

rotork®

Rotork *Bluetooth*® Setting Tool Pro

Installation Manual



Keeping the World Flowing

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Key Functions

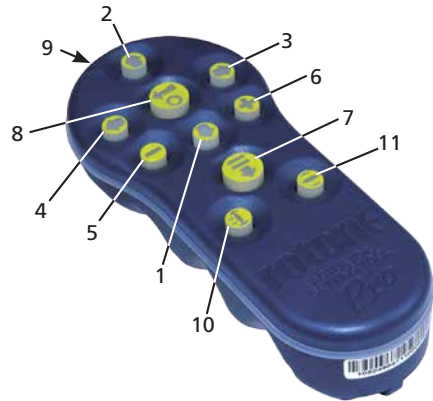
The Rotork Bluetooth® Setting Tool Pro (BTST)

Name	General Operation
------	-------------------

- | | |
|----------------------------------|---|
| 1. ↓ Key* | Display next function down. |
| 2. ↑ Key | Display previous function up. |
| 3. → Key* | Display next function across right / select next actuator / change value (BT mode). |
| 4. ← Key | Display previous function across left / select previous actuator / change value (BT mode). |
| 5. – Key** | Decrease/change displayed function's value or option setting (IR mode). |
| 6. + Key** | Increase/change displayed function's value or option setting (IR mode). |
| 7. ⏏ Key | Long press, Initiates search mode via <i>Bluetooth</i> . Short press initiates IrDA mode / mission. |
| 8. ⏏ Key | Enter displayed value or option setting / initiate BT search. |
| 9. Infra-red transmitter window. | |
| 10. ⏏ Key | Close actuator (Non-functional on SI or CVA actuators). |
| 11. ⏏ Key | Open actuator (Non-functional on SI or CVA actuators). |

* Pressing these two arrow keys simultaneously exits the IrDA setting mode and returns the actuator display to the pressure / position indication mode.

** Pressing these two keys simultaneously exits the *Bluetooth* mode and places the Rotork *Bluetooth*® Setting Tool Pro into its idle state.



This manual contains important safety information. Please ensure it is thoroughly read and understood before installing, operating or maintaining the equipment.

Introduction

The Rotork *Bluetooth*® Setting Tool Pro (BTST) combines the legacy IR and IrDA communication protocols with the latest *Bluetooth* wireless technology. IR / IrDA support for older Rotork products is retained (for use as an IR communication tool, please refer to publications PUB002-003 and PUB002-004).

The new BTST is able to connect to Rotork *Bluetooth*® wireless enabled actuators and related software to setup and complete missions. Missions are configurable programs of instructions that are to be performed by the BTST on an actuator and include (but are not limited to) downloading configuration and datalogger files as well as uploading specific configurations to the actuator. Different missions can be programmed into the BTST via Insight 2.

Specification

Enclosure: IP54

The BTST has been built in accordance with the following standards:

ATEX II 1 G, Ex ia IIC T4 Ga

IECEX – Ex ia IIC T4 Ga

USA – FM Int Safe Class I, Div 1,
Groups A, B, C & D, T4

Canada – CSA Exia Int Safe, Class I, Div 1,
Groups A, B, C & D, T4

Ambient Temperature Range:

Tamb = -30 °C to +50 °C

Operating Range: Infra Red 0.75m, *Bluetooth* 10m

Enclosure Materials: Polycarbonate ABS blend,
Polycarbonate and Silicon Rubber

Instructions for Safe Selection, Installation, Use, Maintenance & Repair

1. The BTST must only be used in hazardous areas (potentially explosive atmosphere) permitted by the equipment classification, temperature class and ambient temperature range stated above (this is also stated on the back of the BTST).
2. The following checks must be conducted on the BTST prior to taking it into a hazardous area:
 - a. The BTST function must be checked by ensuring that the red or green LED, either in the clear window or under the 'Enter' key of the BTST, illuminates when any button is pressed. If an LED does not illuminate, there is a potential functional problem with the BTST and the inspection or battery replacement stated below in paragraph 6 must be performed.
 - b. If the BTST is likely to come in contact with aggressive substances (e.g. solvents that may affect polymeric materials), then it is the responsibility of the user to take suitable precautions (e.g. regular checks as part of the routine inspections or establishing that the enclosure materials are resistant to the specific chemicals) that prevent the BTST being adversely affected, thus ensuring that the type of protection is not compromised.
3. It is essential that the actuator settings are checked for compatibility with the valve, process and control system requirements before the actuator is put into service.
4. No user adjustment of the BTST is required.
5. The BTST must be inspected every three months, in a safe (non-hazardous), dry area by suitably trained personnel, to ensure it has been maintained in accordance with the applicable code of practice.
6. In accordance with the BTST hazardous area approvals and with the recommendations from the approved battery suppliers, the following are mandatory requirements for safe use:
 - a. The inspections or replacement of the batteries must be conducted in a safe (non-hazardous), dry area.
 - b. The batteries must be removed from the BTST when it is not expected to be used for 3 months or longer.
 - c. Discharged batteries must be removed from the BTST to prevent possible damage.
 - d. The battery compartment of the BTST must be inspected every 3 months for any battery leakage. If any battery leakage has occurred then the BTST must not be used.
 - e. Only use battery types that are listed inside the BTST.
 - f. Always replace all four batteries at the same time. Always use four unused batteries of the same approved manufacturer, type and expiry date code.
 - g. Ensure the batteries are fitted with the correct polarity. The battery polarity (+) is indicated on the inside of the battery compartment of the BTST.
7. The BTST contains no other user replaceable parts and it cannot be repaired by the user. If the BTST is faulty or needs repairing, it must not be used.

Using Insight 2

Mission Function

WARNING: IT IS IMPORTANT TO KNOW WHAT MISSION HAS BEEN SET IN THE BTST BEFORE ATTEMPTING TO CONNECT TO AN ACTUATOR. FAILURE TO DO SO MAY RENDER THE ACTUATOR UNUSABLE OR UNSTABLE. REFER TO PAGE 6 FOR DETAILS ON IDENTIFYING AND SETTING THE MISSION.

1 Put the actuator in 'STOP'

If the Mission includes steps to update the actuator's firmware, you must ensure that the actuator is in STOP - otherwise the Mission will fail. If the Mission doesn't include instructions to perform a firmware update, it will not be necessary to put the actuator in STOP, but it is still good practice to do so (if site conditions allow).

WARNING: BEFORE USING THE BTST TOOL IT IS NECESSARY TO CLEAR TOOL OF ANY PREVIOUS MISSIONS!

To clear the setting tool of all preinstalled missions without using Insight 2, press and hold the ↑ Key and ↓ Key simultaneously for 5 seconds. The ⏪ and ⏩ Key will flash green alternately to indicate the missions have been cleared.

2 Setting Missions and Extracting Files



Insight 2 Login

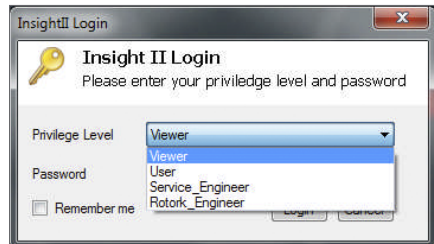
Viewer Mode - Extract and View information Only
Password - 'ROTORK'

User Mode - Extract, View and Upload configuration changes.

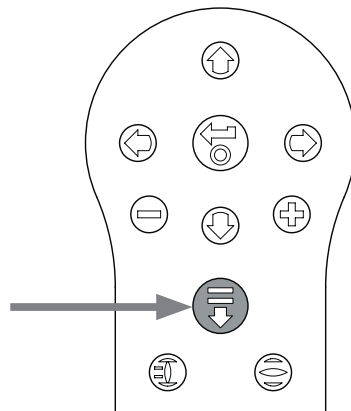
Password - 'ROTACT'

3 BTST Slave Mode

(setting missions and extracting files using Insight 2)

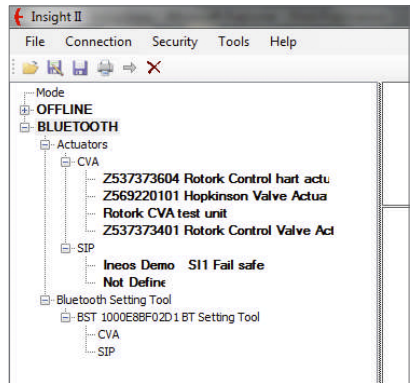
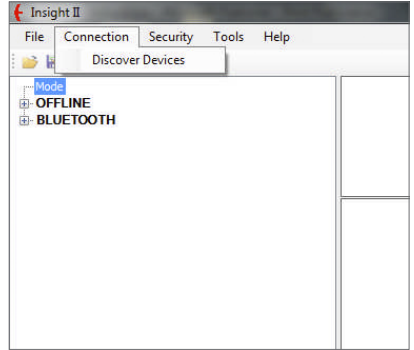


Place the setting tool into its Slave mode, so that it can be found by the Insight 2 software: Press and hold the Enter and Download buttons simultaneously for at least one second. The blue LED under the Enter key will flash slowly to indicate that the BTST is in Slave mode, and can be discovered by the Insight 2 software. Under no circumstances should any other windows programs (i.e. Bluetooth connection software) be used to connect to the setting tool. Insight 2 is the only program that will have access to the setting tool.



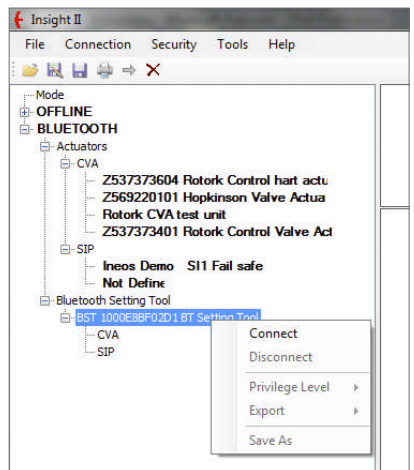
Using Insight 2

1. To connect to the BTST: Click on the Connection tab and then click discover devices. A few attempts may be required before a device is found – this is normal behaviour.
2. Once the search is complete, any discovered devices will be listed in the left hand (mode) panel.



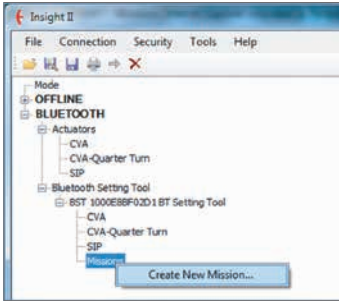
3. Right click the BST entry and click connect.
4. The blue LED under the Enter key should flash more rapidly as an indication that the BTST has been connected to the Insight software enabled device.

At this stage missions can be viewed / edited and data collected can be extracted.

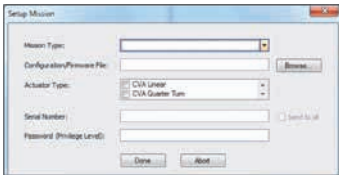


Setting and Editing Missions

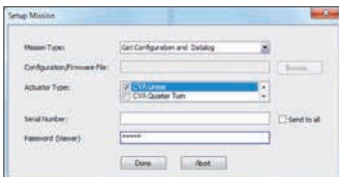
⚠ WARNING: You must pay particular attention to the type of actuator you are setting the mission for. Only set the actuator models you require – this is especially important when setting a configuration update mission.



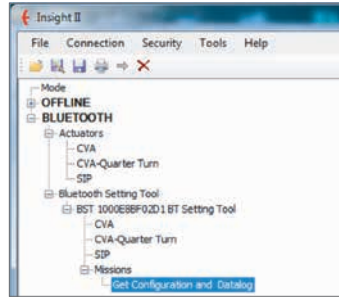
1. To set a mission, right click Missions in the setting tool navigation tree and then click 'Create New Mission'.
2. The New Mission window will appear.
3. Using the Mission type drop down box, select the mission you require. For most cases this will be Get configuration and Datalog files.



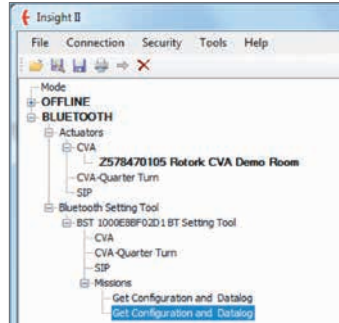
4. Next select the type of actuator you wish to extract these files from. You can select more than one type for a passive mission.
5. If you only want to extract from one actuator in particular, you can enter it's serial number. If you want to collect files from more than one actuator, click the 'send to all' checkbox.
6. Finally enter the relevant password for the actuator. For configuration and datalogger refer to Appendix A on page 11.



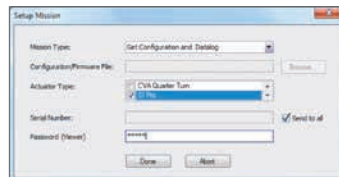
Once the mission has been set click 'Done' and the navigation tree will be updated to show that a mission has been set.



You can also set multiple missions. This would normally include for instance another Datalogger and configuration download where the actuator uses a different password. Repeat the same procedure when adding missions and the updated navigation tree will look like this:



After completing the set mission function, the tool can be set to idle mode either by pressing the + / - keys simultaneously or by using the disconnect function in Insight 2. The mission set can now be executed by following the instructions in the Execute Mission section on page 8.



Bluetooth Device Search Mode

1 Searching for *Bluetooth* devices in the immediate area

To search for *Bluetooth* devices in the immediate area, press and continue to hold the Download button (⏴) on the Rotork *Bluetooth*® Setting Tool Pro.

Whilst the button is held, the BTST will continue for search for devices. As the search is taking place, the green LED under the Enter button will flash green. Each time a *Bluetooth* device is detected, the LED under the Enter button will pulse blue once. It is important to make sure to not point the setting tool at an IrDA device during the search as it will always try to connect to IrDA first (either cover up the front of the setting tool or point away from any active IrDA device). When the operator releases the Download button, if *Bluetooth* devices have been found, the LED under the Enter key will remain blue. If no devices have been found, the LEDs under the Enter and Download keys will alternate red.

2 Selecting the desired device

When the search (above) is complete, and devices have been found, the blue LED under the Enter button will remain illuminated. The operator can then select the desired actuator by cycling through the found actuators using the left and right arrow keys. Pressing either the left or the right arrow keys will connect to the first device in the list of found devices.

While the BTST is connecting to the next actuator, the blue LEDs under the Enter and Download keys will flash simultaneously. When the connection is achieved, both blue LEDs will remain lit.

IQ3 UNITS the blue LED in the display window will illuminate to confirm *Bluetooth* communication is active.

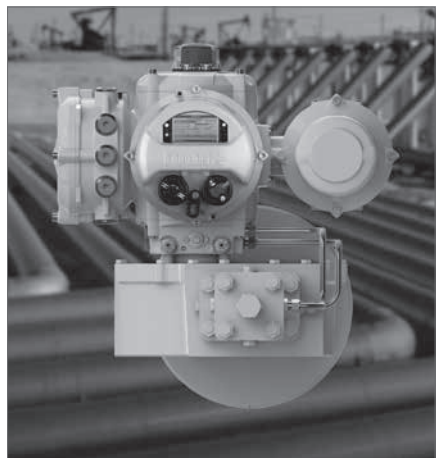
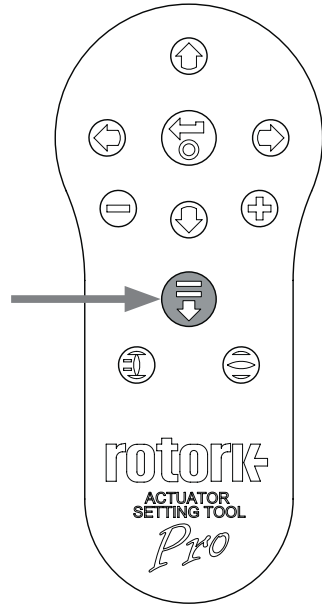
CVA UNITS the LED on the top cover will flash Blue to confirm *Bluetooth* communication is active.

SI UNITS will confirm *Bluetooth* is active on lower part of LCD display and its backlight will flash on and off whilst communication is active.

If the actuator is not the correct one, simply press the left or right button to select the previous or next actuator.

It is important that you have a clear view of the actuator's *Bluetooth* status LED or LCD display to ensure you are connecting with the correct actuator. If the actuator is not the correct one, simply press the left or right button to select the previous or next actuator.

If the operator wishes to abort the operation, pressing the + / - buttons simultaneously on the Rotork *Bluetooth*® Setting Tool Pro returns the tool to its idle state.



Mission Function

⚠ WARNING: It is important to know what mission has been set in the BTST before attempting to connect to an actuator. Failure to do so may render the actuator unusable or unstable. Refer to page 4 for details on identifying and setting the mission. If in doubt, clear all missions from the tool.

1 Put the actuator in 'STOP'

If the Mission includes steps to update the actuator's firmware, you must ensure that the actuator is in STOP - otherwise the Mission will fail. If the Mission doesn't include instructions to perform a firmware update, it will not be necessary to put the actuator in STOP, but it is still good practice to do so (if site conditions allow).

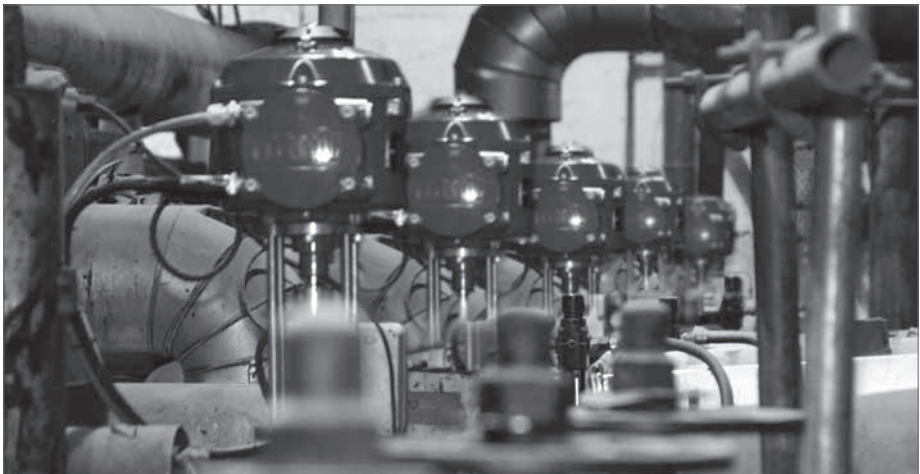
2 Execute the Mission

Once the desired actuator has been selected (as in section 2 on page 7), the Mission can be initiated. The blue LED beneath the ENTER key will be illuminated indicating that an actuator has been selected.

Press the DOWNLOAD key and the ENTER key will start to flash, press the ENTER key within 2 seconds to initiate the Mission. If you change your mind let the ENTER key stop flashing and the Mission will not initiate.

If the Mission completes successfully, the green LEDs under the ENTER and DOWNLOAD keys will alternate green for 5 seconds before returning to the solid blue LED. If the Mission fails, the red LEDs under the Enter and Download keys will alternate red for 5 seconds.

If the operator wishes to abort the operation, pressing the + / - buttons simultaneously on the Rotork Bluetooth® Setting Tool Pro returns the tool to its idle state.



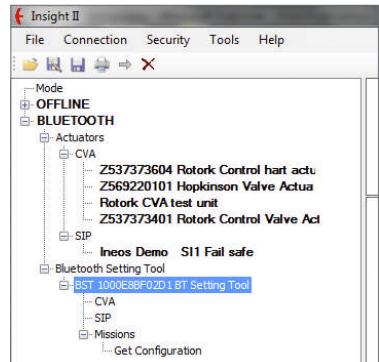
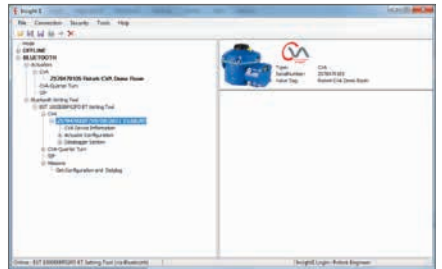
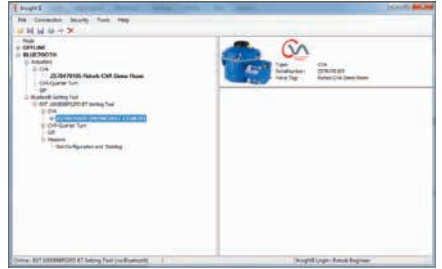
Extracting Files

Extracting Files

Follow the procedure above to place the BTST into the slave mode and connect to Insight 2. This time the tree will indicate the presence of one or more files and these files will be located by actuator type.

If you click on the entry you require, Insight 2 will automatically extract and display the file. Once the file has been extracted the navigation tree will expand to show the different items in the file.

Click on the entry you require for access to the settings / log file.



Specifications

Enclosure: IP54

Certification:

ATEX II 1G, Cert no. 09ATEX2195, Ex ia IIC T4 Ga
FM INT SAFE, Class I, Div 1, Groups A, B, C & D, T4
CSA INT SAFE, Class I, Div 1, Groups A, B, C & D, T4
FCC: Contains Tx FCC ID: ED9LMX9838

Temperature: Tamb = -30 °C to 50 °C

Power supply: 4 x 1.5V AAA Batteries
(supplied and fitted)

Operating range:

Infra-red: 0.75m (from actuator display window)

Bluetooth: 3m (from actuator display window)



Specifications

USA-Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorientate or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CAUTION: **EXPOSURE TO RADIO FREQUENCY RADIATION.**

This device must not be co-located or operating in conjunction with any other antenna or transmitter.

Canada – Industry Canada (IC)

This device complies with RSS 210 of Industry Canada.

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of this device.

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes:

- (1) il ne doit pas produire d'interférence et
- (2) l'utilisateur du dispositif doit être prêt à accepter toute interférence radioélectrique reçue, même si celle-ci est susceptible de compromettre le fonctionnement du dispositif.

CAUTION: **EXPOSURE TO RADIO FREQUENCY RADIATION.**

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website www.hc-sc.gc.ca/rpb

Brazil only

This equipment operates as secondary functionality, that is not entitled to protect from harmful interference, even for stations of the same type, and cannot cause interference to systems operating as primary functionality.

Appendix A

Passwords

	Insight 2	IQ3	CVA	SI Pro
View	ROTORK	ROTORK	VIEW	PASSWORD
User	ROTACT	ROTACT	SULIS	PASSWORD

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Keeping the World Flowing



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A full listing of our worldwide sales and service network is available on our website.

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