TOUCH PROGRAMMABLE RESOLVER LIMIT SWITCH (PRLS)

PROGRAMMING SOFTWARE USER MANUAL

(Manual Part Number MAN-TPRLS-002)

WARNING!

Programmable control devices such as the Touch PRLS must not be used as stand-alone protection in any application. Unless proper safeguards are used, unwanted start-ups could result in equipment damage or personal injury. The operator must be made aware of this hazard and appropriate precautions must be taken.

In addition, consideration must be given to the use of an emergency stop function that is independent of the programmable controller.

The diagrams and examples in this user manual are included for illustrative purposes only. The manufacturer cannot assume responsibility or liability for actual use based on the diagrams and examples.

WARNING: If the Touch PRLS is used in a CLASS I, DIV. 2 environment, the following conditions must be met: Class I, Div. 2 methods; AND — must conform to all rules and requirements of applicable jurisdictions regarding Class I, Div. 2 installations; ALSO — peripheral equipment controlling this device or being controlled by it shall be suitable for service in the location in which they are used. ***Failure to comply with any of the above installation requirements will invalidate the device's qualifications for service in CLASS I, DIV. 2 hazardous locations.***

WARNING: EXPLOSION HAZARD — SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.

WARNING: EXPLOSION HAZARD — DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

CAUTION

Do not press the Touch PRLS touchscreen with any sharp objects. This practice may damage the unit beyond repair.

Trademarks

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Manual P/N MAN-TPRLS-002

Touch PRLS

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Manual Revisions

Manual Part Number: MAN-TPRLS-002
Manual Title: Touch PRLS Programming Software User Manual

The following table provides you with update information. If you call technical support with a question about this manual, please be aware of the revision number.

Revision	Date	Effective Pages	Description of Changes
Original Release	06/2003	Cover Warning/Copyright i-iv 1-44 Appendix A	Original Release of Manual

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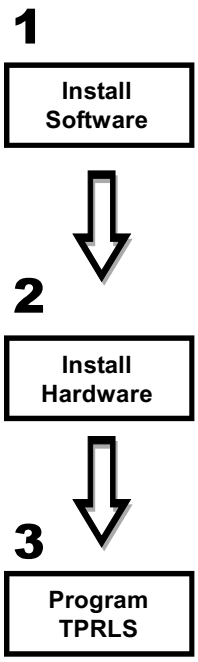
Introduction

The Touch Programmable Resolver Limit Switch (PRLS) is essentially a PowerPanel with two Option Cards installed in the unit (PRLS card and Output card). There are special connectors on the cards that are accessible from the bottom of the unit that allow communication with a resolver. This supplemental manual provides you with information particular to the Touch PRLS and will be used to supplement information provided in the G2 Series PowerPanel Hardware Manual (MAN-UTICW-001) that was also shipped with your Touch PRLS.

You will configure the Touch PRLS using the Touch PRLS Programming Software and PowerPanel Programming Software, Version 4.0 or later.

These manuals will take you through the steps necessary to get your Touch PRLS up and running in the shortest possible time. Although your familiarity with programmable graphic operator interface devices will determine how quickly you move through the steps — it's as easy as 1 — 2 — 3.



Touch PRLS Programming Software is a user-friendly Windows-based program that allows you to program the Touch PRLS. Touch PRLS Programming Software is an executable file (Touch_PRLS.exe) that can be found in the PowerPanel Programming Software Program folder (this is installed by default to: C:\Program Files\PowerPanel\) that was created when you installed the software on your programming computer. For more information, please refer to the ***PowerPanel Programming Software User Manual.***

The G2 Series PowerPanel Hardware Manual will provide you with the instructions you need to install the panel. Included are mounting diagrams for **Stud Mounting**, **Connections and Wiring** requirements, Panel **Setup** instructions, **Maintenance,** and **Troubleshooting**. For installation information particular to the Touch PRLS Panel, see the Touch PRLS Hardware Manual (MAN-TPRLS-001).

The Touch PRLS Programming Software allows you to program the PRLS card in your panel. UTICOR has provided a PRLS Demo Program with the PowerPanel Programming Software that can serve as a model or be modified for use in your motion control application. Use Touch PRLS Programming Software to program the PRLS card and then use the PowerPanel Programming Software to create screens for the Touch PRLS panel that provide a graphical interface designed to interchange and display data from a machine-based resolver by merely viewing or touching the screen — all unique to your particular application. For instructions on how to design these screens, refer to the ***PowerPanel Programming Software User Manual*.**

What you need to get started:

You will need the following hardware and software to configure a Touch PRLS System. A PLC does not have to be connected to configure the Touch PRLS

Hardware

- Touch PRLS Series (6", 8", 10", or 15" Color unit)
- 24 Volt Power Supply
- RS-232C Programming Cable (P/N CBL-UTICW-009)
- TPRLS to Resolver Cables: CBL-TPRLS-005 (5 ft.), CBL-TPRLS-010 (10 ft.), CBL-TPRLS-015 (15 ft.), or CBL-TPRLS-020 (20 ft.)
- Resolver, such as AVG's RL100, E5R, E7R, or E8R Series
- TPRLS I/O D-sub Cable (P/N CBL-TPRLS-I/O3)
- PLC and PLC Cable (see PowerPanel Hardware Manual)
- PC requirements:
  — IBM or compatible PC (486 or better) with a mouse, keyboard and separate serial port
  — VGA display with at least 800 x 600 resolution (1024 x 768 recommended)
  — Standard Windows 98/NT4.0/ME/2000/XP® Requirements
  — CD ROM Drive

Software

- PowerPanel Programming Software, Version 4.0 or higher
- Touch PRLS Programming Software (P/N ACC-TPRLS-EDIT) (included on CD that was shipped with the TouchPRLS)

Need HELP?

Help is never more than a mouse click or a key press away!

Onscreen HELP

One of the most important features of the Touch PRLS Programming Software is the availability of context sensitive onscreen help. To access the Help windows, simply press the F1 function key while on the topic where you need help. For example, if you need help while working with screens, hit the F1 function key while in that area and a popup window will be displayed. Also, most dialog boxes contain a Help button, you may click on it to get help, too!

Fly-Over HELP

When the mouse cursor comes to rest over any tool bar or object button for a short while, a small window will appear containing a brief description of the function of that particular button. The window will disappear as soon as the cursor has been moved off the button.

Technical Support

Although most questions can be answered with Touch PRLS Programming Software HELP topics or the manuals, if you are still having difficulty with a particular aspect of installation or configuration, technical support is available at **1-800-TEC-ENGR (832-3647) or FAX us at 1-563-359-9094. Visit our website at *www.uticor.net.***

Overview of Touch PRLS Functions

The Touch PRLS (PRLS = Programmable Resolver Limit Switch) uses a resolver as a position transducer. Unlike incremental encoders, the resolver, along with its noise-immune ratiometric converter, always gives true machine position, even if the machine has moved during a power outage. An AVG resolver is constructed to be rugged and reliable, even in temperature and humidity extremes, and under prolonged exposure to mechanical shock and vibration.

Touch PRLS Programming Software makes it easy to configure your application. Using a Windows-based architecture and lots of popup screens with pull-down selections, you should be able to quickly build and configure your project

The Touch PRLS brings operator-friendly touch screen control of the PLS to your application, and offers you the MOST ADVANCED PLS features. The features are described below:

- **Leading and Trailing Edge Speed Compensation**
  The Touch PRLS features Leading and Trailing Edge Speed Compensation (Rate Offset) to compensate for speed variations. The Rate Offset, individually programmable for each channel, is used to advance the PLS settings as a function of the machine speed.

- **Pulse Programming**
  Touch PRLS can be fine-tuned while your machine is running. Either or both of the ON and OFF Setpoints can be incremented or decremented.

- **Angle ON / Time OFF**
  The Touch PRLS can be programmed to have its outputs turned ON at an angle and turned OFF after a programmed time by touching the screen. For example, channel 8 can be turned ON at an angle of 100° and stay ON for a period of 2.45 seconds.

- **Programmable ModZ Functionality**
  The Touch PRLS features a dynamic zeroing or ModZ (Modification Zero) to modify the zero reference point independent of the actual resolver position. After the PLS receives the ModZ input, the resolver position is reset to zero. This PLS can be field programmed to ModZ

- **Flexible Channel Assignment**
  When it is desirable to control several different machines linked to the same drive shaft, the TPRLS's Flexible Channel Assignment can be a powerful and useful feature. Output Channels 1 through 31 may be defined as PLS or ModZ type. Each ModZ Channel can have has its own ModZ Inhibit Zone.(Channel 32 is PLS only.)

- **Speed Switch (Built-in Motion Detector and Tach**)
  The Touch PRLS has a built-in Tachometer and Motion Detector. In the Tach Mode, the TPRLS displays the machine shaft speed in RPM. The Motion Detector energizes a relay when the RPM is between the programmed Low and High Limits.

- **Password Protection**
  The Touch PRLS has a Password Protection feature eight-levels deep. Up to eight different passwords (user programmable from the touchscreen) allow access to different screens in the Touch PRLS, providing ultimate protection and security of machine settings. You can program this in the PowerPanel Programming Software project.

Touch PRLS as a Stand-alone Product or as a Part of a Control System.

Used as a stand-alone product, the Touch PRLS can use the Touch PRLS Programming Software to directly configure the TPRLS Card in the panel.

Simply connect the programming computer, resolver and power leads, turn it on, and program the setup for your PLS. You can go online to directly monitor the PLS. If this is all your application demands, follow the instructions to configure your PLS and you're ready to run.

Then you use the PRLS Demo Project included with the PowerPanel Programming Software Version 4.0 or higher. This Demo program provides all of the screens essential to setup, monitor, and change settings in your PLS. Each screen consists of displayed text and graphics, plus pushbuttons, all implemented for quick operator access directly on the configurable touchscreen.

When you need more than a simple stand-alone application, integrating the Touch PRLS with a PLC offers almost limitless possibilities. Touch PRLS's PowerPanel touchscreen operator interface is fully ready to integrate the power of a PLS and a PLC into a seamless system, bringing the ease of touchscreen control to your machinery in the simplest manner yet devised.

Because the operator interface uses two processors, one for the PLS operation, and the other to manage, display, and communicate with the PLC, the Touch PRLS can share PLS information with the PLC, while displaying the data from both on a single screen. Printers and a marquee can also be connected and configured with the Touch PRLS. Many models of PLCs can be accommodated by the Touch PRLS's library of drivers and new drivers are continually being added.

Easy, Economical, Flexible

More than just a touchscreen-based replacement for hard-wired switches, pilot lights, LEDs, etc., the Touch PRLS can accommodate changing production requirements, often in minutes, with its advanced graphical operator interface—and you can make these changes online or offline

The OI part of the Touch PRLS offers you functionality that is not possible with discrete operator panels. It's not only an *economical replacement for common hard-wired panel components*, such as pushbuttons, pilot lights, and selector switches, it also provides complete flexibility—with the Touch PRLS, your panel is never obsolete! Additionally, panels based on Touch PRLS can be made far less cluttered by displaying only the necessary controls, thereby reducing possible operator confusion.

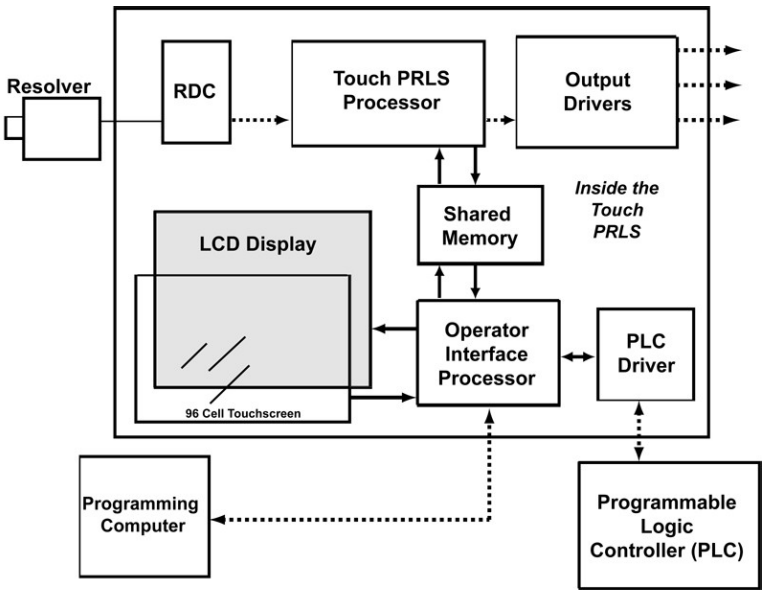
The PowerPanel touchscreen used in the Touch PRLS has been designed to interchange and display graphical data from a programmable limit switch (PLS) by merely touching the screen.

The Touch PRLS is available in four display types designed to suit any application and budget. Any of these display types may be ordered with eight or 16 outputs and N-Type or P-Type output polarity. All other features remain the same, except for the size and availability of colors on the screen. The four display types are listed below:

- **6" STN Color**
- **8" TFT Color**
- **10" TFT Color**
- **15" TFT Color**

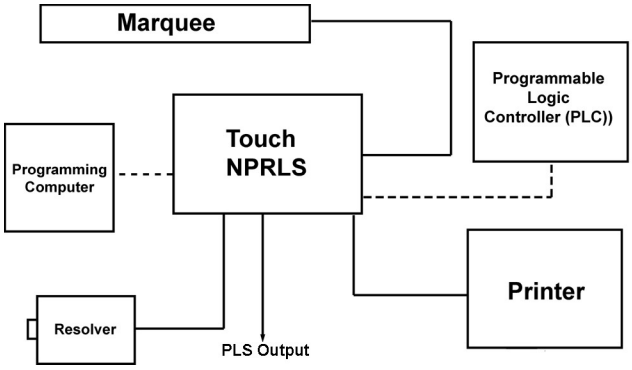
Principle of Operation

The Touch PRLS, as shown in the block diagram below, uses two processors, one for the PLS and the other to manage, display and communicate to the PLC, if used. The PLS processor reads its position signals from the resolver mounted on the machine shaft. It controls position-based outputs independent of the interface processor, providing fast repeatable outputs. There are pre-defined registers available for mapping the PLS. The PLS processor and the interface processor share information through a-shared memory. The dynamic information, such as position, RPM, and output status, is available to the interface processor for display through registers. See Appendix A for more detailed information about the registers.



Touch PRLS Total Integration

The traditional way to communicate your machine position, speed, or PLS status to a PLC network, was through hard-wired discrete outputs. As far as the PLS program settings were concerned, they were simply not available to the PLC. The Touch PRLS can communicate to many different PLCs through a serial connection. PLS status can also be fed to the PLC through the same bus connection. Hard PLS outputs are available to activate machine solenoids directly.



System Configuration

The system, or “global” parameters,” will be set for each PRLS Project under the menu items, **Project Information**, **System Attributes,** and **Communication Setup** in the PRLS Programming Software**.**

All programs created under a single project will share the parameters configured under these menu items.

Project Information includes: Plant, Machine, Job, and Comments. This information allows you to categorize, describe, and reference the project. You may also enter information in the Comments field that may be needed by programmers for future revisions to the project.

System Attributes include:

Machine Offset
This is the number of increments by which the indicated zero position will differ from the resolver’s actual zero position.

Scale Factor
This is the number of increments that one turn of the resolver will be divided into.

Direction
This refers to the direction that the resolver revolves, Clockwise or Counter-clockwise.

Modification to Zero (ModZ)
Under this tab you will set the ModZ **Scale Counts** for **ModZ (Input 1), ModZ (Input2),** and **ModZ (Input 3)**. Modification to Zero (ModZ), or dynamic zeroing, enables you to modify the zero reference point independent of the resolver's actual position.

When a False-to-True transition is detected on the ModZ Input, the current angle of the resolver becomes the new reference "0" point and all setpoints for the Channels assigned to that input mode are then referenced to this value. The ModZ Cycle terminates when one full resolver revolution is made. To start a new ModZ Cycle, the ModZ Input must make a new False-to-True transition. If programmed, the IGNORE MODZ FOR (xxx) Scale Count is the number of Resolver counts that must occur from the start of a ModZ cycle until the next ModZ cycle is initiated. Once a ModZ cycle is initiated, any transitions of the ModZ input will be ignored until this programmed value is exceeded.

*Channel 32 is PLS only.

Next you will program Channels 1 through 31* as either ModZ (to be triggered by Input 1, Input 2, or Input 3) or to remain as a PLS. If you do not select a Channel as ModZ, it will function as a normal PLS Channel. If selected as a ModZ Channel, it is controlled by the corresponding ModZ Input.

Debounce Inputs
This lets you select whether or not Input 1, Input 2, Input 3 (all ModZ) or Input 4 (Program Enable) are fast or normal debounce. When selected, false readings created by fast debounce will be ignored. If not selected the inputs will be read as "normal" debounce.

Communication Setup
Under Communications setup you will define the parameters that allow communication between the Touch PRLS and programming PC.

Program Configuration

Within each project, you can have several programs. Programs (also called "Job Setups") contain all of the parameters, commands, etc., necessary to perform the requirements of a particular application. Up to 32 channels or outputs can be controlled by a single program.

The PRLS Project may contain many distinct programs (only limited by memory) and can implement each as needed—but, **only one Program may be active at a time.**
Once a program is stored in the PRLS, unless there's a change or deletion, the program never needs to be entered again.

Channels
Channels 1 through 31 may be defined either as a ModZ or PLS type —Channel 32 is PLS type only. This creates the effect of 32 independent PLS's running from the same resolver. This can be a very powerful and useful feature when it is desirable to control several different types of processes all being driven by a common shaft. Each ModZ Channel has its own input and a ModZ Inhibit Zone (more on ModZ Inhibit Zones later).

There are 32 independent output channels, each of which contains its own setpoints (used to turn the output ON or OFF at specific shaft angles). Channels 1 through 16 also contain their own speed compensation factor (so that the response time of field devices, such as relays/solenoids, may be compensated.)

Speed Compensation
Speed Compensation allows you to dynamically advance or retard a programmable output based on a resolver speed. This is useful for compensating field device response time. Speed Compensation can be added to a set point to adjust time. You must make sure that you do not enter Speed Compensation values whose ON/OFF times will overlap at Maximum RPM. Channels 1 though 16 have their own leading-edge and trailing-edge speed compensation.

Modification to Zero (ModZ)
Modification to Zero (ModZ), or dynamic zeroing, enables the user to modify the zero reference point independent of the resolver's actual position.

If you do not select a Channel as ModZ, it will function as a normal PLS Channel. If selected as a ModZ Channel, it is controlled by the corresponding ModZ Input.

When a False-to-True transition is detected on the ModZ Input, the current angle of the resolver becomes the new reference "0" point and all setpoints for the Channels assigned to that input mode are then referenced to this value.

The ModZ Cycle terminates when one full resolver revolution is made.

Selection of Setpoints is crucial. Setpoints crossing "0" may give undesirable

results when programmed into a ModZ Output Channel because PRLS will react as if two Setpoints were programmed—one beginning at Zero and the other ending at Zero.
When programming ModZ Setpoints *and* Speed Compensation Values into a PRLS Channel, too much Speed Compensation could cause a similar Setpoint split, or even cause a Beginning of Cycle Setpoint to occur at the end of the Cycle. To start a new ModZ Cycle, the ModZ Input must make a new False-to-True transition.

ModZ Inhibit Zone
If the Channel is ModZ, the System Attributes Offset is not used. Instead, there is a parameter called the "Inhibit Zone." The ModZ Inhibit Zone is an angular zone in which the ModZ cycle may not be triggered. The Inhibit Zone begins when the ModZ cycle is originally triggered (angle = 0), and continues up to a preprogrammed angle. Once the ModZ cycle has progressed beyond this Inhibit Zone, the ModZ cycle may be restarted by retriggering the ModZ Input. Make sure that if a Channel uses ModZ that you do not add Speed Compensation value that will adjust the ON setpoint to a value less than zero (0). This will cause problems with your resolver readings.

Supervisor Protection

The following functions are protected by checking for no Motion (position is NOT moving) and by checking that the Program Enable input is active.

WRITE A VALUE FOR MACHINE ZERO
CHANGE DIRECTION
ZERO MACHINE
CHANGE MODZ INPUT FOR A CHANNEL
EDIT PROGRAM
UPDATE A SETPOINT
EDIT ON SETPOINT
EDIT OFF SETPOINT
PROGRAM USER MEMORY
AUTOZERO

The following functions are protected by checking that the Program Enable input is active.

CHANGE SPEED COMP ON
CHANGE SPEED COMP OFF
CHANGE MODZ DELAY COUNT
FINETUNE INCREMENT
FINETUNE DECREMENT

Error Messages

Error Number	Error Message
101	**OFFSET OUT OF RANGE** Offset entered is greater than Scale Factor.
102	**PAST LAST SETPOINT** Specified a setpoint number greater then the last valid setpoint number.
103	**INVALID SETPOINT VALUE** Value is invalid for this setpoint.
104	**INVALID CHANNEL NUMBER** Specified channel does not exist.
108	**USER PROG NOT FOUND** Specified user program number was not found.
109	**INVALID TYPE OF SETPOINT TO FINETUNE** Can only finetune ANGLE ON/ANGLE OFF type of setpoints.
110	**NO FINETUNE COMMAND SPECIFIED** The FINETUNE registers does not contains a valid value.
112	**FUNCTION IS PROTECTED** Program Enable needs to be active for this function to work.
113	**INVALID SPEED VALUE** The value for a SPEED SWITCH type of setpoint is invalid. The maximum value is 1023 RPMs.
114	**INVALID SETPOINT OFF TIME** The OFF time of an angle on/time off setpoint needs to be between 0 and 4095 Msec.
115	**SETPOINT TO FINETUNE NOT ON THIS CHANNEL** The specified setpoint number was not found the specified channel number.
116	**CAN NOT ADD A SPEED COMP** Only channels that already have a speed comp value can be changed from the panel. If the ON and OFF values were programmed with 0 you will need to change the speed comp values from the Program Loader.

117	**INVALID_MODZ_INPUT_NUMBER** The valid MODZ inputs numbers are 1, 2, or 3.
118	**SETPOINTS_HAVE_MOVED_RESELECT_SETPOINTS** The setpoint numbers have been sorted and have changed order. Please select the correct setpoint number.
119	**INVALID_SETPOINT_NUMBER** The specified setpoint number was not found.
120	**ABOVE MAXIMUM RPM** The RPM is above the supported range. Speed comp will only function correctly up to 1023 RPMs.
121	**FUNCTION NOT ALLOWED DURING MOTION** This function is not allowed while the RPMs are greater than 3.
122	**INVALID SETPOINT TYPE FOR MODZ** A setpoint for the selected channel does not support a MODZ input.
200	**BROKEN WIRE** This indicates that a resolver wire is broken.

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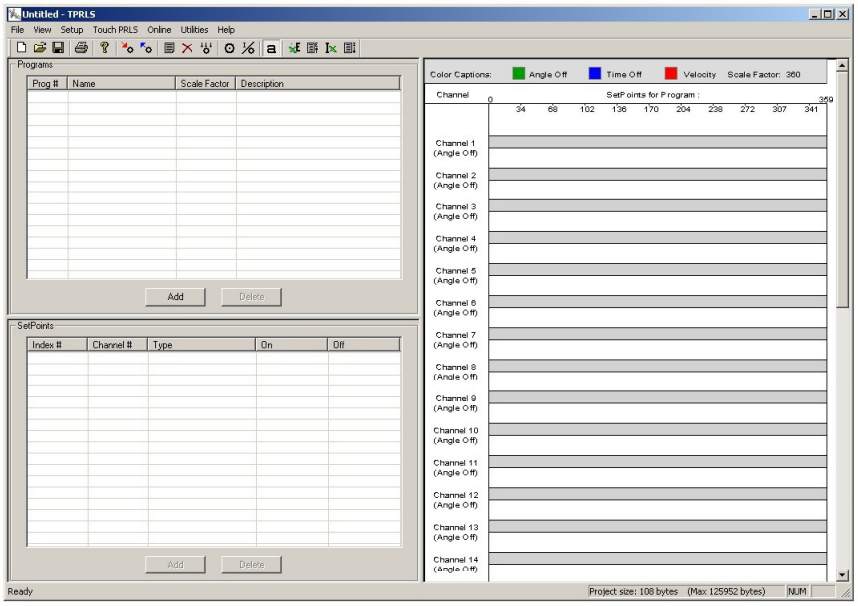
Main Programming Screen



The Main Programming Screen is shown above. It is here that you will configure your Touch PRLS system. In this section, we'll briefly identify and describe the main features of this screen and familiarize you with the Touch NPRLS Programming Software work area.

Title Bar

The **Title Bar** tells you the name of the project that you currently have open.

Main Menu Bar

This is the **Main Menu Bar**. Touch PRLS Programming Software menus are represented by the names listed across the top of the Main Programming Screen and directly under the Title Bar. Each menu item is discussed in detail in the *Reference* Section of this manual beginning on page 29.

Toolbar

The **Standard Tool Bar** consists of icons for frequently used commands. These commands are also found in, and accessible from, the Main Menu Bar.

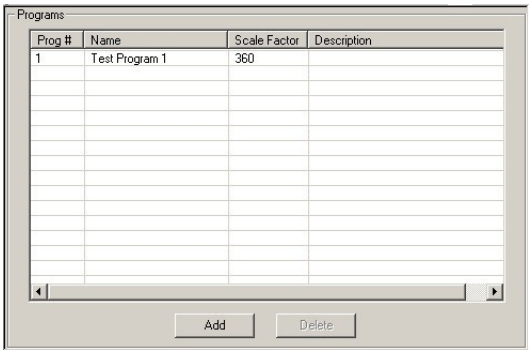
From left to right as placed on the tool bar, the icons and their functions are shown below.

- Open New Project
- Open Existing Project
- Save Project
- Print the active document
- Display program information, version number, and copyright
- Transfers current project to Touch PRLS
- Reads project loaded on Touch PRLS and transfers it into a new project
- Provides information on the Touch PRLS panel
- Clears the Touch PRLS memory
- Sets the machine offset to zero
- Reads the input and output status of the Touch PRLS
- Turns ON or OFF the display of the set point values in the graphical display part of the main programming screen
- Exports the current project's set point values to Excel format
- Exports the current project's set point values to CSV format
- Imports set point values in an Excel file format into the current (open) project

-  Imports set point values in CSV file format into the current (open) project.

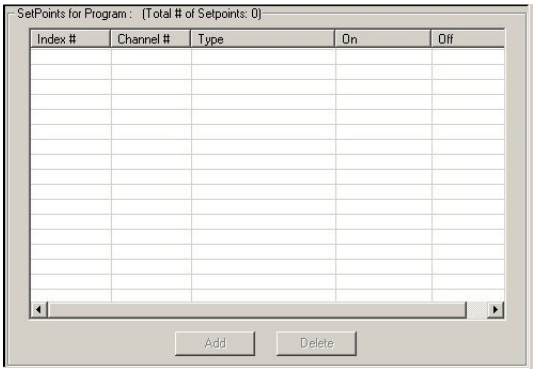
Programs List

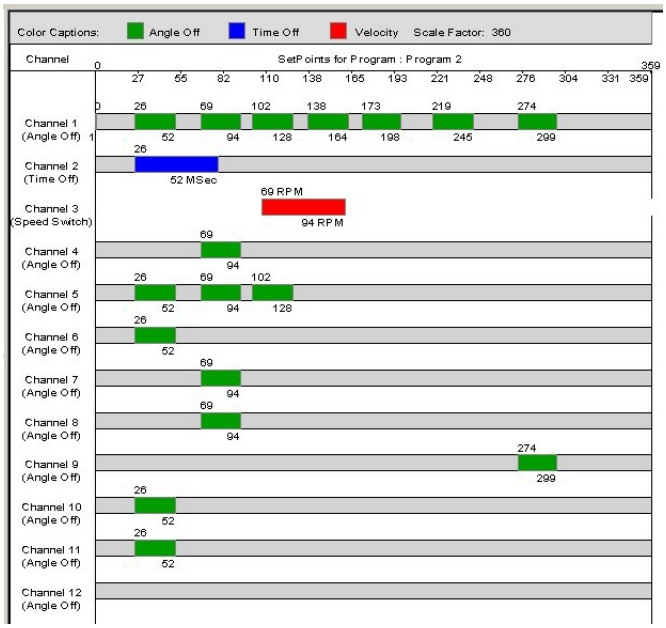
This window lists the programs that have been configured in a single project. **Program Number** and **Name** are listed as well as the **Scale Factor** (1 to 4096) and **Description** for the program. You will click on the **Add** button to configure a new program.



Setpoints for Program List

This window lists the Setpoints that have been configured for a particular program (highlighted in the list above). An **Index #** (for reference), **Channel #**, **Type** (data type), and **On**/**Off** Setpoints are provided for each setpoint configured in the program. To add a setpoint, click on the **Add** button at the bottom of the list.





Graphical Display Window

The window above displays the setpoint values in a bar graph format for the selected program. A color coded (key provided at the top of the window) bar graph allows you to easily determine the data type and set point values for each programmed Channel setpoint in a program. Use the scroll bars to see data that extends beyond range of window.

Status Bar

The status bar provides you with the status of the program loader, and Project Size, and how much memory you have left to use (Maximum bytes).

Create a Project

Make Connections

Connect the panel to your programming computer. Make any other device connections in accordance with the Touch PRLS Hardware Manual (MAN-TPRLS-001).

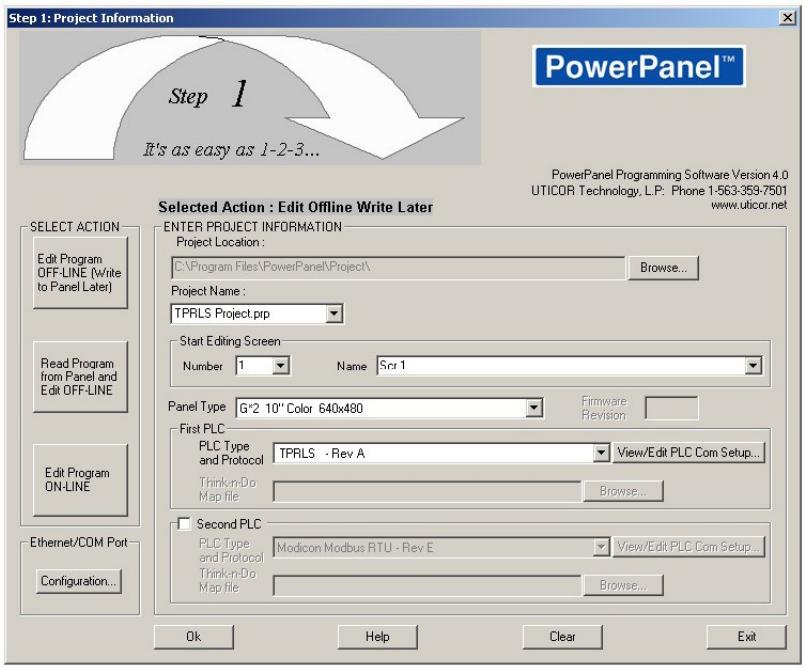
Install Programming Software

If you don't have PowerPanel Programming Software (4.0 or later) installed on your PC, do so now. Install Touch PRLS Programming Software (P/N ACC-TPRLS-EDIT) on your system. Once you have the PowerPanel and Touch PRLS Software loaded, click on their respective icons on your desktop to launch the programs.

Create an TPRLS Project in PowerPanel Programming Software

1. Open the PowerPanel Programming Software to create a TPRLS Project.

2. The following **Project Information** screen is the first to appear.



3. Enter a **Project Name** for your TPRLS Project. You can skip the **Start Editing Screen Number** and Name fields at this time and enter the information later.

   PLEASE NOTE: A sample project has been included with the Touch PRLS Programming Software. The project will be called Demo_TPRLS and is in the Projects folder. A lot of the work has been done for you in this demo program. You can modify it to use with your application or just use it as a learning tool.

4. Select the **Panel Type** of your Touch PRLS. You will choose the G*2 Model that is the same size as your Touch PRLS.

5. Under **First PLC** you will select the TPRLS driver by clicking on the down arrow to view the drop down list for **PLC Type and Protocol**. Select TPRLS - Rev A.

6. The TPRLS Communication Setup is done automatically, so you won't need to click on the **View/Edit PLC Com Setup...** button. (If you do, you will receive a message telling you that the software has already done this.)

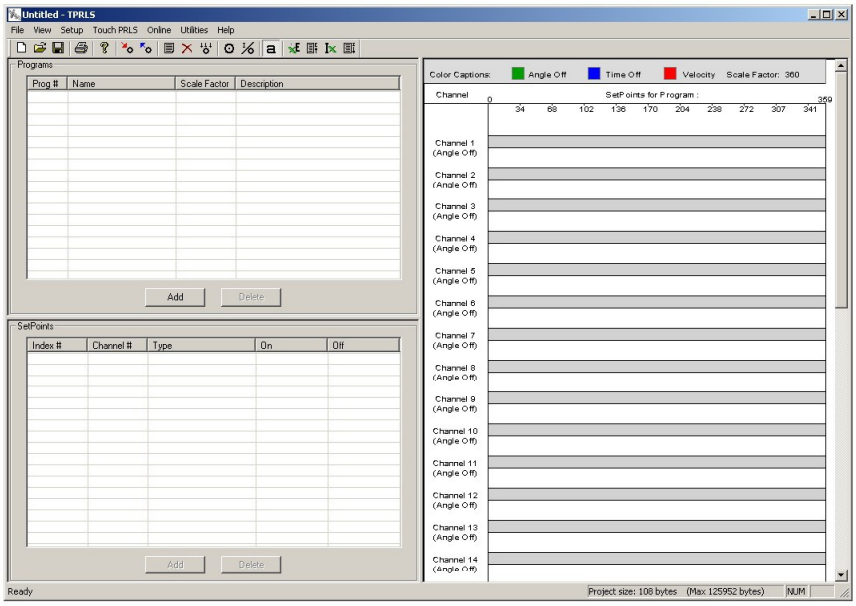
7. Next you may select the PLC you are using under **Second PLC**. Those PLC types and protocols that will not work with the TPRLS are not listed.

8. Click on **OK** to save the project. You may also click or **Clear** to begin again or **Exit** to quit. without saving the project.

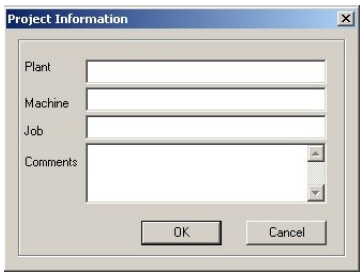
Create a TPRLS Project in Touch PRLS Programming Software

Now you are ready to begin configuring the TPRLS System Project.

1. Navigate to the PowerPanel Program folder that was create on your computer when you installed the software. Find the TPRLS.exe file. Double click on it to launch TPRLS Programming Software. The following Main Programming Screen will appear.



2. Begin by entering information about the project, click on the Main Menu item **Setup > Project Information**. The following screen will appear.



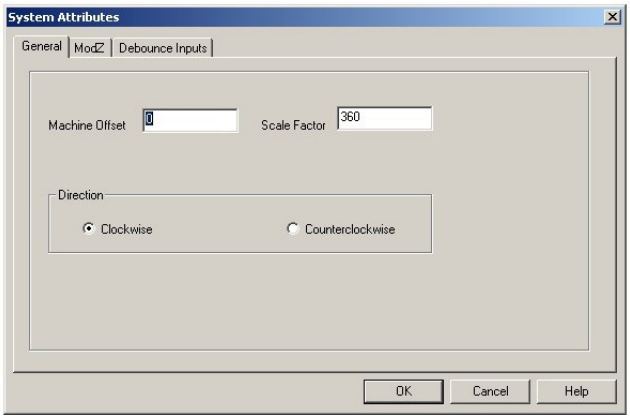
3. Enter the **Plant** name or other identification for the location of the project. You may enter a name of up to 32 characters.

4. Enter the **Machine** name or other identification for the particular device (resolver, encoder, limit switch) for which the project is being created. You may enter up to 32 characters in this field.

5. Enter the name of the **Job**. Enter a name for the job name and/or number that the device is to use, both for operation and editing. You may enter up to 31 characters in this field.

6. A field is provided for the programmer to enter **Comments** for reference by operators or notes for programmers who may make future edits to the project. You may enter up to 120 characters in this field.

7. Next enter the project's system attributes, click on the Main Menu Item **Setup > System Attributes**. The following screen will appear.



Important Note:

Please be aware that the Touch PRLS will not function if the position counts are descending. The resolver position must be ascending for it to function.

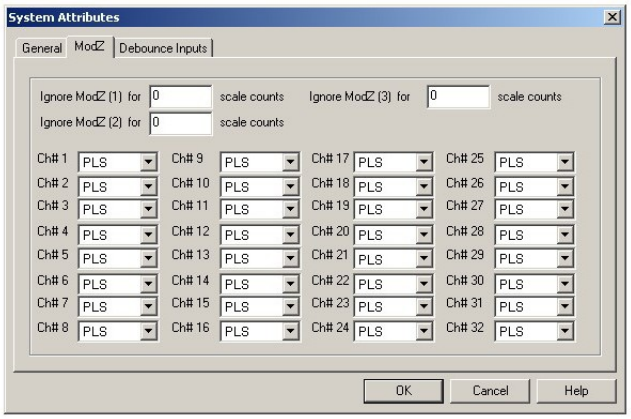
8. Under the **General** tab, enter the following resolver parameters:

   a. Enter the **Machine Offset**. This is the number of increments by which the indicated zero position will differ from the resolver's actual zero position. Enter a number between 0 and the selected scale factor (maximum).

   b. Enter the **Scale Factor.** Enter a number between 0 and 4096.

   c. Enter the **Direction** of the resolver. Select either **Clockwise** or **Counterclockwise.**

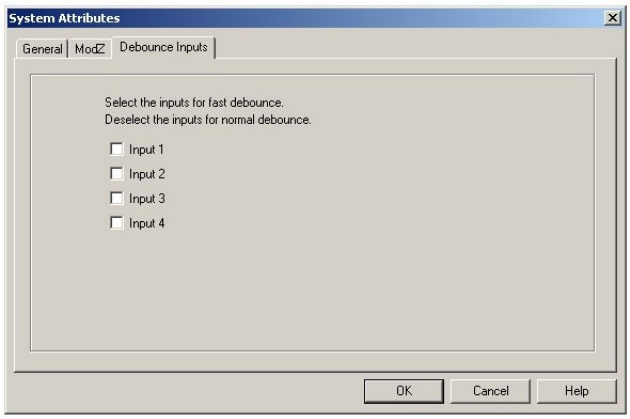
9. Under the **ModZ** tab, you will enter the Modification to Zero (ModZ), or dynamic zeroing, parameter. ModZ enables you to modify the zero reference point independent of the resolver's actual position.



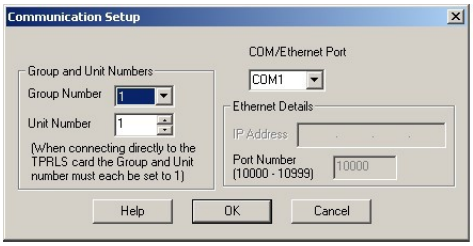
   a. The **Ignore ModZ** parameter is an angular zone in which the ModZ cycle may not be triggered. This zone begins when the ModZ cycle is originally triggered (angle = 0), and continues up to a preprogrammed angle. Once the ModZ cycle has progressed beyond this "ignore" zone, the ModZ cycle may be restarted by retriggering the ModZ Input. Enter a value between 0 and scale factor (maximum) **scale counts** for ModZ 1, 2, and 3.

   b. Select the **Channels** you want to define as ModZ. Select ModZ 1, ModZ 2, or ModZ 3. Leave as "None" those that you want to remain as a normal PLS Channel. Click on the down arrow to make your selections for Channel 1 through Channel 31. (Channel 32 is PLS only.)

10. Under the **Debounce Inputs** tab you will click in the box in front of **Input 1**, **Input 2**, **Input 3**, or **Input 4** to select them if you want fast debounce applied to that input.



11. Now you will set up communications. Click on **Setup > Communications Setup**. The following window will appear.



12. Select the **COM/Ethernet Port.**

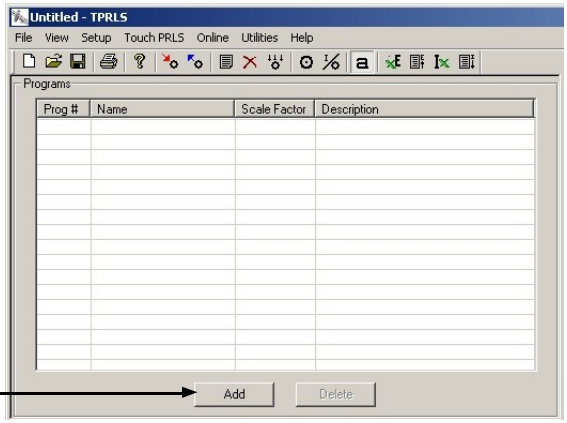
13. If you are connected to the **Ethernet**, enter the **IP Address** and **Port Number**.

14. Click **OK** when finished to save settings, or click **Cancel** to exit without saving.

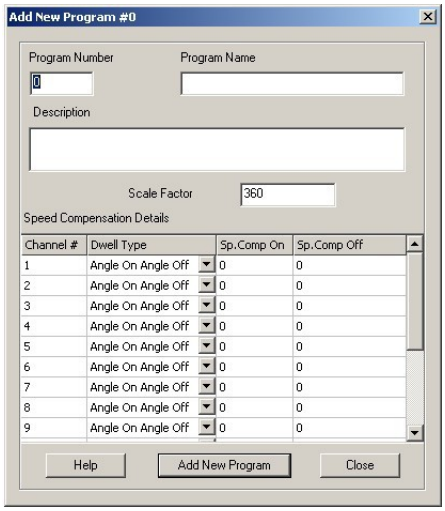
Create a Program in a TPRLS Project

You are now ready to begin creating a program within your TPRLS Project. The number of programs that can be written within one project is only limited by the available memory. For instance, a project with no speed compensation, a project name of three characters, and 32 channels with 1 set point per channel can contain 588 programs. To configure a new program click on the **Add** button as shown in the figure below.

Click here to configure a program



The **Add New Program #** window will appear.



1. Enter a **Program Number** and a **Program Name**. (You will not be allowed to duplicate a Program number or name.)

2. Enter a **Description** of the Program.

3. The **Scale Factor** that you have entered under **System Attributes** for the project will be displayed. The Scale Factor will be the same for all programs within a project. (It will be a value between 1 and 4096).

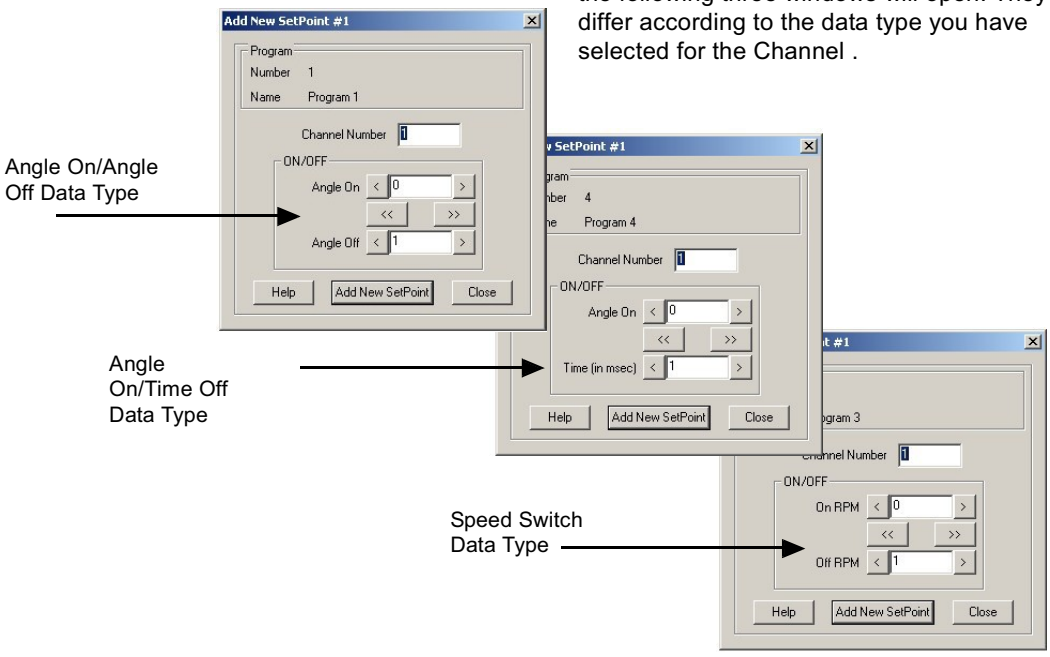
4. For Channel's 1 through 32 select the Data Type. Choose from **Angle On/Angle Off**, **Angle On/Time Off** (available only on Channels 1 through 8), or **Speed Switch** (available only on Channels 2 through 16.) You don't have to use each channel.

5. Next you will enter **Speed Compensation On** and **Speed Compensation Off** for Channels 1 through 16 that you program. (This is only available for Channels 1 through 16.) (See page 10 for explanation of Speed Compensation.)

6. Click on the **Add New Program** button when finished, or **Close** to quit

7. To add Set Points for a program, click on it to highlight in the top list and the Set Points list (bottom) will become available for edit or additions.

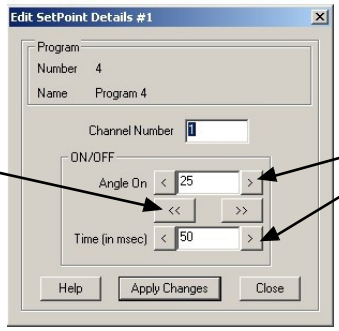
8. Click on the **Add** button at the bottom of the Set Points list. One of the following three windows will open. They differ according to the data type you have selected for the Channel .



9. You will receive the following error message if you try to add more than one setpoint per Channel that has an Angle On/Time Off or Speed Switch Data Type. Only one Set Point is allowed per Channel for those two data types.

10. If adding a setpoint, enter a **Channel Number**, and then enter the ON value (**Angle On** or **On RPM**) and the **Angle Off** or **Time Off (in msecs)**, or **OFF RPM**.

Click on one of these (<< or >>) buttons to increment or decrement BOTH the ON and OFF values by one

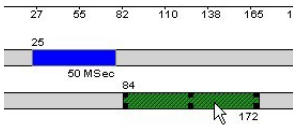


Click on the < or > buttons to increment or decrement the ON or OFF value by one

Please Note:

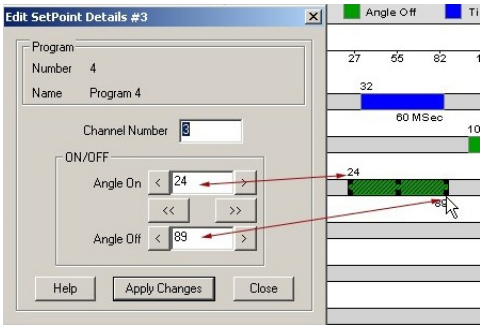
If the Angle On/Angle Off "ON" and "OFF" setpoints are equal, that Setpoint will not be executed by the TPRLS. It will treat the setpoint as if it did not exist. However, it will appear in the setpoint lists.

Click on the **<** or **>** arrow to increase or decrease the value by one increment at a time. Click on the **<<** or **>>** arrows between the two value entry fields to increase or decrease BOTH ON/OFF fields by one increment at a time.



You can also change the values by clicking on the color bar in the graph that represents it. Click and hold on the bar and drag it to the new value. Click and hold a corner of the bar to change the value in either direction (OFF value or ON value).

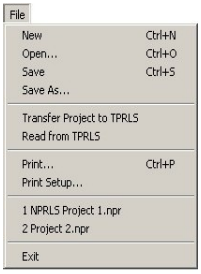
Moving the value on the graph will also change the value in the dialog box and vice versa.



11. To delete a set point from the list, click on it to highlight and then click on the delete button. (To delete two or more, press and hold the shift key while clicking on each set point row to highlight them. Click on the Delete button and all highlighted setpoints will be deleted.

12 You can delete programs within the programs list in the same manner.

REFERENCE



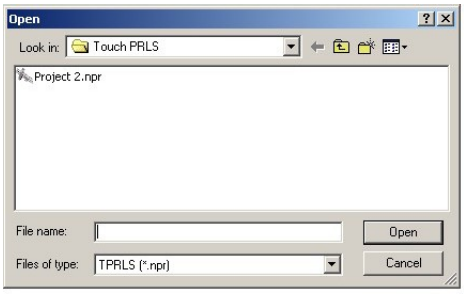
File Menu

New

Click on **File > New** if you want to close the current project and open a new one. You will be asked if you want to save the current project.

Open

To open an existing project or to create a new project while in a programming window, click on **File > Open**. The window shown below will appear. Choose from the available project files (*.npr). Click on **Open** to open the project, or **Cancel** to quit without opening.



Save

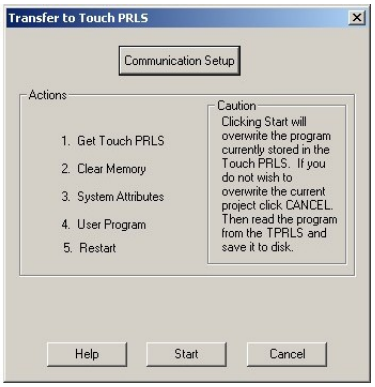
Save As...

Click on **File > Save** to save the current project. Project Attributes and setpoint data bases will all be saved. Click on **File> Save As...** to save the current project under another name.

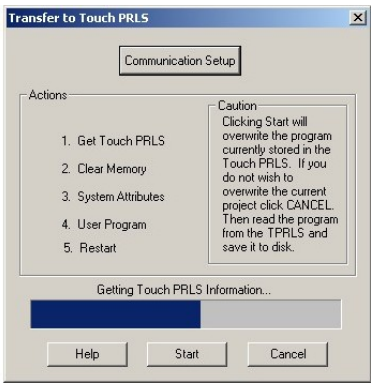
Transfer Project to TPRLS

This allows you to transfer the current (open) project to the TPRLS PowerPanel. Click on **Transfer Project to Touch PRLS** and the dialog box shown to the right will open. This dialog box provides information about transfer process and allows you to check and/or change communication parameters.

Press **Start** to begin the transfer or **Cancel** to abort.



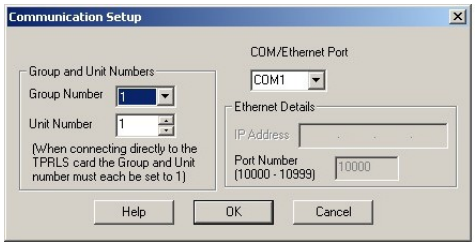
When the transfer is in process, a progress bar will indicate will indicate the transfer status. It may take a minute or two to complete the transfer. You will be notified when it is complete.



If you receive an error message, shown below, you will need to check your TPRLS to PC connections.

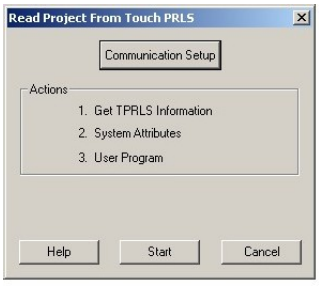
Communication Setup

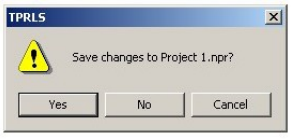
Click on the **Communication Setup** button. Click on the down arrow under **COM/Ethernet Port** to select the correct PC Port —**COM1**, **COM2**, **COM3**, or **COM4**. When connected directly to the TPRLS option card in the panel, you will need to set the Group Number and Unit Number to One. If you are connected to the Touch PRLS panel's COM port, enter the appropriate numbers for that panel. If you select Ethernet, the **Ethernet Details** dialog will become available. Enter the **IP Address** and **Port Number** for the Touch PRLS.



Read from Touch PRLS

If you are connected to a Touch PRLS and want to transfer a project from the unit to your TPRLS Programming Software for editing, click on **Read from TPRLS.**





If you have an open project, you will be asked if you want to save changes. Your current project will

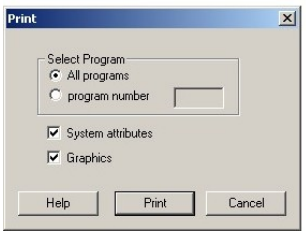
close and a new, untitled, project will open. The project you are reading from the TPRLS will be written to the new project. Be sure to name and save the project. Any changes you make to the project will not take effect until you write the edited project to your TPRLS.

Click on the **Start** button to start reading the project from the TPRLS. A progress bar will appear letting you know the status of the transfer.

When the program has been read from TPRLS, click **OK**. (If you receive an error message, click on the **Communication Setup** button and check that the PC Port, Group Number, and Unit Number match the settings of the TPRLS that you are trying to communicate with.)

Print

Click on **Print** to print the entire project (**All programs**), or select a **program number** from the project to print. You can also choose whether or not to print the **System Attributes** and the bar graph of the set points (**Graphics**). Click in the box in front of the items that you want to print to select them.



Print Setup

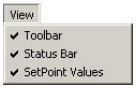
Choose or change your print settings here.

"Recent Project"

Here you will find listed the most recent projects opened for editing. Up to four projects may be listed. You can click on them in this list to open.

Exit

Click here to close all projects and exit the Touch PRLS Programming Software.



View Menu

Toolbar

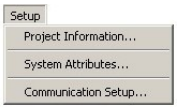
The toolbar provides shortcuts to some of the main menu functions and commands. The toolbar is visible by default. If you do not want the toolbar to appear on the main programming screen, click on it in the menu to remove the checkmark.

Status Bar

This is also selected by default. If you do not want the status bar display at the bottom of the main programming screen, click on it and remove the check mark.

SetPoint Values

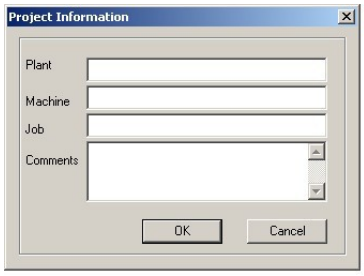
Setpoint values appear along the bar graphs on the right hand side of the screen. If you do not want the actual numerical values to appear , click on this menu item to remove the checkmark.



Setup Menu

Project Information

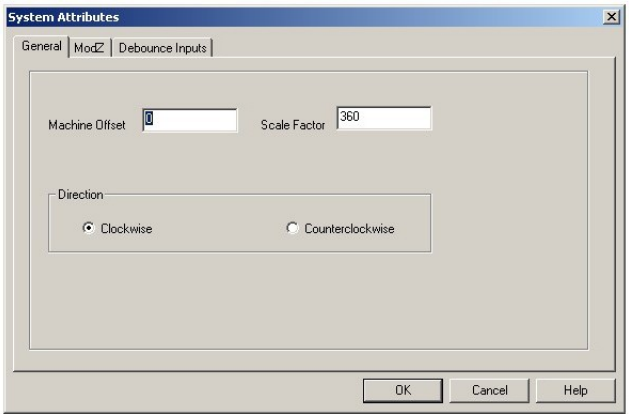
Click on Project Information and the window shown to the right will appear. You can then enter or edit information about the current project. Enter the location (**Plant**) where the program will be used. You may enter a name for the **Machine** and the **Job** for which the program applies. Also you may enter up to 200 characters in the **Comments** field.



System Attributes

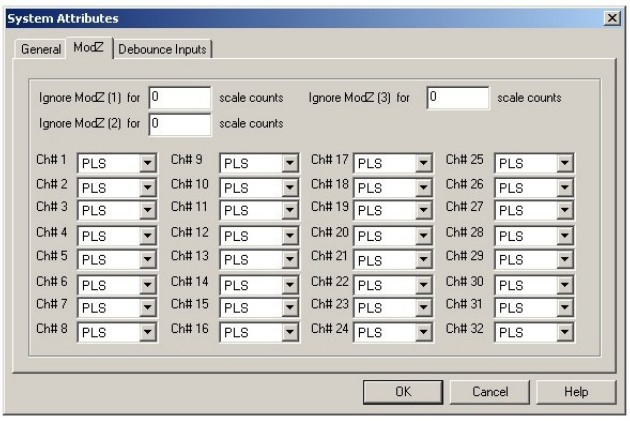
Click on **System Attributes** and the window shown below will appear. System Attributes allow you to program parameters common to all programs within a project and specific to the machine for which the project is created.

General



Under the **General** tab you will enter the **Machine Offset** and **Scale Factor** for the resolver-based machine that the project is being created for. Select **Clockwise** or **Counterclockwise** depending upon the direction that the resolver will revolve.

ModZ



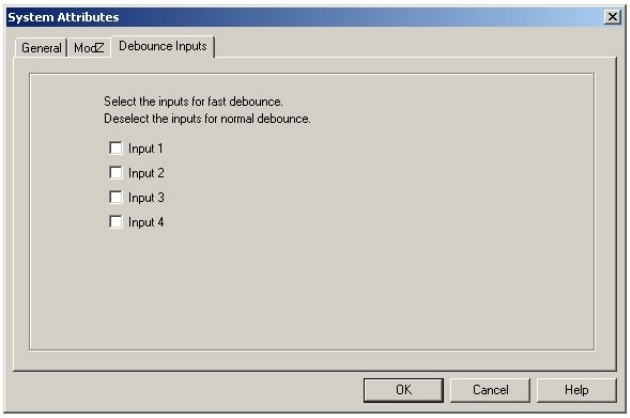
Under the **ModZ** tab you will enter the following parameters. **Modification to Zero** (ModZ) enables you to modify the zero reference point independent of the resolver's actual position.

First you will enter the number of **Scale Counts** (between 0 and 4096, depending on the scale factor) that you want **ModZ (1)** Input to be ignored for. This is also referred to as the Inhibit Zone. Repeat for **ModZ (2)** and **ModZ (3).**

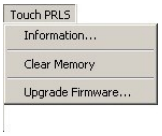
NOTE: Channels 1–31 can be MODZ or PLS. Channel 32 is PLS only.

For each channel (see note to the left) you will select the **ModZ(1)**, **ModZ(2**), **ModZ(3)** scale count inhibit (ignore) zone, or **PLS**. If you select **PLS**, the Channel functions as a programmable limit switch (PLS).

Debounce Inputs



Click on the **Debounce Inputs** tab to program Inputs 1 through 4 for fast or normal debounce. If you place a check mark in the box in front of **Input 1**, **Input 2**, **Input 3** (all ModZ) or **Input 4** (Program Enable) you will program them as fast debounce. If not selected the inputs will be read as "normal" debounce.



Touch PRLS Menu

Information

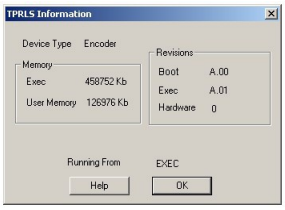
Click on this menu item when you are connected to a Touch PRLS and you will receive information about the TPRLS that you are connected to. Information will include:

Device Type: Encoder

Memory

Exec: Amount of memory available to hold the boot and exec firmware.

User Memory: This is the total RAM memory available for use in the TPRLS.



Revision

Boot: This is the revision of internal panel firmware used to power-up (boot) the panel.

Exec: This is also internal panel firmware, used to display panel information and allow panel adjustments to the internal clock, contrast adjustment, and testing of the panel touch cells and display.

Hardware: (0 = first revision) This is the revision of the Touch PRLS.

Clear Memory

Click here to Clear the current user program from the Flash Memory in the TPRLS.

Upgrade Firmware (SEE CAUTION, BELOW)

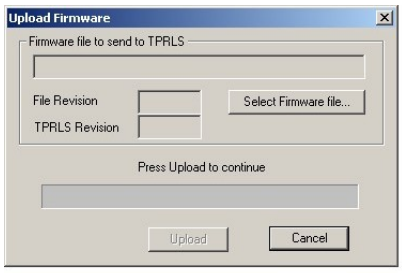
There may be occasional upgrades to the TPRLS internal software, also referred to as the Exec or Firmware. ***(Check the www.uticor.net website periodically for information about software and firmware upgrades.)***

Caution: Upgrading Firmware will clear the current user program in the TPRLS. You must save the user program to disk and then transfer it back to the TPRLS after the upgrade.

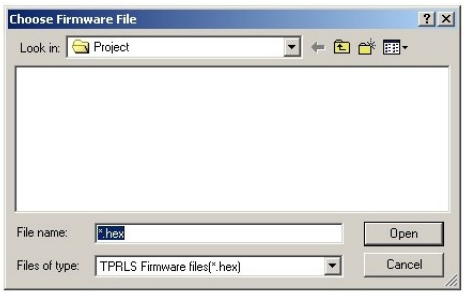
To Upgrade Firmware:

1. Back up the user program currently stored in the TPRLS and save to disk.

2. Click on **Upgrade Firmware**, the window below will appear.



3. Click on **Select Firmware file** button and navigate to the new firmware file (.hex file). Firmware is generally stored in the TPRLS Program file, in the “Project” folder. Click on the .hex file that you want to import and click on the **Open** button.



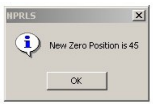
4. The dialog box will show the **File Revision** number of the firmware and the **TPRLS Revision** of the Firmware. Check these revision numbers. If they are the same (no upgrade is needed) you may click on the **Cancel** button to exit.

5. Select the appropriate COM port under **Ethernet/COM Port** and click on the **OK** button to begin the upgrade. A status bar will let you know when the upgrade is complete.

Online Menu

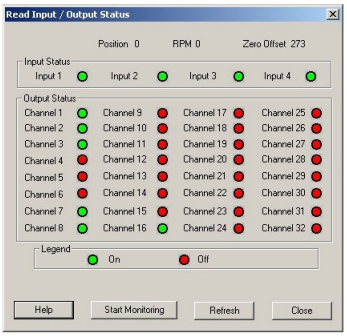
AutoZero Machine Offset

Click on **AutoZero Machine Offse**t if you want the program loader to read the current offset online and set the machine resolver to this value. You will receive the message to the right that will show you what the offset value is.



Read Input/Output Status

Click on **Read Input/Output Status** to visually monitor the input and output status of the TPRLS. The following dialog will appear.

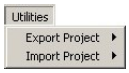


Click on the **Start Monitoring** button to begin reading the status of the TPRLS inputs and outputs.

At the top of the window is shown the **Position**, **RPM,** and **Zero Offset** of the machine resolver. Below that the **Input Status** for **Input 1, Input 2, Input 3,** and **Input 4** is shown. A green indicator next to the input shows that the input is ON. A red indicator shows that it is OFF.

The **Output Status** for each **Channel** (1 through 32) is also shown by either a green (ON) or a red (OFF) indicator.

Click on the **Refresh** button to get a new read of the status. Click on **Close** to end the monitoring.



Utilities Menu

Export Project

Click here of you want to **Export Project** data. Open the **Project**, then click on **Export Project> To Excel**, or **To CSV Format**. Please be aware that the **System Attributes** will not be exported, only the Program data.

Click on the **Export Project** menu item to write the project data (except system attributes) from your current (open) project to an Excel file or a CSV file.

To Excel

Click on the **To Excel** menu item to write the programs from your current (selected) program to a Microsoft Excel® file. The TPRLS Programming Software will open Microsoft Excel and write the project to an Excel book as shown below. Click on File >Save As in the Excel program and enter a name for the file. Click on the Save button to save the file under the name you have entered. Close Excel to return to TPRLS Programming Software.

Microsoft Excel - Book1

File Edit View Insert Format Tools Data Window Help

A1 = PROGRAM_HEADER_INFO

	A	B	C	D	E
1	PROGRAM_HEADER_INFO	Program #	1		
2	PROGRAM_HEADER_INFO	Program Name	Program 1		
3	PROGRAM_HEADER_INFO	Program Description	This is program 1		
4	PROGRAM_HEADER_INFO	Scale Factor	360		
5	PROGRAM_HEADER_INFO	Channel #	Dwell Type	Speed Comp On	Speed Comp Off
6	PROGRAM_SPEEDCOMP_INFO	1	Angle On Angle Off	24	30
7	PROGRAM_SPEEDCOMP_INFO	2	Angle On Angle Off	0	0
8	PROGRAM_SPEEDCOMP_INFO	3	Angle On Angle Off	0	0
9	PROGRAM_SPEEDCOMP_INFO	4	Angle On Angle Off	0	0
10	PROGRAM_SPEEDCOMP_INFO	5	Angle On Angle Off	0	0
11	PROGRAM_SPEEDCOMP_INFO	6	Angle On Angle Off	0	0
12	PROGRAM_SPEEDCOMP_INFO	7	Angle On Angle Off	0	0
13	PROGRAM_SPEEDCOMP_INFO	8	Angle On Angle Off	0	0
14	PROGRAM_SPEEDCOMP_INFO	9	Angle On Angle Off	0	0
15	PROGRAM_SPEEDCOMP_INFO	10	Angle On Angle Off	0	0
16	PROGRAM_SPEEDCOMP_INFO	11	Angle On Angle Off	0	0
17	PROGRAM_SPEEDCOMP_INFO	12	Angle On Angle Off	0	0
18	PROGRAM_SPEEDCOMP_INFO	13	Angle On Angle Off	0	0
19	PROGRAM_SPEEDCOMP_INFO	14	Angle On Angle Off	0	0
20	PROGRAM_SPEEDCOMP_INFO	15	Angle On Angle Off	0	0
21	PROGRAM_SPEEDCOMP_INFO	16	Angle On Angle Off	0	0
22	END OF SETPOINTS FOR	1	Program 1		
23	PROGRAM_HEADER_INFO	Program #	2		
24	PROGRAM_HEADER_INFO	Program Name	Program 2		
25	PROGRAM_HEADER_INFO	Program Description	This is program 2		
26	PROGRAM_HEADER_INFO	Scale Factor	360		
27	PROGRAM_HEADER_INFO	Channel #	Dwell Type	Speed Comp On	Speed Comp Off
28	PROGRAM_SPEEDCOMP_INFO	1	Angle On Angle Off	0	45
29	PROGRAM_SPEEDCOMP_INFO	2	Angle On Time Off	25	30
30	PROGRAM_SPEEDCOMP_INFO	3	Speed Swi		

A message will appear letting you know whether or not the write was successful and the number of setpoints that were written to the file.

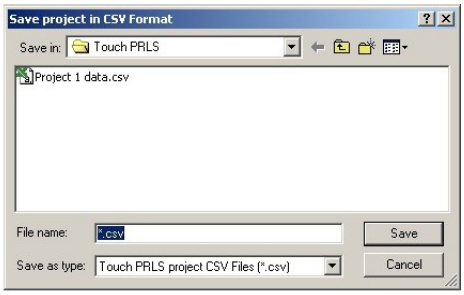
To CSV Format

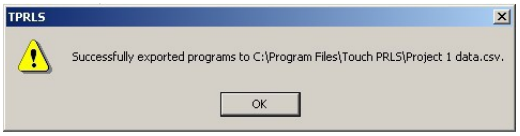
The CSV (Comma delimited or Comma-separated values) file format saves only the text and values as they are displayed in cells of the project. All rows and all characters in each cell are saved. Columns of data are separated by commas, and each row of data ends in a carriage return. If a cell contains a comma, the cell contents are enclosed in double quotation marks.

Example of what a CSV file looks like opened in Notepad:

```
PROGRAM_HEADER_INFO,Program #,1
PROGRAM_HEADER_INFO,Program Name,Program 1
PROGRAM_HEADER_INFO,Program Description,This is program 1
PROGRAM_HEADER_INFO,Scale Factor,360
PROGRAM_HEADER_INFO,Channel #,Dwell Type,Speed Comp On,Speed Comp Off
PROGRAM_SPEEDCOMP_INFO,1,Angle On Angle Off,24,30
PROGRAM_SPEEDCOMP_INFO,2,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,3,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,4,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,5,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,6,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,7,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,8,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,9,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,10,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,11,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,12,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,13,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,14,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,15,Angle On Angle Off,0,0
PROGRAM_SPEEDCOMP_INFO,16,Angle On Angle Off,0,0
END OF SETPOINTS FOR,1,Program 1
PROGRAM_HEADER_INFO,Program #,2
PROGRAM_HEADER_INFO,Program Name,Program 2
PROGRAM_HEADER_INFO,Program Description,This is program 2
PROGRAM_HEADER_INFO,Scale Factor,360
PROGRAM_HEADER_INFO,Channel #,Dwell Type,Speed Comp On,Speed Comp Off
PROGRAM_SPEEDCOMP_INFO,1,Angle On Angle Off,0,45
PROGRAM_SPEEDCOMP_INFO,2,Angle On Time Off,25,30
PROGRAM_SPEEDCOMP_INFO,3,Speed Switch,25,125
PROGRAM_SPEEDCOMP_INFO,4,Angle On Angle Off,0,0
```

Click on **To CSV Format** if you want to save the project data as a .CSV file. The window shown to the right will appear allowing you to name the file and navigate to the directory and folder where you want to save it.



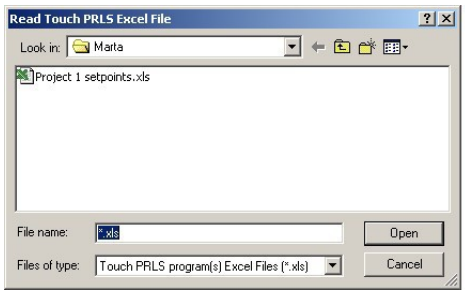


Import Project

Click on one Program in your project's program list to highlight it, and then click on the **Import Setpoints** menu item to import Messages into your current (open) project from a Microsoft Excel® (.xls) file or a CSV (Comma delimited or Comma-separated values) file format. ***Please be aware that only the Program data can be imported, system attributes CANNOT be imported, you will have to enter them under the Setup menu.***

From Excel

1. Click on the **Import Project > From Excel** menu item to select the Microsoft Excel® file where the Excel file resides. The following **Read Touch PRLS Excel File** window will appear. Navigate to the file you want, click on it to highlight it and then click on the **Open** button.



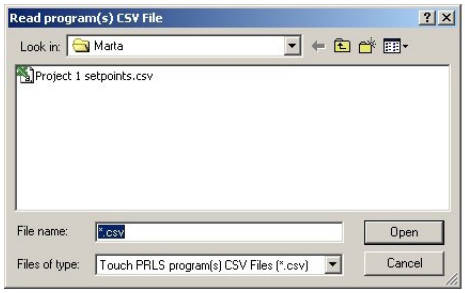
2. The file will be written to a new project. If you have a project open, that project will automatically close when you import the Excel file. This is to prevent you from overwriting an existing project unintentionally. Make sure to give your project a name and save it right away.

3. Set the Project Attributes for the imported project. Click on Setup > Project Attributes.

4. The imported project programs will now be listed in the upper left list on the main programming screen. To view the setpoints, click on a program in this list and they will be displayed in the Setpoint List on the bottom left.

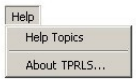
From CSV Format

1. Click on **Import Setpoints > From CSV Format** to import setpoints from a .CSV file. The following window will appear. Navigate to the folder where the file is stored.



2. Click on the .csv file you want to import to highlight it and then click on the **Open** button. The comma separated values in the .csv file will be imported into a new project. If you have a project open, it will automatically close when you import the data file. This is to ensure that you don't inadvertently overwrite an existing file. Be sure to name and save the imported project right away.

3. Enter the System Attributes for the imported project. Click on Setup > System Attributes and save the project.



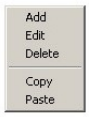
Help Menu

Help Topics

Click here to access the online Help Topics for the Touch PRLS.

About TPRLS

Click on About TPRLS to access the following window. It provides you with information about the current version of the software. To help us answer your questions effectively, please make sure that you know the current version of the software before calling Technical Support.



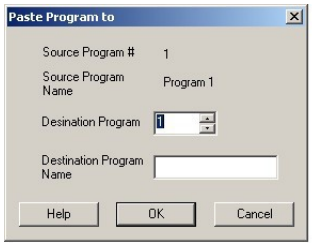
Right Click Menu

The Right Click Edit Menu will appear when you click your right mouse button while in the list of programs or list of channel setpoints in the Main Programming Screen.

From this popup menu you can:

- **Add** a new program or setpoint (brings up the Add New Program, or Add New Setpoint window depending upon whether you have selected a program in the Program List or a Setpoint in the Setpoint list)
- **Edit** a program or setpoint (brings up the Edit Program or Edit Setpont window)
- **Delete** one or more programs or setpoints
- **Copy** one or more programs or setpoints
- **Paste** copied programs or setpoints to new locations in the project or program. You will select the Program or Channel Setpoints in either list by clicking on one or more to highlight. See below.

Paste Program
If you want to duplicate a program or programs in the project, perform the following steps:



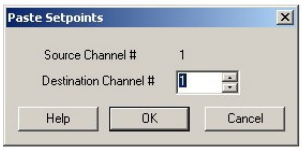
1. Click on the program in the list to highlight it.
2. Right click your mouse anywhere in the main programming screen. The right click edit menu will appear.
3. Click on **Copy** in the menu.
4. Click on **Paste** in the menu and the paste program window will appear.
5. The **Source Program** number and the **Source Program Name** will be displayed at the top of the dialog box.
6. Select the **Destination Program** number and the **Destination Program Name** of the new "pasted" program. Please note that you will not be allowed to paste over an existing program. You must select an unused program number and name.
7. Click **OK** when finished.

Paste Setpoints
If you want to copy programmed setpoints from one channel to another channel, perform the following steps:

1. Click on the **Source Channel** or Channels that you want to copy in the Setpoint list in the bottom left of your main programming screen. (Remember that you only Channels 1 through 8 can be programmed as Angle On/Time Off setpoints.)

2. Right click your mouse and then click on **Copy** in the popup menu.

3. Now right click again and click on **Paste** in the popup menu. The following window will appear.



4. Choose the **Destination Channel** for the first **Source Channel** you have selected. Click **OK**. The **Paste Setpoints** window will continue to appear until all Source Channel setpoints that you have copied have been pasted to their Destination Channels.

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Touch PRLS Registers — Types and Sets

CHANNEL_TO_FINETUNE
This allows you to specify the output channel that you want to finetune.

SETPOINTS_TO_FINETUNE
This allows you to specify the setpoint within the channel to finetune.
Putting a 0 in this register will finetune all setpoints in that channel.

FINETUNE
When this register contains a value of 1, the ON setpoint is changed.
When this register contains a value of 2, the OFF setpoint is changed.
When this register contains a value of 3, the ON & OFF setpoints are changed.

FINETUNE_INCREMENT
Set this bit to increment the selected setpoint(s).

FINETUNE_DECREMENT
Set this bit to decrement the selected setpoint(s).

MODZ_INPNUM_FOR_CHANNEL_1 (1-32)
Assign MODZ input (1, 2 or 3) to this channel.

CHANNEL_1_TYPE (1-32)
When this register contains a value of 0, this channel is Angle ON Angle OFF.
When this register contains a value of 1, this channel is Velocity.
When this register contains a value of 2, this channel is Angle ON Time OFF.
When this register contains a value of 3, all setpoints in this channel will be cleared.

CH1_ON_SPEEDCOMP (1-16)
This value is the on time speed compensation in Msec (-4095 to 4095) for this channel.

CH16_OFF_SPEEDCOMP (1-16)
This value is the off time speed compensation in Msec (-4095 to 4095) for this channel.

MODZ_INP1_IGNORE_COUNTS (1-3)
This value is the number of counts the MODZ input will wait until it can be re-triggered.

PROGRAM_MODIFIED
Bit 0 of this register is set if a setpoint or channel type has been modified.

UPDATE_SETPOINTS
Setting this discrete to a 1 will update the user program with the current setpoint data (after updating set this value to 0).

Touch PRLS Registers — Types and Sets (Continued)

CH_1_SP_1_ON
This register contains the ON value for Channel 1 Setpoint 1.

CH_32_SP_4_OFF
This register contains the off value for Channel 32 Setpoint 4.

Register Details

TAG NAME	REGISTER #	TAG DATA TYPE	PLC RW TYPE	Following are the registers definitions
POSITION	R1	UNSIGNED_INT_16	READ_ONLY	Position (value is in scale counts not absolute) (UNSIGNED_INT_32s)
RPM	R2	UNSIGNED_INT_16	READ_ONLY	RPM
OUTPUTS_1_16	R3	UNSIGNED_INT_16	READ_WRITE	Value of hard outputs 1 to 16
OUTPUTS_17_32	R4	UNSIGNED_INT_16	READ_WRITE	Value of soft outputs 17 to 32
STATUS	R5	UNSIGNED_INT_16	READ_ONLY	Status of NPRLS (error codes) see manual
ZERO_POSITION	R6	DISCRETE	READ_ONLY	B0 = 1 if position is at zero
PROGRAM_NUMBER	R7	UNSIGNED_INT_16	READ_WRITE	Edit program number
PROGRAM_NAME	R8	ASCII_STRING	READ_WRITE	Program name (32 characters, 16 registers)
CHANNEL_TO_FINETUNE	R24	UNSIGNED_INT_16	READ_WRITE	Channel number to fine tune
SETPOINT_TO_FINETUNE	R25	UNSIGNED_INT_16	READ_WRITE	Setpoint of selected channel to finetune. 0 = finetune all setpoints of selected channel.
FINETUNE	R26	UNSIGNED_INT_16	READ_WRITE	BIT 0 = 1 change ON ; BIT 1 = 1 change OFF
FINETUNE_INCREMENT	R27	DISCRETE	READ_WRITE	When register is ON do finetune increment of mode specified in FINETUNE register
FINETUNE_DECREMENT	R28	DISCRETE	READ_WRITE	When register is ON do finetune decrement of mode specified in FINETUNE register
SCALING	R29	UNSIGNED_INT_16	READ_WRITE	Scaling units per revolution
MACHINE_ZERO	R30	UNSIGNED_INT_16	READ_WRITE	Read Position (scale) of machine.Write position (MSB needs to be 1 to set machine zero
ZERO_MACHINE	R31	DISCRETE	READ_WRITE	B0 = 1 take current position as machine zero
DIRECTION_CONTROL	R32	UNSIGNED_INT_16	READ_WRITE	MODE B0=0 Increasing position with Clockwize rotation as viewed from shaft side,B0=1 Increasing Counter Clockwise
MODZ_INPNUM_FOR_CHANNEL_1	R33	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 1
MODZ_INPNUM_FOR_CHANNEL_2	R34	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 2
MODZ_INPNUM_FOR_CHANNEL_3	R35	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 3
MODZ_INPNUM_FOR_CHANNEL_4	R36	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 4
MODZ_INPNUM_FOR_CHANNEL_5	R37	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 5
MODZ_INPNUM_FOR_CHANNEL_6	R38	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 6
MODZ_INPNUM_FOR_CHANNEL_7	R39	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 7
MODZ_INPNUM_FOR_CHANNEL_8	R40	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 8
MODZ_INPNUM_FOR_CHANNEL_9	R41	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 9
MODZ_INPNUM_FOR_CHANNEL_10	R42	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 10
MODZ_INPNUM_FOR_CHANNEL_11	R43	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 11
MODZ_INPNUM_FOR_CHANNEL_12	R44	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 12
MODZ_INPNUM_FOR_CHANNEL_13	R45	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 13
MODZ_INPNUM_FOR_CHANNEL_14	R46	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 14
MODZ_INPNUM_FOR_CHANNEL_15	R47	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 15
MODZ_INPNUM_FOR_CHANNEL_16	R48	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 16
MODZ_INPNUM_FOR_CHANNEL_17	R49	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 17
MODZ_INPNUM_FOR_CHANNEL_18	R50	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 18
MODZ_INPNUM_FOR_CHANNEL_19	R51	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 19
MODZ_INPNUM_FOR_CHANNEL_20	R52	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 20
MODZ_INPNUM_FOR_CHANNEL_21	R53	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 21
MODZ_INPNUM_FOR_CHANNEL_22	R54	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 22
MODZ_INPNUM_FOR_CHANNEL_23	R55	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 23
MODZ_INPNUM_FOR_CHANNEL_24	R56	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 24
MODZ_INPNUM_FOR_CHANNEL_25	R57	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 25
MODZ_INPNUM_FOR_CHANNEL_26	R58	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 26
MODZ_INPNUM_FOR_CHANNEL_27	R59	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 27
MODZ_INPNUM_FOR_CHANNEL_28	R60	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 28
MODZ_INPNUM_FOR_CHANNEL_29	R61	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 29

TAG NAME	REGISTER #	TAG DATA TYPE	PLC RW TYPE	Following are the registers definitions
MODZ_INPNUM_FOR_CHANNEL_30	R62	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 30
MODZ_INPNUM_FOR_CHANNEL_31	R63	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 31
MODZ_INPNUM_FOR_CHANNEL_32	R64	UNSIGNED_INT_16	READ_WRITE	MODZ input to be used by a channel 32
CHANNEL_1_TYPE	R65	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_2_TYPE	R66	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_3_TYPE	R67	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_4_TYPE	R68	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_5_TYPE	R69	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_6_TYPE	R70	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_7_TYPE	R71	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_8_TYPE	R72	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_9_TYPE	R73	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_10_TYPE	R74	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_11_TYPE	R75	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_12_TYPE	R76	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_13_TYPE	R77	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_14_TYPE	R78	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_15_TYPE	R79	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_16_TYPE	R80	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_17_TYPE	R81	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_18_TYPE	R82	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_19_TYPE	R83	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_20_TYPE	R84	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_21_TYPE	R85	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_22_TYPE	R86	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL

TAG NAME	REGISTER #	TAG DATA TYPE	PLC RW TYPE	Following are the registers definitions
CHANNEL_23_TYPE	R87	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_24_TYPE	R88	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_25_TYPE	R89	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_26_TYPE	R90	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_27_TYPE	R91	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_28_TYPE	R92	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_29_TYPE	R93	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_30_TYPE	R94	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_31_TYPE	R95	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
CHANNEL_32_TYPE	R96	UNSIGNED_INT_16	READ_WRITE	TYPE of channel. 0 = Angle ON,OFF ; 1 = VELOCITY ; 2 = ANGLE ON TIME OFF ; 3 will CLEAR THE SETPOINTS OF THIS CHANNEL
MODZ_INP1_IGNORE_COUNTS	R97	UNSIGNED_INT_16	READ_WRITE	Ignore MODZ input 1 for this many counts
MODZ_INP2_IGNORE_COUNTS	R98	UNSIGNED_INT_16	READ_WRITE	Ignore MODZ input 2 for this many counts
MODZ_INP3_IGNORE_COUNTS	R99	UNSIGNED_INT_16	READ_WRITE	Ignore MODZ input 3 for this many counts
CH1_ON_SPEEDCOMP	R100	SIGNED_INT_16	READ_WRITE	ON Speed comp for channel 1
CH2_ON_SPEEDCOMP	R101	SIGNED_INT_17	READ_WRITE	ON Speed comp for channel 2
CH3_ON_SPEEDCOMP	R102	SIGNED_INT_18	READ_WRITE	ON Speed comp for channel 3
CH4_ON_SPEEDCOMP	R103	SIGNED_INT_19	READ_WRITE	ON Speed comp for channel 4
CH5_ON_SPEEDCOMP	R104	SIGNED_INT_20	READ_WRITE	ON Speed comp for channel 5
CH6_ON_SPEEDCOMP	R105	SIGNED_INT_21	READ_WRITE	ON Speed comp for channel 6
CH7_ON_SPEEDCOMP	R106	SIGNED_INT_22	READ_WRITE	ON Speed comp for channel 7
CH8_ON_SPEEDCOMP	R107	SIGNED_INT_23	READ_WRITE	ON Speed comp for channel 8
CH9_ON_SPEEDCOMP	R108	SIGNED_INT_24	READ_WRITE	ON Speed comp for channel 9
CH10_ON_SPEEDCOMP	R109	SIGNED_INT_25	READ_WRITE	ON Speed comp for channel 10
CH11_ON_SPEEDCOMP	R110	SIGNED_INT_26	READ_WRITE	ON Speed comp for channel 11
CH12_ON_SPEEDCOMP	R111	SIGNED_INT_27	READ_WRITE	ON Speed comp for channel 12
CH13_ON_SPEEDCOMP	R112	SIGNED_INT_28	READ_WRITE	ON Speed comp for channel 13
CH14_ON_SPEEDCOMP	R113	SIGNED_INT_29	READ_WRITE	ON Speed comp for channel 14
CH15_ON_SPEEDCOMP	R114	SIGNED_INT_30	READ_WRITE	ON Speed comp for channel 15
CH16_ON_SPEEDCOMP	R115	SIGNED_INT_31	READ_WRITE	ON Speed comp for channel 16
CH1_OFF_SPEEDCOMP	R116	SIGNED_INT_32	READ_WRITE	OFF Speed comp for channel 1
CH2_OFF_SPEEDCOMP	R117	SIGNED_INT_33	READ_WRITE	OFF Speed comp for channel 2
CH3_OFF_SPEEDCOMP	R118	SIGNED_INT_34	READ_WRITE	OFF Speed comp for channel 3
CH4_OFF_SPEEDCOMP	R119	SIGNED_INT_35	READ_WRITE	OFF Speed comp for channel 4
CH5_OFF_SPEEDCOMP	R120	SIGNED_INT_36	READ_WRITE	OFF Speed comp for channel 5
CH6_OFF_SPEEDCOMP	R121	SIGNED_INT_37	READ_WRITE	OFF Speed comp for channel 6
CH7_OFF_SPEEDCOMP	R122	SIGNED_INT_38	READ_WRITE	OFF Speed comp for channel 7
CH8_OFF_SPEEDCOMP	R123	SIGNED_INT_39	READ_WRITE	OFF Speed comp for channel 8
CH9_OFF_SPEEDCOMP	R124	SIGNED_INT_40	READ_WRITE	OFF Speed comp for channel 9

TAG NAME	REGISTER #	TAG DATA TYPE	PLC RW TYPE	Following are the registers definitions
CH10_OFF_SPEEDCOMP	R125	SIGNED_INT_41	READ_WRITE	OFF Speed comp for channel 10
CH11_OFF_SPEEDCOMP	R126	SIGNED_INT_42	READ_WRITE	OFF Speed comp for channel 11
CH12_OFF_SPEEDCOMP	R127	SIGNED_INT_43	READ_WRITE	OFF Speed comp for channel 12
CH13_OFF_SPEEDCOMP	R128	SIGNED_INT_44	READ_WRITE	OFF Speed comp for channel 13
CH14_OFF_SPEEDCOMP	R129	SIGNED_INT_45	READ_WRITE	OFF Speed comp for channel 14
CH15_OFF_SPEEDCOMP	R130	SIGNED_INT_46	READ_WRITE	OFF Speed comp for channel 15
CH16_OFF_SPEEDCOMP	R131	SIGNED_INT_47	READ_WRITE	OFF Speed comp for channel 16
UPDATE_SETPOINTS	R132	DISCRETE	READ_WRITE	When non-zero will update user program with current setpoint data. After updating zero this value.
CLEAR_ERRORS	R133	DISCRETE	READ_WRITE	Set to clear error
PROGRAM_MODIFIED	R134	UNSIGNED_INT_16	READ_ONLY	B0 is set if a setpoint or channel type has been modified.
STATUS_BITS	R135	UNSIGNED_INT_16	READ_ONLY	B0 - B3 inputs ; B4 - B15 undefined
ERROR_MESSAGE	R136	ASCII_STRING	READ_ONLY	Error message as a string. Maximum of 39 characters
WATCHDOG_REGISTER	R156	UNSIGNED_INT_16	READ_ONLY	Register will change every 10 Msec
MODZ_POSITION_1	R157	UNSIGNED_INT_16	READ_ONLY	Position for MODZ input number 1
MODZ_POSITION_2	R158	UNSIGNED_INT_16	READ_ONLY	Position for MODZ input number 2
MODZ_POSITION_3	R159	UNSIGNED_INT_16	READ_ONLY	Position for MODZ input number 3
REVISION_NPRLS_FIRMWARE	R160	ASCII_STRING	READ_ONLY	String of the revision of the NPRLS firmware
NOT USED	R165	UNSIGNED_INT_16	READ_WRITE	Do Not Use
NOT USED	R166	UNSIGNED_INT_16	READ_WRITE	Do Not Use
CHANNEL_1_SP_1_ON	R167	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_1_OFF	R168	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_2_ON	R169	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_2_OFF	R170	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_3_ON	R171	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_3_OFF	R172	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_4_ON	R173	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_4_OFF	R174	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_5_ON	R175	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_5_OFF	R176	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_6_ON	R177	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_6_OFF	R178	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_7_ON	R179	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_7_OFF	R180	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_8_ON	R181	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_8_OFF	R182	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_9_ON	R183	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_9_OFF	R184	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_10_ON	R185	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_10_OFF	R186	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_11_ON	R187	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_11_OFF	R188	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_12_ON	R189	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_12_OFF	R190	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_13_ON	R191	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_13_OFF	R192	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_14_ON	R193	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_14_OFF	R194	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint

TAG NAME	REGISTER #	TAG DATA TYPE	PLC RW TYPE	Following are the registers definitions
CHANNEL_1_SP_15_ON	R195	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_15_OFF	R196	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_16_ON	R197	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_16_OFF	R198	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_17_ON	R199	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_17_OFF	R200	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_18_ON	R201	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_18_OFF	R202	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_19_ON	R203	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_19_OFF	R204	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_20_ON	R205	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_20_OFF	R206	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_21_ON	R207	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_21_OFF	R208	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_22_ON	R209	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_22_OFF	R210	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_23_ON	R211	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_23_OFF	R212	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_24_ON	R213	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_24_OFF	R214	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_25_ON	R215	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_25_OFF	R216	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_26_ON	R217	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_26_OFF	R218	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_27_ON	R219	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_27_OFF	R220	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_28_ON	R221	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_28_OFF	R222	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_29_ON	R223	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_29_OFF	R224	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_30_ON	R225	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_30_OFF	R226	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_31_ON	R227	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_31_OFF	R228	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_1_SP_32_ON	R229	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_1_SP_32_OFF	R230	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_2_SP_1_ON	R231	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_2_SP_1_OFF	R232	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_2_SP_2_ON	R233	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_2_SP_2_OFF	R234	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_2_SP_3_ON	R235	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_2_SP_3_OFF	R236	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_2_SP_4_ON	R237	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_2_SP_4_OFF	R238	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_3_SP_1_ON	R239	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_3_SP_1_OFF	R240	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_3_SP_2_ON	R241	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_3_SP_2_OFF	R242	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint

TAG NAME	REGISTER #	TAG DATA TYPE	PLC RW TYPE	Following are the registers definitions
CHANNEL_3_SP_3_ON	R243	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_3_SP_3_OFF	R244	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_3_SP_4_ON	R245	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_3_SP_4_OFF	R246	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_4_SP_1_ON	R247	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_4_SP_1_OFF	R248	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_4_SP_2_ON	R249	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_4_SP_2_OFF	R250	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_4_SP_3_ON	R251	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_4_SP_3_OFF	R252	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_4_SP_4_ON	R253	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_4_SP_4_OFF	R254	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_5_SP_1_ON	R255	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_5_SP_1_OFF	R256	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_5_SP_2_ON	R257	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_5_SP_2_OFF	R258	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_5_SP_3_ON	R259	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_5_SP_3_OFF	R260	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_5_SP_4_ON	R261	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_5_SP_4_OFF	R262	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_6_SP_1_ON	R263	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_6_SP_1_OFF	R264	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_6_SP_2_ON	R265	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_6_SP_2_OFF	R266	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_6_SP_3_ON	R267	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_6_SP_3_OFF	R268	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_6_SP_4_ON	R269	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_6_SP_4_OFF	R270	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_7_SP_1_ON	R271	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_7_SP_1_OFF	R272	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_7_SP_2_ON	R273	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_7_SP_2_OFF	R274	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_7_SP_3_ON	R275	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_7_SP_3_OFF	R276	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_7_SP_4_ON	R277	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_7_SP_4_OFF	R278	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_8_SP_1_ON	R279	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_8_SP_1_OFF	R280	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_8_SP_2_ON	R281	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_8_SP_2_OFF	R282	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_8_SP_3_ON	R283	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_8_SP_3_OFF	R284	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_8_SP_4_ON	R285	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_8_SP_4_OFF	R286	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_9_SP_1_ON	R287	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_9_SP_1_OFF	R288	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_9_SP_2_ON	R289	UNSIGNED_INT_16	READ_WRITE	ON Setpoint

Register Details

TAG NAME	REGISTER #	TAG DATA TYPE	PLC RW TYPE	Following are the registers definitions
CHANNEL_9_SP_2_OFF	R290	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_9_SP_3_ON	R291	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_9_SP_3_OFF	R292	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_9_SP_4_ON	R293	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_9_SP_4_OFF	R294	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_10_SP_1_ON	R295	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_10_SP_1_OFF	R296	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_10_SP_2_ON	R297	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_10_SP_2_OFF	R298	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_10_SP_3_ON	R299	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_10_SP_3_OFF	R300	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_10_SP_4_ON	R301	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_10_SP_4_OFF	R302	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_11_SP_1_ON	R303	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_11_SP_1_OFF	R304	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_11_SP_2_ON	R305	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_11_SP_2_OFF	R306	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_11_SP_3_ON	R307	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_11_SP_3_OFF	R308	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_11_SP_4_ON	R309	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_11_SP_4_OFF	R310	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_12_SP_1_ON	R311	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_12_SP_1_OFF	R312	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_12_SP_2_ON	R313	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_12_SP_2_OFF	R314	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_12_SP_3_ON	R315	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_12_SP_3_OFF	R316	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_12_SP_4_ON	R317	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_12_SP_4_OFF	R318	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_13_SP_1_ON	R319	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_13_SP_1_OFF	R320	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_13_SP_2_ON	R321	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_13_SP_2_OFF	R322	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_13_SP_3_ON	R323	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_13_SP_3_OFF	R324	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_13_SP_4_ON	R325	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_13_SP_4_OFF	R326	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_14_SP_1_ON	R327	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_14_SP_1_OFF	R328	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_14_SP_2_ON	R329	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_14_SP_2_OFF	R330	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_14_SP_3_ON	R331	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_14_SP_3_OFF	R332	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_14_SP_4_ON	R333	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_14_SP_4_OFF	R334	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_15_SP_1_ON	R335	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_15_SP_1_OFF	R336	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_15_SP_2_ON	R337	UNSIGNED_INT_16	READ_WRITE	ON Setpoint

TAG NAME	REGISTER #	TAG DATA TYPE	PLC RW TYPE	Following are the registers definitions
CHANNEL_15_SP_2_OFF	R338	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_15_SP_3_ON	R339	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_15_SP_3_OFF	R340	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_15_SP_4_ON	R341	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_15_SP_4_OFF	R342	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_16_SP_1_ON	R343	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_16_SP_1_OFF	R344	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_16_SP_2_ON	R345	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_16_SP_2_OFF	R346	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_16_SP_3_ON	R347	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_16_SP_3_OFF	R348	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_16_SP_4_ON	R349	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_16_SP_4_OFF	R350	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_17_SP_1_ON	R351	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_17_SP_1_OFF	R352	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_17_SP_2_ON	R353	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_17_SP_2_OFF	R354	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_17_SP_3_ON	R355	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_17_SP_3_OFF	R356	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_17_SP_4_ON	R357	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_17_SP_4_OFF	R358	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_18_SP_1_ON	R359	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_18_SP_1_OFF	R360	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_18_SP_2_ON	R361	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_18_SP_2_OFF	R362	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_18_SP_3_ON	R363	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_18_SP_3_OFF	R364	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_18_SP_4_ON	R365	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_18_SP_4_OFF	R366	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_19_SP_1_ON	R367	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_19_SP_1_OFF	R368	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_19_SP_2_ON	R369	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_19_SP_2_OFF	R370	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_19_SP_3_ON	R371	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_19_SP_3_OFF	R372	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_19_SP_4_ON	R373	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_19_SP_4_OFF	R374	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_20_SP_1_ON	R375	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_20_SP_1_OFF	R376	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_20_SP_2_ON	R377	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_20_SP_2_OFF	R378	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_20_SP_3_ON	R379	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_20_SP_3_OFF	R380	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_20_SP_4_ON	R381	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_20_SP_4_OFF	R382	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_21_SP_1_ON	R383	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_21_SP_1_OFF	R384	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_21_SP_2_ON	R385	UNSIGNED_INT_16	READ_WRITE	ON Setpoint

Register Details

TAG NAME	REGISTER #	TAG DATA TYPE	PLC RW TYPE	Following are the registers definitions
CHANNEL_21_SP_2_OFF	R386	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_21_SP_3_ON	R387	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_21_SP_3_OFF	R388	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_21_SP_4_ON	R389	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_21_SP_4_OFF	R390	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_22_SP_1_ON	R391	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_22_SP_1_OFF	R392	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_22_SP_2_ON	R393	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_22_SP_2_OFF	R394	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_22_SP_3_ON	R395	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_22_SP_3_OFF	R396	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_22_SP_4_ON	R397	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_22_SP_4_OFF	R398	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_23_SP_1_ON	R399	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_23_SP_1_OFF	R400	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_23_SP_2_ON	R401	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_23_SP_2_OFF	R402	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_23_SP_3_ON	R403	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_23_SP_3_OFF	R404	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_23_SP_4_ON	R405	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_23_SP_4_OFF	R406	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_24_SP_1_ON	R407	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_24_SP_1_OFF	R408	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_24_SP_2_ON	R409	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_24_SP_2_OFF	R410	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_24_SP_3_ON	R411	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_24_SP_3_OFF	R412	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_24_SP_4_ON	R413	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_24_SP_4_OFF	R414	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_25_SP_1_ON	R415	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_25_SP_1_OFF	R416	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_25_SP_2_ON	R417	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_25_SP_2_OFF	R418	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_25_SP_3_ON	R419	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_25_SP_3_OFF	R420	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_25_SP_4_ON	R421	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_25_SP_4_OFF	R422	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_26_SP_1_ON	R423	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_26_SP_1_OFF	R424	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_26_SP_2_ON	R425	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_26_SP_2_OFF	R426	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_26_SP_3_ON	R427	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_26_SP_3_OFF	R428	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_26_SP_4_ON	R429	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_26_SP_4_OFF	R430	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_27_SP_1_ON	R431	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_27_SP_1_OFF	R432	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_27_SP_2_ON	R433	UNSIGNED_INT_16	READ_WRITE	ON Setpoint

TAG NAME	REGISTER #	TAG DATA TYPE	PLC RW TYPE	Following are the registers definitions
CHANNEL_27_SP_2_OFF	R434	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_27_SP_3_ON	R435	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_27_SP_3_OFF	R436	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_27_SP_4_ON	R437	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_27_SP_4_OFF	R438	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_28_SP_1_ON	R439	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_28_SP_1_OFF	R440	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_28_SP_2_ON	R441	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_28_SP_2_OFF	R442	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_28_SP_3_ON	R443	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_28_SP_3_OFF	R444	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_28_SP_4_ON	R445	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_28_SP_4_OFF	R446	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_29_SP_1_ON	R447	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_29_SP_1_OFF	R448	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_29_SP_2_ON	R449	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_29_SP_2_OFF	R450	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_29_SP_3_ON	R451	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_29_SP_3_OFF	R452	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_29_SP_4_ON	R453	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_29_SP_4_OFF	R454	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_30_SP_1_ON	R455	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_30_SP_1_OFF	R456	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_30_SP_2_ON	R457	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_30_SP_2_OFF	R458	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_30_SP_3_ON	R459	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_30_SP_3_OFF	R460	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_30_SP_4_ON	R461	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_30_SP_4_OFF	R462	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_31_SP_1_ON	R463	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_31_SP_1_OFF	R464	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_31_SP_2_ON	R465	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_31_SP_2_OFF	R466	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_31_SP_3_ON	R467	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_31_SP_3_OFF	R468	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_31_SP_4_ON	R469	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_31_SP_4_OFF	R470	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_32_SP_1_ON	R471	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_32_SP_1_OFF	R472	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_32_SP_2_ON	R473	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_32_SP_2_OFF	R474	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_32_SP_3_ON	R475	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_32_SP_3_OFF	R476	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint
CHANNEL_32_SP_4_ON	R477	UNSIGNED_INT_16	READ_WRITE	ON Setpoint
CHANNEL_32_SP_4_OFF	R478	UNSIGNED_INT_16	READ_WRITE	OFF Setpoint

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