

D2_CalcStatFuncArr

Accessing historical values - D2_CalcStatFuncArr function

The function allows you to calculate the specified statistical archive function for all given time intervals on demand.

Declaration

D2_CalcStatFuncArr

```
(archObjName, bt, et, step, deepTime, statFuncID, validPerc, paramIdent, bDirectionByRow, refresh)
```

Parameters

archObjName	TEXT type	<ul style="list-style-type: none">Reference to one value of historical value.Reference to simple value of object (not structured variable).In case of structured variable it is one item (SV.Struct[2]^Item), otherwise name of object (e.g. I/O tag). In this case the system will automatically look for a "suitable" object of Historical value type. If the column "Item" is of the Object type it is possible to specify a string ".ALL" right after the name of column (e.g. SV.Struct[4]^Item.ALL). This causes the historical values to be obtained for the connected object, not for the item of a structured variable.
bt	ABS. TIME type	Interval begin time.
et	ABS. TIME type	Interval end time.
step	INT type	Time step [s] within the archive block.
deepTime	INT type	Time depth [s] for calculating the statistics. Note: The parameter must be a positive integer.
statFuncID	INT type	Statistical function type. The type is represented by a numerical value (see the table).
validPerc	INT type	Validation criteria.
paramIdent	REAL or INT types	Parameter for some types of functions.
bDirectionByRow	BOOL type	Time order of cells in matrix.
refresh		Optional parameter of optional type.

Description

The return value of the function is of array type. Owing to that fact, this function is predetermined to be used in so-called [Matrix](#).

The action executes the calculation of a statistical function specified by the parameter *statFuncID* on the values represented by the historical value *archObjName* for the following time intervals specified by the parameters *bt*, *et*, *step* a *deepTime*:

- first time interval - $<bt - deepTime; bt>$
- second time interval - $<bt + step - deepTime; bt + step>$
-
- n-th time interval - $<bt + (N-1)*step - deepTime; bt + (N-1)*step>$

The results are returned as an array, whose members represent the individual results of calculation of the statistical function for the given time intervals.

The parameter *validPercIdent_Int* represents the [Validation criteria](#) used during the evaluation of the statistical function. The permissible values are in range 1 .. 100 (the error *ERR_RANGE_ERROR* occurs if the condition is not met).

For some statistical archive function, the parameter *paramIdent* must be specified according to the table:

Statistical function	Parameter description								
_STAT_F_INTEGRAL	Integral time units . For individual types, there are also established predefined local variables according to the table:								
	<table><tr><th>Constant</th><th>Description</th></tr><tr><td>_INTEGRAL_HOURUNIT</td><td>Hour integral</td></tr><tr><td>_INTEGRAL_MINUNIT</td><td>Minute integral</td></tr><tr><td>_INTEGRAL_SECUNIT</td><td>Second integral</td></tr></table>	Constant	Description	_INTEGRAL_HOURUNIT	Hour integral	_INTEGRAL_MINUNIT	Minute integral	_INTEGRAL_SECUNIT	Second integral
	Constant	Description							
	_INTEGRAL_HOURUNIT	Hour integral							
	_INTEGRAL_MINUNIT	Minute integral							
_INTEGRAL_SECUNIT	Second integral								
_STAT_F_GE_TIME _STAT_F_GT_TIME _STAT_F_LE_TIME _STAT_F_LT_TIME _STAT_F_ADDITION_P ARAM _STAT_F_INCREMENT _PARAM _STAT_F_DELTA_P AM	Reference value								