

LIGO Laboratory / LIGO Scientific Collaboration

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Advanced LIGO

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**TwinCAT Library for
PZT Mirrors**

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Distribution of this document:
LIGO Scientific Collaboration

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of the LIGO Laboratory.

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Library	
Title	PZTMirror
Version	1
TwinCAT version	2.11
Name space	–
Author	Alexa Staley, Daniel Sigg
Description	Controls PZT mirrors.
Error codes	None
Library dependencies	Error

Hardware Input Type TYPE PZTMirrorInStruct : STRUCT HV10MonitorPZTX: INT; PositionSensorPZTX: INT; HV10MonitorPZTY: INT; PositionSensorPZTY: INT; END_STRUCT END_TYPE	
Type name	PZTMirrorInStruct
Description	Structure of the hardware input that are wired up for the PZT mirrors
Definition	STRUCT
Element	Name: HV10MonitorPZTX Type: INT Description: HV10 input monitor of PZT mirror X
Element	Name: PositionSensorPZTX Type: INT Description: Position sensor input of PZT mirror X
Element	Name: HV10MonitorPZTY Type: INT Description: HV10 input monitor of PZT mirror Y
Element	Name: PositionSensorPZTY Type: INT Description: Position sensor input of PZT mirror Y

User Interface Type TYPE PZTMirrorStruct : STRUCT HV10MonitorPZTX: LREAL; PositionSensorPZTX: LREAL; HV10MonitorPZTY: LREAL; PositionSensorPZTY: LREAL; END_STRUCT END_TYPE	
Type name	PZTMirrorStruct
Description	Structure of the user interface tags that are used to control the PZT mirrors
Definition	STRUCT
Output Tag	Name: HV10MonitorPZTX Type: LREAL Description:
Output Tag	Name: PositionSensorPZTX Type: LREAL Description:
Output Tag	Name: HV10MonitorPZTY Type: LREAL Description:
Output Tag	Name: PositionSensorPZTY Type: LREAL Description:

Function Block FUNCTION_BLOCK PZTMirrorFB VAR_INPUT Request: SaveRestoreEnum; PZTMirrorIn: PZTMirrorInStruct; END_VAR VAR_OUTPUT END_VAR VAR_IN_OUT PZTMirrorInit; PZTMirrorStruct; PZTMirror: PZTMirrorStruct; END_VAR VAR END_VAR	
Name	PZTMirrorFB
Description	Controls the PZT mirrors.
Input argument	Name: Request Type: SaveRestoreEnum Description: Request save/restore/safemode or noop
Input argument	Name: PZTMirrorIn Type: PZTMirrorInStruct Description: Input hardware structure
In/out argument	Name: PZTMirrorInit Type: PZTMirrorStruct Description: Save/restore variable in persistent memory
In/out argument	Name: PZTMirror Type: PZTMirrorStruct Description: User Interface structure

Visual	
<p>The visual shows four rows of components, each with a label and a value. The labels are HV10MonitorPZTX, PositionSensorPZTX, HV10MonitorPZTY, and PositionSensorPZTY. The values are all %3.4f. The components are arranged in a 2x2 grid.</p>	
Name	PZTMirrorViz
Description	Displays monitors and sensors for the PZT mirrors
Placeholder	Name: PZTMirror Type: PZTMirrorStruct Description: PZT Mirror structure