

Project Documentation

Table of contents

1 Device: Device_1	3
1.1 PLC Logic: Plc Logic	3
1.1.1 Application: Application	3

1 Device: Device_1

Users and Groups

Users:

Groups

Access Rights

View

Modify

Execute

Add/remove children

Symbol Rights

Information

Name: CODESYS Control Win V3 x64

Vendor: 3S - Smart Software Solutions GmbH

Categories: PLCs

Type: 4096

ID: 0000 0004

Version: 3.5.19.20

Order number: ???

Description: CODESYS V3 Soft-PLC for Windows with non realtime capabilities (CODESYS Control Win V3 x64)

1.1 PLC Logic: Plc Logic

1.1.1 Application: Application

1.1.1.1 Folder: POU's

1.1.1.1.1 Folder: UM_PalletWrapper

1.1.1.1.1.1 Folder: DUTs

1.1.1.1.1.1.1 DUT: AplicatorMode

```
1      TYPE AplicatorMode :
2      STRUCT
3          sModeName : STRING ;
4          arrLayeringSystem : ARRAY [ 1 .. 8 ] OF USINT ;
5      END_STRUCT
6      END_TYPE
7
```

1.1.1.1.1.1.2 Folder: PalletWrapperError

1.1.1.1.1.1.2.1 DUT: PW_ERROR_ID

```
1      {attribute 'qualified_only'}
2      {attribute 'strict'}
3      TYPE PW_ERROR_ID :
4      (
5          PW_NO_ERROR := 0 ,
6          PW_FILM_NOT_DETECTED_ERROR := 1 ,
7          PW_CLAMP_CLOSE_ERROR := 2 ,
8          PW_CLAMP_RELEASE_ERROR := 3 ,
9
10         PW_STICKER_ATTACH_ERROR := 4 ,
11         PW_STICKER_DETACH_ERROR := 5 ,
12
13         PW_PROTECTOR_EXTEND_ERROR := 6 ,
14         PW_PROTECTOR_RELEASE_ERROR := 7 ,
15
16         PW_APLICATOR_POWER_ERROR := 8 ,
17         PW_ROTATOR_POWER_ERROR := 9 ,
18         PW_APLICATOR_HOME_ERROR := 10 ,
19         PW_ROTATOR_HOME_ERROR := 11 ,
20         PW_APLICATOR_HALT_ERROR := 12 ,
21         PW_ROTATOR_HALT_ERROR := 13 ,
22         PW_APLICATOR_STOP_ERROR := 14 ,
23         PW_ROTATOR_STOP_ERROR := 15 ,
24         PW_APLICATOR_MOVE_ERROR := 16 ,
25         PW_ROTATOR_MOVE_ERROR := 17 ,
26         PW_ENTER_CONVEYOR_DRIVE_ERROR := 18 ,
27         PW_CENTER_CONVEYOR_DRIVE_ERROR := 19 ,
28         PW_EXIT_CONVEYOR_DRIVE_ERROR := 20 ,
```

```
29     PW_ENTER_CONVEYOR_SENSOR_ERROR := 21 ,
30     PW_CENTER_CONVEYOR_SENSOR_ERROR := 22 ,
31     PW_EXIT_CONVEYOR_SENSOR_ERROR  := 23 ,
32     PW_APLICATOR_PALLET_SENSOR_ERROR := 24 ,
33     PW_ENTER_CONVEYOR_USAGE_ERROR  := 25 ,
34     PW_CENTER_CONVEYOR_USAGE_ERROR := 26 ,
35     PW_EXIT_CONVEYOR_USAGE_ERROR   := 27 ,
36     PW_ROTATOR_USAGE_ERROR         := 28 ,
37     PW_APLICATOR_USAGE_ERROR       := 29
38 );
39 END_TYPE
40
```

1.1.1.1.1.2.2 POU: PW_ERROR

```
1  FUNCTION_BLOCK PUBLIC PW_ERROR
2  VAR_INPUT
3      PW_ErrorID : PW_ERROR_ID ;
4      sErrorCauseMessage : STRING ;
5      sErrorSolutionMessage : STRING ;
6  END_VAR
7
```

1

1.1.1.1.1.2.3 POU: PW_getErrorSolution

```
1  FUNCTION PW_getErrorSolution : STRING
2  VAR_INPUT
3      PALLET_WRAPPER_ERROR : PW_ERROR_ID ;
4  END_VAR
5
```

```
1  CASE PALLET_WRAPPER_ERROR OF
2      0 : PW_getErrorSolution := 'No errors' ;
3      1 : PW_getErrorSolution := 'The foil has run out or broken. Insert the
4          foil between the clamping jaws.' ;
5      2 : PW_getErrorSolution := 'Clamp actuator does not extend properly.
6          Check the extension sensor.' ;
7      3 : PW_getErrorSolution := 'Clamp actuator does not retract properly.
8          Check the retraction sensor.' ;
9      4 : PW_getErrorSolution := 'Sticker actuator does not extend properly.
10         Check the extension sensor.' ;
11      5 : PW_getErrorSolution := 'Sticker actuator does not retract properly.
12         Check the retraction sensor.' ;
13      6 : PW_getErrorSolution := 'Protector actuator does not extend
14         properly. Check the extension sensor.' ;
15      7 : PW_getErrorSolution := 'Protector actuator does not retract
16         properly. Check the retraction sensor.' ;
17      8 : PW_getErrorSolution := 'Servo Axis error: ' ;
18  END_CASE
```

1.1.1.1.2 Folder: Globals

1.1.1.1.2.1 Global Variable List: AplicatorModeNames

```
1      {attribute 'qualified_only'}
2      VAR_GLOBAL
3          arrModeNames : ARRAY [ 0 .. 2 ] OF STRING := [ 'Eco' , 'Normal' , 'High
Performance' ] ;
4      END_VAR
5
```

1.1.1.1.2.2 Global Variable List: AplicatorParameters

```
1      {attribute 'qualified_only'}
2      VAR_GLOBAL
3          LR_HOME_POSITION : LREAL := 0 ;
4          LR_JERK : LREAL := 0 ;
5          LR_DECELERATION : LREAL := 1000 ;
6          LR_ACCELERATION : LREAL := 100 ;
7          LR_VELOCITY : LREAL := 3000 ;
8          LR_SLOW_VELOCITY : LREAL := 1000 ;
9          LR_SLOW_ACCELERATION : LREAL := 20 ;
10         LRA_LAYER_POSITIONS : ARRAY [ 1 .. 8 ] OF LREAL := [
11             50 ,
12             500 ,
13             950 ,
14             1400 ,
15             1400 ,
16             950 ,
17             500 ,
18             50 ] ;
19
20     END_VAR
21
```

1.1.1.1.2.3 Global Variable List: ConveyorParameters

```
1      {attribute 'qualified_only'}
2      VAR_GLOBAL
3          LR_JERK : LREAL := 0 ;
4          LR_DECELERATION : LREAL := 1000 ;
5          LR_ACCELERATION : LREAL := 100 ;
6          LR_VELOCITY : LREAL := 3000 ;
7      END_VAR
8
```

1.1.1.1.1.2.4 Global Variable List: LayerSystems

```
1  VAR_GLOBAL CONSTANT
2      //Layering : base, 1, 2, top, top, 2, 1, base
3      arrEcoSystem : ARRAY [1..8] OF USINT := [2,1,1,1,1,0,0,1];
4      // max 7 wraps per pallet
5      arrNormalSystem : ARRAY [1..8] OF USINT := [2,1,1,1,1,1,0,1];
6      // max 8 wraps per pallet
7      arrHighPerformanceSystem : ARRAY [1..8] OF USINT := [2,1,1,1,1,1,1,2]; // max 10 wraps per pallet
8  END_VAR
```

1.1.1.1.1.2.5 Global Variable List: RotatorParameters

```
1  {attribute 'qualified_only'}
2  VAR_GLOBAL
3      LR_HOME_POSITION : LREAL := 0;
4      LR_JERK : LREAL := 0;
5      LR_DECELERATION : LREAL := 1000;
6      LR_ACCELERATION : LREAL := 100;
7      LR_VELOCITY : LREAL := 3000;
8      LR_FIXED_POSITION : LREAL := 360;
9  END_VAR
10
```

1.1.1.1.1.2.6 Global Variable List: UnitModeNames

```
1  VAR_GLOBAL CONSTANT
2      arrUnitModeNames : ARRAY [0..1] OF STRING := ['Production',
3      'Manual'];
4  END_VAR
```

1.1.1.1.1.3 Folder: POU's

1.1.1.1.1.3.1 POU: CM_CenterConveyor

```
1  FUNCTION_BLOCK PUBLIC CM_CenterConveyor EXTENDS ConveyorAxis
2  VAR_INPUT
3      Ref_CenterConveyorAxis : REFERENCE TO AXIS_REF_SM3;
4  END_VAR
5  VAR_OUTPUT
6      PW_Error : PW_ERROR;
7  END_VAR
8
```

1.1.1.1.3.1.2 Method: HaltDrive

```
9      IF bError AND ErrorID <> 0 THEN
10          sErrorCauseMessage := SMC_ErrorString ( ErrorID := ErrorID , Language
:= 0 ) ;
11          sErrorSolutionMessage := PW_getErrorSolution ( PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ) ;
12
13          THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ;
14          THIS ^ . PW_Error . sErrorCauseMessage := sErrorCauseMessage ;
15          THIS ^ . PW_Error . sErrorSolutionMessage := sErrorSolutionMessage ;
16      END_IF
17
```

1.1.1.1.3.1.3 Method: MoveVelocity

```
1      METHOD PUBLIC MoveVelocity
2      VAR_INPUT
3          intDirection : MC_DIRECTION ;
4      END_VAR
5      VAR
6          bError : BOOL ;
7          ErrorID : SMC_ERROR ;
8          sErrorCauseMessage : STRING ;
9          sErrorSolutionMessage : STRING ;
10     END_VAR
11     VAR_OUTPUT
12         bVelocityReached : BOOL ;
13     END_VAR
14
```

```
1      SUPER ^ . ExecuteMoveVel ( Ref_Axis := THIS ^ . Ref_CenterConveyorAxis ,
2                                lrVelocity := ConveyorParameters . LR_VELOCITY ,
3                                lrAcceleration := ConveyorParameters . LR_ACCELERATION ,
4                                lrDeceleration := ConveyorParameters . LR_DECELERATION ,
5                                lrJerk := ConveyorParameters . LR_JERK ,
6                                intDirection := intDirection ,
7                                bVelocityReached => bVelocityReached ,
8                                bError => bError ,
9                                ErrorID => ErrorID ) ;
10
11     IF bError AND ErrorID <> 0 THEN
12         sErrorCauseMessage := SMC_ErrorString ( ErrorID := ErrorID , Language
:= 0 ) ;
13         sErrorSolutionMessage := PW_getErrorSolution ( PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ) ;
14
15         THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ;
16         THIS ^ . PW_Error . sErrorCauseMessage := sErrorCauseMessage ;
17         THIS ^ . PW_Error . sErrorSolutionMessage := sErrorSolutionMessage ;
18
19     END_IF
20
```

1.1.1.1.1.3.1.5 Method: StopDrive

PalletWrapperPlc.project
30.12.2023 22:18

1.1.1.1.3.1.5 Method: StopDrive

```
8             ErrorID => ErrorID );
9
10         IF bError AND ErrorID <> 0 THEN
11             sErrorCauseMessage := SMC_ErrorString ( ErrorID := ErrorID ,
Language := 0 );
12             sErrorSolutionMessage := PW_getErrorSolution ( PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR );
13
14             THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ;
15             THIS ^ . PW_Error . sErrorCauseMessage := sErrorCauseMessage ;
16             THIS ^ . PW_Error . sErrorSolutionMessage := sErrorSolutionMessage ;
17         END_IF
18     END_CASE
19
```

1.1.1.1.3.1.6 Method: ThrowError

```
1     METHOD PUBLIC ThrowError
2     VAR_INPUT
3         ThrownError : PW_ERROR ;
4     END_VAR
5
1     THIS ^ . PW_Error . PW_ErrorID := ThrownError . PW_ErrorID ;
2     THIS ^ . PW_Error . sErrorCauseMessage := ThrownError . sErrorCauseMessage ;
3     THIS ^ . PW_Error . sErrorSolutionMessage := ThrownError .
sErrorSolutionMessage ;
4
```

1.1.1.1.3.2 POU: CM_EnterConveyor

```
1     FUNCTION_BLOCK PUBLIC CM_EnterConveyor EXTENDS ConveyorAxis
2     VAR_INPUT
3         Ref_EnterConveyorAxis : REFERENCE TO AXIS_REF_SM3 ;
4     END_VAR
5     VAR_OUTPUT
6         PW_Error : PW_ERROR ;
7     END_VAR
8
```

1.1.1.1.3.2.1 Method: EnableDrivePower

```
1     METHOD PUBLIC EnableDrivePower
2     VAR
3         bError : BOOL ;
4         ErrorID : SMC_ERROR ;
5         PW_Error : PW_ERROR ;
6     END_VAR
7     VAR_OUTPUT
8         bPowerStatus : BOOL ;
9     END_VAR
10
```

1.1.1.1.3.2.1 Method: EnableDrivePower

```
1  CASE THIS ^.Ref_EnterConveyorAxis .nAxisState OF
2      0 , 1 , 2 : SUPER ^.EnablePower ( Ref_Axis := THIS ^.
Ref_EnterConveyorAxis ,
3          bPowerStatus => bPowerStatus ,
4          bError => bError ,
5          ErrorID => ErrorID ) ;
6  ELSE bPowerStatus := TRUE ;
7  END_CASE
8
9  IF bError AND ErrorID <> 0 THEN
10      PW_Error . PW_ErrorID      := PW_ERROR_ID . PW_ENTER_CONVEYOR_DRIVE_ERROR ;
11      PW_Error . sErrorCauseMessage := SMC_ErrorString ( ErrorId := ErrorID ,
Language := 0 ) ;
12      PW_Error . sErrorSolutionMessage := PW_getErrorSolution ( PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ) ;
13
14      ThrowError ( ThrownError := PW_Error ) ;
15  END_IF
16
```

1.1.1.1.3.2.2 Method: HaltDrive

```
1  METHOD PUBLIC HaltDrive
2  VAR
3      bError : BOOL ;
4      ErrorID : SMC_ERROR ;
5      PW_Error : PW_ERROR ;
6  END_VAR
7  VAR_OUTPUT
8      bHaltDone : BOOL ;
9      bBusy : BOOL ;
10 END_VAR
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
```



```
5         THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID . PW_NO_ERROR ;
6         THIS ^ . PW_Error . sErrorCauseMessage := '' ;
7         THIS ^ . PW_Error . sErrorSolutionMessage := PW_getErrorSolution (
PW_ERROR_ID . PW_NO_ERROR ) ;
8         bResetFaultDone := TRUE ;
9         END_IF
10        bResetFaultDone := FALSE ;
11    ELSE
12        bResetFaultDone := TRUE ;
13    END_IF
14
15
16
```

1.1.1.1.3.2.5 Method: StopDrive

```
1  METHOD PUBLIC StopDrive
2  VAR
3      bBusy : BOOL ;
4      bError : BOOL ;
5      ErrorID : SMC_ERROR ;
6      PW_Error : PW_ERROR ;
7  END_VAR
8  VAR_OUTPUT
9      bStopDone : BOOL ;
10 END_VAR
11
```

```
1  CASE THIS ^ . Ref_EnterConveyorAxis . nAxisState OF
2      4 , 5 , 6 , 7 : SUPER ^ . ExecuteStop ( Ref_Axis := THIS ^ .
Ref_EnterConveyorAxis ,
3          lrDeceleration := ConveyorParameters . LR_DECELERATION ,
4          lrJerk := ConveyorParameters . LR_JERK ,
5          bStatus => bStopDone ,
6          bBusy => bBusy ,
7          bError => bError ,
8          ErrorID => ErrorID ) ;
9
10     IF bError AND ErrorID <> 0 THEN
11         PW_Error . PW_ErrorID := PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ;
12         PW_Error . sErrorCauseMessage := SMC_ErrorString ( ErrorID :=
ErrorID , Language := 0 ) ;
13         PW_Error . sErrorSolutionMessage := PW_getErrorSolution ( PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ) ;
14
15         ThrowError ( ThrownError := PW_Error ) ;
16     END_IF
17 END_CASE
18
```



```
12         THIS ^ . PW_Error . sErrorSolutionMessage := PW_getErrorSolution (
PW_ERROR_ID . PW_APLICATOR_POWER_ERROR ) ;
13     END_IF
14
```

1.1.1.1.3.3.2 Method: HaltDrive

```
1     METHOD PUBLIC HaltDrive
2     VAR
3         bError : BOOL ;
4         ErrorID : SMC_ERROR ;
5         sErrorCauseMessage : STRING ;
6         sErrorSolutionMessage : STRING ;
7     END_VAR
8     VAR_OUTPUT
9         bHaltDone : BOOL ;
10        bBusy : BOOL ;
11    END_VAR
12
13    SUPER ^ . ExecuteHalt ( Ref_Axis := THIS ^ . Ref_ExitConveyorAxis ,
14                          lrDeceleration := ConveyorParameters . LR_DECELERATION ,
15                          lrJerk := ConveyorParameters . LR_JERK ,
16                          bStatus => bHaltDone ,
17                          bBusy => bBusy ,
18                          bError => bError ,
19                          ErrorID => ErrorID ) ;
20
21    IF bError AND ErrorID <> 0 THEN
22        sErrorCauseMessage := SMC_ErrorString ( ErrorId := ErrorID , Language
23        := 0 ) ;
24        sErrorSolutionMessage := PW_getErrorSolution ( PW_ERROR_ID .
25        PW_ENTER_CONVEYOR_DRIVE_ERROR ) ;
26
27        THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID .
28        PW_ENTER_CONVEYOR_DRIVE_ERROR ;
29        THIS ^ . PW_Error . sErrorCauseMessage := sErrorCauseMessage ;
30        THIS ^ . PW_Error . sErrorSolutionMessage := sErrorSolutionMessage ;
31    END_IF
32
```

1.1.1.1.3.3.3 Method: MoveVelocity

```
1     METHOD PUBLIC MoveVelocity
2     VAR_INPUT
3         intDirection : MC_DIRECTION ;
4     END_VAR
5     VAR
6         bError : BOOL ;
7         ErrorID : SMC_ERROR ;
8         sErrorCauseMessage : STRING ;
9         sErrorSolutionMessage : STRING ;
10    END_VAR
11    VAR_OUTPUT
12        bVelocityReached : BOOL ;
```


1.1.1.1.3.3.3 Method: MoveVelocity

```
13     END_VAR
14
1
2     SUPER ^ . ExecuteMoveVel ( Ref_Axis := THIS ^ . Ref_ExitConveyorAxis ,
3                               lrVelocity := ConveyorParameters . LR_VELOCITY ,
4                               lrAcceleration := ConveyorParameters . LR_ACCELERATION ,
5                               lrDeceleration := ConveyorParameters . LR_DECELERATION ,
6                               lrJerk := ConveyorParameters . LR_JERK ,
7                               intDirection := intDirection ,
8                               bVelocityReached => bVelocityReached ,
9                               bError => bError ,
10                              ErrorID => ErrorID ) ;
11
12 IF bError AND ErrorID <> 0 THEN
13     sErrorCauseMessage := SMC_ErrorString ( ErrorId := ErrorID , Language
14     := 0 ) ;
15     sErrorSolutionMessage := PW_getErrorSolution ( PW_ERROR_ID .
16     PW_ENTER_CONVEYOR_DRIVE_ERROR ) ;
17
18     THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID .
19     PW_ENTER_CONVEYOR_DRIVE_ERROR ;
20     THIS ^ . PW_Error . sErrorCauseMessage := sErrorCauseMessage ;
21     THIS ^ . PW_Error . sErrorSolutionMessage := sErrorSolutionMessage ;
22
23 END_IF
```

1.1.1.1.3.3.4 Method: ResetFaults

```
1     METHOD PUBLIC ResetFaults
2     VAR
3         bErrorCancelled : BOOL := TRUE ; // HMI confiramtion
4         sErrorCause : STRING ;
5         sErrorSolution : STRING ;
6     END_VAR
7     VAR_OUTPUT
8         bResetFaultDone : BOOL := FALSE ;
9     END_VAR
10
1
2 IF THIS ^ . PW_Error . PW_ErrorID <> PW_ERROR_ID . PW_NO_ERROR THEN
3     sErrorCause := THIS ^ . PW_Error . sErrorCauseMessage ;
4     sErrorSolution := THIS ^ . PW_Error . sErrorSolutionMessage ;
5     IF bErrorCancelled THEN
6         THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID . PW_NO_ERROR ;
7         THIS ^ . PW_Error . sErrorCauseMessage := '' ;
8         THIS ^ . PW_Error . sErrorSolutionMessage := PW_getErrorSolution (
9         PW_ERROR_ID . PW_NO_ERROR ) ;
10        bResetFaultDone := TRUE ;
11    END_IF
12    bResetFaultDone := FALSE ;
13 ELSE
14     bResetFaultDone := TRUE ;
15 END_IF
```

15
16

1.1.1.1.3.3.5 Method: StopDrive

```
1  METHOD PUBLIC StopDrive
2  VAR
3      bBusy : BOOL ;
4      bError : BOOL ;
5      ErrorID : SMC_ERROR ;
6      sErrorCauseMessage : STRING ;
7      sErrorSolutionMessage : STRING ;
8  END_VAR
9  VAR_OUTPUT
10     bStopDone : BOOL ;
11 END_VAR
12
```

```
1  CASE THIS ^ . Ref_ExitConveyorAxis . nAxisState OF
2      4 , 5 , 6 , 7 : SUPER ^ . ExecuteStop ( Ref_Axis := THIS ^ .
Ref_ExitConveyorAxis ,
3          lrDeceleration := ConveyorParameters . LR_DECELERATION ,
4          lrJerk := ConveyorParameters . LR_JERK ,
5          bStatus => bStopDone ,
6          bBusy => bBusy ,
7          bError => bError ,
8          ErrorID => ErrorID ) ;
9
10     IF bError AND ErrorID <> 0 THEN
11         sErrorCauseMessage := SMC_ErrorString ( ErrorID := ErrorID ,
Language := 0 ) ;
12         sErrorSolutionMessage := PW_getErrorSolution ( PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ) ;
13
14         THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ;
15         THIS ^ . PW_Error . sErrorCauseMessage := sErrorCauseMessage ;
16         THIS ^ . PW_Error . sErrorSolutionMessage := sErrorSolutionMessage ;
17     END_IF
18 END_CASE
19
```

1.1.1.1.3.3.6 Method: ThrowError

```
1  METHOD PUBLIC ThrowError
2  VAR_INPUT
3      ThrownError : PW_ERROR ;
4  END_VAR
5
```

```
1  THIS ^ . PW_Error . PW_ErrorID := ThrownError . PW_ErrorID ;
2  THIS ^ . PW_Error . sErrorCauseMessage := ThrownError . sErrorCauseMessage ;
3  THIS ^ . PW_Error . sErrorSolutionMessage := ThrownError .
sErrorSolutionMessage ;
4
```

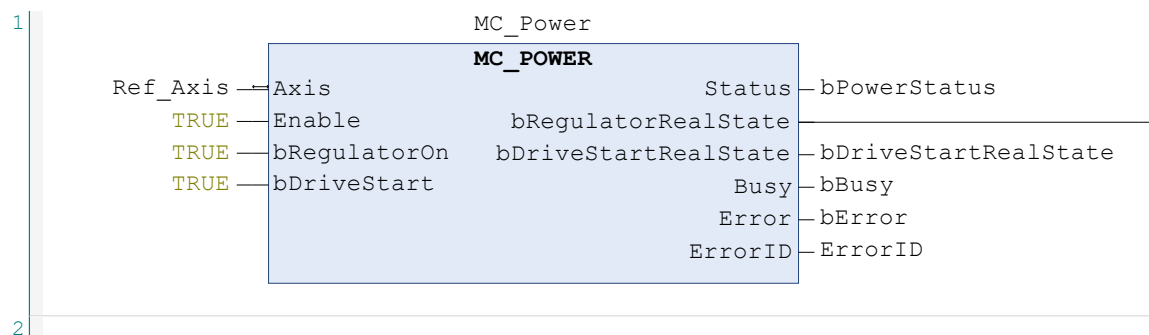
1.1.1.1.3.4 POU: CM_FilmAplicator

```
1  FUNCTION_BLOCK PUBLIC CM_FilmAplicator
2  VAR_INPUT
3      Ref_AplicatorAxis : REFERENCE TO AXIS_REF_SM3 ;
4  END_VAR
5  VAR_OUTPUT
6      HeightSensor : BOOL := TRUE ;
7      PW_Error : PW_ERROR ;
8  END_VAR
9
10
```

1.1.1.1.3.4.1 Folder: Private Methods

1.1.1.1.3.4.1.1 Method: EnablePower

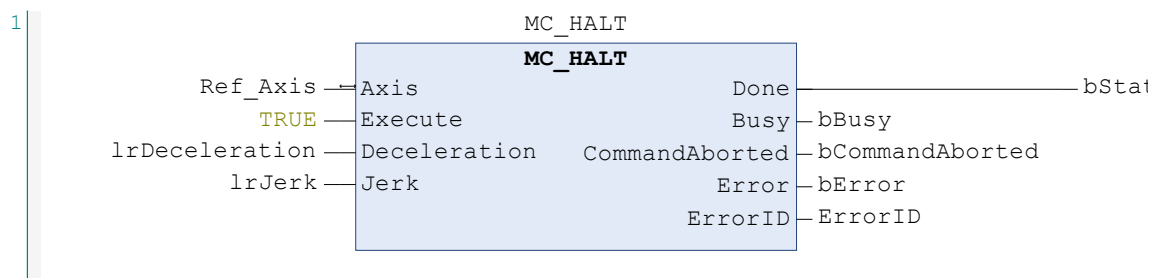
```
1  METHOD PRIVATE EnablePower
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4  END_VAR
5  VAR
6      MC_Power : MC_Power ;
7  END_VAR
8  VAR_OUTPUT
9      bPowerStatus : BOOL ;
10     bRegulatorRealState : BOOL ;
11     bDriveStartRealState : BOOL ;
12     bBusy : BOOL ;
13     bError : BOOL ;
14     ErrorID : SMC_ERROR ;
15 END_VAR
16
```



-bRegulatorRealState

1.1.1.1.3.4.1.2 Method: ExecuteHalt

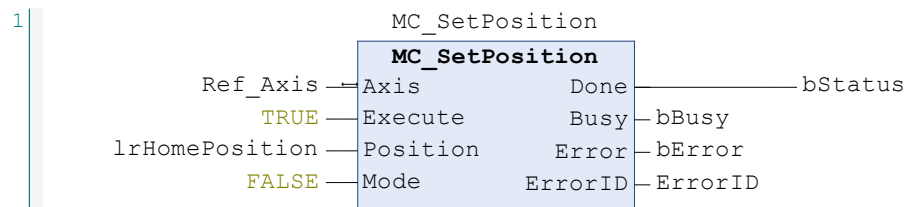
```
1  METHOD PRIVATE ExecuteHalt
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4      lrDeceleration : LREAL ;
5      lrJerk : LREAL ;
6  END_VAR
7  VAR
8      MC_HALT : MC_HALT ;
9  END_VAR
10 VAR_OUTPUT
11     bStatus : BOOL ;
12     bBusy : BOOL ;
13     bCommandAborted : BOOL ;
14     bError : BOOL ;
15     ErrorID : SMC_ERROR ;
16 END_VAR
17
```



cus

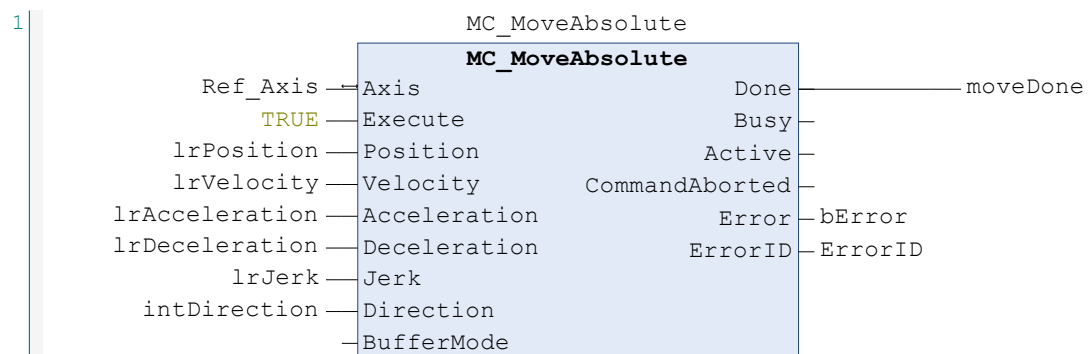
1.1.1.1.1.3.4.1.3 Method: ExecuteHome

```
1  METHOD PRIVATE ExecuteHome
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4      lrHomePosition : LREAL ;
5  END_VAR
6  VAR
7      MC_SetPosition : MC_SetPosition ;
8  END_VAR
9  VAR_OUTPUT
10     bStatus : BOOL ;
11     bBusy : BOOL ;
12     bError : BOOL ;
13     ErrorID : SMC_ERROR ;
14 END_VAR
15
```



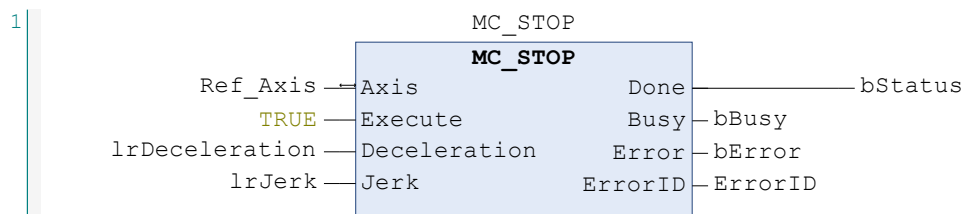
1.1.1.1.3.4.1.4 Method: ExecuteMoveAbs

```
1  METHOD PRIVATE ExecuteMoveAbs : BOOL
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4      lrPosition : LREAL ;
5      lrVelocity : LREAL ;
6      lrAcceleration : LREAL ;
7      lrDeceleration : LREAL ;
8      lrJerk : LREAL ;
9      intDirection : INT ;
10 END_VAR
11 VAR
12     MC_MoveAbsolute : MC_MoveAbsolute ;
13 END_VAR
14 VAR_OUTPUT
15     moveDone : BOOL ;
16     bError : BOOL ;
17     ErrorID : SMC_ERROR ;
18 END_VAR
19
```



1.1.1.1.1.3.4.1.5 Method: ExecuteStop

```
1  METHOD PRIVATE ExecuteStop
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4      lrDeceleration : LREAL ;
5      lrJerk : LREAL ;
6  END_VAR
7  VAR
8      MC_STOP : MC_STOP ;
9  END_VAR
10 VAR_OUTPUT
11     bStatus : BOOL ;
12     bBusy : BOOL ;
13     bError : BOOL ;
14     ErrorID : SMC_ERROR ;
15 END_VAR
16
```



—

1.1.1.1.3.4.3 Method: ExecuteDriveHome

```
3           bStatus => bHomeDone ,
4           bBusy => bBusy ,
5           bError => bError ,
6           ErrorID => ErrorID );
7
8   IF bError AND ErrorID <> 0 THEN
9       sErrorCauseMessage := SMC_ErrorString ( ErrorId := ErrorID , Language
:= 0 );
10      sErrorSolutionMessage := PW_getErrorSolution ( PW_ERROR_ID .
PW_APLICATOR_HOME_ERROR );
11
12      THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID . PW_APLICATOR_HOME_ERROR ;
13      THIS ^ . PW_Error . sErrorCauseMessage := sErrorCauseMessage ;
14      THIS ^ . PW_Error . sErrorSolutionMessage := sErrorSolutionMessage ;
15
16  END_IF
17
```

1.1.1.1.3.4.4 Method: HaltDrive

```
1  METHOD PUBLIC HaltDrive
2  VAR
3      bError : BOOL ;
4      ErrorID : SMC_ERROR ;
5      sErrorCauseMessage : STRING ;
6      sErrorSolutionMessage : STRING ;
7  END_VAR
8  VAR_OUTPUT
9      bHaltDone : BOOL ;
10     bBusy : BOOL ;
11  END_VAR
12
```

```
1  ExecuteHalt ( Ref_Axis := THIS ^ . Ref_AplicatorAxis ,
2              lrDeceleration := AplicatorParameters . LR_DECELERATION ,
3              lrJerk := AplicatorParameters . LR_JERK ,
4              bStatus => bHaltDone ,
5              bBusy => bBusy ,
6              bError => bError ,
7              ErrorID => ErrorID );
8
9  IF bError AND ErrorID <> 0 THEN
10     sErrorCauseMessage := SMC_ErrorString ( ErrorId := ErrorID , Language
:= 0 );
11     sErrorSolutionMessage := PW_getErrorSolution ( PW_ERROR_ID .
PW_APLICATOR_HALT_ERROR );
12
13     THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID . PW_APLICATOR_HALT_ERROR ;
14     THIS ^ . PW_Error . sErrorCauseMessage := sErrorCauseMessage ;
15     THIS ^ . PW_Error . sErrorSolutionMessage := sErrorSolutionMessage ;
16
17  END_IF
18
```

1.1.1.1.3.4.5 Method: MoveAbsolute

```
1  METHOD PUBLIC MoveAbsolute
2  VAR_INPUT
3      lrPosition : LREAL ;
4  END_VAR
5  VAR
6      bError : BOOL ;
7      ErrorID : SMC_ERROR ;
8      sErrorCauseMessage : STRING ;
9      sErrorSolutionMessage : STRING ;
10 END_VAR
11 VAR_OUTPUT
12     bMoveDone : BOOL ;
13 END_VAR
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
```

1.1.1.1.3.4.6 Method: PositionToPalletHeight

```
1  METHOD PUBLIC PositionToPalletHeight
2  VAR_INPUT
3      usintCurrentLayerNumber : USINT ;
4      lrPalletHeight : LREAL ;
5  END_VAR
6  VAR
7      ThrownError : PW_ERROR ;
8      bAplicatorHaltDone : BOOL := FALSE ;
9      bError : BOOL ;
10     ErrorID : SMC_ERROR ;
11 END_VAR
```



```
12         bResetFaultDone := TRUE ;
13     END_IF
14
15
16
```

1.1.1.1.1.3.4.8 Method: StopDrive

```
1  METHOD PUBLIC StopDrive
2  VAR
3      bBusy : BOOL ;
4      bError : BOOL ;
5      ErrorID : SMC_ERROR ;
6      sErrorCauseMessage : STRING ;
7      sErrorSolutionMessage : STRING ;
8  END_VAR
9  VAR_OUTPUT
10     bStopDone : BOOL ;
11  END_VAR
12
```

```
1  CASE THIS ^ . Ref_AplicatorAxis . nAxisState OF
2      4 , 5 , 6 , 7 : ExecuteStop ( Ref_Axis := THIS ^ . Ref_AplicatorAxis ,
3                                  lrDeceleration := AplicatorParameters . LR_DECELERATION ,
4                                  lrJerk := AplicatorParameters . LR_JERK ,
5                                  bStatus => bStopDone ,
6                                  bBusy => bBusy ,
7                                  bError => bError ,
8                                  ErrorID => ErrorID ) ;
9  IF bError AND ErrorID <> 0 THEN
10     sErrorCauseMessage := SMC_ErrorString ( ErrorId := ErrorID , Language
:= 0 ) ;
11     sErrorSolutionMessage := PW_getErrorSolution ( PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ) ;
12
13     THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID .
PW_ENTER_CONVEYOR_DRIVE_ERROR ;
14     THIS ^ . PW_Error . sErrorCauseMessage := sErrorCauseMessage ;
15     THIS ^ . PW_Error . sErrorSolutionMessage := sErrorSolutionMessage ;
16  END_IF
17
18
19  END_CASE
20
```

1.1.1.1.1.3.5 POU: CM_FilmClamp

1.1.1.1.1.3.5.1 Method: ClampCorrect

Page 31 of 145

1.1.1.1.3.5.1 Method: ClampCorrect

```
7      ELIF THIS ^.bExtensionValve AND NOT THIS ^.bExtensionSensor THEN
8          THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID.PW_CLAMP_RELEASE_ERROR ;
9          THIS ^.PW_Error.sErrorCauseMessage := '';
10         THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution (
11             PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_CLAMP_RELEASE_ERROR ); ;
12
13     ELIF NOT THIS ^.bExtensionValve AND NOT THIS ^.bRetractionSensor THEN
14         THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID.PW_CLAMP_CLOSE_ERROR ;
15         THIS ^.PW_Error.sErrorCauseMessage := '';
16         THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution (
17             PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_CLAMP_CLOSE_ERROR ); ;
18
19     ELIF ( THIS ^.bRetractionSensor AND THIS ^.bExtensionSensor ) XOR
20         ( NOT THIS ^.bRetractionSensor AND NOT THIS ^.bExtensionSensor ) THEN
21         IF THIS ^.bExtensionValve THEN
22             THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID .
23             PW_CLAMP_RELEASE_ERROR ;
24             THIS ^.PW_Error.sErrorCauseMessage := '';
25             THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution
26             ( PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_CLAMP_CLOSE_ERROR ); ;
27         END_IF
28         IF NOT THIS ^.bExtensionValve THEN
29             THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID .
30             PW_CLAMP_RELEASE_ERROR ;
31             THIS ^.PW_Error.sErrorCauseMessage := '';
32             THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution
33             ( PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_CLAMP_CLOSE_ERROR ); ;
34         END_IF
35     ELSE
36         THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID.PW_NO_ERROR ;
37         THIS ^.PW_Error.sErrorCauseMessage := '';
38         THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution (
39             PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_NO_ERROR ); ;
40     END_IF
```

1.1.1.1.3.5.2 Method: CloseClamp

```
1      METHOD PUBLIC CloseClamp
2      VAR_OUTPUT
3          bCloseDone : BOOL := FALSE ;
4      END_VAR
5      VAR
6          bCloseBusy : BOOL := FALSE ;
7      END_VAR
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
```


1.1.1.1.1.3.5.2 Method: CloseClamp

```
7          // For simulation testing
8          THIS ^. bRetractionSensor := FALSE ;
9          // For simulation testing
10         THIS ^. bExtensionSensor := TRUE ;
11         // For simulation testing
12         THIS ^. bPresenceSensor := TRUE ;
13     END_IF
14     bCloseDone := THIS ^. bExtensionSensor ;
15     IF bCloseDone THEN
16         bCloseBusy := FALSE ;
17     END_IF
18     ELSE bCloseDone := FALSE ;
19 END_IF
20
```

1.1.1.1.1.3.5.3 Method: InitializeClamp

```
1  METHOD PUBLIC InitializeClamp
2  VAR_OUTPUT
3      bInitializationDone : BOOL ;
4  END_VAR
5
```

```
1  IF THIS ^. bInitConfirmation THEN
2      CloseClamp ( bCloseDone => bInitializationDone ) ;
3  END_IF
4
```

1.1.1.1.1.3.5.4 Method: ProvideFilm

```
1  METHOD PUBLIC ProvideFilm
2  VAR_OUTPUT
3      bFilmProvided : BOOL ;
4  END_VAR
5
```

```
1  bFilmProvided := true ;
2
```

1.1.1.1.1.3.5.5 Method: ReleaseClamp

```
1  METHOD PUBLIC ReleaseClamp
2  VAR_OUTPUT
3      bReleaseDone : BOOL ;
4  END_VAR
5  VAR
6      bReleaseBusy : BOOL ;
7  END_VAR
8
```

```
1  ClampCorrect ( ) ;
2  IF THIS ^. PW_Error . PW_ErrorID = PW_ERROR_ID . PW_NO_ERROR THEN
3      bReleaseDone := THIS ^. bRetractionSensor ;
4      IF NOT bReleaseDone AND ( THIS ^. bExtensionSensor XOR bReleaseBusy )
```

1.1.1.1.3.5.5 Method: ReleaseClamp

```

    THEN
5      bReleaseBusy := TRUE ;
6      THIS ^.bExtensionValve := FALSE ;
7      // For simulation testing
8      THIS ^.bRetractionSensor := TRUE ;
9      // For simulation testing
10     THIS ^.bExtensionSensor := FALSE ;
11     // For simulation testing
12     THIS ^.bPresenceSensor := FALSE ;
13   END_IF
14
15   bReleaseDone := THIS ^.bRetractionSensor ;
16   IF bReleaseDone THEN
17     bReleaseBusy := FALSE ;
18   END_IF
19 ELSE RETURN ;
20 END_IF
21
```

1.1.1.1.3.5.6 Method: ResetFaults

```

1  METHOD PUBLIC ResetFaults
2  VAR
3    bErrorCancelled : BOOL := TRUE ;    // HMI confiramtion
4    bErrorOccured   : BOOL := FALSE ;    // HMI confiramtion
5    sErrorCause     : STRING ;
6    sErrorSolution  : STRING ;
7  END_VAR
8  VAR_OUTPUT
9    bResetFaultDone : BOOL := FALSE ;
10 END_VAR
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
1001
1002
1003
1004
1005
1006
1007
1008
1009
1010
1011
1012
1013
1014
1015
1016
1017
1018
1019
1020
1021
1022
1023
1024
1025
1026
1027
1028
1029
1030
1031
1032
1033
1034
1035
1036
1037
1038
1039
1040
1041
1042
1043
1044
1045
1046
1047
1048
1049
1050
1051
1052
1053
1054
1055
1056
1057
1058
1059
1060
1061
1062
1063
1064
1065
1066
1067
1068
1069
1070
1071
1072
1073
1074
1075
1076
1077
1078
1079
1080
1081
1082
1083
1084
1085
1086
1087
1088
1089
1090
1091
1092
1093
1094
1095
1096
1097
1098
1099
1100
1101
1102
1103
1104
1105
1106
1107
1108
1109
1110
1111
1112
1113
1114
1115
1116
1117
1118
1119
1120
1121
1122
1123
1124
1125
1126
1127
1128
1129
1130
1131
1132
1133
1134
1135
1136
1137
1138
1139
1140
1141
1142
1143
1144
1145
1146
1147
1148
1149
1150
1151
1152
1153
1154
1155
1156
1157
1158
1159
1160
1161
1162
1163
1164
1165
1166
1167
1168
1169
1170
1171
1172
1173
1174
1175
1176
1177
1178
1179
1180
1181
1182
1183
1184
1185
1186
1187
1188
1189
1190
1191
1192
1193
1194
1195
1196
1197
1198
1199
1200
1201
1202
1203
1204
1205
1206
1207
1208
1209
1210
1211
1212
1213
1214
1215
1216
1217
1218
1219
1220
1221
1222
1223
1224
1225
1226
1227
1228
1229
1230
1231
1232
1233
1234
1235
1236
1237
1238
1239
1240
1241
1242
1243
1244
1245
1246
1247
1248
1249
1250
1251
1252
1253
1254
1255
1256
1257
1258
1259
1260
1261
1262
1263
1264
1265
1266
1267
1268
1269
1270
1271
1272
1273
1274
1275
1276
1277
1278
1279
1280
1281
1282
1283
1284
1285
1286
1287
1288
1289
1290
1291
1292
1293
1294
1295
1296
1297
1298
1299
1300
1301
1302
1303
1304
1305
1306
1307
1308
1309
1310
1311
1312
1313
1314
1315
1316
1317
1318
1319
1320
1321
1322
1323
1324
1325
1326
1327
1328
1329
1330
1331
1332
1333
1334
1335
1336
1337
1338
1339
1340
1341
1342
1343
1344
1345
1346
1347
1348
1349
1350
1351
1352
1353
1354
1355
1356
1357
1358
1359
1360
1361
1362
1363
1364
1365
1366
1367
1368
1369
1370
1371
1372
1373
1374
1375
1376
1377
1378
1379
1380
1381
1382
1383
1384
1385
1386
1387
1388
1389
1390
1391
1392
1393
1394
1395
1396
1397
1398
1399
1400
1401
1402
1403
1404
1405
1406
1407
1408
1409
1410
1411
1412
1413
1414
1415
1416
1417
1418
1419
1420
1421
1422
1423
1424
1425
1426
1427
1428
1429
1430
1431
1432
1433
1434
1435
1436
1437
1438
1439
1440
1441
1442
1443
1444
1445
1446
1447
1448
1449
1450
1451
1452
1453
1454
1455
1456
1457
1458
1459
1460
1461
1462
1463
1464
1465
1466
1467
1468
1469
1470
1471
1472
1473
1474
1475
1476
1477
1478
1479
1480
1481
1482
1483
1484
1485
1486
1487
1488
1489
1490
1491
1492
1493
1494
1495
1496
1497
1498
1499
1500
1501
1502
1503
1504
1505
1506
1507
1508
1509
1510
1511
1512
1513
1514
1515
1516
1517
1518
1519
1520
1521
1522
1523
1524
1525
1526
1527
1528
1529
1530
1531
1532
1533
1534
1535
1536
1537
1538
1539
1540
1541
1542
1543
1544
1545
1546
1547
1548
1549
1550
1551
1552
1553
1554
1555
1556
1557
1558
1559
1560
1561
1562
1563
1564
1565
1566
1567
1568
1569
1570
1571
1572
1573
1574
1575
1576
1577
1578
1579
1580
1581
1582
1583
1584
1585
1586
1587
1588
1589
1590
1591
1592
1593
1594
1595
1596
1597
1598
1599
1600
1601
1602
1603
1604
1605
1606
1607
1608
1609
1610
1611
1612
1613
1614
1615
1616
1617
1618
1619
1620
1621
1622
1623
1624
1625
1626
1627
1628
1629
1630
1631
1632
1633
1634
1635
1636
1637
1638
1639
1640
1641
1642
1643
1644
1645
1646
1647
1648
1649
1650
1651
1652
1653
1654
1655
1656
1657
1658
1659
1660
1661
1662
1663
1664
1665
1666
1667
1668
1669
1670
1671
1672
1673
1674
1675
1676
1677
1678
1679
1680
1681
1682
1683
1684
1685
1686
1687
1688
1689
1690
1691
1692
1693
1694
1695
1696
1697
1698
1699
1700
1701
1702
1703
1704
1705
1706
1707
1708
1709
1710
1711
1712
1713
1714
1715
1716
1717
1718
1719
1720
1721
1722
1723
1724
1725
1726
1727
1728
1729
1730
1731
1732
1733
1734
1735
1736
1737
1738
1739
1740
1741
1742
1743
1744
1745
1746
1747
1748
1749
1750
1751
1752
1753
1754
1755
1756
1757
1758
1759
1760
1761
1762
1763
1764
1765
1766
1767
1768
1769
1770
1771
1772
1773
1774
1775
1776
1777
1778
1779
1780
1781
1782
1783
1784
1785
1786
1787
1788
1789
1790
1791
1792
1793
1794
1795
1796
1797
1798
1799
1800
1801
1802
1803
1804
1805
1806
1807
1808
1809
1810
1811
1812
1813
1814
1815
1816
1817
1818
1819
1820
1821
1822
1823
1824
1825
1826
1827
1828
1829
1830
1831
1832
1833
1834
1835
1836
1837
1838
1839
1840
1841
1842
1843
1844
1845
1846
1847
1848
1849
1850
1851
1852
1853
1854
1855
1856
1857
1858
1859
1860
1861
1862
1863
1864
1865
1866
1867
1868
1869
1870
1871
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050
2051
2052
2053
2054
2055
2056
2057
2058
2059
2060
2061
2062
2063
2064
2065
2066
2067
2068
2069
2070
2071
2072
2073
2074
2075
2076
2077
2078
2079
2080
2081
2082
2083
2084
2085
2086
2087
2088
2089
2090
2091
2092
2093
2094
2095
2096
2097
2098
2099
2100
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2117
2118
2119
2120
2121
2122
2123
2124
2125
2126
2127
2128
2129
2130
2131
2132
2133
2134
2135
2136
2137
2138
2139
2140
2141
2142
2143
2144
2145
2146
2147
2148
2149
2150
2151
2152
2153
2154
2155
2156
2157
2158
2159
2160
2161
2162
2163
2164
2165
2166
2167
2168
2169
2170
2171
2172
2173
2174
2175
2176
2177
2178
2179
2180
2181
2182
2183
2184
2185
2186
2187
2188
2189
2190
2191
2192
2193
2194
2195
2196
2197
2198
2199
2200
2201
2202
2203
2204
2205
2206
2207
2208
2209
2210
2211
2212
2213
2214
2215
2216
2217
2218
2219
2220
2221
2222
2223
2224
2225
2226
2227
2228
2229
2230
2231
2232
2233
2234
2235
2236
2237
2238
2239
2240
2241
2242
2243
2244
2245
2246
2247
2248
2249
2250
2251
2252
2253
2254
2255
2256
2257
2258
2259
2260
2261
2262
2263
2264
2265
2266
2267
2268
2269
2270
2271
2272
2273
2274
2275
2276
2277
2278
2279
2280
2281
2282
2283
2284
2285
2286
2287
2288
2289
2290
2291
2292
2293
2294
2295
2296
2297
2298
2299
2300
2301
2302
2303
2304
2305
2306
2307
2308
2309
2310
2311
2312
2313
2314
2315
2316
2317
2318
2319
2320
2321
2322
2323
2324
2325
2326
2327
2328
2329
2330
2331
2332
2333
2334
2335
2336
2337
2338
2339
2340
2341
2342
2343
2344
2345
2346
2347
2348
2349
2350
2351
2352
2353
2354
2355
2356
2357
2358
2359
2360
2361
2362
2363
2364
2365
2366
2367
2368
2369
2370
2371
2372
2373
2374
2375
2376
2377
2378
2379
2380
2381
2382
2383
2384
2385
2386
2387
2388
2389
2390
2391
2392
2393
2394
2395
2396
2397
2398
2399
2400
2401
2402
2403
2404
2405
2406
2407
2408
2409
2410
2411
2412
2413
2414
2415
2416
2417
2418
2419
2420
2421
2422
2423
2424
2425
2426
2427
2428
2429
2430
2431
2432
2433
2434
2435
2436
2437
2438
2439
2440
2441
2442
2443
2444
2445
2446
2447
2448
2449
2450
2451
2452
2453
2454
2455
2456
2457
2458
2459
2460
2461
2462
2463
2464
2465
2466
2467
2468
2469
2470
2471
2472
2473
2474
2475
2476
2477
2478
2479
2480
2481
2482
2483
2484
2485
2486
2487
2488
2489
2490
2491
2492
2493
2494
2495
2496
2497
2498
2499
2500
2501
2502
2503
2504
2505
2506
2507
2508
2509
2510
2511
2512
2513
2514
2515
2516
2517
2518
2519
2520
2521
2522
2523
2524
2525
2526
2527
2528
2529
2530
2531
2532
2533
2534
2535
2536
2537
2538
2539
2540
2541
2542
2543
2544
2545
2546
2547
2548
2549
2550
2551
2552
2553
2554
2555
2556
2557
2558
2559
2560
2561
2562
2563
2564
2565
2566
2567
2568
2569
2570
2571
2572
2573
2574
2575
2576
2577
2578
2579
2580
2581
2582
2583
2584
2585
2586
2587
2588
2589
2590
2591
2592
2593
2594
2595
2596
2597
2598
2599
2600
2601
2602
2603
2604
2605
2606
2607
2608
2609
2610
2611
2612
2613
2614
2615
2616
2617
2618
2619
26
```

1.1.1.1.3.5.7 Method: `ThrowError`

1.1.1.1.1.3.6 POU: CM_FilmSticker

1.1.1.1.1.3.6.1 Method: AttachSticker

1.1.1.1.1.3.6.2 Method: DetachSticker

PalletWrapperPlc.project
30.12.2023 22:19

```
1 DetachSticker ( bDetachDone == bInitializationDone );
2
```

```

1  METHOD PUBLIC ResetFaults
2  VAR
3      bErrorCancelled : BOOL := TRUE;    // HMI confiramtion
4      bErrorOccured   : BOOL := FALSE;
5      sErrorCause      : STRING;
6      sErrorSolution   : STRING;
7  END_VAR
8  VAR_OUTPUT
9      bResetFaultDone : BOOL := FALSE;
10 END_VAR
11

```

1.1.1.1.1.3.6.5 Method: StickerCorrect

1.1.1.1.3.6.5 Method: StickerCorrect

```
6      THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID.PW_STICKER_DETACH_ERROR ;
7      THIS ^.PW_Error.sErrorCauseMessage := '';
8      THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution (
PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_STICKER_DETACH_ERROR ) ; ;
9
10     ELIF ( THIS ^.bRetractionSensor AND THIS ^.bExtensionSensor ) XOR
11         ( NOT THIS ^.bRetractionSensor AND NOT THIS ^.bExtensionSensor ) THEN
12         IF THIS ^.bExtensionValve THEN
13             THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID .
PW_STICKER_DETACH_ERROR ;
14             THIS ^.PW_Error.sErrorCauseMessage := '';
15             THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution
( PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_STICKER_DETACH_ERROR ) ; ;
16         END_IF
17         IF NOT THIS ^.bExtensionValve THEN
18             THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID .
PW_STICKER_DETACH_ERROR ;
19             THIS ^.PW_Error.sErrorCauseMessage := '';
20             THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution
( PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_STICKER_DETACH_ERROR ) ; ;
21         END_IF
22     ELSE
23         THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID.PW_NO_ERROR ;
24         THIS ^.PW_Error.sErrorCauseMessage := '';
25         THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution (
PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_NO_ERROR ) ;
26     END_IF
27
```

1.1.1.1.3.6.6 Method: ThrowError

```
1  METHOD PUBLIC ThrowError
2  VAR_INPUT
3      ThrownError : PW_ERROR ;
4  END_VAR
5
```

```
1  THIS ^.PW_Error.PW_ErrorID := ThrownError.PW_ErrorID ;
2  THIS ^.PW_Error.sErrorCauseMessage := ThrownError.sErrorCauseMessage ;
3  THIS ^.PW_Error.sErrorSolutionMessage := ThrownError .
sErrorSolutionMessage ;
4
```

1.1.1.1.3.7 POU: CM_PalletProtector

```
1  FUNCTION_BLOCK PUBLIC CM_PalletProtector
2  VAR
3      bExtensionValve : BOOL := FALSE ;           { * Pneumatic
electro-valve 3/2 DC, normmally close, stable position BY spring.
4
5      Pneumatic actuator with pull spring, *}
6      bExtensionSensor : BOOL := FALSE ;           // Piston position
sensor, TRUE -> extended, protector vertically.
7      bRetractionSensor : BOOL := TRUE ;           // Piston
```


1.1.1.1.1.3.7.3 Method: ProtectorCorrect

```

1      METHOD PRIVATE ProtectorCorrect
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26

```

```

1      IF THIS ^.bExtensionValve AND NOT THIS ^.bExtensionSensor THEN
2          THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID.PW_PROTECTOR_EXTEND_ERROR ;
3          THIS ^.PW_Error.sErrorCauseMessage := '';
4          THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution (
5              PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_PROTECTOR_EXTEND_ERROR ) ; ;
6      ELSIF NOT THIS ^.bExtensionValve AND NOT THIS ^.bRetractionSensor THEN
7          THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID.PW_PROTECTOR_RELEASE_ERROR
8          ;
9          THIS ^.PW_Error.sErrorCauseMessage := '';
10         THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution (
11             PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_PROTECTOR_RELEASE_ERROR ) ; ;
12     ELSIF ( THIS ^.bRetractionSensor AND THIS ^.bExtensionSensor ) XOR
13         ( NOT THIS ^.bRetractionSensor AND NOT THIS ^.bExtensionSensor ) THEN
14         IF THIS ^.bExtensionValve THEN
15             THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID .
16             PW_PROTECTOR_EXTEND_ERROR ;
17             THIS ^.PW_Error.sErrorCauseMessage := '';
18             THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution
19             ( PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_PROTECTOR_EXTEND_ERROR ) ; ;
20         END_IF
21         IF NOT THIS ^.bExtensionValve THEN
22             THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID .
23             PW_PROTECTOR_RELEASE_ERROR ;
24             THIS ^.PW_Error.sErrorCauseMessage := '';
25             THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution
26             ( PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_PROTECTOR_RELEASE_ERROR ) ; ;
27         END_IF
28     ELSE
29         THIS ^.PW_Error.PW_ErrorID := PW_ERROR_ID.PW_NO_ERROR ;
30         THIS ^.PW_Error.sErrorCauseMessage := '';
31         THIS ^.PW_Error.sErrorSolutionMessage := PW_getErrorSolution (
32             PALLET_WRAPPER_ERROR := PW_ERROR_ID.PW_NO_ERROR ) ;
33     END_IF

```

1.1.1.1.1.3.7.4 Method: ReleaseProtector

```

1      METHOD PUBLIC ReleaseProtector
2      VAR_OUTPUT
3          bReleaseDone : BOOL := FALSE ;
4      END_VAR
5      VAR
6          bReleaseBusy : BOOL := FALSE ;
7      END_VAR
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99

```

```

1      ProtectorCorrect ( ) ;
2      IF THIS ^.PW_Error.PW_ErrorID = PW_ERROR_ID.PW_NO_ERROR THEN
3          bReleaseDone := THIS ^.bRetractionSensor ;

```



```
4      IF NOT bReleaseDone AND ( THIS ^ . bExtensionSensor XOR bReleaseBusy )
      THEN
5          bReleaseBusy := TRUE ;
6          THIS ^ . bExtensionValve := FALSE ;
7          // For simulation testing
8          THIS ^ . bRetractionSensor := TRUE ;
9          // For simulation testing
10         THIS ^ . bExtensionSensor := FALSE ;
11     END_IF
12
13     bReleaseDone := THIS ^ . bRetractionSensor ;
14     IF bReleaseDone THEN
15         bReleaseBusy := FALSE ;
16     END_IF
17 ELSE RETURN ;
18 END_IF
19
```

1.1.1.1.3.7.5 Method: ResetFaults

```
1  METHOD PUBLIC ResetFaults
2  VAR
3      bErrorCancelled : BOOL := TRUE ;    // HMI confiramtion
4      bErrorOccured   : BOOL := FALSE ;
5      sErrorCause     : STRING ;
6      sErrorSolution  : STRING ;
7  END_VAR
8  VAR_OUTPUT
9      bResetFaultDone : BOOL := FALSE ;
10 END_VAR
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
1001
1002
1003
1004
1005
1006
1007
1008
1009
1010
1011
1012
1013
1014
1015
1016
1017
1018
1019
1020
1021
1022
1023
1024
1025
1026
1027
1028
1029
1030
1031
1032
1033
1034
1035
1036
1037
1038
1039
1040
1041
1042
1043
1044
1045
1046
1047
1048
1049
1050
1051
1052
1053
1054
1055
1056
1057
1058
1059
1060
1061
1062
1063
1064
1065
1066
1067
1068
1069
1070
1071
1072
1073
1074
1075
1076
1077
1078
1079
1080
1081
1082
1083
1084
1085
1086
1087
1088
1089
1090
1091
1092
1093
1094
1095
1096
1097
1098
1099
1100
1101
1102
1103
1104
1105
1106
1107
1108
1109
1110
1111
1112
1113
1114
1115
1116
1117
1118
1119
1120
1121
1122
1123
1124
1125
1126
1127
1128
1129
1130
1131
1132
1133
1134
1135
1136
1137
1138
1139
1140
1141
1142
1143
1144
1145
1146
1147
1148
1149
1150
1151
1152
1153
1154
1155
1156
1157
1158
1159
1160
1161
1162
1163
1164
1165
1166
1167
1168
1169
1170
1171
1172
1173
1174
1175
1176
1177
1178
1179
1180
1181
1182
1183
1184
1185
1186
1187
1188
1189
1190
1191
1192
1193
1194
1195
1196
1197
1198
1199
1200
1201
1202
1203
1204
1205
1206
1207
1208
1209
1210
1211
1212
1213
1214
1215
1216
1217
1218
1219
1220
1221
1222
1223
1224
1225
1226
1227
1228
1229
1230
1231
1232
1233
1234
1235
1236
1237
1238
1239
1240
1241
1242
1243
1244
1245
1246
1247
1248
1249
1250
1251
1252
1253
1254
1255
1256
1257
1258
1259
1260
1261
1262
1263
1264
1265
1266
1267
1268
1269
1270
1271
1272
1273
1274
1275
1276
1277
1278
1279
1280
1281
1282
1283
1284
1285
1286
1287
1288
1289
1290
1291
1292
1293
1294
1295
1296
1297
1298
1299
1300
1301
1302
1303
1304
1305
1306
1307
1308
1309
1310
1311
1312
1313
1314
1315
1316
1317
1318
1319
1320
1321
1322
1323
1324
1325
1326
1327
1328
1329
1330
1331
1332
1333
1334
1335
1336
1337
1338
1339
1340
1341
1342
1343
1344
1345
1346
1347
1348
1349
1350
1351
1352
1353
1354
1355
1356
1357
1358
1359
1360
1361
1362
1363
1364
1365
1366
1367
1368
1369
1370
1371
1372
1373
1374
1375
1376
1377
1378
1379
1380
1381
1382
1383
1384
1385
1386
1387
1388
1389
1390
1391
1392
1393
1394
1395
1396
1397
1398
1399
1400
1401
1402
1403
1404
1405
1406
1407
1408
1409
1410
1411
1412
1413
1414
1415
1416
1417
1418
1419
1420
1421
1422
1423
1424
1425
1426
1427
1428
1429
1430
1431
1432
1433
1434
1435
1436
1437
1438
1439
1440
1441
1442
1443
1444
1445
1446
1447
1448
1449
1450
1451
1452
1453
1454
1455
1456
1457
1458
1459
1460
1461
1462
1463
1464
1465
1466
1467
1468
1469
1470
1471
1472
1473
1474
1475
1476
1477
1478
1479
1480
1481
1482
1483
1484
1485
1486
1487
1488
1489
1490
1491
1492
1493
1494
1495
1496
1497
1498
1499
1500
1501
1502
1503
1504
1505
1506
1507
1508
1509
1510
1511
1512
1513
1514
1515
1516
1517
1518
1519
1520
1521
1522
1523
1524
1525
1526
1527
1528
1529
1530
1531
1532
1533
1534
1535
1536
1537
1538
1539
1540
1541
1542
1543
1544
1545
1546
1547
1548
1549
1550
1551
1552
1553
1554
1555
1556
1557
1558
1559
1560
1561
1562
1563
1564
1565
1566
1567
1568
1569
1570
1571
1572
1573
1574
1575
1576
1577
1578
1579
1580
1581
1582
1583
1584
1585
1586
1587
1588
1589
1590
1591
1592
1593
1594
1595
1596
1597
1598
1599
1600
1601
1602
1603
1604
1605
1606
1607
1608
1609
1610
1611
1612
1613
1614
1615
1616
1617
1618
1619
1620
1621
1622
1623
1624
1625
1626
1627
1628
1629
1630
1631
1632
1633
1634
1635
1636
1637
1638
1639
1640
1641
1642
1643
1644
1645
1646
1647
1648
1649
1650
1651
1652
1653
1654
1655
1656
1657
1658
1659
1660
1661
1662
1663
1664
1665
1666
1667
1668
1669
1670
1671
1672
1673
1674
1675
1676
1677
1678
1679
1680
1681
1682
1683
1684
1685
1686
1687
1688
1689
1690
1691
1692
1693
1694
1695
1696
1697
1698
1699
1700
1701
1702
1703
1704
1705
1706
1707
1708
1709
1710
1711
1712
1713
1714
1715
1716
1717
1718
1719
1720
1721
1722
1723
1724
1725
1726
1727
1728
1729
1730
1731
1732
1733
1734
1735
1736
1737
1738
1739
1740
1741
1742
1743
1744
1745
1746
1747
1748
1749
1750
1751
1752
1753
1754
1755
1756
1757
1758
1759
1760
1761
1762
1763
1764
1765
1766
1767
1768
1769
1770
1771
1772
1773
1774
1775
1776
1777
1778
1779
1780
1781
1782
1783
1784
1785
1786
1787
1788
1789
1790
1791
1792
1793
1794
1795
1796
1797
1798
1799
1800
1801
1802
1803
1804
1805
1806
1807
1808
1809
1810
1811
1812
1813
1814
1815
1816
1817
1818
1819
1820
1821
1822
1823
1824
1825
1826
1827
1828
1829
1830
1831
1832
1833
1834
1835
1836
1837
1838
1839
1840
1841
1842
1843
1844
1845
1846
1847
1848
1849
1850
1851
1852
1853
1854
1855
1856
1857
1858
1859
1860
1861
1862
1863
1864
1865
1866
1867
1868
1869
1870
1871
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050
2051
2052
2053
2054
2055
2056
2057
2058
2059
2060
2061
2062
2063
2064
2065
2066
2067
2068
2069
2070
2071
2072
2073
2074
2075
2076
2077
2078
2079
2080
2081
2082
2083
2084
2085
2086
2087
2088
2089
2090
2091
2092
2093
2094
2095
2096
2097
2098
2099
2100
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2117
2118
2119
2120
2121
2122
2123
2124
2125
2126
2127
2128
2129
2130
2131
2132
2133
2134
2135
2136
2137
2138
2139
2140
2141
2142
2143
2144
2145
2146
2147
2148
2149
2150
2151
2152
2153
2154
2155
2156
2157
2158
2159
2160
2161
2162
2163
2164
2165
2166
2167
2168
2169
2170
2171
2172
2173
2174
2175
2176
2177
2178
2179
2180
2181
2182
2183
2184
2185
2186
2187
2188
2189
2190
2191
2192
2193
2194
2195
2196
2197
2198
2199
2200
2201
2202
2203
2204
2205
2206
2207
2208
2209
2210
2211
2212
2213
2214
2215
2216
2217
2218
2219
2220
2221
2222
2223
2224
2225
2226
2227
2228
2229
2230
2231
2232
2233
2234
2235
2236
2237
2238
2239
2240
2241
2242
2243
2244
2245
2246
2247
2248
2249
2250
2251
2252
2253
2254
2255
2256
2257
2258
2259
2260
2261
2262
2263
2264
2265
2266
2267
2268
2269
2270
2271
2272
2273
2274
2275
2276
2277
2278
2279
2280
2281
2282
2283
2284
2285
2286
2287
2288
2289
2290
2291
2292
2293
2294
2295
2296
2297
2298
2299
2300
2301
2302
2303
2304
2305
2306
2307
2308
2309
2310
2311
2312
2313
2314
2315
2316
2317
2318
2319
2320
2321
2322
2323
2324
2325
2326
2327
2328
2329
2330
2331
2332
2333
2334
2335
2336
2337
2338
2339
2340
2341
2342
2343
2344
2345
2346
2347
2348
2349
2350
2351
2352
2353
2354
2355
2356
2357
2358
2359
2360
2361
2362
2363
2364
2365
2366
2367
2368
2369
2370
2371
2372
2373
2374
2375
2376
2377
2378
2379
2380
2381
2382
2383
2384
2385
2386
2387
2388
2389
2390
2391
2392
2393
2394
2395
2396
2397
2398
2399
2400
2401
2402
2403
2404
2405
2406
2407
2408
2409
2410
2411
2412
2413
2414
2415
2416
2417
2418
2419
2420
2421
2422
2423
2424
2425
2426
2427
2428
2429
2430
2431
2432
2433
2434
2435
2436
2437
2438
2439
2440
2441
2442
2443
2444
2445
2446
2447
2448
2449
2450
2451
2452
2453
2454
2455
2456
2457
2458
2459
2460
2461
2462
2463
2464
2465
2466
2467
2468
2469
2470
2471
2472
2473
2474
2475
2476
2477
2478
2479
2480
2481
2482
2483
2484
2485
2486
2487
2488
2489
2490
2491
2492
2493
2494
2495
2496
2497
2498
2499
2500
2501
2502
2503
2504
2505
2506
2507
2508
2509
2510
2511
2512
2513
2514
2515
2516
2517
2518
2519
2520
2521
2522
2523
2524
2525
2526
2527
2528
2529
2530
2531
2532
2533
2534
2535
2536
2537
2538
2539
2540
2541
2542
2543
2544
2545
2546
2547
2548
2549
2550
2551
2552
2553
2554
2555
2556
2557
2558
2559
2560
2561
2562
2563
2564
2565
2566
2567
2568
2569
2570
2571
2572
2573
2574
2575
2576
2577
2578
2579
2580
2581
2582
2583
2584
2585
2586
2587
2588
2589
2590
2591
2592
2593
2594
2595
2596
2597
2598
2599
2600
2601
2602
2603
2604
2605
2606
2607
2608
2609
2610
2611
2612
2613
2614
2615
2616
2617
2618
2619
2620
2621
262
```

1.1.1.1.1.3.7.6 Method: ThrowError

```
1  METHOD PUBLIC ThrowError
2  VAR_INPUT
3      ThrownError : PW_ERROR ;
4  END_VAR
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
```

1.1.1.1.1.3.8 POU: CM_PalletRotator

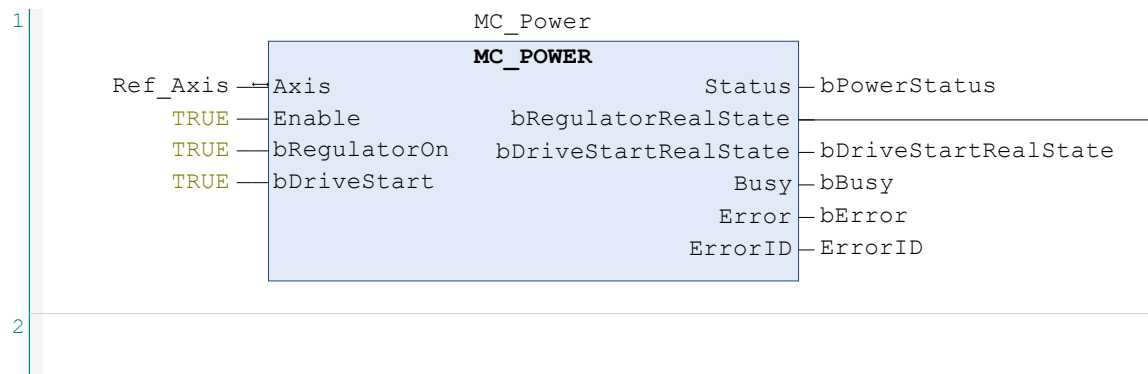
```
1  FUNCTION_BLOCK PUBLIC CM_PalletRotator
2  VAR_INPUT
3      Ref_RotatorAxis : REFERENCE TO AXIS_REF_SM3 ;
4  END_VAR
5  VAR_OUTPUT
6      PW_Error : PW_ERROR ;
7  END_VAR
8
```

1.1.1.1.1.3.8.1 Folder: Private Methods

1.1.1.1.1.3.8.1.1 Method: EnablePower

```
1  METHOD PRIVATE EnablePower
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4  END_VAR
5  VAR
6      MC_Power : MC_Power ;
7  END_VAR
8  VAR_OUTPUT
9      bPowerStatus : BOOL ;
10     bRegulatorRealState : BOOL ;
11     bDriveStartRealState : BOOL ;
12     bBusy : BOOL ;
13     bError : BOOL ;
14     ErrorID : SMC_ERROR ;
15  END_VAR
16
```

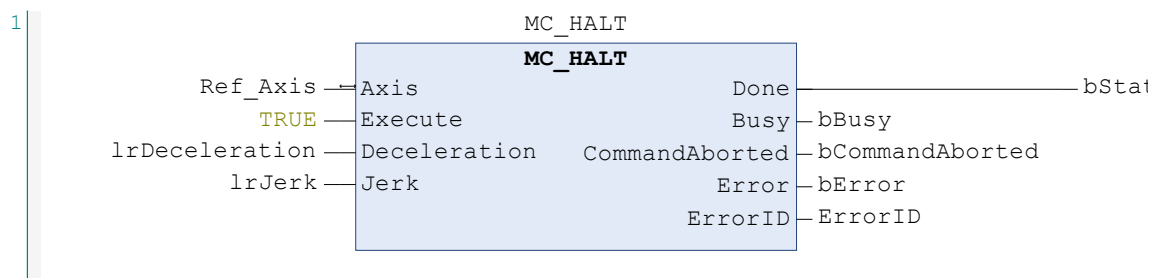
1.1.1.1.1.3.8.1.1 Method: EnablePower



-bRegulatorRealState

1.1.1.1.3.8.1.2 Method: ExecuteHalt

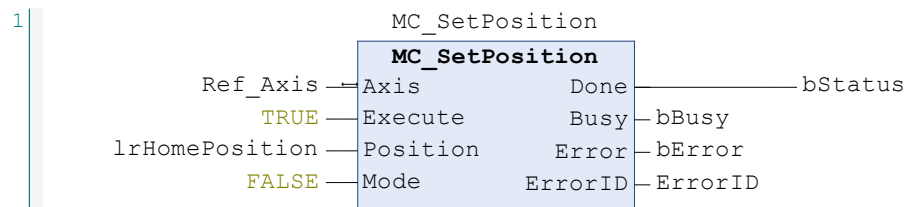
```
1  METHOD PRIVATE ExecuteHalt
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4      lrDeceleration : LREAL ;
5      lrJerk : LREAL ;
6  END_VAR
7  VAR
8      MC_HALT : MC_HALT ;
9  END_VAR
10 VAR_OUTPUT
11     bStatus : BOOL ;
12     bBusy : BOOL ;
13     bCommandAborted : BOOL ;
14     bError : BOOL ;
15     ErrorID : SMC_ERROR ;
16 END_VAR
17
```



cus

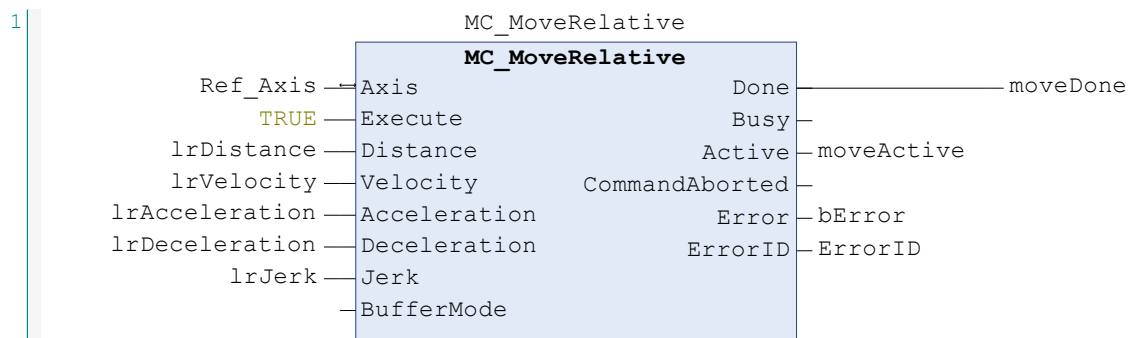
1.1.1.1.1.3.8.1.3 Method: ExecuteHome

```
1  METHOD PRIVATE ExecuteHome
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4      lrHomePosition : LREAL ;
5  END_VAR
6  VAR
7      MC_SetPosition : MC_SetPosition ;
8  END_VAR
9  VAR_OUTPUT
10     bStatus : BOOL ;
11     bBusy : BOOL ;
12     bError : BOOL ;
13     ErrorID : SMC_ERROR ;
14 END_VAR
15
```



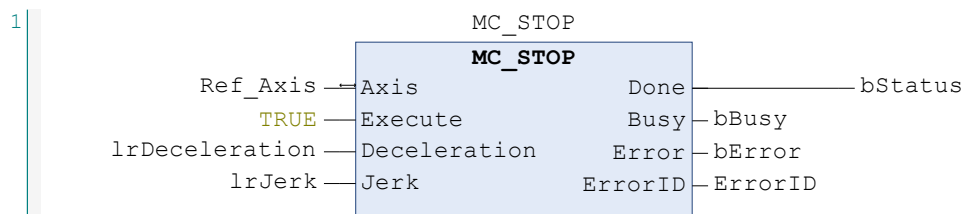
1.1.1.1.3.8.1.4 Method: ExecuteMoveRel

```
1  METHOD PRIVATE ExecuteMoveRel
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4      lrDistance : LREAL ;
5      lrVelocity : LREAL ;
6      lrAcceleration : LREAL ;
7      lrDeceleration : LREAL ;
8      lrJerk : LREAL ;
9  END_VAR
10 VAR
11     MC_MoveRelative : MC_MoveRelative ;
12
13 END_VAR
14 VAR_OUTPUT
15     moveDone : BOOL ;
16     moveActive : BOOL ;
17     bError : BOOL ;
18     ErrorID : SMC_ERROR ;
19 END_VAR
20
```



1.1.1.1.1.3.8.1.5 Method: ExecuteStop

```
1  METHOD PRIVATE ExecuteStop
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4      lrDeceleration : LREAL ;
5      lrJerk : LREAL ;
6  END_VAR
7  VAR
8      MC_STOP : MC_STOP ;
9  END_VAR
10 VAR_OUTPUT
11     bStatus : BOOL ;
12     bBusy : BOOL ;
13     bError : BOOL ;
14     ErrorID : SMC_ERROR ;
15 END_VAR
16
```



1.1.1.1.3.8.3 Method: ExecuteDriveHome

```
8      THIS ^. PW_Error . PW_ErrorID := PW_ERROR_ID . PW_ROTATOR_HOME_ERROR ;
9      THIS ^. PW_Error . sErrorCauseMessage := SMC_ErrorString ( ErrorId :=
ErrorIDPRA , Language := 0 ) ;
10     THIS ^. PW_Error . sErrorSolutionMessage := PW_getErrorSolution (
PW_ERROR_ID . PW_ROTATOR_HOME_ERROR ) ;
11     END_IF
12
```

1.1.1.1.3.8.4 Method: HaltDrive

```
1  METHOD PUBLIC HaltDrive
2  VAR
3      bError : BOOL ;
4      ErrorID : SMC_ERROR ;
5  END_VAR
6  VAR_OUTPUT
7      bHaltDone : BOOL ;
8      bBusy : BOOL ;
9  END_VAR
10
```

```
1  ExecuteHalt ( Ref_Axis := THIS ^. Ref_RotatorAxis ,
2              lrDeceleration := RotatorParameters . LR_DECELERATION ,
3              lrJerk := RotatorParameters . LR_JERK ,
4              bStatus => bHaltDone ,
5              bBusy => bBusy ,
6              bError => bError ,
7              ErrorID => ErrorID ) ;
8
9  IF bError AND ErrorID <> 0 THEN
10     THIS ^. PW_Error . PW_ErrorID := PW_ERROR_ID . PW_ROTATOR_HALT_ERROR ;
11     THIS ^. PW_Error . sErrorCauseMessage := SMC_ErrorString ( ErrorId :=
ErrorID , Language := 0 ) ;
12     THIS ^. PW_Error . sErrorSolutionMessage := PW_getErrorSolution (
PW_ERROR_ID . PW_ROTATOR_HALT_ERROR ) ;
13     END_IF
14
```

1.1.1.1.3.8.5 Method: MoveRelative

```
1  METHOD PUBLIC MoveRelative
2  VAR
3      bError : BOOL ;
4      ErrorID : SMC_ERROR ;
5  END_VAR
6  VAR_INPUT
7      lrDistance : LREAL ;
8  END_VAR
9  VAR_OUTPUT
10     mMoveDone : BOOL ;
11  END_VAR
12
```

```
1  ExecuteMoveRel ( Ref_Axis := THIS ^. Ref_RotatorAxis ,
2                  lrDistance := lrDistance ,
```

1.1.1.1.3.8.5 Method: MoveRelative

```
3         lrVelocity := RotatorParameters . LR_VELOCITY ,
4         lrAcceleration := RotatorParameters . LR_ACCELERATION ,
5         lrDeceleration := RotatorParameters . LR_DECELERATION ,
6         lrJerk := RotatorParameters . LR_JERK ,
7         moveDone => mMoveDone ,
8         bError => bError ,
9         ErrorID => ErrorID ) ;
10
11     IF bError AND ErrorID <> 0 THEN
12         THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID . PW_ROTATOR_MOVE_ERROR ;
13         THIS ^ . PW_Error . sErrorCauseMessage := SMC_ErrorString ( ErrorId :=
ErrorID , Language := 0 ) ;
14         THIS ^ . PW_Error . sErrorSolutionMessage := PW_getErrorSolution (
PW_ERROR_ID . PW_ROTATOR_MOVE_ERROR ) ;
15     END_IF
16
```

1.1.1.1.3.8.6 Method: ResetFaults

```
1     METHOD PUBLIC ResetFaults
2     VAR
3         bErrorCancelled : BOOL := TRUE ;    // HMI confiramtion
4         bErrorOccured : BOOL := FALSE ;
5         sErrorCause : STRING ;
6         sErrorSolution : STRING ;
7     END_VAR
8     VAR_OUTPUT
9         bResetFaultDone : BOOL := FALSE ;
10    END_VAR
11
12    IF THIS ^ . PW_Error . PW_ErrorID <> PW_ERROR_ID . PW_NO_ERROR THEN
13        bErrorOccured := TRUE ;
14        sErrorCause := THIS ^ . PW_Error . sErrorCauseMessage ;
15        sErrorSolution := THIS ^ . PW_Error . sErrorSolutionMessage ;
16        IF bErrorCancelled THEN
17            THIS ^ . PW_Error . PW_ErrorID := PW_ERROR_ID . PW_NO_ERROR ;
18            THIS ^ . PW_Error . sErrorCauseMessage := '' ;
19            THIS ^ . PW_Error . sErrorSolutionMessage := PW_getErrorSolution (
PW_ERROR_ID . PW_NO_ERROR ) ;
20            bResetFaultDone := TRUE ;
21        END_IF
22        bResetFaultDone := FALSE ;
23    ELSE
24        bResetFaultDone := TRUE ;
25    END_IF
26
```

```

1  CASE THIS ^.Ref_RotatorAxis .nAxisState OF
2      4 , 5 , 6 , 7 : ExecuteStop ( Ref_Axis := THIS ^.Ref_RotatorAxis ,
3                                  lrDeceleration := RotatorParameters .LR_DECELERATION ,
4                                  lrJerk := RotatorParameters .LR_JERK ,
5                                  bStatus => bStopDonePRA ,
6                                  bError => bErrorPRA ,
7                                  ErrorID => ErrorIDPRA ) ;
8
9      IF bErrorPRA AND ErrorIDPRA <> 0 THEN
10         THIS ^.PW_Error .PW_ErrorID := PW_ERROR_ID .PW_ROTATOR_STOP_ERROR ;
11         THIS ^.PW_Error .sErrorCauseMessage := SMC_ErrorString ( ErrorId :=
ErrorIDPRA , Language := 0 ) ;
12         THIS ^.PW_Error .sErrorSolutionMessage := PW_getErrorSolution (
PW_ERROR_ID .PW_ROTATOR_STOP_ERROR ) ;
13     END_IF
14 END_CASE
15

```

1.1.1.1.3.8.8 Method: `ThrowError`

```
1  THIS ^.PW_Error.PW_ErrorID := ThrownError.PW_ErrorID ;
2  THIS ^.PW_Error.sErrorCauseMessage := ThrownError.sErrorCauseMessage ;
3  THIS ^.PW_Error.sErrorSolutionMessage := ThrownError.
4  sErrorSolutionMessage ;
```

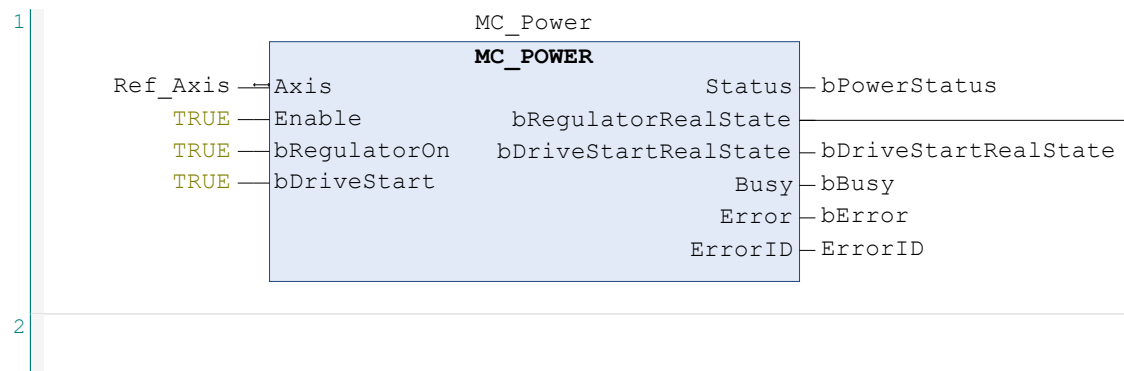
1.1.1.1.1.3.9 POU: ConveyorAxis

```
1  FUNCTION_BLOCK ConveyorAxis
2
3
```

1.1.1.1.1.3.9.1 Folder: Private Methods

1.1.1.1.1.3.9.1.1 Method: EnablePower

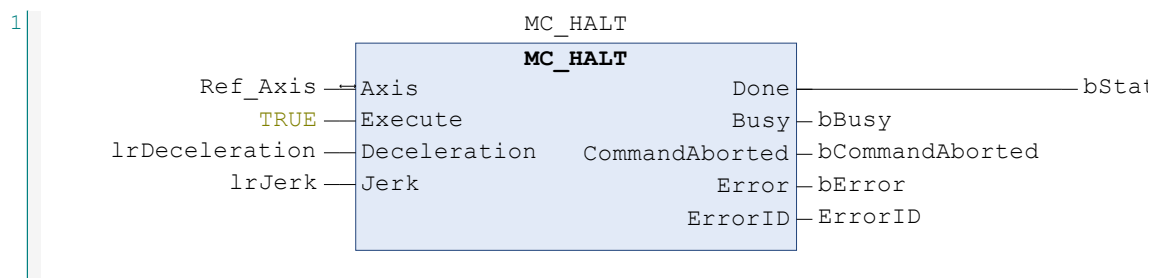
```
1  METHOD PROTECTED EnablePower
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4  END_VAR
5  VAR
6      MC_Power : MC_Power ;
7  END_VAR
8  VAR_OUTPUT
9      bPowerStatus : BOOL ;
10     bRegulatorRealState : BOOL ;
11     bDriveStartRealState : BOOL ;
12     bBusy : BOOL ;
13     bError : BOOL ;
14     ErrorID : SMC_ERROR ;
15 END_VAR
16
```



-bRegulatorRealState

1.1.1.1.3.9.1.2 Method: ExecuteHalt

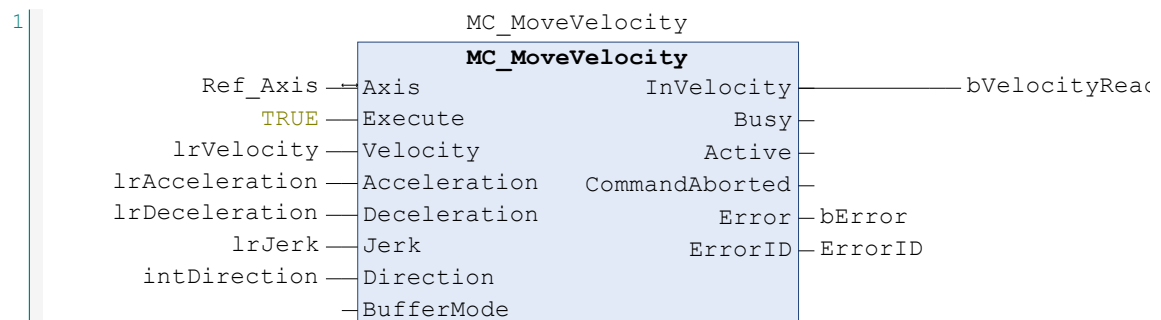
```
1  METHOD PROTECTED ExecuteHalt
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4      lrDeceleration : LREAL ;
5      lrJerk : LREAL ;
6  END_VAR
7  VAR
8      MC_HALT : MC_HALT ;
9  END_VAR
10 VAR_OUTPUT
11     bStatus : BOOL ;
12     bBusy : BOOL ;
13     bCommandAborted : BOOL ;
14     bError : BOOL ;
15     ErrorID : SMC_ERROR ;
16 END_VAR
17
```



cus

1.1.1.1.3.9.1.3 Method: ExecuteMoveVel

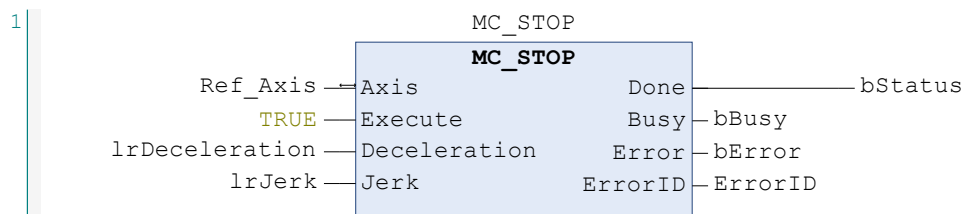
```
1  METHOD PROTECTED ExecuteMoveVel : BOOL
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4      lrVelocity : LREAL ;
5      lrAcceleration : LREAL ;
6      lrDeceleration : LREAL ;
7      lrJerk : LREAL ;
8      intDirection : INT ;
9  END_VAR
10 VAR
11     MC_MoveVelocity : MC_MoveVelocity ;
12 END_VAR
13 VAR_OUTPUT
14     bVelocityReached : BOOL ;
15     bError : BOOL ;
16     ErrorID : SMC_ERROR ;
17 END_VAR
18
```



hed

1.1.1.1.1.3.9.1.4 Method: ExecuteStop

```
1  METHOD PROTECTED ExecuteStop
2  VAR_INPUT
3      Ref_Axis : REFERENCE TO AXIS_REF_SM3 ;
4      lrDeceleration : LREAL ;
5      lrJerk : LREAL ;
6  END_VAR
7  VAR
8      MC_STOP : MC_STOP ;
9  END_VAR
10 VAR_OUTPUT
11     bStatus : BOOL ;
12     bBusy : BOOL ;
13     bError : BOOL ;
14     ErrorID : SMC_ERROR ;
15 END_VAR
16
```



1.1.1.1.3.10 POU: EM_CenterPallet

```
1  FUNCTION_BLOCK PUBLIC EM_CenterPallet
2  VAR_INPUT
3      Ref_CenterConveyor : REFERENCE TO CM_CenterConveyor ;
4  END_VAR
5  VAR
6      bDiffuseEntrySensor : BOOL := FALSE ;           // Io-Link mapping
7      bDiffuseExitSensor  : BOOL := FALSE ;           // Io-Link mapping
8  END_VAR
9
```

1.1.1.1.3.10.1 Method: CyclePreparation

```
1  METHOD PUBLIC CyclePreparation : BOOL
2  VAR
3      mPowerEnable : BOOL ;
4  END_VAR
5
```

```
1  THIS ^ . Ref_CenterConveyor . EnableDrivePower ( bPowerStatus => mPowerEnable )
2  ;
3  CyclePreparation := mPowerEnable ;
```

1.1.1.1.3.10.2 Method: EmergencyStop

```
1  METHOD PUBLIC EmergencyStop : BOOL
2  VAR
3      mConveyorStopped : BOOL ;
4  END_VAR
5
```

```
1  THIS ^ . Ref_CenterConveyor . StopDrive ( bStopDone => mConveyorStopped ) ;
2  EmergencyStop := mConveyorStopped ;
3
```

1.1.1.1.3.10.3 Method: Halt

```
1  METHOD PUBLIC Halt : BOOL
2  VAR
3      mConveyorHalted : BOOL ;
4  END_VAR
5
```

```
1  THIS ^ . Ref_CenterConveyor . HaltDrive ( bHaltDone => mConveyorHalted ) ;
2  Halt := mConveyorHalted ;
3
4
5
```

1.1.1.1.1.3.10.4 Method: ProcessStage1

```
1      METHOD PUBLIC ProcessStage1
2      VAR
3          bHaltDone : BOOL ;
4      END_VAR
5      VAR_IN_OUT
6          mStage1Busy : BOOL ;
7          mStage1Done : BOOL ;
8      END_VAR
9
10
11
12      IF NOT bDiffuseExitSensor THEN
13          THIS ^ . Ref_CenterConveyor . MoveVelocity ( intDirection := MC_DIRECTION .
14          positive ) ;
15          mStage1Busy := TRUE ;
16      ELSE
17          THIS ^ . Ref_CenterConveyor . HaltDrive ( bHaltDone => bHaltDone ) ;
18          IF bHaltDone THEN
19              mStage1Done := TRUE ; mStage1Busy := FALSE ;
20          END_IF
21      END_IF
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
```

1.1.1.1.1.3.10.5 Method: ProcessStage2

```
1      METHOD PUBLIC ProcessStage2
2      VAR
3          bHaltDone : BOOL ;
4      END_VAR
5      VAR_IN_OUT
6          mStage2Busy : BOOL ;
7          mStage2Done : BOOL ;
8      END_VAR
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
```

1.1.1.1.3.10.6 Method: ResetFaults

```
1  METHOD PUBLIC ResetFaults : BOOL
2  VAR
3      mCenterConveyorResetFaultDone : BOOL := FALSE ;
4  END_VAR
5
1  THIS ^ . Ref_CenterConveyor . ResetFaults ( bResetFaultDone =>
    mCenterConveyorResetFaultDone ) ;
2  ResetFaults := mCenterConveyorResetFaultDone ;
3
```

1.1.1.1.3.11 POU: EM_EnterPallet

```
1  FUNCTION_BLOCK PUBLIC EM_EnterPallet
2  VAR_INPUT
3      Ref_EntryConveyor : REFERENCE TO CM_EnterConveyor ;
4  END_VAR
5  VAR
6      bDiffuseEntrySensor : BOOL := FALSE ;           // Io-Link mapping
7      bDiffuseExitSensor  : BOOL := FALSE ;           // Io-Link mapping
8  END_VAR
9
```

1.1.1.1.3.11.1 Method: CyclePreparation

```
1  METHOD PUBLIC CyclePreparation : BOOL
2  VAR
3      mPowerEnable : BOOL ;
4  END_VAR
5
1  THIS ^ . Ref_EntryConveyor . EnableDrivePower ( bPowerStatus => mPowerEnable ) ;
2  CyclePreparation := mPowerEnable ;
3
```

1.1.1.1.3.11.2 Method: EmergencyStop

```
1  METHOD PUBLIC EmergencyStop : BOOL
2  VAR
3      mConveyorStopped : BOOL ;
4  END_VAR
5
1  THIS ^ . Ref_EntryConveyor . StopDrive ( bStopDone => mConveyorStopped ) ;
2  EmergencyStop := mConveyorStopped ;
3
```

```

1      THIS ^ . Ref_EntryConveyor . HaltDrive ( bHaltDone => mConveyorHalted ) ;
2      Halt := mConveyorHalted ;
3
4
5

```

```

1
2
3     IF bDiffuseEntrySensor OR mStagelBusy THEN
4         IF NOT bDiffuseExitSensor THEN
5             THIS ^ . Ref_EntryConveyor . MoveVelocity ( intDirection :=
MC_DIRECTION . positive ) ;
6             mStagelBusy := TRUE ;
7         ELSE
8             mStagelDone := TRUE ; mStagelBusy := FALSE ;
9         END_IF
10    END_IF
11
12

```


1.1.1.1.3.11.5 Method: ProcessStage2

```
positive ) ;
3     mStage2Busy := TRUE ;
4     ELSE
5         Ref_EntryConveyor . HaltDrive ( bHaltDone => bHaltDone ) ;
6         IF bHaltDone THEN
7             mStage2Done := TRUE ; mStage2Busy := FALSE ;
8         END_IF
9     END_IF
10
```

1.1.1.1.3.11.6 Method: ResetFaults

```
1     METHOD PUBLIC ResetFaults : BOOL
2     VAR
3         mEnterConveyorResetFaultDone : BOOL := FALSE ;
4     END_VAR
5
```

```
1     THIS ^ . Ref_EntryConveyor . ResetFaults ( bResetFaultDone =>
mEnterConveyorResetFaultDone ) ;
2     ResetFaults := mEnterConveyorResetFaultDone ;
3
```

1.1.1.1.3.11.7 Method: ThrowUsageError

```
1     METHOD PUBLIC ThrowUsageError
2     VAR_INPUT
3         errUsageError : PW_ERROR ;
4     END_VAR
5
```

```
1     THIS ^ . Ref_EntryConveyor . ThrowError ( ThrownError := errUsageError ) ;
2
```

1.1.1.1.3.12 POU: EM_ExitPallet

```
1     FUNCTION_BLOCK PUBLIC EM_ExitPallet
2     VAR_INPUT
3         Ref_ExitConveyor : REFERENCE TO CM_ExitConveyor ;
4     END_VAR
5     VAR
6         bDiffuseEntrySensor : BOOL := FALSE ;           // Io-Link mapping
7         bDiffuseExitSensor : BOOL := FALSE ;           // Io-Link mapping
8         bRedundantExitSensor : BOOL := FALSE ;         // Prevents the
pallet falling out.
9     END_VAR
10
```

1.1.1.1.3.12.1 Method: CyclePreparation

```
1  METHOD PUBLIC CyclePreparation : BOOL
2  VAR
3      mPowerEnable : BOOL ;
4  END_VAR
5
```

```
1  THIS ^ . Ref_ExitConveyor . EnableDrivePower ( bPowerStatus => mPowerEnable ) ;
2  CyclePreparation := mPowerEnable ;
3
```

1.1.1.1.3.12.2 Method: EmergencyStop

```
1  METHOD PUBLIC EmergencyStop : BOOL
2  VAR
3      mConveyorStopped : BOOL ;
4  END_VAR
5
```

```
1  THIS ^ . Ref_ExitConveyor . StopDrive ( bStopDone => mConveyorStopped ) ;
2  EmergencyStop := mConveyorStopped ;
3
```

1.1.1.1.3.12.3 Method: Halt

```
1  METHOD PUBLIC Halt : BOOL
2  VAR
3      mConveyorHalted : BOOL ;
4  END_VAR
5
```

```
1  THIS ^ . Ref_ExitConveyor . HaltDrive ( bHaltDone => mConveyorHalted ) ;
2  Halt := mConveyorHalted ;
3
4
5
```

1.1.1.1.3.12.4 Method: IsExitBlocked

```
1  METHOD PUBLIC IsExitBlocked
2  VAR
3      bHaltDone : BOOL ;
4  END_VAR
5  VAR_OUTPUT
6      mStage1Blocked : BOOL ;
7  END_VAR
8
```

```
1  IF bDiffuseExitSensor THEN
2      mStage1Blocked := TRUE ;
3  ELSE
4      IF bRedundantExitSensor THEN
```

```
5         mStage1Blocked := TRUE ;
6     ELSE mStage1Blocked := FALSE ;
7     END_IF
8 END_IF
9
```

1.1.1.1.3.12.5 Method: ProcessStage1

```
1  METHOD PUBLIC ProcessStage1
2  VAR_INPUT
3      mStage1Blocked : BOOL ;
4  END_VAR
5  VAR
6      bHaltDone : BOOL ;
7  END_VAR
8  VAR_IN_OUT
9      mStage1Busy : BOOL ;
10     mStage1Done : BOOL ;
11
12 END_VAR
13
14
```

```
1  IF NOT mStage1Blocked THEN
2      THIS ^ . Ref_ExitConveyor . MoveVelocity ( intDirection := MC_DIRECTION .
positive ) ;
3      mStage1Busy := TRUE ;
4  ELSE
5      THIS ^ . Ref_ExitConveyor . HaltDrive ( bHaltDone => bHaltDone ) ;
6      IF bHaltDone THEN
7          mStage1Done := TRUE ; mStage1Busy := FALSE ;
8      END_IF
9  END_IF
10
11
```

1.1.1.1.3.12.6 Method: ResetFaults

```
1  METHOD PUBLIC ResetFaults : BOOL
2  VAR
3      mExitConveyorResetFaultDone : BOOL := FALSE ;
4  END_VAR
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
```

```
1  THIS ^ . Ref_ExitConveyor . ResetFaults ( bResetFaultDone =>
mExitConveyorResetFaultDone ) ;
2  ResetFaults := mExitConveyorResetFaultDone ;
3
```

1.1.1.1.1.3.13 POU: EM_PalletWrapper

```
1  FUNCTION_BLOCK EM_PalletWrapper
2  VAR_INPUT
3      Ref_FilmAplicator : REFERENCE TO CM_FilmAplicator ;
4      Ref_PalletRotator : REFERENCE TO CM_PalletRotator ;
5      Ref_FilmClamp : REFERENCE TO CM_FilmClamp ;
6      Ref_FilmSticker : REFERENCE TO CM_FilmSticker ;
7      Ref_PalletProtector : REFERENCE TO CM_PalletProtector ;
8  END_VAR
9  VAR_OUTPUT
10     CurrentAplicatorMode : AplicatorMode ;
11 END_VAR
12
13
```

1.1.1.1.1.3.13.1 Folder: AuxillaryMethods

1.1.1.1.1.3.13.1.1 Method: ClampProcess

```
1  METHOD PRIVATE ClampProcess
2  VAR_INPUT
3      usintCurrentLayerNumber : USINT ;
4  END_VAR
5  VAR_IN_OUT
6      mCloseClampDone : BOOL ;
7      mReleaseClampDone : BOOL ;
8  END_VAR
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
1001
1002
1003
1004
1005
1006
1007
1008
1009
1010
1011
1012
1013
1014
1015
1016
1017
1018
1019
1020
1021
1022
1023
1024
1025
1026
1027
1028
1029
1030
1031
1032
1033
1034
1035
1036
1037
1038
1039
1040
1041
1042
1043
1044
1045
1046
1047
1048
1049
1050
1051
1052
1053
1054
1055
1056
1057
1058
1059
1060
1061
1062
1063
1064
1065
1066
1067
1068
1069
1070
1071
1072
1073
1074
1075
1076
1077
1078
1079
1080
1081
1082
1083
1084
1085
1086
1087
1088
1089
1090
1091
1092
1093
1094
1095
1096
1097
1098
1099
1100
1101
1102
1103
1104
1105
1106
1107
1108
1109
1110
1111
1112
1113
1114
1115
1116
1117
1118
1119
1120
1121
1122
1123
1124
1125
1126
1127
1128
1129
1130
1131
1132
1133
1134
1135
1136
1137
1138
1139
1140
1141
1142
1143
1144
1145
1146
1147
1148
1149
1150
1151
1152
1153
1154
1155
1156
1157
1158
1159
1160
1161
1162
1163
1164
1165
1166
1167
1168
1169
1170
1171
1172
1173
1174
1175
1176
1177
1178
1179
1180
1181
1182
1183
1184
1185
1186
1187
1188
1189
1190
1191
1192
1193
1194
1195
1196
1197
1198
1199
1200
1201
1202
1203
1204
1205
1206
1207
1208
1209
1210
1211
1212
1213
1214
1215
1216
1217
1218
1219
1220
1221
1222
1223
1224
1225
1226
1227
1228
1229
1230
1231
1232
1233
1234
1235
1236
1237
1238
1239
1240
1241
1242
1243
1244
1245
1246
1247
1248
1249
1250
1251
1252
1253
1254
1255
1256
1257
1258
1259
1260
1261
1262
1263
1264
1265
1266
1267
1268
1269
1270
1271
1272
1273
1274
1275
1276
1277
1278
1279
1280
1281
1282
1283
1284
1285
1286
1287
1288
1289
1290
1291
1292
1293
1294
1295
1296
1297
1298
1299
1300
1301
1302
1303
1304
1305
1306
1307
1308
1309
1310
1311
1312
1313
1314
1315
1316
1317
1318
1319
1320
1321
1322
1323
1324
1325
1326
1327
1328
1329
1330
1331
1332
1333
1334
1335
1336
1337
1338
1339
1340
1341
1342
1343
1344
1345
1346
1347
1348
1349
1350
1351
1352
1353
1354
1355
1356
1357
1358
1359
1360
1361
1362
1363
1364
1365
1366
1367
1368
1369
1370
1371
1372
1373
1374
1375
1376
1377
1378
1379
1380
1381
1382
1383
1384
1385
1386
1387
1388
1389
1390
1391
1392
1393
1394
1395
1396
1397
1398
1399
1400
1401
1402
1403
1404
1405
1406
1407
1408
1409
1410
1411
1412
1413
1414
1415
1416
1417
1418
1419
1420
1421
1422
1423
1424
1425
1426
1427
1428
1429
1430
1431
1432
1433
1434
1435
1436
1437
1438
1439
1440
1441
1442
1443
1444
1445
1446
1447
1448
1449
1450
1451
1452
1453
1454
1455
1456
1457
1458
1459
1460
1461
1462
1463
1464
1465
1466
1467
1468
1469
1470
1471
1472
1473
1474
1475
1476
1477
1478
1479
1480
1481
1482
1483
1484
1485
1486
1487
1488
1489
1490
1491
1492
1493
1494
1495
1496
1497
1498
1499
1500
1501
1502
1503
1504
1505
1506
1507
1508
1509
1510
1511
1512
1513
1514
1515
1516
1517
1518
1519
1520
1521
1522
1523
1524
1525
1526
1527
1528
1529
1530
1531
1532
1533
1534
1535
1536
1537
1538
1539
1540
1541
1542
1543
1544
1545
1546
1547
1548
1549
1550
1551
1552
1553
1554
1555
1556
1557
1558
1559
1560
1561
1562
1563
1564
1565
1566
1567
1568
1569
1570
1571
1572
1573
1574
1575
1576
1577
1578
1579
1580
1581
1582
1583
1584
1585
1586
1587
1588
1589
1590
1591
1592
1593
1594
1595
1596
1597
1598
1599
1600
1601
1602
1603
1604
1605
1606
1607
1608
1609
1610
1611
1612
1613
1614
1615
1616
1617
1618
1619
1620
1621
1622
1623
1624
1625
1626
1627
1628
1629
1630
1631
1632
1633
1634
1635
1636
1637
1638
1639
1640
1641
1642
1643
1644
1645
1646
1647
1648
1649
1650
1651
1652
1653
1654
1655
1656
1657
1658
1659
1660
1661
1662
1663
1664
1665
1666
1667
1668
1669
1670
1671
1672
1673
1674
1675
1676
1677
1678
1679
1680
1681
1682
1683
1684
1685
1686
1687
1688
1689
1690
1691
1692
1693
1694
1695
1696
1697
1698
1699
1700
1701
1702
1703
1704
1705
1706
1707
1708
1709
1710
1711
1712
1713
1714
1715
1716
1717
1718
1719
1720
1721
1722
1723
1724
1725
1726
1727
1728
1729
1730
1731
1732
1733
1734
1735
1736
1737
1738
1739
1740
1741
1742
1743
1744
1745
1746
1747
1748
1749
1750
1751
1752
1753
1754
1755
1756
1757
1758
1759
1760
1761
1762
1763
1764
1765
1766
1767
1768
1769
1770
1771
1772
1773
1774
1775
1776
1777
1778
1779
1780
1781
1782
1783
1784
1785
1786
1787
1788
1789
1790
1791
1792
1793
1794
1795
1796
1797
1798
1799
1800
1801
1802
1803
1804
1805
1806
1807
1808
1809
1810
1811
1812
1813
1814
1815
1816
1817
1818
1819
1820
1821
1822
1823
1824
1825
1826
1827
1828
1829
1830
1831
1832
1833
1834
1835
1836
1837
1838
1839
1840
1841
1842
1843
1844
1845
1846
1847
1848
1849
1850
1851
1852
1853
1854
1855
1856
1857
1858
1859
1860
1861
1862
1863
1864
1865
1866
1867
1868
1869
1870
1871
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050
2051
2052
2053
2054
2055
2056
2057
2058
2059
2060
2061
2062
2063
2064
2065
2066
2067
2068
2069
2070
2071
2072
2073
2074
2075
2076
2077
2078
2079
2080
2081
2082
2083
2084
2085
2086
2087
2088
2089
2090
2091
2092
2093
2094
2095
2096
2097
2098
2099
2100
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2117
2118
2119
2120
2121
2122
2123
2124
2125
2126
2127
2128
2129
2130
2131
2132
2133
2134
2135
2136
2137
2138
2139
2140
2141
2142
2143
2144
2145
2146
2147
2148
2149
2150
2151
2152
2153
2154
2155
2156
2157
2158
2159
2160
2161
2162
2163
2164
2165
2166
2167
2168
2169
2170
2171
2172
2173
2174
2175
2176
2177
2178
2179
2180
2181
2182
2183
2184
2185
2186
2187
2188
2189
2190
2191
2192
2193
2194
2195
2196
2197
2198
2199
2200
2201
2202
2203
2204
2205
2206
2207
2208
2209
2210
2211
2212
2213
2214
2215
2216
2217
2218
2219
2220
2221
2222
2223
2224
2225
2226
2227
2228
2229
2230
2231
2232
2233
2234
2235
2236
2237
2238
2239
2240
2241
2242
2243
2244
2245
2246
2247
2248
2249
2250
2251
2252
2253
2254
2255
2256
2257
2258
2259
2260
2261
2262
2263
2264
2265
2266
2267
2268
2269
2270
2271
2272
2273
2274
2275
2276
2277
2278
2279
2280
2281
2282
2283
2284
2285
2286
2287
2288
2289
2290
2291
2292
2293
2294
2295
2296
2297
2298
2299
2300
2301
2302
2303
2304
2305
2306
2307
2308
2309
2310
2311
2312
2313
2314
2315
2316
2317
2318
2319
2320
2321
2322
2323
2324
2325
2326
2327
2328
2329
2330
2331
2332
2333
2334
2335
2336
2337
2338
2339
2340
2341
2342
2343
2344
2345
2346
2347
2348
2349
2350
2351
2352
2353
2354
2355
2356
2357
2358
2359
2360
2361
2362
2363
2364
2365
2366
2367
2368
2369
2370
2371
2372
2373
2374
2375
2376
2377
2378
2379
2380
2381
2382
2383
2384
2385
2386
2387
2388
2389
2390
2391
2392
2393
2394
2395
2396
2397
2398
2399
2400
2401
2402
2403
2404
2405
2406
2407
2408
2409
2410
2411
2412
2413
2414
2415
2416
2417
2418
2419
2420
2421
2422
2423
2424
2425
2426
2427
2428
2429
2430
2431
2432
2433
2434
2435
2436
2437
2438
2439
2440
2441
2442
2443
2444
2445
2446
2447
2448
2449
2450
2451
2452
2453
2454
2455
2456
2457
2458
2459
2460
2461
2462
2463
2464
2465
2466
2467
2468
2469
2470
2471
2472
2473
2474
2475
2476
2477
2478
2479
2480
2481
2482
2483
2484
2485
2486
2487
2488
2489
2490
2491
2492
2493
2494
2495
2496
2497
2498
2499
2500
2501
2502
2503
2504
2505
2506
2507
2508
2509
2510
2511
2512
2513
2514
2515
2516
2517
2518
2519
2520
2521
2522
2523
2524
2525
2526
2527
2528
2529
2530
2531
2532
2533
2534
2535
2536
2537
2538
2539
2540
2541
2542
2543
2544
2545
2546
2547
2548
2549
2550
2551
2552
2553
2554
2555
2556
2557
2558
2559
2560
2561
2562
2563
2564
2565
2566
2567
2568
2569
2570
2571
2572
2573
2574
2575
2576
2577
2578
2579
2580
2581
2582
2583
2584
2585
2586
2587
2588
2589
2590
2591
2592
2593
2594
2595
2596
2597
2598
2599
2600
2601
2602
2603

```


1.1.1.1.3.13.1.3 Method: ProtectorProcess

```
1  IF usintCurrentLayerNumber = 7 THEN
2      IF mPutLayerDone AND NOT mExtendProtectorDone THEN
3          Ref_PalletProtector . ExtendProtector ( bExtendDone =>
mExtendProtectorDone );
4      END_IF
5  END_IF
6
7  IF usintCurrentLayerNumber = 8
8      AND mCloseClampDone
9      AND mStickerDetachDone THEN
10     IF NOT mReleaseProtectorDone THEN
11         Ref_PalletProtector . ReleaseProtector ( bReleaseDone =>
mReleaseProtectorDone );
12     END_IF
13 END_IF
14
```

1.1.1.1.3.13.1.4 Method: PutLayer

```
1  METHOD PRIVATE PutLayer
2  VAR_INPUT
3      usintWrapsNumber : USINT ;
4      lrAplicatorAimPosition : LREAL ;
5  END_VAR
6  VAR
7      mAplicatorMoveDone : BOOL ;
8      mRotatorMoveDone : BOOL ;
9  END_VAR
10 VAR_IN_OUT
11     usintCurrentWrap : USINT ;
12 END_VAR
13 VAR_OUTPUT
14     mPutLayerDone : BOOL ;
15 END_VAR
16
```

```
1  // Aplicator movement
2  IF NOT mAplicatorMoveDone THEN
3      Ref_FilmAplicator . MoveAbsolute ( lrPosition := lrAplicatorAimPosition ,
4                                          bMoveDone => mAplicatorMoveDone );
5  END_IF
6  // Rotator movement
7  IF usintCurrentWrap <= usintWrapsNumber THEN
8      IF NOT mRotatorMoveDone THEN
9          Ref_PalletRotator . MoveRelative ( lrDistance := RotatorParameters .
LR_FIXED_POSITION - Ref_PalletRotator . Ref_RotatorAxis . fActPosition ,
10                                              mMoveDone => mRotatorMoveDone );
11      END_IF
12      IF mRotatorMoveDone AND ( usintCurrentWrap < usintWrapsNumber ) THEN
13          usintCurrentWrap := usintCurrentWrap + 1 ;
14          mRotatorMoveDone := FALSE ;
15      END_IF
16  ELSE mRotatorMoveDone := TRUE ;    //when particular layer does not require
wrapping.
17  END_IF
18
```

```
19     IF mAplicatorMoveDone AND mRotatorMoveDone THEN
20         mPutLayerDone := TRUE ;
21     ELSE mPutLayerDone := FALSE ;
22     END_IF
23
24
25
```

1.1.1.1.3.13.1.5 Method: SetNewTopLayer

```
1     METHOD PRIVATE SetNewTopLayer
2     VAR_INPUT
3         usintCurrentLayerNumber : USINT ;
4     END_VAR
5     VAR
6         bHaltDone : BOOL ;
7     END_VAR
8     VAR_OUTPUT
9         bMoveDone : BOOL ;
10    END_VAR
11    VAR_IN_OUT
12        lrPalletHeight : LREAL ;
13    END_VAR
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
```

```
24             END_IF
25         END_IF
26     END_IF*}
27
```

1.1.1.1.1.3.13.1.6 Method: StickerProcess

```
1  METHOD PRIVATE StickerProcess
2  VAR_INPUT
3      uintCurrentLayerNumber : uint ;
4      mCloseClampDone : BOOL ;
5  END_VAR
6  VAR_IN_OUT
7      mStickerAttachDone : BOOL ;
8      mStickerDetachDone : BOOL ;
9  END_VAR
10
```

```
1  IF uintCurrentLayerNumber = 8 AND mCloseClampDone THEN
2      IF NOT mStickerAttachDone THEN
3          Ref_FilmSticker . AttachSticker ( bAttachDone =>
4          mStickerAttachDone ) ;
5          RETURN ;
6      ELSE
7          IF NOT mStickerDetachDone THEN
8              Ref_FilmSticker . DetachSticker ( bDetachDone =>
9              mStickerDetachDone ) ;
10             END_IF
11         END_IF
12     END_IF
13
```

1.1.1.1.1.3.13.2 Method: ChangeWrappingMode

```
1  METHOD PUBLIC ChangeWrappingMode
2  VAR_INPUT
3      newAplicatorModeName : STRING ;
4  END_VAR
5
```

```
1  IF newAplicatorModeName = AplicatorModeNames . arrModeNames [ 0 ] THEN
2      THIS ^ . CurrentAplicatorMode . sModeName := AplicatorModeNames .
3      arrModeNames [ 0 ] ;
4      THIS ^ . CurrentAplicatorMode . arrLayeringSystem := LayerSystems .
5      arrEcoSystem ;
6  END_IF
7  IF newAplicatorModeName = AplicatorModeNames . arrModeNames [ 1 ] THEN
8      THIS ^ . CurrentAplicatorMode . sModeName := AplicatorModeNames .
9      arrModeNames [ 1 ] ;
10     THIS ^ . CurrentAplicatorMode . arrLayeringSystem := LayerSystems .
11     arrNormalSystem ;
12 END_IF
13 IF newAplicatorModeName = AplicatorModeNames . arrModeNames [ 2 ] THEN
14     THIS ^ . CurrentAplicatorMode . sModeName := AplicatorModeNames .
15
```



```
arrModeNames [ 2 ] ;
11     THIS ^ . CurrentAplicatorMode . arrLayeringSystem := LayerSystems .
arrHighPerformanceSystem ;
12     END_IF
13
14
15
16
```

1.1.1.1.3.13.3 Method: CyclePreparation

```
1     METHOD PUBLIC CyclePreparation : BOOL
2     VAR
3         mAplicatorPowerEnable : BOOL ;
4         mAplicatorHome : BOOL ;
5         mRotatorPowerEnable : BOOL ;
6         mRotatorHome : BOOL ;
7         mClampInit : BOOL ;
8         mProtectorInit : BOOL ;
9         mStickerInit : BOOL ;
10    END_VAR
11
12
13
14
15
16
17
18
19
20
1     Ref_FilmAplicator . EnableDrivePower ( bPowerStatus => mAplicatorPowerEnable )
2     ;
3     IF mAplicatorPowerEnable THEN
4         Ref_FilmAplicator . ExecuteDriveHome ( bHomeDone => mAplicatorHome ) ;
5     END_IF
6     Ref_PalletRotator . EnableDrivePower ( bPowerStatusPRA => mRotatorPowerEnable
7     ) ;
8     IF mRotatorPowerEnable THEN
9         Ref_PalletRotator . ExecuteDriveHome ( bHomeDone => mRotatorHome ) ;
10    END_IF
11    Ref_FilmClamp . InitializeClamp ( bInitializationDone => mClampInit ) ;
12    Ref_PalletProtector . InitializeProtector ( bInitializationDone =>
13    mProtectorInit ) ;
14    Ref_FilmSticker . InitializeSticker ( bInitializationDone => mStickerInit ) ;
15    CyclePreparation := mAplicatorHome
16                      AND mRotatorHome
17                      AND mClampInit
18                      AND mProtectorInit
19                      AND mStickerInit ;
20
```

1.1.1.1.1.3.13.4 Method: EmergencyStop

```
1  METHOD PUBLIC EmergencyStop : BOOL
2  VAR
3      mAplicatorStoped : BOOL ;
4      mRotatorStoped   : BOOL ;
5      mClampReleased   : BOOL ;
6  END_VAR
7

1  Ref_FilmAplicator . StopDrive ( bStopDone => mAplicatorStoped ) ;
2  Ref_PalletRotator . StopDrive ( bStopDonePRA => mRotatorStoped ) ;
3  Ref_FilmClamp . ReleaseClamp ( bReleaseDone => mClampReleased ) ;
4
5  EmergencyStop := mAplicatorStoped AND mRotatorStoped AND mClampReleased ;
6
```

1.1.1.1.1.3.13.5 Method: Halt

```
1  METHOD PUBLIC Halt : BOOL
2  VAR
3      mAplicatorHalted : BOOL ;
4      mRotatorHalted   : BOOL ;
5      mClampInit       : BOOL ;
6  END_VAR
7

1  Ref_FilmAplicator . HaltDrive ( bHaltDone => mAplicatorHalted ) ;
2  Ref_PalletRotator . HaltDrive ( bHaltDone => mRotatorHalted ) ;
3  Ref_FilmClamp . InitializeClamp ( bInitializationDone => mClampInit ) ;
4  Halt := mAplicatorHalted AND mRotatorHalted AND mClampInit ;
5
```

1.1.1.1.1.3.13.6 Method: ProcessStage1

```
1  METHOD PUBLIC ProcessStage1
2  VAR_IN_OUT
3      usintCurrentLayerNumber : USINT ;
4      usintCurrentWrap        : USINT ;
5      mExtendProtectorDone    : BOOL ;
6      mReleaseProtectorDone   : BOOL ;
7      mCloseClampDone         : BOOL ;
8      mReleaseClampDone       : BOOL ;
9      mStickerAttachDone      : BOOL ;
10     mStickerDetachDone      : BOOL ;
11     mPutLayerDone           : BOOL ;
12     mStage1Done             : BOOL ;
13     mStage1Interrupted      : BOOL ;
14     mCurrentLayerDone       : BOOL ;
15     lrPalletHeight          : LREAL ;
16 END_VAR
17 VAR
```

```
18      usintWrapsNumber : USINT ;
19      lrAplicatorAimPosition : LREAL ;
20      mAplicatorHaltDone : BOOL ;
21      mRotatorHaltDone : BOOL ;
22
23  END_VAR
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
```

1.1.1.1.3.13.6 Method: ProcessStage1

```
42         Ref_FilmAplicator . HaltDrive ( bHaltDone => mAplicatorHaltDone ) ;
43         Ref_PalletRotator . HaltDrive ( bHaltDone => mRotatorHaltDone ) ;
44         IF mRotatorHaltDone AND mAplicatorHaltDone THEN
45             mStage1Interrupted := TRUE ;
46         END_IF
47     END_IF
48
```

1.1.1.1.3.13.7 Method: ProcessStage2

```
1     METHOD PUBLIC ProcessStage2
2     VAR_INPUT
3         uintCurrentLayerNumber : USINT ;
4         uintCurrentWrap : USINT ;
5     END_VAR
6     VAR_OUTPUT
7         mStage2Done : BOOL ;
8     END_VAR
9
```

```
1     FinishTopLayer ( uintCurrentLayerNumber := uintCurrentLayerNumber ,
2                     uintWrapsNumber := CurrentAplicatorMode . arrLayeringSystem [
3                     uintCurrentLayerNumber ] ,
4                     uintCurrentWrap := uintCurrentWrap ,
5                     mFinishTopLayerDone => mStage2Done ) ;
```

1.1.1.1.3.13.8 Method: ProcessStage3

```
1     METHOD PUBLIC ProcessStage3
2     VAR_IN_OUT
3         uintCurrentLayerNumber : USINT ;
4         mStage3Done : BOOL ;
5     END_VAR
6     VAR_IN_OUT
7         lrPalletHeight : LREAL ;
8     END_VAR
9
```

```
1     uintCurrentLayerNumber := 5 ;
2     SetNewTopLayer ( uintCurrentLayerNumber := uintCurrentLayerNumber ,
3                     lrPalletHeight := lrPalletHeight ,
4                     bMoveDone => mStage3Done ) ;
5
6
7
```

1.1.1.1.1.3.13.9 Method: ProcessStage4

```
1  METHOD PUBLIC ProcessStage4
2  VAR_INPUT
3      lrPalletHeight : LREAL ;
4      mStage1Interrupted : BOOL ;
5  END_VAR
6  VAR_IN_OUT
7      usintCurrentLayerNumber : USINT ;
8      usintCurrentWrap : USINT ;
9      mExtendProtectorDone : BOOL ;
10     mReleaseProtectorDone : BOOL ;
11     mCloseClampDone : BOOL ;
12     mReleaseClampDone : BOOL ;
13     mStickerAttachDone : BOOL ;
14     mStickerDetachDone : BOOL ;
15     mPutLayerDone : BOOL ;
16     mStage4Done : BOOL ;
17     mCurrentLayerDone : BOOL ;
18 END_VAR
19 VAR
20     usintWrapsNumber : USINT ;
21     lrAplicatorAimPosition : LREAL ;
22     bHaltDone : BOOL ;
23     ThrownError : PW_ERROR ;
24 END_VAR
25
26
27 IF Ref_FilmAplicator.HeightSensor THEN
28     IF mStage1Interrupted AND usintCurrentLayerNumber = 5 THEN
29         IF lrPalletHeight < AplicatorParameters.LRA_LAYER_POSITIONS [ 5 ]
30             THEN
31                 IF lrPalletHeight > AplicatorParameters.LRA_LAYER_POSITIONS [
32                     6 ] THEN
33                     usintCurrentLayerNumber := 6 ;
34                 END_IF
35                 IF lrPalletHeight < AplicatorParameters.LRA_LAYER_POSITIONS [ 6
36                     ]
37                     AND lrPalletHeight > AplicatorParameters.LRA_LAYER_POSITIONS [ 7 ] THEN
38                     usintCurrentLayerNumber := 7 ;
39                 END_IF
40                 IF lrPalletHeight < AplicatorParameters.LRA_LAYER_POSITIONS [
41                     7 ]
42                     AND lrPalletHeight > AplicatorParameters.LRA_LAYER_POSITIONS [ 8 ] THEN
43                     usintCurrentLayerNumber := 8 ;
44                 END_IF
45                 END_IF
46                 usintWrapsNumber := CurrentAplicatorMode.arrLayeringSystem [
47                     usintCurrentLayerNumber ] ;
48                 lrAplicatorAimPosition := lrPalletHeight ;
49             ELSE
50                 usintWrapsNumber := CurrentAplicatorMode.arrLayeringSystem [
```

```

usintCurrentLayerNumber ] ;
20     lrAplicatorAimPosition := AplicatorParameters . LRA_LAYER_POSITIONS [
usintCurrentLayerNumber ] ;
21     END_IF
22
23     IF NOT mCurrentLayerDone THEN
24         PutLayer ( usintWrapsNumber := usintWrapsNumber ,
25                   lrAplicatorAimPosition := lrAplicatorAimPosition ,
26                   usintCurrentWrap := usintCurrentWrap ,
27                   mPutLayerDone => mPutLayerDone ) ;
28
29         ClampProcess ( usintCurrentLayerNumber := usintCurrentLayerNumber ,
30                       mCloseClampDone := mCloseClampDone ,
31                       mReleaseClampDone := mReleaseClampDone ) ;
32
33         StickerProcess ( usintCurrentLayerNumber := usintCurrentLayerNumber ,
34                         mCloseClampDone := mCloseClampDone ,
35                         mStickerAttachDone := mStickerAttachDone ,
36                         mStickerDetachDone := mStickerDetachDone ) ;
37
38         ProtectorProcess ( usintCurrentLayerNumber :=
usintCurrentLayerNumber ,
39                           mCloseClampDone := mCloseClampDone ,
40                           mPutLayerDone := mPutLayerDone ,
41                           mStickerDetachDone := mStickerDetachDone ,
42                           mExtendProtectorDone := mExtendProtectorDone ,
43                           mReleaseProtectorDone := mReleaseProtectorDone ) ;
44         CASE usintCurrentLayerNumber OF
45             5 , 6 : IF mPutLayerDone THEN mCurrentLayerDone := TRUE ;
END_IF
46             7 : IF mPutLayerDone AND mExtendProtectorDone THEN
mCurrentLayerDone := TRUE ; END_IF
47             8 : IF mPutLayerDone AND mCloseClampDone AND
mStickerDetachDone AND mReleaseProtectorDone THEN mCurrentLayerDone :=
TRUE ; END_IF
48         END_CASE
49         ELSE
50             usintCurrentWrap := 1 ;
51             mCurrentLayerDone := FALSE ;
52             mPutLayerDone := FALSE ;
53
54             CASE usintCurrentLayerNumber OF
55                 5 , 6 , 7 : usintCurrentLayerNumber := usintCurrentLayerNumber +
1 ;
56                 8 : mStage4Done := TRUE ;
57             END_CASE
58         END_IF
59     { *ELSE
60         Ref_FilmAplicator.HaltDrive(bHaltDone => bHaltDone);
61         IF bHaltDone THEN
62             ThrownError.PW_ErrorID :=
PW_ERROR_ID.PW_APLICATOR_PALLET_SENSOR_ERROR;
63             ThrownError.sErrorMessage := ' ';
64             ThrownError.sErrorSolutionMessage:=
PW_getErrorSolution(PW_ERROR_ID.PW_APLICATOR_PALLET_SENSOR_ERROR);
65
66             Ref_FilmAplicator.ThrowError(ThrownError := ThrownError);

```

```
67             mStage4Done := TRUE;
68         END_IF*}
69     END_IF
70
```

1.1.1.1.3.13.10 Method: ProvideFilm

```
1  METHOD PUBLIC ProvideFilm : BOOL
2  VAR
3      mFilmProvided : BOOL ;
4  END_VAR
5
```

```
1  Ref_FilmClamp . ProvideFilm ( bFilmProvided => mFilmProvided ) ;
2  ProvideFilm := mFilmProvided ;
3
```

1.1.1.1.3.13.11 Method: ResetFaults

```
1  METHOD PUBLIC ResetFaults : BOOL
2  VAR
3      mAplicatorResetFaultDone : BOOL := FALSE ;
4      mRotatorResetFaultDone : BOOL := FALSE ;
5      mClampResetFaultDone : BOOL := FALSE ;
6      mStickerResetFaultDone : BOOL := FALSE ;
7      mProtectorResetFaultDone : BOOL := FALSE ;
8
9  END_VAR
10
```

```
1  THIS ^ . Ref_FilmAplicator . ResetFaults ( bResetFaultDone =>
    mAplicatorResetFaultDone ) ;
2  THIS ^ . Ref_PalletRotator . ResetFaults ( bResetFaultDone =>
    mRotatorResetFaultDone ) ;
3  THIS ^ . Ref_FilmClamp . ResetFaults ( bResetFaultDone => mClampResetFaultDone
    ) ;
4  THIS ^ . Ref_FilmSticker . ResetFaults ( bResetFaultDone =>
    mStickerResetFaultDone ) ;
5  THIS ^ . Ref_PalletProtector . ResetFaults ( bResetFaultDone =>
    mProtectorResetFaultDone ) ;
6
7
8  ResetFaults := mAplicatorResetFaultDone
9                AND mRotatorResetFaultDone
10               AND mClampResetFaultDone
11               AND mStickerResetFaultDone
12               AND mProtectorResetFaultDone ;
13
```

1.1.1.1.2 POU: prgCenterPallet

```
1  PROGRAM prgCenterPallet
2  VAR_INPUT
3      Ref_CenterPallet : REFERENCE TO EM_CenterPallet ;
4      mCenterReadyToMoveIn : BOOL ;
5      mCenterReadyToMoveOut : BOOL ;
6      mWrapPalletProcessDone : BOOL ;
7  END_VAR
8  VAR
9      mStage1Done : BOOL ;
10     mStage1Busy : BOOL ;
11     mStage2Done : BOOL ;
12     mStage2Busy : BOOL ;
13     mProcessInit : BOOL := FALSE ;
14 END_VAR
15 VAR_OUTPUT
16     mEntryReadyToMoveIn : BOOL ;
17     mExitReadyToMoveIn : BOOL ;
18     mWrapperReadyToProcess : BOOL ;
19 END_VAR
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
```



```
28
29     IF mStage1Done AND mWrapPalletProcessDone THEN
30         mExitReadyToMoveIn := TRUE ;
31     ELSE mExitReadyToMoveIn := FALSE ;
32     END_IF
33
34     IF mStage1Done AND mStage2Done THEN
35         mProcessInit := FALSE ;
36     END_IF
37 END_IF
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
```

1.1.1.1.3 POU: prgEnterPallet

```
1  PROGRAM prgEnterPallet
2  VAR_INPUT
3      Ref_EnterPallet : REFERENCE TO EM_EnterPallet ;
4      mEntryReadyToMoveIn : BOOL ;
5  END_VAR
6  VAR
7      errUsageError : PW_ERROR ;
8      mStage1Done : BOOL ;
9      mStage1Busy : BOOL ;
10     mStage2Done : BOOL ;
11     mStage2Busy : BOOL ;
12     mProcessInit : BOOL := FALSE ;
13 END_VAR
14 VAR_OUTPUT
15     mCenterReadyToMoveIn : BOOL ;
16 END_VAR
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
```

```
1  IF NOT mProcessInit THEN
2      mStage1Done := FALSE ; mStage1Busy := FALSE ;
3      mStage2Done := FALSE ; mStage2Busy := FALSE ;
4      mCenterReadyToMoveIn := FALSE ;
```

1.1.1.1.3 POU: prgEnterPallet

```
5      mProcessInit := TRUE ;
6  ELSE
7      // Machine used in inappropriate way. Throw an error.
8      IF NOT mEntryReadyToMoveIn AND mStage1Busy THEN
9          errUsageError . PW_ErrorID := PW_ERROR_ID .
PW_ENTER_CONVEYOR_USAGE_ERROR ;
10         errUsageError . sErrorMessage := ' ' ;
11         errUsageError . sErrorSolutionMessage := PW_getErrorSolution (
PW_ERROR_ID . PW_ENTER_CONVEYOR_USAGE_ERROR ) ;
12         Ref_EnterPallet . ThrowUsageError (errUsageError := errUsageError) ;
13     END_IF
14
15     // STAGE 1
16     IF mEntryReadyToMoveIn AND NOT mStage1Done THEN
17         Ref_EnterPallet . ProcessStage1 (mStage1Busy := mStage1Busy ,
mStage1Done := mStage1Done) ;
18     END_IF
19     // STAGE 2
20     IF mEntryReadyToMoveIn AND mStage1Done AND NOT mStage2Done THEN
21         Ref_EnterPallet . ProcessStage2 (mStage2Busy := mStage2Busy ,
mStage2Done := mStage2Done) ;
22     END_IF
23
24     IF mStage1Done AND mStage2Busy THEN
25         mCenterReadyToMoveIn := TRUE ;
26     ELSE mCenterReadyToMoveIn := FALSE ;
27     END_IF
28     IF mStage1Done AND mStage2Done THEN
29         mProcessInit := FALSE ;
30     END_IF
31 END_IF
32
```

1.1.1.1.4 POU: prgExitPallet

```
1  PROGRAM prgExitPallet
2  VAR_INPUT
3      Ref_ExitPallet : REFERENCE TO EM_ExitPallet ;
4      mExitReadyToMoveIn : BOOL ;
5  END_VAR
6  VAR
7      mStage1Done : BOOL ;
8      mStage1Blocked : BOOL ;
9      mStage1Busy : BOOL ;
10     mProcessInit : BOOL := FALSE ;
11 END_VAR
12 VAR_OUTPUT
13     mCenterReadyToMoveOut : BOOL := FALSE ;
14 END_VAR
15
```

```
1  IF NOT mProcessInit THEN
2      mStage1Done := FALSE ;
3      mStage1Busy := FALSE ;
4      mStage1Blocked := FALSE ;
```

1.1.1.1.4 POU: prgExitPallet

```
5      mProcessInit := TRUE ;
6  ELSE
7      // Stage 1
8      Ref_ExitPallet . IsExitBlocked (mStage1Blocked => mStage1Blocked) ;
9      IF (mExitReadyToMoveIn OR mStage1Busy) AND NOT mStage1Done THEN
10     Ref_ExitPallet . ProcessStage1 (mStage1Busy := mStage1Busy ,
11                                     mStage1Done := mStage1Done ,
12                                     mStage1Blocked := mStage1Blocked) ;
13     END_IF
14
15     IF NOT mStage1Blocked AND NOT mStage1Done THEN
16         mCenterReadyToMoveOut := TRUE ;
17     ELSE mCenterReadyToMoveOut := FALSE ;
18     END_IF
19
20     IF mStage1Done AND NOT mStage1Blocked THEN
21         mProcessInit := FALSE ;
22     END_IF
23 END_IF
24
25
26
27
28
29
```

1.1.1.1.5 POU: prgMain

```
1  PROGRAM prgMain
2  VAR
3      // Machine objects initialization.
4      EM_WrapPallet : EM_PalletWrapper ;
5      EM_EnterPallet : EM_EnterPallet ;
6      EM_CenterPallet : EM_CenterPallet ;
7      EM_ExitPallet : EM_ExitPallet ;
8
9      Ref_WrapPallet : REFERENCE TO EM_PalletWrapper ;
10     Ref_EnterPallet : REFERENCE TO EM_EnterPallet ;
11     Ref_ExitPallet : REFERENCE TO EM_ExitPallet ;
12     Ref_CenterPallet : REFERENCE TO EM_CenterPallet ;
13
14     CM_FilmClamp : CM_FilmClamp ;
15     CM_FilmSticker : CM_FilmSticker ;
16     CM_PalletProtector : CM_PalletProtector ;
17     CM_FilmAplicator : CM_FilmAplicator ;
18     CM_PalletRotator : CM_PalletRotator ;
19     CM_EnterConveyor : CM_EnterConveyor ;
20     CM_ExitConveyor : CM_ExitConveyor ;
21     CM_CenterConveyor : CM_CenterConveyor ;
22
23     Ref_FilmAplicator : REFERENCE TO CM_FilmAplicator ;
24     Ref_PalletRotator : REFERENCE TO CM_PalletRotator ;
25     Ref_FilmClamp : REFERENCE TO CM_FilmClamp ;
26     Ref_FilmSticker : REFERENCE TO CM_FilmSticker ;
27     Ref_PalletProtector : REFERENCE TO CM_PalletProtector ;
28     Ref_EnterConveyor : REFERENCE TO CM_EnterConveyor ;
```

```
29     Ref_ExitConveyor : REFERENCE TO CM_ExitConveyor ;
30     Ref_CenterConveyor : REFERENCE TO CM_CenterConveyor ;
31
32     // Initialization flags.
33     mMachineInit : BOOL := FALSE ;
34     mUnitModesInit : BOOL := FALSE ;
35
36     // PackML.
37     ProductionMode : PACK_ML.UnitMode ;
38     ManualMode : PACK_ML.UnitMode ;
39     unitManager : PACK_ML.UnitModeManager ;
40
41     // Visualization.
42     bStartProcessButton : BOOL := FALSE ;
43     bStopProcessButton : BOOL := FALSE ;
44     sSelectedUnitModeName : STRING ;
45     intDesiredAplicatorModeNameIndex : INT := 1 ;
46     intDesiredUnitModeNameIndex : INT := 1 ;
47     bChangeModesNotAllowed : BOOL := TRUE ;
48
49     // Business logic markers.
50     mCenterReadyToMoveIn : BOOL := FALSE ;
51     mCenterReadyToMoveOut : BOOL := FALSE ;
52     mExitReadyToMoveIn : BOOL := FALSE ;
53     mEntryReadyToMoveIn : BOOL := FALSE ;
54     mWrapperReadyToProcess : BOOL := FALSE ;
55     mWrapPalletProcessDone : BOOL := FALSE ;
56 END_VAR
57
```

```
1     IF NOT mMachineInit THEN
2         // Control modules.
3         CM_FilmSticker ( ) ;
4         CM_FilmClamp ( ) ;
5         CM_PalletProtector ( ) ;
6         CM_FilmAplicator ( Ref_AplicatorAxis := IoConfig_Globals .
FilmAplicatorAxis ) ;
7         CM_PalletRotator ( Ref_RotatorAxis := IoConfig_Globals .
PalletRotatorAxis ) ;
8         CM_EnterConveyor ( Ref_EnterConveyorAxis := IoConfig_Globals .
EnterPalletAxis ) ;
9         CM_ExitConveyor ( Ref_ExitConveyorAxis := IoConfig_Globals .
ExitPalletAxis ) ;
10        CM_CenterConveyor ( Ref_CenterConveyorAxis := IoConfig_Globals .
CenterPalletAxis ) ;
11
12        // Control modules references.
13        Ref_FilmClamp REF= CM_FilmClamp ;
14        Ref_FilmSticker REF= CM_FilmSticker ;
15        Ref_PalletProtector REF= CM_PalletProtector ;
16        Ref_FilmAplicator REF= CM_FilmAplicator ;
17        Ref_PalletRotator REF= CM_PalletRotator ;
18        Ref_EnterConveyor REF= CM_EnterConveyor ;
19        Ref_ExitConveyor REF= CM_ExitConveyor ;
```

```

20     Ref_CenterConveyor REF= CM_CenterConveyor ;
21
22     // Equipment modules references
23     EM_WrapPallet ( Ref_FilmAplicator := Ref_FilmAplicator ,
24                   Ref_PalletRotator  := Ref_PalletRotator ,
25                   Ref_FilmClamp      := Ref_FilmClamp ,
26                   Ref_FilmSticker    := Ref_FilmSticker ,
27                   Ref_PalletProtector := Ref_PalletProtector ) ;
28     EM_EnterPallet ( Ref_EntryConveyor := Ref_EnterConveyor ) ;
29     EM_ExitPallet ( Ref_ExitConveyor := Ref_ExitConveyor ) ;
30     EM_CenterPallet ( Ref_CenterConveyor := Ref_CenterConveyor ) ;
31
32     // Equipment modules references
33     Ref_WrapPallet REF= EM_WrapPallet ;
34     Ref_EnterPallet REF= EM_EnterPallet ;
35     Ref_ExitPallet REF= EM_ExitPallet ;
36     Ref_CenterPallet REF= EM_CenterPallet ;
37
38     // Set default wrapping mode to 'Normal'.
39     Ref_WrapPallet . ChangeWrappingMode ( newAplicatorModeName :=
40     AplicatorModeNames . arrModeNames [ intDesiredAplicatorModeNameIndex ] ) ;
41     mMachineInit := TRUE ;
42     RETURN ;
43 END_IF
44
45 // Initialize Unit Modes PackML.
46 IF NOT mUnitModesInit THEN
47     ProductionMode (
48         sName := UnitModeNames . arrUnitModeNames [ 0 ] ,
49         dwSupportedStates := PACK_ML . State . All ,
50         dwAllowsLeavingFromStates := PACK_ML . State . Idle OR
51         PACK_ML . State . Stopped OR PACK_ML . State . Resetting ,
52         dwAllowsEnteringIntoStates := PACK_ML . State . Idle OR
53         PACK_ML . State . Stopped OR PACK_ML . State . Resetting ,
54         eInitialState := PACK_ML . State . Idle ,
55         xActive := TRUE
56     ) ;
57     ManualMode (
58         sName := UnitModeNames . arrUnitModeNames [ 1 ] ,
59         dwSupportedStates := PACK_ML . State . All - PACK_ML .
60         State . Holding - PACK_ML . State . UnHolding - PACK_ML . State . Held -
61         PACK_ML . State . Suspending - PACK_ML . State . UnSuspending - PACK_ML . State
62         . Suspended - PACK_ML . State . Completing - PACK_ML . State . Complete ,
63         dwAllowsLeavingFromStates := PACK_ML . State . Idle OR
64         PACK_ML . State . Stopped OR PACK_ML . State . Resetting ,
65         dwAllowsEnteringIntoStates := PACK_ML . State . Idle OR
66         PACK_ML . State . Stopped OR PACK_ML . State . Resetting ,
67         eInitialState := PACK_ML . State . Idle ,
68         xActive := FALSE
69     ) ;
70     unitManager . Register ( pum := ProductionMode ) ;
71     unitManager . Register ( pum := ManualMode ) ;
72     mUnitModesInit := TRUE ;
73     RETURN ;
74 END_IF

```

```
68      // Errors catching
69      IF EM_WrapPallet . Ref_FilmAplicator . PW_Error . PW_ErrorID <> PW_ERROR_ID .
        PW_NO_ERROR
70      OR EM_WrapPallet . Ref_PalletRotator . PW_Error . PW_ErrorID <>
        PW_ERROR_ID . PW_NO_ERROR
71      OR ( EM_WrapPallet . Ref_FilmClamp . PW_Error . PW_ErrorID <> PW_ERROR_ID .
        PW_NO_ERROR
72      AND EM_WrapPallet . Ref_FilmClamp . PW_Error . PW_ErrorID <>
        PW_ERROR_ID . PW_FILM_NOT_DETECTED_ERROR )
73      OR EM_WrapPallet . Ref_FilmSticker . PW_Error . PW_ErrorID <> PW_ERROR_ID
        . PW_NO_ERROR
74      OR EM_WrapPallet . Ref_PalletProtector . PW_Error . PW_ErrorID <>
        PW_ERROR_ID . PW_NO_ERROR
75      OR EM_EnterPallet . Ref_EntryConveyor . PW_Error . PW_ErrorID <>
        PW_ERROR_ID . PW_NO_ERROR
76      OR EM_ExitPallet . Ref_ExitConveyor . PW_Error . PW_ErrorID <> PW_ERROR_ID
        . PW_NO_ERROR
77      OR EM_CenterPallet . Ref_CenterConveyor . PW_Error . PW_ErrorID <>
        PW_ERROR_ID . PW_NO_ERROR THEN
78          unitManager . ActiveUnitMode . Abort ( ) ;

79      END_IF
80
81      IF mMachineInit AND mUnitModesInit THEN
82          // Catch stop button.
83          IF bStopProcessButton THEN
84              bStartProcessButton := FALSE ;
85              unitManager . ActiveUnitMode . Stop ( ) ;

86      END_IF
87
88      // Allow unit mode and wrapping mode changes.
89      IF unitManager . ActiveUnitMode . AllowsLeaving THEN
90          bChangeModesNotAllowed := FALSE ;
91      ELSE bChangeModesNotAllowed := TRUE ;
92      END_IF
93
94      IF NOT bChangeModesNotAllowed THEN
95          // Change Unit Mode
96          IF UnitModeNames . arrUnitModeNames [ intDesiredUnitModeNameIndex ] <>
            unitManager . ActiveUnitMode . Name THEN
97              IF UnitModeNames . arrUnitModeNames [ intDesiredUnitModeNameIndex ] =
            ProductionMode . Name THEN
98                  unitManager . SwitchUnitMode ( UnitModeNames . arrUnitModeNames [ 0 ]
99              ) ;
100              ELIF UnitModeNames . arrUnitModeNames [ intDesiredUnitModeNameIndex ]
            = ManualMode . Name THEN
101                  unitManager . SwitchUnitMode ( UnitModeNames . arrUnitModeNames [ 1 ]
102              ) ;
103          END_IF
104          END_IF
105          // Change wrapping mode
106          IF AplicatorModeNames . arrModeNames [ intDesiredAplicatorModeNameIndex ]
            <> EM_WrapPallet . CurrentAplicatorMode . sModeName THEN
107              EM_WrapPallet . ChangeWrappingMode ( newAplicatorModeName :=
            AplicatorModeNames . arrModeNames [ intDesiredAplicatorModeNameIndex ] ) ;
```

```
106         END_IF
107     END_IF
108
109     // PackMl sequence
110     CASE unitManager . ActiveUnitMode . CurrentState OF
111         PACK_ML . State . Stopped :
112             IF NOT bStopProcessButton AND bStartProcessButton THEN
113                 unitManager . ActiveUnitMode . Reset ( ) ;
114
115             END_IF
116
117         PACK_ML . State . Resetting :
118             IF EM_WrapPallet . ResetFaults ( )
119                 AND EM_EnterPallet . ResetFaults ( )
120                 AND EM_CenterPallet . ResetFaults ( )
121                 AND EM_ExitPallet . ResetFaults ( ) THEN
122                 bStopProcessButton := FALSE ;
123                 unitManager . ActiveUnitMode . ActingStateCompleted ( ) ;
124
125             ELSE RETURN ;
126             END_IF
127
128         PACK_ML . State . Idle :
129             IF bStartProcessButton THEN
130                 IF EM_EnterPallet . CyclePreparation ( )
131                     AND EM_CenterPallet . CyclePreparation ( )
132                     AND EM_ExitPallet . CyclePreparation ( )
133                     AND EM_WrapPallet . CyclePreparation ( ) THEN
134                     unitManager . ActiveUnitMode . Start ( ) ;
135
136                 ELSE RETURN ;
137                 END_IF
138             END_IF
139
140         PACK_ML . State . Starting :
141             IF EM_WrapPallet . Ref_FilmClamp . PW_Error . PW_ErrorID = PW_ERROR_ID
142             . PW_FILM_NOT_DETECTED_ERROR THEN
143                 unitManager . ActiveUnitMode . Hold ( ) ;
144             ELSE
145                 unitManager . ActiveUnitMode . ActingStateCompleted ( ) ;
146             END_IF
147
148         PACK_ML . State . Execute :
149             // The wrapping film run-out.
150             IF EM_WrapPallet . Ref_FilmClamp . PW_Error . PW_ErrorID = PW_ERROR_ID
151             . PW_FILM_NOT_DETECTED_ERROR THEN
152                 unitManager . ActiveUnitMode . Hold ( ) ;
153             END_IF
154             // Business logic
155             prgCenterPallet ( Ref_CenterPallet := Ref_CenterPallet ,
156                             mCenterReadyToMoveIn := mCenterReadyToMoveIn ,
157                             mCenterReadyToMoveOut := mCenterReadyToMoveOut ,
158                             mWrapPalletProcessDone := mWrapPalletProcessDone ,
159                             mEntryReadyToMoveIn => mEntryReadyToMoveIn ,
160                             mExitReadyToMoveIn => mExitReadyToMoveIn ,
161                             mWrapperReadyToProcess => mWrapperReadyToProcess ) ;
```

```
157
158     prgWrapPallet ( Ref_WrapPallet := Ref_WrapPallet ,
159                     mWrapperReadyToProcess := mWrapperReadyToProcess ,
160                     mWrapPalletProcessDone => mWrapPalletProcessDone ) ;
161
162     prgExitPallet ( Ref_ExitPallet := Ref_ExitPallet ,
163                    mExitReadyToMoveIn := mExitReadyToMoveIn ,
164                    mCenterReadyToMoveOut => mCenterReadyToMoveOut ) ;
165
166     prgEnterPallet ( Ref_EnterPallet := Ref_EnterPallet ,
167                     mEntryReadyToMoveIn := mEntryReadyToMoveIn ,
168                     mCenterReadyToMoveIn => mCenterReadyToMoveIn ) ;
169
170     PACK_ML . State . Completing :
171         unitManager . ActiveUnitMode . ActingStateCompleted ( ) ;
172
173     PACK_ML . State . Complete :
174         unitManager . ActiveUnitMode . Reset ( ) ;
175
176     PACK_ML . State . Holding :
177         IF EM_WrapPallet . Halt ( )
178             AND EM_EnterPallet . Halt ( )
179             AND EM_CenterPallet . Halt ( )
180             AND EM_ExitPallet . Halt ( ) THEN
181             unitManager . ActiveUnitMode . ActingStateCompleted ( ) ;
182         ELSE RETURN ;
183         END_IF
184
185     PACK_ML . State . Held :
186         IF EM_WrapPallet . ProvideFilm ( ) THEN
187             unitManager . ActiveUnitMode . Unhold ( ) ;
188         ELSE RETURN ;
189         END_IF
190
191     PACK_ML . State . UnHolding :
192         unitManager . ActiveUnitMode . ActingStateCompleted ( ) ;
193
194     { * Functionality NOT implemented yet
195     PACK_ML.State.Suspending:
196         unitManager.ActiveUnitMode.ActingStateCompleted();
197     *}
198     { * Functionality NOT implemented yet
199     PACK_ML.State.Suspended:
200         unitManager.ActiveUnitMode.UnSuspend();
201     *}
202     { * Functionality NOT implemented yet
203     PACK_ML.State.UnSuspending:
204         unitManager.ActiveUnitMode.ActingStateCompleted();
205     *}
206
207     PACK_ML . State . Aborting :
208         IF EM_WrapPallet . EmergencyStop ( )
209             AND EM_EnterPallet . EmergencyStop ( )
210             AND EM_ExitPallet . EmergencyStop ( )
211             AND EM_CenterPallet . EmergencyStop ( ) THEN
212             unitManager . ActiveUnitMode . ActingStateCompleted ( ) ;
```


1.1.1.1.5 POU: prgMain

```
213         ELSE RETURN ;
214     END_IF
215
216     PACK_ML . State . Aborted :
217         unitManager . ActiveUnitMode . Clear ( ) ;
218
219     PACK_ML . State . Clearing :
220         unitManager . ActiveUnitMode . ActingStateCompleted ( ) ;
221
222     PACK_ML . State . Stopping :
223         IF EM_WrapPallet . Halt ( )
224             AND EM_EnterPallet . Halt ( )
225             AND EM_CenterPallet . Halt ( )
226             AND EM_ExitPallet . Halt ( ) THEN
227             unitManager . ActiveUnitMode . ActingStateCompleted ( ) ;
228             ELSE RETURN ;
229         END_IF
230     END_CASE
231 END_IF
232
233
```

1.1.1.1.6 POU: prgWrapPallet

```
1  PROGRAM prgWrapPallet
2  VAR_INPUT
3      Ref_WrapPallet : REFERENCE TO EM_PalletWrapper ;
4      mWrapperReadyToProcess : BOOL ;
5  END_VAR
6  VAR
7      mProcessInit : BOOL := FALSE ;
8      mStage1Done : BOOL ;
9      mStage1Interrupted : BOOL ;
10     mStage2Done : BOOL ;
11     mStage3Done : BOOL ;
12     mStage4Done : BOOL ;
13
14     lrPalletHeight : LREAL ;
15     usintCurrentLayerNumber : USINT ;
16     usintCurrentWrap : USINT ;
17
18     mExtendProtectorDone : BOOL ;
19     mReleaseProtectorDone : BOOL ;
20     mCloseClampDone : BOOL ;
21     mReleaseClampDone : BOOL ;
22     mStickerAttachDone : BOOL ;
23     mStickerDetachDone : BOOL ;
24     mPutLayerDone : BOOL ;
25     mCurrentLayerDone : BOOL ;
26
27  END_VAR
28  VAR_OUTPUT
29      mWrapPalletProcessDone : BOOL ;
30  END_VAR
31
```

```

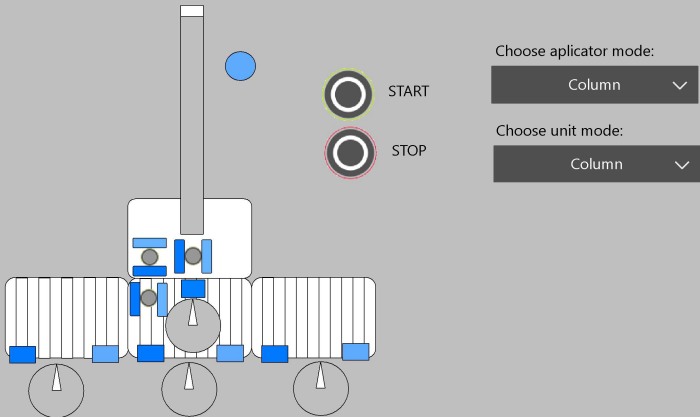
1  IF NOT mProcessInit THEN
2      mWrapPalletProcessDone := FALSE ;
3      mStage1Done := FALSE ;
4      mStage1Interrupted := FALSE ;
5      mStage2Done := FALSE ;
6      mStage3Done := FALSE ;
7      mStage4Done := FALSE ;
8      lrPalletHeight := 1 ;
9      usintCurrentWrap := 1 ;
10     usintCurrentLayerNumber := 1 ;
11     mExtendProtectorDone := FALSE ;
12     mReleaseProtectorDone := FALSE ;
13     mCloseClampDone := FALSE ;
14     mReleaseClampDone := FALSE ;
15     mStickerAttachDone := FALSE ;
16     mStickerDetachDone := FALSE ;
17     mPutLayerDone := FALSE ;
18     mCurrentLayerDone := FALSE ;
19     mStage1Interrupted := FALSE ;
20
21     mProcessInit := TRUE ;
22 ELSE
23     IF NOT mWrapperReadyToProcess AND mWrapPalletProcessDone THEN
24         mProcessInit := FALSE ;
25     END_IF
26
27     IF ( mStage1Done AND mStage4Done AND NOT mStage2Done AND NOT
28 mStage3Done )
29         XOR ( mStage1Interrupted AND mStage2Done AND mStage3Done AND
30 mStage4Done ) THEN
31         mWrapPalletProcessDone := TRUE ;
32     ELSE mWrapPalletProcessDone := FALSE ;
33     END_IF
34
35     //STAGE 1
36     IF mWrapperReadyToProcess
37         AND NOT mStage1Done
38         AND NOT mStage1Interrupted
39         AND NOT mStage2Done
40         AND NOT mStage3Done
41         AND NOT mStage4Done THEN
42         Ref_WrapPallet . ProcessStage1 ( usintCurrentWrap := usintCurrentWrap
43
44 ,
45     usintCurrentLayerNumber ,
46     usintCurrentLayerNumber ,
47     mExtendProtectorDone ,
48     mReleaseProtectorDone ,
49     mReleaseProtectorDone ,
50     mCloseClampDone := mCloseClampDone ,
51     mReleaseClampDone := mReleaseClampDone ,
52     mStickerAttachDone :=
53     mStickerAttachDone ,
54     mStickerDetachDone :=
55     mStickerDetachDone ,
56     mPutLayerDone := mPutLayerDone ,
57     mStage1Done := mStage1Done ,

```

```

50                                     mStage1Interrupted := mStage1Interrupted ,
51                                     mCurrentLayerDone := mCurrentLayerDone ,
52                                     lrPalletHeight := lrPalletHeight ) ;
53     END_IF
54     //STAGE 2
55     IF mWrapperReadyToProcess
56         AND mStage1Interrupted
57         AND NOT mStage1Done
58         AND NOT mStage2Done
59         AND NOT mStage3Done
60         AND NOT mStage4Done THEN
61         Ref_WrapPallet . ProcessStage2 ( usintCurrentLayerNumber :=
usintCurrentLayerNumber ,
62                                     usintCurrentWrap := usintCurrentWrap ,
63                                     mStage2Done => mStage2Done ) ;
64     END_IF
65     //STAGE 3
66     IF mWrapperReadyToProcess
67         AND mStage2Done
68         AND NOT mStage1Done
69         AND NOT mStage3Done
70         AND NOT mStage4Done THEN
71         Ref_WrapPallet . ProcessStage3 ( usintCurrentLayerNumber :=
usintCurrentLayerNumber ,
72                                     mStage3Done := mStage3Done ,
73                                     lrPalletHeight := lrPalletHeight ) ;
74     END_IF
75     //STAGE 4
76     IF mWrapperReadyToProcess
77         AND NOT mStage4Done
78         AND ( ( mStage2Done AND mStage3Done ) XOR ( NOT mStage1Interrupted AND
mStage1Done ) ) THEN
79         Ref_WrapPallet . ProcessStage4 ( lrPalletHeight := lrPalletHeight ,
80                                     mStage1Interrupted := mStage1Interrupted ,
81                                     usintCurrentWrap := usintCurrentWrap ,
82                                     usintCurrentLayerNumber :=
usintCurrentLayerNumber ,
83                                     mExtendProtectorDone :=
mExtendProtectorDone ,
84                                     mReleaseProtectorDone :=
mReleaseProtectorDone ,
85                                     mCloseClampDone := mCloseClampDone ,
86                                     mReleaseClampDone := mReleaseClampDone ,
87                                     mStickerAttachDone :=
mStickerAttachDone ,
88                                     mStickerDetachDone :=
mStickerDetachDone ,
89                                     mPutLayerDone := mPutLayerDone ,
90                                     mStage4Done := mStage4Done ,
91                                     mCurrentLayerDone := mCurrentLayerDone )
92     ;
93     END_IF
94     END_IF

```



The visualization shows a robotic arm assembly line. The arm is positioned over a conveyor belt with several blue blocks. To the right of the arm are two circular buttons labeled 'START' and 'STOP'. Further right are two dropdown menus labeled 'Choose applicator mode:' and 'Choose unit mode:', both currently set to 'Column'.

General

Visualization size algorithm version: Respecting scrollbar location

Background

Use background color: True
Background color: -4144960

Interface

vAR_IN_OUT

END_VAR

Visualization Element List

- Rounded Rectangle Id: 0
 - Element name: GenElemInst_2
 - Tab Order: default
 - Static optimized: True
 - Type of element: Rounded Rectangle
 - Position
 - X: 272
 - Y: 1025
 - Width: 164

Height: 106
Angle: 0
Radius setting
 Radius: Relative to the element size
 Value: 5
Center
 X: 354
 Y: 1078
Colors
 Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
Use gradient color: False
Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
Absolute movement
 Use REAL values: False
Font variables
 Size: , <pt>
Color variables
 Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...
Tap
 Tap FALSE: False

- Rounded Rectangle Id: 3
 - Element name: GenElemInst_3
 - Tab Order: default
 - Static optimized: True
 - Type of element: Rounded Rectangle
 - Position
 - X: 435
 - Y: 1025
 - Width: 164
 - Height: 106
 - Angle: 0
 - Radius setting
 - Radius: Explicit
 - Value: 15
 - Center
 - X: 517
 - Y: 1078
 - Colors
 - Normal state
 - Frame color
 - Transparency: 255
 - Fill color
 - Transparency: 255
 - Alarm state
 - Frame color
 - Transparency: 255
 - Fill color
 - Transparency: 255
 - Use gradient color: False
 - Gradient setting
 - Gradient
 - Color1: Color [Black]
 - Color2: Color [White]
 - Brightnesscolor: Color [Black]
 - Appearance
 - Line width: 1
 - Fill attributes: Filled
 - Line style: Solid
 - Text properties
 - Horizontal alignment: Centered
 - Vertical alignment: Centered
 - Text format: Default
 - Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 - Font color
 - Transparency: 255
 - Absolute movement
 - Use REAL values: False
 - Font variables
 - Size: , <pt>
 - Color variables
 - Toggle color: <toggle/tap variable>
 - Animation duration: 0
 - Input configuration
 - OnDialogClosed: Configure...

OnClick: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 5
Element name: GenElemInst_4
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle
Position
X: 599
Y: 1025
Width: 164
Height: 106
Angle: 0
Radius setting
Radius: Relative to the element size
Value: 5
Center
X: 681
Y: 1078
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255

Absolute movement
 Use REAL values: False
Font variables
 Size: , <pt>
Color variables
 Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...
Tap
 Tap FALSE: False
Frame Id: 21
 Element name: GenElemInst_15
 Type of element: Frame -> SM3_Basic.RotDrive
 Tab Order: default
 Static optimized: True
 Clipping: False
 Show frame: No frame
 Scaling type: Anisotropic
 Deactivate the background drawing: False
 Swiping behavior: Not swipable
 Swiping preview: True
References
 SM3_Basic.RotDrive
 m_Input_AXISREF: EnterPalletAxis
Position
 X: 304
 Y: 1139
 Width: 73
 Height: 71
Center
 X: 340
 Y: 1174
Colors
 Color
 Transparency: 255
 Alarm color
 Transparency: 255
Appearance
 Line width: 1
 Line style: Solid
Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color

Transparency: 255
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
Frame Id: 23
Element name: GenElemInst_16
Type of element: Frame -> SM3_Basic.RotDrive
Tab Order: default
Static optimized: True
Clipping: False
Show frame: No frame
Scaling type: Anisotropic
Deactivate the background drawing: False
Swiping behavior: Not swipable
Swiping preview: True
References
SM3_Basic.RotDrive
m_Input_AXISREF: CenterPalletAxis
Position
X: 480
Y: 1137
Width: 73
Height: 71
Center
X: 516
Y: 1172
Colors
Color
Transparency: 255
Alarm color
Transparency: 255
Appearance
Line width: 1
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255

Font variables

Size: , <pt>

Color variables

Toggle color: <toggle/tap variable>

Animation duration: 0

Input configuration

OnDialogClosed: Configure...

OnMouseClicked: Configure...

OnMouseDown: Configure...

OnMouseEnter: Configure...

OnMouseLeave: Configure...

OnMouseMove: Configure...

OnMouseUp: Configure...

OnValueChanged: Configure...

Tap

Tap FALSE: False

Frame Id: 25

Element name: GenElemInst_17

Type of element: Frame -> SM3_Basic.RotDrive

Tab Order: default

Static optimized: True

Clipping: False

Show frame: No frame

Scaling type: Anisotropic

Deactivate the background drawing: False

Swiping behavior: Not swipable

Swiping preview: True

References

SM3_Basic.RotDrive

m_Input_AXISREF: ExitPalletAxis

Position

X: 654

Y: 1136

Width: 73

Height: 71

Center

X: 690

Y: 1171

Colors

Color

Transparency: 255

Alarm color

Transparency: 255

Appearance

Line width: 1

Line style: Solid

Text properties

Horizontal alignment: Centered

Vertical alignment: Centered

Text format: Default

Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]

Font color

Transparency: 255

Font variables

Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 29
Element name: GenElemInst_19
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle
Position
X: 435
Y: 920
Width: 164
Height: 106
Angle: 0
Radius setting
Radius: Explicit
Value: 10
Center
X: 517
Y: 973
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Text properties

Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
Frame Id: 37
Element name: GenElemInst_24
Type of element: Frame -> SM3_Basic.LinDrive_V
Tab Order: default
Static optimized: False
Clipping: False
Show frame: No frame
Scaling type: Anisotropic
Deactivate the background drawing: False
Swiping behavior: Not swipable
Swiping preview: True
References
SM3_Basic.LinDrive_V
m_Input_AXISREF: FilmAplicatorAxis
Position
X: 505
Y: 664
Width: 30
Height: 304
Center
X: 520
Y: 817
Colors
Color
Transparency: 255
Alarm color
Transparency: 255
Appearance
Line width: 1
Line style: Solid

Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Interior rotation: 180
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False

● Lamp1 Id: 38
Element name: GenElemInst_25
Type of element: Lamp1
Tab Order: default
Static optimized: False
Position
X: 509
Y: 984
Width: 26
Height: 26
Variable: prgMain.EM_WrapPallet.Ref_FilmClamp.bExtensionValve
Image settings
Transparent: False
Transparent color: Black
Isotropic type: Isotropic
Horizontal alignment: Left
Vertical alignment: Top
Center
X: 522
Y: 988
Animation duration: 0
Background
Image: Green

● Lamp1 Id: 40
Element name: GenElemInst_26
Type of element: Lamp1
Tab Order: default
Static optimized: False
Position

X: 452
Y: 986
Width: 25
Height: 27
Variable: prgMain.EM_WrapPallet.Ref_FilmSticker.bExtensionValve
Image settings
 Transparent: False
 Transparent color: Black
 Isotropic type: Isotropic
 Horizontal alignment: Left
 Vertical alignment: Top
Center
 X: 172
 Y: -147
Animation duration: 0
Background
 Image: Green
■ Rounded Rectangle Id: 48
 Element name: GenElemInst_50
 Tab Order: default
 Static optimized: False
 Type of element: Rounded Rectangle
Position
 X: 442
 Y: 1011
 Width: 44
 Height: 13
 Angle: 179
Radius setting
 Radius: Relative to the element size
 Value: 5
Center
 X: 464
 Y: 1017
Colors
 Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
Use gradient color: False
Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
Appearance
 Line width: 1
 Fill attributes: Filled

Line style: Solid

Text properties

- Horizontal alignment: Centered
- Vertical alignment: Centered
- Text format: Default
- Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
- Font color
- Transparency: 255

Absolute movement

- Use REAL values: False

Font variables

- Size: , <pt>

Color variables

- Toggle color: <toggle/tap variable>

Animation duration: 0

Input configuration

- OnDialogClosed: Configure...
- OnMouseClicked: Configure...
- OnMouseDown: Configure...
- OnMouseEnter: Configure...
- OnMouseLeave: Configure...
- OnMouseMove: Configure...
- OnMouseUp: Configure...
- OnValueChanged: Configure...

Toggle

- Variable: prgMain.EM_WrapPallet.Ref_FilmSticker.bRetractionSensor

Tap

- Tap FALSE: False

■ Rounded Rectangle Id: 50

Element name: GenElemInst_49

Tab Order: default

Static optimized: False

Type of element: Rounded Rectangle

Position

- X: 442
- Y: 973
- Width: 44
- Height: 13
- Angle: 0

Radius setting

- Radius: Relative to the element size
- Value: 5

Center

- X: 464
- Y: 979

Colors

Normal state

- Frame color
- Transparency: 255
- Fill color
- Transparency: 255

Alarm state

- Frame color
- Transparency: 255

Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Toggle
Variable: prgMain.EM_WrapPallet.Ref_FilmSticker.bExtensionSensor
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 54
Element name: GenElemInst_52
Tab Order: default
Static optimized: False
Type of element: Rounded Rectangle
Position
X: 517
Y: 991
Width: 44
Height: 13
Angle: 270
Radius setting
Radius: Relative to the element size
Value: 5
Center

X: 539
Y: 997
Colors
 Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
Use gradient color: False
Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
Absolute movement
 Use REAL values: False
Font variables
 Size: , <pt>
Color variables
 Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...
 Toggle
 Variable: prgMain.EM_WrapPallet.Ref_FilmClamp.bExtensionSensor
 Tap
 Tap FALSE: False
■ Rounded Rectangle Id: 62
 Element name: GenElemInst_51
 Tab Order: default
 Static optimized: False

Type of element: Rounded Rectangle

Position

X: 481

Y: 991

Width: 44

Height: 13

Angle: 270

Radius setting

Radius: Relative to the element size

Value: 5

Center

X: 503

Y: 997

Colors

Normal state

Frame color

Transparency: 255

Fill color

Transparency: 255

Alarm state

Frame color

Transparency: 255

Fill color

Transparency: 255

Use gradient color: False

Gradient setting

Gradient

Color1: Color [Black]

Color2: Color [White]

Brightnesscolor: Color [Black]

Appearance

Line width: 1

Fill attributes: Filled

Line style: Solid

Text properties

Horizontal alignment: Centered

Vertical alignment: Centered

Text format: Default

Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]

Font color

Transparency: 255

Absolute movement

Use REAL values: False

Font variables

Size: , <pt>

Color variables

Toggle color: <toggle/tap variable>

Animation duration: 0

Input configuration

OnDialogClosed: Configure...

OnMouseClicked: Configure...

OnMouseDown: Configure...

OnMouseEnter: Configure...

OnMouseLeave: Configure...

OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Toggle
 Variable: prgMain.EM_WrapPallet.Ref_FilmClamp.bRetractionSensor
Tap
 Tap FALSE: False
●Ellipse Id: 78
 Element name: GenElemInst_107
 Tab Order: default
 Static optimized: False
 Type of element: Ellipse
 Position
 X: 564
 Y: 725
 Width: 40
 Height: 38
 Angle: 0
 Radius setting
 Radius: From style
 Value: 5
 Center
 X: 584
 Y: 744
 Colors
 Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Use gradient color: False
 Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
 Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
 Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
 Absolute movement
 Use REAL values: False

Font variables

Size: , <pt>

Color variables

Toggle color: <toggle/tap variable>

Animation duration: 0

Input configuration

OnDialogClosed: Configure...

OnMouseClicked: Configure...

OnMouseDown: Configure...

OnMouseEnter: Configure...

OnMouseLeave: Configure...

OnMouseMove: Configure...

OnMouseUp: Configure...

OnValueChanged: Configure...

Toggle

Variable: prgMain.EM_WrapPallet.Ref_FilmAplicator.HeightSensor

Tap

Tap FALSE: False

■ Rounded Rectangle Id: 80

Element name: GenElemInst_108

Tab Order: default

Static optimized: True

Type of element: Rounded Rectangle

Position

X: 241

Y: 1071

Width: 106

Height: 15

Angle: 270

Radius setting

Radius: From style

Value: 5

Center

X: 294

Y: 1078

Colors

Normal state

Frame color

Transparency: 255

Fill color

Transparency: 255

Alarm state

Frame color

Transparency: 255

Fill color

Transparency: 255

Use gradient color: False

Gradient setting

Gradient

Color1: Color [Black]

Color2: Color [White]

Brightnesscolor: Color [Black]

Appearance

Line width: 1

Fill attributes: Filled
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
■Rectangle Id: 65
Element name: GenElemInst_40
Tab Order: default
Static optimized: False
Type of element: Rectangle
Position
X: 278
Y: 1116
Width: 35
Height: 22
Angle: 0
Radius setting
Radius: From style
Value: 5
Center
X: 295
Y: 1127
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color

Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Toggle
Variable: prgMain.EM_EnterPallet.bDiffuseEntrySensor
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 82
Element name: GenElemInst_53
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle
Position
X: 301
Y: 1071
Width: 106
Height: 15
Angle: 270
Radius setting
Radius: From style
Value: 5
Center
X: 354

Y: 1078
Colors
 Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
Use gradient color: False
Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
Absolute movement
 Use REAL values: False
Font variables
 Size: , <pt>
Color variables
 Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...
Tap
 Tap FALSE: False
■ Rounded Rectangle Id: 84
 Element name: GenElemInst_54
 Tab Order: default
 Static optimized: True
 Type of element: Rounded Rectangle
Position
 X: 271

Y: 1071
Width: 106
Height: 15
Angle: 270
Radius setting
 Radius: From style
 Value: 5
Center
 X: 324
 Y: 1078
Colors
 Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
Use gradient color: False
Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
Absolute movement
 Use REAL values: False
Font variables
 Size: , <pt>
Color variables
 Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...

Tap
Tap FALSE: False

■ Rounded Rectangle Id: 86
Element name: GenElemInst_55
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle

Position
X: 361
Y: 1071
Width: 106
Height: 15
Angle: 270

Radius setting
Radius: From style
Value: 5

Center
X: 414
Y: 1078

Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255

Use gradient color: False

Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]

Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid

Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255

Absolute movement
Use REAL values: False

Font variables
Size: , <pt>

Color variables
Toggle color: <toggle/tap variable>

Animation duration: 0

Input configuration

OnDialogClosed: Configure...

OnMouseClicked: Configure...

OnMouseDown: Configure...

OnMouseEnter: Configure...

OnMouseLeave: Configure...

OnMouseMove: Configure...

OnMouseUp: Configure...

OnValueChanged: Configure...

Tap

Tap FALSE: False

■ Rounded Rectangle Id: 88

Element name: GenElemInst_56

Tab Order: default

Static optimized: True

Type of element: Rounded Rectangle

Position

X: 331

Y: 1071

Width: 106

Height: 15

Angle: 270

Radius setting

Radius: From style

Value: 5

Center

X: 384

Y: 1078

Colors

Normal state

Frame color

Transparency: 255

Fill color

Transparency: 255

Alarm state

Frame color

Transparency: 255

Fill color

Transparency: 255

Use gradient color: False

Gradient setting

Gradient

Color1: Color [Black]

Color2: Color [White]

Brightnesscolor: Color [Black]

Appearance

Line width: 1

Fill attributes: Filled

Line style: Solid

Text properties

Horizontal alignment: Centered

Vertical alignment: Centered

Text format: Default

Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]

Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 90
Element name: GenElemInst_57
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle
Position
X: 525
Y: 1072
Width: 106
Height: 15
Angle: 270
Radius setting
Radius: From style
Value: 5
Center
X: 578
Y: 1079
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]

Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 92
Element name: GenElemInst_58
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle
Position
X: 405
Y: 1072
Width: 106
Height: 15
Angle: 270
Radius setting
Radius: From style
Value: 5
Center
X: 458
Y: 1079
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color

Transparency: 255
Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 94
Element name: GenElemInst_59
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle
Position
X: 466
Y: 1072
Width: 105
Height: 15
Angle: 270
Radius setting
Radius: From style
Value: 5
Center
X: 518

Y: 1079

Colors

- Normal state
 - Frame color
 - Transparency: 255
 - Fill color
 - Transparency: 255
- Alarm state
 - Frame color
 - Transparency: 255
 - Fill color
 - Transparency: 255

Use gradient color: False

Gradient setting

- Gradient
 - Color1: Color [Black]
 - Color2: Color [White]
 - Brightnesscolor: Color [Black]

Appearance

- Line width: 1
- Fill attributes: Filled
- Line style: Solid

Text properties

- Horizontal alignment: Centered
- Vertical alignment: Centered
- Text format: Default
- Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
- Font color
 - Transparency: 255

Absolute movement

- Use REAL values: False

Font variables

- Size: , <pt>

Color variables

- Toggle color: <toggle/tap variable>

Animation duration: 0

Input configuration

- OnDialogClosed: Configure...
- OnMouseClicked: Configure...
- OnMouseDown: Configure...
- OnMouseEnter: Configure...
- OnMouseLeave: Configure...
- OnMouseMove: Configure...
- OnMouseUp: Configure...
- OnValueChanged: Configure...

Tap

- Tap FALSE: False

■ Rounded Rectangle Id: 96

- Element name: GenElemInst_60
- Tab Order: default
- Static optimized: True
- Type of element: Rounded Rectangle

Position

- X: 437

Y: 1072
Width: 105
Height: 15
Angle: 270
Radius setting
 Radius: From style
 Value: 5
Center
 X: 489
 Y: 1079
Colors
 Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
Use gradient color: False
Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
Absolute movement
 Use REAL values: False
Font variables
 Size: , <pt>
Color variables
 Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...

Tap
Tap FALSE: False

■ Rounded Rectangle Id: 98
Element name: GenElemInst_61
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle

Position
X: 496
Y: 1072
Width: 105
Height: 15
Angle: 270

Radius setting
Radius: From style
Value: 5

Center
X: 548
Y: 1079

Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255

Use gradient color: False

Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]

Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid

Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255

Absolute movement
Use REAL values: False

Font variables
Size: , <pt>

Color variables
Toggle color: <toggle/tap variable>

Animation duration: 0

Input configuration

OnDialogClosed: Configure...

OnMouseClicked: Configure...

OnMouseDown: Configure...

OnMouseEnter: Configure...

OnMouseLeave: Configure...

OnMouseMove: Configure...

OnMouseUp: Configure...

OnValueChanged: Configure...

Tap

Tap FALSE: False

■Rectangle Id: 67

Element name: GenElemInst_41

Tab Order: default

Static optimized: False

Type of element: Rectangle

Position

X: 388

Y: 1115

Width: 35

Height: 22

Angle: 0

Radius setting

Radius: From style

Value: 5

Center

X: 405

Y: 1126

Colors

Normal state

Frame color

Transparency: 255

Fill color

Transparency: 255

Alarm state

Frame color

Transparency: 255

Fill color

Transparency: 255

Use gradient color: False

Gradient setting

Gradient

Color1: Color [Black]

Color2: Color [White]

Brightnesscolor: Color [Black]

Appearance

Line width: 1

Fill attributes: Filled

Line style: Solid

Text properties

Horizontal alignment: Centered

Vertical alignment: Centered

Text format: Default

Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]

Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Toggle
Variable: prgMain.EM_EnterPallet.bDiffuseExitSensor
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 120
Element name: GenElemInst_72
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle
Position
X: 567
Y: 1071
Width: 106
Height: 15
Angle: 270
Radius setting
Radius: From style
Value: 5
Center
X: 620
Y: 1078
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]

Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 122
Element name: GenElemInst_73
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle
Position
X: 687
Y: 1071
Width: 106
Height: 15
Angle: 270
Radius setting
Radius: From style
Value: 5
Center
X: 740
Y: 1078
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255

Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 124
Element name: GenElemInst_74
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle
Position
X: 627
Y: 1071
Width: 106
Height: 15
Angle: 270
Radius setting
Radius: From style
Value: 5

Center
X: 680
Y: 1078
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 126
Element name: GenElemInst_75
Tab Order: default
Static optimized: True
Type of element: Rounded Rectangle

Position
X: 597
Y: 1071
Width: 106
Height: 15
Angle: 270
Radius setting
Radius: From style
Value: 5
Center
X: 650
Y: 1078
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...

OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
 Tap FALSE: False
■ Rounded Rectangle Id: 128
 Element name: GenElemInst_76
 Tab Order: default
 Static optimized: True
 Type of element: Rounded Rectangle
 Position
 X: 657
 Y: 1071
 Width: 106
 Height: 15
 Angle: 270
 Radius setting
 Radius: From style
 Value: 5
 Center
 X: 710
 Y: 1078
 Colors
 Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Use gradient color: False
 Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
 Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
 Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
 Absolute movement
 Use REAL values: False
 Font variables
 Size: , <pt>
 Color variables

Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...
Tap
 Tap FALSE: False
■ Rectangle Id: 71
 Element name: GenElemInst_43
 Tab Order: default
 Static optimized: False
 Type of element: Rectangle
 Position
 X: 553
 Y: 1114
 Width: 35
 Height: 22
 Angle: 0
 Radius setting
 Radius: From style
 Value: 5
 Center
 X: 570
 Y: 1125
 Colors
 Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Use gradient color: False
 Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
 Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
 Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered

Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Toggle
Variable: prgMain.EM_CenterPallet.bDiffuseExitSensor
Tap
Tap FALSE: False
● Lamp1 Id: 43
Element name: GenElemInst_28
Type of element: Lamp1
Tab Order: default
Static optimized: False
Position
X: 451
Y: 1040
Width: 25
Height: 29
Variable: prgMain.EM_WrapPallet.Ref_PalletProtector.bExtensionValve
Image settings
Transparent: False
Transparent color: Black
Isotropic type: Isotropic
Horizontal alignment: Left
Vertical alignment: Top
Center
X: 470
Y: 1058
Animation duration: 0
Background
Image: Green
■ Rounded Rectangle Id: 56
Element name: GenElemInst_47
Tab Order: default
Static optimized: False
Type of element: Rounded Rectangle
Position
X: 458

Y: 1048
Width: 44
Height: 13
Angle: 270
Radius setting
 Radius: Relative to the element size
 Value: 5
Center
 X: 480
 Y: 1054
Colors
 Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
Use gradient color: False
Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
Absolute movement
 Use REAL values: False
Font variables
 Size: , <pt>
Color variables
 Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...

Toggle
Variable: prgMain.EM_WrapPallet.Ref_PalletProtector.bExtensionSensor
Tap
Tap FALSE: False
■ Rounded Rectangle Id: 58
Element name: GenElemInst_46
Tab Order: default
Static optimized: False
Type of element: Rounded Rectangle
Position
X: 422
Y: 1047
Width: 44
Height: 13
Angle: 270
Radius setting
Radius: Relative to the element size
Value: 5
Center
X: 444
Y: 1053
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables

Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...
Toggle
 Variable: prgMain.EM_WrapPallet.Ref_PalletProtector.bRetractionSensor
Tap
 Tap FALSE: False
▣ Frame Id: 60
 Element name: GenElemInst_38
 Type of element: Frame -> SM3_Basic.RotDrive
 Tab Order: default
 Static optimized: True
 Clipping: False
 Show frame: No frame
 Scaling type: Anisotropic
 Deactivate the background drawing: False
 Swiping behavior: Not swipable
 Swiping preview: True
References
 SM3_Basic.RotDrive
 m_Input_AXISREF: PalletRotatorAxis
Position
 X: 485
 Y: 1053
 Width: 73
 Height: 71
Center
 X: 521
 Y: 1088
Colors
 Color
 Transparency: 255
 Alarm color
 Transparency: 255
Appearance
 Line width: 1
 Line style: Solid
Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
Font variables
 Size: , <pt>

Color variables

Toggle color: <toggle/tap variable>

Animation duration: 0

Input configuration

OnDialogClosed: Configure...

OnMouseClicked: Configure...

OnMouseDown: Configure...

OnMouseEnter: Configure...

OnMouseLeave: Configure...

OnMouseMove: Configure...

OnMouseUp: Configure...

OnValueChanged: Configure...

Tap

Tap FALSE: False

■ Rounded Rectangle Id: 64

Element name: GenElemInst_48

Tab Order: default

Static optimized: False

Type of element: Rounded Rectangle

Position

X: 510

Y: 1025

Width: 23

Height: 31

Angle: 270

Radius setting

Radius: From style

Value: 5

Center

X: 521

Y: 1040

Colors

Normal state

Frame color

Transparency: 255

Fill color

Transparency: 255

Alarm state

Frame color

Transparency: 255

Fill color

Transparency: 255

Use gradient color: False

Gradient setting

Gradient

Color1: Color [Black]

Color2: Color [White]

Brightnesscolor: Color [Black]

Appearance

Line width: 1

Fill attributes: Filled

Line style: Solid

Text properties

Horizontal alignment: Centered

Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Absolute movement
Use REAL values: False
Font variables
Size: , <pt>
Color variables
Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Toggle
Variable: prgMain.EM_WrapPallet.Ref_FilmClamp.bPresenceSensor
Tap
Tap FALSE: False
■ Rectangle Id: 69
Element name: GenElemInst_42
Tab Order: default
Static optimized: False
Type of element: Rectangle
Position
X: 448
Y: 1114
Width: 35
Height: 22
Angle: 0
Radius setting
Radius: From style
Value: 5
Center
X: 465
Y: 1125
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255
Use gradient color: False

Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
Absolute movement
 Use REAL values: False
Font variables
 Size: , <pt>
Color variables
 Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...
Toggle
 Variable: prgMain.EM_CenterPallet.bDiffuseEntrySensor
Tap
 Tap FALSE: False
■Rectangle Id: 73
 Element name: GenElemInst_44
 Tab Order: default
 Static optimized: False
 Type of element: Rectangle
Position
 X: 612
 Y: 1115
 Width: 35
 Height: 22
 Angle: 0
Radius setting
 Radius: From style
 Value: 5
Center
 X: 629
 Y: 1126
Colors

Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
Use gradient color: False
Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
Absolute movement
 Use REAL values: False
Font variables
 Size: , <pt>
Color variables
 Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...
Toggle
 Variable: prgMain.EM_ExitPallet.bDiffuseEntrySensor
Tap
 Tap FALSE: False
■Rectangle Id: 75
 Element name: GenElemInst_45
 Tab Order: default
 Static optimized: False
 Type of element: Rectangle
Position
 X: 719

Y: 1112
Width: 35
Height: 22
Angle: 0
Radius setting
 Radius: From style
 Value: 5
Center
 X: 736
 Y: 1123
Colors
 Normal state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
 Alarm state
 Frame color
 Transparency: 255
 Fill color
 Transparency: 255
Use gradient color: False
Gradient setting
 Gradient
 Color1: Color [Black]
 Color2: Color [White]
 Brightnesscolor: Color [Black]
Appearance
 Line width: 1
 Fill attributes: Filled
 Line style: Solid
Text properties
 Horizontal alignment: Centered
 Vertical alignment: Centered
 Text format: Default
 Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
 Font color
 Transparency: 255
Absolute movement
 Use REAL values: False
Font variables
 Size: , <pt>
Color variables
 Toggle color: <toggle/tap variable>
Animation duration: 0
Input configuration
 OnDialogClosed: Configure...
 OnMouseClicked: Configure...
 OnMouseDown: Configure...
 OnMouseEnter: Configure...
 OnMouseLeave: Configure...
 OnMouseMove: Configure...
 OnMouseUp: Configure...
 OnValueChanged: Configure...

Toggle
Variable: prgMain.EM_ExitPallet.bDiffuseExitSensor
Tap
Tap FALSE: False
Label Id: 137
Element name: GenElemInst_84
Type of element: Label
Tab Order: default
Static optimized: True
Position
X: 773
Y: 712
Width: 150
Height: 30
Text properties
Horizontal alignment: Left
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;12;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Center
X: 848
Y: 727
Animation duration: 0
Label Id: 151
Element name: GenElemInst_93
Type of element: Label
Tab Order: default
Static optimized: True
Text ID: 723
Texts
Text: START
Position
X: 776
Y: 762
Width: 94
Height: 30
Text properties
Horizontal alignment: Left
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;20;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Center
X: 823
Y: 777
Animation duration: 0
PushSwitch Id: 155
Element name: GenElemInst_98
Type of element: PushSwitch
Tab Order: default
Static optimized: False

Position
X: 692
Y: 747
Width: 70
Height: 70
Variable: prgMain.bStartProcessButton
Image settings
Transparent: False
Transparent color: Black
Isotropic type: Isotropic
Horizontal alignment: Left
Vertical alignment: Top
Element behavior: Image toggler
Tap FALSE: False
Center
X: 727
Y: 782
Animation duration: 0
Input configuration
OnValueChanged: Configure...
Background
Image: Green
• PushSwitch Id: 157
Element name: GenElemInst_99
Type of element: PushSwitch
Tab Order: default
Static optimized: False
Position
X: 695
Y: 824
Width: 70
Height: 70
Variable: prgMain.bStopProcessButton
Image settings
Transparent: False
Transparent color: Black
Isotropic type: Isotropic
Horizontal alignment: Left
Vertical alignment: Top
Element behavior: Image toggler
Tap FALSE: False
Center
X: 730
Y: 859
Animation duration: 0
Input configuration
OnValueChanged: Configure...
Background
Image: Red
T Label Id: 159
Element name: GenElemInst_100
Type of element: Label
Tab Order: default
Static optimized: True

Text ID: 652
Texts
Text: STOP
Position
X: 781
Y: 840
Width: 94
Height: 30
Text properties
Horizontal alignment: Left
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;20;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Center
X: 828
Y: 855
Animation duration: 0
ComboBoxTable Id: 195
Element name: GenElemInst_127
Type of element: ComboBoxTable
Tab Order: default
Static optimized: False
Tooltip ID: 309
Position
X: 917
Y: 744
Width: 274
Height: 50
Variable: prgMain.intDesiredAplicatorModeNameIndex
Data array: AplicatorModeNames.arrModeNames
Columns
Column
[0]
Visible: True
Width: 274
Image column: False
Image configuration
Fill mode: Centered
Transparent: True
Transparent color: White
Text alignment of column: Centered
Use template: True
Template
Type of element: Rectangle
Angle: 0
Radius setting
Radius: Relative to the element size
Value: 5
Colors
Normal state
Frame color
Transparency: 255

Fill color
Transparency: 255
Alarm state
Frame color
Transparency: 255
Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Texts
Text: %s
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;20;Regular;Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Text variables
Text variable: ApplicatorModeNames.arrModeNames[INDEX]
Font variables
Size: , <pt>
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
Maximum array index: 3
Row height: 40
Number of visible rows: 3
Scroll Bar size: 0
Texts
Tooltip: Choose applicator mode.
Text properties
Usage of: Individual settings
Individual text properties
Font: Segoe UI;20;Regular;White, Color [A=255, R=255, G=255, B=255]
Font color
Transparency: 255
Individual font variables

Size: , <pt>
Individual selection text properties
Font: Segoe UI;20;Regular;White, Color [A=255, R=255, G=255, B=255]
Font color
Transparency: 255
Individual selection font variables
Size: , <pt>
State variables
Deactivate inputs: prgMain.bChangeModesNotAllowed
Center
X: 1037
Y: 773
Animation duration: 0
Input configuration
OnValueChanged: Configure...
☞ ComboBoxTable Id: 200
Element name: GenElemInst_131
Type of element: ComboBoxTable
Tab Order: default
Static optimized: False
Tooltip ID: 253
Position
X: 920
Y: 849
Width: 274
Height: 50
Variable: prgMain.intDesiredUnitModeNameIndex
Data array: arrUnitModeNames
Columns
Column
[0]
Visible: True
Width: 274
Image column: False
Image configuration
Fill mode: Centered
Transparent: True
Transparent color: White
Text alignment of column: Centered
Use template: True
Template
Type of element: Rectangle
Angle: 0
Radius setting
Radius: Relative to the element size
Value: 5
Colors
Normal state
Frame color
Transparency: 255
Fill color
Transparency: 255
Alarm state
Frame color

Transparency: 255
Fill color
Transparency: 255
Use gradient color: False
Gradient setting
Gradient
Color1: Color [Black]
Color2: Color [White]
Brightnesscolor: Color [Black]
Appearance
Line width: 1
Fill attributes: Filled
Line style: Solid
Texts
Text: %s
Text properties
Horizontal alignment: Centered
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;20;Regular;Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Text variables
Text variable: arrUnitModeNames[INDEX]
Font variables
Size: , <pt>
Input configuration
OnDialogClosed: Configure...
OnMouseClicked: Configure...
OnMouseDown: Configure...
OnMouseEnter: Configure...
OnMouseLeave: Configure...
OnMouseMove: Configure...
OnMouseUp: Configure...
OnValueChanged: Configure...
Tap
Tap FALSE: False
Maximum array index: 2
Row height: 40
Number of visible rows: 2
Scroll Bar size: 0
Texts
Tooltip: Choose unit mode.
Text properties
Usage of: Individual settings
Individual text properties
Font: Segoe UI;20;Regular;White, Color [A=255, R=255, G=255, B=255]
Font color
Transparency: 255
Individual font variables
Size: , <pt>
Individual selection text properties
Font: Segoe UI;20;Regular;White, Color [A=255, R=255, G=255, B=255]
Font color

Transparency: 255
Individual selection font variables
Size: , <pt>
State variables
Deactivate inputs: prgMain.bChangeModesNotAllowed
Center
X: 1040
Y: 878
Animation duration: 0
Input configuration
OnValueChanged: Configure...
Label Id: 201
Element name: GenElemInst_132
Type of element: Label
Tab Order: default
Static optimized: True
Text ID: 836
Texts
Text: Choose applicator mode:
Position
X: 919
Y: 709
Width: 250
Height: 30
Text properties
Horizontal alignment: Left
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;20;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color
Transparency: 255
Center
X: 1044
Y: 724
Animation duration: 0
Label Id: 203
Element name: GenElemInst_133
Type of element: Label
Tab Order: default
Static optimized: True
Text ID: 10
Texts
Text: Choose unit mode:
Position
X: 920
Y: 814
Width: 250
Height: 30
Text properties
Horizontal alignment: Left
Vertical alignment: Centered
Text format: Default
Font: Segoe UI;20;Regular;Font-Default-Color, Color [A=255, R=0, G=0, B=0]
Font color

Transparency: 255
Center
X: 1045
Y: 829
Animation duration: 0