

centork®

A **rotork** Brand



CK range

Accent User Manual



accent

Modular Design Electric Valve Actuators

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Accent User Manual

1.0 Introduction

- 1.1 Installing Accent
- 1.2 Uninstalling Accent
- 1.3 Updating Accent
- 1.4 Operating Requirements for Accent

1.0 Introduction

Accent PC software is designed as a secondary setting and analysis tool for use with CK Centronik actuators. Actuator configurations and data log information can be saved locally on any PC that has Accent PC software installed. This data will ensure replacement modules can be quickly configured with the original actuator settings.

Functions of Accent:-

- Programming the operation setting of CK_C or CK_{RC} actuators
- Reading all current confirmation settings
- Viewing the data log file of the connected actuator
- Various live actuator operations
- Saving data log and configuration data for future use
- Loading new configuration data into a CK_C or CK_{RC}

1.1 Installing Accent

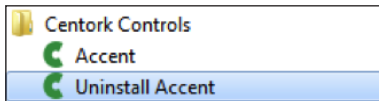
The Accent program can be downloaded from the Accent download page on: www.Centork.com.

On the Accent download page you can view information about the software and the minimum PC operating requirements. It is worth noting down the program access passwords for future use. When you are satisfied that your machine is compatible with Accent, click Download Accent Software for PC. This will begin the software package download for the latest version of Accent.

Once the download is complete, extract the install package to a user specified save location. Open the **Accent_Setup** Windows installer package (.msi) file to load the installation wizard and begin the program install process. Follow the on-screen prompts to install Accent.

1.2 Uninstalling Accent

To uninstall Accent use the Uninstall Accent start menu shortcut or proceed through the standard Windows software management feature. This can be found within the control panel.



For XP users use the "Add/Remove Programs" feature.

For Vista and 7 users use the "Uninstall a program" feature.

Select Accent from the program list and select uninstall.

Follow the onscreen wizard to complete the removal of Accent.

1.3 Updating Accent

Accent will be updated periodically to add new features and increased compatibility with new Centork actuators. To update your copy of Accent please follow instructions detailed on the download page of the Centork website www.Centork.com.

Accent User Manual

1.4 Operating Requirements for Accent

Accent is fully compatible with Windows XP, Vista, 7 and 8 (including touch screens) and supports USB-*Bluetooth*[®] adapter technology.

Minimum PC Operating Requirements:

- Pentium class or equivalent processor
- 1GB RAM
- Minimum 800 x 600 monitor resolution
- Microsoft Windows XP, Vista, 7 and 8
- USB 1 or 2 port

*Whilst every effort has been made to ensure that Accent works with these systems, individual operating system/PC set-up may affect operation. Accent operation cannot be guaranteed with other operating systems. Centork cannot be held responsible if Accent or any of its components does not work on any specific PC.

To ensure a reliable and secure *Bluetooth*[®] connection to Centronik actuators with Accent, Centork always recommends the use of an external USB-*Bluetooth*[®] adapter. Whilst built in *Bluetooth*[®] devices can detect Centronik control modules, they commonly lack the high capacity data transfer capabilities that an external USB-*Bluetooth*[®] adapter provides.

Please contact your system administrator if you have any issues downloading or installing Accent PC software.

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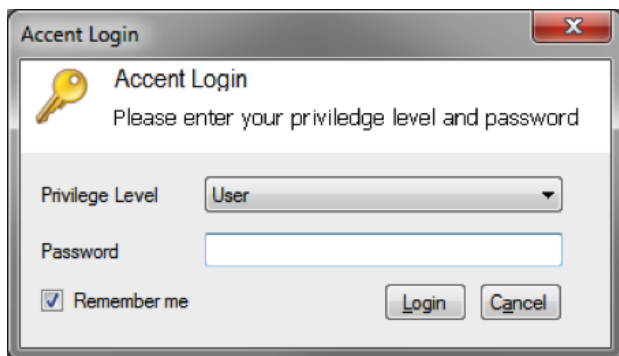
2.0 Logging In

- 2.1 Login Screen
- 2.2 User Levels
 - 2.2.1 Viewer
 - 2.2.2 User
 - 2.2.3 Service_Engineer
 - 2.2.4 Administrator

2.0 Logging In

2.1 Login Screen

Below is the login screen for Accent.



This screen provides the user with four access levels through the drop down menu that require the corresponding password to be entered. The check box in the bottom left allows Accent to remember your login details for easy access to the program in the future.

2.2 User Levels

The Privilege Level drop down menu presents 4 selections.



This selection will determine the available access levels visible when connecting to a Centork *Bluetooth*® device.

Accent User Manual

2.2.1 Viewer

As a Viewer you can connect to any *Bluetooth*[®] equipped Centork device. These include: CK Centronik control modules and Centork *Bluetooth*[®] Setting Tools. Viewer level prevents operators from modifying the settings of an actuator or setting new missions on a Centork Bluetooth(R) Setting Tool.

Default Accent Viewer Password: **CENTORK**

2.2.2 User

As a User you can perform all the tasks of a Viewer with the additional permission to modify setting values. An actuator User login allows you to change some settings within the actuators configuration. Connecting to a Centork Bluetooth(R) Setting Tool as a User allows creation and deletion of User level missions..

Default Accent User Password: **CENTORK**

2.2.3 Service_Engineer

This login is reserved for the use of Centork Service Engineers.

2.2.4 Administrator

This Login is reserved for the use of Centork Engineers for factory calibration purposes.

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3.0 Home Screen

3.1 Layout

3.2 Menu Bar

3.2.1 File

3.2.2 Connection

3.2.3 Security

3.2.4 Tools

3.2.5 Help

3.3 Icon Bar

3.3.1 Open Configuration

3.3.2 Save As

3.3.3 Save

3.3.4 Print

3.3.5 Send

3.3.6 Receive Configuration

3.3.7 Discard

3.4 Side Panel

3.4.1 Offline

3.4.2 Bluetooth

3.5 Range Panel

3.6 Presentation Window

3.7 Status Bar

3.7.1 Connection Status

3.7.2 Actuator Login level

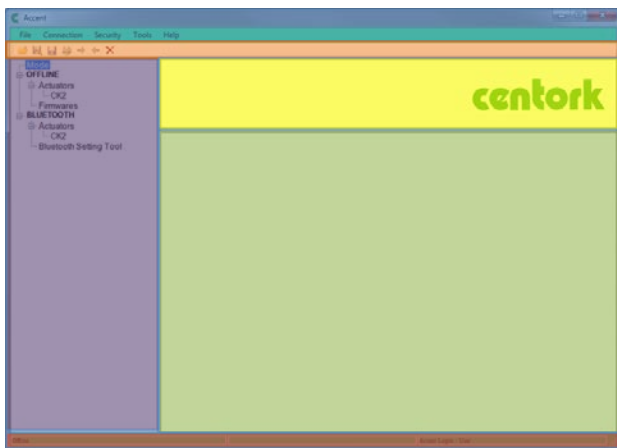
3.7.3 Accent Login Level

3.0 Home Screen

The home screen is the basic interface you see after logging in to Accent. This can easily be split into different sections for the various common and specific functions you will see whilst using this program.

3.1 Layout

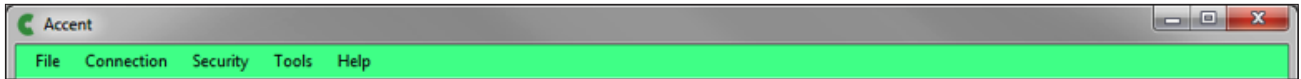
For the purpose of this manual the main Accent screen has been split into six areas as shown below:



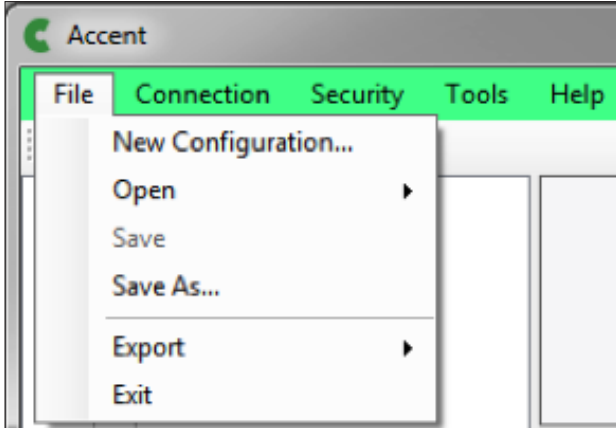
| Description | Colour |
|---------------------|--------|
| Menu Bar | Blue |
| Icon bar | Orange |
| Side Panel | Purple |
| Range Panel | Yellow |
| Presentation Window | Green |
| Status Bar | Red |

Accent User Manual

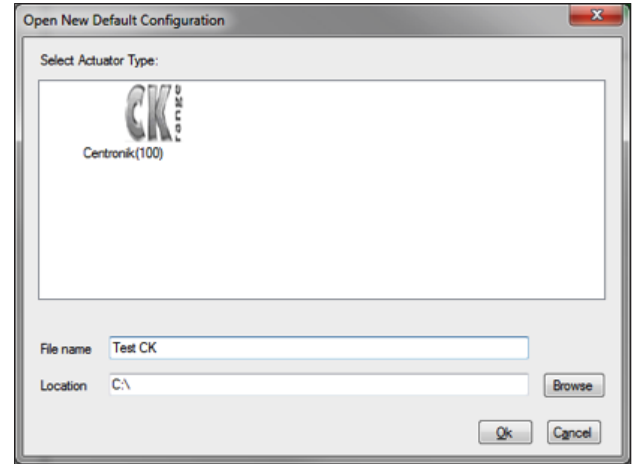
3.2 Menu Bar



3.2.1 File

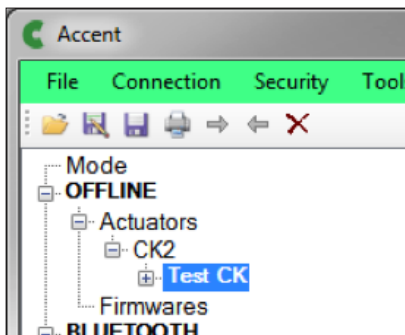
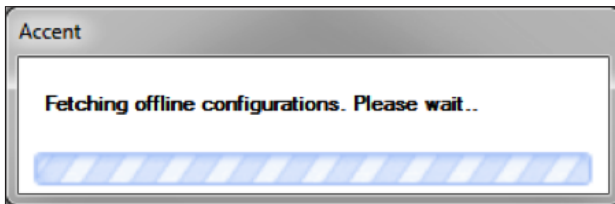


New Configuration



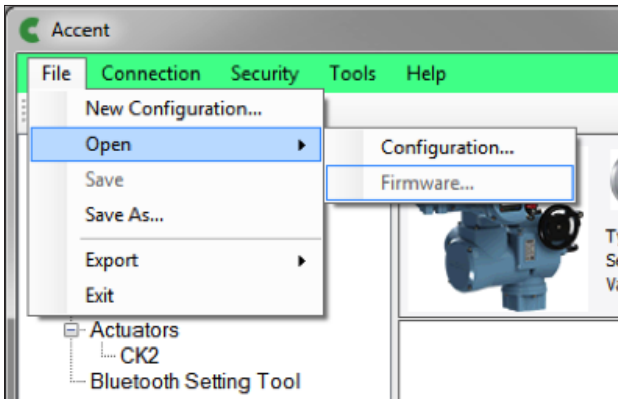
Use this function to create a new default configuration for a compatible Centork product. There are 5 types of actuator that can be configured with Accent. The name and save location of the configuration can be modified appropriately if required.

Once "Ok" is selected the loading screen will appear as Accent prepares the new configuration. This will appear in the Offline section of the side menu (for side menu information see section 3.4.1) under the correct actuator type.

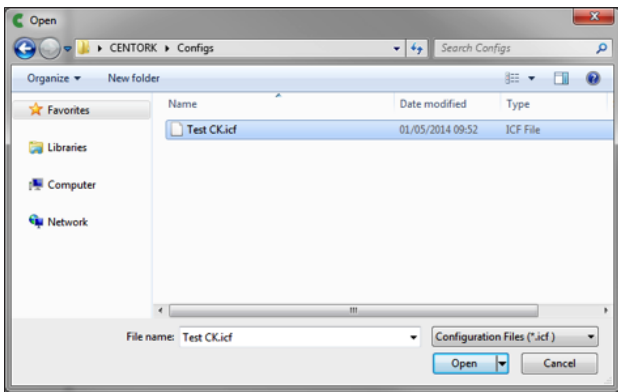


Accent User Manual

Open



Configuration



The configuration option allows the user to open saved configuration files. Opened files will be shown in the Offline section of the Side menu under the relevant actuator type.

Firmware

This function is only available for Centork Service Engineers and Service centres.

Save

When a configuration in the Offline section is changed the user can save those changes.

Save As

This function enables the user to save configuration files from the Offline or Online sections of the side menu to a directory on the PC. These will be available for future offline use.

Export

Configuration

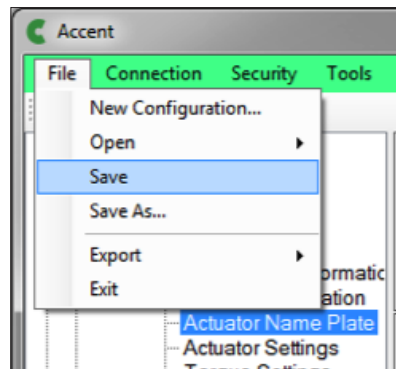
This exports the current actuator configuration as either a Comma Separated Value (.csv) or a Text file (.txt)

Configuration and Data Logs

This exports the current actuator configuration and data log file as either a Comma Separated Value (.csv) or a Text file (.txt). The data log must be viewed within Accent prior to exporting the data.

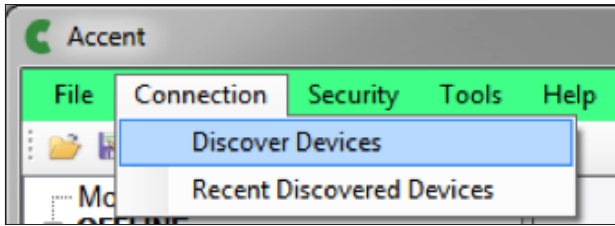
Exit

The Exit function will close Accent and disconnect from any active Bluetooth® device.



Accent User Manual

3.2.2 Connection



Discover Devices

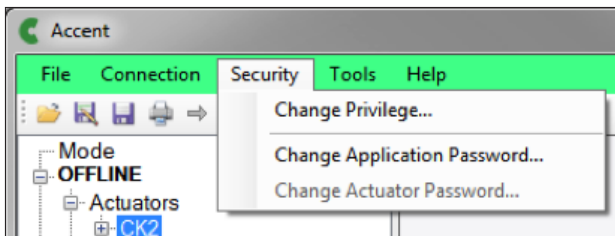
This initialises a search for all *Bluetooth*® enabled actuators* and setting tools within the *Bluetooth*® adaptor range (setting tools can only be found whilst in slave mode, refer to the Centork Setting Tool manual for more information).

Recent Discovered Devices

This provides a list of previously connected devices that the operator can connect to without requiring a *Bluetooth*® search*.

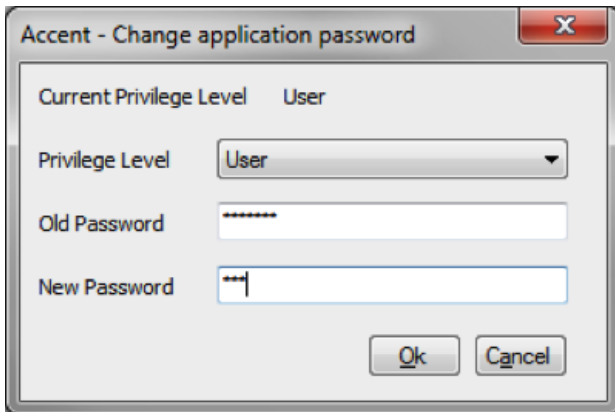
*Actuators must be in a *Bluetooth*® visible mode and within range of the *Bluetooth*® adapter to be discovered with Accent.

3.2.3 Security



Change Privilege

This enables the user to change their privilege level within Accent by re-opening the Login screen (see section 2 Logging In).



Change Application Password

This function enables the current user to change the Accent login passwords for the current privilege level and any lower privilege level.

Change Actuator Password

This function is reserved for Centork Service Engineer use only.

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3.2.4 Tools

Sensor Calibration

This function is reserved for Centork Service Engineer use only.

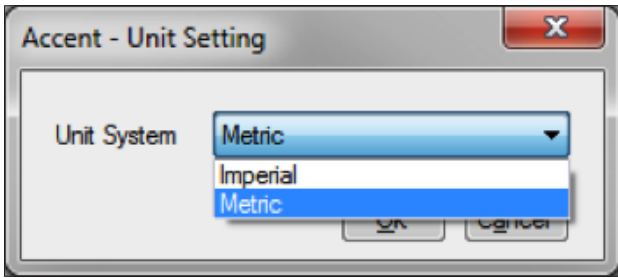
Zero Thrust

This function is reserved for Centork Service Engineer use only.

CP Chat

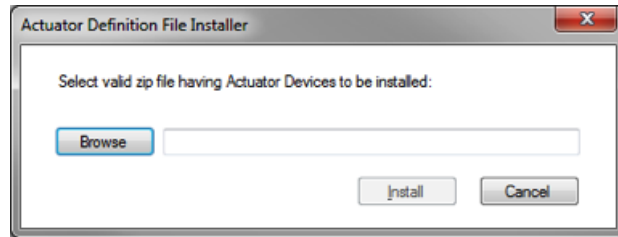
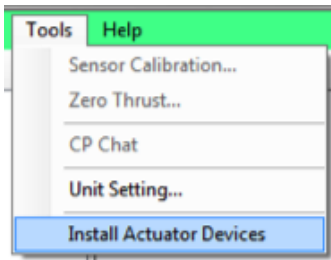
This function is reserved for Centork Service Engineer use only.

Unit Setting



The units displayed within Accent can be set to Metric or Imperial to suit various global markets (**Accent default = Metric**).

Install Actuator Devices



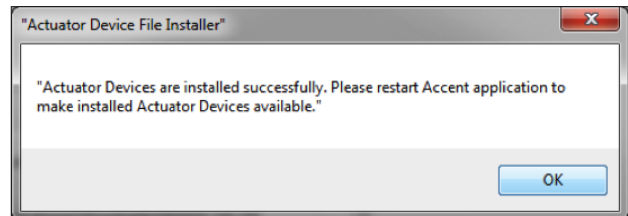
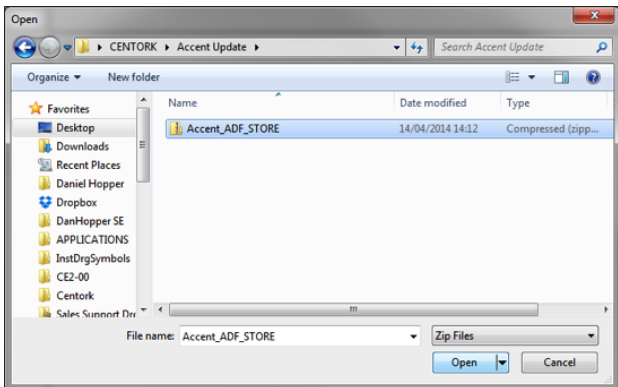
This function enables Accent to be updated using a compressed ADF file package provided by Centork.

All future updates will be supported via this feature to ensure reliable compatibility with the continually expanding Centork product offering.

To download the latest ADF file please visit the Accent download page: www.Centork.com.

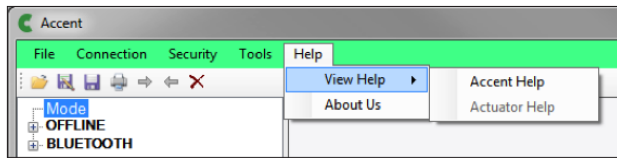
Save the ADF file to an accessible PC directory and then browse to the file through the Install Actuator Devices function.

On successful installation of the update you will be requested to restart Accent.



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3.2.5 Help



View Help

Accent Help

This help file is currently under construction. Future releases will include information about various Accent functions.

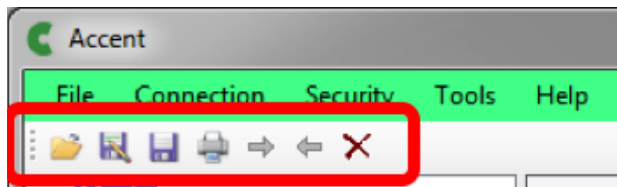
Actuator Help

This help file is currently under construction. Future releases will include information about various Centork actuator functions relevant to the connected actuator type.

About Us

Shows the current version number of the Accent program and contains a brief description about the purpose of Accent.

3.3 Icon Bar



3.3.1 Open Configuration



This allows the user to open a saved Configuration file (.icf) from a PC directory in the Offline section of the Side panel.

3.3.2 Save As



This function enables configuration files from the Offline or Online sections of the side menu to be saved in a PC directory.

3.3.3 Save



When a configuration is open in the Offline Section, this function enables the user to save any modifications to the settings.

3.3.4 Print



This will print the current information in the presentation window as it is shown on the screen (only available when actuator information is displayed within the window).

3.3.5. Send Configuration



This function will send all visible configuration changes to the connected actuator. Send Configuration will only be possible when connected to a *Bluetooth*® device.

3.3.6 Read Configuration



This function will read a device's current configuration. Read Configuration will only be possible when connected to a *Bluetooth*® device.

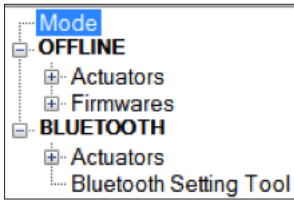
3.3.7 Discard



Removes any unsaved configuration changes (highlighted yellow) displayed within the presentation window.

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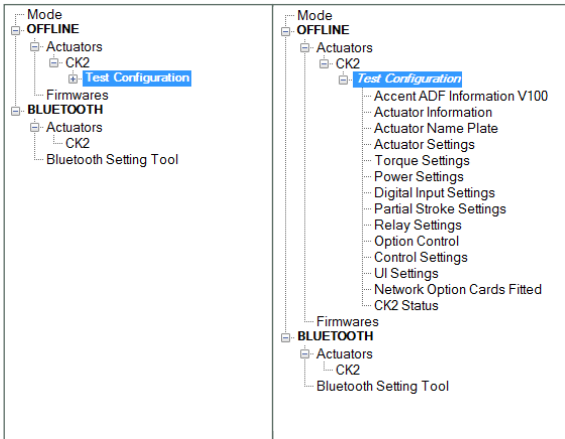
3.4 Side Panel



3.4.1 Offline

Actuators

All offline actuator configurations opened in Accent are stored for the session under their respective actuator type (see Fig 1). Configurations can be edited and viewed (with the correct privilege level) from the expanded menu (See fig 2).



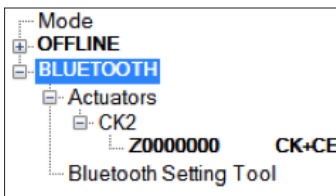
Firmware

This function is reserved for Centork Service Engineer use only.

3.4.2 Bluetooth

Actuators

All actuators that have been found by after a *Bluetooth*® search (see 1.0 and 4.0) will be visible here. The expanded menu can only be accessed once a connection to the device has been established.



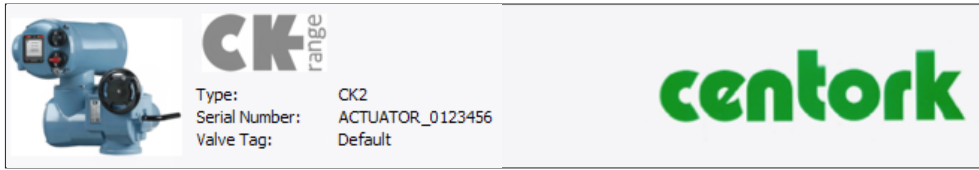
Bluetooth Setting Tool

All visible *Bluetooth*® Setting Tools currently in slave mode and available for connection (See Centork Setting Tool Manual for details) will be visible in this section. The expanded menu can only be accessed once a connection to the *Bluetooth*® Setting Tool has been established.

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3.5 Range Panel

The Range Panel will indicate which actuator range the current configuration or data log belongs to. If the device is currently connected through Accent the serial number and valve tag will also be displayed.



3.6 Presentation Window

The presentation window is where all configuration and data log information is displayed. Any setting entries that are shaded grey are non-editable at the current privilege level.

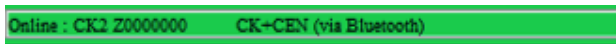
3.7 Status Bar

Current status of actuator connection, actuator privilege level and Accent privilege level are displayed at all times within the Accent window.



3.7.1 Connection Status

Connection status for Accent is visible in the left portion of the status bar. An online connection will show the actuator *Bluetooth*® tag or *Bluetooth*® Setting Tool tag and the connection method. If a *Bluetooth*® connection is not currently active an offline status will be displayed.



3.7.2 Actuator Login Level

Current actuator login level is shown in the middle portion of the status bar. There are three levels available: Viewer, User and Engineer



3.7.3 Accent Login Level

The current privilege level access for Accent is displayed in the right portion of the status bar. To change access level, click on this part of the status bar or use the change privilege level option (See 3.2.3.1).



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4.0 Connecting and Disconnecting Devices

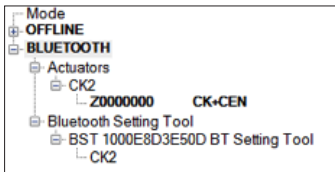
- 4.1 Searching for Devices
- 4.2 Connecting to an Actuator
- 4.3 Connecting to a Bluetooth Setting Tool
- 4.4 Disconnecting from Devices

4.0 Connecting and Disconnecting Devices

4.1 Searching for Devices

Use the Discover Devices function (as detailed in 3.2). This will begin a search for all Centork *Bluetooth*® enabled devices and setting tools within range of the *Bluetooth*® adapter.

Please note only actuators with a *Bluetooth*® Security setting of Medium or Low are visible within Accent. *Bluetooth*® setting Tools have to be in slave mode to be found by Accent (refer to the Centork Setting Tool Manual for information on how to activate Slave Mode).

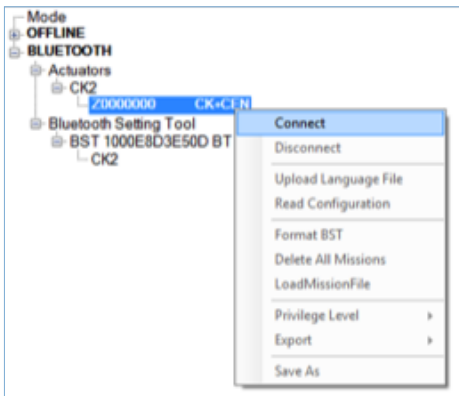


Once the search is complete, all actuators found will be displayed in the expanded menu under the relevant range heading. Each unit will be identified by Serial Number and *Bluetooth*® Friendly Tag.

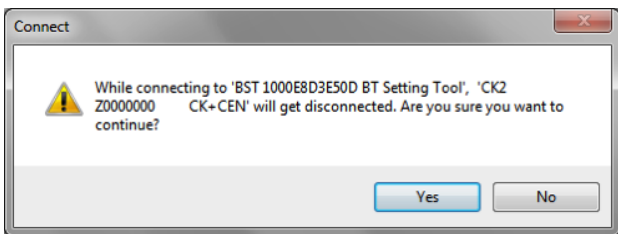
Bluetooth® Setting Tools will be identified by the acronym BST and the *Bluetooth*® MAC address.

4.2 Connecting to an Actuator

To connect to an actuator, double click on the actuator name or right click on the actuator name and click Connect.



If you try to connect to more than one actuator the warning box below will be shown.



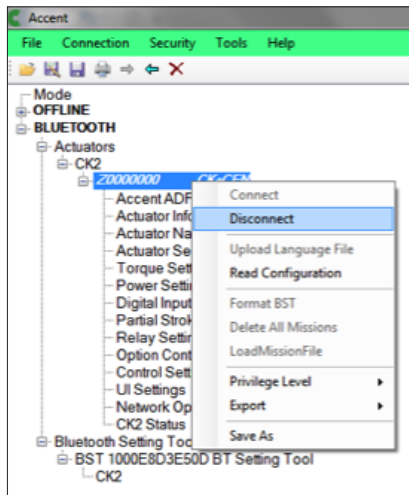
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4.3 Connecting to a Bluetooth Setting Tool

Connecting to a *Bluetooth*® Setting Tool is performed in the same manner as connecting to an actuator. Upon connection with Accent the Setting Tool's Enter key will rapidly flash blue indicating a connection has been established. The connection privilege Level of the *Bluetooth*® Setting Tool is dictated by the current Accent Privilege Level.

4.4 Disconnecting from Devices

You can disconnect from a device by right clicking the device and selecting Disconnect from the drop down menu, this is applicable to all *Bluetooth*® devices.



5.0 Bluetooth Setting Tool Screens

5.1 BTST Information

5.1.1 Firmware Version

5.1.2 Battery Status (mV)

5.1.3 Number of Files

5.1.4 Free Space on the BTST (Bytes)

5.1.5 Flash Memory Size on BTST (Bytes)

5.0 Bluetooth Setting Tool Screens

All the following settings are relevant to the optional Centork *Bluetooth*® Setting Tool. To connect to the Centork *Bluetooth*® Setting Tool please refer to section 4.3 of this manual.

5.1 BTST Information

This screen is found by clicking on the *Bluetooth*® Setting Tool in Accent.

5.1.1 Firmware Version

Shows the firmware version of the connected *Bluetooth*® Setting Tool.

5.1.2 Battery Status (mV)

Shows the battery status of the connected *Bluetooth*® Setting Tool.

5.1.3 Number of Files

Shows the number of files stored on the *Bluetooth*® Setting Tool. This includes configuration, data log and mission files but excludes any system files used for *Bluetooth*® communication.

5.1.4 Free Space on the BTST (Bytes)

Shows the remaining space left on the *Bluetooth*® Setting Tool.

5.1.5 Flash Memory size on BTST (Bytes)

Shows the capacity of the *Bluetooth*® Setting Tool.

5.2 CK

This is where configuration and data log files for CK actuators are stored. They are stored under their individual serial numbers. Double clicking a serial number will open the configuration file and associated data log (if present). For information on all CK screens see section 6.0 CK Centronik Settings.

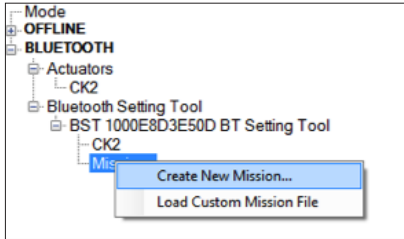
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5.3 Missions

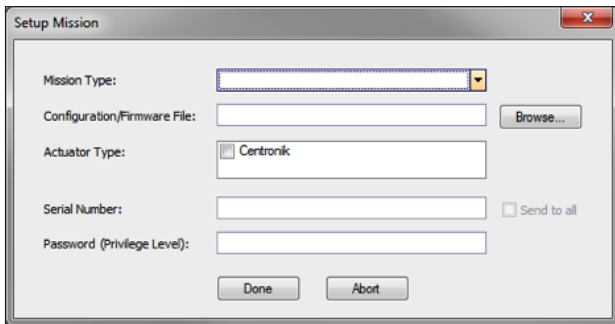
A mission is a defined set of instructions programmed to perform a variety of tasks when communicating with an actuator. Missions are used to send and receive actuator configuration files, upload firmware and collect data log files.

5.3.1 Create Missions

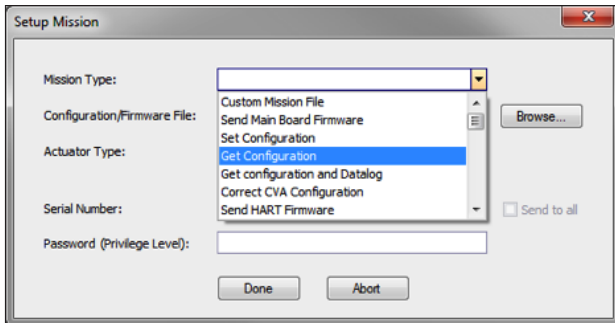
To create a mission, right click on the missions menu under *Bluetooth®* Setting Tool.



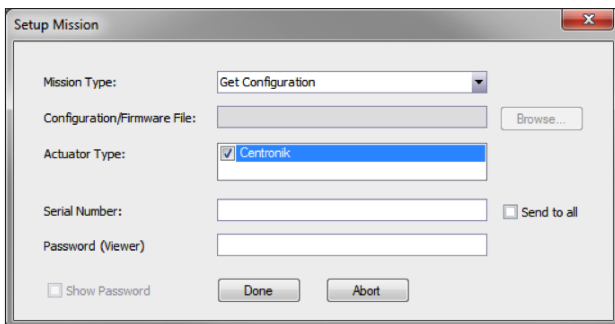
From here the Setup Mission screen will appear and you can start to create your mission.



Here you can select the mission type from the drop down menu.

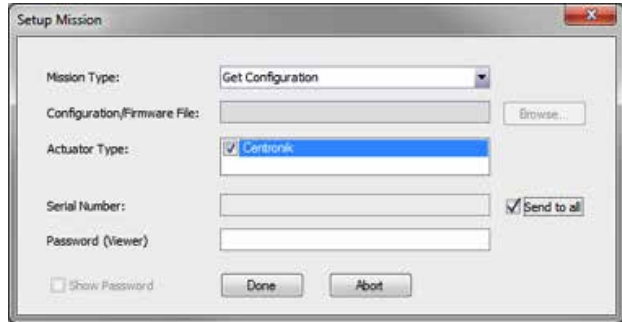
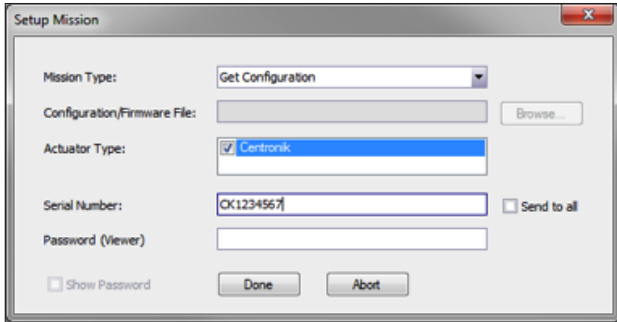


For Missions which upload firmware or configuration files, the browse button should be used to source the necessary file for the mission. Select the appropriate actuator type from the list as shown below.



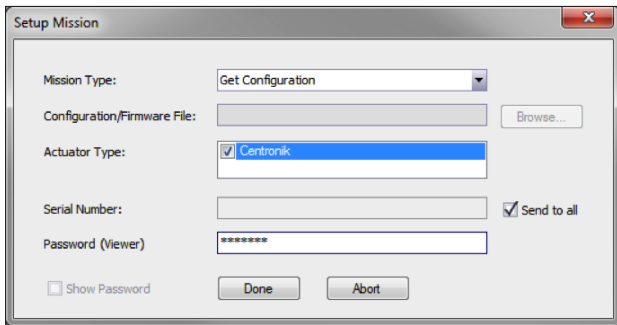
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If the mission is intended for a specific actuator, the serial number can be entered in the Serial Number field. If the connected actuator does not match the entered serial number then the mission will be skipped. If the mission is intended for all actuators that satisfy the actuator type criteria, select "Send to All" on the right hand side of the Serial Number field.



Depending upon the type of mission, Accent will require you to input the corresponding actuator privilege level password. The required privilege level will be shown in brackets.

Note: If the wrong password is entered, the mission will still write to the setting tool however it will fail when you attempt to run it once connected to an actuator.

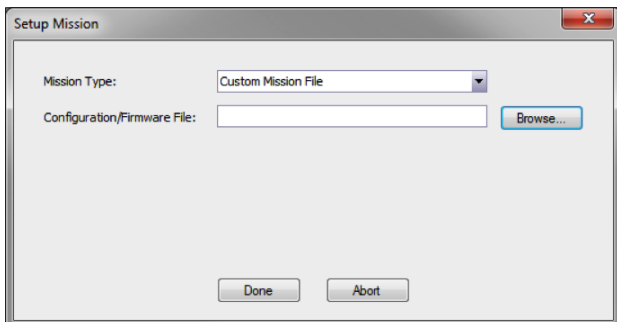


When all the mission details are complete, select "Done" and wait for it to be uploaded to the setting tool.

5.3.2 Custom Mission

Custom Missions can be used to configure more complicated settings in a Centork actuator.

To add a custom mission file to the *Bluetooth*® setting tool right click on the Missions menu and select Load Custom Mission File. The window below will appear allowing the user to browse for the custom mission file they wish to load.



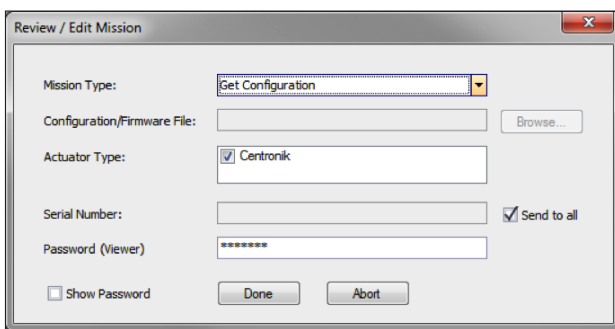
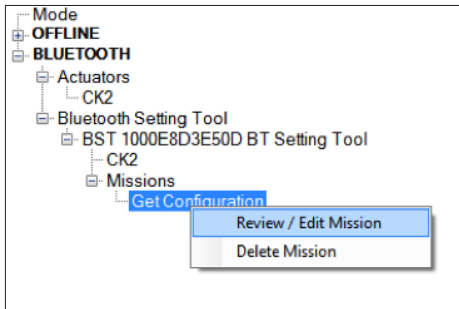
Alternatively create a new mission and select Custom Mission File from the drop down mission type menu or right click the setting tool name and select "LoadMissionFile".

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5.3.3 Review/Edit Mission

To review/edit a mission on the *Bluetooth*® setting tool the user must right click on the mission they wish to edit and select the Review/Edit Mission option from the drop down menu.

This will bring up the screen below and allow the user to change all the mission settings.



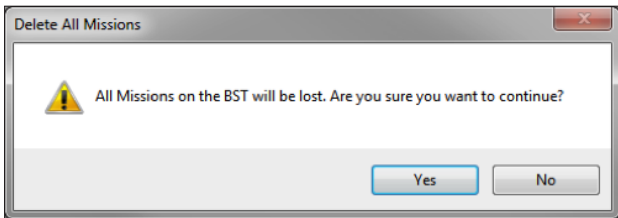
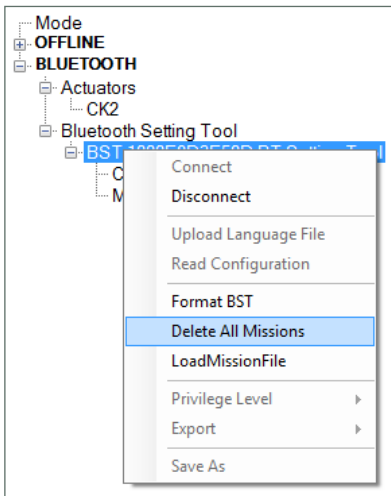
5.3.4 Delete Mission

To remove a mission from the setting tool, just right click on the mission and click Delete Mission.

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5.3.5 Delete All Missions

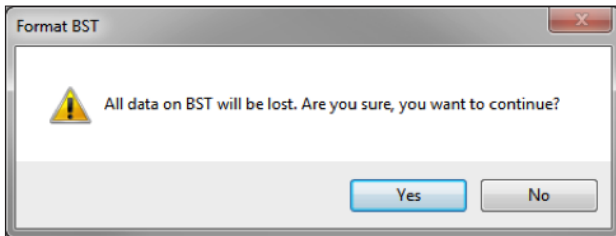
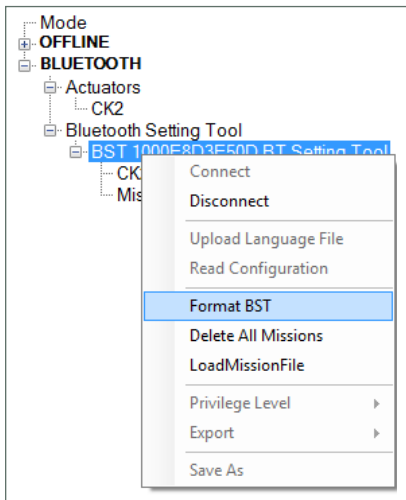
To delete all missions currently present on the *Bluetooth*® Setting Tool, right click the setting tool tag and select Delete All Missions. A confirmation window will appear before you can continue. This function will only delete mission files. Any configuration or data log files currently held in memory will remain on the tool.



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5.3.6 Format BST

To format the *Bluetooth*® Setting Tool to the factory default state, right click the setting tool name and select Format BST. Formatting the setting tool will remove all missions, configurations and data log files currently held in memory.



6.0 Centronik Settings

The following section refers to actuator settings relevant to the CK Centronik Control Module when mated to a CK actuator to form a CKc or CKrc.

It is important to note that whilst most alpha-numeric attributes can accommodate 10 characters on Accent, only 8 characters are visible on the Centronik display (excluding period symbols).

6.1 Actuator Information

The Actuator Information comprises of technical information about the actuator that will help to identify spare parts and important test dates.

| Actuator User Information | |
|---------------------------------------|-------------|
| Valve label | Test Config |
| Actuator Serial Numbers | |
| Actuator | Dans |
| CPIO Module | CPIO-BRD |
| HMI Module | HMI-BRD |
| Switch Mechanism | DSM-MODU |
| Option 1 | OP-BRD-0 |
| Option 2 | OP-BRD-1 |
| Power Board | POWER-MD |
| DC Power Board (if fitted) | DC-POW-B |
| Solid State Starter Board (if fitted) | SSS-DRIV |
| Actuator Manufacturing Information | |
| Date of Manufacture | |
| Service Commission Date | |
| Service Inspection Date | |
| Factory Acceptance Test Date | |
| Wiring Diagram | WIRING-D |

6.1.1 Actuator User Information

Valve Label

This is a user defined description of up to 32 Characters long. It is normally used to denote the function or location of the actuator or valve.

6.1.2 Actuator Serial Numbers

Actuator

Shows the serial number of the actuator.

CPIO Module

For indication only, shows the serial number of the main controller board.

HMI Module

For indication only, shows the serial number of the Position Sensor.

Switch Mechanism

For indication only, shows the serial number of the Switch Mechanism.

Option 1

For indication only, shows the serial number of Option card 1 (if fitted).

Option 2

For indication only, shows the serial number of Option card 2 (if fitted).

Power Board

For indication only, shows the serial number of the power board (for AC only).

DC Power board (if fitted)

For indication only, shows the serial number of the DC power board (for DC only).

Solid State Starter board (if fitted)

For indication only, shows the serial number for the Solid State Starter board (if fitted).

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6.1.3 Actuator Manufacturing Information

Date of Manufacture

For indication only, shows the manufacture date of the actuator.

Service Commission Date

Shows the date the actuator was commissioned by a Centork Engineer.

Service Inspection Date

For indication only, shows when the actuator is due its next inspection.

Factory Acceptance Test Date

For indication only, shows when the actuator was factory tested by Centork.

Wiring Diagram

For indication only, shows the wiring diagram number for the actuator.

6.2 Actuator Name Plate

This menu replicates the physical name plate information visible on the actuator gear case. Should the nameplate become damaged, the correct information will still be retained in this section.

| Actuator Name Plate Info | |
|-----------------------------------|----------|
| Rated Torque (lb ft) | 0 |
| Voltage | 0 |
| Frequency | 0 |
| Wiring Diagram | WIRING-D |
| Wiring Diagram Issue | -00 |
| Size | SIZE |
| Speed | 0 |
| Base | BASE |
| Coupling | CPG |
| Enclosure | TYPE-ENC |
| GearBox | GEARBOX |
| Valve Manufacturing Information | |
| Tag | |
| Serial Number | SERIAL-V |
| Type | Virtual |
| Size | Big |
| Class | V.CLASS |
| Manufacturer | MANUFACT |
| Service Fluid | FLUID-VV |
| Service Temperature | TEMP. |
| Location | Systems |
| Installation Date | |
| Gearbox Manufacturing Information | |
| Serial Number | GEAR-SER |
| Mechanical Advantage | MECH-ADV |
| Ratio | GEARRATI |

Actuator Name Plate Info

Rated Torque

For indication only, shows the rated output torque of the actuator.

Voltage

For indication only, shows the supply voltage the actuator is configured to receive.

Frequency

For indication only, shows the actuator supply voltage frequency (Hz).

Wiring Diagram

For indication only, shows the actuator wiring diagram number which determines the specific internal wiring of the actuator.

Wiring Diagram Issue

For indication only, shows the issue number of the wiring diagram upon installation. This is important as the wiring diagram may have been superseded at a later date.

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Size

For indication only, shows the actuator size and type. For example an IQS12 is a single-phase IQ12.

Speed

For indication only, shows the speed of the actuator in revolutions per minute (RPM).

Base

For indication only, shows what size base flange is fitted to the actuator.

Coupling

For indication only, shows what size coupling the actuator is fitted with.

Enclosure

For indication only, shows what enclosure type the actuator has.

Gearbox

For indication only, shows what gearbox is attached to the actuator. If there is no gearbox is fitted to the actuator this will be listed as N.

Valve Manufacturing Information

Tag

This is similar to the actuator valve label (see section 6.1.1). A user defined label consisting of 16 alpha-numeric or symbolic characters. It is normally used to denote valve location or function.

Serial Number

Input for the serial number of the attached valve. 10 alpha-numeric or symbolic characters are available to input the valve serial number.

Type

Input for the type of the attached valve. 10 alpha-numeric or symbolic characters are available to input the valve type.

Size

Input for the size of the attached valve. 10 alpha-numeric or symbolic characters are available to input the valve size.

Class

Input for the valve classification. 10 alpha-numeric or symbolic characters are available to input the valve classification.

Manufacturer

Input for detail of the valve manufacturer. 10 alpha-numeric or symbolic characters are available to input the valve classification.

Service Fluid

Input for the fluid flowing through the valve. 10 alpha-numeric or symbolic characters are available to input the valve classification.

Service Temperature

Input for the maximum operating temperature of the valve before requiring a service. 5 alpha-numeric or symbolic characters are available to input the valve classification.

Location

Input for detail of the valve's location. 10 alpha-numeric or symbolic characters are available to input the valve location.

Installation Date

Record for when the valve was installed. 8 alpha-numeric or symbolic characters are available to input the valve installation date.

Gearbox Manufacturing Information

Serial Number

Record for the serial number of the actuator gearbox. If no gearbox is fitted the default value will be GEAR-SER.

Mechanical Advantage

Record for the mechanical advantage of the gearbox. If no gearbox is fitted the default value will be MECH-ADV.

Ratio

Record for the internal gear ratio of the gearbox. If no gearbox is fitted the default value will be GEARRATI.

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Actuator Settings

This screen displays the current actuator settings. These settings are all relevant to standard actuator control functions.

6.3 Limit Setup

| Close Settings | |
|---------------------------------|---|
| Direction to Close | <input checked="" type="radio"/> Clockwise <input type="radio"/> Anti-Clockwise |
| Close Action | <input checked="" type="radio"/> Position <input type="radio"/> Torque |
| Close Torque Percentage | <input type="text" value="40"/> |
| Open Settings | |
| Open Action | <input checked="" type="radio"/> Position <input type="radio"/> Torque |
| Open Torque Percentage | <input type="text" value="40"/> |
| Torque Limit Bypass | |
| Boost Level | <input checked="" type="radio"/> 150% Rated Torque <input type="radio"/> Stall Torque |
| Torque Boost Open Direction | <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled |
| Torque Boost Open Position (%) | <input type="text" value="5"/> |
| Torque Boost Close Direction | <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled |
| Torque Boost Close Position (%) | <input type="text" value="95"/> |

Direction to Close

This sets the direction of rotation for the actuator to perform a close operation to the valve. There are two available settings; clockwise and anti-clockwise. A close command will always operate in the set direction; therefore a reversal of controls is not required when changing the operating direction to suit the valve.

Close Action

The actuator can be configured to close on torque for seating valve types or limit for non-seating valve types. Limit means the actuator will stop moving once it reaches the set closed travel limit. Torque means the actuator will stop when it reaches the set closed torque limit (Default 40% of Rated).

Close Torque Percentage

The percentage of rated torque permitted to close the valve. This is configurable between 40% - 100%. **(Default = 40%)**

Open Action

The actuator can be configured to open on torque for back-seating valve types or limit for non-back-seating valve types. Limit means the actuator will stop moving once it reaches the set open travel limit. Torque means the actuator will stop when it reaches the set open torque limit (Default 40% of Rated).

Open Torque Percentage

The percentage of rated torque permitted to open the valve. This is configurable between 40% - 100%. **(Default = 40%)**

Torque Limit Bypass

Boost Level

This enables the user to choose the percentage of rated torque the actuator will output when performing a boost function. The options are:

150% Rated Torque: This allows the actuator to output 150% of rated torque. **(Default)**

Stall Torque: This allows the actuator to apply between 140% and 240% of rated torque (subject to build speed and size).

Torque Boost Open Direction

Gives the option to enable or disable the torque boost function in the open direction.

Torque Boost Open Position (%)

This option allows the user to set the position from which the torque boost will activate in the open direction. This is shown as a percentage of total travel. **(Default: 5%)**

Torque Boost Close Direction

Gives the option to enable or disable the torque boost function in the closed direction.

Torque Boost Close Position (%)

This option allows the user to set the position from which torque boost will activate in the close direction. This is shown as a percentage of total travel. **(Default: 5%)**

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6.4 Indication Settings

6.4.1 Relay Contacts

| | | |
|---------------------------|-----------------------------|--|
| Monitor Relay | Monitor Relay Function | Available |
| Relay S1 Settings | Relay S1 Function | Closed Limit |
| | Relay S1 Control Value (%) | 85 |
| | Relay S1 Contact Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Relay S2 Settings | Relay S2 function | Open Limit |
| | Relay S2 control value (%) | 50 |
| | Relay S2 Contact Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Relay S3 Settings | Relay S3 Function | Closed Limit |
| | Relay S3 Control Value (%) | 50 |
| | Relay S3 Contact Type | <input type="radio"/> Normally Open <input checked="" type="radio"/> Normally Closed |
| Relay S4 Settings | Relay S4 Function | Open Limit |
| | Relay S4 Control Value (%) | 50 |
| | Relay S4 Contact Type | <input type="radio"/> Normally Open <input checked="" type="radio"/> Normally Closed |
| Relay S5 Settings | Relay S5 Function | None |
| | Relay S5 Control Value (%) | 85 |
| | Relay S5 Contact Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Relay S6 Settings | Relay S6 function | Closed Limit |
| | Relay S6 control value (%) | 50 |
| | Relay S6 contact type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Relay S7 Settings | Relay S7 function | Intermediate Position |
| | Relay S7 Control Value (%) | 50 |
| | Relay S7 Contact Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Relay S8 Settings | Relay S8 Function | Intermediate Position |
| | Relay S8 Control Value (%) | 50 |
| | Relay S8 Contact Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Relay S9 Settings | Relay S9 function | None |
| | Relay S9 Control Value (%) | 50 |
| | Relay S9 Contact Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Relay S10 Settings | Relay S10 Function | None |
| | Relay S10 Control Value (%) | 50 |
| | Relay S10 Contact Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Relay S11 Settings | Relay S11 function | None |
| | Relay S11 Control Value (%) | 50 |

Monitor Relay Function

Denotes the function of the monitor relay. This can be set to either Standard or Fault. In standard mode the relay is active when the actuator is ready and available for remote control. In fault mode the relay will be active when the actuator has an active fault condition.

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The following settings are applicable to Relays S1-S12

Relay Function

| CK Centronik Function | Accent Function |
|-----------------------|------------------------|
| DISABLED | None |
| CLOS.LIM. | Closed Limit |
| OPEN.LIM. | Open Limit |
| END.POSIT. | End Position |
| POS.%.OPEN | Intermediate Position |
| MID.TRAVL. | Actuator Mid Travel |
| MOT.RUNNG. | Motor Running |
| CLOSING | Closing |
| OPENING | Opening |
| MOVING | Moving |
| HAND.OPER. | Manual Override Switch |
| MOV.BLINK. | Blinker |
| VALV.ALARM. | Valve Alarm |
| TRQ.CLOSE | Torque Trip Closing |
| TRQ.OPEN | Torque Trip Opening |
| TRQ.TRIP | Torque Trip |
| TRQ.MIDDL. | Torque Trip Mid-Travel |
| MOT.STALL | Stall (any Position) |
| MID.STALL | Stall (Mid-Travel) |
| STOP.SEL. | Stop Selected |

| CK Centronik Function | Accent Function |
|-----------------------|---------------------------|
| LOCAL.SEL. | Local Selected |
| REMOT.SEL. | Remote Selected |
| CTRL.ALARM. | Control Alarm |
| MONITOR | Monitor Output |
| ESD.ACTIV. | ESD Active |
| O.INTLK.AC. | Open Interlock |
| C.INTLK.AC. | Close Interlock |
| INTLK.ACT. | Interlock |
| ACT.ALARM | Actuator Alarm |
| THER.TRIP | Motor Thermostat Switch |
| LOST.PHAS. | Phase Loss |
| 24V.P.FAIL | Customer 24V Fail |
| PRT.STK.AC. | Partial Stroke Active |
| PRT.STK.ER. | Partial Stroke Failed |
| PRT.STK.PS. | Partial Stroke Passed |
| BLUETOOT. | Bluetooth Connected |
| DIGIT.OUT. | S1-12 Digital Output |
| MAINTNCE. | Maintenance Required |
| HI.TRQ.ALM. | Hi Torque Alarm Active |
| H.H.TRQ.ALM. | Hi Hi Torque Alarm Active |

For a description of the various relay functions please refer to the PUB111-005 CK Centronik Full Configuration Manual.

Relay Control Value (%)

This is used for relevant positional relay functions and is configurable from 0% to 100% in increments of 0.1%.

Relay Contact Type

This allows the relays contact type to be configured for normally open or normally closed operation.

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6.4.2 Local Display

| | |
|------------------------------------|---|
| LCD Configuration | |
| Home Screen | Positioner |
| LED Configuration | |
| Close Limit LED Colour | <input checked="" type="radio"/> Green <input type="radio"/> Red |
| Mid-Travel LED Function | Enabled |
| Alarm LED Setting | Disabled |
| Language Configuration | |
| Display Language | English |
| Communication Configuration | |
| Bluetooth Enabled | <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled |
| Bluetooth Security Level | Low - Discover Always |
| Bluetooth MAC | ? |

Home Screen

This sets the default home screen for the actuator. There are four different home screen options:

Position: This shows the position of the actuator as a percentage.

Torque Plus Position: This shows the position of the actuator and a digital torque readout in Nm.

Positioner: This shows a digital and analogue readout of position and demand. Demand will only be shown when the actuator is controlled by a network or a 4-20 mA signal.

Close Limit LED Colour

The colour of the close limit LED can be set, either red or green. The open limit LED will be the inverse of the close limit setting.

Mid Travel LED Function

Shows the current function of the Mid Travel LED, the functions available are:

Disabled: The LED will be off.

Enabled: The LED will be active when the actuator is not at its limits.

Blinker: The yellow lights will blink when the actuator is travelling and will remain on when the actuator is stopped.

LED Blinks When Alarm present: The yellow lights are on during mid-travel and will blink alternately when an alarm is present.

LED ON when Alarm present: The yellow lights will only come on blinking alternately when an alarm is present.

Alarm LED Setting

Shows the current setting for the Alarm LED.

No Alarms Indicated: The yellow lights will not indicate an active alarm.

Active on any Alarm: The LED will be active when an actuator or valve alarm is present if the appropriate option is set above.

Active on any Service alarm: The LED will be active when a Service alarm is present if the appropriate option is set. A service alarm indicates the actuator requires service, due to set duty parameters being met.

Active on any Service or Alarm: The yellow lights indicate active alarms and active service alarms if the appropriate option is set above. A service alarm indicates the actuator requires service due to set duty parameters being met.

Display Language

Shows the language currently used on the display. This is linked to Display Language Section 6.12.1.

Communication Configuration

Bluetooth® Enabled


Specify whether the actuator *Bluetooth* is enabled or disabled. **Do not disable the internal Bluetooth without prior authority from Centork.**

Bluetooth® Security Level

The available options are:

Very High Security – Infra Red Only: All *Bluetooth* communication is disabled. Communication is by infrared commands from the Setting Tool only.

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High Security – Infra Red Initiation Only: The actuator is not available for *Bluetooth* communication using a PC running Insight 2. Communication with the *Bluetooth* Setting Tool is available by holding the  key.

Medium - Discover in Local and Stop: The actuator is available for *Bluetooth* communication when it is in local or stop using the red selector. Connection is unavailable in Remote. The Local/Stop/Remote selector can be padlocked in all three positions. Communication with the *Bluetooth* Setting Tool is available.

Low - Discover Always: The actuator is available for *Bluetooth* communication at all times using the Insight 2 PC software. This setting provides convenient connection when Insight 2 is used. Communication with the *Bluetooth* Setting Tool is available.

Bluetooth® MAC

Shows the MAC address of the fitted Bluetooth device within the Centronik Control module.

6.4.3 Language Settings

| Language Configuration | |
|---------------------------|---------|
| Display Language | English |
| Language Option 1 details | |
| Language | ? |
| Language Option 2 details | |
| Language | ? |
| Language Option 3 details | |
| Language | ? |
| Language Option 4 details | |
| Language | ? |
| Language Option 5 details | |
| Language | ? |
| Language Option 6 details | |
| Language | ? |
| Language Option 7 details | |
| Language | ? |
| Language Option 8 details | |
| Language | ? |






Display Language

Shows the current display language for the Centronik control module.

Language Option 1-8 details

Shows the languages included within the Centronik software.

6.4.4 Service Alarms

| Service Alarms Configuration | |
|---|---|
| Operation starts per hour trip level |  0 |
| Number of Contactor Operations for Alarm |  0 |
| Number of Actuator Output Turns for Alarm |  0 |
| Service Interval Alarm (Months) |  0 |
| Service High Close Torque Trip Level |  0 |
| Service High High Close Torque Trip Level |  0 |
| Service High Open Torque Trip Level |  0 |
| Service High High Open Torque Trip Level |  0 |

Operation starts per hour trip level

Set the starts per hour limit that this alarm will trigger. 0 = OFF.

Number of Contactor Operations for Alarm

Set the total cumulative number of contactor operations that will trigger this alarm. 0 = OFF.

Number of Actuator Output Turns for Alarm

Set the total cumulative number of actuator output turns that will trigger this alarm. 0 = OFF.

Service Interval Alarm (Months)

Set the number of elapsed months between each service interval alarm.

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Service High Close Torque Trip Level

Set the torque level required to trigger the close Hi torque service alarm.

Service High High Close Torque Trip Level

Set the torque level required to trigger the close HiHi torque service alarm.

Service High Open Torque Trip Level

Set the torque level required to trigger the open Hi torque service alarm.

Service High High Open Torque Trip Level

Set the torque level required to trigger the open HiHi torque service alarm.

6.4.5 NAMUR N107 settings

| Namur Status | | |
|--|---|------------------------------|
| Namur Maintenance Status Flag | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Namur Out of Specification Status Flag | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Namur Function Check Status Flag | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Namur Failure Status Flag | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |

Namur Maintenance Status Flag

Status of the NAMUR Maintenance alarm category.

Namur Out of Specification Status Flag

Status of the NAMUR Out of Specification alarm category.

Namur Function Check Status Flag

Status of the NAMUR Function Check alarm category.

Namur Failure Status Flag

Status of the NAMUR Failure alarm category.

All of the following functions can be set for each NAMUR N107 category.

| | | |
|--|---|------------------------------|
| Local Fault alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Power fault alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Thermostat Tripped fault alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Contactor Service Limit | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Service Date Reached | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Torque HI HI Limit | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Torque HI Limit | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Valve fault Indication | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Turns Limit Exceeded | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Unavailable for Remote Control | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| ESD Inhibiting Control | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Control Inhibited | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Remote Communications Lost | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Hardware Error | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Partial Stroke Test Error | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Motor Starts Limit Reached | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Stalled | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Encoder in Limited Operation mode | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| End of Travel Timeout Exceeded | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Control Network Fault | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Customer 24V Supply Fault | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Valve Travel Timeout | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Operation Direction Fault | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |

Local Fault alarm

An error has been detected with the local control selectors.

Power fault alarm

An error has been detected with the incoming power supply.

Thermostat Tripped fault alarm

The thermostat has tripped due to heat rise in the motor.

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Contactor Service Limit

Cumulative contactor starts value has been exceeded.

Service Date Reached

Service interval has elapsed.

Torque HI HI Limit

HiHi torque value has been recorded in either direction.

Torque HI Limit

Hi torque value has been recorded in either direction.

Valve fault Indication

Valve alarm triggered.

Turns Limit Exceeded

Cumulative actuator output turns value has been exceeded.

Unavailable for Remote Control

Actuator is not available for remote control.

ESD Inhibiting Control

ESD is actively preventing operation.

Actuator Control Inhibited

Actuator control is currently inhibited.

Remote Communications Lost

Fieldbus communication has been lost.

Hardware Error

Internal hardware error registered.

Partial Stroke Test Error

Partial stroke test error registered.

Motor Starts Limit Reached

Cumulative motor starts value has been exceeded.

Actuator Stalled

Actuator motor has stalled or stall timer elapsed without any recorded movement.

Actuator Encoder in Limited Operation mode

Fault detected with DSM. Reduced operation mode active.

End of Travel Timeout Exceeded

Actuator has operated longer than expected beyond the position limit without stopping.

Control Network Fault

Fault with fieldbus communications.

Customer 24V Supply Fault

Fault detected with the 24Vdc customer supply.

Valve Travel Timeout

Actuator has operated longer than expected for full valve stroke.

Operation Direction Fault

Wrong operation direction detected.

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6.5 Local Control Settings

| Standard Configuration | |
|----------------------------|---|
| Vandal Resist Mode | Vandal Resist Off |
| Setting Tool Local Control | <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled |
| Local Push to Run | <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled |
| Delayed Control (sec) | <input type="text" value="0.1"/> |

Vandal Resist Mode

The vandal resist mode is aimed at preventing unauthorised actuator operation. There are four options available.

Vandal Resist Off: All control knobs are active and the actuator will respond to all inputs, providing the unit is in the correct control mode. **(Default)**

Vandal Resist Local: In this mode the local and remote controls are disabled. The actuator can only be controlled by the open, close and stop commands on the setting tool.

Vandal Resist Remote: In this mode all local controls, including the setting tool, are disabled. The actuator can only be controlled by remote inputs.

Vandal Resist Local/Remote Switch: Ignore this option as it is currently not a valid setting in the CK software.

Setting Tool Local Control

This setting enables the actuator to be controlled using the open, close and stop commands on the setting tool.

Local Push to Run

When enabled, this changes the local open/close control knob function to a push to run operation. The knob position must be manually maintained for the actuator to run, upon removal of the signal the actuator will stop.

Delayed Control (sec)

This setting inhibits actuator operation for the set period of time once a command signal is active. Range is 0 - 65 seconds.

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6.6 Remote Control Settings

6.6.1 Hardwired Control

| | |
|-----------------------|----------------|
| Hardwired | |
| Two Wire Priority | Close Priority |
| Interlock Mode | |
| Interlock Mode | Disabled |

Two Wire Priority

This sets the action the actuator will take when a close and open signal are applied simultaneously.

Open Priority: The actuator will run open if both signals are applied.

Stop Priority: The actuator will stay put or stop moving if both signals are applied.

Close Priority: The actuator will run closed if both signals are applied.

Interlock Mode

This sets the mode for the interlock inputs. Refer to the actuator wiring diagram for installation details. To operate the actuator when an interlock mode is enabled, an interlock signal must be applied in the appropriate direction whilst providing a control signal.

Disabled: The interlock inputs are disabled.





Interlocks Enabled: Interlocks are enabled for local and remote operation.

Conditional Control Enabled: Interlocks are enabled in remote control only.

Partial Stroke On Open Interlock Enabled: The open interlock will act as a remote input to initiate a partial stroke test.

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6.6.2 Control Source

| Control Source Selection | |
|---|---|
| Control Source 1 | None |
| Control Source 2 | None |
| Remote Source Selection | Hardwired Control |
| Option 1 Configuration | |
| Option 1 Type | None |
| Option 1 Communications Loss Action | Off |
| Option 1 Communications Loss Time |  10000 |
| Comms Loss Timeout Scale | Milliseconds |
| Option 1 Communications Loss Position (%) |  50 |
| Option 2 Configuration | |
| Option 2 Type | None |
| Option 2 Communications Loss Action | Off |
| Option 2 Communications Loss Time |  10000 |
| Comms Loss Timeout Scale | Milliseconds |
| Option 2 Communications Loss Position (%) |  50 |

Control Source Selection

Control Source 1

Configure the source 1 control type from a list of fitted control options.

Control Source 2

Configure the source 2 control type from a list of fitted control options.

Remote Source Selection

This is where the source for remote control is selected. The options for source selection are:

Hardwired Control: The actuator can be controlled by hardwired remote controls.

Source 1 Option Control: The actuator is controlled by the network selected in Source 1.

Hardwired Switched Source 1 Control: The actuator can be controlled by either hardwired remote controls or Source 1. A remote switch must be used to change between control sources.

Analogue Switched as Secondary Control Source: The actuator can be controlled by either source 1 or source 2. A remote switch must be used to change between control sources.

Remote Control Disabled: The actuator will not respond to remote controls.

Option 1-2 Configuration

Option Type

This is where option card slots 1 – 2 can be configured to recognise the following option cards:

- Profibus
- Modbus
- Folomatic
- Foundation Fieldbus
- Hart
- None
- Extra Relay board
- Digital IO Board
- Folomatic Board Two
- Foundation Fieldbus Board Two
- Modbus Board Two
- Extra Relay Board Two
- Profibus Board Two
- Digital IO Board Two
- Hart Board 2

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Option Communication Loss Action

Configure how the actuator will respond to a loss of option communication. The available actions are:

Off: The communication loss action is turned off.

Open Action: The actuator will run to the open limit.

Close Action: The actuator will run to the closed limit.

Stop Action: The actuator will stop.

Go To Position Action: The actuator will run to a predetermined intermediate position.

Option Communication Loss Time

The user can specify the amount of time before a loss of communications is recognised as an alarm. This is configurable between 0 and 65.

Comms Loss Timeout Scale

The units for Option Communication Loss Time can be adjusted from Milliseconds to Seconds to suit the specific application.

Option Communications Loss Position (%)

Upon loss of communication to the option card, the actuator will move to this position. This is only applicable if the actuator is configured to Go To Position on loss of communications. Position is shown as a percentage of total travel (**0-100%**).

6.6.3 Partial Stroke Settings

| Partial Stroke | |
|---|--|
| Partial Stroke Enable | <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled |
| Partial Stroke Initial Position | <input checked="" type="radio"/> Open Limit <input type="radio"/> Closed Limit |
| Partial Stroke to Position (%) | <input type="range" value="85"/> 85 |
| Partial Stroke Time to Position (sec) | <input type="range" value="150"/> 150 |
| Partial Stroke Return Time to Limit (sec) | <input type="range" value="150"/> 150 |

Partial Stroke Enable

This specifies whether partial stroke is enabled or disabled.

Partial Stroke Initial Position

The position that the actuator must be in before it will perform a partial stroke test. This can be set to either the open or closed limit.

Partial Stroke Position (%)

The position the actuator will run to during the partial stroke test.

Partial Stroke Time to Position (sec)

The maximum allowable time the actuator can take to run from the initial position to the partial stroke position. If the actuator fails to perform this part of the partial stroke test in the specified time an alarm will trigger for partial stroke test failure.

Partial Stroke Return Time to Limit (sec)

The maximum allowable time the actuator can take to run from the partial stroke position back to its initial position. If the actuator fails to perform this part of the partial stroke test in the specified time and alarm will trigger for partial stroke test failure.

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6.6.4 Positioning Settings

| Position Settings | |
|---------------------------|----------------------------------|
| Min Span Position (%) | <input type="text" value="0"/> |
| Max Span Position (%) | <input type="text" value="100"/> |
| Deadband (%) | <input type="text" value="2"/> |
| Hysteresis Band (%) | <input type="text" value="1"/> |
| Motion Inhibit Time (sec) | <input type="text" value="5"/> |

Position Settings

Min Span Position (%)

This setting can restrict the minimum allowable travel position without adjusting the set limits.

Max Span Position (%)

This setting can restrict the maximum allowable travel position without adjusting the set limits.

Deadband (%)

Shows the Deadband setting for the actuator. Refer to the CK Centronik Full Configuration Manual for Details.

Hysteresis Band (%)

Shows the Hysteresis Band setting for the actuator. Refer to the CK Centronik Full Configuration Manual for Details.

Motion Inhibit Time (Sec)

This is the amount of time the actuator will not respond to a control signal after moving to a new position. This is configurable from 0 – 1000 seconds.

6.6.5 Auxiliary Mask Configuration

| Auxiliary Mask Configuration | | |
|------------------------------|--|---------------------------------------|
| Digital Input 1 Type | <input checked="" type="radio"/> Digital Input | <input type="radio"/> Remote Open |
| Digital Input 1 Contact Form | <input checked="" type="radio"/> Normally Open | <input type="radio"/> Normally Closed |
| Digital Input 2 Type | <input checked="" type="radio"/> Digital Input | <input type="radio"/> Remote Close |
| Digital Input 2 Contact Form | <input checked="" type="radio"/> Normally Open | <input type="radio"/> Normally Closed |
| Digital Input 3 Type | <input checked="" type="radio"/> Digital Input | <input type="radio"/> Remote Maintain |
| Digital Input 3 Contact Form | <input checked="" type="radio"/> Normally Open | <input type="radio"/> Normally Closed |
| Digital Input 4 Type | <input checked="" type="radio"/> Digital Input | <input type="radio"/> Remote ESD |
| Digital Input 4 Contact Form | <input checked="" type="radio"/> Normally Open | <input type="radio"/> Normally Closed |

Digital Input 1 Type

Configure Digital Input 1 to either Digital Input or Remote Open.

Digital Input 1 Contact Form

The user can configure Digital Input 1 to a normally open or normally closed contact form.

Digital Input 2 Type

Configure Digital Input 2 to either Digital Input or Remote Close.

Digital Input 2 Contact Form

The user can configure Digital Input 2 to a normally open or normally closed contact form.

Digital Input 3 Type

Configure Digital Input 3 to either Digital Input or Remote Maintain.

Digital Input 3 Contact Form

The user can configure Digital Input 3 to a normally open or normally closed contact form.

Digital Input 4 Type

Configure Digital Input 4 to either Digital Input or Remote ESD.

Digital Input 4 Contact Form

The user can configure Digital Input 4 to a normally open or normally closed contact form.

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6.6.6 Digital Input Settings

The following settings are applicable to Digital Inputs 7-14.

| | |
|-------------------------|--|
| Digital Input 7 | |
| DI 7 Function | Disabled |
| DI7 Input Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Digital Input 8 | |
| DI 8 Function | Disabled |
| DI8 Input Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Digital Input 9 | |
| DI 9 Function | Disabled |
| DI9 Input Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Digital Input 10 | |
| DI 10 Function | Disabled |
| DI10 Input Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Digital Input 11 | |
| DI 11 Function | Disabled |
| DI11 Input Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Digital Input 12 | |
| DI 12 Function | Disabled |
| DI12 Input Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Digital Input 13 | |
| DI 13 Function | Disabled |
| DI13 Input Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |
| Digital Input 14 | |
| DI 14 Function | Disabled |
| DI14 Input Type | <input checked="" type="radio"/> Normally Open <input type="radio"/> Normally Closed |

DI Function

This is where the function of a digital input can be viewed and set. The available options are;

Disabled: The selected digital input is disabled.

Remote Open: The digital input will trigger a remote open signal.

Remote Close: The digital input will trigger a remote close signal.

Remote Maintain: The digital input will trigger a remote maintain signal.

Remote ESD: The digital input will trigger a remote ESD signal.

Open Interlock: The digital input will trigger an open interlock signal.

Close Interlock: The digital input will trigger a close interlock signal.

Network Disable: The digital input will disable network control.

Partial Stroke: The digital input will trigger a partial stroke test.

Hand Auto: The digital input will switch between hardwired and analogue control.

Velan Reset: The digital input will perform a Velan reset.

Conditional Open: The digital input will allow operation in the open direction.

Conditional Close: The digital input will allow operation in the close direction.

Local / Remote Switch: The digital input will toggle between Local/ Remote producing the relevant signals.

DI Input Type

Here the digital input can be configured to Normally Open or Normally Closed contact type.

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6.6.7 Interrupter Timer Settings

| Interrupter Timer | |
|--------------------------|--|
| Interrupter Timer Enable | <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled |
| Start Limit | <input checked="" type="radio"/> Closed Limit <input type="radio"/> Open Limit |
| Closing Position (%) | <input type="text" value="50"/> |
| Opening Position (%) | <input type="text" value="50"/> |
| On Time (sec) | <input type="text" value="5"/> |
| Off Time (sec) | <input type="text" value="5"/> |

Interrupter Timer Enable

For indication only, shows whether the interrupter timer is enabled or disabled.

Start Limit

Select the start limit for interrupted operation. Closing and Opening position settings will operate between the position values set and this limit.

Closing Position (%)

This is the position the interrupter timer will activate or deactivate when running in the closed direction.

Opening Position (%)

This is the position the interrupter timer will activate when running in the open direction.

On Time (sec)

The time the interrupter timer will be active for before turning off. This is the period of movement between each interruption.

Off Time (sec)

The time the interrupter timer will be inactive for before turning on. This is the pause length while the interrupter timer is acting on a movement.

6.7 Switch Mechanism Settings

| Switch Mechanism | |
|------------------|----------|
| Type | DSM Type |

Switch Mechanism Type

This setting determines the type of switch mechanism fitted within the CK actuator for position and torque sensing.

DSM Type: A digital switch mechanism is fitted within the actuator providing full absolute encoder functionality.

EMSM (Switches + Potentiometer) Type: A mechanical switch mechanism is fitted within the actuator providing mechanical limit position sensing and intermediate travel indication through the potentiometer.

EMSM (Only Switches) Type: A mechanical switch mechanism is fitted within the actuator providing mechanical limit position sensing only. Intermediate travel indication is not available.

6.8 Modulating Duty Settings

This menu displays the factory configured duty type of this actuator.

| Modulating Duty | |
|-----------------|---|
| Actuator Duty | <input type="radio"/> Isolating <input checked="" type="radio"/> Modulating |

Actuator Duty

For indication only, shows whether the actuator is built for Isolating or Modulating duty.

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6.9 ESD Configuration

| ESD Action | |
|--------------------------------|---|
| ESD Direction | ESD Close |
| ESD When Signal Applied | <input type="radio"/> Removed <input checked="" type="radio"/> Applied |
| ESD Network Disable Re-Map | |
| ESD Fieldbus Disable | <input checked="" type="radio"/> Remote ESD <input type="radio"/> Network Control Disable |
| ESD Override Configuration | |
| ESD Override Local Stop | <input checked="" type="radio"/> No <input type="radio"/> Yes |
| ESD Override Interlock | <input checked="" type="radio"/> No <input type="radio"/> Yes |
| ESD Override Interrupter Timer | <input checked="" type="radio"/> No <input type="radio"/> Yes |
| ESD Override Thermostat | <input checked="" type="radio"/> No <input type="radio"/> Yes |

ESD Direction

This function sets the emergency shutdown action. There are four options.

ESD CLOSE: Upon receiving an ESD signal this setting will cause the actuator to close using the action set in the 'Close Action' screen. See section 6.3.1.

ESD STAYPUT: Upon receiving an ESD signal this option will cause the actuator to stop.

ESD OPEN: Upon receiving an ESD signal this option will cause the actuator open using the action set in the 'Open Action' screen. See section 6.3.1.

ESD OFF: The ESD function has been disabled. Applying an ESD signal will not affect the actuator operation.

ESD When Signal Applied

This setting dictates if the ESD action will be performed when a signal is applied (Normally Open) or removed (Normally Closed).

ESD Fieldbus Disable

The function of the ESD input can be configured in two different ways.

Remote ESD: When an ESD signal is received by the actuator it will perform its ESD action taking into account any override settings.

Network Control Disable: When an ESD signal is received by the actuator it will disable all remote control inputs until the ESD signal is removed. During this period the actuator can only be controlled locally.

ESD Override Local Stop

This setting specifies if the ESD action should override a local stop command. The local control selector has to be in the stop position to actively apply a local stop command. **(Default Setting: No)**

ESD Override Interlock

This setting specifies if the ESD action should override an active interlock. **(Default Setting: No)**

ESD Override Interrupter Timer

This setting specifies if the ESD action should override the interrupter timer function. **(Default Setting: No)**

ESD Override Thermostat

This setting specifies if the ESD action should override an active thermostat trip. **(Default Setting: No)**

6.10 Analogue Control/CPT/CTT/AIO Option

| Analogue Card Type | |
|------------------------------------|--|
| Analogue Card Configuration | |
| Analogue signal type | 0-20mA |
| Analogue Input signal inversion | Not inverted |
| Analogue Output signal inversion | Not inverted |
| Digital input (Hand/Auto) | <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled |
| Analogue Signal Calibration | |
| Software Version | |
| Status | |
| Eeprom Status | <input type="radio"/> Error/Not Initialised <input type="radio"/> Okay |
| Analogue Input Status | <input type="radio"/> Okay - In range <input type="radio"/> Error - Out of range |
| CAN Communications Status | <input type="radio"/> Communications Failed <input type="radio"/> Communications Good |
| Analogue Input Status | <input type="radio"/> Input within range <input type="radio"/> Input out of range HIGH |
| Analogue Input Status | <input type="radio"/> Input within range <input type="radio"/> Input out of range LOW |
| Digital Input State | <input type="radio"/> Input Low (Auto) <input type="radio"/> Input High (Hand) |

Analogue Signal Type

Specifies the configured input signal type for analogue control, available settings are:

- 0-5V:** Input voltage range from 0 to 5 VDC for positioning control.
- 0-10V:** Input voltage range from 0 to 10 VDC for positioning control.
- 0-20V:** Input voltage range from 0 to 20 VDC for positioning control.
- 0-5mA:** Input voltage range from 0 to 5 mA for positioning control.
- 0-10mA:** Input voltage range from 0 to 10 mA for positioning control.
- 0-20mA:** Input voltage range from 0 to 20 mA for positioning control.

Analogue Input Signal Inversion

Configure the input signal controlling the actuator to be inverted:

- Not Inverted:** Low signal will equate to Closed limit position and high signal will equate to Open limit position.
- Inverted:** Low signal will equate to Open limit position and high signal will equate to Closed limit position.

Analogue Output Signal Inversion

Configure the output feedback signal from the actuator to be inverted:

- Not Inverted:** Low signal will equate to Closed limit position and high signal will equate to Open limit position.
- Inverted:** Low signal will equate to Open limit position and high signal will equate to Closed limit position.

Digital Input (Hand/Auto)

Hand/Auto provides a switch between hardwired digital control and proportional analogue positioning control.

- Enabled:** The Hand/Auto switch is active and will switch between hardwired (Hand) and analogue (auto).
- Disabled:** The Hand/Auto switch will not function. Control will be determined through the control source settings.

EEPROM Status

Shows whether the EEPROM is in an **Error/Not Initialised** state or **Okay**.

Analogue Input Status

Shows status for analogue input as **Okay – In Range** or **Error – Out of Range**. If a signal is supplied that is above/below the operating range set for Analogue Signal Type then an error will be shown.

CAN Communications Status

Displays communication status for internal CANbus commands as **Communications Failed** or **Communications Good**.

Analogue Input Status

Provides more detail for out of range analogue signals as **Input within Range** or **Input Out of Range HIGH**.

Analogue Input Status

Provides more detail for out of range analogue signals as **Input within Range** or **Input Out of Range LOW**.

Digital input State

Displays Hand/Auto switch status as **Low (Auto)** or **High (Hand)**.

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6.11 Network Option Cards Fitted

The CK Centronik control module can accommodate many different control options to suit integration into established site systems.

6.11.1 Foundation Fieldbus

| Software Version | |
|------------------|--------------|
| Software Version | V???B1.2h1.0 |

Software Version

Shows the software version present on the fitted Foundation Fieldbus option card.

6.11.2 HART Option

| HART Configuration | |
|--------------------|----|
| HART Address | 0 |
| HART Device ID | 0 |
| HART Long Tag | CK |

HART Address

Set the node address of this actuator on the HART network from **0 – 63**.

HART Device ID

Set the specific device ID so the HART system can determine which parameters are available.

HART Long Tag

Shows the actuator type with an alphanumeric field for easy device recognition.

6.11.3 Modbus

| Modbus Configuration and Status | |
|---|---|
| Modbus Card Type | Single Channel Modbus |
| Primary Modbus Address | 6 |
| Secondary Modbus Address (If Dual Modbus) | 1 |
| Baud Rate | 9600 Baud |
| Parity and Stop Bit setup | 1 Stop/ No Parity |
| Modbus Terminator Control | <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled |
| Software Version | |
| Software Version | v006 (3638) |
| Modbus Status | |
| Modbus Status Bit 0 | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| Modbus Status Bit 1 | <input type="radio"/> Inactive <input checked="" type="radio"/> Active |
| Modbus Status Bit 2 | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| Modbus Status Bit 3 | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |

Modbus Card Type

Set the fitted Modbus card type. Available settings are:

Single Channel Modbus

Single Channel with Repeater Modbus

Dual Channel Modbus

Primary Modbus Address

Set the node address for this actuator on the Modbus network. **1 – 247**.

Secondary Modbus Address (If Dual Modbus)

Set the secondary node address for this actuator on the Modbus network. **1 – 247**.

Baud Rate

Set the Baud rate for Modbus communications. The following speeds are available:

300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57800, 115200 Baud

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Parity and Stop Bit Setup

Specify the parity and stop bit behaviour for Modbus communications.

1 Stop / No Parity

1 Stop / Even Parity

1 Stop / Odd Parity

No Stop / Odd Parity

No Stop / Even Parity

No Stop / No Parity

2 Stop / Odd Parity

2 Stop / Even Parity

Modbus Terminator Control

Specify whether a Modbus terminator is switched into the network at this node. **Enabled** or **Disabled**.

Software Version

Shows the software version present on the fitted Modbus option card.

Modbus Status Bit 0

Shows status of Modbus bit 0 as **Inactive** or **Active**.

Modbus Status Bit 1

Shows status of Modbus bit 1 as **Inactive** or **Active**.

Modbus Status Bit 2

Shows status of Modbus bit 2 as **Inactive** or **Active**.

Modbus Status Bit 3

Shows status of Modbus bit 3 as **Inactive** or **Active**.

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6.11.4 Profibus

| Profibus Configuration | |
|---------------------------------------|---|
| Profibus Card Type | Single Channel Profibus |
| Primary Profibus Address | 2 |
| Profibus Redundancy Mode | Simple System Redundancy |
| Profibus Channel 1 Terminator Control | <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled |
| Profibus Channel 2 Terminator Control | <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled |
| Allow GSD File Parameterisation | <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled |
| Software Version | |
| Software Version | v101 (428) |

Profibus Card Type

View the fitted Profibus card type.

Single Channel Profibus

Dual Channel Profibus

Dual Channel Profibus with REDCOM

Primary Profibus Address

Set the node address for this actuator on the Profibus network. **0 – 126.**

Profibus Redundancy Mode

Specify the redundancy mode of the Profibus network. Available settings are:

Simple System Redundancy

Simple Flying Redundancy

REDCOM System Redundancy

REDCOM Flying Redundancy

Profibus Channel 1 Terminator Control

Specify whether a Profibus terminator is switched into the network on channel 1 at this node. **Enabled** or **Disabled.**

Profibus Channel 2 Terminator Control

Specify whether a Modbus terminator is switched into the network on channel 2 at this node. **Enabled** or **Disabled.**

Allow GSD File Parameterisation

Allow the GSD file to overwrite actuator settings over the Profibus network after a shutdown or site failure event. **Enabled** or **Disabled.**

Software Version

Shows the software version present on the fitted Profibus option card.

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7.0 Centronik Status

Accent includes a section dedicated to the current status of a Centronik control module and attached CK actuator. Should the unit status need to be analysed for functional reasons, the included menus can determine whether valid control signals are present or if a failure has occurred with a specific component. For all attributes included in the status section a check indicates whether the attribute is Inactive or Active.

7.1 Hardwired Status

| Digital Input Status | | |
|-----------------------|---|---------------------------------------|
| Digital Input 1 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Digital Input 2 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Digital Input 3 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Digital Input 4 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Digital Input 5 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Digital Input 6 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Digital Input 7 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Digital Input 8 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Input Status | | |
| Actuator Status DO1 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Status DO2 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Status DO3 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Status DO4 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Status DO5 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Status DO6 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Status DO7 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Status DO8 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Input Function Status | | |
| Open Interlock | <input checked="" type="radio"/> Low | <input type="radio"/> High |
| Close Interlock | <input checked="" type="radio"/> Low | <input type="radio"/> High |
| Fieldbus Disable | <input type="radio"/> Low | <input checked="" type="radio"/> High |

Digital Input 1-8

Status of digital input 1-8.

Digital Output 1-8

Status of digital output 1-8.

Open Interlock

Open interlock is inhibiting movement.

Close Interlock

Close interlock is inhibiting movement.

Fieldbus Disable Active

Fieldbus communication is disabled with high input status.

7.2 Local Control Status

| Local Control Status | | |
|-------------------------------|--|--|
| Remote Control | <input checked="" type="radio"/> Not In Remote | <input type="radio"/> In Remote |
| Local Control | <input checked="" type="radio"/> Not In Local | <input type="radio"/> In Local |
| Local Stop | <input type="radio"/> Not In Local Stop | <input checked="" type="radio"/> In Local Stop |
| Local Command While In Remote | <input checked="" type="radio"/> No Error | <input type="radio"/> Error |

Remote Control

Local/Stop/Remote selector is in Remote mode.

Local Control

Local/Stop/Remote selector is in Local mode.

Local Stop

Local/Stop/Remote selector is in Stop mode.

Local Command While In Remote

Local open or close command applied whilst actuator is in remote mode.

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7.3 Relay Status

| Relay Status | | |
|--------------------------------|---|--|
| Monitor Relay - Remote Control | <input type="radio"/> Available | <input checked="" type="radio"/> Inhibited |
| Relay 1 | <input checked="" type="radio"/> Not Active | <input type="radio"/> Active |
| Relay 2 | <input checked="" type="radio"/> Not Active | <input type="radio"/> Active |
| Relay 3 | <input checked="" type="radio"/> Not Active | <input type="radio"/> Active |
| Relay 4 | <input checked="" type="radio"/> Not Active | <input type="radio"/> Active |
| Relay 5 | <input checked="" type="radio"/> Not Active | <input type="radio"/> Active |
| Relay 6 | <input checked="" type="radio"/> Not Active | <input type="radio"/> Active |
| Relay 7 | <input type="radio"/> Not Active | <input checked="" type="radio"/> Active |
| Relay 8 | <input type="radio"/> Not Active | <input checked="" type="radio"/> Active |

Monitor Relay – Remote Control

Status of the monitor relay contact.

Relay Contact 1-8

Status of relay contact 1-8.

7.4 Position Status

| Position Calibration | |
|--|--|
| Position Reported Remotely (%) | 66.53 |
| Number of Turns | 25.4 |
| Position Status | |
| Motor Operating | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Output Moving | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Stopped Mid Travel | <input type="radio"/> InActive <input checked="" type="radio"/> Active |
| Moving Open | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Moving Closed | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Closed Limit | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Open Limit | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Movement Inhibited by Interrupter Timer | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Movement Inhibited by Motion Inhibit Timer | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Partial Stroke Operation | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Position Sensor Fault | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Hand Operation | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Manual Movement Close | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Manual Movement Open | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Hand Operation onto Closed Limit | <input checked="" type="radio"/> InActive <input type="radio"/> Active |
| Hand Operation onto Open Limit | <input checked="" type="radio"/> InActive <input type="radio"/> Active |

Position Reported Remotely (%)

Current actuator position used for report indication and fieldbus options.

Number of Turns

Total configured valve travel in output turns.

Motor Operating

Actuator motor operating (either direction).

Output Moving

Movement recorded from the actuator output drive.

Stopped Mid Travel

Operation stopped at an intermediate position.

Moving Open

Actuator moving in the open direction.

Moving Closed

Actuator moving in the close direction.

Closed Limit

Actuator has reached the close position limit.

Accent User Manual

Open Limit

Actuator has reached the open position limit.

Movement Inhibited by Interrupter Timer

Operation is inhibited by interrupter timer.

Movement Inhibited by Motion Inhibit Timer

Operation is inhibited by timer.

Partial Stroke Operation

Partial stroke test being performed.

Position Sensor Fault

Fault found with position sensing function of DSM.

Hand Operation

Hand wheel movement in either direction.

Manual Movement Close

Hand wheel movement in the close direction.

Manual Movement Open

Hand wheel movement in the open direction.

Hand Operation onto Closed Limit

Hand wound to the close position limit.

Hand Operation onto Open Limit

Hand wound to the open position limit.

7.5 Control Alarms

| Control Alarms | | |
|-----------------------------------|---|---|
| Control Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Valve Travel Time Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Stall | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| End of Travel Timer Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Valve Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Partial Stroke Fail | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Control Contention | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Communication / Signal Loss Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| EEPROM Updated | <input type="radio"/> Inactive | <input checked="" type="radio"/> Active |
| Data Log Updated | <input type="radio"/> Inactive | <input checked="" type="radio"/> Active |
| Fieldbus Failure | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |

Control Alarm

Control alarm present indicating ESD or Interlocks are active.

Valve Travel Time Alarm

Actuator has been operating longer than the expected travel time for full valve stroke.

Stall

Motor stall detected.

End of Travel Timer Alarm

Actuator has been operating longer than expected beyond the position limit without stopping.

Valve Alarm

Valve alarm detected.

Actuator Alarm

Actuator alarm detected.

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Partial Stroke Fail

Partial stroke test has failed.

Control Contention

Multiple control signals applied simultaneously.

Communication / Signal Loss Alarm

Fieldbus communications signal loss detected.

EEPROM Updated

EEPROM write performed.

Data Log Updated

Data log updated.

Fieldbus Failure

Fieldbus communications failure.

7.6 Power Status

| Power Supply Status | | |
|------------------------------|---|------------------------------|
| Actuator Supply Phase Lost | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| 24VDC Supply Fail | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Mains Supply Failed | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Supply Information | | |
| Actuator Supply Frequency | ? | |

Actuator Supply Phase Lost

Phase loss detected on incoming main power supply.

24VDC Supply Fail

Internal 24Vdc customer supply has failed.

Actuator Mains Supply Failed

Main power supply failure.

Actuator Supply Frequency

Main power supply frequency.

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7.7 Torque Status

| Live Torque Status | | |
|----------------------------------|---|------------------------------|
| Current Torque Value (%) | 2 | |
| Torque Status | | |
| Stopped On Torque Mid Travel | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Stopped On Torque Clockwise | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Stopped On Torque Anti-Clockwise | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Torque Sensor Fault | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Valve Obstructed | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Valve Jammed | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |

Current Torque Value (%)

Shows the instantaneous torque value reported to the Centronik. Only applicable for units fitted with a digital switch mechanism.

Stopped On Torque Mid Travel

Torque trip at an intermediate position.

Stopped On Torque Clockwise

The actuator has reached the set torque limit in the clockwise direction.

Stopped On Torque Anti-Clockwise

The actuator has reached the set torque limit in the anti-clockwise direction.

Torque Sensor Fault

Fault found with torque sensing function of DSM.

Valve Obstructed

Valve obstructed at an intermediate position.

Valve Jammed

Valve jammed at either position limit.

7.8 Hardware Status

| Hardware Status | | |
|-------------------------|---|---|
| Maintenance Needed | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Critical Fault | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Non Critical Fault | <input type="radio"/> Inactive | <input checked="" type="radio"/> Active |
| Vibration | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Thermostat Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| EEPROM Error | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Local Test | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Emergency Shut Down | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Phase Sequence Positive | <input type="radio"/> Inactive | <input checked="" type="radio"/> Active |
| Local Run | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Positioner | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Close Limit Switch | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Open Limit Switch | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Close Torque Switch | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Open Torque Switch | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Blinker Switch | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Power Mode | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |

Maintenance Needed

Actuator maintenance is required.

Critical Fault

A critical fault has been detected.

Non Critical Fault

A non-critical fault has been detected.

Vibration

High vibration has triggered this alarm status.

Accent User Manual

Thermostat Alarm

Actuator thermostat has tripped.

EEPROM Error

EEPROM write issue.

Local Test

A local test is being performed.

Emergency Shut Down

ESD signal status.

Phase Sequence Positive

Automatic phase rotation is actively rotating the incoming phases.

Local Run

Local operation from selector knob in either direction.

Positioner

Actuator operation by 4-20mA control.

Close Limit Switch

Actuator has reached the close position limit.

Open Limit Switch

Actuator has reached the open position limit.

Close Torque Switch

Torque trip in the close direction.

Open Torque Switch

Torque trip in the open direction.

Blinker Switch

Blinker contact energised.

Power Mode

Indicates whether power save mode is active.

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7.9 HMI Status

| HMI Status | | |
|----------------------------------|--------------------------------|------------------------------|
| Actuator Mains Supply Fail | <input type="radio"/> Inactive | <input type="radio"/> Active |
| 3V3 Fail | <input type="radio"/> Inactive | <input type="radio"/> Active |
| 5V Fail | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Open Close Selector Fault | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Local Stop Remote Selector Fault | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Low Temperature Mode | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Service Due | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Motor Starts Service Count | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Contactors Service Count | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Output Turn Service Count | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Hi Trip Service Alarm | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Hi Hi Trip Service Alarm | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Bluetooth Connected | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Local Control Open | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Local Control Close | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Stop Control Mode | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Local Control mode | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Remote Control Mode | <input type="radio"/> Inactive | <input type="radio"/> Active |
| Partial Stroke | ? | |

Actuator Mains Supply Fail

Main power supply failure.

3V3 Fail

Failure of the 3V3 supply to the HMI.

5V Fail

Failure of the 5V supply to the HMI.

Open Close Selector Fault

Fault with the Open/Close selector knob.

Local Stop Remote Selector Fault

Fault with the Local/Stop/Remote selector knob.

Low Temperature Mode

Display has switched to low temperature mode.

Service Due

Display service is due.

Motor Starts Service Count

Motor starts service alarm has been reached.

Contactors Service Count

Contactors starts service alarm has been reached.

Output Turns Service Count

Output turns service alarm has been reached.

Hi Trip Service Alarm

Hi torque service alarm.

Hi Hi Trip Service Alarm

HiHi torque service alarm.

Bluetooth Connected

A *Bluetooth*[®] connection is linked to the Centronik module.

Local Control Open

Open/Close selector is in Open position.

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Local Control Close

Open/Close selector is in Close position.

Stop Control Mode

Local/Stop/Remote selector is in Stop mode.

Local Control Mode

Local/Stop/Remote selector is in Local mode.

Remote Control Mode

Local/Stop/Remote selector is in Remote mode.

Partial Stroke

Partial stroke test status.

7.10 NAMUR Status

| Namur Status Alarm Data | | |
|----------------------------|---|---|
| Motor Starts Service Count | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Local Control Fault | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Power Fault | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Thermostat Trip | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Contactors Service Count | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Service Due | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Hi Hi Trip Service Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Hi Trip Service Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Valve Error | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Output Turns Service Count | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Monitor Relay | <input type="radio"/> Inactive | <input checked="" type="radio"/> Active |
| Control Fail | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Fail | <input type="radio"/> Inactive | <input checked="" type="radio"/> Active |
| Communication Fail | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Hardware Option Fail | <input type="radio"/> Inactive | <input checked="" type="radio"/> Active |
| Partial Stroke Error | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Motor Starts Service Count | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Actuator Stalled | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| DSM Service Required | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| End Of Travel Timer | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Fieldbus Fault | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| 24VDC Customer Supply Fail | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Valve Travel Time | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Wrong Direction | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Namur Maintenance | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Namur Out Of Specification | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Namur Function Check | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Namur Failure | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |

Motor Starts Service Count

Motor starts service alarm has been reached.

Local Control Fault

An error has been detected with the local control selectors.

Power Fault

An issue has been detected with the incoming power supply.

Thermostat Trip

Motor thermostat tripped.

Contactors Service Count

Contactors starts service alarm has been reached.

Service Due

Actuator service is due.

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Hi Hi Trip Service Alarm

HiHi torque service alarm.

Hi Trip Service Alarm

Hi torque service alarm.

Valve Error

Valve error alarm triggered.

Output Turns Service Count

Output turns service alarm has been reached.

Monitor Relay

Monitor relay is status.

Control Fail

Control failure detected.

Actuator Fail

Actuator failure detected.

Communication Fail

Communication failure detected.

Hardware Option Fail

Option card not detected or not configured correctly.

Partial Stroke Error

Partial stroke test error.

Motor Starts Service Count

Motor starts service alarm has been reached.

Actuator Stalled

Actuator motor stalled during operation.

DSM Service Required

Fault detected with the DSM, servicing required on this component.

End of Travel Timer

Reached an end of travel position.

Fieldbus Fault

Network fault detected.

24VDC Customer Supply Fail

Internal 24Vdc customer supply failure.

Valve Travel Time

Actuator has been operating longer than the expected travel time for full valve stroke.

Wrong Direction

Wrong travel direction detected.

Namur Maintenance

A Namur Maintenance condition is active.

Namur Out Of Specification

A Namur Out Of Specification condition is active.

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Namur Function Check

A Namur Function Check condition is active.

Namur Failure

A Namur Failure condition is active.

7.11 Actuator Software Status

This menu for Centork approved engineer use only.

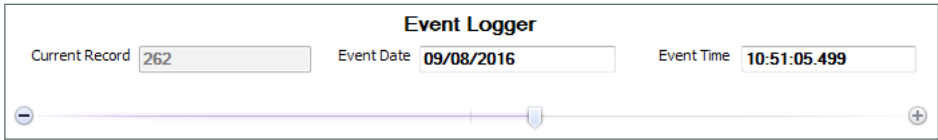
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8.0 CK Centronik Datalogger

The following section refers to the CK Centronik Datalogger provided with the additional Bluetooth module. Functionality of logs may vary with differences in CK manufacturing build.

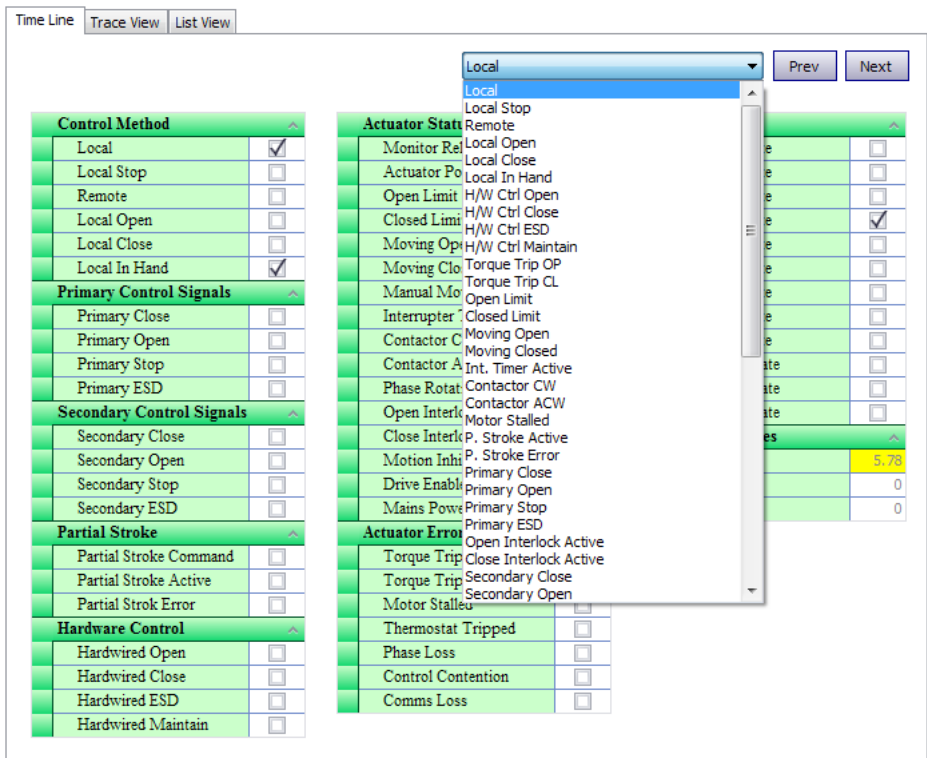
8.1 Event Logger

The Event Logger will store information related to actuator actions and condition changes. All events are date and time stamped to accurately assess the actuator operations.



Time Line

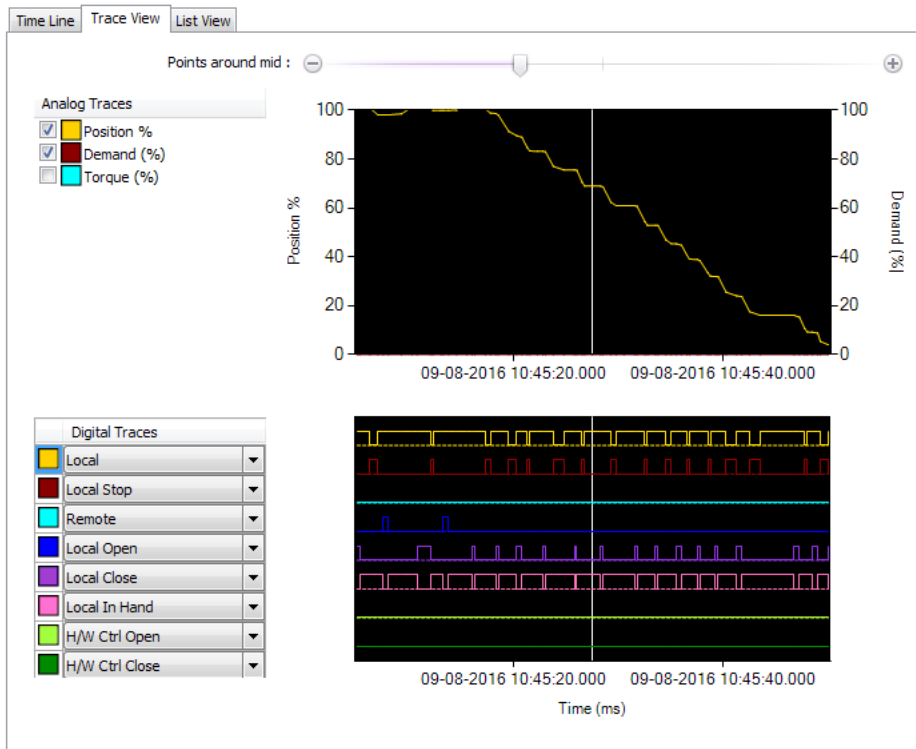
The Time Line display style provides the user with a visual indication of active conditions for the specific event selected with the top scroll bar. An active condition is indicated by a checked box. The dropdown menu is included to apply a filter. The Prev and Next action buttons chronologically skip to the previous or next recorded event for the chosen condition.



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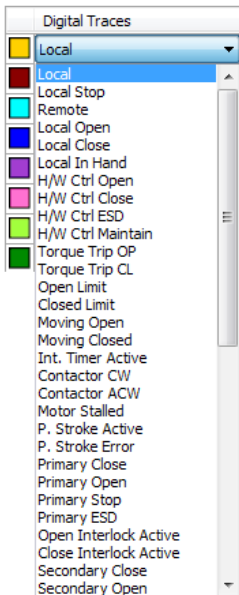
Trace View

The Trace View provides a comparison between various event triggers during each period between events. The Position (%), Demand (%) and Torque (%) traces are analogue recorded values whilst other event conditions can be configured as Digital Traces



The top scroll bar can be used to navigate through various events. There is also an additional scroll bar within the Trace View window. This can be used to adjust the scaling of both traces for more detailed analysis.

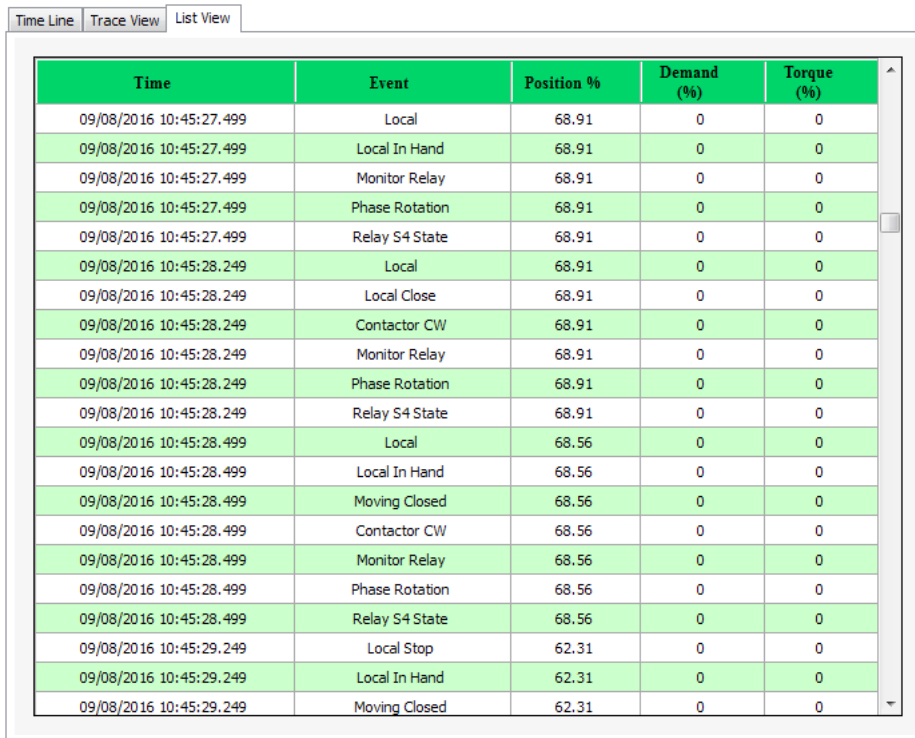
Each digital trace can be allocated a different function by opening the associated drop down menu and selected the required condition.



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List View

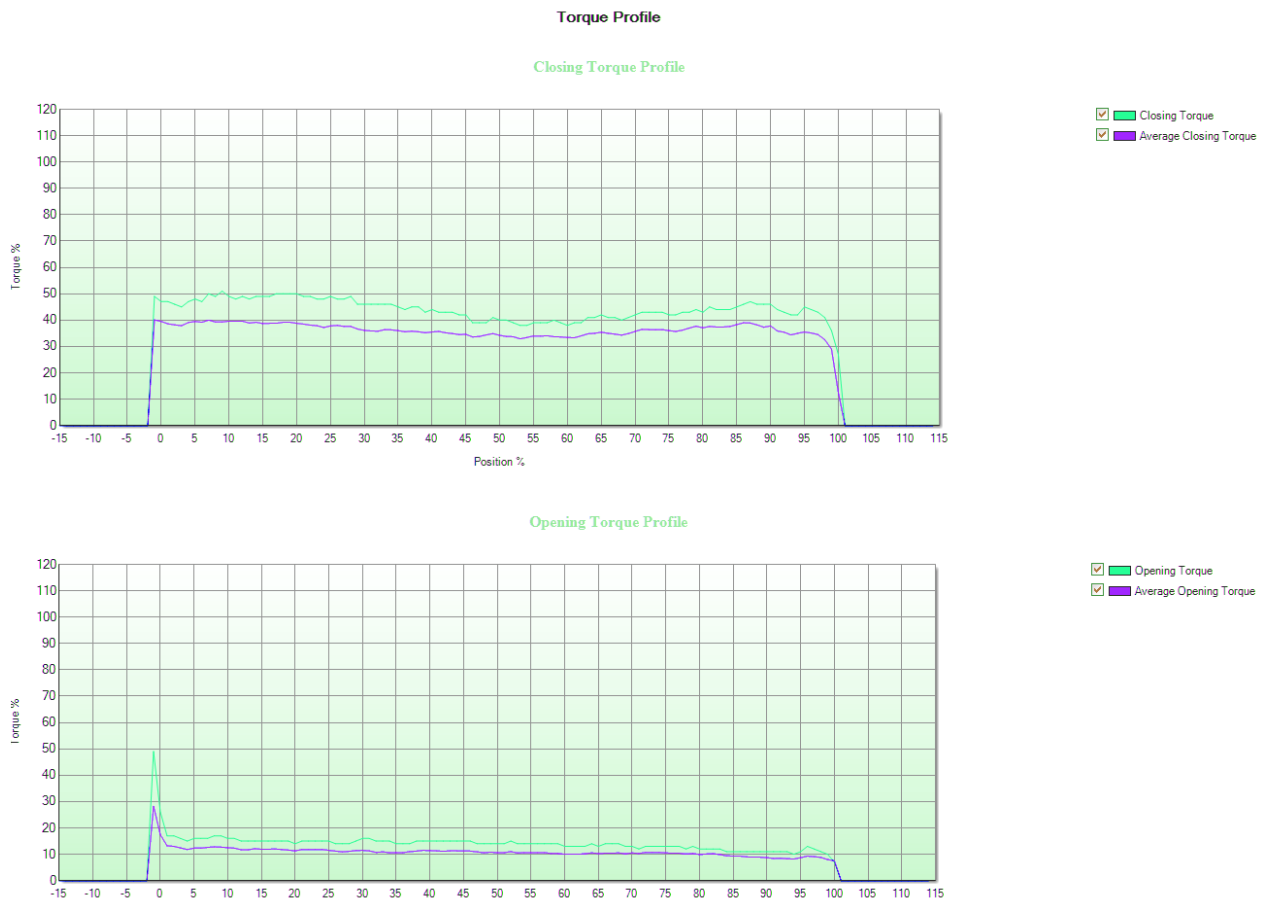
This type of display depicts the data event log of the Centronik in tabular format as a chronological series of events.



| Time | Event | Position % | Demand (%) | Torque (%) |
|-------------------------|----------------|------------|------------|------------|
| 09/08/2016 10:45:27.499 | Local | 68.91 | 0 | 0 |
| 09/08/2016 10:45:27.499 | Local In Hand | 68.91 | 0 | 0 |
| 09/08/2016 10:45:27.499 | Monitor Relay | 68.91 | 0 | 0 |
| 09/08/2016 10:45:27.499 | Phase Rotation | 68.91 | 0 | 0 |
| 09/08/2016 10:45:27.499 | Relay S4 State | 68.91 | 0 | 0 |
| 09/08/2016 10:45:28.249 | Local | 68.91 | 0 | 0 |
| 09/08/2016 10:45:28.249 | Local Close | 68.91 | 0 | 0 |
| 09/08/2016 10:45:28.249 | Contactora CW | 68.91 | 0 | 0 |
| 09/08/2016 10:45:28.249 | Monitor Relay | 68.91 | 0 | 0 |
| 09/08/2016 10:45:28.249 | Phase Rotation | 68.91 | 0 | 0 |
| 09/08/2016 10:45:28.249 | Relay S4 State | 68.91 | 0 | 0 |
| 09/08/2016 10:45:28.499 | Local | 68.56 | 0 | 0 |
| 09/08/2016 10:45:28.499 | Local In Hand | 68.56 | 0 | 0 |
| 09/08/2016 10:45:28.499 | Moving Closed | 68.56 | 0 | 0 |
| 09/08/2016 10:45:28.499 | Contactora CW | 68.56 | 0 | 0 |
| 09/08/2016 10:45:28.499 | Monitor Relay | 68.56 | 0 | 0 |
| 09/08/2016 10:45:28.499 | Phase Rotation | 68.56 | 0 | 0 |
| 09/08/2016 10:45:28.499 | Relay S4 State | 68.56 | 0 | 0 |
| 09/08/2016 10:45:29.249 | Local Stop | 62.31 | 0 | 0 |
| 09/08/2016 10:45:29.249 | Local In Hand | 62.31 | 0 | 0 |
| 09/08/2016 10:45:29.249 | Moving Closed | 62.31 | 0 | 0 |

The top slider bar can be used to navigate through all available events currently in the data log. Alternatively the scroll bar on the right side of the event information can be used to navigate events in the same fashion.

8.2 Torque Position Profile



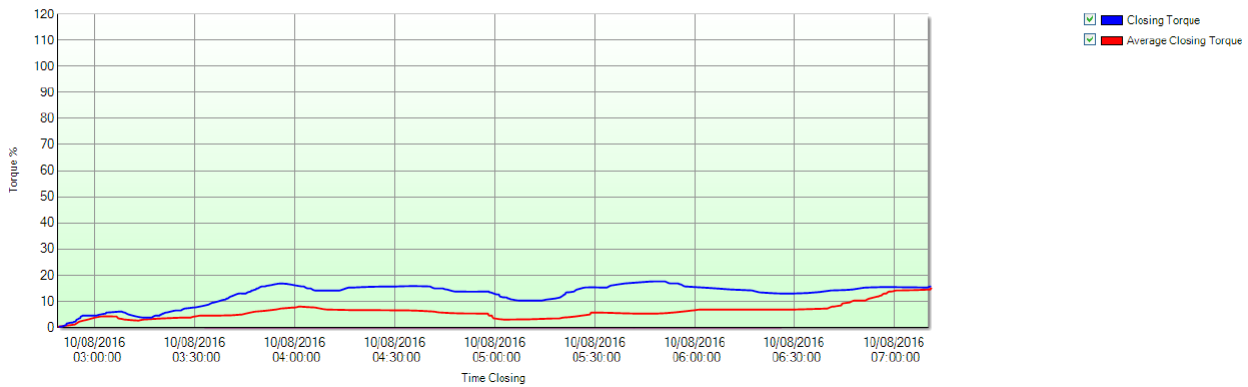
The torque profile graphs show graphical traces detailing the last recorded and average opening or closing torque as a percentage of rated torque by the actuator across a full stroke. This graphical display can be used to identify excessive valve wear.

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area. All traces can be selected/deselected to provide bespoke comparisons.

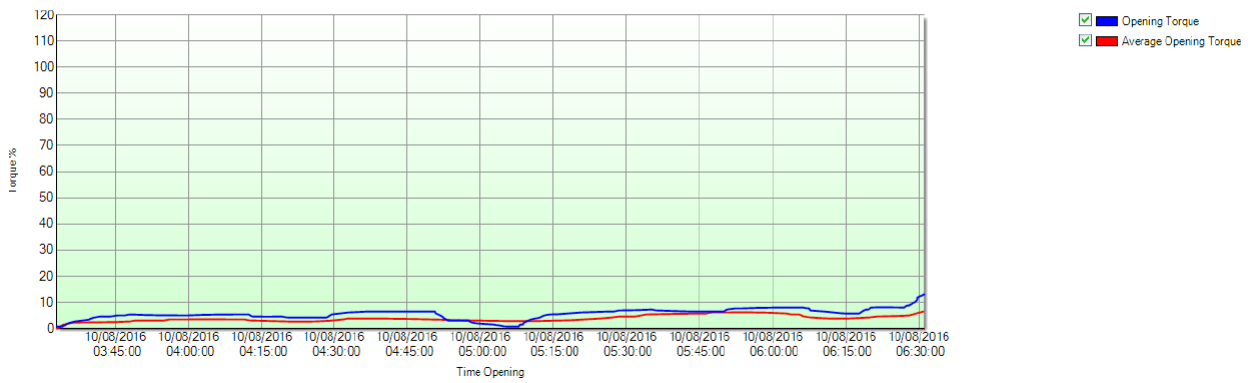
8.3 Torque Time Profile

Torque Time Profile

Closing Torque Profile



Opening Torque Profile



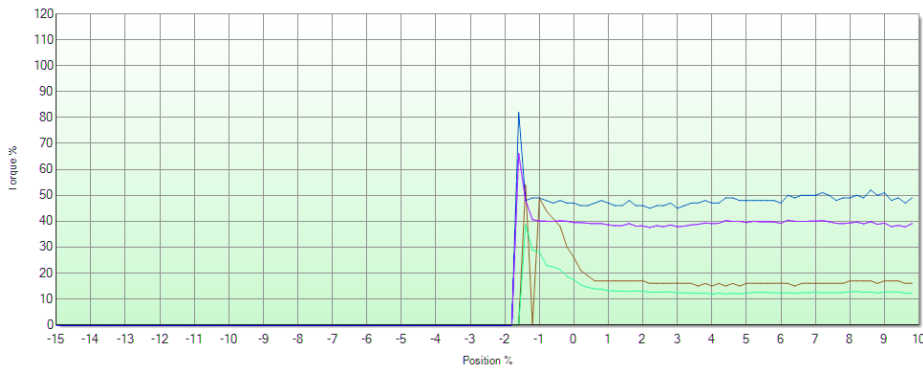
The torque time profile graphs show graphical traces detailing live and average opening or closing torque as a percentage of rated torque over an operating period. The time period will vary depending on actuator use and the running time of the data log. Average torque values are cumulative across the life of the data log until the relevant time point.

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area. All traces can be selected/deselected to provide bespoke comparisons.

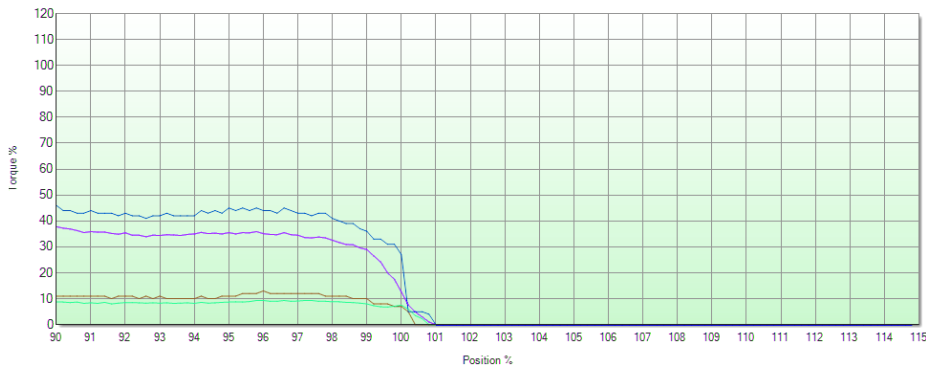
8.4 Torque Limit Profiles

Torque Limit Profiles

Torque Close Limit Profile



Torque Open Limit Profile



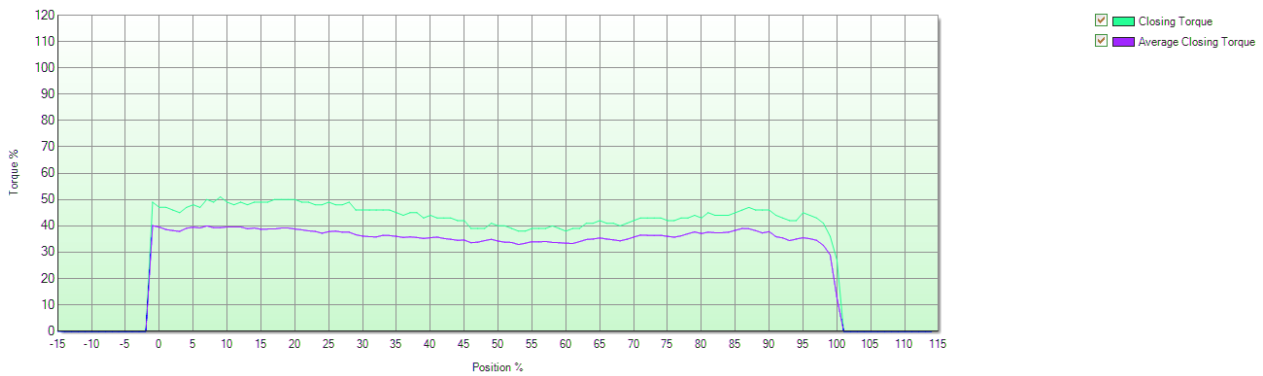
Torque limit profile graphs show the measured torque in both directions around each position limit. The average torque is provided as a reference against the last recorded torque. This will help to identify any valve degradation at the fully closed or fully open positions.

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area. All traces can be selected/deselected to provide bespoke comparisons.

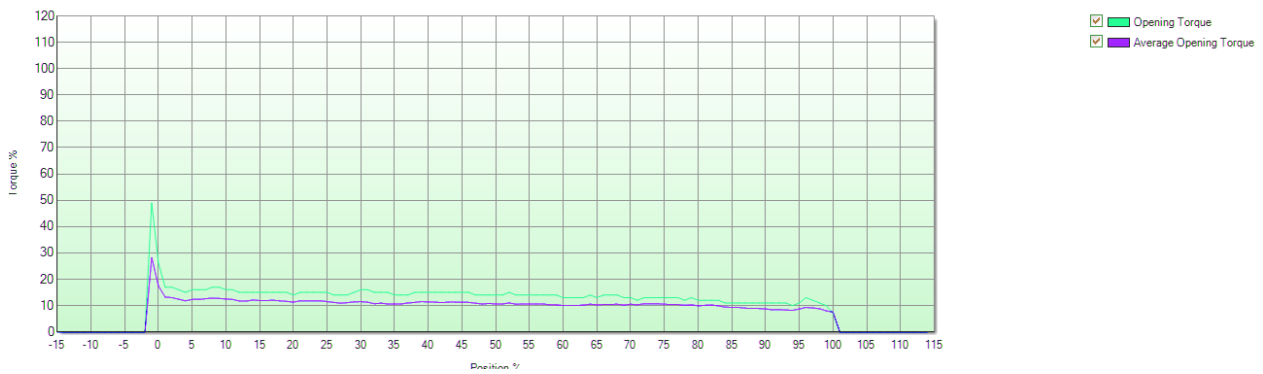
8.5 Torque Position Reference Profile

Torque Profile

Closing Torque Profile



Opening Torque Profile



Torque position reference profile displays the reference stroke for the actuator. The reference data is collected by stroking the valve during commissioning and saving the valve torque within the actuator settings.

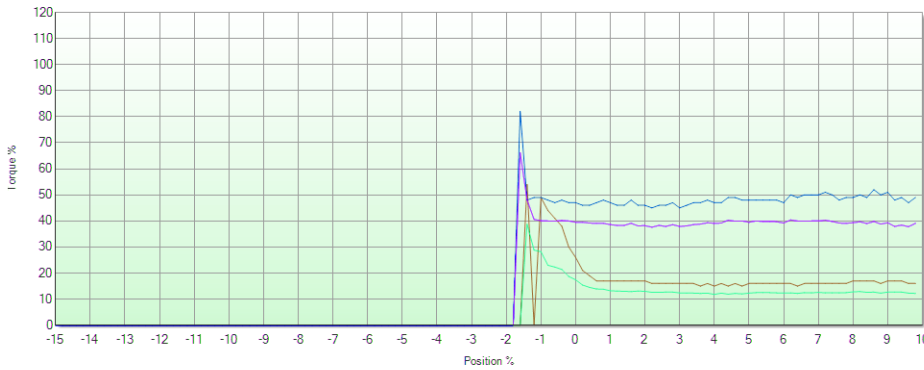
Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area.

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8.6 Torque Reference Limit Profiles

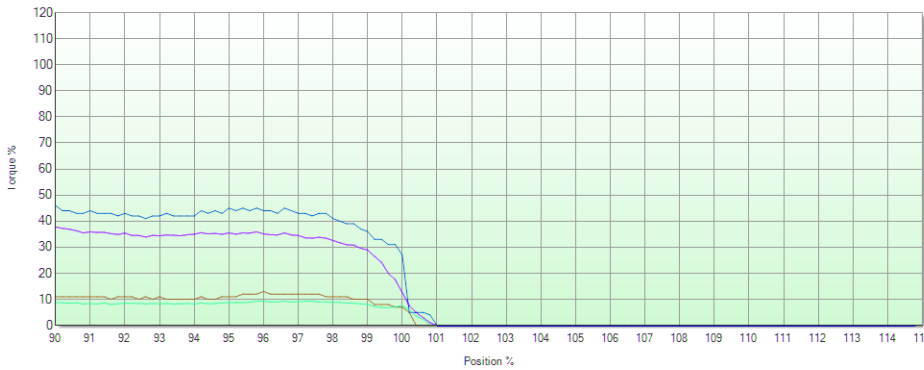
Torque Limit Profiles

Torque Close Limit Profile



- Opening Torque
- Average Opening Torque
- Closing Torque
- Average Closing Torque

Torque Open Limit Profile



- Opening Torque
- Average Opening Torque
- Closing Torque
- Average Closing Torque

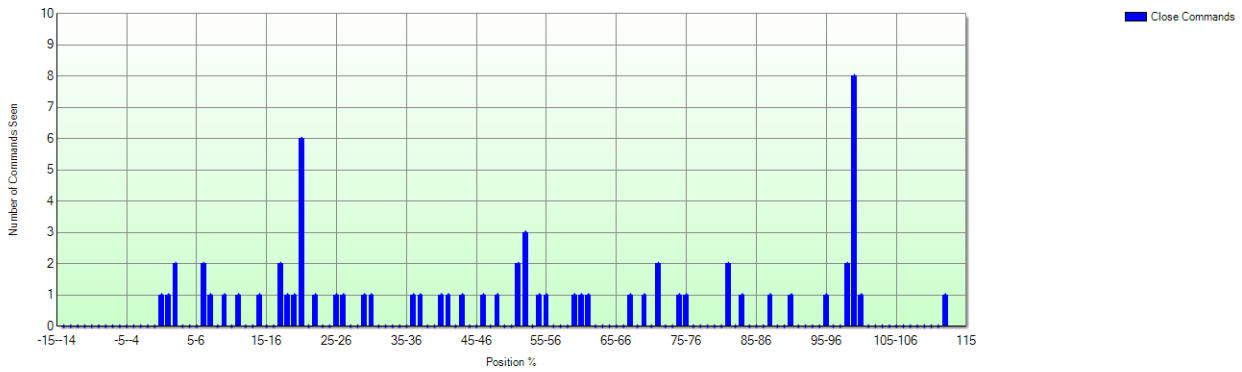
This screen provides greater details of the reference torque at each position limit. The reference data is collected by stroking the valve during commissioning and saving the valve torque within the actuator settings.

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area. All traces can be selected/deselected to provide bespoke comparisons.

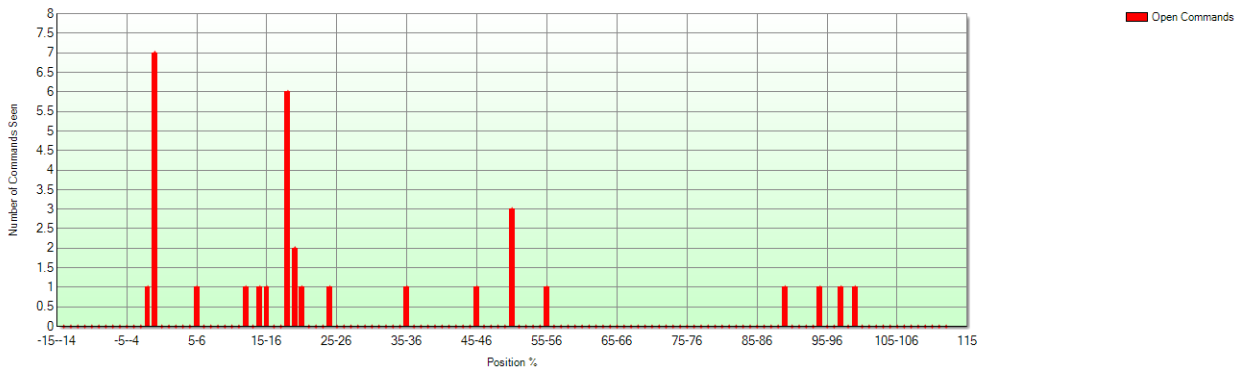
8.7 Starts Log

Starts Log

Close Starts Log



Open Starts Log



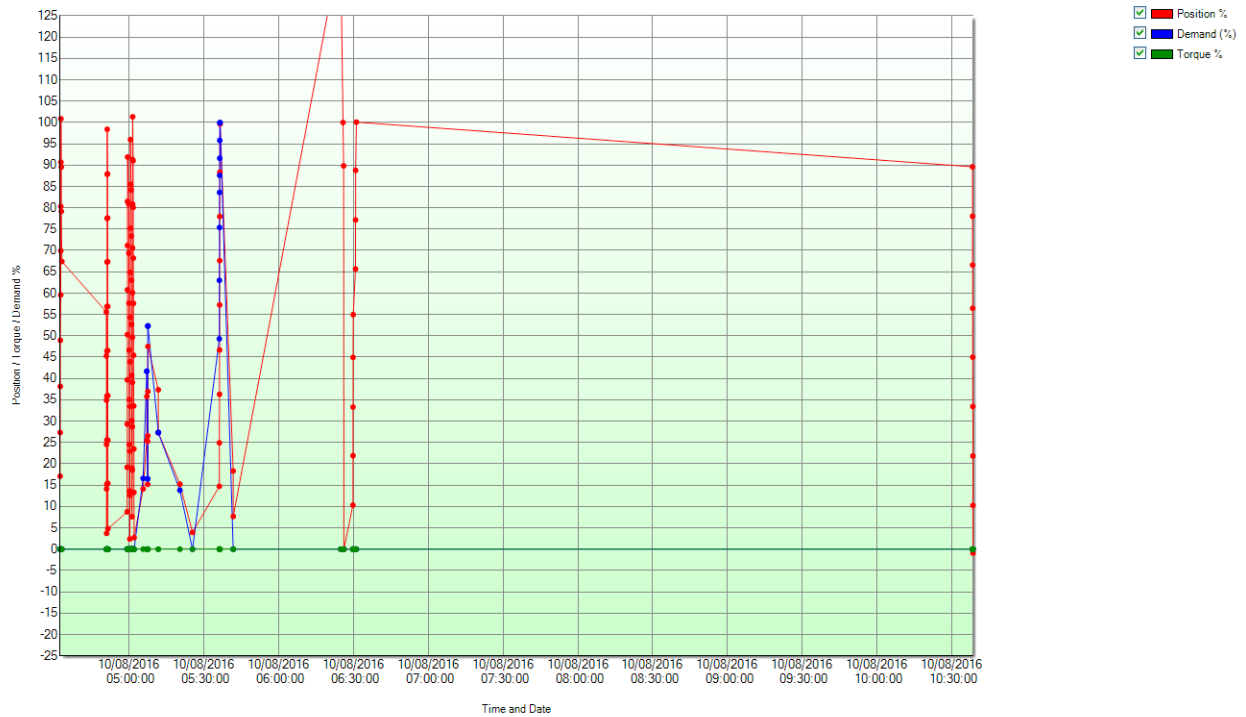
This screen displays the total number of movements initiated in each direction against a percentage of full valve stroke.

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area.

8.8 Movement Log

Movement Log

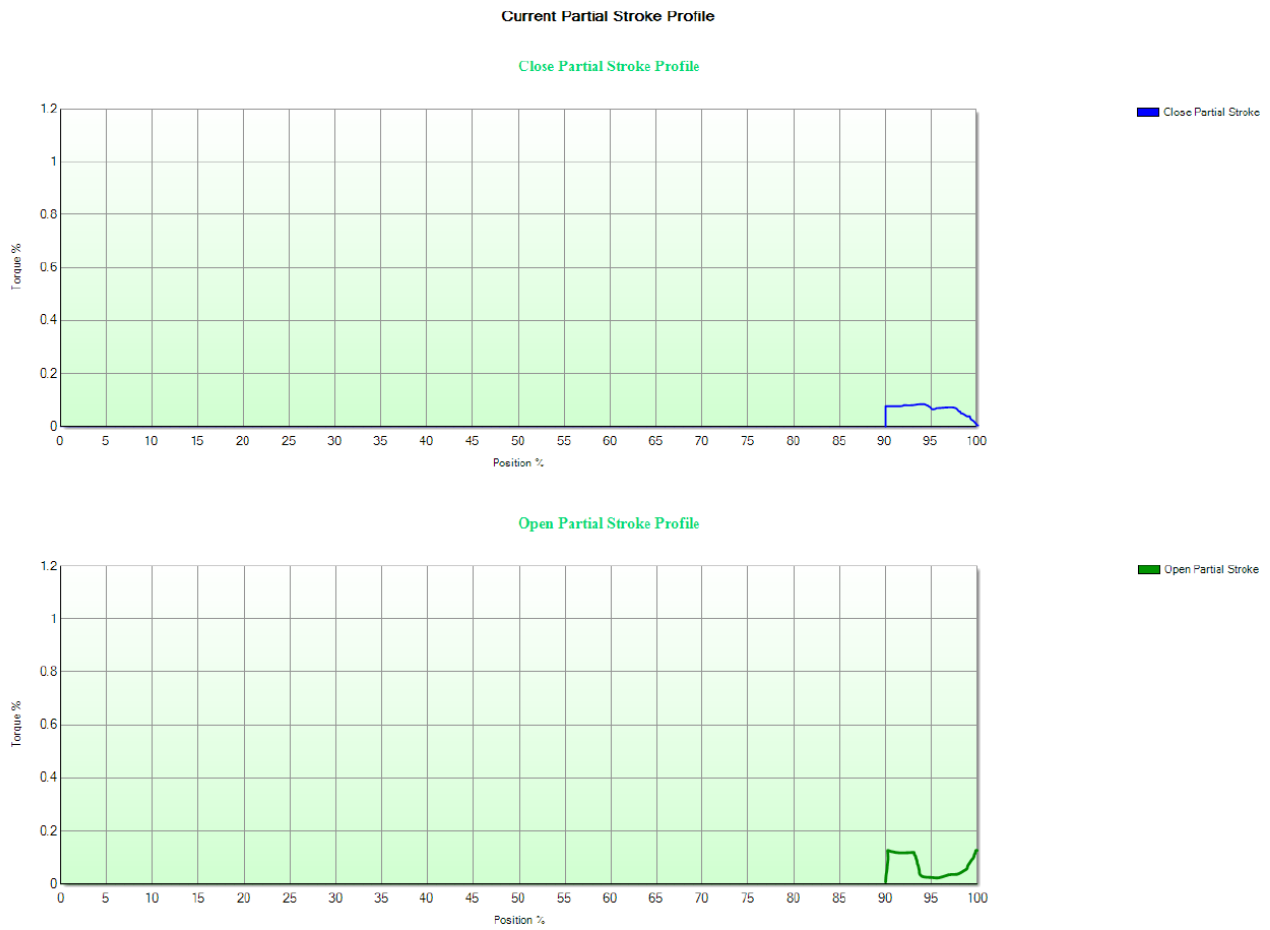
Movement Profile



The movement log records the actuator position, demand and torque as a percentage of rated across the data log period. Each data point is plotted when the actuator stops or covers 10% movement from the origin when movement was instigated.

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area.

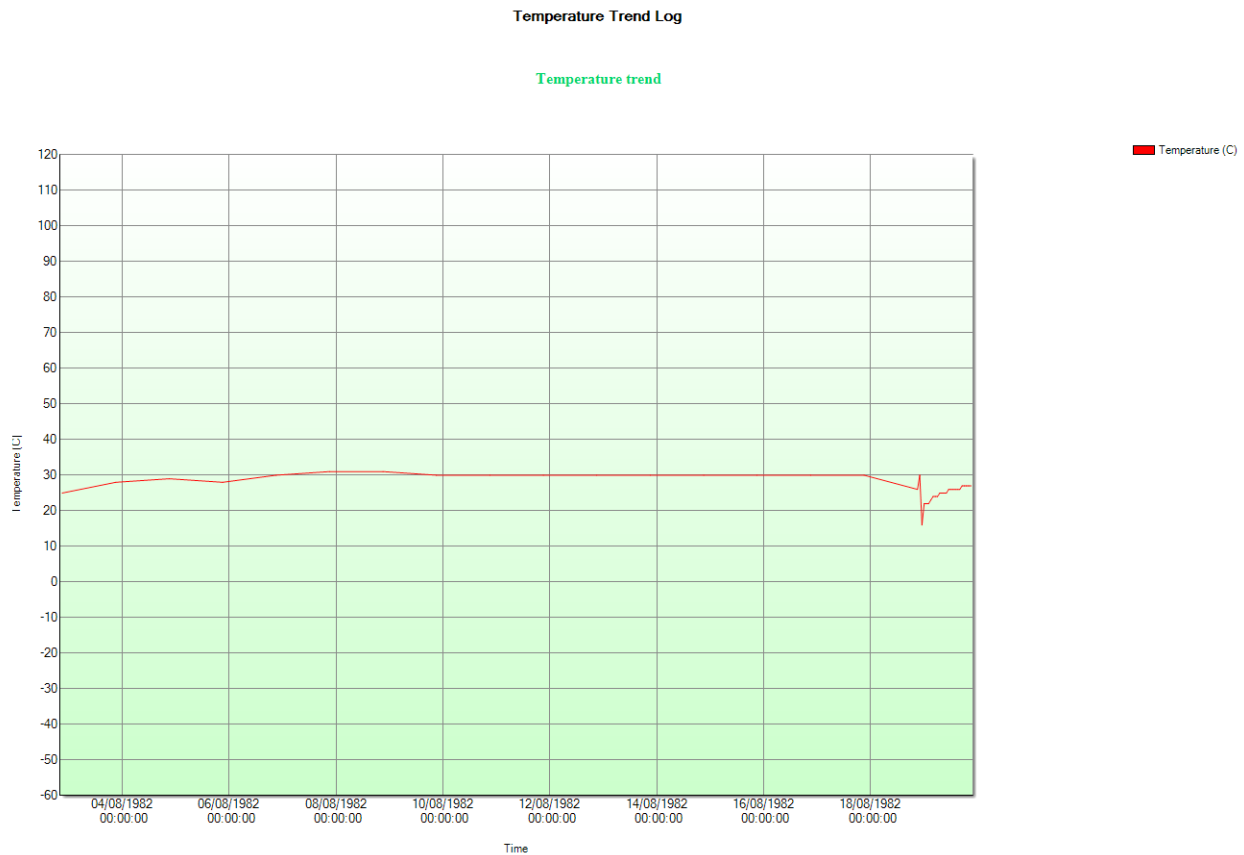
8.9 Current Partial Stroke Profile



This screen displays a torque graph of the last partial stroke movement for both directions of the test. The torque required to operate the valve during the last partial stroke operation may help to diagnose developing problems with the valve and its condition.

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area.

8.10 Temperature Trend Log

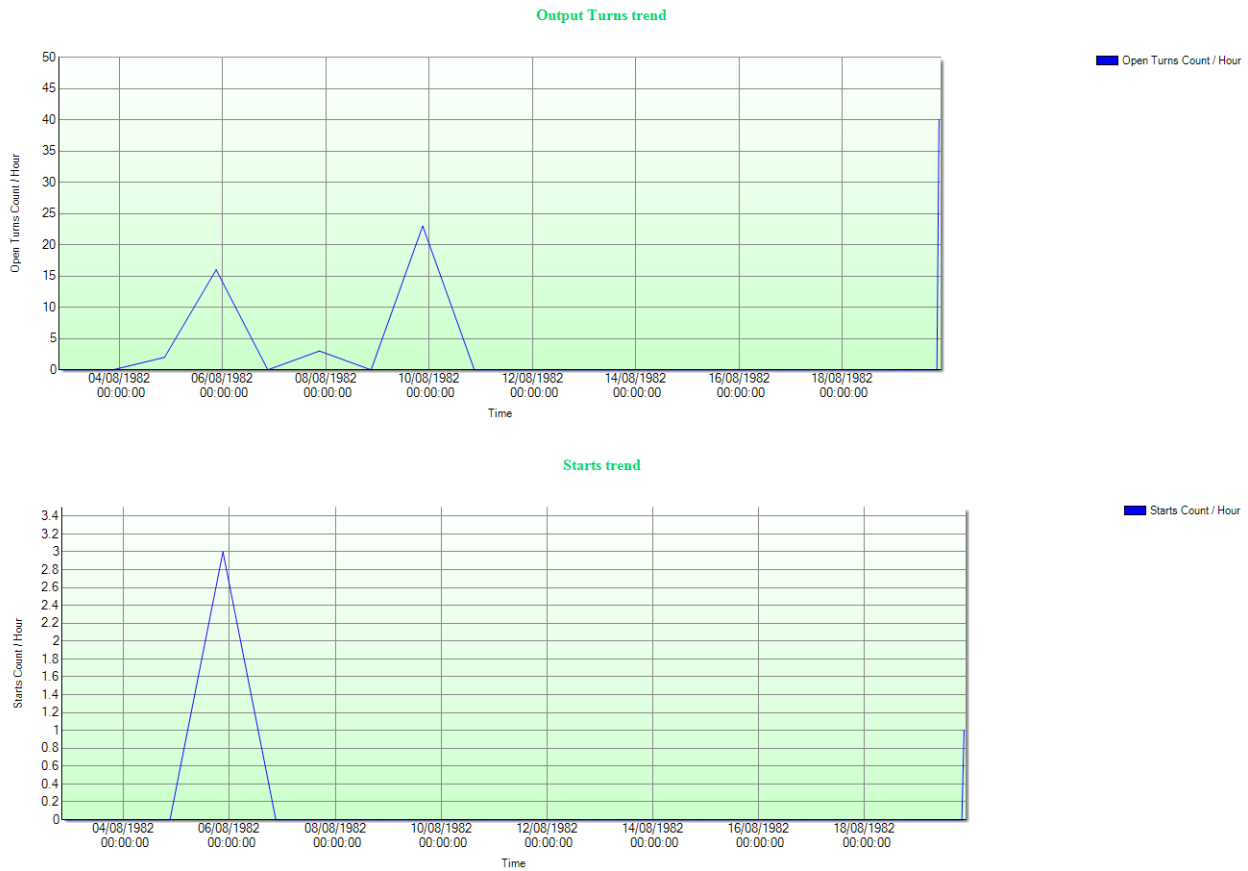


The actuator ambient temperature is monitored to identify if the internal electronics are being exposed to an excessively high operating temperature. Operators can use this trend to issue a protective action should heat rise be witnessed (e.g. fitment of a sun shade in a hot outside unclouded environment).

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area.

8.11 Motor Starts and Output turns Trend Log

Motor Starts and Output turns Trend Log



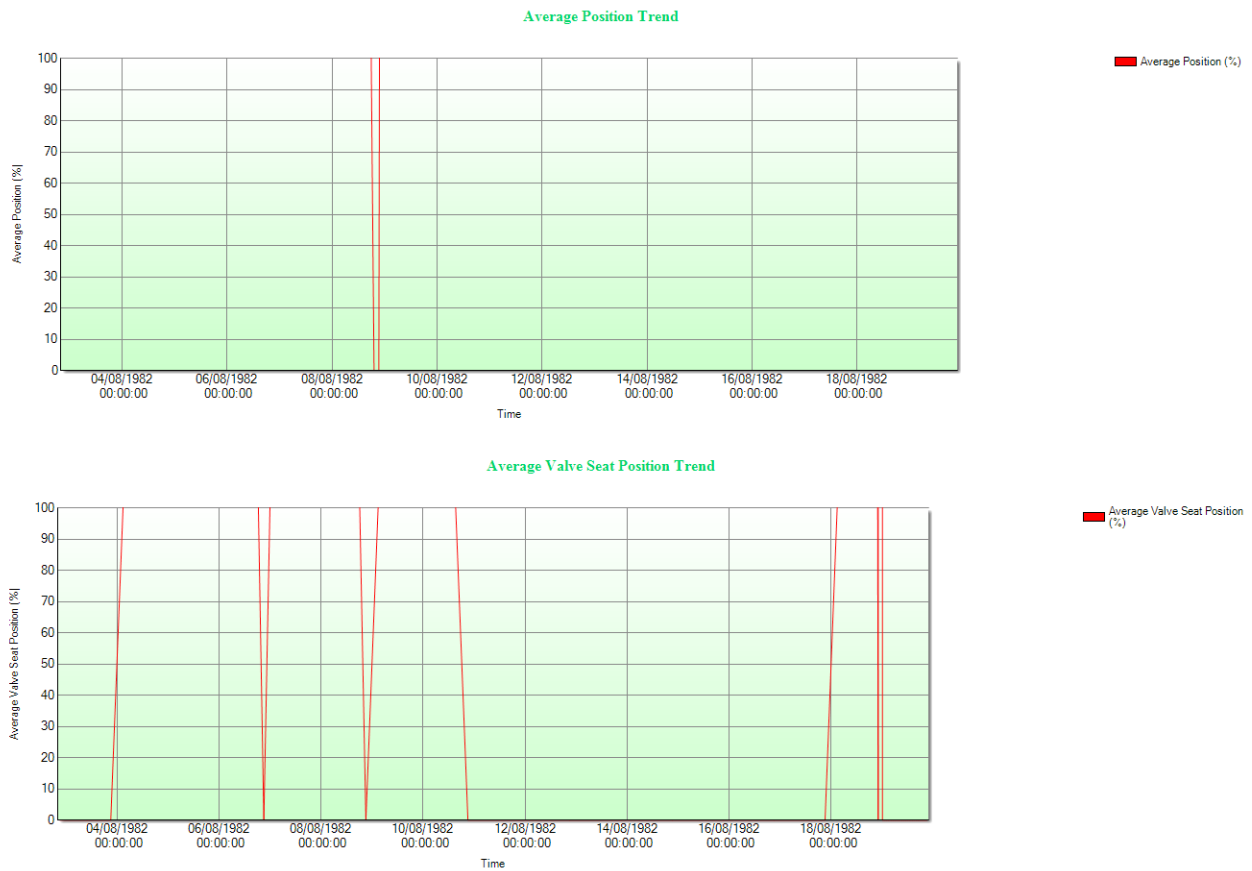
The output turns trend provides a quick visual indication of actuator activity over a number of days. The starts trend can be used in conjunction with the output turns trend to identify if the actuator is moving in an isolating fashion (large movements – normally limit to limit) or modulating fashion (small and frequent step changes).

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area.

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8.12 Average Position and Valve Seat Position Trend Log

Average Position and Valve Seat Position Trend Log



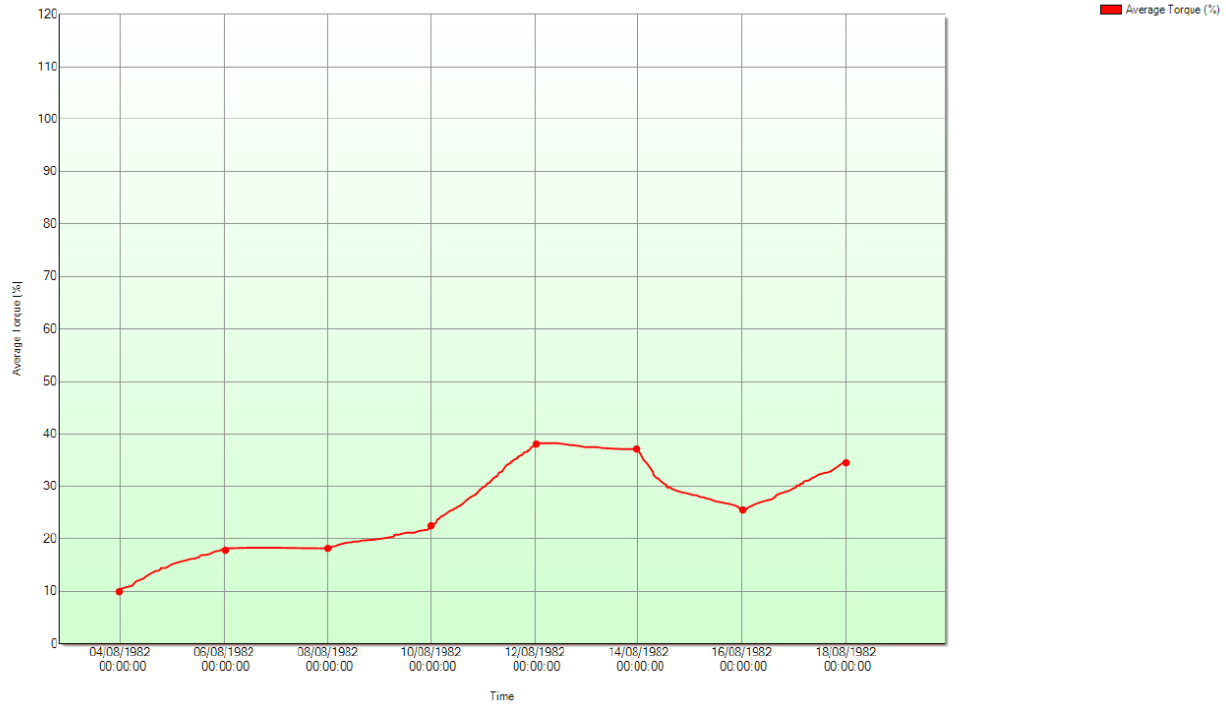
This trend log shows the average position over time and also the average seating position (at either limit) over time. Trends from both of these graphs will show the main dwell positions of the unit during service.

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area.

8.13 Average Torque Trend Log

Average Torque Trend Log

Average Torque Trend

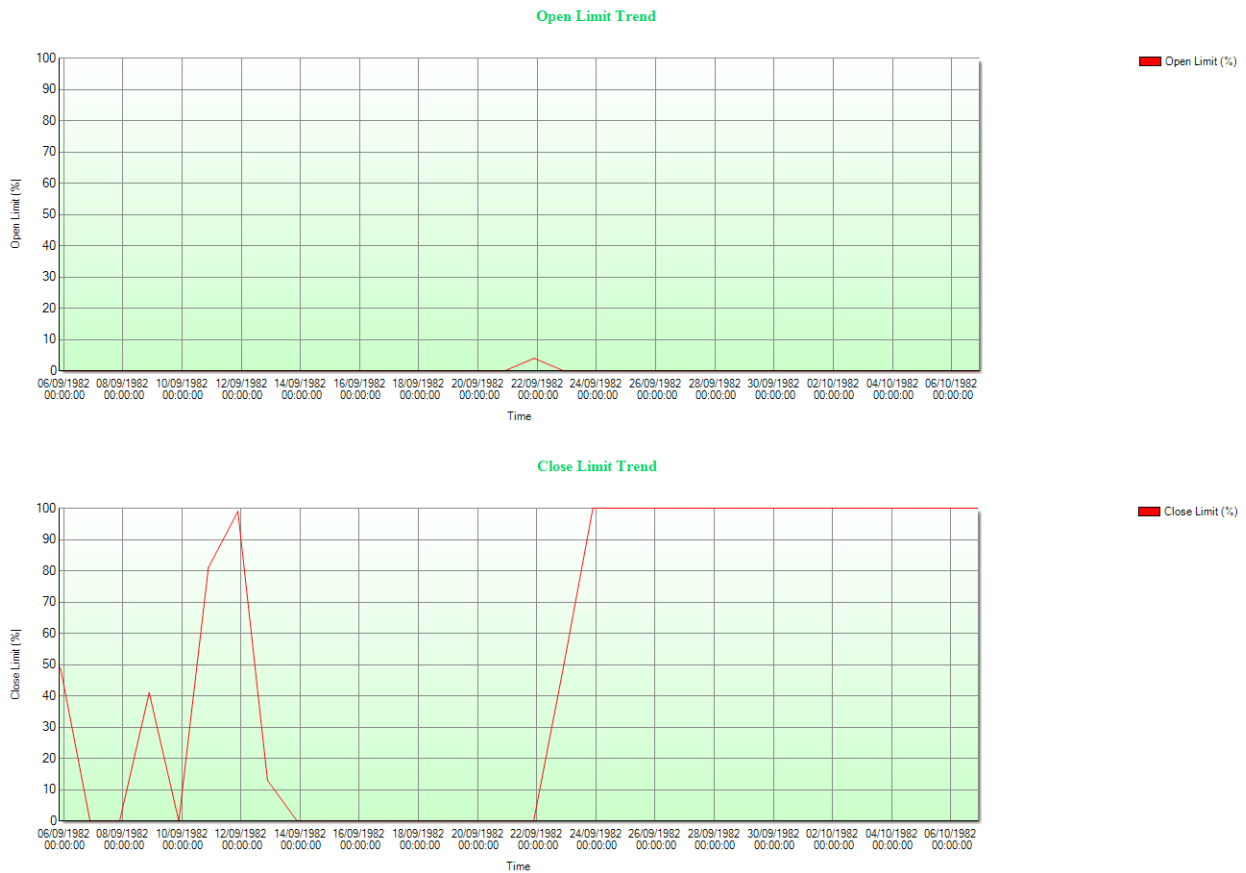


This screens shows the average torque throughout the life of the data log. A steadily rising trend trace could indicate valve degradation or a wear issue.

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area.

8.14 Open Limit and Close Limit Trend Log

Open Limit and Close Limit Trend Log

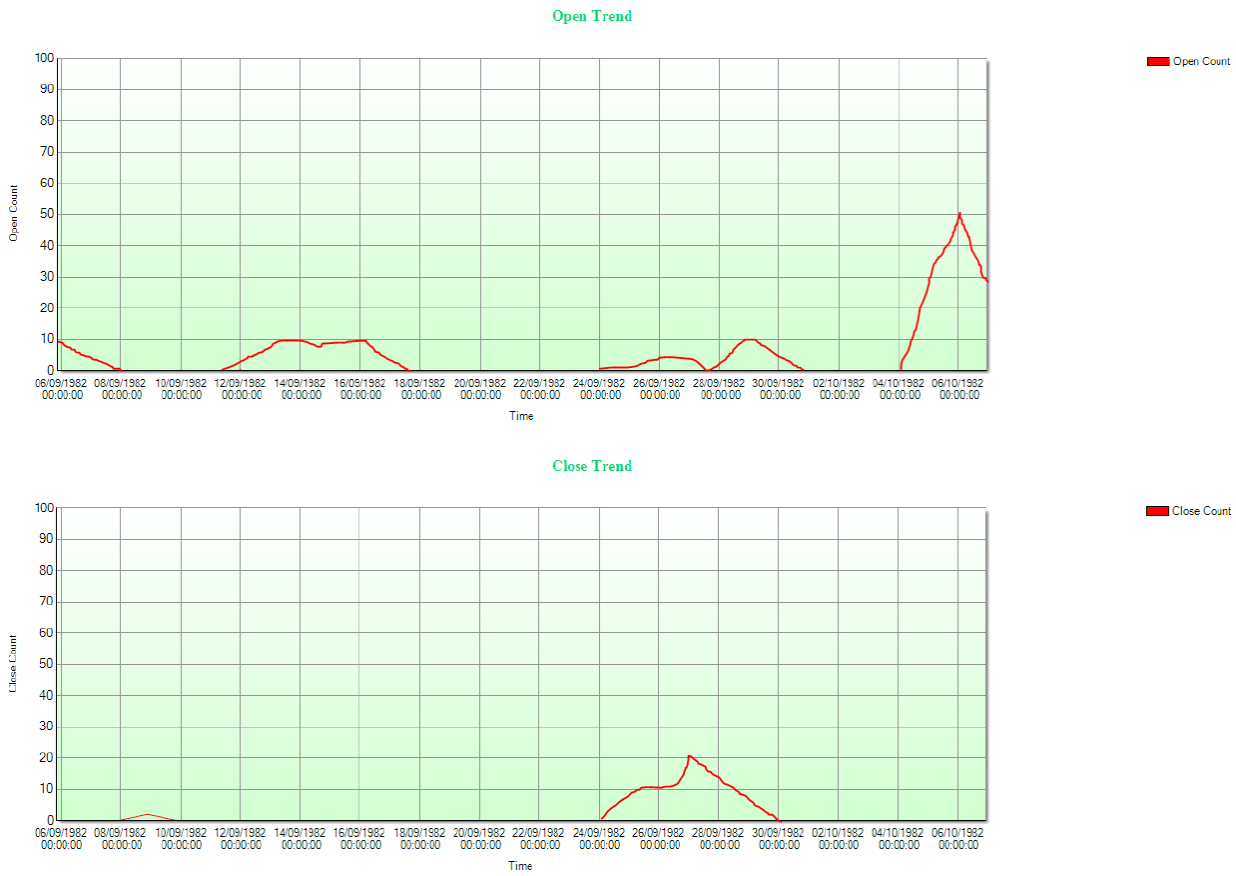


Each trace shows the portion of time spent at each of the respective position limits.

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area.

8.15 Open and Close Trend Log

Open and Close Trend Log



Shows the number of open and close operations across the life of the data log.

Graph detail can be enhanced by dragging a selection area over a section of the graph. This will adjust the axis to zoom into a full sized representation of that area.

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8.16 Miscellaneous and Maintenance Datalog Data

Miscellaneous and Maintenance Datalog Data

| Motor Related Data | |
|---|------------|
| Total Number Open Contactor Operations | 9 |
| Total Number Close Contactor Operations | 9 |
| Total Number Output Turns | 36 |
| Total Motor Run Time | 24 |
| Total Number Of Operations | 15 |
| Total Number Of Strokes | 4294967295 |
| Power Related Data | |
| Number of Power Cycles | 3 |
| Maximum Powered On Time | 4294967295 |
| Limit Related Data | |
| Maximum Open Limit Torque recorded | 255 |
| Maximum Close Limit Torque recorded | 255 |
| Maximum Opening Torque Time | 4294967295 |
| Maximum Closing Torque Time | 4294967295 |
| Open Limit Trip Time | 2 |
| Close Limit Trip Time | 2 |
| Average Torque recorded | 0 |
| Environmental Related Data | |
| Maximum recorded temperature | 28 |
| Minimum recorded temperature | -1 |
| Maximum Temperature Time | 990 |
| Minimum Temperature Time | 4294967295 |
| Maintenance Log Data | |
| Maximum recorded temperature | 32 |
| Minimum recorded temperature | 0 |
| Maximum Temperature Time | 57747 |
| Minimum Temperature Time | 0 |
| Total Number Open Contactor Operations | 58 |
| Total Number Close Contactor Operations | 93 |
| Total Number Output Turns | 1482 |
| Total Motor Run Time | 452 |
| Maximum Open Limit Torque recorded | 0 |
| Maximum Close Limit Torque recorded | 0 |
| Maximum Opening Torque Time | 0 |
| Maximum Closing Torque Time | 0 |
| Open Limit Trip Time | 24121 |
| Close Limit Trip Time | 45230 |
| Average Torque recorded | 0 |
| Open Torque Trip Time | 0 |
| Close Torque Trip Time | 0 |
| Total Number of Power Ups | 15 |
| Maximum Powered Up Time | 0 |
| Number Hi Torque Opening | 0 |
| Number Hi Torque Closing | 0 |
| Number Hi Hi Torque Opening | 0 |
| Number Hi Hi Torque Closing | 0 |

8.16.1 Motor Related Data

Total Number Open Contactor Operations

Cumulative total of contactor operations in the open direction.

Total Number Close Contactor Operations

Cumulative total of contactor operations in the close direction.

Total Number Output Turns

Cumulative total of complete actuator output turns.

Total Motor Run Time in ¼ seconds

Shows the total amount of run time for the motor in 0.25 seconds.

Total Number Of Operations

Cumulative total of operations in the either direction.

Total Number Of Strokes

Cumulative total number of valve strokes.

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8.16.2 Power Related Data

Number of Power Cycles

Total number of recorded power down and power up cycles through the actuator service life (in quarter seconds).

Maximum Powered On Time in ¼ seconds

Total amount of time the unit has been supplied with power (in quarter seconds).

8.16.3 Limit Related Data

Maximum Open Limit Torque recorded

Maximum torque recorded at the open limit position.

Maximum Close Limit Torque recorded

Maximum torque recorded at the close limit position.

Maximum Opening Torque Time

Shows when the maximum recorded open limit torque occurred. This is presented as the raw tick count from the Centronik.

Maximum Closing Torque Time

Shows when the maximum recorded close limit torque occurred. This is presented as the raw tick count from the Centronik.

Open Limit Trip Time

Shows the last time that an open limit trip occurred. This is presented as the raw tick count from the Centronik.

Close Limit Trip Time

Shows the last time that a close limit trip occurred. This is presented as the raw tick count from the Centronik.

Average Torque recorded

Shows average torque over the life of the data log.

8.16.4 Environmental Related Data

Maximum recorded temperature

The maximum peak temperature within the control module.

Minimum recorded temperature

The minimum peak temperature within the control module.

Maximum Temperature Time

The time at which the maximum recorded temperature was witnessed. This is presented as the raw tick count from the Centronik.

Minimum Temperature Time

The time at which the minimum recorded temperature was witnessed. This is presented as the raw tick count from the Centronik.

8.16.5 Maintenance Log Data

Maximum recorded temperature

The maximum peak temperature within the control module.

Minimum recorded temperature

The minimum peak temperature within the control module.

Maximum Temperature Time

The time at which the maximum recorded temperature was witnessed. This is presented as the raw tick count from the Centronik.

Minimum Temperature Time

The time at which the minimum recorded temperature was witnessed. This is presented as the raw tick count from the Centronik.

Total Number Open Contactor Operations

Cumulative total of contactor operations in the open direction.

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Total Number Close Contactor Operations

Cumulative total of contactor operations in the close direction.

Total Number Output Turns

Cumulative total of complete actuator output turns.

Total Motor Run Time in ¼ seconds

Shows the total amount of run time for the motor in 0.25 seconds.

Maximum Open Limit Torque recorded

Maximum torque recorded at the open limit position.

Maximum Close Limit Torque recorded

Maximum torque recorded at the close limit position.

Maximum Opening Torque Time

Shows when the maximum recorded open limit torque occurred. This is presented as the raw tick count from the Centronik.

Maximum Closing Torque Time

Shows when the maximum recorded close limit torque occurred. This is presented as the raw tick count from the Centronik.

Open Limit Trip Time

Shows the last time that an open limit trip occurred. This is presented as the raw tick count from the Centronik.

Close Limit Trip Time

Shows the last time that a close limit trip occurred. This is presented as the raw tick count from the Centronik.

Average Torque recorded

Shows average torque over the life of the data log.

Open Torque Trip Time

Shows the time the last open torque trip event occurred. This is presented as the raw tick count from the Centronik.

Close Torque Trip Time

Shows the time the last close torque trip event occurred. This is presented as the raw tick count from the Centronik.

Total Number of Power Ups

Shows the total number of power ups.

Maximum Powered Up Time

Shows the time the actuator has been on since the last power up.

Number Hi Torque Opening

Shows the number of Hi Torque service alarms triggered in the open direction.

Number Hi Torque Closing

Shows the number of Hi Torque service alarms triggered in the close direction.

Number HiHi Torque Opening

Shows the number of HiHi Torque service alarms triggered in the open direction.

Number HiHi Torque Closing

Shows the number of HiHi Torque service alarms triggered in the close direction.

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