

| Variable Name | Variable Address | Comments |
|---------------------------------|------------------|---|
| GVAR_MODAL_G0_G3 | 4001 | Modal state of G00, G01, G02, G03, G33, G34 |
| GVAR_MODAL_G96_G97 | 4002 | Modal state of G96, G97 |
| GVAR_MODAL_G68_G69 | 4004 | Modal state of G68, G69 |
| GVAR_MODAL_G98_G99 | 4005 | Modal state of G98, G99 |
| GVAR_MODAL_G20_G21 | 4006 | Modal state of G20, G21 |
| GVAR_MODAL_G40_G42 | 4007 | Modal state of G40, G41, G42 |
| GVAR_MODAL_G25_G26 | 4008 | Modal state of G25, G26 |
| GVAR_MODAL_G22_G23 | 4009 | Modal state of G22, G23 |
| GVAR_MODAL_G80_G89 | 4010 | Modal state of G80 - G89 |
| GVAR_MODAL_G66_G67 | 4012 | Modal state of G66, G67 |
| GVAR_MODAL_G54_G59 | 4014 | Modal state of G54-G59 |
| GVAR_MODAL_G17_G19 | 4016 | Modal state of G17-G19 |
| GVAR_TOOL_1_X_CORRECTION | 4600 | (+98) Tool correction (small value corrections in the x direction) |
| GVAR_TOOL_1_Z_CORRECTION | 4700 | (+98) Tool correction (small value corrections) in the z direction) |
| GVAR_RUNNING_STOP | 4800 | |
| GVAR_CURRENT_BLOCK_END_POSITION | 5001 | (+8) program position at the end of current block |
| GVAR_CURRENT_MACHINE_POSITION | 5021 | (+8) Current position in Machine coordinates 5021 - Machine Position X 5022 - Machine Position Y 5023 - Machine Position Z 5024 - Machine Position A 5025 - Machine Position B 5026 - Machine Position C 5027 - Machine Position U 5028 - Machine Position V 5029 - Machine Position W |
| GVAR_CURRENT_PROGRAM_POSITION | 5041 | (+8) Current position in Work coordinates 5041 - Work Position X 5042 - Work Position Y 5043 - Work Position Z 5044 - Work Position A 5045 - Work Position B 5046 - Work Position C 5047 - Work Position U 5048 - Work Position V 5049 - Work Position W |
| GVAR_OFFSET_G38_PROBE | 5061 | Specifies the probe offset from the main working tool (or the offset from some coordinate that has been chosen to be the offset zero) |
| GVAR_G38_PROBE_RESULT | 5070 | Stores the result of the probe coming into contact with a surface |

| Variable Name | Variable Address | Comments |
|--------------------------|------------------|---|
| GVAR_OFFSET_G28 | 5161 | Machine coordinates for G28 Home Position 5161 - G28 X Position 5162 - G28 Y Position 5163 - G28 Z Position 5164 - G28 A Position 5165 - G28 B Position 5166 - G28 C Position 5167 - G28 U Position 5168 - G28 V Position 5169 - G28 W Position |
| GVAR_OFFSET_G30 | 5181 | Machine coordinates for G30 Home Position 5181 - G30 X Position 5182 - G30 Y Position 5183 - G30 Z Position 5184 - G30 A Position 5185 - G30 B Position 5186 - G30 C Position 5187 - G30 U Position 5188 - G30 V Position 5189 - G30 W Position |
| GVAR_OFFSET_G92 | 5211 | |
| GVAR_COORD_SYSTEM_NUMBER | 5220 | Register keeps Current Coordinates System number 1- G54, 2- G55, 3- G56, 4- G57, 5- G58, 6- G59, 7- G59.1, 8- G59.2, 9- G59.3 |
| GVAR_OFFSET_G54_DATA | 5221 | (+8) Offsets between Machine and Work coordinates for Coordinates system #1 (G54) #5221 - G54 Offset X, #5222 - G54 Offset Y, #5223 - G54 Offset Z, #5224 - G54 Offset A, #5225 - G54 Offset B, #5226 - G54 Offset C, #5227 - G54 Offset U, #5228 - G54 Offset V, #5229 - G54 Offset W |
| GVAR_OFFSET_G55_DATA | 5241 | (+8) Offsets between Machine and Work coordinates for Coordinates system #2 (G55) #5241 - G55 Offset X, #5242 - G55 Offset Y, #5243 - G55 Offset Z, #5244 - G55 Offset A, #5245 - G55 Offset B, #5246 - G55 Offset C, #5247 - G55 Offset U, #5248 - G55 Offset V, #5249 - G55 Offset W |

| Variable Name | Variable Address | Comments |
|----------------------|------------------|---|
| GVAR_OFFSET_G57_DATA | 5261 | (+8) Offsets between Machine and Work coordinates for Coordinates system #3 (G56) #5261 - G56 Offset X, #5262 - G56 Offset Y, #5263 - G56 Offset Z, #5264 - G56 Offset A, #5265 - G56 Offset B, #5266 - G56 Offset C, #5267 - G56 Offset U, #5268 - G56 Offset V, #5269 - G56 Offset W |
| GVAR_OFFSET_G57_DATA | 5281 | (+8) Offsets between Machine and Work coordinates for Coordinates system #4 (G57) #5281 - G57 Offset X, #5282 - G57 Offset Y, #5283 - G57 Offset Z, #5284 - G57 Offset A, #5285 - G57 Offset B, #5286 - G57 Offset C, #5287 - G57 Offset U, #5288 - G57 Offset V, #5289 - G57 Offset W |
| GVAR_OFFSET_G58_DATA | 5301 | (+8) Offsets between Machine and Work coordinates for Coordinates system #5 (G58) #5301 - G58 Offset X, #5302 - G58 Offset Y, #5303 - G58 Offset Z, #5304 - G58 Offset A, #5305 - G58 Offset B, #5306 - G58 Offset C, #5307 - G58 Offset U, #5308 - G58 Offset V, #5309 - G58 Offset W |
| GVAR_OFFSET_G59_DATA | 5321 | (+8) Offsets between Machine and Work coordinates for Coordinates system #6 (G59) #5321 - G59 Offset X, #5322 - G59 Offset Y, #5323 - G59 Offset Z, #5324 - G59 Offset A, #5325 - G59 Offset B, #5326 - G59 Offset C, #5327 - G59 Offset U, #5328 - G59 Offset V, #5329 - G59 Offset W |

| Variable Name | Variable Address | Comments |
|--------------------------|------------------|---|
| GVAR_OFFSET_G591_DATA | 5341 | (+8) Offsets between Machine and Work coordinates for Coordinates system #7 (G59.1) #5341 - G59.1 Offset X, #5342 - G59.1 Offset Y, #5343 - G59.1 Offset Z, #5344 - G59.1 Offset A, #5345 - G59.1 Offset B, #5346 - G59.1 Offset C, #5347 - G59.1 Offset U, #5348 - G59.1 Offset V, #5349 - G59.1 Offset W |
| GVAR_OFFSET_G592_DATA | 5361 | (+8) Offsets between Machine and Work coordinates for Coordinates system #8 (G59.2) #5361 - G59.2 Offset X, #5362 - G59.2 Offset Y, #5363 - G59.2 Offset Z, #5364 - G59.2 Offset A, #5365 - G59.2 Offset B, #5366 - G59.2 Offset C, #5367 - G59.2 Offset U, #5368 - G59.2 Offset V, #5369 - G59.2 Offset W |
| GVAR_OFFSET_G593_DATA | 5381 | (+8) Offsets between Machine and Work coordinates for Coordinates system #9 (G59.3) #5381 - G59.3 Offset X, #5382 - G59.3 Offset Y, #5383 - G59.3 Offset Z, #5384 - G59.3 Offset A, #5385 - G59.3 Offset B, #5386 - G59.3 Offset C, #5387 - G59.3 Offset U, #5388 - G59.3 Offset V, #5389 - G59.3 Offset W |
| GVAR_CHECK_TOOL_MISMATCH | 5397 | Checks if the tools present correspond to the specified number of tools that are supposed to be used / if any tool mismatch is present |
| GVAR_CHECK_TOOL_BREAKAGE | 5398 | A register contains Tool integrity flag. It's supposed a Tool integrity procedure will write "1" to this register if a Tool Breakage is detected. A "0" value is written when the broken tool is replaced (tool is intact). |
| GVAR_CURRENT_TOOL_NUMBER | 5400 | Current Tool Number (that is being used by the machine at the moment) is stored in this register |
| GVAR_CURRENT_TOOL_OFFSET | 5401 | Offset values. +8 for all axes |
| | 5403 | Tool length (in mm) is stored in this register (z-axis tool offset) |

| Variable Name | Variable Address | Comments |
|------------------------------|------------------|---|
| GVAR_SCHEDULED_TOOL_NUMBER | 5409 | The register stores the tool number that is going to be next in tool holder. ATC procedure uses both #5400 and #5409 registers to find where to put a current tool and where from to get the new one. |
| GVAR_CURRENT_TOOL_DIAMETER | 5410 | The register stores the diameter of the Current Tool. Register value is updated from Tool table when the Current Tool number (#5400) is changed. |
| GVAR_TOOL_FRONTANGLE | 5411 | Register reserved for future implementation (tool front angle) |
| GVAR_TOOL_BACKANGLE | 5412 | Register reserved for future implementation (tool back angle) |
| GVAR_TOOL_ORIENTATION | 5413 | Register reserved for future implementation (tool orientation) |
| GVAR_TOOL HOLDER_ORIENTATION | 5415 | Register reserved for future implementation (orientation values for the tool holder) |
| GVAR_SOFT_LIMITS_MIN | 5421 | (+8) Soft Limits Minimum Position 5421 - Soft Limit Minimum X Position 5422 - Soft Limit Minimum Y Position 5423 - Soft Limit Minimum Z Position 5424 - Soft Limit Minimum A Position 5425 - Soft Limit Minimum B Position 5426 - Soft Limit Minimum C Position 5427 - Soft Limit Minimum U Position 5428 - Soft Limit Minimum V Position 5429 - Soft Limit Minimum W Position |
| GVAR_SOFT_LIMITS_MAX | 5431 | (+8) Soft Limits Maximum Position 5431 - Soft Limit Maximum X Position 5432 - Soft Limit Maximum Y Position 5433 - Soft Limit Maximum Z Position 5434 - Soft Limit Maximum A Position 5435 - Soft Limit Maximum B Position 5436 - Soft Limit Maximum C Position 5437 - Soft Limit Maximum U Position 5438 - Soft Limit Maximum V Position 5439 - Soft Limit Maximum W Position |
| GVAR_OFFSET_G282 | 5441 | Offsets - G28.2, G28.3 and G28.4 are used to record the current machine position coordinate for a certain axis. The syntax for that will be "G28.2 X0", for example, noting that only the x-axis value is to be recorded. NOTE: The recorded value will NOT be zero in this case, but rather the current x-axis position. The number after the axis symbol is IGNORED. The G28.5,G28.6 and G28.7 will then be used to retrieve these axis values. |

| Variable Name | Variable Address | Comments |
|----------------------------|------------------|---|
| GVAR_HOME_AFTER_POSITION | 5451 | (+8) Registers contain values that used by Homing macros to initialize Machine Position after Homing done 5451 - Machine Position X after Homing 5452 - Machine Position Y after Homing 5453 - Machine Position Z after Homing 5454 - Machine Position A after Homing 5455 - Machine Position B after Homing 5456 - Machine Position C after Homing 5457 - Machine Position U after Homing 5458 - Machine Position V after Homing 5459 - Machine Position W after Homing |
| GVAR_CURRENT_NUM_LINE | 5480 | Stores the current program line number. This global variable is used in the percent/estimated time calculations. |
| GVAR_CURRENT_NUM_NC | 5460 | Stores the current NC block number (command number) |
| GVAR_CURRENT_NC_POSITION | 5461 | (+8) Registers keeps Toolpath Work coordinates when Job running was stopped (Paused). This registers are used by the "Back to Path" procedure to return the tool to the toolpath position 5461 - Current NC Position X 5462 - Current NC Position Y 5463 - Current NC Position Z 5464 - Current NC Position A 5465 - Current NC Position B 5466 - Current NC Position C 5467 - Current NC Position U 5468 - Current NC Position V 5469 - Current NC Position W |
| GVAR_TOOL_SENSOR_POSITION | 5471 | Stores the position of the tool sensor (+8) |
| GVAR_SURFACE_SENSOR_WIDTH | 5490 | Specifies the sensor width in mm to be used for the distance calculation between the sensor position and the actual work position |
| GVAR_PIERCE_HEIGHT | 5491 | Specifies the pierce height |
| GVAR_OFFSETZ_MANUAL | 5492 | Specifies a manual z-axis offset |
| GVAR_OFFSETZ_THC | 5493 | Z-axis offset for THC |
| GVAR_SURFACE_SENSOR_NUMBER | 5494 | Specifies sensor number |
| GVAR_SURFACE_SENSOR_TYPE | 5495 | Specifies sensor type - open or closed |
| GVAR_SHEET_THICKNESS | 5496 | Specifies the thickness of the working material |
| GVAR_OFFSET_G283 | 5501 | Similar to 5441 (G282), stores the position. |
| GVAR_OFFSET_G284 | 5511 | +9. See 5441 (G282) for description. |
| GVAR_END_SENSORS_IGNORE | 5521 | Writing "1" to this register will turn off Hardware Limit Sensors control temporarily. |

| Variable Name | Variable Address | Comments |
|---------------------------|------------------|--|
| GVAR_JOG_STEP_SIZE | 5522 | Specifies the jog step size. This variable can be written to (and is what the user should be interacting with rather than the 7381/7382/etc variables) |
| GVAR_JOG_STEP_FLOAT | 5523 | Obsolete global variable to set a float value for the jog step using the on-screen buttons. Has since been replaced, only used on old profile versions. |
| GVAR_SPINDLE_SPEED | 5524 | Register represents given Spindle Speed. It's equal to "Default Spindle Speed" by default. If G-code program "S"-code with new spindle speed settings executed, the value will be changed accordingly. |
| GVAR_SOFT_LIMITS_IGNORE | 5525 | Writing "1" to this register will turn off Software Limits control temporarily. |
| GVAR_M30_SCHEDULED_REWIND | 5526 | The scheduled rewind allows the user to move back to the beginning of the program after the program run has completed. After moving back to the beginning, this variable is set to 0, so the M30 command needs to be added to the file every time the rewind is required (not on by default) |
| GVAR_SHOW_NCMESSAGE | 5527 | Reserved for future development to be able to display a line of text from the G-code file |
| GVAR_SIMULATION_MODE | 5528 | Indicates that the machine will be in drawing mode to be able to draw/etch on the working material |
| GVAR_SHOCK_SENSOR_IGNORE | 5529 | Ignores shock sensor data (useful when utilizing the sensors for procedures other than shock information gathering) |
| GVAR_STEP_PER_UNIT | 5530 | (+6) Specifies the steps per unit value |
| GVAR_PARKING1 | 5541 | (+8) Registers are obsolete since another address space is reserved to go up to 20 parking coordinates |
| GVAR_PARKING2 | 5551 | (+8) Registers are obsolete since another address space is reserved to go up to 20 parking coordinates |
| GVAR_PARKING3 | 5561 | (+8) Registers are obsolete since another address space is reserved to go up to 20 parking coordinates |
| GVAR_PARKING4 | 5571 | (+8) Registers are obsolete since another address space is reserved to go up to 20 parking coordinates |
| GVAR_PARKING5 | 5581 | (+8) Registers are obsolete since another address space is reserved to go up to 20 parking coordinates |

| Variable Name | Variable Address | Comments |
|----------------------------------|------------------|--|
| GVAR_PARKING6 | 5591 | (+8) Registers are obsolete since another address space is reserved to ge up to 20 parking coordinates |
| GVAR_CURRENT_TOOLCHANGER_TYPE | 5600 | Allows to select the toolchanger type (whether it is off/linear/rotary/manual tool change) |
| GVAR_TOOLCHANGER_UNLOAD_OFFSET | 5601 | +8 |
| GVAR_TOOLCHANGER_BLOW_OFF_OFFSET | 5610 | (+8) The offset for the machine to position itself if the tool will be blown out by the compressed air, done for safety reasons |
| GVAR_MYDEV_MSG_COUNTER | 5630 | +64 till 5694. Allows for a quick display of the number of messages in the UDP message counter field in the Network tab |
| GVAR_TECHNOLOGY_CFG | 5701 | <pre> 0- flexible; 1- plasma; 2- gas; 3- mill; 4- lathe; 5- laser engraving enum{ TECH5701_FLEX=0, TECH5701_PLASMA, //1 TECH5701_GAS, //2 TECH5701_MILL, //3 TECH5701_LATHE, //4 TECH5701_LASER_ENG //5 }; </pre> |
| GVAR_THC_ENABLE | 5702 | THC toggle, 0- disable; 1- enable |
| GVAR_IHC_ENABLE | 5703 | IHC toggle, 0- disable; 1- enable |
| GVAR_ET5_SLOW_PID_ENABLE | 5705 | ET5 SLOW PID: 0- disable; 1- enable |
| GVAR_CV_MODE | 5710 | Enables or disables the Constant Velocity mode (0 - disable, 1 - enable) |
| GVAR_CV_TOLERANCE | 5711 | This stores the constant velocity tolerance, as described in the Constant Velocity Mode (CV) manual |
| GVAR_SOFT_LIMITS_CHECKER | 5714 | Checks whether the machine is within or outside the software limits |
| GVAR_LATHE_GEAR | 5715 | Gear ratios can be used on lathe machines. In order to allow for constant surface speed while changing gears, the gear ratio is used. This global variable stores the value of the gear ratio to be used to calculate CSS |

| Variable Name | Variable Address | Comments |
|------------------------------|------------------|--|
| GVAR_MODE_SINGLE_BLOCK | 5720 | Writing "1" into this register will make the program run in single blocks (single lines). In this mode, the program runs through a single next line of code before stopping again. Useful for safety evaluations when running through the entire program can be dangerous. |
| GVAR_POSITION_STORED | 5900 | This register stores the flag (0 or 1) for whether the current position has been saved in flash memory. This is done every few seconds after the movement has been stopped in order to conserve the number of write operations onto flash memory. The variable flag visualization can be seen in the Diagnostics window in the bottom-right corner next to the stop button (grey for not saved - 0, red for saved - 1) |
| GVAR_CURRENT_MOTION_CODE | 6060 | Specifies the current motion code (useful to wait until motion has finished, for example). |
| GVAR_CURRENT_MOTION_WORK_PTR | 6061 | Motion controller work command pointer |
| GVAR_CURRENT_MOTION_LAST_PTR | 6062 | Motion controller work command pointer (last) |
| GVAR_CURRENT_NC_LINE | 6063 | Current line number within the control program |
| GVAR_TOTAL_NC_LINES | 6064 | Stores the total number of lines of the control program |
| GVAR_SYSTEM_JOB_RUN | 6065 | Denotes whether program is currently running |
| GVAR_JOB_PROGRESS | 6067 | Denotes the current job progress in percentage of total lines done from the control program (useful for time estimation) |
| GVAR_OIL_LENGTH_COUNTER | 6080 | Oil system counter which stores the distance that the lathe has travelled. |
| GVAR_OIL_REVERSE_COUNTER | 6081 | Oil system counter which stores the number of direction changes for the machine system (as those require more frequent lubrication). Both the length and the reverse counter are used in the lubrication process |
| GVAR_SOFT_LIMITS_CONTROL | 6083 | Enables or disables software limits (this can otherwise be set through the check mark in Settings > Config > Inputs/Outputs/Sensors > Limits) |
| GVAR_OIL_SERVICE_COUNTER_X | 6090 | Mileage/oil change X-direction trips counter |
| GVAR_OIL_SERVICE_COUNTER_Y | 6091 | Mileage/oil change Y-direction trips counter |

| Variable Name | Variable Address | Comments |
|--------------------------------|------------------|---|
| GVAR_OIL_SERVICE_COUNTER_Z | 6092 | Mileage/oil change Z-direction trips counter |
| GVAR_TOOLCHANGER_POSITION | 6101 | Specifies the tool changer position on the machine (+8 axes) |
| GVAR_TOOLCHANGER_NEXT_POSITION | 6111 | +6 |
| GVAR_TOOLPOT_1_POSITION | 6121 | +6. Registers 6121-6271 specify the positions for the tool pots |
| GVAR_TOOLPOT_2_POSITION | 6131 | +6 |
| GVAR_TOOLPOT_3_POSITION | 6141 | +6 |
| GVAR_TOOLPOT_4_POSITION | 6151 | +6 |
| GVAR_TOOLPOT_5_POSITION | 6161 | +6 |
| GVAR_TOOLPOT_6_POSITION | 6171 | +6 |
| GVAR_TOOLPOT_7_POSITION | 6181 | +6 |
| GVAR_TOOLPOT_8_POSITION | 6191 | +6 |
| GVAR_TOOLPOT_9_POSITION | 6201 | +6 |
| GVAR_TOOLPOT_10_POSITION | 6211 | +6 |
| GVAR_TOOLPOT_11_POSITION | 6221 | +6 |
| GVAR_TOOLPOT_12_POSITION | 6231 | +6 |
| GVAR_TOOLPOT_13_POSITION | 6241 | +6 |
| GVAR_TOOLPOT_14_POSITION | 6251 | +6 |
| GVAR_TOOLPOT_15_POSITION | 6261 | +6 |
| GVAR_TOOLPOT_16_POSITION | 6271 | +6 |
| GVAR_OIL_SERVICE_LIMIT_X | 6890 | Mileage/oil change X-direction limit |
| GVAR_OIL_SERVICE_LIMIT_Y | 6891 | Mileage/oil change Y-direction limit |
| GVAR_OIL_SERVICE_LIMIT_Z | 6892 | Mileage/oil change Z-direction limit |
| GVAR_TOOL_CHANGE_SPEED | 6970 | Specifies the speed during the tool changing phase |
| GVAR_TAGENTKNIFE_ANGLE | 7001 | Current angle of the tangential knife |
| GVAR_TAGENTKNIFE_POSITION | 7002 | Current position of the tangential knife |
| GVAR_FEEDRATE_UNIT | 7003 | Sets the unit which the feedrate will be using (mm or inch) |
| GVAR_ROTATERATE_UNIT | 7004 | Sets the angular rotation unit (degrees/rad/grad) |
| GVAR_TANGENTKNIFE_ENABLE | 7005 | Register represents Automatic Tangential Knife control. If the register value is "0", tangential control is disabled. If the register value is "1", tangential knife control is enabled |
| GVAR_PLC_MOVE_PROCESS | 7006 | Obsolete global variable - used on old control boards |
| GVAR_THC_PWMSPEED | 7009 | Obsolete global variable, previously used with a separate Torch Height Control board |
| GVAR_THC_ARC_VOLTAGE | 7010 | Current arc voltage value is stored here |
| GVAR_THC_ARC_VOLTAGE_REF | 7011 | Reference arc voltage for torch height control is stored in this register |

| Variable Name | Variable Address | Comments |
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| GVAR_THC_ARC_VOLTAGE_ADJ | 7012 | Obsolete global variable |
| GVAR_SAFE_HEIGHT (GVAR_TOOL_LIFT) | 7020 | Spindle lift height, in mm. This specifies a height value for safe XY motion (no obstructions at that height). |
| GVAR_CREEP_SPEED | 7021 | Safe speed while motion down to path position - allows to increase initial plasma arc stability while cutting materials of a higher than normal thickness |
| GVAR_FEED_SPEED | 7030 | Feed Speed for the machine (+9) |
| GVAR_FEED_SPEED_X | 7030 | Feed Speed for the X axis |
| GVAR_RAPID_SPEED | 7040 | +9. Specifies the rapid speed for the machine (all axes) |
| GVAR_RAPID_SPEED_X | 7041 | Rapid Speed for the X axis |
| GVAR_JOG_SPEED | 7050 | +9. Specifies the machine jog speed (all axes). |
| GVAR_JOG_SPEED_X | 7050 | Jog Speed for the X axis |
| GVAR_MARKING_SPEED | 7060 | Specifies the marking speed for the machine. |
| GVAR_SIMULATION_SPEED | 7061 | Specifies the machine's simulation speed (use global variable 7530 to turn simulation mode on/off for a test run through a control program). |
| GVAR_JOG_STEP_UNLIMITED | 7070 | the value is "1" if Current Jog Mode is "Unlimited", otherwise is "0" (integer). This is a read-only register (useful for user panel displays, etc) |
| GVAR_JOG_LOCKED | 7071 | the value is "1" if Jogging is Locked, otherwise is "0" (integer) |
| GVAR_MOTION_OVERSPEED | 7072 | Register represents Motion Ovrerate percentage. |
| GVAR_SPINDLE_OVERSPEED | 7073 | Register represents Spindle Ovrerate percentage. Actual Spindle speed will be $\text{Actual_Speed} = \text{Default_Speed} * \text{Spindle_Overspeed} / 100$ Default Spindle Speed defined by "Default Spindle Speed" variable and can be chanded in G-code program with S-code. |
| GVAR_JOG_OVERSPEED | 7074 | The jog overspeed value is directly edited through this global variable |
| GVAR_PROBE_SENSOR_DIAMETER | 7075 | Specifies the probe sensor diameter in mm |
| GVAR_PROBE_SENSOR_XOFFSET | 7076 | X-axis offset for the probe sensor in millimeters |
| GVAR_PROBE_SENSOR_YOFFSET | 7077 | Y-axis offset for the probe sensor |
| GVAR_MOTION_OVERSPEED_G0 | 7079 | Sets the overspeed value for G0 movement (rapid move) |

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| GVAR_PLC_MOVE_SPEED | 7080 | Allows to set a certain speed to be used in PLC commands (for example: <code>gvarset(7080,speed_z);</code> |
| GVAR_PLC_MOVE_ACCELERATION | 7081 | Stores PLC movement acceleration value |
| GVAR_PLC_RESET_COORDINATES | 7082 | Allows to reset the coordinates to 0 using a PLC command |
| GVAR_CAMERA_READY | 7090 | Variable denotes the camera state (<code>gvarset(7090);</code> denotes that the camera is ready) |
| GVAR_MULTIDEV_MASK | 7100 | Allows for multi-device control directly using global variables. Typically not used, as multi-dev configuration is done through the myCNC software. |
| GVAR_MULTIDEV_ENABLE1 | 7101 | Denotes whether device 1 is ON. Typically, global variables 7101-7132 are only used for edge cases when direct global variable control is required for a multi-device setup. + 31 |
| GVAR_MULTIDEV_ENABLE32 | 7132 | Multi-device control is reserved for up to 32 devices |
| GVAR_MD_MASTER_MOTION_CODE | 7140 | Used for multi-device setups (master motion) |
| GVAR_M1_CONDITIONAL_STOP | 7150 | Allows to use the M01 conditional stop (motion break) command which can be located in Hardware PLC |
| GVAR_LATHE_THREAD_PULLOUT | 7154 | Specifies whether to perform a chamfer at the end of a thread (1) or not (0). This will be using the M23/M24 commands, which are described here |
| GVAR_SPINDLE_ORIENTATION | 7155 | Reserved for future development in order to specify spindle orientation |
| GVAR_PLASMA_PROCESS_CURRENT | 7156 | The value for plasma current is stored in this register |
| GVAR_ALIGN_CHECK | 7170 | Reserved for future development regarding the gantry alignment procedure |
| GVAR_HW_INPUTS0 | 7180 | Stores the input value in 32 bit increments. In this way, Input0 is 0-31, Input1 is 32-63, etc |
| GVAR_HW_INPUTS1 | 7181 | |
| GVAR_HW_INPUTS2 | 7182 | |
| GVAR_HW_INPUTS3 | 7183 | |
| GVAR_HW_OUTPUTS0 | 7184 | Stores the output value (can be both read and written to) |
| GVAR_HW_OUTPUTS1 | 7185 | Stores the output value (can be both read and written to) |
| GVAR_HW_OUTPUTS2 | 7186 | Stores the output value (can be both read and written to) |

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| GVAR_HW_OUTPUTS3 | 7187 | Stores the output value (can be both read and written to) |
| GVAR_HW_INPUTS4 | 7188 | |
| GVAR_HW_INPUTS5 | 7189 | |
| GVAR_HW_INPUTS6 | 7190 | |
| GVAR_HW_INPUTS7 | 7191 | |
| GVAR_HW_OUTPUTS4 | 7192 | Stores the output value (can be written/read) |
| GVAR_HW_OUTPUTS5 | 7193 | |
| GVAR_HW_OUTPUTS6 | 7194 | |
| GVAR_HW_OUTPUTS7 | 7195 | |
| GVAR_HW_ADC0 | 7196 | Stores the ADC value to be read |
| GVAR_HW_ADC1 | 7197 | |
| GVAR_HW_ADC2 | 7198 | |
| GVAR_HW_ADC3 | 7199 | |
| GVAR_HW_ADC4 | 7200 | |
| GVAR_HW_ADC5 | 7201 | |
| GVAR_HW_ADC6 | 7202 | |
| GVAR_HW_ADC7 | 7203 | |
| GVAR_HW_INP_TCOUNT0 | 7206 | Only for ET10, special purpose global variables. On the ET10 controller, there are two ports which allow to count impulse signals sent on these ports and which can then be used as a timer. These timer values are set in to the myCNC program on the host computer with a period of 32 ms |
| GVAR_HW_INP_TCOUNT1 | 7207 | Only the first two registers (7207 and 7208) are currently used on the existing ET10 controller. Registers 7208 and 7209 have been reserved for future development. |
| GVAR_HW_INP_TCOUNT2 | 7208 | Reserved for future development |
| GVAR_HW_INP_TCOUNT3 | 7209 | Reserved for future development |
| GVAR_PARKING_LAST | 7210 | Data for the last machine parking location is stored in this register |
| GVAR_RTCP_DEBUG_X | 7211 | RTCP correction data for X axis is stored in this register for debug purpose. This register is read-only |
| GVAR_RTCP_DEBUG_Y | 7212 | RTCP correction data for Y axis is stored in this register for debug purpose. This register is read-only |
| GVAR_RTCP_DEBUG_Z | 7213 | RTCP correction data for Z axis is stored in this register for debug purpose. This register is read-only |

| Variable Name | Variable Address | Comments |
|-------------------------|------------------|---|
| GVAR_RTCP_SHOULDER | 7215 | Shoulder Length (in units) for RTCP correction calculations (calculating the correction value for the rotation). Note that the shoulder length is measured from the pivot to the end of the shoulder, and not for the entire shoulder length should it extend past the pivot point. |
| GVAR_HCONTROL2_VREF | 7228 | System-reserved global variable for reference voltage. |
| GVAR_HCONTROL_VREF | 7229 | A global variable reserved for system usage (specifies the reference voltage). For user-facing THC interactions, the 7011 global variable should be used instead of 7228 and 7229. |
| GVAR_PLC_USER_DATA | 7230 | (+32) Allows to specify the PLC user data not through var00/etc, but through global variables. This is an older PLC implementation which can still be used by the controller. |
| GVAR_PLC_USER_DATA_LAST | 7261 | Stores the last PLC user global variable data for easy retrieval. |
| GVAR_HW_DAC0 | 7270 | Stores the DAC 0 value to be read |
| GVAR_HW_DAC1 | 7271 | Stores the DAC 1 value to be read |
| GVAR_HW_DAC2 | 7272 | Stores the DAC 2 value to be read |
| GVAR_HW_DAC3 | 7273 | Stores the DAC 3 value to be read |
| GVAR_HW_DAC4 | 7274 | Stores the DAC 4 value to be read |
| GVAR_HW_DAC5 | 7275 | Stores the DAC 5 value to be read |
| GVAR_HW_DAC6 | 7276 | Stores the DAC 6 value to be read |
| GVAR_HW_DAC7 | 7277 | Stores the DAC 7 value to be read |
| GVAR_HW_PWM0 | 7278 | Stores the PWM 0 value to be read |
| GVAR_HW_PWM1 | 7279 | Stores the PWM 1 value to be read |
| GVAR_HW_PWM2 | 7280 | Stores the PWM 2 value to be read |
| GVAR_HW_PWM3 | 7281 | Stores the PWM 3 value to be read |
| GVAR_HW_PWM4 | 7282 | Stores the PWM 4 value to be read |
| GVAR_HW_PWM5 | 7283 | Stores the PWM 5 value to be read |
| GVAR_HW_PWM6 | 7284 | Stores the PWM 6 value to be read |
| GVAR_HW_PWM7 | 7285 | Stores the PWM 7 value to be read |
| GVAR_GOTO_PROGRAMMING | 7290 | Specifies absolute/incremental programming modes. Reserved for certain custom myCNC profiles, and should not be used by most default profile configurations. The selected mode will specify how the machine will move to the GOTO_POSITION described in register 7291 below. |

| Variable Name | Variable Address | Comments |
|-------------------------|------------------|--|
| GVAR_GOTO_POSITION | 7291 | +16. These describe the position to which the machine will be moving. Not used on most default profile configurations. |
| GVAR_REFERENCE_POSITION | 7311 | +16. Specifies a reference position on some custom myCNC profiles (to be used separately from the zero position). This allows to set a reference work location somewhere on the machine (for example, at the point where the multiple axes of the machine are all at zero, etc) and to refer to that position during the work process. |
| GVAR_PRG_RECT_P | 7330 | +16. P=plus (positive direction). Allows to draw a rectangle to specify certain sizes in the visualization window, etc by specifying one of the three-dimensional points to be used as a corner. |
| GVAR_PRG_RECT_M | 7350 | +16. M=minus (negative direction). Allows to draw a rectangle by specifying the second of the three-dimensional points to be used. |
| GVAR_PLC_SPINDLE_STATE | 7370 | Specifies the spindle state (OFF or ON) by writing 0 or 1 into the variable field (for example, gvarset(7370,0); will specify that the spindle is OFF) |
| GVAR_PLC_SPINDLE_SPEED | 7371 | Variable stores the spindle speed |
| GVAR_PLC_COOLANT_STATE | 7372 | Variable stores the coolant state |
| GVAR_PLC_MIST_STATE | 7373 | Mist state is stored (0 for OFF, 1 for ON) |
| GVAR_JOG_STEP_SIZE | 5522 | Prepresents current jog step size (double) |
| GVAR_JOG_STEP_0_0001 | 7381 | the value is "1" if Current Jog Step Size is "0.0001", otherwise is "0" (integer). These values can only be read, not written to. |
| GVAR_JOG_STEP_0_001 | 7382 | the value is "1" if Current Jog Step Size is "0.001", otherwise is "0" (integer) |
| GVAR_JOG_STEP_0_01 | 7383 | the value is "1" if Current Jog Step Size is "0.01", otherwise is "0" (integer) |
| GVAR_JOG_STEP_0_1 | 7384 | the value is "1" if Current Jog Step Size is "0.1", otherwise is "0" (integer) |
| GVAR_JOG_STEP_1_0 | 7385 | the value is "1" if Current Jog Step Size is "1.0", otherwise is "0" (integer) |
| GVAR_JOG_STEP_10 | 7386 | the value is "1" if Current Jog Step Size is "10", otherwise is "0" (integer) |

| Variable Name | Variable Address | Comments |
|------------------------|------------------|--|
| GVAR_SYSTEM_CONFIGURED | 7390 | Specifies that homing has been performed for all axes and that the system is configured and ready to use |
| GVAR_HOMING_X_RESET | 7391 | <p>The register value is used as a flag that Homing X needed. The value is automatically set to "1" is</p> <ul style="list-style-type: none"> - CNC control software just loaded - Emergency button pressed - X Servo Driver not ready event received <p>The register can be used for either Mandatory Homing Handler procedure or just to display information about possible X position lost</p> |
| GVAR_HOMING_Y_RESET | 7392 | <p>The register value is used as a flag that Homing Y needed. The value is automatically set to "1" is</p> <ul style="list-style-type: none"> - CNC control software just loaded - Emergency button pressed - Y Servo Driver not ready event received <p>The register can be used either for Mandatory Homing Handler procedure or just to display information about possible Y position lost</p> |
| GVAR_HOMING_Z_RESET | 7393 | <p>The register value is used as a flag that Homing Z needed. The value is automatically set to "1" is</p> <ul style="list-style-type: none"> - CNC control software just loaded - Emergency button pressed - Z Servo Driver not ready event received <p>The register can be used for either Mandatory Homing Handler procedure or just to display information about possible Z position lost</p> |
| GVAR_HOMING_A_RESET | 7394 | <p>The register value is used as a flag that Homing A needed. The value is automatically set to "1" is</p> <ul style="list-style-type: none"> - CNC control software just loaded - Emergency button pressed - A Servo Driver not ready event received <p>The register can be used for either Mandatory Homing Handler procedure or just to display information about possible A position lost</p> |

| Variable Name | Variable Address | Comments |
|---|------------------|--|
| GVAR_HOMING_B_RESET | 7395 | <p>The register value is used as a flag that Homing B needed. The value is automatically set to "1" is</p> <ul style="list-style-type: none"> - CNC control software just loaded - Emergency button pressed - B Servo Driver not ready event received <p>The register can be used for either Mandatory Homing Handler procedure or just to display information about possible B position lost</p> |
| GVAR_HOMING_C_RESET | 7396 | <p>The register value is used as a flag that Homing C needed. The value is automatically set to "1" is</p> <ul style="list-style-type: none"> - CNC control software just loaded - Emergency button pressed - C Servo Driver not ready event received <p>The register can be used for either Mandatory Homing Handler procedure or just to display information about possible C position lost</p> |
| GVAR_PRG_EXTREMA_P | 7400 | +16. Functionally a duplicate of the 7330 global variable |
| GVAR_PRG_EXTREMA_M | 7420 | +16. Functionally a duplicate of the 7350 global variable |
| GVAR_CURRENT_FEEDRATE | 7440 | Stores the current feedrate value |
| GVAR_TUBE_DIAMETER | 7450 | Stores tube diameter (in mm) |
| GVAR_HT_CURRENT_SETPOINT GVAR_PLASMA_PROCESS_CURRENT | | Same as the GVAR_PLASMA_PROCESS_CURRENT 7156 global variable. Sets the current for the plasma cutting process. |
| GVAR_HT_PLASMA_PREFLOW | 7461 | Specifies the plasma preflow pressure value (HT = Hypertherm parameter) |
| GVAR_HT_PLASMA_CUTFLOW | 7462 | Specifies the plasma cutflow pressure value (Hypertherm parameter) |
| GVAR_HT_SHIELD_PREFLOW | 7463 | Specifies the shield preflow pressure value (Hypertherm) |
| GVAR_HT_SHIELD_CUTFLOW | 7464 | Specifies the shield cutflow pressure (Hypertherm) |
| GVAR_HT_PLASMA_GAS_TYPE | 7465 | Sets the gas type used for cutting |
| GVAR_HT_SHIELD_GAS_TYPE | 7466 | Sets the gas type used for shielding |
| GVAR_HT_GAS_MIXING_SETPOINT | 7467 | Hypertherm parameter for gas mixing that will be read from the cutcharts (typically not edited by the user directly by using a global variable but rather by editing the cutcharts file if needed) |
| GVAR_HT_SYSTEM_ERROR | 7468 | Register for the Hypertherm system error |

| Variable Name | Variable Address | Comments |
|--------------------------------------|------------------|---|
| GVAR_HT_SYSTEM_STATUS | 7469 | Hypertherm register for system status |
| GVAR_HT_PUMP_CONTROL | 7470 | Hypertherm register for storing the pump control value |
| GVAR_HT_FIRMWARE_VERSION | 7471 | Hypertherm firmware version register |
| GVAR_HT_TEST_CUTFLOW_GASES | 7472 | Cutflow test gases variable for Hypertherm consoles |
| GVAR_HT_TEST_PREFLOW_GASES | 7473 | Preflow test gases variable for Hypertherm consoles |
| GVAR_HT_LINE_VOLTAGE | 7474 | Line voltage value (Hypertherm) |
| GVAR_HT_CHOPPER_CURRENT | 7475 | Chopper current value (Hypertherm) |
| GVAR_HT_WORK_LEAD_CURRENT | 7476 | Lead current |
| GVAR_HT_CHOPPER_TEMPERATURE | 7477 | Chopper temperature value (Hypertherm) |
| GVAR_HT_TRANS_TEMPERATURE | 7478 | Hypertherm temperature value |
| GVAR_HT_GAS_PRESSURE | 7479 | Gas pressure value for Hypertherm machines is stored in this register |
| GVAR_HT_COOLANT_FLOW_RATE | 7480 | Coolant flow rate (Hypertherm) |
| GVAR_HT_CURRENT_ACTUAL | 7481 | The real current value for a Hypertherm machine is stored in this register |
| GVAR_OXYFUEL_PREHEAT_COUNTDOWN | 7490 | Oxyfuel preheat countdown value |
| GVAR_OXYFUEL_PREHEAT_COUNTDOWN_V2 | 7491 | The preheat countdown which is set by default (the preheat can then be turned off by the operator if they consider the process to be complete prior to the countdown end) |
| GVAR_PROBE_SENSOR_CORRECTION_XMINUS | 7501 | Edge sensing correction values for the probe: this register specifies the negative-x correction value |
| GVAR_PROBE_SENSOR_CORRECTION_XPLUS | 7502 | Positive x probe correction value |
| GVAR_PROBE_SENSOR_CORRECTION_YMINUS | 7503 | Negative y probe correction value |
| GVAR_PROBE_SENSOR_CORRECTION_YPLUS | 7504 | Positive y probe correction value |
| GVAR_PROBE_SENSOR_CORRECTION_CENTERX | 7505 | Stores the value for the X-position of the probe sensor's center |
| GVAR_PROBE_SENSOR_CORRECTION_CENTERY | 7506 | Stores the value for the Y-position of the probe sensor's center |
| GVAR_CUTTING_FROM_EDGE | 7520 | Specifies whether the Edge Cutting mode is used for plasma/oxy-fuel machines (this mode allows for easier cuts on thicker material). |
| GVAR_MIST_PULSE_WIDTH | 7521 | NS-CNC Pulse Mist Mode. Sets the pulse width for mist control |
| GVAR_MIST_PULSE_PAUSE | 7522 | Specifies the pause for the pulse mist mode (the cycle consists of mist-pause-mist-pause). |

| Variable Name | Variable Address | Comments |
|-------------------------------------|------------------|--|
| GVAR_GANTRY_CORRECTION | 7525 | Register used for gantry alignment procedure. If the sensors are not aligned perfectly level, and if it is possible to measure exactly what the distance between Sensor 1 and Sensor 2 is (in the machine movement axis), then this value will be stored here and will specify how far the machine should align |
| GVAR_DRAWING_FAST | 7530 | Allows to move over a part in a drawing process to check the movement path at a speed higher than the normal cutting speed. Useful for plasma/gas setups with a lower cutting speed. Writing 0 will disable fast drawing, writing 1 will enable fast drawing. The fast drawing speed is set in Global Variable 7061. |
| GVAR_SHOW2D_AXIS_RADIUS | 7540 | Used on certain tube-cutting machine setups to unfold the a-axis for easier visualization. The radius of the tube is set in this register. This should only be used if the user does not want the 4-axis visualization |
| GVAR_ASSIGN_TOOL_OFFSET_X | 7515 | This register specifies the x-axis tool offset |
| GVAR_ASSIGN_TOOL_OFFSET_Z | 7517 | This register specifies the z-axis tool offset |
| GVAR_LATHE_TOOL_LENGTH_CORRECTION_X | 7511 | Specifies the x-axis tool length correction for lathes |
| GVAR_LATHE_TOOL_LENGTH_CORRECTION_Z | 7513 | Specifies the y-axis tool length correction for lathes |
| GVAR_LATHE_TOOL_OFFSET_CORRECTION_X | 7514 | Specifies the z-axis tool length correction for lathes |
| GVAR_SAW_WIDTH | 7550 | Specifies the saw width. The saw configuration is used on certain custom user profiles, and alterations to suit a particular machine are available upon request. |
| GVAR_SAW_POSTION_START | 7551 | Starting position for a saw setup |
| GVAR_SAW_POSTION_END | 7552 | End position for a saw setup |
| GVAR_SAW_SLOT_L | 7553 | |
| GVAR_SAW_SLOT_L1 | 7554 | |
| GVAR_SAW_GROOVE_L | 7555 | |
| GVAR_SAW_GROOVE_T | 7556 | |
| GVAR_SAW_Z_SAFE | 7557 | Flag to show that the saw is safe to operate |
| GVAR_SAW_Z_WORK | 7558 | |
| GVAR_SAW_CUT_WIDTH | 7559 | Specifies the cut width for the saw |
| GVAR_SAW_DIAMETER | 7560 | Specifies the circular saw diameter |
| THC Control variables | | |

| Variable Name | Variable Address | Comments |
|--|------------------|--|
| THC #0 | | |
| GVAR_THC0_CONTROL | 7570 | THC API |
| GVAR_THC0_INPUT | 7571 | THC API |
| GVAR_THC0_VREF | 7572 | THC API |
| GVAR_THC0_OFFSETZ | 7573 | THC API |
| GVAR_THC0_ENABLED | 7574 | THC API |
| THC #1 | | |
| GVAR_THC1_CONTROL | 7575 | THC API |
| GVAR_THC1_INPUT | 7576 | THC API |
| GVAR_THC1_VREF | 7577 | THC API |
| GVAR_THC1_OFFSETZ | 7578 | THC API |
| GVAR_THC1_ENABLED | 7579 | THC API |
| THC # | | |
| GVAR_THC2_CONTROL | 7580 | THC API |
| GVAR_THC2_INPUT | 7581 | THC API |
| GVAR_THC2_VREF | 7582 | THC API |
| GVAR_THC2_OFFSETZ | 7583 | THC API |
| GVAR_THC2_ENABLED | 7584 | THC API |
| THC #3 | | |
| GVAR_THC3_CONTROL | 7585 | THC API |
| GVAR_THC3_INPUT | 7586 | THC API |
| GVAR_THC3_VREF | 7587 | THC API |
| GVAR_THC3_OFFSETZ | 7588 | THC API |
| GVAR_THC3_ENABLED | 7589 | THC API |
| GVAR_KNIFE_FLAG | 7587 | PLC/Software controlled variable. Tool change PLC procedure writes "1" to the register when Tool number changed to Tangential Knife Tool, otherwise writes "0". |
| Cutchart variables | | |
| GVAR_CUTPROCESS_ID | 7600 | Specifies the cut process ID from the cutchart |
| GVAR_CUTPROCESS KERF | 7601 | Specifies the kerf value for the cutchart |
| GVAR_CUTPROCESS_MATERIAL_THICKNESS | 7602 | Specifies the material thickness |
| GVAR_CUTPROCESS_TIME_PREHEAT | 7603 | Preheat time for the cut process |
| GVAR_CUTPROCESS_TIME_SOFT_OXY_START | 7604 | Cutchart - time value for the oxyfuel cutting start |
| GVAR_CUTPROCESS_CUTSPEED | 7605 | Specifies the cutting speed |
| Oxy Fuel cutting, Automatic Gas Console | | |
| GVAR_CUTPROCESS_AGC_IGNITION_FUEL | 7610 | Automatic gas console ignition fuel variable |
| GVAR_CUTPROCESS_AGC_IGNITION_OXY_HEAT | 7611 | Automatic gas console ignition heating flow |
| GVAR_CUTPROCESS_AGC_PREHEAT_FUEL | 7612 | AGC preheat fuel |
| GVAR_CUTPROCESS_AGC_PIERCE_FUEL | 7613 | AGC pierce fuel |

| Variable Name | Variable Address | Comments |
|--|------------------|---|
| GVAR_CUTPROCESS_AGC_PIERCE_OXY_CUT | 7614 | |
| GVAR_CUTPROCESS_AGC_PIERCE_OXY_HEAT | 7615 | |
| GVAR_CUTPROCESS_AGC_CUTTING_FUEL | 7616 | |
| GVAR_CUTPROCESS_AGC_CUTTING_OXY_HEAT | 7617 | |
| GVAR_CUTPROCESS_AGC_CUTTING_OXY_CUT | 7618 | |
| GVAR_CUTPROCESS_AGC_PILOT_FUEL | 7619 | |
| GVAR_CUTPROCESS_AGC_PILOT_OXY_HEAT | 7620 | |
| GVAR_CUTPROCESS_GAS_SELECT1 | 7621 | |
| GVAR_CUTPROCESS_GAS_SELECT2 | 7622 | |
| Plasma Cutting, Torch consumables | | |
| GVAR_CUTPROCESS_SHIELD_RETAINING_CAP | 7630 | Specifies the state of the retaining cap |
| GVAR_CUTPROCESS_SHIELD | 7631 | Specifies shield state |
| GVAR_CUTPROCESS_NOZZLE_RETAINING_CAP | 7632 | Specifies the state of the nozzle retaining cap |
| GVAR_CUTPROCESS_NOZZLE | 7633 | Specifies the nozzle state |
| GVAR_CUTPROCESS_SWIRL_RING | 7634 | Swirl ring state |
| GVAR_CUTPROCESS_ELECTRODE | 7635 | Electrode state |
| GVAR_CUTPROCESS_WATER_TUBE | 7636 | Water tube state |
| Plasma Cutting, Height control settings | | |
| GVAR_CUTPROCESS_HC_PIERCE_DELAY | 7640 | Pierce delay in seconds for the THC process -loaded from the cutcharts and is a separate value from the Items that set the working THC values |
| GVAR_CUTPROCESS_HC_IGNITION_HEIGHT | 7641 | Ignition height in mm for the THC process |
| GVAR_CUTPROCESS_HC_PIERCE_HEIGHT | 7642 | Pierce height in mm |
| GVAR_CUTPROCESS_HC_CUT_HEIGHT | 7643 | Cutting height in mm |
| GVAR_CUTPROCESS_HC_CONTROL_DELAY | 7644 | THC delay, in seconds |
| GVAR_CUTPROCESS_HC_ARC_VOLTAGE | 7645 | Reference arc voltage |
| GVAR_CUTPROCESS_HC_PIERCE_HEIGHT_FACTOR | 7646 | Reserved for Hypertherm consoles, denotes the factor between the pierce height and the cutting height |
| GVAR_CUTPROCESS_CREEP_TIME | 7650 | Creep time, in seconds (plasma cutting, Torch Height Control) |
| GVAR_CUTPROCESS_CREEP_SPEED | 7651 | Creep speed for the plasma cutting process |
| GVAR_CUTPROCESS_MIX_GAS1 | 7652 | Register stores the mix gas data for Hypertherm consoles (gas #1) |
| GVAR_CUTPROCESS_MIX_GAS2 | 7653 | Register stores the mix gas data for Hypertherm consoles (gas #2) |
| Plasma Cutting, Automatic Gas Console | | |
| GVAR_CUTPROCESS_AGC_PLASMA_PREFLOW | 7660 | Automatic gas console preflow value |
| GVAR_CUTPROCESS_AGC_SHIELD_PREFLOW | 7661 | Shield preflow value |
| GVAR_CUTPROCESS_AGC_PLASMA_CUTFLOW | 7662 | Plasma cutflow value |
| GVAR_CUTPROCESS_AGC_SHIELD_CUTFLOW | 7663 | Shield cutflow value |
| Plasma Cutting, Manual Gas Console | | |

| Variable Name | Variable Address | Comments |
|-------------------------------------|------------------|--|
| GVAR_CUTPROCESS_MGC_PLASMA_PREFLOW | 7670 | Manual plasma preflow value taken from the operator panel in order to display on the screen |
| GVAR_CUTPROCESS_MGC_SHIELD_PREFLOW | 7671 | Manual shield preflow value |
| GVAR_CUTPROCESS_MGC_PLASMA_CUTEFLOW | 7672 | Manual plasma cutflow value |
| GVAR_CUTPROCESS_MGC_SHIELD_CUTEFLOW | 7673 | Manual shield cutflow value |
| Plasma Cutting | | |
| GVAR_CUTPROCESS_SET_PROCESS_CURRENT | 7675 | Register indicates the process current |
| GVAR_CUTPROCESS_SET_ARC_CURRENT | 7676 | Set the arc current |
| GVAR_CUTPROCESS_CORNER_REDUCTION | 7677 | Sets the corner reduction value in order to reduce process current and prevent overheating at the corners during the cut |
| GVAR_CUTPROCESS_TORCH_TYPE | 7680 | Sets the cutchart torch type |
| GVAR_CUTPROCESS_MATERIAL_TYPE | 7681 | Sets the material type |
| GVAR_CUTPROCESS_SPECIFIC_MATERIAL | 7682 | Sets the specific material used in the cut |
| GVAR_CUTPROCESS_PLASMA_SHIELD_GASES | 7683 | Denotes the shield gases used |
| GVAR_CUTPROCESS_PROCESS | 7684 | Denotes the particular process employed (bevel cutting, fine cutting, etc) - can be found in the Cutchart menu. |
| GVAR_CUTPROCESS_VENDOR | 7685 | Denotes the machine vendor |
| GVAR_CUTPROCESS_TECHNOLOGY | 7686 | Denotes the technology for the cutting process. |
| GVAR_CUTPROCESS_REVISION | 7687 | The cutchart version used (reserved for Hypertherm machines) |
| Timers | | |
| GVAR_TIMER0_ENABLED | 8100 | Writing "0" to this register will disable Timer0, writing "1" will enable Timer0 |
| GVAR_TIMER0_PORT | 8101 | Writing to this register will change Output pin connected to Timer0. Writing value is the Output Pin# |
| GVAR_TIMER0_PULSE | 8102 | A value written to this register specifies the Timer 0 Pulse width in milliseconds |
| GVAR_TIMER0_PAUSE | 8103 | A value written to this register specifies the Timer 0 Pause in milliseconds |
| GVAR_TIMER1_ENABLED | 8104 | Writing "0" to this register will disable Timer1, writing "1" will enable Timer1 |
| GVAR_TIMER1_PORT | 8105 | Writing to this register will change Output pin connected to Timer1. Writing value is the Output Pin# |
| GVAR_TIMER1_PULSE | 8106 | A value written to this register specifies the Timer 1 Pulse width in milliseconds |
| GVAR_TIMER1_PAUSE | 8107 | A value written to this register specifies the Timer 1 Pause in milliseconds |

| Variable Name | Variable Address | Comments |
|----------------------------------|------------------|---|
| GVAR_TIMER2_ENABLED | 8108 | Writing "0" to this register will disable Timer2, writing "1" will enable Timer2 |
| GVAR_TIMER2_PORT | 8109 | Writing to this register will change Output pin connected to Timer2. Writing value is the Output Pin# |
| GVAR_TIMER2_PULSE | 8110 | A value written to this register specifies the Timer 2 Pulse width in milliseconds |
| GVAR_TIMER2_PAUSE | 8111 | A value written to this register specifies the Timer 2 Pause in milliseconds |
| GVAR_TIMER3_ENABLED | 8112 | Writing "0" to this register will disable Timer3, writing "1" will enable Timer3 |
| GVAR_TIMER3_PORT | 8113 | Writing to this register will change the Output pin connected to Timer3. Written values specifies the Output Pin# |
| GVAR_TIMER3_PULSE | 8114 | A value written to this register specifies the Timer 3 Pulse width in milliseconds |
| GVAR_TIMER3_PAUSE | 8115 | A value written to this register specifies the Timer 3 Pause in milliseconds |
| GVAR_GENERATOR_FRQ_RATIO | 8132 | Ratio for the step-dir coolant control to convert the step motor values into the software units. Set experimentally. |
| GVAR_GENERATOR_FRQ | 8133 | Rate, in ml/hour, for the step-dir coolant control |
| GVAR_FLY0_ZOFFSET | 8140 | Z correction (mm) - on-the-fly correction. This is a read-only value, writing to this register will not have an effect |
| GVAR_CORRECTIONX_OFFSET | 8151 | Register reserved for future development - analogous to flatbed correction, for x-axis |
| GVAR_CORRECTIONY_OFFSET | 8152 | Register reserved for future development - y-axis |
| GVAR_CORRECTIONZ_OFFSET | 8153 | Flatbed correction (z-axis). This value will impact the program (work) coordinate. It is a read-only value which will be retrieved from the flatbed correction table in myCNC software. Writing to this register directly by setting it through a command is not recommended. |
| GVAR_CURRENT_XMACHINE_POSITION | 8221 | (+8) Stores the current machine position for the 8 axes |
| GVAR_CURRENT_XWORK_POSITION | 8231 | (+8) Stores the current work position for the 8 axes |
| GVAR_CURRENT_XMACHINE_CORRECTION | 8241 | (+8) Stores the current machine correction for the 8 axes |
| Encoders | | |

| Variable Name | Variable Address | Comments |
|---------------------|------------------|---|
| GVAR_ET5_ENCODER | 9000 | <p>(+16) Registers represent Encoder values. Writing to this registers does not affect anything. Selected channel Current Encoder value will be returned when reading these registers. Reading these registers from the controller Hardware PLC will return actual Encoder value. Encoder values in the software are updated about every 128ms. This delay should be counted when using Encoder values from the Software PLC.</p> <p>9000 - Encoder #0 value 9001 - Encoder #1 value 9002 - Encoder #2 value 9003 - Encoder #3 value 9004 - Encoder #4 value 9005 - Encoder #5 value 9006 - Encoder #6 value 9007 - Encoder #7 value</p> |
| GVAR_ET5_EXPOSITION | 9016 | <p>(+16) Registers represent Motor PID Following Error (a difference between commanded and sensed position). Writing to this registers does not affect anything. A Following Error of Selected PID will be returned when reading these registers. Reading these registers from the controller Hardware PLC will return actual value of the Following Error. Following Error values in the software are updated about every 128ms. This delay should be counted when using the registers in the Software PLC.</p> <p>9016 - Motor channel #0 PID Following Error 9017 - Motor channel #1 PID Following Error 9018 - Motor channel #2 PID Following Error 9019 - Motor channel #3 PID Following Error 9020 - Motor channel #4 PID Following Error 9021 - Motor channel #5 PID Following Error 9022 - Motor channel #6 PID Following Error 9023 - Motor channel #7 PID Following Error</p> <p>Examples FERROR implementation</p> |

| Variable Name | Variable Address | Comments |
|----------------------------|------------------|---|
| GVAR_ET5_ENCODER_Z | 9032 | +16. Stores the values for the encoders connected to the controller. Available within the PLC controller - stores the encoder value within the cycle (value within one turn). |
| GVAR_ET5_ENCODER_WZ | 9048 | +16. Stores the absolute value for the encoder. |
| GVAR_ENCODER_Z_EVENT | 9070 | Stores info on the wheel of the encoder passing the zero mark (the zero position) |
| GVAR_POPUP_MESSAGE | 9100 | +16. Allows to assign popup messages with either 0 for OFF or 1 for ON (for example, 9103,1 to bring up message #3). Popup messages examples can be seen here . |
| GVAR_SERVO_PID_ON | 60000 | Denotes that the servo PID is ON |
| GVAR_SERVO_PID_OFF | 60001 | Denotes that the servo PID is OFF |
| Modbus devices API | | |
| GVAR_MODBUS_SET_ID | 60010 | Value written to this register is used as Modbus ID of device to communicate with. More information on Modbus is available here . |
| GVAR_MODBUS_SET_PROTOCOL | 60011 | Writing to this register change Modbus protocol. "0" - Modbus/RTU, "1" - Modbus/ASCII |
| GVAR_MODBUS_SET_SPEED | 60012 | Writing to this register will change RS485/Modbus speed. Available speeds are 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 |
| GVAR_MODBUS_SET_CONNECTION | 60013 | Change UART connection parameters: number of bits (8 or 7), parity (none, odd, even), number of stop bits (1, 2). Data comes in 3 low nibbles. The lowest is stop bits, then parity, then number of bits. Example: 0x801=8,N,1 0x712=7,0,2 0x822=8,E,2 |
| GVAR_MODBUS_SET_VALUE | 60019 | Writing to register will latch the value in shadow register |
| GVAR_MODBUS_SET_ADDRESS | 60020 | Writing to register will latch Address to read in shadow register |
| GVAR_MODBUS_WRITE | 60030 | Writing to register will send value from shadow register to Modbus device to address given in written value |

| Variable Name | Variable Address | Comments |
|-------------------------|------------------|---|
| GVAR_MODBUS_READ | 60031 | Read from this register will send read inquiry to Modbus device (PLC controller will be in till Register value received from Modbus device). Writing to this register will send ready inquiry to Modbus device. The value written is used as Register address to read |
| GVAR_MODBUS_WRITE_BITS | 60035 | Write multiple coils. Write multiple coils command indicates the 16-bit address of first coil to write, the number of coils to write, number of bytes of coil values to follow, and the coil values. The response will be the address of the first coil and the number of coils. |
| GVAR_MODBUS_READ_COILS | 60036 | 60039 is to be used instead. |
| GVAR_MODBUS_RAW_WRITE | 60037 | Write single register. Write single register indicates address of the holding register and the new value of the register. The response, similarly, is the address of the register and the new value. |
| GVAR_MODBUS_WRITE_BIT | 60038 | Write single coil. Requests the 16-bit address of the coil, and the value to write (0 for OFF, FF00 for ON) |
| GVAR_MODBUS_READ_INPUTS | 60039 | Read multiple coils. This will request the address of the first coil to read and the number of coils to read. The Modbus device will respond with the number of bytes to follow and the coil input values |
| GVAR_MODBUS_INPUT_REGS0 | 60060 | Input register 0 (+31) |

Global Variables Description

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