Object Value Attributes

Object value attributes

Mathematical expressions may contain references to individual attributes of complex object value. These attributes are placed after the object name, and they are separated from the name by back slash "\". The list of the attributes is shown in the following table.

Attribute name	Attribute value type	Meaning
TIM	Absolute time	Time of the last object value change.
LIM	Integer	Value limit state [0-InLimit, 1-VL_Limit, 2-L_Limit, 3-H_Limit, 4-VH_Limit, 5-LimitsProblem]. Depending on the object value in relation to the defined limits, the attribute gains these values: • **0** - object value is both greater/equal with LL and less/equal to HL **(LL<=value<=HL)** • **1** - object values is less than VLL **(value<VLL)** • **2** - object value is both greater/equal with VLL and less than LL **(VLL<=value<LL)** • **3** - object value is both greater than HL and less/equal with VHL **(HL<value<=VHL)** • **4** - object value is greater than VHL **(VHL<value)** • **5** - violation of the condition: VLL<LL<HL<VHL or values defining the limits are not defined
VLD	Boolean	Value validity (TRUE - valid value, FALSE - invalid value).
ALF	Boolean	Indication of an active process alarm of the given object (the object has an active process alarm - TRUE, if not - FALSE).
ALQ	Boolean	Acknowledgement indication of the active process alarm of the given object (the active alarm is not acknowledged, i.e. it is not acknowledged by an operator - TRUE or it is acknowledged, i.e. it is acknowledged by an operator - FALSE).
ALT	Absolute time	Time of process alarm value assignment.
ALV	Integer	Process alarm type. Depending on the evaluation of process alarms defined for the given object, the attribute gains the following values: • 0 - PA_NoAlarm • 1 - PA_ToOn • 2 - PA_ToOff • 3 - PA_On • 4 - PA_Off • 5 - PA_Err • 6 - PA_Oscillate • 7 - PA_ErrCmdOn • 8 - PA_ErrCmdOff • 9 - PA_SwToTrans • 10 - PA_SwToOff • 11 - PA_SwToOn • 12 - PA_SwToErr • 13 - PA_SwTrans • 14 - PA_SwOff • 15 - PA_SwOn • 16 - PA_SwErr • 17 - PA_ErrZalCmdOff • 18 - PA_HL • 19 - PA_VHL • 20 - PA_LL • 21 - PA_VLL • 22 - PA_ToHL • 23 - PA_ToVHL • 24 - PA_ToLL • 25 - PA_ToVLL • 26 - PA_ErrWriteCmd • 27 - PA_Change Meaning of individual process alarms is described in the topic Configuration of system texts - Process alarms.
WEA	Boolean	Indication of a weak (suspicious) object value. Weak value is an value, that is not valid in the system, because all conditions of its validity are not still met. Object value is a weak one - TRUE, or object value is not a weak one - FALSE.
NAK	Boolean	Acknowledgement indication of the last object value change. Object value change is not acknowledged - TRUE, if it is - FALSE.

TRA	Boolean	Transient state indication of the object value. Transient state occurs, when the command to set a value was executed, but the backward reading did not verify the value setting. Object value is in Transient state - TRUE, if not - FALSE.
DEF	Boolean	Default state indication of the object value. Default state occurs, when an I/O tag value gained by the communication process D2000 KOM is replaced by other value - a control object value, or it is set manually by an operator in process D2000 HI. Object value is in Default state - TRUE, if not - FALSE.
MAN	Boolean	Manual state indication of the object value. Manual state is active if the object value can be controlled (i.e. providing that a user has sufficient access rights, or ESL script). Manual attribute may be set only for values of objects Remote tag, I/O tag, User variable, Structure variable item.
FLX	Integer	All attributes. Integer number, individual flags in the order FLA FLB FLC ... FLP are assigned to its binary representation. For example, the value of 1 is corresponding the situation, when the value of the flag A is TRUE and values of all another flags are FALSE.
FLA .. FLP	Boolean	Particular flag value of an object value [FL**FlagName**].
DIM	Integer	It returns the structure size. It is usable only for values of *Structure* type.
HBJ	Integer	It returns the unique identifier of an object in D2000 system. Value is *HBJ* type, free convertible to *Int* type.
CNX	Integer	It returns the index of a structure column. The attribute is applicable to the reference to a structure item: SV.Structure^Int\CNX returns the value 2.
CNM	Text	It returns the name of a structure column. The attribute is applicable to the reference to a structure item: SV.Structure^Text\CNM returns the value "Text".
CNR	Integer	It returns the count of structure columns. It is usable only for values of *Structured variable* type and *Structure definition* type.
ALC	Boolean	Indication of an active critical alarm of the given object (the object has an active critical alarm - TRUE, if not - FALSE).