

## Subject: Troubleshooting A.9F with MotionWorks

Refer to the System Error status Tables in your Reference manual. A good start is to check CPU Error Status SW00041.

1. If SB000418=1 (SW00041=256), the MP940 has a **User Math Error**.
  - a. Check the following error count registers to determine which drawing is causing the error.
    - i. DWG.A SW00080 and SW00081 for error code.
    - ii. DWG.H SW00084 and SW00085 for error code.
    - iii. DWG.S SW00086 and SW00087 for error code.
    - iv. DWG.L SW00088 and SW00089 for error code.
      1. NOTE: error code explanations can be explained by looking at the User Operation Error Status – 3 and 4 in the reference manual.
  - b. Check Error Drawing Number SW00056 to see which drawing is causing the error.
    - i. Source DWG: FFFFH | Function: 8xxxH
    - ii. Sub DWG: xx00H (Hxx is the Sub-Dwg number)
2. If SB000419=1 (SW00041=512), the MP940 has an **LIO Error**.
  - a. If SB002140=1, the MP940 has an error with your analog input. This may be caused by a synchronized communication error (A.E2).
  - b. If SB002150=1 or SB002151=1, the MP940 has an error with your analog output. A/D adjustment may need to be performed.
  - c. If SB002120=1, the MP940 has an error with the digital inputs. Call a Yaskawa at 1-800-YASKAWA.
  - d. If SB002130=1, the MP940 has an error with the digital outputs. The digital output fuse may be blown.
3. If SB00041C=1 (SW00041=4096), the MP940 has an **SVA error**.
  - a. A servo alarm may cause this error. If there is a servo alarm, fix it first and verify that this error persists.
  - b. If IBC0001=1, you have an error in one of your settable motion parameters. IWC00F will tell you the parameter number, and a Yaskawa Application Engineer can help you determine a solution. This usually means that you are setting a motion parameter (acceleration, velocity, position etc.) out of range. Also make sure that your Torque Limit (OWC002) value is set accurately and as a negative number.
  - c. If IBC0002=1, you have an error in one of your settable motion parameters. IWC00F will tell you the parameter number, and a Yaskawa Application Engineer can help you determine a solution.
  - d. If IBC0000 = 1, the motor failed to follow the move profile within the Following error Limit (OWC00F). This bit may go on and off as the position drifts in and out of the error window. You may need to do a data trace to detect this bit changing. To correct, verify that the system is tuned, there are no move profiles that exceed the speed or torque of the motor, the Forward (OWC004) and Reverse Speed Limits (OWC005) are set correctly.
4. If SB00041D=1 (SW00041=8192), the MP940 has a **CNTR Error**.
  - a. If the MP940 is configured to use an external encoder, but no encoder is found, you will get this error.
    - i. If IB0002A = 1, the A phase is not detected. Make certain that your I/O connector is firmly plugged in and all connections are correct.
    - ii. If IB0002B = 1, the B phase is not detected. Make certain that your I/O connector is firmly plugged in and all connections are correct.
  - b. This error may also occur if an overflow error occurs while using the gearing function.
5. If SB00041E=1 (SW00041=16384), the MP940 has a **Communication Error**.
  - a. SW00224 will show the status of stations 0-15. If you look at the individual bits (SB002240-SB00224F), you will see a 0 (no error) or 1 (error) for each axis. Station 0 is the least significant bit (farthest to the right of the binary number).
  - b. SW00225 will show the status of stations 16-31 in decimal.
  - c. SW00226 will show the status of stations 32-47 in decimal.
  - d. SW00227 will show the status of stations 48-63 in decimal.
  - e. Note: Mechatrolink will use station 0 for the master and stations 1-29 for slave units. Stations 1-6 have a 1ms update rate, stations 7-14 have a 2ms update rate, stations 15-29 have a 4ms update rate.

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