

StreamDevice: ai 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: $x = (VAL - AOFF) / ASLO$

Input: $VAL = (x * ASLO + AOFF) * (1.0 - SMOO) + VAL * SMOO$

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

If input is successful, UDF is cleared.

LONG format (e.g. %i):

Output: $x = RVAL$

Input: $RVAL = x$

Note that the record calculates $VAL = ((RVAL + ROFF) * ASLO + AOFF) * ESLO + EOFF) * (1.0 - SMOO) + VAL * SMOO$ 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 $0x0000$ to -10.0 , $0x7FFF$ to 0.0 and $0xFFFF$ to 10.0 .

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, in DOUBLE input $SMOO$ is ignored (treated as 0.0).

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