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TwinCAT Library for   
Auxiliary Channels

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| **Library** | |
| Title | Auxiliary |
| Version | 1 |
| TwinCAT version | 2.11 |
| Name space | – |
| Author | Alexa Staley, Daniel Sigg |
| Description | Controls the auxiliary |
| Error codes | None |
| Library dependencies | Error |

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| **Hardware Input Type**  TYPE AuxiliaryInStruct :  STRUCT  AuxAI1: INT;  AuxAI2: INT;  AuxAI3: INT;  AuxAI4: INT;  AuxBI1: INT;  AuxBI2: INT;  AuxBI3: INT;  AuxBI4: INT;  END\_STRUCT  END\_TYPE | |
|  | AuxiliaryInStruct |
| Description | Structure of the hardware input that are wired up for the auxiliary |
| Definition | STRUCT |
| Element | Name: AuxAI1  Type: INT  Description: Analog input 1 |
| Element | Name: AuxAI2  Type: INT  Description: Analog input 2 |
| Element | Name: AuxAI3  Type: INT  Description: Analog input 3 |
| Element | Name: AuxAI4  Type: INT  Description: Analog input 4 |
| Element | Name: AuxBI1  Type: INT  Description: Binary input 1 |
| Element | Name: AuxBI2  Type: INT  Description: Binary input 2 |
| Element | Name: AuxBI3  Type: INT  Description: Binary input 3 |
| Element | Name: AuxBI4  Type: INT  Description: Binary input 4 |

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| **Hardware Output Type**  TYPE AuxiliaryOutStruct :  STRUCT  AuxAO1: INT;  AuxAO2: INT;  AuxAO3: INT;  AuxAO4: INT;  AuxBO1: INT;  AuxBO2: INT;  AuxBO3: INT;  AuxBO4: INT;  END\_STRUCT  END\_TYPE | |
|  | AuxiliaryOutStruct |
| Description | Structure of the hardware output that are wired up for the auxiliary |
| Definition | STRUCT |
| Element | Name: AuxAO1  Type: INT  Description: Analog output 1 |
| Element | Name: AuxAO2  Type: INT  Description: Analog output 2 |
| Element | Name: AuxAO3  Type: INT  Description: Analog output 3 |
| Element | Name: AuxAO4  Type: INT  Description: Analog output 4 |
| Element | Name: AuxBO1  Type: INT  Description: Binary output 1 |
| Element | Name: AuxBO2  Type: INT  Description: Binary output 2 |
| Element | Name: AuxBO3  Type: INT  Description: Binary output 3 |
| Element | Name: AuxBO4  Type: INT  Description: Binary output 4 |

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| **User Interface Type**  TYPE AuxiliaryStruct :  STRUCT  Error: ErrorStruct;  AuxAI1: LREAL;  AuxAI2: LREAL;  AuxAI3: LREAL;  AuxAI4: LREAL;  AuxBI1: LREAL;  AuxBI2: LREAL;  AuxBI3: LREAL;  AuxBI4: LREAL;  AuxAO1: LREAL;  AuxAO2: LREAL;  AuxAO3: LREAL;  AuxAO4: LREAL;  AuxBO1: LREAL;  AuxBO2: LREAL;  AuxBO3: LREAL;  AuxBO4: LREAL;  END\_STRUCT  END\_TYPE | |
| Type name | AuxiliaryStruct |
| Description | Structure of the user interface tags that are used to control the auxiliary |
| Definition | STRUCT |
| Output Tag | Name: Error  Type: ErrorStruct  Description: For error handling |
| Input Tag | Name: AuxAI1  Type: LREAL  Description: Analog input 1 |
| Input Tag | Name: AuxAI2  Type: LREAL  Description: Analog input 2 |
| Input Tag | Name: AuxAI3  Type: LREAL  Description: Analog input 3 |
| Input Tag | Name: AuxAI4  Type: LREAL  Description: Analog input 4 |
| Input Tag | Name: AuxBI1  Type: LREAL  Description: Binary input 1 |
| Input Tag | Name: AuxBI2  Type: LREAL  Description: Binary input 2 |
| Input Tag | Name: AuxBI3  Type: LREAL  Description: Binary input 3 |
| Input Tag | Name: AuxBI4  Type: LREAL  Description: Binary input 4 |
| Output Tag | Name: AuxAO1  Type: LREAL  Description: Analog output 1 |
| Output Tag | Name: AuxAO2  Type: LREAL  Description: Analog output 2 |
| Output Tag | Name: AuxAO3  Type: LREAL  Description: Analog output 3 |
| Output Tag | Name: AuxAO4  Type: LREAL  Description: Analog output 4 |
| Output Tag | Name: AuxBO1  Type: LREAL  Description: Binary output 1 |
| Output Tag | Name: AuxBO2  Type: LREAL  Description: Binary output 2 |
| Output Tag | Name: AuxBO3  Type: LREAL  Description: Binary output 3 |
| Output Tag | Name: AuxBO4  Type: LREAL  Description: Binary output 4 |

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| **Function Block**  FUNCTION\_BLOCK AuxiliaryFB  VAR\_INPUT  AuxiliaryIn: AuxiliaryInStruct;  END\_VAR  VAR\_OUTPUT  AuxiliaryOut: AuxiliaryOutStruct;  END\_VAR  VAR\_IN\_OUT  Auxiliary: AuxiliaryStruct;  END\_VAR | |
| Name | AuxiliaryFB |
| Description | Controls the auxiliary channels |
| Input argument | Name: AuxiliaryIn  Type: AuxiliaryInStruct  Description: Input hardware structure |
| Output argument | Name: AuxiliaryOut  Type: AuxiliaryOutStruct  Description: Output hardware structure |
| In/out argument | Name: Auxiliary  Type: AuxiliaryStruct  Description: User Interface structure |

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