

Steps to Create a GMT Application

(GMT - Graphical Motion Tasking)

SERVOSTAR S600

Introduction

Creating a complete GMT application in the S600 involves the following:

1. Setting User Units
2. Setting Number of User Units per motor rev
3. Setting Machine Limits
4. Setting Home Type
5. Creating the GMT graphical program
6. Starting the GMT Program

Setting User Units (Location: Basic Setup Screen)

- ◆ Click on the Basic Setup button in the Setup software's main screen
- ◆ Select the Position, Velocity, and Acceleration Units you would like to use in the GMT program. In addition to the GMT screen, units selected will also show up in other screens

Setting User Units per Motor Rev (Location: Position Data Screen)

- ◆ Click on the Position button in the Setup software's main screen
- ◆ Then Click on the Position Data button
- ◆ Fill in application resolution by entering the amount of movement (in the user units selected) per 1 motor rev

Setting Machine Limits (Location: Position Data Screen)

Above the area for setting resolution in the Position Data screen fill in values for the following parameter that set limits for the GMT program:

- ◆ Axis Type (Most application = Linear)
- ◆ t acc/dec min or amax (depending on user units selected for acceleration)
- ◆ vmax

Note: It is possible in the GMT program to enter values outside of these limits but actual performance will be limited to these values

There are 3 selections for axis type: Linear, Rollover, and Modulo. The differences are as follows:

- ◆ Linear: Homing required before making an incremental or absolute move.
- ◆ Rollover: No Homing required, Drive's Feedback position gets reset to 0 on the start of each motion task (or motion task sequence)
- ◆ Modulo: Drive's feedback limits set by modulo start pos and modulo end pos

Setting Home Type (Location: Homing Screen)

- ◆ Click on the Position button in the Setup software's main screen
- ◆ Then Click on the Homing button
- ◆ Select Home Type (Reference Travel)
- ◆ Enter velocity and accel/decel rate for the home move
- ◆ Also enter an offset value if you would like the feedback position when homing is complete to be $\neq 0$. Note this does not move the motor from the home position just establishes a starting value (position) other than 0 as the start position
- ◆ It is also possible in this screen to set a Jog velocity

Creating the GMT graphical program (Location: GMT Screen)

- ◆ Click on the Position button in the Setup software's main screen
- ◆ Then click on the Position Data button, then click on GMT button
- ◆ Once in the GMT screen, use icons on the menu bar to create one or more blocks on the palette.
- ◆ Once a block is on the palette, double click on it to give it definition
- ◆ See application note P-SS-004-1603 entitled "SERVOSTAR 600 Graphical Motion Tasking"
- ◆ Down loading GMT file into the S600 Drive
 - ◆ Use the buttons on the menu bar
 - ◆ When this operation is complete, the setup SW takes the user back to the Position Data Screen. From this screen it is possible to see the "raw" information loaded into the S600 by clicking on the Motion Task Table button

- ◆ Loading an already complete program into GMT
 - ◆ Previously create programs can be loaded into the GMT palette for computer memory
 - ◆ A GMT program downloaded into the S600 can not be uploaded to the GMT screen

Starting a GMT Program

A GMT program can be started in the following ways:

- ◆ Digital Input on connector X3
 - ◆ Must configure the Input in Dig I/O screen to function 16,17 or 23
- ◆ Digital Input on connector X11 (if I/O option card installed)
- ◆ Command through RS232 serial port X6
- ◆ From the Setup Software (from Start button on position data screen or “Move” command from the terminal screen)
- ◆ From a Bus Command (Profibus, DeviceNet, CanOpen)
- ◆ Automatically on power up
 - ◆ Homing required first
 - ◆ Set AUTOHOME and NREFMT parameters in the terminal screen