

# Firmware Manual - EC Series Drives

---

Doc Ver 1.00

Firmware ver: \_\_\_\_\_

EC series drives

For installation details refer to **Hardware Manual**

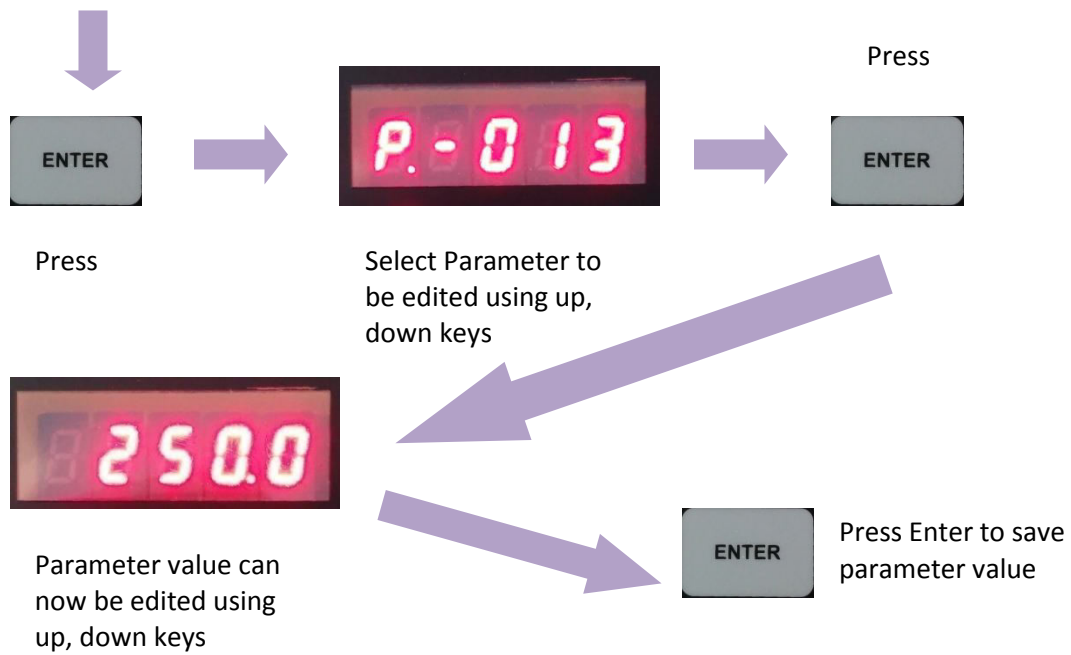
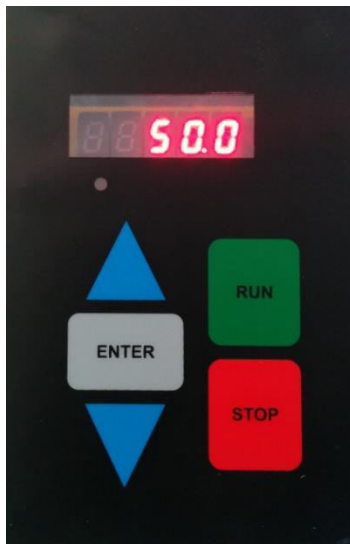
## Safety:

- Read safety instruction in hardware manual before installation and commissioning drive.
- Some safety instructions associated with specific parameters should be complied with. These instructions are included in parameter description.

**This manual is meant for** qualified personnel with knowledge of electrical schematics, basic electrical circuits and wiring.

<b>Table of contents</b>
<ol style="list-style-type: none"><li><b>1. Display and Parameter editing</b></li><li><b>2. Quick Start up</b></li><li><b>3. Parameter Summary</b></li><li><b>4. Parameter Description</b></li></ol>

## 1. Display and Parameter editing



## 2. Quick Start up

Connect drive as per instructions in Hardware manual.

For quick start up of induction motor: 415VAC, 4pole, 50Hz

Set **P -033** = motor rated current.

Drive is now ready for run command.

## 3. Parameter Summary

Parameter number	Parameter	Range	Default	Unit	Runtime operability
P-000	Set frequency	<b>Display values</b>		Hz	Read only
P-001	Drive output frequency			Hz	Read only
P-002	Output Current			Amps	Read only
P-003	DC link Voltage			Volts	Read only
P-004	Output Voltage			Volts	Read only
P-005	HS temperature			°C	Read only
P-006	Power			KW	Read only
P-007	Counter value				Read only
P-008	Total run time			Hr:min	Read only
P-009	Frequency Ref 1	0:Zero Speed 1:Keypad ref 2:Analog inp ref 3:Motorized pot ref	1		Read-Write
P-010	Min Speed	0 - 999.9	0.5	Hz	Read-Write
P-011	Max Speed	0 - 999.9	50.0	Hz	Read-Write
P-012	Acceleration Time	0.1 - 999.9	10.0	Sec	Read-Write
P-013	Deceleration Time	0.1 - 999.9	10.0	Sec	Read-Write
P-014	Operator select	0:Keypad 1:Control Terminals	0		Read-Write
P-015	DI-1	0 : Disable input 1 : RUN 2 : STOP 3 : REV 4 : Jog Start 5 : Fault Reset 6: Emergency Stop 7: Reserved 8: Mot Pot up 9: Mot Pot Down	1		Read-Write
P-016	DI-2		2		Read-Write
P-017	DI-3		12		Read-Write

P-018	DI-4	10: Preset speed 1 11:Preset speed 2 12:Pulse Counter 13-Pulse Counter Reset	13		Read-Write
<b>Parameter number</b>	<b>Parameter</b>	<b>Range</b>	<b>Default</b>	<b>Unit</b>	<b>Runtime operability</b>
P-019	DI-1 Invert	0: Non inverting 1: Inverting	0		Read-Write
P-020	DI-2 Invert		0		Read-Write
P-021	DI-3 Invert		0		Read-Write
P-022	DI-4 Invert		0		Read-Write
P-023					
P-024	Ext Start/Stop Mode	0:3 Wire Mode 1:Fwd Run /Rev Run 2:Run/Fwd	0		Read-Write
P-025	Stop Mode	0:Coast 1:Ramp	0		Read-Write
P-026	Analog inp filter time	0.00 - 25.00	0.30	Sec	Read- Write
P-027	Analog inp max	0.00 - 10.00	9.40	Volts	Read- Write
P-028	Analog inp min	0.00 - 10.00	0.00	Volts	Read- Write
P-029	Analog inp max ref	0.00 - 999.9	50.0	Hz	Read- Write
P-030	Analog inp min ref	0.00 - 999.9	0.00	Hz	Read-Write
P-031	NTC/PTC Select	<b>Reserved</b>			
P-032	Motor Rotation	0:Forward 1:Reverse	0		Read-Write
P-033	Motor Nom Amps	0.00-99.9	4.6	Amps	Read-Write
P-034	Motor rated Volt	0 - 690	415	Volts	Read-Write
P-035	Motor rated freq	0.00 - 500.0	50.0	Hz	Read-Write
P-036	Motor rated RPM	0 - 9999	1500	RPM	Read-Write
P-037	V/f Volt 1	0 - 1000	5	Volts	Read-Write
P-038	V/f Volt 2	0 - 1000	5	Volts	Read-Write
P-039	V/f Volt 3	0 - 1000	415	Volts	Read-Write
P-040	V/f Freq 1	0.0 - 500.0	0.5	Hz	Read-Write
P-041	V/f Freq 2	0.0 - 500.0	0.5	Hz	Read-Write
P-042	V/f Freq 3	0.0 - 500.0	50.0	Hz	Read-Write
P-043	Motor Poles	2 - 15	4		Read-Write
P-044	IR Compensation	0.0 – 50.0	0.0	%	Read-Write
P-045	Slip Compensation	0:Disable 1: Enable	0		Read-Write
P-046	Auto Torque boost	0:Disable 1: Enable	0		Read-Write
P-047	Current Limit	0 – 300	110	%	Read-Write
P-048	Current_1k	<b>Reserved</b>			
P-049	Feedback select	<b>Reserved</b>			
P-050		<b>Reserved</b>			

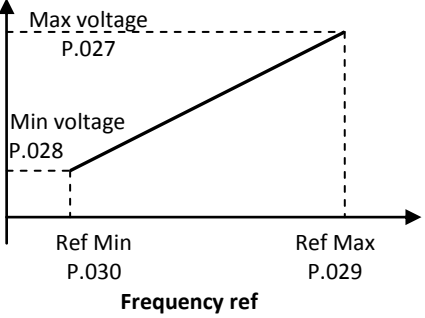
P-051		<b>Reserved</b>			
P-052	Jog reference	0 - 999.9	10.0	Hz	Read-Write
P-053	Jog accel time	0.1 - 999.9	10.0	Sec	Read-Write
P-054	Jog decel time	0.1 - 999.9	10.0	Sec	Read-Write
P-055	Preset Speed select 1	0 - 999.9	10.0	Hz	Read-Write
P-056	Preset Speed select 2	0 to 999.9	20.0	Hz	Read-Write
P-057	Preset Speed select 3	0 to 999.9	30.0	Hz	Read-Write
P-058	Preset Speed select 4	0 to 999.9	40.0	Hz	Read-Write
P-059	E2prom_Default	0:Disable 1:Enable	0		Read-Write
P-060	Reserved				
P-061	FAN control	0:Temperature controlled fan 1:Fan ON with start command	1		Read-Write
P-062	Reserved				
P-063	Power up Parameter	Power up display selection	0		Read-Write
P-064	Reserved				
P-065	Reserved				
P-066	Motor rated Power	0.00-650.00	2.20	KW	Read-Write

## 4. Parameter Descriptions

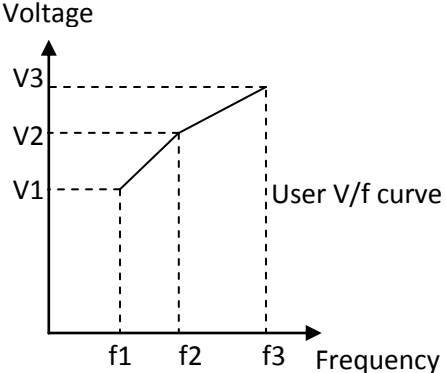
Number	Parameter	Description	Unit								
P-000	<a href="#">Set Frequency</a>	Set frequency before ramp.	Hz								
P-001	<a href="#">Output Frequency</a>	This is the ramp output frequency.	Hz								
P-002	<a href="#">Output Current</a>	Output current of the drive.	Amps								
P-003	<a href="#">DC Link Voltage</a>	DC bus voltage	Volts								
P-004	<a href="#">Output Voltage</a>	Drive output voltage.	Volts								
P-005	<a href="#">HS Temperature</a>	Heatsink temperature of the drive	°C								
P-006	<a href="#">Power</a>	Power output of the drive	KW								
P-007	<a href="#">Counter Value</a>	Input pulses (0-24V) are counted. Maximum counter input frequency = 250Hz.									
P-008	<a href="#">Total run time</a>	Total drive run time . On power off run time value is saved.	Hr:min								
P-009	<a href="#">Frequency reference</a>	<p><b>Range:</b> 0 - 3  <b>Default:</b> 1  <b>Description:</b> Frequency ref can be selected as follows:</p> <table border="1"> <tbody> <tr> <td><b>0</b></td> <td>Zero Speed</td> </tr> <tr> <td><b>1</b></td> <td>Keypad reference</td> </tr> <tr> <td><b>2</b></td> <td>Analog input reference</td> </tr> <tr> <td><b>3</b></td> <td>Motorized pot ref</td> </tr> </tbody> </table>	<b>0</b>	Zero Speed	<b>1</b>	Keypad reference	<b>2</b>	Analog input reference	<b>3</b>	Motorized pot ref	
<b>0</b>	Zero Speed										
<b>1</b>	Keypad reference										
<b>2</b>	Analog input reference										
<b>3</b>	Motorized pot ref										
P-010	<a href="#">Minimum Speed</a>	<p><b>Range:</b> 0 - 999.9Hz  <b>Default value:</b> 0.50Hz  <b>Description:</b> Set Frequency cannot be set below this value.</p>	Hz								
P-011	<a href="#">Maximum Speed</a>	<p><b>Range:</b> 0-999.9Hz  <b>Default value:</b> 50.0Hz  <b>Description:</b> Set Frequency cannot be set above this value.</p>	Hz								
P-012	<a href="#">Acceleration Time</a>	<p><b>Range:</b> 0.1-999.9s  <b>Default value:</b> 10.0s  <b>Description:</b> Final frequency reference ramps up from 0 to rated frequency <a href="#">P-035</a> in this time.</p>	Sec								
P-013	<a href="#">Deceleration Time</a>	<p><b>Range:</b> 0.1 - 999.9s  <b>Default value:</b> 10.0s  <b>Description:</b> Final frequency reference ramps down from rated frequency <a href="#">P-035</a> to 0 in this time.</p>	Sec								

P-014	<b>Operator Select</b>	<b>Range:</b> 0-1 <b>Default value:</b> 0 <b>Description:</b> Operator options: <table border="1"> <tr> <td>0</td> <td>Keypad</td> </tr> <tr> <td>1</td> <td>Control Terminals</td> </tr> </table>	0	Keypad	1	Control Terminals																																								
0	Keypad																																													
1	Control Terminals																																													
P-015	<b>DI-1</b>	<b>Range :</b> 0 - 13 <b>Default value:</b> DI1: 1,DI1: 2,Di3: 12,DI4: 13 <b>Description:</b> Digital inputs(0-24V) can be set up as follows: <table border="1"> <thead> <tr> <th></th> <th>Selection</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Disable input</td> <td>Disable input terminal</td> </tr> <tr> <td>1</td> <td>RUN</td> <td>Run command</td> </tr> <tr> <td>2</td> <td>STOP</td> <td>Stop command</td> </tr> <tr> <td>3</td> <td>REV</td> <td>Rev command</td> </tr> <tr> <td>4</td> <td>Jog</td> <td>Jog command</td> </tr> <tr> <td>5</td> <td>Fault Reset</td> <td>External fault reset</td> </tr> <tr> <td>6</td> <td>Emergency Stop</td> <td>Emergency stop when this command is selected.</td> </tr> <tr> <td>7</td> <td>Reserved</td> <td></td> </tr> <tr> <td>8</td> <td>Mot Pot up</td> <td>Set frequency increase.</td> </tr> <tr> <td>9</td> <td>Mot Pot Down</td> <td>Set frequency decrease.</td> </tr> <tr> <td>10</td> <td>Preset speed sp1</td> <td rowspan="2">See <b>preset speeds</b>.</td> </tr> <tr> <td>11</td> <td>Preset speed sp2</td> </tr> <tr> <td>12</td> <td>Pulse Counter</td> <td>Pulse counter input (max 250Hz).</td> </tr> <tr> <td>13</td> <td>Pulse Counter Reset</td> <td>Reset pulse counter</td> </tr> </tbody> </table>		Selection	Description	0	Disable input	Disable input terminal	1	RUN	Run command	2	STOP	Stop command	3	REV	Rev command	4	Jog	Jog command	5	Fault Reset	External fault reset	6	Emergency Stop	Emergency stop when this command is selected.	7	Reserved		8	Mot Pot up	Set frequency increase.	9	Mot Pot Down	Set frequency decrease.	10	Preset speed sp1	See <b>preset speeds</b> .	11	Preset speed sp2	12	Pulse Counter	Pulse counter input (max 250Hz).	13	Pulse Counter Reset	Reset pulse counter
	Selection		Description																																											
0	Disable input		Disable input terminal																																											
1	RUN		Run command																																											
2	STOP		Stop command																																											
3	REV		Rev command																																											
4	Jog		Jog command																																											
5	Fault Reset		External fault reset																																											
6	Emergency Stop		Emergency stop when this command is selected.																																											
7	Reserved																																													
8	Mot Pot up		Set frequency increase.																																											
9	Mot Pot Down		Set frequency decrease.																																											
10	Preset speed sp1		See <b>preset speeds</b> .																																											
11	Preset speed sp2																																													
12	Pulse Counter	Pulse counter input (max 250Hz).																																												
13	Pulse Counter Reset	Reset pulse counter																																												
P-016	<b>DI-2</b>																																													
P-017	<b>DI-3</b>																																													
P-018	<b>DI-4</b>																																													
P-019	<b>DI-1 invert</b> <b>DI-2 invert</b> <b>DI-3 invert</b> <b>DI-4 invert</b>	<b>Range:</b> 0 - 1 <b>Default Value:</b> 0 <b>Description:</b> Actuation of digital input occurs on 0V if inverted. <table border="1"> <tr> <td>0</td> <td>Non Invert</td> <td>Actuation on 24V input</td> </tr> <tr> <td>1</td> <td>Invert</td> <td>Actuation on 0V input</td> </tr> </table>	0	Non Invert	Actuation on 24V input	1	Invert	Actuation on 0V input																																						
0			Non Invert	Actuation on 24V input																																										
1			Invert	Actuation on 0V input																																										
P-020																																														
P-021																																														
P-022																																														
P-023	<b>Reserved</b>																																													



P-024	Ext Start/Stop mode	<p><b>Range:</b> 0 - 2  <b>Default value:</b> 0  <b>Description:</b> Start/Stop configurations:</p> <table border="1" data-bbox="516 300 1049 411"> <tr> <td>0</td> <td>3 wire mode</td> </tr> <tr> <td>1</td> <td>FWD RUN/ REV RUN</td> </tr> <tr> <td>2</td> <td>RUN/FWD</td> </tr> </table> <p><b>3 wire mode:</b></p> <table border="1" data-bbox="618 491 1297 640"> <thead> <tr> <th>RUN(ext)</th> <th>STOP(ext)</th> <th>Drive status</th> </tr> </thead> <tbody> <tr> <td>0 ----&gt; 1(transition)</td> <td>1</td> <td>Start</td> </tr> <tr> <td>Any</td> <td>1 ----&gt;0 (transition)</td> <td>Stop</td> </tr> <tr> <td>Any</td> <td>0</td> <td>Stop</td> </tr> </tbody> </table> <p><b>FWD RUN/REV RUN:</b></p> <table border="1" data-bbox="610 699 1304 884"> <thead> <tr> <th>RUN</th> <th>REV</th> <th>Drive status</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1</td> <td>FWD Start</td> </tr> <tr> <td>1</td> <td>0</td> <td>REV Start</td> </tr> <tr> <td>0</td> <td>0</td> <td>Stop</td> </tr> <tr> <td>1</td> <td>1</td> <td>Stop</td> </tr> </tbody> </table> <p><b>RUN/FWD:</b>  Start command is given when RUN is actuated (non-latching). Direction is selected by REV terminal.</p>	0	3 wire mode	1	FWD RUN/ REV RUN	2	RUN/FWD	RUN(ext)	STOP(ext)	Drive status	0 ----> 1(transition)	1	Start	Any	1 ---->0 (transition)	Stop	Any	0	Stop	RUN	REV	Drive status	0	1	FWD Start	1	0	REV Start	0	0	Stop	1	1	Stop	
0	3 wire mode																																			
1	FWD RUN/ REV RUN																																			
2	RUN/FWD																																			
RUN(ext)	STOP(ext)	Drive status																																		
0 ----> 1(transition)	1	Start																																		
Any	1 ---->0 (transition)	Stop																																		
Any	0	Stop																																		
RUN	REV	Drive status																																		
0	1	FWD Start																																		
1	0	REV Start																																		
0	0	Stop																																		
1	1	Stop																																		
P-025	Stop mode	<p><b>Range:</b> 0 – 1  <b>Default value:</b> 0  <b>Description:</b></p> <table border="1" data-bbox="516 1161 1396 1234"> <tr> <td>0</td> <td>Coast Stop</td> <td rowspan="2"><b>Range:</b> 0 - 1 <b>Default value:</b> 0</td> </tr> <tr> <td>1</td> <td>Ramp Stop</td> </tr> </table>	0	Coast Stop	<b>Range:</b> 0 - 1 <b>Default value:</b> 0	1	Ramp Stop																													
0	Coast Stop	<b>Range:</b> 0 - 1 <b>Default value:</b> 0																																		
1	Ramp Stop																																			
P-026	Analog Input filter time	<p><b>Range:</b> 0.00 to 25.00s  <b>Default value:</b> 0.30s  <b>Description:</b> This is the time constant of the moving average analog input filter. Increase this value for a noisy input line.</p>	Sec																																	
P-027 P-028	Maximum Voltage at Analog Input Minimum Voltage at Analog Input	<p><b>Range:</b> 0 – 10.00V  <b>Default:</b> Max analog inp = 9.40V  Min analog inp = 0V</p> <p style="text-align: center;"><b>Analog voltage input</b></p> 	Volts																																	

P-029 P-030	Reference at Max Analog input Reference at Min Analog input	<p><b>Range:</b> 0 – 999.9Hz <b>Default value:</b> 50.0Hz , 0.0Hz <b>Description:</b> This is the frequency ref at maximum input voltage and frequency ref at minimum input voltage.</p> $\text{Frequency ref} = \frac{\text{P.029}-\text{P.030}}{\text{abs}(\text{P.027}-\text{P.028})} \times \text{Analog input(V)} + \text{P0.30}$	Hz				
P-031	NTC/PTC Select	Reserved.					
P-032	Motor Rotation	<p><b>Range:</b> 0 – 1 <b>Default value:</b> 0 <b>Description:</b> This parameter is used to set the direction of rotation of motor.</p> <table border="1"> <tr> <td>0</td> <td>Forward</td> </tr> <tr> <td>1</td> <td>Reverse</td> </tr> </table>	0	Forward	1	Reverse	
0	Forward						
1	Reverse						
P-033	Motor Nom Amps (Motor rated current)	<p><b>Range:</b> 0 – 99.9A <b>Default value:</b> 4.6A <b>Description:</b> This is the rated current as shown on the name plate of the motor. If this current exceeds the rated current of the drive, the rated current of the drive takes precedence. In that case over current trip and current limits would be set as per drive rated current.</p>	Amps				
P-034	Motor Rated Voltage	<p><b>Range:</b> 0- 690V <b>Default value:</b> 415V <b>Description:</b> This is the rated voltage as shown on the name plate of the motor.</p>	Volts				
P-035	Motor Rated Frequency	<p><b>Range:</b> 0 – 500.0Hz <b>Default value:</b> 50.0Hz <b>Description:</b> The rated frequency of the motor should be entered here. Motor voltage <b>P-034</b> along with motor rated frequency is used to determine V/f curve applied to the motor.</p>	Hz				
P-036	Motor Rated Speed in RPM	<p><b>Range:</b> 0-9999 <b>Default value:</b> 1500 <b>Description:</b> Motor rated speed on name plate is used to determine rated slip of motor.</p> $\text{Rated slip(Hz)} = \text{rated motor frequency} - \frac{\text{no of poles} \times \text{motor full load rpm}}{120}$ $= \text{P.035} - \frac{\text{P.043} \times \text{P.036}}{120}$	RPM				

P-037 P-038 P-039	<b>V/f Volt1</b> <b>V/f Volt2</b> <b>V/f Volt3</b>	<p><b>Description:</b> These parameters are used to set a user defined V/f curve. A user defined V/f curve can be applied as shown:</p> <table border="1" data-bbox="516 300 954 520"> <thead> <tr> <th>Parameter</th> <th>Default value</th> <th>Range</th> </tr> </thead> <tbody> <tr> <td>V/f Volt1</td> <td>5</td> <td rowspan="3">0 - 1000V</td> </tr> <tr> <td>V/f Volt2</td> <td>5</td> </tr> <tr> <td>V/f Volt3</td> <td>415</td> </tr> </tbody> </table> 	Parameter	Default value	Range	V/f Volt1	5	0 - 1000V	V/f Volt2	5	V/f Volt3	415	Volts
Parameter	Default value	Range											
V/f Volt1	5	0 - 1000V											
V/f Volt2	5												
V/f Volt3	415												
P-040 P-041 P-042	<b>V/f Freq1</b> <b>V/f Freq2</b> <b>V/f Freq3</b>	<p><b>Description:</b> These are the frequencies of the user defined V/f curve.</p> <table border="1" data-bbox="516 705 1279 898"> <thead> <tr> <th>Parameter</th> <th>Default value</th> <th>Range</th> </tr> </thead> <tbody> <tr> <td>V/f Freq1</td> <td>0.5hz</td> <td rowspan="3">0 – 500.0Hz</td> </tr> <tr> <td>V/f Freq2</td> <td>0.5Hz</td> </tr> <tr> <td>V/f Freq3</td> <td>50.0Hz</td> </tr> </tbody> </table>	Parameter	Default value	Range	V/f Freq1	0.5hz	0 – 500.0Hz	V/f Freq2	0.5Hz	V/f Freq3	50.0Hz	Hz
Parameter	Default value	Range											
V/f Freq1	0.5hz	0 – 500.0Hz											
V/f Freq2	0.5Hz												
V/f Freq3	50.0Hz												
P-043	<b>Motor Poles</b>	<p><b>Range:</b> 2 – 15  <b>Default value:</b> 4  <b>Description:</b> Motor poles are used to determine synchronous speed of induction motor and for slip calculation. If synchronous speed is known the number of</p> $\text{Poles} = \frac{120 \times \text{Rated motor frequency (P.035)}}{\text{Rated synchronous speed}}$											
P-044	<b>IR Compensation</b>	<p><b>Range:</b> 0 to 50  <b>Default value:</b> 1  <b>Description:</b> Additional voltage is added to the drive output voltage at low frequency for higher motor torque.  <b>Warning:</b> Too high value of this parameter can activate current limit or OC trip.</p>	%										
P-045	<b>Slip Compensation</b>	<p><b>Range:</b> 0 – 1  <b>Default value:</b> 0  <b>Description:</b> Slip compensation compensates for drop in speed with load.  Rated slip(Hz) =  Rated frequency (P. 035) – <math>\frac{\text{No of poles(P.043)} \times \text{Rated speed of motor(P.036)}}{120}</math>  <b>Note:</b> For higher slip compensation, rated speed of the motor can be reduced.</p> <table border="1" data-bbox="516 1675 1052 1749"> <tbody> <tr> <td>0</td> <td>Disable</td> </tr> <tr> <td>1</td> <td>Enable</td> </tr> </tbody> </table>	0	Disable	1	Enable							
0	Disable												
1	Enable												
P-046	<b>Auto Torque boost</b>	<p><b>Range:</b> 0 – 1  <b>Default value:</b> 0  <b>Description:</b> Reserved</p>											

P-047	<b>Current limit</b>	<b>Range:</b> 0 - 300 <b>Default value:</b> 110 <b>Description:</b> Current limit when activated: 1. Reduces post ramp ref or prevents acceleration if drive is accelerating. 2. Holds or increases post ramp ref if drive is decelerating.	%											
P-048	<b>Current_Ik</b>	Reserved.												
P-049	<b>Feedback Select</b>	Reserved												
P-050	<b>SC Select</b>	Reserved												
P-051		Reserved												
P-052	<b>Jog reference</b>	<b>Range:</b> 0.0 to 200.0 <b>Default value:</b> 10.0	Hz											
P-053	<b>Jog accel time</b>	<b>Range:</b> 0.1 to 999.9	Sec											
P-054	<b>Jog decel time</b>	<b>Default value:</b> 10.0												
P-055	<b>Preset Speed select1</b>	<b>Range:</b> 0 – 999.9	Hz											
P-056	<b>Preset Speed select2</b>	<b>Description:</b> A preset speed when selected bypasses the drive frequency reference. Any user terminal from IN1 to IN4 can be configured for preset speed input.												
P-057	<b>Preset Speed select3</b>													
P-058	<b>Preset Speed select4</b>			<table border="1"> <thead> <tr> <th>Parameter</th> <th>Default Value(Hz)</th> </tr> </thead> <tbody> <tr> <td><b>Preset Speed select1</b></td> <td>10</td> </tr> <tr> <td><b>Preset Speed select2</b></td> <td>20</td> </tr> <tr> <td><b>Preset Speed select3</b></td> <td>30</td> </tr> <tr> <td><b>Preset Speed select4</b></td> <td>40</td> </tr> </tbody> </table>	Parameter	Default Value(Hz)	<b>Preset Speed select1</b>	10	<b>Preset Speed select2</b>	20	<b>Preset Speed select3</b>	30	<b>Preset Speed select4</b>	40
				Parameter	Default Value(Hz)									
			<b>Preset Speed select1</b>	10										
		<b>Preset Speed select2</b>	20											
<b>Preset Speed select3</b>	30													
<b>Preset Speed select4</b>	40													
P-059	<b>E2prom default</b>	<b>Range:</b> 0 – 1 <b>Default value:</b> 0 <b>Description:</b> E2PROM parameters can be set to factory default value using this parameter. If motor ratings are different from the default parameter settings, these have to be set after restoring default values. A 'CE (Communication Error)' message is displayed if any of the drive parameters are not within range.												
		<table border="1"> <tbody> <tr> <td><b>0</b></td> <td>Disable factory defaults</td> </tr> <tr> <td><b>1</b></td> <td>Restore factory defaults</td> </tr> </tbody> </table>	<b>0</b>	Disable factory defaults	<b>1</b>	Restore factory defaults								
<b>0</b>	Disable factory defaults													
<b>1</b>	Restore factory defaults													
P-61	<b>Fan Operation</b>	<b>Range:</b> 0-1 <b>Default value:</b> 1 <b>Description:</b> 0: Fan starts if heatsink temperature exceeds 60°C. 1: Fan starts on RUN command to the drive.												
P-63	<b>Power up parameter</b>	<b>Range:</b> <b>Default value:</b> 0 <b>Description:</b> Power up display parameter can be selected from P.00 to P.08.												
P-66	<b>Motor Rated Power</b>	<b>Range:</b> 0.0 – 650.0 <b>Default Value:</b> 2.2KW	KW											