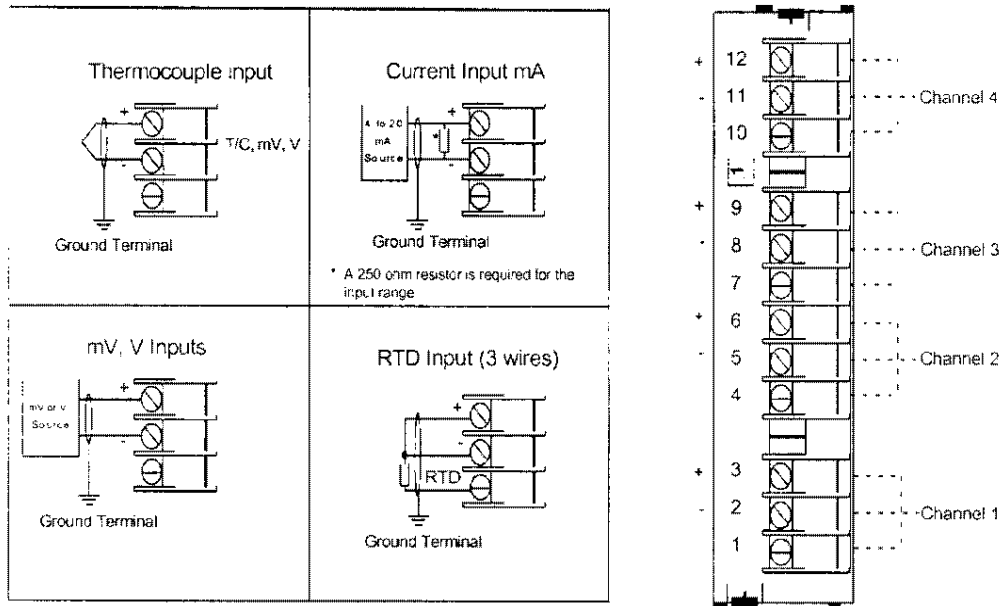


**Procedure for configuring VRX180 for recording purposes only:**

1. Install and wire recorder per section 2 of the User manual.
2. Set mode to Maintenance and clear existing configuration from the Database Services Menu. (section 8.7)
3. Set mode to Program and configure Analog Inputs (section 4.7).
4. Configure Display types and assign Displays to keys (section 4.18)
5. Set mode to On-Line and select Data Storage to Set Up New Schedules (section 4.26)
6. Initialize disk to New Schedule.(sections 3.15 and 7.4)

**Step 1:Wiring**

Slot A supports analog input channels 1-4, Slot B supports channels 5-8 and so on.  
Wire each channel with the desired analog input device.



## Step 2: Clearing Memory and setting Mode to Program

- Press the MENU key then press UP or DOWN ARROW to high light the Set Mode prompt
- Press the ENTER key to high light the current mode of operation
- Press the UP ARROW key until Maintenance mode is displayed
- Press ENTER key to select. Main Menu-Maintenance will be displayed.
- Press DOWN ARROW key to select DATABASE SERVICES
- Press ENTER Display will change to the Database Service menu
- Clear All Memory should be highlighted--Press ENTER and wait for the display to return to the Database Service menu
- Press the MENU key *twice* to return to the top of the Maintenance Main menu.
- Press the ENTER key to high light the current mode of operation
- Press the DOWN ARROW to select Program mode
- Press ENTER key to select. Main Menu-Program will be displayed

## Step 3: Configuring Analog Inputs

- Press the DOWN ARROW key to select ANALOG INPUTS
- Press ENTER and a Select Number box will be displayed.
- Press the UP arrow to select the Input Channel you wish to Configure , then press ENTER to select. The "Program Input# " menu will be displayed.

Parameter	Description
DESCR	up to 16 character descriptor- appears as title on displays/reports
TAG	up to 7 character tag name-identifies the point on most displays
UNITS	shows unit of measure for analog values on displays and reports (ie: Deg F, PSI, GPM)
INPUT TYPE	indicates input type as specific Thermocouple, RTD, Pyrometer or Linear (volt/current)
OUT DECIMAL POS	indicates number of decimal places to be displayed
RANGE LOW	low value in engineering units (ie: -50 degrees, 0 PSI, 0 GPM etc)
RANGE HIGH	high value in engineering units (ie: 2000 degrees, 50 PSI, 250 GPM, etc)
TEMP UNITS	Degrees C, F, Kelvin, Rankin or NONE (if not measuring temperature)
DIRECT/INDIRECT	<b>DIRECT</b> = Thermocouple or RTD, <b>INDIRECT</b> = xmtr input. <b>SQRT</b> = Dp xmtr input
CIRCUIT LOW*	minimum electrical signal to be applied to input (ie: 1 volt, 0 mv, 0 ohms)
CIRCUIT HIGH*	maximum electrical signal to be applied to input (ie: 5 volts, 100mv, 200 ohms)
ELECTRICAL UNITS*	<b>VOLTS, MV</b> (millivolts) or <b>OHMS</b>
LAG	provides digital filtering time constant for input (in seconds)
SAMPLE HOLD	Digital state which when ON holds input at last value; when OFF updates input value
FAILSAFE	for Thermocouples only- <b>UP</b> scale Burnout, <b>DOWN</b> scale Burnout or <b>NONE</b>
CLAMPING	clamps input to <b>HI RANGE</b> value, <b>LO RANGE</b> value, hi or lo <b>RANGE</b> value or <b>NONE</b> if input exceeds range limits
	* only displayed if INDIRECT or SQRT is selected

### Step 3: (continued)

- Using the DOWN ARROW key, select the parameter you wish to configure and press ENTER. This will highlight the data field and allow you to modify the data/values as necessary. Data/values are modified by using the the UP/DOWN and LEFT ARROWS.
- Once the data field has been edited, press the ENTER key to return to the parameter field and continue configuring all the necessary analog input parameters.
- When finished configuring the parameters, press the MENU key. You will be prompted to press ENTER to save.
- After having pressed Enter, the display will return to the Main Menu-Program. Repeat Step 3 for each analog input you need to configure. Upon completion, the Main Menu-Program should be displayed

### Step 4: Configuring Displays

- Using the DOWN ARROW key, highlight the DISPLAYS function and press ENTER. The Displays menu will appear with prompts to allow set up of Trend, Bar Graph, Panel and Unit Data displays. There is also a selection for assigning specific displays to front panel keys. Selecting SET UP TREND or BAR GRAPH will prompt you for the group # (up to 4 groups of 12 points can be assigned). Panel and Unit displays support only a single group of up to 12 points. The table below shows the parameters for configuring Trend displays. Other display types require point assignments, only.

Prompt	Range/Selections	Definition
POINT #1 POINT #12	Analog or discrete parameters	Select up to 12 analog or discrete points to be displayed as a vertical or horizontal trend. Trends of discrete points will show a value of 1 when ON and 0 when OFF.
NORM TIME BASE	5, 15, or 30 minutes, or 1, 2, 4, 8, 24 hours, 7 days or 31 days.  Equivalent paper chart speeds are listed in table 4-56 of the User manual.	Enter the trend display time base for Normal (typically slow speed). The time base is the time period shown for one full screen.
ALT TIME BASE	5, 15, or 30 minutes, or 1, 2, 4, 8, 24 hours, 7 days or 31 days.	Enter the trend display time base for Alternate (typically fast speed). The time base is the time period shown for one full screen.
SET DISPLAY LIMITS	OFF or number	Set the high and low full-scale display limits for each point. If you select OFF for a limit on this display, the limits programmed for the analog point (either RANGE LOW and RANGE HIGH or OUT LOW LIMIT and OUT HIGH LIMIT) will be used as the trend limits for that point.  The accuracy of a trended point is determined only by the original output limits of the point, not by setting wider or narrower limits here. Setting excessively narrower limits here will result in a viewable trend with a high degree of inaccuracy when viewed as a % of the screen. To increase accuracy over a narrower range, decrease the programmed output range (limits) of the point itself.
TIMEBASE SELECTOR	OFF, discrete parameter, 0, 1	Enter a discrete parameter which will cause trend to display alternate timebase when ON and normal timebase when OFF.

Step 4: (continued)

- Using the DOWN ARROW key, select the parameter you wish to configure and press ENTER. This will highlight the data field and allow you to modify the data/values as necessary.
- Once the data field has been edited, press the ENTER key to return to the parameter field and continue configuring all the necessary parameters.
- When finished configuring the parameters, press the MENU key. You will be prompted to press ENTER to save. This will return to the DISPLAY menu.
- Repeat these steps until you have configured each of the display types your application requires.
- Select ASSIGN DISPLAYS TO KEYS and the prompts shown on the table below will appear.
- Using the DOWN ARROW key, select the parameter you wish to configure and press ENTER. This will highlight the data field and allow you to modify the data/values as necessary.
- Once the data field has been edited, press the ENTER key to return to the parameter field and continue configuring all the necessary parameters.
- When finished configuring the parameters, press the MENU key. You will be prompted to press ENTER to save. This will return to the DISPLAY menu.
- Press the MENU key again and return to the Main Menu Program display. Press MENU again to return to top of menu .

The VRX180 has 4 display keys. You can assign a total of 10 displays to these keys. Pressing the Display 1 key (1) accesses the format you assign to Display 1. Display 2 key (2) accesses Display 2 and Display 3 key (3) accesses Display 3. The Display key ( ) accesses displays 4-10.

The table below describes the prompts for assigning displays to keys.

**Assign Displays To Keys Prompts**

Prompt	Range/Selections	Definition
BLANKING TIME	OFF, 1 HOUR, 30 MIN, 15 MIN, 5 MIN, 1MIN	This is a screen-saver type function. If enabled, the screen will blank after time selected. The display will return if a key is pressed or an alarm/diagnostic occurs.
DISPLAY KEY	0, 1, OFF, PARM	By selecting PARM, you can connect a discrete input parameter to function as the Display key. Each off-to-on transition of this discrete will behave as if the Display key ( ) were pressed. Select 0, 1, or OFF to disable this function.
BACKGROUND COLOR	WHITE, BLACK	This sets the background color of displays to black or white. Affects all Trend (live and replay), Bar Graph, and Panel displays. Does not affect Loop, Unit Data, Summary, or menus.
SELECT PEN COLOR	PEN #1 PEN #2 . . PEN #12	Assign a color to each of up to 12 points. Affects points displayed on all Trend (live and replay), Bar Graph, Loop, and Panel displays. Pen #1 corresponds to Point #1, Pen #2 corresponds to Point #2, etc.  Choices: Green, Cyan, Yellow, Purple, Blue, Brown, Red, Black, or White.  Attention: A Yellow pen appears yellow on a black background and orange on a white background.  Caution: Do not select a white pen color for a white background or a black pen color on a black background; these will render your points invisible.

(continued)

### Assign Displays To Keys Prompts (continued)

Prompt	Range/Selections	Definition
DISPLAY 1 DISPLAY 2 . . . DISPLAY 10	FORMAT	Select one of the following display formats. The corresponding format will be shown when the Display keys are pressed. Refer to Figure 4-17 in the User Manual for a sample of displays. V_TREND (Vertical Trend) VTRNDDIG (Vertical Trend Digital) VTRNDBAR (Vertical Trend Bar) VT_6DIV (Vertical Trend-6 Division) H_TREND (Horizontal Trend) HTRNDDIG (Horizontal Trend Digital) HTRNDBAR (Horizontal Trend Bar) V_4_BAR (4-Point Vertical Bar Graph) V_6_BAR (6-Point Vertical Bar Graph) V_8_BAR (8-Point Vertical Bar Graph) V_12_BAR (12-Point Vertical Bar Graph) H_4_BAR H_6_BAR PANEL_4 UNIT DATA (Unit Data Display) PANMETER (Panel Meter) ALARMSUM (Alarm Summary) STORAGE (Storage Status) TOTAL (Display 1 totalizer) TOTALIZR (Display all totalizers) LOOP_BAR (Loop with Bar Graph) LOOP_DIG (Digital Loop) LOOP_2BS (Loop with 2 Bar Graphs) LOOP_3BS (Loop with 3 Bar Graphs) LOOP_4BS (Loop 4 Bar Summary) LOOP_8BS (Loop 8 Bar Summary) SPP_2BS (Set point Profiles with 2 Bar Graphs) SPP_3BS (Set point Profiles with 3 Bar Graphs) SPP_4BS (Set point Profiles with 4 Bar Graphs) SP_TREND (Set point Profile Trend) PROSUM (Process Summary)
	TREND	Appears if a trend format is selected. Select trend data to be displayed: TREND 1 - TREND 4
	BARGRAPH	Appears if a bar graph format is selected. Select bar graph data to be displayed: BARGRAPH 1 - BARGRAPH 4
	ROTATION RATE	Appears if panel display format is selected. Select number of seconds each point on the panel display will be shown: 1, 2, 3, 4, 5, 10, 15, 20, 30, 40, 50, 60
	LOOP	Appears if a loop format is selected. Select loop to be displayed. Loop 1- 8.
	PROFILE	Appears if Set point Profile Trend format is selected. Select profile to be displayed.

## STEP 5: Set mode to Online and Configure Data Storage

- With Set Mode prompt highlighted press ENTER and then UP ARROW to select Online mode. Press ENTER again to change the mode. Main Menu -On Line will be displayed.
- Press the DOWN ARROW and then ENTER to select Data Storage.
- Highlight Enable Storage, press ENTER then press UP ARROW to set parameter to ENABLE and press ENTER again.
- Using the DOWN ARROW, select Set Up New Schedules and Press ENTER.

The following items appear under SET UP NEW SCHEDULES.

**Trend Data 1, Trend Data 2, Trend Data 3, Trend Data 4, Alarms, Events, Diagnostics, Unit, Data Storage Allocation and, Batch Control**

For the purpose of this example, we will only configure Trend Data.

### Trend Data 1-4

At the top of the display the message "SETUP IS CURRENT" indicates that current setup for storage of TREND 1-4 is exactly as shown. If the message is "SETUP IS NOT CURRENT", then the TREND 1 setup has been changed since a disk was last initialized. To make a NOT CURRENT setup CURRENT, you must initialize the disk using new schedules.

#### Prompts For Storage Setup of Trends, Alarms, Events, Diagnostics

Prompt	Range/Selections	Definition
POINT #1 - POINT #12	Analog or discrete parameter	Select the data points for the trend.
STORAGE MODE	CONTIN, BATCH, or NONE	Continuous storage becomes active immediately upon initialization. Batch storage is controlled by a discrete parameter (see BATCH CONTROL) or by start/stop batch menu item. Batch data may be started and stopped several times in a single file until the file is full. Batch start increments a batch number that is stored along with the data. The batch number may be used for data retrieval and analysis using SDA data analysis software.
COPY DISPLAY SETUP		Select this to copy the following Trend 1,2, 3 or 4 Display data to Trend 1,2, 3 or 4 Storage data: Point #1-#12, set display limits, timebase (high rate) selector. Once setup is copied, it can be altered.
LOW RATE	Seconds: .5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 30, 40, 50 Minutes: 1, 2, 3, 4, 5, 10, 20, 30, 40, 50 Hours: 1	Enter data collection rate. This is how often the data points are sampled.
HIGH RATE	Seconds: .5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 30, 40, 50 Minutes: 1, 2, 3, 4, 5, 10, 20, 30, 40, 50 Hours: 1	Enter data collection rate. This is how often the data points are sampled.
ROLLOVER	ON, OFF	Select ON to continue gathering and storing data after the file becomes full. The new data will replace the oldest data on the disk as it is collected. No warning will be given. Select OFF to stop storage of this data type when the disk space for it becomes full. A "DISK FULL" message will then appear. Data is buffered until a new disk is inserted and initialized.
SET DISPLAY LIMITS	OFF or number	Enter upper and lower limit values for the trend display for each point. If OFF then the trend will use the programmed limits for each point.

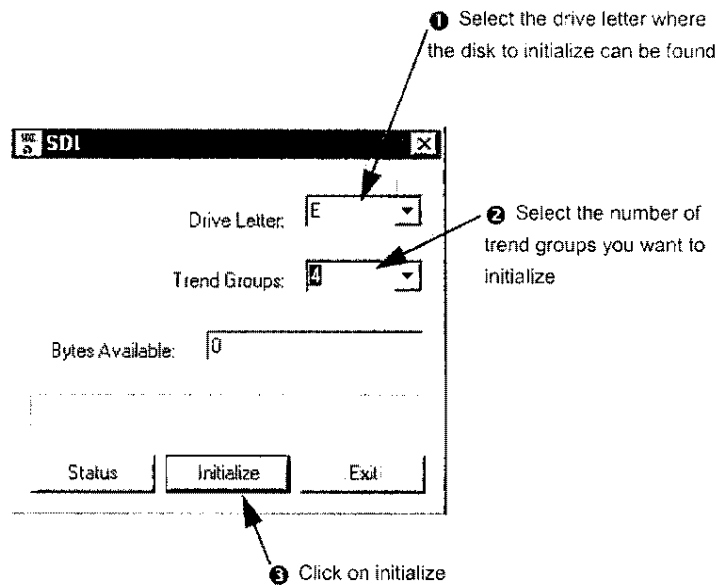
HIGH RATE SELECTORS	SELECTOR	This discrete triggers the high storage rate when ON (1) and the low storage rate when OFF. (OFF, PARM,0 or 1)																											
	CHANGE WITH KEY	This option enables/disables storage rate changes from the Trend display Point/Trend menu. If YES, storage Trend's high rate will be used when display Trend's alternate timebase is selected from the Online Point/Trend menu; Storage Trend's low rate will be used when display Trend's normal timebase is selected. See Table 6-2, Point/Detail Menu Prompts, Timebase.																											
EXTERNAL ENABLE	OFF, discrete parameter, 0, 1	When ON (1), this discrete parameter will allow storage of the data type; when off, storage for the data type will stop. This enable is independent of the storage mode; it does not control batch start/stop.																											
SELECT FILENAME	<table border="0"> <tr> <td>FILE</td> <td>CYCLE</td> <td>DRYER</td> </tr> <tr> <td>PROD</td> <td>RECORD</td> <td>TANK</td> </tr> <tr> <td>UNIT</td> <td>LOOP</td> <td>REACTR</td> </tr> <tr> <td>CONFIG</td> <td>KILN</td> <td>VESSEL</td> </tr> <tr> <td>CALIB</td> <td>WCHEM</td> <td>PRESS</td> </tr> <tr> <td>FURNCE</td> <td>DEMIN</td> <td>CONTRL</td> </tr> <tr> <td>BATCH</td> <td>FERMTR</td> <td>LEHR</td> </tr> <tr> <td>LINE</td> <td>STRLZR</td> <td>OVEN</td> </tr> <tr> <td>ZONE</td> <td></td> <td></td> </tr> </table>	FILE	CYCLE	DRYER	PROD	RECORD	TANK	UNIT	LOOP	REACTR	CONFIG	KILN	VESSEL	CALIB	WCHEM	PRESS	FURNCE	DEMIN	CONTRL	BATCH	FERMTR	LEHR	LINE	STRLZR	OVEN	ZONE			<p>Select a file name to identify the type of data to be stored. 25 pre-programmed filenames have been provided for you.</p> <p>Note: Filenames can be edited via the LABEL function under the Main Menu -Program</p>
FILE	CYCLE	DRYER																											
PROD	RECORD	TANK																											
UNIT	LOOP	REACTR																											
CONFIG	KILN	VESSEL																											
CALIB	WCHEM	PRESS																											
FURNCE	DEMIN	CONTRL																											
BATCH	FERMTR	LEHR																											
LINE	STRLZR	OVEN																											
ZONE																													

- Select Trend Data 1 and press ENTER
- Using the DOWN ARROW key, select the parameter you wish to configure and press ENTER. This will highlight the data field and allow you to modify the data/values as necessary.
- Once the data field has been edited, press the ENTER key to return to the parameter field and continue configuring all the necessary parameters.
- When finished configuring the parameters, press the MENU key. You will be prompted to press ENTER to save.
- Press the MENU key again to return to the Data Storage menu.

#### Step 6: Pre-initializing a floppy disk on a PC, then initializing the disk in the recorder

Disk initialization creates a file structure on the disk allowing quicker writing to the disk during data storage. Pre-initializing an LS120 disk on the video recorder takes time, there is a more efficient way to do it using the SDI tool. The SDI tool is a Win 95/98/NT program that can be used to quickly pre-initialize an LS120 or 1.44MB Floppy disk on a PC. This tool is provided with the video recorder. Install it on your PC, as per instructions on the floppy disk label. *Please note, you must have an LS120 floppy drive installed in your PC to use this type of media.*

Here are the 3 steps to follow when running the SDI utility.



The next step is to initialize the disk on the video recorder. It will take just a few seconds.

- To initialize the disk in the VRX recorder, open the front door of the VRX180 and insert the floppy disk into the drive. Close the door and the recorder will indicate "CHECKING DISK".
- Use the UP ARROW key to select Initialize Disk and press ENTER.
- Use the DOWN ARROW key to select Use New Schedules and press ENTER. When initialization is complete a yellow "S" will be displayed in the lower right corner of the display indicating that storage is active.

Press the previously assigned display key to view the desired display.