Class Functional Specification

# Document Approval

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Completion of the following signature blocks signifies the approver has reviewed this data and confirms all information is correct. | | | | | | | | | |
| Approved by: |  |  |  |  |  |  |  |  |  |
|  |  | Name |  | Position |  | Signature |  | Date |  |
| Approved by: |  |  |  |  |  |  |  |  |  |
|  |  | Name |  | Position |  | Signature |  | Date |  |

# Revision History

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SELECT printf('%d',V.Ver) AS Ver, V.ChangedBy, substr('00'||printf('%d',V.D), -2, 2) || '-' || substr('00'||printf('%d',V.M), -2, 2) || '-' || printf('%d',V.Y) AS ChangedDate, V.ChangeNumber, V.Description FROM tblRevisionHistory AS V WHERE upper(V.KeyName) = @@DOCTYPE@@ AND V.KeyValue = @@LEVEL@@ ORDER BY V.Ver DESC | | | | |
| **Version** | **Changed by** | **Date** | **Change No.** | **Reason** |
| @@VER@@ | @@CHANGEDBY@@ | @@CHANGEDDATE@@ | @@CHANGENUMBER@@ | @@DESCRIPTION@@ |

# Index List

|  |  |
| --- | --- |
| SELECT Class, Description FROM tblClass WHERE Level = @@LEVEL@@ ORDER BY Class | |
| **Class** | **Description** |
| @@CLASS@@ | @@DESCRIPTION@@ |

|  |  |
| --- | --- |
| BASE | |
| Class | Description |
| @@CLASS@@ | **@@DESCRIPTION@@** |

# Scope

|  |
| --- |
| SELECT Requirement FROM tblClass\_Requirement WHERE Type='Scope' AND Level = @@LEVEL@@ AND Class = @@CLASS@@ |
| **Module Scope** |
| @@REQUIREMENT@@ |

# Functional Requirements

|  |  |
| --- | --- |
| SELECT Reqref, Requirement FROM tblClass\_Requirement WHERE Type='Req' AND Level = @@LEVEL@@ AND Class = @@CLASS@@ | |
| **Req Ref** | **Requirement** |
| @@REQREF@@ | @@REQUIREMENT@@ |

# State Diagram

|  |
| --- |
| IMAGE assets/@@CLASS@@.png |

# States

|  |  |  |  |
| --- | --- | --- | --- |
| SELECT State, StateDescription, AlarmState, SFC FROM tblClass\_State WHERE Level = @@LEVEL@@ AND Class = @@CLASS@@ | | | |
| **State** | **Alarm State** | **State Description** | **SFC** |
| @@STATE@@ | @@ALARMSTATE@@ | @@STATEDESCRIPTION@@ | @@SFC@@ |

# Child Device Initial States

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SELECT V.State, C.childAliasTag, C.childAliasClass, C.childAliasDescription, V.Explanation FROM tblClass\_Child AS C LEFT JOIN tblClass\_ChildStateValues AS V ON C.childAliasTag = V.childAliasTag WHERE C.Level = @@LEVEL@@ AND C.Class = @@CLASS@@ | | | | |
| **State** | **Child Alias** | **Class** | **Description** | **Initial State** |
| @@STATE@@ | @@CHILDALIASTAG@@ | @@CHILDALIASCLASS@@ | @@CHILDALIASDESCRIPTION@@ | @@EXPLANATION@@ |

# Transitions

|  |  |
| --- | --- |
| SELECT Transition, Description FROM tblClass\_Transition WHERE Level = @@LEVEL@@ AND Class = @@CLASS@@ | |
| **Transition** | **Description** |
| @@TRANSITION@@ | @@DESCRIPTION@@ |

# Parameters

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SELECT Parameter, ParameterDescription, ParameterMin, ParameterMax, ParameterValue FROM tblClass\_Parameter WHERE Level = @@LEVEL@@ AND ParameterClass = @@CLASS@@ | | | | | |
| **Parameter** | **Description** | **Min** | **Max** | **Default** | **Unit** |
| @@PARAMETER@@ | @@PARAMETERDESCRIPTION@@ | @@PARAMETERMIN@@ | @@PARAMETERMAX@@ | @@PARAMETERVALUE@@ | @@UOM@@ |

# Alarms

|  |  |  |  |
| --- | --- | --- | --- |
| SELECT Mnemonic, Condition, Priority, Message FROM tblClass\_Alarm WHERE Level = @@LEVEL@@ AND Class = @@CLASS@@ | | | |
| **Alarm** | **Condition** | **Priority** | **Message** |
| @@MNEMONIC@@ | @@CONDITION@@ | @@PRIORITY@@ | @@MESSAGE@@ |

# I/O (Physical I/O and ProfiNET I/O prefixed with a “P”)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SELECT Mnemonic, Description, printf('%d',DI) AS DI, printf('%d',DO) AS DO, printf('%d',AI) AS AI, printf('%d',AO) AS AO, printf('%d',PDI) AS PDI, printf('%d',PDO) AS PDO, printf('%d',PAI) AS PAI, printf('%d',PAO) AS PAO FROM tblClass\_IO WHERE Level = @@LEVEL@@ AND Class = @@CLASS@@ | | | | | | | | | |
| **Mnemonic** | **Description** | **DI** | **DO** | **AI** | **AO** | **PDI** | **PDO** | **PAI** | **PAO** |
| @@MNEMONIC@@ | @@DESCRIPTION@@ | @@DI@@ | @@DO@@ | @@AI@@ | @@AO@@ | @@PDI@@ | @@PDO@@ | @@PAI@@ | @@PAO@@ |