

Mini SCADA

Generated by Doxygen 1.9.8

Chapter 1

Namespace Index

1.1 Namespace List

Here is a list of all namespaces with brief descriptions:

[QT_WARNING_DISABLE_DEPRECATED](#) ??

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

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

DataField	??
NumericField	??
TextField	??
QDialog	
ChartEditorDialog	??
SensorSelectionDialog	??
SettingsDialog	??
QFrame	
InfoPanel	??
QMainWindow	
ClientWindow	??
QObject	
TcpClient	??
QTcpServer	
SensorServer	??
QWidget	
ChartWidget	??
SensorChart	??
ValueProcessor< T >	??

Chapter 3

Class Index

3.1 Class List

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

ChartEditorDialog	Klasa odpowiedzialna za charteditordialog	??
ChartWidget	Klasa odpowiedzialna za chartwidget	??
ClientWindow	Klasa odpowiedzialna za clientwindow	??
DataField	Klasa odpowiedzialna za datafield	??
InfoPanel	Klasa odpowiedzialna za infopanel	??
NumericField	Klasa odpowiedzialna za numericfield	??
SensorChart	Klasa odpowiedzialna za sensorchart	??
SensorSelectionDialog	Klasa odpowiedzialna za sensorselectiondialog	??
SensorServer	??
SettingsDialog	Klasa odpowiedzialna za settingsdialog	??
TcpClient	Klasa odpowiedzialna za tcpclient	??
TextField	Klasa odpowiedzialna za textfield	??
ValueProcessor< T >	Szablon klasy do prostego przetwarzania danych	??

Chapter 4

File Index

4.1 File List

Here is a list of all files with brief descriptions:

ChartEditorDialog.cpp	??
ChartEditorDialog.h	??
ChartWidget.cpp	??
ChartWidget.h	??
ClientWindow.cpp	??
ClientWindow.h	??
DataField.cpp	??
DataField.h	??
InfoPanel.cpp	??
InfoPanel.h	??
main.cpp	??
NumericField.cpp	??
NumericField.h	??
SensorChart.cpp	??
SensorChart.h	??
SensorSelectionDialog.cpp	??
SensorSelectionDialog.h	??
SettingsDialog.cpp	??
SettingsDialog.h	??
TcpClient.cpp	??
TcpClient.h	??
TextField.cpp	??
TextField.h	??
ValueProcessor.h	??
build/Desktop_Qt_6_7_3-Debug/moc_ChartEditorDialog.cpp	??
build/Desktop_Qt_6_7_3-Debug/moc_ChartWidget.cpp	??
build/Desktop_Qt_6_7_3-Debug/moc_ClientWindow.cpp	??
build/Desktop_Qt_6_7_3-Debug/moc_InfoPanel.cpp	??
build/Desktop_Qt_6_7_3-Debug/moc_mainwindow.cpp	??
build/Desktop_Qt_6_7_3-Debug/moc_predefs.h	??
build/Desktop_Qt_6_7_3-Debug/moc_SensorChart.cpp	??
build/Desktop_Qt_6_7_3-Debug/moc_SensorSelectionDialog.cpp	??
build/Desktop_Qt_6_7_3-Debug/moc_SettingsDialog.cpp	??
build/Desktop_Qt_6_7_3-Debug/moc_TcpClient.cpp	??
build/Desktop_Qt_6_7_3-Debug/qrc_qmake_qmake_qm_files.cpp	??
raspberry/QTcpServer.cpp	??

Chapter 5

Namespace Documentation

5.1 QT_WARNING_DISABLE_DEPRECATED Namespace Reference

Chapter 6

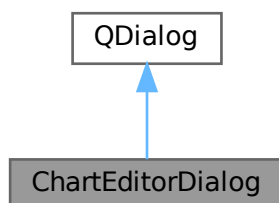
Class Documentation

6.1 ChartEditorDialog Class Reference

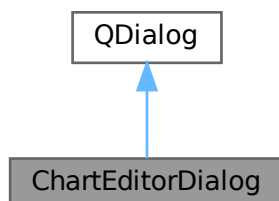
Klasa odpowiedzialna za charteditordialog.

```
#include <ChartEditorDialog.h>
```

Inheritance diagram for ChartEditorDialog:



Collaboration diagram for ChartEditorDialog:



Signals

- void [chartUpdated](#) (const QString &chartName, const QString &chartType, const QColor &lineColor, Qt::↔ PenStyle style, int width, double minY, double maxY)

Public Member Functions

- [ChartEditorDialog](#) (const QStringList &chartNames, QWidget *parent=nullptr)
Metoda [ChartEditorDialog](#).

6.1.1 Detailed Description

Klasa odpowiedzialna za charteditordialog.

6.1.2 Constructor & Destructor Documentation

6.1.2.1 ChartEditorDialog()

```
ChartEditorDialog::ChartEditorDialog (  
    const QStringList & chartNames,  
    QWidget * parent = nullptr ) [explicit]
```

Metoda [ChartEditorDialog](#).

6.1.3 Member Function Documentation

6.1.3.1 chartUpdated

```
void ChartEditorDialog::chartUpdated (  
    const QString & chartName,  
    const QString & chartType,  
    const QColor & lineColor,  
    Qt::PenStyle style,  
    int width,  
    double minY,  
    double maxY ) [signal]
```

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

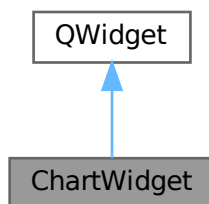
- [ChartEditorDialog.h](#)
- build/Desktop_Qt_6_7_3-Debug/moc_ChartEditorDialog.cpp
- [ChartEditorDialog.cpp](#)

6.2 ChartWidget Class Reference

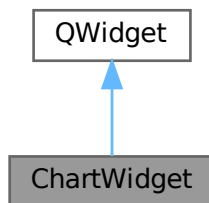
Klasa odpowiedzialna za chartwidget.

```
#include <ChartWidget.h>
```

Inheritance diagram for ChartWidget:



Collaboration diagram for ChartWidget:



Public Member Functions

- [ChartWidget](#) (QWidget *parent=nullptr)
Metoda [ChartWidget](#).
- void [addChart](#) (const QString &title, double minY=0, double maxY=100)
Metoda [addChart](#).
- void [addData](#) (const QString &chartTitle, double value)
Metoda [addData](#).
- void [clearAllCharts](#) ()
Metoda [clearAllCharts](#).
- void [saveToCSV](#) (const QString &filePath)
Metoda [saveToCSV](#).
- void [setAxisRange](#) (const QString &chartTitle, double minY=0, double maxY=100)
Metoda [setAxisRange](#).

- bool [hasChart](#) (const QString &title)
Metoda hasChart.
- void [changeChartType](#) (const QString &chartTitle, const QString &typeName)
Metoda changeChartType.
- QStringList [getChartTitles](#) () const
Metoda getChartTitles.
- void [setChartColor](#) (const QString &chartTitle, const QColor &color)
Metoda setChartColor.
- void [setChartStyle](#) (const QString &chartTitle, Qt::PenStyle style, int width)
Metoda setChartStyle.

6.2.1 Detailed Description

Klasa odpowiedzialna za chartwidget.

6.2.2 Constructor & Destructor Documentation

6.2.2.1 ChartWidget()

```
ChartWidget::ChartWidget (  
    QWidget * parent = nullptr ) [explicit]
```

Metoda [ChartWidget](#).

6.2.3 Member Function Documentation

6.2.3.1 addChart()

```
void ChartWidget::addChart (  
    const QString & title,  
    double minY = 0,  
    double maxY = 100 )
```

Metoda addChart.

6.2.3.2 addData()

```
void ChartWidget::addData (  
    const QString & chartTitle,  
    double value )
```

Metoda addData.

6.2.3.3 changeChartType()

```
void ChartWidget::changeChartType (  
    const QString & chartTitle,  
    const QString & typeName )
```

Metoda changeChartType.

6.2.3.4 clearAllCharts()

```
void ChartWidget::clearAllCharts ( )
```

Metoda clearAllCharts.

6.2.3.5 getChartTitles()

```
QStringList ChartWidget::getChartTitles ( ) const
```

Metoda getChartTitles.

6.2.3.6 hasChart()

```
bool ChartWidget::hasChart (
    const QString & title )
```

Metoda hasChart.

6.2.3.7 saveToCSV()

```
void ChartWidget::saveToCSV (
    const QString & filePath )
```

Metoda saveToCSV.

6.2.3.8 setAxisRange()

```
void ChartWidget::setAxisRange (
    const QString & chartTitle,
    double minY = 0,
    double maxY = 100 )
```

Metoda setAxisRange.

6.2.3.9 setChartColor()

```
void ChartWidget::setChartColor (
    const QString & chartTitle,
    const QColor & color )
```

Metoda setChartColor.

6.2.3.10 setChartStyle()

```
void ChartWidget::setChartStyle (
    const QString & chartTitle,
    Qt::PenStyle style,
    int width )
```

Metoda setChartStyle.

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

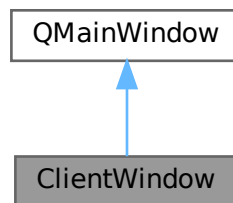
- [ChartWidget.h](#)
- [ChartWidget.cpp](#)

6.3 ClientWindow Class Reference

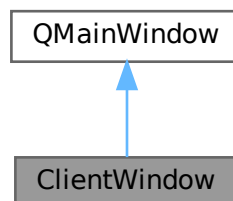
Klasa odpowiedzialna za clientwindow.

```
#include <ClientWindow.h>
```

Inheritance diagram for ClientWindow:



Collaboration diagram for ClientWindow:



Public Member Functions

- [ClientWindow](#) (QWidget *parent=nullptr)
Metoda [ClientWindow](#).
- [~ClientWindow](#) ()
- void [openChartEditor](#) ()
Metoda [openChartEditor](#).

6.3.1 Detailed Description

Klasa odpowiedzialna za clientwindow.

6.3.2 Constructor & Destructor Documentation

6.3.2.1 ClientWindow()

```
ClientWindow::ClientWindow (
    QWidget * parent = nullptr ) [explicit]
```

Metoda [ClientWindow](#).

6.3.2.2 ~ClientWindow()

```
ClientWindow::~ClientWindow ( )
```

6.3.3 Member Function Documentation

6.3.3.1 openChartEditor()

```
void ClientWindow::openChartEditor ( )
```

Metoda [openChartEditor](#).

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

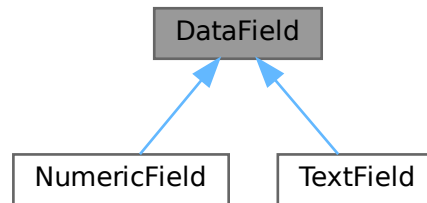
- [ClientWindow.h](#)
- [ClientWindow.cpp](#)

6.4 DataField Class Reference

Klasa odpowiedzialna za datafield.

```
#include <DataField.h>
```

Inheritance diagram for DataField:



Public Member Functions

- virtual [~DataField](#) ()=default
- virtual void [updateValue](#) (const QVariant &value)=0
- virtual QWidget * [getWidget](#) ()=0

6.4.1 Detailed Description

Klasa odpowiedzialna za datafield.

6.4.2 Constructor & Destructor Documentation

6.4.2.1 ~DataField()

```
virtual DataField::~~DataField ( ) [virtual], [default]
```

6.4.3 Member Function Documentation

6.4.3.1 getWidget()

```
virtual QWidget * DataField::getWidget ( ) [pure virtual]
```

Implemented in [NumericField](#), and [TextField](#).

6.4.3.2 updateValue()

```
virtual void DataField::updateValue (
    const QVariant & value ) [pure virtual]
```

Implemented in [NumericField](#), and [TextField](#).

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

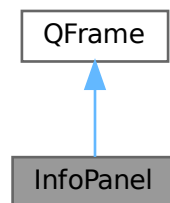
- [DataField.h](#)

6.5 InfoPanel Class Reference

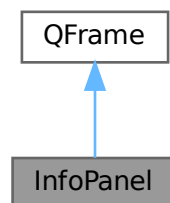
Klasa odpowiedzialna za infopanel.

```
#include <InfoPanel.h>
```

Inheritance diagram for InfoPanel:



Collaboration diagram for InfoPanel:



Public Member Functions

- [InfoPanel](#) (const QString &title="", QWidget *parent=nullptr)
Metoda InfoPanel.
- void [setValue](#) (const QString &valueText)
Metoda setValue.
- void [setFontSize](#) (int size)
Metoda setFontSize.
- void [setTextColor](#) (const QColor &color)
Metoda setTextColor.
- void [setBackgroundColor](#) (const QColor &color)
Metoda setBackgroundColor.
- void [setBorderColor](#) (const QColor &color)
Metoda setBorderColor.
- void [setPanelSize](#) (int width, int height)
Metoda setPanelSize.

6.5.1 Detailed Description

Klasa odpowiedzialna za infopanel.

6.5.2 Constructor & Destructor Documentation

6.5.2.1 InfoPanel()

```
InfoPanel::InfoPanel (
    const QString & title = "",
    QWidget * parent = nullptr ) [explicit]
```

Metoda [InfoPanel](#).

6.5.3 Member Function Documentation

6.5.3.1 setBackgroundColor()

```
void InfoPanel::setBackgroundColor (
    const QColor & color )
```

Metoda setBackgroundColor.

6.5.3.2 setBorderColor()

```
void InfoPanel::setBorderColor (
    const QColor & color )
```

Metoda setBorderColor.

6.5.3.3 setFontSize()

```
void InfoPanel::setFontSize (
    int size )
```

Metoda setFontSize.

6.5.3.4 setPanelSize()

```
void InfoPanel::setPanelSize (
    int width,
    int height )
```

Metoda setPanelSize.

6.5.3.5 setTextColor()

```
void InfoPanel::setTextColor (
    const QColor & color )
```

Metoda setTextColor.

6.5.3.6 setValue()

```
void InfoPanel::setValue (
    const QString & valueText )
```

Metoda setValue.

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

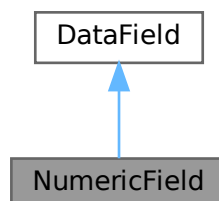
- [InfoPanel.h](#)
- [InfoPanel.cpp](#)

6.6 NumericField Class Reference

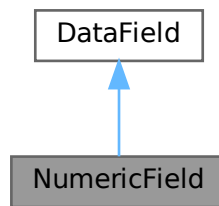
Klasa odpowiedzialna za numericfield.

```
#include <NumericField.h>
```

Inheritance diagram for NumericField:



Collaboration diagram for NumericField:



Public Member Functions

- [NumericField](#) ()
- void [updateValue](#) (const QVariant &value) override
Metoda updateValue.
- QWidget * [getWidget](#) () override
Metoda getWidget.

Public Member Functions inherited from [DataField](#)

- virtual [~DataField](#) ()=default

6.6.1 Detailed Description

Klasa odpowiedzialna za numericfield.

6.6.2 Constructor & Destructor Documentation

6.6.2.1 NumericField()

```
NumericField::NumericField ( )
```

6.6.3 Member Function Documentation

6.6.3.1 getWidget()

```
QWidget * NumericField::getWidget ( ) [override], [virtual]
```

Metoda getWidget.

Implements [DataField](#).

6.6.3.2 updateValue()

```
void NumericField::updateValue (
    const QVariant & value ) [override], [virtual]
```

Metoda updateValue.

Implements [DataField](#).

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

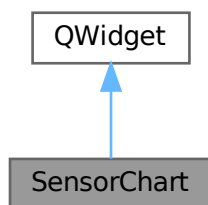
- [NumericField.h](#)
- [NumericField.cpp](#)

6.7 SensorChart Class Reference

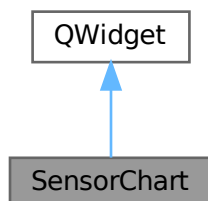
Klasa odpowiedzialna za sensorchart.

```
#include <SensorChart.h>
```

Inheritance diagram for SensorChart:



Collaboration diagram for SensorChart:



Public Types

- enum class [ChartType](#) { [Line](#) , [Scatter](#) }

Public Member Functions

- [SensorChart](#) (const QString &title, double minY, double maxY, QWidget *parent=nullptr)
Metoda [SensorChart](#).
- void [addDataPoint](#) (double value)
Metoda [addDataPoint](#).
- void [clearChart](#) ()
Metoda [clearChart](#).
- QChartView * [getChartView](#) () const
Metoda [getChartView](#).
- QAbstractSeries * [getSeries](#) () const
Metoda [getSeries](#).
- QValueAxis * [getAxisY](#) () const
Metoda [getAxisY](#).
- void [changeType](#) ([ChartType](#) newType)
Metoda [changeType](#).
- void [resetAutoScroll](#) ()
Metoda [resetAutoScroll](#).
- void [setSeriesColor](#) (const QColor &color)
Metoda [setSeriesColor](#).
- void [setSeriesStyle](#) (Qt::PenStyle style, int width)
Metoda [setSeriesStyle](#).
- void [enableAutoScroll](#) ()
Metoda [enableAutoScroll](#).
- bool [eventFilter](#) (QObject *obj, QEvent *event)
Metoda [eventFilter](#).
- void [setAxisRange](#) (double minY, double maxY)
Metoda [setAxisRange](#).
- void [applyEditorSettings](#) (const QColor &color, Qt::PenStyle style, int width, double minY, double maxY, [ChartType](#) type)
Metoda [applyEditorSettings](#).

Public Attributes

- bool [userXRangeActive](#) = false
- bool [userInteracting](#) = false
- QTimer * [autoScrollTimer](#) = nullptr

6.7.1 Detailed Description

Klasa odpowiedzialna za sensorchart.

6.7.2 Member Enumeration Documentation

6.7.2.1 ChartType

```
enum class SensorChart::ChartType [strong]
```

Enumerator

Line	
Scatter	

6.7.3 Constructor & Destructor Documentation

6.7.3.1 SensorChart()

```
SensorChart::SensorChart (
    const QString & title,
    double minY,
    double maxY,
    QWidget * parent = nullptr ) [explicit]
```

Metoda [SensorChart](#).

6.7.4 Member Function Documentation

6.7.4.1 addDataPoint()

```
void SensorChart::addDataPoint (
    double value )
```

Metoda addDataPoint.

6.7.4.2 applyEditorSettings()

```
void SensorChart::applyEditorSettings (
    const QColor & color,
    Qt::PenStyle style,
    int width,
    double minY,
    double maxY,
    ChartType type )
```

Metoda applyEditorSettings.

6.7.4.3 changeType()

```
void SensorChart::changeType (
    ChartType newType )
```

Metoda changeType.

6.7.4.4 clearChart()

```
void SensorChart::clearChart ( )
```

Metoda clearChart.

6.7.4.5 enableAutoScroll()

```
void SensorChart::enableAutoScroll ( )
```

Metoda enableAutoScroll.

6.7.4.6 eventFilter()

```
bool SensorChart::eventFilter (
    QObject * obj,
    QEvent * event )
```

Metoda eventFilter.

6.7.4.7 getAxisY()

```
QValueAxis * SensorChart::getAxisY ( ) const
```

Metoda getAxisY.

6.7.4.8 getChartView()

```
QChartView * SensorChart::getChartView ( ) const
```

Metoda getChartView.

6.7.4.9 getSeries()

```
QAbstractSeries * SensorChart::getSeries ( ) const
```

Metoda getSeries.

6.7.4.10 resetAutoScroll()

```
void SensorChart::resetAutoScroll ( )
```

Metoda resetAutoScroll.

6.7.4.11 setAxisRange()

```
void SensorChart::setAxisRange (
    double minY,
    double maxY )
```

Metoda setAxisRange.

6.7.4.12 setSeriesColor()

```
void SensorChart::setSeriesColor (
    const QColor & color )
```

Metoda setSeriesColor.

6.7.4.13 setSeriesStyle()

```
void SensorChart::setSeriesStyle (
    Qt::PenStyle style,
    int width )
```

Metoda setSeriesStyle.

6.7.5 Member Data Documentation

6.7.5.1 autoScrollTimer

```
QTimer* SensorChart::autoScrollTimer = nullptr
```

6.7.5.2 userInteracting

```
bool SensorChart::userInteracting = false
```

6.7.5.3 userXRangeActive

```
bool SensorChart::userXRangeActive = false
```

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

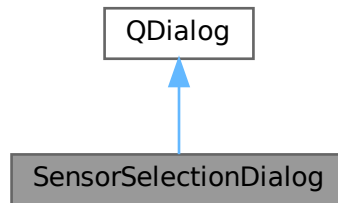
- [SensorChart.h](#)
- [SensorChart.cpp](#)

6.8 SensorSelectionDialog Class Reference

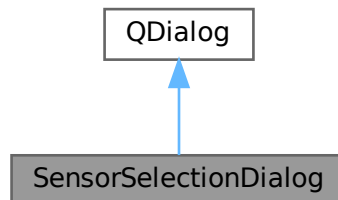
Klasa odpowiedzialna za sensorselectiondialog.

```
#include <SensorSelectionDialog.h>
```

Inheritance diagram for SensorSelectionDialog:



Collaboration diagram for SensorSelectionDialog:



Public Member Functions

- [SensorSelectionDialog](#) (const QStringList &availableSensors, QWidget *parent=nullptr)
Metoda [SensorSelectionDialog](#).
- QStringList [getSelectedSensors](#) () const
Metoda [getSelectedSensors](#).

6.8.1 Detailed Description

Klasa odpowiedzialna za sensorselectiondialog.

6.8.2 Constructor & Destructor Documentation

6.8.2.1 SensorSelectionDialog()

```
SensorSelectionDialog::SensorSelectionDialog (
    const QStringList & availableSensors,
    QWidget * parent = nullptr ) [explicit]
```

Metoda [SensorSelectionDialog](#).

6.8.3 Member Function Documentation

6.8.3.1 getSelectedSensors()

```
QStringList SensorSelectionDialog::getSelectedSensors ( ) const
```

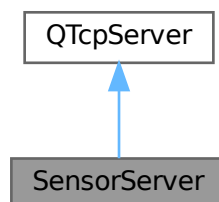
Metoda `getSelectedSensors`.

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

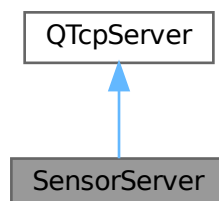
- [SensorSelectionDialog.h](#)
- [SensorSelectionDialog.cpp](#)

6.9 SensorServer Class Reference

Inheritance diagram for SensorServer:



Collaboration diagram for SensorServer:



Public Member Functions

- [SensorServer](#) (QObject *parent=nullptr)

Protected Member Functions

- void [incomingConnection](#) (qintptr socketDescriptor) override

6.9.1 Constructor & Destructor Documentation

6.9.1.1 SensorServer()

```
SensorServer::SensorServer (  
    QObject * parent = nullptr ) [inline]
```

6.9.2 Member Function Documentation

6.9.2.1 incomingConnection()

```
void SensorServer::incomingConnection (  
    qintptr socketDescriptor ) [inline], [override], [protected]
```

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

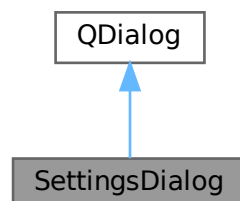
- raspberry/[QTcpServer.cpp](#)

6.10 SettingsDialog Class Reference

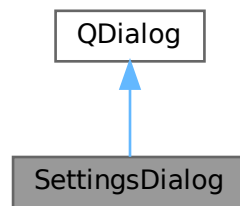
Klasa odpowiedzialna za settingsdialog.

```
#include <SettingsDialog.h>
```

Inheritance diagram for SettingsDialog:



Collaboration diagram for SettingsDialog:



Signals

- void [chartUpdated](#) (const QString &chartName, const QString &chartType, const QColor &lineColor, Qt::PenStyle style, int width, double minY, double maxY)

Public Member Functions

- [SettingsDialog](#) (const QStringList &availableSensors, const QStringList &existingCharts, [ChartWidget](#) *chartWidgetRef, QWidget *parent=nullptr)
- int [getUpdateInterval](#) () const
Metoda getUpdateInterval.
- QStringList [getSelectedSensors](#) () const
Metoda getSelectedSensors.

6.10.1 Detailed Description

Klasa odpowiedzialna za settingsdialog.

6.10.2 Constructor & Destructor Documentation

6.10.2.1 SettingsDialog()

```
SettingsDialog::SettingsDialog (  
    const QStringList & availableSensors,  
    const QStringList & existingCharts,  
    ChartWidget * chartWidgetRef,  
    QWidget * parent = nullptr ) [explicit]
```

6.10.3 Member Function Documentation

6.10.3.1 chartUpdated

```
void SettingsDialog::chartUpdated (
    const QString & chartName,
    const QString & chartType,
    const QColor & lineColor,
    Qt::PenStyle style,
    int width,
    double minY,
    double maxY ) [signal]
```

6.10.3.2 getSelectedSensors()

```
QStringList SettingsDialog::getSelectedSensors ( ) const
```

Metoda getSelectedSensors.

6.10.3.3 getUpdateInterval()

```
int SettingsDialog::getUpdateInterval ( ) const
```

Metoda getUpdateInterval.

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

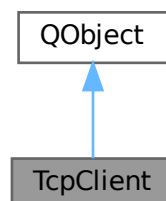
- [SettingsDialog.h](#)
- [build/Desktop_Qt_6_7_3-Debug/moc_SettingsDialog.cpp](#)
- [SettingsDialog.cpp](#)

6.11 TcpClient Class Reference

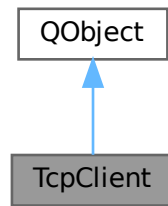
Klasa odpowiedzialna za tcpclient.

```
#include <TcpClient.h>
```

Inheritance diagram for TcpClient:



Collaboration diagram for TcpClient:



Signals

- void [newDataReceived](#) (const QString &data)
Metoda newDataReceived.

Public Member Functions

- [TcpClient](#) (QObject *parent=nullptr)
Metoda TcpClient.
- void [connectToServer](#) (const QString &host, int port)
Metoda connectToServer.
- void [setUpdateInterval](#) (int interval)
Metoda setUpdateInterval.
- void [connectToServer](#) (const QString &host, quint16 port)
Metoda connectToServer.
- void [startSimulation](#) ()
Metoda startSimulation.

6.11.1 Detailed Description

Klasa odpowiedzialna za tcpclient.

6.11.2 Constructor & Destructor Documentation

6.11.2.1 TcpClient()

```
TcpClient::TcpClient (  
    QObject * parent = nullptr ) [explicit]
```

Metoda [TcpClient](#).

6.11.3 Member Function Documentation

6.11.3.1 connectToServer() [1/2]

```
void TcpClient::connectToServer (
    const QString & host,
    int port )
```

Metoda connectToServer.

6.11.3.2 connectToServer() [2/2]

```
void TcpClient::connectToServer (
    const QString & host,
    quint16 port )
```

Metoda connectToServer.

6.11.3.3 newDataReceived

```
void TcpClient::newDataReceived (
    const QString & data ) [signal]
```

Metoda newDataReceived.

6.11.3.4 setUpdateInterval()

```
void TcpClient::setUpdateInterval (
    int interval )
```

Metoda setUpdateInterval.

6.11.3.5 startSimulation()

```
void TcpClient::startSimulation ( )
```

Metoda startSimulation.

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

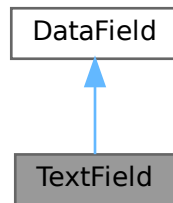
- [TcpClient.h](#)
- [build/Desktop_Qt_6_7_3-Debug/moc_TcpClient.cpp](#)
- [TcpClient.cpp](#)

6.12 TextField Class Reference

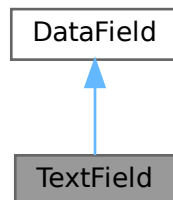
Klasa odpowiedzialna za textfield.

```
#include <TextField.h>
```

Inheritance diagram for TextField:



Collaboration diagram for TextField:



Public Member Functions

- [TextField](#) ()
- void [updateValue](#) (const QVariant &value) override
Metoda updateValue.
- QWidget * [getWidget](#) () override
Metoda getWidget.

Public Member Functions inherited from [DataField](#)

- virtual [~DataField](#) ()=default

6.12.1 Detailed Description

Klasa odpowiedzialna za textfield.

6.12.2 Constructor & Destructor Documentation

6.12.2.1 TextField()

```
TextField::TextField ( )
```

6.12.3 Member Function Documentation

6.12.3.1 getWidget()

```
QWidget * TextField::getWidget ( ) [override], [virtual]
```

Metoda getWidget.

Implements [DataField](#).

6.12.3.2 updateValue()

```
void TextField::updateValue (
    const QVariant & value ) [override], [virtual]
```

Metoda updateValue.

Implements [DataField](#).

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

- [TextField.h](#)
- [TextField.cpp](#)

6.13 ValueProcessor< T > Class Template Reference

Szablon klasy do prostego przetwarzania danych.

```
#include <ValueProcessor.h>
```

Public Member Functions

- void [addValue](#) (T value)
- T [average](#) () const
- void [clear](#) ()
- std::size_t [count](#) () const

6.13.1 Detailed Description

```
template<typename T>
class ValueProcessor< T >
```

Szablon klasy do prostego przetwarzania danych.

Umożliwia dodawanie wartości i obliczanie średniej. Może być użyty do analizy danych z czujników.

6.13.2 Member Function Documentation

6.13.2.1 addValue()

```
template<typename T >
void ValueProcessor< T >::addValue (
    T value ) [inline]
```

6.13.2.2 average()

```
template<typename T >
T ValueProcessor< T >::average ( ) const [inline]
```

6.13.2.3 clear()

```
template<typename T >
void ValueProcessor< T >::clear ( ) [inline]
```

6.13.2.4 count()

```
template<typename T >
std::size_t ValueProcessor< T >::count ( ) const [inline]
```

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

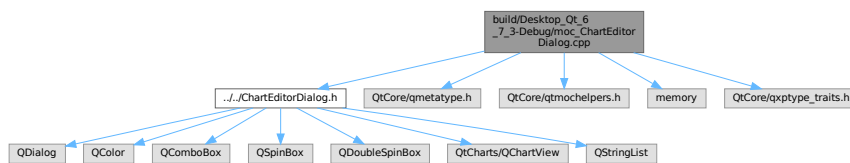
- [ValueProcessor.h](#)

Chapter 7

File Documentation

7.1 build/Desktop_Qt_6_7_3-Debug/moc_ChartEditorDialog.cpp File Reference

```
#include "../..../ChartEditorDialog.h"
#include <QtCore/qmetatype.h>
#include <QtCore/qtmocheelpers.h>
#include <memory>
#include <QtCore/qxptype_traits.h>
Include dependency graph for moc_ChartEditorDialog.cpp:
```



Namespaces

- namespace [QT_WARNING_DISABLE_DEPRECATED](#)

Macros

- `#define` [Q_CONSTINIT](#)

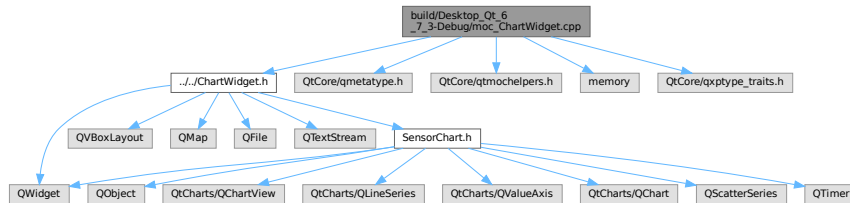
7.1.1 Macro Definition Documentation

7.1.1.1 Q_CONSTINIT

```
#define Q_CONSTINIT
```

7.2 build/Desktop_Qt_6_7_3-Debug/moc_ChartWidget.cpp File Reference

```
#include "../..../ChartWidget.h"
#include <QtCore/qmetatype.h>
#include <QtCore/qtmocheelpers.h>
#include <memory>
#include <QtCore/qxptype_traits.h>
Include dependency graph for moc_ChartWidget.cpp:
```



Namespaces

- namespace [QT_WARNING_DISABLE_DEPRECATED](#)

Macros

- `#define` [Q_CONSTINIT](#)

7.2.1 Macro Definition Documentation

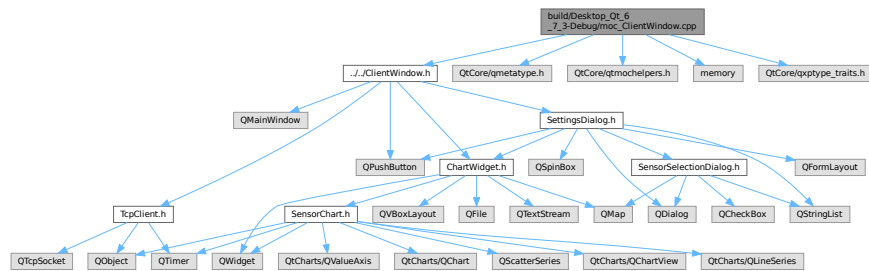
7.2.1.1 Q_CONSTINIT

```
#define Q_CONSTINIT
```

7.3 build/Desktop_Qt_6_7_3-Debug/moc_ClientWindow.cpp File Reference

```
#include "../..../ClientWindow.h"
#include <QtCore/qmetatype.h>
#include <QtCore/qtmocheelpers.h>
#include <memory>
```

```
#include <QtCore/qxptype_traits.h>
Include dependency graph for moc_ClientWindow.cpp:
```



Namespaces

- namespace `QT_WARNING_DISABLE_DEPRECATED`

Macros

- #define Q_CONSTINIT

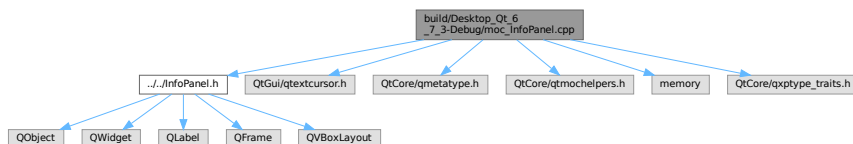
7.3.1 Macro Definition Documentation

7.3.1.1 Q_CONSTINIT

```
#define Q_CONSTINIT
```

7.4 build/Desktop_Qt_6_7_3-Debug/moc_InfoPanel.cpp File Reference

```
#include "../..../InfoPanel.h"
#include <QtGui/QtTextCursor.h>
#include <QtCore/qmetatype.h>
#include <QtCore/qtmochelpers.h>
#include <memory>
#include <QtCore/qxptype_traits.h>
Include dependency graph for moc_InfoPanel.cpp:
```



Namespaces

- namespace `QT_WARNING_DISABLE_DEPRECATED`

Macros

- #define [Q_CONSTINIT](#)

7.4.1 Macro Definition Documentation

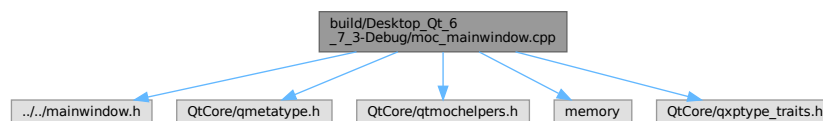
7.4.1.1 Q_CONSTINIT

```
#define Q_CONSTINIT
```

7.5 build/Desktop_Qt_6_7_3-Debug/moc_mainwindow.cpp File Reference

```
#include "../mainwindow.h"
#include <QtCore/qmetatype.h>
#include <QtCore/qtmocheelpers.h>
#include <memory>
#include <QtCore/qxptype_traits.h>
```

Include dependency graph for moc_mainwindow.cpp:



Namespaces

- namespace [QT_WARNING_DISABLE_DEPRECATED](#)

Macros

- #define [Q_CONSTINIT](#)

7.5.1 Macro Definition Documentation

7.5.1.1 Q_CONSTINIT

```
#define Q_CONSTINIT
```

7.6 build/Desktop_Qt_6_7_3-Debug/moc_predefs.h File Reference

Macros

- `#define __DBL_MIN_EXP__ (-1021)`
- `#define __cpp_nontype_template_parameter_auto 201606L`
- `#define __UINT_LEAST16_MAX__ 0xffff`
- `#define __FLT16_HAS_QUIET_NAN__ 1`
- `#define __ATOMIC_ACQUIRE 2`
- `#define __FLT128_MAX_10_EXP__ 4932`
- `#define __FLT_MIN__ 1.17549435082228750796873653722224568e-38F`
- `#define __GCC_IEC_559_COMPLEX 2`
- `#define __cpp_aggregate_nsdmi 201304L`
- `#define __UINT_LEAST8_TYPE__ unsigned char`
- `#define __SIZEOF_FLOAT80__ 16`
- `#define __BFLT16_DENORM_MIN__ 9.18354961579912115600575419704879436e-41BF16`
- `#define __INTMAX_C(c) c ## L`
- `#define __CHAR_BIT__ 8`
- `#define __UINT8_MAX__ 0xff`
- `#define __SCHAR_WIDTH__ 8`
- `#define __WINT_MAX__ 0xffffffffU`
- `#define __FLT32_MIN_EXP__ (-125)`
- `#define __cpp_static_assert 201411L`
- `#define __BFLT16_MIN_10_EXP__ (-37)`
- `#define __ORDER_LITTLE_ENDIAN__ 1234`
- `#define __WCHAR_MAX__ 0x7fffffff`
- `#define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_2 1`
- `#define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_4 1`
- `#define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_8 1`
- `#define __GCC_ATOMIC_CHAR_LOCK_FREE 2`
- `#define __GCC_IEC_559 2`
- `#define __FLT32X_DECIMAL_DIG__ 17`
- `#define __FLT_EVAL_METHOD__ 0`
- `#define __cpp_binary_literals 201304L`
- `#define __FLT64_DECIMAL_DIG__ 17`
- `#define __CET__ 3`
- `#define __cpp_noexcept_function_type 201510L`
- `#define __GCC_ATOMIC_CHAR32_T_LOCK_FREE 2`
- `#define __cpp_variadic_templates 200704L`
- `#define __UINT_FAST64_MAX__ 0xffffffffffffffffUL`
- `#define __SIG_ATOMIC_TYPE__ int`
- `#define __DBL_MIN_10_EXP__ (-307)`
- `#define __FINITE_MATH_ONLY__ 0`
- `#define __cpp_variable_templates 201304L`
- `#define __FLT32X_MAX_EXP__ 1024`
- `#define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_1 1`
- `#define __FLT32_HAS_DENORM__ 1`
- `#define __UINT_FAST8_MAX__ 0xff`
- `#define __cpp_rvalue_reference 200610L`
- `#define __cpp_nested_namespace_definitions 201411L`
- `#define __DEC64_MAX_EXP__ 385`
- `#define __INT8_C(c) c`
- `#define __LDBL_HAS_INFINITY__ 1`
- `#define __INT_LEAST8_WIDTH__ 8`

- `#define __cpp_variadic_using 201611L`
- `#define __UINT_LEAST64_MAX__ 0xffffffffffffffffUL`
- `#define __INT_LEAST8_MAX__ 0x7f`
- `#define __cpp_attributes 200809L`
- `#define __cpp_capture_star_this 201603L`
- `#define __SHRT_MAX__ 0x7fff`
- `#define __LDBL_MAX__ 1.18973149535723176502126385303097021e+4932L`
- `#define __FLT64X_MAX_10_EXP__ 4932`
- `#define __cpp_if_constexpr 201606L`
- `#define __BFLT16_MAX_10_EXP__ 38`
- `#define __BFLT16_MAX_EXP__ 128`
- `#define __LDBL_IS_IEC_60559__ 1`
- `#define __FLT64X_HAS_QUIET_NAN__ 1`
- `#define __UINT_LEAST8_MAX__ 0xff`
- `#define __GCC_ATOMIC_BOOL_LOCK_FREE 2`
- `#define __FLT128_DENORM_MIN__ 6.47517511943802511092443895822764655e-4966F128`
- `#define __UINTMAX_TYPE__ long unsigned int`
- `#define __cpp_nsdmi 200809L`
- `#define __BFLT16_DECIMAL_DIG__ 4`
- `#define __linux 1`
- `#define __DEC32_EPSILON__ 1E-6DF`
- `#define __FLT_EVAL_METHOD_TS_18661_3__ 0`
- `#define __UINT32_MAX__ 0xffffffffU`
- `#define __GXX_EXPERIMENTAL_CXX0X__ 1`
- `#define __DBL_DENORM_MIN__ double(4.94065645841246544176568792868221372e-324L)`
- `#define __FLT128_MIN_EXP__ (-16381)`
- `#define __WINT_MIN__ 0U`
- `#define __FLT128_MIN_10_EXP__ (-4931)`
- `#define __FLT32X_IS_IEC_60559__ 1`
- `#define __INT_LEAST16_WIDTH__ 16`
- `#define __SCHAR_MAX__ 0x7f`
- `#define __FLT128_MANT_DIG__ 113`
- `#define __WCHAR_MIN__ (-__WCHAR_MAX__ - 1)`
- `#define __INT64_C(c) c ## L`
- `#define __SSP_STRONG__ 3`
- `#define __GCC_ATOMIC_POINTER_LOCK_FREE 2`
- `#define __ATOMIC_SEQ_CST 5`
- `#define __unix 1`
- `#define __INT_LEAST64_MAX__ 0x7fffffffffffffffL`
- `#define __FLT32X_MANT_DIG__ 53`
- `#define __GCC_ATOMIC_CHAR16_T_LOCK_FREE 2`
- `#define __cpp_aligned_new 201606L`
- `#define __FLT32_MAX_10_EXP__ 38`
- `#define __FLT64X_EPSILON__ 1.08420217248550443400745280086994171e-19F64x`
- `#define __STDC_HOSTED__ 1`
- `#define __DEC64_MIN_EXP__ (-382)`
- `#define __cpp_decltype_auto 201304L`
- `#define __DBL_DIG__ 15`
- `#define __FLT_EPSILON__ 1.19209289550781250000000000000000000000e-7F`
- `#define __GXX_WEAK__ 1`
- `#define __SHRT_WIDTH__ 16`
- `#define __FLT32_IS_IEC_60559__ 1`
- `#define __LDBL_MIN__ 3.36210314311209350626267781732175260e-4932L`
- `#define __DBL_IS_IEC_60559__ 1`
- `#define __DEC32_MAX__ 9.999999E96DF`

- Generated by Doxygen

- #define `__WCHAR_WIDTH__` 32
- #define `__FLT32_MAX__` 3.40282346638528859811704183484516925e+38F32
- #define `__DEC128_EPSILON__` 1E-33DL
- #define `__FLT16_DECIMAL_DIG__` 5
- #define `__SSE2_MATH__` 1
- #define `__ATOMIC_HLE_RELEASE` 131072
- #define `__PTRDIFF_MAX__` 0x7fffffffffffffffL
- #define `__amd64` 1
- #define `__ATOMIC_HLE_ACQUIRE` 65536
- #define `__GNU__` 13
- #define `__LONG_LONG_MAX__` 0x7fffffffffffffffLL
- #define `__SIZEOF_SIZE_T__` 8
- #define `__BFLT16_HAS_INFINITY__` 1
- #define `__FLT64X_MIN_EXP__` (-16381)
- #define `__SIZEOF_WINT_T__` 4
- #define `__FLT32X_DIG__` 15
- #define `__LONG_LONG_WIDTH__` 64
- #define `__cpp_initializer_lists` 200806L
- #define `__FLT32_MAX_EXP__` 128
- #define `__cpp_hex_float` 201603L
- #define `__GXX_ABI_VERSION` 1018
- #define `__FLT_MIN_EXP__` (-125)
- #define `__GCC_HAVE_DWARF2_CFI_ASM` 1
- #define `__x86_64` 1
- #define `__cpp_lambdas` 200907L
- #define `__INT_FAST64_TYPE__` long int
- #define `__BFLT16_MAX__` 3.38953138925153547590470800371487867e+38BF16
- #define `__FLT64_DENORM_MIN__` 4.94065645841246544176568792868221372e-324F64
- #define `__cpp_template_auto` 201606L
- #define `__FLT16_DENORM_MIN__` 5.96046447753906250000000000000000000000e-8F16
- #define `__FLT128_EPSILON__` 1.92592994438723585305597794258492732e-34F128
- #define `__FLT64X_NORM_MAX__` 1.18973149535723176502126385303097021e+4932F64x
- #define `__SIZEOF_POINTER__` 8
- #define `__SIZE_TYPE__` long unsigned int
- #define `__LP64__` 1
- #define `__DBL_HAS_QUIET_NAN__` 1
- #define `__FLT32X_EPSILON__` 2.22044604925031308084726333618164062e-16F32x
- #define `__LDBL_MAX_EXP__` 16384
- #define `__DECIMAL_BID_FORMAT__` 1
- #define `__FLT64_MIN_10_EXP__` (-307)
- #define `__FLT16_MIN_10_EXP__` (-4)
- #define `__FLT64X_DECIMAL_DIG__` 21
- #define `__DEC128_MIN__` 1E-6143DL
- #define `__REGISTER_PREFIX__`
- #define `__UINT16_MAX__` 0xffff
- #define `__FLT128_HAS_INFINITY__` 1
- #define `__FLT32_MIN__` 1.17549435082228750796873653722224568e-38F32
- #define `__UINT8_TYPE__` unsigned char
- #define `__FLT_DIG__` 6
- #define `__NO_INLINE__` 1
- #define `__DEC_EVAL_METHOD__` 2
- #define `__FLT_MANT_DIG__` 24
- #define `__LDBL_DECIMAL_DIG__` 21
- #define `__VERSION__` "13.3.0"
- #define `__UINT64_C(c)` c ## UL

[illegible]

- [#define __GCC_ATOMIC_LONG_LOCK_FREE](#) 2
- [#define __cpp_nontype_template_args](#) 201411L
- [#define __DEC32_MANT_DIG__](#) 7
- [#define __k8__](#) 1
- [#define __INTPTR_TYPE__](#) long int
- [#define __UINT16_TYPE__](#) short unsigned int
- [#define __WCHAR_TYPE__](#) int
- [#define __pic__](#) 2
- [#define __UINTPTR_MAX__](#) 0xffffffffffffUL
- [#define __INT_FAST64_WIDTH__](#) 64
- [#define __cpp_decltype](#) 200707L
- [#define __INT_FAST64_MAX__](#) 0x7ffffffffffffL
- [#define __GCC_ATOMIC_TEST_AND_SET_TRUEVAL](#) 1
- [#define __FLT_NORM_MAX__](#) 3.40282346638528859811704183484516925e+38F
- [#define __FLT32_HAS_INFINITY__](#) 1
- [#define __FLT64X_MAX_EXP__](#) 16384
- [#define __UINT_FAST64_TYPE__](#) long unsigned int
- [#define __cpp_inline_variables](#) 201606L
- [#define __BFLT16_MIN_EXP__](#) (-125)
- [#define __INT_MAX__](#) 0x7fffffff
- [#define __linux__](#) 1
- [#define __INT64_TYPE__](#) long int
- [#define __FLT_MAX_EXP__](#) 128
- [#define __ORDER_BIG_ENDIAN__](#) 4321
- [#define __DBL_MANT_DIG__](#) 53
- [#define __cpp_inheriting_constructors](#) 201511L
- [#define __SIZEOF_FLOAT128__](#) 16
- [#define __BFLT16_MANT_DIG__](#) 8
- [#define __DEC64_MIN__](#) 1E-383DD
- [#define __WINT_TYPE__](#) unsigned int
- [#define __UINT_LEAST32_TYPE__](#) unsigned int
- [#define __SIZEOF_SHORT__](#) 2
- [#define __FLT32_NORM_MAX__](#) 3.40282346638528859811704183484516925e+38F32
- [#define __SSE__](#) 1
- [#define __LDBL_MIN_EXP__](#) (-16381)
- [#define __FLT64_MAX__](#) 1.79769313486231570814527423731704357e+308F64
- [#define __amd64__](#) 1
- [#define __WINT_WIDTH__](#) 32
- [#define __INT_LEAST64_WIDTH__](#) 64
- [#define __FLT32X_MAX_10_EXP__](#) 308
- [#define __cpp_namespace_attributes](#) 201411L
- [#define __SIZEOF_INT128__](#) 16
- [#define __FLT16_MIN__](#) 6.1035156250000000000000000000000000000000e-5F16
- [#define __FLT64X_IS_IEC_60559__](#) 1
- [#define __LDBL_MAX_10_EXP__](#) 4932
- [#define __ATOMIC_RELAXED](#) 0
- [#define __DBL_EPSILON__](#) double(2.22044604925031308084726333618164062e-16L)
- [#define __INT_LEAST32_TYPE__](#) int
- [#define __LP64__](#) 1
- [#define __UINT8_C\(c\)](#) c
- [#define __FLT64_MAX_EXP__](#) 1024
- [#define __SIZEOF_WCHAR_T__](#) 4
- [#define __GNUC_PATCHLEVEL__](#) 0
- [#define __FLT128_NORM_MAX__](#) 1.18973149535723176508575932662800702e+4932F128
- [#define __FLT64_NORM_MAX__](#) 1.79769313486231570814527423731704357e+308F64

- `#define __FLT128_HAS_QUIET_NAN__ 1`
- `#define __INTMAX_MAX__ 0x7fffffffffffffffL`
- `#define __INT_FAST8_TYPE__ signed char`
- `#define __FLT64X_MIN__ 3.36210314311209350626267781732175260e-4932F64x`
- `#define __STDCPP_THREADS__ 1`
- `#define __BFLT16_HAS_DENORM__ 1`
- `#define __GNUC_STDC_INLINE__ 1`
- `#define __FLT64_HAS_DENORM__ 1`
- `#define __FLT32_EPSILON__ 1.19209289550781250000000000000000000000e-7F32`
- `#define __FLT16_HAS_DENORM__ 1`
- `#define __DBL_DECIMAL_DIG__ 17`
- `#define __STDC_UTF_32__ 1`
- `#define __INT_FAST8_WIDTH__ 8`
- `#define __FXSR__ 1`
- `#define __FLT32X_MAX__ 1.79769313486231570814527423731704357e+308F32x`
- `#define __DBL_NORM_MAX__ double(1.79769313486231570814527423731704357e+308L)`
- `#define __BYTE_ORDER__ __ORDER_LITTLE_ENDIAN__`
- `#define __GCC_DESTRUCTIVE_SIZE 64`
- `#define __INTMAX_WIDTH__ 64`
- `#define __cpp_runtime_arrays 198712L`
- `#define __FLT32_DIG__ 6`
- `#define __UINT64_TYPE__ long unsigned int`
- `#define __UINT32_C(c) c ## U`
- `#define __cpp_alias_templates 200704L`
- `#define __FLT_DENORM_MIN__ 1.40129846432481707092372958328991613e-45F`
- `#define __FLT128_IS_IEC_60559__ 1`
- `#define __INT8_MAX__ 0x7f`
- `#define __LONG_WIDTH__ 64`
- `#define __DBL_MIN__ double(2.22507385850720138309023271733240406e-308L)`
- `#define __PIC__ 2`
- `#define __INT32_MAX__ 0x7fffffff`
- `#define __UINT_FAST32_TYPE__ long unsigned int`
- `#define __FLT16_MANT_DIG__ 11`
- `#define __FLT32X_NORM_MAX__ 1.79769313486231570814527423731704357e+308F32x`
- `#define __CHAR32_TYPE__ unsigned int`
- `#define __FLT_MAX__ 3.40282346638528859811704183484516925e+38F`
- `#define __SSE2__ 1`
- `#define __cpp_deduction_guides 201703L`
- `#define __BFLT16_NORM_MAX__ 3.38953138925153547590470800371487867e+38BF16`
- `#define __INT32_TYPE__ int`
- `#define __SIZEOF_DOUBLE__ 8`
- `#define __cpp_exceptions 199711L`
- `#define __FLT_MIN_10_EXP__ (-37)`
- `#define __FLT64_MIN__ 2.22507385850720138309023271733240406e-308F64`
- `#define __INT_LEAST32_WIDTH__ 32`
- `#define __INTMAX_TYPE__ long int`
- `#define __GLIBCXX_BITSIZE_INT_N_0 128`
- `#define __FLT32X_HAS_QUIET_NAN__ 1`
- `#define __ATOMIC_CONSUME 1`
- `#define __GNUC_MINOR__ 3`
- `#define __GLIBCXX_TYPE_INT_N_0 __int128`
- `#define __UINTMAX_MAX__ 0xffffffffffffffffUL`
- `#define __FLT32X_DENORM_MIN__ 4.94065645841246544176568792868221372e-324F32x`
- `#define __cpp_template_template_args 201611L`
- `#define __DBL_MAX_10_EXP__ 308`

- `#define __LDBL_DENORM_MIN__ 3.64519953188247460252840593361941982e-4951L`
- `#define __INT16_C(c) c`
- `#define __STDC__ 1`
- `#define __PTRDIFF_TYPE__ long int`
- `#define __FLT32X_MIN_10_EXP__ (-307)`
- `#define __UINTPTR_TYPE__ long unsigned int`
- `#define __DEC64_SUBNORMAL_MIN__ 0.0000000000000001E-383DD`
- `#define __DEC128_MANT_DIG__ 34`
- `#define __LDBL_MIN_10_EXP__ (-4931)`
- `#define __cpp_generic_lambdas 201304L`
- `#define __SSE_MATH__ 1`
- `#define __SIZEOF_LONG_LONG__ 8`
- `#define __cpp_user_defined_literals 200809L`
- `#define __FLT128_DECIMAL_DIG__ 36`
- `#define __GCC_ATOMIC_LLONG_LOCK_FREE 2`
- `#define __FLT32_HAS_QUIET_NAN__ 1`
- `#define __FLT_DECIMAL_DIG__ 9`
- `#define __UINT_FAST16_MAX__ 0xffffffffffffffffUL`
- `#define __LDBL_NORM_MAX__ 1.18973149535723176502126385303097021e+4932L`
- `#define __GCC_ATOMIC_SHORT_LOCK_FREE 2`
- `#define __SIZE_MAX__ 0xffffffffffffffffUL`
- `#define __UINT_FAST8_TYPE__ unsigned char`
- `#define __GNU_SOURCE 1`
- `#define __cpp_init_captures 201304L`
- `#define __ATOMIC_ACQ_REL 4`
- `#define __ATOMIC_RELEASE 3`

7.6.1 Macro Definition Documentation

7.6.1.1 `__amd64`

```
#define __amd64 1
```

7.6.1.2 `__amd64__`

```
#define __amd64__ 1
```

7.6.1.3 `__ATOMIC_ACQ_REL`

```
#define __ATOMIC_ACQ_REL 4
```

7.6.1.4 `__ATOMIC_ACQUIRE`

```
#define __ATOMIC_ACQUIRE 2
```

7.6.1.5 `__ATOMIC_CONSUME`

```
#define __ATOMIC_CONSUME 1
```

7.6.1.6 `__ATOMIC_HLE_ACQUIRE`

```
#define __ATOMIC_HLE_ACQUIRE 65536
```

7.6.1.7 `__ATOMIC_HLE_RELEASE`

```
#define __ATOMIC_HLE_RELEASE 131072
```

7.6.1.8 `__ATOMIC_RELAXED`

```
#define __ATOMIC_RELAXED 0
```

7.6.1.9 `__ATOMIC_RELEASE`

```
#define __ATOMIC_RELEASE 3
```

7.6.1.10 `__ATOMIC_SEQ_CST`

```
#define __ATOMIC_SEQ_CST 5
```

7.6.1.11 `__BFLT16_DECIMAL_DIG__`

```
#define __BFLT16_DECIMAL_DIG__ 4
```

7.6.1.12 `__BFLT16_DENORM_MIN__`

```
#define __BFLT16_DENORM_MIN__ 9.18354961579912115600575419704879436e-41BF16
```

7.6.1.13 `__BFLT16_DIG__`

```
#define __BFLT16_DIG__ 2
```

7.6.1.14 `__BFLT16_EPSILON__`

```
#define __BFLT16_EPSILON__ 7.8125000000000000000000000000000000000000e-3BF16
```

7.6.1.15 `__BFLT16_HAS_DENORM__`

```
#define __BFLT16_HAS_DENORM__ 1
```

7.6.1.16 __BFLT16_HAS_INFINITY__

```
#define __BFLT16_HAS_INFINITY__ 1
```

7.6.1.17 __BFLT16_HAS_QUIET_NAN__

```
#define __BFLT16_HAS_QUIET_NAN__ 1
```

7.6.1.18 __BFLT16_IS_IEC_60559__

```
#define __BFLT16_IS_IEC_60559__ 0
```

7.6.1.19 __BFLT16_MANT_DIG__

```
#define __BFLT16_MANT_DIG__ 8
```

7.6.1.20 __BFLT16_MAX_10_EXP__

```
#define __BFLT16_MAX_10_EXP__ 38
```

7.6.1.21 __BFLT16_MAX__

```
#define __BFLT16_MAX__ 3.38953138925153547590470800371487867e+38BF16
```

7.6.1.22 __BFLT16_MAX_EXP__

```
#define __BFLT16_MAX_EXP__ 128
```

7.6.1.23 __BFLT16_MIN_10_EXP__

```
#define __BFLT16_MIN_10_EXP__ (-37)
```

7.6.1.24 __BFLT16_MIN__

```
#define __BFLT16_MIN__ 1.17549435082228750796873653722224568e-38BF16
```

7.6.1.25 __BFLT16_MIN_EXP__

```
#define __BFLT16_MIN_EXP__ (-125)
```

7.6.1.26 __BFLT16_NORM_MAX__

```
#define __BFLT16_NORM_MAX__ 3.38953138925153547590470800371487867e+38BF16
```

7.6.1.27 __BIGGEST_ALIGNMENT__

```
#define __BIGGEST_ALIGNMENT__ 16
```

7.6.1.28 __BYTE_ORDER__

```
#define __BYTE_ORDER__ \_\_ORDER\_LITTLE\_ENDIAN\_\_
```

7.6.1.29 __CET__

```
#define __CET__ 3
```

7.6.1.30 __CHAR16_TYPE__

```
#define __CHAR16_TYPE__ short unsigned int
```

7.6.1.31 __CHAR32_TYPE__

```
#define __CHAR32_TYPE__ unsigned int
```

7.6.1.32 __CHAR_BIT__

```
#define __CHAR_BIT__ 8
```

7.6.1.33 __code_model_small__

```
#define __code_model_small__ 1
```

7.6.1.34 __cplusplus

```
#define __cplusplus 201703L
```

7.6.1.35 __cpp_aggregate_bases

```
#define __cpp_aggregate_bases 201603L
```


7.6.1.36 __cpp_aggregate_nsdmi

```
#define __cpp_aggregate_nsdmi 201304L
```

7.6.1.37 __cpp_alias_templates

```
#define __cpp_alias_templates 200704L
```

7.6.1.38 __cpp_aligned_new

```
#define __cpp_aligned_new 201606L
```

7.6.1.39 __cpp_attributes

```
#define __cpp_attributes 200809L
```

7.6.1.40 __cpp_binary_literals

```
#define __cpp_binary_literals 201304L
```

7.6.1.41 __cpp_capture_star_this

```
#define __cpp_capture_star_this 201603L
```

7.6.1.42 __cpp_constexpr

```
#define __cpp_constexpr 201603L
```

7.6.1.43 __cpp_decltype

```
#define __cpp_decltype 200707L
```

7.6.1.44 __cpp_decltype_auto

```
#define __cpp_decltype_auto 201304L
```

7.6.1.45 __cpp_deduction_guides

```
#define __cpp_deduction_guides 201703L
```

7.6.1.46 __cpp_delegating_constructors

```
#define __cpp_delegating_constructors 200604L
```

7.6.1.47 __cpp_digit_separators

```
#define __cpp_digit_separators 201309L
```

7.6.1.48 __cpp_enumerator_attributes

```
#define __cpp_enumerator_attributes 201411L
```

7.6.1.49 __cpp_exceptions

```
#define __cpp_exceptions 199711L
```

7.6.1.50 __cpp_fold_expressions

```
#define __cpp_fold_expressions 201603L
```

7.6.1.51 __cpp_generic_lambdas

```
#define __cpp_generic_lambdas 201304L
```

7.6.1.52 __cpp_guaranteed_copy_elision

```
#define __cpp_guaranteed_copy_elision 201606L
```

7.6.1.53 __cpp_hex_float

```
#define __cpp_hex_float 201603L
```

7.6.1.54 __cpp_if_constexpr

```
#define __cpp_if_constexpr 201606L
```

7.6.1.55 __cpp_inheriting_constructors

```
#define __cpp_inheriting_constructors 201511L
```

7.6.1.56 __cpp_init_captures

```
#define __cpp_init_captures 201304L
```

7.6.1.57 __cpp_initializer_lists

```
#define __cpp_initializer_lists 200806L
```

7.6.1.58 __cpp_inline_variables

```
#define __cpp_inline_variables 201606L
```

7.6.1.59 __cpp_lambdas

```
#define __cpp_lambdas 200907L
```

7.6.1.60 __cpp_namespace_attributes

```
#define __cpp_namespace_attributes 201411L
```

7.6.1.61 __cpp_nested_namespace_definitions

```
#define __cpp_nested_namespace_definitions 201411L
```

7.6.1.62 __cpp_noexcept_function_type

```
#define __cpp_noexcept_function_type 201510L
```

7.6.1.63 __cpp_nontype_template_args

```
#define __cpp_nontype_template_args 201411L
```

7.6.1.64 __cpp_nontype_template_parameter_auto

```
#define __cpp_nontype_template_parameter_auto 201606L
```

7.6.1.65 __cpp_nsdmi

```
#define __cpp_nsdmi 200809L
```

7.6.1.66 __cpp_range_based_for

```
#define __cpp_range_based_for 201603L
```

7.6.1.67 __cpp_raw_strings

```
#define __cpp_raw_strings 200710L
```

7.6.1.68 __cpp_ref_qualifiers

```
#define __cpp_ref_qualifiers 200710L
```

7.6.1.69 __cpp_return_type_deduction

```
#define __cpp_return_type_deduction 201304L
```

7.6.1.70 __cpp_rtti

```
#define __cpp_rtti 199711L
```

7.6.1.71 __cpp_runtime_arrays

```
#define __cpp_runtime_arrays 198712L
```

7.6.1.72 __cpp_rvalue_reference

```
#define __cpp_rvalue_reference 200610L
```

7.6.1.73 __cpp_rvalue_references

```
#define __cpp_rvalue_references 200610L
```

7.6.1.74 __cpp_sized_deallocation

```
#define __cpp_sized_deallocation 201309L
```

7.6.1.75 __cpp_static_assert

```
#define __cpp_static_assert 201411L
```

7.6.1.76 __cpp_structured_bindings

```
#define __cpp_structured_bindings 201606L
```

7.6.1.77 __cpp_template_auto

```
#define __cpp_template_auto 201606L
```

7.6.1.78 __cpp_template_template_args

```
#define __cpp_template_template_args 201611L
```

7.6.1.79 __cpp_threadsafe_static_init

```
#define __cpp_threadsafe_static_init 200806L
```

7.6.1.80 __cpp_unicode_characters

```
#define __cpp_unicode_characters 201411L
```

7.6.1.81 __cpp_unicode_literals

```
#define __cpp_unicode_literals 200710L
```

7.6.1.82 __cpp_user_defined_literals

```
#define __cpp_user_defined_literals 200809L
```

7.6.1.83 __cpp_variable_templates

```
#define __cpp_variable_templates 201304L
```

7.6.1.84 __cpp_variadic_templates

```
#define __cpp_variadic_templates 200704L
```

7.6.1.85 __cpp_variadic_using

```
#define __cpp_variadic_using 201611L
```

7.6.1.86 __DBL_DECIMAL_DIG__

```
#define __DBL_DECIMAL_DIG__ 17
```

7.6.1.87 __DBL_DENORM_MIN__

```
#define __DBL_DENORM_MIN__ double(4.94065645841246544176568792868221372e-324L)
```

7.6.1.88 __DBL_DIG__

```
#define __DBL_DIG__ 15
```

7.6.1.89 __DBL_EPSILON__

```
#define __DBL_EPSILON__ double(2.22044604925031308084726333618164062e-16L)
```

7.6.1.90 __DBL_HAS_DENORM__

```
#define __DBL_HAS_DENORM__ 1
```

7.6.1.91 __DBL_HAS_INFINITY__

```
#define __DBL_HAS_INFINITY__ 1
```

7.6.1.92 __DBL_HAS_QUIET_NAN__

```
#define __DBL_HAS_QUIET_NAN__ 1
```

7.6.1.93 __DBL_IS_IEC_60559__

```
#define __DBL_IS_IEC_60559__ 1
```

7.6.1.94 __DBL_MANT_DIG__

```
#define __DBL_MANT_DIG__ 53
```

7.6.1.95 __DBL_MAX_10_EXP__

```
#define __DBL_MAX_10_EXP__ 308
```

```
#define DBL_MAX double(1.79769313486231570814527423731704357e+308L)
```

```
#define DBL_MAX_EXP 1024
```

```
#define __DBL_MIN_10_EXP__ (-307)
```

```
#define DBL_MIN double(2.22507385850720138309023271733240406e-308L)
```

```
#define __DBL_MIN_EXP__ (-1021)
```

```
#define DBL_NORM_MAX double(1.79769313486231570814527423731704357e+308L)
```

```
#define DEC128 EPSILON 1E-33DL
```

```
#define DEC128_MANT_DIG 34
```

```
#define DEC128_MAX 9.9999999999999999999999999999999E6144DL
```

```
#define DEC128_MAX_EXP 6145
```

```
#define __DEC128_MIN__ 1E-6143DL
```

```
#define __DEC128_MIN_EXP__ (-6142)
```

[illegible]

```
#define __DEC32_EPSILON__ 1E-6DF
```

```
#define __DEC32_MANT_DIG__ 7
```

```
#define __DEC32_MAX__ 9.999999E96DF
```

```
#define __DEC32_MAX_EXP__ 97
```

```
#define __DEC32_MIN__ 1E-95DF
```

```
#define __DEC32_MIN_EXP__ (-94)
```

```
#define DEC32_SUBNORMAL_MIN 0.000001E-95DF
```


7.6.1.116 __DEC64_EPSILON__

```
#define __DEC64_EPSILON__ 1E-15DD
```

7.6.1.117 __DEC64_MANT_DIG__

```
#define __DEC64_MANT_DIG__ 16
```

7.6.1.118 __DEC64_MAX__

```
#define __DEC64_MAX__ 9.999999999999999E384DD
```

7.6.1.119 __DEC64_MAX_EXP__

```
#define __DEC64_MAX_EXP__ 385
```

7.6.1.120 __DEC64_MIN__

```
#define __DEC64_MIN__ 1E-383DD
```

7.6.1.121 __DEC64_MIN_EXP__

```
#define __DEC64_MIN_EXP__ (-382)
```

7.6.1.122 __DEC64_SUBNORMAL_MIN__

```
#define __DEC64_SUBNORMAL_MIN__ 0.0000000000000001E-383DD
```

7.6.1.123 __DEC_EVAL_METHOD__

```
#define __DEC_EVAL_METHOD__ 2
```

7.6.1.124 __DECIMAL_BID_FORMAT__

```
#define __DECIMAL_BID_FORMAT__ 1
```

7.6.1.125 __DECIMAL_DIG__

```
#define __DECIMAL_DIG__ 21
```

7.6.1.126 __DEPRECATED

```
#define __DEPRECATED 1
```

7.6.1.127 __ELF__

```
#define __ELF__ 1
```

7.6.1.128 __EXCEPTIONS

```
#define __EXCEPTIONS 1
```

7.6.1.129 __FINITE_MATH_ONLY__

```
#define __FINITE_MATH_ONLY__ 0
```

7.6.1.130 __FLOAT_WORD_ORDER__

```
#define __FLOAT_WORD_ORDER__ \_\_ORDER\_LITTLE\_ENDIAN\_\_
```

7.6.1.131 __FLT128_DECIMAL_DIG__

```
#define __FLT128_DECIMAL_DIG__ 36
```

7.6.1.132 __FLT128_DENORM_MIN__

```
#define __FLT128_DENORM_MIN__ 6.47517511943802511092443895822764655e-4966F128
```

7.6.1.133 __FLT128_DIG__

```
#define __FLT128_DIG__ 33
```

7.6.1.134 __FLT128_EPSILON__

```
#define __FLT128_EPSILON__ 1.92592994438723585305597794258492732e-34F128
```

7.6.1.135 __FLT128_HAS_DENORM__

```
#define __FLT128_HAS_DENORM__ 1
```

7.6.1.136 __FLT128_HAS_INFINITY__

```
#define __FLT128_HAS_INFINITY__ 1
```

7.6.1.137 __FLT128_HAS_QUIET_NAN__

```
#define __FLT128_HAS_QUIET_NAN__ 1
```

7.6.1.138 __FLT128_IS_IEC_60559__

```
#define __FLT128_IS_IEC_60559__ 1
```

7.6.1.139 __FLT128_MANT_DIG__

```
#define __FLT128_MANT_DIG__ 113
```

7.6.1.140 __FLT128_MAX_10_EXP__

```
#define __FLT128_MAX_10_EXP__ 4932
```

7.6.1.141 __FLT128_MAX__

```
#define __FLT128_MAX__ 1.18973149535723176508575932662800702e+4932F128
```

7.6.1.142 __FLT128_MAX_EXP__

```
#define __FLT128_MAX_EXP__ 16384
```

7.6.1.143 __FLT128_MIN_10_EXP__

```
#define __FLT128_MIN_10_EXP__ (-4931)
```

7.6.1.144 __FLT128_MIN__

```
#define __FLT128_MIN__ 3.36210314311209350626267781732175260e-4932F128
```

7.6.1.145 __FLT128_MIN_EXP__

```
#define __FLT128_MIN_EXP__ (-16381)
```

7.6.1.146 __FLT128_NORM_MAX__

```
#define __FLT128_NORM_MAX__ 1.18973149535723176508575932662800702e+4932F128
```

7.6.1.147 __FLT16_DECIMAL_DIG__

```
#define __FLT16_DECIMAL_DIG__ 5
```

7.6.1.148 __FLT16_DENORM_MIN__

```
#define __FLT16_DENORM_MIN__ 5.9604644775390625000000000000000000000000e-8F16
```

7.6.1.149 __FLT16_DIG__

```
#define __FLT16_DIG__ 3
```

7.6.1.150 __FLT16_EPSILON__

```
#define __FLT16_EPSILON__ 9.7656250000000000000000000000000000000000e-4F16
```

7.6.1.151 __FLT16_HAS_DENORM__

```
#define __FLT16_HAS_DENORM__ 1
```

7.6.1.152 __FLT16_HAS_INFINITY__

```
#define __FLT16_HAS_INFINITY__ 1
```

7.6.1.153 __FLT16_HAS_QUIET_NAN__

```
#define __FLT16_HAS_QUIET_NAN__ 1
```

7.6.1.154 __FLT16_IS_IEC_60559__

```
#define __FLT16_IS_IEC_60559__ 1
```

7.6.1.155 __FLT16_MANT_DIG__

```
#define __FLT16_MANT_DIG__ 11
```

7.6.1.156 __FLT16_MAX_10_EXP__

```
#define __FLT16_MAX_10_EXP__ 4
```

7.6.1.157 __FLT16_MAX__

```
#define __FLT16_MAX__ 6.55040000000000000000000000000000000000000000000e+4F16
```

7.6.1.158 __FLT16_MAX_EXP__

```
#define __FLT16_MAX_EXP__ 16
```

7.6.1.159 __FLT16_MIN_10_EXP__

```
#define __FLT16_MIN_10_EXP__ (-4)
```

7.6.1.160 __FLT16_MIN__

```
#define __FLT16_MIN__ 6.10351562500000000000000000000000000000000000000e-5F16
```

7.6.1.161 __FLT16_MIN_EXP__

```
#define __FLT16_MIN_EXP__ (-13)
```

7.6.1.162 __FLT16_NORM_MAX__

```
#define __FLT16_NORM_MAX__ 6.55040000000000000000000000000000000000000000000e+4F16
```

7.6.1.163 __FLT32_DECIMAL_DIG__

```
#define __FLT32_DECIMAL_DIG__ 9
```

7.6.1.164 __FLT32_DENORM_MIN__

```
#define __FLT32_DENORM_MIN__ 1.40129846432481707092372958328991613e-45F32
```

7.6.1.165 __FLT32_DIG__

```
#define __FLT32_DIG__ 6
```

7.6.1.166 __FLT32_EPSILON__

```
#define __FLT32_EPSILON__ 1.19209289550781250000000000000000000000000000000e-7F32
```

7.6.1.167 __FLT32_HAS_DENORM__

```
#define __FLT32_HAS_DENORM__ 1
```

7.6.1.168 __FLT32_HAS_INFINITY__

```
#define __FLT32_HAS_INFINITY__ 1
```

7.6.1.169 __FLT32_HAS_QUIET_NAN__

```
#define __FLT32_HAS_QUIET_NAN__ 1
```

7.6.1.170 __FLT32_IS_IEC_60559__

```
#define __FLT32_IS_IEC_60559__ 1
```

7.6.1.171 __FLT32_MANT_DIG__

```
#define __FLT32_MANT_DIG__ 24
```

7.6.1.172 __FLT32_MAX_10_EXP__

```
#define __FLT32_MAX_10_EXP__ 38
```

7.6.1.173 __FLT32_MAX__

```
#define __FLT32_MAX__ 3.40282346638528859811704183484516925e+38F32
```

7.6.1.174 __FLT32_MAX_EXP__

```
#define __FLT32_MAX_EXP__ 128
```

7.6.1.175 __FLT32_MIN_10_EXP__

```
#define __FLT32_MIN_10_EXP__ (-37)
```

7.6.1.176 __FLT32_MIN__

```
#define __FLT32_MIN__ 1.17549435082228750796873653722224568e-38F32
```

7.6.1.177 __FLT32_MIN_EXP__

```
#define __FLT32_MIN_EXP__ (-125)
```

7.6.1.178 __FLT32_NORM_MAX__

```
#define __FLT32_NORM_MAX__ 3.40282346638528859811704183484516925e+38F32
```

7.6.1.179 __FLT32X_DECIMAL_DIG__

```
#define __FLT32X_DECIMAL_DIG__ 17
```

7.6.1.180 __FLT32X_DENORM_MIN__

```
#define __FLT32X_DENORM_MIN__ 4.94065645841246544176568792868221372e-324F32x
```

7.6.1.181 __FLT32X_DIG__

```
#define __FLT32X_DIG__ 15
```

7.6.1.182 __FLT32X_EPSILON__

```
#define __FLT32X_EPSILON__ 2.22044604925031308084726333618164062e-16F32x
```

7.6.1.183 __FLT32X_HAS_DENORM__

```
#define __FLT32X_HAS_DENORM__ 1
```

7.6.1.184 __FLT32X_HAS_INFINITY__

```
#define __FLT32X_HAS_INFINITY__ 1
```

7.6.1.185 __FLT32X_HAS_QUIET_NAN__

```
#define __FLT32X_HAS_QUIET_NAN__ 1
```

7.6.1.186 __FLT32X_IS_IEC_60559__

```
#define __FLT32X_IS_IEC_60559__ 1
```

7.6.1.187 __FLT32X_MANT_DIG__

```
#define __FLT32X_MANT_DIG__ 53
```

7.6.1.188 __FLT32X_MAX_10_EXP__

```
#define __FLT32X_MAX_10_EXP__ 308
```

7.6.1.189 __FLT32X_MAX__

```
#define __FLT32X_MAX__ 1.79769313486231570814527423731704357e+308F32x
```

7.6.1.190 __FLT32X_MAX_EXP__

```
#define __FLT32X_MAX_EXP__ 1024
```

7.6.1.191 __FLT32X_MIN_10_EXP__

```
#define __FLT32X_MIN_10_EXP__ (-307)
```

7.6.1.192 __FLT32X_MIN__

```
#define __FLT32X_MIN__ 2.22507385850720138309023271733240406e-308F32x
```

7.6.1.193 __FLT32X_MIN_EXP__

```
#define __FLT32X_MIN_EXP__ (-1021)
```

7.6.1.194 __FLT32X_NORM_MAX__

```
#define __FLT32X_NORM_MAX__ 1.79769313486231570814527423731704357e+308F32x
```

7.6.1.195 __FLT64_DECIMAL_DIG__

```
#define __FLT64_DECIMAL_DIG__ 17
```


7.6.1.196 __FLT64_DENORM_MIN__

```
#define __FLT64_DENORM_MIN__ 4.94065645841246544176568792868221372e-324F64
```

7.6.1.197 __FLT64_DIG__

```
#define __FLT64_DIG__ 15
```

7.6.1.198 __FLT64_EPSILON__

```
#define __FLT64_EPSILON__ 2.22044604925031308084726333618164062e-16F64
```

7.6.1.199 __FLT64_HAS_DENORM__

```
#define __FLT64_HAS_DENORM__ 1
```

7.6.1.200 __FLT64_HAS_INFINITY__

```
#define __FLT64_HAS_INFINITY__ 1
```

7.6.1.201 __FLT64_HAS_QUIET_NAN__

```
#define __FLT64_HAS_QUIET_NAN__ 1
```

7.6.1.202 __FLT64_IS_IEC_60559__

```
#define __FLT64_IS_IEC_60559__ 1
```

7.6.1.203 __FLT64_MANT_DIG__

```
#define __FLT64_MANT_DIG__ 53
```

7.6.1.204 __FLT64_MAX_10_EXP__

```
#define __FLT64_MAX_10_EXP__ 308
```

7.6.1.205 __FLT64_MAX__

```
#define __FLT64_MAX__ 1.79769313486231570814527423731704357e+308F64
```

7.6.1.206 __FLT64_MAX_EXP__

```
#define __FLT64_MAX_EXP__ 1024
```

7.6.1.207 __FLT64_MIN_10_EXP__

```
#define __FLT64_MIN_10_EXP__ (-307)
```

7.6.1.208 __FLT64_MIN__

```
#define __FLT64_MIN__ 2.22507385850720138309023271733240406e-308F64
```

7.6.1.209 __FLT64_MIN_EXP__

```
#define __FLT64_MIN_EXP__ (-1021)
```

7.6.1.210 __FLT64_NORM_MAX__

```
#define __FLT64_NORM_MAX__ 1.79769313486231570814527423731704357e+308F64
```

7.6.1.211 __FLT64X_DECIMAL_DIG__

```
#define __FLT64X_DECIMAL_DIG__ 21
```

7.6.1.212 __FLT64X_DENORM_MIN__

```
#define __FLT64X_DENORM_MIN__ 3.64519953188247460252840593361941982e-4951F64x
```

7.6.1.213 __FLT64X_DIG__

```
#define __FLT64X_DIG__ 18
```

7.6.1.214 __FLT64X_EPSILON__

```
#define __FLT64X_EPSILON__ 1.08420217248550443400745280086994171e-19F64x
```

7.6.1.215 __FLT64X_HAS_DENORM__

```
#define __FLT64X_HAS_DENORM__ 1
```

7.6.1.216 __FLT64X_HAS_INFINITY__

```
#define __FLT64X_HAS_INFINITY__ 1
```

7.6.1.217 __FLT64X_HAS_QUIET_NAN__

```
#define __FLT64X_HAS_QUIET_NAN__ 1
```

7.6.1.218 __FLT64X_IS_IEC_60559__

```
#define __FLT64X_IS_IEC_60559__ 1
```

7.6.1.219 __FLT64X_MANT_DIG__

```
#define __FLT64X_MANT_DIG__ 64
```

7.6.1.220 __FLT64X_MAX_10_EXP__

```
#define __FLT64X_MAX_10_EXP__ 4932
```

7.6.1.221 __FLT64X_MAX__

```
#define __FLT64X_MAX__ 1.18973149535723176502126385303097021e+4932F64x
```

7.6.1.222 __FLT64X_MAX_EXP__

```
#define __FLT64X_MAX_EXP__ 16384
```

7.6.1.223 __FLT64X_MIN_10_EXP__

```
#define __FLT64X_MIN_10_EXP__ (-4931)
```

7.6.1.224 __FLT64X_MIN__

```
#define __FLT64X_MIN__ 3.36210314311209350626267781732175260e-4932F64x
```

7.6.1.225 __FLT64X_MIN_EXP__

```
#define __FLT64X_MIN_EXP__ (-16381)
```

7.6.1.226 __FLT64X_NORM_MAX__

```
#define __FLT64X_NORM_MAX__ 1.18973149535723176502126385303097021e+4932F64x
```

7.6.1.227 __FLT_DECIMAL_DIG__

```
#define __FLT_DECIMAL_DIG__ 9
```

7.6.1.228 __FLT_DENORM_MIN__

```
#define __FLT_DENORM_MIN__ 1.40129846432481707092372958328991613e-45F
```

7.6.1.229 __FLT_DIG__

```
#define __FLT_DIG__ 6
```

7.6.1.230 __FLT_EPSILON__

```
#define __FLT_EPSILON__ 1.192092895507812500000000000000000000e-7F
```

7.6.1.231 __FLT_EVAL_METHOD__

```
#define __FLT_EVAL_METHOD__ 0
```

7.6.1.232 __FLT_EVAL_METHOD_TS_18661_3__

```
#define __FLT_EVAL_METHOD_TS_18661_3__ 0
```

7.6.1.233 __FLT_HAS_DENORM__

```
#define __FLT_HAS_DENORM__ 1
```

7.6.1.234 __FLT_HAS_INFINITY__

```
#define __FLT_HAS_INFINITY__ 1
```

7.6.1.235 __FLT_HAS_QUIET_NAN__

```
#define __FLT_HAS_QUIET_NAN__ 1
```

7.6.1.236 __FLT_IS_IEC_60559__

```
#define __FLT_IS_IEC_60559__ 1
```

7.6.1.237 __FLT_MANT_DIG__

```
#define __FLT_MANT_DIG__ 24
```

7.6.1.238 __FLT_MAX_10_EXP__

```
#define __FLT_MAX_10_EXP__ 38
```

7.6.1.239 __FLT_MAX__

```
#define __FLT_MAX__ 3.40282346638528859811704183484516925e+38F
```

7.6.1.240 __FLT_MAX_EXP__

```
#define __FLT_MAX_EXP__ 128
```

7.6.1.241 __FLT_MIN_10_EXP__

```
#define __FLT_MIN_10_EXP__ (-37)
```

7.6.1.242 __FLT_MIN__

```
#define __FLT_MIN__ 1.1754943508222875079687365372224568e-38F
```

7.6.1.243 __FLT_MIN_EXP__

```
#define __FLT_MIN_EXP__ (-125)
```

7.6.1.244 __FLT_NORM_MAX__

```
#define __FLT_NORM_MAX__ 3.40282346638528859811704183484516925e+38F
```

7.6.1.245 __FLT_RADIX__

```
#define __FLT_RADIX__ 2
```

7.6.1.246 __FXSR__

```
#define __FXSR__ 1
```

7.6.1.247 __GCC_ASM_FLAG_OUTPUTS__

```
#define __GCC_ASM_FLAG_OUTPUTS__ 1
```

7.6.1.248 __GCC_ATOMIC_BOOL_LOCK_FREE

```
#define __GCC_ATOMIC_BOOL_LOCK_FREE 2
```

7.6.1.249 __GCC_ATOMIC_CHAR16_T_LOCK_FREE

```
#define __GCC_ATOMIC_CHAR16_T_LOCK_FREE 2
```

7.6.1.250 __GCC_ATOMIC_CHAR32_T_LOCK_FREE

```
#define __GCC_ATOMIC_CHAR32_T_LOCK_FREE 2
```

7.6.1.251 __GCC_ATOMIC_CHAR_LOCK_FREE

```
#define __GCC_ATOMIC_CHAR_LOCK_FREE 2
```

7.6.1.252 __GCC_ATOMIC_INT_LOCK_FREE

```
#define __GCC_ATOMIC_INT_LOCK_FREE 2
```

7.6.1.253 __GCC_ATOMIC_LLONG_LOCK_FREE

```
#define __GCC_ATOMIC_LLONG_LOCK_FREE 2
```

7.6.1.254 __GCC_ATOMIC_LONG_LOCK_FREE

```
#define __GCC_ATOMIC_LONG_LOCK_FREE 2
```

7.6.1.255 __GCC_ATOMIC_POINTER_LOCK_FREE

```
#define __GCC_ATOMIC_POINTER_LOCK_FREE 2
```

7.6.1.256 __GCC_ATOMIC_SHORT_LOCK_FREE

```
#define __GCC_ATOMIC_SHORT_LOCK_FREE 2
```

7.6.1.257 __GCC_ATOMIC_TEST_AND_SET_TRUEVAL

```
#define __GCC_ATOMIC_TEST_AND_SET_TRUEVAL 1
```

7.6.1.258 __GCC_ATOMIC_WCHAR_T_LOCK_FREE

```
#define __GCC_ATOMIC_WCHAR_T_LOCK_FREE 2
```

7.6.1.259 __GCC_CONSTRUCTIVE_SIZE

```
#define __GCC_CONSTRUCTIVE_SIZE 64
```

7.6.1.260 __GCC_DESTRUCTIVE_SIZE

```
#define __GCC_DESTRUCTIVE_SIZE 64
```

7.6.1.261 __GCC_HAVE_DWARF2_CFI_ASM

```
#define __GCC_HAVE_DWARF2_CFI_ASM 1
```

7.6.1.262 __GCC_HAVE_SYNC_COMPARE_AND_SWAP_1

```
#define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_1 1
```

7.6.1.263 __GCC_HAVE_SYNC_COMPARE_AND_SWAP_2

```
#define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_2 1
```

7.6.1.264 __GCC_HAVE_SYNC_COMPARE_AND_SWAP_4

```
#define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_4 1
```

7.6.1.265 __GCC_HAVE_SYNC_COMPARE_AND_SWAP_8

```
#define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_8 1
```

7.6.1.266 __GCC_IEC_559

```
#define __GCC_IEC_559 2
```

7.6.1.267 __GCC_IEC_559_COMPLEX

```
#define __GCC_IEC_559_COMPLEX 2
```

7.6.1.268 __GLIBCXX_BITSIZE_INT_N_0

```
#define __GLIBCXX_BITSIZE_INT_N_0 128
```

7.6.1.269 __GLIBCXX_TYPE_INT_N_0

```
#define __GLIBCXX_TYPE_INT_N_0 __int128
```

7.6.1.270 __gnu_linux__

```
#define __gnu_linux__ 1
```

7.6.1.271 __GNUC__

```
#define __GNUC__ 13
```

7.6.1.272 __GNUC_EXECUTION_CHARSET_NAME

```
#define __GNUC_EXECUTION_CHARSET_NAME "UTF-8"
```

7.6.1.273 __GNUC_MINOR__

```
#define __GNUC_MINOR__ 3
```

7.6.1.274 __GNUC_PATCHLEVEL__

```
#define __GNUC_PATCHLEVEL__ 0
```

7.6.1.275 __GNUC_STDC_INLINE__

```
#define __GNUC_STDC_INLINE__ 1
```


7.6.1.276 __GNUC_WIDE_EXECUTION_CHARSET_NAME

```
#define __GNUC_WIDE_EXECUTION_CHARSET_NAME "UTF-32LE"
```

7.6.1.277 __GNUG__

```
#define __GNUG__ 13
```

7.6.1.278 __GXX_ABI_VERSION

```
#define __GXX_ABI_VERSION 1018
```

7.6.1.279 __GXX_EXPERIMENTAL_CXX0X__

```
#define __GXX_EXPERIMENTAL_CXX0X__ 1
```

7.6.1.280 __GXX_RTTI

```
#define __GXX_RTTI 1
```

7.6.1.281 __GXX_WEAK__

```
#define __GXX_WEAK__ 1
```

7.6.1.282 __HAVE_SPECULATION_SAFE_VALUE

```
#define __HAVE_SPECULATION_SAFE_VALUE 1
```

7.6.1.283 __INT16_C

```
#define __INT16_C(  
    c ) c
```

7.6.1.284 __INT16_MAX__

```
#define __INT16_MAX__ 0x7fff
```

7.6.1.285 __INT16_TYPE__

```
#define __INT16_TYPE__ short int
```

7.6.1.286 __INT32_C

```
#define __INT32_C(  
    c ) c
```

7.6.1.287 __INT32_MAX__

```
#define __INT32_MAX__ 0x7fffffff
```

7.6.1.288 __INT32_TYPE__

```
#define __INT32_TYPE__ int
```

7.6.1.289 __INT64_C

```
#define __INT64_C(  
    c ) c ## L
```

7.6.1.290 __INT64_MAX__

```
#define __INT64_MAX__ 0x7fffffffffffffffL
```

7.6.1.291 __INT64_TYPE__

```
#define __INT64_TYPE__ long int
```

7.6.1.292 __INT8_C

```
#define __INT8_C(  
    c ) c
```

7.6.1.293 __INT8_MAX__

```
#define __INT8_MAX__ 0x7f
```

7.6.1.294 __INT8_TYPE__

```
#define __INT8_TYPE__ signed char
```

7.6.1.295 __INT_FAST16_MAX__

```
#define __INT_FAST16_MAX__ 0x7fffffffffffffffL
```

7.6.1.296 __INT_FAST16_TYPE__

```
#define __INT_FAST16_TYPE__ long int
```

7.6.1.297 __INT_FAST16_WIDTH__

```
#define __INT_FAST16_WIDTH__ 64
```

7.6.1.298 __INT_FAST32_MAX__

```
#define __INT_FAST32_MAX__ 0x7fffffffffffffffL
```

7.6.1.299 __INT_FAST32_TYPE__

```
#define __INT_FAST32_TYPE__ long int
```

7.6.1.300 __INT_FAST32_WIDTH__

```
#define __INT_FAST32_WIDTH__ 64
```

7.6.1.301 __INT_FAST64_MAX__

```
#define __INT_FAST64_MAX__ 0x7fffffffffffffffL
```

7.6.1.302 __INT_FAST64_TYPE__

```
#define __INT_FAST64_TYPE__ long int
```

7.6.1.303 __INT_FAST64_WIDTH__

```
#define __INT_FAST64_WIDTH__ 64
```

7.6.1.304 __INT_FAST8_MAX__

```
#define __INT_FAST8_MAX__ 0x7f
```

7.6.1.305 __INT_FAST8_TYPE__

```
#define __INT_FAST8_TYPE__ signed char
```

7.6.1.306 __INT_FAST8_WIDTH__

```
#define __INT_FAST8_WIDTH__ 8
```

7.6.1.307 __INT_LEAST16_MAX__

```
#define __INT_LEAST16_MAX__ 0x7fff
```

7.6.1.308 __INT_LEAST16_TYPE__

```
#define __INT_LEAST16_TYPE__ short int
```

7.6.1.309 __INT_LEAST16_WIDTH__

```
#define __INT_LEAST16_WIDTH__ 16
```

7.6.1.310 __INT_LEAST32_MAX__

```
#define __INT_LEAST32_MAX__ 0x7fffffff
```

7.6.1.311 __INT_LEAST32_TYPE__

```
#define __INT_LEAST32_TYPE__ int
```

7.6.1.312 __INT_LEAST32_WIDTH__

```
#define __INT_LEAST32_WIDTH__ 32
```

7.6.1.313 __INT_LEAST64_MAX__

```
#define __INT_LEAST64_MAX__ 0x7fffffffffffffffffL
```

7.6.1.314 __INT_LEAST64_TYPE__

```
#define __INT_LEAST64_TYPE__ long int
```

7.6.1.315 __INT_LEAST64_WIDTH__

```
#define __INT_LEAST64_WIDTH__ 64
```

7.6.1.316 __INT_LEAST8_MAX__

```
#define __INT_LEAST8_MAX__ 0x7f
```

7.6.1.317 __INT_LEAST8_TYPE__

```
#define __INT_LEAST8_TYPE__ signed char
```

7.6.1.318 __INT_LEAST8_WIDTH__

```
#define __INT_LEAST8_WIDTH__ 8
```

7.6.1.319 __INT_MAX__

```
#define __INT_MAX__ 0x7fffffff
```

7.6.1.320 __INT_WIDTH__

```
#define __INT_WIDTH__ 32
```

7.6.1.321 __INTMAX_C

```
#define __INTMAX_C(  
    c ) c ## L
```

7.6.1.322 __INTMAX_MAX__

```
#define __INTMAX_MAX__ 0xffffffffffffffffL
```

7.6.1.323 __INTMAX_TYPE__

```
#define __INTMAX_TYPE__ long int
```

7.6.1.324 __INTMAX_WIDTH__

```
#define __INTMAX_WIDTH__ 64
```

7.6.1.325 __INTPTR_MAX__

```
#define __INTPTR_MAX__ 0x7fffffffffffffffffL
```

7.6.1.326 __INTPTR_TYPE__

```
#define __INTPTR_TYPE__ long int
```

7.6.1.327 __INTPTR_WIDTH__

```
#define __INTPTR_WIDTH__ 64
```

7.6.1.328 __k8

```
#define __k8 1
```

7.6.1.329 __k8__

```
#define __k8__ 1
```

7.6.1.330 __LDBL_DECIMAL_DIG__

```
#define __LDBL_DECIMAL_DIG__ 21
```

7.6.1.331 __LDBL_DENORM_MIN__

```
#define __LDBL_DENORM_MIN__ 3.64519953188247460252840593361941982e-4951L
```

7.6.1.332 __LDBL_DIG__

```
#define __LDBL_DIG__ 18
```

7.6.1.333 __LDBL_EPSILON__

```
#define __LDBL_EPSILON__ 1.08420217248550443400745280086994171e-19L
```

7.6.1.334 __LDBL_HAS_DENORM__

```
#define __LDBL_HAS_DENORM__ 1
```

7.6.1.335 __LDBL_HAS_INFINITY__

```
#define __LDBL_HAS_INFINITY__ 1
```

7.6.1.336 __LDBL_HAS_QUIET_NAN__

```
#define __LDBL_HAS_QUIET_NAN__ 1
```

7.6.1.337 __LDBL_IS_IEC_60559__

```
#define __LDBL_IS_IEC_60559__ 1
```

7.6.1.338 __LDBL_MANT_DIG__

```
#define __LDBL_MANT_DIG__ 64
```

7.6.1.339 __LDBL_MAX_10_EXP__

```
#define __LDBL_MAX_10_EXP__ 4932
```

7.6.1.340 __LDBL_MAX__

```
#define __LDBL_MAX__ 1.18973149535723176502126385303097021e+4932L
```

7.6.1.341 __LDBL_MAX_EXP__

```
#define __LDBL_MAX_EXP__ 16384
```

7.6.1.342 __LDBL_MIN_10_EXP__

```
#define __LDBL_MIN_10_EXP__ (-4931)
```

7.6.1.343 __LDBL_MIN__

```
#define __LDBL_MIN__ 3.36210314311209350626267781732175260e-4932L
```

7.6.1.344 __LDBL_MIN_EXP__

```
#define __LDBL_MIN_EXP__ (-16381)
```

7.6.1.345 __LDBL_NORM_MAX__

```
#define __LDBL_NORM_MAX__ 1.18973149535723176502126385303097021e+4932L
```

7.6.1.346 __linux

```
#define __linux 1
```

7.6.1.347 __linux__

```
#define __linux__ 1
```

7.6.1.348 __LONG_LONG_MAX__

```
#define __LONG_LONG_MAX__ 0x7fffffffffffffffffLL
```

7.6.1.349 __LONG_LONG_WIDTH__

```
#define __LONG_LONG_WIDTH__ 64
```

7.6.1.350 __LONG_MAX__

```
#define __LONG_MAX__ 0x7fffffffffffffffL
```

7.6.1.351 __LONG_WIDTH__

```
#define __LONG_WIDTH__ 64
```

7.6.1.352 __LP64__

```
#define __LP64__ 1
```

7.6.1.353 __MMX__

```
#define __MMX__ 1
```

7.6.1.354 __MMX_WITH_SSE__

```
#define __MMX_WITH_SSE__ 1
```

7.6.1.355 __NO_INLINE__

```
#define __NO_INLINE__ 1
```


7.6.1.356 __ORDER_BIG_ENDIAN__

```
#define __ORDER_BIG_ENDIAN__ 4321
```

7.6.1.357 __ORDER_LITTLE_ENDIAN__

```
#define __ORDER_LITTLE_ENDIAN__ 1234
```

7.6.1.358 __ORDER_PDP_ENDIAN__

```
#define __ORDER_PDP_ENDIAN__ 3412
```

7.6.1.359 __pic__

```
#define __pic__ 2
```

7.6.1.360 __PIC__

```
#define __PIC__ 2
```

7.6.1.361 __PRAGMA_REDEFINE_EXTNAME

```
#define __PRAGMA_REDEFINE_EXTNAME 1
```

7.6.1.362 __PTRDIFF_MAX__

```
#define __PTRDIFF_MAX__ 0x7fffffffffffffffffL
```

7.6.1.363 __PTRDIFF_TYPE__

```
#define __PTRDIFF_TYPE__ long int
```

7.6.1.364 __PTRDIFF_WIDTH__

```
#define __PTRDIFF_WIDTH__ 64
```

7.6.1.365 __REGISTER_PREFIX__

```
#define __REGISTER_PREFIX__
```

7.6.1.366 __SCHAR_MAX__

```
#define __SCHAR_MAX__ 0x7f
```

7.6.1.367 __SCHAR_WIDTH__

```
#define __SCHAR_WIDTH__ 8
```

7.6.1.368 __SEG_FS

```
#define __SEG_FS 1
```

7.6.1.369 __SEG_GS

```
#define __SEG_GS 1
```

7.6.1.370 __SHRT_MAX__

```
#define __SHRT_MAX__ 0x7fff
```

7.6.1.371 __SHRT_WIDTH__

```
#define __SHRT_WIDTH__ 16
```

7.6.1.372 __SIG_ATOMIC_MAX__

```
#define __SIG_ATOMIC_MAX__ 0x7fffffff
```

7.6.1.373 __SIG_ATOMIC_MIN__

```
#define __SIG_ATOMIC_MIN__ (-__SIG_ATOMIC_MAX__ - 1)
```

7.6.1.374 __SIG_ATOMIC_TYPE__

```
#define __SIG_ATOMIC_TYPE__ int
```

7.6.1.375 __SIG_ATOMIC_WIDTH__

```
#define __SIG_ATOMIC_WIDTH__ 32
```

7.6.1.376 __SIZE_MAX__

```
#define __SIZE_MAX__ 0xffffffffffffffffUL
```

7.6.1.377 __SIZE_TYPE__

```
#define __SIZE_TYPE__ long unsigned int
```

7.6.1.378 __SIZE_WIDTH__

```
#define __SIZE_WIDTH__ 64
```

7.6.1.379 __SIZEOF_DOUBLE__

```
#define __SIZEOF_DOUBLE__ 8
```

7.6.1.380 __SIZEOF_FLOAT128__

```
#define __SIZEOF_FLOAT128__ 16
```

7.6.1.381 __SIZEOF_FLOAT80__

```
#define __SIZEOF_FLOAT80__ 16
```

7.6.1.382 __SIZEOF_FLOAT__

```
#define __SIZEOF_FLOAT__ 4
```

7.6.1.383 __SIZEOF_INT128__

```
#define __SIZEOF_INT128__ 16
```

7.6.1.384 __SIZEOF_INT__

```
#define __SIZEOF_INT__ 4
```

7.6.1.385 __SIZEOF_LONG__

```
#define __SIZEOF_LONG__ 8
```

7.6.1.386 __SIZEOF_LONG_DOUBLE__

```
#define __SIZEOF_LONG_DOUBLE__ 16
```

7.6.1.387 __SIZEOF_LONG_LONG__

```
#define __SIZEOF_LONG_LONG__ 8
```

7.6.1.388 __SIZEOF_POINTER__

```
#define __SIZEOF_POINTER__ 8
```

7.6.1.389 __SIZEOF_PTRDIFF_T__

```
#define __SIZEOF_PTRDIFF_T__ 8
```

7.6.1.390 __SIZEOF_SHORT__

```
#define __SIZEOF_SHORT__ 2
```

7.6.1.391 __SIZEOF_SIZE_T__

```
#define __SIZEOF_SIZE_T__ 8
```

7.6.1.392 __SIZEOF_WCHAR_T__

```
#define __SIZEOF_WCHAR_T__ 4
```

7.6.1.393 __SIZEOF_WINT_T__

```
#define __SIZEOF_WINT_T__ 4
```

7.6.1.394 __SSE2__

```
#define __SSE2__ 1
```

7.6.1.395 __SSE2_MATH__

```
#define __SSE2_MATH__ 1
```

7.6.1.396 __SSE__

```
#define __SSE__ 1
```

7.6.1.397 __SSE_MATH__

```
#define __SSE_MATH__ 1
```

7.6.1.398 __SSP_STRONG__

```
#define __SSP_STRONG__ 3
```

7.6.1.399 __STDC__

```
#define __STDC__ 1
```

7.6.1.400 __STDC_HOSTED__

```
#define __STDC_HOSTED__ 1
```

7.6.1.401 __STDC_IEC_559__

```
#define __STDC_IEC_559__ 1
```

7.6.1.402 __STDC_IEC_559_COMPLEX__

```
#define __STDC_IEC_559_COMPLEX__ 1
```

7.6.1.403 __STDC_IEC_60559_BFP__

```
#define __STDC_IEC_60559_BFP__ 201404L
```

7.6.1.404 __STDC_IEC_60559_COMPLEX__

```
#define __STDC_IEC_60559_COMPLEX__ 201404L
```

7.6.1.405 __STDC_ISO_10646__

```
#define __STDC_ISO_10646__ 201706L
```

7.6.1.406 __STDC_UTF_16__

```
#define __STDC_UTF_16__ 1
```

7.6.1.407 __STDC_UTF_32__

```
#define __STDC_UTF_32__ 1
```

7.6.1.408 __STDCPP_DEFAULT_NEW_ALIGNMENT__

```
#define __STDCPP_DEFAULT_NEW_ALIGNMENT__ 16
```

7.6.1.409 __STDCPP_THREADS__

```
#define __STDCPP_THREADS__ 1
```

7.6.1.410 __UINT16_C

```
#define __UINT16_C(  
    c ) c
```

7.6.1.411 __UINT16_MAX__

```
#define __UINT16_MAX__ 0xffff
```

7.6.1.412 __UINT16_TYPE__

```
#define __UINT16_TYPE__ short unsigned int
```

7.6.1.413 __UINT32_C

```
#define __UINT32_C(  
    c ) c ## U
```

7.6.1.414 __UINT32_MAX__

```
#define __UINT32_MAX__ 0xffffffffU
```

7.6.1.415 __UINT32_TYPE__

```
#define __UINT32_TYPE__ unsigned int
```

7.6.1.416 __UINT64_C

```
#define __UINT64_C(  
    c ) c ## UL
```

7.6.1.417 __UINT64_MAX__

```
#define __UINT64_MAX__ 0xffffffffffffffffUL
```

7.6.1.418 __UINT64_TYPE__

```
#define __UINT64_TYPE__ long unsigned int
```

7.6.1.419 __UINT8_C

```
#define __UINT8_C(  
    c ) c
```

7.6.1.420 __UINT8_MAX__

```
#define __UINT8_MAX__ 0xff
```

7.6.1.421 __UINT8_TYPE__

```
#define __UINT8_TYPE__ unsigned char
```

7.6.1.422 __UINT_FAST16_MAX__

```
#define __UINT_FAST16_MAX__ 0xffffffffffffffffUL
```

7.6.1.423 __UINT_FAST16_TYPE__

```
#define __UINT_FAST16_TYPE__ long unsigned int
```

7.6.1.424 __UINT_FAST32_MAX__

```
#define __UINT_FAST32_MAX__ 0xffffffffffffffffUL
```

7.6.1.425 __UINT_FAST32_TYPE__

```
#define __UINT_FAST32_TYPE__ long unsigned int
```

7.6.1.426 __UINT_FAST64_MAX__

```
#define __UINT_FAST64_MAX__ 0xffffffffffffffffUL
```

7.6.1.427 __UINT_FAST64_TYPE__

```
#define __UINT_FAST64_TYPE__ long unsigned int
```

7.6.1.428 __UINT_FAST8_MAX__

```
#define __UINT_FAST8_MAX__ 0xff
```

7.6.1.429 __UINT_FAST8_TYPE__

```
#define __UINT_FAST8_TYPE__ unsigned char
```

7.6.1.430 __UINT_LEAST16_MAX__

```
#define __UINT_LEAST16_MAX__ 0xffff
```

7.6.1.431 __UINT_LEAST16_TYPE__

```
#define __UINT_LEAST16_TYPE__ short unsigned int
```

7.6.1.432 __UINT_LEAST32_MAX__

```
#define __UINT_LEAST32_MAX__ 0xffffffffU
```

7.6.1.433 __UINT_LEAST32_TYPE__

```
#define __UINT_LEAST32_TYPE__ unsigned int
```

7.6.1.434 __UINT_LEAST64_MAX__

```
#define __UINT_LEAST64_MAX__ 0xffffffffffffffffUL
```

7.6.1.435 __UINT_LEAST64_TYPE__

```
#define __UINT_LEAST64_TYPE__ long unsigned int
```


7.6.1.436 __UINT_LEAST8_MAX__

```
#define __UINT_LEAST8_MAX__ 0xff
```

7.6.1.437 __UINT_LEAST8_TYPE__

```
#define __UINT_LEAST8_TYPE__ unsigned char
```

7.6.1.438 __UINTMAX_C

```
#define __UINTMAX_C(  
    c ) c ## UL
```

7.6.1.439 __UINTMAX_MAX__

```
#define __UINTMAX_MAX__ 0xffffffffffffffffUL
```

7.6.1.440 __UINTMAX_TYPE__

```
#define __UINTMAX_TYPE__ long unsigned int
```

7.6.1.441 __UINTPTR_MAX__

```
#define __UINTPTR_MAX__ 0xffffffffffffffffUL
```

7.6.1.442 __UINTPTR_TYPE__

```
#define __UINTPTR_TYPE__ long unsigned int
```

7.6.1.443 __unix

```
#define __unix 1
```

7.6.1.444 __unix__

```
#define __unix__ 1
```

7.6.1.445 __USER_LABEL_PREFIX__

```
#define __USER_LABEL_PREFIX__
```

7.6.1.446 __VERSION__

```
#define __VERSION__ "13.3.0"
```

7.6.1.447 __WCHAR_MAX__

```
#define __WCHAR_MAX__ 0x7fffffff
```

7.6.1.448 __WCHAR_MIN__

```
#define __WCHAR_MIN__ (-__WCHAR_MAX__ - 1)
```

7.6.1.449 __WCHAR_TYPE__

```
#define __WCHAR_TYPE__ int
```

7.6.1.450 __WCHAR_WIDTH__

```
#define __WCHAR_WIDTH__ 32
```

7.6.1.451 __WINT_MAX__

```
#define __WINT_MAX__ 0xffffffffU
```

7.6.1.452 __WINT_MIN__

```
#define __WINT_MIN__ 0U
```

7.6.1.453 __WINT_TYPE__

```
#define __WINT_TYPE__ unsigned int
```

7.6.1.454 __WINT_WIDTH__

```
#define __WINT_WIDTH__ 32
```

7.6.1.455 __x86_64

```
#define __x86_64 1
```

7.6.1.456 __x86_64__

```
#define __x86_64__ 1
```

7.6.1.457 _GNU_SOURCE

```
#define _GNU_SOURCE 1
```

7.6.1.458 _LP64

```
#define _LP64 1
```

7.6.1.459 _STDC_PREDEF_H

```
#define _STDC_PREDEF_H 1
```

7.6.1.460 linux

```
#define linux 1
```

7.6.1.461 unix

```
#define unix 1
```

7.7 moc_predefs.h

[Go to the documentation of this file.](#)

```
00001 #define __DBL_MIN_EXP__ (-1021)
00002 #define __cpp_nontype_template_parameter_auto 201606L
00003 #define __UINT_LEAST16_MAX__ 0xffff
00004 #define __FLT16_HAS_QUIET_NAN__ 1
00005 #define __ATOMIC_ACQUIRE 2
00006 #define __FLT128_MAX_10_EXP__ 4932
00007 #define __FLT_MIN__ 1.17549435082228750796873653722224568e-38F
00008 #define __GCC_IEC_559_COMPLEX 2
00009 #define __cpp_aggregate_nsdmi 201304L
00010 #define __UINT_LEAST8_TYPE__ unsigned char
00011 #define __SIZEOF_FLOAT80__ 16
00012 #define __BFLT16_DENORM_MIN__ 9.18354961579912115600575419704879436e-41BF16
00013 #define __INTMAX_C(c) c ## L
00014 #define __CHAR_BIT__ 8
00015 #define __UINT8_MAX__ 0xff
00016 #define __SCHAR_WIDTH__ 8
00017 #define __WINT_MAX__ 0xffffffffU
00018 #define __FLT32_MIN_EXP__ (-125)
00019 #define __cpp_static_assert 201411L
00020 #define __BFLT16_MIN_10_EXP__ (-37)
00021 #define __ORDER_LITTLE_ENDIAN__ 1234
00022 #define __WCHAR_MAX__ 0x7fffffff
00023 #define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_2 1
00024 #define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_4 1
00025 #define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_8 1
00026 #define __GCC_ATOMIC_CHAR_LOCK_FREE 2
00027 #define __GCC_IEC_559 2
00028 #define __FLT32X_DECIMAL_DIG__ 17
00029 #define __FLT_EVAL_METHOD__ 0
```

```

00030 #define __cpp_binary_literals 201304L
00031 #define __FLT64_DECIMAL_DIG__ 17
00032 #define __CET__ 3
00033 #define __cpp_noexcept_function_type 201510L
00034 #define __GCC_ATOMIC_CHAR32_T_LOCK_FREE 2
00035 #define __cpp_variadic_templates 200704L
00036 #define __UINT_FAST64_MAX__ 0xffffffffffffffffUL
00037 #define __SIG_ATOMIC_TYPE__ int
00038 #define __DBL_MIN_10_EXP__ (-307)
00039 #define __FINITE_MATH_ONLY__ 0
00040 #define __cpp_variable_templates 201304L
00041 #define __FLT32X_MAX_EXP__ 1024
00042 #define __GCC_HAVE_SYNC_COMPARE_AND_SWAP_1 1
00043 #define __FLT32_HAS_DENORM__ 1
00044 #define __UINT_FAST8_MAX__ 0xff
00045 #define __cpp_rvalue_reference 200610L
00046 #define __cpp_nested_namespace_definitions 201411L
00047 #define __DEC64_MAX_EXP__ 385
00048 #define __INT8_C(c) c
00049 #define __LDBL_HAS_INFINITY__ 1
00050 #define __INT_LEAST8_WIDTH__ 8
00051 #define __cpp_variadic_using 201611L
00052 #define __UINT_LEAST64_MAX__ 0xffffffffffffffffUL
00053 #define __INT_LEAST8_MAX__ 0x7f
00054 #define __cpp_attributes 200809L
00055 #define __cpp_capture_star_this 201603L
00056 #define __SHRT_MAX__ 0x7fff
00057 #define __LDBL_MAX__ 1.18973149535723176502126385303097021e+4932L
00058 #define __FLT64X_MAX_10_EXP__ 4932
00059 #define __cpp_if_constexpr 201606L
00060 #define __BFLT16_MAX_10_EXP__ 38
00061 #define __BFLT16_MAX_EXP__ 128
00062 #define __LDBL_IS_IEC_60559__ 1
00063 #define __FLT64X_HAS_QUIET_NAN__ 1
00064 #define __UINT_LEAST8_MAX__ 0xff
00065 #define __GCC_ATOMIC_BOOL_LOCK_FREE 2
00066 #define __FLT128_DENORM_MIN__ 6.47517511943802511092443895822764655e-4966F128
00067 #define __UINTMAX_TYPE__ long unsigned int
00068 #define __cpp_nsdm1 200809L
00069 #define __BFLT16_DECIMAL_DIG__ 4
00070 #define __linux 1
00071 #define __DEC32_EPSILON__ 1E-6DF
00072 #define __FLT_EVAL_METHOD_TS_18661_3__ 0
00073 #define __UINT32_MAX__ 0xffffffffU
00074 #define __GXX_EXPERIMENTAL_CXX0X__ 1
00075 #define __DBL_DENORM_MIN__ double(4.94065645841246544176568792868221372e-324L)
00076 #define __FLT128_MIN_EXP__ (-16381)
00077 #define __WINT_MIN__ 0U
00078 #define __FLT128_MIN_10_EXP__ (-4931)
00079 #define __FLT32X_IS_IEC_60559__ 1
00080 #define __INT_LEAST16_WIDTH__ 16
00081 #define __SCHAR_MAX__ 0x7f
00082 #define __FLT128_MANT_DIG__ 113
00083 #define __WCHAR_MIN__ (-__WCHAR_MAX__ - 1)
00084 #define __INT64_C(c) c ## L
00085 #define __SSP_STRONG__ 3
00086 #define __GCC_ATOMIC_POINTER_LOCK_FREE 2
00087 #define __ATOMIC_SEQ_CST 5
00088 #define __unix 1
00089 #define __INT_LEAST64_MAX__ 0x7ffffffffffffffffL
00090 #define __FLT32X_MANT_DIG__ 53
00091 #define __GCC_ATOMIC_CHAR16_T_LOCK_FREE 2
00092 #define __cpp_aligned_new 201606L
00093 #define __FLT32_MAX_10_EXP__ 38
00094 #define __FLT64X_EPSILON__ 1.08420217248550443400745280086994171e-19F64x
00095 #define __STDC_HOSTED__ 1
00096 #define __DEC64_MIN_EXP__ (-382)
00097 #define __cpp_decltype_auto 201304L
00098 #define __DBL_DIG__ 15
00099 #define __FLT_EPSILON__ 1.1920928955078125000000000000000000000e-7F
00100 #define __GXX_WEAK__ 1
00101 #define __SHRT_WIDTH__ 16
00102 #define __FLT32_IS_IEC_60559__ 1
00103 #define __LDBL_MIN__ 3.36210314311209350626267781732175260e-4932L
00104 #define __DBL_IS_IEC_60559__ 1
00105 #define __DEC32_MAX__ 9.999999E96DF
00106 #define __cpp_threadsafe_static_init 200806L
00107 #define __cpp_enumerator_attributes 201411L
00108 #define __FLT64X_DENORM_MIN__ 3.64519953188247460252840593361941982e-4951F64x
00109 #define __FLT32X_HAS_INFINITY__ 1
00110 #define __unix__ 1
00111 #define __INT_WIDTH__ 32
00112 #define __STDC_IEC_559__ 1
00113 #define __STDC_ISO_10646__ 201706L
00114 #define __DECIMAL_DIG__ 21
00115 #define __STDC_IEC_559_COMPLEX__ 1
00116 #define __FLT64_EPSILON__ 2.22044604925031308084726333618164062e-16F64

```

Generated by Doxygen

Generated by Doxygen

Generated by Doxygen

```

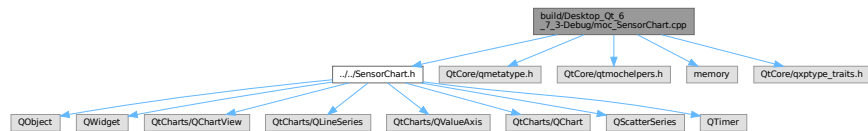
00378 #define __GNUC_PATCHLEVEL__ 0
00379 #define __FLT128_NORM_MAX__ 1.18973149535723176508575932662800702e+4932F128
00380 #define __FLT64_NORM_MAX__ 1.79769313486231570814527423731704357e+308F64
00381 #define __FLT128_HAS_QUIET_NAN__ 1
00382 #define __INTMAX_MAX__ 0x7fffffffffffffffL
00383 #define __INT_FAST8_TYPE__ signed char
00384 #define __FLT64X_MIN__ 3.36210314311209350626267781732175260e-4932F64x
00385 #define __STDCPP_THREADS__ 1
00386 #define __BFLT16_HAS_DENORM__ 1
00387 #define __GNUC_STDC_INLINE__ 1
00388 #define __FLT64_HAS_DENORM__ 1
00389 #define __FLT32_EPSILON__ 1.192092895507812500000000000000000000e-7F32
00390 #define __FLT16_HAS_DENORM__ 1
00391 #define __DBL_DECIMAL_DIG__ 17
00392 #define __STDC_UTF_32__ 1
00393 #define __INT_FAST8_WIDTH__ 8
00394 #define __FXSR__ 1
00395 #define __FLT32X_MAX__ 1.79769313486231570814527423731704357e+308F32x
00396 #define __DBL_NORM_MAX__ double(1.79769313486231570814527423731704357e+308L)
00397 #define __BYTE_ORDER__ __ORDER_LITTLE_ENDIAN__
00398 #define __GCC_DESTRUCTIVE_SIZE 64
00399 #define __INTMAX_WIDTH__ 64
00400 #define __cpp_runtime_arrays 198712L
00401 #define __FLT32_DIG__ 6
00402 #define __UINT64_TYPE__ long unsigned int
00403 #define __UINT32_C(c) c ## U
00404 #define __cpp_alias_templates 200704L
00405 #define __FLT_DENORM_MIN__ 1.40129846432481707092372958328991613e-45F
00406 #define __FLT128_IS_IEC_60559__ 1
00407 #define __INT8_MAX__ 0x7f
00408 #define __LONG_WIDTH__ 64
00409 #define __DBL_MIN__ double(2.22507385850720138309023271733240406e-308L)
00410 #define __PIC__ 2
00411 #define __INT32_MAX__ 0x7fffffff
00412 #define __UINT_FAST32_TYPE__ long unsigned int
00413 #define __FLT16_MANT_DIG__ 11
00414 #define __FLT32X_NORM_MAX__ 1.79769313486231570814527423731704357e+308F32x
00415 #define __CHAR32_TYPE__ unsigned int
00416 #define __FLT_MAX__ 3.40282346638528859811704183484516925e+38F
00417 #define __SSE2__ 1
00418 #define __cpp_deduction_guides 201703L
00419 #define __BFLT16_NORM_MAX__ 3.38953138925153547590470800371487867e+38BF16
00420 #define __INT32_TYPE__ int
00421 #define __SIZEOF_DOUBLE__ 8
00422 #define __cpp_exceptions 199711L
00423 #define __FLT_MIN_10_EXP__ (-37)
00424 #define __FLT64_MIN__ 2.22507385850720138309023271733240406e-308F64
00425 #define __INT_LEAST32_WIDTH__ 32
00426 #define __INTMAX_TYPE__ long int
00427 #define __GLIBCXX_BITSIZE_INT_N_0 128
00428 #define __FLT32X_HAS_QUIET_NAN__ 1
00429 #define __ATOMIC_CONSUME 1
00430 #define __GNUC_MINOR__ 3
00431 #define __GLIBCXX_TYPE_INT_N_0 __int128
00432 #define __UINTMAX_MAX__ 0xffffffffffffffffUL
00433 #define __FLT32X_DENORM_MIN__ 4.94065645841246544176568792868221372e-324F32x
00434 #define __cpp_template_template_args 201611L
00435 #define __DBL_MAX_10_EXP__ 308
00436 #define __LDBL_DENORM_MIN__ 3.64519953188247460252840593361941982e-4951L
00437 #define __INT16_C(c) c
00438 #define __STDC__ 1
00439 #define __PTRDIFF_TYPE__ long int
00440 #define __FLT32X_MIN_10_EXP__ (-307)
00441 #define __UINTPTR_TYPE__ long unsigned int
00442 #define __DEC64_SUBNORMAL_MIN__ 0.000000000000001E-383DD
00443 #define __DEC128_MANT_DIG__ 34
00444 #define __LDBL_MIN_10_EXP__ (-4931)
00445 #define __cpp_generic_lambdas 201304L
00446 #define __SSE_MATH__ 1
00447 #define __SIZEOF_LONG_LONG__ 8
00448 #define __cpp_user_defined_literals 200809L
00449 #define __FLT128_DECIMAL_DIG__ 36
00450 #define __GCC_ATOMIC_LLONG_LOCK_FREE 2
00451 #define __FLT32_HAS_QUIET_NAN__ 1
00452 #define __FLT_DECIMAL_DIG__ 9
00453 #define __UINT_FAST16_MAX__ 0xffffffffffffffffUL
00454 #define __LDBL_NORM_MAX__ 1.18973149535723176502126385303097021e+4932L
00455 #define __GCC_ATOMIC_SHORT_LOCK_FREE 2
00456 #define __SIZE_MAX__ 0xffffffffffffffffUL
00457 #define __UINT_FAST8_TYPE__ unsigned char
00458 #define __GNU_SOURCE 1
00459 #define __cpp_init_captures 201304L
00460 #define __ATOMIC_ACQ_REL 4
00461 #define __ATOMIC_RELEASE 3

```


7.8 build/Desktop_Qt_6_7_3-Debug/moc_SensorChart.cpp File Reference

```
#include "../..../SensorChart.h"
#include <QtCore/qmetatype.h>
#include <QtCore/qtmocheelpers.h>
#include <memory>
#include <QtCore/qxptype_traits.h>
```

Include dependency graph for moc_SensorChart.cpp:



Namespaces

- namespace [QT_WARNING_DISABLE_DEPRECATED](#)

Macros

- #define [Q_CONSTINIT](#)

7.8.1 Macro Definition Documentation

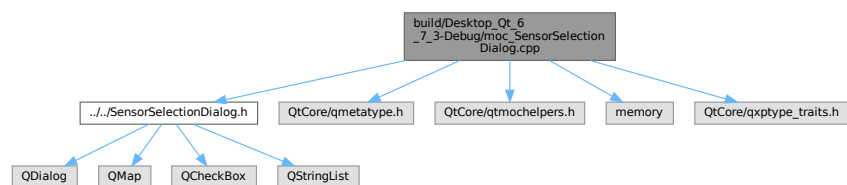
7.8.1.1 Q_CONSTINIT

```
#define Q_CONSTINIT
```

7.9 build/Desktop_Qt_6_7_3-Debug/moc_SensorSelectionDialog.cpp File Reference

```
#include "../..../SensorSelectionDialog.h"
#include <QtCore/qmetatype.h>
#include <QtCore/qtmocheelpers.h>
#include <memory>
#include <QtCore/qxptype_traits.h>
```

Include dependency graph for moc_SensorSelectionDialog.cpp:



Namespaces

- namespace [QT_WARNING_DISABLE_DEPRECATED](#)

Macros

- `#define` [Q_CONSTINIT](#)

7.9.1 Macro Definition Documentation

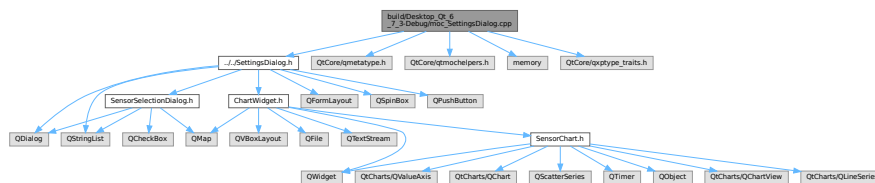
7.9.1.1 Q_CONSTINIT

```
#define Q_CONSTINIT
```

7.10 build/Desktop_Qt_6_7_3-Debug/moc_SettingsDialog.cpp File Reference

```
#include "../SettingsDialog.h"
#include <QtCore/qmetatype.h>
#include <QtCore/qtmocheelpers.h>
#include <memory>
#include <QtCore/qxptype_traits.h>
```

Include dependency graph for moc_SettingsDialog.cpp:



Namespaces

- namespace [QT_WARNING_DISABLE_DEPRECATED](#)

Macros

- `#define` [Q_CONSTINIT](#)

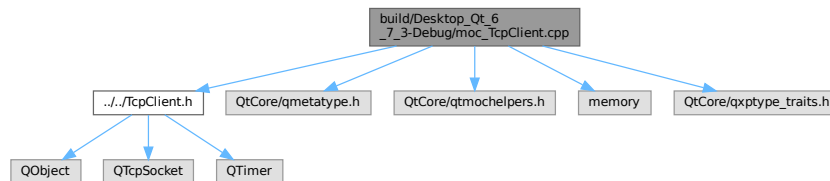
7.10.1 Macro Definition Documentation

7.10.1.1 Q_CONSTINIT

```
#define Q_CONSTINIT
```

7.11 build/Desktop_Qt_6_7_3-Debug/moc_TcpClient.cpp File Reference

```
#include "../..../TcpClient.h"
#include <QtCore/qmetatype.h>
#include <QtCore/qtmocheelpers.h>
#include <memory>
#include <QtCore/qxptype_traits.h>
Include dependency graph for moc_TcpClient.cpp:
```



Namespaces

- namespace [QT_WARNING_DISABLE_DEPRECATED](#)

Macros

- #define [Q_CONSTINIT](#)

7.11.1 Macro Definition Documentation

7.11.1.1 Q_CONSTINIT

```
#define Q_CONSTINIT
```

7.12 build/Desktop_Qt_6_7_3-Debug/qrc_qmake_qmake_qm_files.cpp File Reference

Macros

- #define [QT_RCC_PREPEND_NAMESPACE](#)(name) name
- #define [QT_RCC_MANGLE_NAMESPACE](#)(name) name

Functions

- bool [qRegisterResourceData](#) (int, const unsigned char *, const unsigned char *, const unsigned char *)
- bool [qUnregisterResourceData](#) (int, const unsigned char *, const unsigned char *, const unsigned char *)
- int [QT_RCC_MANGLE_NAMESPACE](#)() [qInitResources_qmake_qmake_qm_files](#) ()
- int [QT_RCC_MANGLE_NAMESPACE](#)() [qCleanupResources_qmake_qmake_qm_files](#) ()

7.12.1 Macro Definition Documentation

7.12.1.1 QT_RCC_MANGLE_NAMESPACE

```
#define QT_RCC_MANGLE_NAMESPACE(  
    name ) name
```

7.12.1.2 QT_RCC_PREPEND_NAMESPACE

```
#define QT_RCC_PREPEND_NAMESPACE(  
    name ) name
```

7.12.2 Function Documentation

7.12.2.1 qCleanupResources_qmake_qmake_qm_files()

```
int QT_RCC_MANGLE_NAMESPACE() qCleanupResources_qmake_qmake_qm_files ( )
```

7.12.2.2 qInitResources_qmake_qmake_qm_files()

```
int QT_RCC_MANGLE_NAMESPACE() qInitResources_qmake_qmake_qm_files ( )
```

7.12.2.3 qRegisterResourceData()

```
bool qRegisterResourceData (  
    int ,  
    const unsigned char * ,  
    const unsigned char * ,  
    const unsigned char * )
```

7.12.2.4 qUnregisterResourceData()

```
bool qUnregisterResourceData (  
    int ,  
    const unsigned char * ,  
    const unsigned char * ,  
    const unsigned char * )
```

7.13 ChartEditorDialog.cpp File Reference

```
#include "ChartEditorDialog.h"
#include "qpushbutton.h"
#include <QtCharts/QChart>
#include <QtCharts/QLineSeries>
#include <QtCharts/QScatterSeries>
#include <QtCharts/QValueAxis>
#include <QVBoxLayout>
#include <QHBoxLayout>
#include <QLabel>
#include <QColorDialog>
#include <QDialogButtonBox>
#include <QtMath>
```

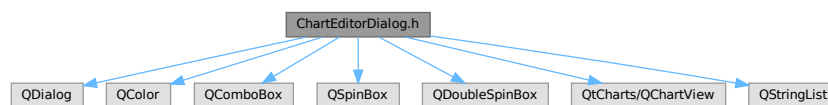
Include dependency graph for ChartEditorDialog.cpp:



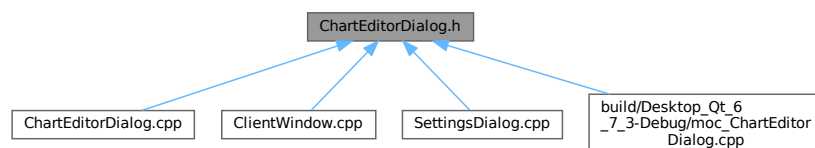
7.14 ChartEditorDialog.h File Reference

```
#include <QDialog>
#include <QColor>
#include <QComboBox>
#include <QSpinBox>
#include <QDoubleSpinBox>
#include <QtCharts/QChartView>
#include <QStringList>
```

Include dependency graph for ChartEditorDialog.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [ChartEditorDialog](#)

Klasa odpowiedzialna za charteditordialog.

7.15 ChartEditorDialog.h

[Go to the documentation of this file.](#)

```

00001 #ifndef CHARTEDITORIALOG_H
00002 #define CHARTEDITORIALOG_H
00003
00004 #include <QDialog>
00005 #include <QColor>
00006 #include <QComboBox>
00007 #include <QSpinBox>
00008 #include <QDoubleSpinBox>
00009 #include <QtCharts/QChartView>
00010 #include <QStringList>
00011
00016 class ChartEditorDialog : public QDialog {
00017     Q_OBJECT
00018
00019 public:
00023     explicit ChartEditorDialog(const QStringList &chartNames, QWidget *parent = nullptr);
00024
00025 signals:
00026     void chartUpdated(const QString &chartName,
00027                       const QString &chartType,
00028                       const QColor &lineColor,
00029                       Qt::PenStyle style,
00030                       int width,
00031                       double minY,
00032                       double maxY);
00033
00034 private:
00038     void updatePreview();
00042     void chooseColor();
00046     void previewChart(const QString &chartName);
00050     void applyChanges();
00051
00052     QComboBox *chartSelector;
00053     QComboBox *typeSelector;
00054     QComboBox *lineStyleSelector;
00055     QSpinBox *lineWidthSpin;
00056     QDoubleSpinBox *minYSpin;
00057     QDoubleSpinBox *maxYSpin;
00058     QPushButton *colorButton;
00059     QChartView *previewView;
00060
00061     QColor selectedColor = Qt::blue;
00062     QString currentChart;
00063 };
00064
00065 #endif // CHARTEDITORIALOG_H

```

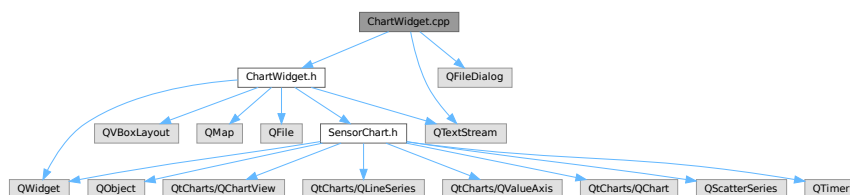
7.16 ChartWidget.cpp File Reference

```

#include "ChartWidget.h"
#include <QFileDialog>
#include <QTextStream>

```

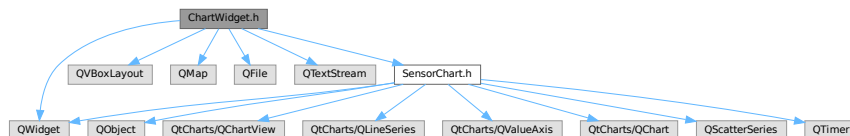
Include dependency graph for ChartWidget.cpp:



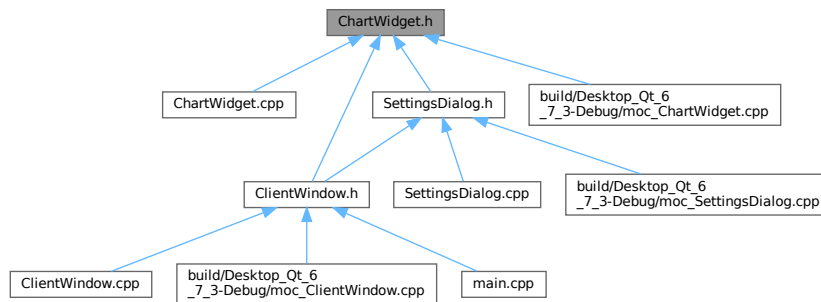
7.17 ChartWidget.h File Reference

```
#include <QWidget>
#include <QVBoxLayout>
#include <QMap>
#include <QFile>
#include <QTextStream>
#include "SensorChart.h"
```

Include dependency graph for ChartWidget.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [ChartWidget](#)

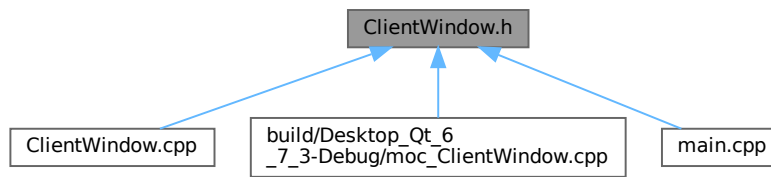
Klasa odpowiedzialna za chartwidget.

7.18 ChartWidget.h

[Go to the documentation of this file.](#)

```
00001 #ifndef CHARTWIDGET_H
00002 #define CHARTWIDGET_H
00003
00004 #include <QWidget>
00005 #include <QVBoxLayout>
00006 #include <QMap>
00007 #include <QFile>
00008 #include <QTextStream>
00009 #include "SensorChart.h"
00010
00015 class ChartWidget : public QWidget {
00016     Q_OBJECT
00017
00018 public:
```


This graph shows which files directly or indirectly include this file:



Classes

- class [ClientWindow](#)

Klasa odpowiedzialna za clientwindow.

7.21 ClientWindow.h

[Go to the documentation of this file.](#)

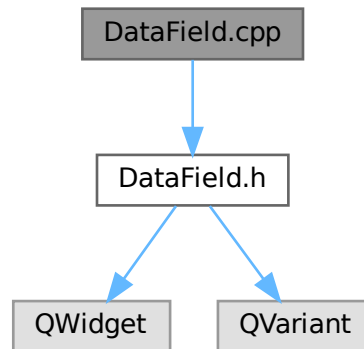
```

00001 #ifndef CLIENTWINDOW_H
00002 #define CLIENTWINDOW_H
00003
00004 #include <QMainWindow>
00005 #include <QPushButton>
00006 #include "TcpClient.h"
00007 #include "ChartWidget.h"
00008 #include "SettingsDialog.h"
00009
00014 class ClientWindow : public QMainWindow {
00015     Q_OBJECT
00016
00017 public:
00021     explicit ClientWindow(QWidget *parent = nullptr);
00022     ~ClientWindow();
00026     void openChartEditor();
00027
00028 private slots:
00032     void updateData(const QString &data);
00036     void saveCSV();
00040     void openSettings();
00044     QStringList getUnusedSensors() const;
00045
00046 private:
00047     TcpClient *tcpClient;
00048     ChartWidget *chartWidget;
00049     QPushButton *saveButton;
00050     QPushButton *settingsButton;
00051     QSet<QString> knownSensors;
00052 };
00053
00054 #endif // CLIENTWINDOW_H
  
```

7.22 DataField.cpp File Reference

```
#include "DataField.h"
```

Include dependency graph for DataField.cpp:

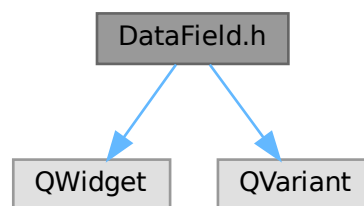


7.23 DataField.h File Reference

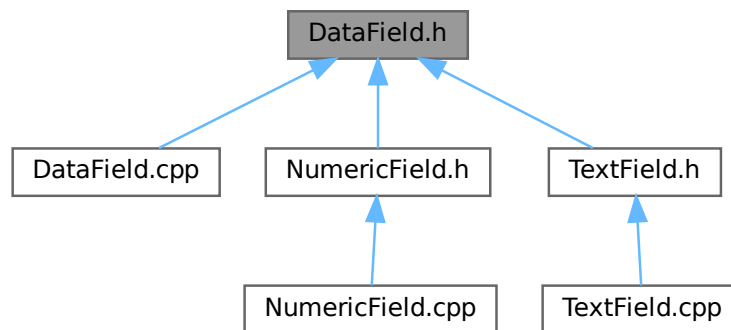
```
#include <QWidget>
```

```
#include <QVariant>
```

Include dependency graph for DataField.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [DataField](#)

Klasa odpowiedzialna za datafield.

7.24 DataField.h

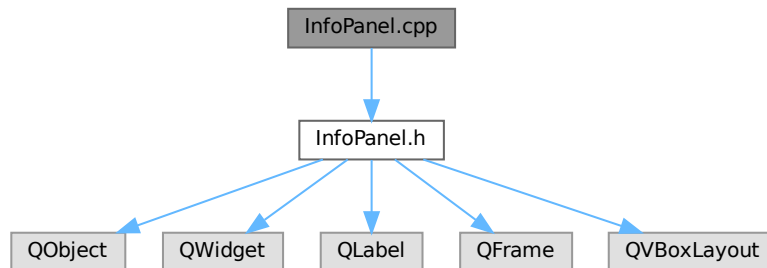
[Go to the documentation of this file.](#)

```
00001 #ifndef DATAFIELD_H
00002 #define DATAFIELD_H
00003
00004 #include <QWidget>
00005 #include <QVariant>
00006
00011 class DataField {
00012 public:
00013     virtual ~DataField() = default;
00014
00015     virtual void updateValue(const QVariant &value) = 0;
00016     virtual QWidget* getWidget() = 0;
00017 };
00018
00019 #endif // DATAFIELD_H
```

7.25 InfoPanel.cpp File Reference

```
#include "InfoPanel.h"
```

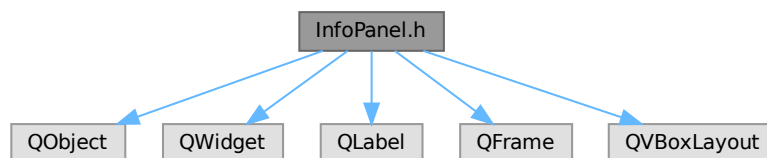
Include dependency graph for InfoPanel.cpp:



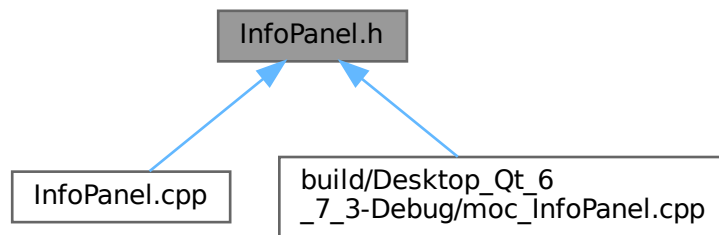
7.26 InfoPanel.h File Reference

```
#include <QObject>
#include <QWidget>
#include <QLabel>
#include <QFrame>
#include <QVBoxLayout>
```

Include dependency graph for InfoPanel.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [InfoPanel](#)

Klasa odpowiedzialna za infopanel.

7.27 InfoPanel.h

[Go to the documentation of this file.](#)

```

00001 #ifndef INFOPANEL_H
00002 #define INFOPANEL_H
00003
00004 #include <QObject>
00005 #include <QWidget>
00006 #include <QLabel>
00007 #include <QFrame>
00008 #include <QVBoxLayout>
00009
00014 class InfoPanel : public QFrame {
00015     Q_OBJECT
00016
00017 public:
00021     explicit InfoPanel(const QString &title = "", QWidget *parent = nullptr);
00022
00026     void setValue(const QString &valueText);
00030     void setFontSize(int size);
00034     void setTextColor(const QColor &color);
00038     void setBackgroundColor(const QColor &color);
00042     void setBorderColor(const QColor &color);
00046     void setPanelSize(int width, int height);
00047
00048 private:
00049     QLabel *titleLabel;
00050     QLabel *valueLabel;
00051 };
00052 #endif // INFOPANEL_H
  
```

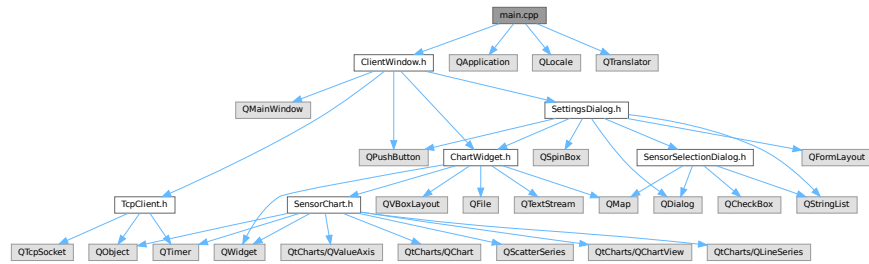
7.28 main.cpp File Reference

```

#include "ClientWindow.h"
#include <QApplication>
#include <QLocale>
  
```

```
#include <QTranslator>
```

Include dependency graph for main.cpp:



Functions

- int [main](#) (int argc, char *argv[])

7.28.1 Function Documentation

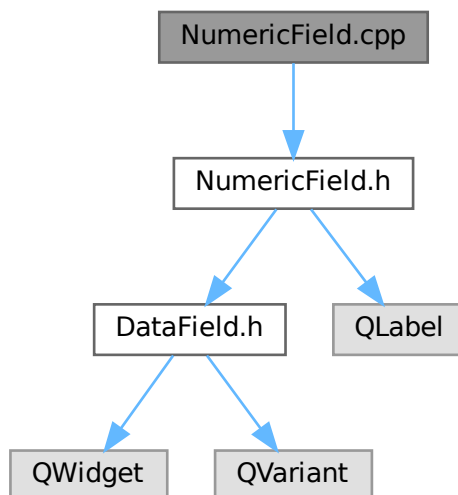
7.28.1.1 main()

```
int main (
    int argc,
    char * argv[] )
```

7.29 NumericField.cpp File Reference

```
#include "NumericField.h"
```

Include dependency graph for NumericField.cpp:

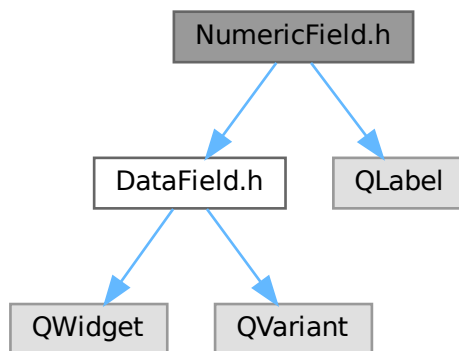


7.30 NumericField.h File Reference

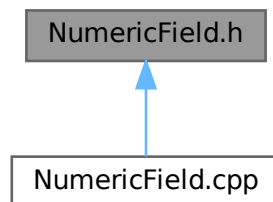
```
#include "DataField.h"
```

```
#include <QLabel>
```

Include dependency graph for NumericField.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [NumericField](#)

Klasa odpowiedzialna za numericfield.

7.31 NumericField.h

[Go to the documentation of this file.](#)

```
00001 #ifndef NUMERICFIELD_H
00002 #define NUMERICFIELD_H
00003
```

```

00004 #include "DataField.h"
00005 #include <QLabel>
00006
00011 class NumericField : public DataField {
00012 public:
00013     NumericField();
00017     void updateValue(const QVariant &value) override;
00021     QWidget* getWidget() override;
00022
00023 private:
00024     QLabel *label;
00025 };
00026
00027 #endif // NUMERICFIELD_H

```

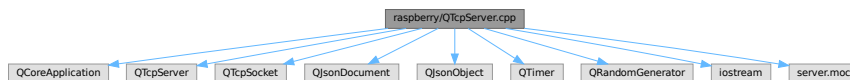
7.32 raspberry/QTcpServer.cpp File Reference

```

#include <QCoreApplication>
#include <QTcpServer>
#include <QTcpSocket>
#include <QJsonDocument>
#include <QJsonObject>
#include <QTimer>
#include <QRandomGenerator>
#include <iostream>
#include "server.moc"

```

Include dependency graph for QTcpServer.cpp:



Classes

- class [SensorServer](#)

Functions

- int [main](#) (int argc, char *argv[])

7.32.1 Function Documentation

7.32.1.1 main()

```

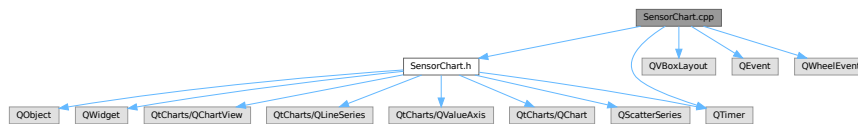
int main (
    int argc,
    char * argv[ ] )

```


7.33 SensorChart.cpp File Reference

```
#include "SensorChart.h"
#include <QVBoxLayout>
#include <QTimer>
#include <QEvent>
#include <QWheelEvent>
```

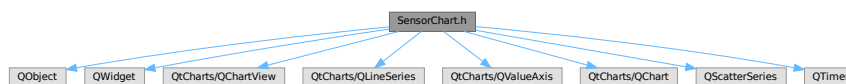
Include dependency graph for SensorChart.cpp:



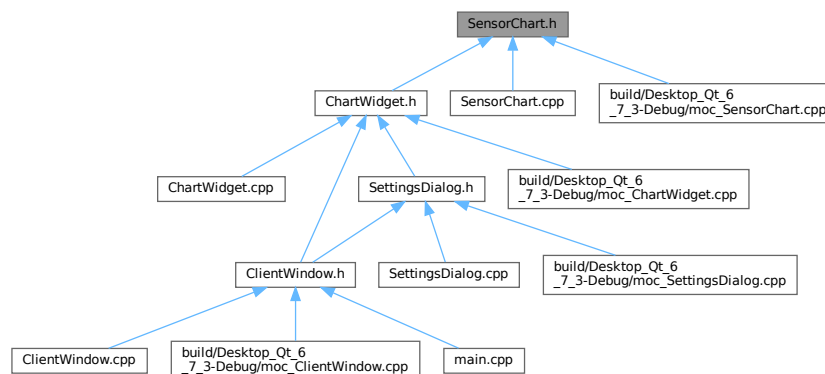
7.34 SensorChart.h File Reference

```
#include <QObject>
#include <QWidget>
#include <QtCharts/QChartView>
#include <QtCharts/QLineSeries>
#include <QtCharts/QValueAxis>
#include <QtCharts/QChart>
#include <QScatterSeries>
#include <QTimer>
```

Include dependency graph for SensorChart.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [SensorChart](#)

Klasa odpowiedzialna za sensorchart.

7.35 SensorChart.h

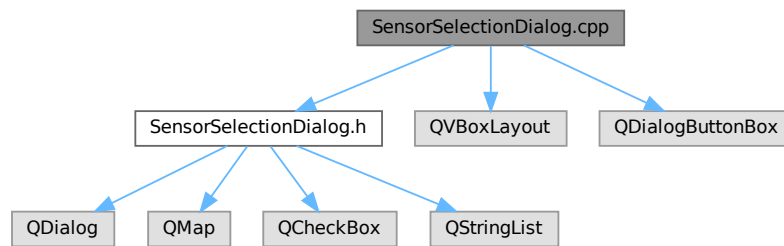
[Go to the documentation of this file.](#)

```
00001 #ifndef SENSORCHART_H
00002 #define SENSORCHART_H
00003
00004 #include <QObject>
00005 #include <QWidget>
00006 #include <QtCharts/QChartView>
00007 #include <QtCharts/QLineSeries>
00008 #include <QtCharts/QValueAxis>
00009 #include <QtCharts/QChart>
00010 #include <QScatterSeries>
00011 #include <QTimer>
00012
00017 class SensorChart : public QWidget {
00018     Q_OBJECT
00019
00020 public:
00024     explicit SensorChart(const QString &title, double minY, double maxY, QWidget *parent = nullptr);
00028     void addDataPoint(double value);
00032     void clearChart();
00036     QChartView* getChartView() const; // Getter do wyświetlenia wykresu w GUI
00040     QAbstractSeries* getSeries() const;
00044     QValueAxis* getAxisY() const;
00045     enum class ChartType {Line, Scatter};
00049     void changeType(ChartType newType);
00050     bool userXRangeActive = false;
00054     void resetAutoScroll();
00058     void setSeriesColor(const QColor &color);
00062     void setSeriesStyle(Qt::PenStyle style, int width);
00066     void enableAutoScroll();
00067     bool userInteracting = false;
00068     QTimer *autoScrollTimer = nullptr;
00072     bool eventFilter(QObject *obj, QEvent *event);
00076     void setAxisRange(double minY, double maxY);
00080     void applyEditorSettings(const QColor &color, Qt::PenStyle style, int width, double minY, double
maxY, ChartType type);
00081
00082 private:
00083     QChart *chart;
00084     QChartView *chartView;
00085     QAbstractSeries *series;
00086     // QLineSeries *series; // Wersja ze stałymi wykresami
00087     QValueAxis *axisX, *axisY;
00088     int dataCount;
00089 };
00090
00091 #endif // SENSORCHART_H
```

7.36 SensorSelectionDialog.cpp File Reference

```
#include "SensorSelectionDialog.h"
#include <QVBoxLayout>
#include <QDialogButtonBox>
```

Include dependency graph for SensorSelectionDialog.cpp:



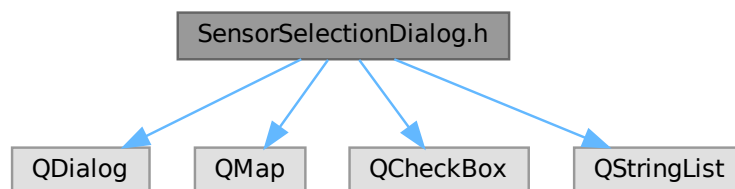
7.37 SensorSelectionDialog.h File Reference

```

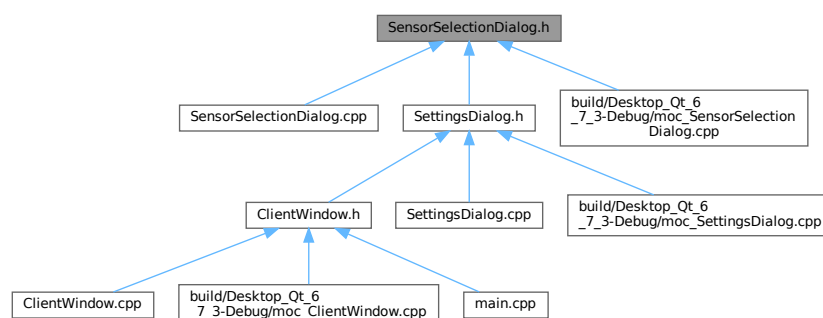
#include <QDialog>
#include <QMap>
#include <QCheckBox>
#include <QStringList>

```

Include dependency graph for SensorSelectionDialog.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [SensorSelectionDialog](#)

Klasa odpowiedzialna za sensorselectiondialog.

7.38 SensorSelectionDialog.h

[Go to the documentation of this file.](#)

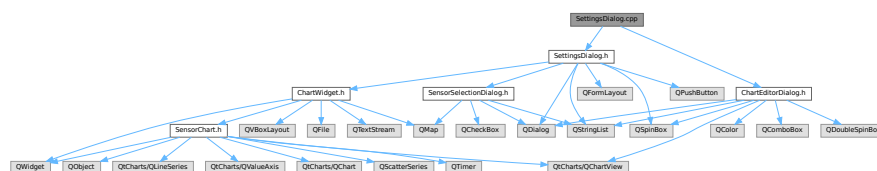
```
00001 #ifndef SENSORSELECTIONDIALOG_H
00002 #define SENSORSELECTIONDIALOG_H
00003
00004 #include <QDialog>
00005 #include <QMap>
00006 #include <QCheckBox>
00007 #include <QStringList>
00008
00013 class SensorSelectionDialog : public QDialog {
00014     Q_OBJECT
00015
00016 public:
00020     explicit SensorSelectionDialog(const QStringList &availableSensors, QWidget *parent = nullptr);
00024     QStringList getSelectedSensors() const;
00025
00026 private:
00027     QMap<QString, QCheckBox*> checkboxes;
00028 };
00029
00030 #endif // SENSORSELECTIONDIALOG_H
```

7.39 SettingsDialog.cpp File Reference

```
#include "SettingsDialog.h"
```

```
#include "ChartEditorDialog.h"
```

Include dependency graph for SettingsDialog.cpp:

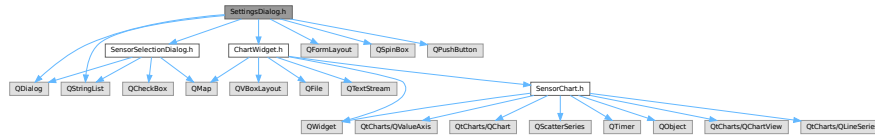


7.40 SettingsDialog.h File Reference

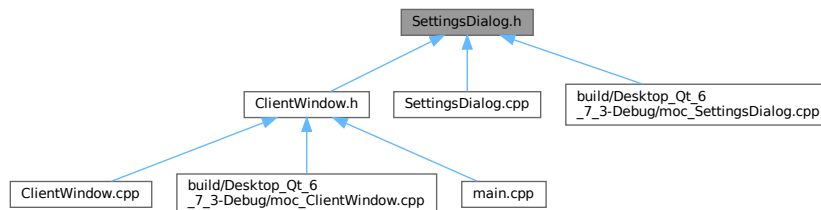
```
#include <QDialog>
#include <QFormLayout>
#include <QSpinBox>
#include <QPushButton>
#include <QStringList>
#include "ChartWidget.h"
```

```
#include "SensorSelectionDialog.h"
```

Include dependency graph for SettingsDialog.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [SettingsDialog](#)

Klasa odpowiedzialna za settingsdialog.

7.41 SettingsDialog.h

[Go to the documentation of this file.](#)

```

00001 #ifndef SETTINGSDIALOG_H
00002 #define SETTINGSDIALOG_H
00003
00004 #include <QDialog>
00005 #include <QFormLayout>
00006 #include <QSpinBox>
00007 #include <QPushButton>
00008 #include <QStringList>
00009 #include "ChartWidget.h"
00010 #include "SensorSelectionDialog.h"
00011
00016 class SettingsDialog : public QDialog {
00017     Q_OBJECT
00018
00019 public:
00020     explicit SettingsDialog(const QStringList &availableSensors,
00021                             const QStringList &existingCharts,
00022                             ChartWidget *chartWidgetRef,
00023                             QWidget *parent = nullptr);
00024
00028     int getUpdateInterval() const;
00032     QStringList getSelectedSensors() const;
00033
00034 signals:
00035     void chartUpdated(const QString &chartName,
00036                      const QString &chartType,
00037                      const QColor &lineColor,
00038                      Qt::PenStyle style,
00039                      int width,
00040                      double minY,
00041                      double maxY);
  
```

```

00042
00043 private:
00044     QSpinBox *updateIntervalSpinBox = nullptr;
00045     QStringList availableSensors;
00046     QStringList selectedSensors;
00047
00048     ChartWidget *chartWidget = nullptr;
00049 };
00050
00051 #endif // SETTINGSDIALOG_H

```

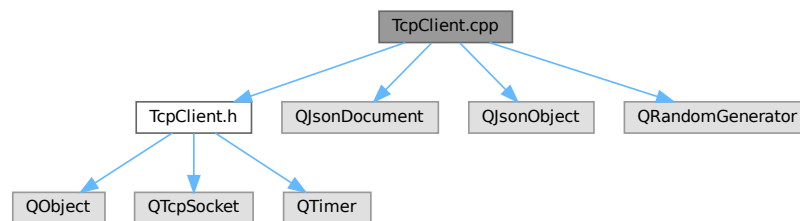
7.42 TcpClient.cpp File Reference

```

#include "TcpClient.h"
#include <QJsonDocument>
#include <QJsonObject>
#include <QRandomGenerator>

```

Include dependency graph for TcpClient.cpp:



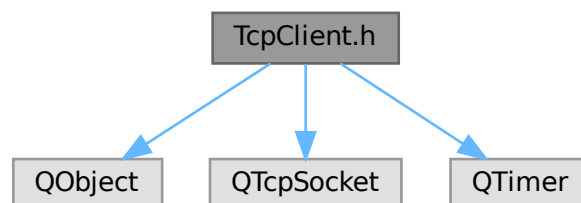
7.43 TcpClient.h File Reference

```

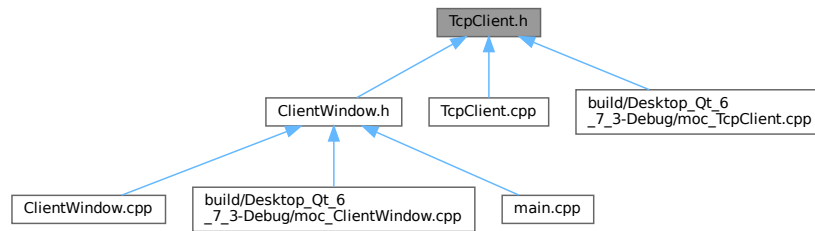
#include <QObject>
#include <QTcpSocket>
#include <QTimer>

```

Include dependency graph for TcpClient.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [TcpClient](#)

Klasa odpowiedzialna za tcpclient.

7.44 TcpClient.h

[Go to the documentation of this file.](#)

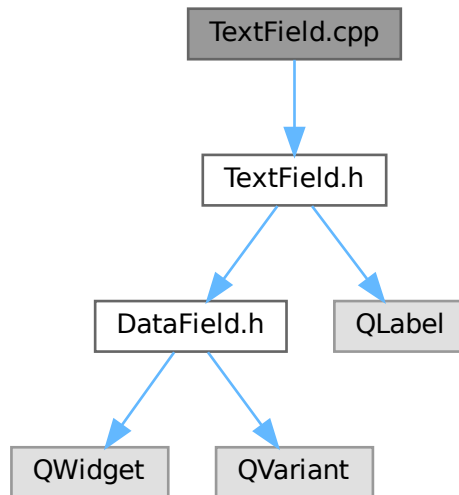
```

00001 #ifndef TCPCLIENT_H
00002 #define TCPCLIENT_H
00003
00004 #include <QObject>
00005 #include <QTcpSocket>
00006 #include <QTimer>
00007
00012 class TcpClient : public QObject {
00013     Q_OBJECT
00014
00015 public:
00019     explicit TcpClient(QObject *parent = nullptr);
00023     void connectToServer(const QString &host, int port);
00027     void setUpdateInterval(int interval);
00031     void connectToServer(const QString &host, quint16 port);
00035     void startSimulation();
00036
00037
00038 signals:
00042     void newDataReceived(const QString &data);
00043
00044 private slots:
00048     void readData();
00052     void simulateData(); // generuje dane losowe
00053
00054 private:
00055     QTcpSocket *socket;
00056     QTimer *simulationTimer;
00057     bool simulationMode = false;
00058 };
00059
00060 #endif // TCPCLIENT_H
  
```

7.45 TextField.cpp File Reference

```
#include "TextField.h"
```

Include dependency graph for TextField.cpp:

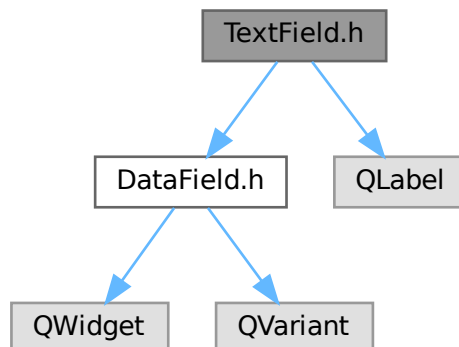


7.46 TextField.h File Reference

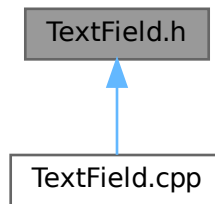
```
#include "DataField.h"
```

```
#include <QLabel>
```

Include dependency graph for TextField.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [TextField](#)

Klasa odpowiedzialna za textfield.

7.47 TextField.h

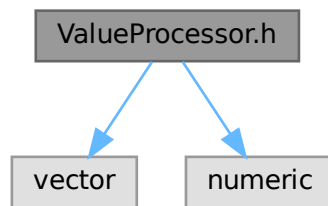
[Go to the documentation of this file.](#)

```
00001 #ifndef TEXTFIELD_H
00002 #define TEXTFIELD_H
00003
00004 #include "DataField.h"
00005 #include <QLabel>
00006
00011 class TextField : public DataField {
00012 public:
00013     TextField();
00017     void updateValue(const QVariant &value) override;
00021     QWidget* getWidget() override;
00022
00023 private:
00024     QLabel *label;
00025 };
00026
00027 #endif // TEXTFIELD_H
```

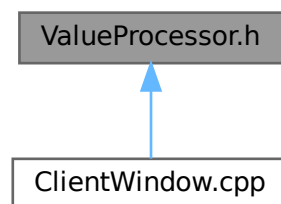
7.48 ValueProcessor.h File Reference

```
#include <vector>
#include <numeric>
```

Include dependency graph for ValueProcessor.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [ValueProcessor< T >](#)

Szablon klasy do prostego przetwarzania danych.

7.49 ValueProcessor.h

[Go to the documentation of this file.](#)

```

00001 #ifndef VALUEPROCESSOR_H
00002 #define VALUEPROCESSOR_H
00003
00004 #include <vector>
00005 #include <numeric>
00006
00013 template <typename T>
00014 class ValueProcessor {
00015 public:
00016     void addValue(T value) {
00017         values.push_back(value);
00018     }
00019
00020     T average() const {
00021         if (values.empty()) return T();
00022         T sum = std::accumulate(values.begin(), values.end(), T());
00023         return sum / static_cast<T>(values.size());
  
```

```
00024     }
00025
00026     void clear() {
00027         values.clear();
00028     }
00029
00030     std::size_t count() const {
00031         return values.size();
00032     }
00033
00034 private:
00035     std::vector<T> values;
00036 };
00037
00038 #endif // VALUEPROCESSOR_H
```

