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TwinCAT Library for PLCInfo

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 | PLCInfo |
| Version | 1 |
| TwinCAT version | V2.11.0 |
| Name space |  |
| Author | Daniel Sigg |
| Description | Information about PLC status/location  Includes system information |
| Error Code | None |
| Library Dependencies | Error, SaveRestore, TcSystem |

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| **User Interface Type**  TYPE IfoIdEnum : (IfoH1, IfoL1, IfoH2, IfoT1, IfoI1)  END\_TYPE; | |
| Type Name | IfoIdEnum |
| Description | Identification of IFO |
| Definition | ENUM |
| Element | Name: IfoH1  Description: H1 |
| Element | Name: IfoL1  Description: L1 |
| Element | Name: IfoH2  Description: H2 |
| Element | Name: IfoT1  Description: T1 |
| Element | Name: IfoI1  Description: I1 |

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| **User Interface Type**  TYPE LocationIdEnum : (Corner, EndX, EndY, MidX, MidY)  END\_TYPE; | |
| Type Name | LocationIdEnum |
| Description | Location of PLC |
| Definition | ENUM |
| Element | Name: Corner  Description: Located in Corner station |
| Element | Name: EndX  Description: Located in EX station |
| Element | Name: EndY  Description: Located in EY station |
| Element | Name: MidX  Description: Located in MX station |
| Element | Name: MidY  Description: Located in MY station |

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| **User Interface Type**  TYPE PlcTaksInfoStruct :  STRUCT  Active: BOOL;  Name: STRING(16);  Priority: DINT;  CycleCount: UDINT;  CycleTime: LREAL;  LastExecTime: LREAL;  CycleTimeExceeded: BOOL;  CycleTimeError: UDINT;  END\_STRUCT  END\_TYPE; | |
| Type Name | PlcTaksInfoStruct |
| Description | Structure used in the user interface to describe the information for all available tasks in the PLC. |
| Definition | STRUCT |
| Output Tag | Name: Active  Type: BOOL  Description: True if task is configured and active |
| Output Tag | Name: Name  Type: STRING(16)  Description: Name of task |
| Output Tag | Name: Priority  Type: DINT  Description: Priority of task |
| Output Tag | Name: CycleCount  Type: UDINT  Description: Cycle count of task |
| Output Tag | Name: CycleTime  Type: LREAL  Description: Predefined cycle time in µs |
| Output Tag | Name: LastExecTime  Type: LREAL  Description: Cycle time of last executed cycle in µs. |
| Output Tag | Name: CycleTimeExceeded  Type: BOOL  Description: True if cycle time exceeded allocated time. |
| Output Tag | Name: CycleTimeError  Type: UDINT  Description: Error counter (updated at rate of task running PLCInfo) |
| **User Interface Type**  TYPE PlcInfoStruct :  STRUCT  IfoId: IfoIdEnum;  LocationId: LocationIdEnum;  Status: ErrorStruct;  SvnRevision: DINT;  StartTime: TIMESTRUCT;  CurrentTime: TIMESTRUCT;  Hostname: T\_MaxString;  CpuUsage: UDINT:  SysLatencyActual: UDINT;  SysLatencyMax: UDINT:  RuntimeNumber: DINT;  ProjectName: STRING(32);  NumberOfTasks: DINT;  OnlineChangeCount: DINT;  RetainLoaded: BOOL;  PersistantLoaded: BOOL;  Task: ARRAY [1..4] OF PlcTaksInfoStruct;  END\_STRUCT;  END\_TYPE; | |
| Type Name | PlcInfoStruct |
| Description | Structure used in the user interface |
| Definition | STRUCT |
| Output Tag | Name: IfoId  Type: IfoIdEnum  Description: Interferometer identification |
| Output Tag | Name: LocationId  Type: LocationIdEnum  Description: Building Location |
| Output Tag | Name: Status  Type: ErrorStruct  Description: Calls error handler |
| Output Tag | Name: SvnRevision  Type: DINT  Description: Subversion Revision |
| Output Tag | Name: StartTime  Type: TIMESTRUCT  Description: PLC start time |
| Output Tag | Name: CurrentTime  Type: TIMESTRUCT  Description: PLC current time |
| Output Tag | Name: ElapsedTime  Type: DINT  Description: Elapsed time since last restart in sec |
| Output Tag | Name: Hostname  Type: T\_MaxString  Description: PLC host name |
| Output Tag | Name: CpuUsage  Type: UDINT  Description: CPU usage |
| Output Tag | Name: SysLatencyActual  Type: UDINT  Description: Actual system latency |
| Output Tag | Name: SysLatencyMax  Type: UDINT  Description: Max system latency |
| Output Tag | Name: RuntimeNumber  Type: DINT  Description: PLC runtime number |
| Output Tag | Name: ProjectName  Type: STRING(32)  Description: Name of PLC project |
| Output Tag | Name: NumberOfTasks  Type: DINT  Description: Number of active tasks in current PLC |
| Output Tag | Name: OnlineChangeCount  Type: DINT  Description: The number of online changes made since the last complete download |
| Output Tag | Name: RetainLoaded  Type: BOOL  Description: Valid retain data loaded |
| Output Tag | Name: PersistentLoaded  Type: BOOL  Description: Valid persistent data loaded |
| Output Tag | Name: Task  Type: ARRAY [1..4] OF PlcTaksInfoStruct  Description: Information on active tasks |
| **Function Block**  TYPE PlcInfoFB:  VAR\_INPUT  Request: SaveRestoreEnum;  Ifo: IfoIdEnum;  Loc: LocationIdEnum;  Svn: DINT;  Status: ErrorStruct;  END\_VAR;  VAR\_OUTPUT  CurrentTime: TIMESTRUCT;  CurrentTimeValid: BOOL;  END\_VAR;  VAR\_IN\_OUT  Plc: PlcInfoStruct;  END\_VAR:  END\_TYPE; | |
| Type Name | PlcInfoFb |
| Description | Function block used to monitor the PLC status/location |
| Definition | Function Block |
| Input Argument | Name: Request  Type: SaveRestoreEnum  Description: Request for save/restore/safe mode or noop |
| Input Argument | Name: Ifo  Type: IfoIdEnum  Description: IFO identification |
| Input Argument | Name: Loc  Type: LocationIdEnum  Description: Location ID |
| Input Argument | Name: Svn  Type: DINT  Description: Subversion status |
| Input Argument | Name: Status  Type: ErrorStruct  Description: Calls error handler |
| Output Argument | Name: CurrentTime  Type: TIMESTRUCT  Description: Current time |
| Output Argument | Name: CurrentTimeValid  Type: BOOL  Description: Current time valid |
| In/out Argument | Name: Plc  Type: PlcInfoStruct  Description: User interface structure |