

Major Controller, off cycle defrost Product Guide

PGM11_01

PRODUCT DESCRIPTION

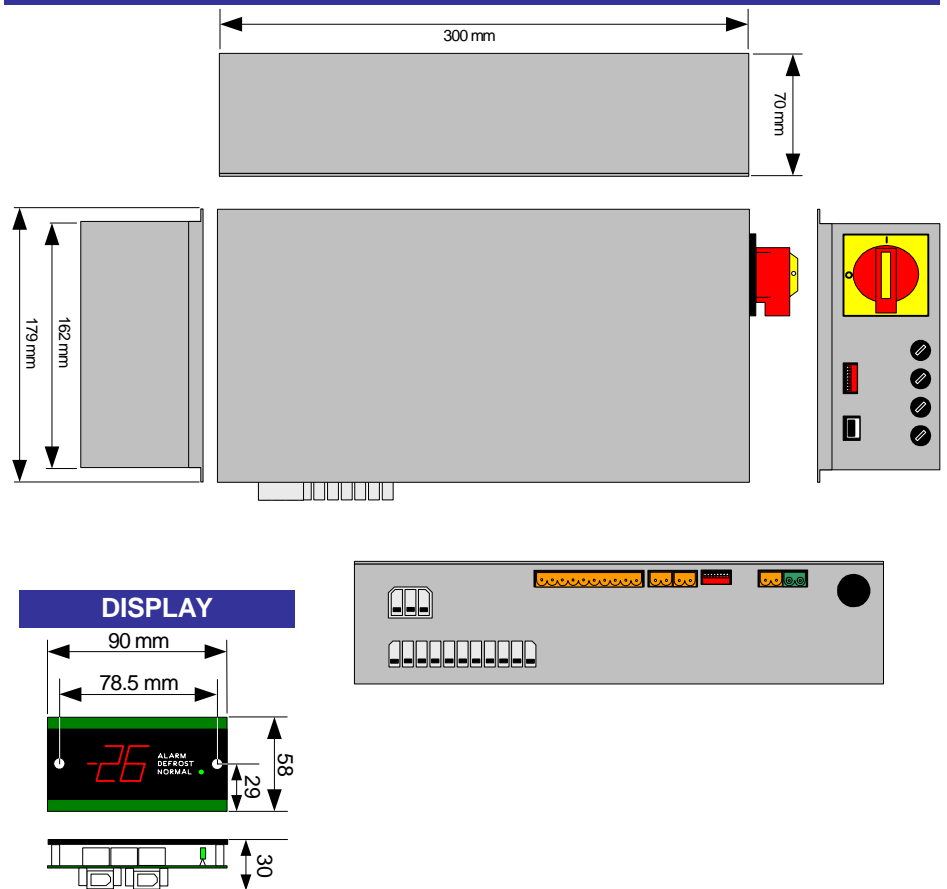
The Major off cycle defrost controller is a universal evaporator controller, based on the Radford's Major range of controllers. The unit is capable of controlling evaporators in a number of different applications, such as;

Display Cabinets
Coldstores
Electronic Expansion Valve Control
Liquid Solenoid Valve Control

The unit can also be supplied with a temperature display module, and key switch.

To perform control of an evaporator the controller has 4 outputs, 5 thermistor inputs and 2 configurable digital inputs. The unit can be connected to the System Manager via any existing RCS communications network, via a network cable or wireless transceiver, and so provides datalogging, alarm detection and remote parameter alteration facilities.

PRODUCT DIMENSIONS



PRODUCT SPECIFICATION

Supply Voltage -
240VAC

Environment -
0°C to 40°C, 30% RH to 85% RH (non-condensing)

Temperature Inputs -
Up to five thermistor probe inputs, using 5K sensors, with an accuracy of +/- 0.3°C and a resolution of 0.1°C.
(Support for other sensor types available upon request)

Digital Inputs -
Two contact sensing digital inputs which can be used to monitor Condensate Pump, Door Switches. Inputs can also be used by the user to close night blinds or force the unit into sleep mode via a key switch.

Digital Outputs-
Solid state output for controlling;
PEV (AKV) Expansion Valve (1 A)
Liquid Valve (1 A)

Relay outputs for controlling;
Cabinet Lights / Coldstore Drip Tray (5 A)
Evaporator Fans (2 A)
Curtain Fans (2 A)

Display Module-
Drive for 3½ digit LED display with alarm and operating mode status information. The display can also incorporate a key switch.
Supplied separately

Network-
The controller includes an RS485 network port, and a Wireless transceiver port is available upon request.
Supports the following protocols;
RMS (600bps, 9600bps)
RCS Mk2
Third party protocols available upon request.

Control Options -
The controller can be configured for the following control options;
Pulsed Expansion Valve or Liquid Valve
Cabinet Evaporator or Coldstore Evaporator
Defrost Probe Termination
Integral or Piped System

Setup -
Default operational values for varying temperature ranges can be selected using the units bit switches.
Individual values can also be setup using a Hand Held Unit, or from the System Manager.
The units operational values and real-time clock are battery backed. Operational values are also automatically backed up by the System Manager.

Enclosure -
Steel enclosure (the unit can also be supplied in PCB only format upon request)

Major Controller, off cycle defrost Product Guide

PGM11_01

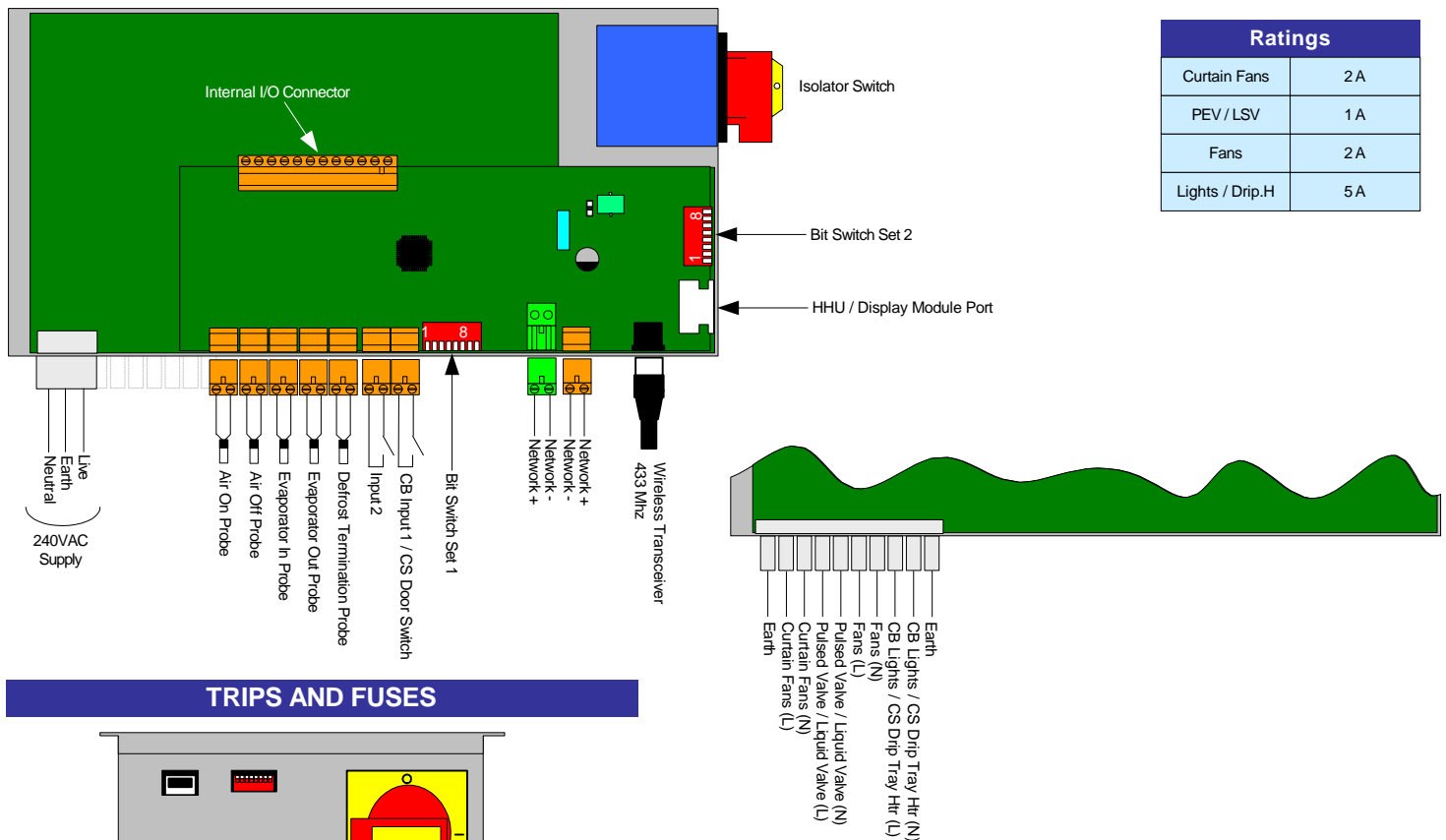
CONTROLLER CONFIGURATION

BIT SWITCH SET 1 (CONTROLLER ADDRESS AND PROTOCOL)				BIT SWITCH SET 2 (APPLICATION & TEMP. RANGE)											
Address Config (Switches 1 to 5)				Protocol (Switch 6 to 8)											
0		8		16		24		RMS 600 Bps		Inlet Valve Type	On = Liquid Solenoid		If Set to Control a Cabinet	-24.0 °C	
1		9		17		25		RMS 9600 Bps			Off = Pulsed Electronic			+1.0 °C	
2		10		18		26		RCS 9600 Bps 5 bit		Defrost Type	On = Electric			+4.0 °C	
3		11		19		27		RCS 9600 Bps 13 bit			Off = Hot Gas			+8.0 °C	
4		12		20		28		RCS 19200 Bps 5 bit		Integral ?	Off = No		If Set to Control a Coldstore	-24.0 °C	
5		13		21		29		RCS 19200 Bps 13 bit			On = Yes			-18.0 °C	
6		14		22		30		Un-used		Cabinet or Coldstore	On = Coldstore			-1.0 °C	
7		15		23		31		Un-used			Off = Cabinet			+3.0 °C	
										Defrost Probe Fitted?	On = Fitted		+8.0 °C		
											Off = Not Fitted		+2.0 °C		

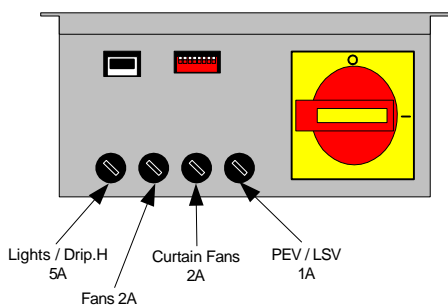
Note : Address 0 is normally un-used.
Note : You only need to set the address when using RCS protocol

Note: If you change any switch settings, remember to power down / up the controller and load defaults.

INTERNAL AND CONNECTION DETAILS



TRIPS AND FUSES

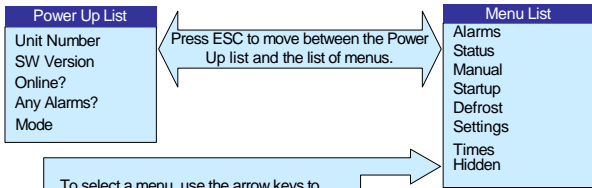


Note: Curtain Fans are de-energized during defrost.

Major Controller, off cycle defrost Product Guide

PGM11_01

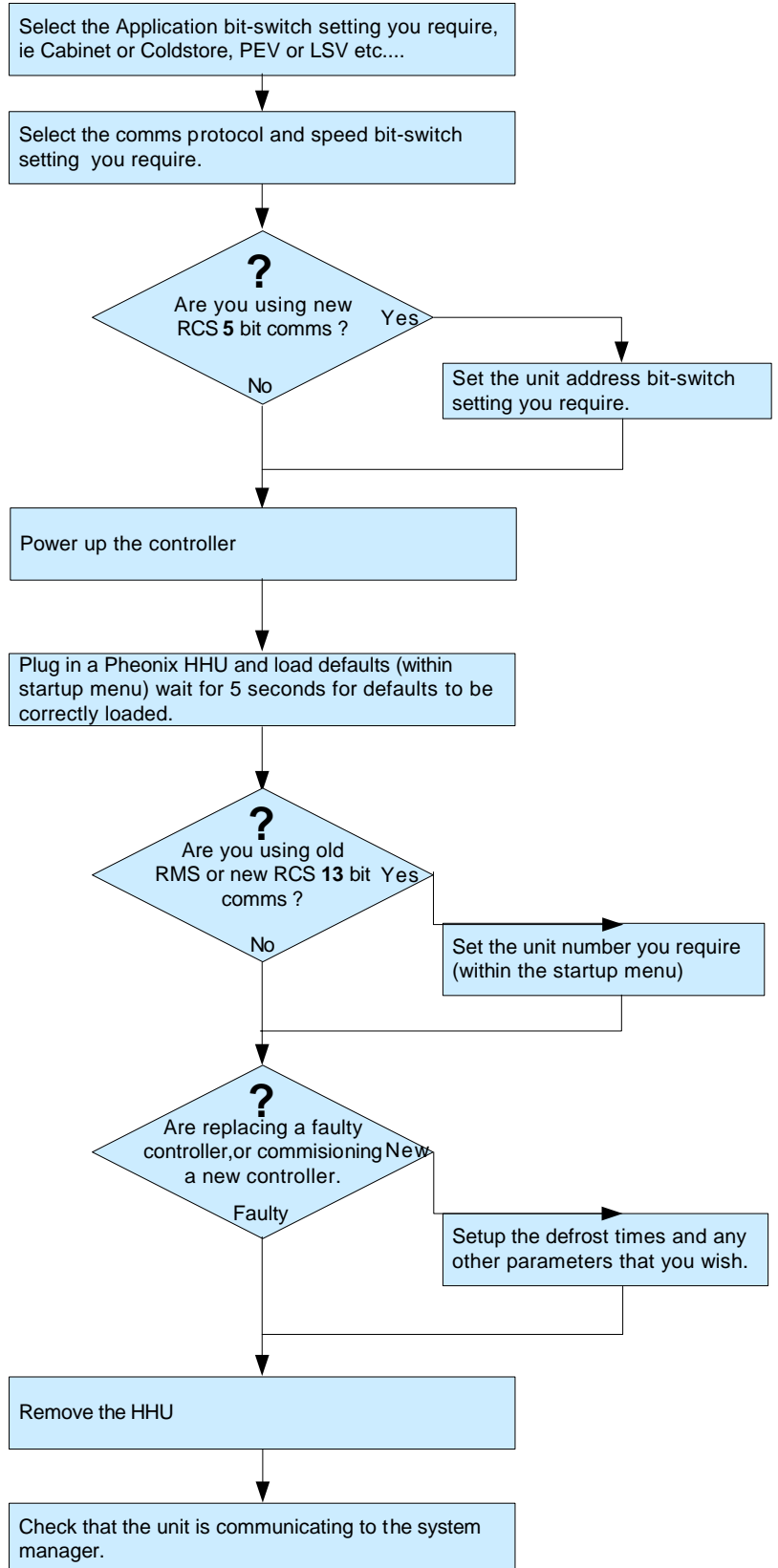
HAND HELD UNIT MENUS



To select a menu, use the arrow keys to highlight the name, then press ENT.
To select a different menu, return to the menu list (using ESC) and use select again.

Alarms (F4)	Status List (F2)	Manual List	Startup
Air On High Air Off High Evap Low MEV Control Crit Sensors Air On Snsr Air Off Snsr Evap In Snsr Evap Out Snsr Defrost Snsr Air On Low Door Insuff Data NVRAM Processor	Air On Air Off Evap In Evap Out Defrost Temp Diff Est Cab EffAirOnSP MEV Opening% MEV State Liquid Valv Evap Out Valve Valves F.Shut Fans State Def Output Lights State Tray Heater Door State	Force Ref-Def MEV Control MEV Set.Open Trigger Def	Load Defaults Unit Number SW Version Online Evap Type Cab or CS Control Type Defrost Type Def Probe Slave Address Protocol Baud Rate Current Time Any Alarms? Mode
Defrost List	Settings List (F3)	Times List	Hidden List
Current Time Defrost 1 Defrost 2 Defrost 3 Defrost 4 Defrost 5 Defrost 6 Defrost 7 Defrost 8 Max Defrost Air On Term Air Off Term DefTempTerm Evap In Term Evap Out Term Def OP Off SP Def Control DB Fans Off SP FnHldEndSPCb FansPulseInDef FanPulsePer FnHldEndSPCs Last Def Term Trigger Def	Cabinet SP Air On SP CS Air Off SP Air On OvrSP Air Off OvrSP TempDiff SP LSV Setpoint LSV Deadband MEV Inject % Mev Min Open% EvapLowLmOfis EvapOfisTolnj EvapOutInjEnd Pull Dwn Per Pump Down Dur Drain Dwn Per Air On Ratio% OvrTmpEnable Over TempSP Air On UndSP CabLightsPer Door AlmDelay Fan Off Delay Max Fans Off TrimAutoDef	Current Time Next Defrost TimeSinceDef PrvDefLasted Last Def At This Defrost	ACF Period Chk Int Per TotalDataLos DataChangLoc

COMMISSIONING A CONTROLLER



WARNING !

For the safety of personnel and the proper functioning of the equipment it is essential that everybody who uses or works on this equipment must be competent to prevent danger and injury. The safety instructions in this manual are intended to draw attention to potential hazards that may be encountered during installation, commissioning and operation of the equipment. While the installer is responsible for the correct and safe installation and commissioning of the equipment, once this is complete, the owner and/or user of the equipment is responsible for its safe operation and maintenance. It is essential that personnel who operate or maintain the equipment know how to isolate each part of the system from its electricity supply.

Notes :
1. If you wish to connect a Major controller to an existing zone of Minor or Skytron controllers, RCS 5bit 9600 bps comms must be selected.