

# QueueLib, 1.0 project documentation

TK Automation

2023-02-19T22:35:18.7293501

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# Chapter 1

## Project information

PROJECT	INFORMATION
Company name	TK Automation
Company URL	<a href="https://github.com/tkucic/QueueLib">https://github.com/tkucic/QueueLib</a>
Project name	QueueLib
Project version	1.0
Project URL	
Content description	Library that holds FIFO and LIFO buffer classes for use in IEC programs
Contact person	Toni Kucic
Content generation date	2023-02-19T22:35:18.7293501

## 1.1 List of namespaces

- Global
- CODESYS\_Control\_Win\_V3\_x64

## 1.2 Metrics

Namespace	Data types	Program	Function Block	Function	Class
Global	25	0	150	0	0
CODESYS_Control_Win_V3_x64	0	12	0	0	0
<b>Total</b>	<b>25</b>	<b>12</b>	<b>150</b>	<b>0</b>	<b>0</b>

Namespace	Lines of code	Lines of comments	Lines in total	Maintainable size
Global	4125	525	5900	5225
CODESYS_Control_Win_V3_x64	368	97	575	564
<b>Total</b>	<b>4493</b>	<b>622</b>	<b>6475</b>	<b>5789</b>

## Chapter 2

# Documentation for namespace Global

### 2.1 Namespace index

- **Data types**

- dtFIFO\_P\_Element\_Int
- dtFIFO\_P\_Element\_Bool
- dtFIFO\_P\_Element\_Byte
- dtFIFO\_P\_Element\_Word
- dtFIFO\_P\_Element\_Dword
- dtFIFO\_P\_Element\_Lword
- dtFIFO\_P\_Element\_Sint
- dtFIFO\_P\_Element\_Usint
- dtFIFO\_P\_Element\_Uint
- dtFIFO\_P\_Element\_Dint
- dtFIFO\_P\_Element\_Udint
- dtFIFO\_P\_Element\_Lint
- dtFIFO\_P\_Element\_Ulint
- dtFIFO\_P\_Element\_Real
- dtFIFO\_P\_Element\_Lreal
- dtFIFO\_P\_Element\_String
- dtFIFO\_P\_Element\_Wstring
- dtFIFO\_P\_Element\_Time
- dtFIFO\_P\_Element\_Ltime
- dtFIFO\_P\_Element\_Date
- dtFIFO\_P\_Element\_Ldate
- dtFIFO\_P\_Element\_Dt
- dtFIFO\_P\_Element\_Ldt
- dtFIFO\_P\_Element\_Tod
- dtFIFO\_P\_Element\_Ltod

- **Function blocks**

- FIFO\_S\_Int
- FIFO\_C\_Int

- FIFO\_FWFT\_Int
- FIFO\_UP\_Int
- FIFO\_OP\_Int
- LIFO\_Int
- FIFO\_S\_Sint
- FIFO\_S\_Usint
- FIFO\_S\_Uint
- FIFO\_S\_Bool
- FIFO\_S\_Byte
- FIFO\_S\_Word
- FIFO\_S\_Dword
- FIFO\_S\_Lword
- FIFO\_S\_Dint
- FIFO\_S\_Udint
- FIFO\_S\_Lint
- FIFO\_S\_Ulint
- FIFO\_S\_Real
- FIFO\_S\_Lreal
- FIFO\_S\_String
- FIFO\_S\_Wstring
- FIFO\_S\_Time
- FIFO\_S\_Ltime
- FIFO\_S\_Date
- FIFO\_S\_Ldate
- FIFO\_S\_Dt
- FIFO\_S\_Ldt
- FIFO\_S\_Tod
- FIFO\_S\_Ltod
- FIFO\_C\_Bool
- FIFO\_C\_Byte
- FIFO\_C\_Word
- FIFO\_C\_Dword
- FIFO\_C\_Lword
- FIFO\_C\_Sint
- FIFO\_C\_Usint
- FIFO\_C\_Uint
- FIFO\_C\_Dint
- FIFO\_C\_Udint
- FIFO\_C\_Lint
- FIFO\_C\_Ulint
- FIFO\_C\_Real
- FIFO\_C\_Lreal
- FIFO\_C\_String
- FIFO\_C\_Wstring
- FIFO\_C\_Time

- FIFO\_C\_Ltime
- FIFO\_C\_Date
- FIFO\_C\_Ldate
- FIFO\_C\_Dt
- FIFO\_C\_Ldt
- FIFO\_C\_Tod
- FIFO\_C\_Ltod
- FIFO\_FWFT\_Bool
- FIFO\_FWFT\_Byte
- FIFO\_FWFT\_Word
- FIFO\_FWFT\_Dword
- FIFO\_FWFT\_Lword
- FIFO\_FWFT\_Sint
- FIFO\_FWFT\_Usint
- FIFO\_FWFT\_Uint
- FIFO\_FWFT\_Dint
- FIFO\_FWFT\_Udint
- FIFO\_FWFT\_Lint
- FIFO\_FWFT\_Ulint
- FIFO\_FWFT\_Real
- FIFO\_FWFT\_Lreal
- FIFO\_FWFT\_String
- FIFO\_FWFT\_Wstring
- FIFO\_FWFT\_Time
- FIFO\_FWFT\_Ltime
- FIFO\_FWFT\_Date
- FIFO\_FWFT\_Ldate
- FIFO\_FWFT\_Dt
- FIFO\_FWFT\_Ldt
- FIFO\_FWFT\_Tod
- FIFO\_FWFT\_Ltod
- FIFO\_UP\_Bool
- FIFO\_UP\_Byte
- FIFO\_UP\_Word
- FIFO\_UP\_Dword
- FIFO\_UP\_Lword
- FIFO\_UP\_Sint
- FIFO\_UP\_Usint
- FIFO\_UP\_Uint
- FIFO\_UP\_Dint
- FIFO\_UP\_Udint
- FIFO\_UP\_Lint
- FIFO\_UP\_Ulint
- FIFO\_UP\_Real
- FIFO\_UP\_Lreal

- FIFO\_UP\_String
- FIFO\_UP\_Wstring
- FIFO\_UP\_Time
- FIFO\_UP\_Ltime
- FIFO\_UP\_Date
- FIFO\_UP\_Ldate
- FIFO\_UP\_Dt
- FIFO\_UP\_Ldt
- FIFO\_UP\_Tod
- FIFO\_UP\_Ltod
- FIFO\_OP\_Bool
- FIFO\_OP\_Byte
- FIFO\_OP\_Word
- FIFO\_OP\_Dword
- FIFO\_OP\_Lword
- FIFO\_OP\_Sint
- FIFO\_OP\_Usint
- FIFO\_OP\_Uint
- FIFO\_OP\_Dint
- FIFO\_OP\_Udint
- FIFO\_OP\_Lint
- FIFO\_OP\_Ulint
- FIFO\_OP\_Real
- FIFO\_OP\_Lreal
- FIFO\_OP\_String
- FIFO\_OP\_Wstring
- FIFO\_OP\_Time
- FIFO\_OP\_Ltime
- FIFO\_OP\_Date
- FIFO\_OP\_Ldate
- FIFO\_OP\_Dt
- FIFO\_OP\_Ldt
- FIFO\_OP\_Tod
- FIFO\_OP\_Ltod
- LIFO\_Bool
- LIFO\_Byte
- LIFO\_Word
- LIFO\_Dword
- LIFO\_Lword
- LIFO\_Sint
- LIFO\_Usint
- LIFO\_Uint
- LIFO\_Dint
- LIFO\_Udint
- LIFO\_Lint

- LIFO\_Ulint
- LIFO\_Real
- LIFO\_Lreal
- LIFO\_String
- LIFO\_Wstring
- LIFO\_Time
- LIFO\_Ltime
- LIFO\_Date
- LIFO\_Ldate
- LIFO\_Dt
- LIFO\_Ldt
- LIFO\_Tod
- LIFO\_Ltod

## 2.2 Metrics

Data types	Programs	Function Blocks	Functions	Classes
25	0	150	0	0

Lines of code	Lines of comments	Lines in total	Maintainable size
4125	525	5900	5225



## 2.3 Data types

### 2.3.1 dtFIFO\_P\_Element\_Int (struct)

Priority FIFO buffer structure

#### 2.3.1.0.1 Components

Name	Type	Documentation
Value	INT	Value member
Priority	INT	Priority member

#### 2.3.1.0.2 Metrics    Number of components: 2

**2.3.2 dtFIFO\_P\_Element\_Bool (struct)**

Priority FIFO buffer structure

**2.3.2.0.1 Components**

Name	Type	Documentation
Value	BOOL	Value member
Priority	INT	Priority member

**2.3.2.0.2 Metrics**    Number of components: 2

**2.3.3 dtFIFO\_P\_Element\_Byte (struct)**

Priority FIFO buffer structure

**2.3.3.0.1 Components**

Name	Type	Documentation
Value	BYTE	Value member
Priority	INT	Priority member

**2.3.3.0.2 Metrics**    Number of components: 2

### 2.3.4 dtFIFO\_P\_Element\_Word (struct)

Priority FIFO buffer structure

#### 2.3.4.0.1 Components

Name	Type	Documentation
Value	WORD	Value member
Priority	INT	Priority member

#### 2.3.4.0.2 Metrics    Number of components: 2

### 2.3.5 dtFIFO\_P\_Element\_Dword (struct)

Priority FIFO buffer structure

#### 2.3.5.0.1 Components

Name	Type	Documentation
Value	DWORD	Value member
Priority	INT	Priority member

#### 2.3.5.0.2 Metrics    Number of components: 2

**2.3.6 dtFIFO\_P\_Element\_Lword (struct)**

Priority FIFO buffer structure

**2.3.6.0.1 Components**

Name	Type	Documentation
Value	LWORD	Value member
Priority	INT	Priority member

**2.3.6.0.2 Metrics**    Number of components: 2

**2.3.7 dtFIFO\_P\_Element\_Sint (struct)**

Priority FIFO buffer structure

**2.3.7.0.1 Components**

Name	Type	Documentation
Value	SINT	Value member
Priority	INT	Priority member

**2.3.7.0.2 Metrics**    Number of components: 2

**2.3.8 dtFIFO\_P\_Element\_Usint (struct)**

Priority FIFO buffer structure

**2.3.8.0.1 Components**

Name	Type	Documentation
Value	USINT	Value member
Priority	INT	Priority member

**2.3.8.0.2 Metrics** Number of components: 2



**2.3.9 dtFIFO\_P\_Element\_Uint (struct)**

Priority FIFO buffer structure

**2.3.9.0.1 Components**

Name	Type	Documentation
Value	UINT	Value member
Priority	INT	Priority member

**2.3.9.0.2 Metrics**    Number of components: 2

**2.3.10 dtFIFO\_P\_Element\_Dint (struct)**

Priority FIFO buffer structure

**2.3.10.0.1 Components**

Name	Type	Documentation
Value	DINT	Value member
Priority	INT	Priority member

**2.3.10.0.2 Metrics**    Number of components: 2

**2.3.11 dtFIFO\_P\_Element\_Udint (struct)**

Priority FIFO buffer structure

**2.3.11.0.1 Components**

Name	Type	Documentation
Value	UDINT	Value member
Priority	INT	Priority member

**2.3.11.0.2 Metrics**    Number of components: 2

**2.3.12 dtFIFO\_P\_Element\_Lint (struct)**

Priority FIFO buffer structure

**2.3.12.0.1 Components**

Name	Type	Documentation
Value	LINT	Value member
Priority	INT	Priority member

**2.3.12.0.2 Metrics** Number of components: 2

**2.3.13 dtFIFO\_P\_Element\_Ulint (struct)**

Priority FIFO buffer structure

**2.3.13.0.1 Components**

Name	Type	Documentation
Value	ULINT	Value member
Priority	INT	Priority member

**2.3.13.0.2 Metrics** Number of components: 2

**2.3.14 dtFIFO\_P\_Element\_Real (struct)**

Priority FIFO buffer structure

**2.3.14.0.1 Components**

Name	Type	Documentation
Value	REAL	Value member
Priority	INT	Priority member

**2.3.14.0.2 Metrics** Number of components: 2

**2.3.15 dtFIFO\_P\_Element\_Lreal (struct)**

Priority FIFO buffer structure

**2.3.15.0.1 Components**

Name	Type	Documentation
Value	LREAL	Value member
Priority	INT	Priority member

**2.3.15.0.2 Metrics** Number of components: 2

**2.3.16 dtFIFO\_P\_Element\_String (struct)**

Priority FIFO buffer structure

**2.3.16.0.1 Components**

Name	Type	Documentation
Value	STRING[None]	Value member
Priority	INT	Priority member

**2.3.16.0.2 Metrics**    Number of components: 2



**2.3.17 dtFIFO\_P\_Element\_Wstring (struct)**

Priority FIFO buffer structure

**2.3.17.0.1 Components**

Name	Type	Documentation
Value	wstring	Value member
Priority	INT	Priority member

**2.3.17.0.2 Metrics**    Number of components: 2

**2.3.18 dtFIFO\_P\_Element\_Time (struct)**

Priority FIFO buffer structure

**2.3.18.0.1 Components**

Name	Type	Documentation
Value	TIME	Value member
Priority	INT	Priority member

**2.3.18.0.2 Metrics** Number of components: 2

**2.3.19 dtFIFO\_P\_Element\_Ltime (struct)**

Priority FIFO buffer structure

**2.3.19.0.1 Components**

Name	Type	Documentation
Value	LTIME	Value member
Priority	INT	Priority member

**2.3.19.0.2 Metrics** Number of components: 2

**2.3.20 dtFIFO\_P\_Element\_Date (struct)**

Priority FIFO buffer structure

**2.3.20.0.1 Components**

Name	Type	Documentation
Value	DATE	Value member
Priority	INT	Priority member

**2.3.20.0.2 Metrics**    Number of components: 2

**2.3.21 dtFIFO\_P\_Element\_Ldate (struct)**

Priority FIFO buffer structure

**2.3.21.0.1 Components**

Name	Type	Documentation
Value	LDATE	Value member
Priority	INT	Priority member

**2.3.21.0.2 Metrics** Number of components: 2

**2.3.22 dtFIFO\_P\_Element\_Dt (struct)**

Priority FIFO buffer structure

**2.3.22.0.1 Components**

Name	Type	Documentation
Value	DT	Value member
Priority	INT	Priority member

**2.3.22.0.2 Metrics** Number of components: 2

**2.3.23 dtFIFO\_P\_Element\_Ldt (struct)**

Priority FIFO buffer structure

**2.3.23.0.1 Components**

Name	Type	Documentation
Value	LDATE_AND_TIME	Value member
Priority	INT	Priority member

**2.3.23.0.2 Metrics** Number of components: 2

**2.3.24 dtFIFO\_P\_Element\_Tod (struct)**

Priority FIFO buffer structure

**2.3.24.0.1 Components**

Name	Type	Documentation
Value	TOD	Value member
Priority	INT	Priority member

**2.3.24.0.2 Metrics**    Number of components: 2



**2.3.25 dtFIFO\_P\_Element\_Ltod (struct)**

Priority FIFO buffer structure

**2.3.25.0.1 Components**

Name	Type	Documentation
Value	LTIME_OF_DAY	Value member
Priority	INT	Priority member

**2.3.25.0.2 Metrics** Number of components: 2

## 2.4 Function blocks

### 2.4.1 FIFO\_S\_Int

Standard FIFO buffer. Allows Enqueuing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.1.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO INT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.1.0.2 Incode documentation

Developed entirely with methods

#### 2.4.1.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.1.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.1.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.1.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Value to add to queue

**2.4.1.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	INT	Value to add to queue

**2.4.1.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.1.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Return value

### 2.4.2 FIFO\_C\_Int

Circular FIFO buffer. Allows Enqueuing when there is a free space in front of the tail

#### 2.4.2.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO INT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.2.0.2 Incode documentation

Developed entirely with methods

#### 2.4.2.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.2.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.2.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Return value

##### 2.4.2.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	INT	Value to add to queue

**2.4.2.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.2.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.2.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Return value

### 2.4.3 FIFO\_FWFT\_Int

First word fall through FIFO buffer. After Dequeueing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.3.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO INT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.3.0.2 Incode documentation Developed entirely with methods

#### 2.4.3.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.3.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.3.1.1 Method Dequeue : **BOOL** Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Return value

##### 2.4.3.1.2 Method Enqueue : **BOOL** Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	INT	Value to add to queue

**2.4.3.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.3.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.3.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Return value

#### 2.4.4 FIFO\_UP\_Int

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

##### 2.4.4.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_INT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

##### 2.4.4.0.2 Incode documentation

Developed entirely with methods

##### 2.4.4.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

##### 2.4.4.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.4.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.4.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	INT	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.4.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.4.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.4.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.5 FIFO\_OP\_Int

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.5.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_INT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.5.0.2 Incode documentation

Developed entirely with methods

#### 2.4.5.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.5.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.5.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.5.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	INT	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.5.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.5.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.5.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.6 LIFO\_Int

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.6.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO INT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.6.0.2 Incode documentation Developed entirely with methods

#### 2.4.6.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.6.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.6.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Return value

##### 2.4.6.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	INT	Value to add to the stack

**2.4.6.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.6.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.6.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	INT	Return value

### 2.4.7 FIFO\_S\_Sint

Standard FIFO buffer. Allows Enqueing if buffer is not full. After being filled, it has to be emptied completely before further equeueing

#### 2.4.7.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO SINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.7.0.2 Incode documentation

Developed entirely with methods

#### 2.4.7.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.7.1 Methods

- Dequeue
- Enqueue
- isFull
- Peek
- isEmpty

##### 2.4.7.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Value to add to queue

##### 2.4.7.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	SINT	Value to add to queue

**2.4.7.1.3 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.7.1.4 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Return value

**2.4.7.1.5 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

### 2.4.8 FIFO\_S\_Usint

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.8.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO USINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.8.0.2 Incode documentation

Developed entirely with methods

#### 2.4.8.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.8.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.8.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.8.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Value to add to queue



**2.4.8.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	USINT	Value to add to queue

**2.4.8.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.8.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Return value

### 2.4.9 FIFO\_S\_Uint

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.9.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO UINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.9.0.2 Incode documentation

Developed entirely with methods

#### 2.4.9.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.9.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.9.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.9.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Value to add to queue

**2.4.9.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	UINT	Value to add to queue

**2.4.9.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.9.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Return value

### 2.4.10 FIFO\_S\_Bool

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.10.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO BOOL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.10.0.2 Incode documentation

Developed entirely with methods

#### 2.4.10.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.10.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.10.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.10.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Value to add to queue

**2.4.10.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	BOOL	Value to add to queue

**2.4.10.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.10.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Return value

### 2.4.11 FIFO\_S\_Byte

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.11.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO BYTE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.11.0.2 Incode documentation

Developed entirely with methods

#### 2.4.11.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.11.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.11.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.11.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Value to add to queue

**2.4.11.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	BYTE	Value to add to queue

**2.4.11.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.11.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Return value

### 2.4.12 FIFO\_S\_Word

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.12.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO WORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.12.0.2 Incode documentation

Developed entirely with methods

#### 2.4.12.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.12.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.12.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.12.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Value to add to queue



**2.4.12.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	WORD	Value to add to queue

**2.4.12.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.12.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Return value

### 2.4.13 FIFO\_S\_Dword

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.13.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.13.0.2 Incode documentation

Developed entirely with methods

#### 2.4.13.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.13.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.13.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.13.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Value to add to queue

**2.4.13.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	DWORD	Value to add to queue

**2.4.13.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.13.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Return value

### 2.4.14 FIFO\_S\_Lword

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.14.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.14.0.2 Incode documentation

Developed entirely with methods

#### 2.4.14.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.14.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.14.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.14.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Value to add to queue

**2.4.14.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	LWORD	Value to add to queue

**2.4.14.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.14.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Return value

### 2.4.15 FIFO\_S\_Dint

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.15.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.15.0.2 Incode documentation

Developed entirely with methods

#### 2.4.15.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.15.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.15.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.15.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Value to add to queue

**2.4.15.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	DINT	Value to add to queue

**2.4.15.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.15.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Return value

### 2.4.16 FIFO\_S\_Udint

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.16.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO UDINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.16.0.2 Incode documentation

Developed entirely with methods

#### 2.4.16.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.16.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.16.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.16.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Value to add to queue



**2.4.16.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	UDINT	Value to add to queue

**2.4.16.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.16.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Return value

### 2.4.17 FIFO\_S\_Lint

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.17.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.17.0.2 Incode documentation

Developed entirely with methods

#### 2.4.17.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.17.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.17.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

###### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.17.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Value to add to queue

**2.4.17.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	LINT	Value to add to queue

**2.4.17.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.17.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Return value

### 2.4.18 FIFO\_S\_Ulint

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.18.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO ULINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.18.0.2 Incode documentation

Developed entirely with methods

#### 2.4.18.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.18.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.18.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.18.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Value to add to queue

**2.4.18.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	ULINT	Value to add to queue

**2.4.18.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.18.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Return value

### 2.4.19 FIFO\_S\_Real

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.19.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO REAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.19.0.2 Incode documentation

Developed entirely with methods

#### 2.4.19.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.19.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.19.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

###### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.19.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Value to add to queue

**2.4.19.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	REAL	Value to add to queue

**2.4.19.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.19.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Return value

## 2.4.20 FIFO\_S\_Lreal

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

### 2.4.20.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LREAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.20.0.2 Incode documentation

 Developed entirely with methods

### 2.4.20.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

### 2.4.20.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

#### 2.4.20.1.1 Method isEmpty : BOOL

 Returns TRUE if FIFO is empty. Reading not allowed

##### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

#### 2.4.20.1.2 Method Dequeue : BOOL

 Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Value to add to queue



**2.4.20.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	LREAL	Value to add to queue

**2.4.20.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.20.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Return value

### 2.4.21 FIFO\_S\_String

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.21.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO STRING[None]	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.21.0.2 Incode documentation

Developed entirely with methods

#### 2.4.21.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.21.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.21.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.21.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Value to add to queue

**2.4.21.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	STRING[None]	Value to add to queue

**2.4.21.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.21.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Return value

### 2.4.22 FIFO\_S\_Wstring

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.22.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO wstring	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.22.0.2 Incode documentation Developed entirely with methods

#### 2.4.22.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.22.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

#### 2.4.22.1.1 Method isEmpty : BOOL Returns TRUE if FIFO is empty. Reading not allowed

##### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

#### 2.4.22.1.2 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Value to add to queue

**2.4.22.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	wstring	Value to add to queue

**2.4.22.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.22.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Return value

### 2.4.23 FIFO\_S\_Time

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.23.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO TIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.23.0.2 Incode documentation

Developed entirely with methods

#### 2.4.23.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.23.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.23.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.23.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Value to add to queue

**2.4.23.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	TIME	Value to add to queue

**2.4.23.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.23.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Return value

### 2.4.24 FIFO\_S\_Ltime

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.24.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LTIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.24.0.2 Incode documentation Developed entirely with methods

#### 2.4.24.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.24.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

#### 2.4.24.1.1 Method isEmpty : BOOL Returns TRUE if FIFO is empty. Reading not allowed

##### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

#### 2.4.24.1.2 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Value to add to queue



**2.4.24.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME	Value to add to queue

**2.4.24.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.24.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Return value

### 2.4.25 FIFO\_S\_Date

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.25.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.25.0.2 Incode documentation

Developed entirely with methods

#### 2.4.25.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.25.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.25.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

###### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.25.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Value to add to queue

**2.4.25.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	DATE	Value to add to queue

**2.4.25.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.25.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Return value

### 2.4.26 FIFO\_S\_Ldate

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.26.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LDATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.26.0.2 Incode documentation

Developed entirely with methods

#### 2.4.26.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.26.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.26.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.26.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Value to add to queue

**2.4.26.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE	Value to add to queue

**2.4.26.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.26.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Return value

### 2.4.27 FIFO\_S\_Dt

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.27.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.27.0.2 Incode documentation Developed entirely with methods

#### 2.4.27.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.27.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.27.1.1 Method isEmpty : BOOL Returns TRUE if FIFO is empty. Reading not allowed

###### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.27.1.2 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Value to add to queue

**2.4.27.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	DT	Value to add to queue

**2.4.27.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.27.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Return value

### 2.4.28 FIFO\_S\_Ldt

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.28.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LDATE_AND_TIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.28.0.2 Incode documentation

Developed entirely with methods

#### 2.4.28.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.28.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

##### 2.4.28.1.1 Method isEmpty : BOOL

Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

##### 2.4.28.1.2 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATA_AND_TIME	Value to add to queue



**2.4.28.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE_AND_TIME	Value to add to queue

**2.4.28.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.28.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE_AND_TIME	Return value

## 2.4.29 FIFO\_S\_Tod

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

### 2.4.29.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO TOD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.29.0.2 Incode documentation

 Developed entirely with methods

### 2.4.29.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

### 2.4.29.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

#### 2.4.29.1.1 Method isEmpty : BOOL

 Returns TRUE if FIFO is empty. Reading not allowed

##### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

#### 2.4.29.1.2 Method Dequeue : BOOL

 Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Value to add to queue

**2.4.29.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	TOD	Value to add to queue

**2.4.29.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.29.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Return value

### 2.4.30 FIFO\_S\_Ltod

Standard FIFO buffer. Allows Enqueueing if buffer is not full. After being filled, it has to be emptied completely before further enqueueing

#### 2.4.30.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LTIME_OF_DAY	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.30.0.2 Incode documentation Developed entirely with methods

#### 2.4.30.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	28	2	40	36

#### 2.4.30.1 Methods

- isEmpty
- Dequeue
- Enqueue
- isFull
- Peek

#### 2.4.30.1.1 Method isEmpty : BOOL Returns TRUE if FIFO is empty. Reading not allowed

##### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

#### 2.4.30.1.2 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Value to add to queue

**2.4.30.1.3 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME_OF_DAY	Value to add to queue

**2.4.30.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation

**2.4.30.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Return value

### 2.4.31 FIFO\_C\_Bool

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.31.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO BOOL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.31.0.2 Incode documentation

Developed entirely with methods

#### 2.4.31.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.31.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.31.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Return value

##### 2.4.31.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	BOOL	Value to add to queue

**2.4.31.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.31.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.31.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Return value

### 2.4.32 FIFO\_C\_Byte

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.32.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO BYTE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.32.0.2 Incode documentation

Developed entirely with methods

#### 2.4.32.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.32.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.32.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Return value

##### 2.4.32.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	BYTE	Value to add to queue



**2.4.32.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.32.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.32.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Return value

### 2.4.33 FIFO\_C\_Word

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.33.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO WORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.33.0.2 Incode documentation

Developed entirely with methods

#### 2.4.33.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.33.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.33.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Return value

##### 2.4.33.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	WORD	Value to add to queue

**2.4.33.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.33.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.33.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Return value

### 2.4.34 FIFO\_C\_Dword

Circular FIFO buffer. Allows Enqueuing when there is a free space in front of the tail

#### 2.4.34.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.34.0.2 Incode documentation

Developed entirely with methods

#### 2.4.34.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.34.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.34.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Return value

##### 2.4.34.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DWORD	Value to add to queue

**2.4.34.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.34.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.34.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Return value

### 2.4.35 FIFO\_C\_Lword

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.35.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.35.0.2 Incode documentation

Developed entirely with methods

#### 2.4.35.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.35.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.35.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Return value

##### 2.4.35.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LWORD	Value to add to queue

**2.4.35.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.35.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.35.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Return value

### 2.4.36 FIFO\_C\_Sint

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.36.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO SINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.36.0.2 Incode documentation

Developed entirely with methods

#### 2.4.36.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.36.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.36.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Return value

##### 2.4.36.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	SINT	Value to add to queue



**2.4.36.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.36.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.36.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Return value

### 2.4.37 FIFO\_C\_Usint

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.37.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO USINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.37.0.2 Incode documentation

Developed entirely with methods

#### 2.4.37.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.37.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.37.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Return value

##### 2.4.37.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	USINT	Value to add to queue

**2.4.37.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.37.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.37.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Return value

### 2.4.38 FIFO\_C\_Uint

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.38.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO UINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.38.0.2 Incode documentation

Developed entirely with methods

#### 2.4.38.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.38.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.38.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Return value

##### 2.4.38.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	UINT	Value to add to queue

**2.4.38.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.38.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.38.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Return value

### 2.4.39 FIFO\_C\_Dint

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.39.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.39.0.2 Incode documentation

Developed entirely with methods

#### 2.4.39.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.39.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.39.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Return value

##### 2.4.39.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DINT	Value to add to queue

**2.4.39.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.39.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.39.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Return value

## 2.4.40 FIFO\_C\_Udint

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

### 2.4.40.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO UDINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.40.0.2 Incode documentation

 Developed entirely with methods

### 2.4.40.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

### 2.4.40.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.40.1.1 Method Dequeue : BOOL

 Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Return value

#### 2.4.40.1.2 Method Enqueue : BOOL

 Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	UDINT	Value to add to queue



**2.4.40.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
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**2.4.40.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.40.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Return value

### 2.4.41 FIFO\_C\_Lint

Circular FIFO buffer. Allows Enqueuing when there is a free space in front of the tail

#### 2.4.41.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

**2.4.41.0.2 Incode documentation** Developed entirely with methods

#### 2.4.41.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.41.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

**2.4.41.1.1 Method Dequeue : BOOL** Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Return value

**2.4.41.1.2 Method Enqueue : BOOL** Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LINT	Value to add to queue

**2.4.41.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.41.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.41.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Return value

## 2.4.42 FIFO\_C\_Ulint

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

### 2.4.42.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO ULINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.42.0.2 Incode documentation

Developed entirely with methods

### 2.4.42.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

### 2.4.42.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.42.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Return value

#### 2.4.42.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	ULINT	Value to add to queue

**2.4.42.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.42.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.42.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Return value

### 2.4.43 FIFO\_C\_Real

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.43.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO REAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.43.0.2 Incode documentation

Developed entirely with methods

#### 2.4.43.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.43.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.43.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Return value

##### 2.4.43.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	REAL	Value to add to queue

**2.4.43.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.43.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.43.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Return value

### 2.4.44 FIFO\_C\_Lreal

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.44.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LREAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.44.0.2 Incode documentation

Developed entirely with methods

#### 2.4.44.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.44.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.44.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Return value

##### 2.4.44.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LREAL	Value to add to queue



**2.4.44.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.44.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.44.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Return value

### 2.4.45 FIFO\_C\_String

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.45.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO STRING[None]	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.45.0.2 Incode documentation

Developed entirely with methods

#### 2.4.45.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.45.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.45.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Return value

##### 2.4.45.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	STRING[None]	Value to add to queue

**2.4.45.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.45.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.45.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Return value

## 2.4.46 FIFO\_C\_Wstring

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

### 2.4.46.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO wstring	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.46.0.2 Incode documentation

 Developed entirely with methods

### 2.4.46.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

### 2.4.46.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.46.1.1 Method Dequeue : BOOL

 Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Return value

#### 2.4.46.1.2 Method Enqueue : BOOL

 Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	wstring	Value to add to queue

**2.4.46.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.46.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.46.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Return value

## 2.4.47 FIFO\_C\_Time

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

### 2.4.47.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO TIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.47.0.2 Incode documentation

 Developed entirely with methods

### 2.4.47.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

### 2.4.47.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.47.1.1 Method Dequeue : BOOL

 Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Return value

#### 2.4.47.1.2 Method Enqueue : BOOL

 Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	TIME	Value to add to queue

**2.4.47.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.47.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.47.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Return value

## 2.4.48 FIFO\_C\_Ltime

Circular FIFO buffer. Allows Enqueuing when there is a free space in front of the tail

### 2.4.48.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LTIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.48.0.2 Incode documentation

Developed entirely with methods

### 2.4.48.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

### 2.4.48.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.48.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Return value

#### 2.4.48.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME	Value to add to queue



**2.4.48.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.48.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.48.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Return value

## 2.4.49 FIFO\_C\_Date

Circular FIFO buffer. Allows Enqueuing when there is a free space in front of the tail

### 2.4.49.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.49.0.2 Incode documentation

Developed entirely with methods

### 2.4.49.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

### 2.4.49.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.49.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Return value

#### 2.4.49.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DATE	Value to add to queue

**2.4.49.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.49.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.49.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Return value

### 2.4.50 FIFO\_C\_Ldate

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.50.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LDATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.50.0.2 Incode documentation

Developed entirely with methods

#### 2.4.50.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.50.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.50.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Return value

##### 2.4.50.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE	Value to add to queue

**2.4.50.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.50.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.50.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Return value

### 2.4.51 FIFO\_C\_Dt

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.51.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.51.0.2 Incode documentation

Developed entirely with methods

#### 2.4.51.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.51.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.51.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Return value

##### 2.4.51.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DT	Value to add to queue

**2.4.51.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.51.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.51.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Return value

### 2.4.52 FIFO\_C\_Ldt

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.52.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LDATE_AND_TIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.52.0.2 Incode documentation

Developed entirely with methods

#### 2.4.52.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.52.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.52.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE_AND_TIME	Return value

##### 2.4.52.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE_AND_TIME	Value to add to queue



**2.4.52.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.52.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.52.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE_AND_TIME	Return value

### 2.4.53 FIFO\_C\_Tod

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.53.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO TOD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.53.0.2 Incode documentation

Developed entirely with methods

#### 2.4.53.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.53.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.53.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Return value

##### 2.4.53.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	TOD	Value to add to queue

**2.4.53.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.53.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.53.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Return value

### 2.4.54 FIFO\_C\_Ltod

Circular FIFO buffer. Allows Enqueueing when there is a free space in front of the tail

#### 2.4.54.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LTIME_OF_DAY	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.54.0.2 Incode documentation

Developed entirely with methods

#### 2.4.54.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 2

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	28

#### 2.4.54.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.54.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Return value

##### 2.4.54.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME_OF_DAY	Value to add to queue

**2.4.54.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
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**2.4.54.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
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**2.4.54.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Return value

### 2.4.55 FIFO\_FWFT\_Bool

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.55.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO BOOL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.55.0.2 Incode documentation Developed entirely with methods

#### 2.4.55.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.55.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.55.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Return value

##### 2.4.55.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	BOOL	Value to add to queue

**2.4.55.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.55.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.55.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Return value

### 2.4.56 FIFO\_FWFT\_Byte

First word fall through FIFO buffer. After Dequeueing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.56.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO BYTE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.56.0.2 Incode documentation Developed entirely with methods

#### 2.4.56.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.56.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.56.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Return value

##### 2.4.56.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	BYTE	Value to add to queue



**2.4.56.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
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**2.4.56.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.56.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Return value

## 2.4.57 FIFO\_FWFT\_Word

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.57.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO WORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.57.0.2 Incode documentation Developed entirely with methods

### 2.4.57.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.57.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.57.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Return value

#### 2.4.57.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	WORD	Value to add to queue

**2.4.57.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.57.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.57.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Return value

### 2.4.58 FIFO\_FWFT\_Dword

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.58.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.58.0.2 Incode documentation Developed entirely with methods

#### 2.4.58.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.58.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.58.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Return value

##### 2.4.58.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DWORD	Value to add to queue

**2.4.58.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.58.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.58.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Return value

### 2.4.59 FIFO\_FWFT\_Lword

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.59.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.59.0.2 Incode documentation Developed entirely with methods

#### 2.4.59.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.59.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.59.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Return value

##### 2.4.59.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LWORD	Value to add to queue

**2.4.59.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.59.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.59.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Return value

## 2.4.60 FIFO\_FWFT\_Sint

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.60.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO SINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.60.0.2 Incode documentation Developed entirely with methods

### 2.4.60.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.60.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.60.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Return value

#### 2.4.60.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	SINT	Value to add to queue



**2.4.60.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.60.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.60.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Return value

### 2.4.61 FIFO\_FWFT\_Usint

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.61.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO USINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.61.0.2 Incode documentation Developed entirely with methods

#### 2.4.61.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.61.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.61.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Return value

##### 2.4.61.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	USINT	Value to add to queue

**2.4.61.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.61.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.61.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Return value

### 2.4.62 FIFO\_FWFT\_Uint

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.62.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO UINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.62.0.2 Incode documentation Developed entirely with methods

#### 2.4.62.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.62.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.62.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Return value

##### 2.4.62.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	UINT	Value to add to queue

**2.4.62.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.62.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.62.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Return value

### 2.4.63 FIFO\_FWFT\_Dint

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.63.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.63.0.2 Incode documentation Developed entirely with methods

#### 2.4.63.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.63.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.63.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Return value

##### 2.4.63.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DINT	Value to add to queue

**2.4.63.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.63.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.63.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Return value

### 2.4.64 FIFO\_FWFT\_Udint

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.64.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO UDINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.64.0.2 Incode documentation Developed entirely with methods

#### 2.4.64.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.64.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.64.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Return value

##### 2.4.64.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	UDINT	Value to add to queue



**2.4.64.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.64.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.64.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Return value

### 2.4.65 FIFO\_FWFT\_Lint

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.65.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.65.0.2 Incode documentation Developed entirely with methods

#### 2.4.65.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.65.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.65.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Return value

##### 2.4.65.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LINT	Value to add to queue

**2.4.65.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.65.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.65.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Return value

### 2.4.66 FIFO\_FWFT\_Ulint

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.66.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO ULINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.66.0.2 Incode documentation Developed entirely with methods

#### 2.4.66.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.66.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.66.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Return value

##### 2.4.66.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	ULINT	Value to add to queue

**2.4.66.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.66.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.66.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Return value

## 2.4.67 FIFO\_FWFT\_Real

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.67.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO REAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.67.0.2 Incode documentation Developed entirely with methods

#### 2.4.67.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.67.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.67.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Return value

#### 2.4.67.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	REAL	Value to add to queue

**2.4.67.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.67.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.67.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Return value

## 2.4.68 FIFO\_FWFT\_Lreal

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.68.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LREAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.68.0.2 Incode documentation Developed entirely with methods

#### 2.4.68.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.68.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.68.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Return value

#### 2.4.68.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LREAL	Value to add to queue



**2.4.68.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.68.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.68.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Return value

## 2.4.69 FIFO\_FWFT\_String

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.69.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO STRING[None]	Externally allocated buffer. Must be in format AR- RAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.69.0.2 Incode documentation Developed entirely with methods

#### 2.4.69.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of com- ments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.69.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.69.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Return value

#### 2.4.69.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	STRING[None]	Value to add to queue

**2.4.69.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
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**2.4.69.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.69.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Return value

## 2.4.70 FIFO\_FWFT\_Wstring

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.70.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO wstring	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.70.0.2 Incode documentation Developed entirely with methods

#### 2.4.70.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.70.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.70.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Return value

#### 2.4.70.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	wstring	Value to add to queue

**2.4.70.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.70.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.70.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Return value

## 2.4.71 FIFO\_FWFT\_Time

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.71.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO TIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.71.0.2 Incode documentation Developed entirely with methods

#### 2.4.71.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.71.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.71.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Return value

#### 2.4.71.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	TIME	Value to add to queue

**2.4.71.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.71.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.71.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Return value

## 2.4.72 FIFO\_FWFT\_Ltime

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.72.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LTIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.72.0.2 Incode documentation Developed entirely with methods

#### 2.4.72.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.72.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.72.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Return value

#### 2.4.72.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME	Value to add to queue



**2.4.72.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.72.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.72.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Return value

### 2.4.73 FIFO\_FWFT\_Date

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

#### 2.4.73.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.73.0.2 Incode documentation Developed entirely with methods

#### 2.4.73.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

#### 2.4.73.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.73.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Return value

##### 2.4.73.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DATE	Value to add to queue

**2.4.73.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.73.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.73.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Return value

## 2.4.74 FIFO\_FWFT\_Ldate

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.74.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LDATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.74.0.2 Incode documentation Developed entirely with methods

#### 2.4.74.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.74.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.74.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Return value

#### 2.4.74.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE	Value to add to queue

**2.4.74.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.74.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.74.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Return value

## 2.4.75 FIFO\_FWFT\_Dt

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.75.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.75.0.2 Incode documentation Developed entirely with methods

#### 2.4.75.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.75.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.75.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Return value

#### 2.4.75.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DT	Value to add to queue

**2.4.75.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
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**2.4.75.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.75.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Return value

## 2.4.76 FIFO\_FWFT\_Ldt

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.76.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LDATE_AND_TIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.76.0.2 Incode documentation Developed entirely with methods

#### 2.4.76.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.76.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.76.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE_AND_TIME	Return value

#### 2.4.76.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE_AND_TIME	Value to add to queue



**2.4.76.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.76.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.76.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE_AND_TIME	Return value

## 2.4.77 FIFO\_FWFT\_Tod

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.77.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO TOD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.77.0.2 Incode documentation Developed entirely with methods

#### 2.4.77.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.77.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.77.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Return value

#### 2.4.77.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	TOD	Value to add to queue

**2.4.77.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.77.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.77.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Return value

## 2.4.78 FIFO\_FWFT\_Ltod

First word fall through FIFO buffer. After Dequeuing the whole array is shifted one space to the left so the next element is always at the beginning

### 2.4.78.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LTIME_OF_DAY	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.78.0.2 Incode documentation Developed entirely with methods

#### 2.4.78.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	22	1	31	28

### 2.4.78.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.78.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Return value

#### 2.4.78.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME_OF_DAY	Value to add to queue

**2.4.78.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.78.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

**Method Interface**

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.78.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

**Method Interface**

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Return value

## 2.4.79 FIFO\_UP\_Bool

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

### 2.4.79.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_BOOL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.79.0.2 Incode documentation

Developed entirely with methods

### 2.4.79.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

### 2.4.79.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.79.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Return value
VAR_OUTPUT	Priority	INT	Return priority

#### 2.4.79.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	BOOL	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.79.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.79.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.79.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.80 FIFO\_UP\_Byte

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.80.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_BYTE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.80.0.2 Incode documentation

Developed entirely with methods

#### 2.4.80.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.80.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.80.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.80.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	BYTE	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.80.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.80.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.80.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.81 FIFO\_UP\_Word

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.81.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_WORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.81.0.2 Incode documentation

Developed entirely with methods

#### 2.4.81.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.81.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.81.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.81.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	WORD	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.81.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.81.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.81.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

## 2.4.82 FIFO\_UP\_Dword

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

### 2.4.82.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_DWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.82.0.2 Incode documentation

Developed entirely with methods

### 2.4.82.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

### 2.4.82.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.82.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

#### 2.4.82.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DWORD	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.82.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.82.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.82.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.83 FIFO\_UP\_Lword

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.83.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.83.0.2 Incode documentation

Developed entirely with methods

#### 2.4.83.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.83.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.83.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.83.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LWORD	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.83.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.83.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.83.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.84 FIFO\_UP\_Sint

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.84.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_SINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.84.0.2 Incode documentation

Developed entirely with methods

#### 2.4.84.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.84.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.84.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.84.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	SINT	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.84.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.84.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.84.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.85 FIFO\_UP\_Usint

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.85.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_USINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.85.0.2 Incode documentation

Developed entirely with methods

#### 2.4.85.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.85.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.85.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.85.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	USINT	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.85.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.85.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.85.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.86 FIFO\_UP\_Uint

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.86.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_UINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.86.0.2 Incode documentation

Developed entirely with methods

#### 2.4.86.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.86.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.86.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.86.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	UINT	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.86.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.86.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.86.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

## 2.4.87 FIFO\_UP\_Dint

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

### 2.4.87.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_DINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.87.0.2 Incode documentation

Developed entirely with methods

### 2.4.87.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

### 2.4.87.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.87.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

#### 2.4.87.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DINT	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.87.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.87.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.87.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

## 2.4.88 FIFO\_UP\_Udint

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

### 2.4.88.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_UDINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.88.0.2 Incode documentation

Developed entirely with methods

### 2.4.88.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

### 2.4.88.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.88.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

#### 2.4.88.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

##### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	UDINT	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.88.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.88.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.88.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.89 FIFO\_UP\_Lint

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.89.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.89.0.2 Incode documentation

Developed entirely with methods

#### 2.4.89.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.89.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.89.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.89.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LINT	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.89.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.89.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.89.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.90 FIFO\_UP\_Ulint

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.90.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_ULINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.90.0.2 Incode documentation

Developed entirely with methods

#### 2.4.90.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.90.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.90.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.90.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	ULINT	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.90.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.90.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.90.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.91 FIFO\_UP\_Real

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.91.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_REAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.91.0.2 Incode documentation

Developed entirely with methods

#### 2.4.91.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.91.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.91.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.91.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	REAL	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.91.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.91.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.91.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.92 FIFO\_UP\_Lreal

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.92.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LREAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.92.0.2 Incode documentation

Developed entirely with methods

#### 2.4.92.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.92.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.92.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.92.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	LREAL	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.92.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.92.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.92.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.93 FIFO\_UP\_String

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.93.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_STRING	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.93.0.2 Incode documentation

Developed entirely with methods

#### 2.4.93.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.93.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.93.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.93.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	STRING[None]	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.93.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.93.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.93.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.94 FIFO\_UP\_Wstring

Unordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.94.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_WSTRING	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.94.0.2 Incode documentation

Developed entirely with methods

#### 2.4.94.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.94.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.94.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.94.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	wstring	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.94.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.94.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.94.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.95 FIFO\_UP\_Time

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.95.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_TIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.95.0.2 Incode documentation

Developed entirely with methods

#### 2.4.95.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.95.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.95.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.95.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	TIME	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.95.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.95.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.95.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.96 FIFO\_UP\_Ltime

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.96.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LTIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.96.0.2 Incode documentation

Developed entirely with methods

#### 2.4.96.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.96.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.96.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.96.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.96.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
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**2.4.96.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.96.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.97 FIFO\_UP\_Date

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.97.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_DATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.97.0.2 Incode documentation

Developed entirely with methods

#### 2.4.97.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.97.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.97.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.97.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DATE	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.97.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.97.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.97.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Return value
VAR_OUTPUT	Priority	INT	Return priority

## 2.4.98 FIFO\_UP\_Ldate

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

### 2.4.98.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LDATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.98.0.2 Incode documentation

Developed entirely with methods

### 2.4.98.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

### 2.4.98.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.98.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Return value
VAR_OUTPUT	Priority	INT	Return priority

#### 2.4.98.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.98.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.98.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.98.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.99 FIFO\_UP\_Dt

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.99.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_DT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.99.0.2 Incode documentation

Developed entirely with methods

#### 2.4.99.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.99.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.99.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.99.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DT	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.99.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.99.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.99.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.100 FIFO\_UP\_Ldt

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.100.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LDT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.100.0.2 Incode documentation

Developed entirely with methods

#### 2.4.100.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.100.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.100.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE_AND_TIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.100.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE_AND_TIME	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.100.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.100.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.100.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE_AND_TIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.101 FIFO\_UP\_Tod

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.101.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_TOD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.101.0.2 Incode documentation Developed entirely with methods

#### 2.4.101.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.101.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.101.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.101.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	TOD	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.101.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.101.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.101.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.102 FIFO\_UP\_Ltod

Unordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first.

#### 2.4.102.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LTOD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.102.0.2 Incode documentation Developed entirely with methods

#### 2.4.102.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	38	10	58	45

#### 2.4.102.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.102.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.102.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME_OF_DAY	Value to add to queue
VAR_INPUT	Priority	INT	Return priority

**2.4.102.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.102.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.102.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.103 FIFO\_OP\_Bool

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.103.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_BOOL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.103.0.2 Incode documentation Developed entirely with methods

#### 2.4.103.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.103.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.103.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.103.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	BOOL	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.103.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.103.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.103.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.104 FIFO\_OP\_Byte

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.104.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_BYTE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.104.0.2 Incode documentation

Developed entirely with methods

#### 2.4.104.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.104.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.104.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.104.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	BYTE	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.104.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.104.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.104.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.105 FIFO\_OP\_Word

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.105.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_WORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.105.0.2 Incode documentation

Developed entirely with methods

#### 2.4.105.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.105.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.105.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.105.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	WORD	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.105.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.105.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.105.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

## 2.4.106 FIFO\_OP\_Dword

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

### 2.4.106.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_DWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

### 2.4.106.0.2 Incode documentation Developed entirely with methods

### 2.4.106.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

### 2.4.106.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

#### 2.4.106.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

#### 2.4.106.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DWORD	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.106.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.106.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.106.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.107 FIFO\_OP\_Lword

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.107.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.107.0.2 Incode documentation

Developed entirely with methods

#### 2.4.107.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.107.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.107.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.107.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LWORD	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.107.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.107.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.107.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.108 FIFO\_OP\_Sint

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.108.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_SINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.108.0.2 Incode documentation

Developed entirely with methods

#### 2.4.108.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.108.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.108.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.108.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	SINT	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.108.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.108.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.108.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.109 FIFO\_OP\_Usint

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.109.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_USINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.109.0.2 Incode documentation

Developed entirely with methods

#### 2.4.109.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.109.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.109.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.109.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	USINT	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.109.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.109.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.109.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.110 FIFO\_OP\_Uint

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.110.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_UINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.110.0.2 Incode documentation

Developed entirely with methods

#### 2.4.110.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.110.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.110.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.110.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	UINT	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.110.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
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**2.4.110.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.110.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.111 FIFO\_OP\_Dint

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.111.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_DINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.111.0.2 Incode documentation Developed entirely with methods

#### 2.4.111.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.111.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.111.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.111.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DINT	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.111.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.111.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.111.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.112 FIFO\_OP\_Udint

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.112.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_UDINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.112.0.2 Incode documentation

Developed entirely with methods

#### 2.4.112.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.112.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.112.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.112.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	UDINT	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.112.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.112.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.112.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.113 FIFO\_OP\_Lint

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.113.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.113.0.2 Incode documentation

Developed entirely with methods

#### 2.4.113.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.113.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.113.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.113.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LINT	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.113.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.113.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.113.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.114 FIFO\_OP\_Ulint

Ordered Priority FIFO buffer. Allows Enqueuing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.114.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_ULINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.114.0.2 Incode documentation

Developed entirely with methods

#### 2.4.114.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.114.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.114.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.114.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	ULINT	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.114.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.114.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.114.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.115 FIFO\_OP\_Real

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.115.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_REAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.115.0.2 Incode documentation

Developed entirely with methods

#### 2.4.115.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.115.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.115.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.115.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	REAL	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.115.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.115.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.115.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.116 FIFO\_OP\_Lreal

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.116.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LREAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.116.0.2 Incode documentation

Developed entirely with methods

#### 2.4.116.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.116.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.116.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.116.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	LREAL	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.116.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.116.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.116.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.117 FIFO\_OP\_String

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.117.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_STRING	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.117.0.2 Incode documentation

Developed entirely with methods

#### 2.4.117.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.117.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.117.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.117.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	STRING[None]	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.117.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.117.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.117.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.118 FIFO\_OP\_Wstring

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.118.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_WSTRING	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.118.0.2 Incode documentation

Developed entirely with methods

#### 2.4.118.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.118.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.118.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.118.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	wstring	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.118.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.118.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.118.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.119 FIFO\_OP\_Time

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.119.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_TIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.119.0.2 Incode documentation

Developed entirely with methods

#### 2.4.119.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.119.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.119.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.119.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	TIME	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.119.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.119.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.119.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.120 FIFO\_OP\_Ltime

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.120.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LTIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.120.0.2 Incode documentation

Developed entirely with methods

#### 2.4.120.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.120.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.120.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.120.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.120.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.120.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.120.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.121 FIFO\_OP\_Date

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.121.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_DATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.121.0.2 Incode documentation Developed entirely with methods

#### 2.4.121.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.121.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.121.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.121.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DATE	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.121.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.121.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.121.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.122 FIFO\_OP\_Ldate

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.122.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LDATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.122.0.2 Incode documentation

Developed entirely with methods

#### 2.4.122.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.122.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.122.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.122.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.122.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.122.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.122.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.123 FIFO\_OP\_Dt

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.123.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_DT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.123.0.2 Incode documentation

Developed entirely with methods

#### 2.4.123.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.123.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.123.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.123.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DT	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.123.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.123.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.123.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.124 FIFO\_OP\_Ldt

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.124.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LDT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.124.0.2 Incode documentation

Developed entirely with methods

#### 2.4.124.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.124.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.124.1.1 Method Dequeue : BOOL

Returns the next FIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE_AND_TIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.124.1.2 Method Enqueue : BOOL

Inserts new value into the FIFO buffer

#### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE_AND_TIME	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.124.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.124.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.124.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE_AND_TIME	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.125 FIFO\_OP\_Tod

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.125.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_TOD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.125.0.2 Incode documentation Developed entirely with methods

#### 2.4.125.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.125.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.125.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.125.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	TOD	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.125.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.125.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.125.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.126 FIFO\_OP\_Ltod

Ordered Priority FIFO buffer. Allows Enqueing if buffer is not full. Dequeues the highest priority elements first. Buffer is ordered from lowest to highest priority. e.g. 0 = Lowest priority

#### 2.4.126.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO dt-FIFO_P_Element_LTOD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.126.0.2 Incode documentation Developed entirely with methods

#### 2.4.126.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	37	6	53	43

#### 2.4.126.1 Methods

- Dequeue
- Enqueue
- isEmpty
- isFull
- Peek

##### 2.4.126.1.1 Method Dequeue : BOOL Returns the next FIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Return value
VAR_OUTPUT	Priority	INT	Return priority

##### 2.4.126.1.2 Method Enqueue : BOOL Inserts new value into the FIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME_OF_DAY	Value to add to queue
VAR_INPUT	Priority	INT	Priority to add to queue

**2.4.126.1.3 Method isEmpty : BOOL** Returns TRUE if FIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.126.1.4 Method isFull : BOOL** Returns TRUE if FIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.126.1.5 Method Peek : UINT** Returns the index of the next element to Dequeue. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Return value
VAR_OUTPUT	Priority	INT	Return priority

### 2.4.127 LIFO\_Bool

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.127.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO BOOL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.127.0.2 Incode documentation Developed entirely with methods

#### 2.4.127.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.127.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.127.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Return value

##### 2.4.127.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	BOOL	Value to add to the stack

**2.4.127.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.127.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.127.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BOOL	Return value

### 2.4.128 LIFO\_Byte

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.128.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO BYTE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.128.0.2 Incode documentation Developed entirely with methods

#### 2.4.128.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.128.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.128.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Return value

##### 2.4.128.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	BYTE	Value to add to the stack

**2.4.128.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.128.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.128.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	BYTE	Return value

### 2.4.129 LIFO\_Word

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.129.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO WORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.129.0.2 Incode documentation Developed entirely with methods

#### 2.4.129.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.129.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.129.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Return value

##### 2.4.129.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	WORD	Value to add to the stack

**2.4.129.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.129.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.129.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	WORD	Return value

### 2.4.130 LIFO\_Dword

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.130.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.130.0.2 Incode documentation Developed entirely with methods

#### 2.4.130.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.130.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.130.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Return value

##### 2.4.130.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DWORD	Value to add to the stack

**2.4.130.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.130.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.130.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DWORD	Return value

### 2.4.131 LIFO\_Lword

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.131.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LWORD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.131.0.2 Incode documentation Developed entirely with methods

#### 2.4.131.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.131.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.131.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Return value

##### 2.4.131.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LWORD	Value to add to the stack

**2.4.131.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.131.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.131.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LWORD	Return value

### 2.4.132 LIFO\_Sint

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.132.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO SINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.132.0.2 Incode documentation Developed entirely with methods

#### 2.4.132.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.132.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.132.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Return value

##### 2.4.132.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	SINT	Value to add to the stack

**2.4.132.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.132.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.132.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	SINT	Return value

### 2.4.133 LIFO\_Usint

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.133.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO USINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.133.0.2 Incode documentation Developed entirely with methods

#### 2.4.133.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.133.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.133.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Return value

##### 2.4.133.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	USINT	Value to add to the stack

**2.4.133.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.133.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.133.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	USINT	Return value

### 2.4.134 LIFO\_Uint

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.134.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO UINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.134.0.2 Incode documentation Developed entirely with methods

#### 2.4.134.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.134.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.134.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Return value

##### 2.4.134.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	UINT	Value to add to the stack

**2.4.134.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.134.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.134.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UINT	Return value

### 2.4.135 LIFO\_Dint

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.135.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.135.0.2 Incode documentation Developed entirely with methods

#### 2.4.135.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.135.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.135.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Return value

##### 2.4.135.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DINT	Value to add to the stack

**2.4.135.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.135.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.135.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DINT	Return value

### 2.4.136 LIFO\_Udint

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.136.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO UDINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.136.0.2 Incode documentation Developed entirely with methods

#### 2.4.136.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.136.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.136.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Return value

##### 2.4.136.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	UDINT	Value to add to the stack

**2.4.136.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.136.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.136.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	UDINT	Return value

### 2.4.137 LIFO\_Lint

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.137.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.137.0.2 Incode documentation Developed entirely with methods

#### 2.4.137.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.137.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.137.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Return value

##### 2.4.137.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LINT	Value to add to the stack

**2.4.137.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.137.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.137.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LINT	Return value

### 2.4.138 LIFO\_Ulint

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.138.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO ULINT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.138.0.2 Incode documentation Developed entirely with methods

#### 2.4.138.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.138.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.138.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Return value

##### 2.4.138.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	ULINT	Value to add to the stack

**2.4.138.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.138.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.138.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	ULINT	Return value

### 2.4.139 LIFO\_Real

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.139.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO REAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.139.0.2 Incode documentation Developed entirely with methods

#### 2.4.139.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.139.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.139.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Return value

##### 2.4.139.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	REAL	Value to add to the stack

**2.4.139.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.139.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.139.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	REAL	Return value

### 2.4.140 LIFO\_Lreal

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.140.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LREAL	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.140.0.2 Incode documentation Developed entirely with methods

#### 2.4.140.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.140.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.140.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Return value

##### 2.4.140.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	LREAL	Value to add to the stack

**2.4.140.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.140.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.140.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LREAL	Return value

### 2.4.141 LIFO\_String

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.141.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO STRING[None]	Externally allocated buffer. Must be in format AR- RAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.141.0.2 Incode documentation Developed entirely with methods

#### 2.4.141.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of com- ments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.141.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.141.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Return value

##### 2.4.141.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	STRING[None]	Value to add to the stack

**2.4.141.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.141.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.141.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	STRING[None]	Return value

### 2.4.142 LIFO\_Wstring

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.142.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO wstring	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.142.0.2 Incode documentation Developed entirely with methods

#### 2.4.142.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.142.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.142.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Return value

##### 2.4.142.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	wstring	Value to add to the stack

**2.4.142.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.142.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.142.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	wstring	Return value

### 2.4.143 LIFO\_Time

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.143.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO TIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.143.0.2 Incode documentation Developed entirely with methods

#### 2.4.143.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.143.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.143.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Return value

##### 2.4.143.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	TIME	Value to add to the stack

**2.4.143.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.143.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.143.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TIME	Return value

### 2.4.144 LIFO\_Ltime

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.144.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LTIME	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.144.0.2 Incode documentation Developed entirely with methods

#### 2.4.144.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.144.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.144.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

##### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Return value

##### 2.4.144.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

##### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME	Value to add to the stack

**2.4.144.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.144.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.144.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME	Return value

### 2.4.145 LIFO\_Date

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.145.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.145.0.2 Incode documentation Developed entirely with methods

#### 2.4.145.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.145.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.145.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Return value

##### 2.4.145.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DATE	Value to add to the stack

**2.4.145.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.145.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.145.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DATE	Return value

### 2.4.146 LIFO\_Ldate

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.146.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LDATE	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.146.0.2 Incode documentation Developed entirely with methods

#### 2.4.146.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.146.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.146.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Return value

##### 2.4.146.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE	Value to add to the stack

**2.4.146.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.146.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.146.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE	Return value

### 2.4.147 LIFO\_Dt

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.147.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO DT	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.147.0.2 Incode documentation Developed entirely with methods

#### 2.4.147.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.147.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.147.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Return value

##### 2.4.147.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	DT	Value to add to the stack

**2.4.147.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.147.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.147.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	DT	Return value

### 2.4.148 LIFO\_Ldt

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.148.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LDATE_AND_TIME	Externally allocated buffer. Must be in format AR- RAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.148.0.2 Incode documentation Developed entirely with methods

#### 2.4.148.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of com- ments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.148.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.148.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE_AND_TIME	Return value

##### 2.4.148.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface



Direction	Name	Type	Documentation
VAR_INPUT	Value	LDATE_AND_TIME	Value to add to the stack

**2.4.148.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.148.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.148.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LDATE_AND_TIME	Return value

### 2.4.149 LIFO\_Tod

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.149.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO TOD	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.149.0.2 Incode documentation Developed entirely with methods

#### 2.4.149.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.149.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.149.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Return value

##### 2.4.149.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	TOD	Value to add to the stack

**2.4.149.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.149.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.149.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	TOD	Return value

### 2.4.150 LIFO\_Ltod

LIFO / Stack buffer. Pushing places new value on top of the stack and popping removes the element from the top.

#### 2.4.150.0.1 Interface

Direction	Name	Type	Documentation
VAR_INPUT	Buffer	POINTER TO LTIME_OF_DAY	Externally allocated buffer. Must be in format ARRAY[0..N]. ! Block doesn't check for Null pointer
VAR_INPUT	Size	UINT	Size/Max elements of the buffer
VAR_OUTPUT	NrElements	UINT	Number of elements in the FIFO

#### 2.4.150.0.2 Incode documentation Developed entirely with methods

#### 2.4.150.0.3 Metrics

- VAR\_INPUT : 2
- VAR\_OUTPUT : 1
- VAR : 1

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	5	20	1	27	27

#### 2.4.150.1 Methods

- Pop
- Push
- isEmpty
- isFull
- Peek

##### 2.4.150.1.1 Method Pop : BOOL Returns the top LIFO element stored in the buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Return value

##### 2.4.150.1.2 Method Push : BOOL Inserts new value on the top of the LIFO buffer

###### Method Interface

Direction	Name	Type	Documentation
VAR_INPUT	Value	LTIME_OF_DAY	Value to add to the stack

**2.4.150.1.3 Method isEmpty : BOOL** Returns TRUE if LIFO is empty. Reading not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.150.1.4 Method isFull : BOOL** Returns TRUE if LIFO is full. Inserting not allowed

#### Method Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

**2.4.150.1.5 Method Peek : UINT** Returns the index of the next element to Pop. Output paramter holds the element without removing it from the Buffer

#### Method Interface

Direction	Name	Type	Documentation
VAR_OUTPUT	Value	LTIME_OF_DAY	Return value

## Chapter 3

# Documentation for namespace CODESYS\_Control\_Win\_V3\_x64

### 3.1 Namespace index

- Programs

- FIFO\_S\_ManTest
- FIFO\_C\_ManTest
- FIFO\_FWFT\_ManTest
- FIFO\_UP\_ManTest
- LIFO\_ManTest
- FIFO\_C\_UnitTest
- FIFO\_S\_UnitTest
- FIFO\_FWFT\_UnitTest
- FIFO\_UP\_UnitTest
- FIFO\_OP\_UnitTest
- LIFO\_UnitTest
- FIFO\_OP\_ManTest

### 3.2 Metrics

Data types	Programs	Function Blocks	Functions	Classes
0	12	0	0	0

Lines of code	Lines of comments	Lines in total	Maintainable size
368	97	575	564

## 3.3 Programs

### 3.3.1 FIFO\_S\_ManTest

Manual tests for function block FIFO\_S\_Int

#### 3.3.1.0.1 Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

#### 3.3.1.0.2 Metrics

- VAR : 14

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	23	3	31	37



### 3.3.2 FIFO\_C\_ManTest

Manual tests for function block FIFO\_C.Int

#### 3.3.2.0.1 Interface

Direction	Name	Type	Documentation
-----------	------	------	---------------

#### 3.3.2.0.2 Metrics

- VAR : 14

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	26	3	34	40

### 3.3.3 FIFO\_FWFT\_ManTest

Manual tests for function block FIFO\_FWFT\_Int

#### 3.3.3.0.1 Interface

Direction	Name	Type	Documentation
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#### 3.3.3.0.2 Metrics

- VAR : 14

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	24	3	32	38

### 3.3.4 FIFO\_UP\_ManTest

Manual tests for function block FIFO\_UP\_Int

#### 3.3.4.0.1 Interface

Direction	Name	Type	Documentation
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#### 3.3.4.0.2 Metrics

- VAR : 17

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	26	3	34	43

### 3.3.5 LIFO\_ManTest

Manual tests for function block LIFO\_Int

#### 3.3.5.0.1 Interface

Direction	Name	Type	Documentation
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#### 3.3.5.0.2 Metrics

- VAR : 14

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	23	3	31	37

### 3.3.6 FIFO\_C\_UnitTest

Automated unit tests for function block FIFO\_C\_Int

#### 3.3.6.0.1 Interface

Direction	Name	Type	Documentation
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**3.3.6.0.2 Incode documentation** List of tests Test1: Fifo returns TRUE on successfull enqueue Test2: Fifo fills three values correctly Test3: Fifo reports FULL when full Test4: Fifo reports FALSE on unsuccesfull enqueue Test5: Fifo returns TRUE on successfull dequeue Test6: Fifo dequeues values correctly Test7: Fifo can count correctly Test8: Fifo reports EMPTY when EMPTY Test9: Fifo reports FALSE on unsuccesfull dequeue Test10: Fifo circulates to index 0 after being full and one item dequeued Test11: Peek functionality: Should return the next element but not remove it, it should report correct index of the buffer

#### 3.3.6.0.3 Metrics

- VAR : 17

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	36	13	62	53

### 3.3.7 FIFO\_S\_UnitTest

Automated unit tests for function block FIFO\_S\_Int

#### 3.3.7.0.1 Interface

Direction	Name	Type	Documentation
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**3.3.7.0.2 Incode documentation** List of tests Test1: Fifo returns TRUE on successfull enqueue Test2: Fifo fills three values correctly Test3: Fifo reports FULL when full Test4: Fifo reports FALSE on unsuccesfull enqueue Test5: Fifo returns TRUE on successfull dequeue Test6: Fifo dequeues values correctly Test7: Fifo can count correctly Test8: Fifo reports EMPTY when EMPTY Test9: Fifo reports FALSE on unsuccesfull dequeue Test10: Fifo prevents enqueue if its full Test11: Able to enqueue again only after empty flag Test12: Peek functionality: Should return the next element but not remove it, it should report correct index of the buffer

#### 3.3.7.0.3 Metrics

- VAR : 19

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	44	14	73	63

### 3.3.8 FIFO\_FWFT\_UnitTest

Automated unit tests for function block FIFO\_FWFT\_Int

#### 3.3.8.0.1 Interface

Direction	Name	Type	Documentation
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**3.3.8.0.2 Incode documentation** List of tests Test1: Fifo returns TRUE on successfull enqueue Test2: Fifo fills three values correctly Test3: Fifo reports FULL when full Test4: Fifo reports FALSE on unsuccesfull enqueue Test5: Fifo returns TRUE on successfull dequeue Test6: Fifo dequeues values correctly Test7: Fifo can count correctly Test8: Fifo reports EMPTY when EMPTY Test9: Fifo reports FALSE on unsuccesfull dequeue Test10: Fifo first word fall trough is working Test11: Peek functionality: Should return the next element but not remove it, it should report correct index of the buffer

#### 3.3.8.0.3 Metrics

- VAR : 17

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	35	13	61	52

### 3.3.9 FIFO\_UP\_UnitTest

Automated unit tests for function block FIFO\_UP\_Int

#### 3.3.9.0.1 Interface

Direction	Name	Type	Documentation
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**3.3.9.0.2 Incode documentation** List of tests Test1: Fifo returns TRUE on successfull enqueue Test2: Fifo fills three values correctly Test3: Fifo reports FULL when full Test4: Fifo reports FALSE on unsuccesfull enqueue Test5: Fifo returns TRUE on successfull dequeue Test6: Fifo dequeues values correctly Test7: Fifo can count correctly Test8: Fifo reports EMPTY when EMPTY Test9: Fifo reports FALSE on unsuccesfull dequeue Test10: Fifo returns the highest priority value first Test11: Peek functionality: Should return the next element but not remove it, it should report correct index of the buffer

#### 3.3.9.0.3 Metrics

- VAR : 18

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	37	13	63	55



### 3.3.10 FIFO\_OP\_UnitTest

Automated unit tests for function block FIFO\_OP\_Int

#### 3.3.10.0.1 Interface

Direction	Name	Type	Documentation
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**3.3.10.0.2 Incode documentation** List of tests Test1: Fifo returns TRUE on successfull enqueue Test2: Fifo fills three values correctly Test3: Fifo reports FULL when full Test4: Fifo reports FALSE on unsuccesfull enqueue Test5: Fifo returns TRUE on successfull dequeue Test6: Fifo dequeues values correctly Test7: Fifo can count correctly Test8: Fifo reports EMPTY when EMPTY Test9: Fifo reports FALSE on unsuccesfull dequeue Test10: Fifo returns the highest priority value first Test11: Fifo has ordered the buffer correctly according to priority. The buffer is lowest : highest = 0 : N Test12: Peek functionality: Should return the next element but not remove it, it should report correct index of the buffer

#### 3.3.10.0.3 Metrics

- VAR : 19

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	38	14	66	57

### 3.3.11 LIFO\_UnitTest

Automated unit tests for function block LIFO\_Int

#### 3.3.11.0.1 Interface

Direction	Name	Type	Documentation
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**3.3.11.0.2 Incode documentation** List of tests Test1: Lifo returns TRUE on successfull Push Test2: Lifo fills three values correctly Test3: Lifo reports FULL when full Test4: Lifo reports FALSE on unsuccesfull Push Test5: Lifo returns TRUE on successfull Pop Test6: Lifo dequeues values correctly Test7: Lifo can count correctly Test8: Lifo reports EMPTY when EMPTY Test9: Lifo reports FALSE on unsuccesfull Pop Test10: Peek functionality: Should return the next element but not remove it, it should report correct index of the buffer

#### 3.3.11.0.3 Metrics

- VAR : 16

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	30	12	54	46

### 3.3.12 FIFO\_OP\_ManTest

Manual tests for function block FIFO\_OP\_Int

#### 3.3.12.0.1 Interface

Direction	Name	Type	Documentation
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#### 3.3.12.0.2 Metrics

- VAR : 17

Actions	Methods	Lines of code	Lines of comments	Lines in total	Maintainable size
0	0	26	3	34	43