

DO-MORE! INSTRUCTION SET






In This Appendix...

Instruction Set	A-2
Contacts	A-2
Coil / Bit Outputs	A-2
Analog / Process	A-2
CTRIO.....	A-3
Date / Time / Calendar	A-3
Ethernet	A-3
File System.....	A-3
Hardware / Device.....	A-4
High Speed / Axis.....	A-4
Math	A-4
Math Functions	A-4
Misc / Data Manipulation.....	A-5
Program Control	A-6
Program-Looping.....	A-6
Protocol-Custom/Ascii	A-7
Protocol Standard.....	A-7
String	A-7
Timer / Counter / Drum.....	A-7

Instruction Set

The following table lists the Do-more! instruction set. (See Help topic DMD0186 for more on the Do-more! instruction set.)

Do-more! Instruction Set	
Instruction	Name
Contacts	
	Normally Open
	Normally Closed
	Leading Edge One-Shot
	Trailing Edge One-Shot
	Greater-Than-or-Equal-To
	Equal-To
	Less-Than-or-Equal-To
	Less-Than
	Not-Equal-To
	Greater-Than
	Delta
	Leading Edge One-Shot on Power Flow
	Trailing Edge One-Shot on Power Flow
	Invert Power Flow
Coil / Bit Outputs	
DEBOUNCE	Reduce Discrete Input Chatter
END	End Code Block
FLASHER	Cycle Output ON/OFF
INI	Immediate Discrete Input
ND	Trailing Edge One-Shot
NOP	Null Operation
OUT	Coil Write Bit
OUTI	Coil Out Immediate Bit
PD	Leading Edge One-Shot
PONOFF	Push On/Push Off
RST	Reset Bit
RSTI	Reset Immediate Bit
RSTR	Reset Range
SET	Coil Set Bit
SETI	Coil Set Immediate Bit
SETR	Set Range
SR	Shift Register
TIMEDOUT	Timed Output
Analog / Process	
ALDEV	Deviation Alarm
ALHILO	High/Low Alarm
ALRATE	Rate of Change Alarm
CLAMP	Limit Range
DEADBAND	Set Outside Deadband
FILTER	First Order Filter
<i>Table continued on next page</i>	

Do-more! Instruction Set (continued)	
Class	Description
INTEGRAT	Integrate Over Time
PID	Closed Loop Controller
PIDINT	Set PID Tuning Constants
RAMPSOAK	Ramp Soak Profile
SCALE	Scale Value
SLOPE	Calculate Slope
TIMEPROP	Time Proportional Control
CTRIO	
CTAXCFG	CTRIO2 Axis Configuration
CTAXDYNP	CTRIO2 Axis Run Dynamic Position Mode
CTAXDYNV	CTRIO2 Axis Run Dynamic Velocity Mode
CTAXJOG	CTRIO2 Axis Jog Mode
CTAXLIMT	CTRIO2 Axis Run Trapezoid w/ Limits
CTAXTRAP	CTRIO2 Axis Run Trapezoid
CTDYNPOS	CTRIO Run Dynamic Position Mode
CTDYNVEL	CTRIO Run Dynamic Velocity Mode
CTPLSADD	CTRIO Add Entry to PLS
CTPLSEDT	CTRIO Edit PLS Entry
CTREGRD	CTRIO Read Register
CTREGWR	CTRIO Write Register
CTRUNPOS	CTRIO Run Position Mode
CTRUNVEL	CTRIO Run Velocity Mode
CTTBLADD	CTRIO Add Entry to Preset Table
CTTBLCLR	CTRIO Clear Table
CTTBLEDT	CTRIO Edit Preset Table Entry
CTTBLLD	CTRIO Load Table
CTUPDLVL	CTRIO Update Level
Date / Time / Calendar	
DT2EPOCH	Convert Date/Time to Epoch
DTCMP	Compare Date/Time
DTDIF	Difference Between Two Dates/Times
DTOFFSET	Add Offset to Date/Time
EPOCH2DT	Convert Epoch to Date/Time
NETTIME	SNTP Client
SETTIME	Set PLC Date/Time
Ethernet	
DNSLOOKUP	Name to IP Address
EMAIL	Send Email
PING	Ping Ethernet Device
SETUPIP	Setup TCP/IP Parameters
SETUPNOD	Setup Ethernet Node Parameters
File System	
BACKUP	Create PLC Image File
FILECLOSE	Close File
FILECOPY	Copy File
FILEDEL	Delete File
<i>Table continued on next page</i>	

Do-more! Instruction Set (continued)	
Class	Description
FILELOG	Log to File
FILENEWFLDR	Make a New Folder
FILEOPEN	Open File
FILEQUERY	Query File or Folder Information
FILEREAD	Read from File
FILESEEK	Seek to Position in File
FILESYSCMD	Perform File System Command
FILETRUNC	Truncate File
FILEWRITE	Write to File
Hardware / Device	
CLOSE	Close Device
DEVCLEAR	Clear Device
DEVREAD	Read to Device Register
DEVWRITE	Write to Device Register
HWINFO	Get Hardware Information
OPENDEV	Open Device
RD	Read from Intelligent Module
SETUPSER	Setup Serial Port
WT	Write to Intelligent Module
High Speed / Axis	
AXCAM	Axis Electronic Camming
AXCONFIG	Axis Configuration
AXFOLLOW	Axis Position Following with Offset
AXGEAR	Axis Electronic Gearing
AXHOME	Axis Perform Home Search
AXJOG	Axis Jog Mode
AXPOSSCRV	Axis Move to Position Using S-Curve
AXPOSTRAP	Axis Move to Position Using Trapezoid
AXRSTFAULT	Reset Axis Limit Fault
AXSCRIPT	Run a Sequence of Axis Commands
AXSETPROP	Set Axis Properties
AXVEL	Axis Set Velocity Mode
PWMOUT	Pulse Width Modulated Output
TDODECFG	Deconfigure Table Driven Output
TDOPLS	Load Programmable Limit Switch Table
TDOPRESET	Load Preset Table for Table Driven Output
Math	
DEC	Decrement
INC	Increment
LERP	Linear Interpolation
MATH	Calculate Expression
RANDSEED	Random Number Seed
Math Functions	
COS	Cosine of Radian Angle
ACOS	Arccosine in Radians
SIN	Sine of Radian Angle
<i>Table continued on next page</i>	

Do-more! Instruction Set (continued)	
Class	Description
ASIN	Arcsine in Radians
TAN	Tangent of Radian Angle
ATAN	Arctangent in Radians
DEG	Convert Radians to Degrees
RAD	Convert Degrees to Radians
FRAC	Fractional Portion of a Real Number
TRUNC	Truncate Real to Whole Number
ROUND	Round Real to Nearest Whole Number
LN	Natural Log
LOG	Log Base 10
PI	Return PI
RANDINT	Random Integer
RANDREAL	Random Real Number
REF	Read Value Indirectly
ABS	Absolute Value
SQRT	Square Root
AVGR	Average of a Range of Values
SUMR	Sum of a Range of Values
MAXR-	Maximum Value Across a Range of Values
MINR	Minimum Value Across a Range of Values
STDEVPR	Population Standard Deviation of a Range
STDEVR	Sample Standard Deviation of a Range
MIN	Minimum Between Two Expressions
MAX	Maximum Between Two Expressions
TICKus	Get Microsecond System Timer Value
TICKms	Get Millisecond System Timer Value
NOW	Get Date / Time Stamp as a 32-bit Integer
TOINT	Convert to Integer
TOREAL	Convert to Real
IF	If / Else Expression
COUNTIF (EQ, GE, GT, LE, LT, NE)	Count If
SUMIF (EQ, GE, GT, LE, LT, NE)	Sum If
Misc / Data Manipulation	
BCDTO	BCD to Integer/Real
COPY	Copy Data
DATAINFO	Query Information about Data Memory
DECO	Decode to Set Bit
ENCO	Encode Bit Position
GRAY	Gray Code to Integer
INIT	Initialize Data
ISCLEAR	Is Structure Cleared
MAPIO	Map Inputs/Outputs
MEMCLEAR	Clear Memory
MEMCOPY	Copy Memory Range
MOVE	Move Value
MOVEBIT	Move Single Bit
MOVER	Move Range of Values
<i>Table continued on next page</i>	

Do-more! Instruction Set (continued)	
Class	Description
PUBLISH	Translate from Do-more!
REFWRITE	Write Value Indirectly
ROTL	Rotate Left
ROTR	Rotate Right
SEG	Hex/BCD to 7 Segment Display
SETNUMBER	Set Numeric Range
SUBSCRIB	Translate to Do-more!
SUMBITS	Sum Bits
SWAPB	Swap Bytes
TOBCD	Integer/Real to BCD
Program Control	
CALL	Call Subroutine
ENDC	Conditional End of Code-Block
ENTASK	Enable Task
EXIT	Exit this program
GOTO	Go to Label
HALT	Halt program or Task
INTCONFIG	Configure Interrupts
INTDECONFIG	Deconfigure Interrupts
INTRESUME	Resume Interrupts
INTSUSPEND	Suspend Interrupts
JMP	Jump to Stage
JMPI	Indexed Jump
LABEL	Program Label
REBOOT	Reboot PLC
RESTART	Restart Program or Task
RET	Return Back to CALL
RETC	Conditional Return Back to CALL
RUN	Run Program
SG	Stage
SGCONVRG	Converge Multiple Stages to SG
SGDIVRG	Jump to Multiple Stages
SGRST	Disable Stage
SGRSTR	Disable Range of Stages
SGSET	Enable Stage
STOP	Switch to Program Mode
SUSPEND	Suspend Program or Task
WATCHDOG	Force Watchdog Error
YIELD	Yield Program or Task
Program-Looping	
BREAK	Exit Loop
CONTINUE	Skip to Loop End
FOR	Index Loop
NEXT	Index by Step
REPEAT	Loop Until Condition is Non-Zero
UNTIL	Repeat Until Condition is Non-Zero
Table continued on next page	

Do-more! Instruction Set (continued)	
Class	Description
WEND	While End
WHILE	Loop with While Condition is Non-Zero
Protocol-Custom/Ascii	
CHECKSUM	Checksum Algorithm
OPENTCP	Open TCP Connection
PACKETIN	Input Data from Packet Device
PACKETOUT	Output Data from Packet Device
STREAMIN	Stream in Data from Device
STREAMOUT	Stream Out Data to Device
TCPLISTEN	Start Listening on TCP port
Protocol Standard	
DLRX	DirectLOGIC Network Read
DLWX	DirectLOGIC Network Write
EIPMSG	Send EtherNet/IP Message
GSREGRD	GS E-Drive Register Read
GSREGWR	GS E-Drive Register Write
HTTPCMD	Execute HTTP Command
JSONBUILD	Build JSON Record
JSONPARSE	Parse JSON Record
MQTTPUB	IoT Publish MQTT Topics
MQTTSUB	IoT Subscribe to MQTT Topics
MRX	Modbus Network Read
MWX	Modbus Network Write
PEERLINK	Share Data w/PLCs
RX	Do-more! Network Read
WX	Do-more! Network Write
String	
STR2INT	Convert String to Integer
STR2REAL	Convert String to Real
STRCASE	Covert String to Upper/Lower Case
STRCLEAR	Clear Strings
STRCMP	String Compare
STRDELETE	Delete Substring
STRFIND	Find within a String
STRGETB	Get Bytes out of String
STRINSERT	Insert Substring
STRPRINT	Print a String
STRPUTB	Put Bytes into a String
STRSUB	Get Sub-String
STRTRIM	Trim Whitespace
STRTRUNC	Set String Length
Timer / Counter / Drum	
CNT	Up Counter
CNTDN	Down Counter
COMMON_TIMER	Common Timer
DRUM	Timed/Event/Timed-Event Drum
Table continued on next page	

Do-more! Instruction Set (continued)	
Class	Description
FREQCNT	Frequency Counter
FREQTMR	Frequency Timer
OFFDTMR	Off Delay Timer
ONDTMR	On Delay Timer
RSTCT	Reset Counter
RSTT	Reset Timer
TMR	Timer
TMRA	Accumulating Timer
TMRADOWN	Accumulating Down Timer
TMRAG	Global Accumulating Timer
TMRDOWN	Down Timer
UDC	Up/Down Counter
UDCG	Global Up/Down Counter