SELECTRONIX, INC.
WOODINVILLE, WA

SUPERSTEP SERIES 4000

SLC4075 Touch Screen GATEWAY

SLC4075 Tech Note 210 Startup Configuration Modification Guide

1. **Models: SLC4075-4 4" Screen**
2. **Models: SLC4075-7 7" Screen**

SLC4075TechNote210_
StartupConfigurationModificationGuide
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TABLE OF CONTENTS

Introduction

This document provides instructions for modifying the default startup options and descriptive labels, for Touchscreen Gateway (TSGW) firmware version 2.0 and on The options and values set in this text file ***unconditionally sets values on power up***.
As such, do not enter values or uncomment options whose value that are desired to be changed and retained during operation.
Once the desired values and options have been established, they may be saved permanently in this database and provides an electronic and human readable backup of the settings.

Prerequisites

1. For Red Lion Kadet G304 or 307 base units
    a. Crimson software version 697.00 and on (available free from redlion.net Support; Software & Firmware; Red Lion Software; Crimson; Crimson 3.0
2. For Red Lion CR1000 base units
    a. Crimson software version 697.00 and on (available free from redlion.net Support; Software & Firmware; Red Lion Software; Crimson; Crimson 3.1, Build 3100.009 or greater
3. Obtain customer-specific database from the boiler manufacturer or Selectronix tech support.
4. PC to upload modified database to the TSGW.

Detailed Instructions

1. Open Crimson software and load the customer-specific database.
2. In the Navigation Pane's lower window, click on 'Display Pages'
3. In the Navigation Pane's upper window, click on 'Pages'
4. In the middle window, 'Global Actions';'On Startup'; 'Complex'; 'Complex Code', click on Edit…
5. A text editor opens with a title 'Edit Complex Code'.
    a. The first 3 configurable items set the Company Info, Basic Configuration, and Screen size, which would not normally be changed from the delivered database.
    b. Note the selection for Item 2, Basic Configuration

i. TSGW.g_iCfgSpecificOptSelect = TSGW.CFG.PGS_ONSTARTUP_.....
ii. This is the selector for the specific block of code applicable to your database.
iii. Scroll through the text to find this block of code.

PID1

This block sets the following:

1. // PGW.PID1.g_fUnmodSetptDeg = PGW.PID1.UNMOD_SETPT_DEFVAL;
   a. Sets the default set point in degrees. It is commented out for field modification
2. PGW.PID1.g_fSetModeSel = PGW.PID.PID_MODE_EN_NON_INV_BMS; // Heat mode
   a. Sets the PID mode and would not normally be changed in the field
3. PGW.PID1.g_fSetEngrUnits = PGW.PID.PIDSPM_UNITS_DEGF;
   a. Sets the engineering units, either degrees F or degrees C
      i. Change to PGW.PID.PIDSPM_UNITS_DEGC for Celcius
4. // PGW.PID1.g_iSetPreset = PGW.PID.PID_PRESET_SEL_SLOW;
   a. Sets the default PID preset which would not normally be changed
5. // PGW.PID1.g_fSet_P = PGW.PID.PID_PRESET_P_SLOW_DEFVAL;
   a. Set the PID1 Proportional value. Uncomment this line and set the desired unchangeable number
6. // PGW.PID1.g_fSet_I = PGW.PID.PID_PRESET_I_SLOW_DEFVAL;
   a. Set the PID1 Integral value. Uncomment this line and set the desired unchangeable number
7. // PGW.PID1.g_fSet_D = PGW.PID.PID_PRESET_D_SLOW_DEFVAL;
   a. Set the PID1 Derivative value. Uncomment this line and set the desired unchangeable number

SPM1

Sets the Set Point Modifier 1 (Outdoor Air Reset) parameters
Sets the SPM source selection. Uncomment the line that sets the desired mode

1. // PGW.SPM1.g_fSetSPMSrcSel = PGW.SPM.SPMSRC_DIS;
2. // PGW.SPM1.g_fSetSPMSrcSel = PGW.SPM.SPMSRC_RTD2_DEGF;
3. // PGW.SPM1.g_fSetSPMSrcSel = PGW.SPM.SPMSRC_RTD2_DEGC;
4. // PGW.SPM1.g_fSetSPMSrcSel = PGW.SPM.SPMSRC_GPA2_PCTSPAN;
5. // PGW.SPM1.g_fSetSPMSrcSel = PGW.SPM.SPMSRC_GPA2_EU;

PID2, GPA1 and GPA2

// PID2 and GPA1

1. PGW.PID2.g_fSetModeSel = PGW.PID.PID_MODE_DIS; // Disabled
   Sets the PID2 mode select
   a. Set the desired mode from tags located in PGW.PID.xxx
2. PGW.GPA1.g_fEUMappedToZeroPct = PGW.GPA.PSI_0;
   Sets the engineering value mapped to 0 span percent.
3. PGW.GPA1.g_fEUMappedTo100Pct = PGW.GPA.PSI_150;
   Sets the engineering value mapped to 100 span percent.
   a. Set this to the desired engineering unit at 100 span percent.
   Example: to change the default range from 0-150 PSI to 0-15 PSI, change this to PGW.GPA.PSI_15, or simply 15.
4. PGW.PID2.g_fSetEngrUnits = PGW.PID.PIDSPM_UNITS_PSI;

// GPA2

1. PGW.GPA2.g_fEUMappedToZeroPct = PGW.GPA.PCTSPAN_0;
   Sets the engineering value mapped to 0 span percent.
2. PGW.GPA2.g_fEUMappedTo100Pct = PGW.GPA.PCTSPAN_100;
   Sets the engineering value mapped to 100 span percent.

SPM2

Sets the Set Point Modifier 2 parameters
Sets the SPM source selection. Uncomment the line that sets the desired mode

1. // PGW.SPM2.g_fSetSPMSrcSel = PGW.SPM.SPMSRC_DIS;
2. // PGW.SPM2.g_fSetSPMSrcSel = PGW.SPM.SPMSRC_RTD2_DEGF;
3. // PGW.SPM2.g_fSetSPMSrcSel = PGW.SPM.SPMSRC_RTD2_DEGC;
4. // PGW.SPM2.g_fSetSPMSrcSel = PGW.SPM.SPMSRC_GPA2_PCTSPAN;
5. // PGW.SPM2.g_fSetSPMSrcSel = PGW.SPM.SPMSRC_GPA2_EU;

Aux/BMS automatically switch to Aux on GPDI Fault

The Aux/BMS may be programmatically enabled to switch to the Aux position on a fault.
Find line and set to true to enable the switch to Aux mode on a GPDI fault.

```
// ********************AUX/BMS position on Alarm**********************
        PGW.GPDI.g_bAuxOnAlarm = false;                    // Switch to Aux on Alarm
```

GPDI

1. // ********************AUX/BMS position on Alarm**********************
   Sets whether the Aux/BMS switch reverts to Aux on a defined GPDI alarm
   PGW.GPDI.g_bAuxOnAlarm = false; // Switch to Aux on Alarm
2. // GPDI Invert sense
   Sets whether the specified bit is inverted or not. A '0' is non-inverted
   a. PGW.GPDI.g_iSetGPDISdEnAndInvMask.0 = 0;
   b. PGW.GPDI.g_iSetGPDISdEnAndInvMask.1 = 0;
   c. PGW.GPDI.g_iSetGPDISdEnAndInvMask.2 = 0;
   d. PGW.GPDI.g_iSetGPDISdEnAndInvMask.3 = 0;
3. // Alarm Titles and Enables for Level-triggered with Siren [.7-.4]
   a. TSGW.g_bCfgGPDIAlmEn[0] =1;
   This defines whether this GPDI bit is an alarm to be displayed on the TSGW
   b. PGW.GPDI.g_iSetGPDISdEnAndInvMask.4 = 1;
   This defines whether or not this GPDI bit causes the SLC4000 to ShutDn the output of ALL the SLC4000 units, applicable for a single boiler operation. ***This bit is normally set to 0 for multiple boiler systems, which allows the other units to continue to output .***
4. PGW.GPDI.g_strGPDI_AlmEvtName[0] = "Low Water";
   Sets the TSGW label for this alarm
5. PGW.GPDI.g_iGPDI1_MultiLbl = 2; // Low Water
   Sets the label displayed on the GPDI page
6. PGW.GPDI.g_iGPDI2_MultiLbl = 3; // High Limit
7. PGW.GPDI.g_iGPDI3_MultiLbl = 4; // Status
8. PGW.GPDI.g_iGPDI4_MultiLbl = 1; // GPDI4 Unused

The labels for the GPDI1 through GPDI4 are controlled by a multi-state tag. The various names within the tag contain several of the commonly used labels. Other names may be added to customize the database for future use.

1. Using an existing label
   a. State 1 GPDIn Unused (n is GDPI number)
   b. State 2 Low Water

c. State 3 High Limit
d. State 4 Status
e. State 5 Boiler #n Lockout (n is GDPI number)

2. If the GPDI is assigned to operate the Relays, those labels need to be changed, as well.
3. Adding a new label
    a. In the Navigation Pane, select Data Tags
    b. Select PGW; GPDI; g_iGPDIn_MultiLbl, where n is the GPDI number
    c. In the format tab; Format States
        i. Add a new state with a new label

XDI

XDI is the eXpansionl Digital Input, SLC4080

1. // Shutdown mask is for an input that causes S4K to turn off all relays and flash red status
   XDI.g_iSetSdMask = 0b00000000; // Disable all Shutdn enable
2. XDI.g_iSetInvMask = 0b00000000; // All normal sense
   Sets the invert mask for the specific bits
3. XDI.g_iInp1Bit0_MultiLbl = 1; // XDI Unused
   Set the label for this bit
   Create a new label by defining in XDI.g_iInp1Bit0_MultiLbl
4. XDI.g_iInp1Bit1_MultiLbl to XDI.g_iInp1Bit7_MultiLbl
   Set the label for the specific bit
   Create a new label by defining in XDI.g_iInp1Bitn_MultiLbl, where n is the specific bit number
5. // TSGW Alarm Enable for Level-triggered with Siren (default) and TSGW Alarm Titles
6. TSGW.g_bCfgXDIAlmEn[0] = 0;
   Sets whether this XDI bit is to display an TSGW alarm
7. TSGW.g_strXDIAlmEvtName[0] = "Unused 1";
   Sets the text to display on the TSGW alarm page for this XDI bit
8. TSGW.g_bCfgXDIAlmEn[1] = 0;
   through TSGW.g_bCfgXDIAlmEn[7] is the same as for TSGW.g_strXDIAlmEvtName [0]

PGW Relays

1. // Src Sel
   Sets the source for PGW relays 1-3
   PGW.Rly.g_fSetPGWRlysSrcSel[0] = PGW.Rly.RLYSRCSEL_GPDI;
   PGW.Rly.g_fSetPGWRlysSrcSel[1] = PGW.Rly.RLYSRCSEL_GPDI;
   PGW.Rly.g_fSetPGWRlysSrcSel[2] = PGW.Rly.RLYSRCSEL_GPDI;
   Other Rly sources are:
   a. PGW.Rly.RLYSRCSEL_DISABLED
   b. PGW.Rly.RLYSRCSEL_BMS
      Relay is controlled by BMS
   c. PGW.Rly.RLYSRCSEL_CLL
      Relay is controlled by Classic Lead Lag
   d. PGW.Rly.RLYSRCSEL_S4K_FLT
      Relay is energized when the S4K fault is non-zero
   e. PGW.Rly.RLYSRCSEL_PGW_FLT
      Relay is energized when the PGW fault is non-zero
   f. PGW.Rly.RLYSRCSEL_TSGW_FLT
      Relay is energized when the TSGW fault is non-zero
   g. PGW.Rly.RLYSRCSEL_GPDI_AND_GPDI4
      Relay is energized when both the same numbered GPDI AND GPDI4 is logically set
   h. PGW.Rly.RLYSRCSEL_GPDI_OR_GPDI4
      Relay is energized when both the same numbered GPDI OR GPDI4 is logically set
2. // Src Sel Labels
   Sets the label to be displayed on the SLC4060 Relays page. See the applicable PGW.Rly.g_iRlySrcSel_MultiLbl[0] to PGW.Rly.g_iRlySrcSel_MultiLbl[2] to select a different label, or define a new label.
   a. PGW.Rly.g_iRlySrcSel_MultiLbl[0] = 1; // GPDIx
   b. PGW.Rly.g_iRlySrcSel_MultiLbl[1] = 1; // GPDIx
   c. PGW.Rly.g_iRlySrcSel_MultiLbl[2] = 1; // GPDIx
3. // Rly Desc Labels
   Sets the label to be displayed on the SLC4060 Relays page. See the applicable PGW.Rly.g_iRly1_MultiLbl to PGW.Rly.g_iRly3_MultiLbl to select a different label, or define a new label.
   PGW.Rly.g_iRly1_MultiLbl = 2; // Low Water
   PGW.Rly.g_iRly2_MultiLbl = 3; // High Limit
   PGW.Rly.g_iRly3_MultiLbl = 4; // Status

   The labels for the GPDI1 through GPDI4 are controlled by a multi-state tag. The various names within the tag contains several of the commonly used labels. Other names may be added to customize the database for future use.

1. Using an existing label
   a. State 1 Rlyn Unused (n is Rly number)
   b. State 2 Low Water
   c. State 3 High Limit
   d. State 4 Status
   e. State 5 Boiler #n Lockout (n is Rly number)
2. Adding a new label
   a. In the Navigation Pane, select Data Tags
   b. Select PGW; Rly; g_iRlyn_MultiLbl, where n is the Rly number
   c. In the format tab; Format States
      i. Add a new state with a new label

XRlys

1. // Src Sel selects the pre-defined definition for all rlys
   XRly.g_iSrcSel=XRly.SRCSEL_XDI_1;
   Sets the src to operate the like-numbered relay
   Other source choices are:
   a. SRCSEL_DIS_0
      i. All XRlys are disabled
   b. SRCSEL_XDIFLT_2
      i. Relays 1-4 by the like-numbered XDI
      ii. Relays 5 is energized when the PGW fault is non-zero
      iii. Relays 6 is energized when the TSGW fault is non-zero
      iv. Relays 7 is energized when the S4K fault is non-zero
      v. Relays 8 is reserved
   c. SRCSEL_XDIBMS_3
      i. Relays 1-4 by the like-numbered XDI
      ii. Relays 5-8 are controlled by the BMS
   d. SRCSEL_BMS_4
      i. Relays are controlled by the BMS
   e. SRCSEL_CLLXDI_5
      i. Relays 1-4 are controlled by Classic Lead Lag
      ii. Relays 5-8 are controlled by the like-numbered XDI
   f. SRCSEL_CLLBMS_6
      i. Relays 1-4 are controlled by Classic Lead Lag
      ii. Relays 5-8 are controlled by the BMS
2. // XRlys Desc Labels
   Sets the text label displayed on the XRlys page
   XRly.g_iRly1_MultiLbl = 1;
   XRly.g_iRly2_MultiLbl = 1;
   XRly.g_iRly3_MultiLbl = 1;
   XRly.g_iRly4_MultiLbl = 1;
   XRly.g_iRly5_MultiLbl = 1;
   XRly.g_iRly6_MultiLbl = 1;
   XRly.g_iRly7_MultiLbl = 1;
   XRly.g_iRly8_MultiLbl = 1;

Voltage Driver

1. // ----------VltDrvr----------

Sets the source for the voltage driver output

PGW.VltDrvr.g_fSetVltDrvrSel = PGW.VltDrvr.VLTDRVR_PID1_0_10;

This sets the output to PID1 percent using 0 to 10 volt.

// Note that field choice of VltDrvrSel auto selects the applicable PGW.VltDrvr.g_iVltDrvr_MultiLbl

a. Other choices for the voltage driver are:

i. PGW.VltDrvr.VLTDRVR_DISABLED
Disabled the output

ii. PGW.VltDrvr.VLTDRVR_BMS
Output controlled by BMS

iii. PGW.VltDrvr.VLTDRVR_GPA1
Output controlled by GPA1 span percent

iv. PGW.VltDrvr.VLTDRVR_GPA2
Output controlled by GPA2 span percent

v. PGW.VltDrvr.VLTDRVR_RTD1
Output controlled by RTD1 span percent

vi. PGW.VltDrvr.VLTDRVR_RTD2
Output controlled by RTD2 span percent

vii. PGW.VltDrvr.VLTDRVR_PID1_2_10;
This sets the output to PID1 percent using 2 to 10 volt.

viii. PGW.VltDrvr.VLTDRVR_PID2_0_10;
This sets the output to PID2 percent using 0 to 10 volt.

ix. PGW.VltDrvr.VLTDRVR_PID2_2_10;
This sets the output to PID2 percent using 2 to 10 volt.