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PDFX Command Reference

COMMAND	SYNTAX	TYPE	DESCRIPTION
A	a**A**n	[I/B]	Sets both the **Acceleration** and **Deceleration** in RPS².
AA	a**AA**n	[I/B]	Sets the **Acceleration only** in RPS².
AD	a**AD**n	[I/B]	Sets the **Deceleration only** in RPS².
ARM	a**ARM**n	[I/B]	Enables and disables the **Event Triggered Code** [arm : n = 1, disarm : n = 0].
C	a**C**	[Im]	Results in a user program to **Continue** after a pause command.
CLEAR	a**CLEAR**(label)	[I/B]	**Deletes** a user program defined by the name 'label'; a label of 'all' deletes all user programs.
DECLARE	a**DECLARE**(label)	[I/B]	**Declares** a user program label (max 5 character), to permit definition of the program.
D	a**D**n	[I/B]	Sets the move **Distance** in units set by the 'DU' system variable.
E	a**E**n	[I/B]	**Enable/Disable** the **Serial Communications** [enable: n = 1, disable: n = 0].
EXIT	a**EXIT**	[I/B]	The **Exit** command is used to terminate a **Loop** function instantly.
G	a**G**	[I/B]	The **Go** command starts motion using the settings given by 'V', 'AA', 'AD' (or just 'A'), 'D' and 'VS'.
GH	a**GH**	[I/B]	The **Go-Home** command instructs the indexer to search for the home position.
GOSUB	a**GOSUB**(label)	[I/B]	Runs the **Subroutine** defined by 'label', returning to the original program once the subroutine ends.
GOTO	a**GOTO**(label)	[I/B]	Runs the **Program** defined by 'label', ending the program containing the original GOTO command.
H	a**H**n	[I/B]	Set **H+** for **CW** motion**, H-** for **CCW** motion**.** With **'H'** alone the direction of motion is simply **reversed**.
HOME	a**HOME**on/off(params)	[I/B]	**Setup Homing** before 'GH' command. Parameters are (ref_edge, switch_type, dir_&_vel, accel, mode). 'on/off' = 1 to enable.
IF	a**IF**(sysvar, relation, value)	[I/B]	The **IF** command compares the 'system variable' with the 'value' using the specified 'relationship'.
IS	a**IS**	[I/B]	Pattern showing the **Input Status:** User Inputs 1 - 6, 7 (REG), 8 (HOME), 9 (LIM-) and 10 (LIM+) [high = 1].
K	a**K**	[Im]	The **Kill** command is used to immediately stop motion (Use 'S' for a controlled stop).
LIMITS	a**LIMITS**(mask,type,mode,LD)	[I/B]	**Setup Limits:** MASK [0-3: enable all , - only, + only, none]; TYPE [1 = n.c. 0 = n.o.]; MODE [(0)=abort,(1)=cont.]; LIMIT DECEL = nn
LIST	a**LIST**(label)	[I/B]	The **List** command is used to view a user program of name 'label'; a label of 'all' will list all programs.
LOOP	a**LOOP**(label, cycles)	[I/B]	The **Loop** command repeats a user program called 'label' the number of times specified by 'cycles'.
LSEL	a**LSEL**on/off(params)	[I/B]	The **Label-Select** command allows the use of the inputs 1-5 to select a numerical labelled program. 'on/off' = 1 to enable.
M	a**M**n	[I/B]	Sets the **Indexing Mode** of operation: n = (**A**)bsolute, n = (**I**)ncremental or n = (**C**)ontinuous.
O	a**O**(pattern)	[I/B]	The **Output** command applies the specified binary pattern to the user outputs. [e.g. aO1010, outputs 1 & 3 ON, 2 & 4 OFF].
OFF	a**OFF**	[I/B]	**Shutdown** the **Drive** and de-energise the motor.
ON	a**ON**	[I/B]	**Enable** the **Drive** and energise the motor.
POSMAIN	a**POSMAIN**(params)	[I/B]	**Enable Position Maintenance**; parameters are (dead_band_range, output.'n'_ON_if_in_window, settling_time).
PROFILE	a**PROFILE**n(params)	[I/B]	Defines a move **Profile**; parameters for profile number 'n' are ('AA', 'AD', 'D', 'V,' 'VS').
PS	a**PS**	[I/B]	The **Pause** command cause immediate command execution to pause until a continue (C) command is issued.
R	a**R**(sysvar)	[I/B]	**Reports** the system variable requested by 'sysvar'.
REG	a**REG**on/off(params)	[I/B]	**Define** a **Registration Move**; parameters are (rising_edge, profile_no, hold_off_distance, registration_window). 'on/off' = 1 to enable.
RFS	a**RFS**	[I/B]	**Return** to **Factory Settings** - initialises the indexer with the factory defaults.
S	a**S**	[I/B]	Use the **Stop** command to bring motion to a controlled stop.
SN	a**SN**n	[I/B]	The **Scan** command allows you to set an input debounce time, in mS.
STALL	a**STALL**on/off(params)	[I/B]	**Enable Stall-Detection**; parameters are (error_window, stop_on_stall, output.'n'_ON_if_stalled).
SV	a**SV**	[I/B]	The **Save** command stores the current system variables and user programs in non-volatile memory.
T	a**T**n	[I/B]	The **Time Delay** command pauses program execution for the time specified by 'n', in seconds.
TR	a**TR**(sysvar, relation, value)	[I/B]	The **Trigger** command pauses program execution until the relationship between the 'system variable' and the 'value' is true.
USE	a**USE**(profile)	[I/B]	The **Use Profile** command copies the predefined 'profile' command settings to the current move parameters.
V	a**V**n	[I/B]	The **Velocity** command sets or reports the programmed velocity of the motor.
VS	a**VS**n	[I/B]	The **Velocity Start/Stop** command sets or reports the velocity at which the motor starts and stops, in RPS.
W	a**W**(sysvar,value)	[I/B]	The **Write** command allows you to set a specified 'system variable' to a particular 'value'.
Z	a**Z**	[I/B]	The **Reset** command will reset the indexer; similar to cycling the power.
#	a#n	[I/B]	**Set** the unit's **Communications Device Address Remotely**, rather than in hardware.
" "	a**"**text**"**	[I/B]	Use the **Quote** command to send a message string of up to 10 characters over the serial communications port.

[Syntax: '**a**' = Address '**n**' = Number in Range '**label**' = User Defined Program Name '**sysvar**' = System Variable(s) '**params**' = Command Specific Parameters]
[Type : '**Im**' = Immediate Command Only '**Bf**' = Buffered Command Only '**I/B**' = Immediate or Buffered Commands]

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PDFX System Variables

Var	Name	R/W	Range/default value
BU	Buffer usage	Y N	% of program buffer used 0-100
CQ	Command queuing	Y Y	1= Pauses until move complete
			0= continuous execution
DF	Drive Fault status	Y N	See following section
DU	Distance Units	Y Y	0= Motor steps or 1= Encoder steps, default=0
EI	Encoder Input	Y Y	0=step/dir, 1=cw/ccw, 2=quad ABZ, default=2
EO	Encoder signal output	Y Y	0=step/dir, 1=cw/ccw, 2=quad ABZ, default=0
EP	Encoder Position	Y Y	-2,147,483,647 to 2,147,483,647 counts
EX	Comms. Response Style & echo control	Y Y	0= speak when spoken to - echo off (RS485)
			1= speak whenever - echo off (RS485)
			2= speak when spoken to - echo on (RS232)
			3= speak whenever - echo on (RS232)
ER	Feedback encoder resolution	Y Y	0-4096 : 0 returns error
IN	Inputs	N N	Same format as IS command
IP	In Position flag	Y N	1= In position or 0= not yet in position
MC	Motor current	Y Y	50, 60, 70, 80, 90, 100 (in percent), default 50
MR	Motor resolution	Y Y	400, 800, 2000, 4000, default 4000
MS	Motor standby current	Y Y	50, 70 (in percent) , default 50
MV	Moving	Y N	Flag 1= moving or 0 = not moving
PA	Position Absolute	Y Y	-2,147,483,647 to 2,147,483,647 steps/counts, default 0
PE	Position Error	Y N	Encoder count or motor steps depending on DU
PI	Position Incremental	Y Y	-2,147,483,647 to 2,147,483,647 steps/counts, default 0
RB	Ready/Busy flag	Y N	Flag 0= ready or 1= busy
RM	Registration Move	Y N	Flag 1= reg move in progress, 0 = not doing reg move
RV	ReVision of software	Y N	x.yy major.minor
SN	Serial number	Y N	Drive serial number
ST	Status of indexing	Y N	See following section
UF	User program Fault status	Y N	See following section

PDFX User Fault Codes

Bit Number	User Fault Information
1	Value is out of range
2	Incorrect command syntax
3	Last label already in use
4	Label of this name not defined
5	Missing Z pulse when homing
6	Homing failed - no signal detected
7	Home signal too narrow
8	Drive de-energised
9	Cannot relate END statement to a label
10	Program memory buffer full
11	No more motion profiles available
12	No more sequence labels available
13	End of travel limit hit
14	Still moving
15	Deceleration error
16	Transmit buffer overflow*
17	User program nesting overflow
18	Reserved
19	Drive not ready
21	Boost duty cycle error
22	Save error
23 to 32	Reserved

PDFX Status Codes

Bit Number	Status Information	Bit Number	Status Information
1	Command processing paused	**13**	-ve limit seen during last move
2	Looping (command executing)	**14**	+ve limit seen during last move
3	Wait for trigger (input)	**17**	Executing a position maintenance move
4	Running program	**18**	Possible stall
5	Going home	**21**	No registration signal seen in reg window
6	Waiting for delay timeout	**22**	Cannot stop within the registration distance
7	Registration in progress	**23 to 32**	Reserved
9	Motor energised		

PDFX Drive Fault Codes

Bit Number	Drive Fault Information
1	Composite fault
2	Output stage over current
3	Supply rail failure
4	Ambient over temperature
5	Drive over temperature
6	Configuration error
7	Motor high voltage rail failure
8	Output fault
9 to 32	Reserved

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