FUNCTION\_BLOCK FWD\_REV\_MON

VAR\_INPUT AUTO : BOOL ;(\* Enable automated commands \*)

ACK : BOOL ; (\* Acknowledge/cancel all alarms \*)

AUTO\_FWD : BOOL ; (\* Automated forward command \*)

MAN\_FWD : BOOL ; (\* Manual forward command \*)

MAN\_FWD\_CHK : BOOL ; (\* Negated MAN\_FWD for debouncing \*)

T\_FWD\_MAX : TIME ; (\* Maximum time from FWD\_CMD to FWD\_FDBK \*)

FWD\_FDBK : BOOL ; (\* Confirmation of FWD\_CMD completion \*)

(\* by operative unit \*)

AUTO\_REV : BOOL ; (\* Automated reverse command \*)

MAN\_REV : BOOL ; (\* Manual reverse command \*)

MAN\_REV\_CHK : BOOL ; (\* Negated MAN\_REV for debouncing \*)

T\_REV\_MAX : TIME ; (\* Maximum time from REV\_CMD to REV\_FDBK \*)

REV\_FDBK : BOOL ; (\* Confirmation of REV\_CMD completion \*)

END\_VAR (\* by operative unit \*)

VAR\_OUTPUT KLAXON : BOOL ; (\* Any alarm active \*)

FWD\_REV\_ALRM : BOOL; (\* Forward/reverse command conflict \*)

FWD\_CMD : BOOL ; (\* "Forward" command to operative unit \*)

FWD\_ALRM : BOOL ; (\* T\_FWD\_MAX expired without FWD\_FDBK \*)

REV\_CMD : BOOL ; (\* "Reverse" command to operative unit \*)

REV\_ALRM : BOOL ; (\* T\_REV\_MAX expired without REV\_FDBK \*)

END\_VAR

VAR FWD\_MON : CMD\_MONITOR; (\* "Forward" command monitor \*)

REV\_MON : CMD\_MONITOR; (\* "Reverse" command monitor \*)

FWD\_REV\_FF : SR ; (\* Forward/Reverse contention latch \*)

END\_VAR

(\* Function Block body \*)

LD AUTO (\* Load common inputs \*)

ST FWD\_MON.AUTO\_MODE

ST REV\_MON.AUTO\_MODE

LD ACK

ST FWD\_MON.ACK

ST REV\_MON.ACK

ST FWD\_REV\_FF.R

LD AUTO\_FWD (\* Load inputs to FWD\_MON \*)

ST FWD\_MON.AUTO\_CMD

LD MAN\_FWD

ST FWD\_MON.MAN\_CMD

LD MAN\_FWD\_CHK

ST FWD\_MON.MAN\_CMD\_CHK

LD T\_FWD\_MAX

ST FWD\_MON.T\_CMD\_MAX

LD FWD\_FDBK

ST FWD\_MON.FDBK

CAL FWD\_MON (\* Activate FWD\_MON \*)

LD AUTO\_REV (\* Load inputs to REV\_MON \*)

ST REV\_MON.AUTO\_CMD

LD MAN\_REV

ST REV\_MON.MAN\_CMD

LD MAN\_REV\_CHK

ST REV\_MON.MAN\_CMD\_CHK

LD T\_REV\_MAX

ST REV\_MON.T\_CMD\_MAX

LD REV\_FDBK

ST REV\_MON.FDBK

CAL REV\_MON (\* Activate REV\_MON \*)

LD FWD\_MON.CMD (\* Check for contention \*)

AND REV\_MON.CMD

S1 FWD\_REV\_FF (\* Latch contention condition \*)

LD FWD\_REV\_FF.Q

ST FWD\_REV\_ALRM (\* Contention alarm \*)

LD FWD\_MON.CMD (\* "Forward" command and alarm \*)

ANDN FWD\_REV\_ALRM

ST FWD\_CMD

LD FWD\_MON.ALRM

ST FWD\_ALRM

LD REV\_MON.CMD (\* "Reverse" command and alarm \*)

ANDN FWD\_REV\_ALRM

ST REV\_CMD

LD REV\_MON.ALRM

ST REV\_ALRM

OR FWD\_ALRM (\* OR all alarms \*)

OR FWD\_REV\_ALRM

ST KLAXON

END\_FUNCTION\_BLOCK