

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		
GVAR_TOOL_1_Z_CORRECTION	4700		
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 have been set in properly / 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 is a Tool Breakage is detected. A "0" value is written while the broken tool is replaced.	
GVAR_CURRENT_TOOL_NUMBER	5400	Current Tool Number 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)	
GVAR_SCHEDULED_TOOL_NUMBER	5409	A Tool number, that 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.	

Variable Name	Variable Address	Comments	
GVAR_CURRENT_TOOL_DIAMETER	5410	The register keeps a diameter of the Current Tool. Register value is updated from Tool table when Current Tool number (#5400) is changed.	
GVAR_TOOL_FRONTANGLE	5411	Register reserved for future implementation (tool angle)	
GVAR_TOOL_BACKANGLE	5412	Register reserved for future implementation (tool angle)	
GVAR_TOOL_ORIENTATION	5413	Register reserved for future implementation	
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	

Variable Name	Variable Address	Comments	
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.	
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 line number	
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 "Back to Path" procedure to return the tool on 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)	

Variable Name	Variable Address	Comments	
GVAR_SURFACE_SENSOR_WIDTH	5490	Specifies the sensor width in mm	
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.	
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	

Variable Name	Variable Address	Comments	
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	
GVAR_PARKING6	5591	(+8) Registers are obsolete since another address space is reserved to go 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	

Variable Name	Variable Address	Comments	
GVAR_TECHNOLOGY_CFG	5701	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 };	
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	
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)	

Variable Name	Variable Address	Comments	
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	
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	

Variable Name	Variable Address	Comments	
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	
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).	

Variable Name	Variable Address	Comments	
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 Overtake percentage.	
GVAR_SPINDLE_OVERSPEED	7073	Register represents Spindle Overtake 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 changed 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)	
GVAR_PLC_MOVE_SPEED	7080	Allows to set a certain speed to be used in PLC commands (for example: gvarset(7080,speed_z);	
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 (gvarset(7090); 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.	

Variable Name	Variable Address	Comments	
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)	
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		

Variable Name	Variable Address	Comments	
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	
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.	

Variable Name	Variable Address	Comments	
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.	
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.	

Variable Name	Variable Address	Comments	
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)	
GVAR_SYSTEM_CONFIGURED	7390	Specifies that homing has been performed for all axes and that the system is configured and ready to use	

Variable Name	Variable Address	Comments	
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_SETPPOINT 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	

Variable Name	Variable Address	Comments	
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	
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).	

Variable Name	Variable Address	Comments	
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).	
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_A_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_POSITION_START	7551	Starting position for a saw setup	
GVAR_SAW_POSITION_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		

Variable Name	Variable Address	Comments	
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			
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	

Variable Name	Variable Address	Comments	
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	
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	

Variable Name	Variable Address	Comments	
GVAR_CUTPROCESS_AGC_SHIELD_PREFLOW	7661	Shield preflow value	
GVAR_CUTPROCESS_AGC_PLASMA_CUTEFLOW	7662	Plasma cutflow value	
GVAR_CUTPROCESS_AGC_SHIELD_CUTEFLOW	7663	Shield cutflow value	
Plasma Cutting, Manual Gas Console			
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 whether plasma or oxy-fuel (gas) cutting is used.	
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#	

Variable Name	Variable Address	Comments	
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	
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	

Variable Name	Variable Address	Comments	
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			
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.</p> <p>Reading these registers from the controller Hardware PLC will return actual Encoder value.</p> <p>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>	

Variable Name	Variable Address	Comments	
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.</p> <p>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>	
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			

Variable Name	Variable Address	Comments	
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	
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.	

Variable Name	Variable Address	Comments	
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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Last update: **2019/08/30 11:45**

