# AC500 V3 PLC – Bitshift operators
SHL, SHR, ROL & ROR Operators and Examples

The Bitshift operators are used to shift the bits inside a BYTE, WORD, DWORD or LWORD. The second input of the operator gives the number of bits which are shifted

- The SHL operator is shifting the bits to the left, and filling with 0 on the right.
- The SHR operator is shifting the bits to the right, and filling with 0 on the left.
- The ROL operator is rotating the bits to the left.
- The ROR operator is rotating the bits to the right.

Examples:
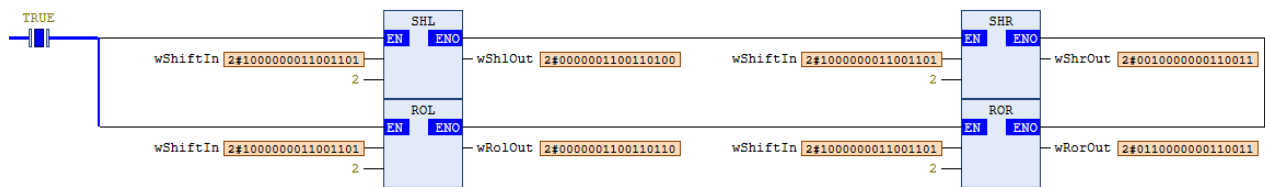
The screenshot above shows a simple logic in ladder diagram. Starting from the top left the SHL operator is sifting the inputted word 2 bits left. On the right side two time 0 is added. Below this the ROL operator is rotating the bits. This means the two bits (10), which are moved out on the left side are added on the right.

The same way also SHR is working. The bits are shifted to the right by two. On the left hand SHL is filling with 0 values. ROR is filling with the two bits (01) which are moved out on the right side.

The same logic as shown and described above, can be found in structured text below.