## 6 Homing Programs

## Single-Axis Homing

This program describes automatic homing for an axis. We assume that axis 1 home switch is connected to the Mx4 input IN1. The negative and positive homing speeds are set to a small value.

The process of homing starts with driving toward the home switch. Upon the receipt of this signal the axis decelerates to a stop, index (marker) pulse interrupt is enabled and a move in opposite direction is initiated. Upon the receipt of index pulse interrupt, the location of index pulse is saved in reference\_pos and the axis decelerates to a stop. The move parameter, reference\_pos, in conjunction with trapezoidal move command, AXMOVE, will drive the axis to the marker position.

## Mul ti-Axis Homing

This program describes automatic homing for multiple axes. We assume that axis 1 and axis 2 home switches are connected to the Mx4 inputs IN1 and IN3 respectively. The negative and positive homing speeds are set to small values. The process of homing starts with driving toward the home switches. Upon receipt of these signals the two axes decelerate to a stop, index (marker) pulse interrupt is enabled and a move in opposite direction is initiated. Upon the receipt of index pulse interrupt, the locations of these index pulses are saved in reference\_pos1 and reference\_pos2, and both axes decelerate to a stop. The move parameters, reference\_pos1, and reference\_pos2, in conjunction with trapezoidal move command, axmove, will move the axes to the marker position.

```
#macro "c:\dspcg\applications\homing\system.lib"
#macro "c:\dspcg\applications\homing\macro.hll"
plc_program:
        run_m_program (var_speed)
end
var_speed:
       ctrl (1, 0, 2000, 1000, 1000)
                                          ; set control gains for
motor 1
        maxacc (1, 1)
                                           ; set maximun acceleration
for motor to 1
        home2(inpl_reg, 0x0004, -0.5, 0.1)
home6(inpl_reg, 0x0020, -0.5, 0.1)
                                              ; home axis 2
                                              ; home axis 6
        var45 = ((sqrt(var44 *pos4))/(timer-1024)+(var47=-
pos1*var6))*sin(pos1*10)
end
```