*LIGO Laboratory / LIGO Scientific Collaboration*

LIGO- E200631-v1 Advanced LIGO 6/14/2012

TwinCAT Library for
Shutter Control

Alexa Staley, Daniel Sigg

Distribution of this document:

LIGO Scientific Collaboration

This is an internal working note
of the LIGO Laboratory.

|  |  |
| --- | --- |
| **California Institute of Technology****LIGO Project – MS 18-34****1200 E. California Blvd.****Pasadena, CA 91125**Phone (626) 395-2129Fax (626) 304-9834E-mail: info@ligo.caltech.edu | **Massachusetts Institute of Technology****LIGO Project – NW22-295****185 Albany St****Cambridge, MA 02139**Phone (617) 253-4824Fax (617) 253-7014E-mail: info@ligo.mit.edu |
| **LIGO Hanford Observatory****P.O. Box 159****Richland WA 99352**Phone 509-372-8106Fax 509-372-8137 | **LIGO Livingston Observatory****P.O. Box 940****Livingston, LA 70754**Phone 225-686-3100Fax 225-686-7189 |

http://www.ligo.caltech.edu/

|  |
| --- |
| **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 |

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

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

|  |
| --- |
| **User Interface Type**TYPE ShutterControlStruct :STRUCTShutterMonitor: BOOL; ShutterClose: BOOL;ShutterOpen: BOOL; Error: ErrorStruct;END\_STRUCTEND\_TYPE |
| Type name | ShutterControlStruct |
| Description | Structure of the user interface tags that are used to control the shutter control |
| Definition | STRUCT |
| Output Tag | Name: ErrorType: ErrorStructDescription: For error handling |
| Output Tag | Name: ShutterMonitorType: BOOLDescription: Monitors shutter |
| Input Tag | Name: ShutterCloseType: BOOLDescription: Close shutter |
| Input Tag | Name: ShutterOpenType: BOOLDescription: Open shutter |

|  |
| --- |
| **Function Block**FUNCTION\_BLOCK ShutterControlFBVAR\_INPUTShutterControlIn: ShutterControlInStruct;END\_VARVAR\_OUTPUTShutterControlOut: ShutterControlOutStruct;END\_VARVAREND\_VARVAR\_IN\_OUT ShutterControl: ShutterControlStruct;END\_VAR |
| Name | ShutterControlFB |
| Description | Controls the shutter control  |
| Input argument | Name: ShutterControlInType: ShutterControlInStructDescription: Input hardware structure |
| Output argument | Name: ShutterControlOutType: ShutterControlOutStructDescription: Output hardware structure |
| In/out argument | Name: ShutterControlType: ShutterControlStructDescription: User Interface structure |

|  |
| --- |
| **Visual** |
| Name | ShutterControlVis |
| Description | Displays open and close buttons for the shutter and the shutter monitor |
| Placeholder | Name: ShutterControlType: ShutterControlStructDescription: Shutter Control structure |