



Multiple Card Systems A/S

Sapphire

Technical Guide

Revision 1.1

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Introduction

IMPORTANT NOTE: Before setting up the Sapphire, please read pages 2 and 3 in this user guide.

The purpose of this document is not to cover all possibilities, menus, etc. for a Sapphire, but to provide a short guide to setting up the terminal.

The Sapphire terminal is designed to control dispensing of fuel from attached pumps, and authorization of users / vehicles using the systems. The Sapphire terminal must be connected to the Internet, and integrates with the web based administrative tool Total Site Manager (TSM). TSM provides the functionality for setting up cards, processing and monitoring transactions and much more. Please note that card and vehicle information needed by the terminal, must be entered in TSM.

For more information on TSM, see section later in the document.

Internet Connection

The Sapphire terminal must be connected to a good Internet connection, with a router providing the necessary security. The router must be set up to block incoming connections, except RDP and TeamViewer. The router must accept all outgoing communication. Options are: Wi-fi, 3G, land line.

Technical Specifications

- Size (in mm): H:275, W:300, D:150
- Power requirements: 220-240VAC / 50 Hz.
- Power consumption: max. 20 Watts
- The terminal shall be grounded properly
- **IMPORTANT** The terminal shall be mounted leveled, or leaning slightly forward, in order to make it possible for the card reader to empty itself for water drops.

Cleaning

- Only use a damp cloth when cleaning
- Only use detergent with a middle pH value, for the sake of the front-plate and card-reader.
- Do not use high pressure jetting on the terminal

Connectivity

- Please note that external equipment like flow meters or other items should not be powered by the Sapphires internal power supply, which is only intended to power the Sapphire and the parts supplied by MCS.

If needed, MCS can fit an additional power supply in the Sapphire, to handle external equipment.

Software Setup before Installation

The Sapphire is shipped from MCS with a default software setup.

Upon arrival, please connect Sapphire to the Internet in your workshop, and ask MCS Support to set up software to your requirements. Please use Info form provided by MCS.

The following is a short summary of the various info forms provided by MCS:

- Creating New Company on TSM
This form needs to be filled in with information about the company
Name of file: [TSM – New Company.doc](#)
- Creating New Site on TSM
This form needs to be filled in with information about a specific site.
This form is dependent on the submission of the above mentioned 'TSM -New Company.doc'.
Name of file: [TSM –New Site.doc](#)
- Importing data to TSM (CVD)
If MCS are to import data to TSM (customers, cards, vehicles, drivers) the CVD file should be used.
Name of file: [CVD-template-v3.xls](#)

The forms need to be completed as accurately as possible and should be forwarded to support@mcscardsystems.com before the aforementioned deadlines. This will contribute to the installation and the following cooperation can proceed as smooth as possible. Any questions or comments are more than welcome.

Normally setting up a company, site, and importing data into TSM can be done by MCS within one week or less.

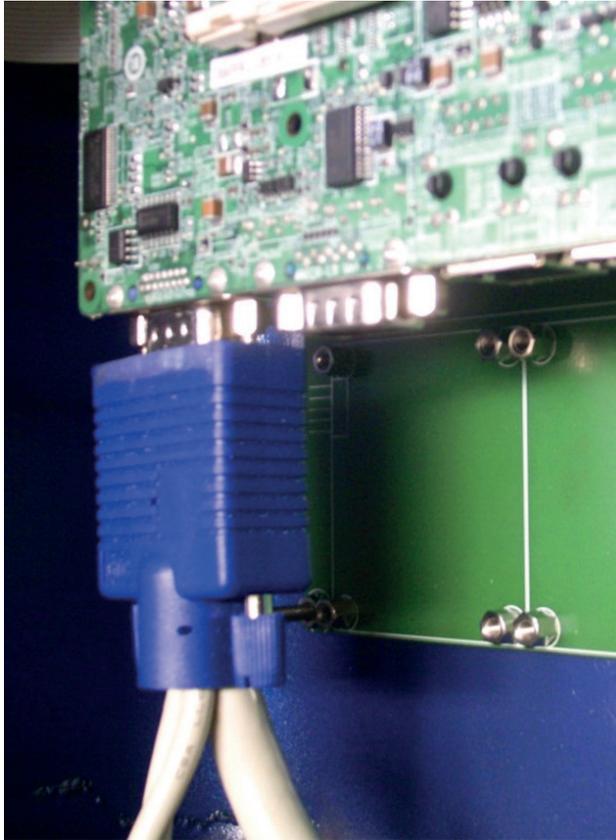
Important: After setup, and before installation, the Agent shall test the setup of the equipment in the workshop, to make sure all is working as intended, and you are able to draw fuel. After the test, the equipment is ready for installation.

Connection of Screen and Keyboard

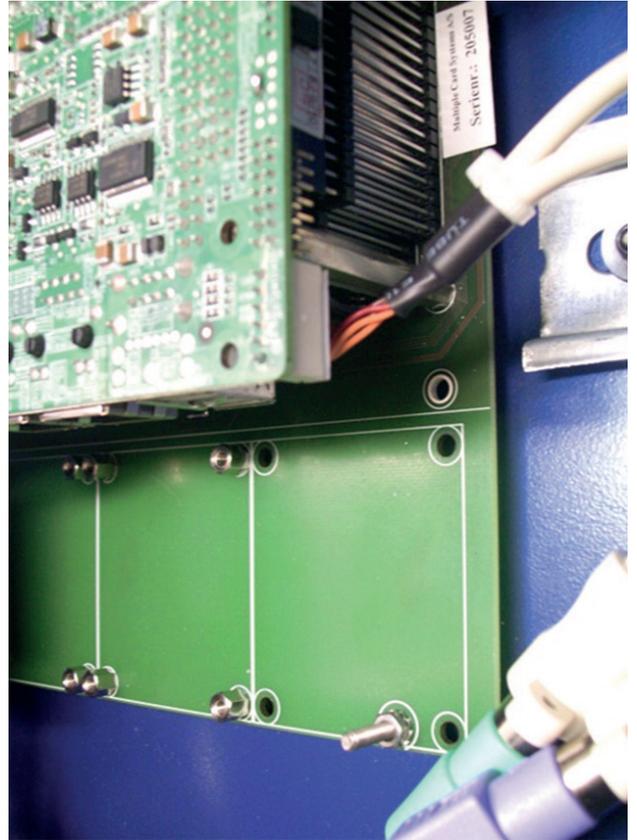
It is possible to connect a screen and a keyboard, in order to work directly on the Sapphire terminal.

The Sapphire must be restarted in order to recognize mouse / keyboard.

Some USB Keyboard/Mouse are supported, but not all.



Connection of screen.

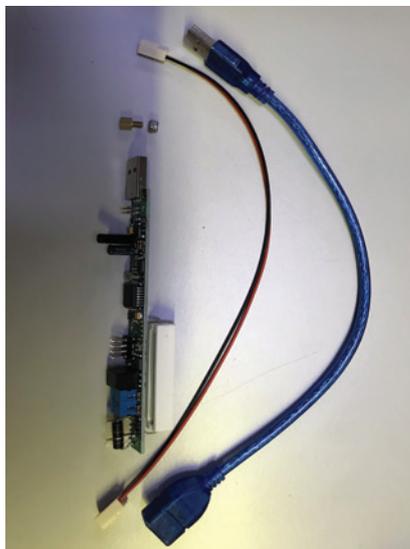


Connection of mouse and keyboard via adapter from MCS.

Installation of the Uptime hardware kit and associated Software to the Sapphire terminal

Please note that the device must not be plugged in before the driver is installed, so follow the instructions below carefully. Any issues, please contact MCS support on support@mcscardsystems.com

The Kit:



Software installation: Part 1

- On the Sapphire terminal, make sure serenum.sys is present and NOT renamed (to e.g. _serenum.sys) in C:\windows\system32\drivers. It is ok that serial.sys is renamed to _serial.sys.

- Download the zip file CDM 2.08.24 WHQL Certified

(Alternately, if link does not work, download the file “CDM 2.08.24 WHQL - Certified.zip” from FTDI at <http://www.ftdichip.com/Drivers/VCP.htm> and click on “2.08.24” in the x86 (32-bit) column.)

Extract the file to a convenient location on the Sapphire.

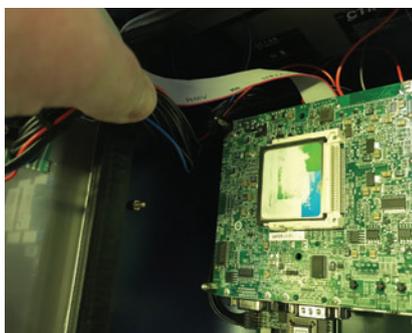
- Make sure ts.dll and ts.bin exists in C:\TSMClient folder. These can be provided by MCS support or found on the Uptime website.

Hardware installation

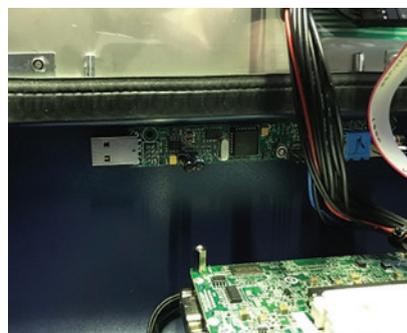
Ensure to fully power-off the Sapphire before module installation.



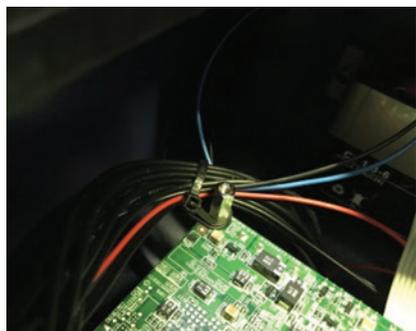
1. Install 5mm stand off on existing stud



2. Tighten using 5mm socket driver



3. Install uptime board using 3mm nut



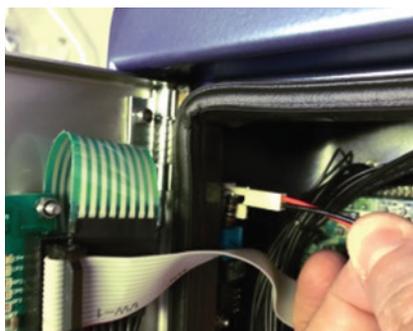
4. Make sure wires does not touch uptime board when door is closed.



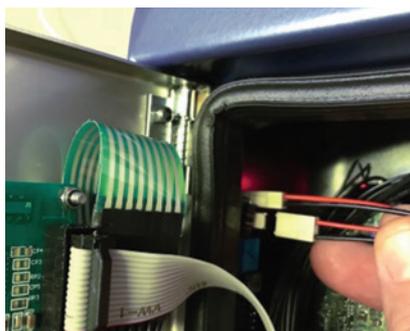
5. Install USB cable



6. Remove existing battery cable



7. Install the existing battery cable to the uptime board.



8. Install the new battery cable to the uptime board



9. Install the new battery cable to the Sapphire mainboard.

When the above steps are complete power up the Sapphire terminal.

C: Software installation: Part 2

Once the Sapphire is powered and Windows has started, the Found New Hardware Wizard will start. Make the following choices:

- Can Windows connect to Windows Update to search for software?

- No, not at this time.

- What do you want the wizard to do?

- Install from a list or specified location (Advanced).

- Please choose your search and installation options.

- Tick Search for the best driver in these locations.
- Untick Search removable media.
- Tick Include this location in the search:
- Browse to the location where you extracted the driver files.

This will install the USB Serial Converter.

Afterwards the 'Found New Hardware Wizard' will start again - this time installing the USB Serial Port. Make the same choices as above for the USB Serial Converter installation.

Following this the Sapphire wants to be restarted. Before doing this, run devmgmt.msc (Device Manager) and verify the COM-port number for the device under Ports (COM & LPT) / USB Serial Port is COM5. Otherwise change to COM5. Now restart the Sapphire, while the device remains plugged in.

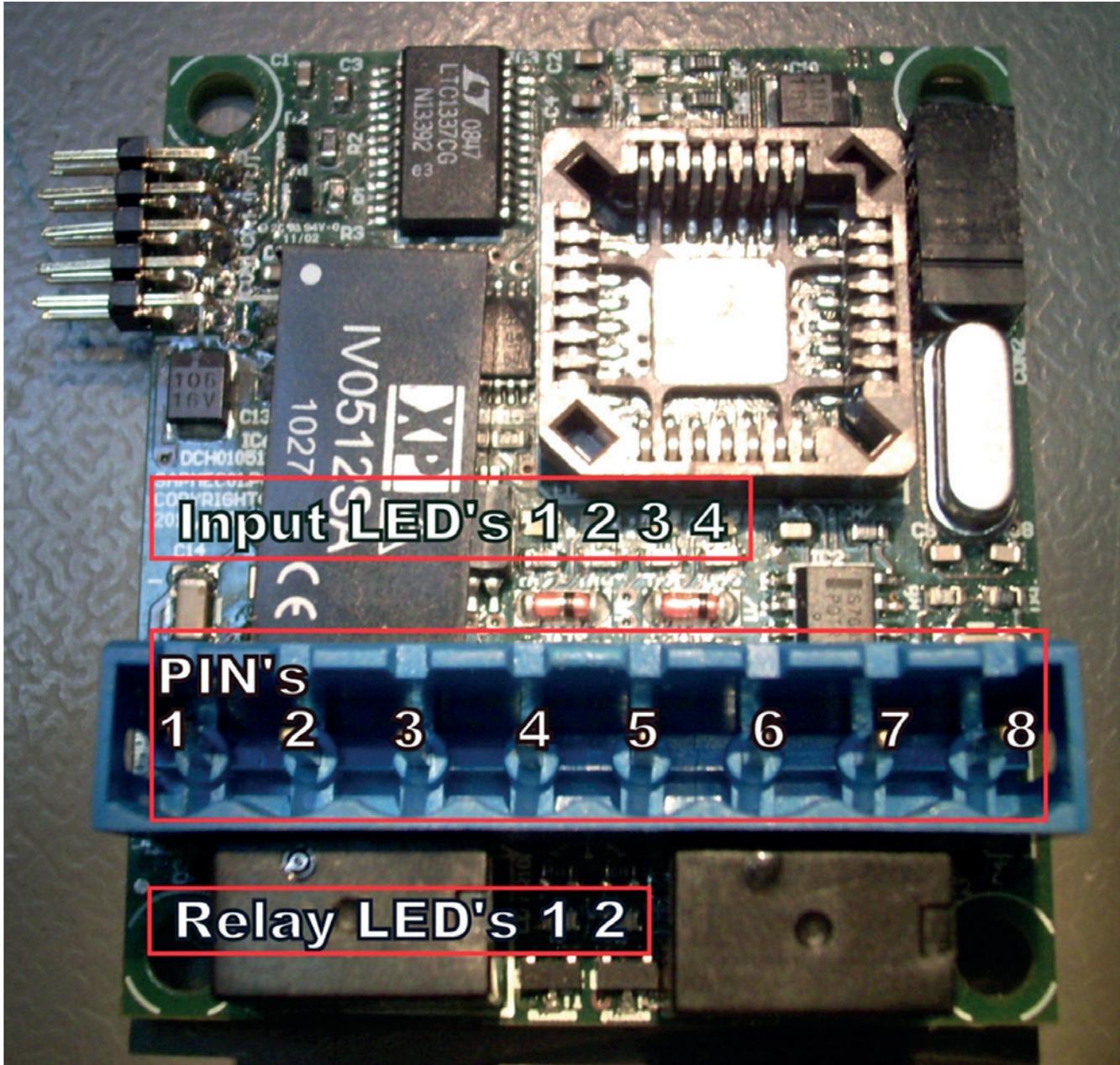
The device is now ready to use.

Physical Attachment of Pumps - Sapmec

In the lower section of the Sapphire, three slots are set aside for pump interfaces.

The Sapmec is used to connect directly to the pump's pulser and relays.

The following provides information on how to attach pumps to the Sapmec interface.



Overview of Sapmec interface

Physical Attachment of Pumps - Sapmec Continued...

Signals for 1 or 2 pumps:

Signals for one pump using double pulse and/or valve relay:

Signals - One pump using double pulse and or valve relay	LED (On=active)	Pin
Common contact input Relay 1 and 2. Max 0,5A 48v dc / 24v ac	NA	1
Contact out motor	Relay 1	2
Contact out valve	Relay 2	3
Pulse1	Input 1	4
Pulse 2 (double pulses)	Input 2	5
Nozzle switch – product A	Input 3	6
Nozzle switch – product B	Input 4	7
Common ground for inputs, all inputs are in respect to this pin and active low.	NA	8

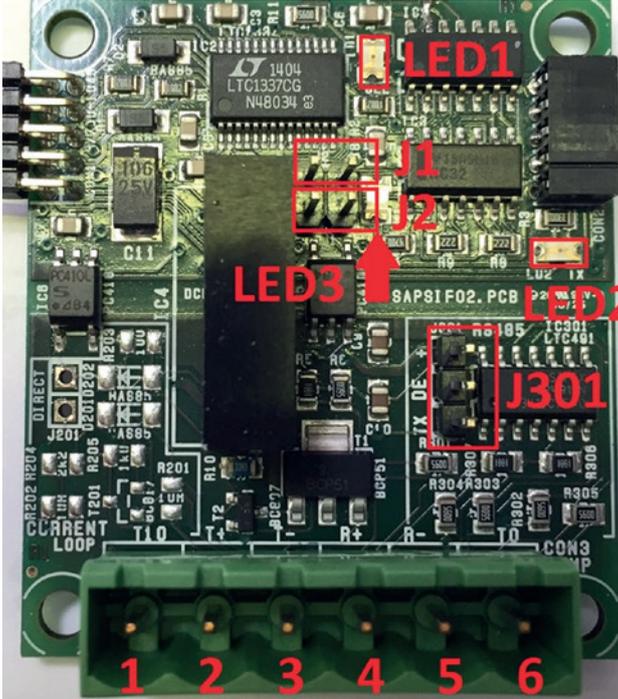
Inputs are internally pulled up to 12V dc, sourcing 10mA when pulled down to common.

Pulse input shall be connected to a pulse encoder providing open collector output capable of driving at least 10 mA. The encoder shall have a well-defined signal, and cannot be an old mechanical encoder with e.g. reed switches. Encoders using 12 to 24 volt supply is recommended, as the input shall have level of minimum 10 volt when 'high'.

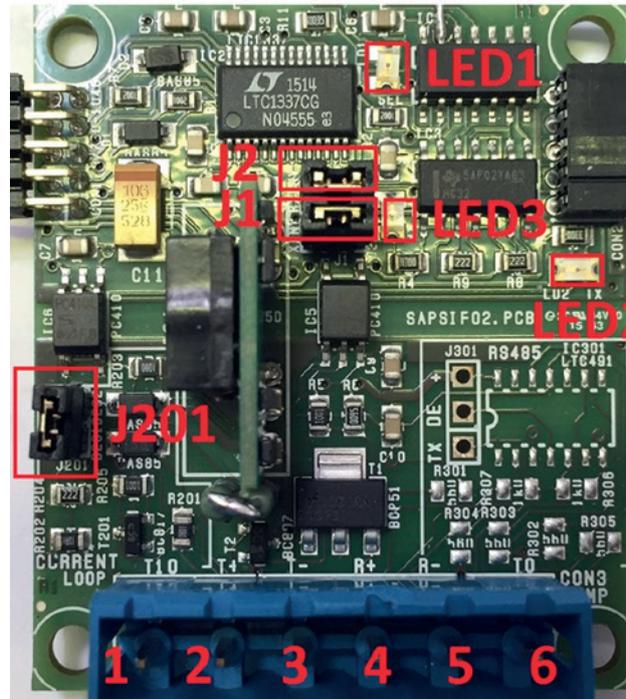
The nozzle input can be connected to a switch controlled by the nozzle handle, connecting input to common when nozzle is lifted. If no nozzle switch is available, short nozzle input to ground and adjust timeouts to your needs.

Physical Attachment of Pumps - Sapsif

The Sapsif is used to connect pumps with serial interface. The interface exists in an RS485 and a Current Loop version. You must order your interface according to the pump type used! The following provides information on how to attach pumps to the Sapsif interface.



Overview of Sapsif 485 interface.



Overview of Sapsif Current Loop interface.

LED Overview:

LED	Name	Description
1	Select	On when SapSif is selected
2	Tx	On when Sapphire transmits to pump
3	Rx	On when Sapphire receives data from pump.

Connections for Dresser-Wayne / Ljungman (RS485 version):

(Jumper J201 is replaced with a 470 ohm resistor)

Sapsif	Ljungman/Wayne
2 T+	31
3 T-	30
4 R+	29
5 R-	29

Physical Attachment of Pumps - Sapsif Continued...

(Jumper J301 should be in position +)

Connections for Pumptronics (Current loop version):

Sapsif	Pumptronics
1	+ on the pump
2 is connected to 4	
5	- on the pump

(Jumper J1, J2, J201 shall be installed)

Connections for Autotank Current loop 20mA 4800 Baud (Current loop version):

Sapsif	AutoTank dispenser
1	Tx +
2	Rx +
3	Rx -
4	Tx -
5 is connected to 6	

(Jumper J201 is replaced with a 470 ohm resistor)

Connections for Gilbarco Highline-2 / EuroLine / SK700 (Current loop version):

Sapsif	Gilbarco
2	+ on the pump
4	- on the pump
5 is connected to 6	

(Jumpers J1, J2 and J201 shall be installed. R10 must be changed to 13 ohm.)

Connections for Compaq Pumps (Compaq version):

Sapsif	Compaq
2	+ on the pump
4	- on the pump

Physical Attachment of Tank Gauges

The Sapphire supports many different Tank gauge systems using RS485 or RS232 communication. The following examples show how to connect.

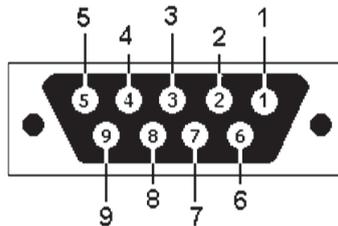
Franklin Colibri

Sapphire 9 way d-sub male COM1	Franklin Colibri 9 way d-sub female
2 Rx	3 Tx
3 Tx	2 Rx
5 GND	5 GND

Veeder-Root TLS4

Sapphire 9 way d-sub male COM1	Veeder-Root TLS4 9 way d-sub female COM1
2 Rx	3 Tx
3 Tx	2 Rx
5 GND	5 GND

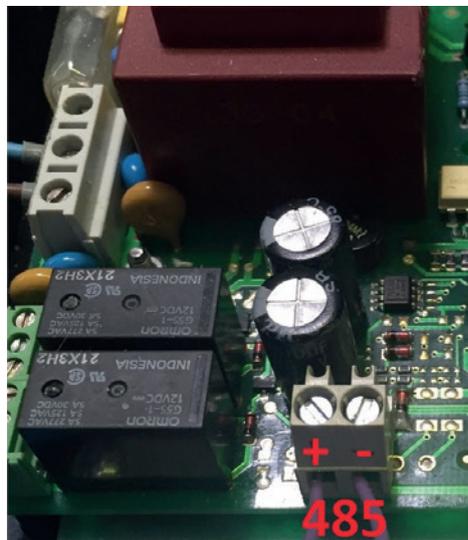
9 way female as used in Franklin and Veeder-Root



Ocio

Sapphire 485 optional connector	Ocio 485
+	+
-	-

The connector on the OCIO:

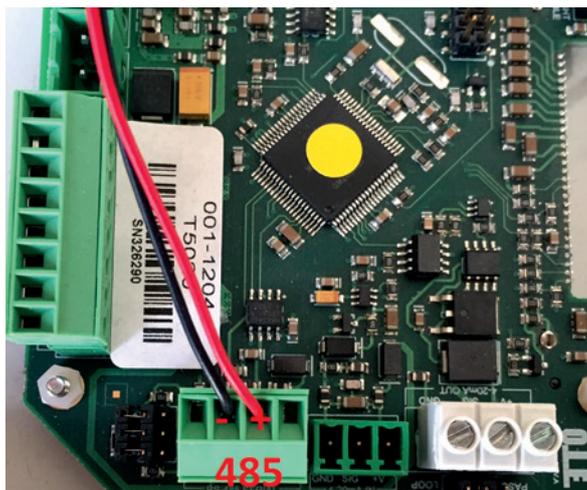


Physical Attachment of Tank Gauges Continued...

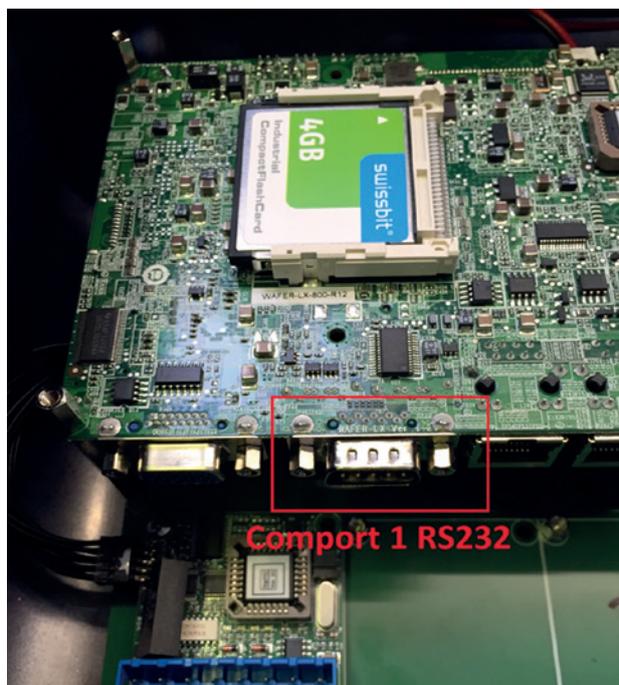
O.L.E

Sapphire 485 optional connector	O.L.E. 485
+	+
-	-

The connector on the O.L.E:



The RS232 connector in the Sapphire



The RS485 connector in the Sapphire



Setting Up Pumps - Via TAPP-PUMPS.ini

The file C:\TSMClient\TAPP-PUMPS.ini contains the setup of pumps on the Sapphire. Here you can adjust settings like pulses per litre and various timeouts. As an example, the following is a setup with two Sapmec pumps. Please note that the file only contains one entry per line, but the content is truncated below in order to make it easier to read and compare.

Example for Sapmec interface:

Pump A	Pump B	Comments
PumpA]	[PumpB]	-
PumpNumber=1	PumpNumber=2	-
PumpType=Sapmec	PumpType=Sapmec	Type of pump
IFPosition=1	IFPosition=1	Interface position
TimeoutFilling=900	TimeoutFilling=900	Entire transaction
TimeoutAuth=120	TimeoutAuth=120	From auth. to first pulse
TimeoutNoProgress=120	TimeoutNoProgress=120	From last pulse until stop
ProductA=1	ProductA=2	Productno. on TSM
ProductB=0	ProductB=0	-
ProductC=0	ProductC=0	-
ProductD=0	ProductD=0	-
ProductE=0	ProductE=0	-
ProductF=0	ProductF=0	-
ProductG=0	ProductG=0	-
ProductH=0	ProductH=0	-
ProductI=0	ProductI=0	-
MixPercentA=50	MixPercentA=50	-
MixPercentD=50	MixPercentD=50	-
MixPercentG=50	MixPercentG=50	-
CRC16=1B16	CRC16=1BA6	CRC checksum for section
Address=1	Address=2	Sapmec address (1,2,3...)
VolumeFactor=1	VolumeFactor=1	Multiply vol. by this factor
MaxCount=0	MaxCount=0	-
PulsesPerLitre=100	PulsesPerLitre=100	Pulses per liter
ProgressPulses=3	ProgressPulses=3	-
MaxErrorPulses=10	MaxErrorPulses=10	-
MaxZeroFuel=10	MaxZeroFuel=10	Max subsequent 0 fillings #
DependentPump=0	DependentPump=0	Pump that can start this pump
TrifleLimit=0	TrifleLimit=0	To filter out minor transactions
ValveOffCl=50	ValveOffCl=50	-
BitsPump=P2	BitsPump=P3	Pump pin on Sapmec
BitsValve=	BitsValve=	-
BitsPulses=P4	BitsPulses=P5	Pulse pin on Sapmec *
BitsNozzle=P6	BitsNozzle=P7	Nozzle pin on Sapmec

*For double pulses, this should be P45 – in that case only one pump can be connected per Sapmec interface.

To reset counter for zero transactions, the SapMec interface needs to be powerless.

Either turn off power to terminal, or do a windows shutdown via Team Viewer.

For a Sapmec interface, the settings that are typically adjusted are the various timeouts, and pulses per litre.

Setting Up Pumps - Via TAPP-PUMPS.ini Continued...

If something needs changing in the .ini file, then after making the change, also remove the “CRC=xxx” line in the section updated (if present – and don’t leave a blank line), then restart the Terminal program (ctrl + c). Upon startup, the terminal program will write a new checksum to the file, and upload a copy of it to the FTP configuration server.

Example for Sapsif interface with Dresser-Wayne / Ljungman:

Pump A	Comments
[PumpA]	-
PumpNumber=1	-
PumpType=Wayne_CL	Always set when Wayne pump with current loop interface
IFPosition=1	Designates the number of the SAPSIF board
TimeoutFilling=900	-
TimeoutAuth=120	-
TimeoutNoProgress=120	-
ProductA=1	Priceline Low grade (set correct product codes)
ProductB=1	Priceline Medium grade
ProductC=1	Priceline High grade
ProductD=1	Priceline Diesel
ProductE=0	-
ProductF=1	Priceline Extra grade
ProductG=0	
ProductH=0	-
ProductI=0	-
MixPercentA=50	-
MixPercentD=50	-
MixPercentG=50	-
Address=1	Address on the Wayne pump
Echo=Yes	-
Reset=850	Standard address scheme is used when set to '850'. If set to '900', a different address scheme is used, optimized for model 900 dispensers

Setting Up Pumps - Via TAPP-PUMPS.ini Continued...

Example for Sapsif interface with Pumptronic:

Pump A	Comments
[PumpA]	-
PumpNumber=1	-
PumpType=Microline	Always set when Wayne pump with current loop interface
IFPosition=1	Designates the number of the SAPSIF board
TimeoutFilling=900	-
TimeoutAuth=120	-
TimeoutNoProgress=120	-
ProductA=1	Product code for hose 1 to 9 (normally 4 hoses are set, if only one product then set all four hoses to same product)
ProductB=1	
ProductC=1	-
ProductD=1	-
ProductE=0	-
ProductF=0	-
ProductG=0	-
ProductH=0	-
ProductI=0	-
MixPercentA=50	-
MixPercentD=50	-
MixPercentG=50	-
Duplex=Half	-
TwinSide=Low	For single pump=Low. For twinpump resp. low/high for each side
Format=0	<p>Formatting number of decimals on price, volume and amount. Many settings are possible, but the most relevant are: 0: When price figure in terminal is using 1/100 units (e.g. pound / euro with 2 decimals)</p> <p>100: When price figure in terminal is using 1/10 minor units (e.g. pence / cent with one decimal)</p> <p>104: When price figure in terminal is using 1/100 minor units (e.g. pence / cent with two decimals)</p>

Setting Up Pumps - Via Menu System

Another way to set up pumps is via the Sapphire menu system. To be able to change these settings, you need to have access to "Advanced setup". This is obtained using a master card. Please note that the master card is only intended to be used by technical personnel for set up, and should not be handed over to end-users. Also note that the master code used to gain access to advanced setup, is a calculated value based on the date and a predefined value, so it is important that the date is correct on the Sapphire.

To navigate in the menu system on Sapphire these keys are used:

Enter : Confirm, choose
Clear : Cancel, go back
Arrow up / down : Browses the menu system on a given level

The following steps give access to setting up pumps:

- Swipe mastercard
- Enter pin
- Choose "Enter mastercode"
- Enter mastercode
- Choose: "Advanced setup" → "Edit pumps setup" → "[PumpA]" for pump 1, or
- Choose: "Advanced setup" → "Edit pumps setup" → "[PumpB]" for pump 2.

Here it is possible to set values for the following, of which most are not normally changed.
For comments on the values, please see previous section (Setting up pumps – via TAPP-PUMPS.ini)

After the changes have been made, the following is done:

- Press "Stop"
- Sapphire asks: "Save changes?" YES
- (In case you don't want to save changes, press arrow right / left to change YES to NO)
- Press enter

Then the pumps are set up on the terminal.

MID Certified Sapphire

The Sapphire terminal is MID certified for resale, please inform MCS support if you need the terminal to be installed in an MID approved installation.

It is not legal to use the Sapphire for adjustment of the pulse ratio. When using Sapmec, the setting PulsesPerLitre shall be set in accordance with the marked pulse ratio on the dispenser.

These conditions must be met, for the terminal to be certified:

- If pump interface is Sapmec it must use double pulses
- An approval.ini file must be located in TSMClient folder
- FPS (File Protector Service) must be installed
- Parameters must be locked
- Must show correct program id on restart or on demand

MID: Showing information on Display

If the above conditions are met the terminal will show the program versions on startup. Each of the following lines will appear for five seconds on the display (versions may vary):

- AppLoader-A:2.2.1-B:002-5415A26C
- SCCard-A:4.3.1-B:002-144CC166
- SAP-A:1.01-B:001-DBD6F12D-N:1.25
- Pump n: SAPMEC 1.08 Nov 2012 CRC32:A477 12D0 (Only if Sapmec is used)

To show the versions for longer time, press any key when the information is showed and it will stay on the display for additional 60 seconds.

If the parameters are not locked, a warning will show on startup:

- "Device specific params are unlocked"

If any of the other conditions are not met, program versions will simply not show on startup. The Sapphire will work properly, however.

When running as certified, certain parts of the files / settings will be locked by the FPS, in order to protect the files from changes. At present the files protected are:

- tapp_*.ini
- cardselect.txt
- fps.dll
- its_apploader.ini
- ftp_sync.ini
- cardapp.ini
- hostsetup.ini
- tsmsiteconfig.ini
- sc_cardapp_data*.*
- sc_cardapp_saf*.xml
- AppA1Data*.eos

MID: Showing information on Display Continued...

It's possible to read out program version information on the display while the application is running. Press '0' followed by 'SHOWID' after which this information also shown at startup will be shown. Use arrow up / down to navigate through the messages. After the program versions, a log of the FPS actions will be shown, for example:

- SAP: Dev spec params locked 4689
- SAP: Dev spec params unlocked 8087
- APPLOADER: Upgraded: C:\TSMClient\TAPP-PUMPS.ini

Between showing version numbers and FPS log the following error messages may appear:

Error message	Description
"No approval identifier!"	Shown if the file APPROVAL.INI is missing or the code derived from the hardware ID and serial number is wrong.
"SAPMEC uses single pulse!"	Shown if one or more Sapmec pumps are set up to count single pulses instead of double pulses.
"No certification applied!"	Shown if APPVERSIONS.TXT from AppLoader containing all version numbers doesn't exist or can't be read.
"Version missing: AppLoader / SCCard / SAP"	Shown if one of the version numbers is missing in APPVERSIONS.TXT (AppLoader, SCCard or Sapphire).
"Device specific params are unlocked!"	Shown if the device specific parameters are unlocked.

MID: Locking / unlocking terminal

When the terminal is running as certified certain device specific parameters in the ini-files are now locked and cannot be changed via the menu, unless the terminal is unlocked.

In order to unlock the terminal, swipe a master card and enter master code. Then go to 'Advanced setup / Parameter lock'.

Now a challenge number is shown on the display. Contact MCS support, inform them of the number, and they will then calculate a code to enter. Next time the procedure is repeated, the challenge number is different again, resulting in another code. Once unlocked, the terminal will remain so for 4 hours, unless it is deliberately locked. In order to lock an unlocked terminal use the same steps as unlocking. The terminal will inform that the terminal is unlocked and for how many minutes more it will stay in this state and then ask if it should be locked now. No code is needed for locking the terminal.

The device specific parameters that are locked are as follows:

In TAPP-PUMPS.INI: IFPosition, Address, PulsesPerLitre, MaxErrorPulses, BitsPump, BitsValve, BitsPulses, BitsNozzle.

It is also possible to manually edit files, for example tapp-config.ini or ftp_sync.ini. In order to do so, copy the file into Upgrade\UpgradeFiles folder, edit the file and from ITSApploader run menu files, manually upgrade in apploader. This will ask for a code - Password calculation is agreed on by MCS Support.

Please note that the files TAPP-PUMPS.ini and TAPP-PRODUCTS.ini have a CRC check included. If this does not match the content of the file the terminal will not work, but just show "CRC error" on startup. These files should not be edited manually, but the values should only be changed through the menu system on the terminal, or through the TSM website.

MID: How to Upgrade Sapphire to MID Certification

When new terminals are delivered by MCS, they are already prepared for running according to the MID certification. If an older terminal must be upgraded, the following procedure should be followed:

1. Before stopping the application, go into the menu and note the terminal's hardware ID (Swipe mastercard, enter PIN, and choose "User setup -> Hardware ID"). Obtain the terminal's serial number which can be seen on the door, the first pump-interface and on the motherboard:



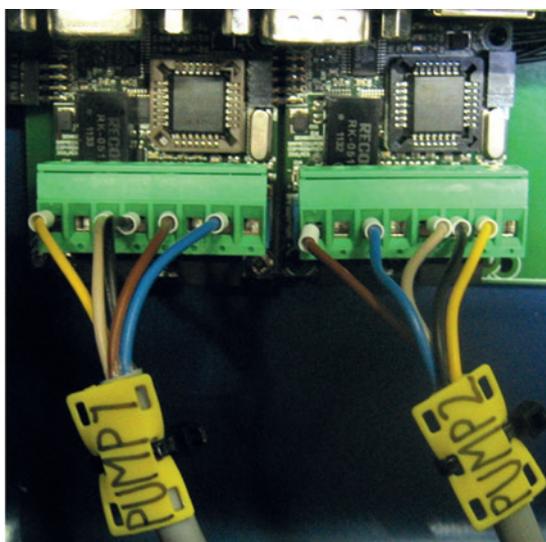
Inform MCS of those two numbers, and MCS will generate and send you the file APPROVAL.INI, which must be placed in the folder c:\TSMClient. Close applications via Apploader, menu File | Exit for service.

2. Make sure the terminal is running at least the following versions: Apploader 2.2.1.12, SCCard 4.3.1.19 and Sapphire app 1.25. For Sapmec, at least version 1.08 shall be used.
3. Run the program SETUPFPS.EXE and follow the prompt. It will suggest copying FPS files to c:\fps. Click ok to that. When FPS installation has completed, a DOS box will appear, showing how the installation went. The state of the FPS service should be START_PENDING or RUNNING.
4. Make sure its_apploader.ini is setup correctly.
 - a. Application section for SCCard must include this tag:
"Security=STD"
 - b. Application section for Sapphire must include this tag:
"Security=LEGAL"
5. Re-start the terminal by restarting windows ('Start | Shutdown | Restart').

MID: Marking of cables

In order not to mix up cables when doing service, it is very important to mark the cables going into the Sapmec / Sapsif pump interfaces.

An example of how this can be done is shown here:



TSM - Web Interface to Sapphire Terminal

Total Site Manager is a secure web based service for the complete management of home depot and home depot networks, allowing online transaction and stock management. The easy to use website enables reconciliation transactions and stock movements both in real time and over defined ranges.

Featured functionality:

- Transactions and wet stock movement displayed in real time
- Online reporting packages - transaction, card, stock and MPG reports in various formats including Excel and PDF
- Online stock management with tank gauges linked directly into terminal and TSM website
- Import of non-depot transactions from fuel card suppliers to report 100% of fleet usage for MPG and transaction reports (Non Standard package)
- Single or multi-site fuel and stock management
- Monitor live transactions against dip readings shown on TSM
- Suitable for fleets ranging from 2 - 10,000 vehicles
- Protection from environmental issues - System highlights if stock levels change without a transaction taking place. (Nonstandard Package)
- Instant control of terminal and card access through secure broadband connection

Total Site Manager is found here: www.mcstsm.com

For more questions on TSM, please contact support@mcscardsystems.com

Hardware & Software Terms and Conditions

Delivery Terms

- MCS will endeavour to meet all estimated delivery dates and will not be liable for any delay in delivery however caused.
- The Customer is required to inspect the goods upon arrival and to notify MCS of any damage that may have incurred while in transit.
- Delivery shall be charged to the customer

Ownership and Risk

- The products remain the property of MCS until full payment has been received, the customer should hold the product in a secure, protected and insured environment and be stored in such a way that the product is identified as MCS property.
- Until payment is received and ownership of the product passed to the customer, MCS are entitled to have the product returned to them at a cost to the customer.
- If the customer fails to do so MCS are entitled to enter premises for the purpose of recovering goods.

Payment Terms

- Unless otherwise agreed in writing the customer shall pay MCS 50% of the total order value up front on order.
- The goods shall remain the property of MCS until full payment has been received by MCS.
- The customer shall pay MCS within 30 days of the date of invoice.
- MCS reserves the right to charge interest on a day by day basis at the rate of 6% over the base lending rate for any overdue payment.

Price Variation

- The price of any products may be varied in consequence of the imposition of any tax or levy on sales or of any other similar fiscal obligation.
- Prices are exclusive of VAT, other taxes, delivery and installation unless otherwise stated.
- Where MCS obtains any products or any parts from outside Denmark the price may be varied to take into account fluctuations in any relevant rate of exchange.

Customer Obligations

- The customer is obliged to check the compatibility and functionality of the terminal prior to installation.
- MCS will accept no costs however rising in connection with any delays, defects of the product or labour aspect of installation.

Conditions and Warranties

- MCS cannot guarantee that the product will be free from defects in any way or error free.
- MCS at its own option will carry out repairs or in some circumstances replace hardware which has been notified as defective within the 12 month warranty period.
- MCS reserves the right to withhold any services where the customer has an outstanding account balance with MCS.
- MCS can not guarantee that the product will conform to a set performance criteria, in general for data storage or that the product will run at any particular speed for each function.
- MCS can not guarantee the compatibility of the systems with any other fuel management system, pump or software.
- MCS shall not be liable for any financial consequential or indirect loss suffered by the customer or any third party, this includes loss of product, loss of profits, loss of goodwill, loss of contracts, loss of data or damage to the customers property.
- The MCS 12 Month Parts Warranty is subject to the product not being misused, modified or repaired by a non MCS approved contractor.
- MCS provide 12 Months Parts Warranty on all products, this excludes labour unless stated. The MCS Warranty commences on the delivery date from MCS of the product.
- It is the responsibility of the customer to provide MCS with the installation address of the equipment.

MCS Support/Product Services

- MCS will provide access and training to TSM Web interface to agents installing MCS Online equipment for monitoring and maintenance purposes.
- Support to the customer is provided 24 hours a day 7 days a week through the agent installing and maintaining the equipment
- MCS will provide support in and out of office hours to the assigned agent
- MCS provide monthly software support to customer and assigned agent including, software updates, software fixes, installation and configuration of online equipment, Ad-Hoc terminal software issues, support to engineers, automated back-up of terminal configuration and system settings.
- Monthly Software support service is charged directly to the customer at a standard monthly rate, discounts to be agreed with MCS Management and Customer directly.
- TSM Web interface for customer use only, access password restricted to a customer's own sites.
- TSM charged at standard monthly rate, this rate is inclusive of software support service.
- MCS are not obliged to offer any support on PC or terminal software that is not covered by a MCS Software Support contract.

Delay

- MCS shall not be liable for any delay caused by any act of the customer or MCS agent.
- If the delivery is delayed due to insufficient delivery instructions from the customer or failure to take delivery of the goods then MCS reserves the right to charge the customer for any additional delivery charges.
- MCS shall not be liable for any financial consequential or indirect loss suffered by the customer or any third party, this includes loss of profits, loss of goodwill, loss of contracts, loss of data or loss of turnover caused by a delay in delivery.

Cancellation Policy

- Cancellation of any hardware order must be made in writing 30 days prior to scheduled delivery date.
- MCS reserve the right to 50% of the order value of any hardware cancelled within 30 days of the scheduled delivery date.
- MCS reserve the right to 50% of the order value of any software development work that is cancelled after work has commenced and prior to completion.

Miscellaneous

- Any legal issues arising shall be governed in accordance with Danish Law.



Multiple Card Systems A/S



MCS supplies terminals and services globally, to the oil and transport industries.

Based at Naestved near Copenhagen, MCS designs and manufactures a complete range of fluid and fuel management terminals and associated products.

Our web based management tools and on-line interface allow you to efficiently manage transaction information.

MCS have over 20 years experience with more than 16,500 systems installed globally.

Visit our website or Youtube Channel (MCS Card Systems) to watch our promotional videos

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Multiple Card Systems A/S
Youtube: MCS Card Systems

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