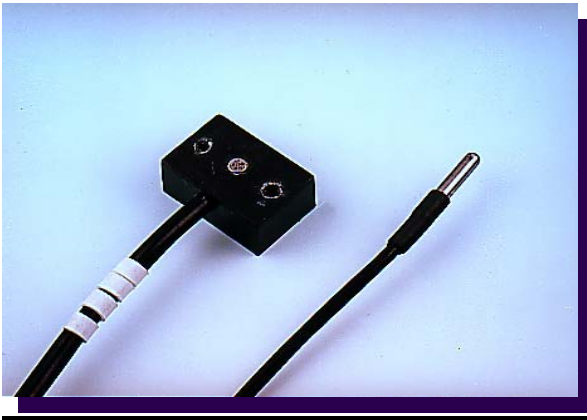
Examples of damaged that will be chargeable:-

Missing or damaged cables

Any damage to the case

Damaged as a result of the unit being dropped.

## Probes



### Probes

**Description**  
Block Probe  
Thermistor Probe

**Part Number**  
ASY01087  
THERMVAR5K8M



### Probes

Only the probes shown will be replaced under the maintenance contract, however a minimum length of two meters is required. If the probe is not with a two meter lead length then it will not be replaced.

Note:

This is a guide and Radford Control Systems do not accept responsibility for any errors.