

# ESU V4.0 And Select CV Programming For DCC Systems Which Do Not Allow Access To CV's Over 255!

Some DCC Systems do not allow programming of CVs above 255. In order to make full programming possible, ESU has implemented an assistance tool. This helps to write the number of the CVs desired temporarily into two assisting CVs (so-called address registers), since the usual CVs cannot be reached. Afterwards the value of the CV desired will be programmed into another assisting CV (so-called value register). When the value register is written, the content will be copied to the actual desired position and the assisting CV will be set back.

**Consequently, 3 CVs have to be programmed to write one CV.** These 3 CVs are described in the following chart:

CV	NAME	DESCRIPTION	VALUE RANGE
96	Address offset.	Saves the CV number that should be actually programmed in hundreds.	0 – 9 <i>(Single digits only)</i>
97	Address.	Saves the CV number that should be actually programmed in both tens and units.	0 – 99 <i>(Two digits only)</i>
99	Value.	Saves the value of the CV that should be actually programmed.	0 - 255

**EXAMPLE:** Program **CV317** with a value **120**.

Proceed as follows:

1. Program the value of the CV number in hundreds in **CV96**.

- In this example: **CV96 = 3**.

Program the value of the CV number in tens and units in **CV97**.

- In our example: **CV97 = 17**.

Program the desired value in **CV99**.

- In our example: **CV99 = 120**.

As soon as you have programmed CV 99, the value of CV 99 will be transferred into CV 317. Is the programming finished, CVs 96, 97 and 99 will be set back automatically.

**Note:** *This procedure is ONLY needed when programming CV's on DCC Systems not allowing programming of CV's above 255.*