5. Commands And Parameters (Settings & Confirmation)

5.1 Outline

The following commands enable the DYNASERV to carry out a move:
(1) Command @:   Start & end commands
                  Useful also for Emergency stop command
(2) Parameter (#):   For settings the values of distance, velocity, indexing points etc.
                  For reading and confirmation of the values set above.
                  Setting user commands, reading various values of parameters etc. (Programmed mode operation)
                  Settings for the point table and the confirmation of the same (Point mode operation)

5.2 Usage Of @ Commands:

The format for the @ commands are as follows:
@$$: First field: Second field:......⅃
  ($$:@number; ⅃:CR ; Refer to list below for relevant fields for each of the @ commands)

<Example 1> Start programmed operation (Start program no.5)
    @3:4:5⅃   (⅃:CR)
    Receive R00   (This response is returned if the @ command format was correct)
    ALM**:&&&&&&&&   (When the @ command fields are in error, the driver responds with this message where the ** stands for the alarm number and the &&&&&&& represents the alarm message display)

<Example 2> Jog move (Clockwise rotation)
    @11:1⅃   (⅃:CR)
    Receive R00   (This response is returned if the @ command format was correct)
    ALM**:&&&&&&&&   (When the @ command fields are in error, the driver responds with this message where the ** stands for the alarm number and the &&&&&&& represents the alarm message display)

5.3 @ Commands Listing:

Number	Field 1	Field 2	Field 3	Function	Response	Command Execution while the driver is still under operation
@1	No	No	No	Abort	R00	YES
@2	No	No	No	Stop	R00	YES
@3	Move mode number	No	No	Start(Mechanical settings, test, Homing,Signal, search, direct value input	R00	NO
		Program number	Block number	Start (Program mode)	R00	NO
		Index number	No	Start (Index move mode)	R00	NO
		Point numbers	No	Start(Point move mode)	R00	NO
@4	No	No	No	Error reset	R00	NO
@8	0	No	No	Servo ON is paused.	R00	YES
	1	No	No	Change to Servo ON from the paused state.	R00	YES
@9		No	No	M answer	R00	YES
@10	1	No	No	Homing offset settings (CW direction)	R00	NO
	-1	No	No	Homing offset settings (CCW direction)	R00	NO
@11	0			Jog move stop	R00	NO
	1			Jog move (clcokwise)	R00	NO
	-1			Jog move (anti-clockwise)	R00	NO

5.4 Settings And Confirmation Of Parameters (# Command)

<Settings example>   Set the value of the parameter #123 as 1000.
  Use the PC Utility in the terminal mode and input as follows:
  #123=1000: ⌐   (⌐ : CR)
  ReceiveR00 Ready: 123 (If the parameter change was successfully completed)
  ALM**:&&&&&&&   (When the @ command fields are in error, the driver responds with this message where the ** stands for the alarm number and the &&&&&&&& represents the alarm message display)

  <Reading example> Read the value of the parameter #124.
  Use the PC Utility in the terminal mode and input as follows:
  #123 ⌐   (⌐ : CR)
  Receive RID $$$$$$: 234 (If the parameter read is successful then the $$$ represent the comments and the 234 is the value of the parameter #124)
  ALM**:&&&&&&&   (When the @ command fields are in error, the driver responds with this message where the ** stands for the alarm number and the &&&&&&&& represents the alarm message display)

#Parameter types

Parameter number	Parameter type	Comments
0-199	General parameters	General settings/ Reading the value of these settings
200-299	Mechanical settings parameters	Used in Mechanical settings modes/ Can be used to read the parameter's value.
300-399	Monitor parameters	These parameters are used to read the values only/ Can be used as general parameters also
400-499	Registration parameters	These can be defined by the user in programming or backup for general usage/ Can also be used to read the parameter's value. (Values are backed up until re-initialized)
500-549	Volatile parameters	These can be defined by the user in programming or backup for general usage/ Can also be used to read the parameter's value. (Values are not backed upon recycling power to the driver)
600-699	Point table parameters	Use in the point table mode. General usage/ Can also be used to read the parameter's value.

Refer to separate listings for the descriptions of various types of general parameters, Mechanical mode settings and also the monitor parameters.

NOTE: The settings range for the parameters #400 to #699 are in the range of -999999999 to 999999999

5.5 Parameter Details

1.	**Enables the over-travel error function in the + direction**
	Minimum value: 0
	Maximum value: 1
	Initial value: 0
	Units: None
	The setting of this parameter shall determine the display of error upon the detection of the + direction over-travel sensor signal during the axis move instruction in the + direction.
	    0: Error signal turned OFF
	    1: Error signal turned ON

2.	**Enables the over-travel function in the - direction**
	Minimum value: 0
	Maximum value: 1
	Initial value: 0
	Units: None
	The setting of this parameter shall determine the display of error upon the detection of the - direction over-travel sensor signal during the axis move instruction in the - direction.
	    0: Error signal turned OFF
	    1: Error signal turned ON

3.	**Selecting the type of cam profile move**
	Minimum value: 0
	Maximum: 1
	Initial: 1
	Units: None
	Selection of the type of motion profile under the positioning move (It is assumed that the exact amount of distance to be moved is already known).
	    0: Trapezoidal move
	    1: Cam profile move

4.	**Selecting the acceleration type**
	Minimum value: 0
	Maximum vale: 1
	Initial value: 0
	Units: None
	Selects the type of acceleration profile under a Trapezoidal move.
	    0: Constant velocity
	    1: S curve

5.	**Selecting the deceleration type**
	Minimum value: 0
	Maximum value: 1
	Initial value: 0
	Units None
	Selects the type of deceleration profile under a Trapezoidal move.
	    0: Constant velocity
	    1: S curve

6.	**Selection of the cam profile**
	Minimum value: 1
	Maximum value: 16
	Initial value: 5
	Units: None
	Selects the type of cam profile under a cam move.
	    1 - 8: Preset standard cam curves
	    9 - 16: User defined & registered cam curves

7. Acceleration time during a trapezoidal move
Minimum value: 1
Maximum value: 9999
Initial value: 1000
Units: milliseconds
Selection of the acceleration time required for the change of velocity from zero to the maximum velocity of the specified axis under a trapezoidal move.

8. Deceleration time during a trapezoidal move
Minimum value: 1
Maximum value: 9999
Initial value: 1000
Units: milliseconds
Selection of the deceleration time required for the change of velocity from zero to the maximum axis velocity under the trapezoidal move.

9. Feeding Velocity
Minimum value: 1
Maximum value: 9999999
Initial value: 100000
Units: Axis command unit/ sec
Permits setting a value for the feed velocity.
For trapezoidal moves: Sets the feeding velocity.
For cam profile move: Sets the peak velocity for a cam move.

10. Jog Velocity
Minimum value: 1
Maximum value: 9999999
Initial value: 100000
Units: Axis command unit/sec
Sets the feeding velocity for a move in the jog mode.

11. Over travel search velocity during a homing move
Minimum value: 1
Maximum value: 9999999
Initial value: 100000
Units: Axis command unit/sec
This parameter is used to specify a velocity for the motor when it is searching for the over travel sensor signal in the Homing mode. This parameter value becomes void, if homing is not being carried out.

12. Homing operation: Home sensor proximity signal search velocity
Minimum value: 1
Maximum value: 9999999
Initial value: 50000
Units: Axis command unit/sec
This parameter specifies the velocity of motor under a homing operation when searching for a proximity sensor signal. This parameter value becomes void, if the proximity sensor signal is not used during homing.

13. Home sensing move 1
Minimum value: 1
Maximum value: 9999999
Initial value: 20000
Units: Axis command unit/sec
Under the homing mode, this parameter enables to set the velocity of the initial home sensing run for the motor.
Apart from this, the velocity specified here will also be used as the feed velocity in the following cases:
During the second run over the home position;
After detection of the home position, for the over-move of the motor for better home detection;
For the final move to the home position after detection of the home position signal.

Minimum velocity for this operation is limited to 20000 pulses/ sec.

15.	**Homing operation: Origin position offset feed velocity**			

15. Homing operation: Origin position offset feed velocity

Minimum value: 1
Maximum value: 9999999
Initial value: 100000
Unit s: Axis command unit/sec
This parameter enables to set the feed velocity for the home offset position under homing mode.
This parameter becomes void at if the Origin offset is at a distance of 0 from the Origin.

16. Velocity override percentage 1

Minimum value: 0
Maximum value: 200
Initial value: 100
Units: %
Enables to set the velocity override in % for the velocity override percentage 1.

17. Velocity override percentage 2

Minimum value: 0
Maximum value: 200
Initial value: 100
Units: %
Enables to set the velocity override in % for the velocity override percentage 2.

20. Homing direction

Minimum value: 0
Maximum value: 1
Initial value: ·0
Units: None
Under a Homing mode, this parameter sets the homing direction (The proximity sensor signal search direction).
                     0:      -direction
                     1:      +direction

21. . Enable/ Disable the overtravel signal under the homing mode.

Minimum value: 0
Maximum value: 1
Initial value: 0
Units: None
This parameter enables (or disables) the over travel signal during the homing operation.
                     0:      Disable the overtravel signal search during homing.
                     1:      Enable the over travel signal search during homing.

22. Enable/ Disable the proximity signal search during a homing operation

Minimum value: 0
Maximum value: 1
Initial value: 0
Units: None
This parameter enables (or disables) the proximity signal search during the homing operation.
                     0:      Disable the proximity sensor signal.
                     1:      Enable the proximity sensor signal.

27. Enabling the homing flag position error

Minimum value: 0
Maximum value: 1
Initial value: 1
Units: None
After the completion of the Homing procedure, based upon the relationship between the motor's
position locating fixture and the Motor's Z phase, either an **error** or an **alarm** is issued:

[Position of locating fixture - position of the Z phase] > (Z phase interval X 0.95) or
[Position of locating fixture - position of the Z phase] < (Z phase interval X 0.05) leads to an error!

[Position of locating fixture - position of the Z phase] > (Z phase interval X 0.90) or
[Position of locating fixture - position of the Z phase] < (Z phase interval X 0.10) prompts a warning!

29.	**Offset distance from the Home position**
	Minimum value: -9999999
	Maximum value: 9999999
	Initial value: 0
	Units: Axis command unit
	This parameter enables to set an offset distance from the home position while operating under the homing mode.

30.	**Homing complete operation command value**
	Minimum value: -9999999
	Maximum value: 9999999
	Initial value: 0
	Units: Axis command unit
	This parameter sets the drive command coordinate value for due usage after the completion of the homing.

31.	**Operation width under testing mode**
	Minimum value: 0
	Maximum value: 9999
	Initial value: 1000
	Units: Axis command unit
	This parameter sets the operation width under the test mode of operation.

32.	**Operation width under Auto-tuning**
	Minimum value: 5000
	Maximum value: 45000
	Initial value: 20000
	Units: Axis command unit
	This parameter sets the operation width under the Auto-tuning mode.

33.	**Maximum deceleration under Auto-tuning**
	Minimum value: 10
	Maximum value: 1000
	Initial value: 100
	Units: milliseconds
	This parameter sets the maximum deceleration to be used while under the Auto-tuning mode of operation.

34.	**Initializing the deceleration time while under Auto-tuning.**
	Minimum value: 100
	Maximum value: 2000
	Initial value: 500
	Units: milliseconds
	This parameter sets the default value of the deceleration to be used while under the Auto-tuning mode of operation.

38.	**Servo stiffness settings**
	Minimum value: 1
	Maximum value: 5
	Initial value: 3
	Units: None
	This parameter enables to select the type of Servo stiffness desired for a particular operation. (Large values lead to higher stiffness but, it also implies that the motor becomes susceptible to resonance phenomenon)
	1. Velocity control band width 30 Hz Position control band width 7 Hz
	2. Velocity control band width 40 Hz Position control band width 10 Hz
	3. Velocity control band width 50 Hz Position control band width 12 Hz
	4. Velocity control band width 60 Hz Position control band width 15 Hz
	5. Velocity control band width 70 Hz Position control band width 17 Hz

39. Signal search direction
Minimum value: 0
Maximum value: 1
Initial value: 0
Units: none
Sets the direction of the search move under the signal search mode.
0: (-) direction
1: (+) direction

41. Enabling the signal search mark signal
Minimum value: 0
Maximum value: 1
Initial value: 0
Units: none
In the signal search mode, this parameter is used to enable/ disable the Mark sense signal.
0: Do not seek
1: Turn ON the search.

42. Enabling the proximity signal during homing
Minimum value: 0
Maximum value: 1
Initial value: 0
Units: none
In the signal search mode, this parameter is used to enable/ disable the proximity sensor signal.
0: Do not seek
1: Turn ON the search.

43. Enabling the (+) direction over travel signal during the signal search mode
Minimum value: 0
Maximum value: 1
Initial value: 0
Units: none
In the signal search mode, this parameter is used to enable/ disable the (+) over travel sensor signal.
0: Do not seek
1: Turn ON the search.

44. Enabling the (-) direction over travel signal during the signal search mode
Minimum value: 0
Maximum value: 1
Initial value: 0
Units: none
In the signal search mode, this parameter is used to enable/ disable the (-) over travel sensor signal.
0: Do not seek
1: Turn ON the search.

46. Signal search mark signal logic settings
Minimum value: 0
Maximum value: 1
Initial value: 0
Units: none
In the signal search mode, this parameter sets the logic type for the mark signal.
When the mark signal search is not used, this parameter becomes void automatically.
0: Mark sense signal OFF
1: Mark sense signal ON

47.	Logic for the proximity signal during homing
	Minimum value: 0
	Maximum value: 1
	Initial value: 0
	Units: none
	This parameter determines the logic of the proximity sensor signal sought under the signal search mode. When the proximity signal search is not used, this parameter becomes void automatically.
	0: Proximity sensor signal OFF
	1: Proximity sensor signal ON

48.	Logic for the (+) direction over travel signal during the signal search mode
	Minimum value: 0
	Maximum value: 1
	Initial value: 0
	Units: none
	This parameter determines the logic of (+) direction over travel signal sought under the signal search mode. When the (+) direction over travel signal is not used, this parameter becomes void automatically.
	0: (+) direction overtravel signal OFF
	1: (+) direction overtravel signal ON

49.	Logic for the (-) direction over travel signal during the signal search mode
	Minimum value: 0
	Maximum value: 1
	Initial value: 0
	Units: none
	This parameter determines the logic of (-) direction over travel signal sought under the signal search mode. When the (-) direction over travel signal is not used, this parameter becomes void automatically.
	0: (-) direction overtravel signal OFF
	1: (-) direction overtravel signal ON

50.	The position control band width
	Minimum value: 1
	Maximum value: 32
	Initial value: 9
	Units: Hz
	This parameter sets the position control band width for the axis position control unit.

53.	The position integral limiting value
	Minimum value: 0
	Maximum value: 999999
	Initial value: 10000
	Units: none
	This parameter sets the limit value of the position error integrator for the axis position control unit If the motor exhibits excessive windup error, kindly set this parameter to the minimum value possible.

54.	The position feed forward percentage
	Minimum value: 0
	Maximum value: 126
	Initial value: 90
	Units: %
	When the driver is set in the I-PD control loop, this parameter sets the amount of position feed forward as a percentage for the controlled axis. However, when the driver is operated under the PI mode of control this parameter's value shall not be used and has no effect on the motor's control.

55.	Velocity feed forward percentage	
	Minimum value:	0
	Maximum value:	126
	Initial value:	100
	Units:	%
	This parameter sets the amount of velocity feed forward in the control loop as a percentage.	

56.	Acceleration feed forward gain	
	Minimum value:	0
	Maximum value:	999999
	Initial value:	0
	Units:	None
	This parameter sets the amount of gain for the acceleration (or the torque) feed forward for a specified axis of the servo driver (provided the feed forward function is available) . If the control system does not have the feature of acceleration (or torque) feed forward, this parameter will not have any effect.	

58.	Positioning settling width	
	Minimum value:	0
	Maximum value:	999999
	Initial value:	0
	Units:	None
	This parameter sets the settling check and width for an axis position instruction command under position control.	

65.	Value to cause an error detection in the (+) direction or CW direction:	
	Minimum value:	1
	Maximum value:	32767
	Initial value:	32767
	Units:	Pulse
	This parameter sets the maximum value for detected error in the (+) direction.	

66.	Value to cause an error detection in the (-) direction or the CCW direction:	
	Minimum value:	-32767
	Maximum value:	-1
	Initial value:	-32767
	Units:	Pulse
	This parameter sets the maximum value for detected error in the (-) direction.	

70.	Analog monitor selection	
	Minimum value:	0
	Maximum value:	8
	Initial value:	4
	Units:	None
	Selecting the content type for the analog monitor	

0:	Axis position variation	[pulse]
1:	Axis test operation response	[pulse]
2:	Axis position command value	[pulse]
3:	Axis position current value	[pulse]
4:	Axis command velocity (based on the position command value)	[pps]
5:	Axis response velocity	[pps]
6:	Reference position	[pulse]
7:	Reference velocity	[pps]
8:	Reference velocity ripple	[pps2]

71.	**Axis positioning error monitoring gain**

Minimum value: 0
Maximum value: 6
Initial value: 2
Units: None

This parameter sets the axis position error monitor gain for use by the analog monitor terminal.

    0:    10V / 32768 pulse
    1:    10V / 16384 pulse
    2:    10V / 8192 pulse
    3:    10V / 4096 pulse
    4:    10V / 2048 pulse
    5:    10V / 1024 pulse
    6:    10V / 512 pulse

72.	**Axis test operation monitoring gain**

Minimum value: 0
Maximum value: 6
Initial value: 2
Units: None

During analog monitoring, this parameter sets the gain of the response from the axis under test operation.

    0:    10V / 32768 pulse
    1:    10V / 16384 pulse
    2:    10V / 819 2 pulse
    3:    10V / 4096 pulse
    4:    10V / 2048 pulse
    ..5:   10V / 1024 pulse
    6:    10V / 512 pulse

73.	**Axis position monitoring gain**

Minimum value: 0
Maximum value: 12
Initial value: 2
Units: None

During analog monitoring, this parameter sets the axis position monitor gain.

    0:    10V / 4194304 pulse
    1:    10V / 2097152 pulse
    2:    10V / 1048576 pulse
    3:    10V / 5242886 pulse
    4:    10V / 262144 pulse
    5:    10V / 131072 pulse
    6:    10V / 65536 pulse
    7:    10V / 32768 pulse
    8:    10V / 16384 pulse
    9:    10V / 8192 pulse
    10:    10V / 4096 pulse
    11:    10V / 2048 pulse
    12:    10V / 1024 pulse
    13:    10V / 512 pulse

74.	**Axis velocity monitoring gain**

Minimum value: 0
Maximum value: 6
Initial value: 2
Units: None

During analog monitoring, this parameter sets the axis velocity monitor gain.

    0:    10V / 4096000 pulse
    1:    10V / 2048000 pulse
    2:    10V / 1024000 pulse
    3:    10V / 512000 pulse
    4:    10V / 256000 pulse
    5:    10V / 128000 pulse
    6:    10V / 64000 pulse

78.	Feeding move set value	
	Minimum value:	-999999999
	Maximum value:	999999999
	Initial value:	0
	Units:	Axis command unit
	This parameter sets the direct input value. Depending on the selection of ABS instruction type in Indexing/ Point move/ Direct input operation will also determine whether this value is an absolute instruction value or an incremental instruction value.	

79.	Move time during a cam profile selection	
	Minimum value:	1
	Maximum value:	99999
	Initial value:	2000
	Units:	Milliseconds
	This parameter sets the move time for a cam profile move.	

80.	Acceleration time during a cam profile selection	
	Minimum value:	1
	Maximum value:	9999
	Initial:	1000
	Units:	Milliseconds
	This parameter sets the acceleration time from zero to the maximum of 100% velocity override value.	

81.	Deceleration time during a cam profile selection	
	Minimum value:	1
	Maximum value:	9999
	Initial value:	1000
	Units:	Milliseconds
	This parameter sets the deceleration time from zero to the maximum of 100% velocity override value.	

82.	Enabling the Program step execution	
	Minimum value:	0
	Maximum value:	1
	Initial value:	0
	Units:	None
	This parameter enables the stepping through the program lines automatically.	
	0:	Normal execution
	1:	Step execution

83.	Enabling the Absolute instruction during program execution	
	Minimum value:	0
	Maximum value:	1
	Initial value:	0
	Units:	None
	During the execution of a program, this parameter will determine whether the instructions are of the incremental type or the absolute type.	
	0:	Incremental instruction
	1:	Absolute instruction

84.	Enabling the peak velocity during a cam profile move	
	Minimum value:	0
	Maximum value:	1
	Initial value:	0
	Units:	None
	This parameter will enable the selection of peak velocity during a cam profile move.	
	0:	During a cam profile move, this will utilize the time parameter to execute.
	1:	During a cam profile move, this will utilize the maximum velocity to execute.

85.	**Enable the (+) direction soft limit error**
	Minimum value: 0
	Maximum value: 1
	Initial value: 0
	Units: None
	When the command instruction exceeds the value of the parameter [#87: (+) direction soft limit], an error is returned depending upon the state.
	0: Error detection turned OFF
	1: Error detection turned ON

86.	**Enable the (-) direction soft limit error enable**
	Minimum value: 0
	Maximum value: 1
	Initial value: 0
	Units: None
	When the command instruction exceed the value of this parameter [#88: (-) direction soft limit], an error is returned depending upon the state.
	0: Error detection turned OFF
	1: Error detection turned ON

87.	**(+) direction soft limit settings**
	Minimum value: -999999999
	Maximum value: 999999999
	Initial value: 0
	Units: Axis command unit
	This parameter is used to set the value of the (+) direction soft limit command.

88.	**(-) direction soft limit settings**
	Minimum value: -999999999
	Maximum value: 999999999
	Initial value: 0
	Units: Axis command unit
	This parameter is used to set the value of the (-) direction soft limit command.

89.	**Brake turn OFF delay time upon Servo ON**
	Minimum value: 0
	Maximum value: 2000
	Initial value: 0
	Units: Milliseconds
	This parameter will set a value of time which is the delay in turning off the Brake after the Servo is switched ON.

90.	**Advanced Brake turn ON before Servo OFF**
	Minimum value: 0
	Maximum value: 2000
	Initial value: 0
	Units: Milliseconds
	This parameter will turn on the Brake by this value of time set here, before turning OFF the Servo.

91.	**TBX_EMG Servo status**
	Minimum value: 0
	Maximum value: 2
	Initial value: 0
	Units: None
	This parameter will select the type of operation to be carried when the EMG switch is pressed on the teaching box (TBX).
	0: After a deceleration stop, the Servo remains ON
	1: After a deceleration stop, the Servo is turned OFF
	2: Immediately turn the Servo OFF.

92. **Start-up program enable**

Minimum value: 0
Maximum value: 1
Initial value: 0
Units: None

If a program is registered in the program no. 0, the setting of this parameter will determine if the program no. 0 should be executed or not.

    0: Do not start-up the program
    1: Enable the program start-up.

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100. **M function enable in program execution**

Minimum value: 0
Maximum value: 1
Initial value: 0
Units: None

This parameter setting will enable or disable the M-function upon program execution.

    0: Disable the M function
    1: Enable the M function

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101. **M function enable during index point operation**

Minimum value: 0
Maximum value: 1
Initial value: 0
Units: None

This parameter setting will enable or disable the M-function during index point operation.

    ·0: Disable the M function
    1: Enable the M function

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102. **Enabling the selection of type of serial communication for the M function interface**

Minimum value: 0
Maximum value: 1
Initial value: 0
Units: None

This parameter will determine the type of outputs from the M-function interface.

    0: Sets the M-function interface to a PLC type.
    1: Sets the M-function interface to the serial communications type.

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103. **Optional stop enable**

Minimum value: 0
Maximum value: 1
Initial value: 0
Units: None

This parameter will chose the state for the Optional stop function.

    0: Set the optional stop function to disabled.
    1: Set the optional stop function to enabled.

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104. **ABS command selection during Index / point / direct input value type of operations**

Minimum value: 0
Maximum value: 1
Initial value: 0
Units: None

This parameter may be used to choose between the type of instruction: Absolute or Incremental when the motor is operated under Index / point / direct input value modes of operation.

    0: Incremental moves
    1: Absolute moves.

105.	**Movement direction options under rotation coordination**

Minimum value: 0
Maximum value: 3
Initial value: 0
Units: None

This parameter setting will determine the direction of movement under rotation coordination.

    0:     In the INC mode, the motor direction will be determined by the prefix on the data; in the ABS mode, the motor will take the direction based upon the shortest distance to location.

    1:     Move towards the location taking the shortest path.

    2:     Move always in the (+) direction

    3:     Move always in the (-) direction

106.	**Settling wait enable**

Minimum value: 0
Maximum value: 1
Initial value: 1
Units: None

This parameter will enable or disable the settling time after the completion of the positioning move. If the motor does not complete the position instruction, irrespective of this parameter's setting, the motor will not wait for settling. In the homing mode, the motor shall go through a settling wait time irrespective of this parameter's setting.

    0:     Disable settling wait

    1:     Enable settling wait

108.	**Operation units selection**

Minimum value: 0
Maximum value: 2
Initial value: 1
Units: None

This parameter sets the type of axis operation units. However, the operation unit type switches automatically from Index units in Index operating mode to the Point units in the Point move operations and further, will remain as the default unit after completion of the motion commands.

    0:     Direct value input units

    1:     Index units

    2:     Point units

109.	**Index divisions setting**

Minimum value: -1
Maximum value: 100
Initial value: 4
Units: None

This parameter is used to set the number of divisions in the Indexing mode of operation.

    -1:   Select the A file

    0:     Select the B file

    1-100: Set the number of divisions desired for indexing.

110.	**Point divisions setting**

Minimum value: 1
Maximum value: 100
Initial value: 10
Units: None

This parameter is used to set the number of divisions in the Points mode of operation. During a Point move operation, when the motor is set for incremental instructions only, shall this parameter be enabled for usage.

150. Velocity control loop: Proportional gain settings
Minimum value: 5
Maximum value: 10000
Initial value 80
Units: 0.1 times
This parameter is used to set the proportional gain for the velocity control loop of the Servo system.

152. First order delay filter: Frequency settings
Minimum value: 0
Maximum value: 3
Initial value: 0
Units: None
This parameter is used to set the frequency of the first order delay filter used in the driver.

0:	First order filter disabled
1:	20 / 80 Hz
2:	30 / 120 Hz
3:	40 / 160 Hz

153. Notch filter: Enable / Disable
Minimum value: 0
Maximum value: 1
Initial value: 0
Units: None
This parameter is used to enable or disable the notch filter status.

0:	Notch filter enable
1:	Notch filter disable

154. Notch filter: Frequency selection
Minimum value: 50
Maximum value: 1500
Initial value: 1500
Units: Hz
This parameter is used to set the frequency of the notch filter.

155. Inertia settings
Minimum value: 0
Maximum value: 100000
Initial value: 0
Units: $0.001 * Kg.m^2$
This parameter is used to specify the load inertia.

158. Torque limiter
Minimum value: 0
Maximum value: 100
Initial value: 0
Units: %
This parameter is used to set the limiting value of torque expressed as a percentage.

159. Velocity control loop band width
Minimum value: 1
Maximum value: 100
Initial value: 40
Unit Hz
his parameter is used to set the band width of the velocity control loop.

161.	**Cam positioner 0_ON**
	Minimum value: 0
	Maximum value: 9999999
	Initial value: 0
	Units: Axis command unit
	This parameter is used to set the ON point for the Cam positioner 0.

162.	**Cam positioner 0_OFF**
	Minimum value: 0
	Maximum value: 9999999
	Initial value: 0
	Units: Axis command unit
	This parameter is used to set the OFF point for the Cam positioner 0.

163.	**Cam positioner 1_ON**
	Minimum value: 0
	Maximum value: 9999999
	Initial value: 0
	Units: Axis command unit
	This parameter is used to set the ON point for the Cam positioner 1.

164.	**Cam positioner 1_OFF**
	Minimum value: 0
	Maximum value: 9999999
	Initial value: 0
	Units: Axis command unit
	This parameter is used to set the OFF point for the Cam positioner 1.

165.	**Auto homing**
	Minimum value: 0
	Maximum value: 1
	Initial value: 0
	Units: None

This parameter is used to enable the Auto-homing function. During the Index move or the Point move, upon a start command, depending upon the motor position, auto-homing is carried out and then the commands are run in sequence.

In the ABS mode of instruction:	If the motor has not performed a homing run, then with auto-homing enabled, the motor shall first carry out a homing operation and then automatically proceed with the programmed instructions.
In the INC mode of instruction:	If the motor has not performed a homing run or, if the program performs an illegal operation, then with auto-homing enabled, the motor shall first carry out a homing operation and then automatically proceed with the programmed instructions.

201.	**Selection of English / Japanese language display**
	Minimum value: 0
	Maximum value: 1
	Initial value: 0
	Unit None

This parameter is used to switch between the English display / Japanese display.

    0:     Japanese display
    1:     English display

202.	**Axis command (+)direction setting**
	Minimum value: 0
	Maximum value: 1
	Initial value: 1
	Units: None
	This parameter is used to set the rotation direction of the motor in the (+) direction or the (-) direction when the axis command is the (+) velocity command.
	0: Moves the motor in the (-) direction of rotation, when the (+) current velocity command is given.
	1: Moves the motor in the (+) direction of rotation, when the (+) current velocity command is given.

204.	**Acceleration feed forward logic**
	Minimum value: 0
	Maximum value: 1
	Initial value: 0
	Units: None
	This parameter is enabled only if the Servo driver's axis has the feature of acceleration (or torque) feed forward function.
	0: When the motor is accelerating in direction set in parameter #202, this will output (-) current in the (+) direction setting.
	1: When the motor is accelerating in direction set in parameter #202, this will output (+) current in the (+) direction setting.

205.	**Axis encoder resolution settings**
	Minimum value: 1000
	Maximum value: 9999999
	Initial value: `655360
	Units: pulse/rev
	This parameter is used to set the resolution of the encoder (4 X encoder pulse count).

206.	**Axis velocity input sensitivity settings**
	Minimum value: 1
	Maximum value: 9999
	Initial value: 2500
	Units: mV / (rev/ sec)
	This parameter is used to set the input voltage sensitivity for the velocity command unit of the specified axis Servo driver. For a rotational speed of 1 r.p.s, it is necessary to specify the input sensitivity voltage for this purpose in mV units.

207.	**Z signal interval**
	Minimum value: 1
	Maximum value: 9999999
	Initial value: 10922
	Units: pulse
	This parameter is used to set the Z signal's interval for a specified motor axis.
	AC/DC : In this case, set it to the motor resolution (4 X encoder pulse count).
	DD : Refer to the DYNASERV motor's instruction manual for individual motor settings.

208.	**Axis command unit selection**
	Minimum value: 0
	Maximum value: 3
	Initial value: 1
	Units: None
	This parameter is set based upon on the type of motor axis:
	0: Pulse The axis motor pulse will be the command dimension irrespective of axis scaling data (command unit side) or the axis scaling data (pulse side).
	1: Angle 360 degree will be set equal to the axis motor pulse which is the axis scaling data (pulse side). The command unit shall be 1/1000 of a degree of rotation,
	2: Angle 360 degree will be set equal to the axis motor pulse which is the axis scaling data (pulse side). The command unit shall be 1/100 of a degree of rotation.
	3. Scaling The value set in #209 is set equal to the value set in the parameter #210. The command pulse units will have the same units as those of #210.

209. Axis scaling data (command unit side)

Minimum value: 1000
Maximum value: 9999999
Initial value: Refer to the various DYNASERV motor specifications for this value.
Units: Axis command unit

This parameter is used as a relational parameter for the axis data after suitable conversion. Set this equal to the value of #210. However, this parameter is used only if the value of parameter #208 is set to scaling. Further, if the selected axis type is the rotational coordination system, the value set in this parameter will be equal to one rotation of the motor axis.

Example: In rotational coordination: Pitch (μm)
In direct line coordination: Screw pitch (μm)

210. Axis scaling data (pulse side)

Minimum value: 1000
Maximum value: 9999999
Initial value: Refer to the various DYNASERV motor specifications for this value.
Units: Pulse

This parameter is used as a relational parameter for the axis data after suitable conversion. Set this equal to the value of #209. However, this parameter is used only if the value of parameter #208 is set to Angle or Scaling only. Further, if the selected axis type is the rotational coordination system, the value set in this parameter will be equal to one rotation of the motor axis.

212. Straight line coordinate selection

Minimum value: 0
Maximum value: 1
Initial value: 0
Units: .None

This parameter will select the straight line coordination.
0: Rotational coordination
1: Straight line coordination

213. Axis maximum velocity

Minimum value: 1
Maximum value: 9999999
Initial value: Refer to the various DYNASERV motor specifications for this value.
Units: Axis command unit / sec

This parameter will be used to set the maximum allowable velocity for a motor/ driver set. The value of this parameter is used during the servo control of the axis to limit the commanded velocity. Further, in the cases of the jog mode, homing mode, moving mode, signal search mode, using a trapezoidal profile (Constant acceleration / deceleration) for a move operation, this parameter's value shall be used in conjunction with the deceleration time parameter, the feed velocity parameter to calculate the acceleration profile for the move.

215. PLC operation: Start signal processing speed selection

Minimum value: 0
Maximum value: 1
Initial value: 0
Units: None

This parameter will determine the scan time for reading the PLC start operations via the PLC interface.
0: Standard settings (10 milliseconds cycle scan, automatic read delay is enabled)
1: High speed settings (2 milliseconds cycle scan, automatic read delay is disabled)

216. Servo ON status upon power up during serial communication operations:

Minimum value: 0
Maximum value: 1
Initial value: 1
Units: None

This parameter will determine the Servo status of the driver upon power up of the driver and with the serial communications enabled.
0: Servo OFF status
1: Servo ON status

217. Jog move operation: Serial communication selection

Minimum value: 0
Maximum value: 1
Initial value: 0
Units: . None

This parameter selects the type of serial communication for the Jog move mode.
0: PLC side
1: RS232C Serial communications

218. Rotor inertia

Minimum value: 5
Maximum value: 5000
Initial value: Refer to the various DYNASERV motor specifications for this value.
Units: $0.001 * Kg.m^2$

This parameter is used to select the motor's rotor inertia.

219. Maximum torque

Minimum value: 5
Maximum value: 10000
Initial value: Refer to the various DYNASERV motor specifications for this value.
Units: 0.1'N.m

This parameter is used to select the motor's maximum torque output.

220. Torque input

Minimum value: 1
Maximum value: 10000
Initial value: Refer to the various DYNASERV motor specifications for this value.
Units: 0.01 N.m/ V

This parameter is used to select the motor's torque signal inputs.

5.6 Monitor parameter details

300 Currently under operation Units: None This parameter displays the fact that the motor is under operation.	

300 Currently under operation
Units: None
This parameter displays the fact that the motor is under operation.

301 Axis is under operation
Units: None
This parameter displays the fact that the servo axis is under operation.

302 Error status
Units: None
This parameter displays a warning that the servo system is under error status

303 Alarm status
Units: None
This parameter displays a warning status about the servo system requiring attention.

304 Controller ready
Units: None
This parameter displays the fact that the controller function is normal.

305 Servo ready
Units: None
This parameter displays the fact the axis is in the Servo ready status.

306 Drive coordinate status
Units: None
This parameter displays the fact that the coordinate system is ready for operation. If the display reveals that the coordination system is not ready, then it is not possible to move the motor using incremental instruction.

307 M function under operation
Units: None
This parameter displays the fact the M function is under operation.

308 Selection of communication interface for operations
Units: None
This parameter will display the type of communication unit used as the operation unit.
    0: Operations carried out by a PLC
    1: Operations carried out by a RS232C serial communication device.

310 Display of program number under execution (or last executed)
Units: None
This parameter will display the program number currently under execution, or, if the program has completed, will reveal the last programmed number executed.

311 Display of block number under execution in the program
Units: None
This parameter will display the program block number currently under execution, or, if the program block has completed, this parameter shall reveal the last programmed block number executed.

312 Program nesting counter
Units: None
This parameter shall display the program nest counter details during the execution of a program with nested loops.

313	**Move dimensions display**
	Units: None
	This parameter displays the drive command dimensions.
	      0: Direct count
	      1: Index
	      2: Point

314	**Index resolution current value** Units: None This parameter displays the current value of index resolution.

315	**Velocity override selection status**
	Units: None
	This parameter displays the velocity override selection status.
	      0: Velocity override 1
	      1: Velocity override 2
	      2: Interlock

316	**Program auto-rewind enabled status** Units: None This parameter displays the auto-rewind enabled status under the programmed operation.
317	**Completion of homing status display** Units: None This parameter displays the information about the homing completion after power up of the system. But if the servo driver is unable to count the position pulses, the system shall return to the power ON status only.
318	**Homing operation: The measured value** Units: Pulse This parameter displays the measured count of pulses between the proximity sensor signal and the origin under the homing operation.
320	**Axis pulse position command value** Units: Pulse This parameter displays the axis pulse position command.
321	**Axis pulse position current value** Units: Pulse This parameter displays the present and current value of axis position in pulses.
322	**Axis pulse position deviation** Units: Pulse This parameter displays the deviation of the axis position in pulses.
323	**Axis command unit command value** Units: Pulse This parameter displays the value of the axis command unit command.
324	**Axis scaling data (command unit side)** Units: Axis command unit This parameter displays the actual axis scaling data (command unit side) being used in operations.
325	**Axis scaling data (pulse side)** This parameter displays the actual axis scaling data (pulse unit side) being used in operations.

326 Axis under operation: Command value Units: Axis running unit This parameter displays the axis running command count	
328 Axis position settling status Units: none This parameter displays the fact that the axis position deviation is within the set limits.	
329 Axis positioning status Units: None This parameter displays the fact that the axis position counter has stopped refreshing the data and further will indicate that the positional deviation is within the set limits.	
330 Display brake turned OFF Units: None This parameter displays the brake turned OFF status from the brake signal.	
331 Cam positioner 0 status Units: None This parameter displays the status of the Cam Positioner 0.	
332 Cam positioner 1 status Units: None This parameter displays the status of the Cam Positioner 1.	