1.1 Drive Software Upgrader

The Drive Software Upgrader provides the functionality to flash firmware to the frequency converter. Files can only be flashed via USB and the serial bus RS-485 with the drive serial address configured to 1.
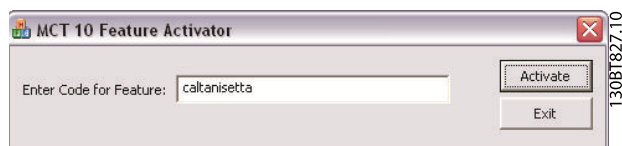
1.2 Feature Activation

Per default the functionality is not present in the MCT 10 Set-up Software Basic and Advanced versions. It can be enabled in both from a feature activator located in the MCT 10 Set-up Software installation path:
\Program Files\Danfoss Drives\VLT Motion Control Tool\MCT 10 Set-up Software

Double click on the file MCT 10 Set-up Software Feature Activator.exe to open the MCT 10 Set-up Software Feature Activator dialog

Enter the password *caltanisetta* and press the *Activate* button to enable the software upgrade functionality.

Click on the *Exit* button to close the dialog.

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1.3 Flash Firmware

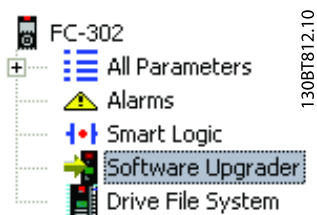The features available in the Drive Software Upgrader are listed in *Table 1.1*.

	Flash Drive Firmware	Flash Option Card Firmware	Flash Power Card Firmware
FC 51	Yes	N/A	N/A*
FC 101	Yes	N/A	N/A*
FC 102	Yes**	Yes**	N/A*
FC 202	Yes**	Yes**	N/A*
FC 300	Yes**	Yes**	N/A*
OEM versions of the FC series	Yes**	Yes**	N/A*
AAF005	Yes**	Yes**	N/A*

* Available only for Danfoss internal Authorized personnel.

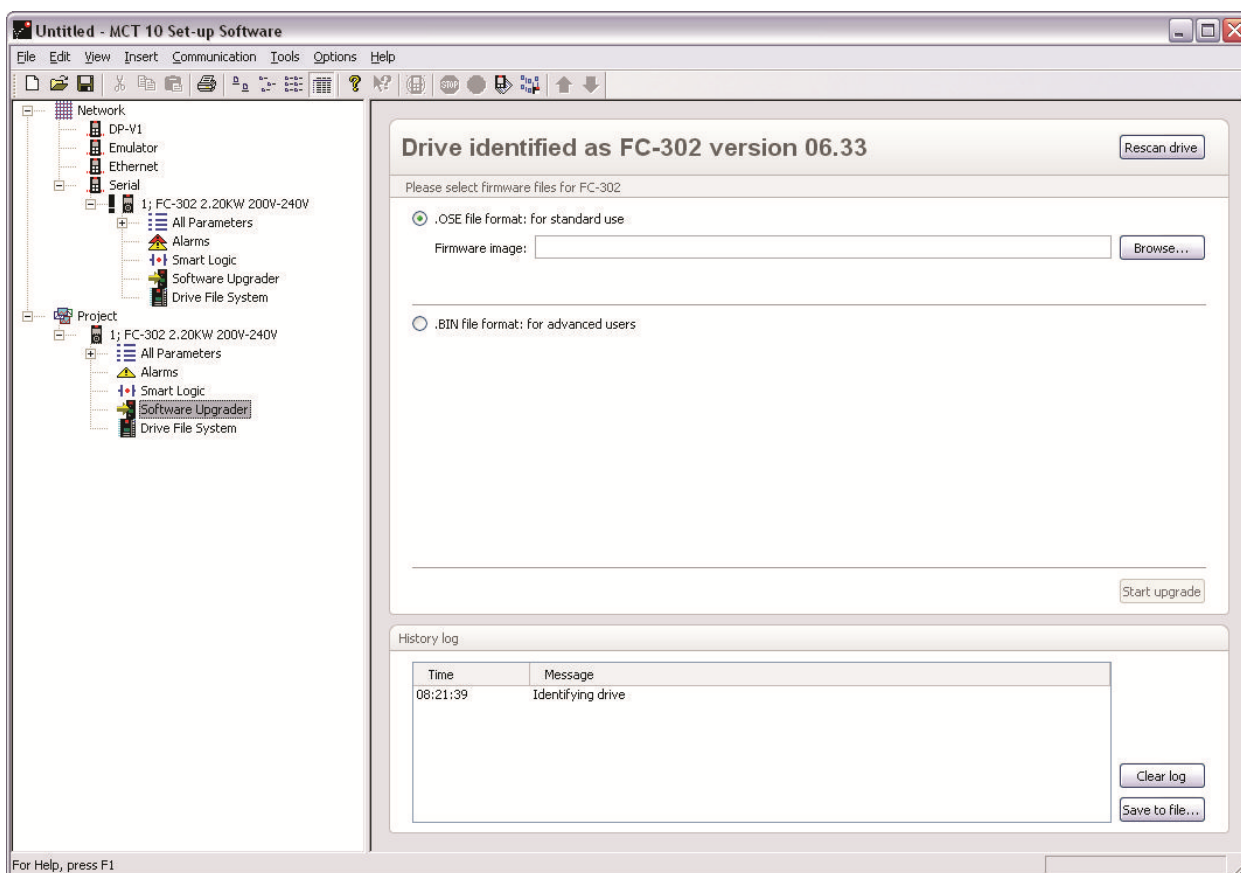*** Flashing via USB is only supported on PCs installed with Windows 7*

The functionality is available as a plugin named *Software Upgrader* and is accessible both from Network and Project nodes.

Please be aware if the connection is lost while flashing from the Network, the frequency converter can only be identified again from an offline project.

When clicking on the plugin, the Software Upgrader starts the identification process. The identification result is displayed in the right view and an error message is displayed when the baudrate does not match the frequency converter configuration or the serial address is not configured to 1 if using RS-485.

The identified frequency converter information is visualized with the frequency converter series and the firmware version. It can be identified again by pressing the button *Rescan drive*.
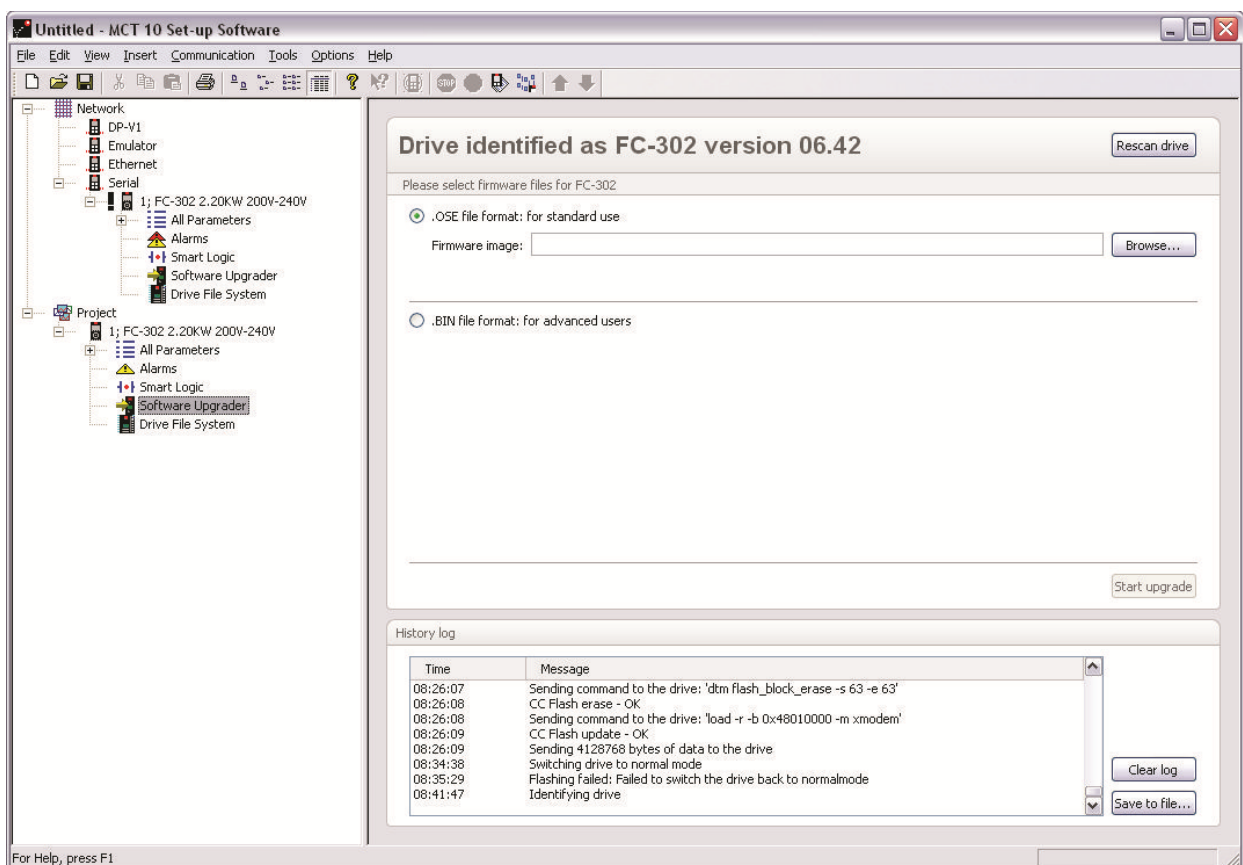
Drive, option- and power card firmware files are deployed as OSE files and are the default selection. Additionally raw bin files can also be flashed to the frequency converter. When loading the OSE firmware file it is being validated against the identified frequency converter information. Firmware files can only be loaded for the same series. If the firmware file is successfully validated the *Start upgrade* button will be enabled.

Clicking on the *Start upgrade* button, the frequency converter will be switched from normal- to service mode and the flashing process will begin.

NOTE
Please do not interrupt the flashing process by unplugging the frequency converter power cable, power cycling the frequency converter or unplugging the communication cable during operating.

The Software Upgrader identification and flashing process can be monitored from a progress bar and the history log.

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The *Clear log* button erases the content in the History log. *Safe to file* button saves the History log to a file for diagnostics.

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1.4 Troubleshooting

In *Table 1.1* there is a guidance to solve any problem when flashing the frequency converter.

Problem	Symptoms	Solution
The frequency converter will not start up and stays in Service mode. Could be caused by failed upgrading of the frequency converter firmware.	LCP does not show anything.	Create an offline frequency converter in MCT 10 Set-up Software, specifying the correct bus.
	For HVAC Basic frequency converters, the Alarm LED is flashing slowly if it is in service mode. All other LED's are off.	Try flashing again, using the same OSE file. Additionally try flashing using an older firmware version.
	FC 102, FC 202, FC 300 series, OEM versions of the FC series and AAF005 will flash all 3 LEDs when entering service mode, otherwise green LEDs flashes when executing a command.	
The Software Upgrader fails to identify the frequency converter.	When activating the Software Upgrader, it won't find the frequency converter and displays the message "Couldn't identify drive!".	The frequency converter communication settings might be wrong.
		From MCT 10 Set-up Software, open the Fieldbus Configuration dialog (right click on the serial fieldbus in the Network tree, and choose Configure Bus. Alternative the Windows assigned COM port can be identified from the Device Manager)
		Check that the COM Port number and Baud rate are correct. Frequency converter default baud rate is 9600.
		Check that no other applications are blocking the COM Port number at the same time.
New firmware won't work and the frequency converter fails to start up, but won't enter the Service mode either.	Software Upgrader fails to identify the frequency converter.	It is required to force the frequency converter into the service mode.
	The frequency converter won't start properly.	The frequency converter will enter the Service mode and its Alarm LED will flash slowly.
	The frequency converter doesn't enter Service mode either (its Alarm LED isn't flashing slowly).	

Table 1.1 Troubleshooting guidance