

High Speed Main

SEE H05: GROUP MAIN AND INTERLOCK

0000  
0000  
NL-1

SEE   
Name H05

SEE H20: HIGH SPEED AXIS MAIN

0001  
0001  
NL-1

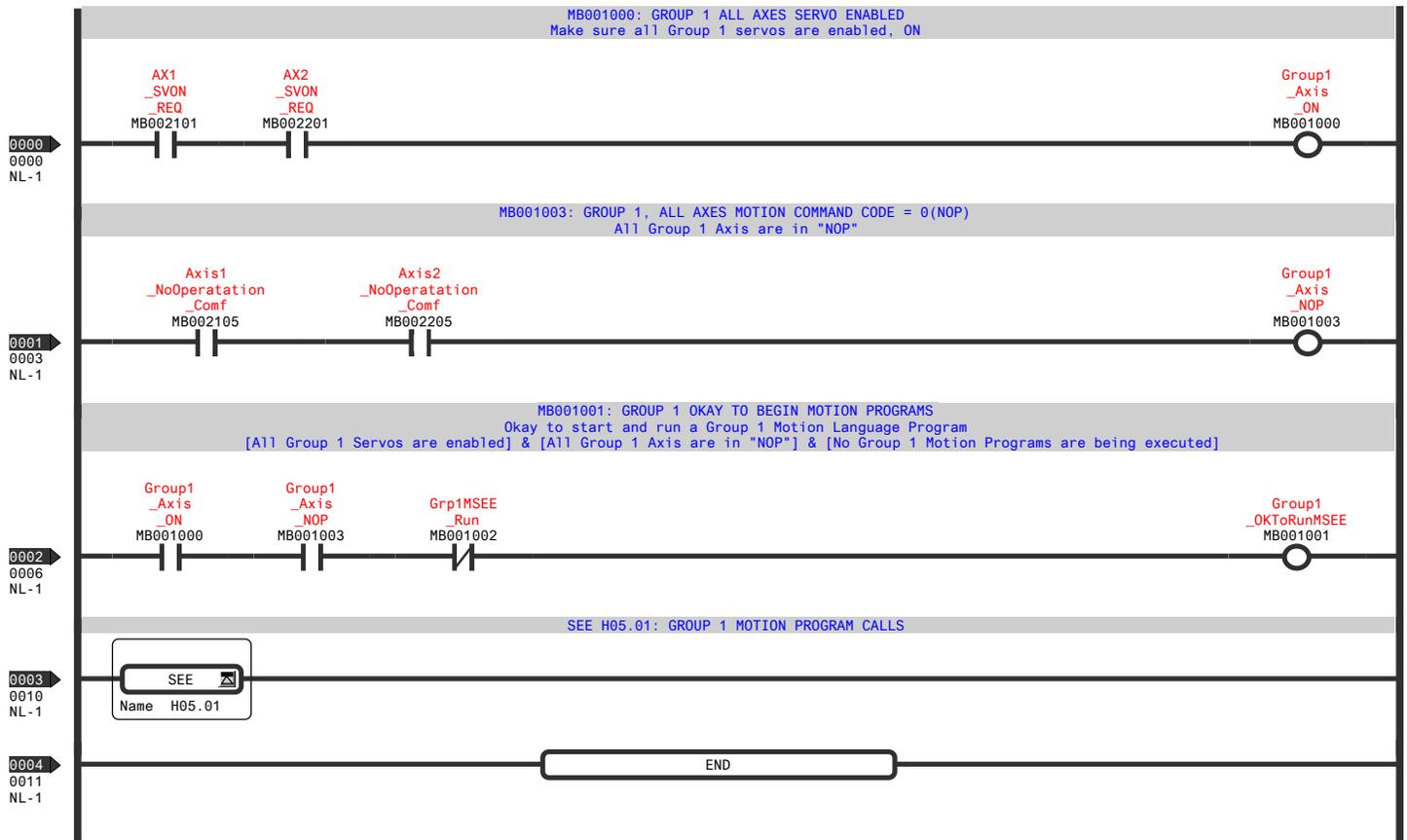
SEE   
Name H20

0002  
0002  
NL-1

END

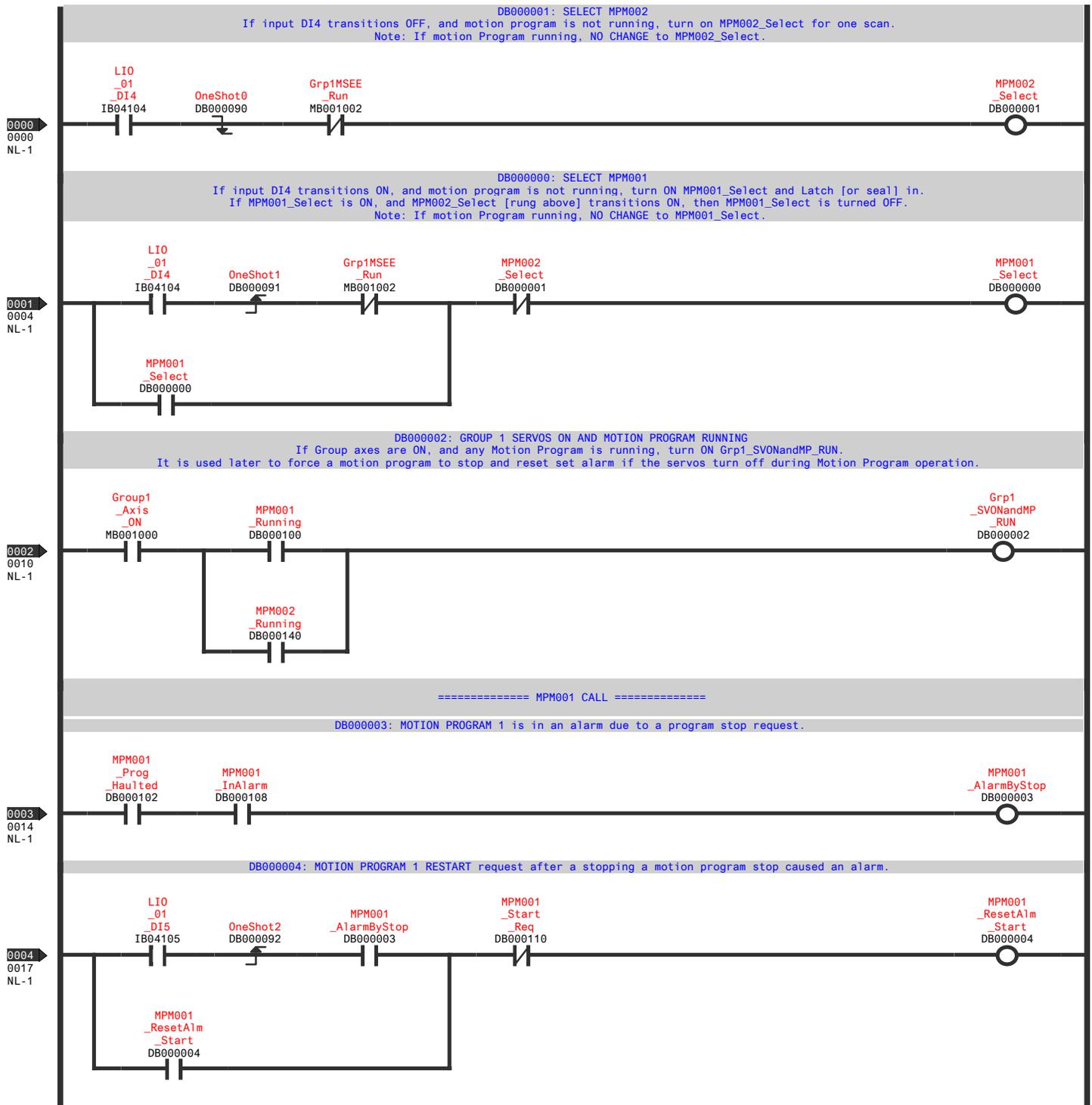
		Draw. Date.2004.12.14	H Main Program High Speed Main	PMP2000-962401 P00101
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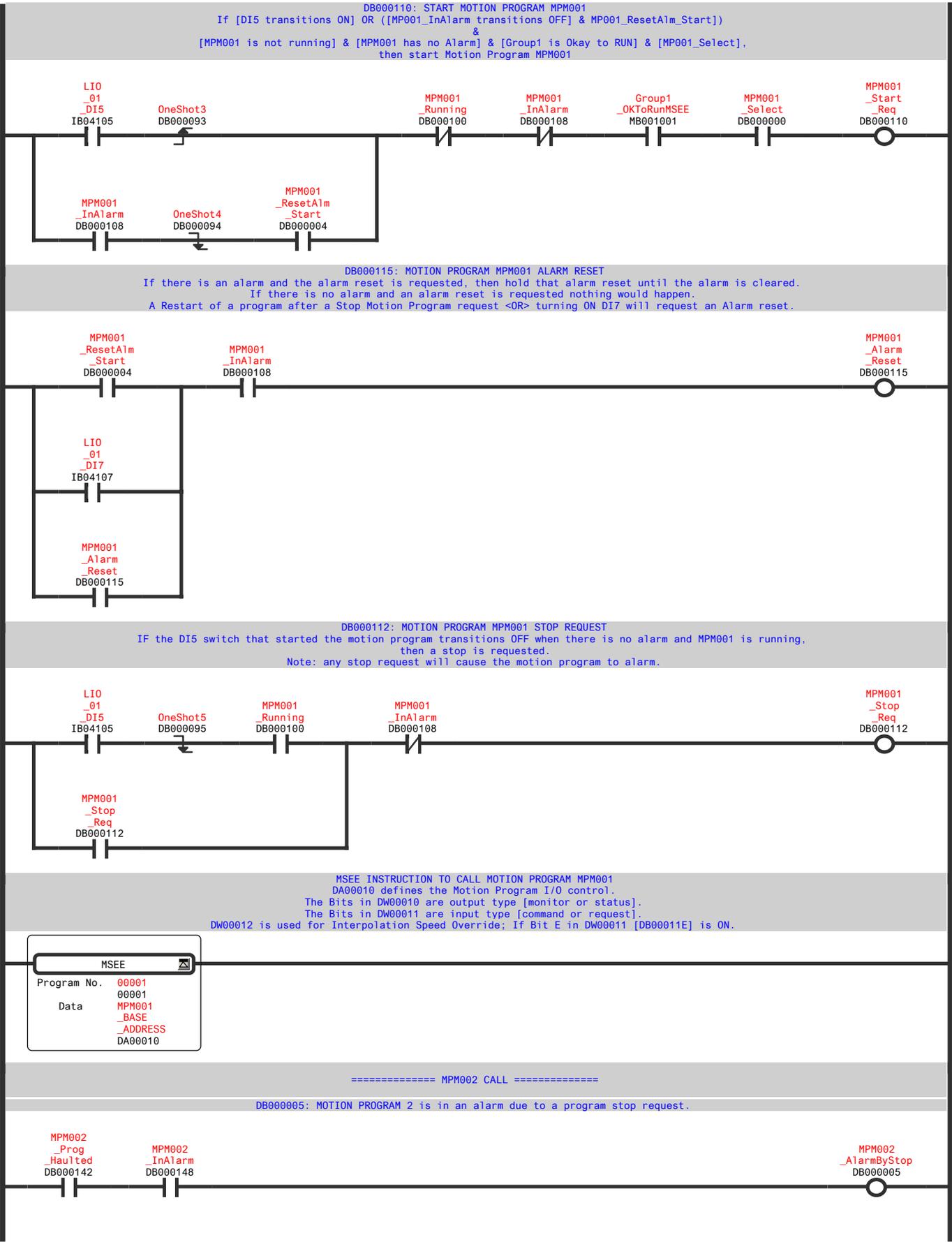
Group Main and Interlock



		Draw. Date.2004.12.14	H05 Main Program Group Main and Interlock	PMP2000-962401 P00103
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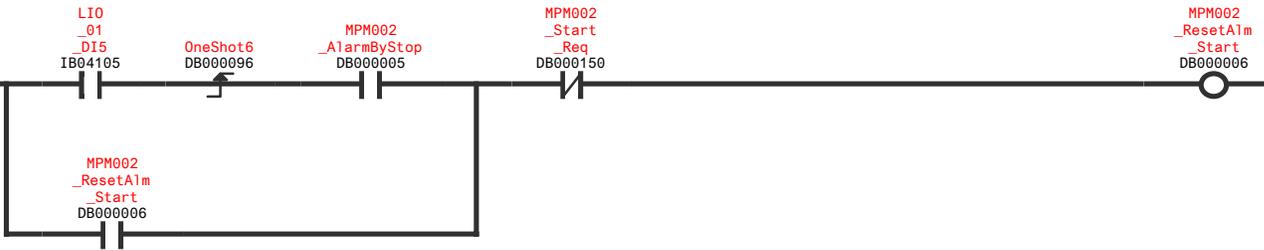
Group 1 Motion Program Calls





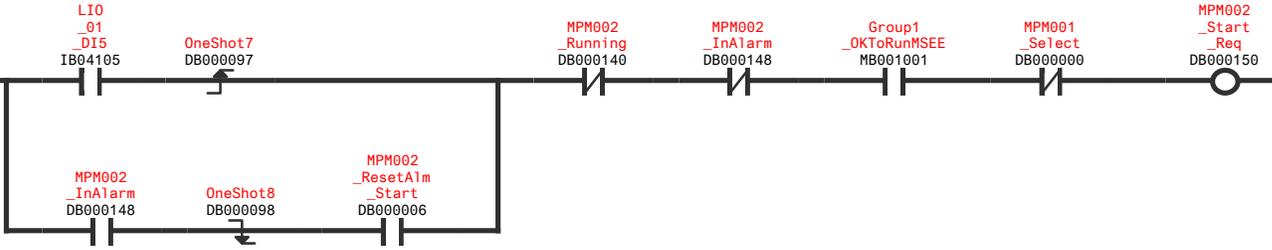
DB000006: MOTION PROGRAM 2 RESTART request after a stopping a motion program stop caused an alarm.

0010  
0048  
NL-1



DB000150: START MOTION PROGRAM MPM002  
If [DI5 transitions ON] OR ([MP001\_InAlarm transitions OFF] & MP002\_ResetAlm\_Start) & [MPM002 is not running] & [MPM002 has no Alarm] & [Group1 is Okay to RUN] & [NOT MP001\_Select], then start Motion Program MPM002

0011  
0054  
NL-1



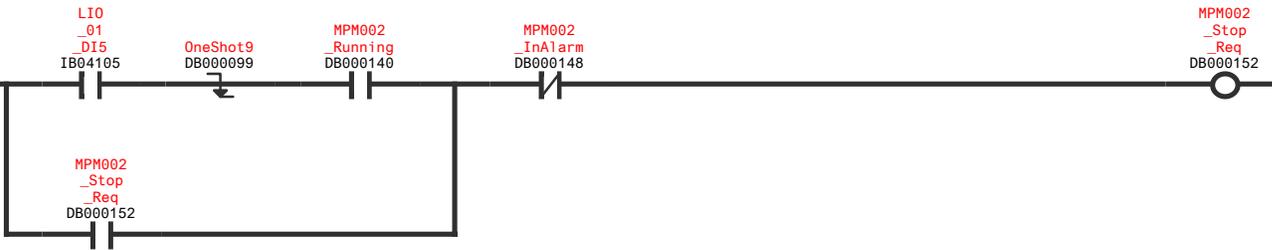
DB000155: MOTION PROGRAM MPM002 ALARM RESET  
If there is an alarm and the alarm reset is requested, then hold that alarm reset until the alarm is cleared.  
If there is no alarm but an alarm reset is requested nothing will happen  
A Restart of a program after a Stop Motion Program request <OR> turning ON DI7 will request an Alarm reset.

0012  
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DB000152: MOTION PROGRAM MPM002 STOP REQUEST  
IF the DI5 switch that started the motion program transitions OFF when there is no alarm and MPM002 is running, then a stop is requested.  
Note: any stop request will cause the motion program to alarm.

0013  
0069  
NL-1



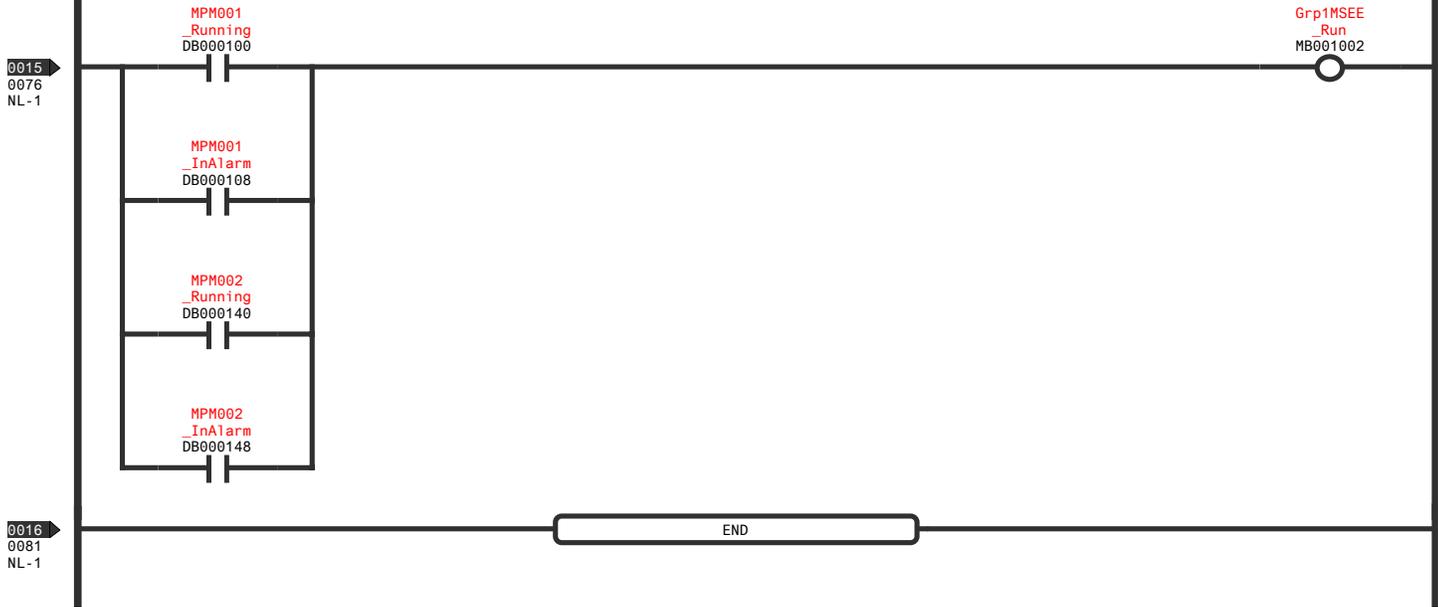
MSEE INSTRUCTION TO CALL MOTION PROGRAM MPM002  
DA00014 defines the Motion Program I/O control.  
The Bits in DW00014 are output type [monitor or status].  
The Bits in DW00015 are input type [command or request].  
DW00016 is used for Interpolation Speed Override; If Bit E in DW00015 [DB00015E] is ON.

0014  
0075  
NL-1

MSEE

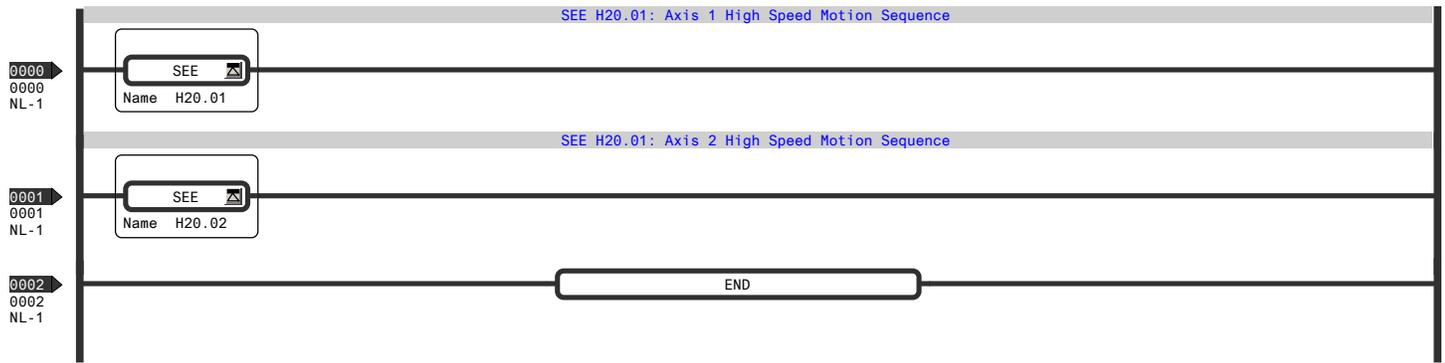
Program No.	00002
	00002
Data	MPM002
	_BASE
	_ADDRESS
	DA00014

MB001002: IS A GROUP1 MOTION PROGRAM RUNNING  
If either MPM001 OR MPM002 are running OR in alarm, this intelock needs to be ON



		Draw. Date.2004.12.14	H05.01 Main Program Group 1 Motion Program Calls	PMP2000-962401 P00108
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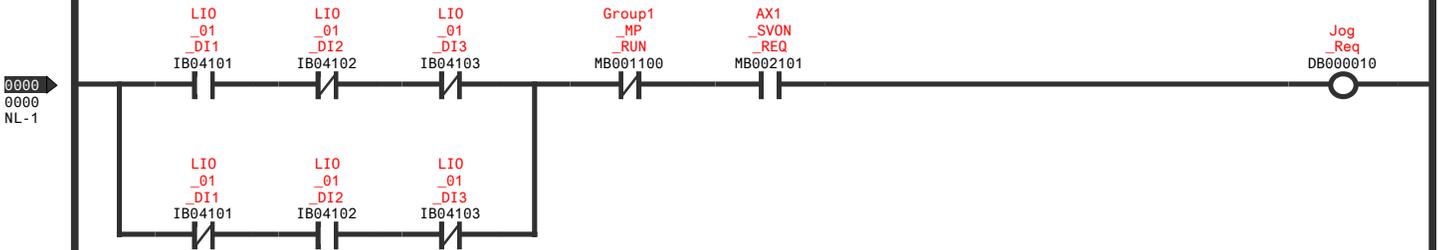
High Speed Axis Main



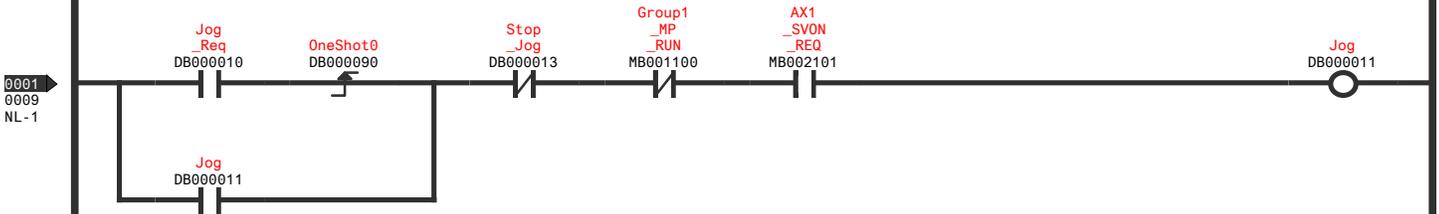
		Draw. Date.2004.12.14	H20 Main Program High Speed Axis Main	PMP2000-962401 P00110
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Axis 1 High Speed Motion Sequence

DB000010: JOG REQUEST (AXIS 1 ONLY)  
 Interlocks to test for specific switch states.  
 First that Axis 1 jog (IB04103 = OFF) is selected then one of the two jog switches (IB04101 or IB04102) are ON.  
 If both jog switches are OFF or both ON, no jog will happen.  
 The other two conditions are that no group 1 motion programs are running (Group1\_MP\_RUN) and this servo is enabled (AX1\_SVON\_REQ).



DB000011: JOG (AXIS 1 ONLY)  
 JOG is latched in [sealed] if the Jog request above transitions high.  
 It will be released once Jog has stopped (Stop\_Jog).  
 Group 1 motion program has started (not possible due to interlocks) or Servo enable is lost (possible due to alarm or IB04100 switch turned OFF) during JOG.



DB000013: JOG STOP  
 Special bit that will delay the turn off of Jog mode (Motion Command Code change from 7 to 0).  
 The idea behind the use of this bit is such that once the jog is requested to finish, the speed is first changed from a non zero value to zero, then after deceleration has completed and motion stops and the motion command code changes. It requires a test if there is motion to toggle the Zero speed bit.



Absolute value operation is done on Delta Scan is stored in a Long Integer Local used as an accumulator.



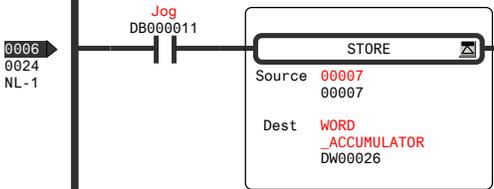
DB000012: ZERO SPEED  
 The Long Accumulator (In this case dScan [delta scan]) is tested to see if it less than 10 [counts/scan], if so the Zero speed bit is turned ON.



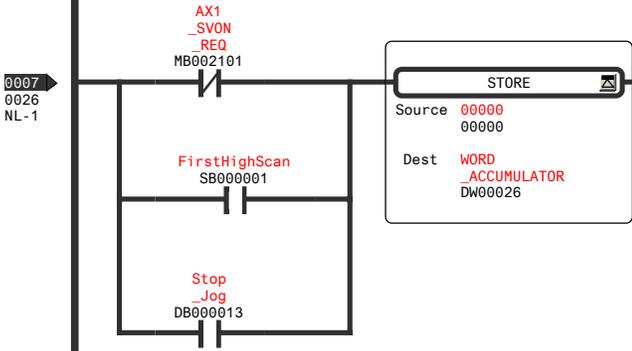
===== START OF MANIPULATION/MONITOR OF MOTION COMMAND CODE [MCC] REQUEST REGISTER =====  
 Store Present value of MCC request register into a 16-bit integer word accumulator.



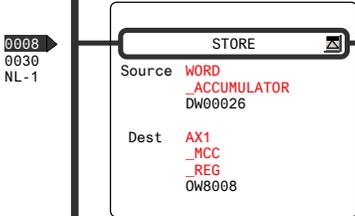
If Jog is true overwrite accumulator with a 7. This will only happen if Servos are enabled and if the group this servo is a member of has NO motion programs executing.



Overwrite the accumulator with a Zero if this axis servo is NOT enabled.  
OR  
It is the first High speed scan after controller power up.  
OR  
Stop\_Jog is ON.



Store the accumulator in the MCC request register.

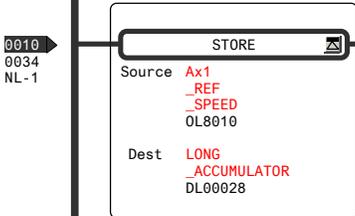


===== END OF MANIPULATION/MONITOR OF MOTION COMMAND CODE [MCC] REQUEST REGISTER =====

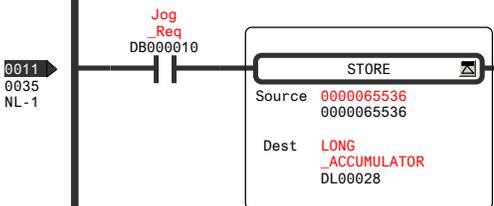
OB80092: AX1\_JogStep\_DIR (Bit is used to force JOG (MCC=7) and Step (MCC=8) in the negative direction)  
If Jog is ON and the Jog reverse input is ON the Jog is done in the reverse direction.



===== START OF MANIPULATION/MONITOR OF SPEED REQUEST REGISTER =====  
Store the speed request register in a Long interger (32-bit) accumulator

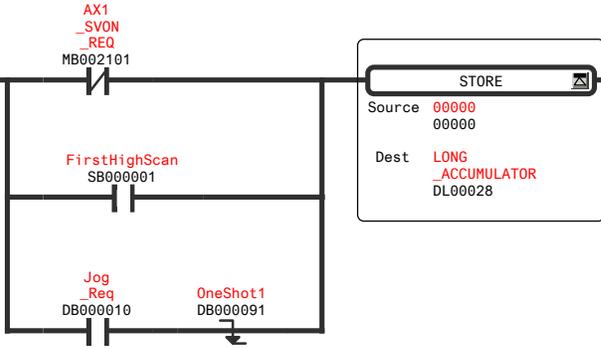


If Jog request is ON, then overwrite the accumulator with a value of 65536 [1000units/min]



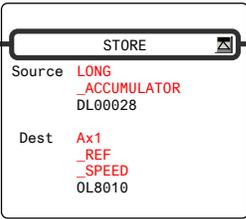
Overwrite the accumulator with 0 if Axis Servo is OFF.  
 OR  
 It is the first High Speed Scan after controller power up.  
 OR  
 Jog request transitions OFF.

0012  
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 NL-1



Store the accumulator in the speed request register.

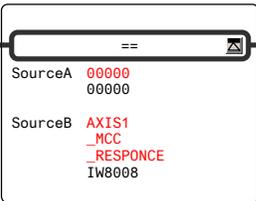
0013  
 0042  
 NL-1



===== END OF MANIPULATION/MONITOR OF SPEED REQUEST REGISTER =====

DB000000: AXIS MOTION COMMAND FEEDBACK IS ZERO  
 Test that Motion Command Code feedback register for this Axis is Zero (NOP)

0014  
 0043  
 NL-1



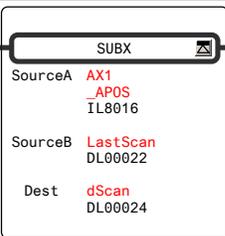
MB002105: NO OPERATION CONFIRMATION  
 Absolute test that there is no motion, no motion buffered and held.

0015  
 0045  
 NL-1



===== START OF DELTA SCAN CREATION =====  
 AXIS FEEDBACK -- FEEDBACK OF AXIS LAST SCAN = DELTA SCAN

0016  
 0050  
 NL-1



FEEDBACK OF AXIS LAST SCAN

0017  
 0051  
 NL-1



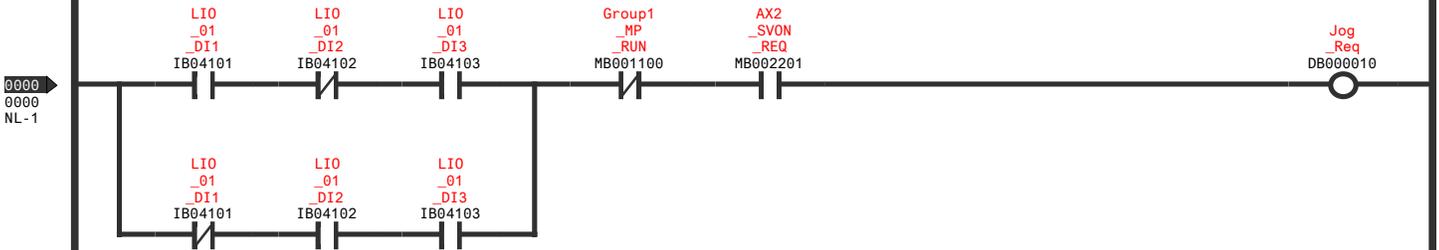
0018  
0052  
NL-1

END

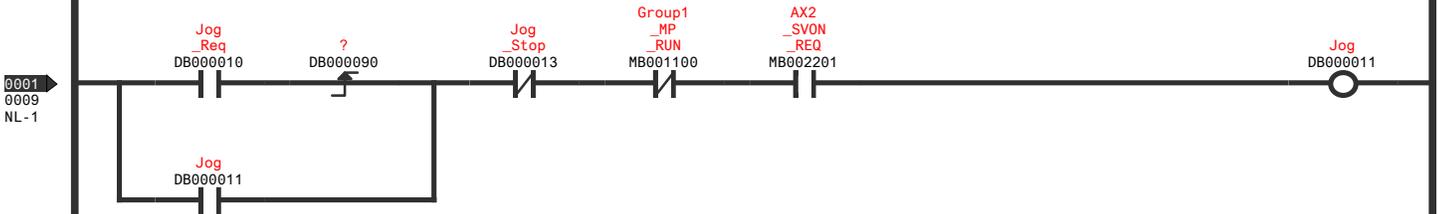
		Draw. Date.2004.12.14	H20.01 Main Program Axis 1 High Speed Motion Sequence	PMP2000-962401 P00115
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Program Comment

DB000010: JOG REQUEST (AXIS 1 ONLY)  
 Interlocks to test for specific switch states.  
 First that Axis 2 jog (IB04103 = ON) is selected then one of the two jog switches (IB04101 or IB04101) are ON.  
 If both jog switches are OFF or both ON, no jog will happen.  
 The other two conditions are that no group 1 motion programs are running (Group1\_MP\_RUN) and this servo is enabled (AX2\_SVON\_REQ).



DB000011: JOG (AXIS 2 ONLY)  
 JOG is latched in [sealed] if the Jog request above transitions high.  
 It will be released once Jog has stopped (Stop\_Jog).  
 Group 1 motion program has started (not possible due to interlocks) or Servo enable is lost (possible due to alarm or IB04100 switch turned OFF) during JOG.



DB000013: JOG STOP  
 Special bit that will delay the turn off of Jog mode (Motion Command Code change from 7 to 0).  
 The idea behind the use of this bit is such that once the jog is requested to finish, the speed is first changed from a non zero value to zero, then after deceleration has completed and motion stops and the motion command code changes. It requires a test if there is motion to toggle the Zero speed bit.



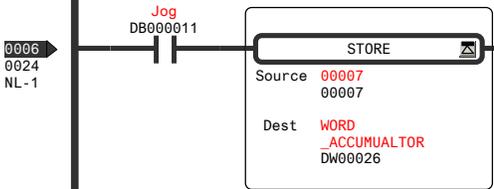
Absolute value operation is done on Delta Scan is stored in a Long Integer Local used as an accumulator.



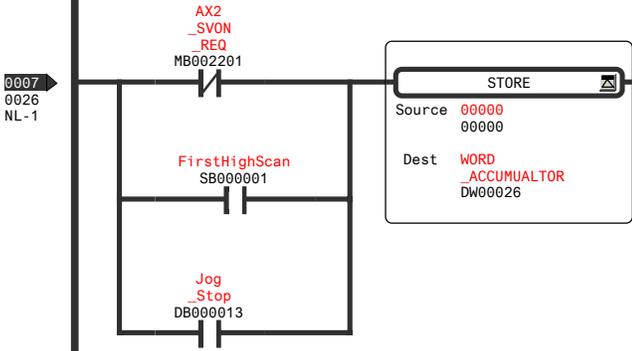
===== START OF MANIPULATION/MONITOR OF MOTION COMMAND CODE [MCC] REQUEST REGISTER =====  
 Store Present value of MCC request register into a 16-bit integer word accumulator.



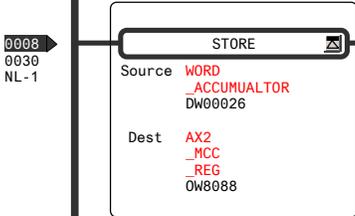
If Jog is true overwrite accumulator with a 7. This will only happen if Servos are enabled and if the group this servo is a member of has no motion programs executing.



Overwrite the accumulator with a Zero if this axis servo is NOT enabled.  
OR  
It is the first High speed scan after controller power up  
OR  
Stop\_Jog is ON.



Store the accumulator in the MCC request register.

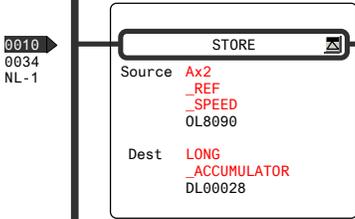


===== END OF MANIPULATION/MONITOR OF MOTION COMMAND CODE [MCC] REQUEST REGISTER =====

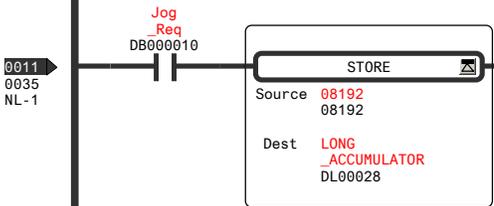
OB80892: AX2\_JogStep\_DIR (Bit is used to force JOG (MCC=7) and Step (MCC=8) in the negative direction)  
If Jog is ON and the Jog reverse input is ON the Jog is done in the reverse direction.



===== START OF MANIPULATION/MONITOR OF SPEED REQUEST REGISTER =====  
Store the speed request register in a Long integer (32-bit) accumulator

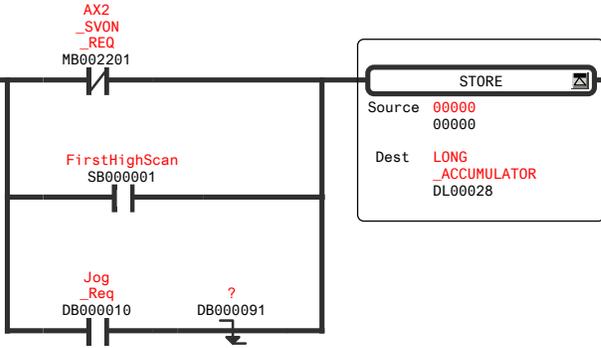


If Jog request is ON, then overwrite the accumulator with a value of 8192 [1000units/min]



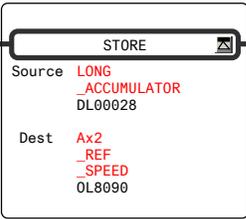
Overwrite the accumulator with 0 if Axis Servo is OFF.  
 OR  
 It is the first High Speed Scan after controller power up.  
 OR  
 Jog request transitions OFF.

0012  
 0037  
 NL-1



Store the accumulator in the speed request register.

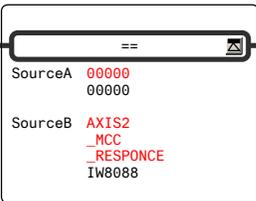
0013  
 0042  
 NL-1



===== END OF MANIPULATION/MONITOR OF SPEED REQUEST REGISTER =====

DB000000: AXIS MOTION COMMAND FEEDBACK IS ZERO Test that Motion Command Code feedback register for this Axis is Zero (NOP)

0014  
 0043  
 NL-1



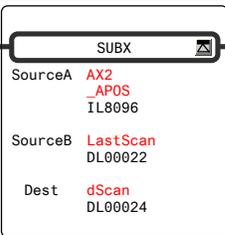
MB002205: AXIS 2 NO OPERATION CONFIRMATION Absolute test that there is no motion, no motion buffered and held.

0015  
 0045  
 NL-1



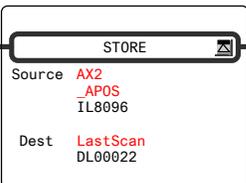
AXIS FEEDBACK -- FEEDBACK OF AXIS LAST SCAN = DELTA SCAN

0016  
 0050  
 NL-1



FEEDBACK OF AXIS LAST SCAN

0017  
 0051  
 NL-1



0018  
0052  
NL-1

END

		Draw. Date.2004.12.14	H20.02 Main Program Axis 2 High Speed Motion Sequence	PMP2000-962401 P00120
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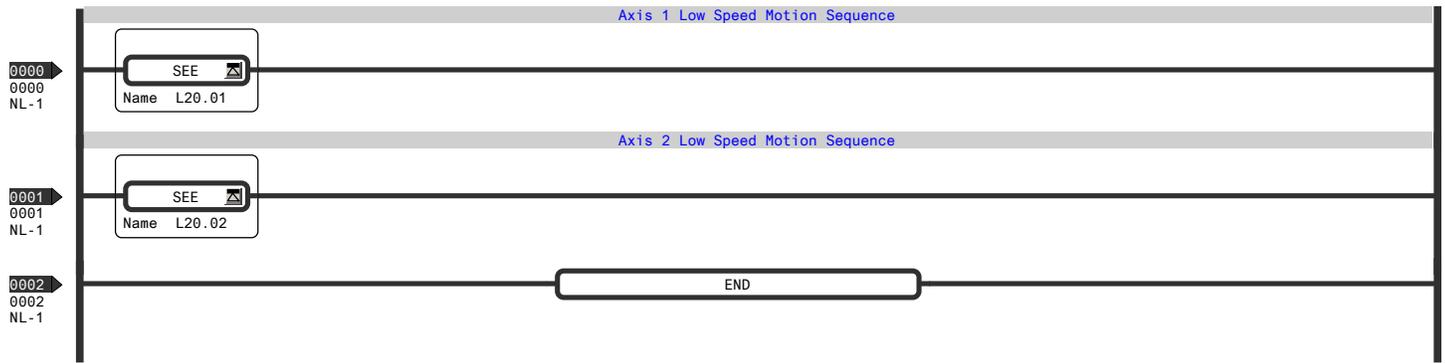
0000  
0000  
NL-1

SEE   
Name L20

0001  
0001  
NL-1

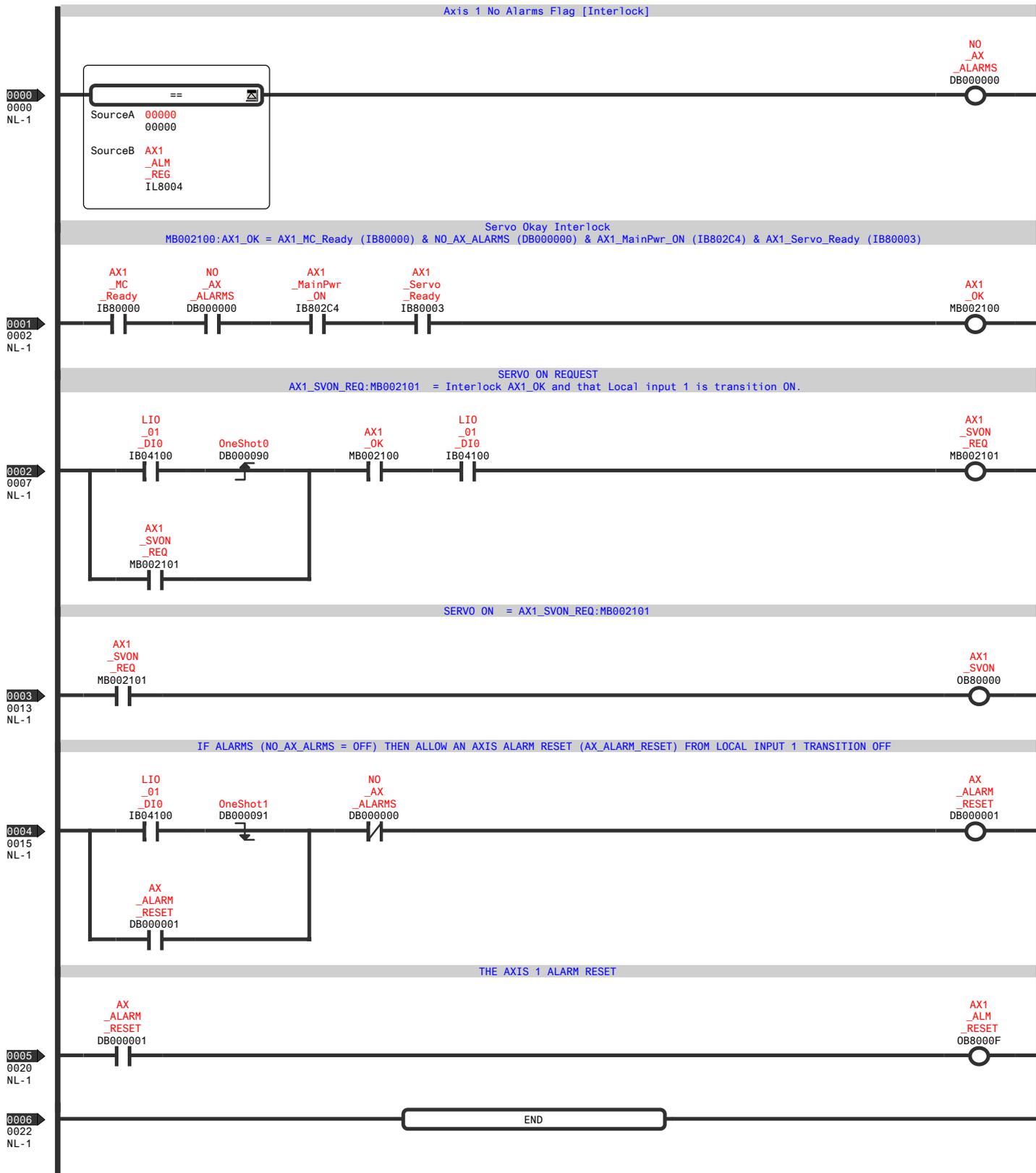
END

		Draw. Date.2004.12.14	L Main Program Low Speed Main	PMP2000-962401 P00122
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		Draw. Date.2004.12.14	L20 Main Program Low Speed Axis Main	PMP2000-962401 P00124
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Axis 1 Low Speed Motion Sequence



Axis 2 Low Speed Motion Sequence

