**APPENDIX 10, Automation Standard**

to Arla Foods Group Agreement for Purchase of Machinery including installation

|  |
| --- |
| **Software Design Specification**  **for Units - PackML** |
| |  |  | | --- | --- | |  | Description | | Seller (company) | Seller A/S | | Document responsible (Seller) | FirstName LastName :  Phone number :  Mail adresse : | | Document Version | 1.0 | | Date | 2014-01-12 |   *Table 1: Seller information* | |
| |  |  | | --- | --- | |  | Description | | Buyer | Taulov Diary | | Line | Line 44 | | Location on site | Pack 4 | | Project name | Superline | | Unit name / type | Flow packer | | Buyer machine number | 882Y430 (defined by buyer) |   *Table 2: Unit information* | |
|  |

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# Software Design Specification requirements

Black text is mandatory and cannot be changed by seller.

The seller has to specify and change the text marked with RED.

The Software Design Specification requirements are part of the Performance criteria in the contract.

## references

Basics for this document:

|  |  |  |
| --- | --- | --- |
| Reference number | Reference | Version |
| 1 | Interface requirements and Specification for Units - PackML, Automation Standard to Arla Foods Group Agreement for Purchase of Machinery including installation. appendix 10 | V01 |
| 2 | Performance criteria, Arla Foods Group Agreement for Purchase of Machinery including installation, appendix 4 | 2014-01-05 |
| 3 | Interface description, Arla Foods Group Agreement for Purchase of Machinery including installation, appendix 2 | 2014-01-05 |
| 4 | Layout drawing | 2014-01-10 |
| 5 | Meeting minutes at Alpma | 2014-01-10 |

*Table 3: references*

# Building hardware

## Physical specification

Specify the unit and devices and the surrounding units.

The unit is a flowpacker. A cheese cutter is upstream and delivers cheese to the flowpacker. The flowpacker delivers cheese downstream to the box filler.

|  |  |  |
| --- | --- | --- |
|  | Included (X)  Not included (N/A) | Comment |
| Upstream control | X | Cheese cutter |
| Downstream control | X | Box filler |
| Other communication to unit | N/A | Name/type of the unit for other communication to the unit |

*Table 4: Up and downstream control*

## Communication topology

Witch elements are included for communication topology in the project:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Included (X)  Not included (N/A) | Required Datablocks | Comment |
| Heart beat | X | DB100, DB106 | Mandatory |
| States and modes | X | DB101 | Mandatory |
| Commands | X | DB107 | Mandatory |
| Job data | X | DB102, DB108 |  |
| OEE | X | DB103 |  |
| Warnings | X | DB104 |  |
| Errors | X | DB104 |  |
| Additional data | N/A | DB105, DB109 | Interface data from other units. |

*Table 5: PackML requirements*

|  |  |  |
| --- | --- | --- |
|  | Included (X)  Not included (N/A) | Comment |
| Printer | N/A | Printer name and type |
| Scale | N/A | Scale name and type |
| X-ray | N/A | X-ray name and type |
| Vision | N/A | Vision name and type |
| Etc. | N/A |  |

*Table 6: Special unit requirements*

|  |  |  |
| --- | --- | --- |
|  | Included (X)  Not included (N/A) | Comment |
| Safe PLC and E-stops | N/A | There is only E-stop local on unit, and no Safe PLC on line |

*Table 7: Optional requirements*

## Ethernet communication

Specify the identification of the unit and the related IP-address on site and during test. The IP-address on site is a local IP-address, defined by buyer.

During FAT test, the unit is to be connect to a test case. During the test the unit has a specific IP-Address

|  |  |
| --- | --- |
|  | Unit IP-address |
| Final adress On site | 10.10.20.30 |
| Test suitcase for FAT | 10.0.0.1 |

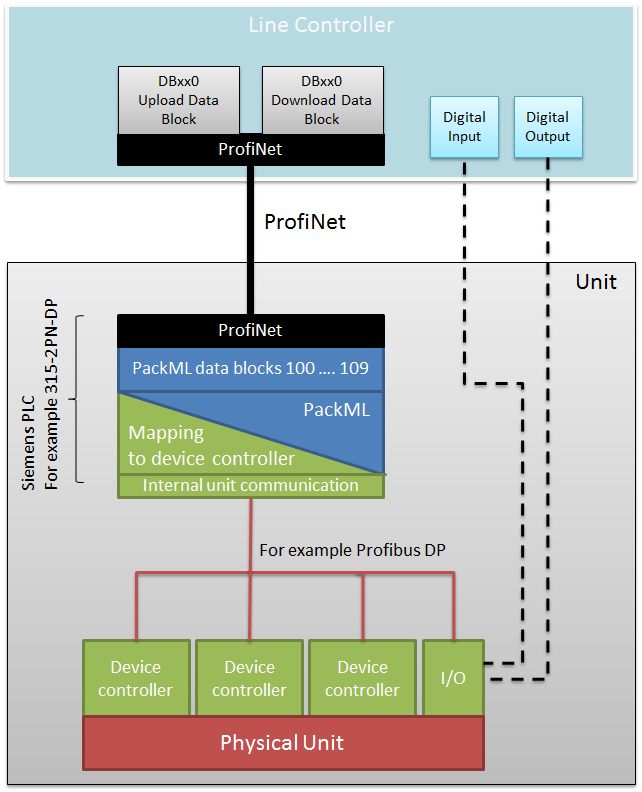
*Table 8: Unit identification and IP-address*

### Obtain the data block structure

There are several ways to implement the required interface.

Specify how the PackML interface is implemented within the unit-hardware configuration.

Specification: Gateway S7 315-2 PN/DP PLC. internal Elau controllers are connected to the gateway PLC through the profibus.



*Figure 1: Communication topology*

## Communication DB data definition

The PackML interface on the unit do follow the DB data definintion of Most Significant Byte, Least Significant Byte, Most Significant Word, Least Significant Word. APPENDIX 10, Automation Standard to Arla Foods Group Agreement for Purchase of Machinery including installation

## Communication data

The unit do follow the handshake conditions described in APPENDIX 10, Automation Standard to Arla Foods Group Agreement for Purchase of Machinery including installation.

## 

## Data Block: Heart Beat

The unit has implemented Data Block DB100 Heart Beat, DB106 Heart Beat and the related counter according to APPENDIX 10, Automation Standard to Arla Foods Group Agreement for Purchase of Machinery including installation.

## Data Block: Job data

The Job data, data format, value range, unit and data length are specified below in DB102 and DB 108.

The job data is recipe parameters that are required to run the unit with a specified product, these data are coming from the SAP system or are stored in Arla Foods Group recipe handling system (RMS).

Job data is according to APPENDIX 10, Automation Standard to Arla Foods Group Agreement for Purchase of Machinery including installation.

**DB102 Unit write**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Addr. | Description  (English) | Description  (Local language) | Data format | Value range | Unit | Data length | |
| 0.0 | Status Unit | Status Unit | Byte | 0-1 |  | 1 Byte |
| 1.0 | Status Line Controller | Status Line Controller | Byte | 0-1 |  | 1 Byte |
| 2.0 | Temperature setpoint | Temperatur setpunkt | REAL | 0.0-100.0 | °C | 4 Bytes |
| 6.0 | Speed | Hastighed | DINT | 0-1000 | Pieces | 4 Bytes |
| 10.0 | Label number | Label nummer | INT | 0-10 |  | 2 Bytes |
| 12.0 | Small size | Lille størrelse | BYTE | 0-1 |  | 1 Bytes |
| 13.0 | Splash mounted | Stænk monteret | BYTE | 0-1 |  | 1 Bytes |
| 14.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 18.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 22.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 26.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 30.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 34.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 38.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 42.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 46.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 50.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 54.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 58.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 62.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 66.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 70.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 74.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 78.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 82.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |

*Table 9: Data Block Job Data – Unit write*

**DB108 Line Controller write**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Addr. | Description  (English) | Description  (Local language) | Data format | Value range | Unit | Data length |
| 0.0 | Status Line Controller | Status Line Controller | Byte | 0-1 |  | 1 Byte |
| 1.0 | Status Unit | Status Unit | Byte | 0-1 |  | 1 Byte |
| 2.0 | Temperature setpoint | Temperatur setpunkt | REAL | 0.0-100.0 | °C | 4 Bytes |
| 6.0 | Speed | Hastighed | DINT | 0-1000 | Pieces | 4 Bytes |
| 10.0 | Label number | Label nummer | INT | 0-10 |  | 2 Bytes |
| 12.0 | Small size | Lille størrelse | BYTE | 0-1 |  | 1 Bytes |
| 13.0 | Splash mounted | Stænk monteret | BYTE | 0-1 |  | 1 Bytes |
| 14.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 18.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 22.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 26.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 30.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 34.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 38.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 42.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 46.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 50.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 54.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 58.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 62.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 66.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 70.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 74.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 78.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 82.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |

*Table 10: Data Block Job Data – Line Controller write*

## Data Block: Mode & State

The Data Block Mode & State is implemented according to APPENDIX 10, Automation Standard to Arla Foods Group Agreement for Purchase of Machinery including installation.

The modes where the unit follows the PackML interface and eventID is specified in the table below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Mode** | **Value** | **PackML state model implemented** | **OEE**  **EventID Implemented** | **EventID** |
| Undefined | 0 | N/A | N/A | N/A |
| Producing | 1 | X | X | See section 2.10 datablock OEE |
| Maintenance | 2 | N/A | X | EventID = 61; Maintenance |
| Manual | 3 | N/A | X | EventID = 81; Non working time |
| Reserved | 4...15 | N/A | N/A | N/A |
| Clean | 16 | N/A | X | EventID = 51; Cleaning |
| Jog | 17 | N/A | N/A | N/A |
| CIP | 18 | N/A | N/A | N/A |
| User Defined | 19 | N/A | N/A | N/A |
| User Defined | N | N/A | N/A | N/A |

*Table 11: Predefined modes*

The defined states are:

|  |  |  |
| --- | --- | --- |
| State | Value | Define the actions to be taken on unit |
| Clearing | 1 | Release of E-stop |
| STOPPED | 2 | Production is stopped. |
| Starting | 3 | Starting up flow, temperature controller activates. |
| IDLE | 4 | Ready for production |
| SUSPENDED | 5 | Temperature controller is active and flow are stopped |
| EXECUTE | 6 | Production is running |
| Stopping | 7 | Buffers are emptying, stop of flow and deactivate temperature controller. |
| Aborting | 8 | Stop of flow and deactivate temperature controller. |
| ABORTED | 9 | Production is stopped. |
| Holding | 10 | Stop of flow and deactivate temperature controller |
| HELD | 11 | Production is stopped. |
| UnHolding | 12 | Starting up flow, temperature controller activates. |
| Suspending | 13 | Temperature controller is active and flow are stopped when internal output buffer is full. |
| Unsuspending | 14 | Starting up flow |
| Resetting | 15 | No physical change on the unit |
| Completing | 16 | Buffers are emptying, stop of flow and deactivate temperature controller. |
| COMPLETE | 17 | Production is stopped. |

*12: Defined states and the related actions.*

## Data Block: Command

The Data Block Command is implemented according to APPENDIX 10, Automation Standard to Arla Foods Group Agreement for Purchase of Machinery including installation.

The commands implemented on the unit itself are specified below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Command | Value | Implemented on Unit | | | |
| External  via interface | Unit  itself | E-stop | Name on unit HMI |
| No command | 0 | YES | YES |  | N/A |
| Reset | 1 |  | YES |  | Reset |
| Start | 2 | YES | YES |  | Start |
| Stop | 3 | YES | YES |  | Stop |
| Hold | 4 |  | YES |  | N/A |
| Unhold | 5 |  | YES |  | Restart |
| Suspend | 6 | YES | YES |  | N/A |
| Unsuspend | 7 | YES | YES |  | N/A |
| Abort | 8 |  |  | YES | E-Stop |
| Clear | 9 |  | YES |  | Reset E-Stop |
| Complete | 10 |  | NO |  | N/A |

*13: Defined Commands.*

## Data Block: OEE

The Data Block OEE is implemented according to APPENDIX 10, Automation Standard to Arla Foods Group Agreement for Purchase of Machinery including installation.

The Error number related to a unit failure (Error) is specified in the next section Data Block: Warning & Error. The first coming error is the actual error in “detailed error info”.

The table below specifies the implemented EventIDs in producing mode. The eventID numbers in the table below are pre-defined, and cannot be changed. The text in RED can be changed for the specific unit. It is optional to add more EventID’s.

|  |  |  |
| --- | --- | --- |
| **STATE** | **MODE = PRODUCING**  Legal EventID groups | **Implemented EventID** |
| IDLE | (ST) Setup time | **EventID = 41**; Setup time and changeover time from one product to another. |
| Starting | (ST) Setup time | **EventID = 41**; Setup time and changeover time from one product to another. |
| EXECUTING | (OT) Production | **EventID = 1**; Unit is producing  **EventID = 2;** Unit is producing with reduced speed. |
| Holding | (MF) Machine failure, (PF) Operator failure | **EventID = 11:** Unit failure (all errors except 1 and 2)  **EventID = 31**; Operator related failures, (Error 1 or 2) |
| HELD | (MF) Machine failure, (PF) Operator failure | **EventID = 11:** Unit failure (all errors except 1 and 2)  **EventID = 31**; Operator related failures, (Error 1 or 2) |
| Unholding | (MF) Machine failure, (PF) Operator failure | **EventID = 11:** Unit failure (all errors except 1 and 2)  **EventID = 31**; Operator related failures, (Error 1 or 2) |
| Suspending | (OT) Production  (LF) Line Failure  (RPD) Removable Planned Down time | **EventID = 1**; Unit is producing  **EventID = 2;** Unit is producing with reduced speed.  **EventID = 21**; Unit is in saturation  **EventID = 22**; Unit is in starvation.  **EventID = 71**; Operator Break |
| SUSPENDED | (LF) Line Failure  (RPD) Removable Planned Down time | **EventID = 21**; Unit is in saturation  **EventID = 22**; Unit is in starvation.  **EventID = 71**; Operator Break |
| Unsuspending | (LF) Line Failure  (RPD) Removable Planned Down time | **EventID = 21**; Unit is in saturation  **EventID = 22**; Unit is in starvation.  **EventID = 71**; Operator Break |
| Completing | (OT) Production | **EventID = 1**; Unit is producing  **EventID = 2;** Unit is producing with reduced speed. |
| COMPLETE | (ST) Setup time | **EventID = 41**; Setup time and changeover time from one product to another. |
| Stopping | (OT) Production | **EventID = 1**; Unit is producing  **EventID = 2;** Unit is producing with reduced speed. |
| STOPPED | (ST) Setup time  (NWT) Non Working Time | **EventID = 41**; Setup time and changeover time from one product to another. |
| Resetting | (ST) Setup time | **EventID = 41**; Setup time and changeover time from one product to another. |
| Aborting | (MF) Machine failure, (PF) Operator failure | **EventID = 11:** Unit failure (all errors except 1 and 2)  **EventID = 31**; Operator related failures, (Error 1 or 2) |
| ABORT | (MF) Machine failure, (PF) Operator failure | **EventID = 11:** Unit failure (all errors except 1 and 2)  **EventID = 31**; Operator related failures, (Error 1 or 2 |
| Clearing | (MF) Machine failure, (PF) Operator failure | **EventID = 11:** Unit failure (all errors except 1 and 2)  **EventID = 31**; Operator related failures, (Error 1 or 2 |

*Table 14: Specification of EventIDs for unit.*

## Data Block: Warning & Error

The Data Block Warning & Error is implemented according to APPENDIX 10, Automation Standard to Arla Foods Group Agreement for Purchase of Machinery including installation.

### Warning

The Warnings implemented are specified below:

|  |  |  |  |
| --- | --- | --- | --- |
| Bit | Warning No. | Specify Warning on unit (English) | Specify Warning on unit (Local Language) |
| 2.0 | 1 | Low level in buffer1 | Lav niveau i buffer1 |
| 2.1 | 2 | Low level in buffer2 | Lav niveau i buffer2 |
| 2.2 | N/A | N/A | N/A |
| 2.3 | N/A | N/A | N/A |
| 2.4 | N/A | N/A | N/A |
| 2.5 | N/A | N/A | N/A |
| 2.6 | N/A | N/A | N/A |
| 2.7 | N/A | N/A | N/A |
| 3.0 | N/A | N/A | N/A |
| 3.1 | N/A | N/A | N/A |
| …. | N/A | N/A | N/A |
| 9.7 | N/A | N/A | N/A |

*Table 15: Bit map of warnings and definition in English and Local Language.*

### Error

The number of errors which should be available via the PackML interface: 4

The Errors implemented are specified below:

|  |  |  |  |
| --- | --- | --- | --- |
| Bit | Error No.  (OEE detailed error info) | Specify Error on unit (English) | Specify Error on unit (Local Language) |
| 10.0 | 1 | Buffer 1 empty | Buffer 1 tom |
| 10.1 | 2 | Buffer 2 empty | Buffer 2 tom |
| 10.2 | 3 | Overload on motor 1 | Termofejl motor 1 |
| 10.3 | 4 | Overload on motor 2 | Termofejl motor 2 |
| 10.4 | N/A | N/A | N/A |
| 10.5 | N/A | N/A | N/A |
| 10.6 | N/A | N/A | N/A |
| 10.7 | N/A | N/A | N/A |
| 11.0 | N/A | N/A | N/A |
| 11.1 | N/A | N/A | N/A |
| 11.2 | N/A | N/A | N/A |
| …. | N/A | N/A | N/A |

*Table 16: Bit map of Errors and definition in English and local language.*

## Data Block: Additional data

Additional data is according to APPENDIX 10, Automation Standard to Arla Foods Group Agreement for Purchase of Machinery including installation

No additional data is implemented.

**DB105 Unit write**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Addr. | Description  (English) | Description  (Local language) | Data format | Value range | Unit | Data length | |
| 0.0 | Status Unit | Status Unit | Byte | 0-1 |  | 1 Byte |
| 1.0 | Status Line Controller | Status Line Controller | Byte | 0-1 |  | 1 Byte |
| 2.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 6.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 10.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 14.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 18.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 22.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 26.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 30.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 34.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 38.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 42.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 46.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 50.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 54.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 58.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 62.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 66.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 70.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 74.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 78.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 82.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |

*Table 17: Data Block Additional Data – Unit write*

**DB109 Line Controller write**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Addr. | Description  (English) | Description  (Local language) | Data format | Value range | Unit | Data length |
| 0.0 | Status Unit | Status Unit | Byte | 0-1 |  | 1 Byte |
| 1.0 | Status Line Controller | Status Line Controller | Byte | 0-1 |  | 1 Byte |
| 2.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 6.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 10.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 14.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 18.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 22.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 26.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 30.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 34.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 38.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 42.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 46.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 50.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 54.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 58.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 62.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 66.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 70.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 74.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 78.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |
| 82.0 | N/A | N/A | DINT | N/A | N/A | 4 Bytes |

*Table 18: Data Block Additional Data – Line Controller write*

# Special unit requirements

The unit contains the following equipment that needs more than the PackML communication to satisfy it tasks

Specification of required data communication interface to the unit.

N/A

# Optional requirements

## SafePLC and E-stop

The unit has implemented the E-stop as follows:

There are 2 E-stops on the unit, one in each end. Both E-stop is stopping the unit. There is no SafePLC.

# Test requirements

The buyer and seller has to determine the test and the date for completing the test. Furthermore, the seller needs to specify the required test equipment and test persons.

|  |  |  |  |
| --- | --- | --- | --- |
| Test | Date | Required test equipment | Required test persons |
| PackML Factory Acceptance Test – FAT | yyyy-mm-dd | Test suitcase | Software engeneer: Mr. Y.  Unit architect : Mrs. Z  Seller personal : Mr. A |
| PackML Input & Out test – I/O test | yyyy-mm-dd | N/A | Software engeneer: Mr. Y Software Engeneer : Mr. A (appointed by buyer) |
| PackML Site Acceptance Test – SAT | yyyy-mm-dd | N/A | PLC programmer: Mr. Y  Software Engeneer PLC : Mr. B (appointed by buyer)  Software Engeneer MES : Mr. C (appointed by buyer) |
| PackML Take Over Certificate – TOC | yyyy-mm-dd | N/A | Seller : Mr. Z  Buyer : Mr. D |

*Table 19: Test requirements*

# Version log

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Description of changes** |
| 01 | yyyy-mm-dd | INIT | Document for signed contract |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

*Table 20: Version log*