

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
GVAR_TOOL_1_Z_CORRECTION	4700	+98
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	
GVAR_G38_PROBE_RESULT	5070	

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 <b>Current Coordinates System</b> 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 <b>Machine</b> and <b>Work</b> 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 <b>Machine</b> and <b>Work</b> 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 <b>Machine</b> and <b>Work</b> 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 <b>Machine</b> and <b>Work</b> 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 <b>Machine</b> and <b>Work</b> 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 <b>Machine</b> and <b>Work</b> 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 <b>Machine</b> and <b>Work</b> 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 <b>Machine</b> and <b>Work</b> 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 <b>Machine</b> and <b>Work</b> 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	
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_OFFSET_TOOL_PARAMS	5400	
GVAR_CURRENT_TOOL_NUMBER	5400	Current Tool Number is stored in this register
GVAR_CURRENT_TOOL_OFFSET	5401	+8 for all axes

Variable Name	Variable Address	Comments
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.
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	A register is reserved for future implementation
GVAR_TOOL_BACKANGLE	5412	A register is reserved for future implementation
GVAR_TOOL_ORIENTATION	5413	A register is reserved for future implementation
GVAR_TOOL HOLDER_ORIENTATION	5415	A register is reserved for future implementation
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	
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	Stop NC line

Variable Name	Variable Address	Comments
GVAR_CURRENT_NUM_NC	5460	Stop NC line
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	(+8)
GVAR_SURFACE_SENSOR_WIDTH	5490	
GVAR_PIERCE_HEIGHT	5491	
GVAR_OFFSETZ_MANUAL	5492	
GVAR_OFFSETZ_THC	5493	
GVAR_SURFACE_SENSOR_NUMBER	5494	
GVAR_SURFACE_SENSOR_TYPE	5495	
GVAR_SHEET_THICKNESS	5496	
GVAR_OFFSET_G283	5501	
GVAR_OFFSET_G284	5511	+9
<a href="#">GVAR_END_SENSORS_IGNORE</a>	<a href="#">5521</a>	Writing "1" to this register will turn off Hardware Limit Sensors control temporarily.
GVAR_JOG_STEP_SIZE	5522	
GVAR_JOG_STEP_FLOAT	5523	
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 spindnle speed settings executed, the value will be changed accordingly.
<a href="#">GVAR_SOFT_LIMITS_IGNORE</a>	<a href="#">5525</a>	Writing "1" to this register will turn off Software Limits control temporarily.
GVAR_M30_SCHEDULED_REWIND	5526	
GVAR_SHOW_NCMESSAGE	5527	
GVAR_DRAWING_MODE	5528	
GVAR_SHOCK_SENSOR_IGNORE	5529	
GVAR_STEP_PER_UNIT	5530	+6
GVAR_PARKING1	5541	(+8) Registers are obsolete since another address space is reserved to ge up to 20 parking coordinates
GVAR_PARKING2	5551	(+8) Registers are obsolete since another address space is reserved to ge up to 20 parking coordinates

Variable Name	Variable Address	Comments
GVAR_PARKING3	5561	(+8) Registers are obsolete since another address space is reserved to ge up to 20 parking coordinates
GVAR_PARKING4	5571	(+8) Registers are obsolete since another address space is reserved to ge up to 20 parking coordinates
GVAR_PARKING5	5581	(+8) Registers are obsolete since another address space is reserved to ge up to 20 parking coordinates
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	
GVAR_TOOLCHANGER_UNLOAD_OFFSET	5601	+8
GVAR_TOOLCHANGER_BLOW_OFF_OFFSET	5610	+8
GVAR_MYDEV_MSG_COUNTER	5630	+64 till 5694
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	0- disable; 1- enable
GVAR_IHC_ENABLE	5703	0- disable; 1- enable
GVAR_ET5_SLOW_PID_ENABLE	5705	ET5 SLOW PID: 0- disable; 1- enable
GVAR_CV_MODE	5710	
GVAR_CV_TOLERANCE	5711	
GVAR_SOFT_LIMITS_CHECKER	5714	
GVAR_LATHE_GEAR	5715	
GVAR_MODE_SINGLE_BLOCK	5720	
GVAR_POSITION_STORED	5900	
GVAR_CURRENT_MOTION_CODE	6060	
GVAR_CURRENT_MOTION_WORK_PTR	6061	Motion controller work command pointer
GVAR_CURRENT_MOTION_LAST_PTR	6062	Motion controller work command pointer
GVAR_CURRENT_NC_LINE	6063	Current NC line number
GVAR_TOTAL_NC_LINES	6064	
GVAR_SYSTEM_JOB_RUN	6065	
GVAR_OIL_LENGTH_COUNTER	6080	
GVAR_OIL_REVERSE_COUNTER	6081	
GVAR_SOFT_LIMITS_CONTROL	6083	

Variable Name	Variable Address	Comments
GVAR_TOOLCHANGER_POSITION	6101	+8
GVAR_TOOLCHANGER_NEXT_POSITION	6111	+6
GVAR_TOOLPOT_1_POSITION	6121	+6
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_TOOL_CHANGE_SPEED	6970	
GVAR_TAGENTKNIFE_ANGLE	7001	
GVAR_TAGENTKNIFE_POSITION		
GVAR_FEEDRATE_UNIT	7003	
GVAR_ROTATERATE_UNIT	7004	
<b>GVAR_TANGENTKNIFE_ENABLE</b>	7005	Register represents Automatic Tangential Knife control. If the register value is "0", tangential control is disabled. If the register value is "1", <b>tangential knife control is enabled</b>
GVAR_PLC_MOVE_PROCESS	7006	
GVAR_THC_PWMSPEED	7009	
GVAR_THC_ARC_VOLTAGE	7010	
GVAR_THC_ARC_VOLTAGE_REF	7011	
GVAR_THC_ARC_VOLTAGE_ADJ	7012	
GVAR_SAFE_HEIGHT (GVAR_TOOL_LIFT)	7020	Height value for safe XY motion.
GVAR_CREEP_SPEED	7021	Safe speed while motion down to path position.
GVAR_FEED_SPEED	7030	Feed Speed +9
GVAR_FEED_SPEED_X	7030	Feed Speed_X
GVAR_RAPID_SPEED	7040	+9
GVAR_RAPID_SPEED_X	7041	Rapid Speed_X
GVAR_JOG_SPEED	7050	+9
GVAR_JOG_SPEED_X	7050	Jog Speed_X
GVAR_MARKING_SPEED	7060	+9



Variable Name	Variable Address	Comments
GVAR_JOG_STEP_UNLIMITED	7070	the value is "1" if Current Jog Mode is "Unlimited", otherwise is "0" (integer)
GVAR_JOG_LOCKED	7071	the value is "1" if Jogging is Locked, otherwise is "0" (integer)
GVAR_MOTION_OVERSPEED	7072	
GVAR_SPINDLE_OVERSPEED	7073	Register represents Spindle Overtime 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	
GVAR_PROBE_SENSOR_DIAMETER	7075	
GVAR_PROBE_SENSOR_XOFFSET	7076	
GVAR_PROBE_SENSOR_YOFFSET	7077	
GVAR_MOTION_OVERSPEED_G0	7079	
GVAR_PLC_MOVE_SPEED	7080	
GVAR_PLC_MOVE_ACCELERATION	7081	
GVAR_PLC_RESET_COORDINATES	7082	
GVAR_CAMERA_READY	7090	
GVAR_MULTIDEV_MASK	7100	
GVAR_MULTIDEV_ENABLE1	7101	
GVAR_MULTIDEV_ENABLE2	7102	
GVAR_MULTIDEV_ENABLE3	7103	
GVAR_MULTIDEV_ENABLE4	7104	
GVAR_MULTIDEV_ENABLE5	7105	
GVAR_MULTIDEV_ENABLE6	7106	
GVAR_MULTIDEV_ENABLE7	7107	
GVAR_MULTIDEV_ENABLE8	7108	
GVAR_MULTIDEV_ENABLE9	7109	
GVAR_MULTIDEV_ENABLE10	7110	
GVAR_MULTIDEV_ENABLE11	7111	
GVAR_MULTIDEV_ENABLE12	7112	
GVAR_MULTIDEV_ENABLE13	7113	
GVAR_MULTIDEV_ENABLE14	7114	
GVAR_MULTIDEV_ENABLE15	7115	
GVAR_MULTIDEV_ENABLE16	7116	
GVAR_MULTIDEV_ENABLE32	7132	reserved up to 32 devices
GVAR_MD_MASTER_MOTION_CODE	7140	master
GVAR_M1_CONDITIONAL_STOP	7150	
GVAR_LATHE_THREAD_PULLOUT	7154	
GVAR_SPINDLE_ORIENTATION	7155	
GVAR_PLASMA_PROCESS_CURRENT	7156	

Variable Name	Variable Address	Comments
GVAR_ALIGN_CHECK	7170	
GVAR_HW_INPUTS0	7180	
GVAR_HW_INPUTS1	7181	
GVAR_HW_INPUTS2	7182	
GVAR_HW_INPUTS3	7183	
GVAR_HW_OUTPUTS0	7184	
GVAR_HW_OUTPUTS1	7185	
GVAR_HW_OUTPUTS2	7186	
GVAR_HW_OUTPUTS3	7187	
GVAR_HW_INPUTS4	7188	
GVAR_HW_INPUTS5	7189	
GVAR_HW_INPUTS6	7190	
GVAR_HW_INPUTS7	7191	
GVAR_HW_OUTPUTS4	7192	
GVAR_HW_OUTPUTS5	7193	
GVAR_HW_OUTPUTS6	7194	
GVAR_HW_OUTPUTS7	7195	
GVAR_HW_ADC0	7196	
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	
GVAR_HW_INP_TCOUNT1	7207	
GVAR_HW_INP_TCOUNT2	7208	
GVAR_HW_INP_TCOUNT3	7209	
GVAR_PARKING_LAST	7210	
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 calculation.
GVAR_HEAD1_ENABLE	7221	
GVAR_HEAD2_ENABLE	7222	
GVAR_HEAD3_ENABLE	7223	
GVAR_HEAD4_ENABLE	7224	

Variable Name	Variable Address	Comments
GVAR_HCONTROL_VREF	7229	
GVAR_PLC_USER_DATA	7230	(+32)
GVAR_PLC_USER_DATA_LAST	7261	
GVAR_HW_DAC0	7270	
GVAR_HW_DAC1	7271	
GVAR_HW_DAC2	7272	
GVAR_HW_DAC3	7273	
GVAR_HW_DAC4	7274	
GVAR_HW_DAC5	7275	
GVAR_HW_DAC6	7276	
GVAR_HW_DAC7	7277	
GVAR_HW_PWM0	7278	
GVAR_HW_PWM1	7279	
GVAR_HW_PWM2	7280	
GVAR_HW_PWM3	7281	
GVAR_HW_PWM4	7282	
GVAR_HW_PWM5	7283	
GVAR_HW_PWM6	7284	
GVAR_HW_PWM7	7285	
GVAR_GOTO_PROGRAMMING	7290	
GVAR_GOTO_POSITION	7291	+16
GVAR_REFERENCE_POSITION	7311	+16
GVAR_PRG_RECT_P	7330	+16
GVAR_PRG_RECT_M	7350	+16
GVAR_PLC_SPINDLE_STATE	7370	
GVAR_PLC_SPINDLE_SPEED	7371	
GVAR_PLC_COOLANT_STATE	7372	
GVAR_PLC_MIST_STATE	7373	
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)
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)

Variable Name	Variable Address	Comments
GVAR_JOG_STEP_10	7386	the value is "1" if Current Jog Step Size is "10", otherwise is "0" (integer)
GVAR_SYSTEM_CONFIGURED	7390	
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"> <li>- CNC control software just loaded</li> <li>- Emergency button pressed</li> <li>- X Servo Driver not ready event received</li> </ul> <p>The register can be used for either <a href="#">Mandatory Homing Handler</a> 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"> <li>- CNC control software just loaded</li> <li>- Emergency button pressed</li> <li>- Y Servo Driver not ready event received</li> </ul> <p>The register can be used either for <a href="#">Mandatory Homing Handler</a> 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"> <li>- CNC control software just loaded</li> <li>- Emergency button pressed</li> <li>- Z Servo Driver not ready event received</li> </ul> <p>The register can be used for either <a href="#">Mandatory Homing Handler</a> 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"> <li>- CNC control software just loaded</li> <li>- Emergency button pressed</li> <li>- A Servo Driver not ready event received</li> </ul> <p>The register can be used for either <a href="#">Mandatory Homing Handler</a> 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"> <li>- CNC control software just loaded</li> <li>- Emergency button pressed</li> <li>- B Servo Driver not ready event received</li> </ul> <p>The register can be used for either <a href="#">Mandatory Homing Handler</a> 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"> <li>- CNC control software just loaded</li> <li>- Emergency button pressed</li> <li>- C Servo Driver not ready event received</li> </ul> <p>The register can be used for either <a href="#">Mandatory Homing Handler</a> procedure or just to display information about possible C position lost</p>
GVAR_PRG_EXTREMA_P	7400	+16
GVAR_PRG_EXTREMA_M	7420	+16
GVAR_CURRENT_FEEDRATE	7440	
GVAR_TUBE_DIAMETER	7450	
GVAR_HT_CURRENT_SETPPOINT GVAR_PLASMA_PROCESS_CURRENT		
GVAR_HT_PLASMA_PREFLOW	7461	
GVAR_HT_PLASMA_CUTFLOW	7462	
GVAR_HT_SHIELD_PREFLOW	7463	
GVAR_HT_SHIELD_CUTFLOW	7464	
GVAR_HT_PLASMA_GAS_TYPE	7465	
GVAR_HT_SHIELD_GAS_TYPE	7466	
GVAR_HT_GAS_MIXING_SETPPOINT	7467	
GVAR_HT_SYSTEM_ERROR	7468	
GVAR_HT_SYSTEM_STATUS	7469	
GVAR_HT_PUMP_CONTROL	7470	
GVAR_HT_FIRMWARE_VERSION	7471	
GVAR_HT_TEST_CUTFLOW_GASES	7472	
GVAR_HT_TEST_PREFLOW_GASES	7473	
GVAR_HT_LINE_VOLTAGE	7474	
GVAR_HT_CHOPPER_CURRENT	7475	
GVAR_HT_WORK_LEAD_CURRENT	7476	
GVAR_HT_CHOPPER_TEMPERATURE	7477	
GVAR_HT_TRANS_TEMPERATURE	7478	

Variable Name	Variable Address	Comments
GVAR_HT_GAS_PRESSURE	7479	
GVAR_HT_COOLANT_FLOW_RATE	7480	
GVAR_HT_CURRENT_ACTUAL	7481	
GVAR_OXYFUEL_PREHEAT_COUNTDOWN	7490	
GVAR_OXYFUEL_PREHEAT_COUNTDOWN_V2	7491	
GVAR_PROBE_SENSOR_CORRECTION_XMINUS	7501	
GVAR_PROBE_SENSOR_CORRECTION_XPLUS	7502	
GVAR_PROBE_SENSOR_CORRECTION_YMINUS	7503	
GVAR_PROBE_SENSOR_CORRECTION_YPLUS	7504	
GVAR_PROBE_SENSOR_CORRECTION_CENTERX	7505	
GVAR_PROBE_SENSOR_CORRECTION_CENTERY	7506	
GVAR_CUTTING_FROM_EDGE	7520	
GVAR_MIST_PULSE_WIDTH	7521	NS-CNC Pulse Mist Mode
GVAR_MIST_PULSE_PAUSE	7522	
GVAR_GANTRY_CORRECTION	7525	
GVAR_DRAWING_FAST	7530	
GVAR_SHOW2D_AXIS_A_RADIUS	7540	
GVAR_ASSIGN_TOOL_OFFSET_X	7515	
GVAR_ASSIGN_TOOL_OFFSET_Z	7517	
GVAR_LATHE_TOOL_LENGTH_CORRECTION_X	7511	
GVAR_LATHE_TOOL_LENGTH_CORRECTION_Z	7513	
GVAR_LATHE_TOOL_OFFSET_CORRECTION_X	7514	
GVAR_SAW_WIDTH	7550	
GVAR_SAW_POSTION_START	7551	
GVAR_SAW_POSTION_END	7552	
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	
GVAR_SAW_Z_WORK	7558	
GVAR_SAW_CUT_WIDTH	7559	
GVAR_SAW_DIAMETER	7560	
<b>THC Control variables</b>		
<b>THC #0</b>		
GVAR_THC0_CONTROL	7570	<a href="#">THC API</a>
GVAR_THC0_INPUT	7571	<a href="#">THC API</a>
GVAR_THC0_VREF	7572	<a href="#">THC API</a>
GVAR_THC0_OFFSETZ	7573	<a href="#">THC API</a>
GVAR_THC0_ENABLED	7574	<a href="#">THC API</a>
<b>THC #1</b>		
GVAR_THC1_CONTROL	7575	<a href="#">THC API</a>
GVAR_THC1_INPUT	7576	<a href="#">THC API</a>
GVAR_THC1_VREF	7577	<a href="#">THC API</a>

Variable Name	Variable Address	Comments
GVAR_THC1_OFFSETZ	7578	THC API
GVAR_THC1_ENABLED	7579	THC API
<b>THC #</b>		
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
<b>THC #3</b>		
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".
<b>Cutchart variables</b>		
GVAR_CUTPROCESS_ID	7600	
GVAR_CUTPROCESS KERF	7601	
GVAR_CUTPROCESS_MATERIAL_THICKNESS	7602	
GVAR_CUTPROCESS_TIME_PREHEAT	7603	
GVAR_CUTPROCESS_TIME_SOFT_OXY_START	7604	
GVAR_CUTPROCESS_CUTSPEED	7605	
GVAR_CUTPROCESS_AGC_IGNITION_FUEL	7610	
GVAR_CUTPROCESS_AGC_IGNITION_OXY_HEAT	7611	
GVAR_CUTPROCESS_AGC_PREHEAT_FUEL	7612	
GVAR_CUTPROCESS_AGC_PIERCE_FUEL	7613	
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	
GVAR_CUTPROCESS_SHIELD_RETAINING_CAP	7630	
GVAR_CUTPROCESS_SHIELD	7631	
GVAR_CUTPROCESS_NOZZLE_RETAINING_CAP	7632	
GVAR_CUTPROCESS_NOZZLE	7633	
GVAR_CUTPROCESS_SWIRL_RING	7634	

**Cutchart variables**

GVAR_CUTPROCESS_ELECTRODE	7635	
GVAR_CUTPROCESS_WATER_TUBE	7636	
GVAR_CUTPROCESS_HC_PIERCE_DELAY	7640	
GVAR_CUTPROCESS_HC_IGNITION_HEIGHT	7641	
GVAR_CUTPROCESS_HC_PIERCE_HEIGHT	7642	
GVAR_CUTPROCESS_HC_CUT_HEIGHT	7643	
GVAR_CUTPROCESS_HC_CONTROL_DELAY	7644	
GVAR_CUTPROCESS_HC_ARC_VOLTAGE	7645	
GVAR_CUTPROCESS_HC_PIERCE_HEIGHT_FACTOR	7646	
GVAR_CUTPROCESS_CREEP_TIME	7650	
GVAR_CUTPROCESS_CREEP_SPEED	7651	
GVAR_CUTPROCESS_MIX_GAS1	7652	
GVAR_CUTPROCESS_MIX_GAS2	7653	

**Plasma Automatic Gas Console**

GVAR_CUTPROCESS_AGC_PLASMA_PREFLOW	7660	
GVAR_CUTPROCESS_AGC_SHIELD_PREFLOW	7661	
GVAR_CUTPROCESS_AGC_PLASMA_CUTEFLOW	7662	
GVAR_CUTPROCESS_AGC_SHIELD_CUTEFLOW	7663	

**Plasma Manual Gas Console**

GVAR_CUTPROCESS_MGC_PLASMA_PREFLOW	7670	
GVAR_CUTPROCESS_MGC_SHIELD_PREFLOW	7671	
GVAR_CUTPROCESS_MGC_PLASMA_CUTEFLOW	7672	
GVAR_CUTPROCESS_MGC_SHIELD_CUTEFLOW	7673	
GVAR_CUTPROCESS_SET_PROCESS_CURRENT	7675	
GVAR_CUTPROCESS_SET_ARC_CURRENT	7676	
GVAR_CUTPROCESS_CORNER_REDUCTION	7677	
GVAR_CUTPROCESS_TORCH_TYPE	7680	
GVAR_CUTPROCESS_MATERIAL_TYPE	7681	
GVAR_CUTPROCESS_SPECIFIC_MATERIAL	7682	
GVAR_CUTPROCESS_PLASMA_SHIELD_GASES	7683	
GVAR_CUTPROCESS_PROCESS	7684	
GVAR_CUTPROCESS_VENDOR	7685	
GVAR_CUTPROCESS_TECHNOLOGY	7686	
GVAR_CUTPROCESS_REVISION	7687	

**Encoders**



Cutchart variables		
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>
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.</p> <p>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  <a href="#">FERROR implementation</a></p>
GVAR_ET5_ENCODER_Z	9032	+16
GVAR_ET5_ENCODER_WZ	9048	+16
GVAR_ENCODER_Z_EVENT	9070	
GVAR_POPUP_MESSAGE	9100	+16
GVAR_SERVO_PID_ON	60000	
GVAR_SERVO_PID_OFF	60001	
Modbus devices API		
GVAR_MODBUS_SET_ID	60010	Value written to this registered is used as Modbus ID of device to communicate with

Cutchart variables		
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 <b>Address to read</b> 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

## Global Variables Description

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