

NOME	ENDEREÇO	READ/WRITE	DESCRIÇÃO
RESERVED_REGISTERS_BASE	+ 00	R	Endereço inicial = 10000
PGM	+ 01	W	Variável utilizada para seleção de programa, deve-se atribuir um número nela, esse número será o programa selecionado
DIR	+ 02	W	Variável utilizada para seleção de diretório do programa, deve-se atribuir um número nela, esse número será o programa selecionado
BLOCK	+ 03	R	
BLOCKS_AHEAD	+ 04	R	
ELAPSED_TIME	+ 05	R	
EXECSTATUS	+ 06	R	
POSTYPE	+ 07	R	
PLANE	+ 08	R	
POS_MODE	+ 09	R	
FEEDTYPE	+ 10	R	
UNITS	+ 11	R	
RADIUSCOMP	+ 12	R	
LENGTHCOMP	+ 13	R	
ORIGIN	+ 14	R	
SHIFT	+ 15	R	
SURFSPEED	+ 16	R	
ACCURACY	+ 17	R	
SPINDLE	+ 18	R	
OPSTOP	+ 19	R	
SPINDLE_MODE	+ 20	R	
COOLER1	+ 21	R	
COOLER2	+ 22	R	
ACTIVETOOL	+ 23	W	
ACTIVETOOLDEF	+ 24	W	
LASTMCODE	+ 25	R	
LASTS	+ 26	W	
LASTF	+ 27	R	
POTF	+ 28	R	
POTS	+ 29	R	
POSR_A	+ 30	R	Variável utilizada para leitura da posição real do eixo
POSR_B	+ 31	R	
POSR_C	+ 32	R	
POSR_U	+ 33	R	
POSR_V	+ 34	R	
POSR_W	+ 35	R	
POSR_X	+ 36	R	
POSR_Y	+ 37	R	
POSR_Z	+ 38	R	
POST_A	+ 39	R	Variável utilizada para leitura da posição teórica do eixo
POST_B	+ 40	R	
POST_C	+ 41	R	
POST_U	+ 42	R	
POST_V	+ 43	R	
POST_W	+ 44	R	
POST_X	+ 45	R	
POST_Y	+ 46	R	
POST_Z	+ 47	R	
POSF_A	+ 48	R	Variável utilizada para leitura da posição final do eixo
POSF_B	+ 49	R	
POSF_C	+ 50	R	
POSF_U	+ 51	R	
POSF_V	+ 52	R	
POSF_W	+ 53	R	
POSF_X	+ 54	R	
POSF_Y	+ 55	R	
POSF_Z	+ 56	R	
POS_A	+ 57	R	
POS_B	+ 58	R	
POS_C	+ 59	R	
POS_U	+ 60	R	
POS_V	+ 61	R	
POS_W	+ 62	R	
POS_X	+ 63	R	
POS_Y	+ 64	R	
POS_Z	+ 65	R	
TOOLRADIUS	+ 66	R	
TOOLENGTH	+ 67	R	
TOOLENGTH2	+ 68	R	
TOOLSIDE	+ 69	R	
FEEDRATE	+ 70	R	
SPINDLESPEED	+ 71	W	
USERLEVEL	+ 72	R	
PUT_DATA	+ 73	W	data base
GET_DATA	+ 74	W	

GET_INDEX	+ 75	R	
PUT_INDEX	+ 76	R	
CLEAR_ALL_DATA	+ 77	W	
SAVE_DATA	+ 78	W	
LOAD_DATA	+ 79	W	
TOOL_DATA	+ 80	W	Variável responsável por selecionar uma ferramenta da tabela de ferramentas
TOOL_F	+ 81	W	Alterar a família da ferramenta que foi selecionada pela variável 80
TOOL_L	+ 82	W	Alterar o comprimento da ferramenta selecionada
TOOL_LX	+ 83	W	
TOOL_LZ	+ 84	W	
TOOL_R	+ 85	W	
TOOL_LC	+ 86	W	
TOOL_DL	+ 87	W	
TOOL_DLX	+ 88	W	
TOOL_DLZ	+ 89	W	
TOOL_DR	+ 90	W	
TOOL_TR	+ 91	W	
TOOL_AP	+ 92	W	
TOOL_AC	+ 93	W	
TOOL_DI	+ 94	W	
TOOL_W	+ 95	W	
TOOL_N	+ 96	W	
TOOL_TS	+ 97	W	
TOOL_COR	+ 98	W	
TOOL_UNIT	+ 99	W	
POSTR_A	+ 100	R	
POSTR_B	+ 101	R	
POSTR_C	+ 102	R	
POSTR_U	+ 103	R	
POSTR_V	+ 104	R	
POSTR_W	+ 105	R	
POSTR_X	+ 106	R	
POSTR_Y	+ 107	R	
POSTR_Z	+ 108	R	
POSTT_A	+ 109	R	
POSTT_B	+ 110	R	
POSTT_C	+ 111	R	
POSTT_U	+ 112	R	
POSTT_V	+ 113	R	
POSTT_W	+ 114	R	
POSTT_X	+ 115	R	
POSTT_Y	+ 116	R	
POSTT_Z	+ 117	R	
POSTF_A	+ 118	R	
POSTF_B	+ 119	R	
POSTF_C	+ 120	R	
POSTF_U	+ 121	R	
POSTF_V	+ 122	R	
POSTF_W	+ 123	R	
POSTF_X	+ 124	R	
POSTF_Y	+ 125	R	
POSTF_Z	+ 126	R	
TRACER_RESET	+ 127	W	tracer
TRACER_ENABLE	+ 128	W	
TRACER_DISABLE	+ 129	W	
LIMIT_X_LIMIT	+ 130	W	Axes limits REGISTERS
LIMIT_X_STATUS	+ 131	R	
LIMIT_X_POS	+ 132	W	
LIMIT_X_NEG	+ 133	W	
LIMIT_Y_LIMIT	+ 134	W	
LIMIT_Y_STATUS	+ 135	R	
LIMIT_Y_POS	+ 136	W	
LIMIT_Y_NEG	+ 137	W	
LIMIT_Z_LIMIT	+ 138	W	
LIMIT_Z_STATUS	+ 139	R	
LIMIT_Z_POS	+ 140	W	
LIMIT_Z_NEG	+ 141	W	
LIMIT_U_LIMIT	+ 142	W	
LIMIT_U_STATUS	+ 143	R	
LIMIT_U_POS	+ 144	W	
LIMIT_U_NEG	+ 145	W	
LIMIT_V_LIMIT	+ 146	W	
LIMIT_V_STATUS	+ 147	R	
LIMIT_V_POS	+ 148	W	

LIMIT_V_NEG	+ 149	W	
LIMIT_W_LIMIT	+ 150	W	
LIMIT_W_STATUS	+ 151	R	
LIMIT_W_POS	+ 152	W	
LIMIT_W_NEG	+ 153	W	
LIMIT_A_LIMIT	+ 154	W	
LIMIT_A_STATUS	+ 155	R	
LIMIT_A_POS	+ 156	W	
LIMIT_A_NEG	+ 157	W	
LIMIT_B_LIMIT	+ 158	W	
LIMIT_B_STATUS	+ 159	R	
LIMIT_B_POS	+ 160	W	
LIMIT_B_NEG	+ 161	W	
LIMIT_C_LIMIT	+ 162	W	
LIMIT_C_STATUS	+ 163	R	
LIMIT_C_POS	+ 164	W	
LIMIT_C_NEG	+ 165	W	
CYC_RETURN_TYPE	+ 166	R	G99
OVER_METAL	+ 167	W	OVER METAL LAYER
SCOPE_DATA_AXIS_1	+ 168	W	SCOPE DATA
SCOPE_DATA_AXIS_2	+ 169	W	
SCOPE_DATA_CMD	+ 170	W	
TOOL_NALARM	+ 171	W	Extended TOOL DATA
TOOL_NCORR	+ 172	W	
TOOL_XLCORR	+ 173	W	
TOOL_ZRCORR	+ 174	W	
USER_TABLE_SET_ID	+ 180	W	User Tables Read/Write Access
USER_TABLE_SET_LIN	+ 181	W	
USER_TABLE_SET_COL	+ 182	W	
USER_TABLE_GET_DATA	+ 183	R	User Tables Read Access
USER_TABLE_GET_LINS	+ 184	R	
USER_TABLE_GET_COLS	+ 185	R	
USER_TABLE_SET_XDATA	+ 186	W	TABLE X
USER_TABLE_GET_LIN_XDATA	+ 187	R	
USER_TABLE_SET_COL_FX	+ 188	W	
USER_TABLE_GET_FX	+ 189	R	
TOOL_CHANGER_POSITION	+ 190	W	Tool Changer
TOOL_CHANGER_ASK_TOOL	+ 191	R	
TOOL_CHANGER_SET_TOOL	+ 192	W	
TOOL_CHANGER_TOOL	+ 193	W	
TOOL_CHANGER_ASK_POSITION	+ 194	R	
TOOL_CHANGER_ASK_FREE_POSITION	+ 195	R	
MAIN_INITIALIZATION	+ 200	R	Main Initialization
EMERGENCY_STATE	+ 201	W	Emergency State
PGM_FEED_THEO	+ 205	R	PGM current Feed (Ftheo) in mm/min
SPINDLE_INDEX_STOP_ANGLE	+ 206	R	Spindle Index Stop ANGLE
SPINDLE_THEO_SPEED	+ 207	R	Spindle THEO Speed
EXE_ATOMIC_FUNCTION_COUNTER	+ 208	W	Atomic Function Counter
DSP_ATOMIC_FUNCTION_COUNTER	+ 209	R	
PRESET_A	+ 210	W	Preset Axis
PRESET_B	+ 211	W	
PRESET_C	+ 212	W	
PRESET_U	+ 213	W	
PRESET_V	+ 214	W	
PRESET_W	+ 215	W	
PRESET_X	+ 216	W	
PRESET_Y	+ 217	W	
PRESET_Z	+ 218	W	
SELECT_ORIGIN	+ 219	W	
POS_STOP_X	+ 220	R	Last Stop Position
POS_STOP_Y	+ 221	R	
POS_STOP_Z	+ 222	R	
GRAPHIC_CUTTING_STATUS	+ 223	W	Graphic Cutting Status
BREAK_POINT_N_TIMES_CONDITION	+ 224	W	Resume Program Break Point Conditions

BREAK_POINT_M_FUNCTION	+ 225	W	
SET_FEEDRATE	+ 226	W	Feed Rate Control
SET_LOCK	+ 227	W	
EXE_CURSOR_STATUS	+ 228	R	Execution Cursor Status
RTC_YEAR	+ 230	R	RTC
RTC_MONTH	+ 231	R	
RTC_DAY	+ 232	R	
RTC_HOUR	+ 233	R	
RTC_MINUTE	+ 234	R	
RTC_SECOND	+ 235	R	
RTC_YEAR_MONTH_DAYS_SINCE_2000	+ 236	R	
RTC_HOUR_MINUTE_SECOND_OF_CURRENT_YEAR	+ 237	R	
SD_CARD_STATUS	+ 238	R	SD_CARD Status
USER_TABLE_WR_DATA	+ 240	W	User Tables Write Access
USER_TABLE_WR_TAB_FILE	+ 241	W	
USER_TABLE_WR_CSV_FILE	+ 242	W	
USER_TABLE_LD_DXF_FILE	+ 243	W	
CURRENT_BLOCK_ID	+ 245	W	Current Block ID
GRAF_TOOL_OFFSET_X	+ 246	W	Tool Offsets for Graphics
GRAF_TOOL_OFFSET_Y	+ 247	W	
SET_PUNCH_MODE	+ 248	W	Punch MODE
SET_PUNCH_DIST	+ 249	W	
REVERSE_EXECUTION_STATUS	+ 250	R	Reverse Execution Status
WAIT_FOR_DRAWING_ELEMENTS	+ 251	R	
RESUME_EXECUTION_TYPE	+ 252	R	Resume Execution Type
PLC_SERIAL_GEN_PROTOCOL_SERVICE	+ 255	W	Generic PLC Serial Communication Protocol
DRY_RUN_FEED_RATE_OVERRIDE	+ 256	W	Dry Run Feed Rate Override
INSERT_MCODE_G00_TO_G02_OR_G03	+ 257	W	Insert Mcode when transition G00 to G02 or G03
SMALL_LINES_SIZE	+ 258	W	Small Lines Size and Feed Rate
SMALL_LINES_FEED_RATE	+ 259	W	
ELEMENTS_STORED_ON_M_TABLE	+ 260	R	GoTo M Table GoTo Line
CURRENT_MARK_INDEX_FROM_M_TABLE	+ 261	R	
GOTO_MARK_INDEX_M_TABLE	+ 262	W	
GOTO_LAST_MARK_LINE_M_TABLE	+ 263	W	
RESET_EXEC_TIMER	+ 265	W	Reset Execution Time
FEED_RATE_OVERRIDE	+ 266	W	Feed Rate Override
DISTANCE_TO_VERTICE	+ 267	R	
M00_BEHAVES_LIKE_M30	+ 268	W	M00 behaves like M30
OPTION_ACC_CIRC_INTERPOL_P142	+ 269	W	Changes Acceleration during Circular Interpolation
REC_CMD	+ 270	W	RR_CMD_WR_FILE_OPTIMA_CADWAY_PLC RECEIPT : BACKUP / RESTORE PLC DATA / PLC TABLES / CAD_WAY: RR_CMD_NOP RR_CMD_FORMAT RR_CMD_CLEAR_REC RR_CMD_CLEAR_BLK RR_CMD_READ_REC RR_CMD_WRITE_REC RR_CMD_READ_BLK RR_CMD_WRITE_BLK RR_CMD_EXPORT_BLK RR_CMD_IMPORT_BLK RR_CMD_DELETE_BLK RR_CMD_INSERT_BLK RR_CMD_READ_N_BLK RR_CMD_WRITE_TABLE_BP RR_CMD_WRITE_TABLE_EXE RR_CMD_WRITE_TABLE_PLC RR_CMD_WRITE_TABLE_SCR RR_CMD_WR_FILE_OPTIMA_CADWAY_EXE RR_CMD_WR_FILE_OPTIMA_CADWAY_PLC
REC_CMD_STATUS	+ 271	R	
REC_AREA	+ 272	W	
REC_SIZE	+ 273	W	

REC_BLOCK	+ 274	W	
REC_ID	+ 275	W	
REC_BLK_ID	+ 276	W	
REC_PLC_ADR	+ 277	W	
REC_REGISTER	+ 278	W	
REC_BLOCK_CNT	+ 279	W	
CUT_GRAPH_OFFSET_X	+ 280	W	CutMonitor
CUT_GRAPH_OFFSET_Y	+ 281	W	
CUT_GRAPH_Rotation	+ 282	W	
CUT_GRAPH_Board_Lenght_X	+ 283	W	
CUT_GRAPH_Board_Lenght_Y	+ 284	W	
CUT_GRAPH_TABLE_BLOCK_ID	+ 285	W	
CUT_GRAPH_MIRROR_CMD	+ 286	W	
CIR_FEED_RATE_OVERRIDE	+ 287	W	Circular Feed Rate Override
CUT_GRAPH_FIT_ON_SCREEN	+ 288	W	
PGM LENGHT_REST_MM	+ 290	W	Program accumulated length: total length
PGM LENGHT_TOTAL_IN_METERS	+ 291	W	
DSP LENGHT_REST_MM	+ 292	W	
DSP LENGHT_TOTAL_IN_METERS	+ 293	W	
PGM_COPY_CMD	+ 300	W	Copying Programs to and from SD CARD
PGM_COPY_SRC	+ 301	W	
PGM_COPY_DST	+ 302	W	
PERIMETER_COOPLING_AXIS	+ 310	W	Perimeter Coopling
PERIMETER_COOPLING_FACTOR	+ 311	W	
COORD_TRANS_TAN_RADIUS	+ 315	W	Coordinates Transformation for tangencial coopling
COORD_TRANS_TAN_X_FIX	+ 316	W	
COORD_TRANS_TAN_Y_FIX	+ 317	W	
READ_REP_INFO_IN_PGMs_HEADER	+ 318	W	Read PGM 1 to 20 Header REP and store in #val vector %1 (3210 x 2200 M00774 50Rep.)
READ_REP_INIT_PGM	+ 319	W	
MIN_RADIUS_CIRCULAR	+ 320	W	
MAX_RADIUS_CIRCULAR	+ 321	W	
SELECT_PGM_TV_WAY	+ 322	W	
SELECT_REP_TV_WAY	+ 323	W	
SELECT_MINIMUM_MOVE	+ 324	W	
SHEET_SIZE_X	+ 325	W	
SHEET_SIZE_Y	+ 326	W	
FTP_DEL_ALL_CNT	+ 327	R	
FTP_DEL_FILE_CNT	+ 328	R	
PLC_MOTION_DATA_ADR	+ 330	W	Motion Data Structure to interface Cyc with Flight Simulation MCSlink DLL
PLC_RM_STATUS_ADR	+ 331	W	
CHECK_MOTION_DATA_STATUS	+ 332	R	
CMD_STATE_REQUEST	+ 333	W	
AUTO_BALANCER_CMD_ADR	+ 340	W	AUTO_BALANCER
AUTO_BALANCER_STATUS_ADR	+ 341	R	
AUTO_BALANCER_SENSIBILITY_DATA_ADR	+ 342	R	
AUTO_BALANCER_DELAY_DATA_ADR	+ 343	R	
AUTO_BALANCER_WEIGHT_DATA_ADR	+ 344	R	
AUTO_BALANCER_CORRECTION_ANG_DATA_ADR	+ 345	R	
EPSON_ROBOT_CMD	+ 350	W	EPSON ROBOT: CNC -> ROBOT starts with \$ CNC <- ROBOT starts with #
EPSON_ROBOT_DATA0	+ 351	W	
EPSON_ROBOT_DATA1	+ 352	W	
EPSON_ROBOT_STATUS	+ 353	R	
EPSON_ROBOT_RET0	+ 354	R	
EPSON_ROBOT_RET1	+ 355	R	
CONVERT_PGM_TO_AF_PGM_CMD	+ 360	W	Part Program Automatic Generation
CONVERT_PGM_TO_AF_STATUS	+ 361	R	
SELECT_PGM_FOR_EXECUTION	+ 362	W	
SELECT_DIR_FOR_EXECUTION	+ 363	W	
SELECT_AF_PGM_FOR_DESTINATION	+ 364	W	
SELECT_AF_DIR_FOR_DESTINATION	+ 365	W	
SELECT_TABLE_FOR_DESTINATION	+ 366	W	Convert to Table and With Lin Segment Size
SELECT_TABLE_TYPE_RAM_0_CSV_1	+ 367	W	
SPLIT_MOVES_TO_LINEAR_SEGMENT_LENHT_M	+ 368	W	
MEM_PLC_FLUSH_CMD	+ 370	W	Non Volatile Table
SIMULATION_MODE	+ 371	R	Simulation Mode Status
REPORT_ID_TYPE	+ 372	W	Reports ID and Report Command
REPORT_COMMAND	+ 373	W	

RETAIL_MSG_GROUP_ENABLE	+ 375	W	RETAIL_MSG
RETAIL_MSG_GROUP_DISABLE	+ 376	W	
RETAIL_MSG_ALL_GROUPS_ENABLE	+ 377	W	
RETAIL_MSG_ALL_GROUPS_DISABLE	+ 378	W	
POSAUXENC_A	+ 380	R	Drive Aux Encoder (2nd Position)
POSAUXENC_B	+ 381	R	
POSAUXENC_C	+ 382	R	
POSAUXENC_U	+ 383	R	
POSAUXENC_V	+ 384	R	
POSAUXENC_W	+ 385	R	
POSAUXENC_X	+ 386	R	
POSAUXENC_Y	+ 387	R	
POSAUXENC_Z	+ 388	R	
LAGAUXENC_A	+ 389	R	
LAGAUXENC_B	+ 390	R	
LAGAUXENC_C	+ 391	R	
LAGAUXENC_U	+ 392	R	
LAGAUXENC_V	+ 393	R	
LAGAUXENC_W	+ 394	R	
LAGAUXENC_X	+ 395	R	
LAGAUXENC_Y	+ 396	R	
LAGAUXENC_Z	+ 397	R	
ENABLE_AUXENC_A	+ 398	W	
ENABLE_AUXENC_B	+ 399	W	
ENABLE_AUXENC_C	+ 400	W	
ENABLE_AUXENC_U	+ 401	W	
ENABLE_AUXENC_V	+ 402	W	
ENABLE_AUXENC_W	+ 403	W	
ENABLE_AUXENC_X	+ 404	W	
ENABLE_AUXENC_Y	+ 405	W	
ENABLE_AUXENC_Z	+ 406	W	
AUXENC_CONTROL_TIME	+ 407	W	aux encoder (slip) control time in ms
DRIVE_NUMBER	+ 410	W	DRIVE PDO Information: Axis number
DRIVE_ACTUAL_POSITION	+ 411	R	Read drive actual position (user units - ToolRealPosition)
DRIVE_ACTUAL_VELOCITY	+ 412	R	Read drive actual velocity (drive units)
DRIVE_ACTUAL_TORQUE	+ 413	R	Read drive actual torque (drive units)
DRIVE_FAULT_CODE	+ 414	R	Read last drive fault code (Fnnn): 0 = no fault, -1 = EtherCAT Fail, nnn = drive fault code
DRIVE_NUMBER_FAULTS	+ 415	R	Read number faults of drive
DRIVE_STATUSW	+ 416	R	Read drive Status Word
DRIVE_AUX_ENCODER	+ 417	R	Read drive auxiliary encoder with reference offset: units = 360o / rev (float)
DRIVE_ANALOG_INPUT	+ 418	R	Read drive analog input (drive units): +12.5V = -32768 to +32767 (16 bits)
DRIVE_AUX_ENCODER_REF_STT	+ 419	R	Read reference status of auxiliary encoder (0 = no reference , 1 = reference OK)
DRIVE_ANALOG_OUTPUT	+ 420	W	Set analog output value (drive units): +10V = -10000 to +10000 (mV)
DRIVE_AUX_ENCODER_REF_CMD	+ 421	W	Drive Aux Encoder: Set reference search command to auxiliary encoder (1 = Start Ref , 0 = Cancel Ref)
DRIVE_AUX_ENCODER_REF_DELAY	+ 422	W	Drive Aux Encoder: Set time delay compensation in the capture mode
DRIVE_AUX_ENCODER_REF_OFFSET	+ 423	R	Drive Aux Encoder: Read REF offset value: units = degrees
AXIS_GEOMETRIC_ERROR	+ 424	R	Geometric compensation error of axis (mm)
DRIVE_AUX_ENCODER_NUMERATOR	+ 425	W	Drive Aux Encoder: numerator units (pitch) - INT64
DRIVE_AUX_ENCODER_DENOMINATOR	+ 426	W	Drive Aux Encoder: denominator units (pulses) - INT64
RESET_AXIS_TURN	+ 430	W	Número do eixo que deseja zerar o número de voltas
CNC_MODE	+ 431	R	
MANUALMODE_MODE	+ 432	W	Manual Mode (screen)
MANUALMODE_INC_SCALE	+ 433	W	
MANUALMODE_WHEEL_AXIS	+ 434	W	
MANUALMODE_WHEEL_SCALE	+ 435	W	
MANUALMODE_JOY_AXES	+ 436	W	
SCREEN_EVENT_CALL	+ 440	W	Call Lua Script
LUA_EVENT_CALL	+ 441	W	
TEMPERATURE_CHANNEL	+ 450	W	Select temperature channel (1 - 32)
TEMPERATURE_VALUE	+ 451	R	Read temperature value
TEMPERATURE_STATUS	+ 452	R	Read temperature status
TEMPERATURE_TYPE	+ 453	W	Set temperature type
TEMPERATURE_OFFSET	+ 454	W	Set temperature offset
TEMPERATURE_GAIN	+ 455	W	Set temperature gain
LOG_EVENT	+ 460	W	LOG
SAVE_LOG_FILE	+ 461	W	
PERF_ECOT	+ 465	R	PERFORMANCE
PERF_MOTION	+ 466	R	
PERF_PLC	+ 467	R	
PERF_PGM_EXEC	+ 468	R	
PERF_CNC_INIT_TIME	+ 469	R	

SYSTEM_REG_INDEX	+ 480	W	SYSTEM REGISTERS (1024)
SYSTEM_REG_READ	+ 481	R	
SYSTEM_REG_WRITE	+ 482	W	
APPLICATION_REG_INDEX	+ 485	W	APPLICATION REGISTERS (1024)
APPLICATION_REG_READ	+ 486	R	
APPLICATION_REG_WRITE	+ 487	W	
DISABLE_REG_PLC_SERVICES	+ 490	W	DISABLE ALL MULTIAXIS PLC SERVICES
ABORT_MOVE_GOTO_NEXT	+ 492	W	ABORT CURRENT MOVEMENT AND GO TO NEXT BLOCK
CAME_AXIS_ENABLE	+ 498	W	AXIS CAMES: ENABLE/DISBLE
CAME_AXIS_DISABLE	+ 499	W	
CAME_AXIS_ID	+ 500	W	AXIS CAMES: CONFIGURATION
CAME_AXIS_TPMSCAME	+ 501	W	
CAME_AXIS_NUMFOTO	+ 502	W	
CAME_AXIS_SKIP	+ 503	W	
CAME_AXIS_OFFSET	+ 504	W	
CAME_AXIS_POSACOP	+ 505	W	
CAME_AXIS_POSDESACOP	+ 506	W	
CAME_AXIS_POSTABAUX_OK	+ 507	W	
CAME_AXIS_RECUO	+ 508	W	
CAME_AXIS_DELTA_REC	+ 509	W	
CAME_AXIS_DISTFOTO	+ 510	W	
CAME_AXIS_EIXOAUX	+ 511	W	
CAME_AXIS_AXISCAMETAB	+ 512	W	
CAME_AXIS_MAX_RPM	+ 513	W	
CAME_AXIS_MAX_FOTO_COMPENSATION	+ 514	W	
CAME_AXIS_CMD_ACOPIIME	+ 520	W	COMMANDS (PLC -> CNC)
CAME_AXIS_CMD_ACOPOS	+ 521	W	
CAME_AXIS_CMD_DESACOPIME	+ 522	W	
CAME_AXIS_CMD_DESACOPPOS	+ 523	W	
CAME_AXIS_CMD_ACOFOTO1	+ 524	W	
CAME_AXIS_CMD_ACOFOTO2	+ 525	W	
CAME_AXIS_CMD_PROGVINC	+ 526	W	
CAME_AXIS_CMD_VALTAB_VINC1	+ 527	W	
CAME_AXIS_CMD_VALTAB_PVINC	+ 528	W	
CAME_AXIS_CMD_VALTAB_POS	+ 529	W	
CAME_AXIS_CMD_VALTAB_IME	+ 530	W	
CAME_AXIS_CMD_VALTAB_VINC1AUX	+ 531	W	
CAME_AXIS_CMD_RECUAR	+ 532	W	
CAME_AXIS_CMD_COMP_VINC	+ 533	W	
CAME_AXIS_CMD_BLOQ_FOTO	+ 534	W	
CAME_AXIS_CMD_BLOQ_AUX	+ 535	W	
CAME_AXIS_HABVINC_1	+ 560	W	ENABLE / DESABLE VINC
CAME_AXIS_HABVINC_2	+ 561	W	
CAME_AXIS_HABVINC_3	+ 562	W	
CAME_AXIS_HABVINC_4	+ 563	W	
CAME_AXIS_HABVINC_5	+ 564	W	
CAME_AXIS_HABVINC_6	+ 565	W	
CAME_AXIS_HABVINC_7	+ 566	W	
CAME_AXIS_HABVINC_8	+ 567	W	
CAME_AXIS_HABVINC_9	+ 568	W	
CAME_AXIS_HABVINC_10	+ 569	W	
CAME_AXIS_HABVINC_11	+ 570	W	
CAME_AXIS_HABVINC_12	+ 571	W	
CAME_AXIS_HABVINC_13	+ 572	W	
CAME_AXIS_HABVINC_14	+ 573	W	
CAME_AXIS_HABVINC_15	+ 574	W	
CAME_AXIS_HABVINC_16	+ 575	W	
CAME_AXIS_SEL_VINC	+ 576	W	
CAME_AXIS_HAB_VINC	+ 577	W	
CAME_AXIS_ST_INIT	+ 580	R	STATUS (CNC -> PLC)
CAME_AXIS_ST_OPEN	+ 581	R	
CAME_AXIS_ST_FAIL	+ 582	R	
CAME_AXIS_ST_EMG	+ 583	R	
CAME_AXIS_ST_ACOPLANDO	+ 584	R	
CAME_AXIS_ST_ACOPLADO	+ 585	R	
CAME_AXIS_ST_DESACOPLANDO	+ 586	R	
CAME_AXIS_ST_DESACOPLADO	+ 587	R	
CAME_AXIS_ST_WAIT_R	+ 588	R	
CAME_AXIS_ST_RECUANDO	+ 589	R	
CAME_AXIS_ST_RECUADO	+ 590	R	
CAME_AXIS_ST_WAIT_COMP_REC	+ 591	R	
CAME_AXIS_ST_COMP_REC	+ 592	R	
CAME_AXIS_ST_TAB_ERROR	+ 593	R	
CAME_AXIS_ST_TAB_AUX_OK	+ 594	R	

CAME_AXIS_ST_TAB_PRI_OK	+ 595	R	
CAME_AXIS_ST_STT_SYNC	+ 596	R	
CAME_AXIS_ST_FC_POS	+ 597	R	
CAME_AXIS_ST_FC_NEG	+ 598	R	
CAME_AXIS_ST_VINC_IN_1	+ 610	R	STATUS - ENABLE/DISABLE VINC
CAME_AXIS_ST_VINC_IN_2	+ 611	R	
CAME_AXIS_ST_VINC_IN_3	+ 612	R	
CAME_AXIS_ST_VINC_IN_4	+ 613	R	
CAME_AXIS_ST_VINC_IN_5	+ 614	R	
CAME_AXIS_ST_VINC_IN_6	+ 615	R	
CAME_AXIS_ST_VINC_IN_7	+ 616	R	
CAME_AXIS_ST_VINC_IN_8	+ 617	R	
CAME_AXIS_ST_VINC_IN_9	+ 618	R	
CAME_AXIS_ST_VINC_IN_10	+ 619	R	
CAME_AXIS_ST_VINC_IN_11	+ 620	R	
CAME_AXIS_ST_VINC_IN_12	+ 621	R	
CAME_AXIS_ST_VINC_IN_13	+ 622	R	
CAME_AXIS_ST_VINC_IN_14	+ 623	R	
CAME_AXIS_ST_VINC_IN_15	+ 624	R	
CAME_AXIS_ST_VINC_IN_16	+ 625	R	
CAME_AXIS_ST_SEL_VINC	+ 626	W	
CAME_AXIS_ST_SEL_STATUS	+ 627	R	
N_REF_SEARCH_AXIS_ID	+ 650	W	MULTI-AXIS - SEARCH FOR REFERENCE MARK
N_REF_CHREF	+ 651	W	COMMANDS: Chave de referência
N_REF_BLOQR	+ 652	W	Bloqueio de referência
N_REF_POSMARK	+ 653	W	Posicionar na marca de referência eixo
N_REF_SEARCH_TYPE	+ 654	W	Busca DIRETA(1) ou REVERSA (0)
N_REF_RSVD	+ 655	W	
N_REF_ENABLE	+ 656	W	ENABLE (1) / DISABLE (0) SERVICE
N_REF_INIREF	+ 660	R	STATUS: Serviço Iniciado
N_REF_STAREF	+ 661	R	Esperando start para a referência do eixo
N_REF_AFCBRF	+ 662	R	Aguardando fechar chave de busca de referência eixo
N_REF_AACBRF	+ 663	R	Aguardando abrir chave de busca de referencia eixo
N_REF_AMRBRF	+ 664	R	Aguardando marca de referencia eixo
N_REF_ATREFF	+ 665	R	Atualizando referencia eixo
N_REF_POSREF	+ 666	R	Posicionando na referencia eixo
N_REF_PAUSRF	+ 667	R	Referencia em pausa - feed hold eixo
N_REF_STOPRF	+ 668	R	Referencia parada(STOP) eixo
N_REF_FALHRF	+ 669	R	Falha na referencia eixo
N_REF_REFOKF	+ 670	R	Referencia eixo ok
N_REF_EMERRF	+ 671	R	Emergencia na referencia do eixo
N_MAN_POT_FOR_AXIS	+ 679	W	MULTI-AXIS - MANUAL MOVES: COMMANDS Individual POT for each axis to control velocity in the manual movements (Joystick): 0 - 100%
N_MAN_AXIS_ID	+ 680	W	SELECT AXIS
N_MAN_MOVE_POSITIVE_DIR	+ 681	W	MOVE AXIS TO POSITIVE DIRECTION
N_MAN_MOVE_NEGATIVE_DIR	+ 682	W	MOVE AXIS TO NEGATIVE DIRECTION
N_MAN_ENABLE	+ 683	W	ENABLE (1) / DISABLE (0) SERVICE
N_MAN_MOVE_INCREMENTAL	+ 684	W	MOVE INCREMENTAL
N_MAN_MOVE_INDEPENDENT	+ 685	W	MOVE INDEPENDENT
N_MAN_MOVE_POSITION	+ 686	W	MOVE VALUE : INCREMENT OR POSITION
N_MAN_MOVE_SPEED	+ 687	W	SPEED VALUE
N_MAN_MOVE_G53	+ 688	W	0 = User offset , 1 = G53
N_MAN_FEED_TYPE	+ 689	W	FEED TYPE: 0 = mm/min (default) , 1 = mm/rev
N_MAN_ST_INIT	+ 690	R	STATUS: SERVICE INIT (STARTED)
N_MAN_ST_OPEN	+ 691	R	SERVICE ENABLE
N_MAN_ST_INMOVE	+ 692	R	IN MANUAL MOTION
N_MAN_ST_INMOVE_START	+ 693	R	MOVING AFTER START OR INCREMENTAL
N_MAN_ST_ABORT	+ 694	R	MOVE ABORTED
N_MAN_ST_EOT_FC_POS	+ 695	R	END-OF-TRAVEL POSITIVE DIR
N_MAN_ST_EOT_FC_NEG	+ 696	R	END-OF-TRAVEL NEGATIVE DIR
N_MAN_ST_MOVE_DONE	+ 697	R	MOVE COMPLETED (DONE)
N_MAN_ST_FAIL	+ 698	R	FALHA DE MOVIMENTO
N_MAN_ST_OUT_FC_POS	+ 699	R	OUT OF POSITIVE E-O-T
N_MAN_ST_OUT_FC_NEG	+ 700	R	OUT OF NEGATIVE E-O-T
N_MAN_ST_EMERGENCY	+ 701	R	EMERGENCY
N_GEN_ENABLE	+ 709	W	MULTI-AXIS - GENERAL MOTION COMMANDS: ENABLE (1) / DISABLE (0)
N_GEN_AXIS_ID	+ 710	W	SELECT AXIS
N_GEN_CMD_FREE_MODE	+ 711	W	COMMANDS: FREE MODE : ACTUAL POS => THEOR POS
N_GEN_CMD_BACKSLASH	+ 712	W	BACK-SLASH (1 = ACTIVE)
N_GEN_CMD_LAGSERV	+ 713	W	LAG ERROR ON CNC (0) OR PLC (1)
N_GEN_CMD_RSTLAG	+ 714	R	RESET AXIS LAG ERROR
N_GEN_CMD_AXIS_ENABLE	+ 715	W	ENABLE (1) / DISABLE (0) AXIS
N_GEN_CMD_PRESET	+ 716	W	COORDINATE FOR PRESET
N_GEN_STATUS_REFOK	+ 720	R	STATUS: AXIS REFERENCE MARK OK
N_GEN_STATUS_VTEO	+ 721	R	AXIS IN MOVEMENT (VTEO != 0)
N_GEN_STATUS_MOVDIR	+ 722	R	MOVEMENT DIRECTION
N_GEN_STATUS_INSIDE_WINDOW	+ 723	W	(1) INSIDE POSITION WINDOW, (0) = OUT

N_GEN_STATUS_LAG_ERROR	+ 724	R	LAG ERROR
N_GEN_STATUS_EOT_POSITIVE_ERROR	+ 725	R	END OF TRAVEL IN POSITIVE DIRECTION
N_GEN_STATUS_EOT_NEGATIVE_ERROR	+ 726	R	END OF TRAVEL IN NEGATIVE DIRECTION
N_GEN_STATUS_REAL_POSITION	+ 727	R	REAL AXIS POSITION RELATIVE TO ACTIVE OFFSET
N_GEN_STATUS_THEOR_POSITION	+ 728	R	THEORETICAL AXIS POSITION RELATIVE TO ACTIVE OFFSET
N_GEN_STATUS_THEOR_POSITION_G53	+ 729	R	THEORETICAL AXIS POSITION RELATIVE G53
N_GEN_STATUS_FINAL_POSITION	+ 730	R	FINAL AXIS POSITION RELATIVE TO ACTIVE OFFSET
N_GEN_STATUS_AXIS_COUPLED	+ 731	R	AXIS IS SLAVE (COUPLED): 0 = uncoupled , 1 to 32 = master axis number
N_GEN_STATUS_BACKSLASH	+ 732	R	BACK-SLASH (1 = ACTIVE)
N_GEN_STATUS_SERVICE_IN_USE	+ 733	R	AXIS IS ALLOCATED FOR PGM OR PLC SERVICE
N_GEN_STATUS_EXECH	+ 734	R	AXIS IS ALLOCATED FOR WHAT EXECUTION CHANNEL: PGM=1-4 , PLC=5-36
N_GEN_STATUS_AXIS_ENABLED	+ 735	R	AXIS IS ENABLED (0 = DISABLED, 1 = ENABLED)
N_GEN_STATUS_TOOL_REAL_POSITION	+ 736	R	REAL AXIS POSITION RELATIVE TO TOOL
N_GEN_STATUS_TOOL_THEOR_POSITION	+ 737	R	THEORETICAL AXIS POSITION RELATIVE TO TOOL
N_GEN_STATUS_TOOL_FINAL_POSITION	+ 738	R	FINAL AXIS POSITION RELATIVE TO TOOL
N_GEN_STATUS_LAG	+ 739	R	LAG VALUE
GS_SPINDLE_AXIS_ID	+ 750	W	GERALS: COMMANDS SELECT SPINDLE AXIS
GS_SPINDLE_RESET	+ 751	W	RESET/INIT GERALS RESERVED VARIABLES (COMMANDS AND PARAMETERS)
GS_SPINDLE_ENABLE	+ 752	W	ENABLE (1) / DISABLE (0) GERALS
GS_SPINDLE_CW_CMD_M3	+ 753	W	SPINDLE CMD M3 : (1) = SPINDLE ON, CLOCKWISE DIR
GS_SPINDLE_CCW_CMD_M4	+ 754	W	SPINDLE CMD M4 ; (1) = SPINDLE ON, COUNTER CLOCKWISE DIR
GS_SPINDLE_STOP_CMD_M5	+ 755	W	SPINDLE CMD M5 : (1) = SPINDLE OFF
GS_SPINDLE_CMD_M19	+ 752	W	SPINDLE CMD M19 : (1) = STOP AT ANGULAR VALUE , CMD M5: ABORT M19 (STOP SPINDLE)
GS_SPINDLE_CW_CMD_JOG_M3	+ 757	W	SPINDLE CMD JOG_M3 : (1) = SPINDLE ON, CLOCKWISE DIR, (0) = STOP (M5)
GS_SPINDLE_CW_CMD_JOG_M4	+ 758	W	SPINDLE CMD JOG_M4 : (1) = SPINDLE ON, COUNTER CLOCKWISE DIR , (0) = STOP (M5)
GS_SPINDLE_EN_REF_SEARCH_CMD	+ 759	W	SPINDLE CMD ENABLE REFERENCE SEARCH
GS_MAX_SPINDLE_SPEED_IN_RPM	+ 765	W	GERALS: PARAMETERS MAX SPINDLE SPEED IN RPM: (0) = DEFAULT = AXIS PARAMETER (P024 / P025)
GS_SPINDLE_SPEED_IN_RPM	+ 766	W	SPINDLE SPEED IN RPM: (0) = PGM (S xxx)
GS_SPINDLE_POT_S	+ 767	W	SPINDLE POT_S (%), (-1) = default = CNC POT S VALUE
GS_SPINDLE_JOG_SPEED_IN_RPM	+ 768	W	SPINDLE JOG: SPEED IN RPM: (0) = DEFAULT = AXIS PARAMETER (P027)
GS_VCC_LIMIT_SPINDLE_SPEED	+ 769	W	VCC MODE LIMIT SPINDLE SPEED IN RPM: (0) = PGM (G92 Sxxx)
GS_VCC_AXIS_ID	+ 770	W	CONSTANT CUTTING SPEED AXIS ID: (1 - 32), (0) = default = Axis 1 (X)
GS_VCC_SPEED_VALUE	+ 771	W	CONSTANT CUTTING SPEED VALUE (VCC IN m/min): (0) = PGM (G96 Sxxx)
GS_SPINDLE_M19_ANGLE	+ 772	W	SPINDLE M19: ANGLE TO M19 STOP (DEGREES): (-1) = PGM (M19 Sxxx)
GS_SPINDLE_M19_SPEED_IN_RPM	+ 773	W	SPINDLE M19: SPEED IN RPM, (0) = DEFAULT = AXIS PARAMETER (P028)
GS_SPINDLE_M19_MIN_SPEED_IN_RPM	+ 774	W	SPINDLE M19: MIN SPEED IN RPM, (0) = DEFAULT = 10 RPM
GS_SPINDLE_REF_KEY	+ 775	W	SPINDLE REFERENCE: SET REF KEY STATE BY PLC (0 = OPENED KEY , 1 = CLOSED KEY)
GS_REF_STATUS	+ 780	R	GERALS: STATUS SPINDLE REF STATUS, (1) = OK
GS_SPINDLE_SPEED_STATUS	+ 781	R	SPINDLE SPEED STATUS:(0)INIT,(3)M3,(4)=M4,(5)=M5,(19)=M19
GS_SPINDLE_M3_STATUS	+ 782	R	SPINDLE M3 STATUS
GS_SPINDLE_M4_STATUS	+ 783	R	SPINDLE M4 STATUS
GS_SPINDLE_M5_STATUS	+ 784	R	SPINDLE M5 STATUS
GS_SPINDLE_M19_IN_MOVE	+ 785	R	SPINDLE MOVING TO M19 ANGULAR DESTINATION (POSITION CONTROL)
GS_SPINDLE_M19_IN_POSITION	+ 786	W	SPINDLE M19 INSIDE THE POSITION WINDOW
GS_RSVD	+ 787		
GS_SPINDLE_JOGM3_STATUS	+ 788	R	SPINDLE STATUS JOG M3: (1) = JOG SPINDLE ON, CLOCKWISE DIR
GS_SPINDLE_JOGM4_STATUS	+ 789	R	SPINDLE STATUS JOG M4: (1) = JOG SPINDLE ON, COUNTER CLOCKWISE DIR
GS_SPINDLE_SPEED_MODE	+ 790	R	SPINDLE SPEED MODE: (0) = NORMAL, (1) = CONSTANT CUTTING SPEED (VCC)
GS_SPINDLE_ERROR	+ 791	R	SPINDLE ERROR CODE
GS_THEO_POSITION	+ 792	R	SPINDLE COMMAND POSITION IN DEGREES
GS_THEO_SPEED	+ 793	R	SPINDLE COMMAND SPEED IN RPM
GS_ANALOG_OUT	+ 794	R	SPINDLE ANALOG OUT VALUE (UNIT = +-10 Volts)
GS_REAL_POSITION	+ 795	R	SPINDLE ANGULAR ACTUAL POSITION, IF FEEDBACK
GS_REAL_SPEED	+ 796	R	SPINDLE ACTUAL SPEED IN RPM
CNC_ERROR_NUMBER	+ 800	R	CNC ERROR: Number of CNC Active Errors (Error, Alarm, Message)
CNC_ERROR_1	+ 801	R	CNC Error Code: Get first active error (SystemMessages.xml) , -1 = invalid error index
CNC_ERROR_2	+ 802	R	
CNC_ERROR_3	+ 803	R	
CNC_ERROR_4	+ 804	R	
CNC_ERROR_5	+ 805	R	
CNC_ERROR_6	+ 806	R	
CNC_ERROR_7	+ 807	R	
CNC_ERROR_8	+ 808	R	CNC Error Code: Get last (8) active error (SystemMessages.xml) , -1 = invalid error index
ECAT_STATE	+ 810	R	EtherCAT Network State: 0=Unknown, 1=Init, 2=PreOP, 3=BootStrap, 4=SafeOP, 8=OP, 16=Error
ANA_INPUT_CHANNEL	+ 820	W	Select analog input channel (1 - 64): AKT Modules + Drives
ANA_INPUT_VALUE	+ 821	R	Read analog input value (Volts): Module = 0 - 10V , Drive = +-12.5V
ANA_OUTPUT_CHANNEL	+ 825	W	Select analog output channel (1 - 64): AKT Modules + Drives
ANA_OUTPUT_VALUE	+ 826	W	Set analog output value (Volts): Module = 0 - 10V , Drive = +-10V
PWM_CHANNEL	+ 830	W	Select PWM output channel (1 - 64): AKT Modules (Beckhoff KL-2502)
PWM_PERIOD	+ 831	W	Set PWM period value (us): PWMH mode = 50 - 4000 us
PWM_DUTY_CYCLE	+ 832	W	Set PWM duty cycle (%): 0 - 100%
ENCODER_CHANNEL	+ 835	W	Select encoder input channel (1 - 64): AKT Modules + Drives
ENCODER_PITCH	+ 836	W	Set position units value per lap (Pitch = n units / lap)
ENCODER_PRESET	+ 837	W	Preset encoder position
ENCODER_INC_POSITION	+ 838	R	Read incremental position of encoder (with number of laps), considering preset and pitch
ENCODER_LAP_POSITION	+ 839	R	Read lap position of encoder, considering preset and pitch
ENCODER_VELOCITY	+ 840	R	Read velocity of encoder in RPM

