

# VTICODA

## DATA ACQUISITION AND INSTRUMENT CONTROL SOFTWARE

## **QUICK START GUIDE**

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VXI Technology, Inc.

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## **SECTION 1**

## QUICK START

#### **OVERVIEW**

This guide summarizes the essential steps that are needed during a typical session of running VTIcoda (i.e. add data acquisition modules, to create and start test runs and to create view definitions, etc.). It does not, however, replace the complete description of the functionality of each software module.

#### FIRST STEPS

The steps described below assume that:

- All data acquisition hardware that will be used has been correctly installed
- The hardware has been acknowledged by the Agilent I/O Libraries (see Section 1: Data Acquisition Hardware Installation in the User's Manual)
- The instruments have been switched on (otherwise, VTIcoda will not be able to detect the hardware)
- The VTIcoda software has been correctly installed (see *Section 1: Software Installation and Configuration*)

After starting the **VTIcoda** software by double-clicking the **CodaAdmin** icon on PC's desktop, a prompt will appear requesting a user name and password. After successfully entering the login information, the **Coda Admin** main window will appear on the screen.

#### ADDING DATA ACQUISITION HARDWARE MODULES

In the tree structure on the left of the screen, under **Hardware Configuration**, select the group to which hardware modules will be added (e.g. VXI Tree).



FIGURE 1-1: ADDING HARDWARE MODULES TO A GROUP

In order for VTIcoda to accept connected hardware modules, click the Scan Hardware button

(**Sec**). VTIcoda will then scan for hardware modules connected to the system. Do not start any other operation before the "Hardware scan complete" message is viewed. Next, expand the **Hardware Configuration** item in the tree by clicking the + symbol on the left. VTIcoda will then display the hardware detected.

**NOTE** The scanning procedure should only be executed when the hardware setup has been changed (i.e. replacing existing hardware or adding new hardware modules). After a hardware scan, it is necessary to re-allocate the hardware (using the Hardware Configuration tab) in the next test run.

#### **CREATING A NEW TEST RUN**

To create a new test run, select the **Testrun List** item in the tree and click the **Add** button ( in the toolbar. A new, empty test run mask will now be created and displayed.

| CodaAdmin - [CODA@LOCALHOST - TESTRUN STATUS : RU   | NNING -> Single Full Bridge Channel]   | X                       |
|---|--|-------------------------|
| 📅 File Data Record View Window ?  |  | _ 8 ×                   |
| 🌉 🗊 🏷 🖌 🕫 м с. р. е. г. со л  | L CA 🚎 S VS RS 😵   |                         |
| WTICOA      WTICOA     WTICOA     WTICOA      WTICOA     WTICOA     WTICOA      W | Testsun name New Entry Gioop Teansdoord ID ( Hardware configuration Signale Alema Stain Gage Temperature balancing Shurt calibration Log. Ch. Label Group Host Mainframe Instrument Board Hw. Ch. Sample rate: Fiber AD meas: range Zero measuring | gi Excitation Excite On |

FIGURE 1-2: CREATING A NEW TEST RUN

By default, the new test run is named **New Entry**. To rename the test run, go to the **Testrun name** field and enter a different name that better describes the test run that will be created. After renaming the test run, refresh the tree display by clicking the **Testrun List** item in the tree again. The new, empty test run will now appear in the test run list.

In the **Description** entry field, provide text that can be used to easily identify the channel (e.g. the purpose of the new test run). Next step, continue to add as many channels as will be required for the test run. Do this by right-clicking the large empty area. This will open the context menu. Select **New** entry from this menu. This will create a new channel in the test run.

| # CodaAdmin - [CODA@LOCALHOST - TESTRUN STATUS : RUI  | NNING -> Single Full Bridge  | e Channel]   |
|---|--|--|
| File Data Record View Window ?  |  |  |
| 📰 🛃 🖥 🦄 🖌 🌮 🛛 M 🛛 C 🛛 P 🛛 E 🛛 CO A  | L CA 🚆 S VS RS 💡   |  |
| ## VTCODA         ## Coda System Administration         Image: System Adm | Testrun name<br>Description<br>Hardware configuration Sign<br>Log. Ch. Label Group | Quarter-Bridge (120)         48 Channels of 1200hm Quarter Bridge         nals       Alarms         Strain Gage       Temperature balancing         Shurt calibration         Host       Mainframe         Instrument       Board         Hw. Ch.       Sample rate         Filter       Alarms         New       Rename         Duplicate       Duplicate         Delete       Update         Properties       Properties |

FIGURE 1-3: ADDING CHANNELS TO A TEST RUN

After creating a new test run and associated channels, defining the individual parameters of each channel should be done next.

To allocate a channel to a certain group, for example, double-click the empty field of this channel in the **Group** column to open a pull-down menu that offers all groups that have been previously defined in the VTIcoda Catalogs/Groups section. Select an appropriate group.

Configure the remaining parameters (Signals, Alarms, etc.) in the **Hardware configuration** tab as described in *Section 3: Hardware Configuration* of the *VTIcoda User's Manual*.

#### Creating Strain Gage Channels

When creating a test run for strain gage measurements, remember that strain gages provide a voltage when measuring signals. This means that, for each measurement channel (providing a voltage signal) that is defined, a complementary calculation channel must be created to convert the measured voltage into a strain unit (see example below).

| 🗰 CodaAdmin - [CODA@  | LOCALHOST - TESTRUN STATUS : RUNNING -> Single Full Bridge Channel]  |  |
|---|--|--|
| 🕎 File Data Record View   | Window ?   |  |
| 🔤 🖬 👘 🐂 🗸   | " 🇭 M C P E I COALCA 🚆 S VSRS 😵  |  |
| WTICODA         Coda System Adminis         Shutdown Buffer         User Managemen         Path Settings         Hardware Configurat         Start / Stop Testrun -         Start / Stop Testrun -                        | Testrun name       Quarter-Bridge (120)         Description       48 Channels of 1200hm Quarter Bridge         Hardware configuration       Signals         Alarms       Strain Gage   | Filter<br>Group<br>Transducer ID                   |
| <ul> <li>Mixed Channels</li> <li>Performance</li> <li>Quarter-Bridge (1)</li> <li>Single Full Bridge</li> <li>Single Linear Tran</li> <li>Single Strain Chan</li> <li>Single Tong Chan</li> <li>Single Voltage</li> </ul> | Log. Ch.         Label         Group         Host         Mainframe         Instrument         Board         Hw. Ch.         Sample r.           1         CH_0         LXI         EX1629 (192.168.1.56)         0         10 Hz           2         CH_1         LXI         EX1629 (192.168.1.56)         1         10 Hz           3         CH_0_S         LXI         EX1629 (192.168.1.56)         1         10 Hz           4         CH_1_S         LXI         EX1629 (192.168.1.56)         1         10 Hz | ate Filter AD meas.ran<br>10 Hz Auto<br>10 Hz Auto |



#### **NOTES** 1) A calculation channel does NOT require any hardware allocation!

2) Please note that the calculation channel and the strain gage measurement channel it is assigned to must both have the same transducer ID (to be defined in the Signals tab, see below, where logical channels 1 and 2 have the Transducer ID "TD\_0" and logical channels 3 and 4 have the Transducer ID "TD\_1"). See *Section 3: Signals* of the *VTIcoda User's Manual* for a description of the signal parameters.

| 🗰 CodaAdmin - [CODA@   | LOCALHOST - TESTRUN ST                          | ATUS : RUNNING -> Single Full                               | Bridge Channel]  |  |                                  |                       |                  |         |         |
|--|---|---|--|--|----------------------------------|-----------------------|------------------|---------|---------|
| 🔛 File Data Record View  | Window ?  |   |  |  |                                  |                       |                  |         |         |
| 🏬   🍯   🐄 🏹   🗸  | 🗭   М   С Р   Е Т                               | COALCA 🚟 S VS   | rs 💡   |  |                                  |                       |                  |         |         |
| # VTICODA     # Coda System Adminis     # Shutdown Buffer     User Managemen     Path Settings     # Coda Catalogs     # Hardware Configurat | Testrun name<br>Description                     | Quarter-Bridge (120)<br>48 Channels of 1200hm Quarter Bridg |  |  | Filter<br>Group<br>Transducer ID |                       | ×                |         |         |
| Start / Stop Testrun   | Hardware configuration 51gr                     | hais Alarms Strain Gage Temperatu                           | re balancing Shunt calibration                               |  |                                  |                       |                  |         |         |
| Testrun List     Mixed Channels     Performance     Ouerter-Bridge (1)   | Log. Ch. Label Grou<br>1 CH_0 LXI<br>2 CH_1 LXI | up Unit Rangemin. Rangemax.<br>V<br>V                       | Transducer Transducer ID<br>1/4 Bridg TD_0<br>1/4 Bridg TD_1 | Transducer<br>Gage 1 (a)<br>Gage 1 (a) | r Opt. Zero Meas Value           | User defined resistor | Temp ch. Formula | VB min. | VR max. |
| Single Full Bridge<br>Single Linear Trar<br>Single Strain Char<br>Single Temp Char<br>Single Voltage   | 3 CH_0_S LXI<br>4 CH_1_S LXI                    | μΕ<br>μΕ  | 1/4 Bridg TD_0<br>1/4 Bridg TD_1                             | Strain<br>Strain                       |                                  |                       |                  |         |         |

FIGURE 1-5: DEFINING THE TRANSDUCER ID

#### Creating Voltage Channels

To perform voltage measurements with VTIcoda (e.g using a VXI Technology E1413 64-channel data acquisition module), voltage channels must be created. In the example shown in the **Hardware configuration tab** below, two E1501A SCPs are used in combination with an E1413.

| F | Hardware co | onfiguration   Signa | ls Alarm | ns∣Strain Gag | e   Temperatu | ure balancing   S | hunt calibration |         |             |        |                |                |            |            |
|---|-------------|----------------------|----------|---------------|---------------|-------------------|------------------|---------|-------------|--------|----------------|----------------|------------|------------|
|   | Log. Ch.    | Label                | Group    | Host          | Mainframe     | Instrument        | Board            | Hw. Ch. | Sample rate | Filter | AD meas, range | Zero measuring | Excitation | Excite, On |
|   |             | 1501_03_24_00        | VXI      |               | VXI0          | E1413 (Slot 3)    | E1501A (Port 24) |         | 48 Hz       | Off    |                |                |            | No         |
|   | 2           | 1501_03_24_01        | VXI      | рс            | VXIO          | E1413 (Slot 3)    | E1501A (Port 24) | 1       | 48 Hz       | Off    | Auto           | Yes            |            | No         |
|   | 3           | 1501_03_24_02        | VXI      | pc            | VXIO          | E1413 (Slot 3)    | E1501A (Port 24) | 2       | 48 Hz       | Off    | Auto           | Yes            |            | No         |
|   | 9           | 1501_03_56_00        | VXI      | pc            | VXIO          | E1413 (Slot 3)    | E1501A (Port 56) | 0       | 48 Hz       | Off    | Auto           | Yes            |            | No         |
|   | 10          | 1501_03_56_01        | VXI      | рс            | VXIO          | E1413 (Slot 3)    | E1501A (Port 56) | 1       | 48 Hz       | Off    | Auto           | Yes            |            | No         |
|   | 11          | 1501_03_56_02        | VXI      | pc            | VXIO          | E1413 (Slot 3)    | E1501A (Port 56) | 2       | 48 Hz       | Off    | Auto           | Yes            |            | No         |
|   | 12          | 1501_03_56_03        | VXI      | pc            | VXIO          | E1413 (Slot 3)    | E1501A (Port 56) | 3       | 48 Hz       | Off    | Auto           | Yes            |            | No         |

#### FIGURE 1-6: HARDWARE CONFIGURATION FOR VOLTAGE CHANNELS

Please note that, for all devices which are connected via the VXI interface, the appropriate parameters in the Group, Host, Mainframe, Instrument, and Board columns must be entered. For more detail, see *Section 3: Hardware Configuration* of the *VTIcoda User's Manual*.

In the **Signals** tab, enter the appropriate parameters for the voltage channels, as shown below. For a complete description of these parameters, please see *Section 3: Signals* of the *VTIcoda User's Manual*.

| ſ   | Hardware c | onfiguration Signa | als Alam | ns   Str | ain Gage   Te | mperature balar | ncing   Shunt ca | libration |         |      |          |          |         |         |         |          |             |
|-----|------------|--------------------|----------|----------|---------------|-----------------|------------------|-----------|---------|------|----------|----------|---------|---------|---------|----------|-------------|
|     | Log. Ch.   | Label              | Group    | Unit     | Range min.    | Range max.      | Transducer       | Transduc  | Transdu | Zero | User def | Temp ch. | Formula | VB min. | VR max. | Polarity | Sensitivity |
|     | 1          | 1501_03_24_00      | VX       | V        | -1            | 1               | Voltage Input    |           |         | 0    |          |          |         | -1      | 1       | Positive |             |
| i i | 2          | 1501_03_24_01      | VXI      | m        | 0             | 40              | Voltage Input    |           |         | 0    |          |          |         | 0       | 10      | Positive |             |
|     | 3          | 1501_03_24_02      | VXI      | cm       | 0             | 4000            | Voltage Input    |           |         | 0    |          |          |         | 0       | 10      | Positive |             |
|     | 9          | 1501_03_56_00      | VXI      | mm       | 0             | 1000            | Voltage Input    |           |         | 0    |          |          |         | 0       | 5       | Positive |             |
|     | 10         | 1501_03_56_01      | VXI      | m        | 0             | 10              | Voltage Input    |           |         | 0    |          |          |         | 0       | 10      | Positive |             |
|     | 11         | 1501_03_56_02      | VXI      | cm       | 0             | 1000            | Voltage Input    |           |         | 0    |          |          |         | 0       | 10      | Positive |             |
|     | 12         | 1501_03_56_03      | VXI      | mm       | 0             | 500             | Voltage Input    |           |         | 0    |          |          |         | 0       | 5       | Positive |             |
|     |            |                    |          |          |               |                 |                  |           |         |      |          |          |         |         |         |          |             |
|     |            |                    |          |          |               |                 |                  |           |         |      |          |          |         |         |         |          |             |
|     |            |                    |          |          |               |                 |                  |           |         |      |          |          |         |         |         |          |             |
|     |            |                    |          |          |               |                 |                  |           |         |      |          |          |         |         |         |          |             |

FIGURE 1-7: SIGNAL CONFIGURATION FOR VOLTAGE CHANNELS

#### **Creating Temperature Channels**

To perform temperature measurements with VTIcoda (e.g using a VXI Technology EX1048 48-channel precision thermocouple instrument), temperature channels must be created. In the example shown in the **Hardware configuration** tab below, three temperature channels have been defined.

| Testrun name                | Temperature               | Up                      | date!         |             |        | Filter<br>Group |                | •                     |
|-----------------------------|---------------------------|-------------------------|---------------|-------------|--------|-----------------|----------------|-----------------------|
| Description                 | EX1048                    |                         |               |             |        | Transducer ID   |                | •                     |
| Hardware configuration Sign | nals   Alarms   Strain Ga | ge   Temperature balanc | ing   Shunt c | alibration  |        |                 |                |                       |
| Log. Ch. Label              | Group Host Mai            | Instrum 🛆 Boar          | d Hw. Ch.     | Sample rate | Filter | AD meas, range  | Zero measuring | Excitation Excite. On |
| 1 EX1048_CH00               | LXI                       | EX1048 (1.2             | 0             | 200 Hz      | Off    | Auto            | Yes            | No                    |
| 2 EX1048_CH01               | LXI                       | EX1048 (1.2             | 1             | 200 Hz      | Off    | Auto            | Yes            | No                    |
| 3 EX1048_CH02               | LXI                       | EX1048 (1.2             | 2             | 200 Hz      | Off    | Auto            | Yes            | No                    |

#### FIGURE 1-8: HARDWARE CONFIGURATION FOR TEMPERATURE CHANNELS

When setting filters for temperature channels, remember that only 4 Hz and 1000 Hz are supported. For a complete description of these parameters, please see *Section 3: Hardware Configuration* of the *VTIcoda User's Manual*.

| in - [CODA@XE - TESTRUN STATUS : idle ]   |  |
|---|--|
| a Record View Window ?  | _ <del>_</del> <del>_</del> <del>_</del> <del>_</del> <del>_</del>   |
| 1 12 14 14 14 17 18 18 18 18 18 18 18 18 18 18 18 18 18                                   |  |
| Testus asso   | File   |
| Testrun name Preniperature Opualitier   | uroup  |
| Description EX1048  | Transducer ID  |
|   |  |
| Hardware configuration Signals Alarms Strain Gage Temperature balancing Shunt calibration |  |
|   |  |
| Log. Ch. Label Group Unit Range min. Range max. Transducer Transdu                        | cer ID Transducer Opt. Zero Meas Value User defined resistor Temp ch. Formula VR min. VR max. Polarity Sensitivity |
| 1 EX1048_CH00 LXI *C 10 40 Thermo Type K  | 0 Positive   |
| 2 EX1048_CH01 LXI *C 10 40 Thermo Type K  | 0 Positive   |
| 3 EX1048_CH02 LXI *C 10 40 Thermo Type K  | 0 Positive   |
|   |  |

#### FIGURE 1-9: SIGNAL CONFIGURATION FOR TEMPERATURE CHANNELS

Enter the appropriate parameters for the temperature channel being defined. Define whether degrees Celsius or Fahrenheit will be used by using the **unit** parameter. Next, define the measurement range (e.g. 10°C to 40°C for **Range min./Range max.**). Identify the thermocouple type (e.g. Type K, Type B, etc.) in the **Transducer** column. Each temperature channel may be operated with a different type of thermocouple.

#### Creating Digital I/O Channels

To use digital I/O channels with VTIcoda, ensure that suitable hardware is connected, such as the VT1533A, a 16-bit Digital Input/Output signal conditioning plug-on. The VT1533A has two ports, each with eight channels. Each port can be configured either as output or as input.

| ardware co | nfiguration Signa | als Alam | ns Strain | Gage Tem  | perature balancing | Shunt calibration |         |             |        |                |                |            |            |
|------------|-------------------|----------|-----------|-----------|--------------------|-------------------|---------|-------------|--------|----------------|----------------|------------|------------|
| Log. Ch.   | Label             | Group    | Host      | Mainframe | Instrument         | Board             | Hw. Ch. | Sample rate | Filter | AD meas, range | Zero measuring | Excitation | Excite. On |
|            | Digital Out01     | VXI      | A-Wing    |           | E1422A [Slot 1]    | E1533A (Port 08)  |         | 48 Hz       |        |                |                |            |            |
| 2          | Digital Out02     | VXI      | A-Wing    | VXI1      | E1422A (Slot 1)    | E1533A (Port 08)  | 1       | 48 Hz       |        |                |                |            |            |
| 3          | Digital Out03     | VXI      | A-Wing    | VXI1      | E1422A (Slot 1)    | E1533A (Port 08)  | 2       | 48 Hz       |        |                |                |            |            |
| 4          | Digital Input01   | VXI      | A-Wing    | VXI1      | E1422A (Slot 1)    | E1533A (Port 09)  | 0       | 48 Hz       |        |                |                |            |            |
| 5          | Analog Input01    | VXI      | A-Wing    | VXI1      | E1413 (Slot 2)     | E1501A (Port 00)  | 0       | 48 Hz       | Off    | Auto           | Yes            |            |            |
| 6          | Analog_Input02    | VXI      | A-Wing    | VXI1      | E1413 (Slot 2)     | E1501A (Port 00)  | 1       | 48 Hz       | Off    | Auto           | Yes            |            |            |

FIGURE 1-10: DIGITAL I/O CHANNELS - HARDWARE CONFIGURATION

#### Proceed as follows:

| ardware co | infiguration sign | alan  | ns Su | ain Gage Te | mperature balar | ncing Shunt calibration  |               |                 |                 |                       |          |         |         |         |          |            |
|------------|-------------------|-------|-------|-------------|-----------------|--------------------------|---------------|-----------------|-----------------|-----------------------|----------|---------|---------|---------|----------|------------|
| Log. Ch.   | Label             | Group | Unit  | Range min.  | Range max.      | Transducer               | Transducer ID | Transducer Opt. | Zero Meas Value | User defined resistor | Temp ch. | Formula | VR min. | VR max. | Polarity | Sensitivit |
|            | Digital Out01     |       |       |             |                 | Digital Output (Passive) |               |                 |                 |                       |          |         |         |         | Positive |            |
| 2          | Digital Out02     | VXI   |       | 0           | 1               | Digital Output (Passive) |               |                 | 0               |                       |          |         |         |         | Positive |            |
| 3          | Digital Out03     | VXI   |       | 0           | 1               | Digital Output (Passive) |               |                 |                 |                       |          |         |         |         | Positive |            |
| 4          | Digital Input01   | VXI   |       | 0           | 1               | Digital Input            |               |                 |                 |                       |          |         |         |         | Positive |            |
| 5          | Analog_Input01    | VXI   | mm    | 0           | 100             | Voltage Input            |               |                 |                 |                       |          |         | 0       | 5       | Positive |            |
| 6          | Analog Input02    | VXI   | mm    | 0           | 100             | Voltage Input            |               |                 |                 |                       |          |         | 0       | 5       | Positive |            |

FIGURE 1-11: DIGITAL I/O CHANNELS - SIGNALS

In the Transducer column of the Signals tab, define whether the channel will be used as an input or an output. Please note that the **same transducer type must be assigned to all channels of the same port**.

| Output Characteristics | Characteristic           | OUTPut:TYPE ACTive    | OUTPut:TYPE PASSive  |
|------------------------|--------------------------|-----------------------|----------------------|
|                        | current source (logic 1) | 5 mA                  | 0                    |
|                        | current sink (logic 0)   | 48 mA                 | 48 mA                |
|                        | Voltage (logic 1)        | 2.5 V Min @ 5 mA load | NA                   |
|                        | Voltage (logic 0)        | 0.5 Max @ 48 mA load  | 0.5 Max @ 48 mA load |

#### FIGURE 1-12: PASSIVE/ACTIVE OUTPUT PROPERTIES (SOURCE: VT1533A MANUAL)

| Log. Ch. | Label           | Group | Unit | Range min. | Range max. | Alarm min. | Hysteresis min. | Alarm max. | Hysteresis max. | Alarm min. active | Alarm max. active | Excitation Lower Limit | Dig. Out Ch.  | Set Dig High | Set Dig Lo |
|----------|-----------------|-------|------|------------|------------|------------|-----------------|------------|-----------------|-------------------|-------------------|------------------------|---------------|--------------|------------|
|          | Digital Out01   |       |      |            |            |            |                 |            |                 |                   |                   |                        |               |              |            |
|          | Digital Out02   | VXI   |      | 0          | 1          |            |                 |            |                 | No                | Yes               |                        |               |              |            |
| 1        | Digital Out03   | VXI   |      | 0          | 1          |            |                 |            |                 | No                | Yes               |                        |               |              |            |
|          | Digital Input01 | VXI   |      | 0          | 1          |            |                 |            |                 | No                | Yes               |                        | Digital Out01 | Alarm Max    | In Limit   |
| i        | Analog Input01  | VXI   | roro | 0          | 100        | 20         |                 | 80         |                 | Yes               | Yes               |                        | Digital Out02 | Alarm MinMax | In Limit   |
| 3        | Analog Input02  | VXI   | mm   | 0          | 100        | 25         |                 |            |                 | Yes               | No                |                        | Digital Out03 | In Limit     | Alarm Min  |

#### FIGURE 1-13: DIGITAL I/O CHANNELS - ALARMS

If a value is entered for either **Alarm min./max.** or **Hysteresis min./ max.** for digital channels, these values are ignored. Instead, set **Alarm min./max.** to **Yes** in order to define the status that will be reported.

Channels configured for a digital output will be available for in the **Dig. OutCh.** column to be switched by means of events. This holds for all input channels, regardless of whether they are analog or digital channels.

The following events can be selected:

| Alarm Max    | The digital output channel assigned in <b>Dig. OutCh.</b> will be set to high or low as soon as the value defined in <b>Alarm max.</b> is exceeded.  |
|--------------|--|
| Alarm Min    | The digital output channel assigned in <b>Dig. OutCh.</b> will be set to high or low as soon as the actual value falls short of the value defined in <b>Alarm min.</b>   |
| Alarm MinMax | The digital output channel assigned in <b>Dig. OutCh.</b> will be set to high or low as soon as the value defined under <b>Alarm max.</b> is exceeded or as soon as the actual value falls short of the value defined in <b>Alarm min.</b> |
| In Limit     | The digital output channel assigned in <b>Dig. OutCh.</b> will be set to high or low as soon as the actual value falls short of the value defined in <b>Alarm min.</b>   |

| Dig. Out Ch.  | High                       | Low                     |
|---------------|----------------------------|-------------------------|
| Digital_Out01 | if Digital_Input01 =       | if Digital_Input01 =    |
|               | High (Alarm max.)          | Low (no Alarm max.)     |
| Digital_Out02 | if Analog_Input01 =        | if Analog_Input01 =     |
|               | Alarm min. or max. (<20 mm | InLimit (>20 mm and <80 |
|               | or > 80 mm)                | mm)                     |
| Digital_Out03 | if Analog_Input02 =        | if Analog_Input02 =     |
|               | InLimit (>25 mm)           | Alarm min (<25 mm)      |

#### **STARTING A TEST RUN**

To start a test run, select the Calibration - Start / Stop Testrun item in the tree display.

| 🗰 CodaAdmin - [CODAg   | LOCALHOST - TESTRUN STATUS   | : idle ]   |  |  |
|--|--|--|--|--|
| 🗒 File Data Record View  | Window ?   |  |  |  |
| Talling Taller   | ° 🕫 🖌 М 🛛 С. Р 🛛 Е. Г. 🖸 СО  | ALCA 🔤 SVSRS 😵   |  |  |
| # YTICODA         # #Coda System Adminis         III Ser Managemen         III Ser Managemen | Start / Stop Testrun - Calib<br>Test Run<br>Mied Charnels<br>Performance<br>Guarder Birbge (130)<br>Single Linea Transduer<br>Single Stain Charnel<br>Single Stain Charnel<br>Single Temp Charnel<br>Single Temp Charnel | Start / Stop         Start       Current Status         Start       IDLE         Stop       Zero Measurement         Master Reset       Save data         26.09.2007 10.37.30.       BEGIN       eMsgT askBegin 11         26.09.2007 10.37.31.       BEGIN       eMsgT askBegin 11         26.09.2007 10.37.32.       EFINF Media       EFINF Media         26.09.2007 10.37.32.       EFINF Media       EFINF Media         26.09.2007 10.37.32.       END       eMsgT askBegin 11         26.09.2007 10.37.32.       END       eMsgT askBegin 14         MSG-TEXT:END       END       eMsgT askBegin 14 | Calibration Calibration SetHest instrument SetHest instrument Calibrat SetHest instrument Calibrat digmvaid (mag = 23, task = 6) Measurement >> Stopping Test graveling = 23, task = 8) Measurement >> Stopping Test | Cal Chan<br>Cal Zero<br>Cal ChanTare<br>Cal Chan Remote<br>e |

FIGURE 1-14: SELECTION OF TEST TO BE STARTED

Select a test run from the test run list displayed in the selection window and then click start Start.

#### **VIEW DEFINITIONS**

Before the display of the measurement diagrams can be enabled, select a view definition. If no view definitions are available, a new view should be created.

#### Create New View Definition

To create a new view definition, click the **Change View Definition** category in the tree on the left of the screen, then click the ( ) icon or choose the **New Data Record** function in the **Data Record** menu. The header "Change View Definition, New Entry" appears in the main right part of the window.

Enter a name for the new view definition in the **Name** field (e.g. EX1048\_1), then click the **Insert!** button. The new name will appear in the header line and the **Add Channel** and **Remove Channel** buttons will be activated. The tree shows the new view name "EX1048\_1" in the **Change View Definition** category.

| 🔁 CODA - [CODA@LOCALHOST - :                    | LOCALHO                      | DST]    |             |           |        |        |         |            |           |              |                 |                     |                 |        |
|---|------------------------------|---------|-------------|-----------|--------|--------|---------|------------|-----------|--------------|-----------------|---------------------|-----------------|--------|
| 🕎 File Data Record View Help                    | 과 File Data Record View Help |         |             |           |        |        |         |            |           |              |                 |                     |                 |        |
|   |                              |         |             |           |        |        |         |            |           |              |                 |                     |                 |        |
| VTICODA   | Chang                        | je Viev | w Defi      | nition, ( | Quarte | ər-Bri | dge (1  | 20), All C | hannel \  | /iew         |                 |                     |                 |        |
| Change View Definition     Mixed Channels       | Name:                        | All     | Channel \   | /iew      |        |        |         |            |           | Add Channel  |                 | Number of<br>Charts | 1 .             |        |
| Quarter-Bridge (120)                            | Testrun:                     | Qu      | arter-Bridg | ge (120)  |        | ~      |         |            | R         | emove Channi |                 | Displayed:          |                 |        |
| ■ All Channel View ■ Single Full Bridge Channel | Design:                      | Dia     | igram       |           |        | *      |         |            |           |              |                 |                     |                 |        |
|   | Channels                     |         |             |           |        |        |         |            |           |              |                 |                     |                 |        |
| Single Temp Channel     Single Voltage          | Label                        | Group   | Chart       | Position  | Туре   | Axis   | lin/log | Autoscale  | Min-Scale | Max-Scale    | Min. Pre. Start | Min. Pre. End       | Max. Pre. Start | Max. F |
|   |                              |         |             |           |        |        |         |            |           |              |                 |                     |                 |        |

FIGURE 1-15: CREATE NEW VIEW DEFINITION

Next, select a test run from the **Testrun** pull-down menu and a display type from the **Design** pulldown menu. After creating and naming the new view, determine the channels that will be included in this view.

#### Add Channel

Click the **Add Channel!** button to select the channels that will appear in this view definition. The **New Channel** window will open.

| New Channel                  |   |  | ×      |
|------------------------------|---|--|--------|
| Group                        | Transducer ID   | Label  |        |
| All groups<br>Group X<br>LXI | All transducers<br>EX1629_00<br>EX1629_01<br>EX1629_02<br>EX1629_03<br>EX1629_04<br>EX1629_05<br>EX1629_07<br>EX1629_16<br>EX1629_17<br>EX1629_18<br>EX1629_19<br>EX1629_20<br>EX1629_21<br>EX1629_21<br>EX1629_22<br>EX1629_23 | CH_EX1048_00<br>CH_EX1048_01<br>CH_EX1048_02<br>CH_EX1048_03<br>CH_EX1048_05<br>CH_EX1048_06<br>CH_EX1048_06<br>CH_EX1048_17<br>CH_EX1048_17<br>CH_EX1048_18<br>CH_EX1048_19<br>CH_EX1048_20<br>CH_EX1048_21<br>CH_EX1048_22<br>CH_EX1048_23 | Cancel |
| Chart                        | Type Position   | Axis lin/log Autoscale   | 1      |
| 1 💌                          | Diagram 💌 1 💌   | Y V linear No V  |        |

FIGURE 1-16: ADDING CHANNELS FOR THE VIEW DEFINITION

The left part of this window lists all available channel groups. As the desired group is selected, the center part of the window displays the list of all Transducer IDs belonging to the selected group. Mark the desired Transducer ID by a right-clicking and the third part of the window will display a list of the available channels (only those channels are listed here that have been configured in the test run selected before). Choose the desired channel, define its view parameters in the line below the columns and click the **Add** button. Then select further channels, as required. When all the required channels have bee selected for the view definition, click the **Close** button. All channel definitions will now be written to the View Definition table.

**NOTE** Hold the Ctrl button and left-click multiple, single channels. Hold the Shift button and left-click to select several consecutive channels. With the first click, the first channel of the row is selected and, with the second click, the last channel is selected.

To add a channel later, simply click the **Add Channel** button and select the missing channel in the window as described above. Then, click the **Close** button. The channel will then be listed in the table.

The next step will be to pre-define some important view parameters.

#### Presetting the View Parameters



#### FIGURE 1-17: PRESETTING THE VIEW PARAMETERS

In the selection fields displayed at the bottom of the window, a number of view parameters can be defined: the position a channel will appear in a specific window, the diagram type that will be used, and whether scaling is logarithmic or linear. Furthermore, the values which appear on the x-and y-axis can be selected as well as whether automatic scaling will be enabled.

If several channels are selected, these will be assigned automatically to the preset window and diagram type. The position will also be numbered automatically.

**NOTE** If more than eight channels are selected for one window, double traces will appear in a diagram. It is possible to correct this error later in the channel table.

#### Adding Channels of Several Groups

Channels of several test runs can be selected for a view. To do so, chose the channels of one test run and click the **Add** button. The data from the channels are passed to the clipboard. Switch to another group, select the desired channels and click the **Add** button. The channels data will be added to the data that was already passed to the clipboard. Once channel selection is finished, click the **Close** button. All selected channels will now be listed in the View Definition table. Here, the entries for the channel display can be corrected (the window position, diagram type, etc.) as the fields of the table can be edited.

#### Number of Charts Displayed

As soon as the channels are listed, the "Number of Charts Displayed" selection field offers 1, 4, 8, and 16.



Now, select the number of charts that will be displayed on the screen. A maximum of 16 diagrams per screen page can be selected.

When the "Number of Charts Displayed" is modified, the **Update!** button appears next to the test name. Click this button to modifications made to the database.

#### Table/Diagram Selection

If **Diagram** is selected, the desired online values are displayed in diagrams.

If **Table** is selected, the desired online values are displayed in tables. Select one chart (1 - 16) and one of the positions (1 - 8). The assignment of the channels to charts is not changed, the channels of one chart are displayed in a table.

The Screen View Channel Table

| CODA - [CODA@LOCALHOST - :LOCALHOST]   |   |                                       |   |                                      |   |                                 |   |                                  |  |   |                 |                                   |                    |  |
|--|---|---------------------------------------|---|--------------------------------------|---|---------------------------------|---|----------------------------------|--|---|-----------------|-----------------------------------|--------------------|--|
| 🕎 File Data Record View Help   | P File Data Record View Help  |                                       |   |                                      |   |                                 |   |                                  |  |   |                 |                                   |                    |  |
|  |   |                                       |   |                                      |   |                                 |   |                                  |  |   |                 |                                   |                    |  |
| VITCODA     Copy View Definition     Copy View Definition     Mixed Channels     Mixed Channels     All Channel View     Single Full Bridge Channel     Mixed Channel     Single Linear Transducer     Mixed Linear Linearel | Change<br>Name:<br>Testrun:<br>Design:<br>Channels  | View [<br>All Cha<br>Quarte<br>Diagra | Definit<br>nnel Vier<br>r-Bridge  <br>m | ion, Qu<br>~<br>(120)                | iarter-B  | ridge                           | (120),  | All Char                         | Inel View<br>Add Channel<br>Remove Channel |   |                 | Number of<br>Charts<br>Displayed: |                    |  |
| Single Temp Channel  | Label   | Group                                 | Chart                                   | Position                             | Туре  | Axis                            | lin/log   | Autoscale                        | Min-Scale                                  | Max-Scale   | Min. Pre. Start | Min. Pre. End                     | Max. Pre. Start Ma |  |
| Imm single voltage     Select View Definition  | CH_00_S<br>CH_01_S<br>CH_02_S<br>CH_03_S<br>CH_04_S<br>CH_05_S<br>CH_06_S<br>CH_06_S<br>CH_07_S | ZZZZZZZ                               | 1<br>1<br>1<br>1<br>1<br>1<br>1         | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8 | Diagram<br>Diagram<br>Diagram<br>Diagram<br>Diagram<br>Diagram<br>Diagram | Y<br>Y<br>Y<br>Y<br>Y<br>Y<br>Y | linear<br>linear<br>linear<br>linear<br>linear<br>linear<br><b>linear</b> | No<br>No<br>No<br>No<br>No<br>No | 0<br>0<br>0<br>0<br>0<br>0<br>0            | 100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100 |                 |                                   |                    |  |

FIGURE 1-18: SCREEN VIEW CHANNEL TABLE

See Section 4: The Screen View Channel Table for a complete description of all parameters available in this table.