SyringePumpPro

Take Control of Your Pumps

> We've been using various syringe/peristaltic pumps of yours for years now and now rely pretty heavily on SyringePumpPro for automation purposes. - **Aaron S, Lonza**

FEATURES

Make your pump operations easy!

Program and operate your pumps quickly and reliably.

Stop and Start multiple pumps as a group.

SyringePumpPro Owners now in control of their OEM pump

Up to 100 pumps at the same time.
Mix supported models and brands at the same time.

INSTALL AND USE TODAY

Install SyringePumpPro now and it will always detect and connect to your correctly configured and connected pumps. Up to 100 of them. A very useful cabling tester and pump monitor.

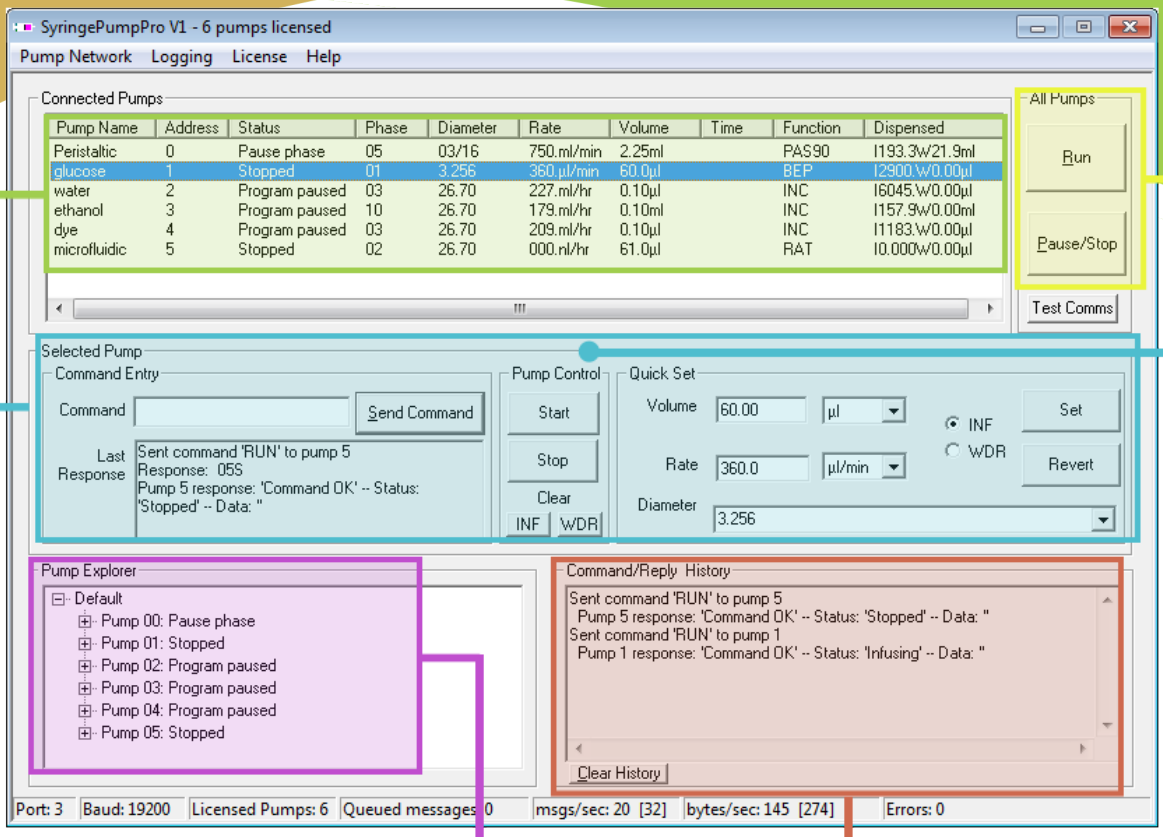
If you can't get a connection email me - **I will get you pumping.**

Ideal companion application for **LabView** and Matlab

DOWNLOAD NOW!

syringepumppro.com | timb@syringepumppro.com

Take the tour



Pump worksheet

Manual command entry and rate/volume setting

Pump explorer - examine all pump parameters

History Window keeps running list of commands and actions

Control selected pump

Control ALL pumps

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> This morning I find your email. SyringePumpPro installed swiftly, and without a hitch. I checked comm settings, left as default, and when I closed it, viola, communicating. Nice.
>
> **Andrew Keightely**, MBB

> I should say you are a super nice programmer. Though I never met and knew you, I can feel that you are a great person with patient, enthusiasm, diligence and intelligence. Many thanks for your help!
>
> **Xiaoyan Sun**, University of Queensland

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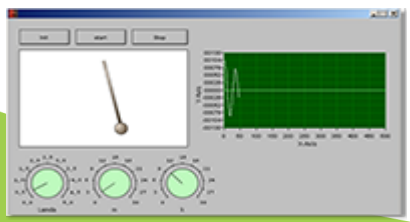

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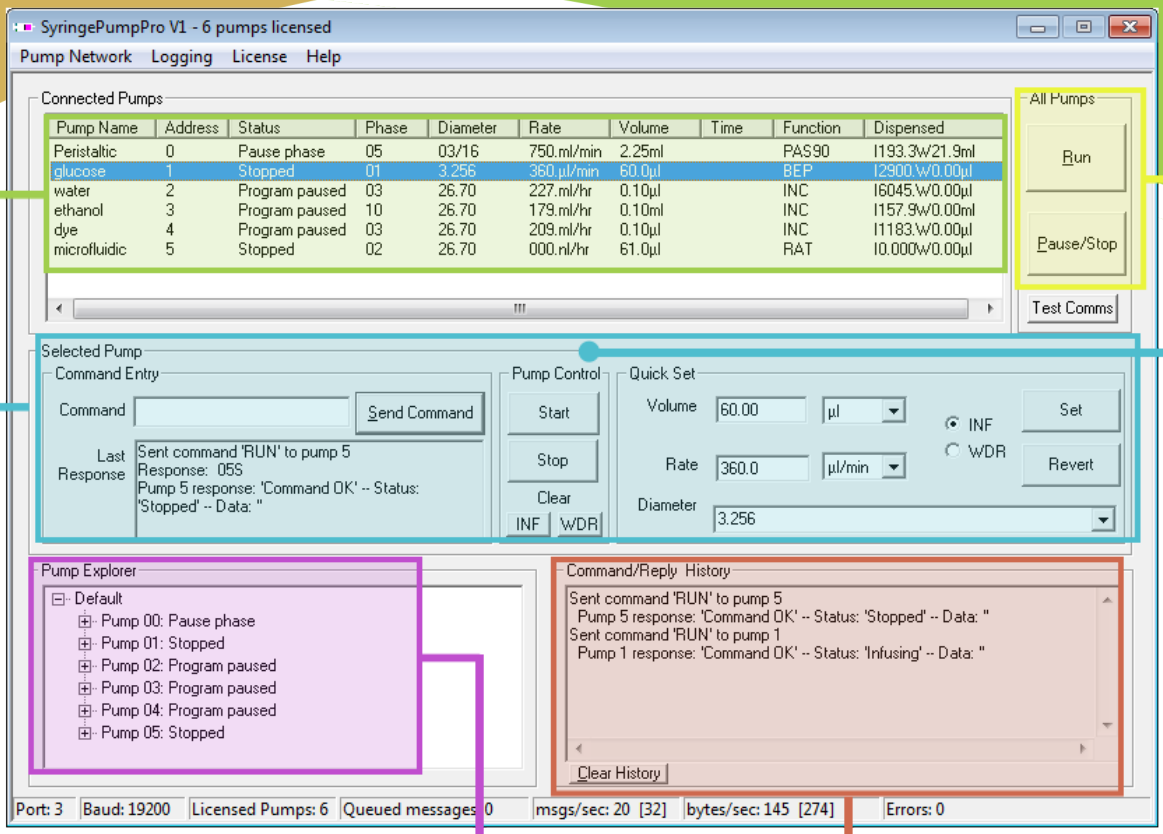

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Frequently Asked Questions

If you can't find an answer here - please contact us!

Home » **Programming**

</> Pump Programming

How do I get a laboratory pump to do.... Your questions answered here.

Pump Programming Triggers

Categories: FAQs, Pump Programming

What is a Trigger? A trigger is something usually an electrical signal that is used to get a pump to change it's pumping action. Simplest example is the use of [...]

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Do you need to monitor the pressure in the syringe? Do y need to regulate the pressur currently considering adding pressure monitoring and reg to SyringePumpPro. I would [

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Programming Multi Pump Recipies

Categories: FAQs, Pump Programming | Tags: PPL

PPL File Sets A file set consists of a file for each pump and a master ppl file. Multiple pump file sets Continuing with the example, you would [...]

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What to try when 41 program steps run out

Categories: FAQs, Pump Programming | Tags: Aladdin, Cole-Parmer, Harvard, New Era, Next Advance, Protea, Stoelting, TSE Systems

Programmable syringe pumps have a limited number of program steps. Basically they only have so much on board memory available. What are some techniques for growing past this limit? Sometimes [...]

How To Specify Your

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drawing board Before you ca programming your pump, yo to understand the flow you r in detail. For a simple single r volume flow you [...]

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TTL Ports - Button Pumps Pump TTL Db9 Connector On the normal button/display pumps or bench pumps, the ttl output ports are available on the DB9 connector [...]

Pump Commands

Categories: FAQs, Pump Programming | Tags: Braintree Scientific, New Era

How does the pump communicate with a computer. Pump Communication Procedure Command Set Are you looking for a detailed explanation of the the

Easy Way to Create P Files – Programming Spreadsheet

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spreadsheet which is installe SyringePu pPro. P E Creato supplied by New Era Pumps.

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- Tour
- Compatible Pumps
- Pump Manufacturers
- Contact Us
- Who's Using
- Testimonials
- About
- Blog
- Papers Citing SyringePumpPro
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- Pump Programming Service
- Used Pumps
- Login
- Pumps
- Programming
- Syringes and Tubing
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Aladdin, Braintree Scientific, cables, Chemyx, Cole-Parmer, distributor, diy, dual, Electro-*, Harvard, KDScientific, licence, microscope, NE-300, NE-500, NE-501L, NE-510, NE-1000, NE-1010

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Pump Programming Triggers

What is a Trigger?

A trigger is something usually an electrical signal that is used to get a pump to change it's pumping action.

Simplest example is the use of a foot switch on a manual production line. For example an ink cartridge re-filler. They pick up a print cartridge for filling, insert the filling probe into the cartridge and then press the foot switch (with their foot). The pump then begins to run a pumping program which fills the ink cartridge at a safe rate for a known volume. Every print cartridge is filled the same following the foot switch trigger.

Sophisticated Triggering

The pumps on this website all support external signal triggering from ttl logic level signals.

The triggers can be the rising or falling of the signal input level. These triggers can be configured to jump to two different sections of a pump program – thus implementing two separate pumping actions based on the input signal applied. For example you could have two sections one for a slow flow and anther for a fast flow – the trigger could switch between the flow rates.

Electrical triggers

Electrical triggers are passing into the pump via it's ttl inputs and output port. The pump's software then provides the ability to further define what the trigger will be – a rising edge, a level and many others. Read about these triggers on the TTL Inputs and Outputs Page.

Back to Pump Programming | Back to FAQs

By SyringePumpPro | May 22nd, 2019 | Categories: FAQs, Pump Programming

About the Author: SyringePumpPro

As the author of SyringePumpPro products I have been involved with laboratory pumps for about 10 years now.My career spans electronics, avionics, programming, teaching, research and development laboratory experience, and even television.

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- Pump Manufacturers
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- Who's Using
- Testimonials
- About
- Blog
- Papers Citing SyringePumpPro
- Shop
- Pricing
- Try SyringePumpPro
- Find a Distributor
- Licensing
- Pump Programming Service
- Used Pumps
- Login
- Pumps
- Programming
- Syringes and Tubing
- Manuals
- Rates and Specifications
- Drawings
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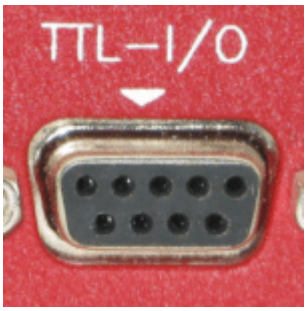
Home » **TTL Inputs and Outputs**

TTL Inputs and Outputs

TTL Ports – Button Pumps



Pump TTL Db9 Connector

On the normal button/display pumps or bench pumps, the ttl output ports are available on the DB9 connector on the rear panel. This connector is not the RS-232 port!

The following chart shows the pin input and output assignment.

Pin #	Definition	*Type*	*Function*
1	Vcc (5V)	Reference	Logic high reference. Power on indicator.
2	Operational Trigger	Input	Configurable start/stop operational trigger input. [Ft] Foot Switch — Falling edge: Start or stop trigger [FH] Foot Switch Hold — Falling edge: Start trigger; Rising edge: Stop trigger [F2] Foot Switch Reverse — Rising edge: Start or stop trigger [LE] Level — Falling edge: Stop trigger; Rising edge: Start trigger [St] Start only — Falling edge: Start trigger [t2] Start only Reverse — Rising edge: Start trigger [SP] Stop only — Falling edge: Stop trigger [P2] Stop only Reverse — Rising edge: Stop trigger [rL] Start on low level — Low level: Start trigger [rH] Start on high level — High level: Start trigger [SL] Stop on low level — Low level: Stop trigger [SH] Stop on high level — High level: Stop trigger [OF] Trigger off (disabled) [Et] Program function: Redirects trigger to Event trap [bt] Program function: Redirects 'Stop' key to Event trap
3	Pumping Direction	Input	Changes pumping direction according to setup [dr:rE] / [dr:dU] Falling edge: Infuse / Withdraw Rising edge: Withdraw / Infuse
4	Event Trigger	Input	Event input or user definable input
5	Program Output	Output	Program controlled output or user definable output
6	Program Input	Input	Program conditional input read by the "IF" program function. Also user definable input. Also used by the keypad lockout function.
7	Pump Motor Operating	Output	[RUN.0] High: Pumping; Low: Not pumping [RUN.1] High: Pumping or Pause timer Low: Pumping Programmed stopped or paused
8	Pumping Direction	Output	High: Infuse; Low: Withdraw
9	Ground (0V)	Reference	Logic low reference

Db9 TTL Pin Out Chart

Logic Levels

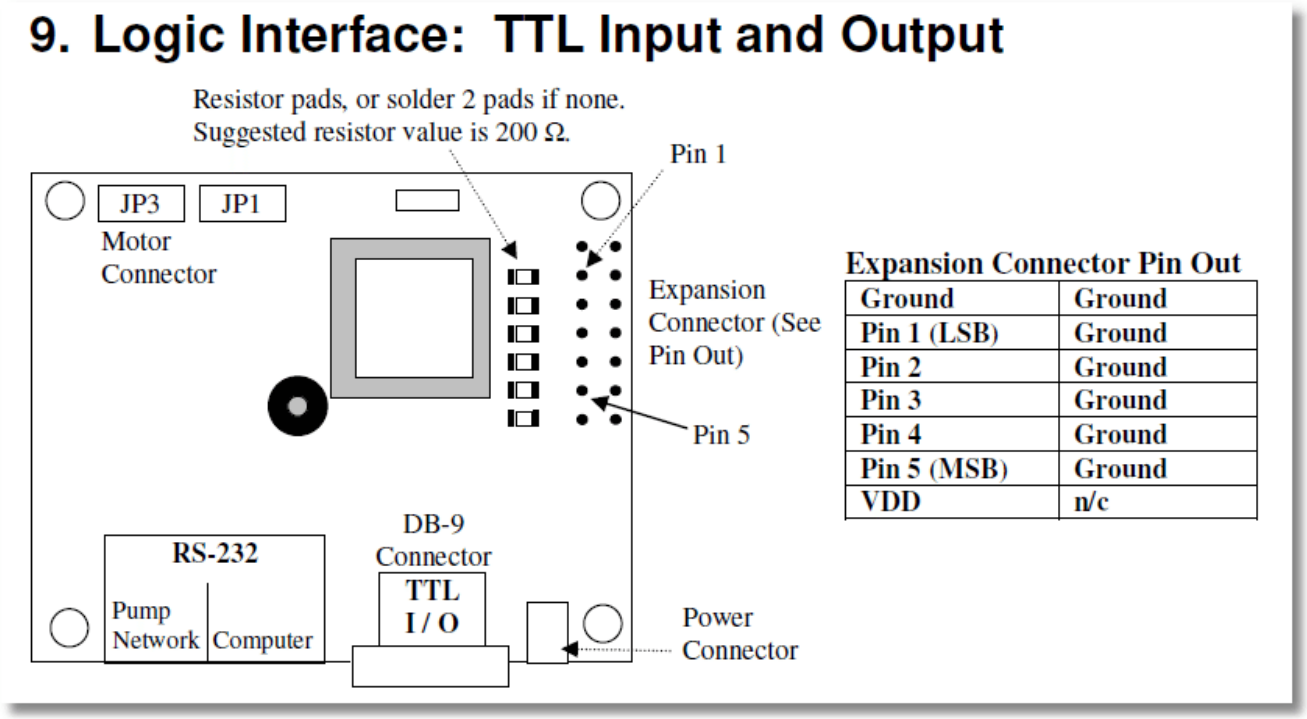
To guarantee recognition of logic levels, voltages on the input lines must be within the following ranges:

- TTL logic low (0): 0 to 1.5 V
- logic high (1): 3.5 to 5.25 V

TTL Ports – OEM Pumps

The OEM pump models are configured for installing in equipment of your design. As such the pump control circuit board is set up to take soldered connections rather than a single plug.

This diagram from the OEM Pump Manual shows the solder pad location and the location of current limiting resistors.



Download Diagram

Accessing Ports Via RS232

The logic levels of pins 2, 3, 4, and 6 can be queried from an attached computer using the RS-232 'IN' command and the output logic level of pin 5 can be set with the RS-232 'OUT' command. There's more details in your pump manual.

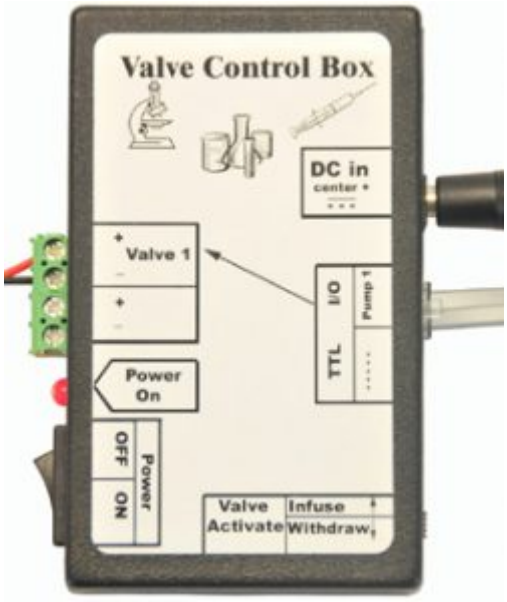
Power on Pin State

Unfortunately neither model of the pump appear to remember the last state of the TTL outputs after power cycling. All the pins appear to come on high at switch on regardless of previous state.

Users of the Valve Control Box

If you're a user of the Valve Control Box inverting the signal is just a matter of changing the valve activate switch from Infuse to Withdraw.

Back to Pump Programming | Back to FAQs



Single Control Valve Box

By SyringePumpPro | January 31st, 2017 | Categories: FAQs, Pump Programming | Tags: OEM

About the Author: SyringePumpPro

As the author of SyringePumpPro products I have been involved with laboratory pumps for about 10 years now.My career spans electronics, avionics, programming, teaching, research and development laboratory experience, and even television.

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Login

Drawings

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Home » **Have You Got Cables? – Start Here**

Have You Got Cables? – Start Here

If you have got a pump and a PC you will need cables to connect them. Have you got cables?

A lot of folks either expect the cables to come with a new pump or they have come to a place where the cables have been lost – I mean put in a special place for safety :-}

This page will take you to other pages which will help you get cables through purchasing information or DIY cables information.

List of Cables, Application and Part Numbers


CBL-PC-PUMP

This page contains images of all the official pump related cables. It lists when to use each cable (application) and their official part numbers. You can order these cables from your pump distributor.

CBL-PC-PUMP is the cable used to connect a pump to your computer.

CBL-NET is the cable to connect a daisy chain from the first pump to the second pump, pump n to pump (n+1).

Where to buy cables?

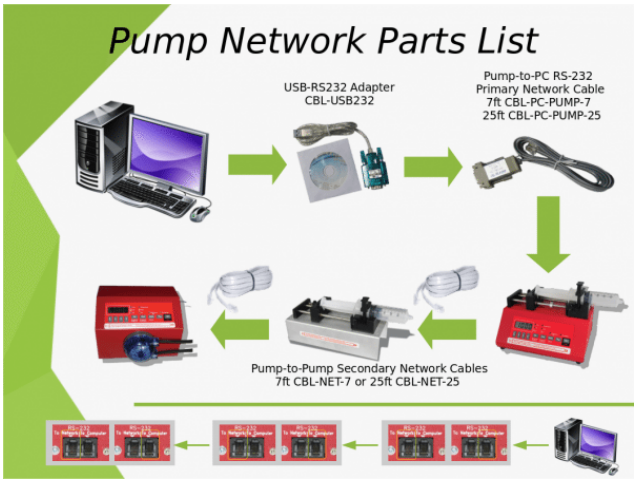
The quick answer is from your pump distributor. Find your pump distributor.

Hey tell 'em SyringePumpPro sent you.

Don't know what to order?

The part numbers are on this diagram.

The CBL-PC pictured here should definitely be on your shopping list along with a USB-RS232 adapter. Here is the manual for that cable.



Thinking of simply buying some generic RS-232 cables?

Don't. Take care I regularly see folks struggling with bought cables and then purchasing the pump manufacturer cables in the end. I have photos of a the handy-work of one frustrated general serial cable purchaser – it reveals hacksaw cutting on a cable end – ugly!

DIY cables?

tools

Bought cables are inexpensive and will save you time, simply because they will work properly and leave you in no doubt that the cables are the correct ones.

However a lot of people like to build their own. Here's how...

What are all the different cables/ what are they used for?

There's a table showing each cable and describing it's use here.

Do you need a power supply for your pump?

Here's how.

Back to Software Support | Back to FAQs

By SyringePumpPro | April 7th, 2019 | Categories: FAQs, Software Support | Tags: cables diy New Era

About the Author: SyringePumpPro

As the author of SyringePumpPro products I have been involved with laboratory pumps for about 10 years now.My career spans electronics, avionics, programming, teaching, research and development laboratory experience, and even television.

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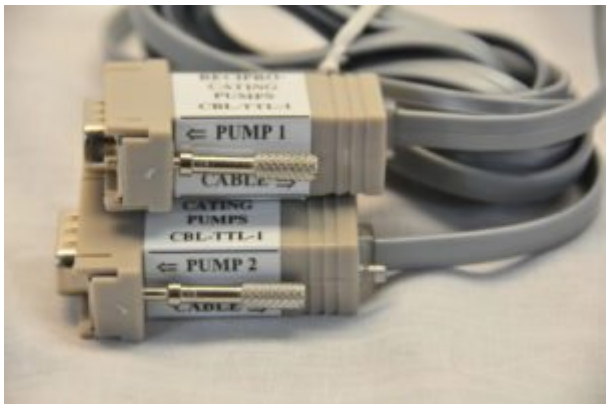
Home » **Cables**

Cables

There are several cables that go with your pumps. The following table is a list of all the cables, their part numbers and their description and usage.

- Are you looking to make your own pump cables?
- Are you trying to figure out what cables you need to connect your pumps to your PC?
- Are you an electo spinner or electro sprayer. See my post on High Voltage setups.

Part Number	Description	Photo
CBL-TTL-1	This is a pump synchronization cable. For use with two pumps only. It is used with pump programs to create continuous infusion systems and dual infusion systems. You can use with your own custom pump programs to start and stop another pump Download Cable Instruction Sheet	  TTL Cable
CBL-PC-PUMP-7 (7 ft. cable) **CBL-PC-PUMP-25**	Used to connect from a USB-RS232 adapter to the first pump in your pump network. Download Cable Instruction Sheet	

(25 ft. cable)		 primary cable PC-Pump
CBL-DUAL-3	• Used for creating a continuous infusion system, dual infusion system, or one of the other 2 pump automation modes. • Replaces cable CBL-TTL-1, unless the use of the TTL ports for synchronization is preferred. Can result in more responsive pump reactions – no RS232 transmission delays. Download Cable Instruction Sheet	
Pump-to-Pump Secondary Network Cable **CBL-NET-7** **CBL-NET-25**	Used to connect second pump and subsequent pumps in a pump network. See how to connect this cable Download Cable Instruction Sheet 25ft (7.6m) Cables not long enough?	
RS-232 to USB Converter **CBL-USB232**	Connects to your PC via USB and provides modern reliable 9 pin RS232 port with buffering.	

Need your pumps and PC separated by more than 25ft (7.6m)? Thinking of MRI users in particular.

SyringePumpPro

Home » **Pump Network Parts List**

Pump Network Parts List

What cables and things do your need to connect your pumps to your computer? Here's the items you need.

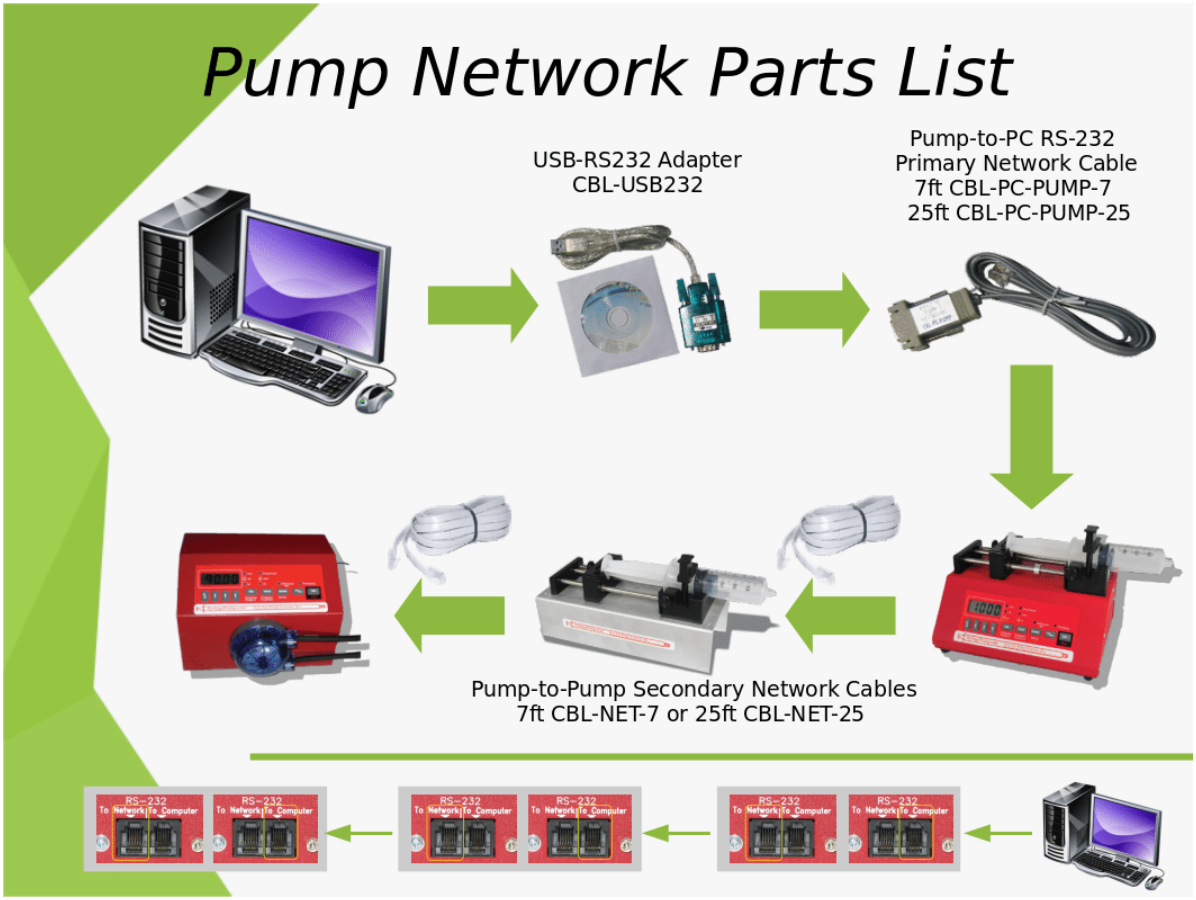
When one or more pumps are connected to your computer, we refer to the interconnecting cabling and USB-RS232 adapter as a pump network.

- ***Are you trying to figure out what cables you need to connect your pumps to your PC?***
- Are you looking to make your own pump cables?
- Are you an electro spinner or electro sprayer? See my post on High Voltage setups.
- Want to buy cables but don't know where?

What parts do you need to build your pump network?

One or More Pumps? Different manufacturers? Different Models?

Study this diagram:

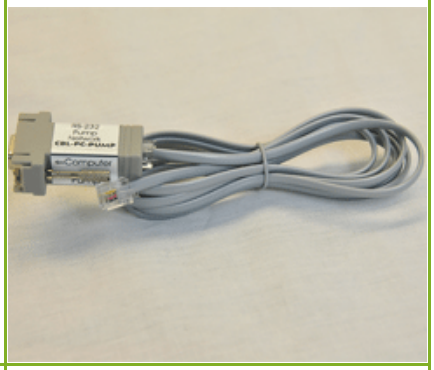


- If you have a single pump, you only need the parts from the computer to the first pump. CBL-USB232 and a CBL-PC-PUMP-7
- If you have multiple pumps, you need to buy all the parts up to the first pump and then a CBL-NET-7 Pump-to-Pump Secondary Network Cable for the number of pumps you have minus 1. You already have connected the first pump with the CBL-NET-7.
- Remember you can mix models and brands of compatible pumps.

Print this diagram for reference whilst you order cables and leave it with your pumps as documentation on how to make your pump network.

Download Pump Network Parts List Diagram

Table of Cables

Part Number	Description	Photo
RS-232 to USB Converter CBL-USB232	• Adds RS-232 serial port to your computer. Connect to a USB port on your computer. • Attaches to cable CBL-PC-PUMP-7	
Pump-to-PC RS-232 Primary Network Cable CBL-PC-PUMP-7 (7 ft. cable) CBL-PC-PUMP-25 (25 ft. cable)	• DB-9 adapter connects to 9-pin serial port provided by CBL-USB232 • RJ11 connector connects to first pump – "To Computer" socket	
Pump-to-Pump Secondary Network Cable CBL-NET-7 (7 ft. cable) CBL-NET-25 (25 ft. cable)	• Allows networking of two or more pumps or other device to a single computer • Frst pump to be connected with primary network cable	

See our Cables Page for a list of all cables and their application

Where to Buy Cables?

These parts are available from your pump distributor. If you don't know who your distributor is you can search our distributors by country they serve here. Or you can go to the manufacturer New Era Pump Systems cables page and then on to their order form.

Do you have a CBL-DUAL-3?

CBL-DUAL-3

That is for connecting dual pumps on their own without computer control. Don't use this cable to make a pump network – it wont work. Read more about Dual Pump Sets.

Back to Pump Connectivity | Back to FAQs

By SyringePumpPro | March 6th, 2017 | Categories: FAQs, Pump Connectivity | Tags: cables New Era

About the Author: SyringePumpPro

As the author of SyringePumpPro products I have been involved with laboratory pumps for about 10 years now.My career spans electronics, avionics, programming, teaching, research and development laboratory experience, and even television.

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NE-1010

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Home » **Start Programming Your Pump**

Start Programming Your Pump

In the beginning, manually programming your pump and getting started writing pump programs is a challenge! The initial learning curve is high. So much to learn. There's plenty to learn about the programming language and how the pump operates. You just want to start getting results – now! I can help you!

How SyringePumpPro Helps

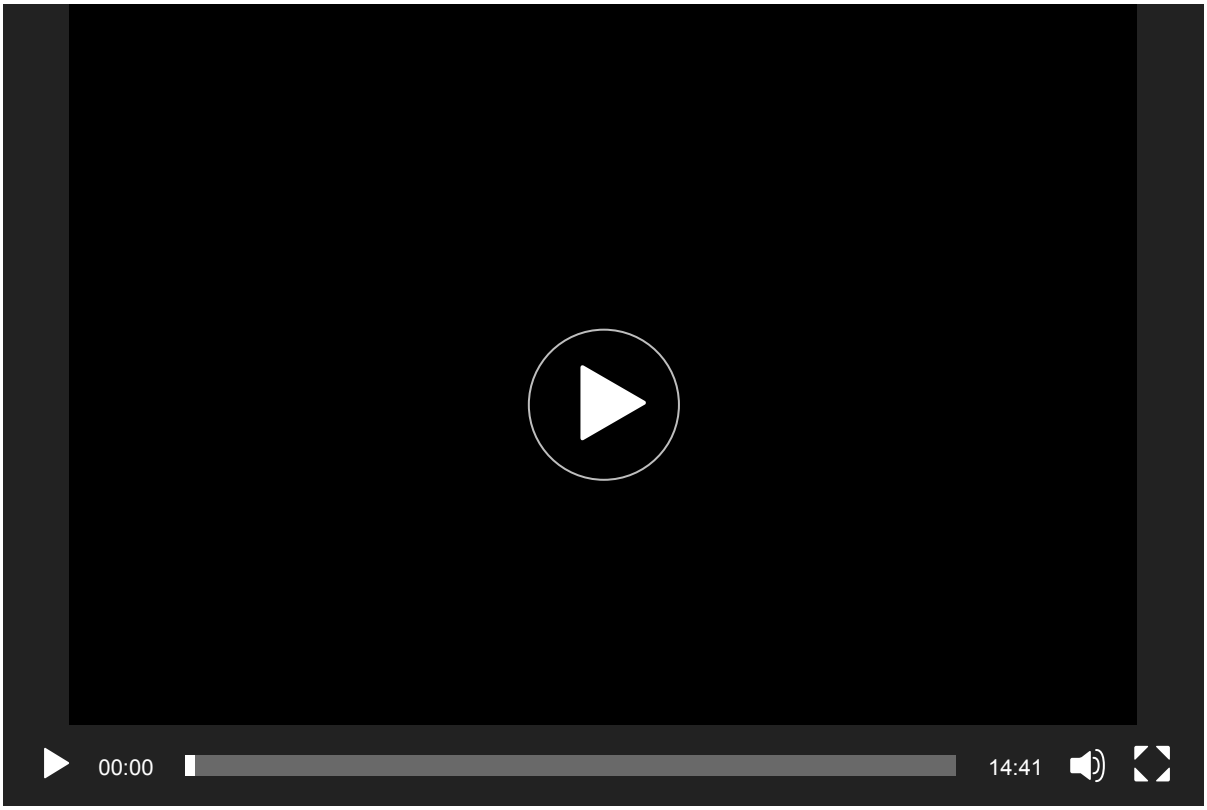
Pump Programming Spreadsheet

SyringePumpPro installs:

- Some very handy and easy to use pump programming spreadsheets. These are great when you get started – they really teach you the pump syntax.
- Many examples for microfluidic infusion, infusion and peristaltic pumps.
- Pump programming manuals covering the more popular brands of pumps.

There's a Video!

This video gives an introduction to the pump programming process.



What I Provide

> *A fully tested PPL file. This means I run the PPL on a pump and check timing, rates and volumes. A fully documented pump program showing you where to modify rates, volumes and timing. All files are provided in a downloadable installer program, which installs the ppl files I have developed for you into your SyringePumpPro installation.*

PPL Costing

Tell me about your task and I will give you a fixed quotation.

How I Do This

First I need to wrap my head around what exactly is needed from your PPL. So the first step is to have you write a short but detailed description of what the ppl will do – step by step.

I need to know about

- Timing,
- Syringe to be used,
- External stimulus,
- Pump model,
- Description of injection signal etc.
- A great diagram… you probably need all these things your final paper anyway – draw it up front – it helps!

I write and test with delays and rates that are 10x or 20x to test the PPL logic coding cycle and then I test at 1X and basically make sure the PPL takes long enough – and I do some spot checking during the run.

Turn Around Time – **FAST!**

Life permitting, I usually quote turn around times of about 3 days.

By SyringePumpPro | July 2nd, 2017 | Categories: FAQs, Pump Programming | Tags: paper PPL

About the Author: SyringePumpPro

As the author of SyringePumpPro products I have been involved with laboratory pumps for about 10 years now.My career spans electronics, avionics, programming, teaching, research and development laboratory experience, and even television.

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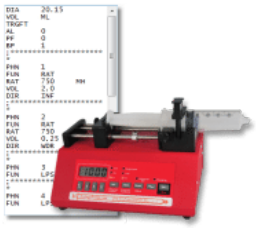
Pump Commands

- How does the pump communicate with a computer.
- Pump Communication Procedure
- Command Set



Are you looking for a detailed explanation of the the available pump commands?
Are you interested in the specific syntax of a pump command?

They are explained in detail in your pump manual.

I am considering offering pump programming training here, are you interested? If so please contact me

How does the pump communicate with a computer.

Via RS-232/RS-485 is the short answer. You can learn more about the cabling.

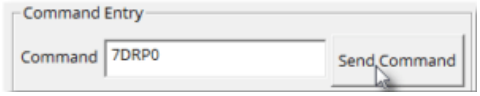
Pump Communication Procedure

A quick explanation of the process – this should be useful to those of you writing your own pump software.

Assuming you have a working pump network....

Pump Sends Prompt

Pump's send out a command prompt when they are ready to accept a new pump command. This doesn't relate to whether they are pumping or not, they issue a command prompt as soon as they are ready for the next command.



Entering Pump Command

The computer sends the characters of a command – generated by a human typing a command into software or a piece of software automating pump operations. SyringePumpPro does both of these things – accepts pump commands from an operator and it queries the pump automatically to update it's pump status information.

Command Sequence

```
To pump: <transmitted data> => { <command data> | <response data> } <command data> => [<address> | * ] [<command>]

From pump <response data> => <address> <status> [ <data> ]
```

Format of Command to Pump

```
<basic command protocol> => <command data> <CR>
```

A master-slave protocol is used, whereby the pump will only transmit in response to a received command.

When the pump receives the

```
<basic command protocol>, <command data>
```

it will be stripped of all space and control characters, and all text will be converted to upper case. This simplifies communications with the pump when commands are being manually typed in from a generic terminal emulator.

This travel down the cable to the pump.

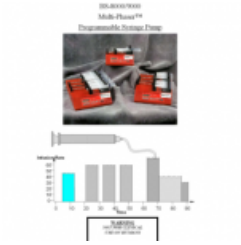
Format of Response from Pump

```
<safe response protocol> => <STX> <length> <response data> <CRC 16> <ETX>
```

The pump replies with a 'safe mode' formatted response which is design for electrically noisy environments. A CRC value of the response contents is sent so that the receiver can confirm that the pumps actual response was received.

You can simply accept the response data without checking the CRC value, and the response is human readable text. SyringePumpPro checks all responses and alerts the operator if data corruption is detected.

Command Set



Braintree Scientific BS8000/BS9000 User Manual

The command set varies from pump software version and model so it's worth grabbing the manual for your pump

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By SyringePumpPro | January 30th, 2017 | Categories: FAQs, Pump Programming | Tags: Braintree Scientific New Era

About the Author: SyringePumpPro

As the author of SyringePumpPro products I have been involved with laboratory pumps for about 10 years now.My career spans electronics, avionics, programming, teaching, research and development laboratory experience, and even television.

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Testimonials

About

Blog

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Pump Programming Service

Used Pumps

Login

Rates and Specifications

Drawings

Connectivity

Cables

Applications

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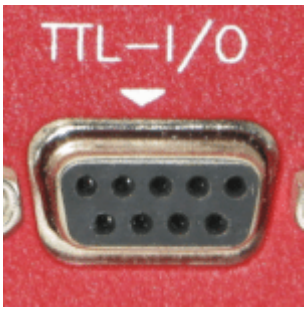
Home » **TTL Inputs and Outputs**

TTL Ports – Button Pumps



Pump TTL Db9 Connector

On the normal button/display pumps or bench pumps, the ttl output ports are available on the DB9 connector on the rear panel. This connector is not the RS-232 port!

The following chart shows the pin input and output assignment.

Pin #	Definition	*Type*	*Function*
1	Vcc (5V)	Reference	Logic high reference. Power on indicator.
2	Operational Trigger	Input	Configurable start/stop operational trigger input. [Ft] Foot Switch — Falling edge: Start or stop trigger [FH] Foot Switch Hold — Falling edge: Start trigger; Rising edge: Stop trigger [F2] Foot Switch Reverse — Rising edge: Start or stop trigger [LE] Level — Falling edge: Stop trigger; Rising edge: Start trigger [St] Start only — Falling edge: Start trigger [t2] Start only Reverse — Rising edge: Start trigger [SP] Stop only — Falling edge: Stop trigger [P2] Stop only Reverse — Rising edge: Stop trigger [rL] Start on low level — Low level: Start trigger [rH] Start on high level — High level: Start trigger [SL] Stop on low level — Low level: Stop trigger [SH] Stop on high level — High level: Stop trigger [OF] Trigger off (disabled) [Et] Program function: Redirects trigger to Event trap [bt] Program function: Redirects 'Stop' key to Event trap
3	Pumping Direction	Input	Changes pumping direction according to setup [dr:rE] / [dr:dU] Falling edge: Infuse / Withdraw Rising edge: Withdraw / Infuse
4	Event Trigger	Input	Event input or user definable input
5	Program Output	Output	Program controlled output or user definable output
6	Program Input	Input	Program conditional input read by the "IF" program function. Also user definable input. Also used by the keypad lockout function.
7	Pump Motor Operating	Output	[RUN.0] High: Pumping; Low: Not pumping [RUN.1] High: Pumping or Pause timer Low: Pumping Programmed stopped or paused
8	Pumping Direction	Output	High: Infuse; Low: Withdraw
9	Ground (0V)	Reference	Logic low reference

Db9 TTL Pin Out Chart

Logic Levels

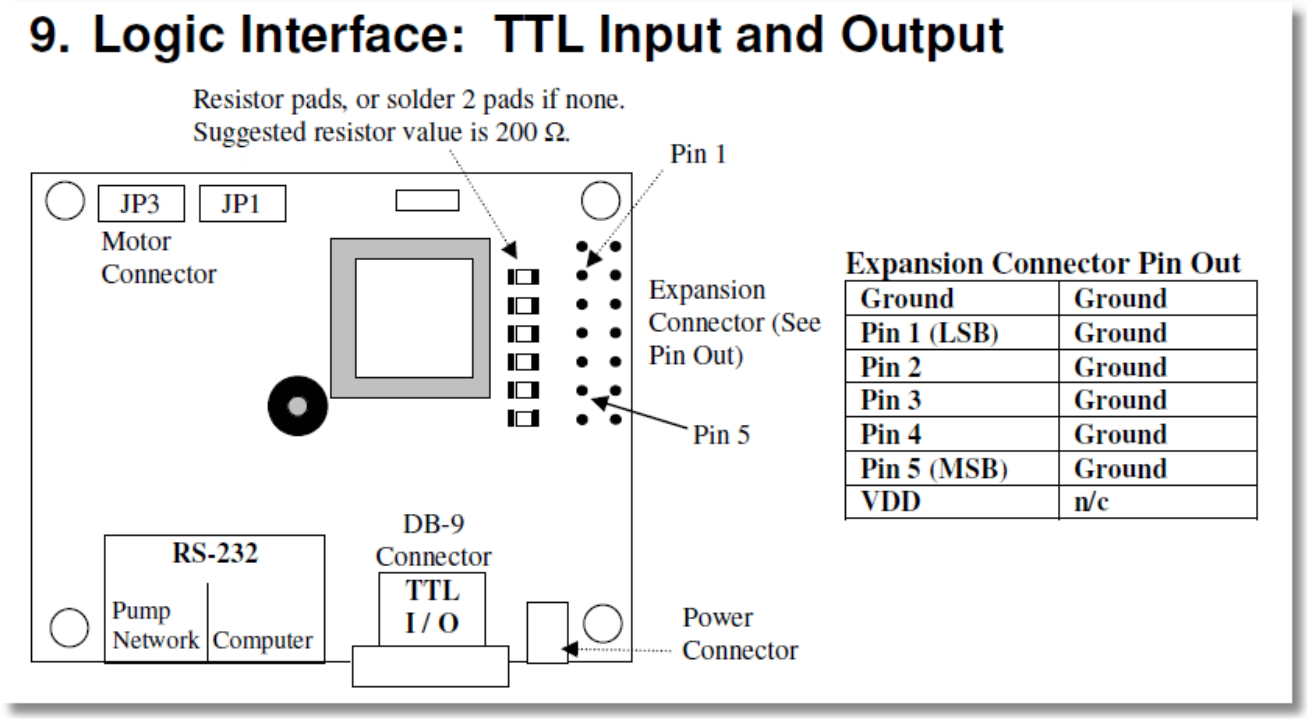
To guarantee recognition of logic levels, voltages on the input lines must be within the following ranges:

- TTL logic low (0): 0 to 1.5 V
- logic high (1): 3.5 to 5.25 V

TTL Ports – OEM Pumps

The OEM pump models are configured for installing in equipment of your design. As such the pump control circuit board is set up to take soldered connections rather than a single plug.

This diagram from the OEM Pump Manual shows the solder pad location and the location of current limiting resistors.



Download Diagram

Accessing Ports Via RS232

The logic levels of pins 2, 3, 4, and 6 can be queried from an attached computer using the RS-232 'IN' command and the output logic level of pin 5 can be set with the RS-232 'OUT' command. There's more details in your pump manual.

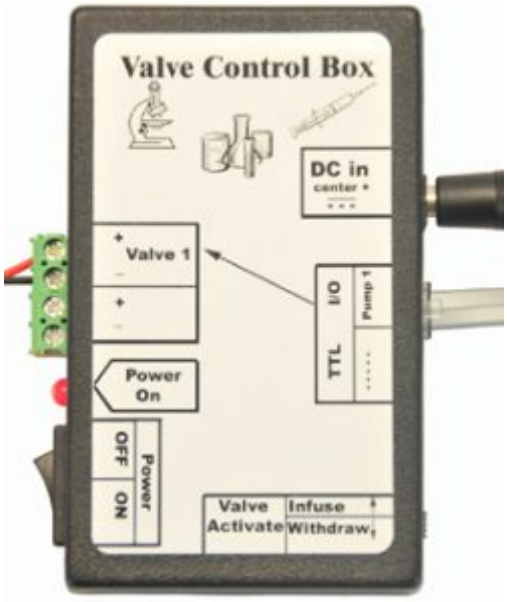
Power on Pin State

Unfortunately neither model of the pump appear to remember the last state of the TTL outputs after power cycling. All the pins appear to come on high at switch on regardless of previous state.

Users of the Valve Control Box

If you're a user of the Valve Control Box inverting the signal is just a matter of changing the valve activate switch from Infuse to Withdraw.

Back to Pump Programming | Back to FAQs



Single Control Valve Box

By SyringePumpPro | January 31st, 2017 | Categories: FAQs, Pump Programming | Tags: OEM

About the Author: SyringePumpPro

As the author of SyringePumpPro products I have been involved with laboratory pumps for about 10 years now.My career spans electronics, avionics, programming, teaching, research and development laboratory experience, and even television.

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Blog

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Drawings

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SyringePumpPro

Home » **Easy Way to Create PPL Files – Programming Spreadsheet**

Easy Way to Create PPL Files – Programming Spreadsheet

There is an easy way to create Pump Programs! Use the PPL Creator spreadsheet which is installed with SyringePumpPro. PPL Creator is supplied by New Era Pumps. It is easy to use but you still need to be familiar with how the pump works, and the pump commands in order to write programs for your pumps.

If your not sure about your particular pump's brand or model – check out the compatible pump's page.

> *Credit: This PPL spreadsheet has taken Barry Cowan owner of New Era Pump Systems a lot of time over the years to create and update.*

Pump Programming Spreadsheet

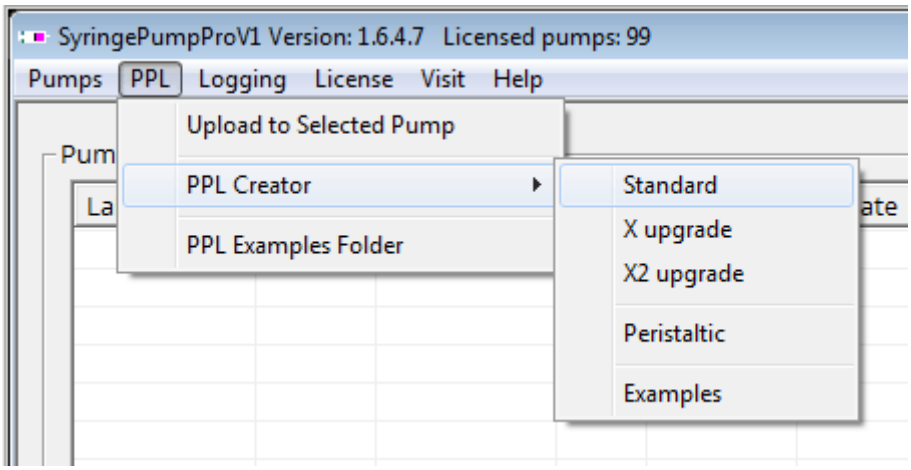
SyringePumpPro installs three versions of the spreadsheets covering the different models of the pumps.

Spreadsheet Name	Target Pumps
Standard PPL Creator.xls Download Standard PPL Creator Spreadsheet	**All pumps excluding peristaltic and models with X or X2 upgrades** Standard NE-1000, NE-1200, NE-1600, NE-1800, NE-500, NE-4000, NE-4500 models – not using X and X2 upgrade features. NE-1002 micro-fluidic pumps use this spreadsheet with Microfluidic units in selected cell O17.

X and X2 upgrade PPL Creator.xls Download X and X2 upgrade PPL Creator Spreadsheet	**X upgrade Pumps** Pumps having X and X2 in their part number.
Peristaltic Pump PPL Creator.xls Download Peristaltic PPL Creator Spreadsheet	**All Peristaltic pumps** Including clear, blue, green heads.
Standard PPL Examples.xls Download Standard PPL Examples Spreadsheet	**Program Examples** In the pump user manuals there are several example programs. This spreadsheet contains all of the example code for you to work through as a learning exercise and a starting point for your pump programs.

SyringePumpPro installs these spreadsheets

Access theses spreadsheets from within SyringePumpPro:

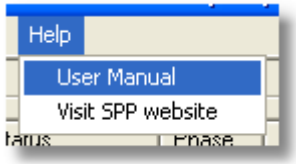


When you have installed SyringePumpPro you can launch the PPL Creator using the start menu entry.

PPL creation requires time spent with the pump manuals to understand the commands the pumps take.

The PPL spreadsheet is handy because it creates your PPL file for you, by you clicking and selecting the commands you want. This means no errors when you upload the PPL file. Less frustration and lots of time saved.

See the User Guide for SyringePumpPro for more details. Help -> User Guide.



Back to Pump Programming | Back to FAQs

Menu – Help->User Manual

By SyringePumpPro | January 30th, 2017 | Categories: FAQs, Pump Programming | Tags: NE-1000 NE-1600 NE-1800 NE-4000 New Era

About the Author: SyringePumpPro

As the author of SyringePumpPro products I have been involved with laboratory pumps for about 10 years now.My career spans electronics, avionics, programming, teaching, research and development laboratory experience, and even television.

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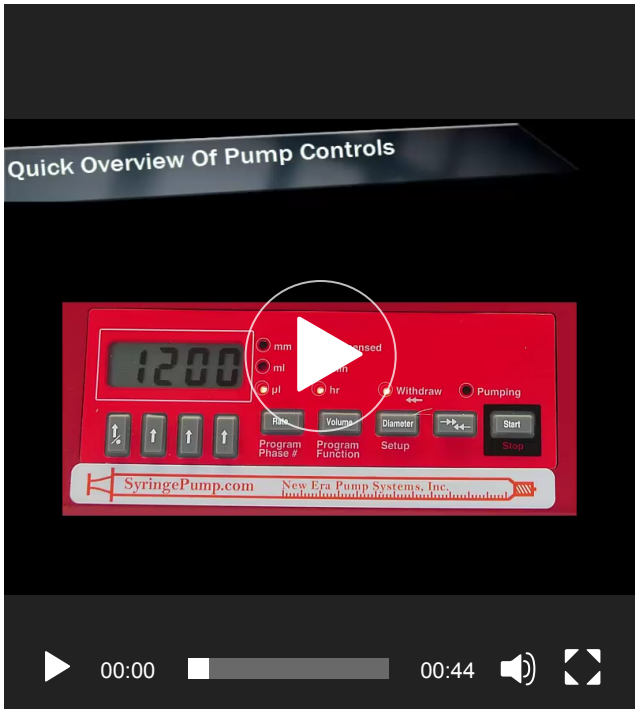
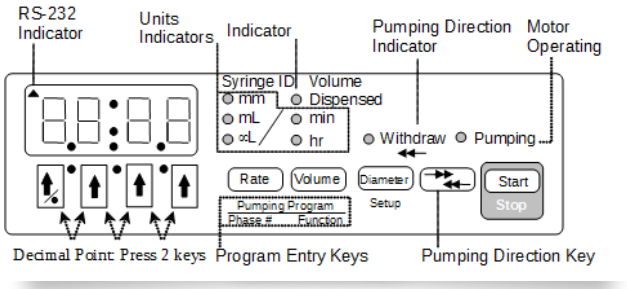
SyringePumpPro

Home » **Front Panel Controls**

Front Panel Controls





This page introduces you to the front panel controls on your pump. If you have an OEM pump, there will be no controls on the front panel and you can only control the pump from a computer, using a terminal application or SyringePumpPro.

Pumps with front panel controls can be operated via computer in the exactly the same way as an OEM pump. You will need computer interface cables.

Grab the manual for your pump

To get a deeper discussion on what your pump does in response to these buttons, and the interpretation of the information displayed (not in an OEM pump) grab your pump's manual from here.

Download Front Panel Controls Video

Parts	Definition
RS-232 Indicator	Small triangle in top left hand side of display. Indicates a connected RS-232 cable. It is possible for this to illuminate and communications do not work. See Pump Addressing
Units Indicators	Led to indicates the pumping units uL, mL pL (varies with pump model)

Indicator	Led's to indicate units and what information is currently displayed on the LCD display.
Pumping Direction Indicator	Indicates if pump is infusing or withdrawing. May not be pumping at the time.
Motor Operating	Pump is pumping when lit.
Pumping Direction Key	One press toggles between infusing and withdrawing.
Program Entry Keys	Keys used to enter pump programs.
Decimal Point (Press 2 keys)	To move the decimal point when entering numbers.

Back to Pumps | Back to FAQs

By SyringePumpPro | April 8th, 2019 | Categories: FAQs, Pump Connectivity, Pumps

About the Author: SyringePumpPro

As the author of SyringePumpPro products I have been involved with laboratory pumps for about 10 years now.My career spans electronics, avionics, programming, teaching, research and development laboratory experience, and even television.

Take control of your pumps!

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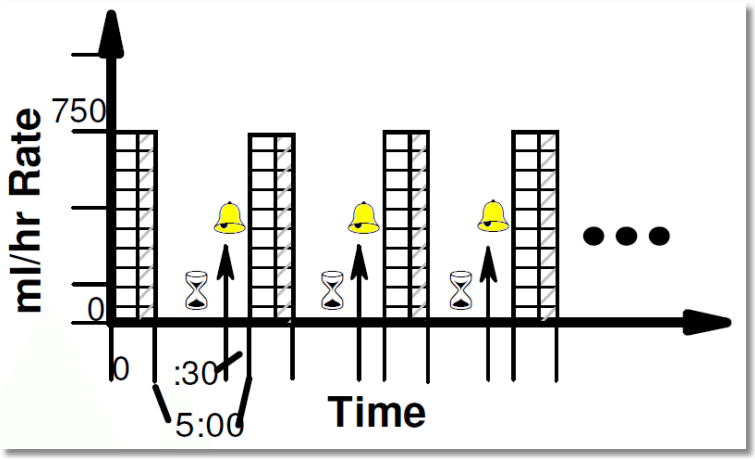
What to try when 41 program steps run out

Programmable syringe pumps have a limited number of program steps. Basically they only have so much on board memory available. *What are some techniques for growing past this limit?*

Sometimes your pump program grows and then grows and then grows and suddenly 41 steps becomes a limitation. This limitation is like colliding with a brick wall – your part way through a ppl program and … that's it no more.



There are a couple of techniques that you can use to work around this limitation.

Upgrade your pump -Easy but Costs Money

The easiest is to eliminate the limitation by upgrading the chip (and thus the memory) in your pump.

These brands – (I know this because SyringePumpPro supports these):

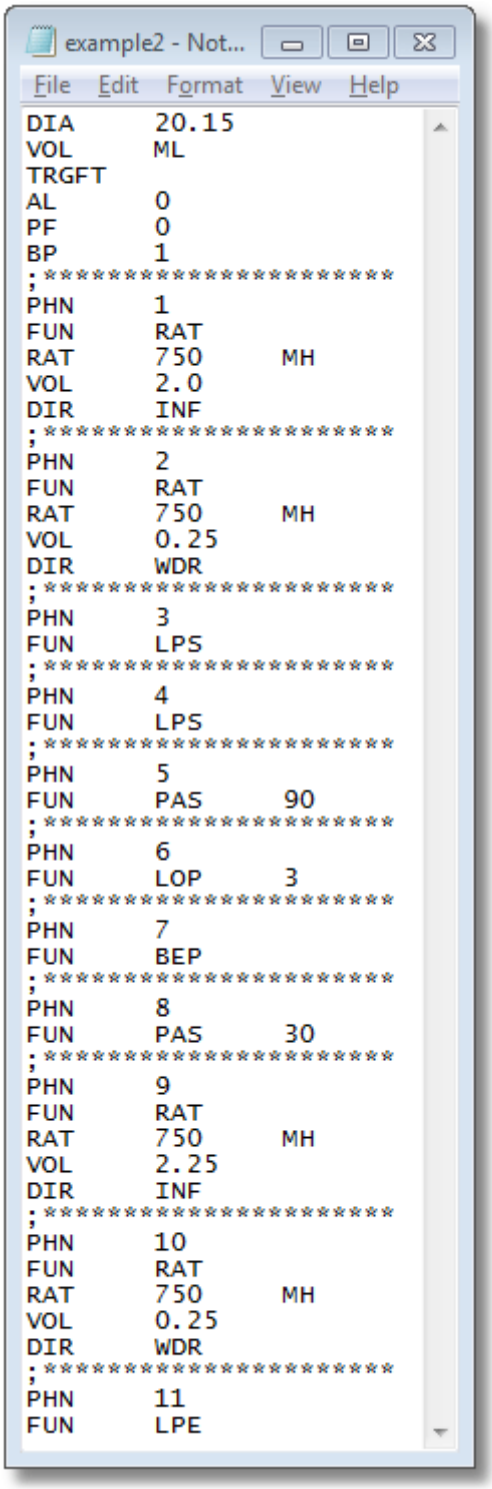
- New Era Pump Systems,
- Aladdin,
- Cole Parmer,
- Next Advance,
- Protea Bioanalytical Biology
- Stoelting
- TSE System

All of these brands have an X2 upgrade chip available which expands your pump to 300+ programming steps. So part with your cash and fix the problem quick and easy. Tell em the SyringePumpPro guy sent you.

From my limited experience with them, I can't say much about other brands like:

- KD Scientific
- Harvard Apparatus

Currently SyringePumpPro doesn't support these, though I own several examples of each ready for supporting them in the near future. A quick skim through their manuals didn't give any idea about the number of program steps they support and there doesn't seem to be any chip upgrades available for their pumps.



Reducing Your Program Size

Eliminate Necessary Steps

Do you need every step?

Perhaps you could break your pump program into two pieces – a before and after – this is a stupid suggestion for a lot of applications – it really depends on what happens if the pump stops and then someone is required to upload the second part of your pumping application. Most of you in this position should part with the money and upgrade to and X2 chip.

Some Program Code Don't Take Steps

Often pumps will include code lines at the start such as PF 1 and AL 1. These configuration items (Power fail and alarms) which you can configure in your pump and it will survive power cycles – they don't actually take up steps since they configure the pump at upload and then are gone.

Optimize Your Program

This is the hard work option. Take a long hard look at your application and your pump program and see if you can change either and reduce your pumping flow changes.

1. Use looping to reduce repeating code.
   If your doing the same 2 or 3 flows sequentially with a pause (very common) write the code with a loop (LPS) the the flow (RAT/VOL) and a single timed pause, then loop back the number of times you need to repeat that flow pattern.
2. Use subroutines to eliminate repetitive code.
   Often your program will infuse the same volume at the same rate or do the same sequence of steps repeatably. Gather these steps in one place and set them up as a subroutine. Then call them when you need them. This can save a lot of steps for little effort – but doing it the first time takes some working through.
3. Print your Pump Program,
   grab a coffee and just take a good long look at it. This change of venue and mindset often will

reveal improvements (and bugs). This really works!

4. Send me your pump program and I can offer some suggestions.

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By SyringePumpPro | February 1st, 2017 | Categories: FAQs, Pump Programming | Tags: Aladdin Cole-Parmer Harvard New Era Next Advance Protea Stoelting TSE Systems

About the Author: SyringePumpPro

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