

Pds Epics

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The following epics-related classes are **not** part of Epics namespace:

Class EpicsPvHeader

Public attributes:

```
short int iPvId           // process variable ID
short int iDbrType        // Epics Data Type
short int iNumElements    // Size of PV Array
```

Public Member Functions:

```
EpicsPvHeader( short int iPvId1, short int iDbrType1, short int iNumElements1 ) :
    iPvId(iPvId1),                // process variable ID
    iDbrType(iDbrType1),           // Epics Data Type
    iNumElements(iNumElements1) {} // Size of PV Array

int printPv() const;
```

Public Member Functions:

```
static void* operator new(size_t size, char* p)    { return p; }
// Disable ordinary (non-placement) new: only placement new and memory mapped objects are allowed
// Disable placement delete: Not allow to delete memory mapped objects
```

Class EpicsPvCtrlHeader

Public attributes:

```
char    sPvName[_iMaxPvNameLength];
```

Public Member Functions:

```
// Constructor
EpicsPvCtrlHeader( short int iPvId1,
    short int iDbrType1,
    short int iNumElements1,
    const char sPvName1[] )
    : EpicsPvHeader( iPvId1, iDbrType1, iNumElements1)
```

Class EpicsPvCtrl

Inherits from EpicsPvCtrlHeader and EpicsPvBase

Public Attributes:

```
int printPv() const;
enum { iDbrCtrlType = EpicsDbrTools::DbrTypeTraits<iDbrType1>::iDbrCtrlType };
```

Public Member Functions

```
// Constructor
EpicsPvCtrl( short int iPvId1,
             short int iNumElements1,
             const char sPvName1[],
             void* pEpicsDataValue1,
             int* piSize = NULL )
: EpicsPvCtrlHeader(iPvId1, iDbrCtrlType, iNumElements1, sPvName1),
  EpicsPvBase( *(EpicsPvBase*) pEpicsDataValue1 )
```

Class EpicsPvTime

Inherits from EpicsPvHeader and EpicsPvBase

Public Attributes:

```
enum { iDbrTimeType = EpicsDbrTools::DbrTypeTraits<iDbrType1>::iDbrTimeType };
typedef typename EpicsDbrTools::DbrTypeTraits<iDbrType1>::TDbrOrg TDbrOrg;
```

Public Member Functions:

```
EpicsPvTime( short int iPvId1,
             int iNumElements1,
             void* pEpicsDataValue1,
             int* piSize = NULL )
: EpicsPvHeader( iPvId1, iDbrTimeType, iNumElements1 ),
  EpicsPvBase( *(EpicsPvBase*) pEpicsDataValue1 )

int printPv() const;
```

Pds::Epics Namespace Reference.

[EPICS](#) (Experimental Physics and Industrial Control System) is used for hardware control and readout of hardware status, values etc. These are called process variables (PV). Pdsdata contains a package that holds the epics classes needed to read the process variables from the xtc file. This is not even a complete documentation of these classes, as it would be unnecessarily detailed. Here we aim just to include the main ingredients and what the user need to know to extract the data.

The following classes, typedefs and variables are part of Epics namespace:

Classes

```

struct      epicsTimeStamp
struct      dbr_time_string
struct      dbr_time_short
struct      dbr_time_float
struct      dbr_time_enum
struct      dbr_time_char
struct      dbr_time_long
struct      dbr_time_double
struct      dbr_sts_string
struct      dbr_ctrl_int
struct      dbr_ctrl_short
struct      dbr_ctrl_float
struct      dbr_ctrl_enum
struct      dbr_ctrl_char
struct      dbr_ctrl_long
struct      dbr_ctrl_double

```

Typedefs

```

typedef char      epicsInt8
typedef unsigned char      epicsUInt8
typedef short     epicsInt16
typedef unsigned short    epicsUInt16
typedef epicsUInt16     epicsEnum16
typedef int       epicsInt32
typedef unsigned  epicsUInt32
typedef float     epicsFloat32
typedef double    epicsFloat64
typedef unsigned long    epicsIndex
typedef epicsInt32     epicsStatus
typedef char          epicsOldString [MAX_STRING_SIZE]
typedef Pds::Epics::epicsTimeStamp     epicsTimeStamp
typedef epicsOldString      dbr_string_t
typedef epicsUInt8          dbr_char_t
typedef epicsInt16          dbr_short_t
typedef epicsUInt16         dbr_enum_t
typedef epicsInt32          dbr_long_t
typedef epicsFloat32        dbr_float_t
typedef epicsFloat64        dbr_double_t
typedef epicsUInt16         dbr_put_ack_t
typedef epicsUInt16         dbr_put_acks_t
typedef epicsOldString      dbr_stsack_string_t
typedef epicsOldString      dbr_class_name_t

```

Variables

```

const char *      epicsAlarmSeverityStrings [ALARM_NSEV]
const char *      epicsAlarmConditionStrings [ALARM_NSTATUS]
const char *      dbr_text [35]
const char *      epicsAlarmSeverityStrings [ALARM_NSEV]
Initial value:
{
    "NO_ALARM",
    "MINOR",
    "MAJOR",
    "INVALID",
}

const char *      epicsAlarmConditionStrings [ALARM_NSTATUS]
Initial value:
{
    "NO_ALARM",
    "READ",
    "WRITE",
    "HIHI",
    "HIGH",
    "LOLO",
    "LOW",
    "STATE",
    "COS",
    "COMM",
    "TIMEOUT",
    "HWLIMIT",
    "CALC",
    "SCAN",
    "LINK",
    "SOFT",
    "BAD_SUB",
    "UDF",
    "DISABLE",
    "SIMM",
    "READ_ACCESS",
    "WRITE_ACCESS",
}

```

Pds::EpicsXtcSettings Namespace

Pds::EpicsDbrTools Namespace