

# EDS Guide for DC drives and RDNA/RCNA/RETA

## What are EDS files?

EDS stands for Electronic Data Sheet, meaning a file on disk that contains configuration data for a specific device. EDS files are needed when implementing a DeviceNet or ControlNet fieldbus using, for example, Rockwell Software RSNetWorx. The DeviceNet EDS files also describe the parameters of the device, making it possible to configure the device via the fieldbus. However, this is not possible with RSNetWorx for ControlNet or Ethernet/IP.

## Selecting the ABB EDS file type

Due to the static nature of DeviceNet, ControlNet and Ethernet/IP EDS files and the vast adaptability of the ABB drives, a single EDS file can't cover all configurations of a drive model. As the parameter groups of the drive are changed by some parameters (i.e. motor ctrl mode), the EDS file needs to be changed as well because some programs aren't compatible with EDS files containing parameters that are invisible on the device.

There are three types of EDS files for DCS550/DCS800 and RDNA/RCNA and RETA:

1. Typical offers the best compatibility with different configurations.
2. Extended enables configuration of the drive via the fieldbus
3. Custom needed when some special parameters need to be changed

**Note!** The different types of EDS files have the same product code ID and Vendor code. Therefore you cannot have more than one type of EDS for a single drive model registered concurrently.

**Changed Product Code!** Starting with DCS800 firmware version 3.5 the product code of DC Drive DCS800 has changed from 30 to 300! EDS files for this firmware version and newer ones contains the product code of 300. Please take care that no different product codes of DCS800 are in one fieldbus line. The product code of 300 is defined for DCS800, but unfortunately it could not be used in the past.

## Typical EDS files

The typical EDS files contain no information on the drive parameters and therefore are compatible with all drive configurations. On the other hand, the drive has to be configured using the control panel or a separate configuration tool. The typical EDS files are named such as

DCS550-Standard\_RDNA01\_appl2.xx\_**Typical**\_drv1.2\_filerev1.0.eds

or

DCS800-Standard\_RDNA01\_appl2.2\_**Typical**\_drv3.5\_filerev4.0.eds

## Extended EDS files

The extended EDS files contain a definition of the drive parameters that can be modified using RsNetWorx. The files, however, are compatible only with the specific application, communication profile and device configuration. When changing some drive parameters, you may have to unregister the EDS file and register another. The extended EDS files are named such as

DCS550-Standard\_RDNA01\_appl2.xx\_**Extended**\_drv1.2\_filerev1.0.eds

or

DCS800-Standard\_RDNA01\_appl2.2\_**Extended**\_drv3.5\_filerev4.0.eds

**Note!** RSNetWorx for DeviceNet supports device parameters.

**Note!** The default values of parameters depend on other parameters and the characteristics of the device. It's highly recommended not to use the default values specified in the EDS file and always upload the parameter configuration from the device before making any changes.

## EDS files revisions

Due to the hardware of the RDNA-01 module being updated, the major revision number has been updated from 1 to 2. Many PLC configuration programs (including RSNetWorx) require that the major revision number of the module and the EDS file must match.

For this reason there are now two different EDS files for each major revision number (see 'fba version' of file name) of fieldbus adapter and for each DC drive.

RDNA-01 rev. J or earlier contains major revision number 1

RDNA-01 rev. K or later contains major revision number 2

### Selecting the ABB EDS file type

The DCS550 and DCS800 files are named according to the scheme; e.g.

*DCS550-<application>\_<fba>\_<fba version>\_<scope>\_<drive ver>\_<file revision>.EDS*

Field	Explanation	Examples
application	The application of the DC drive.	Standard
fba	The type of the fieldbus adapter	RDNA01 RCNA01 RETA01
fba version	The firmware version of the fieldbus adapter. <b>Note!</b> The file can also be used with older firmware.	appl2.2
scope	The type of the EDS file	Typical Extended Custom
drive ver	The firmware version of the drive.	drv1_2
file revision	Version of the EDS file	filerev1.0 (for example)

## Solving problems with extended EDS files

### Uploading parameters from drive fails

There are some occasions when an extended EDS file does not work and uploading parameters from the drive fails with an error like this:

*"Address NN: Communication Error(0xC) 'Error response received: [0x040c, 0x00ff]. Object state conflict.', SCIA(0xE, 0x29, 0x1, 0x5), Param10"*

There are two possible reasons for this: the drive may be configured incorrectly or the drive may not support the parameter at all.

If you are planning to use the drive with, for example, the ABB communication profile but the drive has not yet been configured to use it, the configuration software may fail when trying to fetch some parameters that aren't enabled in the drive yet. This problem can be solved by changing the appropriate parameters using the drive panel and making sure that the drive configuration conforms to the EDS file name. Check if the fieldbus module is enabled (group 98) and the input and output instances (group 51). (See section Naming of the EDS files) .

If you are sure that you are using the correct EDS file and the drive is configured properly, it is possible that the parameter is not needed and not even supported by your drive version. In this case you may have to modify it to meet your drive configuration. It is possible to change the visibility of a parameter in the Parameters window by altering the EDS file. (See below)

### Downloading a parameter to drive fails

Downloading a parameter to the drive can fail because of many reasons:

- The drive is configured incorrectly or the drive does not support the parameter. See section *Uploading parameters from drive fails* above.
- The parameter may be write protected at the moment. This occurs with some parameters when the drive is running and usually RSNetWorx shows error message *Attribute not settable*. Try changing the value by the drive panel. If changing fails, the parameter is write protected.
- Some parameters can't be set to their maximum or minimum values via fieldbus due to value rounding and boundary checks.

### A parameter is listed in manual but not shown in the parameter window

Most parameters not supported by all drive versions or configurations are defined to be invisible as they might cause problems when uploading or downloading the parameter values. The parameter information is, however, available in the EDS file and it can be enabled when needed. Refer to the next section to enable this kind of parameters.

## Hiding unnecessary parameters that cause problems or showing hidden parameters

You can change the visibility of a parameter by opening the EDS file in a text editor such as Microsoft Notepad, and searching for a section that begins with Param keyword and describes the desired parameter. For instance, the section of the Param10 mentioned above looks something like this:

```
Param10 =
0,                                     $ reserved, shall equal 0
6,"20 29 24 01 30 05",               $ Link Path Size, Link Path(class,instance,attribute)
0x0002,                               $ Descriptor
0xC1,                                 $ Data Type
1,                                    $ Data Size in bytes
"0.10 Net Control",                   $ name
"",                                   $ units
"See Firmware Manual, Net Control", $ help string
0,1,0,                                $ min, max, default data values
,,,,                                  $ mult, div, base, offset scaling
,,,,                                  $ mult, div, base, offset links
0;                                    $ decimal places
```

The visibility of the parameter in the Parameters window is determined by bit 9 (0000 0010 0000 0000 or 0x200 in hex) of the descriptor field. If the bit is 0 the parameter is visible in the list and if the bit is 1 the configuration software ignores the parameter. In practice, you can change the visibility by replacing the value of the descriptor field with the hide param value given in the comment (0x0202 in this case). Correspondingly, you can change the value if you want to enable a parameter that is invisible by default.

**Note!** After editing an EDS file, it is recommended that you save it with a different name than the original file. Replace the word 'Extended' with 'Custom' to make it clear that the file has been edited.

## RSNetWorx for ControlNet crashes or hangs

All ControlNet EDS files contain a section called Connection Manager, although it is not used with all ControlNet scanners (Allen Bradley 1756 series, for example). RSNetWorx for ControlNet is known to hang sometimes if the EDS file contains a connection that is not used, so the file may have to be edited.

You can try to solve the problem by opening the EDS file in a text editor such as Microsoft Notepad and removing the following sections (Params and Connection Manager)

**Note!** After editing an EDS file, it is recommended that you save it with a different name than the original file. Replace the word 'Typical' with 'Custom' to make it clear that the file has been edited.



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