| DO-MORE PLC INSTRUCTIONS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (H2-DM1/E, T1H-DM1/E, BX-DM1/E) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CATEGORY | INSTRUCTION | DESCRIPTION |  |  |  | $\begin{array}{\|c\|} \hline 2.6 \\ 19-\mathrm{Jun} \\ 2019 \\ \hline \end{array}$ |  |  |  | $\begin{array}{\|c\|} \hline 2.1 \\ 20-\text { Sep } \\ 2017 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline 2.0 \\ 22-\mathrm{Feb} \\ 2017 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline 1.4 \\ 07-\mathrm{Jul} \\ 2015 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline 1.3 \\ 03-A p r \\ 2014 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline 1.2 \\ 30-0 \mathrm{ct} \\ 2013 \\ \hline \end{array}$ |  |  |
| Contact | --] [-- | Normally Open | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --]/[-- | Normally Closed | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --] _ ${ }^{-}$[-- | Leading Edge One-Shot | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --] ${ }^{-}$_ [-- | Trailing Edge One-Shot | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --] $]$ [-- | Greater-Than-or-Equal-To Relational | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --]=[-- | Equal-To Relational | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --] $]$ [-- | Less-Than-or-Equal-To Relational | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --]<[-- | Less-Than Relational | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --] $]$ [-- | Not-Equal-To Relational | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --]>[-- | Greater-Than Relational | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --] $]$ [-- | Delta | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --( _ ${ }^{-}$)-- | Leading Edge One-Shot on Power Flow | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --(-\| ${ }_{-}$)-- | Trailing Edge One-Shot on Power Flow | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | --\|>0-- | Invert Power Flow | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Coil/Bit I/O | DEBOUNCE | Reduce Discrete Input Chatter | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
|  | END | End Code Block | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | FLASHER | Cycle Output ON/OFF | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
|  | INI | Immediate Discrete Input | X | X | X | X | X | X | X |  |  |  |  |  |  |  |
|  | ND | Trailing Edge One-Shot | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | NOP | Null Operation | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | OUT | Write Bit | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | OUTI | Out Immediate Bit | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | PD | Leading Edge One-Shot | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | PONOFF | Push On/Push Off | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | RST | Reset Bit | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | RSTI | Reset Immediate Bit | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | RSTR | Reset Range | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SET | Set Bit | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SETI | Set Immediate Bit | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | SETR | Set Range | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SR | Shift Register | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | TIMEDOUT | Timed Output | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| Analog/Process | ALDEV | Deviation Alarm | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | ALHILO | High/Low Alarm | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | ALRATE | Rate of Change Alarm | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CLAMP | Limit Range | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | DEADBAND | Set Outside Deadband | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | FILTER | First Order Filter | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | INTEGRAT | Integrate Over Time | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | PID | Closed Loop Controller | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | PIDINIT | Set PID Tuning Constants | X | X | X | X | X | X | X | X | X | X | X | X | X | X |


| CATEGORY | INSTRUCTION | DESCRIPTION | $\begin{gathered} \hline 2.9 \\ 17-\mathrm{Feb} \\ 2022 \end{gathered}$ | 2.8 <br> 09-Dec <br> 2020 | 2.7 <br> $25-\mathrm{Mar}$ <br> 2020 | $\begin{array}{\|c\|} \hline 2.6 \\ \text { 19-Jun } \\ 2019 \end{array}$ | $\begin{array}{\|c\|} \hline 2.5 \\ 27-\mathrm{Mar} \\ 2019 \end{array}$ | 2.3 31-May 2018 | 2.2 19-Mar <br> 19-Mar <br> 2018 | $\begin{array}{\|c\|} \hline 2.1 \\ 20-S e p \\ 2017 \end{array}$ | $\begin{array}{\|c\|} \hline 2.0 \\ 22-\mathrm{Feb} \\ 2017 \end{array}$ | $\begin{array}{\|c\|} \hline 1.4 \\ 07-\mathrm{Jul} \\ 2015 \end{array}$ | $\begin{array}{\|c\|} \hline 1.3 \\ 03-\mathrm{Apr} \\ 2014 \end{array}$ | $\begin{array}{\|c\|} \hline 1.2 \\ 30-O c t \\ 2013 \end{array}$ | 1.1 <br> $20-A u g$ <br> 2013 | 1.0 <br> $06-S e p$ <br> 2012 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Analog/Process | RAMPSOAK | Rap Soak Profile | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | RANGECHECK | Value In/Out of Range | X | X | X |  |  |  |  |  |  |  |  |  |  |  |
|  | SCALE | Scale Value | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SLOPE | Calculate Slope | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | TIMEPROP | Time Proportional Control | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| CTRIO | CTAXCFG | CTRIO2 Axis Configuration | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTAXDYNP | CTRIO2 Axis Run Dynamic Position Mode | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTAXDYNV | CTRIO2 Axis Run Dynamic Velocity Mode | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTAXJOG | CTRIO2 Axis Jog Mode | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTAXLIMT | CTRIO2 Axis Run Trapezoid w/Limits | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTAXTRAP | CTRIO2 Axis Run Trapezoid | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTDYNPOS | CTRIO Run Dynamic Position Mode | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTDYNVEL | CTRIO Run Dynamic Velocity Mode | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTPLSADD | CTRIO2 Add Entry to PLS | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTPLSEDT | CTRIO2 Edit PLS Entry | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTREGRD | CTRIO Read Register | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTREGWR | CTRIO Write Register | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTRUNPOS | CTRIO Run Position Mode | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTRUNVEL | CTRIO Run Velocity Mode | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTTBLADD | CTRIO Add Entry to Preset Table | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTTBLCLR | CTRIO Clear Table | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTTBLEDT | CTRIO Edit Preset Table Entry | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTTBLLD | CTRIO Load Table | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CTUPDLVL | CTRIO Update Level | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Date/Time/ Calendar | DT2EPOCH | Convert Date/Time to Epoch | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | DTCMP | Compare Date/Time | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | DTDIFF | Difference Between Two Date/Times | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | DTOFFSET | Add Offset to Date/Time | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | EPOCH2DT | Convert Epoch to Date/Time | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | NETTIME | SNTP Client | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SETTIME | Set PLC Date/Time | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Ethernet | DMLOGGER | Broadcast String to DmLogger.exe | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
|  | DNSLOOKUP | Name to IP Address | X | X | X | X | X | X | X | X | X | X | X | X | X |  |
|  | EMAIL | Send Email | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | PING | Ping Ethernet Device | X | X | X | X | X | X | X | X | X | X | X | X | X |  |
|  | SETUPIP | Setup TCP/IP Parameters | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SETUPNOD | Setupt Ethernet Node Parameters | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| File System | BACKUP | Create PLC Image File | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
|  | FILECLOSE | Close File | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | FILECOPY | Copy File | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | FILEDEL | Delete File | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | FILELOG | Log to File | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | FILENEWFLDR | Make New Folder | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | FILEOPEN | Open File | X | X | X | X | X | X | X | X | X |  |  |  |  |  |


| CATEGORY | INSTRUCTION | DESCRIPTION |  |  |  | $\begin{gathered} \hline 2.6 \\ \text { 19-Jun } \\ 2019 \\ \hline \end{gathered}$ |  |  |  | $\begin{array}{\|c\|} \hline 2.1 \\ 20-S e p \\ 2017 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline 2.0 \\ 22-\mathrm{Feb} \\ 2017 \\ \hline \end{array}$ | 1.4 <br> $07-\mathrm{Jul}$ <br> 2015 | 1.3 <br> $03-A p r$ <br> 2014 | $\begin{array}{\|c\|} \hline 1.2 \\ 30-O c t \\ 2013 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline 1.1 \\ 20-A u g \\ 2013 \\ \hline \end{array}$ | $\begin{gathered} \hline 1.0 \\ 06-\text { Sep } \\ 2012 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| File System | FILEQUERY | Query File or Folder Information | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | FILEREAD | Read from File | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | FILESEEK | Seek to Position in File | X | X | X | X | X | X | X | X | x |  |  |  |  |  |
|  | FILESYSCMD | Perform File System Command | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | FILETRUNC | Truncate File | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | FILEWRITE | Write to File | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| Hardware/Device | CLOSE | Close Device | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | DEVCLEAR | Clear Device | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | DEVREAD | Read Device Register | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | DEVWRITE | Write Device Register | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | HWCONFIG | Configure Hardware | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
|  | HWINFO | Get Hardware Information | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | OPENDEV | Open Device | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | RD | Read from Intelligent Module | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SETUPSER | Setup Serial Port | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | WT | Write to Intelligent Module | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| High Speed/Axis | AXCAM | Axis Electronic Camming | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | AXCONFIG | Axis Configuration | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | AXFOLLOW | Axis Position Following with Offset | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | AXGEAR | Axis Electronic Gearing | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | AXHOME | Axis Perform Home Search | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | AXJOG | Axis Jog Mode | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | AXPOSSCRV | Axis Move to Position Using S-Curve | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | AXPOSTRAP | Axis Move to Position Using Trapezoid | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | AXRSTFAULT | Reset Axis Fault | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | AXSCRIPT | Run a Sequence of Axis Commands | X | X | X | X | X |  |  |  |  |  |  |  |  |  |
|  | AXSETPROP | Set Axis Properties | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | AXVEL | Axis Set Velocity Mode | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | HSCNT | High Speed Counting | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | HSEDGE | Precise Edge to Edge Timing | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | HSPULSEC | Catch Pulse Input | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | PWMOUT | Pulse Width Modulated Output | X | X | X | X | X |  |  |  |  |  |  |  |  |  |
|  | TDODECFG | Deconfigure Table Driven Output | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | TDOPLS | Load Programmable Limit Switch Table for Table Driven Output | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | TDOPRESET | Load Preset Table for Table Driven Output | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| Math | DEC | Decrement | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | INC | Increment | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | LERP | Linear Interpolation | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | MATH | Calculate Expression | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | RANDSEED | Random Number Seed | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | TESTNUM | Classify Numeric Value Types | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Misc/Data Manipulation | BCDTO | BCD To Integer/Real | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | COPY | Copy Data | X | X | X | X | X | X | X | X |  |  |  |  |  |  |


| CATEGORY | INSTRUCTION | DESCRIPTION |  | 2.8 <br> $09-$ Dec <br> 2020 |  | 2.6 <br> 19-Jun <br> 2019 |  |  |  | 2.1 $20-S e p$ 2017 |  | 1.4 <br> $07-\mathrm{Jul}$ <br> 2015 |  | $\begin{gathered} \hline 1.2 \\ 30-0 \mathrm{ct} \\ 2013 \\ \hline \end{gathered}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Misc/Data Manipulation | DATAINFO | Query Information about Data Memory | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | DECO | Decode to Set Bit | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | ENCO | Encode Bit Position | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | FIFOLOAD | Load First-In-First-Out | X | X | X | X |  |  |  |  |  |  |  |  |  |  |
|  | FIFORESET | Reset FIFO Queue | X | X | X | X |  |  |  |  |  |  |  |  |  |  |
|  | FIFOUNLOAD | Unload First-In-First-Out | X | X | X | X |  |  |  |  |  |  |  |  |  |  |
|  | GRAY | Gray Code to Integer | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | INIT | Initialize Data | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | ISCLEAR | Is Structure Cleared | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | LIFOLOAD | Load Last-In-First-Out | X | X | X | X |  |  |  |  |  |  |  |  |  |  |
|  | LIFORESET | Reset LIFO Queue | X | X | X | x |  |  |  |  |  |  |  |  |  |  |
|  | LIFOUNLOAD | Unload Last-In-First-Out | X | X | X | X |  |  |  |  |  |  |  |  |  |  |
|  | MAPIO | Map Inputs/Outputs | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | MEMCLEAR | Clear Memory | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | MEMCOPY | Copy Memory Range | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | MOVE | Move Value | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | MOVEBIT | Move Single Bit | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | MOVER | MOVE Range of Values | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | PUBLISH | Translate from Do-more | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | REFWRITE | Write Value Indirectly | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | ROTL | Rotate Left | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | ROTR | Rotate Right | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SEG | Hex/BCD to 7 Segment Display | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SETNUMR | Set Numeric Range | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SUBSCRIB | Translate to Do-more | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SUMBITS | Sum Bits | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SWAPB | Swap Bytes | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | TOBCD | Integer/Real To BCD | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Program Control | CALL | Call Subroutine | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | ENDC | Conditional End of Code-Block | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | ENTASK | Enable Task | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | EXIT | Exit This Program | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | GOTO | Go To Label | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | HALT | Halt Program or Task | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | INTCONFIG | Configure Interrupt | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | INTDECONFIG | Deconfigure Interrupt | X | X | X | X | X | X | X | X | x |  |  |  |  |  |
|  | INTRESUME | Resume Interrupts | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | INTSUSPEND | Suspend Interrupts | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | JMP | Jump To Stage | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | JMPI | Indexed Jump | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | LABEL | Program Label | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | REBOOT | Reboot PLC | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | RESTART | Restart Program or Task | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | RET | Return Back to CALL | X | X | X | X | X | X | X | X | X |  |  |  |  |  |


| CATEGORY | INSTRUCTION | DESCRIPTION | $\begin{gathered} \hline 2.9 \\ 17-\mathrm{Feb} \\ 2022 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \hline 2.8 \\ \text { 09-Dec } \\ 2020 \\ \hline \end{array}$ | $25-7$ <br> $25 a r$ <br> 2020 | $\begin{array}{\|c\|} \hline 2.6 \\ 19-\mathrm{Jun} \\ 2019 \\ \hline \end{array}$ | 2.5 <br> $27-M a r$ <br> 2019 | 2.3 <br> 31-May <br> 2018 <br> $X$ | $\begin{array}{\|c\|} \hline 2.2 \\ 19-\mathrm{Mar} \\ 2018 \\ \hline \end{array}$ | 2.1 <br> $20-S e p$ <br> 2017 <br> $X$ | 2.0 <br> $22-\mathrm{Feb}$ <br> 2017 <br> $X$ | 1.4 <br> $07-\mathrm{Jul}$ <br> 2015 | $\begin{array}{\|c\|} \hline 1.3 \\ 03-\mathrm{Apr} \\ 2014 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline 1.2 \\ 30-0 \mathrm{ct} \\ 2013 \\ \hline \end{array}$ | 1.1 <br> $20-A u g$ <br> 2013 | 1.0 <br> $06-S e p$ <br> 2012 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Program Control | RETC | Conditional Return Back to CALL | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
|  | RUN | Run Program | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SG | Stage | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SGCONVRG | Converge Multiple Stages to SG | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SGDIVRG | Jump to Multiple Stages | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SGRST | Disable Stage | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SGRSTI | Indexed Disable Stage | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
|  | SGRSTR | Disable Range of Stages | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SGSET | Enable Stage | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SGSETI | Indexed Enable Stage | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
|  | STOP | Switch to Program Mode | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | SUSPEND | Suspend Program or Task | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | WATCHDOG | Force Watchdog Error | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | YIELD | Yield Program or Task | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Program-Looping | BREAK | Exit Loop | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CONTINUE | Skip to Loop End | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | FOR | Index Loop | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | NEXT | Index by Step | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | REPEAT | Loop Until Condition is Non-Zero | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | UNTIL | Repeat Until Condition is Non-Zero | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | WEND | While End | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | WHILE | Loop While Condition is Non-Zero | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| ProtocolCustom/ASCII | CHECKSUM | CheckSum Algorithm | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | OPENTCP | Open TCP Connection | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | PACKETIN | Input Data from Packet Device | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | PACKETOUT | Output Data to Packet Device | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STREAMIN | Stream in Data from Device | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STREAMOUT | Stream Out Data to Device | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | TCPLISTEN | Start Listening on TCP Port | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Protocol- <br> Standard | DLRX | DirectLOGIC Network Read | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | DLWX | DirectLOGIC Network Write | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | EIPMSG | Send EtherNet/IP Message | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
|  | FTPGET | Retrieve File FROM Remote | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FTPPUT | Store File TO Remote | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
|  | GSREGRD | GS Edrive Register Read | X | X | X | X | X | X | X | X | X | X | X | X | X |  |
|  | GSREGWR | GS Edrive Register Write | X | X | X | X | X | X | X | X | X | X | X | X | X |  |
|  | HTTPCMD | HTTP Request / Response with Server | X | X | X | X | X |  |  |  |  |  |  |  |  |  |
|  | JSONBUILD | Build JSON Record | X | X | X | X | X |  |  |  |  |  |  |  |  |  |
|  | JSONPARSE | Parse JSON Text | X | X | X | X | X |  |  |  |  |  |  |  |  |  |
|  | MQTTPUB | IoT Publish MQTT Topics | X | X | X | X | X | X |  |  |  |  |  |  |  |  |
|  | MQTTSUB | IoT Subscribe MQTT Topics | X | X | X | X | X | X |  |  |  |  |  |  |  |  |
|  | MRX | Modbus Network Read | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | MSREGRD | Modbus Scanner I/O Register Read | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | MSREGWR | Modbus Canner I/O Register Write | X |  |  |  |  |  |  |  |  |  |  |  |  |  |


| CATEGORY | INSTRUCTION | DESCRIPTION |  |  |  | $\begin{array}{\|c\|} \hline 2.6 \\ \text { 19-Jun } \\ 2019 \\ \hline \end{array}$ |  |  |  | 2.1 $20-S e p$ 2017 | 2.0 <br> $22-\mathrm{Feb}$ <br> 2017 <br> $X$ | 1.4 <br> $07-\mathrm{Jul}$ <br> 2015 |  | 1.2 <br> $30-O c t$ <br> 2013 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Protocol- <br> Standard | MWX | Modbus Network Write | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | PEERLINK | Share Data w/PLCs | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | RX | Do-more Network Read | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
|  | WX | Do-more Network Write | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| String | STR2INT | Convert String to Integer | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STR2REAL | Convert String to Real | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRCASE | Convert String to UPPER / lower Case | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRCLEAR | Clear Strings | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRCMP | String Compare | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRCOPY | Copy String | X | X | X |  |  |  |  |  |  |  |  |  |  |  |
|  | STRCOPYR | Copy Range of String | X | X | X |  |  |  |  |  |  |  |  |  |  |  |
|  | STRDELETE | Delete Substring | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRFIND | Find within String | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRGETB | Get Bytes Out of a String | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRINSERT | Insert Substring | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRPRINT | Print to String | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRPUTB | Put Bytes Into a String | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRSUB | Get Sub-String | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRTRIM | Trim Whitespace | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | STRTRUNC | Set String Length | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Timer/Counter/ Drum | CNT | Up Counter | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | CNTDN | Down Counter | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | COMMON_TIMER | Start here if not sure | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
|  | DRUM | Timed/Event/Timed-Event Drum | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | FREQCNT | Frequency Counter | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | FREQTMR | Frequency Timer | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | OFFDTMR | Off Delay Timer | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | ONDTMR | On Delay Timer | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | RSTCT | Reset Counter | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | RSTT | Reset Timer | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | TMR | Timer | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | TMRA | Accumulating Timer | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | TMRAG | Global Accumulating Timer | X | X | X | X | X | X | X | X | X | X | X |  |  |  |
|  | TMRADOWN | Accumulating Down Timer | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | UDC | Up/Down Counter | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|  | UDCG | Global Up/Down Counter | X | X | X | X | X | X | X | X | X | X | X |  |  |  |
|  |  | TOTAL NUMBER OF INSTRUCTIONS: | 252 | 247 | 240 | 237 | 231 | 226 | 224 | 223 | 217 | 180 | 177 | 175 | 175 | 171 |

## INSTRUCTION COLOR KEY

| INSTRUCTION COLOR |
| :--- |
|  |
|  |

BrX PLC only
Ethernet port only

- BRX PLC w/Ethernet \& Simulator only

BRX PLC \& Simulator only

## SUPPORTED COLOR KEY

| $\mathbf{X}$ |
| :---: |
| $\mathbf{X}$ |

- Supported
- Supported, the version in which the instruction was introduced
- Not supported

