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TwinCAT Library for
Auxiliary Channels

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| **Library** |
| Title | Auxiliary |
| Version | 3 |
| TwinCAT version | 2.11 |
| Name space | – |
| Author | Alexa Staley, Daniel Sigg |
| Description | Controls the auxiliary  |
| Error codes | None |
| Library dependencies | Error, SaveRestore |

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| **Hardware Input Type**TYPE AuxiliaryInStruct :STRUCT AI1: INT;AI2: INT;AI3: INT;AI4: INT;BI1: INT;BI2: INT;BI3: INT;BI4: INT;END\_STRUCTEND\_TYPE |
|   | AuxiliaryInStruct |
| Description | Structure of the hardware input that are wired up for the auxiliary |
| Definition | STRUCT |
| Element | Name: AI1Type: INTDescription: Analog input 1 |
| Element | Name: AI2Type: INTDescription: Analog input 2 |
| Element | Name: AI3Type: INTDescription: Analog input 3 |
| Element | Name: AI4Type: INTDescription: Analog input 4 |
| Element | Name: BI1Type: INTDescription: Binary input 1 |
| Element | Name: BI2Type: INTDescription: Binary input 2 |
| Element | Name: BI3Type: INTDescription: Binary input 3 |
| Element | Name: BI4Type: INTDescription: Binary input 4 |

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| **Hardware Output Type**TYPE AuxiliaryOutStruct :STRUCT AO1: INT;AO2: INT;AO3: INT;AO4: INT;BO1: INT;BO2: INT;BO3: INT;BO4: INT;END\_STRUCTEND\_TYPE |
|   | AuxiliaryOutStruct |
| Description | Structure of the hardware output that are wired up for the auxiliary |
| Definition | STRUCT |
| Element | Name: AO1Type: INTDescription: Analog output 1 |
| Element | Name: AO2Type: INTDescription: Analog output 2 |
| Element | Name: AO3Type: INTDescription: Analog output 3 |
| Element | Name: AO4Type: INTDescription: Analog output 4 |
| Element | Name: BO1Type: INTDescription: Binary output 1 |
| Element | Name: BO2Type: INTDescription: Binary output 2 |
| Element | Name: BO3Type: INTDescription: Binary output 3 |
| Element | Name: BO4Type: INTDescription: Binary output 4 |

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| **User Interface Type**TYPE AuxiliaryStruct :STRUCTError: ErrorStruct;BI: ARRAY [1..4] OF BOOL;BO: ARRAY [1..4] OF BOOL;AI: ARRAY [1..4] OF BOOL;AO: ARRAY [1..4] OF BOOL;END\_STRUCTEND\_TYPE |
| Type name | AuxiliaryStruct |
| Description | Structure of the user interface tags that are used to control the auxiliary |
| Definition | STRUCT |
| Output Tag | Name: ErrorType: ErrorStructDescription: For error handling |
| Input Tag | Name: AIType: ARRAY [1..4] OF BOOL;Description: Array of analog inputs  |
| Input Tag | Name: BIType: ARRAY [1..4] OF BOOL;Description: Array of binary inputs |
| Output Tag | Name: AOType: ARRAY [1..4] OF BOOL;Description: Array of analog outputs |
| Output Tag | Name: BO1Type: ARRAY [1..4] OF BOOL;Description: Array of binary outputs |

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| **Function Block**FUNCTION\_BLOCK AuxiliaryFBVAR\_INPUT Request: SaveRestoreEnum;AuxiliaryIn: AuxiliaryInStruct; Momentary: ARRAY[1..4] OF LREAL := 0,0,0,0;END\_VARVAR\_OUTPUTAuxiliaryOut: AuxiliaryOutStruct;END\_VARVAR\_IN\_OUT AuxiliaryInit: AuxiliaryStruct; Auxiliary: AuxiliaryStruct;END\_VAR |
| Name | AuxiliaryFB |
| Description | Controls the auxiliary channels  |
| Input argument | Name: Request:Type: SaveRestoreEnumDescription: Rquest for save/restore/safemode or noop |
| Input argument | Name: AuxiliaryInType: AuxiliaryInStructDescription: Input hardware structure |
| Input argument | Name: MomentaryType: ARRAY[1..4] OF LREALDescription: momentary switching on BO channels with the specified on-time or off-time in seconds. Time = 0: level switchingTime > 0: momentary switch, normally 0, finite on-time Time < 0: momentary switch, normally 1, finite off-timeThe time is specified as an array for each BO channel separately. |
| Output argument | Name: AuxiliaryOutType: AuxiliaryOutStructDescription: Output hardware structure |
| In/out argument | Name: AuxiliaryInitType: AuxiliaryStructDescription: Save/restore variable in persistent memory |
| In/out argument | Name: AuxiliaryType: AuxiliaryStructDescription: User Interface structure |

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| **Visual** |
| Name | AuxiliaryVis |
| Description | Displays auxiliary input and output, and standard error message |
| Placeholder | Name: AuxiliaryStructType: AuxiliaryDescription: Auxiliary structure |