COMFUTRA SERVICE MANUAL

ComFutra Installation and Service Manual
Version No 1.1.7

Model: Compac ComFutra

Date: 6th December 2018

compac
PREMIUM DISPENSER TECHNOLOGY

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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- 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.
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Product Identification

Specifications

Models Covered	This manual applies to Compac ComFutra – all applications. Power Supply: 230 - 240 VAC; 50 Hz; 10 Amp +/- 10% **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.

Manufactured By:

Compac ComFutra 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

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1.1.5	18 Dec 2017	S Laycock	Reformatted manual
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1.1.7	06 Dec 2018	R Liu	Updated contact information

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Safety

You must adhere to the following safety precautions at all times when working on this unit. Failure to observe these safety precautions could result in electrical or mechanical damage to the unit or injury or death to yourself or bystanders.

Make sure that you read and understand all safety precautions before installing, servicing or operating this unit.

NOTE: *Failure to follow safety instructions may invalidate any warranty.*

Mechanical Safety

Observe the following mechanical precautions:

CAUTION

During installation, take care that the unit is well supported and cannot fall over.

Take care with handling sharp edges, wear gloves where required.

Make sure that the service area is thoroughly clean when servicing. Dust and dirt entering the components may reduce the life span of the components and can affect operation.

Electrical Safety

Observe the following electrical precautions:

CAUTION

Always turn off the power to the unit before commencing work on any wiring. Never touch wiring or components inside the high voltage area with the power on. Be aware that capacitors and back up batteries may power the unit even after mains power is removed.

Always turn off the power to the unit at the mains switch before removing or replacing software or memory ICs.

Always take basic anti-static precautions when working on the electronics, i.e., wearing a wristband with an earth strap.

Environmental Safety

Observe the following environmental precautions:

Take care that you clean up after working on the unit.

Remove and carefully dispose of any waste.

Any spills must be cleaned up and disposed of in an approved manner.

CAUTION

Any spillage of fuel must be handled to minimise the risk of fire or explosion. Major spills must be reported to the local environmental authorities.

Site Safety

Observe the following precautions when on site:

Personal safety is the responsibility of the site manager and technician. Personal protective equipment appropriate to the situation is to be worn and if required, the working area appropriately cordoned off with cones, tape and/or barriers.

CAUTION

When working in or near hazardous areas, take all precautions to avoid sources of ignition. Obtain a Hot Work Permit if required.

NOTE: These instructions are intended as a guide only. It is the responsibility of the technician and the site manager to manage safety in accordance with local regulations and best safe site practice.

Introduction

The Compac ComFutra unit is designed as a versatile, multi-purpose authorisation and fuel management station that can be factory fitted or retrofitted to the top of Compac Master series pumps manufactured from 2000 onwards.

It is compatible with most common fuel pumps and can be easily customised to accept a variety of authorisation methods and provide detailed transaction reporting. The main features include:

- Stand alone unit for unattended refuelling
- Non contact keypad
- Card, PIN, iTrack, HID or CWID authorisation options
- Netbase, USB key or CompacOnline software for site management.

The ComFutra is designed to be used on unattended sites where the fuel pumps are authorised and controlled totally by the unit.

A ComFutra can be configured with the appropriate hardware to communicate to and control Compac, PEC protocol and selected Gilbarco and Email protocol pumps.

The ComFutra replaces the Futra. The main differences are:

- The ComFutra can control multi hose and multi product dispensers
- More prompt and interface options
- Can control other pumps on site if required
- Can have a single CWID (Compac Wireless Identifier) or HID unit controlling two hoses
- Larger memory

NOTE: The control systems of the ComFutra are shared by other Compac terminals. some text or illustrations may refer to these models where they share common components.

Card Reader (Optional)

USB Key Reader (Optional)

PIN Pad and Display
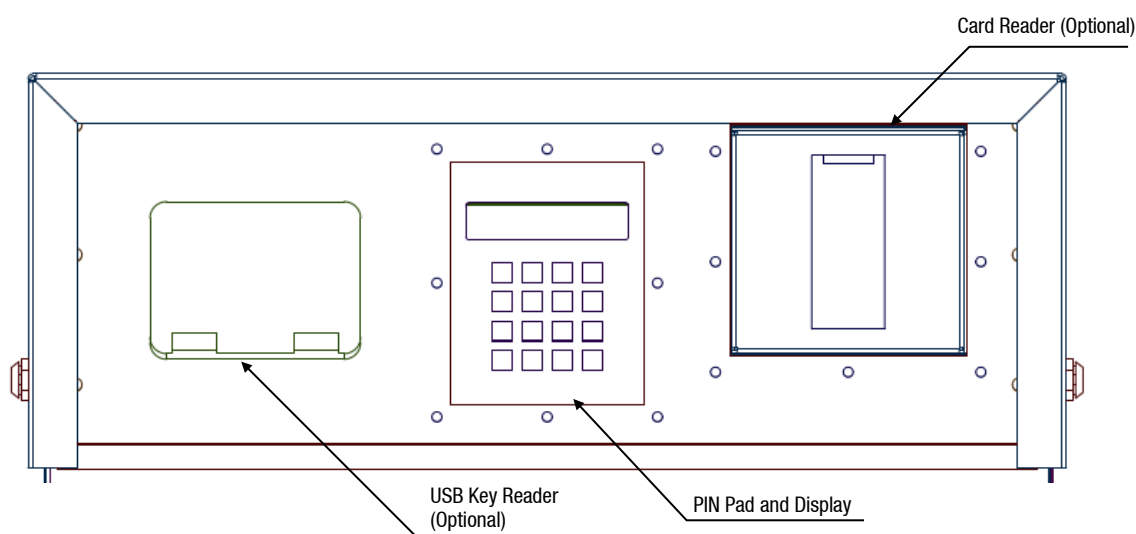
Options

The ComFutra is a very versatile unit and can be equipped for many different functions depending on the customer's requirements.

Reporting Options

- Compac USB Key unit for downloading transactions and uploading card authorisation lists.
- CompacOnline unit for remote reporting and administration. ADSL or 3G communication.
- Netbase unit for remote reporting and administration. Dial-up or TCP-IP communication.

Authorisation Options

- Card based authorisation.
- CWID (Compac Wireless Identifier) proximity key authorisation.
- CWID (Compac Wireless Identifier) nozzle mounted proximity key authorisation.
- HID Wireless proximity key authorisation.
- iTrack Vehicle mounted proximity key authorisation.
- PIN (Personal Identification Number) authorisation.

Memory Options

The ComFutra can accept multiple card bases simultaneously including all major Oil Company, Gas Company and third party cards. It can authorise and control Compac, PEC, Gilbarco and Email Pumps with the appropriate hardware. It is NSC [Weights and Measures Australia] approved.

The unit has the ability to change the partition on the memory to make more space for card numbers (while reducing the transaction memory).

DS1250Y memory	5,500 Transactions	5,000 Cards
DS1250Y memory	4,000 Transactions	22,000 Cards

NOTE: *These figures are approximate depending on the fields required.*

Card numbers can be stored in two different ways: In limited validation mode, only the card numbers stored in the ComFutra can be used. In extended validation mode all valid ISO or mapped cards will be accepted apart from the "Hot Card" numbers that are stored in the memory.

Installation

For new units. the ComFutra is pre-wired into the pump. Refer to the relevant pump Installation and Setup Instructions for installation details.

Retrofit

The ComFutra can be easily retrofitted to any Compac Master series pump manufactured from 2000 onwards. The unit replaces the existing lid of the pump. The power and communication wires at the bottom of the unit are connected to the flame proof electrical box in the base of the unit.

NOTE: The addition of a ComFutra unit to an existing pump may affect the approval of the pump. If in any doubt, confirm the approval status before proceeding.

CAUTION

Always take precautions to avoid arcs and short circuits that may damage sensitive components.

Tools Required
- Allen keys
- Wire strippers
- Electrical screwdriver

Retrofitting

1. Isolate and lock out and tag out the pump unit.
2. Undo the four hex head screws holding on the lid of the pump and remove it.
3. Undo the four hex head screws holding the cover onto the ComFutra unit. Unlock the cover and remove it.
4. Place the ComFutra unit onto the pump. If you have the option, try to orientate the unit so it faces away from the prevailing wind and direct sunlight.
5. Attach the ComFutra to the pump with the four lid screws.

Wiring

1. Remove the front panel of the pump.
2. Lead the wires at the base of the unit down to the base of the pump.
3. Remove the lid from the flame proof electrical box.
4. Wire the power and communication wires into the electrical box.
5. Replace the lid of the flameproof box and neatly cable tie the wires in the cabinet to prevent them interfering with any components.
6. Make sure all wires are correctly glanded.
7. Replace the perspex cover plate over the electrical terminals (if removed).
8. Replace the front panel of the pump.

Commissioning

1. Turn on the power to the pump.
2. Turn on the power switch inside the ComFutra unit. Replace and lock the lid.

3. Test operation of pump(s) and the ComFutra unit.

NOTE: *Some pumps may require additional software or software upgrades to work with the ComFutra.*

Cover Screws

Screws attaching
ComFutra to unit

Lock
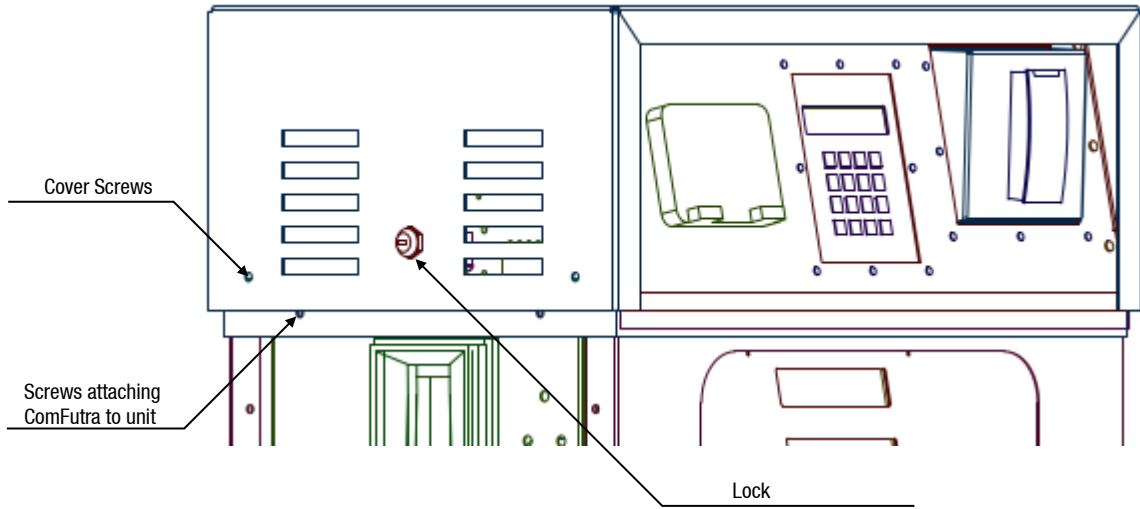
Powering Up

When all wiring and fuel connections have been made and checked, the power can be switched on to the unit.

NOTE: *Where regulations require, a registered electrician must check and approve connections.*

Start Up Check

The retail displays should illuminate and the quantity and price displays should read zero. The $ per litre display will display the factory setting.

Remove the lid of the ComFutra and turn on the UPS switch. The keypad display will illuminate and after boot-up should display the message: Pass Card.

If the back-up battery has discharged during transit, the UPS board will beep and the keypad screen will display the message: Pass Card - Low Battery. You will need to wait until the battery has charged before the unit can be used.

Checking Communication

External Comms

When the pump is on, contact your Netbase administrator and check that they can dial in and communicate with the pump.

Pump Comms

Use the diagnostic LEDs on the C4000 board to determine if the pump comm's are working correctly.

Diagnostic LEDs

In a typical system (with Compac pumps only) this is how the diagnostic LEDs will appear.

LED	Comms working correctly	Comms wiring reversed	Short on comms
To Pumps / 5	Flashes	Flashes	Flashes (very fast)
From Pumps / 5	Flashes	Flashes	Flashes (very fast)
Comm Short / 5	OFF	ON	Flashes (very fast)
TX / 5	Flashes	Flashes	Flashes
RX / 5	Flashes (faster than TX / 5)	Stuck ON	Stuck ON
WDOG	OFF	OFF	OFF
POWER	ON	ON	ON
To Pumps / 4	n/a	n/a	n/a
From Pumps / 4	n/a	n/a	n/a
Comm Short / 4	n/a	n/a	n/a
D6 (on C4000)	Flashes	Stuck ON	OFF
D7 (on C4000)	Flashes	OFF	OFF

Checking Card Reader

Check the card reader to see if it reads approved cards.

Swipe a test card and check that a transaction can be made. The card is inserted with the stripe to the top and on the right hand side.

Do this for all types of approved cards.

Checking Transactions are Uploaded

Contact your Netbase or CompacOnline administrator and check that your test transactions and any customer transactions that have taken place have been recorded correctly on Netbase or CompacOnline.

For USB equipped units, download your test transactions and check that the information recorded matches the information on the receipts.
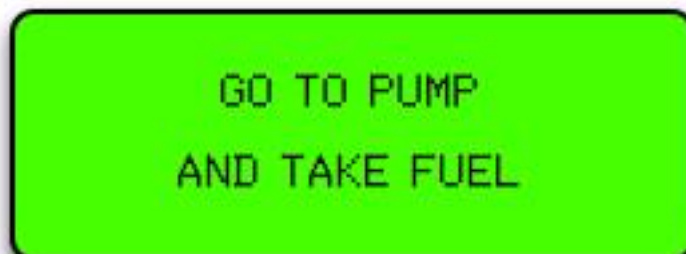
User Instructions

When not in use, the PIN pad display will read:

PASS CARD

The customer inserts and withdraws their fuel card (stripe to the top, either way round). If the card requires a PIN number, the display will read:

ENTER PIN

Once the PIN number has been entered (or if a PIN number is not required), the display will read:

GO TO PUMP

AND TAKE FUEL

Lift nozzle and after a short delay, the pump will start. The display will read:

PASS CARD

TRANSACTIONS ACTIVE
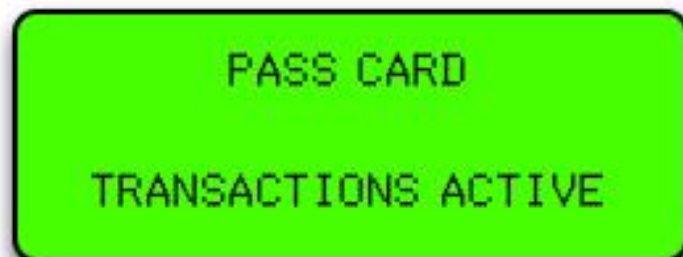
Once you have finished refuelling, hang up the nozzle.

To Obtain a Receipt:

Return to the display, the screen will read:

PASS CARD

Insert and remove your card. The screen will read:
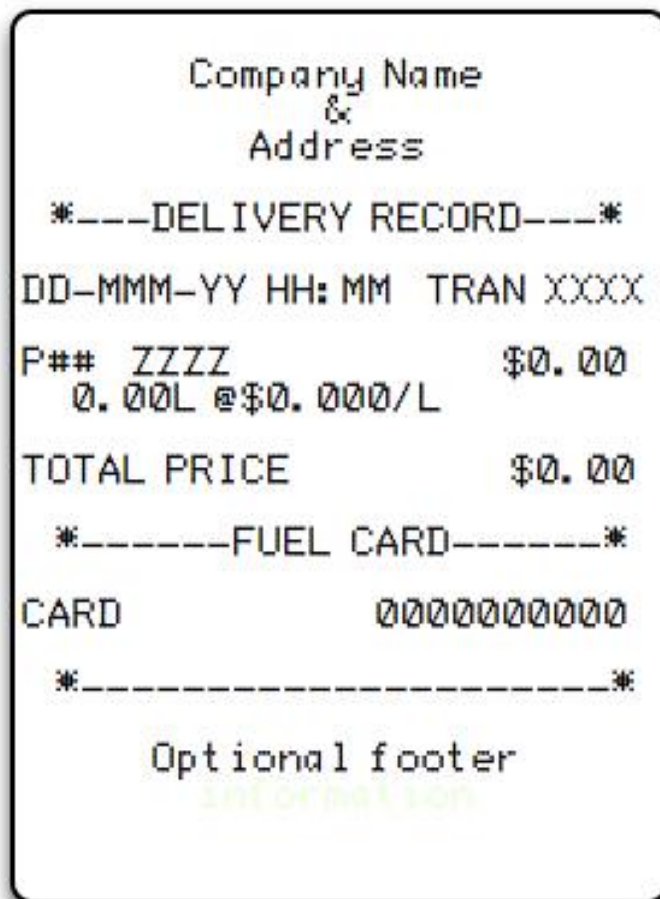
RECEIPT REQUIRED?

If you want a receipt press Yes or if you want to start a new transaction press No.

A receipt for the transaction can be printed up to 20 minutes after hanging up the nozzle. After that time, inserting the card will start a new transaction.

Receipt Details

Depending on the site setup the receipt will look similar to this:

```
           Company Name
                &
             Address

  *---DELIVERY RECORD---*

DD-MMM-YY HH:MM  TRAN XXXX

P##  ZZZZ              $0.00
    0.00L @$0.000/L

TOTAL PRICE            $0.00

   *-------FUEL CARD-------*

CARD            0000000000

   *---------------------*

         Optional footer
```

TRAN XXXX is the transaction number.

P## is the pump (hose) number. P01 for single hose units.

ZZZZ is the fuel grade eg. Diesel, JET A1 etc.
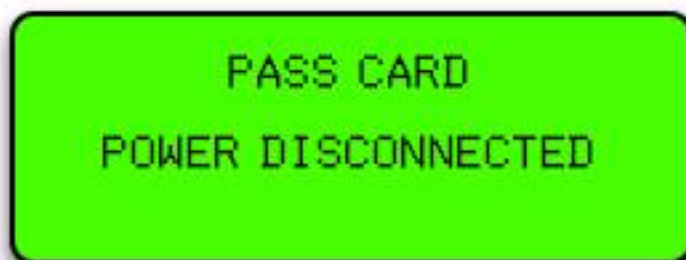
$0.00 is the dollar amount of fuel dispensed.

0.00L @$0.000/L is number of litres dispensed and price per litre.

CARD 0000000000 is the fuel card number.

Other Screen Messages

If the power has been disconnected, the following message will appear:


```
        PASS CARD

   POWER DISCONNECTED
```

The pump will not be able to be used but a receipt for previous transactions (or transactions interrupted by the power failure) can be issued up to 20 minutes after disconnection.

If power is restored to the unit but the voltage of the battery has dropped below a pre-set threshold, the following message will appear:

```
PASS CARD

LOW BATTERY
```
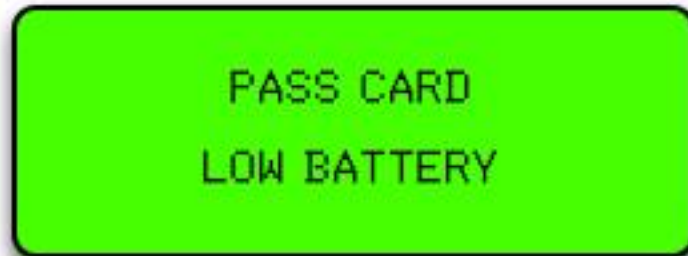
To ensure the battery will have enough power to print receipts if the power fails again, the unit will re-charge for 20 minutes after the threshold battery level is reached before allowing new transactions. Refer to Mains Power Loss.

CWID Key & CWID Block Readers

Overview

Compac authorisation units can be equipped with a Compac Wireless Identifier (CWID) sensor. Drivers with CWID keys can place their key close to the sensor to enable the pumps. The CWID keys have unique numbers so that each transaction can be assigned to a particular CWID.

CWID block transceivers can also be mounted on the pump nozzle so that the pump is authorised automatically when the nozzle is inserted into a fuel tank fitted with a CWID key. The unit can be programmed to cut out if the CWID signal is lost for 10 seconds in order to prevent filling of unauthorised vehicles.

Standard CWID Key Operation

The driver goes to the unit and places their CWID key close to the CWID "target". If the CWID is valid, the display will request PIN entry [optional] and Odometer entry [optional].

If more than one pump is available, the display then requests the driver to select which pump they wish to refuel from.

The display then advises the driver to take fuel.

After the transaction, if the unit is equipped with a receipt printer and the driver requires a receipt, he/she goes back to the unit and re-presents their CWID key. Select YES to print receipt. (If NO is pressed, a new transaction will be started.)

After printing, the driver lifts the sliding door to retrieve receipt. The receipt is cut off automatically.

CWID Block Nozzle Mount Operation

The driver goes to the pump and inserts the nozzle into the fuel tank. The unit recognises the key and starts the pump.

NOTE: *If the nozzle is removed from the filler, the unit will shut the pump down after approximately ten seconds. This it to prevent the filling of unauthorised tanks.*

When refuelling is complete, the driver hangs up the pump nozzle and departs.

Setup

The CWID aerial is tuned for best performance at the factory. If the CWID board or aerial is replaced then the aerial must be re-tuned. Follow the instructions for Tuning the CWID Aerial.

HID Readers

Overview

Compac authorisation units can be equipped with an HID reader. Drivers with HID keys can place their key close to the sensor to enable the pumps. The HID keys have unique numbers so that each transaction can be assigned to a particular key.

Standard HID Key Operation

The display on the unit will read "PASS HID KEY".

The driver goes to the unit and places their HID key close to the HID panel on the unit. If the HID key is valid, the red light at the top of the sensor will turn green and beep once.

If the unit is configured to ask for a customer ID, odometer reading or job number it will read: "ENTER CUSTOMER ID", "LOAD ODOMETER AND PRESS ENTER" or "ENTER JOB NUMBER".

When the correct numbers have been entered the display will read: "LOAD PUMP NUMBER AND PRESS ENTER". The driver selects the pump number they wish to use and presses enter. The display will now read: "GO TO PUMP AND TAKE FUEL". (If the pump number selected is not one connected to the unit or the pump is switched off, the display will read: "PUMP OFF LINE".)

The driver will then take fuel and then hang up the nozzle; this completes the transaction.

iTrack Reader

Overview

The Compac unit can be supplied with an iTrack reader that detects vehicles fitted with an authorised transponder and authorises the pump to dispense fuel.

Standard iTrack Operation

When the driver drives up to the pump the iTrack reader will sense the presence of an authorised vehicle. Depending on site setup the unit display will request PIN entry [optional], odometer entry [optional] and which pump they wish to refuel from [optional].

The display then advises the driver to take fuel.

After refuelling, if the unit is equipped with a receipt printer and the driver requires a receipt they select YES to print receipt. (If NO is pressed, a new transaction will be started.)

After printing, the driver lifts the sliding door to retrieve the receipt. The receipt is cut off automatically.

The driver then drives away from the pump. The pump is now ready for the next transaction.

USB Module

The USB Module is mounted in a plastic enclosure with a sealed lid. Under the lid is a slot for a USB stick, an LCD display and four buttons:

⬆ and ⬇ arrows toggle between the screens.

✔ accepts the Yes/No option displayed.

✘ rejects the Yes/No option displayed and returns to the *"press any key"* screen.

The screens available for uploading and downloading are:

- Set Price - Upload new price schedule from USB stick
- Send Cards - Uploads new card authorisation files from USB stick
- Get Trans - Downloads all untagged transaction details to the USB stick
- Get Buffer - Downloads all transactions in the memory to the USB stick including previously downloaded transactions. (This could be up to several thousand transactions)
- Get All - Uploads and downloads all the above files

The USB module and key can be used while the unit is in operation.

While not recommended, if the USB key is removed while in use, no transaction data will be lost. If the USB key is removed, the operation will need to be repeated to ensure all the data stored on the unit is retrieved.

USB Memory Stick

The Compac USB Module comes with a USB stick that has already been programmed for the customer with a unique file number. The number is located in the Compac folder and will allow the USB module to recognise the USB stick.

NOTE: Each module must have its own key. You cannot have one USB key that covers multiple units.

You should always keep a secure copy of this file as if you lose your Compac USB stick the USB Module will not recognise any other USB stick unless it contains the unique "USB.key" file in the Compac folder.

It is also good practice to keep a secure copy of the Cards folder and Price folder if you are setting up the price through the USB.

The USB Module will display a "Non-Secure USB" error message if the USB Stick does not have the "USB.key" file or the file is not under the Compac folder.

For instructions on handling these files refer to: USB Module Files.
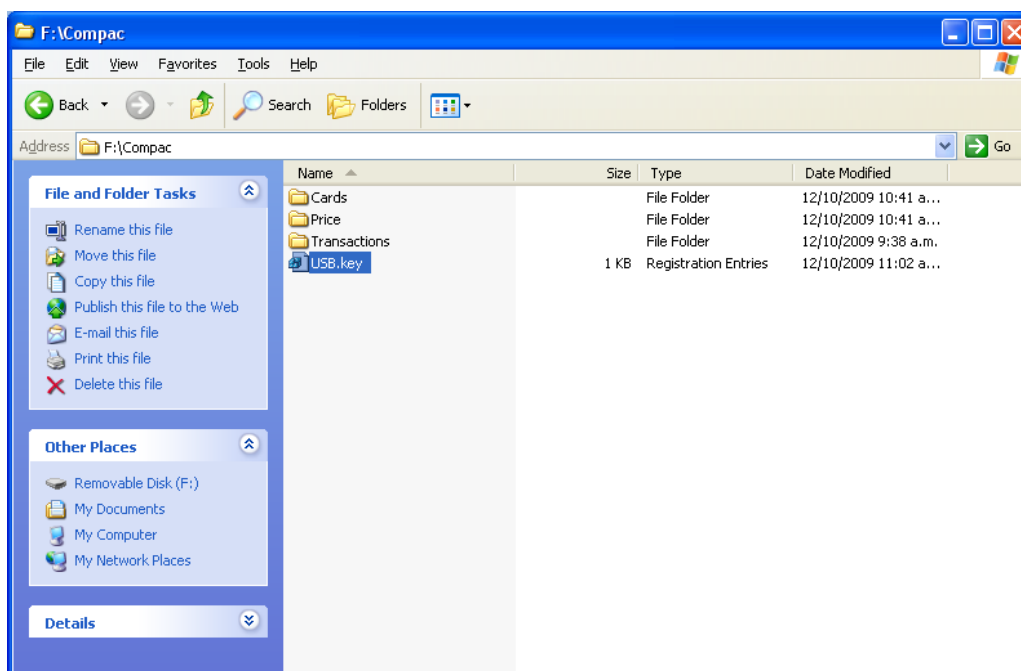
Managing Files

To use the USB Module lift the plastic cover of the module. The screen should display: *"COMPAC USB module press any key"*.

COMPAC USBmodule
press any key
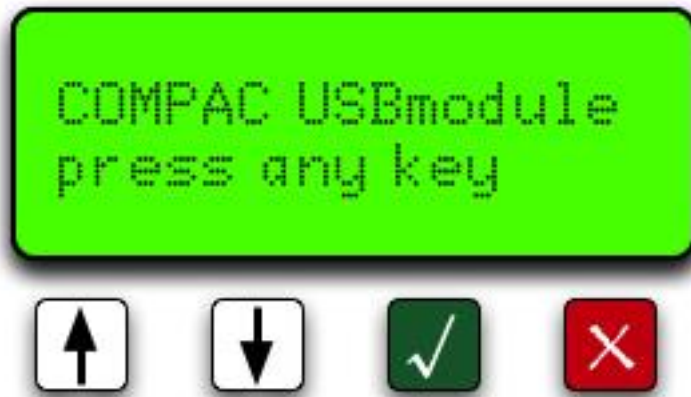
Plug your USB stick into the USB slot and push any of the keys. It will then display *"Searching USB..."*.

COMPAC USBmodule
Searching USB...

If the USB stick does not contain the Compac USB security code the display will read *"Non Secure USB"*. You will have to load the "USB Key" file onto the key before it will work.

If the USB stick has the security code and it has found the data on the USB stick, it will display *"Select [UP/DN] Do All? [OK]"* Refer to the screen Do All. Use the up ⬆ and down ⬇ buttons to go through the menu on the USB Module.

NOTE: *If the USB Module can't find the USB stick, pull it out and push it in again.*

```
COMPAC USBmodule
Non-Secure USB
```

⬆ ⬇ ✓ ✗

1) Do All

"Do All" uploads the cards files and price files from the USB stick to the module and downloads transactions and buffers from the module to the USB stick. Push the green ✓ button to start the operation. The unit will read *"Please wait..."* while it's uploading transaction and buffer files and downloading cards and price files. Be patient.

If you do not want to use this function, use the up or down keys to scroll through the other options.

NOTE: *Getting the buffer itself could take up to 5 minutes depend on how many transactions are in the unit.*

NOTE: *It is very important that you DO NOT unplug the USB stick before the USB module says "Complete Remove USB".*

```
Select [UP/DN]
Do All? [OK]
```

⬆ ⬇ ✓ ✗

2) Set Price

Push down the button to move to the next option *"Set Price"*. Push the green ✔ button to send the price file to the module. The unit will read *"Please wait..."* Once the file has been uploaded to the unit it will say *"Complete Remove USB"*. You can now either unplug the USB stick or wait a few seconds for the screen to return to the menu to continue uploading or downloading more files.

```
Select [UP/DN]
Set Price? [OK]
```

3) Send Cards

The next option is *"Send Cards"*. Push the green ✔ button to upload the card files to the module. The unit will read *"Please wait..."* Wait for the USB Module to say *"Complete Remove USB"*. You can now either unplug the USB stick or wait a few seconds for the screen to return to the menu to continue uploading or downloading more files.

```
Select [UP/DN]
Send Cards? [OK]
```
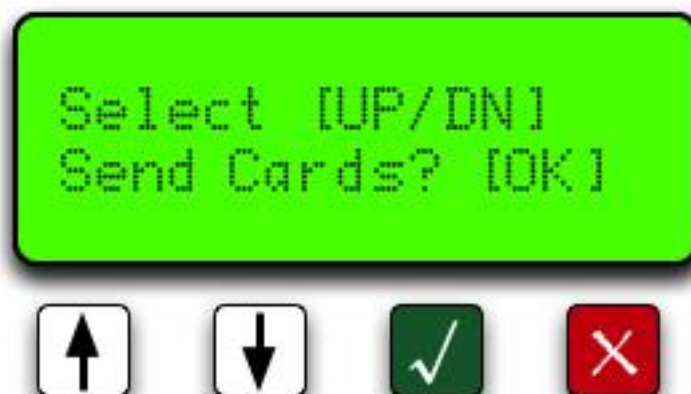
4) Get Buffer

Move down to the next option *"Get Buffer"*. Use this option if you want to download all the transactions from the module. This would include the old transactions that have been downloaded from the module before. This operation could take up to 5 minutes depending on how long the unit has been trading and how many transactions are held in the memory of the equipment. Push the ✔ button. The unit will read *"Please wait..."* Wait for the USB Module to say, *"Complete Remove USB"*. You can now either unplug the USB stick or wait a few seconds for the screen to return to the menu to continue uploading or downloading more files.

```
Select [UP/DN]
Get Buffer? [OK]
```
⬆ ⬇ ✔ ✖
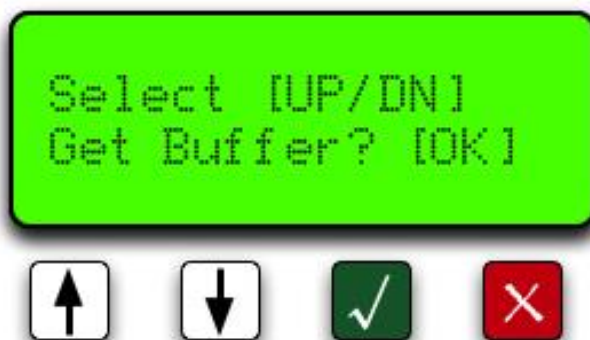
5) Get Transactions

The last option is *"Get Trans"(actions).* Push the green ✔ button to download transaction file from the module to the USB stick. The unit will read *"Please wait..."* Wait for the USB Module to say, *"Complete Remove USB".* You can now either unplug the USB stick or wait a few seconds for the screen to return to the menu to continue uploading or downloading more files.

NOTE: *Every time you download transactions from the equipment, it tags them so they will not be downloaded again using this function. It also marks them as re-writable so as the transactions fill up the memory, it will overwrite the old transactions. Depending on functions, the equipment can store up to 5,000 transactions.*

```
Select [UP/DN]
Get Trans? [OK]
```
⬆ ⬇ ✔ ✖

Managing Files
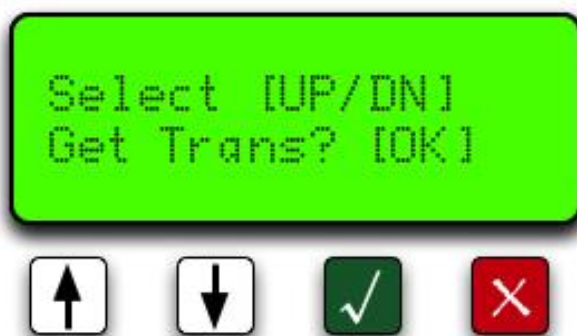
USB Module Files

You can access the files on your USB key by plugging it into the USB port of your computer and clicking on the Compac file.

You will see the following folders:
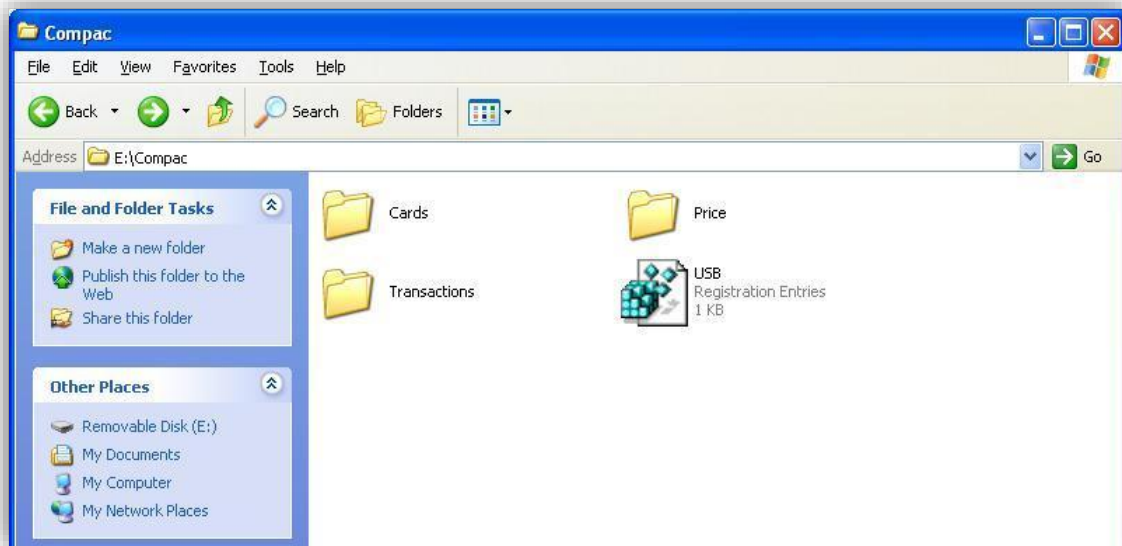
Click on the Cards, Price or Transactions files to view, change or retrieve information.

NOTE: Only transaction information is uploaded from the module. Card and pricing information is stored on the key and downloaded to the module when requested.

1) Cards

Opening the Cards folder will show the Excel spreadsheet file for the cards called cards.csv.

	A	B	C	D	E	F	G	H
1	CARD_NUM	VALID						
2	1000	TRUE						
3	1001	TRUE						
4	1003	TRUE						
5	1004	TRUE						
6	6001316	TRUE						
7	6001317	TRUE						
8	6001318	TRUE						
9	6001319	TRUE						

Adding a Card

To add a card, enter the new card number in column A and the word TRUE in column B. Save the changes. Next time the USB key is inserted in the module and the Send Cards function selected, the new card number(s) will be installed.

Deleting a Card

Change the appropriate field in column B to FALSE. Save the changes. Next time the USB key is inserted in the module and the Send Cards function selected, the card(s) will be deleted.

NOTE: *The module will upload card information from the USB key and overwrite card information stored in the USB Module. The module cannot download card information to the USB key.*

NOTE: *It is not recommended to delete cards by deleting the card information.*

PIN Numbers

If you wish to use PIN numbers for added card security, you can add a new column titled SELECT_PIN. (Depending on the set-up you ordered, this may already be entered.) When a PIN number is added in this column, the user will be prompted to enter their PIN number. If a cell in this column is left blank, a PIN will not be asked for.

PIN numbers are 4 digits as standard.

	A	B	C	D	E	F	G	H
1	CARD_NUM	VALID	SELECT_PIN					
2	2900001	TRUE	1234					
3	2900002	TRUE	5678					
4	2900003	TRUE	3456					
5	2900004	TRUE	6543					
6	2900005	TRUE						
7	2900006	TRUE	7890					
8	2900007	TRUE						

User ID

The unit can be set up to manage user ID numbers. It requires a change to the configuration code of the unit and a new file called cardusers.csv added to the Cards folder of the USB key.

When set up, the unit will prompt for a user ID number and then a PIN number (if the card is set-up with a PIN).

Users are not linked to a particular card.

As PIN numbers are assigned to the card, all users will have to enter the same PIN number.

To assist with administration, you can set up a column linking names to ID numbers but this information will not be transferred to any reports.

NOTE: It is not recommended to delete user IDs by deleting the information. Use the word FALSE in the VALID column to remove the user ID from the unit.

	A	B	C	D	E	F	G	H
1	USER_ID	VALID						
2	1234	TRUE						
3	1235	TRUE						
4	1236	TRUE						
5	1237	TRUE						
6	1238	FALSE						
7	1239	TRUE						

File Format

If the any of the above files are lost then a new file can be recreated by duplicating the headers in row 1 (case sensitive). Enter the card fields and save as a .csv file.

2) Price

Clicking on the Price file will show the pricing spreadsheet. Click on the icon to display the pricing information.

	A	B	C	D	E	F	G
1	PRODUCT_CODE	PRODUCT_PRICE	PRODUCT_NAME				
2	3	0.999	DIESEL				
3							
4							

Changing Price

To change pricing, change the figure(s) in column B to the new value. ($ per litre) Next time the USB key is inserted in the module and the Set Price function selected, the new price(s) will be installed.

NOTE: The module will upload pricing information from the USB key and overwrite the information stored in the USB Module. The module cannot download pricing information to the USB key.

File Format

If the price file is lost then a new file can be recreated by duplicating the headers in row 1 (case sensitive). Enter the pricing information and save as a .csv file.

3) Transactions

The Transactions folder has the downloaded transactions from the USB module. Click on the file you wish to view.

To help you find the correct file the transaction files are named using the following format: Transactions_Day (DD) Month (MM) Year (YYYY) Time (Hours Minutes Seconds).TRA

Example: Transactions_30112009140653.TRA was created on the 30th November 2009 at 2.06 and 53 seconds PM.

|	A	B	C	D	E	F	G	H	I	J	K
1	Reference	Amount	Quantity	Hose	Product	Pump	CardNumber	LocalDateTime	Odometer	Tag	UserID
2	0	0.5	0.5	1	3	1	1354272	12/09/2002 6:14			
3	1	0.48	0.48	1	3	1	1354272	12/09/2002 6:15			
4	2	9.23	9.23	1	3	1	1354272	12/09/2002 6:17			
5	3	8.93	8.93	1	3	1	1354272	12/09/2002 6:20			
6	4	4.88	4.88	1	3	1	15954272	12/09/2002 6:26			
7	5	16.34	16.34	1	3	1	1354455	12/09/2002 6:27			
8	6	17.62	17.62	1	3	1	1354455	12/09/2002 6:28			
9	7	18.22	18.22	1	3	1	1354455	12/09/2002 6:28			
10	8	19.23	19.23	1	3	1	1354455	12/09/2002 6:29			
11	9	3.21	3.21	1	3	1	1354272	12/09/2002 6:30			
12	10	2.09	2.09	1	3	1	1354272	12/09/2002 6:30			
13	11	1.23	1.23	1	3	1	1354272	12/09/2002 6:30			
14	12	0.84	0.84	1	3	1	1354272	12/09/2002 6:36			
15	13	4.22	4.22	1	3	1	1354272	12/09/2002 6:36			
16	14	1.27	1.27	1	3	1	1354272	12/09/2002 6:39	258963		
17	15	2.05	2.05	1	3	1	1354272	12/09/2002 6:39	258		
18	16	1.24	1.24	1	3	1	1354272	12/09/2002 6:40	6		
19	17	4.46	4.46	1	3	1	1354272	12/09/2002 6:40	9		
20	18	6.08	6.08	1	3	1	1354455	12/09/2002 6:40	25		
21	19	7.35	7.35	1	3	1	1354455	12/09/2002 6:41	8		
22	20	2.09	2.09	1	3	1	1354455	12/09/2002 6:41	25		
23	21	1.42	1.42	1	3	1	1354455	12/09/2002 6:42	2		
24	22	3.03	3.03	1	3	1	1354455	12/09/2002 6:43	2		

File Format

The files shown are as follows:

- Reference - Every transaction is given a consecutive number from initialisation of the USB module
- Amount - The value of the transaction in local currency
- Quantity - The amount of fuel dispensed in litres
- Hose - The hose number used
- Product - The product code number
- Pump - The pump number
- Card Number - The number of the card used for the transaction
- Local Date Time - The date (DD/MM/YYYY) and time (24 hour clock) of the transaction
- Odometer - The odometer reading if entered
- Tag - Information is shown here if the unit uses mapped cards
- User ID - The ID number of the user if the unit is set up to prompt for a number

Customising Your Transaction Reports

If you want to include more card information on your transaction reports we have developed an automated process to include card information in your transaction file. This software requires an update to existing USB keys that do not have it. The new software is called USBTransJoin.exe and as its name suggests, it joins the card information on the USB key to the transaction records.

Software installation and setup instructions

1. Copy the USBTransJoin.exe file onto the Compac USB key and put it in the "Compac" Folder
2. In the "Cards" folder you will have a file called "cards.csv". The two standard columns in this file are "CARD_NUM" and "VALID"
3. To include information from this file into your transaction records you will need to create new columns that start with the prefix "D_". For example, if you wanted to include the name and unit number of the vehicle using cards you would add in two columns titles "D_Name" and "D_ Unit Number". See the screenshot below showing this example.
4. There is no limitation to the number of extra columns you add to the card file however the "CARD_NUM" and "VALID" column must not have their column names altered or other columns added to the left-hand side of them.
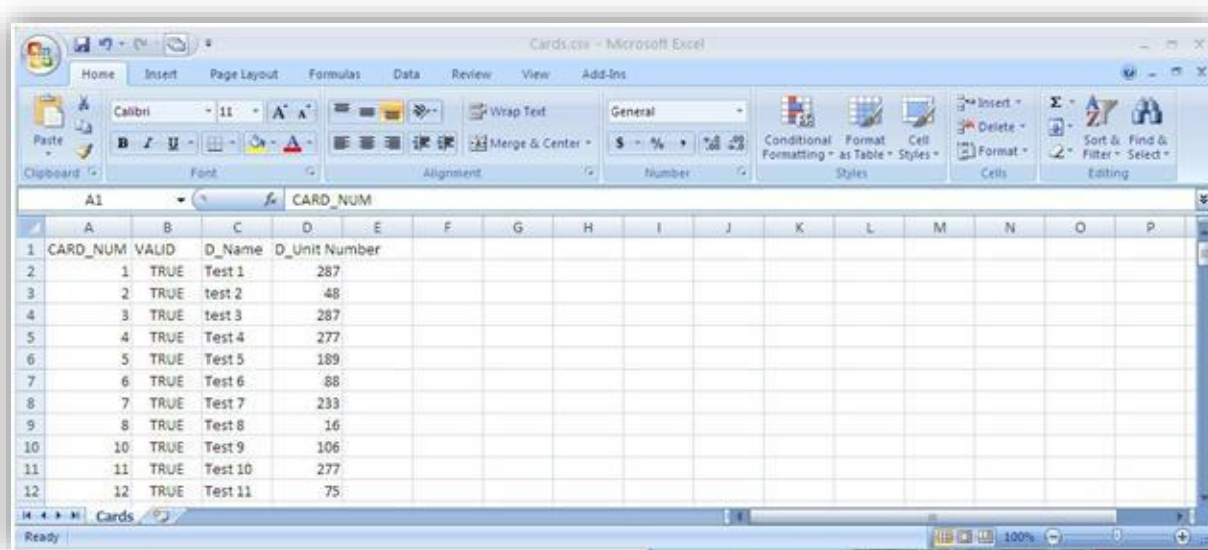
How to use the software

Run the USBTransJoin.exe software by double clicking on it. A dialog box with appear with the message "Card file found".

Click on the "Process Transactions" button to merge the card information with the transaction information. A conformation message will appear showing the file path of the file created.
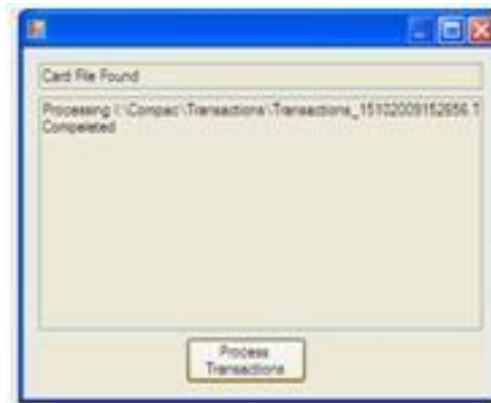
Browse to the transactions folder on the USB key, a new folder will have been created titled "PostProcess". Inside this folder will be a CSV file with the merged transaction and card information. Any of the card information fields with the "D_" suffix will appear on the right side directly after all the normal fields that are in a transaction file. If you do not have any information allocated to that card the headers will be in this file but there will not be any information against that card. In this example below card number 51 had the name "Test 39" and Unit number "188" assigned against it.

31.

Powering Up

When you power up the USB Module it will display *"COMPAC USB module ...no host"* as the software has not started running yet. It should change after 2 minutes or so and display the idle message saying "*press any key*".

If the no host message does not clear in 5 minutes, check all the cables are plugged in to the Compac Box.

32.

Set Up

System Setup

The unit uses the ComFMS circuit board. All set up is done using the four line dot matrix display on the PIN Pad.

Please contact your local Compac service agent if you have any problems.

The area where installers have the most difficulty is in setting up pumps and cards.

Where possible Compac will set up the Pumps and Cards in the unit during manufacture. However, as these details are not always available, some setting up may be required on site.

NOTE: *Refer to tables later in this manual for detailed instructions on how to set up each parameter.*

Software Identification

To identify the software versions installed in the unit, the eprom software version and then the downloaded software version are shown on the display during power-up. The downloaded software version is displayed in the screen below.

NOTE: *Software versions may differ from example shown above. Check with help desk for the appropriate version for your unit.*

Main Menu Options

The following is usually displayed when the unit is not in use.

```
PASS CARD
```

If setup is required, push <NO> and "ENTER PASS CODE" will be displayed. Enter the pass code to access the main menu. (Factory default 654321). If you lose your pass code, contact Compac to get it reset.

```
ENTER PASS CODE
         *
```
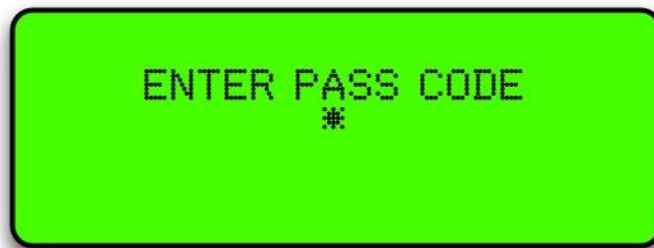
The following options are displayed:

```
1) REPORTS    5) PUMPS
2) CARDS      6) TANKS
3) FUELS      7) GROUPS
4) SYSTEM
```

Option #1 REPORTS

The reports menu is not used on current models. For old systems running audit trail printers, contact Compac for setup advice.

Option #2 CARDS

Selecting Cards will bring up this screen.
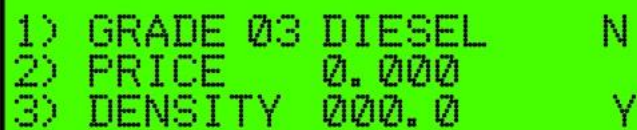
```
1> IDENTIFIER VALIDATION

3> NETWORK SETUP
```

Choose 1 Identifier Validation to set up cards or 3 Network Setup to enter Access and ISO settings.

Option #3 FUELS

Selecting Fuels will bring up the following screen:

NOTE: Depending on your software, the Density line may not show.

```
1> GRADE 03 DIESEL      N
2> PRICE    0.000
3> DENSITY  000.0       Y
```

Use the Yes and No buttons to scroll through the fuel types.

To change the price for the fuel grade, press 2 and the price will start flashing.

Enter the new price in a four-digit format and press Enter.

The following table describes the process.

Keyboard Entry	Result on Display	Operation
Enter Passcode		
<ENTER>	Main Menu is displayed	
<3>	Fuel Menu is displayed	
	1) GRADE XX 2) PRICE 0.000	Change Price
<2>	1) GRADE XX 2) PRICE 0.000 (flashes)	Use the N and Y keys to scroll up and down the Grades
Type in new price	1) GRADE XX 2) PRICE 0.000 (still flashes)	
<ENTER>	1) GRADE XX 2) PRICE 0.000 (stops flashing)	
<N> or <Y> to change grade		Change another price
<CLEAR>	Returns to Main Menu	Escape

NOTE: Manual pricing is overridden by USB or internet pricing.

Pump Grade Maps

Grade Number	Standard Setup	BP Fuelcard Setup (NZ)	Mobil Fuelcard Setup (NZ)
1	Super	Diesel	Super
2	Unleaded	Super	Unleaded
3	Diesel	Oil 1	Diesel
4	PULP	Oil 2	CNG
5	LPG	T/Wash	LPG
6	Oil	C/Park	Oil
7	Kerosene	LPG	Kerosene
8	Avgas	Unleaded	Avgas
9	Jet A1	W/Bridge	Jet A1
10	Water	Oil 3	Water
11	CNG	Avgas	(not used)
12	MPD (Multi-product)	Jet A1	Multi-product
13	Oil 1	Multi-product	Oil 1
14	Oil 2	Oil 4	Avgas
15	Oil 3	Oil 5	Jet A1
16	Oil 4	N/A	N/A
21	Receipt	Receipt	Receipt
22	Auth.	Auth.	Auth.

A **receipt station** (grade 21) has a cardreader with which the holder of a validated card may request a receipt for a transaction carried out on any pump.

An **authorisation station** (grade 22) has a cardreader that enables the holder of a validated card to select and use a pump. This is typically used when non-Compac pumps are installed. An optional receipt printer may be attached to the authorisation station.

Option #4 SYSTEM

To set up a system the following parameters must be set:

NOTE: *The Passcode and Site number must be set up to enable Netbase to dial into it.*

The password and site number must be set on site as they cannot be changed remotely by Netbase.

The Compac factory Passcode on new equipment is 654321.

The system screen looks like this:

```
1) PASSCODE   4) CFG  A
2) SITE NUM   5) CFG  B
3) CLOCK      6) TIMEOUT
```

Passcode

The factory set passcode 654321 can be changed using the "PASSCODE" option in the Systems menu. Passcodes can be from 1 to 6 digits long.

```
PASSCODE = 654321
```

If you want to change the passcode, enter it and press Enter.

Make sure you have recorded the new passcode as you will be locked out if you forget it and the memory will have to be erased to reset it.

The following table describes the process.

Keyboard Entry	Result on Display	Operation
Enter Passcode		
<ENTER>	Main Menu is displayed	
<4>	System menu is displayed	
<1>	PASSCODE = XXXXXX (flashes)	Change Passcode
Type in new passcode	PASSCODE = XXXXXX (still flashes)	
<ENTER>	Returns to System menu	

Site Number

The site number is set by using the "SITE NUM" option in the Systems menu.
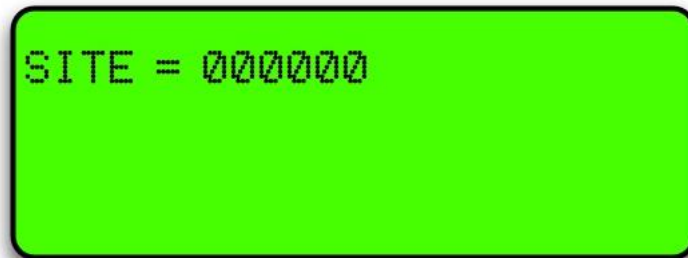
If you want to set the site number, enter it and press Enter.

The following table describes the process.

Keyboard Entry	Result on Display	Operation
Enter Passcode		
<ENTER>	Main Menu is displayed	
<4>	System menu is displayed	
<2>	SITE = XXXXXX (flashes)	Change Site Number
Type in site number (Factory set Site number is #1 which can be left if unit is not part of a Network. If part of a Network, consult the Network Supervisor.)	SITE = XXXXXX (still flashes)	
<ENTER>	Returns to System menu	

Setting the Clock

The setting of the clock is very important, as transactions are stored in chronological order. The clock will need to be changed to compensate for Daylight Saving time.

NOTE: If the clock setting is found to be wrong, upload transactions before setting the clock correctly to ensure that transactions are picked up in the correct order.

```
ENTER DD/MM/YY HH: mm

00/00/00 00: 00
```
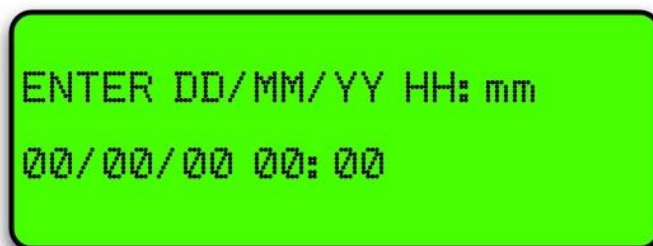
To set the clock follow this procedure carefully as changing the wrong numbers may disable the system. < > means push that key.

Keyboard Entry	Result on Display	Operation
Enter Passcode		
<ENTER>	Main menu is displayed	
<4>	System menu is displayed	
<3>	ENTER DD/MM/YY HH:mm DD = day MM = month YY = year (20YY) HH = hour (in 24hr time) mm = minutes	Set Date and Time
<ENTER>	Returns to system menu	

NOTE: The clock setting is not shown on the display. To check the clock setting is correct, do a zero dollar transaction and check the time/date data on the receipt.

Configuration "A" Settings

The configuration "A" is a 12 digit code that configures the unit for each application. This is usually set at the factory. Only change the configuration settings if you are sure that all information is backed up and that you are aware of any consequences.

Digit	Operation	Options	Display
1	Controller Type	0 - Standard default 3 - Driveway Card Acceptor (DCA / ComFutra)	
2	Deleting options	0 - Enable local delete 1 - Disable local delete	
3	Unused	0 - Default 1 - Plant number prompt	
4	Printout and Tank gauging options	0 - Print one copy only 2 - Print 2 copies 5 - Does not display NO RECEIPT in DCA mode if no receipt printer fitted	PR2
5	Deleting and Monitoring options	0 - Delete after transactions (Print Total & Transactions(CentCont) or Current & Shift report(CommCont) 1 - Delete after totals (Print Totals or Shift report only) 6 - Disable events monitoring (events are recorded by default)	
6	Printout and Bulk metering options	0 - Default 1 - Litres only printout 3 - Bulk mode 4 - High Bulk mode 5 - Big Hot Card file 6 - Depot (with midnight shutdown) 7 - Bay Authorisation Mode 8 - Bulk mode with Preset	
7	User ID option	0 - No PIN. Note: Encoding on the card can activate a prompt for PIN 1 - Prompts for Employee number 2 - Prompts for Fleet number 4 – Prompts for User ID (on DCA only). Note: If card is swiped at the pump it does not display a prompt	UIP
8	Odometer prompt	0 - No odometer. Note: Encoding on the card can prompt for odo 1 - Odometer request 2 - No Odometer request. Note: Will override card encoding for Odo. request 5 - Engine Hours 6 - Vehicle number 7 - Monitored Odometer request – Only accepts odometers equal to or more than the last one entered. This is only reset after a Delete Transactions	ODO NOD
9	Card type	0 - Cards not requiring specific configuration 1 - BP NZ Fuelcard (with NZ software) or BP Plus Card (with Aust. software) 2 - Mobilcard 3 - Print all card details on Audit Trail (with NZ software) or Woolmans Card (with Aust. software) 4 - PIN code authorisation 5 - Cyphercard (with NZ software) or Shell Distributor card (with Aust. software) 6 - Air BP card (with Aust. software) or Track 1 system setup: Track 1 Comcard (with NZ software) or Track 2 system setup: Gilbarco card (with Aust. software)	BP MOB CAU CYP or SDC ABP COM FLT or MON

		7 - Fleetcard (with NZ software): Shellcard (with Aust. software	
		8 - Monitor pumps mode	
		9 -Vehicle Number Authorisation	
10	Validation option	2 - Limited Validation - Cards	LVC
		3 - Extended validation - Cards	EVC
11	Variance	0 - Default Standard Communicator functionality	
		1 - Special POS I/F mode - 1 POS only	
12		1 - Track 1	T1
		2 - Track 2	T2

Changing the "A" Settings

This is changed using the keypad and display. Follow this procedure carefully as changing the wrong numbers may disable the system. < > means push that key.

| Keyboard Entry	Result on Display	Operation
Enter Passcode		
<ENTER>	Main Menu is displayed	
<4>	System menu is displayed	
<4>	CFG A = XXXXXXXXXXXX (flashes) was XXXXXXXXXXXX	Set Configuration A
Edit 12 digit number	CFG A = XXXXXXXXXXXX (still flashes) was XXXXXXXXXXXX	
<ENTER>	Returns to System menu	

Configuration "B" Settings

The Configuration Code B options available may depend on the software version. Refer to the following charts for options.

For credit card units refer to Credit Card Units "B" Settings.

NOTE: Not all options shown may be available on your unit. If unsure, please refer to the Helpdesk for more information.

Digit	Operation	Options
1	Unused	0
2	Unused	0
3	Unused	0
4	CIM-less DCA	0 – DCA with CIM 1 – DCA with PINPad and Magtek TTL card-reader (changes receipt cut length)
5	Unused	0
6	Unused	0
7	Unused	0
8	Unused	0
9	SCA	0 – Normal (prompts for pump number) 1 – Single hose ComFutra (auto Select Pump 1)
10	CWID	0 – Card Mode 1 – CWID Mode
11	Override	0 - Default 1 - Ignore expiry date 2 - Ignore Grade Restriction 3 - Ignore both Expiry date and Grade restriction
12	Unused	0

To change the "B" settings

This is changed on the keypad and display on the unit. Follow this procedure carefully as changing the wrong numbers may disable the system. < > means push that key.

Keyboard Entry	Result on Display	Operation
Enter Passcode		
<ENTER>	Main Menu is displayed	
<4>	System menu is displayed	
<5>	CFG B = XXXXXXXXXXXX (flashes) was XXXXXXXXXXXX	Set Configuration B
Type in 12 digit number	CFG B = XXXXXXXXXXXX (still flashes) was XXXXXXXXXXXX	
<ENTER>	Returns to System menu	

Credit Card Units "B" Settings

The Compac credit card capable units can be set up with a variety of credit card authorisation options using the "B" settings. The settings differ from the normal "B" options fitted to the standard unit.

Digit	Operation	Options
1	Unused	0
2	Printer	0 - Seiko drop box printer 2 - T2460 printer with cutter 3 - T2460 printer without cutter
3	Transactions	0 – Default, transactions must be deleted before over writing. 6 – Transactions are automatically deleted.
4*	CC DCA	0 – Default 1 – $5 Over Authorisation
5**	CC DCA	0 – Standard, no CVC2 Prompt, no authorisation retry 1 – CVC2 Prompt, no authorisation retry 2 – Authorisation retry, no CVC2 prompt 3 – CVC2 Prompt and authorisation retry 4 – Selectable authorisation range 5 – CVC2 + Enter authorisation 6 – Enter user selected authorisation
6	Unused	0
7	Unused	0
8	Unused	0
9	Unused	0
10	Unused	0
11	Override	0 - Default 1 - Ignore expiry date 2 - Ignore Grade Restriction 3 - Ignore both Expiry date and Grade restriction
12	OIML options	0 - No OIML checking. 2 - UPS checking (DCA)

* When option 1 is selected, the unit applies for an authorisation amount $5.00 more than selected. This is to prevent pumps over running and dispensing more than the amount authorised which can create conflict at the authorising bank.

** These options can be set to offer a variety of authorisation amounts and whether a CVC2 (back of card security code) entry is required.

To change the "B" settings

This is changed on the keypad and display on the unit. Follow this procedure carefully as changing the wrong numbers may disable the system. < > means push that key.

Keyboard Entry	Result on Display	Operation
Enter Passcode		
<ENTER>	Main Menu is displayed	
<4>	System menu is displayed	
<5>	CFG B = XXXXXXXXXXXX (flashes) was XXXXXXXXXXXX	Set Configuration B
Type in 12 digit number	CFG B = XXXXXXXXXXXX (still flashes) was XXXXXXXXXXXX	
<ENTER>	Returns to System menu	

Option #5 PUMPS

To set up a pump each of the following parameters have to be set:

(There is also an option for Bay Number which is only used in special applications.)

Use the YES and NO keys to select to the pump number.

If a Dual pump on Gilbarco comms the pump number on side B should be lower than the pump number on side A. e.g. A = 2, B = 1

For Compac comms the side A pump number is usually the larger number but will work either way round.

```
1) NUM   01     5) HI-G03
2) Chanl 1      6) H2-G00
3) TYPE C12     7) H3-G00
4) ID    01     8) BAY 00
```
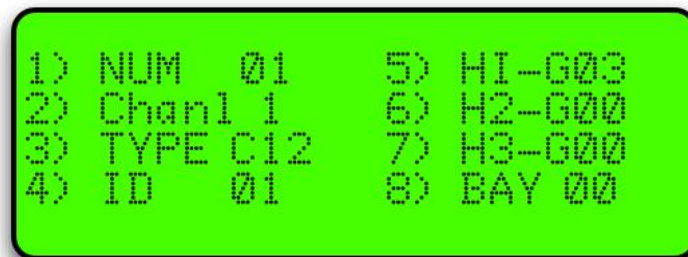
Comms Channel

The comms channel will usually be set at the factory depending on the site setup. Channel 1 or Channel 2 are the available options.

Number	Operation
1	Channel 1 pump comms e.g. via 2 pin 'PUMP COMMS 1' on rear panel (for Compac pumps) Can also be setup for RS232 comms via Port #5
2	Channel 2 pump comms used for the following: (a) Gilbarco comms I/F via TTL Port #4 (b) Email comms I/F via TTL Port #4 (c) 2nd Comms channel (pumps 17 to 32) 'PUMP COMMS 2' on rear panel via TTL Port #4 (d) Tankgauging I/F (e.g. VeederRoot, Diptronic, Franklin)
0	No comms -This will disable comms to a pump even if all the other parameters are set correctly

Comms Type

For Compac pumps enter <2>

For Gilbarco pumps enter <6> (goes to sub-menu to select Gilbarco type.)

NOTE: Electroline pumps may need to be setup as Hilines or vice-versa. If experiencing difficulties getting Gilbarco pumps to work on a Communicator, try changing the type. After changing the type, the Communicator MUST be re-powered.

For Email pumps enter <7> or <8> (depending on type of pump.)

If in doubt, contact your Compac agent for the correct settings.

Pump ID

For simplicity, this is usually set to the same number as the Pump number. The Controller looks for a pump with a pump number that matches the ID number.

Eg. Pump number 01 set up in controller but ID set to 05.

Controller looks for a pump with pump # 05.

Product Group Number

NOTE: *Options 1,4,5,6 & 7 require the <ENTER> key to be pressed to save the number you have entered (the cursor flashes.) Options 2 & 3 are saved as you type in the number (the cursor does not flash.)*

Keyboard Entry	Result on Display	Operation
Enter Passcode *		
<ENTER>	Main Menu is displayed	
<5>	Pump Menu is displayed	
<1>	'Num xx' flashes	Set Pump Number
Type in pump number	'Num xx' still flashes	
<ENTER>	'Num xx' stops flashing (number saved)	
<2> **	Scrolls between 1,2 & 0 each time <2> pressed	Set pump channel number
<3> ***	Comms Type Menu is displayed	Set pump comms type
<4>	'ID' flashes	Set ID Number
Type in ID number	'ID' still flashes	
<ENTER>	'ID stops flashing (number saved)	
<5>	'H1-G01' flashes	Set hose 1 Product group
Type in Number	'H1-G01' still flashes	(Single, Dual, 4 & 6 Hose Multi)
<ENTER>	'H1-G01' stops flashing (number saved)	
<6>	'H1-G02' flashes	Set hose 2 Product group
Type in Number	'H1-G02' still flashes	(Dual, 4 & 6 Hose Multi only)
<ENTER>	'H1-G02' stops flashing (number saved)	
<7>	'H1-G03' flashes	Set hose 1 Product group
Type in Number	'H1-G03' still flashes	(6 Hose Multi only)
<ENTER>	'H1-G03' stops flashing (number saved)	

Refer to Tanks/Pumps/Groups first for a detailed explanation on how to set up groups.

Comms Options

The unit can support two protocols at once out of the following:

- Compac/PEC
- Gilbarco
- Email

For Email and Gilbarco comms, interface boards are required.

These can be connected to either Port 4 (TTL) or Port 5 (RS232) although if only one interface board is used, it is normally connected to Port 4 (TTL).

If BOTH Email and Gilbarco comms are required, then Compac comms are unavailable.

Comms Channels

The Communicator has two comms channels (Compac or Gilbarco and Email). Usually Compac pump comms are assigned to channel 1 and the other comms assigned to channel 2.

Channel 1 can be either Current loop or RS232 (to either an Email or Gilbarco I/F board).

Channel 2 is TTL (to either an Email or Gilbarco I/F board).

This table shows which combinations of protocols are used on the two channels.

Channel 1 (Current Loop)	Channel 2 (Current Loop)	Channel 1 RS232 (Port 5)	Channel 2 TTL (Port 4)	Dip-Switch 1	Dip-Switch 2	Dip-Switch 6	Dip-Switch 7
Compac/PEC				ON	OFF	OFF	OFF
Compac/PEC	Compac/PEC			ON	OFF	ON	ON
Compac/PEC			Gilbarco	ON	OFF	OFF	OFF
Compac/PEC			Email	ON	OFF	OFF	OFF
		Email	Gilbarco	OFF	ON	OFF	OFF
		Gilbarco	Email	OFF	ON	OFF	OFF

Comms Dip-switches

The comms dip-switch is an 8 way switch but normally only numbers 1 and 2 are used. These two switches direct Channel 1 comms to either Current Loop or RS232 (Port 5).

Only one of these switches must be on. The factory default setting is 1 ON 2-8 OFF.

Where more than 16 pumps are controlled, the Current Loop Channel 2 can be added by using Dip switches 6 and 7.

Second Current Loop Comms Channel

There are two current loop comms channels (for Compac Pumps) on the Com FMS board. If a fault occurs on Current Loop Channel 1 and Current Loop Channel 2 is not being used then the channels can be switched over.

To connect Compac pumps to the second current loop comms channel:

1. Change the comms channel in the pump setup to Channel 2. Refer to Pumps for detail.
2. Move the wires on the 2 core comms cable on the "Current Loop" plug to the second position in from each end. Refer Com FMS Board Replacement for detail.
3. Change the dipswitches to the following settings:

1	X
2	X
3	X
4	X
5	X
6	ON
7	ON
8	X

Email Comms

Status of LEDs on Communicator board when connected to Port #4

	Red Rx	Green Tx
Email board unplugged from Communicator board	Off	Flashes rapidly
Email board plugged in but pump not connected	Flashes	Flashes in time with Rx
Email board plugged in but pump set up for Compac comms	Off	Flashes rapidly
Email board plugged in but pump set up for wrong channel	Off	Off
Email board plugged in but pump ID incorrect	Flashes	Flashes in time with Rx
Email board plugged in and operating correctly	**Flashes very rapidly and is much brighter that Tx, almost looks like its stuck on**	**Flashes very rapidly**
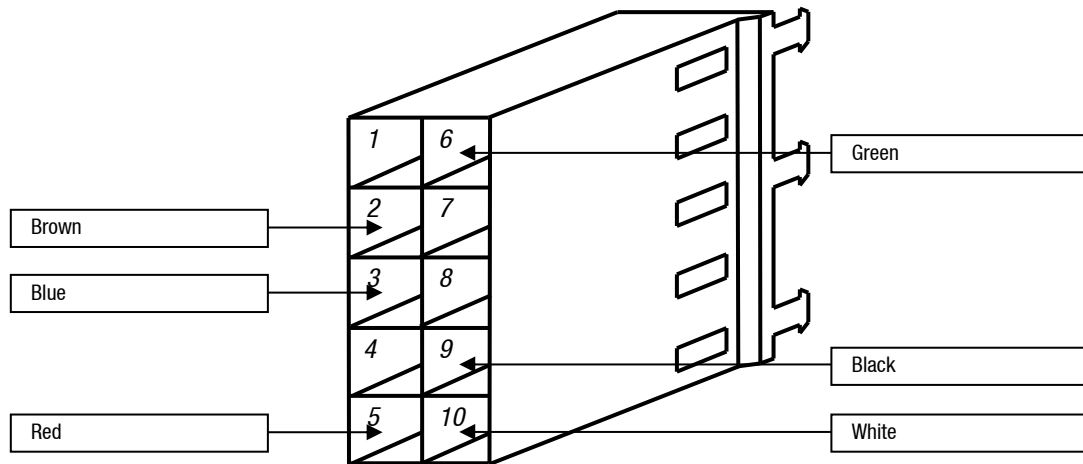
Cable between Port #4 and J4 on Email Board

NOTE: *The connections are the same on both ends.*
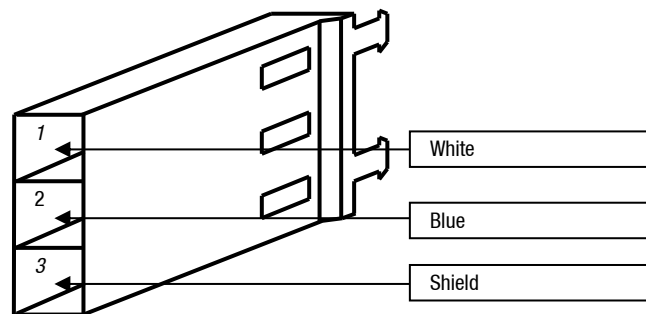
J1 Plug on Comms Board

Dip Switch SW1

The Yellow, Orange Red and Brown switches should be closest to the centre of the board

i.e. A,B,C & D visible.

NOTE: Only issue C Communicator boards support Email protocol.

NOTE: Multi hose Email pumps are not supported.

NOTE: The Shield and Blue wires should not be swapped over. If they are the system may appear to work but cause intermittent comms problems.

NOTE: Take great care line up the locking tabs on the green plugs correctly as reversal of these will damage the Email board.

Gilbarco Comms

Status of the Red and Green LEDs on Port #4:

Red LED	Green LED	
Flashes rapidly and unevenly	Flashes rapidly and unevenly	Pump communicating normally
OFF	Flashes rapidly	Comms channel set up for Channel 2 but Gilbarco board not connected
ON	OFF	Gilbarco board connected but Comms channel not set up for Channel 2
ON	Flashes rapidly (dimly)	Gilbarco board connected, Comms channel set up for Channel 2 but no pump connected
Flashes slowly (and dimly)	Flashes slowly (and dimly) (simultaneously with Red LED)	Comms channel set up for Channel 2 but short on Gilbarco pump comms or pump comms wires reversed.
Flashes rapidly and unevenly	Flashes rapidly and unevenly	Pump appears to be communicating but does not work when nozzle is lifted - Pump is set up as a Hi-line instead of an Electroline

A DC voltage of approx 2 to 5V can be measured across the Gilbarco comms to establish whether a pump is connected.

Gilbarco Wiring

Wiring can either be from CON3 on the Gilbarco I/F board to TTL port 4 on the communicator board (channel 2 only, wiring is the same at both ends) or from CON4 to RS232 port 4 on the communicator board. Examples are shown below:
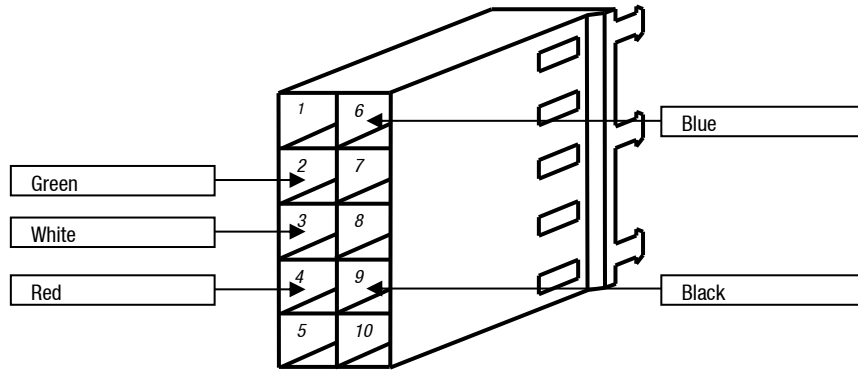
Wiring from CON3 on the Gilbarco I/F board to TTL port 4 on the communicator board
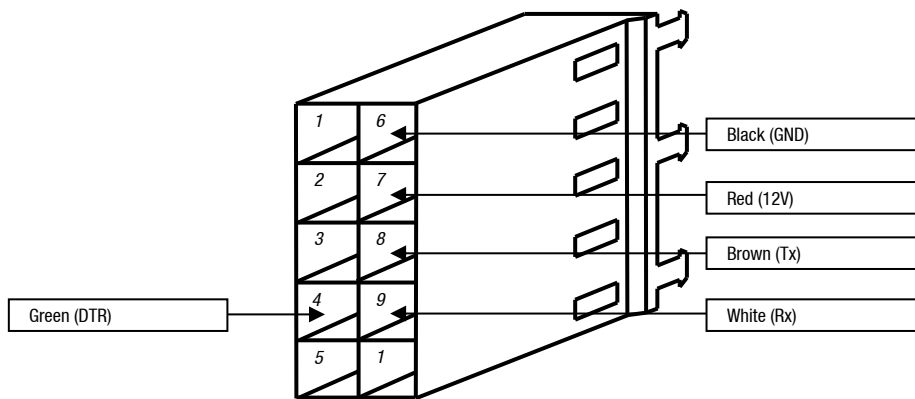
Wiring from CON4 to RS232 port 4
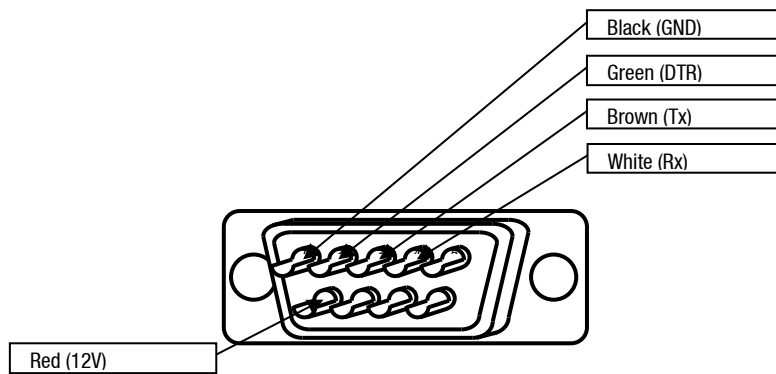
View Looking from Front into the Female Connector
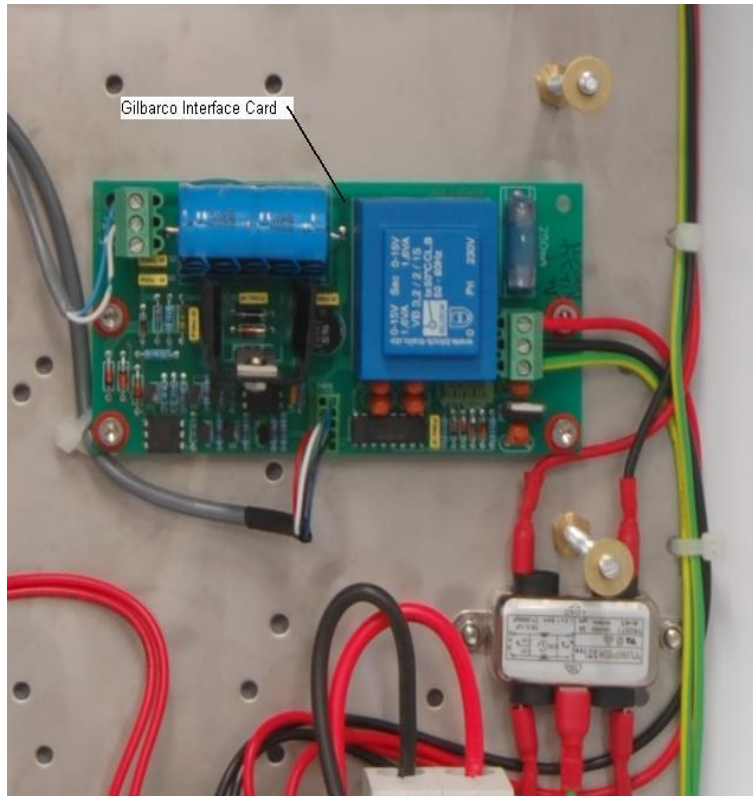
Gilbarco Interface Card with TTL connection

Option #6 TANKS

The following Tank interface options are available (Special software required for Diptronic and Franklin)

1. Theoretical (THEO)
2. VeederRoot (VDDR)
3. Diptronic (DIPT)
4. Franklin (FRNK)


```
1) NUM  01      5) DIP (L)
2) STATUS       6) DIP (mm)
3) STATUS       7) SETUP
                8) COMS
```

Menu Option	Function		Operation
1. No XX	Tank number		Scroll up and down with NO and YES to select tank
2. Status	Displays theoretical Capacity and Volume		
3. Status	Displays tank temperature (Franklin option only)		
4. Delivery	Enter in delivery of product		Type in delivery volume (Theoretical only)
5. Dip (L)	Enter in dipped volume (in litres)		Type in new volume (Theoretical only)
7. Setup	Sets up alarms, capacity and Product Group.		Refer to Tank setup table
8. COMMS	Sets up comms type		Refer to Tank Comms table

Tank number is usually set as 1. If there are more tanks, use the YES and NO keys to select to the tank number you want to set up.

Tank Setup Table

Select Setup from the Tanks menu and the following screen will open.

```
1) HI ALRM   5) SYPHON
2) LO ALRM   6) STRP T
3) CAPCITY   7) AUTOCAL
4) GROUP 01
```
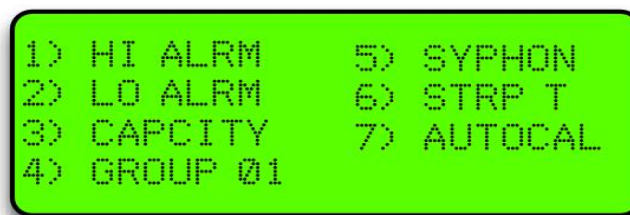
Keyboard Entry	Result on Display	Operation
<7>	Capacity Group 00	
<3>	Capacity = XXXXXXXX	Set Tank capacity (NOT required for Diptronic, Franklin or Colibri)
Type in capacity		
<ENTER>	Returns to Setup menu	
<4>	Cursor flashes	Set group
Type in product group number		
<ENTER>	Cursor stops flashing	
<CLEAR>	Returns to setup menu	
<CLEAR>	Returns to main menu	

For the units setup with Franklin comms, return to the main tanks menu and select (2) Status. The tank gauge readings should be displayed. Select (3) Status and the tank temperature should be displayed.

Depending on tank gauging and software installed, other options may or may not be available.

Tank Comms Table

Select Comms from the menu and the following screen will open.

```
1) TYPE      FRNK
2) CHANNEL   1
3) ID        01
4) PGRM ID
```
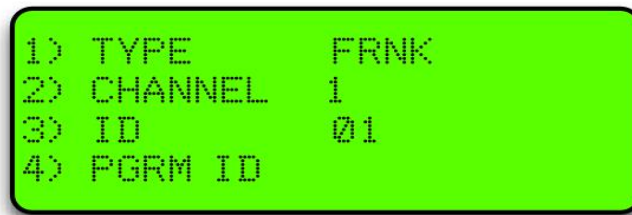
Pressing 1 will scroll through the comms options.

Keyboard Entry	Result on Display	Operation
<8>		
<1>	THEO \ FRNK \ VDDR \ DIPT 2. CHANNEL X 3. ID XX 4. PGRM ID	Scroll through by repeatedly pressing <1> to select comms type
<2> (NOT shown in THEO Mode)	2. CHANNEL 0, 1 or 2	Scroll through by repeatedly pressing <2> to select Channel number 2
		NOTE: *Tank Gauging normally works on Channel 2 (Selecting Channel 0 turns the tank off)*
<3>	ID	Same as tank number
<4>	PGRM ID	Not used

Depending on tank gauging and software installed, other options may or may not be available.

Diptronic Tank Gauging Interface

Set up for the DIPTRONIC model DIP200

Interfacing is done via the RS232 port 4 as per usual tank gauging interface, (9 pin D-connector both ends).

Port #4   Diptronic

- Pin 2 ………..Pin 2
- Pin 3 ………..Pin 3
- Pin 5 ………..Pin 5

The Communicator is set up to display the reading of the Diptronic unit, therefore no strapping tables, alarms or capacities are sent to the Diptronic from the Communicator.

Set up

Enter Passcode	
<6> TANKS	Select tanks
<8> COMMS	
1. Type	DIPT (continually press #1 to scroll through)
2. Channel*	2
3. ID	Same as tank number
4. PRGM ID	

* Channel 1 is not used for Tank gauging. Select <2> to turn tank # ON or <0> to turn tank # OFF

Set up the Diptronic unit to have the following settings:

The Diptronic is configured by the Diptronic technicians to interface with our RS232 specifications.

Check the status of the Diptronic Tank gauging.

 <2> STATUS (Checking the tanks status)

Tank #1
Volume = (in L)
Height = (in MM)
Capacity = (in L)

<3> STATUS (Checking the product temp). Temp °C =

VeederRoot Tank Gauging Interface

Communicator and VeederRoot Controller use an RS232

Wiring connections - RS232 cable between the VeederRoot controller and Port #4 RS232 on the Communicator Controller (9 pin D-connector both ends)

Port #4   VeederRoot

- Pin 2 ………..Pin 3
- Pin 3 ………..Pin 2
- Pin 5 ………..Pin 5

Setting up the Communicator in the Tank Menu:

Enter Passcode	
Select Tanks	
<8> COMMS	
1. Type	VDRR (continually press #1 to scroll through)
2. Channel	2
3. ID	same as tank number
4. PRGM ID	

In this application the VeederRoot controller provides a height to the Com FMS board. The tank volumes are set up in the software. When the unit is powered up, it sends a message to the VeederRoot Controller to specify the units of measure (imperial or metric). If the VeederRoot is connected to the unit while it is running, the units of measure used may default to imperial (e.g. the temperature will appear too high because it is being displayed in Fahrenheit). In this case re-power the unit to change back to metric.

To set up the unit for VeederRoot Tank Gauging please use the following steps:

1. Set up the tank comms as type VDRR in the Communicator -Refer Tank comms table.

2. Download tank curves from DOS Netbase (When starting DOS Netbase add /strapping to bring up tank gauging options or refer to Compac). Alternatively enter strapping table in the Tanks/Setup/STRP TBL Minimum requirement is 2 points - lowest and highest (only gives you a straight line not a curve). Use the 'yes' and 'no' keys to move up and down the strapping table entering heights and corresponding volumes.

3. Setup the VeederRoot controller comms as follows

- *Serial*
- *1200 baud*
- *odd parity*
- *7 bit*
- *1 stop bit*
- *Handshaking off*

4. Enable the tanks in the VeederRoot controller as per the VeederRoot manual.

5. Ensure that Tanks, Groups and Fuels are matched up correctly in the Communicator.

Main Menu Options

Franklin Tank Gauging Interface

Set up for the Incon Tank Sentinel model TS-504.

Interfacing is done via the RS232 port 4 as per usual tank gauging interface, (9 pin D-connector both ends). Interfacing requires a DCE cable with the following connections.

Port #4   Franklin

- Pin 2 ………..Pin 2   (TXA)
- Pin 3 ………..Pin 3   (RXA)
- Pin 5 ………..Pin 5   (GND)

The Communicator is setup to display the output of the Franklin unit, therefore no strapping tables, alarms or capacities are sent to the Franklin from the Communicator.

Setup

1. Enter the TANKS menu and select the tank number. <6> TANKS <1> 01

2. Configure the comms to the tank controller using the comms menu.

<7> COMMS

(1) TYPE	FRNK
(2) CHANNEL	2*
(3) ID	01
(4) PRGM ID	

* Channel 1 is not used for Tank gauging

3. Select <2> to turn tank # ON or <0> to turn tank # OFF

4. Setup the Franklin unit to have the following settings.

- *Veeder root (Comms mode).*
- *9600 baud*
- *No parity*
- *8 bit*
- *1 stop bit*
- *Handshaking off*

5. Enable the tanks as per the Franklin setup manual.

6. Check the status of the Franklin Tank gauging in the communicator. <2> STATUS (Checking the tanks status)

Tank #1
Volume = (in L)
Height = (in MM)
Capacity = (in L)

<3> STATUS (Checking the product temp) Temp °C =

Option #7 PRODUCT GROUPS and GRADES

The allocation of tanks and pumps for fuel dispensing involves the use of groups. (If you are used to the concept of grades, you can think of groups as the equivalent of grades.) The group is a controller protocol that aids product reconciliation and also enables fuel dispensing to be tailored to suit different local conditions. The group is like a junction box through which tanks, pumps, devices and products are assigned.

```
GROUP NUMBER 01        N

IS 00 NOT SET          Y
```

Tanks/Pumps/Groups

Concept
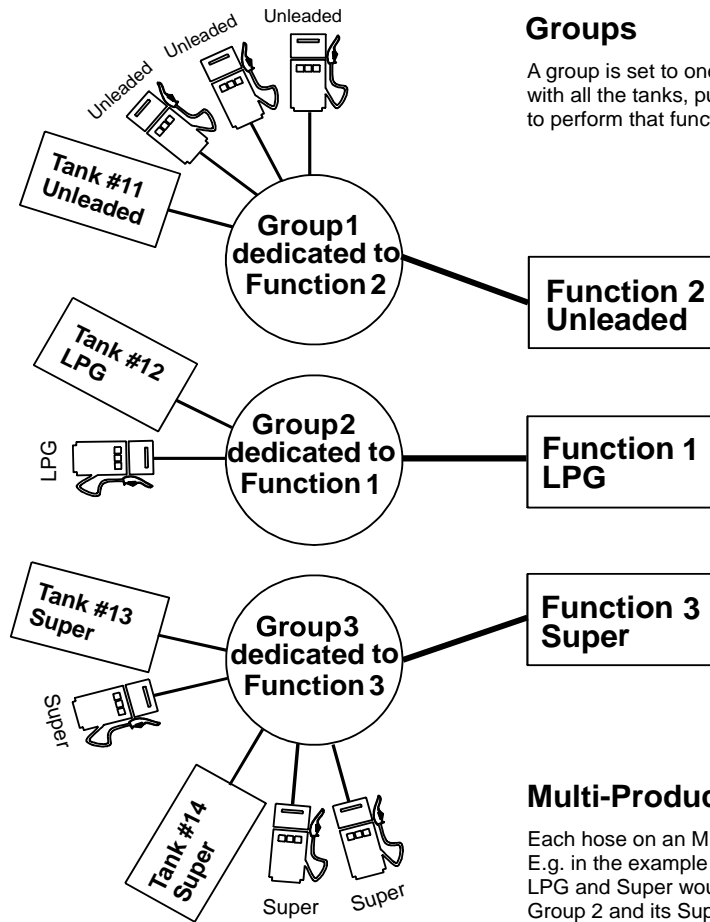
Groups

A group is set to one function - e.g. a product - with all the tanks, pumps, and devices needed to perform that function.

Functions

A function is an interface between the installation and client - e.g. dispensing a product.
Functions 1 - 16 are products,
Function 21 is the receipt station,
Function 22 is the authorisation station.

Tanks

Each tank must be individually set to a group.
A tank can only be set to one group.
However, more than one tank may be set to the same group.

Pumps

Each pump must be individually set to a group.
A pump can only be set to one group.
However, more than one pump may be set to the same group.

Multi-Product Dispensers

Each hose on an M.P.D. must be individually set to a group.
E.g. in the example shown, an M.P.D. dispensing LPG and Super would have its LPG hose(s) set to Group 2 and its Super hose(s) set to Group 3.

Groups

The first stage in setting up is to marry the functions performed by the site to groups that you create in the groups menu option. Each group is dedicated to one grade or function.

In the 'Groups' menu option, first select a unique number for a group, then select the number of the grade or function it is to be dedicated to. The group numbers don't have to be in sequence and may be any numbers between 1 and 20.

For the grade/function map refer to Pump Grade maps.

Tanks

Once the groups have been decided, the 'Tanks' menu option enables each tank to be allocated to a group. A tank must be dedicated to one group; it cannot be allocated to different groups. However, more than one tank may be dedicated to the same group.

Select Tank

Each tank must be set up individually

Select Tank – Group

This option allows you to match the tank number to the appropriate group number.

Pumps

The 'Pumps' menu option is where pumps are set up.

Select Pump

Each pump is set up individually.

Set Channel

0 - offline / not used.
1 - on board current loop 1 / external protocol converter.
2 - on board current loop 2 / internal protocol converter.

Set Type

C12 - Compac current loop pump comms, 1200 baud (NZ Standard).
C24 - Compac current loop pump comms, 2400 baud (Compac pumps only.
GC - Gilbarco Calcopac.
GEL - Gilbarco Electroline.
GHL - Gilbarco High line.
GMP - Gilbarco Multi product.
EME - Email Eclipse
EMV - Email Vision

Set ID

The number in the pump head. This must be unique per channel, per protocol.

Set hose – Group

Allocate different product hoses to different groups; for a single hose just set H1.

Setting Product Groups

Pumps are not directly assigned to a Product Grade.

Each pump is assigned to a Product Group.

Each Product Group is in turn assigned to a Product Grade.

For simplicity, in the majority of applications the Product Group numbers can mirror the Product Grade numbers according to the standard Grade Map.

The most common are:

Grade number	Product names as they appear in the Communicator / Commander	Also referred to, or used for the following products
1	Super	Premium, Premium Unleaded, 96, LRP
2	Unleaded	Unleaded 91 , 91, ULP
3	Diesel	
4	PULP	Premium Unleaded Petrol
5	LPG	
6	Oil	
7	Kerosene	
8	AVGAS	
9	JET A1	

This option simply assigns products to groups.

Keyboard Entry	Result on Display	Operation
Enter Passcode		
<ENTER>	Main Menu is displayed	
<7>	1) Group # XX 2) IS XX Product (or NOT set)	
Use N and Y keys to scroll up or down the Groups		Select Group to assign product to
<2>	1) Group # XX 2) IS XX (flashes) Product (or NOT set)	
Type in product number Refer to Grade Map for Product number		
<ENTER>	2) IS (Selected Product name)	
Use N and Y keys to scroll up or down to select another Group	Same as for previous Group	
or <CLEAR>	Returns to Main menu	

Assign Pump Number

Pump numbers for each model

Model	Number of pump numbers to set up
Master Premier Laser Single	One
Master Premier Laser Dual	Two

Order of pump numbers

Compac comms:

The pump number for Side A is usually **lower** than Side B

Gilbarco comms:

The pump number for Side A must be **higher** than Side B

Assign Hoses

It is important to look at the Pump or Dispenser from the 'FRONT'.

Remove the doors and a 'FRONT' sticker will be found on the hydraulic mounting rail.

When looking at the front of the Pump/Dispenser, Hose 1-Side A is always on your right (as per the following diagrams).

Master, Premier and Laser (Single and Dual)

Hose 1 Side B	Master Premier & Laser (Single & Dual) FRONT	Hose 1 Side A
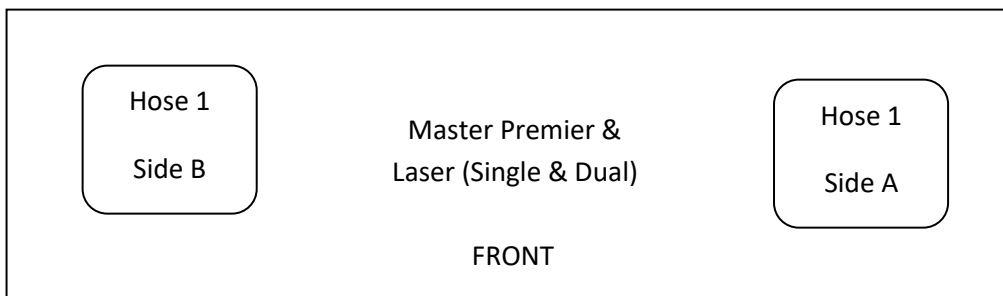
Cards

Expiry Date

The expiry date on the card must be less than 10 years from today's date. If the date is more than 10 years old, *Expired Card* will appear when the card is swiped. To allow expired cards to be used you can use this procedure: Change the second digit from the right in the 'B' configuration code to 1.

Overriding the Expiry Date

If the Display on the unit reads "ENTER PASS CODE" type in your 6 digit Passcode. (If you do not know the passcode, contact the Compac Industries Help Desk. The default Password on new Communicator Controllers is 000000) Or, if the display reads PASS CARD, press the <NO> key. This will then bring up "ENTER PASS CODE". The main menu will then be displayed.

Press <4> (SYSTEM). The system sub menu will be displayed.

1. Press <5> (CFG B)
2. Display will read: CFG B = XXXXXXXXXXXX (12 digit binary number) Was XXXXXXXXXXXX
3. Take careful note of the existing CFG B number
4. Type in a new 12 digit number with the 11th digit from the left = 1 for example XXXXXXXXXX1X. This will overwrite the existing number in the top line but you will still be able to still view the old number in the bottom line as you type in the new number. For example Old CFG B was 000000100000 new CFG B with expiry date override = 000000100010
5. Press <ENTER>
6. Press <CLEAR> twice to return to Main screen.

NOTE: Although it is possible to put the clock back in the Communicator to less than 10 years from the expiry date of the card to make it work this is not recommended as date range reporting functionality is affected and some transactions may not be able to be retrieved.

Setting ISO and Access codes

NOTE: If two cards systems are being supported (i.e. an Oil company / Nationwide card and an in-house Compac Standard card) then the Oil company card must be set up as ISO/Access code 1 and the Compac Standard in-house card set up as ISO and Access 2. If they are setup the other way around the system may return a 'BAD CARD' or 'INVALID CARD'.

Oil company ISO and Access codes

If the unit is part of a Network, the appropriate ISO and Access codes will be downloaded via the modem by the System Administrator. Otherwise contact the Compac Helpdesk.

ATG / CE Box

The Compac Box is an option fitted to the unit to monitor tank gauging. The Compac Box also communicates with the FMS board and stores transaction information.

The tank gauging and transaction information can be accessed from the Compac Box by using either a USB key or CompacOnline software.

For Credit Card capable units the Compac Box uses the installed PXPost programme to communicate secure credit card information with DPS.

Compac Boxes are configured at the factory and require no set up unless credit card capable boxes are replaced. Set up is done remotely.

For replacement refer Compac Box Replacement.

CompacOnline Compac Box Connections
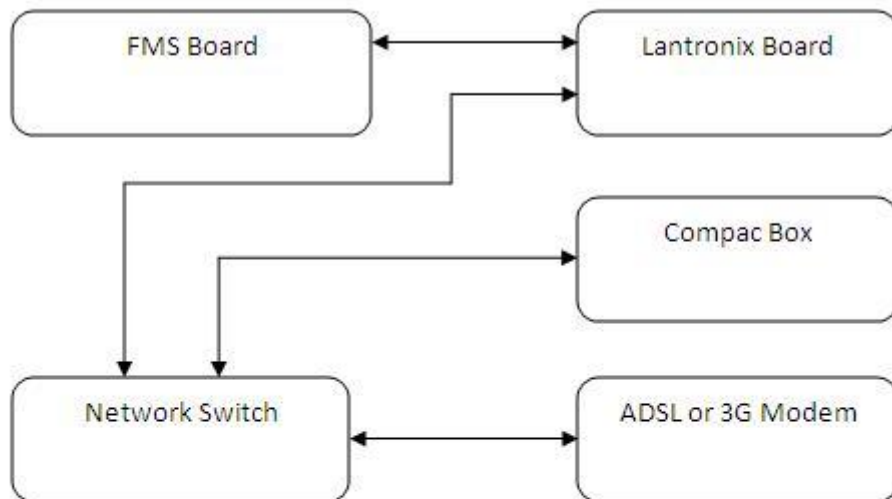
USB Monitor Compac Box Connections
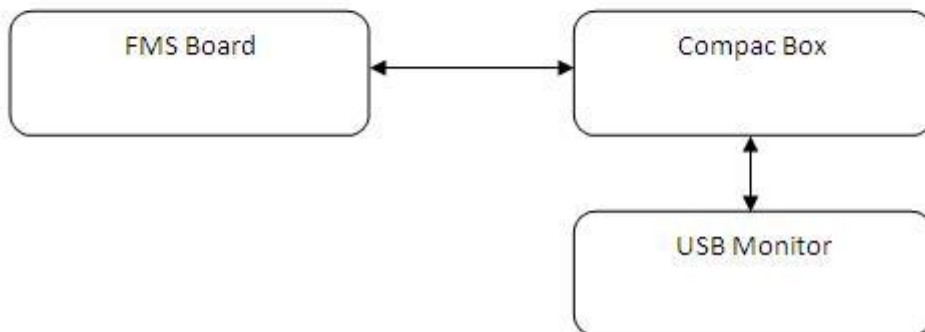
Cardreaders

Units built from January 2004 onwards no longer have CIMs and use a Magtek cardreader. These work with software version EAB1800 onwards.

__NOTE:__ This also requires B configuration code setting to work -Refer to Configuration code tables.

Wiring connections are:

Cardreader end J3

1. Unused
2. Blue RDP
3. White CLS
4. Brown RCP
5. Unused
6. Red Vcc
7. Black Ground
8. Unused
9. Unused

Note pin 1 is marked on the cardreader pcb next to "J3".

Communicator Controller end:
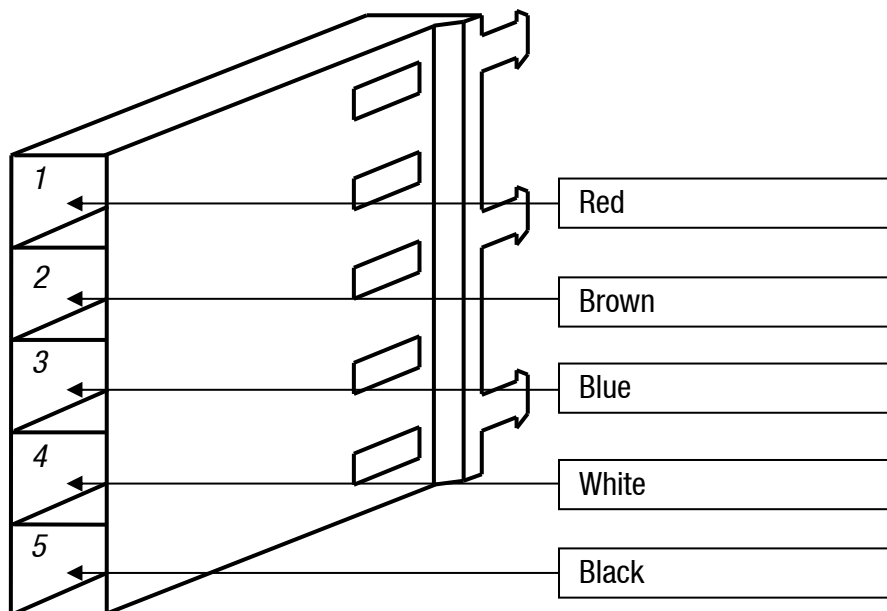
Cardreader Plug on Communications Board

Modems

GSM Modem (Wavecom)

Connection

There is a ribbon cable that goes between the Port #1 RS232 D connector and Port #1 on the Communicator board.

Cut the 'Ring Indicator' wire (connects to pin 9 on the D connector) This is the 3rd wire in from the locking tab end of the red plug.

There is cable supplied with the Cell modem with a 15 pin high density d-connector one end.

Plug this end into the Cell modem and the other (9 pin) end into to Port #1 RS232 socket on the rear panel of the board.

Setup

No special software setup is required for the Cell Modem as the Communicator recognises the modem when it initialises it.

NOTE: The SIM card must be setup by the phone provider as Data enabled (a different phone number will be issued).

The diagnostic LED stays ON for 20-30 seconds at power-up while it registers on the network. It will then flash slowly when in its idle state. During a comms session it flashes faster.

The baud rate in Netbase must be set to 9600.

The Boot ROM software version in the Communicator must be BFA01052 or later.

Lantronix

If you have given Compac the IP address that you want to use, the unit will have been set up by the factory. If you haven't told Compac the IP address it will be 10.0.0.122 by default.

Lantronix Setup

Step 1

Connect the Lantronix port on the communicator to your computer network.

Step 2

Change the IP address of your computer to be on the same network as the Lantronix unit. This means going Start/Control Panel/Network Connections; this will bring up the network connections. Right click on the connection that you will be using and then click on properties.
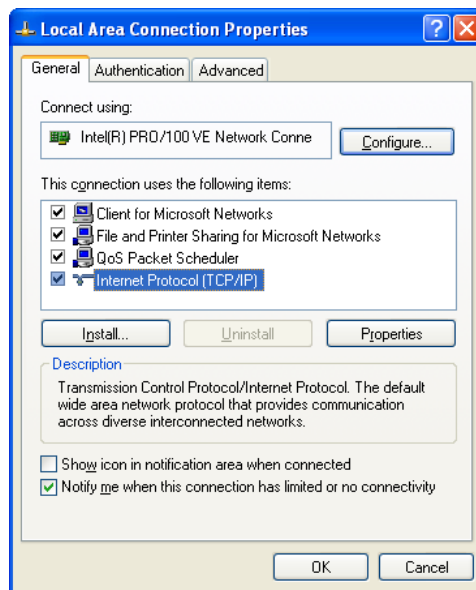
Then double click on Internet Protocol (TCP/IP).
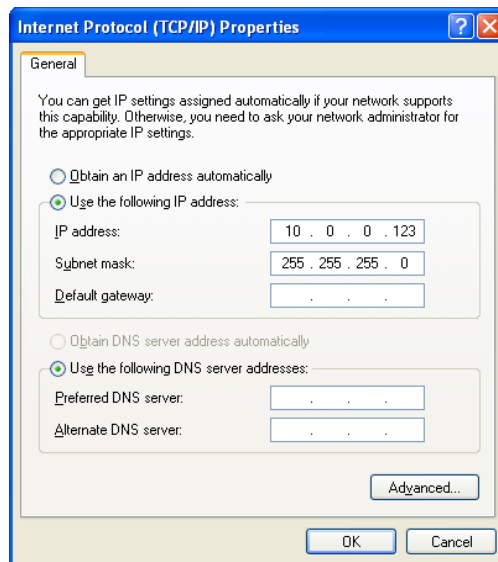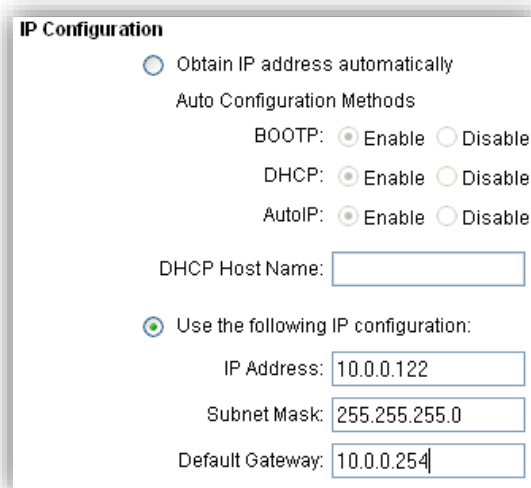
Select "Use the following IP address", for the IP address enter 10.0.0.123 subnet mask 255.255.255.0; this will put your computer on the same network as the Lantronix unit.

Step 3

In your web browser type the IP address of the Lantronix unit, in our case type http://10.0.0.122 (http://10.0.0.122). This will login into the Lantronix unit. You will be prompted for username and a password; the default username is "admin" with no password.

Once you are logged into the Lantronix unit click on "network" in the menu. What you need to do is assign an IP address that will be on the same network as the network that you are connecting the communicator to. Be aware that when you are setting the IP address on the Lantronix unit it cannot conflict with any IP address on your network. If you have a DHCP server you will have to reserve an IP address for the Lantronix unit.

Under IP configuration select "Use the following IP configuration". This is where you can set the IP address of the Lantronix. Do not use the "Obtain IP address automatically". Remember that if you are running a DHCP server you must reserve the IP address of the Lantronix so that the server does not assign it to another computer.

Step 4

The communicator is now ready to be connected to the network. Once it is connected to the network the Netbase will be able to connect to the communicator. Before you can do this you need to make sure that the Netbase has been setup for the communicator.

Make sure that the settings in the Communicator are the same as the settings in the Netbase.

In this case

- Passcode – 000000
- Site Number– 000001
- Config A (Parameter 1) = 202
- Config B (Parameter 2) = 0
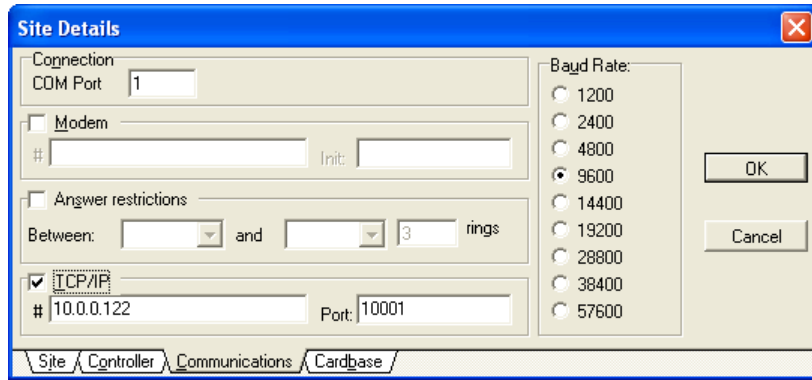
In the Communications tab make sure that the settings are as follows:

- The TCP/IP box should in ticked.
- The IP address (this is the IP address that you entered in step 3) for the Lantronix unit is to be entered in the box labelled "#".
- The box labelled port contains the port that the Lantronix unit communicates on, this is always "10001" but this can be changed.
- The baud rate must be always set to 9600.

At this stage the communicator should be setup correctly and ready to communicate with the Netbase. To test the connection try doing a "Get date time" procedure.

Diagnostic LEDs

There are a number of diagnostic LEDs on the Com FMS board to assist in the diagnosis of comms problems.

LED name on board	Location	Colour	Operation
POWER	Near Dipswitches	Green	ON to indicate Power Supply working
W/DOG	Near Dipswitches	Red	1. Watchdog 2. Indicates software has stopped running (may have restarted) 3. IC fitted incorrectly or leg broken/bent
TX/1	Adjacent Port #1 TTL plug	Green	Transmit data to Modem or Direct host
RX/1	" " " "	Red	Receive data from Modem or Direct host
DCD/1	" " " "	Green	Handshaking line to Modem
TX/2	Adjacent Port #2 TTL plug	Green	To Audit Trail Printer
RX/2	" " " "	Red	
CTS/2	" " " "	Yellow	ON when Audit Trail Printer connected
TX/3	Adjacent Port #3 TTL plug	Green	Used for Receipt Printer and Commander
RX/3	" " " "	Red	
TX/4	Adjacent Port #4 TTL plug	Green	Only used when Gilbarco or Email pumps
RX/4	" " " "	Red	Running on comms channel 2

Diagnostic LEDs in a System with Compac Comms Only

In a typical system (with Compac pumps only) this is how the diagnostic LEDs will appear.

Com FMS Board

LED	Comms working correctly	Comms wiring reversed	Short on comms
To Pumps / 5	Flashes	Flashes	Flashes (very fast)
From Pumps / 5	Flashes	Flashes	Flashes (very fast)
Comm Short / 5	OFF	ON	Flashes (very fast)
TX / 5	Flashes	Flashes	Flashes
RX / 5	Flashes (faster than TX / 5)	Stuck ON	Stuck ON
WDOG	OFF	OFF	OFF
POWER	ON	ON	ON

C4000 Board

LED	Comms working correctly	Comms wiring reversed	Short on comms
D6	Flashes	Stuck ON	OFF
D7	Flashes	OFF	OFF

Troubleshooting

Symptom	Problem	Solution
One pump drags the comms down on the other pumps	An unused hose has been allocated to a group	Check group allocations for that pump
"Receipt unavailable" displayed keeps trying to initialise GPRS modem	Cardreader not plugged in when unit was powered up	Plug cardreader in and re-power
"Receipt unavailable" displayed	Paper not through far enough to be detected by paper out sensor	Press paper feed button momentarily
Cardreader does nothing when card swiped	Cardreader was plugged in after the unit was powered up Cardreader unplugged	Re-power the unit Plug cardreader in

Error Messages

BUFFER FULL	The memory is full. Old transactions need to be deleted before any more transactions can be made - Refer to Deleting Transactions.
Pump unavailable or Pump OFF LINE	Comms problem between the unit and the pumps.

Maintenance

Introduction

The unit is a fairly simple device requiring the following regular maintenance:

Cleaning the Cabinet

The cabinet should be cleaned with a soft cloth and non-abrasive cleaner to remove dirt, grease, graffiti and unauthorised stickers. All instruction and branding decals should be replaced if damaged or faded.

NOTE: Do not use buckets of water, hoses or water blasters to clean the cabinet as water may enter and damage delicate components. Water damage is not covered by warranty.

Card Reader

The card reader should be swiped through with a cleaner card (Part number F-BA-CARDRD-CKIT) wet with cleaner fluid. The card reader may need to be cleaned daily on dirty, dusty or wet sites.

PIN Pad

The fascia should be cleaned to keep the printing legible. A soft dry rag should be used. Do not use a rag wet with solvent or petrol as the PIN pad fascia printing may be damaged. No other service is required, as there are no moving parts.

Door Seals

If the seals appear perished or damaged or there is water leakage into the cabinet through the seals, they should be replaced. Order new seals through your Compac agent.

Protection

The unit should have been mounted facing away from prevailing winds and in a sheltered place. If there are recurring problems with moisture, dust, sun damage or any other problems caused by the environment, moving the unit, constructing a shelter or other protective measures should be considered.

Appendix

Comm FMS Board Connections

The following pictures and diagrams indicate the common wiring location and wire colours for the Comm FMS board.

NOTE: *Due to the wide range of configurations, actual wiring in the unit may vary from what is shown here.*

ComFutra Com FMS board CI202A
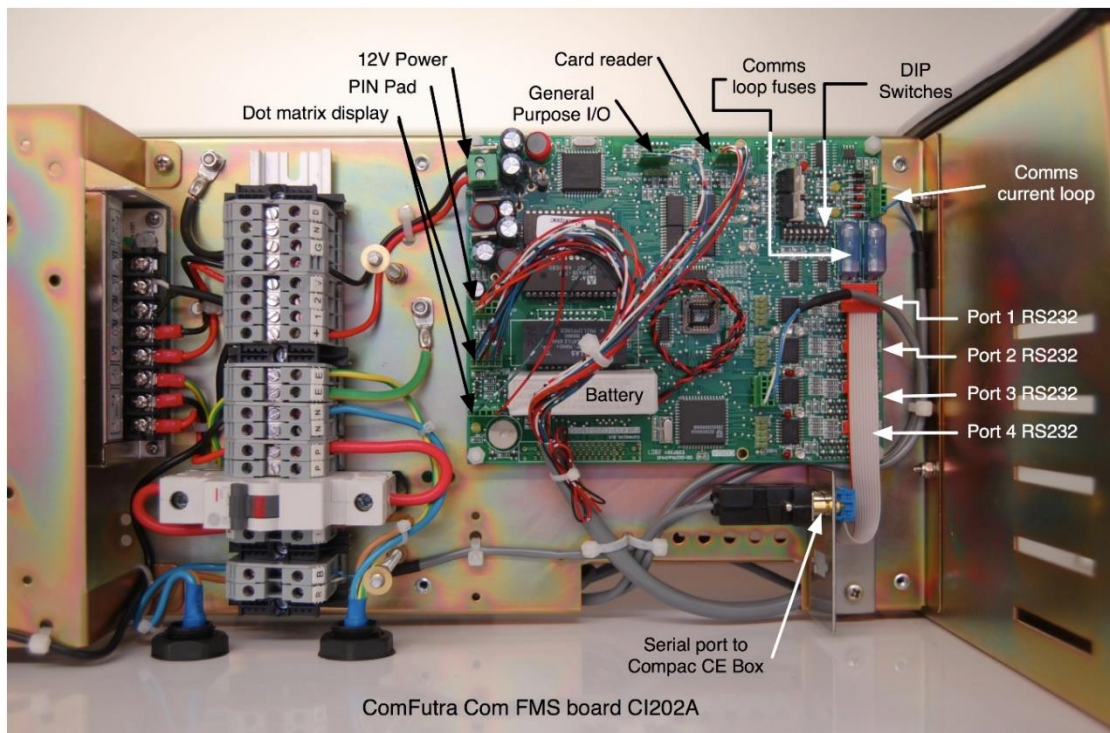
Connecter shown below is for the capacitive (hard) type key pad. Refer to membrane key pad wiring for soft type key pad wiring.

PIN Pad Keyboard

78.

Blue/Black — 10 9 — Black/White

Black — 8 7 — White/Red

Green/White — 6 5 — Orange/Red

Blue/Red — 4 3 — Black/White/Red

Green/Black — 2 1 — Red/White/Black

Dot Matrix Display

5 — Orange

4 — Green

3 — White

2 — Blue

1 — Red
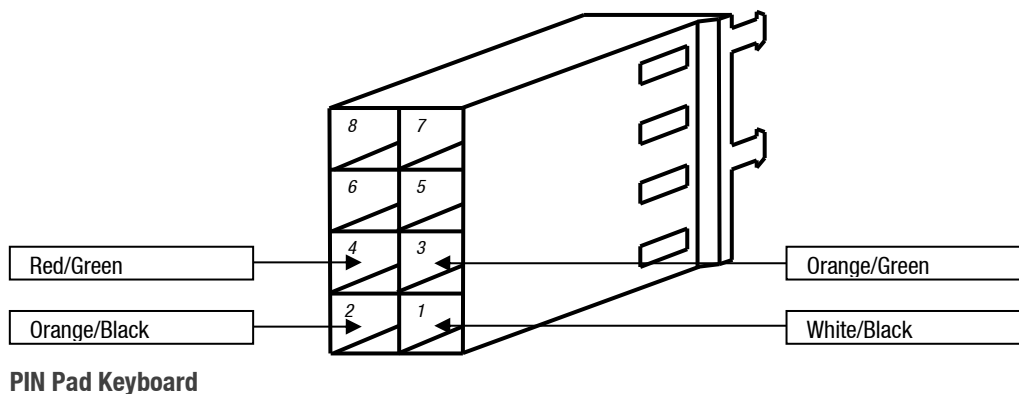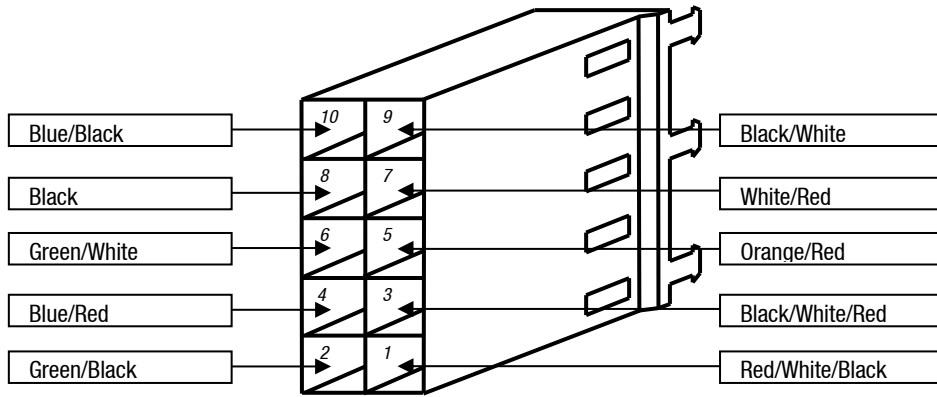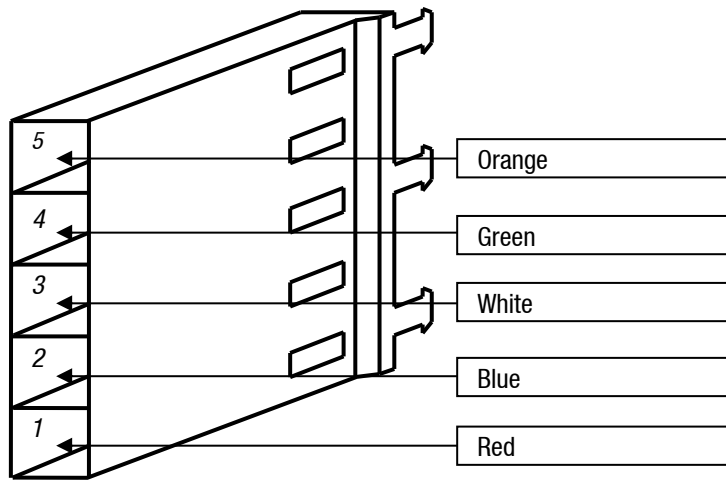
Card Reader

For a "White Card" and Fuelcard enabled unit the receipt printer plugs into Port 3 TTL of the Comm FMS board as shown below:

Black — 8 7

Green — 6 5 — White

10 9

4 3

2 1

Port 3 TTL

79.
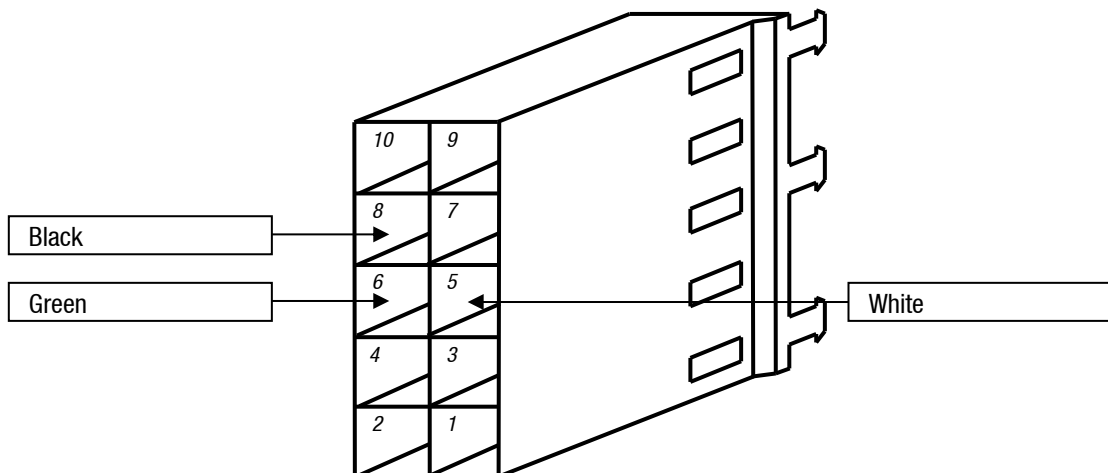
For a Credit Card enabled unit the plug for Port 3 TTL is wired like this and terminates at the Comm FMS RS232 Port Expansion Board.

10	9
8	7
6	5
4	3
2	1

Black → 8
Orange → 6
White → 4
Yellow → 2

9 → Green
7 → Red
5 → Blue
3 → Brown
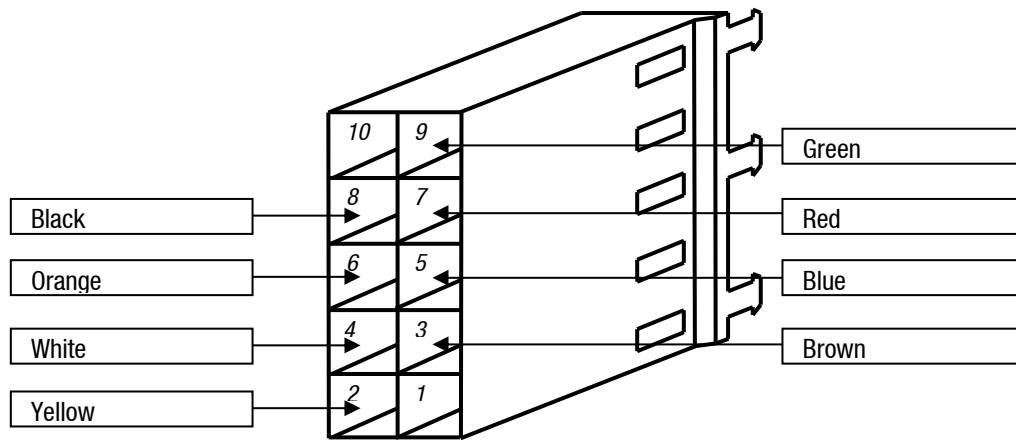
Port 3 TTL on Communicator Board

Appendix

Plugs and Connectors

Display

The Display is connected as shown below:

Pin	Wire
1	Green/Black
2	Red/White/Black
3	Black/White/Red
4	Blue/Black
5	Blue/Red
6	Black/White
7	Red/White
8	Black/Red
9	
10	
11	Green/White
12	Orange/Red
13	Black
14	White/Red
15	Red/Black
16	Green/Black/White
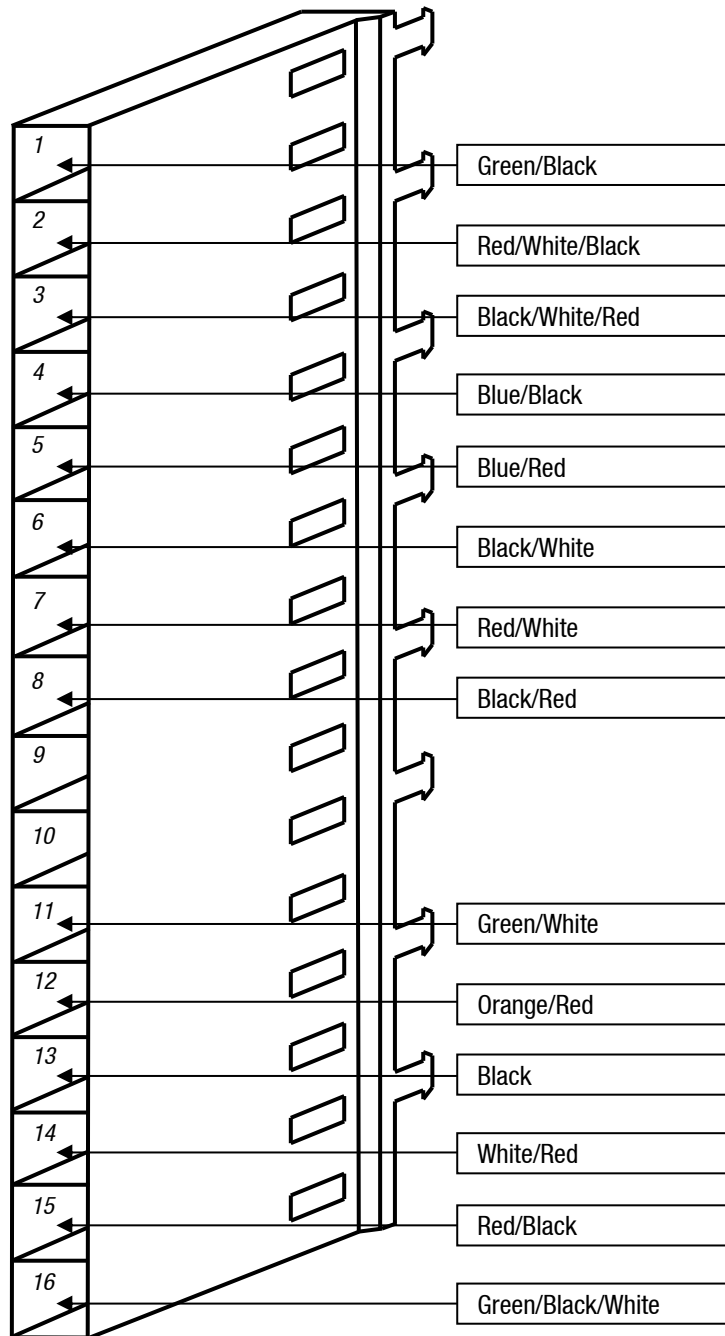
Dot Matrix Display Pin Header

Capacitance Keypad

The capacitance (hard) keypad is connected as follows:
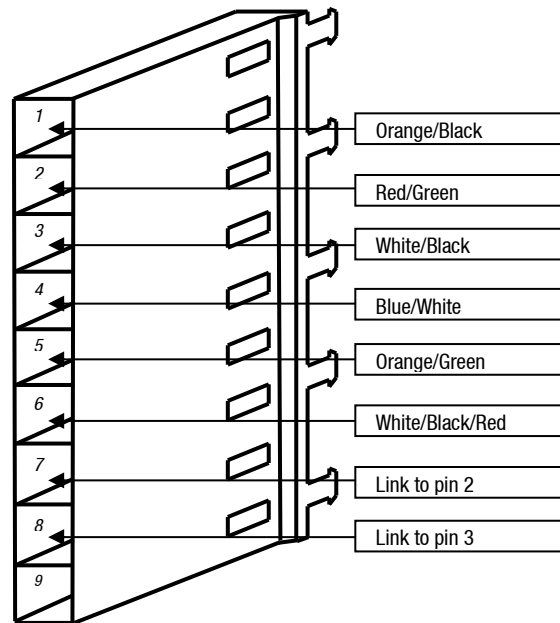
Capacitive Pin Pad Keypad

Membrane Keypad

The membrane type (soft) key pad requires a different cable to the capacitance (hard) type key pad. Key pads can be interchanged but a software change is required if a different key pad is fitted.
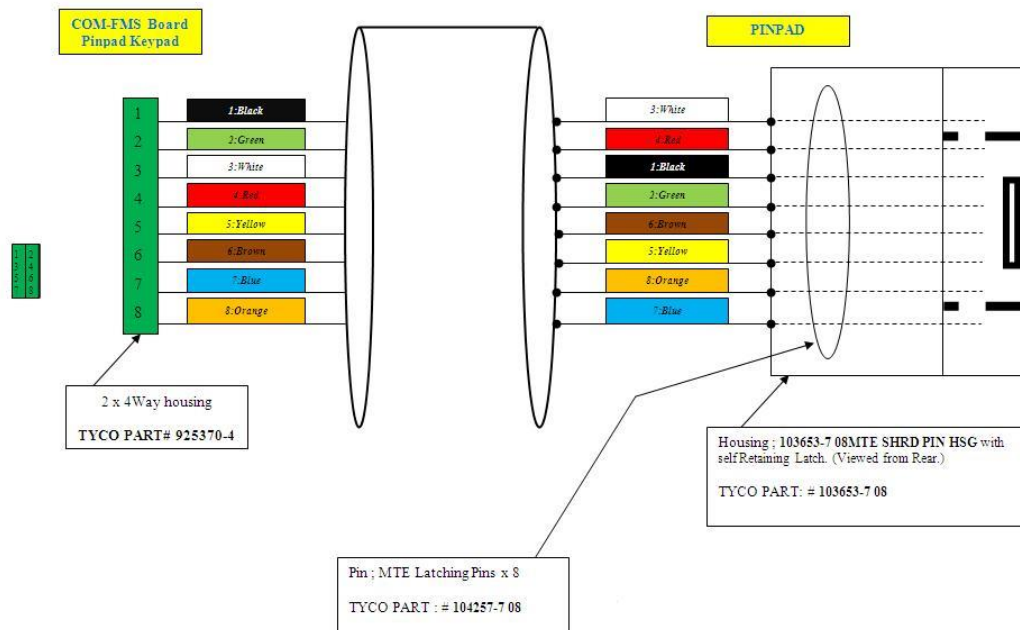
Keypad Interchange

Service and Upgrades

The unit is designed to perform many different operations depending on the application. The contents of the cabinets shown in the following procedures may not reflect the actual cabinet you are working on.

Com FMS Board Replacement

CAUTION

Always take anti-static precautions when working with electronic components. i.e., wearing a wristband with an earth strap.

Always take precautions to avoid arcs and short circuits that may damage sensitive components.

Tools Required to Replace the FMS Board

- 3 mm allen key
- Replacement FMS board

NOTE: Check if the board has memory and software chips (consult with Compac Help Desk to see if you can use existing software or if you also need to install new chips).

Removal

1. Turn off the mains switch.
2. Remove any components that may obstruct the easy removal of the board. Note the locations and connections to the parts removed.
3. Unplug the connections to the board.
4. Undo the four machine screws holding the board and remove it.
5. Remove the memory and software chips from the FMS board if they are to be re-used and installed into the replacement FMS board.

Replacement

1. Replace the Comm FMS board and reconnect.
2. Once a new PCB has been installed in the electronic module install the memory and software chips onto the appropriate sockets on the board.
3. Replace all the components that were removed to access the board.
4. Verify the site pump and comms settings are correct. If the memory and software used are new, the site specific settings such as tanks / groups will need to be entered. Refer Main Menu Options.
5. Set the time and date. Refer to Setting the Clock.

Port 4 RS232
Port 3 RS232
Port 2 RS232
Port 1 RS232
Port 5 RS232 Channel 1
Comms loop fuses
Current Loop
Card Reader

Port 4 TTL
Port 3 TTL
Port 2 TTL
Port 1 TTL
Battery
Batt
Comm FMS Dip Switches
General Purpose Inputs
IC 5 pin

Mains power fuse
IBM Keyboard
Mains Power
Dot Matrix Display
PIN Pad Keyboard

DCA Comm FMS Board. Some wiring removed for clarity.
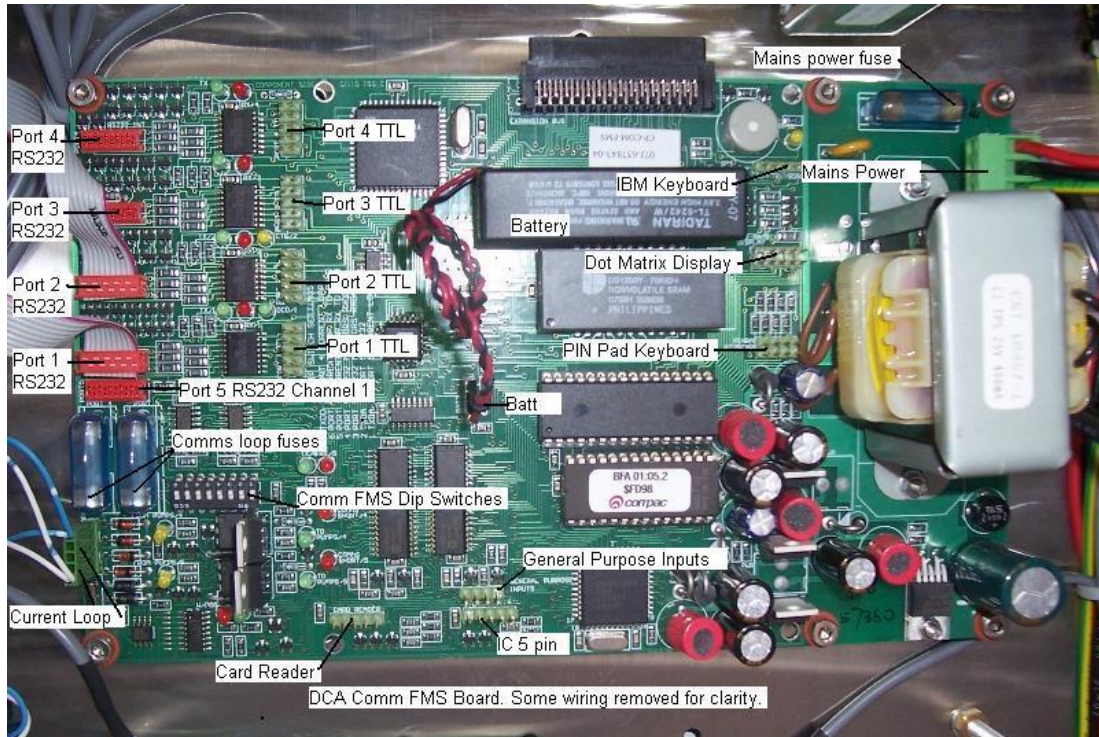
Due to the varied configurations of the units, all combinations of wiring can not be listed here. Take careful note of all connections before removal and use the list below as a guide only. The RS232 ports are RS232 mirrors of the TTL ports.

Component	Wire Colours	Comment
Port 1 RS232		Modem / direct host
Port 2 RS232		Audit trail printer or GPRS modem
Port 3 RS232		
Port 4 RS232		Tank gauging or Gilbarco comm's
Port 5 RS232		RS232 output of current loop for long distance pump comm's
Port 1 TTL		Connects to Lantronix board for TCPIP communication with CompacOnline, Netbase or Compac Box.
Port 2 TTL		Used in conjunction with Port 1 TTL
Port 3 TTL		Receipt printer
Port 4 TTL		
IC (5pin)		Power for capacitance keypad.
Card Reader		
General Purpose Inputs		
Mains Power	Red/Black/Green	Uses 3 pin plug wired: Phase-red, Neutral-black and Earth-green
PIN Pad Keyboard		
Dot Matrix Display		
IBM Keyboard		Not used
Batt	Red, Black	3.6V lithium battery
Dip Switches		Use DIP switches to allocate port functions. If replacing a board, make sure DIP switches match up.
		CAUTION: *Use the above table as a guide only as wire colours can change during production and after servicing.*

C4000 Board Replacement

Depending on the model of unit the C4000 board (or boards) may be mounted in different positions. The C4000 board is recognisable by the three parameter switches on the board.

Refer to the C4000 Master Manual for more information.

Removal & Replacement

Due to the varied mounting, there are no specific instructions.

Remove all components that may interfere with the removal of the board, taking note of the position and polarity of all wiring.

Remove the C4000 board.

Replacement is the opposite of removal. If a software chip was not included on the replacement board, use the chip from the old board, refer to the C4000 Master Manual for more information.

Configuration

The C4000 board can be set up in different ways depending on whether it is being used for CWID authorisation or for reporting mechanical register outputs. Refer to Compac and the C4000 Master Manual for details.

Parameter

K-Factor
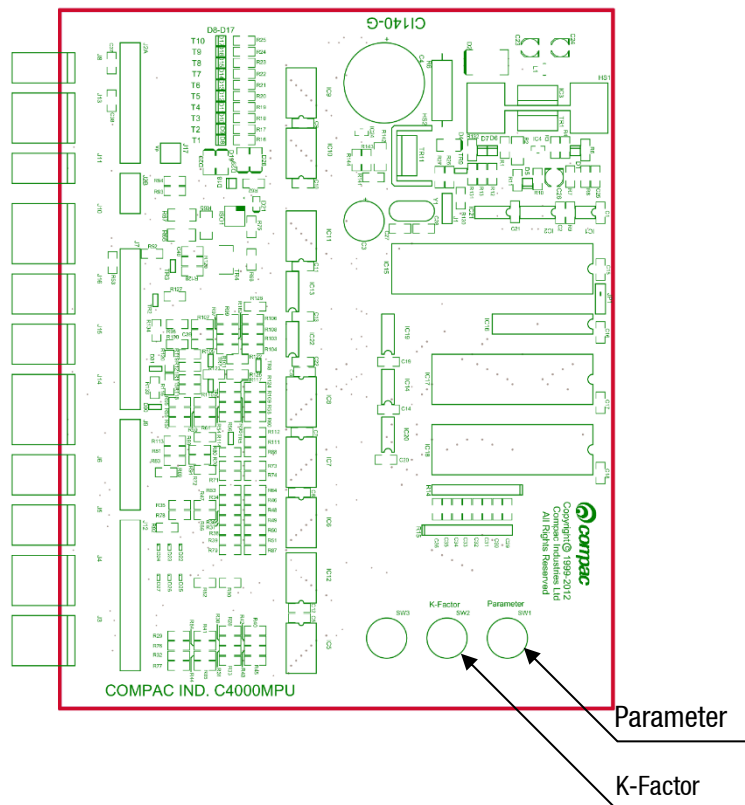
ATG Box Replacement

To Replace the ATG Box you will need:

- 7mm Nut driver
- Replacement ATG box
- Cable ties
- Cutters
- Laptop and network cable or keyboard, mouse and screen (for CC DCA)

Removal:

Turn off the power to the unit

Remove the perspex cover and any components that restrict access to the ATG box taking note of location and connections of all parts used.

Unplug all connections leading into the ATG box, noting their positions.

Loosen the 4 nuts retaining the ATG mounting plate to the back wall of the cabinet. Lift and carefully remove the ATG mounting plate.

Remove the ATG box from the mounting plate.

If the ATG transformer has failed, snip the cable ties and remove this too.

Replacement:

Replacement is the reverse of removal. Ensure the perspex cover is replaced.

Configuring an ATG box (Tank Gauging Only)

No configuration is required for standard (tank gauging only) ATG connections.

Configuring an ATG box (Credit card capable units)

Contact Compac who will remotely configure the unit. You may be asked to plug a laptop or screen, keyboard and mouse in to the ATG box to do initial configuration.

Wiring a USB Module

The diagram below shows the wiring diagram for USB interface board to a Compac Box. The power for the USB Interface Board is off J17 on the C4000 Process Board. An RS232 cable comes off Port1 on the Com-fms board to the Com1 socket on the Compac Box.

The USB cable from the USB Module plugs into the USB port on the Compac Box (not shown here).

USB Interface Board
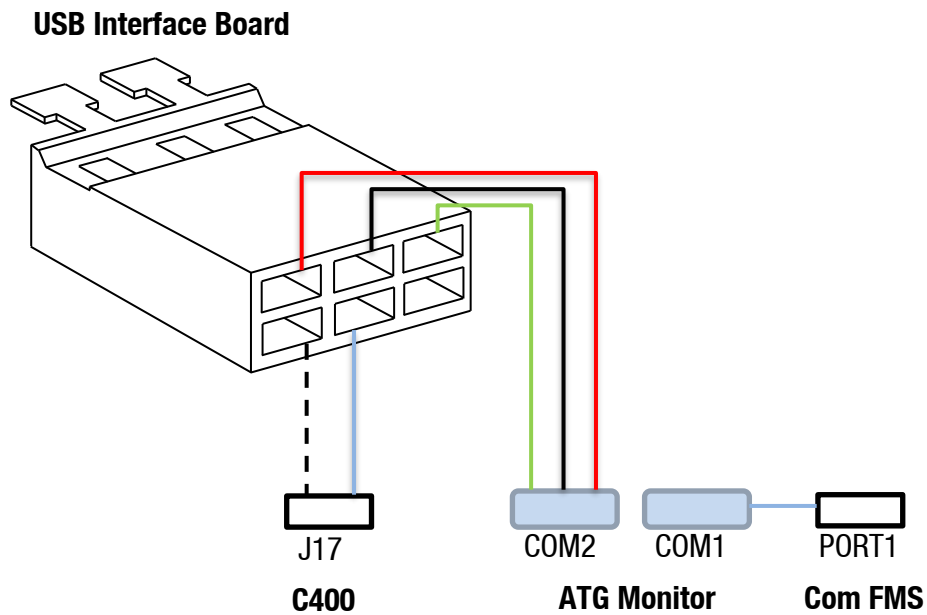
Attach the RS232 cable wires to the plug terminals so they match the following table:

Wire	Pin
Red	2
Black	3
Green	5
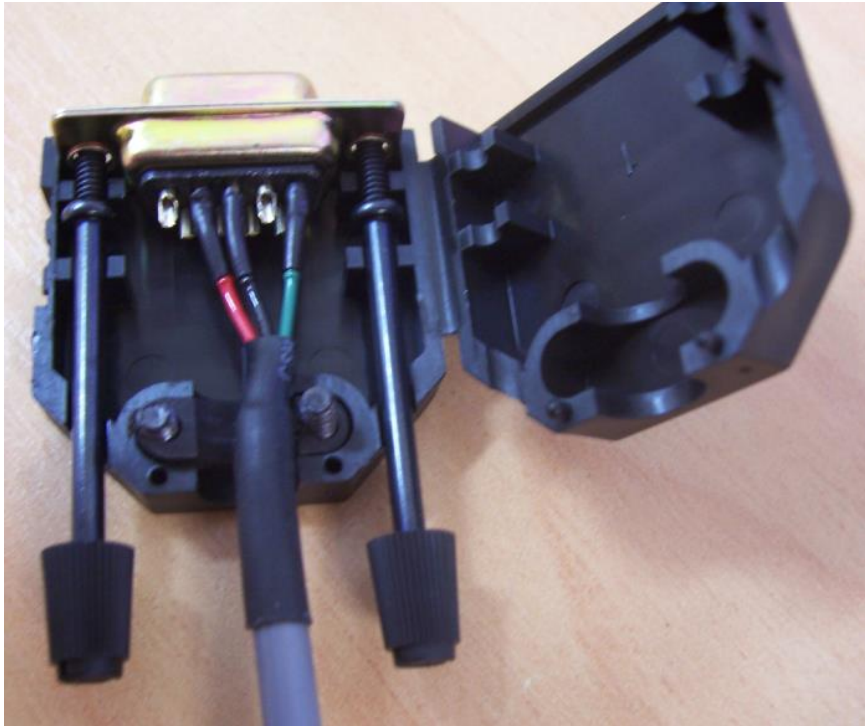
USB Module to Compac Box (COM2) Wiring
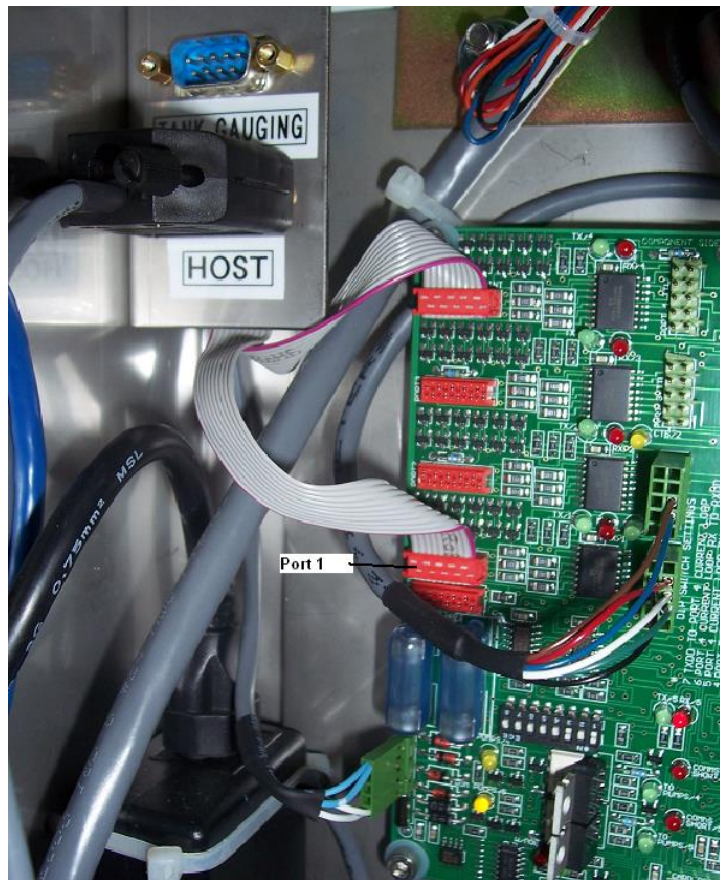
Location of Port 1 on Com FMS board

Plug the RS232 cable into Port1 on the Com-FMS board.
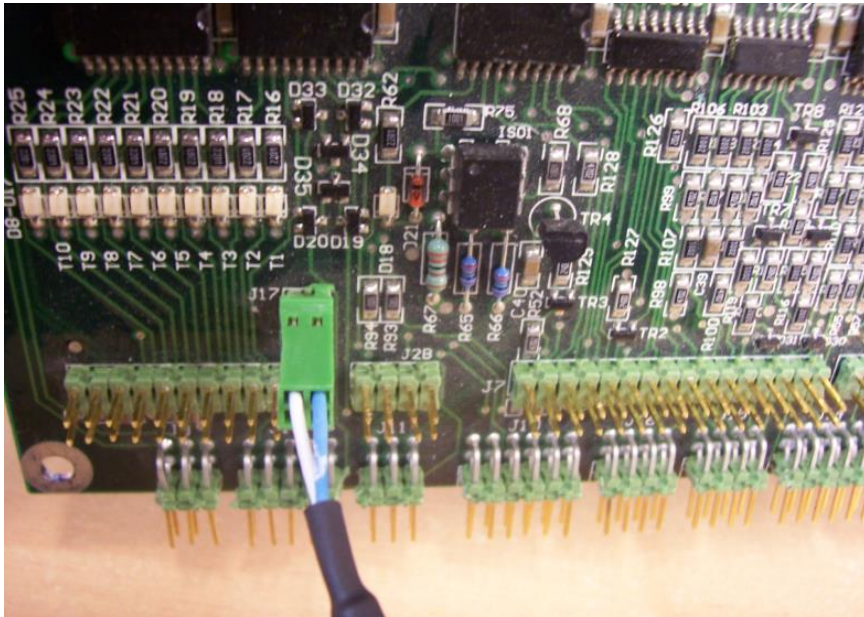
12V Supply Cable from C4000 to USB Interface Board

Plug the two-core cable into J17 on the C4000 processor board. The white wire goes into +12V and blue wire goes to ground.

NOTE: If the unit does not have a C4000 processor board you need to obtain a 12 volt power supply either from a power transformer or by connecting into the TTL port of the Com-FMS board as shown.
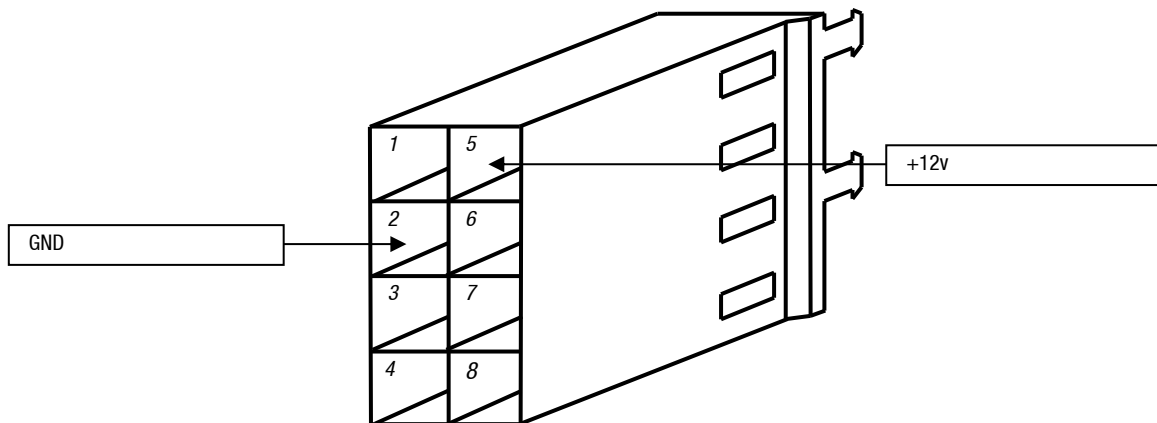
Connections to the TTL port of the Com-FMS board

Wire both RS232 cables to the Compac Box as shown and plug the 6-way connector into the USB Interface board. The USB cable off the USB Interface board should be plugged into the USB port on the Compac Box.
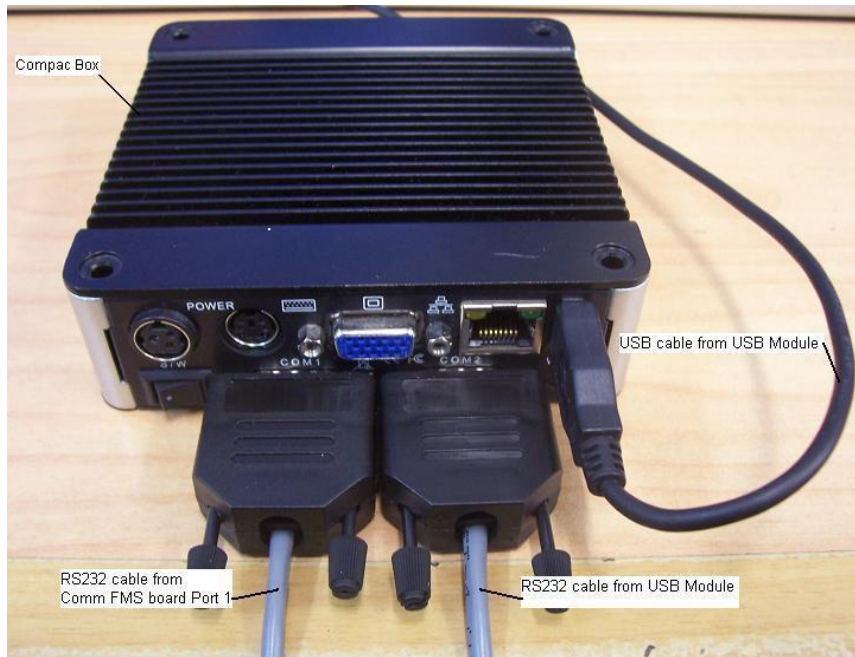
CWID Interface Board Replacement

Tools Required to Replace the CWID Board

- 3 mm allen key
- Replacement CWID board.

NOTE: Check if the board has memory and software chips (consult with Compac Help Desk to see if you can use existing software or if you also need to install new chips).

Removal

1. Turn off the mains switch.
2. Remove any components that may obstruct the easy removal of the board. Note the locations and connections to the parts removed.
3. Unplug the connections to the board.
4. Undo the four machine screws holding the board and remove it.

Replacement

1. Replace the CWID board and reconnect.
2. Once a new PCB has been installed in the electronic module install the memory and software chips onto the appropriate sockets on the board.
3. Replace all the components that were removed to access the board.
4. Repower the unit and check Power, Comm's and Valid LEDs by swiping CWID key.
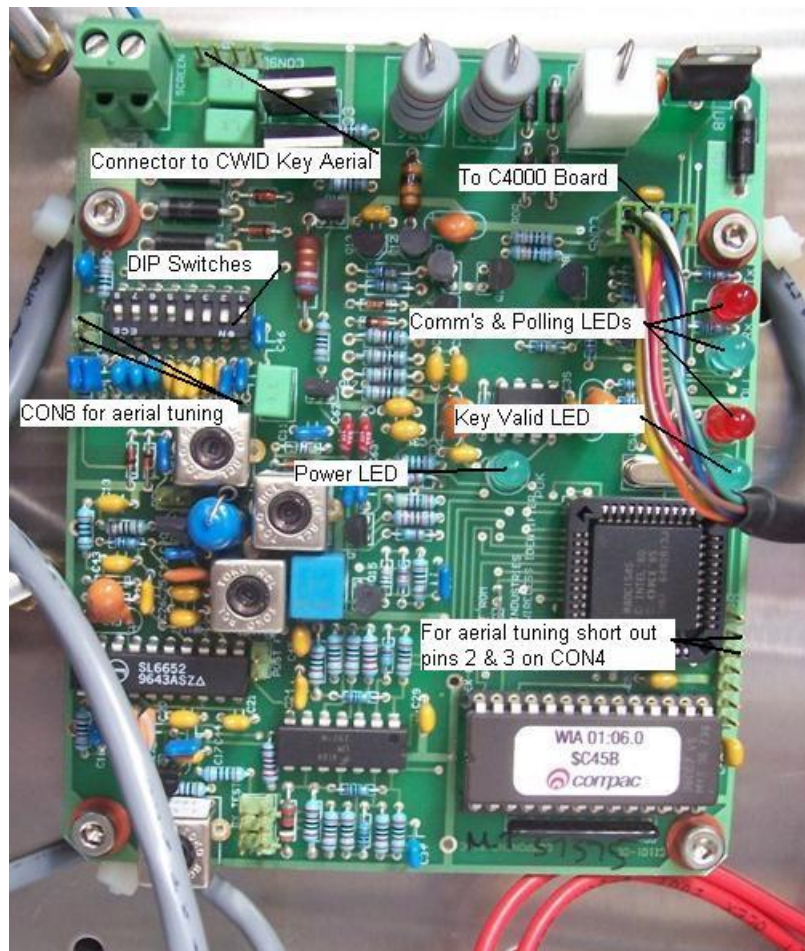
NOTE: The screw connector block can also be used for the CWID aerial connection.

NOTE: If either the aerial or the interface board are replaced the aerial must be re-tuned. Refer to Tuning the CWID Aerial.

CWID Aerial Replacement

Tools Required to Replace the CWID Aerial

- #2 Pozi-drive screwdriver
- Cable ties
- Replacement CWID aerial

Removal

1. Turn off the mains switch. Open the cabinet.
2. Remove any components that may obstruct the easy removal of the aerial. Note the locations and connections to the parts removed.
3. Unplug the aerial connection to the CWID interface board.
4. Unscrew the aerial from the square mounting block.
5. If access is difficult, undo the four screws holding the aerial mounting block and remove the assembly in order to unscrew the aerial.

Replacement

1. Replace the aerial and seal (if mounting block removed) and reconnect to the board.
2. Replace all the components that were removed to access the aerial.
3. Repower the unit and check the operation of the CWID key. The Valid LED on the CWID board will illuminate when a valid CWID key is swiped.

NOTE: If either the aerial or the interface board are replaced the aerial must be re-tuned. Refer to Tuning the CWID Aerial.

CWID Nozzle Aerial Replacement

If the nozzle mounted CWID aerial or cable fails, the entire assembly must be replaced. The aerial can be ordered with a 5, 10, 12 or 14 metre cable to suit the application.

For most nozzle mounted CWID aerials the CWID aerial will terminate at a CWID interface board mounted at the pump. The interface board is connected to the C4000 board in the unit by an extended cable.

Tools Required to Replace the CWID Nozzle Aerial

- Spanners
- Side cutters
- Electrical screwdrivers
- Cable ties

Removal

1. Remove the aerial wire from the CWID board.
2. Undo the three bolts holding the CWID aerial ring onto the nozzle and remove.
3. Undo any cable fastenings or snip any cable ties to free the cable.

Replacement

Installation is the opposite of removal. The installation of the CWID aerial cable varies from site to site. Install the new cable the same way as the original.

NOTE: If either the aerial or the interface board are replaced the aerial must be re-tuned. Refer to Tuning the CWID Aerial (see below.)

Tuning the CWID Aerial

Whenever the CWID PCB is changed, the aerial will need to be tuned. For locations of the connectors, refer to the picture in CWID Interface Board Replacement.

1. Connect a Multimeter (set to Volts) to CON8.
2. Place a shorting link across pins 2 & 3 of CON4. The poll LED will flash slower, indicating "Tuning Mode".
3. Using the dipswitches (SW1), adjust the capacitance to obtain the maximum voltage at CON8. Each dipswitch adds a capacitor to the tuned circuit. The DIP switches 1 to 5 are primary capacitors while 6 to 8 are fine tuning capacitors.
4. Use the following technique:
5. Turn on Switch 1 and measure voltage, turn on switch 8 and see if voltage rises or falls. If it rises, turn off 8 and turn on switch 2.
6. Continue this procedure for switches 3, 4 and 5 until you get a voltage drop.
7. If the voltage drop occurs at switch 2, 3, 4 or 5 then return to the previous switch and add switches 6, 7 and 8 until the voltage drops. When the drop occurs, revert to the previous switch.
8. If there is no voltage drop as switches 6, 7 and 8 are added, compare this voltage to the voltage achieved at the next primary switch with 6, 7 and 8 turned off.
9. If you can't get a voltage drop when the fine tuning switches are used, use the chart below to calculate a capacitance figure between the switch combination achieved above. For example: If 1+2+6+7+8 (7.3 nF) obtains a higher voltage than 1+2+3 (8.33nF) then try 1+2+5 (7.33 nF). If the voltage reading is higher than the two previous combinations, switch on 8 then 7 then 6 until you get a drop. If no drop is measured, try 1+2+4(7.66 nF). Keep working with combinations until you get the voltage drop when one of the fine tuning switches is added or you have run out of combinations. Always use the setting that achieves the highest voltage.
10. If the voltage drop occurs at step 5, turn off switch 1 and turn on switches 2, 3, 4 and 5 then test for voltage drop with switch 8. If voltage drops then turn off switch 5, measure voltage and test again with switch 8. Continue with combinations until a voltage drop occurs when one of the fine tuning capacitors is switched on.
11. Though the CWID aerial can work at lower voltages, the voltage reading should be above 28 Volts.
12. Remove the shorting link fitted at 2 above.
13. Test the operation with a valid CWID key.

Dipswitch (SW1)	Capacitance (nF)	Dipswitch (SW1)	Capacitance (nF)
1	4.7	5	0.33
2	2.3	6	0.1
3	1.33	7	0.1
4	0.66	8	0.1

HID Reader Replacement

The HID unit if ordered from Compac will come with approximately 1.5 metres of cable terminated with a 5 pin plug.

To Perform This Operation You Will Need

- New HID Reader
- #2 Phillips type screwdriver
- Allen key set
- 7mm Nutdriver or spanner

Removal

1. Turn off the mains switch and ensure there is no power to the unit.
2. Open the cabinet and unplug the HID Reader from the IC socket on the FMS Board marked "Card Reader".
3. Undo the gland nut on the back of the door.
4. Undo the screw at the bottom of the HID reader and pull of the HID reader cover and reader unit. Pull the cable through. (You may need to remove the terminals from the plug to do this.) If you want to replace the base plate and gland nut, remove these too.

Replacement

Replacement is the reverse of removal. (The terminals may have to be removed from the plug to pass through the gland.)

NOTE: *If the gland is replaced you will need to cut about 6mm off the threaded end to allow the HID reader to fit flush against the door.*

Test the HID reader by using a valid key to perform a zero dollar transaction.

Gland to HID Reader

HID Reader Connection

5	→	Black
4		
3	→	Green
2	→	White
1	→	Red
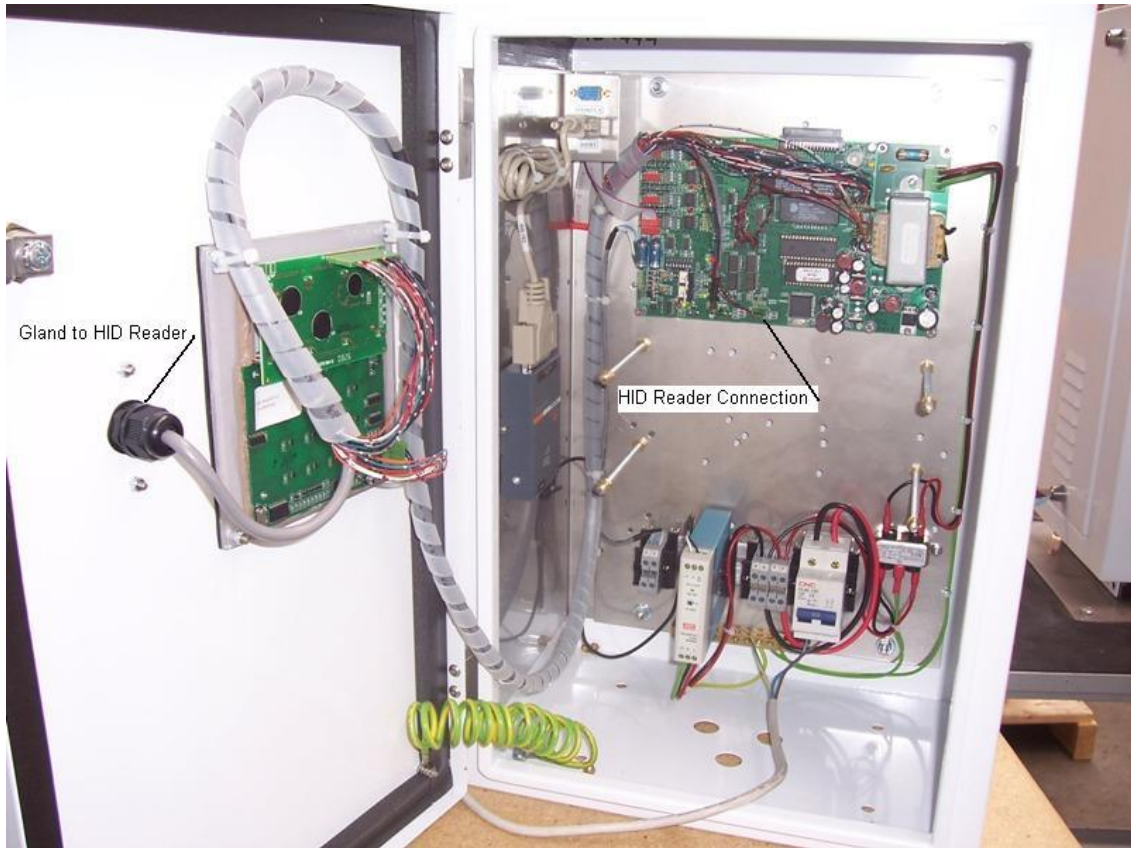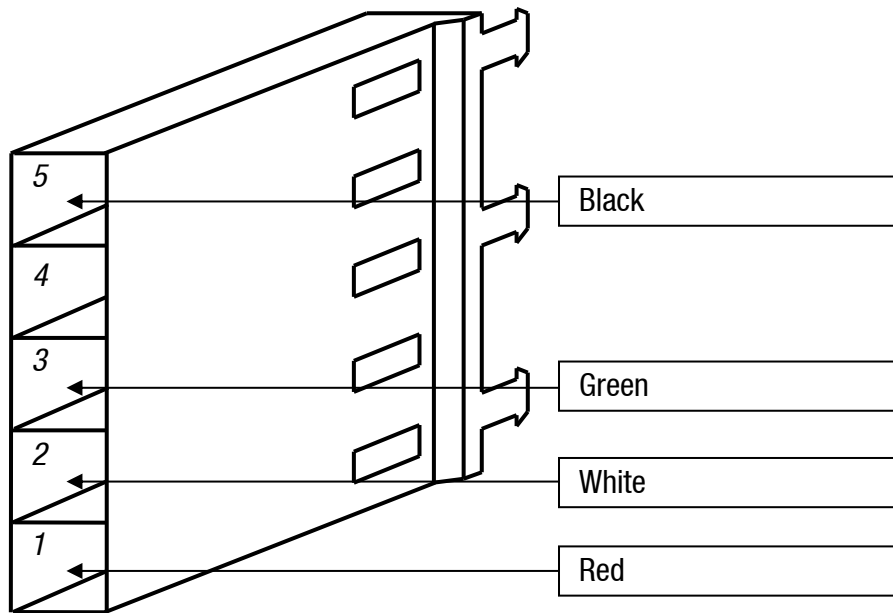
Card Reader on COM-FMS Board

iTrack Reader Installation and Replacement

The iTrack reader can either be supplied with a new unit or retrofitted to existing ones. See below for a wiring diagram:
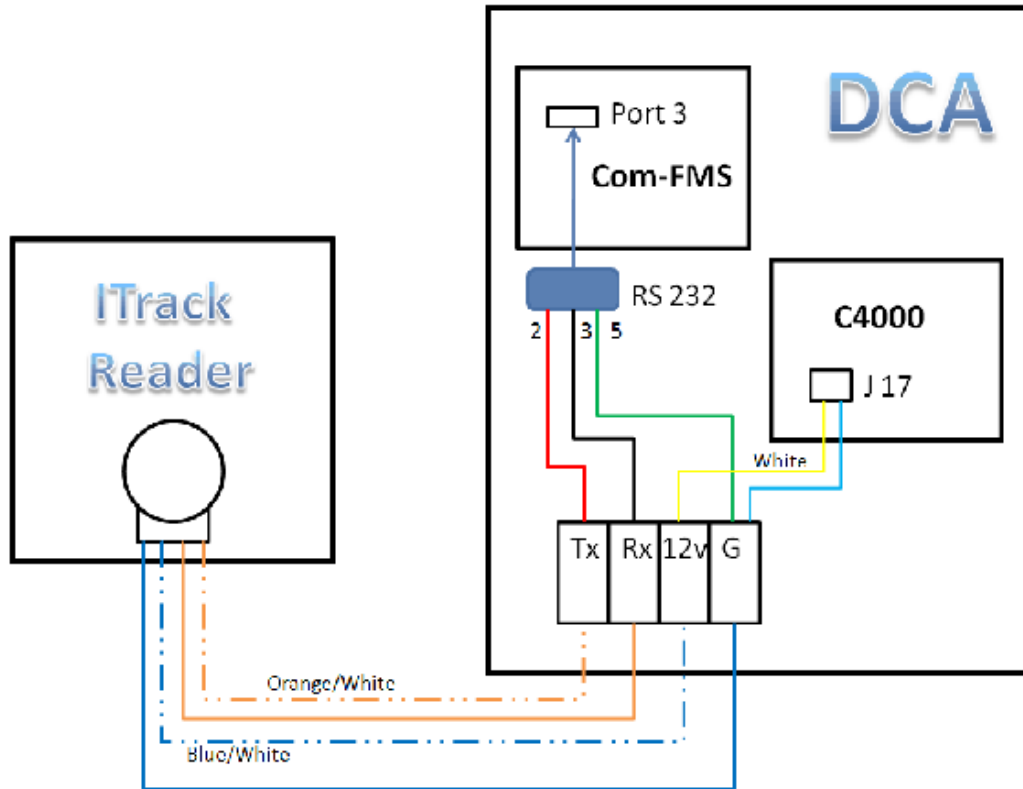
Existing iTrack Reader

If the iTrack reader has been set up at the factory, it will connect to the pre-wired sockets on the DIN rail as follows:

NOTE: Isolate the unit before attempting any work on the iTrack reader.
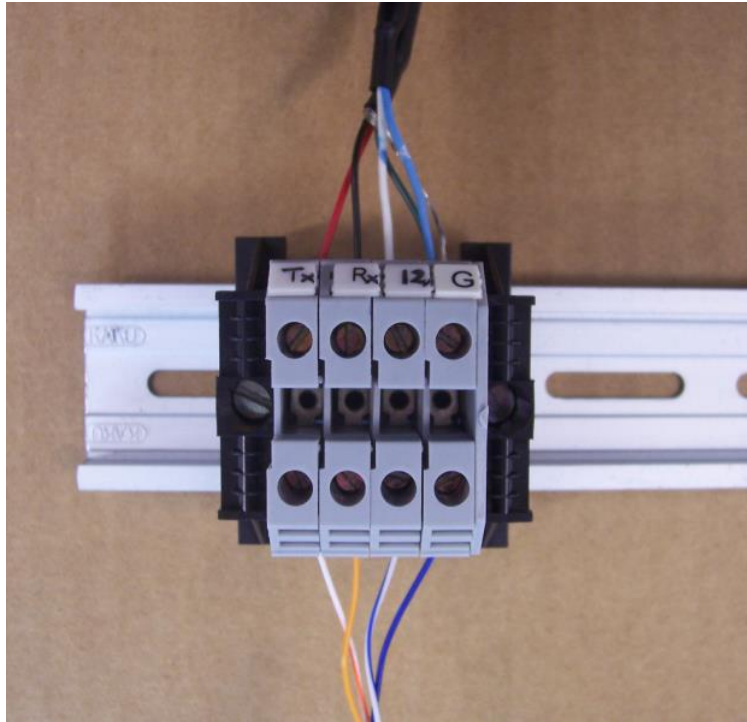
Factory Set Up iTrack Reader

Terminal	Wires	iTrack Reader Wires
Tx	Red	Orange and White
Rx	Black	Orange
12V	White	Blue and White
G	Blue, Green and Shield	Blue

New Installation

To connect an iTrack reader where no DIN rail connection is supplied you can wire the reader to an RS232 plug as follows:
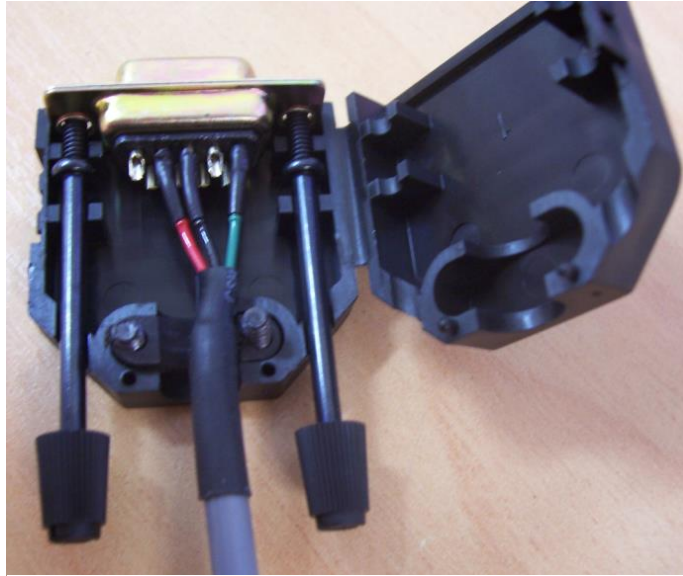
iTrack Reader Wired to an RS232 Plug

NOTE: *The picture above shows the factory wiring. When wiring the iTrack direct to the RS232 plug use the colours in the table.*

Wire	Pin
Orange / White	2
Orange	3
Blue	5

Plug the RS232 plug into the supplied socket (generally labelled "Host") and plug the ribbon cable at the back of this socket into Port 3 on the Com FMS board.
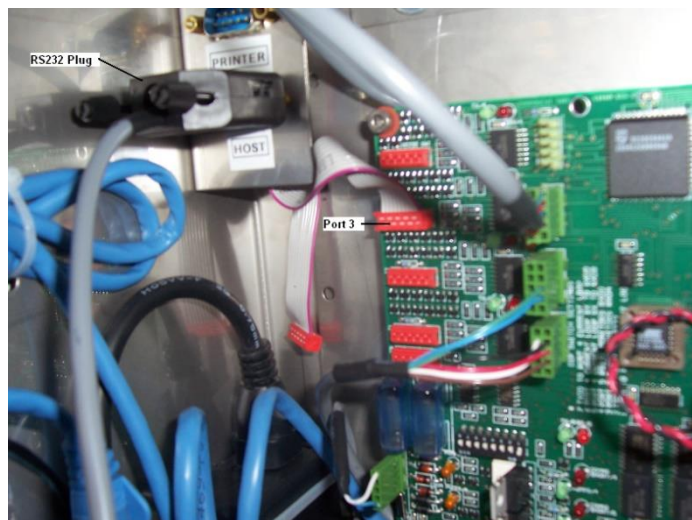
Wiring to the Com-FMS Board

Connect the Blue/White wire to the 12v supply side of socket J17 on the C4000 board and the blue wire to the earth (twinned with the wire to RS252 pin 5).
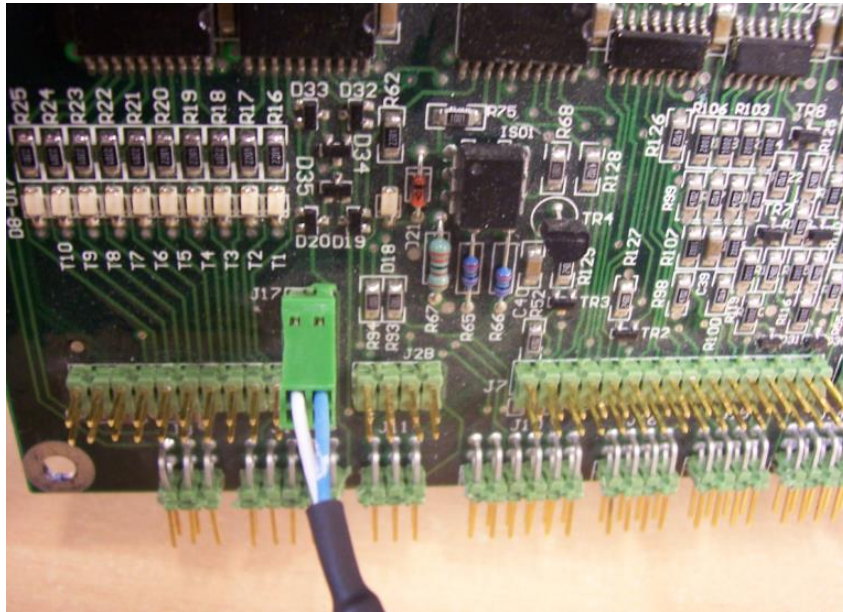
Card Reader Replacement

Tools Required to Replace the Card Reader

- Card Reader (Check the type of card reader you require)
- 7mm nut driver
- 3mm allen key
- #1 Pozidrive screwdriver

Removal

1. Note the orientation of the 5 way connector and pull the connector off the back of the card reader.
2. If there is a sheet metal screen between the reader and the LCD screen, undo the cap screws that hold it on and remove the extended nuts underneath.
3. Unscrew the four nylock nuts that retain the card reader to the door.

Replacement

Replacing the card reader is the reversal of the removal procedure. Replace the gasket if it is perished or damaged.

NOTE: When reconnecting, pay attention that the connector orientation is the same as when it was removed.

P Series card reader
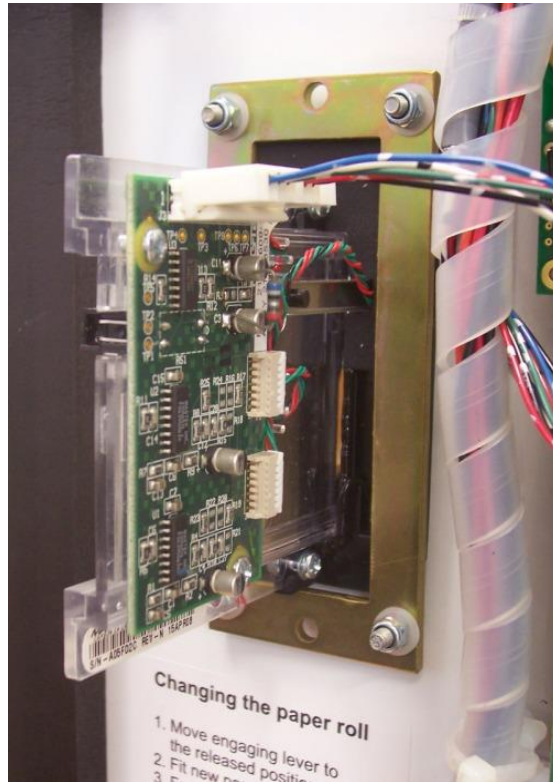
P Series Card Reader - Inside

Keypad and Display Screen Replacement

Tools Required to Replace the Keypad

- Replacement keypad
- 7mm nut driver
- Side cutters
- Cable Ties

Removal

1. Cut the cable ties around the key pad and remove the cable tie clips.
2. Note the position and orientation of the connectors before removing them.
3. Unscrew the four nylock nuts that retain the keypad to the door.

Replacement

Replacing the keypad is the reversal of the removal procedure.

Test the keypad and display for correct operation.

NOTE: Replace the gasket if it is damaged or perished.

Router / Switch Replacement

The ADSL router / switch module is not repairable on site and will need to be replaced with a new part.

Tools Required to Replace the Router / Switch

- ADSL Router / Switch module
- Wire cutters
- Cable ties
- 7mm & 8mm Nut driver

Removal

1. Turn off the power using the mains switch.
2. Unclip the Ethernet cables, power and phone line (If present) and cut any cable ties that secure the module in place. Remove the module.

NOTE: Some routers are mounted behind a mounting plate. In this case you will also need a 7mm nut driver to unscrew the nuts, then pull off the mounting plate.

Replacement

Reverse the removal procedure above to replace the router / switch.

Once the unit has been installed contact Compac to set up the router user name, password and port forwarding.

Setting up an ADSL Router

Set Up - On Site

1. Power up the router and connect a laptop to the router using one of the spare ports.
2. Start Internet Explorer and type in the root IP address of the network http://10.0.0.1 if the router has been configured by Compac and press Enter. If the router has not been pre configured, the IP address will be 192.168.1.50 for 3G and Next G routers and 192.168.1.1 for ADSL routers.
3. Enter your user name and password if prompted. Contact Compac for user name and password if you do not have one.
4. The router setup screen will open.
5. If you have a pre-configured router, you will only need to change the PPPoA user name and password to match the OPT site. (Contact Compac for this information.)
6. If your router is not pre-configured you will need to go configure the router. You can do this either by installing the router configuration file if installed on your laptop or going through each screen and matching the numbers and switch settings.

Installing Router Configuration File

1. Load the configuration file onto your laptop
2. Connect to the router using the above instructions.
3. Click on the Administration tab
4. Click on the Backup and Restore sub tab
5. Click on the Browse button in the Restore Configuration box
6. Select the configuration file and click Restore.
7. Follow the instructions above to enter your site specific user name and password.

Configuring an ADSL Router Manually

1. Connect your laptop to the router using the above instructions
2. Match the router settings with the screen settings shown below.

Setup Screen:

From the Setup Screen, click on the DDNS tab and check the settings.
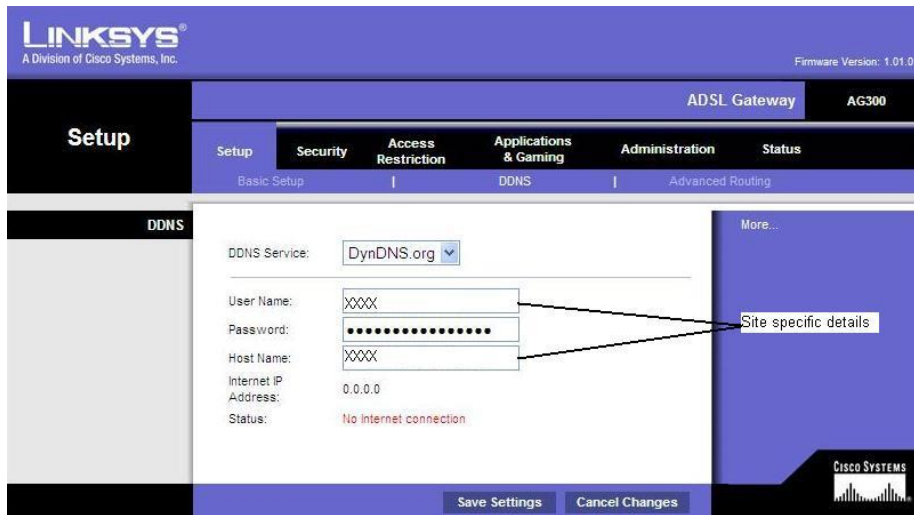
Router Security Settings

105.
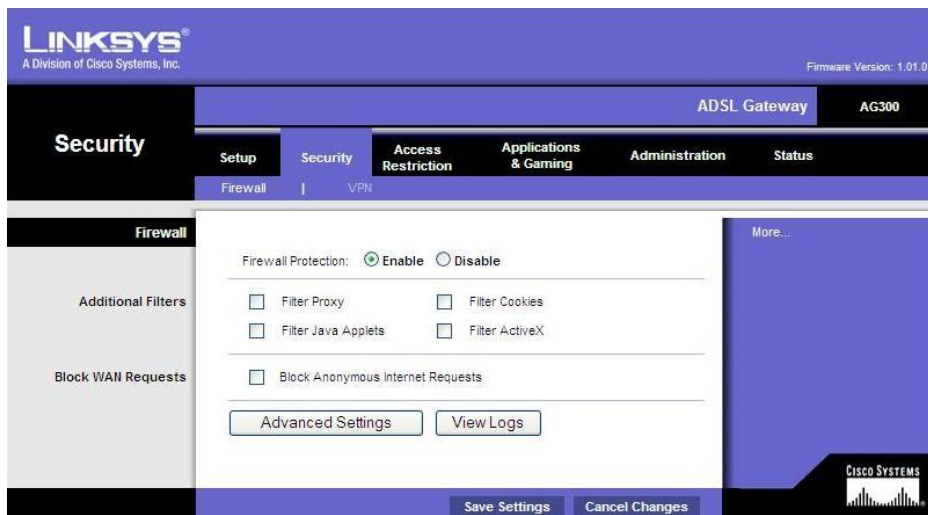
Router Access Restriction Screen

Router Applications Screen

Router Administration Screen

108.

UPnP

UPnP:	⦿ Enable ○ Disable
Please select a PVC connection to bind:	1 ▾

IGMP-Proxy

IGMP Proxy	○ Enable ⦿ Disable
Immediate Leave	○ Enable ⦿ Disable

IGMP-Snooping

IGMP Snooping	○ Enable ⦿ Disable

TR064

TR-064:	○ Enable ⦿ Disable

Telnet

Telnet:	⦿ Enable ○ Disable

Save Settings   Cancel Changes

CISCO SYSTEMS

109.

Software Upgrading

This is the software upgrade procedure to be followed for all EPROMS.

1. Ensure, before working on the ComFutra, that anti-static precautions are taken (i.e. wearing of wristband with earth strap).
2. Check that all current data has been uploaded from the unit.
3. Record all existing parameters and settings.
4. The above steps are taken to safeguard against software incompatibility causing loss of information.
5. Turn off power.
6. Remove software EPROM using an EPROM extractor.
7. Plug in new software EPROM, being careful that the dimple is at the correct end of the socket (see diagram below). Also ensure that all the legs are correctly located in the socket.
8. Turn on power.
9. Check that the data recorded in Step 3 is still present, if not contact Help Desk for instructions.
10. Check date/time and all other settings are correct.
11. Test pump operation.

CAUTION

When replacing Integrated Circuit chips, ensure that the notch is facing in the direction of the IC board socket (the notch is the end referred to as the "front").

When inserting the IC chip, the rear pin (of the IC chip) must be plugged into the rear pin socket of the IC board socket. If the chip is shorter than the socket, any spare pin sockets should be at the front.

Failure to correctly insert the IC chips or adhere to the above guidelines specified will result in a loss of memory data.
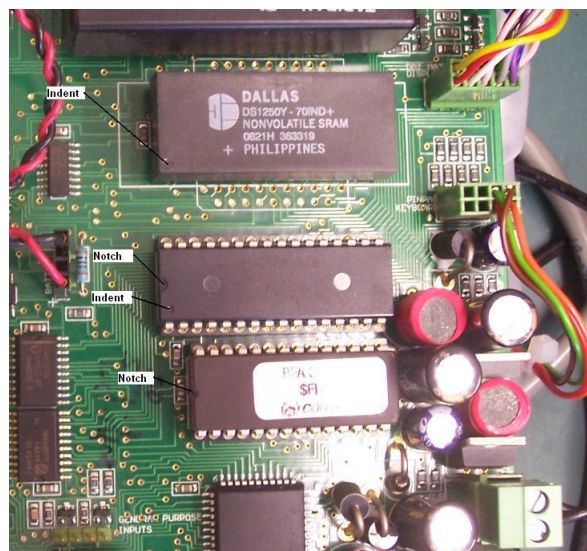
Memory Chip Orientation

Spare Parts List

The following parts list may contain components that are not specific to your particular unit. To ensure you get the correct parts, always quote serial number of the unit when ordering.

Cabinet

Part Number	Description
P-SEALANT-SD21	Rubber sealing strip

Electronic Components

Part Number	Description
BS-1PMLB-6A	Mains Switch
F-C4PWR-FUSEKIT	0.5MM Amp Fuse 20MM
CP-CI202-FMS12T	Comm FMS Board - Tested
FD-AM-BT-BUP-3V6	Comm FMS Backup Battery 3.6V,1.9AH
F-AD-4MEG-NVRAMN	Flash Memory (DS1250Y)
F-CP-C4PROCESS-A	C4000 Board
FO-BRD-0003	Embedded LAN Interface
F-CP-COMM-DPIA	Commander RS232 PORT I/F
F-CP-PINPADT	Complete Capacitance PIN Pad Tested (DCA)
BA-PWR-12V5V-120	120W 12V/5V Dual Power Supply
F-AD-27C512-A	EPROM 8 X 64K 28 PIN DIP
F-BRG7L1ABUBJ240	Omron relay for DCA with mechanical register
P-GASKET-CMFPP	PIN Pad Gasket

Modem / Router Options

FO-ADSL-001	Linksys AG 300 ADSL Router
F-BA-MDM-CDR990	3G Vodafone Router (NZ)
F-BA-MDM-CDR790	3G Vodafone Router (Aus)
FO-HUB-001	Switch / Hub
FO-AERIAL-0001	Long external aerial kit For 3G/Next-G
FO-AERIAL-0002	Short external aerial kit For 3G/Next-G

Card Reader

Part Number	Description
F-BA-CDRD--MT-TTL	Account Card Reader

CWID HID & USB

F-CP-CWID-E	**CWID board for one or two aerials**
F-CU-CWIDD-TAG1	CWID Tag block type - programmed
F-CU-CWIDD-TAG2	CWID Tag key ring type - programmed
F-CWID-RD-FORM/K	CWID key reader aerial former (DCA cabinet mount)
BA-HID-RDR	HID key reader
CU-HID-TAG	HID key
F-BA-USBKEY	USB memory stick 2Gb
FD-BA-CE-BOXPUSB	CE box programmed for USB applications
FD-BA-USBINT	DCA USB interface cable. Does not include cables.

Exchange Parts

Part Number	Description
FE-ATG-CU-0001	ATG box (exchange unit)

Pump Parts

Refer to the pump manual for all pump parts.

Glossary of Terms

TERM	DESCRIPTION
ATG	Automatic Tank Gauging
Class 1 Zone 0	An area in which an explosive-gas atmosphere is present continuously or is present for long periods.
Class 1 Zone 1	An area in which an explosive-gas atmosphere is likely to occur in normal operation.
Class 1 Zone 2	An area in which an explosive-gas atmosphere is not likely to occur in normal operation, and if it does occur it will exist for short periods only.
ComFutra	A model of pump mounted authorisation terminal made by Compac.
CPU	Central Processing Unit.
CWID	Compac Wireless Identifier.
DCA	Driveway Card Acceptor - A type of pump authorisation terminal made by Compac.
Encoder	A device that translates rotary motion into electronic pulses. Often referred to as a pulser.
Head	Dispenser calculator/Indicator. C4000 PCB, complete with power supply.
HID	Transponder key authorisation system
Intrinsically safe circuit	A circuit in which any spark or any thermal effect produced in the test conditions prescribed in the relevant standard (which includes normal operation and specified fault conditions) is incapable of causing ignition of a given explosive atmosphere.
Intrinsically safe electrical equipment	Electrical equipment in which all the circuits are intrinsically safe. The equipment may be self-contained or may form part of an intrinsically safe electrical system.
Intrinsically safe electrical system	An assembly of interconnected items of electrical equipment in which the circuits or parts of circuits, intended to be used in an explosive atmosphere, are intrinsically safe circuits.
LED	Light emitting diode.
Memory chip	EPROM chip that stores parameters and/or transaction & totals.
OPT	Outdoor Payment Terminal - A type of authorisation terminal designed for credit card applications made by Compac.
PCB	Printed Circuit Board.
RAS	Retail Authorisation Station - Authorisation terminal designed for manned sites
Via	'Plated through hole' in a PCB that enables tracks to swap sides on a PCB.
Software chip	EPROM chip with label indicating program version.

Installation Checklist

Version 1.0.0.

Covers Comfutra and Controller units.

Site number and name:	
Date:	
Installer name and phone number:	
Terminal ID number:	

When a new unit is being installed use the following checklist to make sure the unit is fully operational. Check each box or write N/A where not applicable. Refer to the relevant installation manual for procedures.

Mechanical Checks	Yes	No
Check unit is undamaged and has not been tampered with.		
Is the unit in a sheltered position and facing away from the prevailing wind and rain?		
Check all panels are securely fastened using tamper-proof fastenings where supplied.		
Check that all cable entries to unit are through glands.		

Power on Checks	Yes	No
Check that the CE board, FMS board, pinpad, printer, cardreader, router and modem all power up.		
Check pumps are re-priced to the current fuel price.		
Check that different fuels are correctly priced on all hoses.		

Transaction Checks	Yes	No
Complete transaction using white card/CWID/HID/Pin authorisation methods		
Complete transaction using credit card (credit card DCA only).		
Check that all hoses can be selected and authorised by the unit.		

Check all hoses stop on or before the pre-authorised value (credit card DCA only).		

Receipt Checks (where fitted)	Yes	No
Check that the correct $, L and fuel grade are printed on the receipt.		
Check the date, time and header information is correct.		

USB Module Checks (where fitted)	Yes	No
Check the supplied USB key is recognised by the unit.		
Select "Set Price" and check that the unit price is correctly updated on all hoses.		
Select "Get Transactions" and check that transactions are uploaded to the USB key.		

CompacOnline Checks (when connected)	Yes	No
Check the site appears on CompacOnline.		
Check that transactions have been recorded on CompacOnline.		
Change price on line and check that the price is uploaded to all units.		

Tank Gauging Checks (where fitted)	Yes	No
Check that tanks are set up in CompacOnline and that correct levels are being reported.		
Check that the correct products are assigned to the correct tanks.		

Customer Training	Yes	No
Check site attendants understand refuelling procedures.		
Check that site administrators understand how to obtain transactions and administer cards.		