

# Appendix A: 6K Command List

(Firmware Revision 5.0)

Command	Description	Command	Description
%	Task Identifier	COMEXL	Continue Execution on End-of-Travel Limit
[ ! ]	Immediate Command Identifier	COMEXR	Continue Motion on Pause/Continue Input
[ @ ]	Global Command Identifier	COMEXS	Continue Execution on Stop
;	Begin Comment	[ COS ( ) ]	Cosine [operator]
\$	Label Declaration	D	Distance
[ # ]	Step Through a Program	[ D ]	Distance [operator]
'	Enter Interactive Data	[ DAC ]	Value of DAC Output Voltage [operator]
[ . ]	Bit Select	DACLIM	DAC Output Voltage Limit
[ " ]	Begin and End String	[ DAT ]	Data Assignment [operator]
[ \ ]	ASCII Character Designator	DATA	Data Statement
[ = ]	Assignment or Equivalence	[ DATP ]	Data Program
[ > ]	Greater Than	DATPTR	Set Data Pointer
[ >= ]	Greater Than or Equal	DATRST	Reset Data Pointer
[ < ]	Less Than	DATSIZ	Data Program Size
[ <= ]	Less Than or Equal	DATTCH	Data Teach
[ <> ]	Not Equal	DCLEAR	Clear RP240 Display
[ ( ) ]	Operation Priority Level	DEF	Begin Definition of Program
[ + ]	Addition	DEL	Delete Program
[ - ]	Subtraction	DJOG	Enable RP240 Jog Mode
[ * ]	Multiplication	[ DKEY ]	Value of RP240 Key
[ / ]	Division	DLED	Turn RP240 LEDs ON/OFF
[ & ]	Boolean And	DPASS	Change RP240 Password
[   ]	Boolean Inclusive Or	DPCUR	Position RP240 Display Cursor
[ ^ ]	Boolean Exclusive Or	[ DPTR ]	Data Pointer Location [operator]
[ ~( ) ]	Boolean Not	[ DREAD ]	Read RP240 Numeric Data [operator]
[ << ]	Shift from Right to Left (bit 32 to bit 1)	[ DREADF ]	Read RP240 Function Key [operator]
[ >> ]	Shift from Left to Right (bit 1 to bit 32)	DREADI	RP240 Data Read, Immediate Mode
[	Send Response to Both COM Ports	DRES	Drive Resolution
]	Send Response to Alternate COM Port	DRFEN	Drive Fault Input Enable
A	Acceleration	DRFLVL	Drive Fault Input, Active Level
[ A ]	Acceleration [operator]	DRIVE	Drive Enable/Disable
AA	Acceleration, S-curve	DRPCHK	RP240 COM Port Check
AD	Deceleration	DSTP	Enable/Disable RP240 Stop Key
[ AD ]	Deceleration [operator]	DVAR	Display Numeric Variable on RP240
ADA	Deceleration, S-curve	DVARB	Display Binary Variable on RP240
ADDR	Auto-Address Multiple Serial Units	DVARI	Display Integer Variable on RP240
[ AND ]	And [operator]	DWRITE	Write Text to RP240
[ ANI ]	Analog Input Voltage [operator]	E	Enable Serial Communication
ANIEN	Analog Input Enable	ECHO	Enable Communication Echo
ANIFB	Analog Inputs as Axis Feedback	EFAIL	Encoder Failure Detect
ANIMAS	Assign Analog Input as Master	ELSE	Else Condition of IF Statement
ANIRNG	Analog Input Voltage Range	ENCCNT	Encoder Count Reference Enable
[ AS ]	Axis Status [operator]	ENCPOL	Encoder Polarity
[ ASX ]	Axis Status, Extended [operator]	ENCSND	Encoder Step & Direction Mode
[ ATAN ( ) ]	Arc Tangent [operator]	END	End Definition of Program
AXSDEF	Axis Definition	EOL	End-of-Line Termination Characters
BAUD	Baud Rate	EOT	End-of-Transmission Characters
BOT	Beginning of Transmission Characters	[ ER ]	Error Status [operator]
BP	Set a Program Break Point	ERASE	Erase All Programs
BREAK	Terminate Program Execution	ERES	Encoder Resolution
C	Continue Command Execution	ERRBAD	Error Prompt Characters
CMDDIR	Commanded Direction Voltage	ERRDEF	Program Definition Prompt Characters
COMEXC	Continuous Command Processing Mode	ERRLVL	Error Detection Level

Command	Description	Command	Description
ERROK	Good Prompt Characters	INTSW	Force an Alarm Event
ERROR	Enable Error Checking	JOG	Enable Jog Mode
ERRORP	Assign an Error Program	JOGA	Jog Acceleration
ESDB	Stall Backlash Deadband	JOGAA	Jog Acceleration, S-curve
ESK	Kill on Stall	JOGAD	Jog Deceleration
ESTALL	Enable Stall Detection	JOGADA	Jog Deceleration, S-curve
EXE	Execute Program from a Compiled Program	JOGVH	Jog Velocity, High
[ FB ]	Value of Feedback Device [operator]	JOGVL	Jog Velocity, Low
FFILT	Following Filter	JOY	Enable Joystick Mode
FGADV	Following Geared Advance	JOYA	Joystick Acceleration
FMAXA	Follower Axis Maximum Acceleration	JOYAA	Joystick Acceleration, S-curve
FMAXV	Follower Axis Maximum Velocity	JOYAD	Joystick Deceleration
FMCLEN	Master Cycle Length	JOYADA	Joystick Deceleration, S-curve
FMCNEW	Restart Master Cycle Counting	JOYAXH	Joystick Analog Channel, High
FMCP	Initial Master Cycle Position	JOYAXL	Joystick Analog Channel, Low
FOLEN	Enable Following Mode	JOYCDB	Joystick Center Deadband
FOLK	Following Kill, Limitations	JOYCTR	Joystick Center
FOLMAS	Assignment of Master to Follower	JOYEDB	Joystick End Deadband
FOLMD	Master Distance	JOYVH	Joystick Velocity, High
FOLRD	Denominator of Follower-to-Master Ratio	JOYVL	Joystick Velocity, Low
FOLRN	Numerator of Follower-to-Master Ratio	JOYZ	Joystick Zero (Center)
FOLRNF	Numerator of Final Follower-to-Master Ratio	JUMP	Jump to Program or Label (No Return)
FPEN	Enable Master Position Prediction	K	Kill Motion
[ FS ]	Following Status [operator]	<ctrl>K	Kill Motion
FSHFC	Continuous Shift	KDRIVE	Disable Drive on Kill
FSHFD	Preset Shift	L	Loop
FVMACC	Virtual Master Count Acceleration	LH	Enable Hardware End-of-Travel Limits
FVMFRQ	Virtual Master Count Frequency	LHAD	Hardware EOT Limits Deceleration
GO	Initiate Motion	LHADA	Hardware EOT Limits Decel, S-curve
GOBUF	Store a Compiled Motion Segment	[ LIM ]	Hardware EOT & Home Limit Inputs, Status
GOL	Initiate Linear Interpolated Motion	LIMEN	Limit Input Enable
GOSUB	Call a Subroutine	LIMFNC	Limit Input Function Assignment
GOTO	Goto a Program or Label	LIMLVL	Hardware EOT & Home Inputs, Active Level
GOWHEN	Conditional Go	LN	End of Loop
HALT	Terminate Program Execution	LOCK	Lock Resource to a Task
HELP	Technical Support Phone Numbers	LS	Enable Software End-of-Travel Limits
HOM	Initiate Homing Operation	LSAD	Software EOT Limits, Deceleration
HOMA	Homing Acceleration	LSADA	Software EOT Limits Decel, S-curve
HOMAA	Homing Acceleration, S-curve	LSNEG	Negative-Direction Software EOT Limit
HOMAD	Homing Deceleration	LSPOS	Positive-Direction Software EOT Limit
HOMADA	Homing Deceleration, S-curve	LX	Terminate Loop
HOMBAC	Backup to Home	MA	Enable Absolute/Incremental Positioning
HOMDF	Homing Final Direction	MC	Enable Continuous/Preset Positioning
HOMEDG	Home Reference Edge	MEMORY	Partition Product Memory
HOMV	Homing Velocity	MEPOL	Master Encoder Polarity
HOMVF	Homing Velocity, Final Approach	MESND	Master Encoder Step & Direction Mode
HOMZ	Home to Encoder Z Channel	[ MOV ]	Axis Moving Status [operator]
IF ( )	IF Statement	NIF	End IF Statement
[ IN ]	Input Status [operator]	[ NMCY ]	Master Cycle Number Status [operator]
INDEB	Input Debounce Time	[ NOT ]	Not [operator]
INDUSE	Enable User Status	NTADDR	Set IP Address
INDUST	User Status Definition	NTMASK	Ethernet Network Mask
INEN	Enable Specific Inputs	NWHILE	End of WHILE Statement
INFNC	Input Function Assignment	ONCOND	Enable Program Interrupt ("On") Conditions
INLVL	Input Active Level	ONIN	On an Input Condition GOSUB
[ INO ]	Other Inputs (Enable Input) Status [operator]	ONP	On Condition Program Assignment
INPLC	Establish PLC Data Inputs	ONUS	On a User Status Condition GOSUB
INSELP	Enable Program Selection via Inputs	ONVARA	On Numeric Variable 1 Condition GOSUB
INSTW	Establish Thumbwheel Data Inputs	ONVARB	On Numeric Variable 2 Condition GOSUB
INTHW	Enable Checking for Alarm Events	[ OR ]	Or [operator]

Command	Description
OUT	Activate Programmable Outputs
[ OUT ]	Programmable Outputs Status [operator]
OUTALL	Activate Programmable Outputs, Range
OUTEN	Disable Programmable Outputs
OUTFNC	Programmable Output Function Assignment
OUTLVL	Programmable Output Active Level
OUTPn	Output on Position — Axis Specific
OUTPLC	Establish PLC Strobe Outputs
OUTTW	Establish Thumbwheel Strobe Outputs
PA	Path Acceleration
PAA	Path Acceleration, S-curve
PAB	Path Absolute
PAD	Path Deceleration
PADA	Path Deceleration, S-curve
[ PANI ]	Position of ANI Inputs
PARCM	Radius-Specified CCW Arc Segment
PARCOM	Origin-Specified CCW Arc Segment
PARCOP	Origin-Specified CW Arc Segment
PARCP	Radius-Specified CW Arc Segment
PAXES	Participating Axes for Contouring
[ PC ]	Position Commanded [operator]
[ PCC ]	Captured Commanded Position [operator]
[ PCE ]	Position of Captured Encoder [operator]
[ PCME ]	Position of Captured Master Encoder [operator]
[ PCMS ]	Position of Captured Master Cycle [operator]
PCOMP	Compile a Profile or Program
[ PE ]	Position of Encoder [operator]
[ PER ]	Position Error [operator]
PESET	Set Encoder Absolute Position (steppers)
PEXE	Execute a Compiled Program
[ PI ]	Pi ( $\pi$ ) [operator]
PL	Select Path Local/Work Coordinate System
PLC	Define Path Local Coordinates
PLCP	Compiled PLC Program
PLIN	Move in a Line (Line Segment)
PLN	End of Loop, Compiled Motion
PLOOP	Start of Loop, Compiled Motion
[ PMAS ]	Current Master Cycle Position [operator]
[ PME ]	Position of Master Encoder [operator]
PMECLR	Clear Master Encoder Absolute Position
PMESET	Set Master Encoder Absolute Position
PORT	Designate Destination COM Port
POUT	Compiled Output (Contouring)
POUTn	Compiled Output (Compiled Motion), Axis Specific
PPRO	Path Proportional Axis
PRTOL	Path Radius Tolerance
PRUN	Run a Compiled Profile
PS	Pause Program Execution
PSET	Establish Absolute Position Reference
[ PSHF ]	Net Position Shift Status [operator]
[ PSLV ]	Commanded Follower Position [operator]
PTAN	Path Tangent Axis Resolution
PUCOMP	Un-Compile a Compiled Profile
PULSE	Step Output Pulse Width
PV	Path Velocity
PWC	Path Work Coordinates
RADIAN	Specify Units in Radians or Degrees
RE	Enable Registration
[ READ ]	Read a Value
REG	Registration Distance

Command	Description
REGLOD	Registration Lockout Distance
REGSS	Registration Single-Shot
REPEAT	REPEAT Statement
RESET	Reset the 6K Controller
RUN	Begin Executing a Program
S	Stop Motion
SCALE	Enable Scaling Factors
SCANP	Scan a Compiled PLC Program
SCLA	Acceleration Scale Factor
SCLD	Distance Scale Factor
SCLMAS	Master Axis Scale Factor
SCLV	Velocity Scale Factor
[ SEG ]	Number of Free Segment Buffers [operator]
SFB	Select Servo Feedback Source
SGAF	Gain – Acceleration Feedforward
SGENB	Enable a Servo Gain Set
SGI	Gain – Integral Feedback
SGILIM	Gain – Integral Windup Limit
SGP	Gain – Proportional Feedback
SGSET	Save a Servo Gain Set
SGV	Gain – Velocity Feedback
SGVF	Gain – Velocity Feedforward
[ SIN( ) ]	Sine [operator]
SINAMP	Virtual Master Sine Wave Amplitude
SINANG	Virtual Master Sine Wave Angle
SINGO	Virtual Master - Start Internal Sine Wave
SMPER	Maximum Allowable Position Error
SOFFS	Servo Control Signal Offset
[ SQRT ]	Square Root [operator]
[ SS ]	System Status [operator]
STARTP	Start-up Program
STEP	Enable Single Step Mode
STRGTD	Target Zone Distance
STRGTE	Enable Target Zone Mode
STRGTT	Target Zone Timeout Period
STRGTV	Target Zone Velocity
[ SWAP ]	Task Swap Assignment [operator]
T	Time Delay
[ TAN( ) ]	Tangent [operator]
TANI	Transfer ANI Analog Input Voltage
TAS	Transfer Axis Status
TASF	Transfer Axis Status (full-text report)
[ TASK ]	Task Number Assignment [operator]
TASX	Transfer Axis Status, Extended
TASXF	Transfer Axis Status, Extended (full-text)
TCMDER	Transfer Command Error
TDAC	Transfer DAC Voltage
TDIR	Transfer Program Directory
TDPTR	Transfer Data Pointer Status
TER	Transfer Error Status
TERF	Transfer Error Status (full-text report)
TEX	Transfer Program Execution Status
TFB	Transfer Position of Feedback Devices
TFS	Transfer Following Status
TFSF	Transfer Following Status (full-test report)
TGAIN	Transfer Servo Gains
[ TIM ]	Current Timer Value [operator]
TIMINT	Timer Value to Cause an Alarm Event
TIMST	Start Timer
TIMSTP	Stop Timer

<b>Command</b>	<b>Description</b>	<b>Command</b>	<b>Description</b>
TIN	Transfer Programmable Input Status	TSS	Transfer System Status
TINO	Transfer Other Input Status	TSSF	Transfer System Status (full-text report)
TINOF	Transfer Other Input Status (full-text report)	TSTAT	Transfer Controller Statistics
TIO	Transfer Expansion I/O Status	TSTLT	Transfer Settling Time
TLABEL	Transfer Labels	TSWAP	Transfer Currently Active Tasks
TLIM	Transfer Hardware Limit Status	TTASK	Transfer Task Number
TMEM	Transfer Memory Usage	TTIM	Transfer Timer Value
TNMCY	Transfer Master Cycle Number	TTRIG	Transfer Trigger Interrupt Status
TNTMAC	Transfer Ethernet Address	TUS	Transfer User Status
TOUT	Transfer Programmable Output Status	TVEL	Transfer Current Commanded Velocity
TPANI	Transfer Position of ANI Inputs	TVELA	Transfer Current Actual Velocity
TPC	Transfer Commanded Position	TVMAS	Transfer Current Master Velocity
TPCC	Transfer Captured Commanded Position	[ TW ]	Thumbwheel Assignment [operator]
TPCE	Transfer Position of Captured Encoder	UNTIL ( )	Until Part of REPEAT Statement
TPCME	Transfer Position of Captured Master Encoder	[ US ]	User Status [operator]
TPCMS	Transfer Position of Captured Master Cycle	V	Velocity
TPE	Transfer Position of Encoder	[ V ]	Velocity [operator]
TPER	Transfer Position Error	VAR	Numeric Variable Assignment
TPMAS	Transfer Position of Master (current cycle)	VARB	Binary Variable Assignment
TPME	Transfer Position of Master Encoder	VARCLR	Clear All Variables
TPROG	Transfer Program Contents	VARI	Integer Variable Assignment
TPSHF	Transfer Net Position Shift	VARS	String Variable Assignment
TPSLV	Transfer Commanded Position of Follower	VCVT ( )	Variable Type Conversion
TRACE	Enable Program Trace Mode	[ VEL ]	Commanded Velocity Assignment [operator]
TRACEP	Enable Program Flow Mode	[ VELA ]	Actual Velocity Assignment [operator]
TRANS	Enable Translation Mode	VF	Final Velocity
TREV	Transfer Revision Level	[ VMAS ]	Velocity of Master [operator]
TRGFN	Trigger Functions	WAIT ( )	Wait for a Specific Condition
[ TRIG ]	Trigger Interrupt Status [operator]	WHILE ( )	WHILE Statement
TRGLOT	Trigger Interrupt Lockout Time	WRITE	Write a Message
TSCAN	Transfer Scan Time of PLC Program	WRVAR	Write a Numeric Variable
TSEG	Transfer Number of Free Segment Buffers	WRVARB	Write a Binary Variable
TSGSET	Transfer Servo Gain Set	WRVARI	Write a Integer Variable
TSKAX	Task Axis Association for Multi-Tasking	WRVARS	Write a String Variable
TSKTRN	Task Turns Before Swapping	XONOFF	Enable XON/XOFF ASCII Handshaking