|  |  |
| --- | --- |
| Command | Byte Sequence |
| PRG | PRG{0000}, FM{0} |
| JOG | JOG{0001}, DEST{000}, DIR{0} |
| SET | SET{0010}, DEST{000}, REL{0} – MSB{00000000} – LSB {00000000} |
| GET | GET{0011}, SRC{000} |

# PRG

## Format

PRG FM

## Encoding

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0000 | | | | M | FM | X | X |

## Operation

IF M == 0

RETURNS FLAG\_FM

ELSE

FLAG\_FM = FM

## Description

If the M bit is 0 returns the current value of FLAG\_FM. If the M bit is 1 the Feedback Mode Flag (FLAG\_FM) is set to the value of the FM bit. If FLAG\_FM == 1 feedback mode is enabled the device is assumed to be in “feedback mode.” Otherwise it is not

## Returns

If the M bit is 0:

Return 1 byte – the value of FLAG\_FM

If the M bit is 1:

If in feedback mode: returns 1 byte - 0XX for SUCCESS, 1XX for FAILURE, 2XX RESERVED[[1]](#footnote-1)

If not in feedback mode: returns nothing (does not return)

# JOG

## Format

JOG DEST, DIR

## Encoding

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0001 | | | | DEST | | | DIR |

## Operation

If DIR == 0

Servo[DEST].write(Servo[DEST].get() + JOGAMT)

Else

Servo[DEST].write(Servo[DEST].get() - JOGAMT)

## Description

If the DIR bit is 0 the JOGAMT is added to the DEST servo’s value and then written to the DEST servo. If the DIR bit is set the JOGAMT is subtracted from the DEST servo’s value and then written to the DEST servo. The DIR bit determines direction of the JOG

## Returns

If in feedback mode: returns 1 byte - 0XX for SUCCESS, 1XX for FAILURE, 2XX RESERVED[[2]](#footnote-2)

If not in feedback mode: returns nothing (does not return)

# SET

## Format

SET DEST, REL, MSB, LSB

## Encoding

|  |  |  |
| --- | --- | --- |
| Byte 1 | Byte 2 | Byte 3 |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | | 0010 | | | | DEST | | | REL | | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | | MSB | | | | | | | | | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | | LSB | | | | | | | | |

## Operation

If REL == 0

Servo[DEST].write(MSB<<8 + LSB)

Else

Servo[DEST].write(Servo[DEST].get() + (MSB<<8 + LSB)

## Description

If the REL bit is 0 the value composed of the most significant byte and least significant byte is written to the DEST servo. Note, the signed nature of the MSB is conserved. If the REL bit is 1 the value composed of the most significant byte and least significant byte is added to the current value of the DEST servo and written to the DEST servo. Note, again the signed nature of the MSB is conserved. The REL bit signifies if the value composed of the MSB and LSB should be relative (1) or not (0) to the current value of the DEST servo

## Returns

If in feedback mode: returns 1 byte - 0XX for SUCCESS, 1XX for FAILURE, 2XX RESERVED[[3]](#footnote-3)

If not in feedback mode: returns nothing (does not return)

# GET

## Format

JOG SRC

## Encoding

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0011 | | | | SRC | | | X |

## Operation

RETURNS Servo[SRC].get()

## Description

Used to get the current position of a servo

## Returns

2 bytes (MSB, LSB) that represent the SRC servo’s position.

# Return Codes

000 – Success, Ping Pong (General success, nothing to report)

100 – Failure

200 – Reserved

1. See RETURN CODES for further information [↑](#footnote-ref-1)
2. See RETURN CODES for further information [↑](#footnote-ref-2)
3. See RETURN CODES for further information [↑](#footnote-ref-3)