

Mach4 ENUM list for mc.VAR calls:

(it covers most all of the useable enums, enjoy Scott Shafer)

Controller modes:

mc.MC_MODE_MILL
mc.MC_MODE_LATHE_DIA
mc.MC_MODE_LATHE_RAD
mc.MC_MODE_TANGENTIAL

Axis Enums:

mc.X_AXIS
mc.Y_AXIS
mc.Z_AXIS
mc.A_AXIS
mc.B_AXIS
mc.C_AXIS
mc.S_AXIS
mc.AXIS7
mc.AXIS8
mc.AXIS9
mc.AXIS10
mc.AXIS11

Motor Enums:

mc.MOTOR0 to mc.MOTOR31

Axis Bit Enums:

mc.X_AXIS_BIT
mc.Y_AXIS_BIT
mc.Z_AXIS_BIT
mc.A_AXIS_BIT
mc.B_AXIS_BIT
mc.C_AXIS_BIT
mc.AXIS6_BIT
mc.AXIS7_BIT
mc.AXIS8_BIT
mc.AXIS9_BIT
mc.AXIS10_BIT
mc.AXIS11_BIT

Motor Bit Enums:

mc.MOTOR0_BIT to mc.MOTOR31_BIT

Spindle Control Enums:

mc.MC_SPINDLE_OFF
mc.MC_SPINDLE_FWD
mc.MC_SPINDLE_REV
mc.MC_SPINDLE_RPM
mc.MC_SPINDLE_CSS
mc.MC_SRANGE0 to mc.MC_SRANGE19

Getting Offsets:

mc.MC_OFFSET_FIXTURE
mc.MC_OFFSET_AXIS
mc.MC_OFFSET_TOOL
mc.MC_OFFSET_WORK
mc.MC_OFFSET_HEAD
mc.MC_OFFSET_ALL

System Values:

mc.VAL_ACTIVE_TOOL
mc.VAL_AXIS_MACHINE_POS
mc.VAL_AXIS_POS
mc.VAL_AXIS_VEL
mc.VAL_BLOCK_DELETE
mc.VAL_CONTROLLER_MODE
mc.VAL_CYCLE_TIME
mc.VAL_DIA_REG
mc.VAL_DIST_TO_GO
mc.VAL_ENCODER_POS
mc.VAL_EXECUTION_NUM
mc.VAL_FIXTURE_POS
mc.VAL_FRO
mc.VAL_G_INTERPRETER_POS
mc.VAL_GCODE_LINE
mc.VAL_GCODE_LINE_COUNT
mc.VAL_GCODE_VAR
mc.VAL_TOOLPATH_PERCENT
mc.VAL_HEIGHT_REG
mc.VAL_MACHINE_POS

mc.VAL_MOTOR_PLAN_ABS
mc.VAL_MOTOR_PLAN_INC
mc.VAL_MOTOR_POS
mc.VAL_MOTOR_VEL
mc.VAL_NEXT_TOOL
mc.VAL_OPTIONAL_STOP
mc.VAL_PATHGENERATE
mc.VAL_REGISTER
mc.VAL_RRO
mc.VAL_SINGLE_BLOCK
mc.VAL_SLOW_JOG_RATE
mc.VAL_SOFTLIMIT
mc.VAL_SOFTLIMIT_MAX
mc.VAL_SOFTLIMIT_MIN
mc.VAL_SPINDLE_SPEED
mc.VAL_TOOLPATH_JOGFOLLOW
mc.VAL_VELOCITY
mc.VAL_TOOLOFFSETDIST
mc.VAL_SOFTLIMIT_USED
mc.VAL_SLOW_JOG_ACCEL
mc.VAL_JOG_INC
mc.VAL_AXIS_PROBE_POS
mc.VAL_AXIS_MACHINE_PROBE_POS
mc.VAL_JOG_TYPE
mc.VAL_AXIS_SCALE

Input Signals 0-63:

mc.ISIG_INPUT0 to mc.ISIG_INPUT63

Input Motor Home 0-32:

mc.ISIG_MOTOR0_HOME to mc.ISIG_MOTOR31_HOME

Input Motor Pos limit 0-32:

mc.ISIG_MOTOR0_PLUS to mc.ISIG_MOTOR31_PLUS

Input Motor Min limit 0-32:

mc.ISIG_MOTOR0_MINUS to mc.ISIG_MOTOR31_MINUS

Input Signals Other:

mc.ISIG_PROBE
mc.ISIG_INDEX
mc.ISIG_LIMITOVER
mc.ISIG_EMERGENCY
mc.ISIG_THCON
mc.ISIG_THCUP
mc.ISIG_THCDOWN
mc.ISIG_TIMING
mc.ISIG_JOGXP
mc.ISIG_JOGXN
mc.ISIG_JOGYP
mc.ISIG_JOGYN
mc.ISIG_JOGZP
mc.ISIG_JOGZN
mc.ISIG_JOGAP
mc.ISIG_JOGAN
mc.ISIG_JOGBP
mc.ISIG_JOGBN
mc.ISIG_JOGCP
mc.ISIG_JOGCN
mc.ISIG_SPINDLE_AT_SPEED
mc.ISIG_SPINDLE_AT_ZERO
mc.ISIG_PROBE1
mc.ISIG_PROBE2
mc.ISIG_PROBE3

Output Signals Limit/Home:

mc.OSIG_XLIMITPLUS
mc.OSIG_XLIMITMINUS
mc.OSIG_XHOME
mc.OSIG_YLIMITPLUS
mc.OSIG_YLIMITMINUS
mc.OSIG_YHOME
mc.OSIG_ZLIMITPLUS
mc.OSIG_ZLIMITMINUS
mc.OSIG_ZHOME
mc.OSIG_ALIMITPLUS
mc.OSIG_ALIMITMINUS
mc.OSIG_AHOME

mc.OSIG_BLIMITPLUS
mc.OSIG_BLIMITMINUS
mc.OSIG_BHOME
mc.OSIG_CLIMITPLUS
mc.OSIG_CLIMITMINUS
mc.OSIG_CHOME

Output Signals Enable (0-32):

mc.OSIG_ENABLE0 to mc.OSIG_ENABLE31

Output Signals (0-63):

mc.OSIG_OUTPUT0 to mc.OSIG_OUTPUT63

Output Signals Other:

mc.OSIG_RUNNING_GCODE
mc.OSIG_FEEDHOLD
mc.OSIG_BLOCK_DELETE
mc.OSIG_SINGLE_BLOCK
mc.OSIG_REVERSE_RUN
mc.OSIG_OPT_STOP
mc.OSIG_MACHINE_ENABLED
mc.OSIG_TOOL_CHANGE
mc.OSIG_DIST_TOGO
mc.OSIG_MACHINE_CORD
mc.OSIG_SOFTLIMITS_ON
mc.OSIG_JOG_INC
mc.OSIG_JOG_CONT
mc.OSIG_JOG_ENABLED
mc.OSIG_JOG_MPG
mc.OSIG_HOMED_X
mc.OSIG_HOMED_Y
mc.OSIG_HOMED_Z
mc.OSIG_HOMED_A
mc.OSIG_HOMED_B
mc.OSIG_HOMED_C
mc.OSIG_DWELL
mc.OSIG_TP_MOUSE_DN
mc.OSIG_LIMITOVER
mc.OSIG_CHARGE
mc.OSIG_CHARGE2
mc.OSIG_CURRENTHILOW

mc.OSIG_SPINDLEON
 mc.OSIG_SPINDLEFWD
 mc.OSIG_SPINDLEREV
 mc.OSIG_COOLANTON
 mc.OSIG_MISTON
 mc.OSIG_DIGTRIGGER
 mc.OSIG_ALARM
 mc.OSIG_PRTSF

Tool Table Enums:

mc.TOOLS_START //Start of Tools in Parameter list
 mc.TOOL_INC //Inc from tool to tool in the param list

mc.MTOOL_MILL_X /*X offset*/
 mc.MTOOL_MILL_X_W /*X Wear offset*/
 mc.MTOOL_MILL_Y /*offset*/
 mc.MTOOL_MILL_Y_W /*Y Wear offset*/
 mc.MTOOL_MILL_HEIGHT /*Tool height offset*/
 mc.MTOOL_MILL_HEIGHT_W /*Height wear Offset*/
 mc.MTOOL_MILL_RAD /*Rad for comp*/
 mc.MTOOL_MILL_RAD_W /*wear offset for comp*/
 mc.MTOOL_MILL_POCKET /*Tool changer pocket*/

mc.MTOOL_LATHE_X mc.MTOOL_MILL_X /*X offset*/
 mc.MTOOL_LATHE_X_W mc.MTOOL_MILL_X_W /*X Wear offset*/
 mc.MTOOL_LATHE_Y mc.MTOOL_MILL_Y /*Y offset*/
 mc.MTOOL_LATHE_Y_W mc.MTOOL_MILL_Y_W /*Y Wear offset*/
 mc.MTOOL_LATHE_Z mc.MTOOL_MILL_HEIGHT /*Z offset*/
 mc.MTOOL_LATHE_Z_W mc.MTOOL_MILL_HEIGHT_W /*Z wear offset*/
 mc.MTOOL_LATHE_POCKET mc.MTOOL_MILL_POCKET
 /*Pocket # (may not be needed)*/

mc.MTOOL_LATHE_TIPRAD mc.MTOOL_MILL_RAD /*Tip Rad for comp*/
 mc.MTOOL_LATHE_TIPDIR mc.MTOOL_MILL_RAD_W /*Tool tip DIR*/
 mc.MTOOL_LATHE_TOOLSIDE /*AxisSlide number and - for reversed*/
 mc.MTOOL_TYPE /*Type = 0 == MILL Type != 0 == Lathe*/

Jog Enums:

mc.MC_JOG_POS
 mc.MC_JOG_NEG
 mc.MC_JOG_STOP
 mc.MC_JOG_TYPE_VEL
 mc.MC_JOG_TYPE_INC

ToolPath View Enums:

mc.MC_TPVIEW_TOP
mc.MC_TPVIEW_BOTTOM
mc.MC_TPVIEW_LEFT
mc.MC_TPVIEW_RIGHT
mc.MC_TPVIEW_ISO

Local Var Enums:

mc.SV_A
mc.SV_B
mc.SV_C
mc.SV_I
mc.SV_J
mc.SV_K
mc.SV_D
mc.SV_E
mc.SV_F
mc.SV_G
mc.SV_H
mc.SV_L
mc.SV_M
mc.SV_N
mc.SV_O
mc.SV_P
mc.SV_Q
mc.SV_R
mc.SV_S
mc.SV_T
mc.SV_U
mc.SV_V
mc.SV_W
mc.SV_X
mc.SV_Y
mc.SV_Z

Common vars (cleared on startup)

mc.SV_CMN1_START
mc.SV_CMN1_END

Common vars (retained across startups)

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mc.SV_CMN2_START
mc.SV_CMN2_END
mc.SV_CURRENT_TIP           // Tool tip direction in Lathe mode for Tip Comp
mc.SV_FRO_ON_OFF           // FRO On or Off
mc.SV_CUR_DIA_INDEX         // Current Dia number (D)
mc.SV_CUR_TOOL_NUMBER      // Current tool number (T)
mc.SV_CUR_SELECTED_TOOL    // Current tool that is selected (Next T number)
mc.SV_CUR_LENGTH_INDEX     // Current Length number (H)
mc.SV_CUR_TOOL_XLENGTH_REGISTER
mc.SV_CUR_TOOLDIA_REGISTER // Register for the amount of tool dia offset
mc.SV_CUR_TOOL_ZLENGTH_REGISTER
mc.SV_CUR_TOOL_YLENGTH_REGISTER
mc.SV_CUR_SPINDLE_SPEED
mc.SV_TRAVERSE_RATE // Rate for traverse motions .. I don't think this is needed here..
mc.SV_FEEDRATE       // Feed rate in current units/min
mc.SV_ROTATION_X
mc.SV_ROTATION_Y
mc.SV_ROTATION
mc.SV_ALM           // W: Writing to this var will produce a machine alarm.
mc.SV_CLOCK1       // R: Time, in milliseconds, since the machine was powered on.
mc.SV_CLOCK2       // R: Accumulated time, in hours, of the machine. (Hour Meter)
mc.SV_CNTL1 // R/W: bit 0 high suppresses single block (default == not set), bit 1 high
suppresses waits on MST codes (default == not set).
mc.SV_M_SBK
mc.SV_M_MST
mc.SV_M_FIN           // Same as SV_M_MST.
mc.SV_CNTL2           // R/W: bit 0 high disables feed hold (default == not set), bit 1
high disables FRO (default == not set), bit 2 high enables exact stop (default == not set).
mc.SV_M_FHD
mc.SV_M_OV
mc.SV_M_EST
mc.SV_SETDT           // R/W: Settings Data (bit 2 = 0 Inch, bit 2 = 1 Metric)
mc.SV_MSGSTP         // W: Writing to this var will produce a machine stop.
mc.SV_MRIMG          // R: Status of Mirror Image.
mc.SV_PRSTR          // R: Program restart (0 or 1)
mc.SV_DEFAULT_UNITS // Same as SV_SETDT R/W: (bit 2 = 0 Inch, bit 2 = 1 Metric)
mc.SV_DATE           // R: Current Date (YYYYMMDD)
mc.SV_TIME           // R: Current Time (HHMMSS)
mc.SV_EMPTY          // R: returns NIL
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mc.SV_PI // R: returns pi. (3.14159265358979323846)
mc.SV_BASE_LOG_E // R: returns base of natural logarithm E. 2.71828182845904523536)
mc.SV_PRTSA // R/W: Total number of parts.
mc.SV_PRTSN // R/W: Number of required parts
mc.SV_MAINO // Main program number.
mc.SV_MOD_GROUP_1 // Group 1 // active G-code for motion
mc.SV_MOD_GROUP_2 // Group 2 // active plane, XY-, YZ-, or XZ-plane
mc.SV_MOD_GROUP_3 // Group 3 // absolute or incremental
mc.SV_MOD_GROUP_4 // Group 4 // Arc Center mode
mc.SV_MOD_GROUP_5 // Group 5 // G_93 (inverse time) or G_94 units/min
mc.SV_MOD_GROUP_6 // Group 6 // millimeters or inches
mc.SV_MOD_GROUP_7 // Group 7 // current cutter compensation side
mc.SV_MOD_GROUP_8 // Group 8 // not used
mc.SV_MOD_GROUP_9 // Group 9 // not used
mc.SV_MOD_GROUP_10 // Group 10 // for cycles, old_z or r_plane
mc.SV_MOD_GROUP_11 // Group 11 // Polar mode
mc.SV_MOD_GROUP_12 // Group 12 // active origin (1=G54 to 9=G59.3)
mc.SV_MOD_GROUP_13 // Group 13 // exact path or cutting mode
mc.SV_MOD_GROUP_14 // Group 14 // not used
mc.SV_MOD_GROUP_15 // Group 15 // not used
mc.SV_MOD_GROUP_16 // Group 16 // not used
mc.SV_MOD_GROUP_17 // Group 17 // not used
mc.SV_MOD_GROUP_18 // Group 18 // not used
mc.SV_MOD_GROUP_19 // Group 19 // not used
mc.SV_MOD_GROUP_20 // Group 20 // not used
mc.SV_MOD_GROUP_21 // Group 21 // not used
mc.SV_MOD_GROUP_22 // Group 22 // not used
mc.SV_BUFB // last buffered B code value.
mc.SV_BUFD // last buffered D code value.
mc.SV_BUFE // last buffered E code value.
mc.SV_BUFF // last buffered F code value.
mc.SV_BUFH // last buffered H code value.
mc.SV_BUFM // last buffered H code value.
mc.SV_BUFN // last buffered N code value.
mc.SV_BUFO // last buffered O code value.
mc.SV_BUFS // last buffered S code value.
mc.SV_BUFT // last buffered T code value.
mc.SV_ORIGIN_OFFSET_X
mc.SV_ORIGIN_OFFSET_Y
mc.SV_ORIGIN_OFFSET_Z
mc.SV_ORIGIN_OFFSET_A

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mc.SV_ORIGIN_OFFSET_B
mc.SV_ORIGIN_OFFSET_C
mc.SV_LAST_OUTPUT_X
mc.SV_LAST_OUTPUT_Y
mc.SV_LAST_OUTPUT_Z
mc.SV_LAST_OUTPUT_A
mc.SV_LAST_OUTPUT_B
mc.SV_LAST_OUTPUT_C
mc.SV_CURRENT_MACH_X
mc.SV_CURRENT_MACH_Y
mc.SV_CURRENT_MACH_Z
mc.SV_CURRENT_MACH_A
mc.SV_CURRENT_MACH_B
mc.SV_CURRENT_MACH_C
mc.SV_AXIS_OFFSET_X // Used to save the offset with the G92.3 command
mc.SV_AXIS_OFFSET_Y
mc.SV_AXIS_OFFSET_Z
mc.SV_AXIS_OFFSET_A
mc.SV_AXIS_OFFSET_B
mc.SV_AXIS_OFFSET_C
mc.SV_CURRENT_ABS_X
mc.SV_CURRENT_ABS_Y
mc.SV_CURRENT_ABS_Z
mc.SV_CURRENT_ABS_A
mc.SV_CURRENT_ABS_B
mc.SV_CURRENT_ABS_C
mc.SV_G92_OFFSET_X // Used to save the offset with the G92.3 command
mc.SV_G92_OFFSET_Y
mc.SV_G92_OFFSET_Z
mc.SV_G92_OFFSET_A
mc.SV_G92_OFFSET_B
mc.SV_G92_OFFSET_C
mc.SV_PROBE_POS_X // G31 Skip signal
mc.SV_PROBE_POS_Y
mc.SV_PROBE_POS_Z
mc.SV_PROBE_POS_A
mc.SV_PROBE_POS_B
mc.SV_PROBE_POS_C
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mc.SV_PROBE_MACH_POS_X           // G31 Skip signal machine position
mc.SV_PROBE_MACH_POS_Y
mc.SV_PROBE_MACH_POS_Z
mc.SV_PROBE_MACH_POS_A
mc.SV_PROBE_MACH_POS_B
mc.SV_PROBE_MACH_POS_C
mc.SV_HEAD_SHIFT_X
mc.SV_HEAD_SHIFT_Y
mc.SV_HEAD_SHIFT_Z
mc.SV_HEAD_SHIFT_A
mc.SV_HEAD_SHIFT_B
mc.SV_HEAD_SHIFT_C
/* Turn Registers only */
/* G76 Parameters */
mc.SV_G76_MIN_PASS_DEPTH
mc.SV_G76_FINISH_DEPTH
mc.SV_G76_FINISH_PASSES
mc.SV_G76_THREAD_ANGLE
mc.SV_G76_CHAMFER_AMOUNT
mc.SV_G76_CUTTING_METHOD
/* End of Turn Registers */
mc.SV_CUR_COMP_X                 // Program x, used when cutter comp on
mc.SV_CUR_COMP_Y                 // Program y, used when cutter comp on
mc.SV_CUR_COMP_Z                 // Program z, used when cutter comp on
mc.SV_G_30_XPOS
mc.SV_G_30_YPOS
mc.SV_G_30_ZPOS
mc.SV_G_30_APOS
mc.SV_G_30_BPOS
mc.SV_G_30_CPOS
mc.SV_WORK_SHIFT_X
mc.SV_WORK_SHIFT_Y
mc.SV_WORK_SHIFT_Z
mc.SV_WORK_SHIFT_A
mc.SV_WORK_SHIFT_B
mc.SV_WORK_SHIFT_C
mc.SV_FIXTURES_START             // Fixture start in Parameter list
mc.SV_FIXTURES_INC               // (20)Increment from fixture to fixture (does not define a
system var!)

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mc.SV_G_30_P2_XPOS
mc.SV_G_30_P2_YPOS
mc.SV_G_30_P2_ZPOS
mc.SV_G_30_P2_APOS
mc.SV_G_30_P2_BPOS
mc.SV_G_30_P2_CPOS
mc.SV_G_30_P3_XPOS
mc.SV_G_30_P3_YPOS
mc.SV_G_30_P3_ZPOS
mc.SV_G_30_P3_APOS
mc.SV_G_30_P3_BPOS
mc.SV_G_30_P3_CPOS
mc.SV_G_30_P4_XPOS
mc.SV_G_30_P4_YPOS
mc.SV_G_30_P4_ZPOS
mc.SV_G_30_P4_APOS
mc.SV_G_30_P4_BPOS
mc.SV_G_30_P4_CPOS
mc.SV_ROTATION_G68_NO_R
mc.SV_APPROACH_DIST_X // Approach distance for the G60 Unidirectional approach
command
mc.SV_APPROACH_DIST_Y
mc.SV_APPROACH_DIST_Z
mc.SV_APPROACH_DIST_A
mc.SV_APPROACH_DIST_B
mc.SV_APPROACH_DIST_C
mc.SV_CMN_RO_START // The starting common var (#500-#999) to write protect.
mc.SV_CMN_RO_END // The ending common var (#500-#999) to write protect.
mc.SV_PRTCNTL // Setting to 1 only allows M code specified by #6710 to increment part
count. (default 0)
mc.SV_PRTINCM // Set to a M code that will incremnt part counts with or without M02 and
M30 according to #6700.
mc.SV_PRTSA2 // R/W: Total number of parts. Will change/reflect #3901 as well. (cleared on
file load).
mc.SV_PRTST // R/W: Total number of parts machined.
mc.SV_PRTSN2 // R/W: Number of required parts Will change/reflect #3902 as well
mc.SV_FIXTURE_EXPAND // Fixtures after G54.1
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