OPT SCR200 Installation Manual
Version No: 1.0.3

Model: OPT Mark 2 SCR200
Date: 7th December 2018

Conditions of Use

- Read this manual completely before working on, or making adjustments to, the Compac equipment
- Compac Industries Limited accepts no liability for personal injury or property damage resulting from working on or adjusting the equipment incorrectly or without authorization.
- Along with any warnings, instructions, and procedures in this manual, you should also observe any other common sense procedures that are generally applicable to equipment of this type.
- Failure to comply with any warnings, instructions, procedures, or any other common sense procedures may result in injury, equipment damage, property damage, or poor performance of the Compac equipment
- The major hazard involved with operating the Compac C4000 processor is electrical shock. This hazard can be avoided if you adhere to the procedures in this manual and exercise all due care.
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- Compac Industries Limited reserves the right to change the specifications of its products or the information in this manual without necessarily notifying its users.
- Variations in installation and operating conditions may affect the Compac C4000 processor's performance. Compac Industries Limited has no control over each installation's unique operating environment. Hence, Compac Industries Limited makes no representations or warranties concerning the performance of the Compac C4000 processor under the actual operating conditions prevailing at the installation. A technical expert of your choosing should validate all operating parameters for each application.
- Compac Industries Limited has made every effort to explain all servicing procedures, warnings, and safety precautions as clearly and completely as possible. However, due to the range of operating environments, it is not possible to anticipate every issue that may arise. This manual is intended to provide general guidance. For specific guidance and technical support, contact your authorised Compac supplier, using the contact details in the Product Identification section.
- Only parts supplied by or approved by Compac may be used and no unauthorised modifications to the hardware of software may be made. The use of non-approved parts or modifications will void all warranties and approvals. The use of non-approved parts or modifications may also constitute a safety hazard.
- Information in this manual shall not be deemed a warranty, representation, or guarantee. For warranty provisions applicable to the Compac C4000 processor, please refer to the warranty provided by the supplier.
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Product Identification

Specifications

Models Covered	This manual applies to the OPT Mark 2 SCR200. ***NOTE:*** *Do not use this manual for earlier models. Contact Compac for archived manuals if required.*

Validity

Compac Industries Limited reserves the right to revise or change product specifications at any time. This publication describes the state of the product at the time of publication and may not reflect the product at all times in the past or in the future.

CONDITIONS

Manufactured By:

The Compac OPT SCR200 is designed and manufactured by Compac Industries Limited
52 Walls Road, Penrose, Auckland 1061, New Zealand
P.O. Box 12-417, Penrose, Auckland 1641, New Zealand
Phone: + 64 9 579 2094
Fax: + 64 9 579 0635
Email: techsupport@compac.co.nz
www.compac.biz

Document Control

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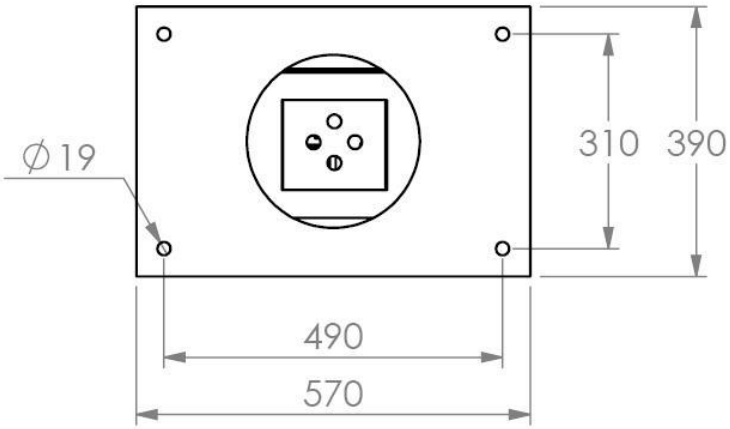
Revision History			
Version	**Date**	**Author(s)**	**Revision Notes**
1.0.0	06 Mar 2018	S Laycock	New Manual
1.0.1	20 Mar 2018	S Laycock	Updated component layout
1.0.2	22 Jun 2018	S Laycock	Added aerial installation instructions
1.0.3	07 Dec 2018	R Liu	Updated contact information

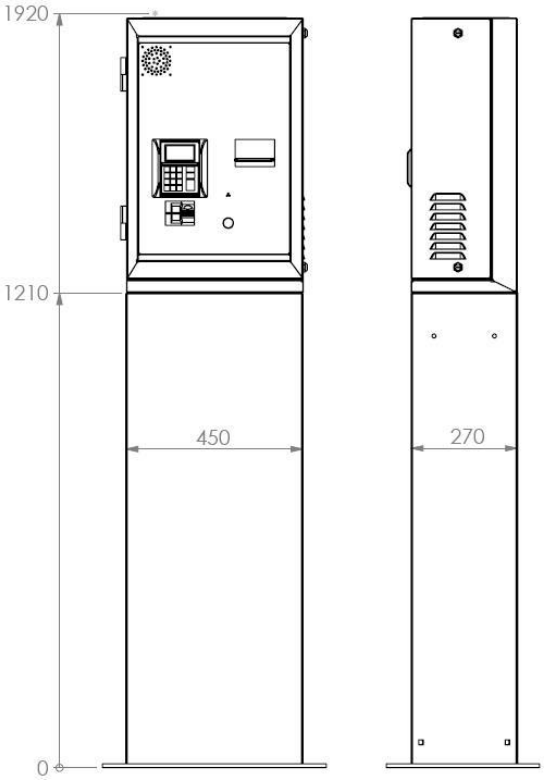
Contents

Footprints

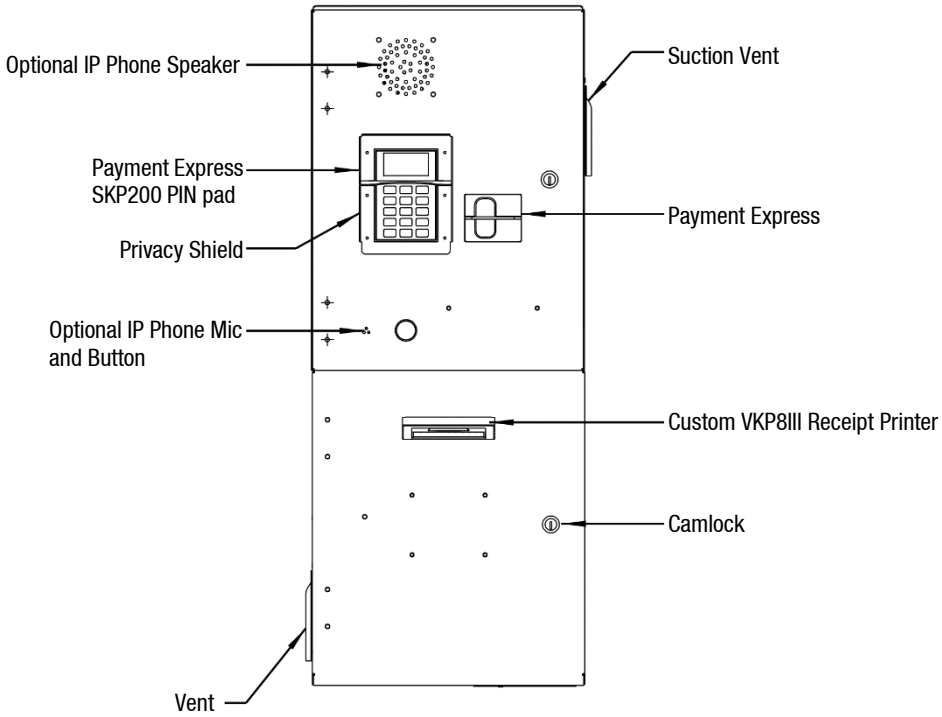
Base Footprint

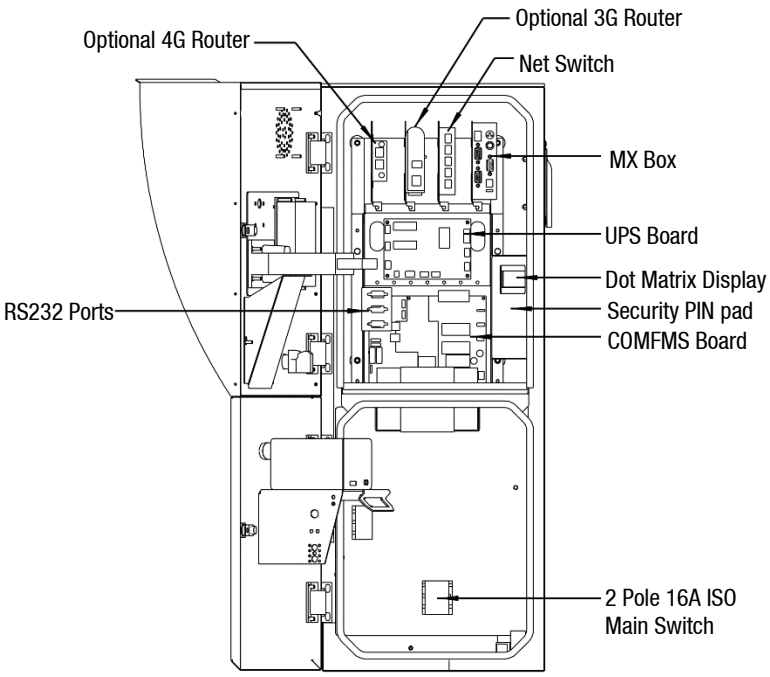


External Dimensions



Components


Optional IP Phone Speaker
Suction Vent
Payment Express
SKP200 PIN pad
Payment Express
Privacy Shield
Optional IP Phone Mic
and Button
Custom VKP8III Receipt Printer
Camlock
Vent


Optional 4G Router
Optional 3G Router
Net Switch
MX Box
UPS Board
Dot Matrix Display
RS232 Ports
Security PIN pad
COMFMS Board
2 Pole 16A ISO
Main Switch

Tools Checklist

Having all the correct tools will make installation, upgrade and repair procedures easy and minimise the risk of damage to components.

Before you arrive on site, make sure you have a minimum of all the tools listed here:

NOTE: *Make sure your cell phone and laptop are fully charged.*

- 5.5mm nut driver
- 7mm nut driver
- 8mm nut driver
- T30 Torx drive bit or driver
- T10 Torx drive bit or driver
- Metric spanner set
- Metric 3/8" or 1/4" drive socket set
- 1/4" screwdriver bit holder
- 1/4" A/F spanner
- 6" adjustable spanner
- Flat blade screwdriver set (1.5 - 5mm blades)
- #0, #1, #2 Phillips screwdrivers
- #1, #2 Pozidriv screwdrivers
- Set of metric Allen (hex) keys
- Fine long nose pliers, side cutters & pliers
- Hacksaw
- Stanley knife or similar sharp blade
- Felt tip pen or marker
- Glue - Loctite 601 or similar
- Insulating tape and masking tape
- Ruler
- Multimeter

Precautions

DANGER: The Compac OPT is NOT suitable for mounting in a hazardous area. Please consult the site's zone drawings to find the exact positions of the hazardous areas for each particular site.

For adequately ventilated fuel dispensing sites (not including CNG/NGV), in most cases the following will apply:

- The unit is not designed to be constantly exposed to the elements. A shelter should be installed to protect it.
- The card reader and PIN pad should face away from the prevailing wind especially in dusty or wet areas.
- In areas experiencing extremes of weather (heat, cold, wind, rain, salt spray etc.) consideration should be given to installing additional shelter.
- The OPT location or protection should be such as to minimise the possibility of damage from vehicles, trailers, boats, or the like.
- On heavy vehicle sites, mounting the unit on a raised pad and/or installing bollards to help protect from damage should be considered.
- If mounting on a post, the base needs to be attached to a smooth, level surface of sufficient strength to securely hold the retaining bolts or fasteners.
- The OPT should be placed at least 8 metres from any above ground flammable liquid storage or handling facility other than a dispenser.
- The OPT should be placed at least 0.5 metres from any flammable liquid fuel dispensers and 1.5 metres from any LPG dispensers.
- The OPT should be mounted so that the base of the cabinet is at least 1.2 metres above the ground. If mounted on the post supplied by Compac it will be 1.2 metres high.
- Whenever running a cable through the post into the base of the cabinet always ensure that the cable entry into the cabinet uses a vapour tight gland.
- If the OPT post is within 4 metres of a dispenser or within 1 metre of the end of any fuel dispenser hose, then the entire interior of the post may be considered a hazardous area. Any cables running through, or electrical equipment mounted in the post should be suitable for that hazardous area (refer AS/NZS 2381).
- Generally the area below the OPT may be a hazardous area and therefore some appropriate signage may be required e.g. no smoking.
- Lighting should be provided during the hours of operation. Lighting should be sufficient to provide safe working conditions that include, but are not limited to, clear visibility of all markings on packages, signs, instruments and other necessary items.

NOTE: *A minimum value of 50 lux is recommended.*

These requirements do not apply to any specific site but are merely recommendations that will apply in most cases. The owner/installer must ensure that the installation complies with AS/NZS 3000, AS 1940, and any other applicable regulations.

Mechanical Installation

Prior to Installation

Read the relevant parts of this manual and make sure you have the following information:

- All necessary approvals to work on the site
- The OPT factory set up sheet
- The site audit document
- The telephone number, user name and password for ADSL sites
- Contact details for site owner or manager
- Contact details for help desk

NOTE: *For ADSL sites, check that either the broadband account is set up.*

NOTE: *For wireless sites check that the SIM card is registered to a valid account.*

NOTE: *It is advisable to book an installation time with the help desk at least 24 hours before going to site. This will ensure that help desk staff will be prepared for your inquiries. Help desk hours are currently Monday to Friday 7.30am to 7pm NZ Standard Time.*

Bring the following equipment:

- Mechanical and electrical tools
- Multimeter
- Fastenings to mount the OPT
- Security key drivers (Security TORX or unique security key if Extra Security equipped)
- A fully charged laptop computer
- A charged cell phone
- OPT spares kit
- SIM cards for wireless sites (if not supplied with unit)

Position

Refer to the Site Audit document for location.

Check the site drawings for details regarding hazardous areas. If in any doubt about the location, refer to the site manager.

Install the OPT in a sheltered position and if possible, facing away from prevailing wind and rain direction.

If possible, install out of direct sunlight to avoid raising the temperature inside the OPT cabinet more than necessary.

Situate the OPT so the PIN pad display will not be in direct sunlight at any time during the day as it makes it hard to read.

Make sure that you position the OPT to ensure you can open the cabinet door. If mounted on a post, you must also allow clearance be able to remove and replace the access panel on the post.

Mounting the OPT on a Post

If a post is part of the installation, the post must be securely attached to the ground using appropriate fastenings.

NOTE: *Due to the variability in sites, Compac does not supply ground fastenings with the post. The base plate has 4 x 19mm holes for fastenings, select appropriate fastenings according to the surface and location where the OPT is to be mounted.*

CAUTION: Take care when opening the OPT cabinet door before the cabinet is securely mounted. The door holds several heavy components that will cause the cabinet to tip when opened.

To mount the post onto the base:

- Place the post over the base with the opening facing away from where the front of the OPT will be.
- If the OPT has been supplied with the extra security upgrade, place the powder coated stainless steel bolt covers over the base mounting nuts (trim the bolts if needed). Secure using the supplied stainless steel bolts passing through the bolt cover, post and base plate. (The bolts may need trimming.)The rounded head faces out and place a flat washer under the nut on the inside of the post.
- Standard OPTs do not have the bolt covers. Fasten using the supplied galvanised bolts with the rounded head facing out and a flat washer under the nut.

To mount the OPT onto the post:

- OPTs with the extra security upgrade use special keyed machine screws. The head of the bolts face out. Standard OPTs use four M10 bolts, nuts, flat and spring washers.
- Place the OPT cabinet on top of the post and securely fasten the cabinet to the post using a flat washer and spring washer under the nut.
- Feed the wiring into the base of the OPT using vapour resistant glands and block any unused holes.
- Coil and secure all loose wiring inside the post. Neatly cable-tie the wiring inside cabinet to existing cable routings. Ensure wiring will not contact any equipment when the door is closed and ensure it is not under tension.
- Fit the cover plate on the back of the post using the supplied M6 Security Torx head screws or security keyed M6 machine screws for the extra security models.

NOTE: *Use only the Compac supplied 4 bolt mounting plate to secure the OPT to the post.*

NOTE: *Security Torx or Security Keyed head screws must be used on the cover plate of the post to prevent unauthorised access to the wiring.*

CAUTION: Any unused holes in the bottom of the OPT cabinet must be blanked. No open holes in the base of the OPT cabinet are permitted.

Electrical Installation

Cable Requirements

Power Cable

3 Core Steel Wire Armour Cable 2.5mm². 230 Volts, 10A, 50 Hz. Connect the incoming mains as follows:

- **Live** - Connect to the Left bottom screw down terminal of the mains switch.
- **Neutral** - Connect to the Right bottom screw down terminal of the mains switch.
- **Earth** - Connect to the busbar.

Pump Comms

2 Core Steel Wire Armour Cable 1.5mm². Total cable length in the comms circuit should not exceed 100 metres.

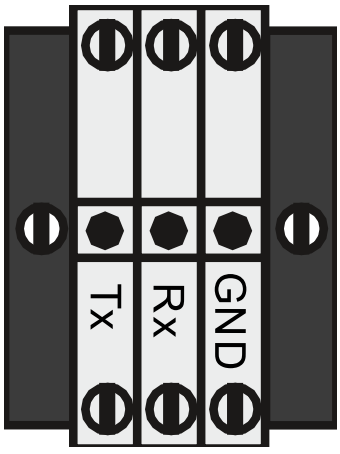
Terminals will be labelled depending on the brand of pump on site. Correct polarity must be observed.

NOTE: *For pump comms, tank gauging and ADSL connections it is suggested that the wires are crimped to a ferrule to provide a greater contact area for the screw fastener.*

NOTE: *Make sure the clamping screw contacts the terminal and not the insulation.*

Tank Gauging

Connect the wires from the tank gauging unit to the terminals on the Din rail marked Tx, Rx and G. The Tx wire from the tank gauging unit connects to the Rx terminal.



Cable length should be less than 3 metres. Cable length can be extended up to 10 metres if an opto-isolator is used.

NOTE: *Site electrical and magnetic interference can reduce transmission distance.*

Phone Line/Network

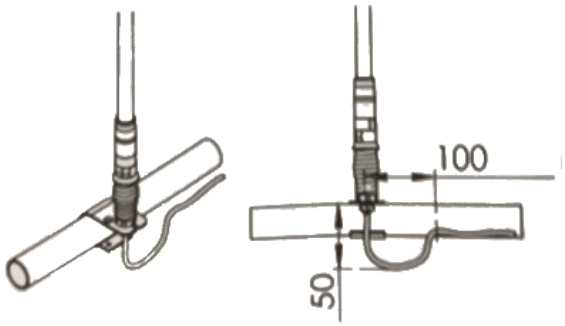
For ADSL connected units the phone cable should be run through ducting that provides suitable protection and flexibility. There is a phone line surge protector mounted on the DIN rail.

4G Aerial/Antennae Installation

For wireless connected units where the aerial is mounted remotely from the cabinet, the aerial cable should be run through ducting that provides suitable protection and flexibility.

When choosing a location for aerial installation, ensure that as much of the aerial as possible, especially the fibreglass whip section, is mounted away from metallic obstructions such as pillars and roof overhang. Ensure it is not mounted within one metre of any other aerials to minimise signal interference.

IMPORTANT NOTE: When installing the spring-loaded aerial, it is essential to leave enough loose cable at the bottom of the aerial for when the spring flexes. A loop of 50mm before fixing the cable should be sufficient.



The aerial plugs into the wireless router. Neatly cable-tie the aerial cable to existing wiring and feed any excess into the base where it can be coiled and cable tied out of the way. Make sure the aerial cable does not interfere with the paper roll when the door is closed.

Glanding

Gland the mains power, pumps comms, tank gauging and phone line/Network SWA cables up through the post into the 20mm holes provided in the bottom of the cabinet.

Certain configurations will use wireless communication to internet and therefore require no phone line or network cable.

Ensure the Perspex terminal cover is refitted after the cables are connected

NOTE: *Check that all cables are securely fastened by pulling each one in turn to make sure they are properly attached.*

CAUTION: Ensure Perspex terminal cover is refitted after all cables are connected.

NOTE: *Due to varying customer requirements, connections may change from what is shown above.*

Electrical Testing

This procedure outlines how to perform an electrical operations test on the OPT before carrying out a full site test.

Once the power and comms terminations have been completed, check all terminals, plugs and chips inside the unit to make sure they have not become loose during transit.

Site information provided to the factory may have been entered into the unit to help with commissioning, but all settings must be checked when on site to make sure they are correct.

CAUTION: Some of the options shown below and described in this section may not appear in certain configurations. The numbers used to select the options may change with different versions of software.

NOTE: *Ensure all terminations are secure and made to the copper wire, not to the insulation.*

System Power Up

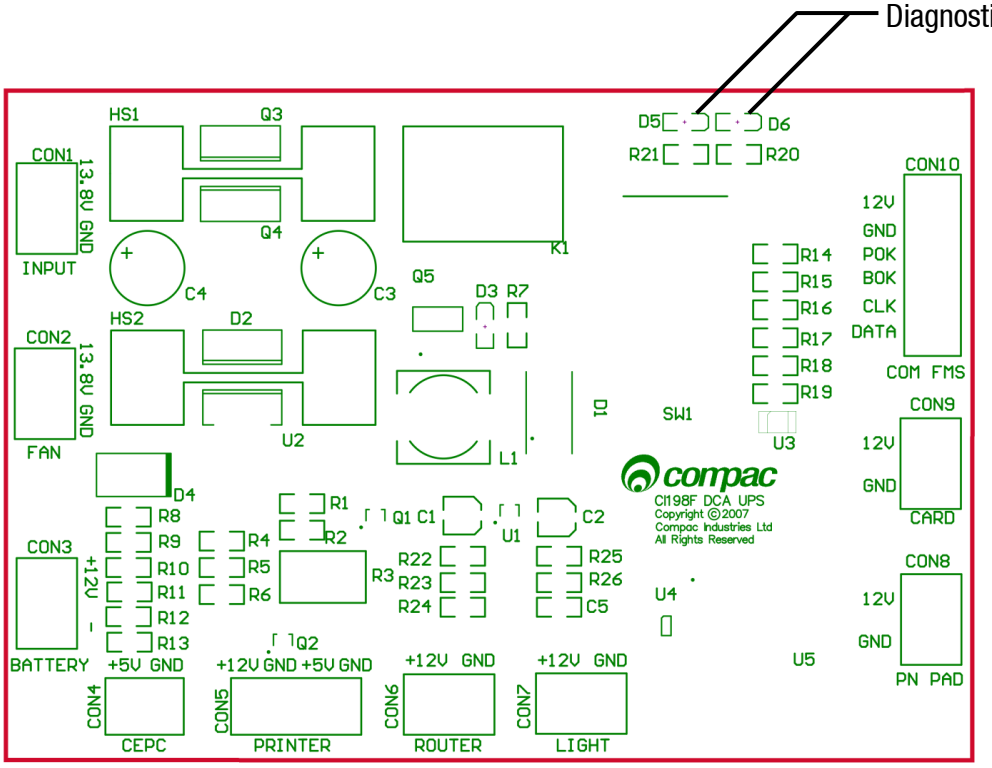
- Turn on the main circuit breaker inside the OPT then turn on the power switch on the UPS board. When the unit is turned on, two LEDs above the power switch should turn on. LED labelled D5 indicates the 230V mains power is OK, D6 indicates the battery is connected and OK.
- If D6 does not light up when then unit is first turned on it may be because the battery has discharged during transport and storage or that the battery terminals have become loose. If this happens, remove the battery from the holder and check that the battery terminals are secure and then re-install it. If D6 still does not light up leave the unit connected to the 230V supply for an hour or so to charge the battery and then re-check.
- Check the Router or ADSL modem is turned on and the power LED is lit.
- Check the green power led on the right side of the Compac Box is on. If not, check the switch on the left-hand side of the box is turned on.

Communications

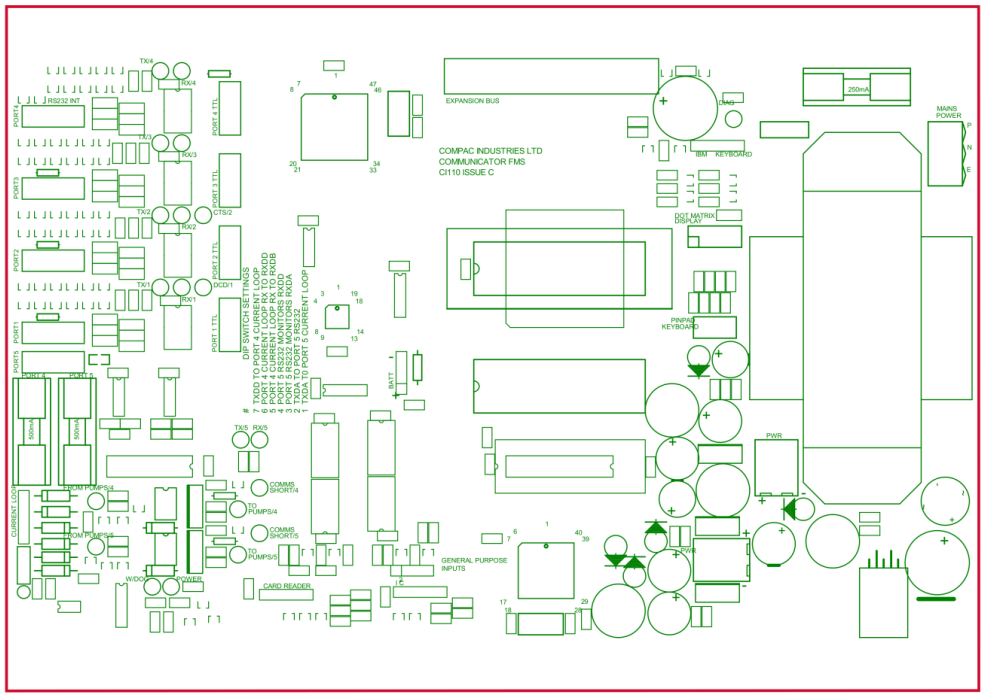
Check that the ATG and Pump Communications LEDs on the FMS Board are lit.

LED	Colours	Comment
Pump Com's (NZ)	Yellow Green Red	Toggles Yellow / Green = Normal Red = Comm's short
Pump Com's (Aus)	Green Red	Toggles Red Green = Normal
ATG (NZ)	Green Red	Toggles Red Green = Normal
ATC (Aus)	Green Red	Toggles Red Green = Normal

UPS Board LEDs



FMS Board LEDs



Tank Gauging Setup

Tank gauging is wired into the terminals marked Tx, Rx and G.

The tank gauging unit will have to be set up with the correct outputs to communicate with the FMS board. Settings depend on the unit.

Type	Mode	Baud Rate	Parity	Bit	1 Stop Bit	Handshake
Veeder Root	Serial	1200	Odd	7 Bit	Yes	Off
Franklin	Veeder Root	9600	No	8 Bit	Yes	Off
Colibri	Veeder Root	9600	No	8 Bit	Yes	Off

The Compac settings for each model of tank gauge are usually either set at the factory or sent via CompacOnline.

System and Transaction Tests

When you are happy that the OPT is powered up and communicating, contact the Help Desk. The Help Desk will check that the OPT is communicating correctly and will ask you to perform various checks to confirm this.

The exact site test setup and procedure will vary from customer to customer but as a minimum we would suggest the following:

- Check that the current price is correct.
- Check each dispenser making sure the correct price has been applied.
- Dispense fuel from each pump on site, confirming that the correct pump is authorised when requested and you are able to dispense fuel.
- After dispensing fuel, check the receipt and make sure the correct dollars, litres, fuel grade and site details are printed on the receipt.
- Test the VoIP help phone function if fitted.
- The Help Desk will open CompacOnline and check that the transactions have been recorded correctly. They will also check that the tank gauging is active and sending back the correct levels.
- If your initial test transactions were completed with the OPT door open, you will need to close and lock the cabinet and perform your transaction tests again.
- Complete the Install Checklist.

Installation Checklist

Before leaving site, ensure the installation checklist is completed. If any of the following tests fail, please contact Helpdesk.

Mechanical	Yes	No
Check that the unit has been securely bolted down.		
Check all panels are securely fastened.		
Check that all cable entries to OPT are through glands.		

Wiring	Yes	No
Check that power has been connected to the main breaker in the OPT.		
Check that the phone line is connected to the router. (Wired ADSL units)		
Check that the SIM card has been inserted into the modem and the aerial wired and mounted appropriately. (Wireless internet OPTs)		
Check that the pump comms have been connected.		
Check that the tank gauging is connected and operating correctly (where fitted). Replace ATG cable to OPT where possible.		

Power On Tests	Yes	No
Check that the CE board, FMS board, pinpad, printer, cardreader, router and modem all power up.		
Check that the router logs in and is able to access the internet using a laptop and network cable plugged into the router.		
Get the installer to call the number on the back of the pinpad and get the PIN pad activated. (NZ only at present)		
Make sure the pumps are re-priced by the OPT to the current fuel price.		
Check that different fuels are correctly priced on all hoses.		
Check that the site logs onto CompacOnline and that a temperature is recorded at site.		

Transaction Tests	Yes	No
Check that all pumps can be selected when starting a transaction on the PIN pad.		
Check that the correct $, L and fuel grade are printed on the receipt and that a receipt is issued after each transaction when the card is re-swiped.		
Check that the transactions that appear on CompacOnline match up to the receipt information that is printed on site.		
Check that date and time zones are correct.		

Tank Information Tests (where fitted)	Yes	No
Check that tanks are set up in CompacOnline and that correct information from the equipment is being displayed on screen.		
Check that the correct fuels have the correct levels and that one fuel is not being reported as a different fuel.		

VoIP Tests (where fitted)	Yes	No
Press the green button on the front of the unit and complete a test call to the service centre. It should be a clear conversation at both ends.		

Finishing	Yes	No
Ensure all cables are plugged back in after remote accessing.		
Check that door switch alarm has cleared.		
Tidy up all rubbish and clean the OPT before leaving.		