

Upgrading to CD series 5

A short description of the differences between the CD series-2 and series-5 in terms of compatibility and new features.

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Compatibility [Top](#)

Series 5 is basically backward compatible to the series 2 CD in terms of features and performance. Downloading a series-2 ".ssv" configuration file to a series-5 drive with the same power rating will produce compatible behavior.

The replacements of existing modules included in the series-5 CD are:

- Software resolver conversion (no RDC chip).
- Software sin-encoder conversion (no add-on sin-encoder card).

As a result of these new software conversion modules, the encoder simulation output is now available with enhanced resolution options, however, it is generated at 90 uSec time delay (Strict encoder systems is identical to series-2 with respect to both the conversion module and the encoder simulation output).

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The new series-5 drive features are:

- **Wake-no-shake:** Initialization of incremental systems with minimal shaking motion. ([more](#))
 - **Expanded i/o:** 6 digital inputs with 30 input modes and 3 digital outputs.
 - **Motion buffer:** 16 entries absolute or incremental with possible jog commands.
 - **Software resolver conversion:** allows for selectable resolver tracking bandwidth, and improved resolution of encoder simulation. ([more](#))
 - **Sin encoder:** Stegmann sin encoder support added to the previously available Endat. ([more](#))
 - **Auto HC:** automatic on board harmonic correction optimizer (currently available only on custom firmware).
 - **DeviceNet:** With an add-on card card, DeviceNet field bus is supported.
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Software resolver conversion

The software resolver conversion is a firmware module which replaces the resolver conversion chip (RDC). It consists of synchronized 16 kHz A/D sampling of the resolver signals and software tracking loop for obtaining the position reading.

The software conversion allows for flexible setting of the conversion bandwidth regardless of the operating speed range (conversion bandwidth can be set between 200 to 1200 Hz).

Encoder simulation signal is available for binary resolution (1024, 2048,.. 16384) upto 16 bit, with conversion delay of 90 uSec.

Software sin-encoder interface

The software sin-encoder interface replaces the add-on board option that was required with the series-2. It uses an available A/D and software algorithm.

- Arc tangent computation produce effective 10 bit interpolation.
- Supports EnDat and Steggman.
- Calibration of sin-cos signals for gain and offset.
- Sin-cos integrity monitoring.

Wake No shake

For initializing incremental encoder systems a improved algorithm is fitted over the existing ones. The benefits are significant reduction of the travel during init (10 electrical degrees vs. 120 or 720 with the existing ones). Also the initialization time has been significantly shortened to around 0.5 sec. The improved algorithm is suitable for a wider range of applications.

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