

# *StreamDevice: ao Records*

## Normal Operation

Depending on the format type, different record fields are used for output and input. The variable  $x$  stands for the written or read value.

DOUBLE format (e.g. %f):

Output:  $x = (OVAL - AOFF) / ASLO$

Input:  $VAL = x * ASLO + AOFF$

In both cases, if  $ASLO == 0.0$ , it is treated as  $1.0$ . Default values are  $ASLO = 1.0$ ,  $AOFF = 0.0$ .

Note that  $OVAL$  is not necessarily equal to  $VAL$  if  $OROC != 0.0$ .

LONG format (e.g. %i):

Output:  $x = RVAL$

Input:  $RBV = x$

Note that the record calculates  $RVAL = ( (OVAL - EOFF) / ESLO ) - AOFF$  if  $LINR == "LINEAR"$ .

$ESLO$  and  $EOFF$  might be set in the record definition. *StreamDevice* does not set it. For example,

$EOFF = -10$  and  $ESLO = 0.000305180437934$  ( $= 20.0 / 0xFFFF$ ) maps  $-10.0$  to  $0x0000$ ,  $0.0$  to  $0x7FFF$  and  $10.0$  to  $0xFFFF$ .

ENUM format (e.g. %{}):

Not allowed.

STRING format (e.g. %s):

Not allowed.

## Initialization

During initialization, the `@init` handler is executed, if present. In contrast to normal operation, output in DOUBLE format uses  $VAL$  instead of  $OVAL$ . Note that the record initializes  $VAL$  from  $DOL$  if that is a constant. LONG input is put to  $RVAL$  as well as to  $RBV$  and converted by the record.

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