

Specifications

Standard	ISO10368 compatible
Power supply	24 VAC +20/-30% 50-60Hz or 24-41 VDC
Power consumption, max	25 VA/W transmitting
Power line voltage range	0-560 VAC @ 50-60Hz, 3 phases
Power line power consumption	0.1A (Max)
Weight	600 g
Safety and Environmental	CE compliant (EMC and LVD) RoHS compliant
Shock	20G operating, 100G non-operating
Vibration	Random (20Hz to 2kHz)
Operating temperature	-25 <TA < 70 °C

Supported Controllers

Manufacturer	Type
Carrier:	ML3
	ML2i
	ML2
Daikin	DECOS 3f
	DECOS 3e
	DECOS 3d
	DECOS 3c
	DECOS 3b
Starcool	RCCU5 SCC6
Denso	

Warning

This product is for intended use only in a restricted access location. Access can only be gained by SERVICE PERSONS or by USERS who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken.

This product is for build in only, and requires a suitable electrical and fire enclosure in the final place of installation.

Minimum fire requirements for electrical enclosure are UL 94 V-2.

Remote Monitoring Module

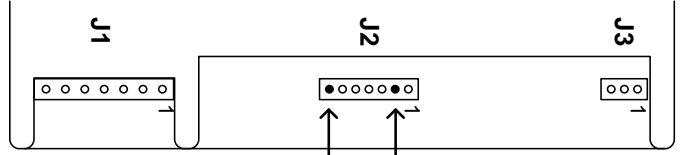
Revision 1.8

Description

This guide describes how to install the RMM on a container prepared with the cable connectors and mounting points required for modem installation.

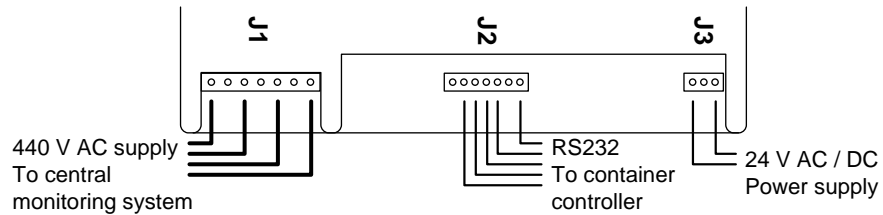
Installation

Please carefully mount, connect and check the RMM as follows.

Step	Action
1	Fasten the RMM to the modem mounting holes.
2	For RMMs fitted with ground wire: Fasten the green ground wire to the terminal block.
3	Check the RS232 cable connector fitting socket J2.  No connection allowed Ensure there is no connection at pins 2 and 7.
4	Plug in the cable connectors: <ul style="list-style-type: none"> • Plug the 7-pin 3-phase power cable connector into socket J1. • Plug the 7-pin RS232 connector into socket J2. • Plug the 3-pin power supply connector into socket J3.
5	Apply power to the container.
6	Check the RMM LEDs – they should appear like this: <ul style="list-style-type: none"> • POWER: Green. • CTRL: Green. • PCT: Flashing green.
7	Take action if the LEDs do not appear as shown in step 6. The information in this guide should help you solve the problem.

About the RMM

The Remote Monitoring Module (RMM) is a key component in power-line communication for monitoring and control of reefer containers. The RMM is the link between the container controller and a central monitoring system, such as the REFCON system.



Each container equipped with an RMM is able to send data on its operating conditions and alarms to the central monitoring system.

Besides monitoring, the RMM can be used to remotely control various reefer container functions, which include changing the setpoint and initiating defrost.

Connector Specifications

N.C. means: Not Connected.

Power Cable Connector Specification (J1) ^(note 1)					
1:	Earth/Ground	2:	N.C.	3:	AC Phase 1
4:	N.C.	5:	AC Phase 2	6:	N.C.
7:	AC Phase 3				

Note 1: The power-line interface is not fused. Use external fuse: Max 32A, slow.

RS232 Connector Specification (J2) ^(note 2)					
1:	GND	2:	N.C.	3:	RTS
4:	CTS	5:	RxD	6:	TxD
7:	N.C.				

Note 2: Use shielded cables with shield connected to GND.

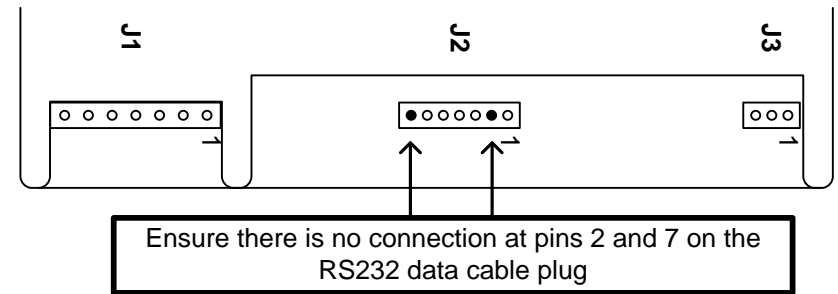
Power Supply Connector Specifications (J3) ^(note 3)					
1:	AC input/DC ground	2:	N.C.	3:	AC/DC input

Note 3:

- When supplied by AC, connect between pin 1 and 3.
- If AC is grounded, connect the grounded wire to pin 1
- When supplied by DC, connect DC+ to pin 3 and ground to pin 1.
- AC/DC input is protected by a $\varnothing 5 \times 20$ mm, 2A slow fuse.

Important Installation Notes

The RMM uses pins 2 and 7 of the data socket (J2) for factory and service testing. **For correct operation, ensure that there is NO CONNECTION to the RMM at pins 2 and 7.**



Also please make sure the Earth/Ground (pin 1) of the 3-phase power plug is connected.

Disconnect device

This product requires a disconnect device. The disconnect device must be easily accessible by the service personnel.

LED Status Indicators

The LEDs illuminate as given below. Normal operation when fully connected is shown in bold type.

LED	Status Indication
PCT	Off: no communication with system Green: logged on to system Flashing green: ready to log on
CTRL	Off: no connection to controller Green: controller connected and container ID valid Flashing green: controller connected but ID is invalid
TRANSMIT	Off: listening Flashing yellow: transmitting
ACTIVITY	Off: no data signal detected Flashing yellow: data detected on power cable
RESET	Off: normal operation Red: the RMM is resetting
POWER	Off: No power to RMM Green: Power applied to RMM