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TwinCAT Library for   
Shutter Control

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of the LIGO Laboratory.

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

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| **Hardware Input Type**  TYPE ShutterControlInStruct :  STRUCT  ShutterMonitor: BOOL;  END\_STRUCT  END\_TYPE | |
| Type name | ShutterControlInStruct |
| Description | Structure of the hardware input that are wired up for the shutter control |
| Definition | STRUCT |
| Element | Name: ShutterMonitor  Type: BOOL  Description: Binary inputs for shutter monitor |

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| **Hardware Output Type**  TYPE ShutterControlOutStruct :  STRUCT  ShutterClose: BOOL;  ShutterOpen: BOOL;  END\_STRUCT  END\_TYPE | |
| Type name | ShutterControlOutStruct |
| Description | Structure of the hardware output that are wired up for the shutter control |
| Definition | STRUCT |
| Element | Name: ShutterClose  Type: BOOL  Description: Close shutter |
| Element | Name: ShutterOpen  Type: BOOL  Description: Open shutter |

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| **User Interface Type**  TYPE ShutterControlStruct :  STRUCT  ShutterMonitor: BOOL;  ShutterClose: BOOL;  ShutterOpen: BOOL;  Error: ErrorStruct;  END\_STRUCT  END\_TYPE | |
| Type name | ShutterControlStruct |
| Description | Structure of the user interface tags that are used to control the shutter control |
| Definition | STRUCT |
| Output Tag | Name: Error  Type: ErrorStruct  Description: For error handling |
| Output Tag | Name: ShutterMonitor  Type: BOOL  Description: Monitors shutter |
| Input Tag | Name: ShutterClose  Type: BOOL  Description: Close shutter |
| Input Tag | Name: ShutterOpen  Type: BOOL  Description: Open shutter |

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| **Function Block**  FUNCTION\_BLOCK ShutterControlFB  VAR\_INPUT  ShutterControlIn: ShutterControlInStruct;  END\_VAR  VAR\_OUTPUT  ShutterControlOut: ShutterControlOutStruct;  END\_VAR  VAR  END\_VAR  VAR\_IN\_OUT  ShutterControl: ShutterControlStruct;  END\_VAR | |
| Name | ShutterControlFB |
| Description | Controls the shutter control |
| Input argument | Name: ShutterControlIn  Type: ShutterControlInStruct  Description: Input hardware structure |
| Output argument | Name: ShutterControlOut  Type: ShutterControlOutStruct  Description: Output hardware structure |
| In/out argument | Name: ShutterControl  Type: ShutterControlStruct  Description: User Interface structure |

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| **Visual** | |
| Name | ShutterControlVis |
| Description | Displays open and close buttons for the shutter and the shutter monitor |
| Placeholder | Name: ShutterControl  Type: ShutterControlStruct  Description: Shutter Control structure |