

# EPICS QT Framework

## 1.1.5

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# Chapter 1

## QCa - EPICS aware Qt Widgets

- QCa is a layered software framework for accessing EPICS data using Channel Access on a range of platforms.
- The QCa framework provides object oriented C++ access to control systems using EPICS (Experimental Physics and Industrial Control System). It is based on Qt, a widely used cross-platform application development framework.
- GUI or console based applications can be written that use QCa at several levels. QCa includes Qt plugin libraries, EPICS aware widgets, data formatting classes, and classes for accessing raw EPICS data in a Qt friendly way.
- QCa also includes an application - ASgui - for displaying forms produced by the Qt development tool 'Designer'. Using this application a complete EPICS GUI system can be generated without writing any code. A GUI system produced in this way can interact with existing EPICS display tools such as EDM.
- QCa handles much of the complexities of Channel Access including initiating and managing a channel. Applications using QCa can interact with Channel Access using Qt based classes and data types. Channel Access updates are delivered using Qt's signals and slots mechanism.

### 1.1 Documentation

Support documents can be found in the [documentation](#) section of the epicsqt sourceforge project. The framework download (available on the [epicsqt sourceforge homepage](#)) also includes this documentation as well as full Doxygen generated documentation of all the epicsqt classes and widgets.

### 1.2 License

epicsqt is distributed under the terms of the [GNU General Public License](#).

## 1.3 Platforms

epicsqt might be usable in all environments where you find [Qt](#). It is compatible with Qt >= 4.4.

## 1.4 Screenshots

- [ASgui screen shots](#)
- [other applications using epicsqt widgets](#)
- [Qt Designer](#)
- [Qt Creator](#)

Screenshots are only available in the HTML docs.

## 1.5 Downloads

Stable releases and development snapshots are available at the [epicsqt project page](#). For getting a development snapshot from the SVN repository:

```
svn svn co https://epicsqt.svn.sourceforge.net/svnroot/epicsqt epicsqt
```

## 1.6 Installation

Read [QCa\\_GettingStarted.pdf](#) in the documentation for setting up an environment for building or using the epicsqt framework.

To build the framework, open epicsqt.pro in QtCreator, ensure shadow build is turned off, and hit build.

Symbolic links to the resultant library libQCaPlugin.so will need to set up according to how it is to be used - see [QCa\\_GettingStarted.pdf](#) for details.

Any Qt specific queries? start at [Qt developer documentation](#)

## 1.7 Support

Visit the sourceforge epicsqt [support page](#) for assistance.

## 1.8 Related Projects

[Qwt](#), The core of a Channel Access aware plotting widget.

## **1.9 Credits:**

**Authors:**

Andrew Rhyder, Anthony Owen, Glenn Jackson

**Project admin:**

Andrew Rhyder <[andrew.rhyder@synchrotron.org.au](mailto:andrew.rhyder@synchrotron.org.au)>



## Chapter 2

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## **Chapter 3**

# **INSTALL**





## Chapter 4

### ASgui screen shots

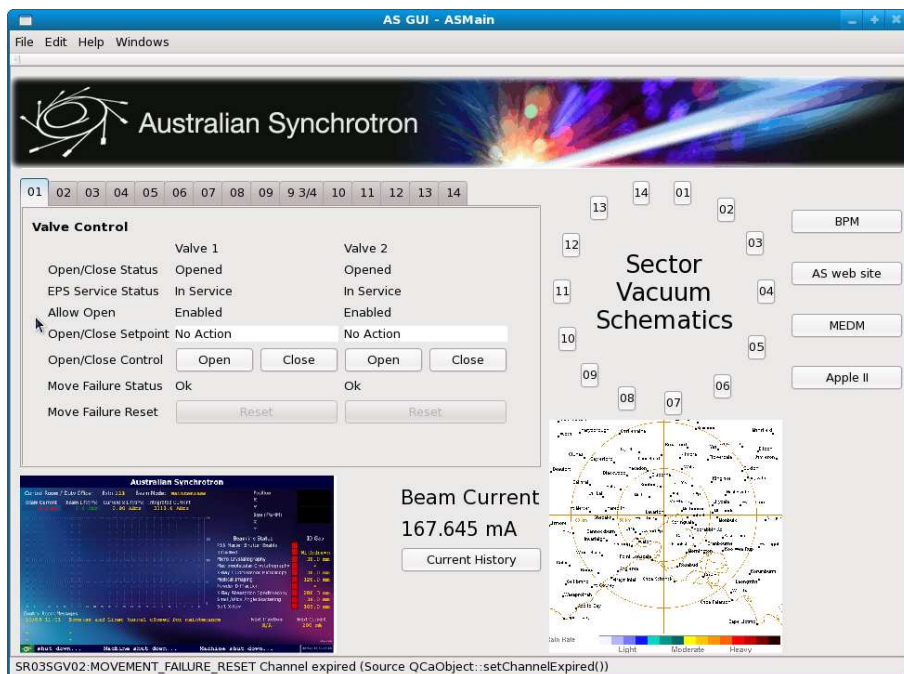


Figure 4.1: Australian Synchrotron mock up

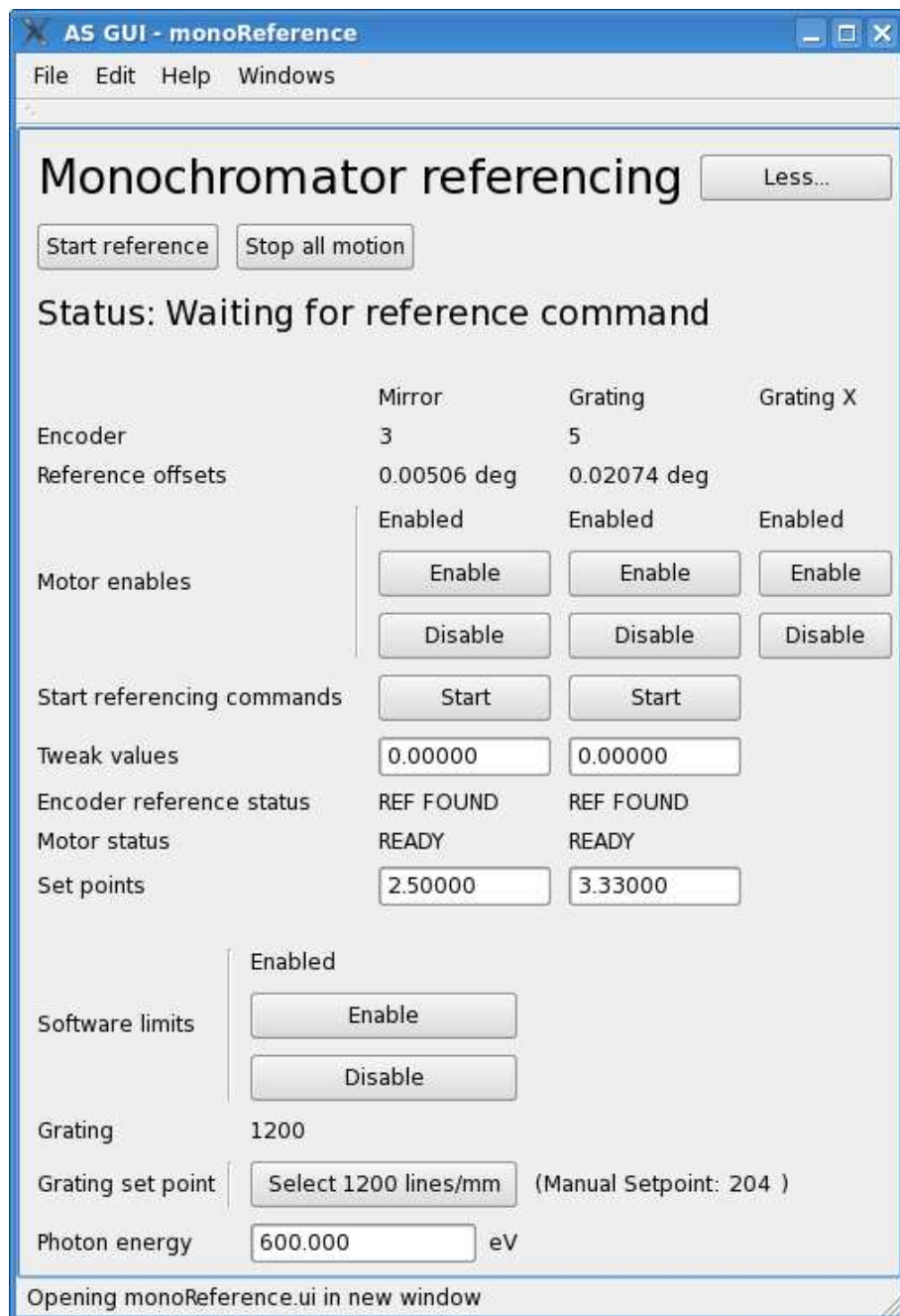


Figure 4.2: Monochromator referencing

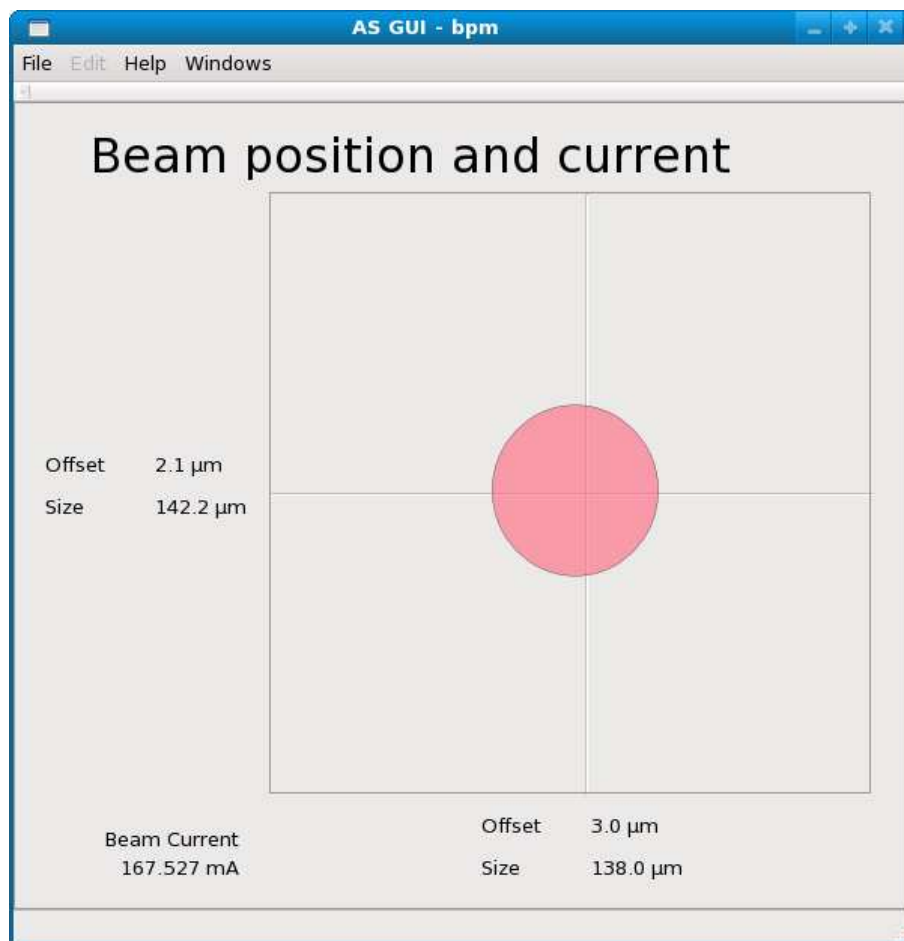


Figure 4.3: Beam position monitor

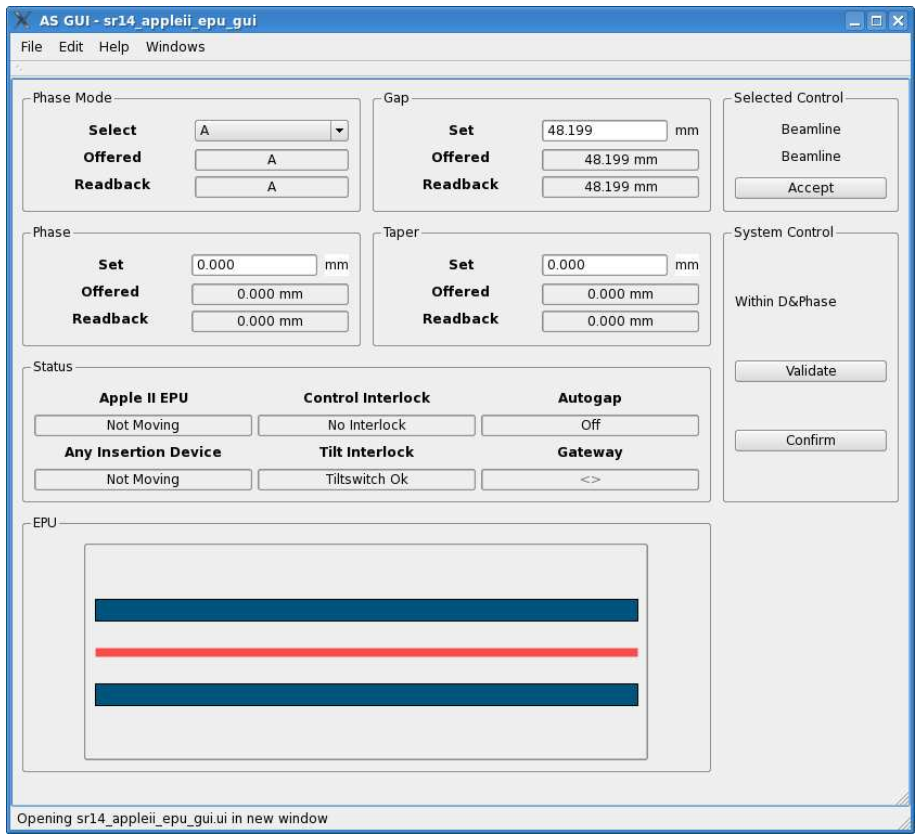


Figure 4.4: Insertion device

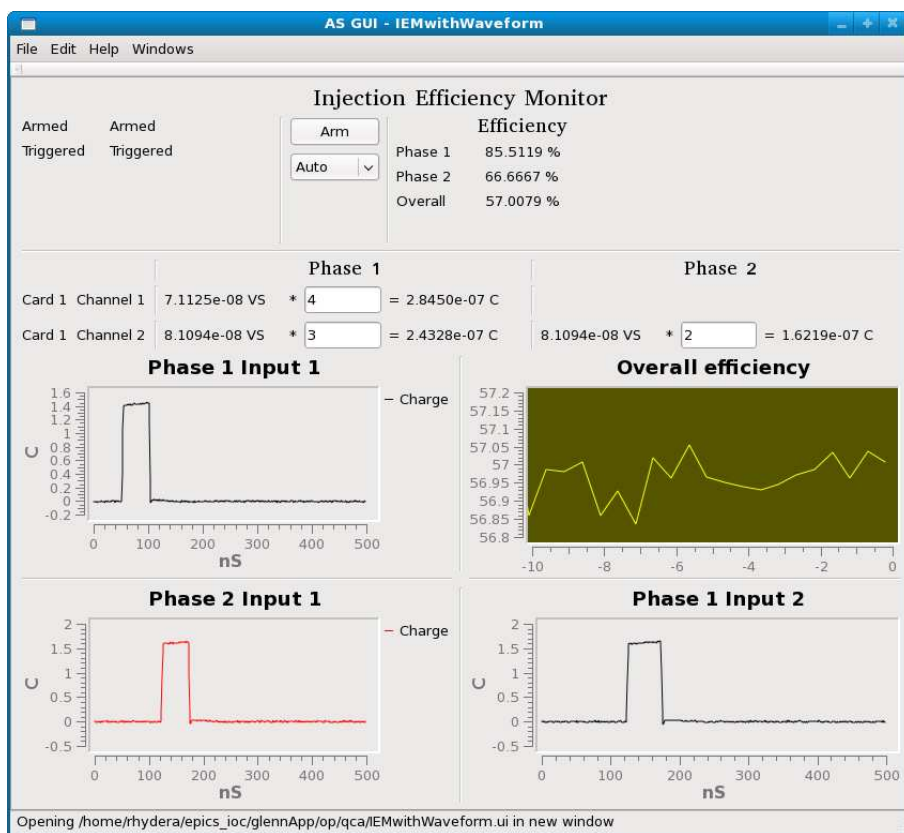


Figure 4.5: Injection efficiency monitor



## Chapter 5

### other applications using epicsqt widgets

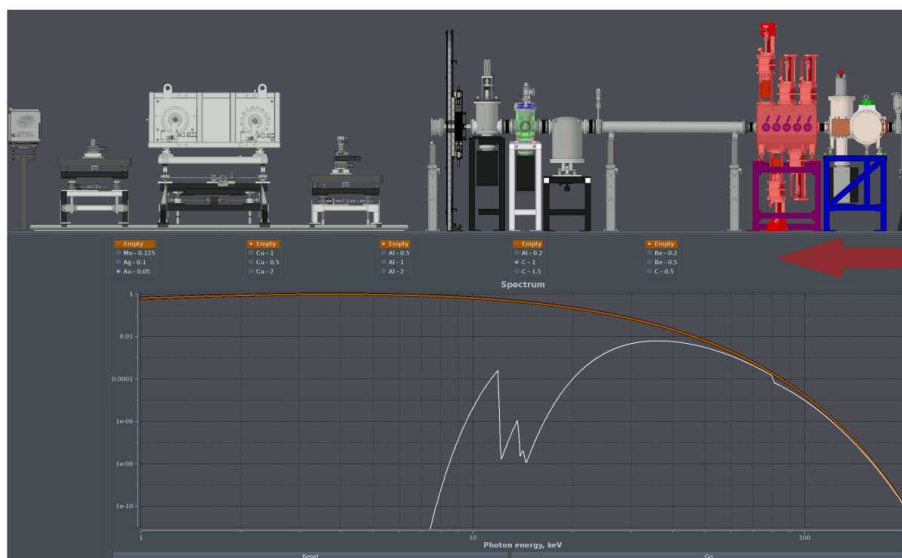


Figure 5.1: Medical Imaging beamline

2B SampleTable Z <@SR08ID01OPI01>

PV name: SR08ID01:MTR32B View mode: Macro

Description: 2B SampleTable Z

Precision: 5 Units: mm

Message: Connection established. clean

User: 6mm Move absolutely Raw: -80932

JOG< UNDO >JOG

LIMIT< Move relatively >LIMIT

< 1mm >

step/10 step/2 step\*2 step\*10

User: 6mm = Hi limit

Resolution: 0.0001mm/step \* 42271.2068mm

Raw: -80932 + Lo Limit

Offset: -2.0932mm -42275.3932mm

Speed Acceleration

Maximum: 1.2mm/s

Normal: 0.8mm/s 1s

Backlash: 0mm/s 1s

log: 1mm/s 10s

Backlash: 0mm

Figure 5.2: Motor controller

MotorMx <@SR08ID01OPI01>

- ▲ ▼	DEI Theta Mono	109.5mm	<	0.1	>	UNDO
- ▲ ▼	DEI Mono Z	-0.3mm	<	0.1	>	UNDO
- ▲ ▼	2B Sample Table Y	0mm	<	1	>	UNDO
- ▲ ▼	2B SampleTable Z	6mm	<	1	>	UNDO
- ▲ ▼	2B Detector Table Z	42mm	<	5	>	UNDO
- ▲ ▼	2B Sample Rotate	-1deg	<	1	>	UNDO
- ▲ ▼	2B Detector Table Y	13.9025mm	<	1	>	UNDO
- ▲ ▼	SETUP	0	<	relative	>	STOP
- ▲ ▼	SLW01:LEFT	9.99975mm	<	3456	>	UNDO

Add motor

Figure 5.3: Motor controller



## Chapter 6

# Qt Designer

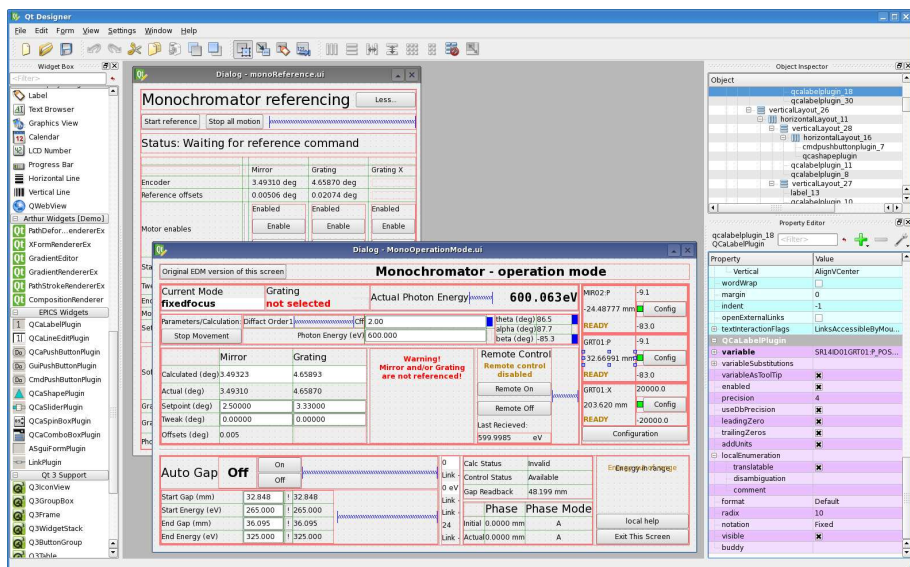


Figure 6.1: Editing multiple GUIs

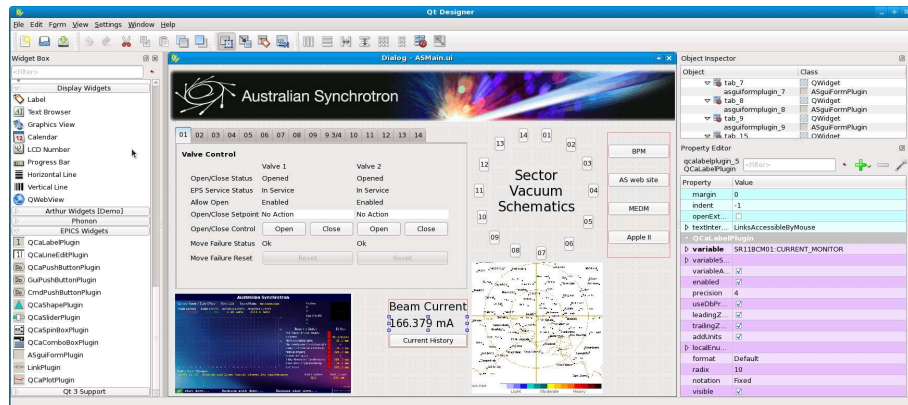


Figure 6.2: Editing a GUI

## Chapter 7

# Qt Creator

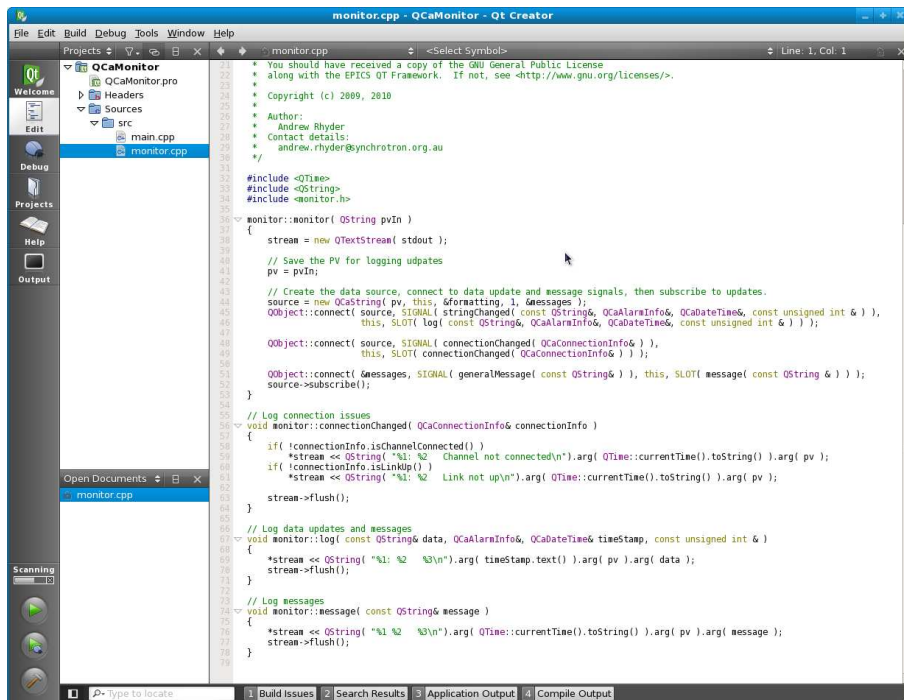


Figure 7.1: Application using epicsqt data source classes



## Chapter 8

# Namespace Index

### 8.1 Namespace List

Here is a list of all documented namespaces with brief descriptions:

[qcaobject](#) . . . . . 31



## Chapter 9

# Class Index

### 9.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

ASguiForm . . . . .	33
ASguiFormPlugin . . . . .	35
ASguiFormPluginManager . . . . .	36
CmdPushButtonPluginManager . . . . .	38
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QCaWidget . . . . .	133
QCaAnalogProgressBar . . . . .	56
QCaBitStatus . . . . .	58
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QCaLineEditPlugin . . . . .	84
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## Chapter 10

# Class Index

### 10.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

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<a href="#">ASguiFormPluginManager</a> (ASgui form Plugin for Qt Designer ) . . . . .	36
<a href="#">CmdPushButtonPlugin</a> . . . . .	37
<a href="#">CmdPushButtonPluginManager</a> (Command Push Button Widget Plugin Manager for designer ) . . . . .	38
<a href="#">qcastatemachine::ConnectionQCaStateMachine</a> . . . . .	39
<a href="#">ContainerProfile</a> (Defines attributes of the containing window (form, dialog, etc) within which QCa widgets are being created ) . . . . .	39
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<a href="#">GuiPushButtonPluginManager</a> (Launch GUI Push Button Widget Plugin Manager for designer ) . . . . .	43
<a href="#">Link</a> (Manage updating tool tip with variable name, alarm state and connected state ) . . . . .	44
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## Chapter 11

# Namespace Documentation

### 11.1 qcaobject Namespace Reference

#### Classes

- class [QCaObject](#)

#### 11.1.1 Detailed Description

##### Version

##### Revision:

#4

##### Date

##### DateTime:

2010/06/23 07:49:40

##### Author

Last checked in by:

##### Author:

rhydera

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## Chapter 12

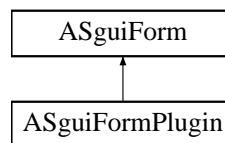
# Class Documentation

### 12.1 ASguiForm Class Reference

A base form GUI.

```
#include <ASguiForm.h>
```

Inheritance diagram for ASguiForm:



#### Public Types

- enum **creationOptions** { **CREATION\_OPTION\_OPEN**, **CREATION\_OPTION\_NEW\_TAB**, **CREATION\_OPTION\_NEW\_WINDOW** }

#### Public Slots

- void **requestEnabled** (const bool &state)
- void **readUiFile** ()
- void **onGeneralMessage** (QString message)

#### Public Member Functions

- **ASguiForm** (QWidget \*parent=0)
- **ASguiForm** (const QString &uifileNameIn, QWidget \*parent=0)
- void **commonInit** (const bool alertIfUINoFoundIn)

- `QString getASGuiTitle ()`
- `QString getGuiFileName ()`
- `void setVariableNameAndSubstitutions (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)`
- `void setUiFileName (QString uiFile)`
- `QString getUiFileName ()`
- `void setHandleGuiLaunchRequests (bool handleGuiLaunchRequests)`
- `bool getHandleGuiLaunchRequests ()`

### Protected Member Functions

- `void setVariableNameSubstitutions (QString variableNameSubstitutionsIn)`

### Protected Attributes

- `QString uiFileName`
- `bool handleGuiLaunchRequests`

## 12.1.1 Detailed Description

A base form GUI.

### Version

### Revision:

#10

### Date

### DateTime:

2010/09/06 13:16:04

### Author

andrew.rhyder

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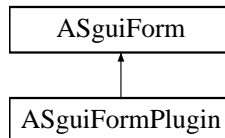
- `epicsqt/ca_framework/widgets/include/ASguiForm.h`

## 12.2 ASguiFormPlugin Class Reference

Wrapper around [ASguiForm](#) to make it a Qt Designer Plugin.

```
#include <ASguiFormPlugin.h>
```

Inheritance diagram for ASguiFormPlugin:



### Public Member Functions

- [ASguiFormPlugin](#) (QWidget \*parent=0)  
*Constructors.*
- void **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- QString **getVariableNameSubstitutionsProperty** ()

### Properties

- QString [uiFile](#)
- QString **variableSubstitutions**
- bool **handleGuiLaunchRequests**

#### 12.2.1 Detailed Description

Wrapper around [ASguiForm](#) to make it a Qt Designer Plugin. Wrapper around [QCaLabel](#) to allow [QCaLabel](#) to be used within Designer.

#### Version

#### Revision:

#5

#### Date

#### DateTime:

2010/09/06 11:58:56

**Author**

andrew.rhyder

**12.2.2 Property Documentation****12.2.2.1 QString ASguiFormPlugin::uiFile** [read, write]

Note, a property macro in the form 'Q\_PROPERTY(QString uiFileName READ ...' doesn't work. A property name ending with 'Name' results in some sort of string a variable being displayed, but will only accept alphanumeric and won't generate call-backs on change.

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/ASguiFormPlugin.h

**12.3 ASguiFormPluginManager Class Reference**

ASgui form Plugin for Qt Designer.

```
#include <ASguiFormPluginManager.h>
```

**Public Member Functions**

- **ASguiFormPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

**12.3.1 Detailed Description**

ASgui form Plugin for Qt Designer.

**Version****Revision:**

#4

**Date****DateTime:**

2010/06/23 07:49:40

**Author**

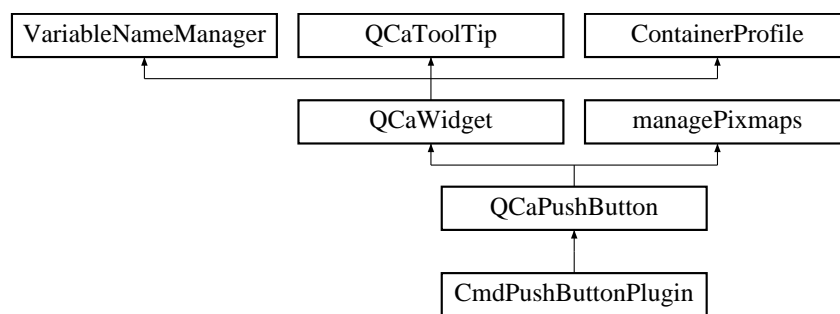
&lt;andrew.rhyder&gt;

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/ASguiFormPluginManager.h

## 12.4 CmdPushButtonPlugin Class Reference

Inheritance diagram for CmdPushButtonPlugin:

**Public Member Functions**

- [CmdPushButtonPlugin](#) (QWidget \*parent=0)

*Constructors.*

**Properties**

- QString [program](#)  
*Text to write on a button click.*
- QStringList [arguments](#)  
*Program to run.*
- QString [variableSubstitutions](#)

## 12.4.1 Property Documentation

### 12.4.1.1 QString CmdPushButtonPlugin::variableSubstitutions [read, write]

Variable substitutions Example: SECTOR=01 will result in any occurrence of \$SECTOR in variable name being replaced with 01. Note, unlike most objects with a variable name substitutions, changes to this property do not take immediate effect, so the normal code which waits for the user to finish typing, then propagates the substitutions is not required. the substitutions are simply used next time the button is pushed.

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/CmdPushButtonPlugin.h

## 12.5 CmdPushButtonPluginManager Class Reference

Command Push Button Widget Plugin Manager for designer.

```
#include <CmdPushButtonPluginManager.h>
```

### Public Member Functions

- **CmdPushButtonPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.5.1 Detailed Description

Command Push Button Widget Plugin Manager for designer. ???

#### Version

#### Revision:

#4

#### Date

**DateTime:**

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**Author**

Last checked in by:

**Author:**

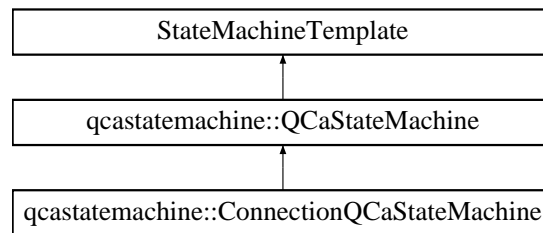
rhydera

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/CmdPushButtonPluginManager.h

## 12.6 qcastatemachine::ConnectionQCaStateMachine Class Reference

Inheritance diagram for qcastatemachine::ConnectionQCaStateMachine:

**Public Member Functions**

- **ConnectionQCaStateMachine** (void \*parent)
- bool **process** (int requestedState)

The documentation for this class was generated from the following file:

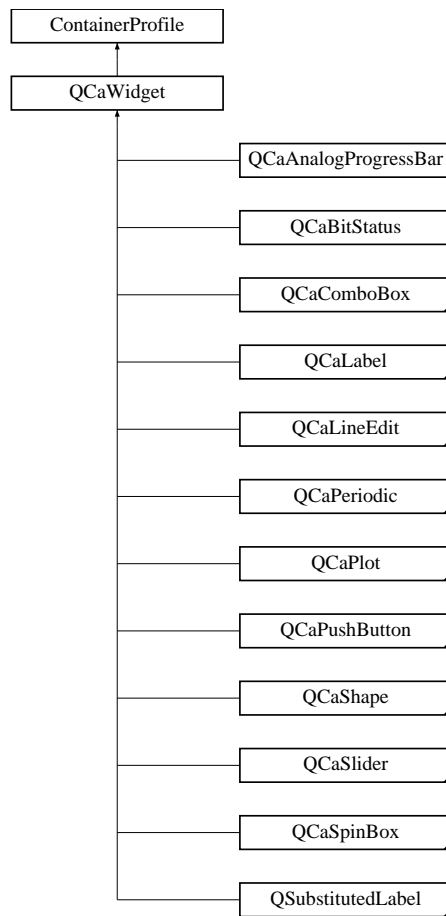
- epicsqt/ca\_framework/data/include/QCaStateMachine.h

## 12.7 ContainerProfile Class Reference

Defines attributes of the containing window (form, dialog, etc) within which QCa widgets are being created.

```
#include <ContainerProfile.h>
```

Inheritance diagram for ContainerProfile:



## Public Member Functions

- void **init** ()
- void **setupProfile** (QObject \*statusMessageConsumerIn, QObject \*errorMessageConsumerIn, QObject \*warningMessageConsumerIn, QObject \*guiLaunchConsumerIn, QString pathIn, QString macroSubstitutionsIn, bool interactiveIn)
- QObject \* **replaceGuiLaunchConsumer** (QObject \*newGuiLaunchConsumerIn)
- void **addMacroSubstitutions** (QString macroSubstitutionsIn)
- void **removeMacroSubstitutions** ()
- QObject \* **getStatusMessageConsumer** ()
- QObject \* **getWarningMessageConsumer** ()
- QObject \* **getErrorMessageConsumer** ()
- QObject \* **getGuiLaunchConsumer** ()
- QString **getPath** ()
- QString **getMacroSubstitutions** ()
- bool **isProfileDefined** ()
- bool **isInteractive** ()



- void **addContainedWidget** (QCaWidget \*containedWidget)
- QCaWidget \* **getNextContainedWidget** ()
- void **releaseProfile** ()

### 12.7.1 Detailed Description

Defines attributes of the containing window (form, dialog, etc) within which QCa widgets are being created.

#### Version

#### Revision:

#4

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/ContainerProfile.h

## 12.8 QCaPeriodic::elementInfoStruct Struct Reference

### Public Attributes

- unsigned int **number**
- double **atomicWeight**
- QString **name**
- QString **symbol**
- double **meltingPoint**
- double **boilingPoint**
- double **density**
- unsigned int **group**
- double **ionizationEnergy**
- unsigned int **tableRow**
- unsigned int **tableCol**

The documentation for this struct was generated from the following file:

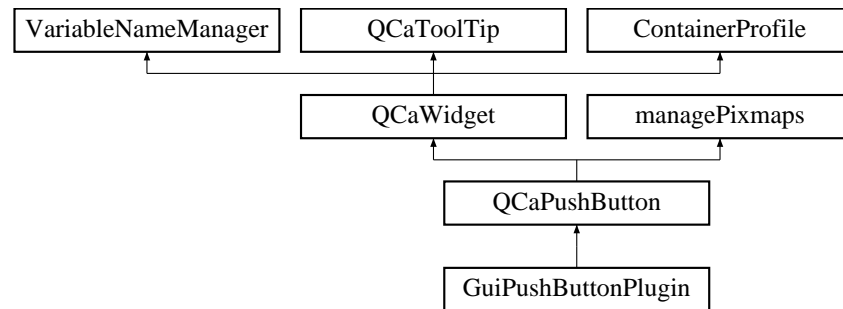
- epicsqt/ca\_framework/widgets/include/QCaPeriodic.h

## 12.9 GuiPushButtonPlugin Class Reference

Launch GUI Push Button Widget Plugin.

```
#include <GuiPushButtonPlugin.h>
```

Inheritance diagram for GuiPushButtonPlugin:



### Public Types

- enum **CreationOptionNames** { **Open** = ASguiForm::CREATION\_OPTION\_OPEN, **NewTab** = ASguiForm::CREATION\_OPTION\_NEW\_TAB, **NewWindow** = ASguiForm::CREATION\_OPTION\_NEW\_WINDOW }

### Public Member Functions

- [GuiPushButtonPlugin](#) (QWidget \*parent=0)  
*Constructors.*
- void **setCreationOptionProperty** (CreationOptionNames creationOptionIn)
- CreationOptionNames **getCreationOptionProperty** ()

### Properties

- QString **guiFile**
- CreationOptionNames [creationOption](#)  
*GUI file name to launch.*
- QString **variableSubstitutions**

### 12.9.1 Detailed Description

Launch GUI Push Button Widget Plugin.

**Version****Revision:**

#6

**Date****DateTime:**

2010/09/06 11:58:56

**Author**

Last checked in by:

**Author:**

rhydera

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/GuiPushButtonPlugin.h

## 12.10 GuiPushButtonPluginManager Class Reference

Launch GUI Push Button Widget Plugin Manager for designer.

```
#include <GuiPushButtonPluginManager.h>
```

**Public Member Functions**

- **GuiPushButtonPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.10.1 Detailed Description

Launch GUI Push Button Widget Plugin Manager for designer. ???

#### Version

#### Revision:

#4

#### Date

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#### Author

Last checked in by:

#### Author:

rhydera

The documentation for this class was generated from the following file:

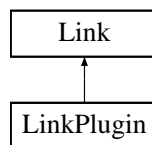
- epicsqt/ca\_framework/plugins/include/GuiPushButtonPluginManager.h

### 12.11 Link Class Reference

Manage updating tool tip with variable name, alarm state and connected state.

```
#include <Link.h>
```

Inheritance diagram for Link:



#### Public Types

- enum **conditions** {  
    **CONDITION\_EQ, CONDITION\_NE, CONDITION\_GT, CONDITION\_-**  
    **GE,**  
    **CONDITION\_LT, CONDITION\_LE }**

### Public Slots

- void **in** (const bool &in)
- void **in** (const qlonglong &in)
- void **in** (const double &in)
- void **in** (const QString &in)
- void **autoFillBackground** (const bool &enable)

### Signals

- void **out** (const bool &out)
- void **out** (const qlonglong &out)
- void **out** (const double &out)
- void **out** (const QString &out)

### Public Member Functions

- **Link** (QWidget \*parent=0)
- void **setCondition** (conditions conditionIn)
- conditions **getCondition** ()
- void **setComparisonValue** (QString comparisonValue)
- QString **getComparisonValue** ()
- void **setSignalTrue** (bool signalTrue)
- bool **getSignalTrue** ()
- void **setSignalFalse** (bool signalFalse)
- bool **getSignalFalse** ()
- void **setOutTrueValue** (QString outTrueValue)
- QString **getOutTrueValue** ()
- void **setOutFalseValue** (QString outFalseValue)
- QString **getOutFalseValue** ()
- void **setRunVisible** (bool visibleIn)
- bool **getRunVisible** ()

### Protected Attributes

- conditions **condition**
- QVariant **comparisonValue**
- bool **signalTrue**
- bool **signalFalse**
- QVariant **outTrueValue**
- QVariant **outFalseValue**
- bool **visible**

### 12.11.1 Detailed Description

Manage updating tool tip with variable name, alarm state and connected state.

#### Version

#### Revision:

#8

#### Date

#### DateTime:

2010/09/06 13:16:04

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

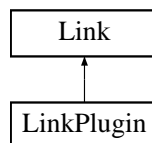
- epicsqt/ca\_framework/widgets/include/Link.h

## 12.12 LinkPlugin Class Reference

[Link](#) Widget Plugin for designer.

```
#include <LinkPlugin.h>
```

Inheritance diagram for LinkPlugin:



#### Public Types

- enum **ConditionNames** {  
    **Equal** = Link::CONDITION\_EQ, **NotEqual** = Link::CONDITION\_NE, **Greater** **Than**  
    = Link::CONDITION\_GT, **Greater** **Than** **Or** **Equal** = Link::CONDITION\_GE,  
    **Less** **Than** = Link::CONDITION\_LT, **Less** **Than** **Or** **Equal** = Link::CONDITION\_-  
    LE }

## Public Member Functions

- [LinkPlugin](#) (QWidget \*parent=0)  
*Constructors.*
- void **setConditionProperty** (ConditionNames condition)
- ConditionNames **getConditionProperty** ()

## Properties

- ConditionNames [condition](#)  
*Qt Designer Properties - condition.*
- QString **comparisonValue**
- bool **signalTrue**
- bool **signalFalse**
- QString **outTrueValue**
- QString **outFalseValue**

### 12.12.1 Detailed Description

[Link](#) Widget Plugin for designer.

#### Version

#### Revision:

#6

#### Date

#### DateTime:

2010/09/06 11:58:56

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/LinkPlugin.h

## 12.13 LinkPluginManager Class Reference

[Link](#) Widget Plugin Manager for designer.

```
#include <LinkPluginManager.h>
```

### Public Member Functions

- **LinkPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.13.1 Detailed Description

[Link](#) Widget Plugin Manager for designer. ???

#### Version

#### Revision:

#3

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/LinkPluginManager.h



## 12.14 localEnumerationItem Class Reference

### Public Types

- enum **operations** {  
**LESS, LESS\_EQUAL, EQUAL, NOT\_EQUAL,**  
**GREATER\_EQUAL, GREATER, ALWAYS, UNKNOWN }**

### Public Attributes

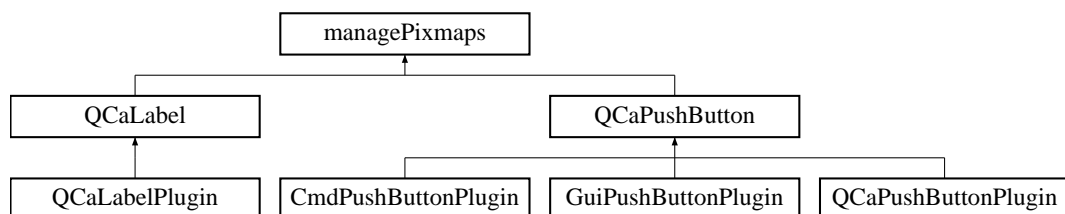
- int **value**
- operations **op**
- QString **text**

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaStringFormatting.h

## 12.15 managePixmaps Class Reference

Inheritance diagram for managePixmaps:



### Public Member Functions

- void **setDataPixmap** (QPixmap &Pixmap, unsigned int index)
- QPixmap **getDataPixmap** (unsigned int index)
- QPixmap **getDataPixmap** (QString value)

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/widgets/include/managePixmaps.h

## 12.16 PeriodicDialog Class Reference

### Public Member Functions

- **PeriodicDialog** (QWidget \*parent=0)
- QString **getElement** ()
- void **setElement** (QString elementIn, QList< bool > &enabledList, QList< QString > &elementList)

### Protected Member Functions

- void **changeEvent** (QEvent \*e)

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/widgets/include/PeriodicDialog.h

## 12.17 PeriodicElementSetupForm Class Reference

### Public Member Functions

- **PeriodicElementSetupForm** (QWidget \*parent=0)

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/PeriodicElementSetupForm.h

## 12.18 PeriodicSetupDialog Class Reference

### Public Member Functions

- **PeriodicSetupDialog** (QWidget \*parent=0)

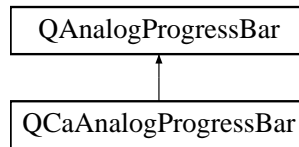
The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/PeriodicSetupDialog.h

## 12.19 QAnalogProgressBar Class Reference

```
#include <QAnalogProgressBar.h>
```

Inheritance diagram for QAnalogProgressBar:



### Public Slots

- void **setAnalogRange** (const double analogMinimumIn, const double analogMaximumIn)
- void **setAnalogMinimum** (const double analogMinimumIn)
- void **setAnalogMaximum** (const double analogMaximumIn)
- void **setAnalogValue** (const double analogValueIn)

### Public Member Functions

- [QAnalogProgressBar](#) (QWidget \*parent=0)  
*Constructor.*
- double **getAnalogMinimum** ()
- double **getAnalogMaximum** ()
- double **getAnalogValue** ()

### Protected Member Functions

- virtual QString **getSprintfFormat** ()

### Properties

- double **analogMinimum**
- double **analogMaximum**
- double **analogValue**

#### 12.19.1 Detailed Description

This class inherits directly from QProgressBar and provides an analog view of the progress bar widget including analogous analog functions and properties:

QProgressBar [QAnalogProgressBar](#)

setRange() setAnalogRange() setMinimum() setAnalogMinimum() getMinimum() getAnalogMinimum() setMaximum() setAnalogMaximum() getMaximum() getAnalogMaximum() setValue() setAnalogValue() getValue() getAnalogValue()

Minimum analogMinimum Maximum analogMaximum Value analogValue

The class sets the range of of the underlying QProgressBar to 0 .. 10000. It is considered unlikely, in practice, that an AnalogProgressBar will stretch more than 10000 pixels given that current screen technology is limited to 2000 pixels.

This class inherited from rather than containing a QProgressBar, and as such cannot hide and does not override the integer related base class functions and properties. Therefore they should not be used.

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/widgets/include/QAnalogProgressBar.h

## 12.20 QAnalogProgressBarPluginManager Class Reference

```
#include <QAnalogProgressBarPluginManager.h>
```

### Public Member Functions

- **QAnalogProgressBarPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.20.1 Detailed Description

???

The documentation for this class was generated from the following file:

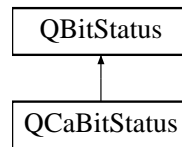
- epicsqt/ca\_framework/plugins/include/QAnalogProgressBarPluginManager.h

## 12.21 QBitStatus Class Reference

Bit Status Widget.

```
#include <QBitStatus.h>
```

Inheritance diagram for QBitStatus:



## Public Types

- enum **Orientations** { **LSB\_On\_Right**, **LSB\_On\_Bottom**, **LSB\_On\_Left**, **LSB\_On\_Top** }

## Public Slots

- void **setValue** (const long value)

## Public Member Functions

- **QBitStatus** (QWidget \*parent=0)
- virtual QSize **sizeHint** () const
- void **setBorderColour** (const QColor value)
- QColor **getBorderColour** ()
- void **setOnColour** (const QColor value)
- QColor **getOnColour** ()
- void **setOffColour** (const QColor value)
- QColor **getOffColour** ()
- void **setInvalidColour** (const QColor value)
- QColor **getInvalidColour** ()
- void **setDrawBorder** (const bool value)
- bool **getDrawBorder** ()
- void **setNumberOfBits** (const int value)
- int **getNumberOfBits** ()
- void **setShift** (const int value)
- int **getShift** ()
- void **setIsValid** (const bool value)
- bool **getIsValid** ()
- void **setOrientation** (const enum Orientations value)
- enum Orientations **getOrientation** ()
- long **getValue** ()

## Properties

- int **value**
- int **numberOfBits**
- int **shift**

- QColor **boarderColour**
- QColor **invalidColour**
- QColor **onColour**
- QColor **offColour**
- bool **drawBorder**
- bool **isValid**
- Orientations **Orientation**

### 12.21.1 Detailed Description

Bit Status Widget.

#### Version

#### Revision:

#3

#### Date

#### DateTime:

2011/06/12 15:07:03

#### Author

andrew.starritt

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/widgets/include/QBitStatus.h

## 12.22 QBitStatusPluginManager Class Reference

CA ProgressBar Widget Plugin Manager for designer.

```
#include <QBitStatusPluginManager.h>
```

### Public Member Functions

- **QBitStatusPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const

- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.22.1 Detailed Description

CA ProgressBar Widget Plugin Manager for designer. ???

#### Version

#### Revision:

#1

#### Date

#### DateTime:

2011/06/11 16:35:50

#### Author

andrew.starritt

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QBitStatusPluginManager.h

## 12.23 QCaAlarmInfo Class Reference

### Public Member Functions

- **QCaAlarmInfo** (unsigned short statusIn, unsigned short severityIn)
- QString **statusName** ()
- QString **severityName** ()
- bool **isInAlarm** ()
- bool **isMinor** ()
- bool **isMajor** ()
- bool **isInvalid** ()
- QString **style** ()
- QCAALARMINFO\_SEVERITY **getSeverity** ()

### Static Public Member Functions

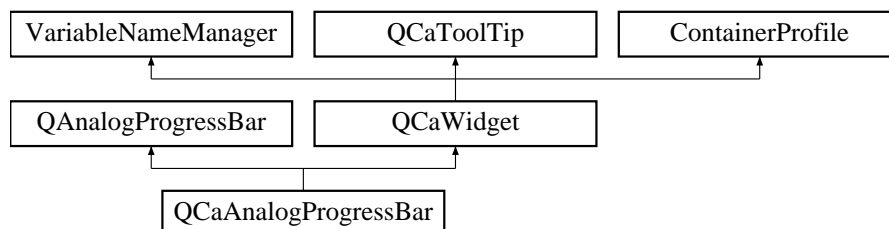
- static QCAALARMINFO\_SEVERITY **getInvalidSeverity** ()

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaAlarmInfo.h

## 12.24 QCaAnalogProgressBar Class Reference

Inheritance diagram for QCaAnalogProgressBar:



### Public Slots

- void **requestEnabled** (const bool &state)

### Signals

- void **dbValueChanged** (const double &out)

### Public Member Functions

- **QCaAnalogProgressBar** (QWidget \*parent=0)
- **QCaAnalogProgressBar** (const QString &variableName, QWidget \*parent=0)
- bool **isEnabled** () const
- void **setEnabled** (bool state)
- void **setVariableNameProperty** (QString variableName)
- QString **getVariableNameProperty** ()
- void **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- QString **getVariableNameSubstitutionsProperty** ()
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setVariableAsToolTip** (bool variableAsToolTip)
- bool **getVariableAsToolTip** ()
- void **setUseDbPrecision** (bool useDbPrecisionIn)



- bool **getDbPrecision** ()
- void **setDbDisplayLimits** (bool useDbDisplayLimitsIn)
- bool **getDbDisplayLimits** ()
- void **setRunVisible** (bool visibleIn)
- bool **getRunVisible** ()

### Protected Member Functions

- virtual QString **getSprintfFormat** ()
- void **establishConnection** (unsigned int variableIndex)  
*Initialise macro substitutions. May be used on creation.*

### Protected Attributes

- [QCaFloatingFormatting](#) **floatingFormatting**
- bool **localEnabled**

### Properties

- QString **variable**
- QString **variableSubstitutions**
- bool **variableAsToolTip**  
*Flag if data updates should be requested.*
- bool **enabled**
- bool **useDbDisplayLimits**  
*Display properties.*
- bool **visible**

#### 12.24.1 Property Documentation

##### 12.24.1.1 QString QCaAnalogProgressBar::variable [read, write]

Note, a property macro in the form 'Q\_PROPERTY(QString variableName READ ...)' doesn't work. A property name ending with 'Name' results in some sort of string a variable being displayed, but will only accept alphanumeric and won't generate callbacks on change.

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/widgets/include/QCaAnalogProgressBar.h`

## 12.25 QCaAnalogProgressBarPluginManager Class Reference

```
#include <QCaAnalogProgressBarPluginManager.h>
```

### Public Member Functions

- **QCaAnalogProgressBarPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.25.1 Detailed Description

???

The documentation for this class was generated from the following file:

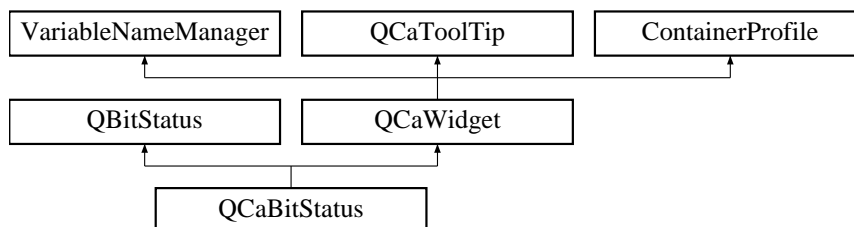
- epicsqt/ca\_framework/plugins/include/QCaAnalogProgressBarPluginManager.h

## 12.26 QCaBitStatus Class Reference

CA Bit Status Widget.

```
#include <QCaBitStatus.h>
```

Inheritance diagram for QCaBitStatus:



### Public Slots

- void **requestEnabled** (const bool &state)

## Signals

- void **dbValueChanged** (const long &out)

## Public Member Functions

- [QCaBitStatus](#) (QWidget \*parent=0)  
*#endif*
- **QCaBitStatus** (const QString &variableName, QWidget \*parent=0)
- bool **isEnabled** () const
- void **setEnabled** (bool state)
- void **setVariableNameProperty** (QString variableName)
- QString **getVariableNameProperty** ()
- void **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- QString **getVariableNameSubstitutionsProperty** ()
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setVariableAsToolTip** (bool variableAsToolTip)
- bool **getVariableAsToolTip** ()
- void **setRunVisible** (bool visibleIn)
- bool **getRunVisible** ()

## Protected Member Functions

- void [establishConnection](#) (unsigned int variableIndex)  
*Initialise macro substitutions. May be used on creation.*

## Protected Attributes

- [QCaIntegerFormatting](#) **integerFormatting**
- bool **localEnabled**

## Properties

- QString [variable](#)  
*#ifdef PLUGIN\_APP*
- QString **variableSubstitutions**
- bool [variableAsToolTip](#)  
*Flag if data updates should be requested.*
- bool **enabled**
- bool **visible**

### 12.26.1 Detailed Description

CA Bit Status Widget.

#### Version

#### Revision:

#1

#### Date

#### DateTime:

2011/06/11 21:36:00

#### Author

andrew.starritt

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/widgets/include/QCaBitStatus.h

## 12.27 QCaBitStatusPluginManager Class Reference

CA ProgressBar Widget Plugin Manager for designer.

```
#include <QCaBitStatusPluginManager.h>
```

### Public Member Functions

- **QCaBitStatusPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.27.1 Detailed Description

CA ProgressBar Widget Plugin Manager for designer. ???

#### Version

#### Revision:

#1

#### Date

#### DateTime:

2011/06/11 21:36:00

#### Author

andrew.starritt

The documentation for this class was generated from the following file:

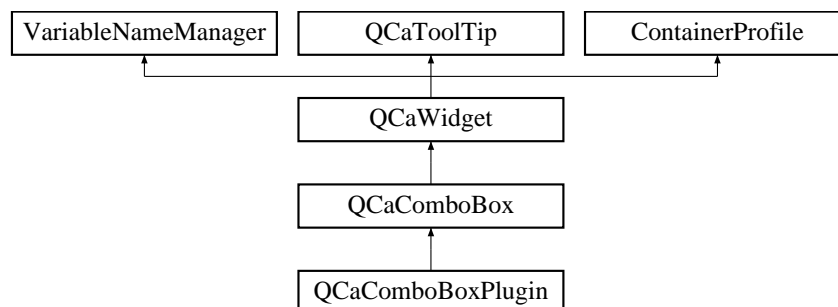
- `epicsqt/ca_framework/plugins/include/QCaBitStatusPluginManager.h`

## 12.28 QCaComboBox Class Reference

CA Combobox Widget.

```
#include <QCaComboBox.h>
```

Inheritance diagram for QCaComboBox:



#### Public Slots

- void **requestEnabled** (const bool &state)

## Signals

- void **dbValueChanged** (const qulonglong &out)

## Public Member Functions

- **QCaComboBox** (QWidget \*parent=0)
- **QCaComboBox** (const QString &variableName, QWidget \*parent=0)
- bool **isEnabled** () const
- void **setEnabled** (bool state)
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setSubscribe** (bool [subscribe](#))
- bool **getSubscribe** ()
- void **setVariableAsToolTip** (bool [variableAsToolTip](#))
- bool **getVariableAsToolTip** ()
- void **setUseDbEnumerations** (bool useDbEnumerations)
- bool **getUseDbEnumerations** ()

## Protected Member Functions

- void [establishConnection](#) (unsigned int variableIndex)  
*Initialise macro substitutions. May be used on creation.*

## Protected Attributes

- [QCaIntegerFormatting](#) **integerFormatting**
- bool **useDbEnumerations**
- bool **localEnabled**

### 12.28.1 Detailed Description

CA Combobox Widget.

#### Version

#### Revision:

#14

#### Date

**DateTime:**

2010/09/06 13:16:04

**Author**

andrew.rhyder

The documentation for this class was generated from the following file:

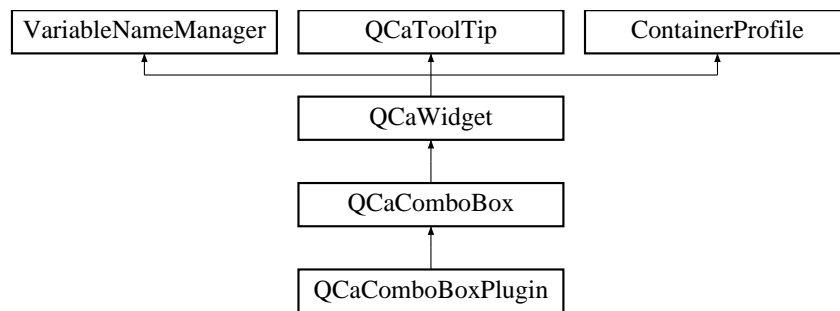
- epicsqt/ca\_framework/widgets/include/QCaComboBox.h

## 12.29 QCaComboBoxPlugin Class Reference

CA Combobox Widget Plugin.

```
#include <QCaComboBoxPlugin.h>
```

Inheritance diagram for QCaComboBoxPlugin:

**Public Member Functions**

- **QCaComboBoxPlugin** (QWidget \*parent=0)
- **QCaComboBoxPlugin** (QString variableName, QWidget \*parent=0)
- void **setVariableNameProperty** (QString variableName)
- QString **getVariableNameProperty** ()
- void **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- QString **getVariableNameSubstitutionsProperty** ()

**Properties**

- QString **variable**
- QString **variableSubstitutions**
- bool **subscribe**

*Set the number of variables that will stream data updates to the widget. Default of 1 if not called.*

- bool [variableAsToolTip](#)  
*Flag if data updates should be requested.*
- bool **enabled**
- bool **useDbEnumerations**

### 12.29.1 Detailed Description

CA Combobox Widget Plugin.

#### Version

#### Revision:

#7

#### Date

#### DateTime:

2010/09/06 11:58:56

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/plugins/include/QCaComboBoxPlugin.h`

## 12.30 QCaComboBoxPluginManager Class Reference

CA Combobox Widget Plugin Manager for designer.

```
#include <QCaComboBoxPluginManager.h>
```

### Public Member Functions

- **QCaComboBoxPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const



- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.30.1 Detailed Description

CA Combobox Widget Plugin Manager for designer.

#### Version

#### Revision:

#4

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaComboBoxPluginManager.h

## 12.31 QCaConnectionInfo Class Reference

### Public Member Functions

- **QCaConnectionInfo** (unsigned short channelStateIn, unsigned short linkStateIn)
- bool **isChannelConnected** ()
- bool **isLinkUp** ()

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaConnectionInfo.h

## 12.32 QCaDateTime Class Reference

### Public Member Functions

- **QCaDateTime** (QDateTime dt)
- void **operator=** (const [QCaDateTime](#) &other)
- **QCaDateTime** (unsigned long seconds, unsigned long nanoseconds)
- QString **text** ()
- double **floating** (QDateTime base)

### Public Attributes

- unsigned long **nSec**

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaDateTime.h

## 12.33 QCaDesignerPlugin Class Reference

Collection of CA plugins for QT Designer.

```
#include <QCaDesignerPlugin.h>
```

### 12.33.1 Detailed Description

Collection of CA plugins for QT Designer.

#### Version

#### Revision:

#3

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaDesignerPlugin.h

## 12.34 QCaEventFilter Class Reference

Manage CA alarm and severity information.

```
#include <QCaEventFilter.h>
```

### Public Member Functions

- void [addFilter](#) (QObject \*objectIn)  
*Add a filter to an object.*
- void [deleteFilter](#) (QObject \*objectIn)  
*Remove an event filter from an object.*
- bool [eventFilter](#) (QObject \*watched, QEvent \*e)  
*Event filter added to a QObject.*

### 12.34.1 Detailed Description

Manage CA alarm and severity information. CA event filter for QT.

CA Date Time manager.

Manage CA connection information.

This class allows instances of [QCaObject](#) to receive events posted to them by foreign CA threads. Each event recipient creates an instance of this class. This class, however, manages only a single event filter for all instances of itself.

#### Version

#### Revision:

#5

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

#### Version

**Revision:**

#3

**Date****DateTime:**

2010/06/23 07:49:40

**Author**

andrew.rhyder

**Version****Revision:**

#4

**Date****DateTime:**

2010/08/30 16:37:08

**Author**

andrew.rhyder

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/data/include/QCaEventFilter.h`

## 12.35 QCaEventItem Class Reference

Simple container for a list [QCaEventUpdate](#) instances.

```
#include <QCaEventUpdate.h>
```

**Public Member Functions**

- [QCaEventItem](#) ([QCaEventUpdate](#) \*newEvent)

**Public Attributes**

- [QCaEventUpdate](#) \* event

### 12.35.1 Detailed Description

Simple container for a list [QCaEventUpdate](#) instances. This class is simply a reference to an update event (an instance of class [QCaEventUpdate](#)) This class exists so that a list of references to outstanding events can be maintained.

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/data/include/QCaEventUpdate.h`

## 12.36 QCaEventUpdate Class Reference

Packages CA callback data as a Qt event.

```
#include <QCaEventUpdate.h>
```

### Public Member Functions

- **QCaEventUpdate** ([qcaobject::QCaObject](#) \*emitterObjectIn, long newReason, void \*newDataPtr)

### Public Attributes

- bool **acceptThisEvent**
- [qcaobject::QCaObject](#) \* **emitterObject**  
*If true, the originator of this event has been deleted. Ignore the event.*
- long **reason**  
*The object to process the data and emit a signal.*
- void \* **dataPtr**  
*Callback reason. Actually of type `caobject::callback_reasons`.*

### Static Public Attributes

- static `QEvent::Type` **EVENT\_UPDATE\_TYPE**

### 12.36.1 Detailed Description

Packages CA callback data as a Qt event.

### Version

**Revision:**

#4

**Date****DateTime:**

2010/06/23 07:49:40

**Author**

andrew.rhyder

This class packages data and status generated by a CA callback as a Qt event. When data or status updates must be passed from a foreign CA thread to a Qt thread an instance of this class is created, populated with the CA information and posted through the event mechanism to a Qt thread.

The documentation for this class was generated from the following file:

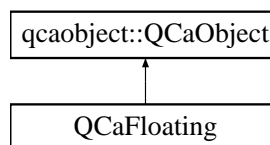
- `epicsqt/ca_framework/data/include/QCaEventUpdate.h`

## 12.37 QCaFloating Class Reference

Floating specific wrapper for [QCaObject](#).

```
#include <QCaFloating.h>
```

Inheritance diagram for QCaFloating:

**Public Slots**

- void **writeFloating** (const double &data)

**Signals**

- void **floatingChanged** (const double &value, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp, const unsigned int &variableIndex)
- void **floatingArrayChanged** (const QVector< double > &values, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp, const unsigned int &variableIndex)

## Public Member Functions

- **QCaFloating** (QString recordName, QObject \*eventObject, [QCaFloatingFormatting](#) \*floatingFormattingIn, unsigned int variableIndexIn)
- **QCaFloating** (QString recordName, QObject \*eventObject, [QCaFloatingFormatting](#) \*floatingFormattingIn, unsigned int variableIndexIn, [UserMessage](#) \*userMessageIn)

### 12.37.1 Detailed Description

Floating specific wrapper for [QCaObject](#).

#### Version

#### Revision:

#5

#### Date

#### DateTime:

2010/09/06 13:16:04

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/data/include/QCaFloating.h`

## 12.38 QCaFloatingFormatting Class Reference

Provides textual formatting for [QCaFloating](#) data.

```
#include <QCaFloatingFormatting.h>
```

## Public Types

- enum **formats** {  
    **FORMAT\_e** = 'e', **FORMAT\_E** = 'E', **FORMAT\_f** = 'f', **FORMAT\_g** = 'g',  
    **FORMAT\_G** = 'G' }

### Public Member Functions

- double **formatFloating** (const QVariant &value)
- QVector< double > **formatFloatingArray** (const QVariant &value)
- QVariant **formatValue** (const double &floatingValue, generic::generic\_types valueType)
- void **setPrecision** (unsigned int precision)
- void **setFormat** (formats format)
- unsigned int **getPrecision** ()
- int **getFormat** ()

#### 12.38.1 Detailed Description

Provides textual formatting for [QCaFloating](#) data.

#### Version

#### Revision:

#4

#### Date

#### DateTime:

2010/08/30 16:37:08

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaFloatingFormatting.h

## 12.39 QCaInstalledFiltersListItem Class Reference

### Public Member Functions

- **QCaInstalledFiltersListItem** (QObject \*eventObjectIn)



### Public Attributes

- `QObject *` [eventObject](#)  
*QObject that an event filter has been added to.*
- `long` [referenceCount](#)  
*Count of how many QCaObjects expect the event filter to be on the QObject.*

The documentation for this class was generated from the following file:

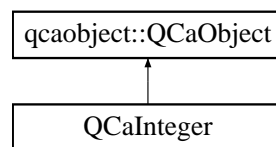
- `epicsqt/ca_framework/data/include/QCaEventFilter.h`

## 12.40 QCaInteger Class Reference

Integer specific wrapper for [QCaObject](#).

```
#include <QCaInteger.h>
```

Inheritance diagram for QCaInteger:



### Public Slots

- `void` **writeInteger** (`const long &data`)

### Signals

- `void` **integerChanged** (`const long &value`, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp, `const unsigned int &variableIndex`)

### Public Member Functions

- **QCaInteger** (`QString recordName`, `QObject *eventObject`, [QCaIntegerFormatting](#) \*integerFormattingIn, `unsigned int variableIndexIn`)
- **QCaInteger** (`QString recordName`, `QObject *eventObject`, [QCaIntegerFormatting](#) \*integerFormattingIn, `unsigned int variableIndexIn`, [UserMessage](#) \*userMessageIn)

### 12.40.1 Detailed Description

Integer specific wrapper for [QCaObject](#).

#### Version

#### Revision:

#6

#### Date

#### DateTime:

2010/09/06 13:16:04

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/data/include/QCaInteger.h`

## 12.41 QCaIntegerFormatting Class Reference

Provides textual formatting for [QCaInteger](#) data.

```
#include <QCaIntegerFormatting.h>
```

### Public Member Functions

- long **formatInteger** (const QVariant &value)
- QVariant **formatValue** (const long &integerValue, generic::generic\_types value-Type)
- void **setRadix** (unsigned int radix)
- unsigned int **getPrecision** ()
- unsigned int **getRadix** ()

### 12.41.1 Detailed Description

Provides textual formatting for [QCaInteger](#) data.

#### Version

**Revision:**

#4

**Date****DateTime:**

2010/06/23 07:49:40

**Author**

andrew.rhyder

The documentation for this class was generated from the following file:

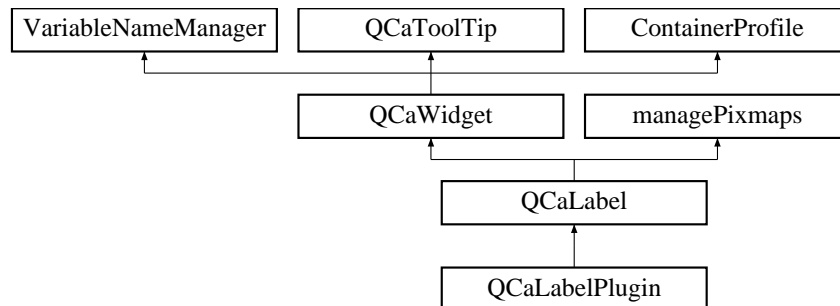
- epicsqt/ca\_framework/data/include/QCaIntegerFormatting.h

## 12.42 QCaLabel Class Reference

Manage updating tool tip with variable name, alarm state and connected state.

```
#include <QCaLabel.h>
```

Inheritance diagram for QCaLabel:

**Public Types**

- enum **updateOptions** { **UPDATE\_TEXT**, **UPDATE\_PIXMAP** }

**Public Slots**

- void **requestEnabled** (const bool &state)

## Signals

- void **dbValueChanged** (const QString &out)
- void **requestResend** ()

## Public Member Functions

- **QCaLabel** (QWidget \*parent=0)
- **QCaLabel** (const QString &variableName, QWidget \*parent=0)
- bool **isEnabled** () const
- void **setEnabled** (bool state)
- void **setUpdateOption** (updateOptions updateOptionIn)
- updateOptions **getUpdateOption** ()
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setVariableAsToolTip** (bool [variableAsToolTip](#))
- bool **getVariableAsToolTip** ()
- void **setPrecision** (unsigned int precision)
- unsigned int **getPrecision** ()
- void **setUseDbPrecision** (bool useDbPrecision)
- bool **getUseDbPrecision** ()
- void **setLeadingZero** (bool leadingZero)
- bool **getLeadingZero** ()
- void **setTrailingZeros** (bool trailingZeros)
- bool **getTrailingZeros** ()
- void **setAddUnits** (bool addUnits)
- bool **getAddUnits** ()
- void **setLocalEnumeration** (QString localEnumeration)
- QString **getLocalEnumeration** ()
- void **setFormat** (QCaStringFormatting::formats format)
- QCaStringFormatting::formats **getFormat** ()
- void **setRadix** (unsigned int radix)
- unsigned int **getRadix** ()
- void **setNotation** (QCaStringFormatting::notations notation)
- QCaStringFormatting::notations **getNotation** ()
- void **setArrayAction** (QCaStringFormatting::arrayActions arrayAction)
- QCaStringFormatting::arrayActions **getArrayAction** ()
- void **setArrayIndex** (unsigned int arrayIndex)
- unsigned int **getArrayIndex** ()
- void **setRunVisible** (bool visibleIn)
- bool **getRunVisible** ()

## Protected Member Functions

- void [establishConnection](#) (unsigned int variableIndex)  
*Initialise macro substitutions. May be used on creation.*

**Protected Attributes**

- [QCaStringFormatting](#) **stringFormatting**
- bool **caEnabled**
- bool **caVisible**
- updateOptions **updateOption**

**12.42.1 Detailed Description**

Manage updating tool tip with variable name, alarm state and connected state.

**Version****Revision:**

#13

**Date****DateTime:**

2010/09/06 13:16:04

**Author**

andrew.rhyder

The documentation for this class was generated from the following file:

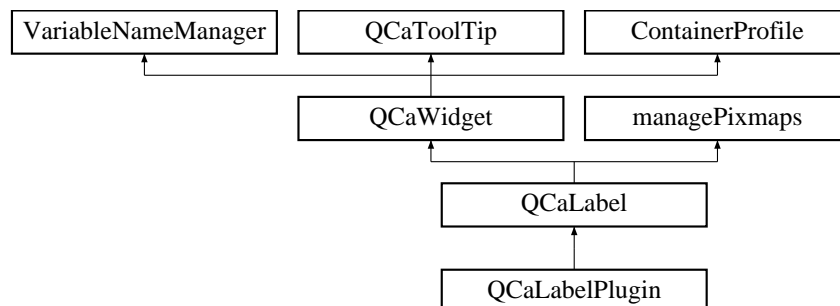
- epicsqt/ca\_framework/widgets/include/QCaLabel.h

**12.43 QCaLabelPlugin Class Reference**

CA Label Widget Plugin for designer.

```
#include <QCaLabelPlugin.h>
```

Inheritance diagram for QCaLabelPlugin:



## Public Types

- enum **UpdateOptions** { **Text** = QCaLabel::UPDATE\_TEXT, **Picture** = QCaLabel::UPDATE\_PIXMAP }
- enum **Formats** {  
**Default** = QCaStringFormatting::FORMAT\_DEFAULT, **Floating** = QCaStringFormatting::FORMAT\_FLOATING, **Integer** = QCaStringFormatting::FORMAT\_INTEGER, **UnsignedInteger** = QCaStringFormatting::FORMAT\_UNSIGNEDINTEGER,  
**Time** = QCaStringFormatting::FORMAT\_TIME, **LocalEnumeration** = QCaStringFormatting::FORMAT\_LOCAL\_ENUMERATE }
- enum **Notations** { **Fixed** = QCaStringFormatting::NOTATION\_FIXED, **Scientific** = QCaStringFormatting::NOTATION\_SCIENTIFIC, **Automatic** = QCaStringFormatting::NOTATION\_AUTOMATIC }
- enum **ArrayActions** { **Append** = QCaStringFormatting::APPEND, **Ascii** = QCaStringFormatting::ASCII, **Index** = QCaStringFormatting::INDEX }

## Public Member Functions

- [QCaLabelPlugin](#) (QWidget \*parent=0)  
*Constructors.*
- **QCaLabelPlugin** (QString variableName, QWidget \*parent=0)
- void **setVariableNameProperty** (QString variableName)
- QString **getVariableNameProperty** ()
- void **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- QString **getVariableNameSubstitutionsProperty** ()
- void **setUpdateOptionProperty** (UpdateOptions updateOption)
- UpdateOptions **getUpdateOptionProperty** ()
- void **setPixmap0Property** (QPixmap pixmap)
- void **setPixmap1Property** (QPixmap pixmap)
- void **setPixmap2Property** (QPixmap pixmap)
- void **setPixmap3Property** (QPixmap pixmap)
- void **setPixmap4Property** (QPixmap pixmap)
- void **setPixmap5Property** (QPixmap pixmap)
- void **setPixmap6Property** (QPixmap pixmap)
- void **setPixmap7Property** (QPixmap pixmap)
- QPixmap **getPixmap0Property** ()
- QPixmap **getPixmap1Property** ()
- QPixmap **getPixmap2Property** ()
- QPixmap **getPixmap3Property** ()
- QPixmap **getPixmap4Property** ()
- QPixmap **getPixmap5Property** ()
- QPixmap **getPixmap6Property** ()
- QPixmap **getPixmap7Property** ()
- void **setFormatProperty** (Formats format)

- Formats **getFormatProperty** ()
- void **setNotationProperty** (Notations notation)
- Notations **getNotationProperty** ()
- void **setArrayActionProperty** (ArrayActions arrayAction)
- ArrayActions **getArrayActionProperty** ()

## Properties

- QString **variable**
- QString **variableSubstitutions**
- bool **variableAsToolTip**  
*Flag if data updates should be requested.*
- bool **enabled**
- UpdateOptions **updateOption**  
*Update options (text, pixmap, or both)*
- QPixmap **pixmap0**  
*Pixmaps.*
- QPixmap **pixmap1**
- QPixmap **pixmap2**
- QPixmap **pixmap3**
- QPixmap **pixmap4**
- QPixmap **pixmap5**
- QPixmap **pixmap6**
- QPixmap **pixmap7**
- unsigned **int**  
*String formatting properties.*
- bool **useDbPrecision**
- bool **leadingZero**
- bool **trailingZeros**
- bool **addUnits**
- QString **localEnumeration**
- Formats **format**
- Notations **notation**
- ArrayActions **arrayAction**
- bool **visible**

### 12.43.1 Detailed Description

CA Label Widget Plugin for designer.

#### Version

#### Revision:

#11

#### Date

#### DateTime:

2010/09/06 11:58:56

#### Author

andrew.rhyder

### 12.43.2 Property Documentation

#### 12.43.2.1 QString QCaLabelPlugin::variable [read, write]

Note, a property macro in the form 'Q\_PROPERTY(QString variableName READ ...' doesn't work. A property name ending with 'Name' results in some sort of string a variable being displayed, but will only accept alphanumeric and won't generate call-backs on change.

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaLabelPlugin.h

## 12.44 QCaLabelPluginManager Class Reference

CA Label Widget Plugin Manager for designer.

```
#include <QCaLabelPluginManager.h>
```

### Public Member Functions

- **QCaLabelPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const



- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.44.1 Detailed Description

CA Label Widget Plugin Manager for designer. ???

#### Version

#### Revision:

#4

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

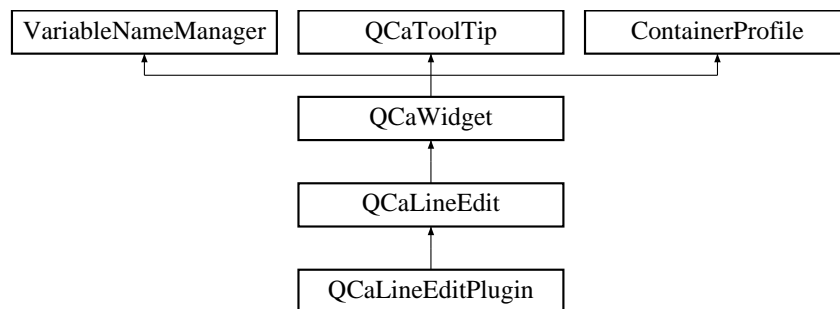
- epicsqt/ca\_framework/plugins/include/QCaLabelPluginManager.h

## 12.45 QCaLineEdit Class Reference

CA Line Edit Widget.

```
#include <QCaLineEdit.h>
```

Inheritance diagram for QCaLineEdit:



## Public Slots

- void [requestEnabled](#) (const bool &state)  
*Act on the user signaling text editing is complete (pressing return)*

## Signals

- void **dbValueChanged** (const QString &out)

## Public Member Functions

- **QCaLineEdit** (QWidget \*parent=0)
- **QCaLineEdit** (const QString &variableName, QWidget \*parent=0)
- bool **isEnabled** () const
- void **setEnabled** (bool state)
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setWriteOnLoseFocus** (bool [writeOnLoseFocus](#))
- bool **getWriteOnLoseFocus** ()
- void **setWriteOnEnter** (bool [writeOnEnter](#))
- bool **getWriteOnEnter** ()
- void **setSubscribe** (bool [subscribe](#))
- bool **getSubscribe** ()
- void **setVariableAsToolTip** (bool [variableAsToolTip](#))
- bool **getVariableAsToolTip** ()
- void **setConfirmWrite** (bool [confirmWrite](#))
- bool **getConfirmWrite** ()
- void **setPrecision** (unsigned int precision)
- unsigned int **getPrecision** ()
- void **setUseDbPrecision** (bool useDbPrecision)
- bool **getUseDbPrecision** ()
- void **setLeadingZero** (bool leadingZero)
- bool **getLeadingZero** ()
- void **setTrailingZeros** (bool trailingZeros)
- bool **getTrailingZeros** ()
- void **setAddUnits** (bool addUnits)
- bool **getAddUnits** ()
- void **setFormat** (QCaStringFormatting::formats format)
- QCaStringFormatting::formats **getFormat** ()
- void **setRadix** (unsigned int radix)
- unsigned int **getRadix** ()
- void **setNotation** (QCaStringFormatting::notations notation)
- QCaStringFormatting::notations **getNotation** ()

### Protected Member Functions

- void [establishConnection](#) (unsigned int variableIndex)

*Request confirmation before writing a value.*

### Protected Attributes

- [QCaStringFormatting](#) **stringFormatting**

- bool [writeOnLoseFocus](#)

*String formatting options.*

- bool [writeOnEnter](#)

*Write changed value to database when widget object loses focus (user moves from widget)*

- bool [localEnabled](#)

*Write changed value to database when enter is pressed with focus on the widget.*

- bool [confirmWrite](#)

*Override the default widget `setEnabled` to allow alarm states to override current enabled state.*

#### 12.45.1 Detailed Description

CA Line Edit Widget.

#### Version

#### Revision:

#13

#### Date

#### DateTime:

2010/09/06 13:16:04

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

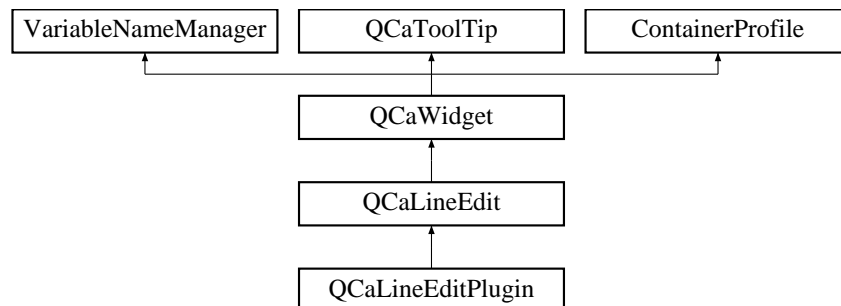
- `epicsqt/ca_framework/widgets/include/QCaLineEdit.h`

## 12.46 QCaLineEditPlugin Class Reference

CA Line Edit Widget Plugin.

```
#include <QCaLineEditPlugin.h>
```

Inheritance diagram for QCaLineEditPlugin:



### Public Types

- enum **Formats** {  
**Default** = QCaStringFormatting::FORMAT\_DEFAULT, **Floating** = QCaStringFormatting::FORMAT\_FLOATING, **Integer** = QCaStringFormatting::FORMAT\_INTEGER, **UnsignedInteger** = QCaStringFormatting::FORMAT\_UNSIGNEDINTEGER,  
**Time** = QCaStringFormatting::FORMAT\_TIME }
- enum **Notations** { **Fixed** = QCaStringFormatting::NOTATION\_FIXED, **Scientific** = QCaStringFormatting::NOTATION\_SCIENTIFIC, **Automatic** = QCaStringFormatting::NOTATION\_AUTOMATIC }

### Public Member Functions

- [QCaLineEditPlugin](#) (QWidget \*parent=0)  
*Constructors.*
- **QCaLineEditPlugin** (QString variableName, QWidget \*parent=0)
- void **setVariableNameProperty** (QString variableName)
- QString **getVariableNameProperty** ()
- void **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- QString **getVariableNameSubstitutionsProperty** ()
- void **setFormatProperty** (Formats format)
- Formats **getFormatProperty** ()
- void **setNotationProperty** (Notations notation)
- Notations **getNotationProperty** ()

## Properties

- QString **variable**
- QString **variableSubstitutions**
- bool **writeOnLoseFocus**  
*String formatting options.*
- bool **writeOnEnter**  
*Write changed value to database when widget object loses focus (user moves from widget)*
- bool **subscribe**  
*Set the number of variables that will stream data updates to the widget. Default of 1 if not called.*
- bool **variableAsToolTip**  
*Flag if data updates should be requested.*
- bool **enabled**
- bool **confirmWrite**  
*Override the default widget `setEnabled` to allow alarm states to override current enabled state.*
- unsigned **int**  
*String formatting properties.*
- bool **useDbPrecision**
- bool **leadingZero**
- bool **trailingZeros**
- bool **addUnits**
- Formats **format**
- Notations **notation**

### 12.46.1 Detailed Description

CA Line Edit Widget Plugin.

#### Version

#### Revision:

#9

#### Date

**DateTime:**

2010/09/06 11:58:56

**Author**

andrew.rhyder

**12.46.2 Property Documentation****12.46.2.1 QString QCaLineEditPlugin::variable** [read, write]

Note, a property macro in the form 'Q\_PROPERTY(QString variableName READ ...)' doesn't work. A property name ending with 'Name' results in some sort of string a variable being displayed, but will only accept alphanumeric and won't generate call-backs on change.

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaLineEditPlugin.h

**12.47 QCaLineEditPluginManager Class Reference**

CA Line Edit Widget Plugin Manager for designer.

```
#include <QCaLineEditPluginManager.h>
```

**Public Member Functions**

- **QCaLineEditPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

**12.47.1 Detailed Description**

CA Line Edit Widget Plugin Manager for designer.

**Version**

**Revision:**

#4

**Date****DateTime:**

2010/06/23 07:49:40

**Author**

andrew.rhyder

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaLineEditPluginManager.h

## 12.48 QCaObject Class Reference

Provides channel access to QT.

```
#include <QCaObject.h>
```

### 12.48.1 Detailed Description

Provides channel access to QT.

**Version****Revision:**

#10

**Date****DateTime:**

2010/09/06 13:16:04

**Author**

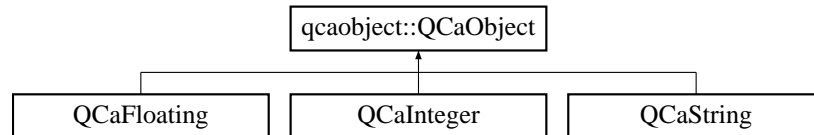
anthony.owen

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaObject.h

## 12.49 qcaobject::QCaObject Class Reference

Inheritance diagram for qcaobject::QCaObject:



### Public Slots

- bool **writeData** (const QVariant &value)
- void **resendLastData** ()

### Signals

- void **dataChanged** (const QVariant &value, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp)
- void **connectionChanged** ([QCaConnectionInfo](#) &connectionInfo)

### Public Member Functions

- **QCaObject** (const QString &recordName, QObject \*eventObject)
- **QCaObject** (const QString &recordName, QObject \*eventObject, [UserMessage](#) \*userMessageIn)
- bool **subscribe** ()
- bool **singleShotRead** ()
- bool **dataTypeKnown** ()
- bool **createChannel** ()

*State machine access functions.*

- void **deleteChannel** ()
- bool **createSubscription** ()
- bool **getChannel** ()
- bool **putChannel** ()
- bool **isChannelConnected** ()
- void **startConnectionTimer** ()
- void **stopConnectionTimer** ()
- void **setUserMessage** ([UserMessage](#) \*userMessageIn)
- void **enableWriteCallbacks** (bool enable)
- bool **isWriteCallbacksEnabled** ()
- QString **getEgu** ()
- QStringList **getEnumerations** ()
- unsigned int **getPrecision** ()



- double **getDisplayLimitUpper** ()
- double **getDisplayLimitLower** ()
- double **getAlarmLimitUpper** ()
- double **getAlarmLimitLower** ()
- double **getWarningLimitUpper** ()
- double **getWarningLimitLower** ()
- double **getControlLimitUpper** ()
- double **getControlLimitLower** ()

### Static Public Member Functions

- static void **processEventStatic** ([QCaEventUpdate](#) \*dataUpdateEvent)

### Protected Member Functions

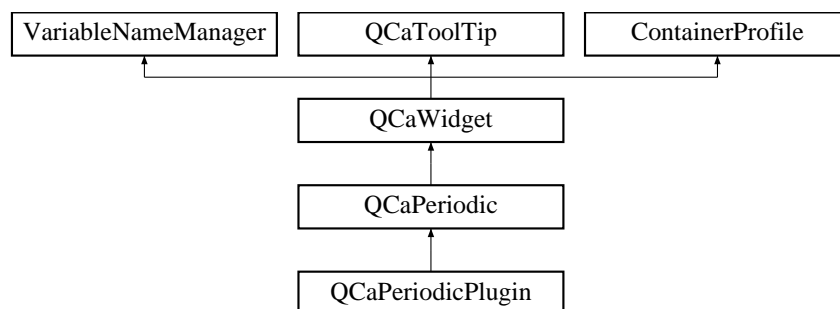
- generic::generic\_types **getDataType** ()

The documentation for this class was generated from the following file:

- [epicsqt/ca\\_framework/data/include/QCaObject.h](#)

## 12.50 QCaPeriodic Class Reference

Inheritance diagram for QCaPeriodic:



### Classes

- struct [elementInfoStruct](#)
- struct [userInfoStructArray](#)

## Public Types

- enum **variableTypes** {  
**VARIABLE\_TYPE\_NUMBER**, **VARIABLE\_TYPE\_ATOMIC\_WEIGHT**, **VARIABLE\_TYPE\_MELTING\_POINT**, **VARIABLE\_TYPE\_BOILING\_POINT**,  
**VARIABLE\_TYPE\_DENSITY**, **VARIABLE\_TYPE\_GROUP**, **VARIABLE\_TYPE\_IONIZATION\_ENERGY**, **VARIABLE\_TYPE\_USER\_VALUE\_1**,  
**VARIABLE\_TYPE\_USER\_VALUE\_2** }
- enum **presentationOptions** { **PRESENTATION\_BUTTON\_AND\_LABEL**, **PRESENTATION\_BUTTON\_ONLY**, **PRESENTATION\_LABEL\_ONLY** }

## Public Slots

- void **requestEnabled** (const bool &state)

## Signals

- void **dbValueChanged** (const double &out)
- void **dbElementChanged** (const QString &out)
- void **requestResend** ()

## Public Member Functions

- **QCaPeriodic** (QWidget \*parent=0)
- **QCaPeriodic** (const QString &variableName, QWidget \*parent=0)
- bool **isEnabled** () const
- void **setEnabled** (const bool &state)
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setSubscribe** (bool [subscribe](#))
- bool **getSubscribe** ()
- void **setVariableAsToolTip** (bool [variableAsToolTip](#))
- bool **getVariableAsToolTip** ()
- void **setPresentationOption** (presentationOptions presentationOptionIn)
- presentationOptions **getPresentationOption** ()
- void **setVariableType1** (variableTypes variableType1In)
- variableTypes **getVariableType1** ()
- void **setVariableType2** (variableTypes variableType2In)
- variableTypes **getVariableType2** ()
- void **setVariableTolerance1** (double variableTolerance1In)
- double **getVariableTolerance1** ()
- void **setVariableTolerance2** (double variableTolerance2In)
- double **getVariableTolerance2** ()
- void **setUserInfo** (QString userInfo)
- QString **getUserInfo** ()

### Public Attributes

- [userInfoStruct](#) **userInfo** [NUM\_ELEMENTS]

### Static Public Attributes

- static [elementInfoStruct](#) **elementInfo** [NUM\_ELEMENTS]

### Protected Member Functions

- void [establishConnection](#) (unsigned int variableIndex)  
*Initialise macro substitutions. May be used on creation.*

### Protected Attributes

- [QCaFloatingFormatting](#) **floatingFormatting**
- bool **localEnabled**
- variableTypes **variableType1**
- variableTypes **variableType2**
- double **variableTolerance1**
- double **variableTolerance2**

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/widgets/include/QCaPeriodic.h

## 12.51 QCaPeriodicComponentData Class Reference

### Public Attributes

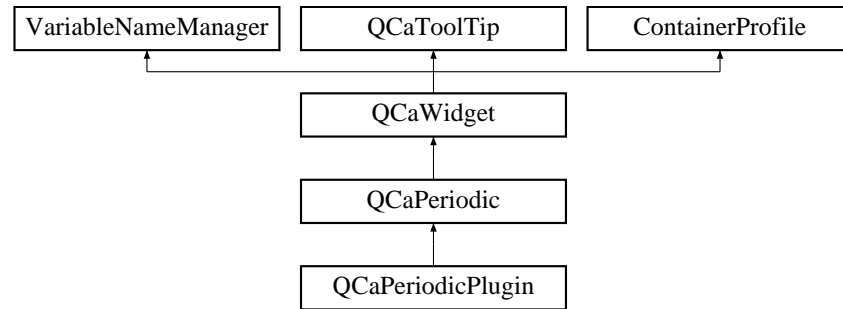
- unsigned int **variableIndex1**
- double **lastData1**
- bool **haveLastData1**
- unsigned int **variableIndex2**
- double **lastData2**
- bool **haveLastData2**

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/widgets/include/QCaPeriodic.h

## 12.52 QCaPeriodicPlugin Class Reference

Inheritance diagram for QCaPeriodicPlugin:



### Public Types

- enum **PresentationOptions** { **buttonAndLabel** = QCaPeriodic::PRESENTATION\_BUTTON\_AND\_LABEL, **buttonOnly** = QCaPeriodic::PRESENTATION\_BUTTON\_ONLY, **labelOnly** = QCaPeriodic::PRESENTATION\_LABEL\_ONLY }
- enum **VariableTypes** {  
**Number** = QCaPeriodic::VARIABLE\_TYPE\_NUMBER, **atomicWeight** = QCaPeriodic::VARIABLE\_TYPE\_ATOMIC\_WEIGHT, **meltingPoint** = QCaPeriodic::VARIABLE\_TYPE\_MELTING\_POINT, **boilingPoint** = QCaPeriodic::VARIABLE\_TYPE\_BOILING\_POINT,  
**density** = QCaPeriodic::VARIABLE\_TYPE\_DENSITY, **group** = QCaPeriodic::VARIABLE\_TYPE\_GROUP, **ionizationEnergy** = QCaPeriodic::VARIABLE\_TYPE\_IONIZATION\_ENERGY, **userValue1** = QCaPeriodic::VARIABLE\_TYPE\_USER\_VALUE\_1,  
**userValue2** = QCaPeriodic::VARIABLE\_TYPE\_USER\_VALUE\_2 }

### Public Member Functions

- [QCaPeriodicPlugin](#) (QWidget \*parent=0)  
*Constructors.*
- **QCaPeriodicPlugin** (QString variableName, QWidget \*parent=0)
- void **setVariableName1Property** (QString variable1Name)
- QString **getVariableName1Property** ()
- void **setVariableNameSubstitutions1Property** (QString variableNameSubstitutions1)
- QString **getVariableNameSubstitutions1Property** ()
- void **setVariableName2Property** (QString variable2Name)
- QString **getVariableName2Property** ()
- void **setVariableNameSubstitutions2Property** (QString variableNameSubstitutions2)

- QString **getVariableNameSubstitutions2Property** ()
- void **setVariableName3Property** (QString variable3Name)
- QString **getVariableName3Property** ()
- void **setVariableNameSubstitutions3Property** (QString variableNameSubstitutions3)
- QString **getVariableNameSubstitutions3Property** ()
- void **setVariableName4Property** (QString variable4Name)
- QString **getVariableName4Property** ()
- void **setVariableNameSubstitutions4Property** (QString variableNameSubstitutions4)
- QString **getVariableNameSubstitutions4Property** ()
- void **setPresentationOptionProperty** (PresentationOptions presentationOption)
- PresentationOptions **getPresentationOptionProperty** ()
- void **setVariableType1Property** (VariableTypes variableType)
- void **setVariableType2Property** (VariableTypes variableType)
- VariableTypes **getVariableType1Property** ()
- VariableTypes **getVariableType2Property** ()

## Properties

- QString **writeButtonVariable1**
- QString **writeButtonVariableSubstitutions1**
- QString **writeButtonVariable2**
- QString **writeButtonVariableSubstitutions2**
- QString **readbackLabelVariable1**
- QString **readbackLabelVariableSubstitutions1**
- QString **readbackLabelVariable2**
- QString **readbackLabelVariableSubstitutions2**
- bool **subscribe**  
*Set the number of variables that will stream data updates to the widget. Default of 1 if not called.*
- bool **variableAsToolTip**  
*Flag if data updates should be requested.*
- bool **enabled**
- PresentationOptions **presentationOption**
- VariableTypes **variableType1**
- VariableTypes **variableType2**
- double **variableTolerance1**
- double **variableTolerance2**
- QString **userInfo**

## 12.52.1 Property Documentation

### 12.52.1.1 QString QCaPeriodicPlugin::writeButtonVariable1 [read, write]

Note, a property macro in the form 'Q\_PROPERTY(QString variableName READ ...)' doesn't work. A property name ending with 'Name' results in some sort of string a variable being displayed, but will only accept alphanumeric and won't generate callbacks on change.

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaPeriodicPlugin.h

## 12.53 QCaPeriodicPluginManager Class Reference

```
#include <QCaPeriodicPluginManager.h>
```

### Public Member Functions

- **QCaPeriodicPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.53.1 Detailed Description

???

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaPeriodicPluginManager.h

## 12.54 QCaPeriodicPluginTaskMenu Class Reference

### Public Member Functions

- **QCaPeriodicPluginTaskMenu** ([QCaPeriodicPlugin](#) \*periodicPlugin, QObject \*parent)

- QAction \* **preferredEditAction** () const
- QList< QAction \* > **taskActions** () const

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaPeriodicPluginTaskMenu.h

## 12.55 QCaPeriodicPluginTaskMenuFactory Class Reference

### Public Member Functions

- **QCaPeriodicPluginTaskMenuFactory** (QExtensionManager \*parent=0)

### Protected Member Functions

- QObject \* **createExtension** (QObject \*object, const QString &iid, QObject \*parent)  
const

The documentation for this class was generated from the following file:

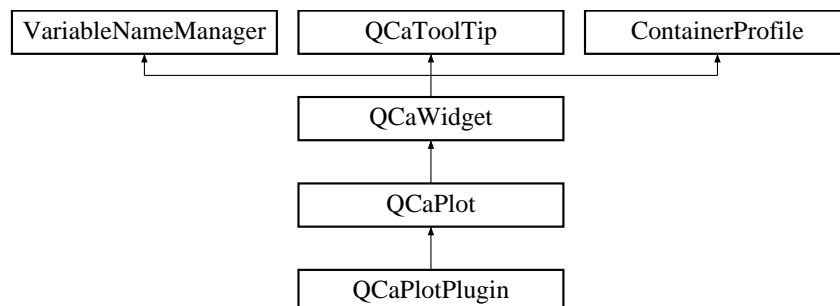
- epicsqt/ca\_framework/plugins/include/QCaPeriodicPluginTaskMenu.h

## 12.56 QCaPlot Class Reference

Manage updating tool tip with variable name, alarm state and connected state.

```
#include <QCaPlot.h>
```

Inheritance diagram for QCaPlot:



### Public Slots

- void **requestEnabled** (const bool &state)

## Signals

- void **dbValueChanged** (const double &out)
- void **dbValueChanged** (const QVector< double > &out)

## Public Member Functions

- **QCaPlot** (QWidget \*parent=0)
- **QCaPlot** (const QString &variableName, QWidget \*parent=0)
- bool **isEnabled** () const
- void **setEnabled** (bool state)
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setSubscribe** (bool [subscribe](#))
- bool **getSubscribe** ()
- void **setVariableAsToolTip** (bool [variableAsToolTip](#))
- bool **getVariableAsToolTip** ()
- void **setYMin** (double yMin)
- double **getYMin** ()
- void **setYMax** (double yMax)
- double **getYMax** ()
- void **setAutoScale** (bool autoScale)
- bool **getAutoScale** ()
- void **setAxisEnableX** (bool axisEnableXIn)
- bool **getAxisEnableX** ()
- void **setAxisEnableY** (bool axisEnableYIn)
- bool **getAxisEnableY** ()
- QString **getTitle** ()
- void **setBackgroundColor** (QColor backgroundColor)
- QColor **getBackgroundColor** ()
- void **setTraceStyle** (QwtPlotCurve::CurveStyle traceStyle, const unsigned int variableIndex)
- QwtPlotCurve::CurveStyle **getTraceStyle** (const unsigned int variableIndex)
- void **setTraceColor** (QColor traceColor, const unsigned int variableIndex)
- void **setTraceColor1** (QColor traceColor)
- void **setTraceColor2** (QColor traceColor)
- void **setTraceColor3** (QColor traceColor)
- void **setTraceColor4** (QColor traceColor)
- QColor **getTraceColor** (const unsigned int variableIndex)
- QColor **getTraceColor1** ()
- QColor **getTraceColor2** ()
- QColor **getTraceColor3** ()
- QColor **getTraceColor4** ()
- void **setTraceLegend1** (QString traceLegend)
- void **setTraceLegend2** (QString traceLegend)
- void **setTraceLegend3** (QString traceLegend)



- void **setTraceLegend4** (QString traceLegend)
- QString **getTraceLegend1** ()
- QString **getTraceLegend2** ()
- QString **getTraceLegend3** ()
- QString **getTraceLegend4** ()
- void **setXUnit** (QString xUnit)
- QString **getXUnit** ()
- void **setYUnit** (QString yUnit)
- QString **getYUnit** ()
- void **setGridEnableMajorX** (bool gridEnableMajorXIn)
- void **setGridEnableMajorY** (bool gridEnableMajorYIn)
- void **setGridEnableMinorX** (bool gridEnableMinorXIn)
- void **setGridEnableMinorY** (bool gridEnableMinorYIn)
- bool **getGridEnableMajorX** ()
- bool **getGridEnableMajorY** ()
- bool **getGridEnableMinorX** ()
- bool **getGridEnableMinorY** ()
- void **setGridMajorColor** (QColor gridMajorColorIn)
- void **setGridMinorColor** (QColor gridMinorColorIn)
- QColor **getGridMajorColor** ()
- QColor **getGridMinorColor** ()
- void **setXStart** (double xStart)
- double **getXStart** ()
- void **setXIncrement** (double xIncrement)
- double **getXIncrement** ()
- void **setTimeSpan** (unsigned int timeSpan)
- unsigned int **getTimeSpan** ()
- void **setTickRate** (unsigned int tickRate)
- unsigned int **getTickRate** ()

### Protected Member Functions

- void [establishConnection](#) (unsigned int variableIndex)  
*Initialise macro substitutions. May be used on creation.*
- void **setRunVisible** (bool visibleIn)

### Protected Attributes

- [QCaFloatingFormatting](#) **floatingFormatting**
- bool **localEnabled**
- bool **visible**

### 12.56.1 Detailed Description

Manage updating tool tip with variable name, alarm state and connected state.

#### Version

#### Revision:

#4

#### Date

#### DateTime:

2010/09/06 13:16:04

#### Author

glenn.jackson

The documentation for this class was generated from the following file:

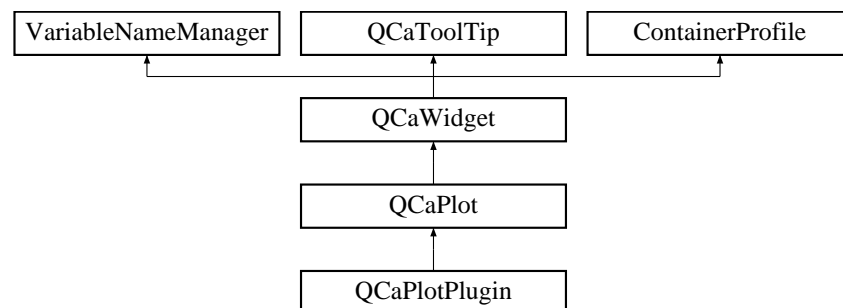
- epicsqt/ca\_framework/widgets/include/QCaPlot.h

## 12.57 QCaPlotPlugin Class Reference

CA Plot Widget Plugin for designer.

```
#include <QCaPlotPlugin.h>
```

Inheritance diagram for QCaPlotPlugin:



#### Public Types

- enum **TraceStyles** { **Lines** = QwtPlotCurve::Lines, **Sticks** = QwtPlotCurve::Sticks, **Steps** = QwtPlotCurve::Steps, **Dots** = QwtPlotCurve::Dots }

## Public Member Functions

- [QCaPlotPlugin](#) (QWidget \*parent=0)

*Constructors.*

- **QCaPlotPlugin** (QString variableName, QWidget \*parent=0)
- void **setVariableName1Property** (QString variable1Name)
- QString **getVariableName1Property** ()
- void **setVariableName2Property** (QString variable2Name)
- QString **getVariableName2Property** ()
- void **setVariableName3Property** (QString variable3Name)
- QString **getVariableName3Property** ()
- void **setVariableName4Property** (QString variable4Name)
- QString **getVariableName4Property** ()
- void **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- QString **getVariableNameSubstitutionsProperty** ()
- void **setTraceStyle1** (TraceStyles traceStyle)
- void **setTraceStyle2** (TraceStyles traceStyle)
- void **setTraceStyle3** (TraceStyles traceStyle)
- void **setTraceStyle4** (TraceStyles traceStyle)
- TraceStyles **getTraceStyle1** ()
- TraceStyles **getTraceStyle2** ()
- TraceStyles **getTraceStyle3** ()
- TraceStyles **getTraceStyle4** ()

## Properties

- QString **variable1**
- QString **variable2**
- QString **variable3**
- QString **variable4**
- QString **variableSubstitutions**
- bool [variableAsToolTip](#)

*Flag if data updates should be requested.*

- QColor **traceColor1**
- QColor **traceColor2**
- QColor **traceColor3**
- QColor **traceColor4**
- TraceStyles **traceStyle1**
- TraceStyles **traceStyle2**
- TraceStyles **traceStyle3**
- TraceStyles **traceStyle4**
- QString **traceLegend1**
- QString **traceLegend2**

- QString **traceLegend3**
- QString **traceLegend4**
- double **yMin**
- double **yMax**
- bool **autoScale**
- bool **axisEnableX**
- bool **axisEnableY**
- bool **gridEnableMajorX**
- bool **gridEnableMajorY**
- bool **gridEnableMinorX**
- bool **gridEnableMinorY**
- QColor **gridMajorColor**
- QColor **gridMinorColor**
- QString **title**
- QColor **backgroundColor**
- QString **xUnit**
- QString **yUnit**
- double **xStart**
- double **xIncrement**
- unsigned **int**

### 12.57.1 Detailed Description

CA Plot Widget Plugin for designer.

#### Version

#### Revision:

#3

#### Date

#### DateTime:

2010/09/06 11:58:56

#### Author

glenn.jackson

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaPlotPlugin.h

## 12.58 QCaPlotPluginManager Class Reference

CA Plot Widget Plugin Manager for designer.

```
#include <QCaPlotPluginManager.h>
```

### Public Member Functions

- **QCaPlotPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.58.1 Detailed Description

CA Plot Widget Plugin Manager for designer. ???

#### Version

#### Revision:

#1

#### Date

#### DateTime:

2010/08/30 16:37:08

#### Author

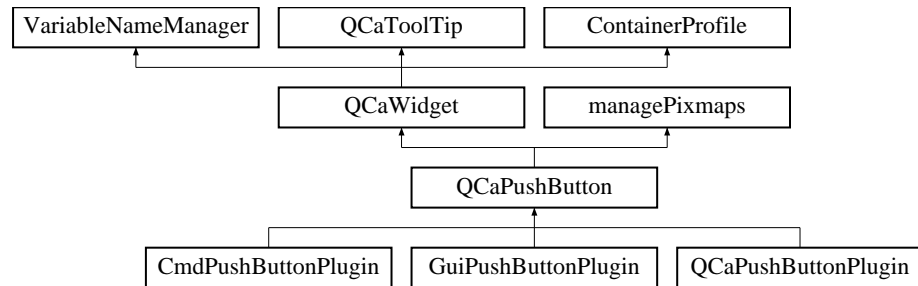
glenn.jackson

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaPlotPluginManager.h

## 12.59 QCaPushButton Class Reference

Inheritance diagram for QCaPushButton:



### Public Types

- enum **updateOptions** { **UPDATE\_TEXT**, **UPDATE\_ICON**, **UPDATE\_TEXT\_AND\_ICON** }

### Public Slots

- void **requestEnabled** (const bool &state)
- void **onGeneralMessage** (QString message)

### Signals

- void **dbValueChanged** (const QString &out)
- void **newGui** (QString [guiName](#), QString substitutions, ASguiForm::creationOptions [creationOption](#))

### Public Member Functions

- **QCaPushButton** (QWidget \*parent=0)
- **QCaPushButton** (const QString &variableName, QWidget \*parent=0)
- bool **isEnabled** () const
- void **setEnabled** (const bool &state)
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setSubscribe** (bool [subscribe](#))
- bool **getSubscribe** ()
- void **setVariableAsToolTip** (bool [variableAsToolTip](#))
- bool **getVariableAsToolTip** ()
- void **setUpdateOption** (updateOptions updateOptionIn)
- updateOptions **getUpdateOption** ()

- void **setPrecision** (unsigned int precision)
- unsigned int **getPrecision** ()
- void **setUseDbPrecision** (bool useDbPrecision)
- bool **getUseDbPrecision** ()
- void **setLeadingZero** (bool leadingZero)
- bool **getLeadingZero** ()
- void **setTrailingZeros** (bool trailingZeros)
- bool **getTrailingZeros** ()
- void **setAddUnits** (bool addUnits)
- bool **getAddUnits** ()
- void **setFormat** (QCaStringFormatting::formats format)
- QCaStringFormatting::formats **getFormat** ()
- void **setRadix** (unsigned int radix)
- unsigned int **getRadix** ()
- void **setNotation** (QCaStringFormatting::notations notation)
- QCaStringFormatting::notations **getNotation** ()
- void **setWriteOnPress** (bool writeOnPress)
- bool **getWriteOnPress** ()
- void **setWriteOnRelease** (bool writeOnRelease)
- bool **getWriteOnRelease** ()
- void **setWriteOnClick** (bool writeOnClick)
- bool **getWriteOnClick** ()
- void **setPressText** (QString [pressText](#))
- QString **getPressText** ()
- void **setReleaseText** (QString releaseTextIn)
- QString **getReleaseText** ()
- void **setClickText** (QString clickTextIn)
- QString **getClickText** ()
- void **setProgram** (QString [program](#))
- QString **getProgram** ()
- void **setArguments** (QStringList [arguments](#))
- QStringList **getArguments** ()
- void **setGuiName** (QString [guiName](#))
- QString **getGuiName** ()
- void **setCreationOption** (ASguiForm::creationOptions [creationOption](#))
- ASguiForm::creationOptions **getCreationOption** ()

### Protected Member Functions

- void [establishConnection](#) (unsigned int variableIndex)  
*Initialise macro substitutions. May be used on creation.*

### Protected Attributes

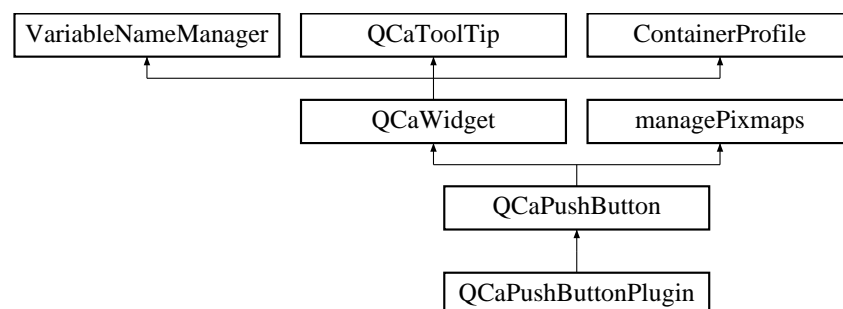
- [QCaStringFormatting](#) **stringFormatting**
- bool **writeOnPress**
- bool **writeOnRelease**
- bool **writeOnClick**
- QString **releaseText**
- QString **pressText**  
*Text to write on a button release.*
- QString **clickText**  
*Text to write on a button press.*
- QString **program**  
*Text to write on a button click.*
- QStringList **arguments**  
*Program to run.*
- QString **guiName**  
*Program arguments.*
- ASguiForm::creationOptions **creationOption**  
*GUI file name to launch.*
- bool **localEnabled**
- updateOptions **updateOption**

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/widgets/include/QCaPushButton.h`

## 12.60 QCaPushButtonPlugin Class Reference

Inheritance diagram for QCaPushButtonPlugin:





## Public Types

- enum **UpdateOptions** { **Text** = QCaPushButton::UPDATE\_TEXT, **Icon** = QCaPushButton::UPDATE\_ICON, **TextAndIcon** = QCaPushButton::UPDATE\_TEXT\_AND\_ICON }
- enum **Formats** {  
**Default** = QCaStringFormatting::FORMAT\_DEFAULT, **Floating** = QCaStringFormatting::FORMAT\_FLOATING, **Integer** = QCaStringFormatting::FORMAT\_INTEGER, **UnsignedInteger** = QCaStringFormatting::FORMAT\_UNSIGNEDINTEGER,  
**Time** = QCaStringFormatting::FORMAT\_TIME }
- enum **Notations** { **Fixed** = QCaStringFormatting::NOTATION\_FIXED, **Scientific** = QCaStringFormatting::NOTATION\_SCIENTIFIC, **Automatic** = QCaStringFormatting::NOTATION\_AUTOMATIC }
- enum **CreationOptionNames** { **Open** = ASguiForm::CREATION\_OPTION\_OPEN, **NewTab** = ASguiForm::CREATION\_OPTION\_NEW\_TAB, **NewWindow** = ASguiForm::CREATION\_OPTION\_NEW\_WINDOW }

## Public Member Functions

- [QCaPushButtonPlugin](#) (QWidget \*parent=0)  
*Constructors.*
- **QCaPushButtonPlugin** (QString variableName, QWidget \*parent=0)
- void **setVariableNameProperty** (QString variableName)
- QString **getVariableNameProperty** ()
- void **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- QString **getVariableNameSubstitutionsProperty** ()
- void **setUpdateOptionProperty** (UpdateOptions updateOption)
- UpdateOptions **getUpdateOptionProperty** ()
- void **setPixmap0Property** (QPixmap pixmap)
- void **setPixmap1Property** (QPixmap pixmap)
- void **setPixmap2Property** (QPixmap pixmap)
- void **setPixmap3Property** (QPixmap pixmap)
- void **setPixmap4Property** (QPixmap pixmap)
- void **setPixmap5Property** (QPixmap pixmap)
- void **setPixmap6Property** (QPixmap pixmap)
- void **setPixmap7Property** (QPixmap pixmap)
- QPixmap **getPixmap0Property** ()
- QPixmap **getPixmap1Property** ()
- QPixmap **getPixmap2Property** ()
- QPixmap **getPixmap3Property** ()
- QPixmap **getPixmap4Property** ()
- QPixmap **getPixmap5Property** ()
- QPixmap **getPixmap6Property** ()
- QPixmap **getPixmap7Property** ()
- void **setFormatProperty** (Formats format)

- Formats **getFormatProperty** ()
- void **setNotationProperty** (Notations notation)
- Notations **getNotationProperty** ()
- void **setCreationOptionProperty** (CreationOptionNames creationOptionIn)
- CreationOptionNames **getCreationOptionProperty** ()

## Properties

- QString **variable**
- QString **variableSubstitutions**
- bool **subscribe**

*Set the number of variables that will stream data updates to the widget. Default of 1 if not called.*

- bool **variableAsToolTip**

*Flag if data updates should be requested.*

- bool **enabled**
- UpdateOptions **updateOption**

*Update options (text, pixmap, or both)*

- QPixmap **pixmap0**

*Pixmaps.*

- QPixmap **pixmap1**
- QPixmap **pixmap2**
- QPixmap **pixmap3**
- QPixmap **pixmap4**
- QPixmap **pixmap5**
- QPixmap **pixmap6**
- QPixmap **pixmap7**
- unsigned **int**

*String formatting properties.*

- bool **useDbPrecision**
- bool **leadingZero**
- bool **trailingZeros**
- bool **addUnits**
- Formats **format**
- Notations **notation**
- bool **writeOnPress**
- bool **writeOnRelease**
- bool **writeOnClick**
- QString **pressText**

*Text to write on a button release.*

- QString **releaseText**
- QString [clickText](#)  
*Text to write on a button press.*
- QString [program](#)  
*Text to write on a button click.*
- QStringList [arguments](#)  
*Program to run.*
- QString **guiFile**
- CreationOptionNames [creationOption](#)  
*GUI file name to launch.*

### 12.60.1 Property Documentation

#### 12.60.1.1 QString QCaPushButtonPlugin::variable [read, write]

Note, a property macro in the form 'Q\_PROPERTY(QString variableName READ ...)' doesn't work. A property name ending with 'Name' results in some sort of string a variable being displayed, but will only accept alphanumeric and won't generate call-backs on change.

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaPushButtonPlugin.h

## 12.61 QCaPushButtonPluginManager Class Reference

CA Push Button Widget Plugin Manager for designer.

```
#include <QCaPushButtonPluginManager.h>
```

### Public Member Functions

- **QCaPushButtonPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.61.1 Detailed Description

CA Push Button Widget Plugin Manager for designer. ???

#### Version

#### Revision:

#4

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

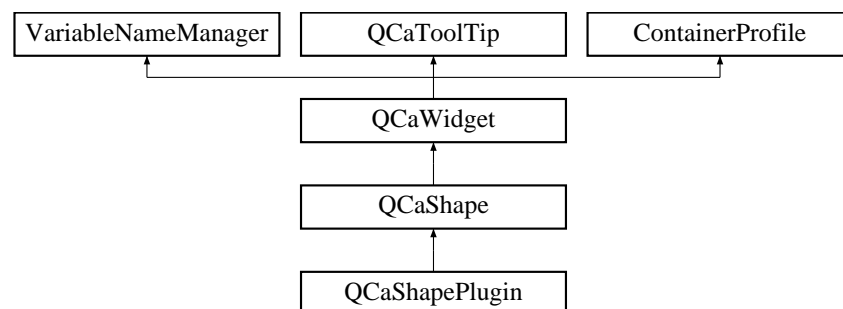
- `epicsqt/ca_framework/plugins/include/QCaPushButtonPluginManager.h`

## 12.62 QCaShape Class Reference

CA Shape Widget.

```
#include <QCaShape.h>
```

Inheritance diagram for QCaShape:



#### Public Types

- enum **Shape** {

- Line, Points, Polyline, Polygon,**
- Rect, RoundedRect, Ellipse, Arc,**
- Chord, Pie, Path, Text,**
- Pixmap }**
- enum **Animations {**
- Width, Height, X, Y,**
- Transperency, Rotation, ColourHue, ColourSaturation,**
- ColourValue, ColourIndex, Penwidth }**

### Public Slots

- void **requestEnabled** (const bool &state)

### Signals

- void **dbValueChanged1** (const qlonglong &out)
- void **dbValueChanged2** (const qlonglong &out)
- void **dbValueChanged3** (const qlonglong &out)
- void **dbValueChanged4** (const qlonglong &out)
- void **dbValueChanged5** (const qlonglong &out)
- void **dbValueChanged6** (const qlonglong &out)

### Public Member Functions

- **QCaShape** (QWidget \*parent=0)
- **QCaShape** (const QString &variableName, QWidget \*parent=0)
- bool **isEnabled** () const
- void **setEnabled** (bool state)
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setAnimation** (Animations animation, const int index)
- Animations **getAnimation** (const int index)
- void **setScale** (const double scale, const int index)
- double **getScale** (const int index)
- void **setOffset** (const double offset, const int index)
- double **getOffset** (const int index)
- void **setBorder** (const bool border)
- bool **getBorder** ()
- void **setFill** (const bool fill)
- bool **getFill** ()
- void **setSubscribe** (const bool [subscribe](#))
- bool **getSubscribe** ()
- void **setVariableAsToolTip** (const bool [variableAsToolTip](#))
- bool **getVariableAsToolTip** ()

- void **setShape** (Shape shape)
- Shape **getShape** ()
- void **setNumPoints** (const unsigned int numPoints)
- unsigned int **getNumPoints** ()
- void **setOriginTranslation** (const QPoint originTranslation)
- QPoint **getOriginTranslation** ()
- void **setPoint** (const QPoint point, const int index)
- QPoint **getPoint** (const int index)
- void **setColor** (const QColor color, const int index)
- QColor **getColor** (const int index)
- void **setDrawBorder** (const bool drawBorder)
- bool **getDrawBorder** ()
- void **setLineWidth** (const unsigned int lineWidth)
- unsigned int **getLineWidth** ()
- void **setStartAngle** (const double startAngle)
- double **getStartAngle** ()
- void **setRotation** (const double rotation)
- double **getRotation** ()
- void **setArcLength** (const double arcLength)
- double **getArcLength** ()
- void **setText** (const QString text)
- QString **getText** ()

### Protected Member Functions

- void **colorChange** (unsigned int index)
  - void **establishConnection** (unsigned int variableIndex)
- Index into colorsProperty last used when setting brush color.*

### Protected Attributes

- [QCaIntegerFormatting](#) **integerFormatting**
- double **offsets** [OFFSETS\_SIZE]
- double **scales** [SCALES\_SIZE]
- Shape **shape**
- QPoint **originTranslation**
- QPoint **points** [POINTS\_SIZE]
- unsigned int **numPoints**
- QColor **colors** [COLORS\_SIZE]
- Animations **animations** [6]
- bool **fill**
- bool **border**
- double **startAngle**
- double **arcLength**

- QString **text**
- double **rotation**
- unsigned int **lineWidth**
- bool **drawBorder**
- bool **localEnabled**
- unsigned int **currentColor**

*Act on a color property change. (will update shape if using the color)*

### 12.62.1 Detailed Description

CA Shape Widget.

#### Version

#### Revision:

#12

#### Date

#### DateTime:

2010/09/06 13:16:04

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

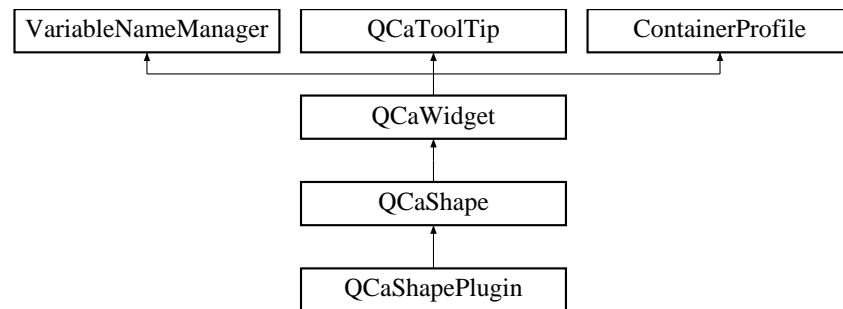
- epicsqt/ca\_framework/widgets/include/QCaShape.h

## 12.63 QCaShapePlugin Class Reference

CA Shape Widget Plugin.

```
#include <QCaShapePlugin.h>
```

Inheritance diagram for QCaShapePlugin:



## Public Types

- enum **animationOptions** {  
**Width** = QCaShape::Width, **Height** = QCaShape::Height, **X** = QCaShape::X, **Y** = QCaShape::Y,  
**Transperency** = QCaShape::Transperency, **Rotation** = QCaShape::Rotation, **ColourHue** = QCaShape::ColourHue, **ColourSaturation** = QCaShape::ColourSaturation,  
**ColourValue** = QCaShape::ColourValue, **ColourIndex** = QCaShape::ColourIndex,  
**Penwidth** = QCaShape::Penwidth }
- enum **shapeOptions** {  
**Line** = QCaShape::Line, **Points** = QCaShape::Points, **Polyline** = QCaShape::Polyline,  
**Polygon** = QCaShape::Polygon,  
**Rect** = QCaShape::Rect, **RoundedRect** = QCaShape::RoundedRect, **Ellipse** = QCaShape::Ellipse, **Arc** = QCaShape::Arc,  
**Chord** = QCaShape::Chord, **Pie** = QCaShape::Pie, **Path** = QCaShape::Path,  
**Text** = QCaShape::Text,  
**Pixmap** = QCaShape::Pixmap }

## Public Member Functions

- [QCaShapePlugin](#) (QWidget \*parent=0)  
*Constructors.*
- **QCaShapePlugin** (QString variableName, QWidget \*parent=0)
- void **setVariableName1Property** (QString variable1Name)
- QString **getVariableName1Property** ()
- void **setVariableName2Property** (QString variable2Name)
- QString **getVariableName2Property** ()
- void **setVariableName3Property** (QString variable3Name)
- QString **getVariableName3Property** ()
- void **setVariableName4Property** (QString variable4Name)
- QString **getVariableName4Property** ()
- void **setVariableName5Property** (QString variable5Name)



- **QString** **getVariableName5Property** ()
- **void** **setVariableName6Property** (QString variable6Name)
- **QString** **getVariableName6Property** ()
- **void** **setAnimation1Property** (animationOptions animation)
- **animationOptions** **getAnimation1Property** ()
- **void** **setAnimation2Property** (animationOptions animation)
- **animationOptions** **getAnimation2Property** ()
- **void** **setAnimation3Property** (animationOptions animation)
- **animationOptions** **getAnimation3Property** ()
- **void** **setAnimation4Property** (animationOptions animation)
- **animationOptions** **getAnimation4Property** ()
- **void** **setAnimation5Property** (animationOptions animation)
- **animationOptions** **getAnimation5Property** ()
- **void** **setAnimation6Property** (animationOptions animation)
- **animationOptions** **getAnimation6Property** ()
- **void** **setScale1Property** (double scale)
- **double** **getScale1Property** ()
- **void** **setScale2Property** (double scale)
- **double** **getScale2Property** ()
- **void** **setScale3Property** (double scale)
- **double** **getScale3Property** ()
- **void** **setScale4Property** (double scale)
- **double** **getScale4Property** ()
- **void** **setScale5Property** (double scale)
- **double** **getScale5Property** ()
- **void** **setScale6Property** (double scale)
- **double** **getScale6Property** ()
- **void** **setOffset1Property** (double offset)
- **double** **getOffset1Property** ()
- **void** **setOffset2Property** (double offset)
- **double** **getOffset2Property** ()
- **void** **setOffset3Property** (double offset)
- **double** **getOffset3Property** ()
- **void** **setOffset4Property** (double offset)
- **double** **getOffset4Property** ()
- **void** **setOffset5Property** (double offset)
- **double** **getOffset5Property** ()
- **void** **setOffset6Property** (double offset)
- **double** **getOffset6Property** ()
- **void** **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- **QString** **getVariableNameSubstitutionsProperty** ()
- **void** **setShapeProperty** (shapeOptions shape)
- **shapeOptions** **getShapeProperty** ()
- **void** **setPoint1Property** (QPoint point)
- **QPoint** **getPoint1Property** ()

- void **setPoint2Property** (QPoint point)
- QPoint **getPoint2Property** ()
- void **setPoint3Property** (QPoint point)
- QPoint **getPoint3Property** ()
- void **setPoint4Property** (QPoint point)
- QPoint **getPoint4Property** ()
- void **setPoint5Property** (QPoint point)
- QPoint **getPoint5Property** ()
- void **setPoint6Property** (QPoint point)
- QPoint **getPoint6Property** ()
- void **setPoint7Property** (QPoint point)
- QPoint **getPoint7Property** ()
- void **setPoint8Property** (QPoint point)
- QPoint **getPoint8Property** ()
- void **setPoint9Property** (QPoint point)
- QPoint **getPoint9Property** ()
- void **setPoint10Property** (QPoint point)
- QPoint **getPoint10Property** ()
- void **setColor1Property** (QColor color)
- QColor **getColor1Property** ()
- void **setColor2Property** (QColor color)
- QColor **getColor2Property** ()
- void **setColor3Property** (QColor color)
- QColor **getColor3Property** ()
- void **setColor4Property** (QColor color)
- QColor **getColor4Property** ()
- void **setColor5Property** (QColor color)
- QColor **getColor5Property** ()
- void **setColor6Property** (QColor color)
- QColor **getColor6Property** ()
- void **setColor7Property** (QColor color)
- QColor **getColor7Property** ()
- void **setColor8Property** (QColor color)
- QColor **getColor8Property** ()
- void **setColor9Property** (QColor color)
- QColor **getColor9Property** ()
- void **setColor10Property** (QColor color)
- QColor **getColor10Property** ()

### Properties

- QString [variable1](#)
- QString **variable2**
- QString **variable3**
- QString **variable4**
- QString **variable5**

- QString **variable6**
- animationOptions **animation1**
- animationOptions **animation2**
- animationOptions **animation3**
- animationOptions **animation4**
- animationOptions **animation5**
- animationOptions **animation6**
- double **scale1**
- double **scale2**
- double **scale3**
- double **scale4**
- double **scale5**
- double **scale6**
- double **offset1**
- double **offset2**
- double **offset3**
- double **offset4**
- double **offset5**
- double **offset6**
- bool **border**
- bool **fill**
- QString **variableSubstitutions**
- bool [subscribe](#)

*Set the number of variables that will stream data updates to the widget. Default of 1 if not called.*

- bool [variableAsToolTip](#)

*Flag if data updates should be requested.*

- bool **enabled**
- shapeOptions **shape**
- unsigned **int**
- QPoint **originTranslation**
- QPoint **point1**
- QPoint **point2**
- QPoint **point3**
- QPoint **point4**
- QPoint **point5**
- QPoint **point6**
- QPoint **point7**
- QPoint **point8**
- QPoint **point9**
- QPoint **point10**
- QColor **color1**
- QColor **color2**
- QColor **color3**

- QColor **color4**
- QColor **color5**
- QColor **color6**
- QColor **color7**
- QColor **color8**
- QColor **color9**
- QColor **color10**
- bool **drawBorder**
- double **startAngle**
- double **rotation**
- double **arcLength**
- QString **text**

### 12.63.1 Detailed Description

CA Shape Widget Plugin.

#### Version

#### Revision:

#7

#### Date

#### DateTime:

2010/09/06 11:58:56

#### Author

andrew.rhyder

### 12.63.2 Property Documentation

#### 12.63.2.1 QString QCaShapePlugin::variable1 [read, write]

Note, a property macro in the form 'Q\_PROPERTY(QString variableName READ ...)' doesn't work. A property name ending with 'Name' results in some sort of string a variable being displayed, but will only accept alphanumeric and won't generate call-backs on change.

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaShapePlugin.h

## 12.64 QCaShapePluginManager Class Reference

CA Shape Widget Plugin Manager for designer.

```
#include <QCaShapePluginManager.h>
```

### Public Member Functions

- **QCaShapePluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.64.1 Detailed Description

CA Shape Widget Plugin Manager for designer.

#### Version

#### Revision:

#4

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

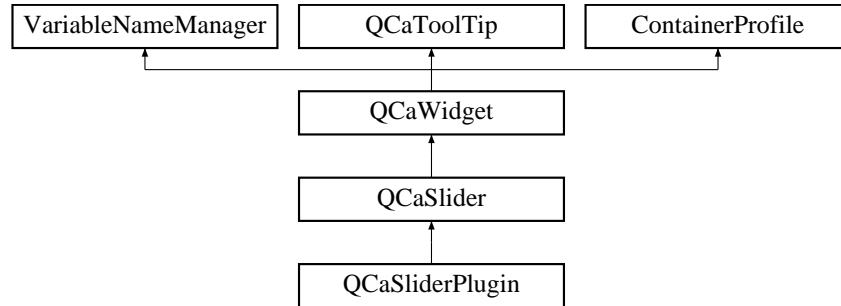
- epicsqt/ca\_framework/plugins/include/QCaShapePluginManager.h

## 12.65 QCaSlider Class Reference

CA Slider Widget.

```
#include <QCaSlider.h>
```

Inheritance diagram for QCaSlider:



### Public Slots

- void **requestEnabled** (const bool &state)

### Signals

- void **dbValueChanged** (const qulonglong &out)

### Public Member Functions

- **QCaSlider** (QWidget \*parent=0)
- **QCaSlider** (const QString &variableName, QWidget \*parent=0)
- bool **isEnabled** () const
- void **setEnabled** (bool state)
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setWriteOnChange** (bool [writeOnChange](#))
- bool **getWriteOnChange** ()
- void **setSubscribe** (bool [subscribe](#))
- bool **getSubscribe** ()
- void **setVariableAsToolTip** (bool [variableAsToolTip](#))
- bool **getVariableAsToolTip** ()

### Protected Member Functions

- void [establishConnection](#) (unsigned int variableIndex)  
*Initialise macro substitutions. May be used on creation.*

### Protected Attributes

- [QCaIntegerFormatting](#) **integerFormatting**
- bool [writeOnChange](#)

*Integer formatting options.*

- bool [localEnabled](#)

*Write changed value to database when ever the position changes.*

#### 12.65.1 Detailed Description

CA Slider Widget.

#### Version

#### Revision:

#12

#### Date

#### DateTime:

2010/09/06 13:16:04

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

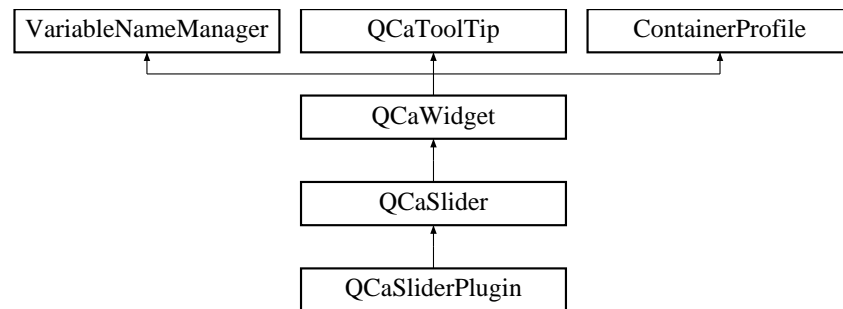
- `epicsqt/ca_framework/widgets/include/QCaSlider.h`

## 12.66 QCaSliderPlugin Class Reference

CA Slider Widget Plugin.

```
#include <QCaSliderPlugin.h>
```

Inheritance diagram for QCaSliderPlugin:



## Public Member Functions

- [QCaSliderPlugin](#) (QWidget \*parent=0)  
*Constructors.*
- [QCaSliderPlugin](#) (QString variableName, QWidget \*parent=0)
- void [setVariableNameProperty](#) (QString variableName)
- QString [getVariableNameProperty](#) ()
- void [setVariableNameSubstitutionsProperty](#) (QString variableNameSubstitutions)
- QString [getVariableNameSubstitutionsProperty](#) ()

## Properties

- QString [variable](#)
- QString [variableSubstitutions](#)
- bool [enabled](#)
- bool [writeOnChange](#)  
*Integer formatting options.*
- bool [subscribe](#)  
*Set the number of variables that will stream data updates to the widget. Default of 1 if not called.*
- bool [variableAsToolTip](#)  
*Flag if data updates should be requested.*

### 12.66.1 Detailed Description

CA Slider Widget Plugin.

## Version



**Revision:**

#6

**Date****DateTime:**

2010/09/06 11:58:56

**Author**

andrew.rhyder

**12.66.2 Property Documentation****12.66.2.1 QString QCaSliderPlugin::variable** [read, write]

Note, a property macro in the form 'Q\_PROPERTY(QString variableName READ ...)' doesn't work. A property name ending with 'Name' results in some sort of string a variable being displayed, but will only accept alphanumeric and won't generate call-backs on change.

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaSliderPlugin.h

**12.67 QCaSliderPluginManager Class Reference**

CA Slider Widget Plugin Manager for designer.

```
#include <QCaSliderPluginManager.h>
```

**Public Member Functions**

- **QCaSliderPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.67.1 Detailed Description

CA Slider Widget Plugin Manager for designer.

#### Version

#### Revision:

#4

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

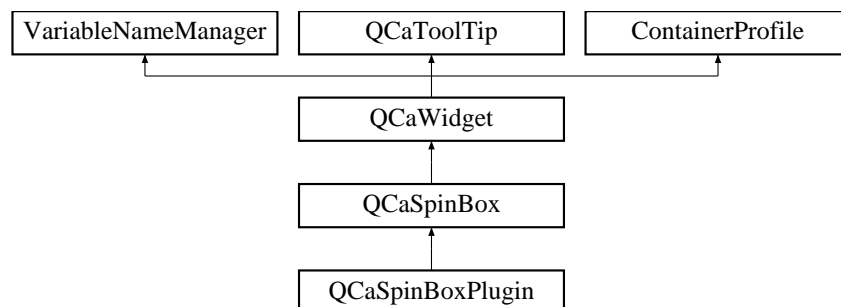
- epicsqt/ca\_framework/plugins/include/QCaSliderPluginManager.h

## 12.68 QCaSpinBox Class Reference

CA Spinbox Widget.

```
#include <QCaSpinBox.h>
```

Inheritance diagram for QCaSpinBox:



#### Public Slots

- void **requestEnabled** (const bool &state)

## Signals

- void **dbValueChanged** (const qlonglong &out)

## Public Member Functions

- **QCaSpinBox** (QWidget \*parent=0)
- **QCaSpinBox** (const QString &variableName, QWidget \*parent=0)
- bool **isEnabled** () const
- void **setEnabled** (bool state)
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setSubscribe** (bool [subscribe](#))
- bool **getSubscribe** ()
- void **setVariableAsToolTip** (bool [variableAsToolTip](#))
- bool **getVariableAsToolTip** ()

## Protected Member Functions

- void [establishConnection](#) (unsigned int variableIndex)  
*Initialise macro substitutions. May be used on creation.*

## Protected Attributes

- [QCaIntegerFormatting](#) **integerFormatting**
- bool **localEnabled**

### 12.68.1 Detailed Description

CA Spinbox Widget.

#### Version

#### Revision:

#12

#### Date

#### DateTime:

2010/09/06 13:16:04

**Author**

andrew.rhyder

The documentation for this class was generated from the following file:

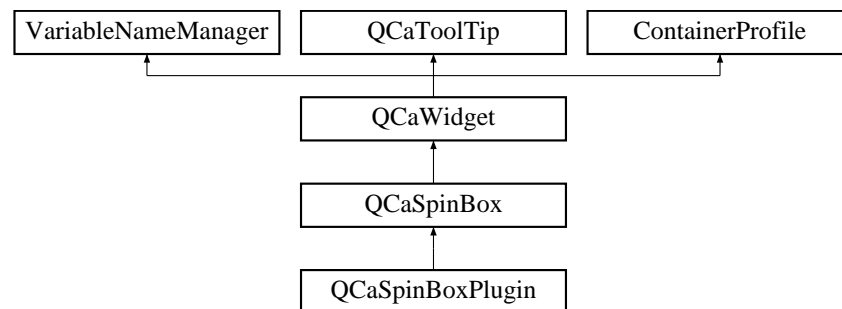
- epicsqt/ca\_framework/widgets/include/QCaSpinBox.h

**12.69 QCaSpinBoxPlugin Class Reference**

CA Spinbox Widget Plugin.

```
#include <QCaSpinBoxPlugin.h>
```

Inheritance diagram for QCaSpinBoxPlugin:

**Public Member Functions**

- **QCaSpinBoxPlugin** (QWidget \*parent=0)
- **QCaSpinBoxPlugin** (QString variableName, QWidget \*parent=0)
- void **setVariableNameProperty** (QString variableName)
- QString **getVariableNameProperty** ()
- void **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- QString **getVariableNameSubstitutionsProperty** ()

**Properties**

- QString **variable**
- QString **variableSubstitutions**
- bool **subscribe**

*Set the number of variables that will stream data updates to the widget. Default of 1 if not called.*

- bool **variableAsToolTip**

*Flag if data updates should be requested.*

- bool **enabled**

### 12.69.1 Detailed Description

CA Spinbox Widget Plugin.

#### Version

#### Revision:

#6

#### Date

#### DateTime:

2010/09/06 11:58:56

#### Author

andrew.rhyder

### 12.69.2 Property Documentation

#### 12.69.2.1 QString QCaSpinBoxPlugin::variable [read, write]

Note, a property macro in the form 'Q\_PROPERTY(QString variableName READ ...)' doesn't work. A property name ending with 'Name' results in some sort of string a variable being displayed, but will only accept alphanumeric and won't generate call-backs on change.

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaSpinBoxPlugin.h

## 12.70 QCaSpinBoxPluginManager Class Reference

CA Spinbox Widget Plugin Manager for designer.

```
#include <QCaSpinBoxPluginManager.h>
```

### Public Member Functions

- **QCaSpinBoxPluginManager** (QObject \*parent=0)

- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.70.1 Detailed Description

CA Spinbox Widget Plugin Manager for designer.

#### Version

#### Revision:

#4

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QCaSpinBoxPluginManager.h

## 12.71 QCaStateMachine Class Reference

Statemachine architecture.

```
#include <QCaStateMachine.h>
```

### 12.71.1 Detailed Description

Statemachine architecture.

#### Version

#### Revision:

#7

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

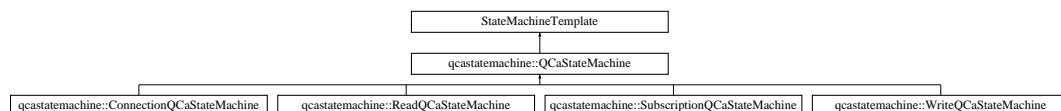
anthony.owen

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaStateMachine.h

## 12.72 qcastatemachine::QCaStateMachine Class Reference

Inheritance diagram for qcastatemachine::QCaStateMachine:



### Public Member Functions

- **QCaStateMachine** (void \*parent)
- virtual bool **process** (int requestedState)=0

### Public Attributes

- QMutex **lock**
- bool **pending**
- bool **active**
- bool **expired**

- void \* **myWorker**

The documentation for this class was generated from the following file:

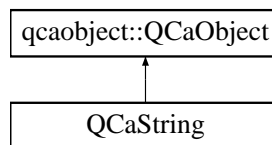
- epicsqt/ca\_framework/data/include/QCaStateMachine.h

## 12.73 QCaString Class Reference

String wrapper for [QCaObject](#) variant data.

```
#include <QCaString.h>
```

Inheritance diagram for QCaString:



### Public Slots

- void **writeString** (const QString &data)

### Signals

- void **stringChanged** (const QString &value, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp, const unsigned int &variableIndex)

### Public Member Functions

- **QCaString** (QString recordName, QObject \*eventObject, [QCaStringFormatting](#) \*stringFormattingIn, unsigned int variableIndexIn)
- **QCaString** (QString recordName, QObject \*eventObject, [QCaStringFormatting](#) \*stringFormattingIn, unsigned int variableIndexIn, [UserMessage](#) \*userMessageIn)

#### 12.73.1 Detailed Description

String wrapper for [QCaObject](#) variant data.

### Version



**Revision:**

#6

**Date****DateTime:**

2010/09/06 13:16:04

**Author**

andrew.rhyder

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaString.h

## 12.74 QCaStringFormatting Class Reference

Formats the string for [QCaString](#) data.

```
#include <QCaStringFormatting.h>
```

**Public Types**

- enum **formats** {  
**FORMAT\_DEFAULT**, **FORMAT\_FLOATING**, **FORMAT\_INTEGER**, **FORMAT\_**-  
**UNSIGNEDINTEGER**,  
**FORMAT\_TIME**, **FORMAT\_LOCAL\_ENUMERATE** }
- enum **notations** { **NOTATION\_FIXED** = QTextStream::FixedNotation, **NOTATION\_**-  
**SCIENTIFIC** = QTextStream::ScientificNotation, **NOTATION\_AUTOMATIC**  
= QTextStream::SmartNotation }
- enum **arrayActions** { **APPEND**, **ASCII**, **INDEX** }

**Public Member Functions**

- QString **formatString** (const QVariant &value)
- QVariant **formatValue** (const QString &text)
- void **setDbEgu** (QString egu)
- void **setDbEnumerations** (QStringList enumerations)  
*Units to be added (or removed) from the formatted string if 'addUnits' flag is set.*
- void **setDbPrecision** (unsigned int dbPrecisionIn)
- void **setDbVariableIsStatField** (bool isStatField)
- void **setPrecision** (unsigned int precision)

- void **setUseDbPrecision** (bool useDbPrecision)
- void **setLeadingZero** (bool leadingZero)
- void **setTrailingZeros** (bool trailingZeros)
- void **setFormat** (formats format)
- void **setRadix** (unsigned int radix)
- void **setNotation** (notations notation)
- void **setArrayAction** (arrayActions arrayActionIn)
- void **setArrayIndex** (unsigned int arrayIndexIn)
- void **setAddUnits** (bool addUnits)
- void **setLocalEnumeration** (QString localEnumerationIn)
- unsigned int **getPrecision** ()
- bool **getUseDbPrecision** ()
- bool **getLeadingZero** ()
- bool **getTrailingZeros** ()
- formats **getFormat** ()
- unsigned int **getRadix** ()
- notations **getNotation** ()
- arrayActions **getArrayAction** ()
- unsigned int **getArrayIndex** ()
- bool **getAddUnits** ()
- QString **getLocalEnumeration** ()

### 12.74.1 Detailed Description

Formats the string for [QCaString](#) data.

#### Version

#### Revision:

#9

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

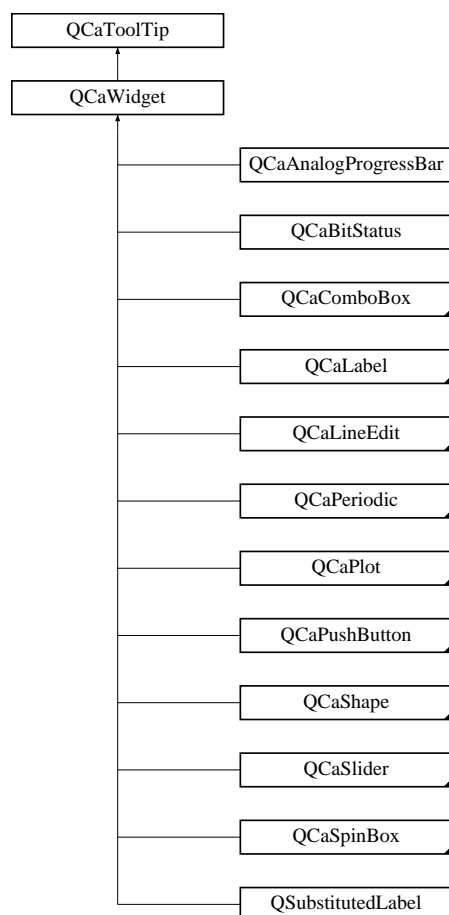
- epicsqt/ca\_framework/data/include/QCaStringFormatting.h

## 12.75 QCaToolTip Class Reference

Manage updating tool tip with variable name, alarm state and connected state.

```
#include <QCaToolTip.h>
```

Inheritance diagram for QCaToolTip:



### Public Member Functions

- void **updateToolTipVariable** (const QString &variable)
- void **updateToolTipAlarm** (const QString &alarm)
- void **updateToolTipConnection** (bool connection)
- virtual void **updateToolTip** (const QString &tip)=0

### 12.75.1 Detailed Description

Manage updating tool tip with variable name, alarm state and connected state.

**Version****Revision:**

#5

**Date****DateTime:**

2010/06/23 07:49:40

**Author**

andrew.rhyder

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/widgets/include/QCaToolTip.h

## 12.76 QCaVariableNamePropertyManager Class Reference

Handles variable name sets.

```
#include <QCaVariableNamePropertyManager.h>
```

**Signals**

- void **newVariableNameProperty** (QString variable, QString Substitutions, unsigned int variableIndex)

**Public Member Functions**

- QString **getVariableNameProperty** ()
- void **setVariableNameProperty** (QString variableNamePropertyIn)
- QString **getSubstitutionsProperty** ()
- void **setSubstitutionsProperty** (QString substitutionsPropertyIn)
- void **setVariableIndex** (unsigned int variableIndexIn)

### 12.76.1 Detailed Description

Handles variable name sets.

**Version**

**Revision:**

#3

**Date****DateTime:**

2010/06/23 07:49:40

**Author**

andrew.rhyder

The documentation for this class was generated from the following file:

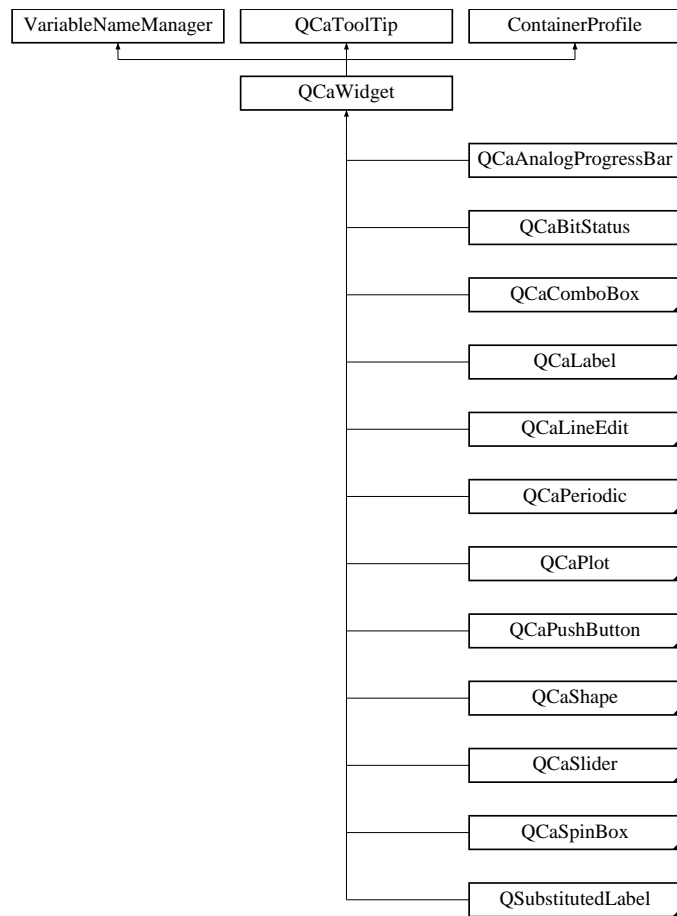
- epicsqt/ca\_framework/data/include/QCaVariableNamePropertyManager.h

## 12.77 QCaWidget Class Reference

Template for Qt-CA aware widgets.

```
#include <QCaWidget.h>
```

Inheritance diagram for QCaWidget:



## Public Member Functions

- [~QCaWidget \(\)](#)

*Constructor.*

- void [activate \(\)](#)

*Manager of messages to the user.*

## Public Attributes

- [UserMessage userMessage](#)

*Destructor.*

### Protected Member Functions

- void [setNumVariables](#) (unsigned int numVariablesIn)  
*Initiate updates.*
- [qcaobject::QCaObject](#) \* [createConnection](#) (unsigned int variableIndex)  
*Flag the tool tip should be set to the variable name.*
- virtual void [setup](#) ()=0  
*Create a CA connection. Return a [QCaObject](#) if successfull.*
- virtual [qcaobject::QCaObject](#) \* [createQcaItem](#) (unsigned int variableIndex)=0  
*???*
- [qcaobject::QCaObject](#) \* [getQcaItem](#) (unsigned int variableIndex)  
*Function to create a appropriate superclass of [QCaObject](#) to stream data updates.*

### Protected Attributes

- bool [subscribe](#)  
*Set the number of variables that will stream data updates to the widget. Default of 1 if not called.*
- bool [variableAsToolTip](#)  
*Flag if data updates should be requested.*

#### 12.77.1 Detailed Description

Template for Qt-CA aware widgets.

#### Version

#### Revision:

#10

#### Date

#### DateTime:

2010/09/06 13:16:04

#### Author

anthony.owen

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/data/include/QCaWidget.h`

## 12.78 QCaWidgets Class Reference

### Public Member Functions

- **QCaWidgets** (QObject \*parent=0)
- virtual QList< QDesignerCustomWidgetInterface \* > **customWidgets** () const

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/plugins/include/QCaDesignerPlugin.h`

## 12.79 QEpicsPV Class Reference

### Public Slots

- const QVariant & **set** (QVariant value, int delay=-1)  
*Sets new value for the field.*
- void **setPV** (const QString &\_pvName="")  
*Sets new PV.*

### Signals

- void **connectionChanged** (bool connected)
- void **connected** ()  
*Emitted on successful connection.*
- void **disconnected** ()  
*Emitted on disconnection, destruction and in `::setPV()` method.*
- void **valueChanged** (const QVariant &value)
- void **valueUpdated** (const QVariant &value)
- void **valueInitd** (const QVariant &value)  
*Emitted on first value update after the connection was established.*



## Public Member Functions

- [QEpicsPV](#) (const QString &\_pvName, QObject \*parent=0)
- [QEpicsPV](#) (QObject \*parent=0)
- [~QEpicsPV](#) ()

*Destructor.*

- const QVariant & [get](#) () const
- void [needUpdated](#) () const

*Starts monitoring for the updates.*

- const QVariant & [getUpdated](#) (int delay=defaultDelay) const

*Returns an updated value of the field.*

- bool [isConnected](#) () const
- const QStringList & [getEnum](#) () const
- const QString & [pv](#) () const
- const QVariant & [getReady](#) (int delay=defaultDelay) const

*Ensures that the object is ready to operate.*

## Static Public Member Functions

- static void [setDebugLevel](#) (unsigned level=0)
- static QVariant [get](#) (const QString &\_pvName, int delay=defaultDelay)
- static QVariant [set](#) (QString &\_pvName, const QVariant &value, int delay=-1)

*Static version of the ::getUpdated() method.*

*Static version of the ::set() method.*

### 12.79.1 Constructor & Destructor Documentation

#### 12.79.1.1 QEpicsPV::QEpicsPV ( const QString & \_pvName, QObject \* parent = 0 )

Constructor.

#### Parameters

<i>_pvName</i>	new PV name.
<i>parent</i>	Object's parent.

#### 12.79.1.2 QEpicsPV::QEpicsPV ( QObject \* parent = 0 )

Constructor.

**Parameters**

<i>parent</i>	Object's parent.
---------------	------------------

**12.79.2 Member Function Documentation****12.79.2.1 void QEpicsPV::connectionChanged ( bool *connected* ) [signal]**

Emitted whenever the connection status has changed.

**Parameters**

<i>connected</i>	new connection status.
------------------	------------------------

**12.79.2.2 static QVariant QEpicsPV::get ( const QString & *\_pvName*, int *delay* = defaultDelay ) [static]**

Static version of the ::getUpdated() method.

Constructs new object of the [QEpicsPV](#) type, gets it ready and returns the value. Useful for the single shot readouts.

**Parameters**

<i>_pvName</i>	PV name of the field.
<i>delay</i>	Maximum waiting time in milliseconds. If zero, then unlimited waiting.

**Returns**

Value of the field. If the value was not updated during the specified delay then returns an invalid object.

**12.79.2.3 const QVariant& QEpicsPV::get ( ) const**

Returns current value of the field.

**Returns**

Latest value of the PV field or invalid object if the field is not connected or before first update.

**12.79.2.4 const QStringList& QEpicsPV::getEnum ( ) const**

PV's enumeration.

**Returns**

The enumeration of the PV field, or the empty list if the PV is not an enumeration.

**12.79.2.5 const QVariant& QEpicsPV::getReady ( int *delay* = defaultDelay ) const**

Ensures that the object is ready to operate.

Connection to the EPICS PV and first update takes certain time after the ::setPV() method or the constructor with name are called. This method waits for the PV to get connected and the value to be initialized before returning.

**Parameters**

<i>delay</i>	Maximum waiting time in milliseconds. If zero, then unlimited waiting. Note that the actual waiting time can be twice as large as the delay: one delay to wait for the connection and one more to wait for the first update.
--------------	--

**Returns**

Field's updated value. If the connection could not be established or the value was not updated then returns an invalid data.

**12.79.2.6 const QVariant& QEpicsPV::getUpdated ( int *delay* = defaultDelay ) const**

Returns an updated value of the field.

Same as ::get(), but ensures that the PV's value was updated since the last call to ::needUpdated() method or establishing the connection.

**Parameters**

<i>delay</i>	Maximum waiting time in milliseconds. If zero, then unlimited waiting.
--------------	--

**Returns**

Updated value of the field. If the value was not updated during the specified delay then returns an invalid object.

**12.79.2.7 bool QEpicsPV::isConnected ( ) const**

Connection status.

**Returns**

true if connected, false otherwise.

**12.79.2.8 void QEpicsPV::needUpdated ( ) const**

Starts monitoring for the updates.

Makes sense only in combination with further call to ::getUpdated(). Ensures that the next call to ::getUpdated() method will return only after a new value of the PV is received.

**12.79.2.9** `const QString& QEpicsPV::pv ( ) const`

PV name.

**Returns**

PV name.

**12.79.2.10** `const QVariant& QEpicsPV::set ( QVariant value, int delay = -1 ) [slot]`

Sets new value for the field.

**Parameters**

<i>value</i>	Value to be set.
<i>delay</i>	Negative delay tells that the confirmation of the update is nor required (just puts the new value and returns). If non-negative, then sets the maximum time in milliseconds to wait for the update event before return. Zero delay sets unlimited waiting time. Note that the method does not confirm the updated value to be equal to the one set.

**Returns**

Last updated value or invalid object if could not confirm the update within the specified delay time.

**12.79.2.11** `static QVariant QEpicsPV::set ( QString & _pvName, const QVariant & value, int delay = -1 ) [static]`

Static version of the `::set()` method.

Constructs new object of the [QEpicsPV](#) type, gets it ready, sets the new value and returns the result of the `::set()` method. Useful for the single shot write.

**Parameters**

<i>_pvName</i>	PV name of the field.
<i>value</i>	Value to be set.
<i>delay</i>	Negative delay tells that the confirmation of the update is nor required (just puts the new value and returns). If non-negative, then sets the maximum time in milliseconds to wait for the update event before return. Zero delay sets unlimited waiting time. Note that the method does not confirm the updated value to be equal to the one set.

**Returns**

Updated value or invalid object if could not confirm the update within the specified delay time.

**12.79.2.12** void QEpicsPV::setPV ( const QString & *\_pvName* = " " ) [slot]

Sets new PV.

First disconnects any previous PV (if any was connected) and connects to the new one (if non-empty).

#### Parameters

<i>_pvName</i>	New PV name.
----------------	--------------

**12.79.2.13** void QEpicsPV::valueChanged ( const QVariant & *value* ) [signal]

Emitted whenever the field is updated with a value different from the old one.

#### Parameters

<i>value</i>	new value.
--------------	------------

**12.79.2.14** void QEpicsPV::valueUpdated ( const QVariant & *value* ) [signal]

Emitted whenever the field is updated (even if the new value is equal to the old one).

#### Parameters

<i>value</i>	new value.
--------------	------------

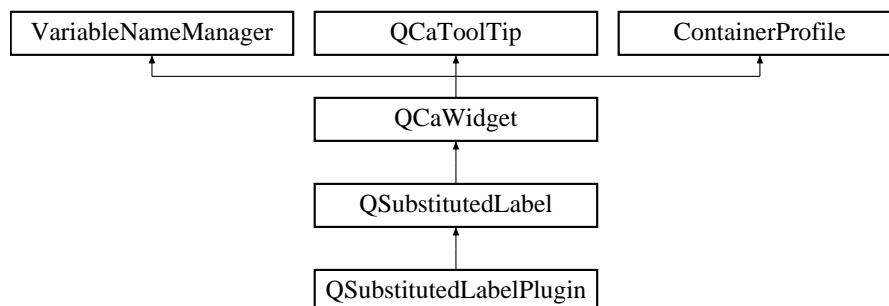
The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/qepicspv.h

## 12.80 QSubstitutedLabel Class Reference

```
#include <QSubstitutedLabel.h>
```

Inheritance diagram for QSubstitutedLabel:



## Public Member Functions

- **QSubstitutedLabel** (QWidget \*parent=0)
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **establishConnection** (unsigned int variableIndex)

*Initialise macro substitutions. May be used on creation.*

### 12.80.1 Detailed Description

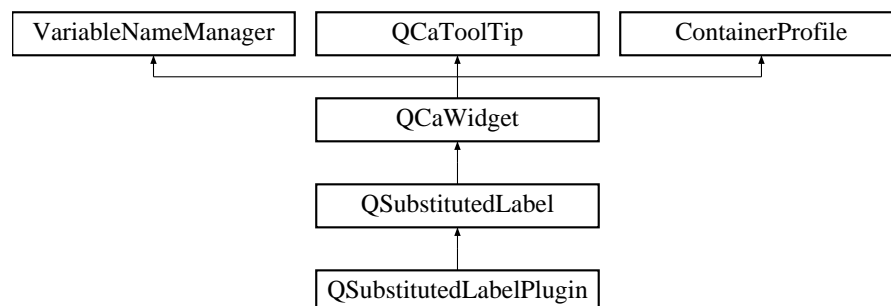
This class is based on the Qt label widget. It is NOT a CA aware widget. It does, however, use the [QCaWidget](#) and its [VariableNameManager](#) base class to manage substituting the label's text in the same way most other widgets manage substitutions in variable names. It is tightly integrated with the base class [QCaWidget](#). Refer to [QCaWidget.cpp](#) for details, but watch out for references to variable names when it is actually just talking about the text that will be displayed in the QLabel widget. This widget is required to implement some virtual functions required by [QCaWidget](#) for managing data connections. These functions are just stubs.

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/widgets/include/QSubstitutedLabel.h`

## 12.81 QSubstitutedLabelPlugin Class Reference

Inheritance diagram for QSubstitutedLabelPlugin:



## Public Member Functions

- **QSubstitutedLabelPlugin** (QWidget \*parent=0)  
*Constructors.*
- **QSubstitutedLabelPlugin** (QString variableName, QWidget \*parent=0)
- void **setVariableNameProperty** (QString variableName)

- QString **getVariableNameProperty** ()
- void **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- QString **getVariableNameSubstitutionsProperty** ()

## Properties

- QString [initialText](#)
- QString [textSubstitutions](#)

### 12.81.1 Property Documentation

#### 12.81.1.1 QString QSubstitutedLabelPlugin::initialText [read, write]

Text to be substituted. NOTE, this plugin uses the variable-name-and-substitutions mechism used to manage variable names to manage text displayed in the label.

#### 12.81.1.2 QString QSubstitutedLabelPlugin::textSubstitutions [read, write]

Text substitutions. NOTE, this plugin uses the variable-name-and-substitutions mechism used to manage variable names to manage text displayed in the label.

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QSubstitutedLabelPlugin.h

## 12.82 QSubstitutedLabelPluginManager Class Reference

```
#include <QSubstitutedLabelPluginManager.h>
```

### Public Member Functions

- **QSubstitutedLabelPluginManager** (QObject \*parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget \* **createWidget** (QWidget \*parent)
- void **initialize** (QDesignerFormEditorInterface \*core)

### 12.82.1 Detailed Description

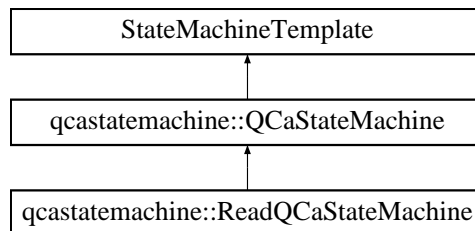
???

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/plugins/include/QSubstitutedLabelPluginManager.h

### 12.83 qcastatemachine::ReadQCaStateMachine Class Reference

Inheritance diagram for qcastatemachine::ReadQCaStateMachine:



#### Public Member Functions

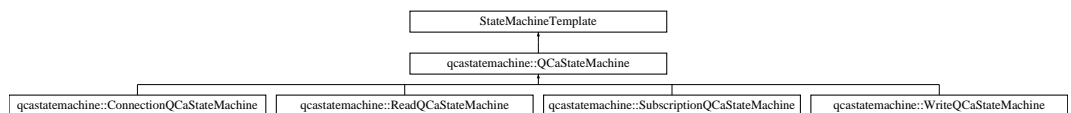
- **ReadQCaStateMachine** (void \*parent)
- bool **process** (int requestedState)

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaStateMachine.h

### 12.84 StateMachineTemplate Class Reference

Inheritance diagram for StateMachineTemplate:



#### Public Member Functions

- virtual bool **process** (int requestedState)=0



### Public Attributes

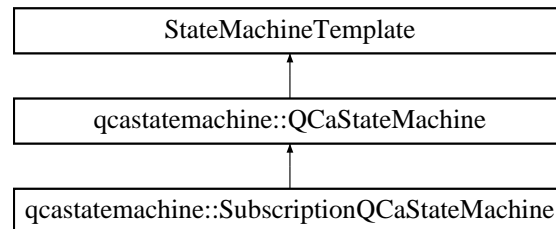
- int **currentState**
- int **requestState**

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaStateMachine.h

## 12.85 qcastatemachine::SubscriptionQCaStateMachine Class Reference

Inheritance diagram for qcastatemachine::SubscriptionQCaStateMachine:



### Public Member Functions

- **SubscriptionQCaStateMachine** (void \*parent)
- bool **process** (int requestedState)

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaStateMachine.h

## 12.86 trace Class Reference

### Public Attributes

- QVector< [QCaDateTime](#) > **timeStamps**
- QVector< double > **xdata**
- QVector< double > **ydata**
- QwtPlotCurve \* **curve**
- QColor **color**
- QString **legend**
- bool **waveform**
- QwtPlotCurve::CurveStyle **style**

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/widgets/include/QCaPlot.h`

## 12.87 `userInfoStruct` Class Reference

### Public Attributes

- bool **enable**
- double **value1**
- double **value2**
- QString **elementText**

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/widgets/include/QCaPeriodic.h`

## 12.88 `QCaPeriodic::userInfoStructArray` Struct Reference

### Public Attributes

- [`userInfoStruct`](#) array [NUM\_ELEMENTS]

The documentation for this struct was generated from the following file:

- `epicsqt/ca_framework/widgets/include/QCaPeriodic.h`

## 12.89 `UserMessage` Class Reference

User message manager.

```
#include <UserMessage.h>
```

### Signals

- void **statusMessage** (QString message)
- void **warningMessage** (QString message)
- void **errorMessage** (QString message)
- void **generalMessage** (QString message)

## Public Member Functions

- void **setup** (QObject \*statusMessageConsumer, QObject \*warningMessageConsumer, QObject \*errorMessageConsumer)
- void **setup** (QObject \*generalMessageConsumer)
- void **sendStatusMessage** (QString message)
- void **sendStatusMessage** (QString message, QString source)
- void **sendWarningMessage** (QString message)
- void **sendWarningMessage** (QString message, QString source)
- void **sendErrorMessage** (QString message)
- void **sendErrorMessage** (QString message, QString source)

### 12.89.1 Detailed Description

User message manager.

#### Version

#### Revision:

#4

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

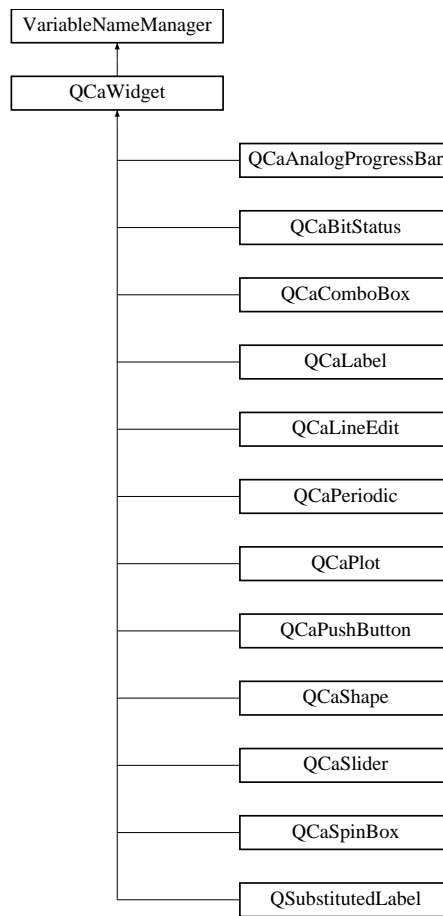
- epicsqt/ca\_framework/data/include/UserMessage.h

## 12.90 VariableNameManager Class Reference

Variable name management.

```
#include <VariableNameManager.h>
```

Inheritance diagram for VariableNameManager:



## Public Member Functions

- void **variableNameManagerInitialise** (unsigned int numVariables)
- QString **getOriginalVariableName** (unsigned int variableIndex)  
*Used to set up the number of variables required (defaults to 1 if this is not called)*
- QString **getVariableNameSubstitutions** ()  
*Return variable name prior to any macro substitutions. (eg, SR\$SECTOR\$V )*
- QString **getSubstitutedVariableName** (unsigned int variableIndex)  
*Return macro substitutions used for variable names (eg, SECTOR=01,V=PRESURE)*
- void **initialiseVariableNameSubstitutions** (const QString &substitutions)  
*Return variable name after macro substitutions.*
- virtual void **establishConnection** (unsigned int variableIndex)=0  
*Initialise macro substitutions. May be used on creation.*

- void [setVariableNameSubstitutionsOverride](#) (const QString &substitutions)  
*Create a CA connection and initiates updates if required.*
- void [setVariableName](#) (const QString &variableName, unsigned int variableIndex)
- void [setVariableNameSubstitutions](#) (const QString &substitutions)  
*Accept a new variable name which may include substitution keys preceeded by \$.*

### 12.90.1 Detailed Description

Variable name management.

#### Version

#### Revision:

#7

#### Date

#### DateTime:

2010/06/23 07:49:40

#### Author

andrew.rhyder

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/data/include/VariableNameManager.h`

## 12.91 WidgetRef Class Reference

### Public Member Functions

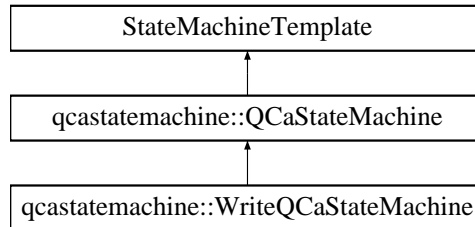
- [WidgetRef](#) ([QCaWidget](#) \*refIn)
- [QCaWidget](#) \* [getRef](#) ()

The documentation for this class was generated from the following file:

- `epicsqt/ca_framework/plugins/include/ContainerProfile.h`

## 12.92 qcastatemachine::WriteQCaStateMachine Class Reference

Inheritance diagram for qcastatemachine::WriteQCaStateMachine:



### Public Member Functions

- **WriteQCaStateMachine** (void \*parent)
- bool **process** (int requestedState)

The documentation for this class was generated from the following file:

- epicsqt/ca\_framework/data/include/QCaStateMachine.h

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