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TwinCAT Library for Fiber Polarization Correction

Daniel Sigg, Alexa Staley

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

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

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| **Library** | |
| Title | FiberPolCorr |
| Version | 1 |
| TwinCAT version | V2.11.0 |
| Name space |  |
| Author | Daniel Sigg |
| Description | Monitors the fiber polarization |
| Error Code | None |
| Library Dependencies | Error, SaveRestore |

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| **User Interface Type**  TYPE FiberPolCorrChannel :  STRUCT  Error: ErrorStruct;  END\_STRUCT;  END\_TYPE; | |
| Type Name | FiberPolCorrChannel |
| Description | Structure used in the user interface for various channels |
| Definition | STRUCT |
| Ouput Tag | Name: Error  Type: ErroStruct  Description: calls error handler |

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| **User Interface Type**  TYPE FiberPolCorrStrcut :  STRUCT  Error: ErrorStruct;  X: FiberPolCorrChannel;  Y: FiberPolCorrChannel;  END\_STRUCT;  END\_TYPE; | |
| Type Name | FiberPolCorrStruct |
| Description | Structure used in the user interface |
| Definition | STRUCT |
| Output Tag | Name: Error  Type: ErrorStruct  Description: calls error handler |
| Output Tag | Name: X  Type: FiberPolCorrChannel  Description: X channel |
| Output Tag | Name: Y  Type: FiberPolCorrChannel  Description: Y channel |

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| **User Interface Type**  TYPE FiberPolCorrMsgInStruct :  STRUCT  D: ARRAY [0…255] of BYTE;  ID: INT;  TimeLo: UDINT;  TimeHi: UDINT;  END\_STRUCT;  END\_TYPE; | |
| Type Name | FiberPolCorrMsgInStruct |
| Description | Structure used in the user interface |
| Definition | STRUCT |
| Output Tag | Name: D  Type: ARRAY [0…255} OF BYTE  Description: |
| Output Tag | Name: ID  Type: INT  Description: |
| Output Tag | Name: TimeLo  Type: UDINT  Description: |
| Output Tag | Name: TimeHi  Type: UDINT  Description: |

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| **User Interface Type**  TYPE FiberPolCorrMsgOutStruct :  STRUCT  D: ARRAY [0…255] of BYTE;  ID: INT;  TimeLo: UDINT;  TimeHi: UDINT;  END\_STRUCT;  END\_TYPE; | |
| Type Name | FiberPolCorrMsgOutStruct |
| Description | Structure used in the user interface |
| Definition | STRUCT |
| Output Tag | Name: D  Type: ARRAY [0…255} OF BYTE  Description: |
| Output Tag | Name: ID  Type: INT  Description: |
| Output Tag | Name: TimeLo  Type: UDINT  Description: |
| Output Tag | Name: TimeHi  Type: UDINT  Description: |

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| **User Interface Type**  TYPE FiberPolCorrSerialPortBufferStruct :  STRUCT  RxBuffer: ComBuffer;  TxBuffer: ComBuffer;  COMportControlError: BOOL;  COMportControlErrorID: ComError\_t;  END\_STRUCT;  END\_TYPE; | |
| Type Name | FiberPolCorrSerialPortBufferStruct |
| Description | Structure used in the user interface |
| Definition | STRUCT |
| Output Tag | Name: RxBuffer  Type: ComBuffer  Description: Receive data buffer; used with all receive function blocks |
| Output Tag | Name: TxBuffer  Type: ComBuffer  Description: Transmit data buffer; used with all transmit function blocks |
| Output Tag | Name: COMportControlError  Type: BOOL  Description: Error flag |
| Output Tag | Name: COMportControlErrorID  Type: BOOL  Description: Error ID |

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| **Function Block**  TYPE FiberPolCorrFB:  VAR\_INPUT  Request: SaveRestoreEnum;  MsgIn: FiberPolCorrMsgOutStruct;  END\_VAR;  VAR\_OUTPUT  MsgOut: FiberPolCorrMsgInStruct;  END\_VAR;  VAR\_IN\_OUT  FiberPolCorr: FiberPolCorrStruct;  FiberPolCorrInit: FiberPolCorrStruct;  END\_VAR:  END\_TYPE; | |
| Type Name | FiberPolCorrFB |
| Description | Function block used to monitor the fiber polarization corr |
| Definition | Function Block |
| Input Argument | Name: Request  Type: SaveRestoreEnum  Description: Request for save/restore/safe mode or noop |
| Input Argument | Name: MsgIn  Type: FiberPolCorrMsgOutStruct  Description: Input structure |
| Output Argument | Name: MsgOut  Type: FiberPolCorrMsgInStruct  Description: Output structure |
| In/out Argument | Name: FiberPolCorr  Type: FiberPolCorrStruct  Description: User interface structure |
| In/out Argument | Name: FiberPolCorrInit  Type: FiberPolCorrStruct  Description: Save/restore variable in persistent memory |

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| **Function Block**  TYPE FiberPolCorrMsgFB:  VAR\_INPUT  MsgIn: FiberPolCorrMsgInStruct;  END\_VAR;  VAR\_OUTPUT  MsgOut: FiberPolCorrMsgOutStruct;  END\_VAR;  VAR\_IN\_OUT  ComPortData: FiberPolCorrSerialPortBufferStruct;  END\_VAR:  END\_TYPE; | |
| Type Name | FiberPolCorrMsgFB |
| Description | Function block used to monitor the fiber polarization corr message |
| Definition | Function Block |
| Input Argument | Name: MsgIn  Type: FiberPolCorrMsgInStruct  Description: Input structure |
| Output Argument | Name: MsgOut  Type: FiberPolCorrMsgOutStruct  Description: Output structure |
| Out/in Argument | Name: ComPortData  Type: FiberPolCorrSerialPortBufferStruct  Description: Receive and transmit buffers |

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| **Function Block**  TYPE FiberPolCorrSerialPortControlFB:  VAR\_INPUT  Mode: ComSerialLineMode\_t;  pComIn: POINTER TO ARRAY[0..65] OF BYTE;  pComOut: POINTER TO ARRAY[0..65] OF BYTE;  SizeComIn: UNIT:  END\_VAR;  VAR\_IN\_OUT  Com: FiberPolCorrSerialPortBufferStruct;  END\_VAR:  END\_TYPE; | |
| Type Name | FiberPolCorrSerialPortControlFB |
| Description | Function block used to monitor the fiber polarization corr serial port control |
| Definition | Function Block |
| Input Argument | Name: Mode  Type: ComSerialLineMode\_t  Description: |
| Input Argument | Name: pComIn:  Type: POINTER TO ARRY [0..65] OF BYTE  Description: |
| Input Argument | Name: pComOut:  Type: POINTER TO ARRY [0..65] OF BYTE  Description: |
| Input Argument | Name: SizeComIn:  Type: UNIT  Description: |
| In/out Argument | Name: Com  Type: FiberPolCorrSerialPortByfferStruct  Description |