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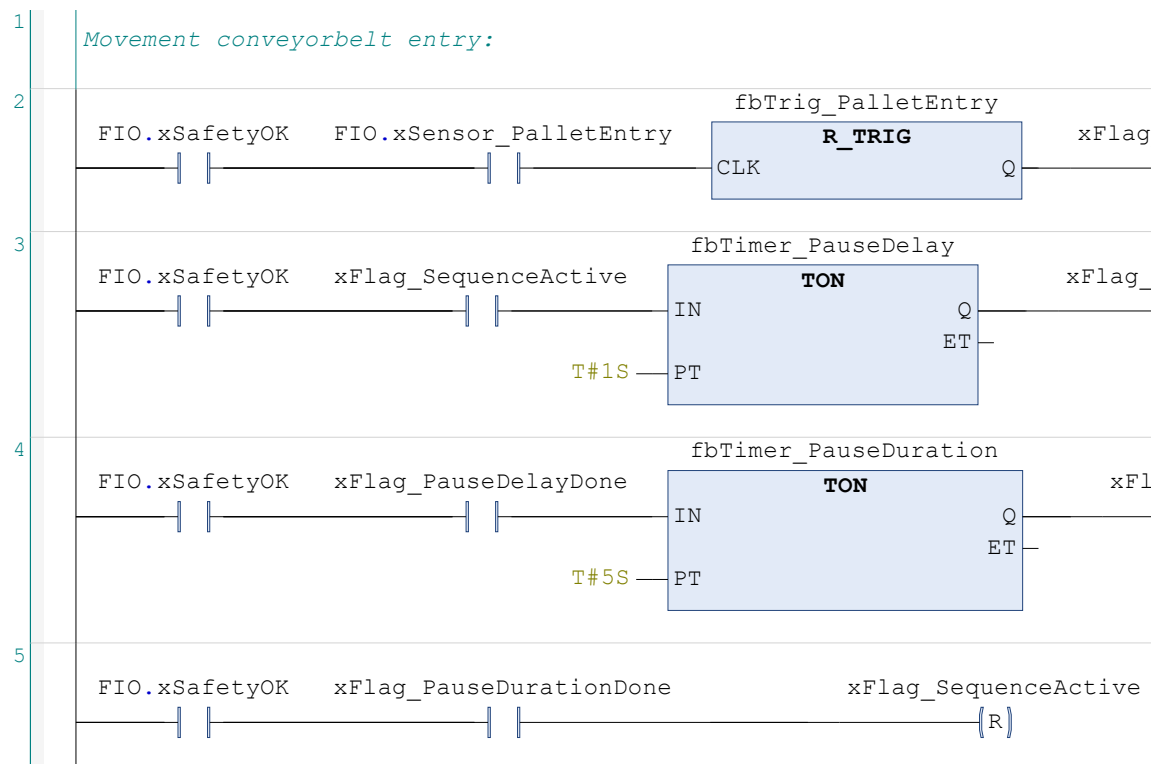
1  PROGRAM PLC_PRG
2  VAR
3      // =====
4      // 1. SYSTEM CONTROL & SEQUENCE MANAGEMENT
5      // =====
6      fbSR_SystemOn      : SR ;      // Main System ON/OFF Latch (Start/Stop
logic)
7      fbRS_LoadSeq       : RS ;      // Loading Sequence Latch (controls the
feed)
8      iAutoStep          : INT := 0 ; // Main Step Chain / State Machine
index
9      xFlag_ConveyorAccess : BOOL ;  // Flag: Permission to run the main
conveyor
10
11     // =====
12     // 2. PAUSE LOGIC (TIMING & DELAYS)
13     // =====
14     fbTrig_PalletEntry   : R_TRIG ; // Detects new pallet entry (Rising
Edge)
15     fbTimer_StartDelay   : TON ;     // Initial start-up delay timer (1s)
16     fbTimer_PauseDelay   : TON ;     // Pre-pause delay timer
17     fbTimer_PauseDuration : TON ;     // Main pause duration timer (5s
stop)
18
19     // Status Flags
20     xFlag_SequenceActive  : BOOL ;    // Flag: Sequence is currently
active
21     xFlag_PauseDelayDone  : BOOL ;    // Flag: Start delay finished
22     xFlag_PauseDurationDone : BOOL ;   // Flag: 5s pause finished
23
24     // =====
25     // 3. SORTING LOGIC: BIG BOX (LEFT CONVEYOR)
26     // =====
27     // Detection & Actuation
28     fbTrig_LoadSensor     : R_TRIG ; // Load sensor trigger
29     fbTimer_PushBigBox    : TON ;     // Timer for Big Box pusher
extension
30     fbSR_BigBoxActive     : SR ;      // Memory latch for Big Box sorting
operation
31
32     // Flags
33     xFlag_BigBoxDetected  : BOOL ;    // Input: High sensor detected (Big
Box)
34     xFlag_BigBoxActive    : BOOL ;    // Output control: Big Box pusher is
active
35     xFlag_BigBoxPath      : BOOL ;    // Tracking: Box is on the "Big Box"
path
36     xFlag_ConveyorLeftActive : BOOL ;  // Status: Left conveyor is running
37
38     // =====
39     // 4. SORTING LOGIC: SMALL BOX (RIGHT CONVEYOR)
40     // =====
41     // Detection & Actuation
42     fbTrig_SmallBoxEntry  : R_TRIG ; // Small Box entry detection
43     fbTimer_PushSmallBox  : TON ;     // Timer for Small Box pusher
extension
44

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45      // Flags
46      xFlag_SmallBoxDetected   : BOOL ;    // Input: Low sensor detected (Small
Box)
47      xFlag_SmallBoxActive     : BOOL ;    // Output control: Small Box pusher
is active
48      xFlag_SmallPath          : BOOL ;    // Tracking: Box is on the "Small
Box" path
49      xFlag_ConveyorRightActive : BOOL ;    // Status: Right conveyor is running
50
51      // =====
52      // 5. COUNTING & EXIT MONITORING
53      // =====
54      // Edge Detections
55      fbTrig_CountLeft         : R_TRIG ;    // Counting trigger (Left side)
56      fbTrig_CountRight        : R_TRIG ;    // Counting trigger (Right side)
57      fbFTrig_ExitLeft         : F_TRIG ;    // Falling edge detection at Left
Exit
58      fbFTrig_ExitRight        : F_TRIG ;    // Falling edge detection at Right
Exit
59
60      // Counters & Results
61      fbCounter_TotalBoxes     : CTU ;        // Main Up-Counter for total boxes
62      xCountPulse               : BOOL ;      // Combined counting pulse (Left +
Right)
63      iCurrentCount             : INT ;      // Total count value for HMI/Display
64      END_VAR
65

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\_SequenceActive  
—(S)

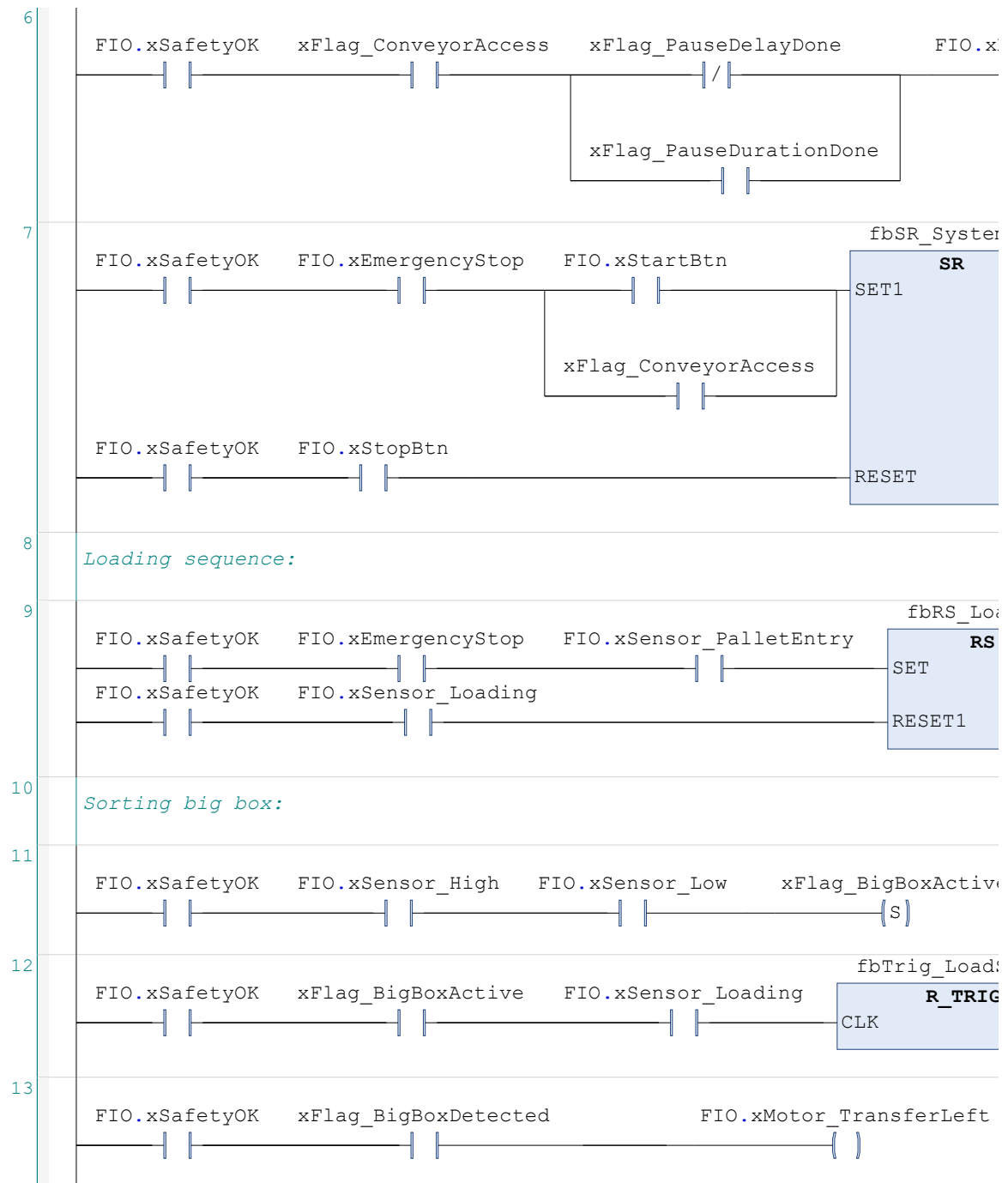
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.PauseDelayDone  
—( )

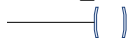
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ag\_PauseDurationDone  
—( )

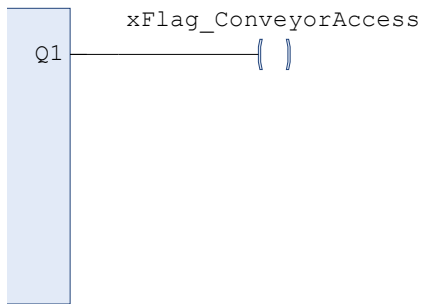
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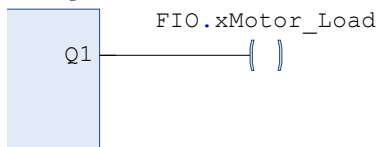
Motor\_ConveyorEntry



nOn

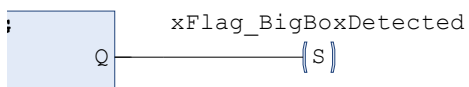


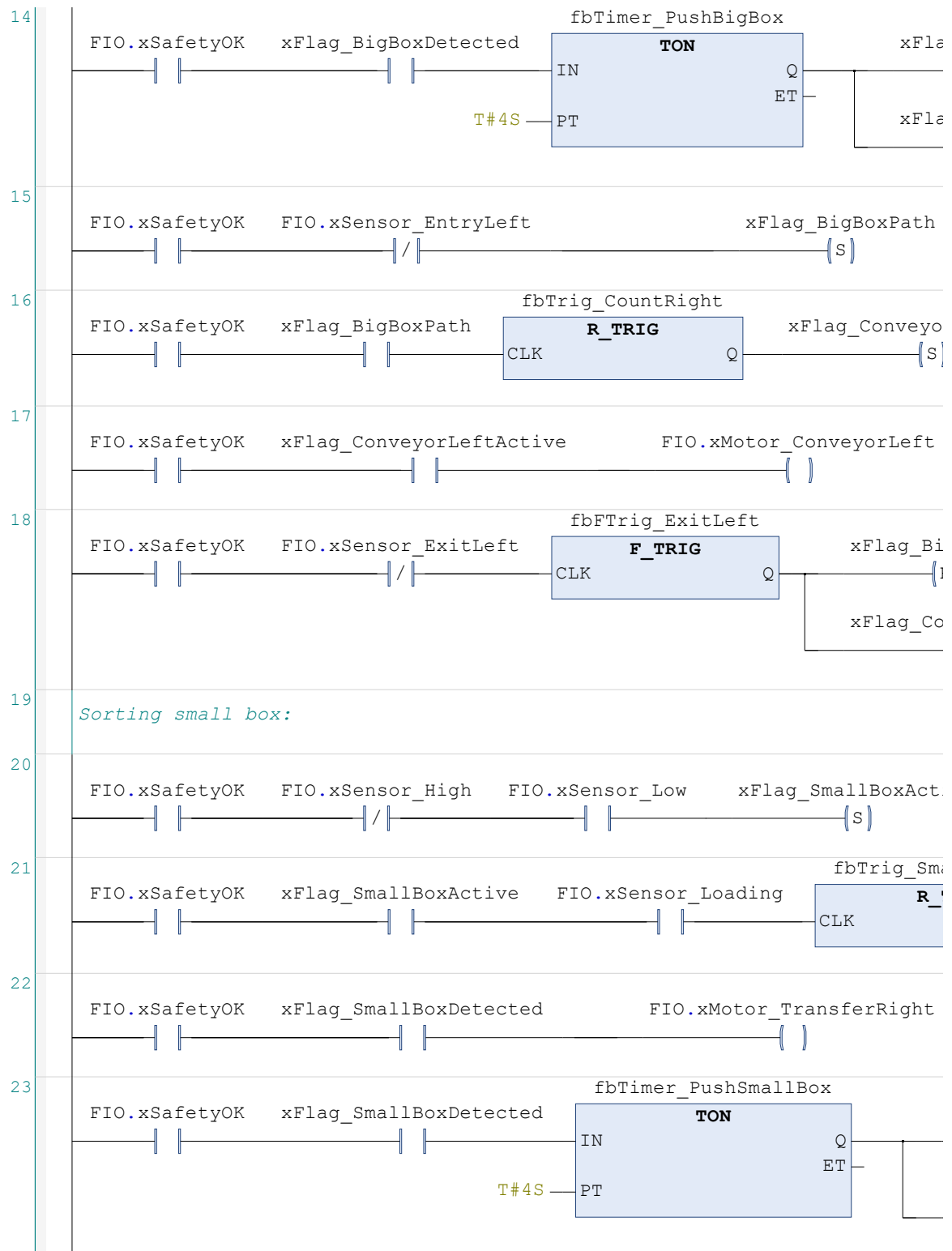
adSeq



e

Sensor





ig\_BigBoxDetected  
——(R)

ig\_BigBoxActive  
——(R)

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rLeftActive  
|

---

gBoxPath  
R)

nveyorLeftActive  
——(R)

---

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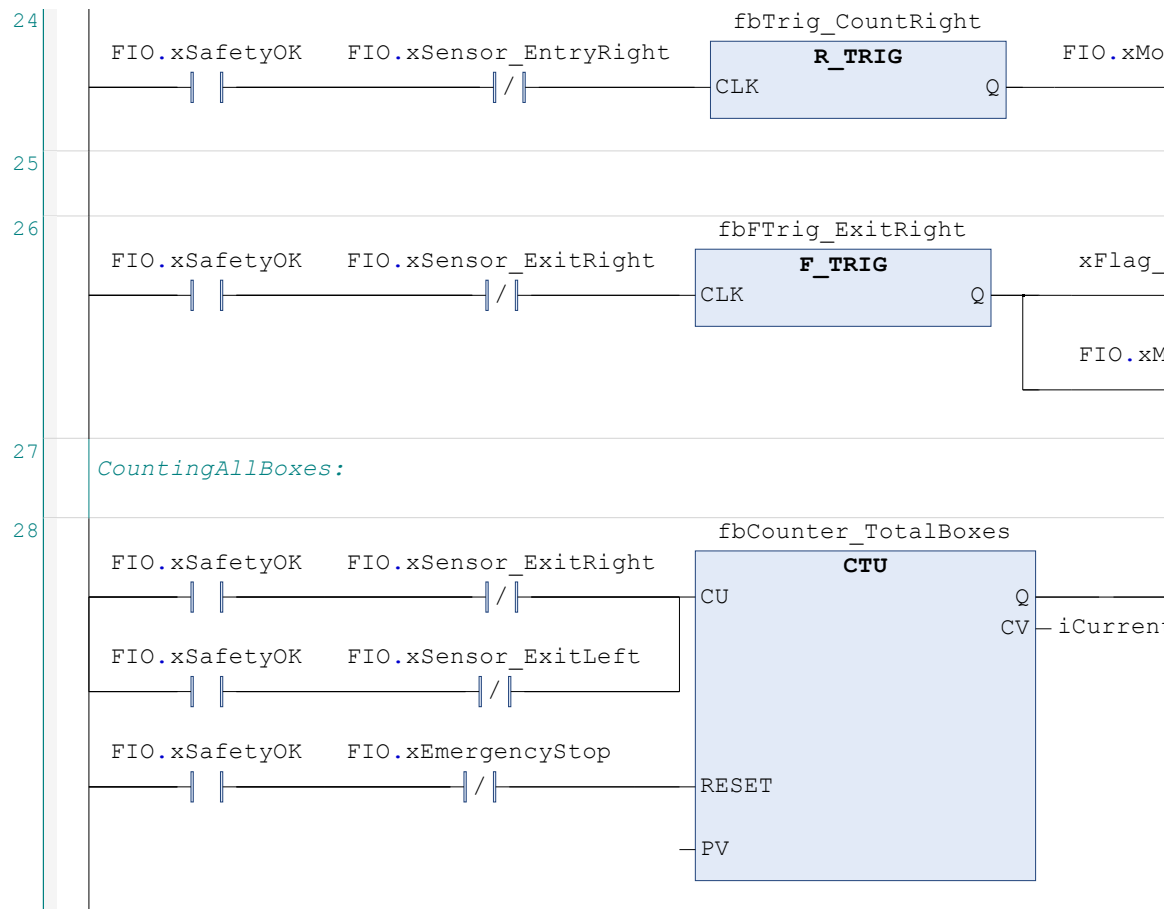
allBoxEntry  
**TRIG** xFlag\_SmallBoxDetected  
Q —————(S)

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xFlag\_SmallBoxDetected  
———(R)

xFlag\_SmallBoxActive  
———(R)

---





tor\_ConveyorRight  
— (S)

---

.SmallPath  
(R)

lotor\_ConveyorRight  
— (R)

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xCountPulse  
tCount — ( )

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