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# WORLDDRIVE WD4X

## **Quick Start Guide**



This Quick Start Guide is intended to allow a user to become quickly familiar with the basic operations of the WorldDrive 4X (WD4X).

For all other configurations, please refer to the specific setup and configuration instructions available on the WorldWide Electric website: **wwec.co/WD4X** 

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## Safety Information

- **NOTE:** This Quick Start Guide is intended for users with basic knowledge of electricity and electric devices. If you are unfamiliar with the installation and operation of Variable Frequency Drives or are unsure about any procedure, please contact qualified personnel for installation assistance.
- Do not open the cover of the Variable Frequency Drive (VFD) while it is on or energized. Do not operate the VFD while the cover is open. Exposure of high voltage terminals or charging area to the external environment may result in an electric shock. Do not remove any covers or touch the internal circuit boards (PCBs) or electrical contacts on the product when the power is on or during operation. Doing so may result in serious injury, death, or serious property damage.
- Do not open the cover of the VFD even when the power supply to the VFD has been turned off unless it is necessary for maintenance or regular inspection. Opening the cover may result in an electric shock even when the power supply is off.
- The equipment may hold charge long after the power supply has been turned off. Use a multimeter to make sure that there is no voltage before working on the VFD, motor or motor cable.
- This equipment must be grounded for safe and proper operation.
- Do not supply power to a faulty VFD. If you find that the VFD is faulty, disconnect the power supply and have the VFD repaired or replaced.
- The VFD becomes hot during operation. Avoid touching the VFD until it has cooled to avoid burns.
- Do not allow foreign objects, such as screws, metal chips, debris, water, or oil to get inside the VFD. Allowing foreign objects inside the VFD may cause the VFD to malfunction or result in a fire.
- Do not operate the VFD with wet hands. Doing so may result in electric shock.

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### Power and Control Input and Output Wiring Diagram



### **Keypad Functions**





Display	Term	Function Description		
RUN	RUN Key	Run command		
	STOP/RESET Key	STOP: Stop command during operation, RESET: Reset command when a fault occurs.		
	UP Key	Used to scroll through codes or to increase a parameter value		
	DOWN Key	Used to scroll through codes or to decrease a parameter value		
<	Left Key	Used to jump to other parameter groups or move the cursor to the left		
$\triangleright$	Right Key	Used to jump to other parameter groups or move the cursor to the right		
ENT	Enter Key	Used to set a parameter value or to save the changed parameter value		
Esc	Escape Key	Used to cancel the Jog or Remote/Local change key or when editing		
FWD	Forward Run	Illuminated during forward run		
REV	Reverse Run	Illuminated during reverse run	Flickering when a fault occurs	
RUN	RUN Key	Illuminated during operation (flickering during acceleration/deceleration)		
SET	Setting	Illuminated during parameter setting/Flickering when the ESC key is operating as a multi-key		
7-Segment	Current Value	Indicates operating conditions and parameter data		



### Keypad Functions (continued)

Group Name	Display	Function Description
<sup>0</sup> Operation Group	-	The most basic parameters required for operation such as a target frequency, acceleration/ deceleration time.
Drive Group (Drive)	dr	Basic operation parameters and parameters related to keypad operation, such as jog operation, motor capacity selection, torque boost.
Basic Function Group (Basic)	68	This group contains basic functions such as motor parameters and multi-step frequencies.
Advanced Function Group (Advanced)	84	This group contains acceleration/deceleration patterns and frequency limit functions etc.
Control Function Group (Control)	En	This group contains functions related to sensorless and vector control.
Input Terminal Block Function Group (Input Terminal)	In	This group contains functions related to the drive input terminal block such as multi-function digital input and analog input.
Output Terminal Block Function Group (Output Terminal)	00	This group contains functions related to the drive output terminal block such as relay and analog output.
Communication Function Group (Communication)	£.7	This group contains RS485 communication setting parameters.
Application Function Group (Application)	<i>RP</i>	This group contains functions for the PID control sequence operation etc.
Protective Function Group (Protection)	p <sub>r</sub>	This group contains protective functions for motors and drive.
<sup>2</sup> Motor Function (Motor 2)	<i></i> 2	This group contains parameter settings for a second motor to be connected.

Group Name	Display	Group Movement
<sup>9</sup> Operation Group	-	
Drive Group (Drive)	dr	
Basic Function Group (Basic)	68	
Advanced Function Group (Advanced)	88	
Control Function Group (Control)	٤n	
Input Terminal Block Function Group (Input Terminal)	In	
Output Terminal Block Function Group (Output Terminal)	00	
Communication Function Group (Communication)	£.7	
Application Function Group (Application)	RP	
Protective Function Group (Protection)	p,	
<sup>2</sup> Motor Function (Motor 2)	<i>.</i> .2	

How to move between groups in the first code of each group:



Display	LCD Indication	Туре	Description
OLE	Over Load	Latch	Displayed when motor overload protection is selected and the load exceeds the set value. It works only if Pr.20 is set as a value other than 0.
ÜLE	Under Load	Latch	Displayed when the under-load protection function is selected and the motor load is below the set normal duty level. It works only if Pr.27 is set as a value other than 0.
	Over Current1	Latch	Displayed when the drive output current rises above 200% of rated current.
Out	Over Voltage	Latch	Displayed when the voltage of the DC circuit increases above the specified value.
Lut	Low Voltage	Level	Displayed when the voltage of the DC circuit decreases below the specified value.
٢٠٢	Low Voltage2	Latch	Displayed when the voltage of the DC circuit decreases below the specified value when operating the drive.
<u>L'FF</u>	Ground Trip	Latch	Displayed when current is flowing above the specified value because of a ground fault at the drive output stage. The ground fault detection current is different for each drive capacity.
<b>EFH</b>	E-Thermal	Latch	Prevents overheating when operating a motor in overload for an extended time period and operates according to inverse time characteristics. It works only if Pr.40 is set as a value other than 0.
POE	Out Phase Open	Latch	Displayed when any output phase to the 3-phase motor is open circuit. It works only if bit 1 of Pr.05 is set as 1.
<b>;                                    </b>	In Phase Open	Latch	Displayed when any output phase to the 3-phase motor is open circuit. It works only if bit 2 of Pr.05 is set as 1.
	Drive OLT	Latch	Inverse time thermal property protection function for protecting the drive from overheating. The criteria is 150%, 1 minute, 200%, 4 seconds based on the drive rated current. The 200%, 4 seconds is different for each drive capacity.
ົກເປັ	No Motor Trip	Latch	Displayed when a motor is not connected when operating the drive. It works only if Pr31 is set as1

#### Protective functions for output current and input voltage:

#### Protective Functions by the keypad and option:

Display	LCD Indication	Туре	Description
LOr	Lost Command	Level	This fault is displayed if the frequency or operation command signal is lost when using any methods other than keypad commands. It works if Pr.12 is set as a value other than 0.
I OF			Displayed when a basic I/O or external communication card is not connected with the drive or the contact condition is poor.
<u>SI 00</u> Err[	IO Board Trip	Latch	<ul><li>'S100' is displayed when I/O is disconnected from the main CPU.</li><li>If the S100 code is displayed for more than 5 seconds ErrC occurs.</li></ul>
<b>P</b> 8r	ParaWrite Trip	Latch	Displayed when there is no communication while writing parameters due to a loader cable fault or bad connection etc.
<u>OPE</u>	Option Trip-1	Latch	Displayed when there is a communication error between the drive main body and a communication option board.



Protective functions by in	ternal circuit faults	and external signals:
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Display	LCD Indication	Туре	Description
OXF	Over Heat	Latch	A fault occurs if the temperature of the drive heat sink rises above the specified value.
530	Over Current2	Latch	A fault occurs if the DC unit in the drive detects a short-circuit current value.
<u>દ્રન્દ</u>	External Trip	Latch	Indicates that a fault has occurred to wiring connected to a multi-function terminal that has been configured as 'External trip' (Data code 4 set in function IN 65 ~71)
64	BX	Level	Indicates that a signal has been received to a multi-function terminal that has been configured as 'BX Base Block' (Data code 5 set in function IN 65 ~71)
<u> </u>	H/W-Diag	Fatal	There is an internal fault on the memory (EEPRom), analog-digital converter output (ADC Off Set), and CPU malfunction (Watch Dog-1, Watch Dog-2) etc. in the drive. - EEP Err: There is an internal fault when reading/writing parameters due to KPD EEP Rom damage. - ADC Off Set: There is a fault with the internal current sensing circuit.
nf[	NTC Open	Latch	This fault occurs if an error is detected in the temperature detecting sensor of the power semiconductor (IGBT).
FRn	Fan Trip	Latch	This fault occurs if a cooling fan error is detected. It works if Pr.79 is selected as 0.
<b><i>P! d</i></b>	Pre-PID Fail	Latch	While operating Pre-PID by setting a function between AP34~36, if the control value(PID feedback) is continuously entered below the set value, this fault is displayed.
<u>hbr</u>	Ext-Brake	Latch	This error can happen when operating external brake signals and any of the multi-function input terminals have been configured accordingly. If the drive output current at starting is held at less than Ad-41 level this fault is output. Set one of OU-31, 32 as no. 35 BR Control.
SFb)	Safety A(B) Err	Level	This error occurs if a fault with the safety inputs occur. If either input A or B is missing, the drive will display this fault code.

#### Fault recovery:

Display	Туре	Cause	Solution
OLE	Over Load	Load is larger than the motor rating. The value set in the overload fault level (Pr.21) is too small.	Increase the capacity of motor and drive. Increase the set value of the overload fault level
<u> </u>	Under Load	There is a problem in the connection between the motor and the load. The normal duty level (Pr.29, 30) is set larger than minimum load of the system.	Decrease the capacity of motor and drive. Lower the set value of the light load level.
OCF	Over Current1	The acceleration/deceleration is too short for the inertia of load(GD2). The drive load is larger than the rating. The drive output is applied when the motor is idling. Motor mechanical brake is on.	Set the acceleration/deceleration time longer. Replace with an drive with large capacity. Operate after the motor stops or use the speed search function. Check the mechanical brake.

WorldWide Electric Motor WD4X Quick Start Guide This guide and all referenced information is intended for qualified personnel only. For additional information, please consult the WD4X User Manual (Document No: MC-OM-4XS0618.R01)



### Keypad Functions (continued)

Display	Туре	Cause	Solution		
Out	Over Voltage	The deceleration time is too short compared to the inertia of load (GD2). A regenerative load is connected to the drive output. AC input voltage is high.	Set the deceleration time longer. Use a braking resistor. Check whether the AC input voltage is above the specified value.		
Lut	Low Voltage	AC input voltage is low. Larger load than the power capacity is connected to the power system. (Welding machine or motor line-start etc.) A device on the power input side of the drive is defective.	Check whether the AC input voltage is below the specified value. Increase the power capacity. Replace the electromagnetic contactor.		
لعك	Low Voltage2	AC input voltage is lowered during operation. There is an input open phase under the low AC input voltage condition. A device on the power input side of the drive is defective.	Check whether the AC input voltage is below the specified value. Check the input wiring. Replace the electromagnetic contactor.		
<u>GFF</u>	Ground Trip	The drive output wire has a ground fault. The motor insulation has failed.	Investigate the drive output terminal wiring. Replace the motor.		
<u> </u>	E-Thermal	The motor is overheated. The drive load is larger than the rating. Electronic thermal level is set low. The drive has been operating at low speed for a long time.	Reduce the load or the operating frequency. Increase the drive capacity. Set the appropriate electronic thermal level. Force cool the motor.		
POŁ	Out Phase Open	Bad connection or open circuit at an output device. Output wiring & defect occurred.	Check for faulty/open device on the drive output device. Check the output wiring.		
	In Phase Open	Bad connection on a device on the drive input side. Input wiring defect occurred. Consider replacing the drive DC unit condenser.	Check the device at the drive input side. Check the input wiring. Replace the drive DC unit condenser. Contact the nearest service center.		
<b>I OL</b>	Drive OLT	Load is larger than the drive rating. The torque boost amount is too large.	Increase the capacity of motor and drive. Reduce the torque boost amount.		
OKF)	Over Heat	There is a problem with the cooling system. The drive has been used for a longer time than the replacement period of cooling fan. Ambient temperature is high.	Check whether there is a foreign substance in the vent such as the air inlet and outlet. Replace the drive cooling fan. Keep the temperature around the drive below 50°C.		
<b>530</b>	Over Current2	The drive output wiring is short-circuited. There is a problem in the drive power semiconductor (IGBT).	Investigate the drive output terminal wiring. The drive cannot be operated. Contact the nearest service center.		
	NTC Open	Ambient temperature is too low. There is a problem in the temperature sensor inside the drive.	Operate the drive at a place where ambient temperature is above -10°C. Contact the nearest service center.		
FRn	FAN Lock	Foreign substances have entered into the drive vent where the fan is located. Consider replacing the drive cooling fan.	Check the air inlet and outlet. Replace the drive cooling fan.		
FRn	IP66 FAN Trip	The fan connector is not connected. Consider replacing the drive cooling fan.	Connect the fan connector. Replace the drive cooling fan.		

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	An example of changing the acceleration time from 5.9 second to 16.0 second:				
1	0.00	<ul> <li>Indicate the first code information of the operation group.</li> <li>Press the UP key (▲)</li> </ul>			
2	8[[]	<ul> <li>Indicate the acceleration time ACC that is the second code of the operation group.</li> <li>Press the ENTER key (ENT).</li> </ul>			
3	<b>50</b>	<ul> <li>0 in 5.0 flickers at 1-second interval.</li> <li>Press the Left Shift key (◄)</li> </ul>			
4	<b>5</b> .0	<ul> <li>5 in 5.0 flickers, which indicates that the value of 5 can be changed.</li> <li>Press the UP key (▲)</li> </ul>			
5	<b>6.0</b>	<ul> <li>The value is changed into 6.0.</li> <li>Press the Left Shift key (&lt;)</li> </ul>			
6	660	<ul> <li>As 0 in 06.0 flickers, it indicates 06.0.</li> <li>Press the UP key (A)</li> </ul>			
7		<ul><li>16.0 is indicated. Press the ENTER key (ENT).</li><li>16.0 flickers. Press the ENTER key (ENT).</li></ul>			
8	8[[	<ul> <li>ACC is indicated. The acceleration time is changed into 16.0 second.</li> </ul>			

I Flickering when modifying a parameter is for asking whether you are going to enter the value. When pressing the enter key (ENT) at this step, the input is completed. If you do not want to enter the modified value, you can press the left, right, up or down keys (<) (>) (△) (♥) except the enter key (ENT) in the ON condition to cancel the input.



#### How to Move between Codes in the operation group

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# Common Drive Setup Parameters

Operation Group (use A or x arrows keys) best obegin from Hz displayed         Min/Max           ACC         Accel Trme in seconds         20.0         Min/Max           ACC         Accel Trme in seconds         20.0         0-600.0           Bit operation (Second Methods for external switch connections         30.0         0-600.0           FR/RW are hardwire terminal blocks for external switch connections         F         F           Fright requency Secting Methods = K-kypadi (1 = FX/RX); 2 = FX/RX (2 = 1 m48); 8 = FIdBus         0         0-16           Ord         Forward or Reverse Control: F = Forward (1 = Reverse)         F         F           drifs         Torque Boost 0 = Arrows keys) best to begin from Hz displayed         5.30           drifs         Torque Boost 0 = Arrows keys) best to begin from Hz displayed         5.30           drifs         Base Frequency:         0.0         0.1           drifs         Base Frequency:         0.00         0.1           drifs         Base Frequency:         0.0         0.1           drifs         Base Frequency:	Group Name	<b>Description</b> See drive manual for complete configuration capabilities	Default Value	Value Range	New Value
0.00         Frequency speed reference on keypad (0.00 before a new value is entered)         0.00         Min/Max           04C         Accel Time in seconds         30.0         0-600.0           04C         Decel Time in seconds         30.0         0-600.0           04C         Decel Time in seconds         1         0-5           04C         Forward or Reverse output is terminal blocks for external switch connections         F         F           04C         Forward or Reverse output is external switch connections         F         F           04C         Forward or Reverse output is external switch connections         F         F           04         Other Group (use - or > arrows keys) best to begin from tet displayed         F         F           04T         Motor HP size         0         0-6         6           04T4         Motor HP size         0         0         0         0           04T6         Base Frequency.         60.00         30-400 Hz         0         0           04T6         Maximum frequency.         0         0         1         0         1         0           04T6         Maximum frequency.         0         0         1         0         1         0         1		Operation Group (use $\land$ or $\lor$ arrows keys) best to begin from Hz displayed			
ACC         Accel Time in seconds         20.0         0<-60.00           GCU         Deck Impe in seconds         30.0         0<-60.00	0.00	Frequency speed reference on keypad (0.00 before a new value is entered)	0.00	Min/Max	
decDeck Time in seconds30.06-60.0First Mark Standard terminal blocks for external solution connections10.5First Mark Standard terminal blocks for external solution connections00.16First Mark Standard Terminal blocks for external solution connections00.16First Mark Standard Terminal blocks for external solution connections00.16First Mark Standard Terminal blocks for external solution connections00.6Mark Standard Mark Standard Terminal blocks for external solution connections00.6Mark Standard Mark Standard Terminal blocks for external solution connections00.6Mark Standard Mark Standard Terminal blocks for external solution connections0.53030-400 HzMark Standard Mark St	ACC	Accel Time in seconds	20.0	0-600.0	
drug         Command Source: 0 = Keypad: 1 = FX/RX: 2 = FX/RX: 2 = Int 48:5 + Field bus         1         0 - 5           Fig         Frequency Setting Method: 0 = Keypad: 2 = V1; 4 = V2; 5 = I2; 6 = Int 48:5, 8 = FidBus         0         0 - 16           First         Frequency Setting Method: 0 = Keypad: 1 = FX/RX: 2 = FX/RX: 2 = I2; 6 = Int 48:5, 8 = FidBus         0         0 - 16           drow for Group Uses core x arrows Keyp Det to begin from Hz displayed         F         F           drow for Group Uses core x arrows Keyp Det to begin from Hz displayed         0         0.6           drow for Group Uses core x arrows Keyp Det to begin from Hz displayed         0         0.6           drow for Group Uses core x arrows Keyp Det to begin from Hz displayed         0         0.6           drow for Group Uses core x arrows Keyp Det to begin and 1 = RPM Display         0         0.6         0.0           drow for Group Uses core Return 1 = IGG2 = Local / Remote         0         0         0.1           drow for Group Uses core Return 1 = IGG2 = Local / Remote         0         0.1         0.1           drow for Group Uses core Return 1 = IGG2 = Local / Remote         0         0.1         0.1           drow for Return 1 = IGG2 = Local / Remote         0         0.1         0.1         0.1           drow for Return 1 = IGG2 = Local / Remote         0         0.1	dEC	Decel Time in seconds	30.0	0-600.0	
PX/PX are hardwire terminal blacks for external switch connections         Interval         Interval           Prequency Setting Methods 0 = Krypadi 12 = 211; 4 = V2, 5 = 12; 6 = 1nt 485; 8 = Rid Buss         0         0-16           dr         Drive Group (use - or > arrows kryp) best to begin from Hz displayed         Image: Control Mode: 0 = V/F; 2 = Slip Comp; 4 = IM Sensoriess; 6 = PM Sensoriess         0         0-6           dr14         Motor HP size         10         5:30         5:30           dr15         Torque Boost; 0 = Manual; 1 = Auto 1; 2 - Auto 2         0         0         0           dr18         Base Frequency:         0.50         0         0.60.00         40-400.00 Hz           dr18         Base Frequency:         0.50         0         0.01.00 Hz         0           dr18         Base Frequency:         0.50         0         0         0           dr18         Base Frequency:         0.50         0         0         0           dr20         Marameter Read Manum frequency: Range of 40.00 to 400.00 Hz         0.50         0         0           dr21         Hz/RPM Select: 0 - Hz Display and 1 = RPM Display         0         0         0         0           dr23         Parameter Rolatio: Setter Wite         Gamameter Reado         0         0	dru	Command Source: <b>0</b> = Keypad; <b>1</b> = FX/RX1; <b>2</b> = FX/RX2; <b>3</b> = Int 485; <b>4</b> = Field bus	1	0-5	
Frq         Frequency Setting Method: 0: 2 w1/1 4 w2/5 s [2; 6 = Int 485; 8 = FidBus         0         0-16           Forw Group (use or x arrows keys) bet to begin from it z displayed         K         F           Group (use or x arrows keys) bet to begin from it z displayed         0         0-6           Motor HP size         0         0-6         0-6           Group (use or x arrows keys) bet to begin from it z displayed         0         0-6           Motor HP size         0         0-6         0-6           Group (use or x arrows keys) bet to begin from it z displayed         0         0-1           Motor HP size         0.0         0-1         0-1           Group (Base C and Manual ; 1 = Auto 1; 2 - Auto 2         0         0-1           Group (Base C and Manual ; 1 = Auto 1; 2 - Auto 2         0.0         0-1         0-1           Group (Base C and Manual ; 1 = Auto 1; 2 - Auto 2         0.0         0-1         0.0           Group (Base C and Manual ; 1 = Auto 1; 2 - Auto 2         0.0         0-1         0.0         0-1           Group (Base C and Manual ; 1 = Auto 1; 2 - Dig) and 1 = RP/Rob 2; 2 - Dig 3 = Dig 4 + Ad; 5 = Ch; 6 = In; 7 = OU         0         0         0           Group (G and Manual S = C - Dig Aig 2; 1 = N/Rob 1; 2 = Sint A85         1         0         0         0 <t< td=""><td></td><td>FX/RX are hardwire terminal blocks for external switch connections</td><td></td><td></td><td></td></t<>		FX/RX are hardwire terminal blocks for external switch connections			
drFrward or Reverse control: F = ReverseFF-rdrNove Group (use < or > arrows keys) bet to begin from 1z displayedImage: Section 100 (Section 12, Section 22, Section 100, Sect	Frq	Frequency Setting Method: <b>0</b> = Keypad1; <b>2</b> = V1; <b>4</b> = V2; <b>5</b> = I2; <b>6</b> = Int485; <b>8</b> = FldBus	0	0-16	
drive Group (use < or > arrows keys) best to begin from Hz displayed         Image: Control Mode: 0 = V/F; 2 = Silp Comp; 4 = IM Sensoriess; 6 = PM Sensoriess         0         0           dr14         Moor HP size         5-30         5-30           dr15         Torque Boost: 0 = Manual; 1 = Auto 1; 2 = Auto 2         0         7-30           dr18         Base Frequency:         60.00         30-400 Hz           dr19         Start frequency:         60.00         40-400.00 Hz           dr17         Hz/RM Setct: 0 = HZ Display and 1 = RPM Display         0         0         -1           dr28         Parameter Mead         60.00         40-400.00 Hz         60.00           dr88         Parameter Mead         0         0         -1         60.00           dr89         Changed Parameters: 0 = No; 1 = YGS         Local / Remote         2         0-2         0           dr39         ESC Key functions: 0 = Retury; 1 = JGS; 2 = Local / Remote         0         0         0         0           dr39         Parameter Minitalize: 0 = No; 1 = All Gr; 2 = Dr; 3 = bA; 4 = Ad; 5 = Cn; 6 = In; 7 = OU         0         0         0         0           dr39         Parameter Minitalize: 0 = No; 1 = All Gr; 2 = Dr; R > 2; 3 = Int 485         1         0-4         0         0	drC	Forward or Reverse control: <b>F</b> = Forward ; <b>r</b> = Reverse	F	F-r	
dr         Drive Group (use < or > arrow keys) (set to begin from it zisphyded         0         0-6           dr14         Motor H# size         5-30         0         0           dr15         Torque Boost: 0 - Manual; 1 = Auto 1; 2 = Auto 2         0					
dr09         Control Mode: 0 = V; 2 = bip (comp: 4 = IM sensories; 6 = PM sensories;         0         0-6           dr14         Motor PH size         0	dr	Drive Group (use < or > arrows keys) best to begin from Hz displayed			
dr14         Motor H size         0         -5-00           dr15         Torque Boost 0 = Manual; 1 = Auto 1; 2= Auto 2         0	dr09	Control Mode: $0 = V/F$ ; $2 = Slip Comp; 4 = IM Sensorless; 6 = PM Sensorless$	0	0-6	
dr1s         Dr1gue isoon: 0 = Manual; 1 = Auto 1; 2 = Auto 2         0         3           dr1s         Base Frequency:         60.00         30-400 Hz           dr1s         Start frequency:         60.00         40-400.00 Hz           dr14         Hz/RPM Select: 0 = Hz Display and 1 = RPM Display         0	dr14	Motor HP size		.5-30	
dr19         State frequency:         0.000         30-400 Hz           dr19         State frequency:         0.500         0-10.00 Hz           dr20         Maximum frequency: Range of 40.00 to 400.00 Hz         0.500         40-400.00 Hz           dr21         Hz/RPM Select: 0 = Hz Display and 1 = RPM Display         0         0         0           dr21         Hz/RPM Select: 0 = Hz Display and 1 = RPM Display         0         0         0           dr36         Parameter KWrite         0         0         0         0           dr39         Parameter Write         2         0-2         0         0           dr39         Parameter Write         0         0         0         0         0           dr39         Parameter instatizes o = No; 1 = Yes         0         0         0         0         0           dr39         Parameter instatizes o = No; 1 = Nes         1         0         0         0         0         0           dr39         Parameter instatizes o = No; 1 = Nes         1         0         0         0         0         0           dr30         Basic Group         V         No         0         0         0         0         0         0	dr15	For the Boost: $0$ = Manual ; $1$ = Auto 1; $2$ = Auto 2	0		
dr19         Start trequency         0.90         0-1000 Hz           dr20         Maximum frequency: Range of 40.00 to 400.00 Hz         60.00         40-40000 Hz           dr21         Hz/RPM Select: 0 = Hz Display and 1 = RPM Display         0         0         0           dr85         Parameter Read         0         0         0         0           dr86         Parameter Si = No; 1 = Yes         0         0         0         0           dr90         ES Ckey functions: 0 = Return; 1 = JOG; 2 = Local / Remote         2         0.2         0           dr93         Parameter Save: 0 = No; 1 = Yes         0         0         0         0           dr93         Parameter Save: 0 = No; 1 = Als         Dr; 3 = DA; 4 = Al; 5 = Cr; 6 = In; 7 = OU         0         0         0           dr93         Parameter Save: 0 = No; 1 = Xes         Dr; 3 = DA; 4 = Al; 5 = Cr; 6 = In; 7 = OU         0         0         0           Start frequency         e Keypad (1 = Rx/Rx: 1; 2 = Fx/Rx 2; 3 = Int 485         0         0         0         0           D44         Command Aux Src: 0 = Keypad (1 = Xr/Rx: 1; 2 = Fx/Rx 2; 3 = Int 485         0         0         0         0           D47         VF Pattern: 0 = Linear: 1 = Square; 2 = Usr (F: a Square 2         0         0	dr18	Base Frequency:	60.00	30-400 Hz	
012.0         Maximum requency: Range or 40.000 H2         00.00         44-40.000 H2           012.1         H2/RPM Select: 0 H2 Display and 1 = RPM Display         0         0         0           013.6         Parameter Read              01486         Parameter Read              01490         ESC Key functions: 0 = Return; 1 = JOG; 2 = Local / Remote         2         0-2           01493         Parameter Save: 0 = No; 1 = Yes         0         0         1           01493         Parameter Save: 0 = No; 1 = XH         Group         0         0           01493         Parameter Save: 0 = No; 1 = XH         Group         0         0           0149         Parameter Save: 0 = No; 1 = XH         Group         0         0           0140         Parameter Save: 0 = No; 1 = XH         0         0         0           0140         Parameter Save: 0 = No; 1 = XH         1         0         0           0140         Parameter Save: 0 = No; 1 = XH         1         0         0           0141         Motor pole number (total poles : 1 = 0.1 sec; 2 = 1 sec         0         0         0           0141         Motor pole number (total poles : NDT pole parals) <t< td=""><td>dr19</td><td>Start frequency</td><td>0.50</td><td>0-10.00 Hz</td><td></td></t<>	dr19	Start frequency	0.50	0-10.00 Hz	
01/1         H2/HVM Steet: 0 = H2 Usplay and 1 = HVM Usplay         0         0-1           485         Parameter Read             486         Parameter Write             6489         Changed Parameters: 0 = No; 1 = Yes             6490         ES Ckey functions: 0 = Return; 1 = JOG; 2 = Local / Remote         2         0-2           6493         Parameter Save: 0 = No; 1 = Yes         0         0-16           6493         Parameter initialize: 0 = No; 1 = All Grp; 2 = Dr; 3 = bA; 4 = Al; 5 = Cn; 6 = In; 7 = OU         0         0-16           6493         Parameter initialize: 0 = No; 1 = All Grp; 2 = Dr; 3 = bA; 4 = Al; 5 = Cn; 6 = In; 7 = OU         0         0-16           644         Command Aux Src: 0 = Keypad; 1 = Rx/Rx: 1; 2 = Fx/Rx 2; 3 = Int 485         1         0-4           645         Freq 2nd Source: 0 = Keypad; 1 = Rx/Rx: 1; 2 = Fx/Rx 2; 3 = Square 2         0         0-3           640         Time scale for Ramp; 0 = Ool sec; 1 = 0.1 sec; 2 = 1 sec         0         0         60/50 Hz           6411         Motor pole number (total poles - NOT pole pairs)         4         2-48         6           6413         Motor Na Load Current In Amps (typical value of 20-40% of FLA)         230/460V         230/460V           6414	dr20	Maximum frequency: Range of 40.00 to 400.00 Hz	60.00	40-400.00 Hz	
Ores         Parameter Mede         Image: Comparison of the comparis of the comparison of the co	arz i	HZ/RPM Select: <b>U</b> = HZ Display and <b>I</b> = RPM Display	0	0-1	
Ores         Parameter Write         Image Parameter Write           dr99         ESC Key functions: 0 = Return; 1 = JOG; 2 = Local / Remote         2         -2           dr92         Parameter Save: 0 = No; 1 = All Grp; 2 = Dr; 3 = bA; 4 = Ad; 5 = Cn; 6 = In; 7 = OU         0         0-16           dr93         Parameter initialize: 0 = No; 1 = All Grp; 2 = Dr; 3 = bA; 4 = Ad; 5 = Cn; 6 = In; 7 = OU         0         0-16           XX         Basic Group         Image Parameter initialize: 0 = No; 1 = All Grp; 2 = Dr; 3 = DA; 4 = Ad; 5 = Cn; 6 = In; 7 = OU         0         0-16           Sate         Group         Parameter initialize: 0 = No; 1 = All Grp; 2 = Dr; 3 = DA; 4 = Ad; 5 = Cn; 6 = In; 7 = OU         0         0-16           Sate         Group         Parameter initialize: 0 = No; 1 = All Grp; 2 = Dr; 3 = DA; 4 = Ad; 5 = Cn; 6 = In; 7 = OU         0         0-16           Sate         Group         Image Parameter Sate Sate Sate Sate Sate Sate Sate Sate	dr85	Parameter Read			
0ras         Changed parameters or No; 1 = Yes         0         0-1           0res         Parameter Save: 0 = No; 1 = Yes         0         0-1           dr90         ESC Key functions: 0 = Return; 1 = JOG; 2 = Local / Remote         2         0-2           dr92         Parameter Save: 0 = No; 1 = All Grp; 2 = Dr; 3 = bà; 4 = Ad; 5 = Cr; 6 = In; 7 = OU         0         0-16           Factory default controlled by dr93         Command Aux Src: 0 = Keypad; 1 = Rx/Rx-1; 2 = Fx/Rx 2; 3 = Int 485         1         0-4           ba5         Freq 2nd Source: 0 = Keypad; 1 = Rx/Rx-1; 2 = Fx/Rx 2; 3 = Int 485         0         0-16           bA7         V/P Pattern: 0 = Linear; 1 = Square; 2 - User V/F; 3 = Square 2         0         0         0-3           bA9         Time scale for Ramp: 0 = 0.01 sec; 1 = 0.1 sec; 2 = 1 sec         0         0         60/50 Hz           bA11         Motor pole number (total poles NOT pole pairs)         4         60/50 Hz         -448           bA13         Motor nameplate Full Load Amps         230/460V         230/460V           bA14         Motor not load Specific         230/460V         230/460V           bA19         VFD input power voltage         0         0         -6           bA14         Advarced Group         0         0         1 <t< td=""><td>dr86</td><td>Parameter Write</td><td></td><td></td><td></td></t<>	dr86	Parameter Write			
0f90         P3C NP3 Unictions: 0 = Neithin; 1 = Job; 2 = Locar) Kenote         2         0-2           0f92         Parameter Size: 0 = No; 1 = All Grp; 2 = Dr; 3 = bA; 4 = Ad; 5 = Cn; 6 = In; 7 = OU         0         0-16           dr33         Parameter Size: 0 = No; 1 = All Grp; 2 = Dr; 3 = bA; 4 = Ad; 5 = Cn; 6 = In; 7 = OU         0         0-16           XX         Basic Group         0         0-16         0         0           bA4         Command Aux Src: 0 = Keypad; 1 = Rx/Rx:1; 2 = Fx/Rx 2; 3 = Int 485         1         0-4         0           bA5         Freq 2nd Source: 0 = Keypad; 1 = 8u/Rx:1; 2 = Fx/Rx 2; 3 = Int 485         0         0         0-16           bA7         V/F Pattern: 0 = Linear; 1 = Square; 2 = User V/F; 3 = Square 2         0         0         0-2           bA10         Base frequency: 0 = 60 Hz; 1 = 50 Hz (Input power freq)         0         60/50 Hz         0           bA11         Motor nameplate Full Load Amps         4         2-48         0         0           bA14         Motor nameplate Full Load Amps         230/460V         230/460V         0         0           bA13         Motor rated voltage: VFD model specific         230/460V         230/460V         0         0           bA20         Auto tuning: 0 = None; 1 = All Rotatio; 2 = All Static; 3 = Rotate Lsig	ar89	Changed Parameters: $0 = No; 1 = Yes$	2	0.2	
drameter         and term         and term         and term           493         Parameter         0         0         0         0           Factory default controlled by dr33	dr90	ESC key functions: $0$ = Return; $1$ = JOG; $2$ = Local / Remote	2	0-2	
Arameter initialize: 0 = Nor, 1 = All Gry, 2 = Dr, 3 = DA, 4 = AG, 5 = Ch, 6 = IA, 7 = 0.0       0       0       0       0       0       0       0       0       0       16         XX       Basic Group       Image: 0 = Nor, 1 = RX/Rx-1; 2 = Fx/Rx 2; 3 = Int 485       1       0-4       0       0       0       0       0       0       16         ba4       Command Aux Src: 0 = Keypad; 1 = Rx/Rx-1; 2 = Fx/Rx 2; 3 = Int 485       0 </td <td>dr92</td> <td>Parameter save: <math>\mathbf{U} = NO</math>; <math>\mathbf{I} = Yes</math></td> <td>0</td> <td>0-1</td> <td></td>	dr92	Parameter save: $\mathbf{U} = NO$ ; $\mathbf{I} = Yes$	0	0-1	
Actor version         Image: Command Load Collinger of Uriss           XX         Basic Group         Image: Command Load XX Src: 0 = Keypad; 1 = Rx/Rx-1; 2 = Fx/Rx 2; 3 = Int 485         1         0-4           ba4         Command Aux Src: 0 = Keypad; 1 = Rx/Rx-1; 2 = Fx/Rx 2; 3 = Square 2         0         0-16           bA7         V/F Pattern: 0 = Linear; 1 = Square; 2 = User V/F; 3 = Square 2         0         0-2           bA9         Time scale for Ramp: 0 = 0.01 sec; 1 = 0.1 sec; 2 = 1 sec         0         60/50 Hz           bA10         Base frequency: 0 = 60 Hz; 1 = 50 Hz (input power freq)         0         60/50 Hz           bA11         Motor noumber (total poles - NOT pole pairs)         4         2-48           bA13         Motor nameplate Full Load Amps         230/460V           bA14         Motor No Load Current in Amps (typical value of 20-40% of FLA)         230/460V           bA13         Motor rated voltage: VFD model specific         230/460V           bA20         Auto tuning: 0 = None; 1 = All Rotation; 2 = All Static; 3 = Rotate Lsigma; 6 = Static         0         0-1           Ad4         Acc Pattern: 0 = Linear and 1 = S-Curve         0         0-1         4d3           Ad5         Stop mode: 0 = Docel; 1 = DC Brake; 2 = Free Run; 3 = Resy, 4 = Power braking         0         0-1           Ad2 <td< td=""><td>ar93</td><td>Parameter initialize: <math><b>0</b> = No; <b>1</b> = All Grp; <b>2</b> = Dr; <b>3</b> = DA; <b>4</b> = Ad; <b>5</b> = Ch; <b>6</b> = In; <b>7</b> = OU</math></td><td>0</td><td>0-16</td><td></td></td<>	ar93	Parameter initialize: $0 = No; 1 = All Grp; 2 = Dr; 3 = DA; 4 = Ad; 5 = Ch; 6 = In; 7 = OU$	0	0-16	
XXBasic GroupInternational Aux Src: 0 = Keypad; 1 = Rx/Rx-1; 2 = FX/Rx 2; 3 = Int 485International Aux Src: 0 = Keypad; 1 = Rx/Rx-1; 2 = FX/Rx 2; 3 = Int 485International Aux Src: 0 = Keypad; 1 = Ay, 2 = FY, 2 = FY, 2 = Int 485International Aux Src: 0 = Keypad; 1 = Ay, 2 = FY, 2 = FY, 2 = Int 485International Aux Src: 0 = Keypad; 1 = Ay, 2 = FY, 2 = FY, 2 = Int 485International Aux Src: 0 = Keypad; 1 = Ay, 2 = FY, 2 = FY, 2 = Int 485International Aux Src: 0 = Keypad; 1 = Ay, 2 = FY, 2 = FY		Factory default controlled by dr93			
ba4Command Aux Src: 0 = Keypad; 1 = Rx/Rx-1; 2 = Fx/Rx 2; 3 = Int 48510-4ba5Freq 2nd Source: 0 - Keypad; 1; 2 = V1 : 4 = V2; 5 = 12; 9 = Int 48500-16bA7V/F Pattern: 0 = Linear; 1 = Square; 2 = User V/F; 3 = Square 200-3bA9Time scale for Ramp: 0 = 0.01 sec; 1 = 0.1 sec; 2 = 1 sec000-2bA10Base frequency: 0 = 60 Hz; 1 = 50 Hz (input power freq)060/50 HzbA11Motor pole number (total poles - NOT pole pairs)42-48bA13Motor nameplate Full Load Amps230/460VbA14Motor No Load Current in Amps (typical value of 20-40% of FLA)0230/460VbA19VFD input power voltage230/460V230/460VbA14Auto tuning: 0 = None; 1 = All Rotatior; 2 = All Static; 3 = Rotate Lsigm; 6 = Static00-1AdAcce Pattern: 0 = Linear and 1 = S-Curve00-11Ad2Decel Pattern: 0 = Linear and 1 = S-Curve00-1Ad3Frequency limit: 0.0 to high limit9.889, 4 = Power braking00-1Ad3Run Prevent: 0 = None; 1 = FWD Prevent; 2 = REV Prevent00-1Ad24Frequency limit: 0.0 to high limit0.5000.400 HzAd25Frequency limit: 0.0 to high limit0.10.1Ad26Frequency limit: 0.0 to high limit00.1Ad26Regen Avoidance Level: D Koy: 1 = VES00Ad4Regen Avoidance Level: D Koy: 1 = VES00.1Ad4Regen Avoidance Level: D Koy: 1 = VES	хх	Basic Group			
ba5Freq 2nd Source: 0 = Keypad 1; 2 = V1 ; 4 = V2; 5 = 12; 9 = Int 48500-16bA7V/F Pattern: 0 = Linear; 1 = Square; 2 = User V/F; 3 = Square 200-3bA9Time scale for Ramp: 0 = 0.01 sec; 1 = 0.1 sec; 2 = 1 sec00-2bA10Base frequency: 0 = 60 Hz; 1 = 50 Hz (input power freq)060/50 HzbA13Motor pole number (total poles - NOT pole pairs)42-48bA13Motor nameplate Full Load Amps00-16bA14Motor No Load Current in Amps (typical value of 2-04% of FLA)230/460VbA15Motor routed voltage: VFD model specific00-6bA14Motor No Load Current in Amps (typical value of 2-04% of FLA)00-6bA15Motor routed voltage: VFD model specific00-6bA16Auto tuning: 0 = None; 1 = All Rotation; 2 = All Static; 3 = Rotate Lsigma; 6 = Static00-1AdAdvanced Group00-100-1Ad1Acc Pattern: 0 = Linear and 1 = S-Curve00-10Ad2Decel Pattern: 0 = Linear and 1 = S-Curve00-10Ad3Frequency limit: 0 = None; 1 = FWD Prevent; 2 = REV Prevent00-10Ad24Frequency limit: 0.0 to high limit40.500-400 HzAd25Frequency limit: 0.0 to high limit00-10Ad26Frequency limit: 0.0 to high limit00-10Ad26Ron prevent: 0 = None; 1 = FWD Prevent; 2 = Tere Montorel00-1Ad26Frequ	ba4	Command Aux Src: <b>0</b> = Keypad; <b>1</b> = Rx/Rx-1; <b>2</b> = Fx/Rx 2; <b>3</b> = Int 485	1	0-4	
bA7V/F Pattern: 0 = Linear; 1 = Square; 2 = User V/F; 3 = Square 200-3bA9Time scale for Ramp; 0 = 0.01 sec; 1 = 0.1 sec; 2 = 1 sec00-2bA10Base frequency: 0 = 60 Hz; 1 = 50 Hz (input power freq)060/50 HzbA11Motor pole number (total poles - NOT pole pairs)42-48bA13Motor No Load Current in Amps (typical value of 20-40% of FLA)	ba5	Freq 2nd Source: <b>0</b> = Keypad 1; <b>2</b> = V1 ; <b>4</b> = V2; <b>5</b> = I2; <b>9</b> = Int 485	0	0-16	
bA9Time scale for Ramp: 0 = 0.01 sec; 1 = 0.1 sec; 2 = 1 sec000-2bA10Base frequency: 0 = 60 Hz; 1 = 50 Hz (input power freq)060/50 Hz1bA11Motor pole number (total poles - NOT pole pairs)42-481bA13Motor nameplate Full Load Amps42-481bA14Motor No Load Current in Amps (typical value of 20-40% of FLA)1230/460V1bA13Motor rated voltage: VFD model specific00-61bA14Kotor No Load Current in Amps (typical value of 20-40% of FLA)00-61bA15Motor rated voltage: OFD model specific00-61bA14Kotor No Load Current in Amps (typical value of 20-40% of FLA)00-61bA15Motor rated voltage: OFD model specific00-611bA20Auto tuning: 0 = None; 1 = All Rotatior; 2 = All Static; 3 = Rotate Lsigma; 6 = Static00-61Ad1Acc Pattern: 0 = Linear and 1 = S-Curve00-111Ad2Decel Pattern: 0 = Linear and 1 = S-Curve00-111Ad24Frequency limit: 0 = No and 1 = Yes00-111Ad24Frequency limit: 0 = No and 1 = Yes00.101Ad25Frequency limit: 0 = No and 1 = Yes00.101Ad26Frequency limit: 0 = No and 1 = Yes00.101Ad25Frequency limit: 0 = No and 1 = Yes00.10<	bA7	V/F Pattern: <b>0</b> = Linear; <b>1</b> = Square; <b>2</b> = User V/F; <b>3</b> = Square 2	0	0-3	
bA10Base frequency: 0 = 60 Hz ; 1 = 50 Hz (input power freq)060/50 HzbA11Motor pole number (total poles - NOT pole pairs)42-48bA13Motor nameplate Full Load Amps	bA9	Time scale for Ramp: <b>0</b> = 0.01 sec ; <b>1</b> = 0.1 sec ; <b>2</b> = 1 sec	0	0-2	
bA11Motor pole number (total poles - NOT pole pairs)42-48bA13Motor nameplate Full Load AmpsInternational Control of Con	bA10	Base frequency: <b>0</b> = 60 Hz ; <b>1</b> = 50 Hz (input power freq)	0	60/50 Hz	
bA13Motor nameplate Full Load AmpsIndexIndexbA14Motor No Load Current in Amps (typical value of 20-40% of FLA)Index230/460VbA15Motor rated voltage: VFD model specific230/460V230/460VbA19VFD input power voltage0230/460VbA20Auto tuning: 0 = None; 1 = All Rotation; 2 = All Static; 3 = Rotate Lsigma; 6 = Static00-6	bA11	Motor pole number (total poles - NOT pole pairs)	4	2~48	
bA14Motor No Load Current in Amps (typical value of 20-40% of FLA)IndexIndexIndexbA15Motor rated voltage: VFD model specific230/460V230/460VbA19VFD input power voltage0230/460VbA20Auto tuning: 0 = None; 1 = All Rotation; 2 = All Static; 3 = Rotate Lsigma; 6 = Static00-6AdAdvanced Group00-11Ad1Acc Pattern: 0 = Linear and 1 = S-Curve00-11Ad2Decel Pattern: 0 = Linear and 1 = S-Curve00-11Ad3Stop mode: 0 = Docel; 1 = DC Brake; 2 = Free Run; 3 = Resv; 4 = Power braking00-11Ad4Frequency limit: 0 = None; 1 = FWD Prevent; 2 = REV Prevent00-21Ad24Frequency limit: 0 = No and 1 = Yes00-11Ad25Frequency limit: 0 = No and 1 = Yes00-11Ad26Frequency limit: 0 = No and 1 = Yes00-11Ad25Frequency limit: 0 = No and 1 = Yes00.101Ad26Frequency limit: 0 = No and 1 = Yes00.102Ad44Regen Avoidance Select: 0 = NO; 1 = YES00.101Ad54Regen Avoidance Level: DC bus voltage level700300-8001Ad75Regen Avoidance Level: DC bus voltage level700300-8001Ad76Comp Frequency Limit: usually good to set at 60.00 Hz Max1.000-60.00 HzAd76Comp Frequency Limit: usually good to set at 60.00 Hz	bA13	Motor nameplate Full Load Amps			
bA15Motor rated voltage: VFD model specific230/460VbA19VFD input power voltage230/460VbA20Auto tuning: 0 = None; 1 = All Rotation; 2 = All Static; 3 = Rotate Lsigma; 6 = Static00-6AdAdvanced Group00-1Ad1Acc Pattern: 0 = Linear and 1 = S-Curve00-1Ad2Decel Pattern: 0 = Linear and 1 = S-Curve00-1Ad8Stop mode: 0 = Decel; 1 = DC Brake; 2 = Free Run; 3 = Resv; 4 = Power braking00-4Ad9Run Prevent: 0 = None; 1 = FWD Prevent; 2 = REV Prevent00-1Ad24Frequency limit: 0.to high limit0.500-400 HzAd25Frequency low limit: 0.to high limit0.500-400 HzAd26Frequency low limit: 0.to high limit00-1Ad27Regen Avoidance Select: 0 = NO; 1 = YES00Ad74Regen Avoidance Level: DC bus voltage level00-1Ad75Regen Avoidance Level: DC bus voltage level1.000-6.00 HzAd76Comp Frequency Limit: usually good to set at 60.00 Hz Max1.000-60.00 HzAd77Regen Avoidance I Gain: Range of 0.0 to 100.0%500.0-100.0%Ad80Fire Moder I Gain: Range of 2.0 to 30,000 mili-seconds50020-30000ms	bA14	Motor No Load Current in Amps (typical value of 20-40% of FLA)			
bA19VFD input power voltage230/460VbA20Auto tuning: 0 = None; 1 = All Rotation; 2 = All Static; 3 = Rotate Lsigma; 6 = Static00-6AdAdvanced Group00-11Ad1Acc Pattern: 0 = Linear and 1 = S-Curve00-11Ad2Decel Pattern: 0 = Linear and 1 = S-Curve00-11Ad3Stop mode: 0 = Decel; 1 = DC Brake; 2 = Free Run; 3 = Resy; 4 = Power braking00-40Ad9Run Prevent: 0 = None; 1 = FWD Prevent; 2 = REV Prevent00-11Ad24Frequency limit: 0 = No and 1 = Yes00-11Ad25Frequency limit: 0.0 to high limit minum frequency to maximum frequency60.000.1-400 HzAd44Cooling fan control: 0 = During Run; 1 = Always On; 2 = Temp Control00-1Ad74Regen Avoidance Select: 0 = NO; 1 = YES00-1Ad75Regen Avoidance Level: DC bus voltage level70030-800Ad76Comp Frequency Limit: usually good to set at 60.00 Hz Max1.000-60.00 HzAd77Regen Avoidance P Gain: Range of 0.0 to 100.0%500.0-100.0%Ad78Regen Avoidance P Gain: Range of 0.0 to 30,000 mili-seconds50020-3000msAd80Fire Mode Select: 0 = None; 1 = Fire Mode; 2 = Fire Mode Test00-2	bA15	Motor rated voltage: VFD model specific		230/460V	
bA20Auto tuning: 0 = None; 1 = All Rotation; 2 = All Static; 3 = Rotate Lsigma; 6 = Static00-6AdAdvanced Group00-1Ad1Acc Pattern: 0 = Linear and 1 = S-Curve00-1Ad2Decel Pattern: 0 = Linear and 1 = S-Curve00-4Ad3Stop mode: 0 = Decel; 1 = DC Brake; 2 = Free Run; 3 = Resv; 4 = Power braking00-4Ad4Frequency limit: 0 = None; 1 = FWD Prevent; 2 = REV Prevent00-1Ad24Frequency limit: 0 = No and 1 = Yes00-1Ad25Frequency low limit: 0.0 to high limit0.0 to high limit0.0 to high limitAd26Frequency low limit: 0.0 to high limit0.0 to high limit0.0 to high limitAd26Frequency low limit: 0.0 to high limit frequency to maximum frequency00.1 doAd26Frequency limit ing mum frequency to maximum frequency00.1 doAd47Regen Avoidance Select: 0 = NO; 1 = YES000-1Ad75Regen Avoidance Level: DC bus voltage level700300-800Ad76Comp Frequency Limit: usually good to set at 60.00 Hz Max1.000-60.00 HzAd77Regen Avoidance P Gain: Range of 0.0 to 100.0%5000.0-100.0%Ad78Regen Avoidance I Gain: Range of 20 to 30,000 mili-seconds50020-3000msAd80Fire Mode Select: 0 = Non; 1 = Fire Mode; 2 = Fire Mode Test000-2	bA19	VFD input power voltage		230/460V	
Advanced Group         Image: Constraint of the second	bA20	Auto tuning: <b>0</b> = None; <b>1</b> = All Rotation; <b>2</b> = All Static; <b>3</b> = Rotate Lsigma; <b>6</b> = Static	0	0~6	
AdAvalated of oupOOAd1Acc Pattern: 0 = Linear and 1 = S-Curve000-1Ad2Decel Pattern: 0 = Linear and 1 = S-Curve000Ad8Stop mode: 0 = Decel; 1 = DC Brake; 2 = Free Run; 3 = Resv; 4 = Power braking000Ad9Run Prevent: 0 = None; 1 = FWD Prevent; 2 = REV Prevent000Ad24Frequency limit: 0 = No and 1 = Yes0000Ad25Frequency low limit: 0.0 to high limit0.50000Ad26Frequency limit: 0 = During Run; 1 = Always On; 2 = Temp Control0000Ad44Cooling fan control: 0 = During Run; 1 = Always On; 2 = Temp Control0000Ad74Regen Avoidance Select: 0 = NO ; 1 = YES00010Ad75Regen Avoidance Level: DC bus voltage level700300-800300-8001Ad76Comp Frequency Limit: usually good to set at 60.00 Hz Max1.000-60.00 Hz4Ad77Regen Avoidance P Gain: Range of 0.0 to 100.0%500.0-100.0%4Ad78Regen Avoidance I Gain: Range of 20 to 30,000 mili-seconds50020-30000ms2Ad80Fire Mode Select: 0 = None; 1 = Fire Mode; 2 = Fire Mode Test0002	۸d	Advanced Group			
Add toAcc Pattern: 0 = Linear and 1 = 5-Curve00 - 1Ad2Decel Pattern: 0 = Linear and 1 = S-Curve00-1Ad8Stop mode: 0 = Decel; 1 = DC Brake; 2 = Free Run; 3 = Resv; 4 = Power braking00-4Ad9Run Prevent: 0 = None; 1 = FWD Prevent; 2 = REV Prevent00-2Ad24Frequency limit: 0 = No and 1 = Yes00-1Ad25Frequency low limit: 0.0 to high limit0.500-400 HzAd26Frequency low limit: 0.0 to high limit0.500-400 HzAd26Frequency ligh limit: minimum frequency to maximum frequency60.000.1-400 HzAd64Cooling fan control: 0 = During Run; 1 = Always On; 2 = Temp Control00-2Ad74Regen Avoidance Select: 0 = NO; 1 = YES00-1Ad75Regen Avoidance Level: DC bus voltage level700300-800240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)	Ad1	Acc Dattern: 0 - Linear and 1 - 5 Curve	0	0.1	
Ad2Deter Pattern, 0 = Linear and 1 = 3-Curve000-1Ad8Stop mode: 0 = Decel; 1 = DC Brake; 2 = Free Run; 3 = Resv; 4 = Power braking00-4Ad9Run Prevent: 0 = None; 1 = FWD Prevent; 2 = REV Prevent00-2Ad24Frequency limit: 0 = No and 1 = Yes00-1Ad25Frequency low limit: 0.0 to high limit0.500-400 HzAd26Frequency low limit: 0.0 to high limit minum frequency to maximum frequency60.000.1-400 HzAd26Frequency low limit: 0.0 to high limit minum frequency to maximum frequency00-2Ad64Cooling fan control: 0 = During Run; 1 = Always On; 2 = Temp Control00-1Ad74Regen Avoidance Select: 0 = NO; 1 = YES00-1Ad75Regen Avoidance Level: DC bus voltage level700300-800240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)	Ada	Acceleration $0 = \text{Linear and } 1 = 5 \text{-curve}$	0	0-1	
AddStop Hidde: 0 = Decel, 1 = De Blake, 2 = Hee Rdil, 3 = Resv, 4 = Fower blaking00-4Ad9Run Prevent: 0 = None; 1 = FWD Prevent; 2 = REV Prevent00-2Ad24Frequency limit: 0 = No and 1 = Yes00-1Ad25Frequency low limit: 0.0 to high limit0.500-400 HzAd26Frequency high limit: minimum frequency to maximum frequency60.000.1-400 HzAd64Cooling fan control: 0 = During Run; 1 = Always On; 2 = Temp Control00-2Ad74Regen Avoidance Select: 0 = NO ; 1 = YES00-1Ad75Regen Avoidance Level: DC bus voltage level700300-800240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)	Adg	Stop mode: $0 = \text{Decel: } 1 = \text{DC Brake: } 2 = \text{Ereg Pup: } 2 = \text{Decy: } 4 = \text{Dower braking}$	0	0-1	
Ad24Frequency limit: <b>0</b> = No and <b>1</b> = Yes00-1Ad25Frequency low limit: 0.0 to high limit0.500-400 HzAd26Frequency high limit: minimum frequency to maximum frequency60.000.1-400 HzAd64Cooling fan control: <b>0</b> = During Run; <b>1</b> = Always On; <b>2</b> = Temp Control00-2Ad74Regen Avoidance Select: <b>0</b> = NO ; <b>1</b> = YES00-1Ad75Regen Avoidance Level: DC bus voltage level700300-800240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)	Ado	Stop mode. $0$ - Deter, $1$ - Determine, $2$ - Free Kurl, $3$ - Kesv, $4$ - Fower braking	0	0-4	
Ad24Frequency limit: <b>0</b> = No and <b>1</b> = Yes00-1Ad25Frequency low limit: 0.0 to high limit0.500-400 HzAd26Frequency high limit: minimum frequency to maximum frequency60.000.1-400 HzAd64Cooling fan control: <b>0</b> = During Run; <b>1</b> = Always On; <b>2</b> = Temp Control00-2Ad74Regen Avoidance Select: <b>0</b> = NO; <b>1</b> = YES00-1Ad75Regen Avoidance Level: DC bus voltage level700300-800240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)	Aus	Ruff Frevent = Volte, T = FwD Frevent, Z = RLv Frevent	0	0-2	
Ad25Frequency low limit: 0.0 to high limit0.500-400 HzAd26Frequency high limit: minimum frequency to maximum frequency60.000.1-400 HzAd64Cooling fan control: <b>0</b> = During Run; <b>1</b> = Always On; <b>2</b> = Temp Control00-2Ad74Regen Avoidance Select: <b>0</b> = NO ; <b>1</b> = YES00-1Ad75Regen Avoidance Level: DC bus voltage level700300-800240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)	Ad24	Frequency limit: <b>0</b> = No and <b>1</b> = Yes	0	0-1	
Ad26Frequency high limit: minimum frequency to maximum frequency60.000.1-400 HzAd64Cooling fan control: <b>0</b> = During Run; <b>1</b> = Always On; <b>2</b> = Temp Control00-2Ad74Regen Avoidance Select: <b>0</b> = NO ; <b>1</b> = YES00-1Ad75Regen Avoidance Level: DC bus voltage level700300-800240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)	Ad25	Frequency low limit: 0.0 to high limit	0.50	0-400 Hz	
Ad64Cooling fan control: 0 = During Run; 1 = Always On; 2 = Temp Control00-2Ad74Regen Avoidance Select: 0 = NO; 1 = YES00-1Ad75Regen Avoidance Level: DC bus voltage level700300-800240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)Ad76Comp Frequency Limit: usually good to set at 60.00 Hz Max1.000-60.00 HzAd77Regen Avoidance I Gain: Range of 0.0 to 100.0%50020-3000msAd78Regen Avoidance I Gain: Range of 20 to 30,000 mili-seconds5000.0-2Ad80Fire Mode Select: 0 = None; 1 = Fire Mode; 2 = Fire Mode Test00-2	Ad26	Frequency high limit: minimum frequency to maximum frequency	60.00	0.1-400 Hz	
Ad74Regen Avoidance Select: <b>0</b> = NO; <b>1</b> = YES00-1Ad75Regen Avoidance Level: DC bus voltage level700300-800240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)	Ad64	Cooling fan control: <b>0</b> = During Run; <b>1</b> = Always On; <b>2</b> = Temp Control	0	0-2	
Ad75Regen Avoidance Level: DC bus voltage level700300-800240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)	Ad74	Regen Avoidance Select: <b>0</b> = NO ; <b>1</b> = YES	0	0-1	
240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)Image: Constant of the constant of	Ad75	Regen Avoidance Level: DC bus voltage level	700	300-800	
Ad76         Comp Frequency Limit: usually good to set at 60.00 Hz Max         1.00         0-60.00 Hz           Ad77         Regen Avoidance P Gain: Range of 0.0 to 100.0%         50         0.0-100.0%           Ad78         Regen Avoidance I Gain: Range of 20 to 30,000 mili-seconds         500         20-3000ms           Ad80         Fire Mode Select: <b>0</b> = None; <b>1</b> = Fire Mode; <b>2</b> = Fire Mode Test         0         0-2		240v AC Line (range 335-350vDC) or 480v AC Line (range 690-715vDC)			
Ad77         Regen Avoidance P Gain: Range of 0.0 to 100.0%         50         0.0-100.0%           Ad78         Regen Avoidance I Gain: Range of 20 to 30,000 mili-seconds         500         20-3000 ms           Ad80         Fire Mode Select: <b>0</b> = None; <b>1</b> = Fire Mode; <b>2</b> = Fire Mode Test         0         0-2	Ad76	Comp Frequency Limit: usually good to set at 60.00 Hz Max	1.00	0-60.00 Hz	
Ad78         Regen Avoidance I Gain: Range of 20 to 30,000 mili-seconds         500         20-30000ms           Ad80         Fire Mode Select: <b>0</b> = None; <b>1</b> = Fire Mode; <b>2</b> = Fire Mode Test         0         0-2	Ad77	Regen Avoidance P Gain: Range of 0.0 to 100.0%	50	0.0-100.0%	
Ad80Fire Mode Select: <b>0</b> = None; <b>1</b> = Fire Mode; <b>2</b> = Fire Mode Test00-2	Ad78	Regen Avoidance I Gain: Range of 20 to 30,000 mili-seconds	500	20-30000ms	
	Ad80	Fire Mode Select: <b>0</b> = None; <b>1</b> = Fire Mode; <b>2</b> = Fire Mode Test	0	0-2	



### Common Drive Setup Parameters (continued)

Control Group         Image: Control Group <thimage: control="" group<="" th="">         Image: Control Gr</thimage:>	Group Name	<b>Description</b> See drive manual for complete configuration capabilities	Default Value	Value Range	New Value
Cn04         Carrier Frequency Select in ktz         10-15.0 kHz           Cn05         Speed Search nodes: Drijng Start-2; 1 = Plying Start-2         1         1           Cn07         Speed Search nodes: Drijng Start-1; 1 = Plying Start-2         1         1           Cn07         Speed Search nodes: Drijng Start-1; 1 = Plying Start-2         1         1           Cn06         P2 Define Digital input: 2: 7 = Speet 1; 2 = Speed M: 9 = Speed		Control Group			
Cn70         Speed Search modes: 0 = Flying Start-1: 1 = Flying Start-2:         1           Cn71         Speed Search midles: search after power interruption: Also Ad10 = 1         b0000           Input Selections are typically assignable for digital inputs P1 thru P5         Imput Selections are typically assignable for digital inputs P1 thru P5           Inf66         P1 Define Digital input: 2: 7 = Speed 1: 8 = Speed H: 18 = Run trabile         2         0-52           Inf68         P1 Define Digital input: 3: 4 = 3wire: 15 = and Sure: 2: 10: 18 = Down         5         0-52           Inf69         P1 Define Digital input: 3: 8 = Time: risk = Free Made         7         0-52           Inf69         Define Digital input: 3: 8 = Time: risk = Free Made         7         0-52           Inf69         Digital Input status: for troubeshooting dependent upon NO/NC contact)         0         0         1           Output selections are typically assignable for digital outputs OU Bits 4 = TO; 5 = Pwr         0         0-15           OUT         AO2 assignment: 0 = Freq: 1 = 0:4 Current: 2: -0:4 Vibit 3 = DO Bits 4 = TO; 5 = Pwr         0         0-40           OU33         Relay: 2: 0 = None; 1 = FDT; 5 = O; 7 = Under Load; 9 = Smit: 10 = O; 11 = UV         0         0-40           OU34         Relay: 2: 0 = None; 1 = FDT; 5 = O; 7 = Under Load; 9 = Smit: 10 = O; 11 = UV         0         0-41           OU3	Cn04	Carrier Frequency Select in kHz	2 or 3 kHz	1.0-15.0 kHz	
Cn71         Speed Search: affects restart after power interruption: Also Ad10 = 1         b0000           Input Terminal Group         India         India           India         P1 Define Digital input 1: 0 = None; 1 = FX; 2 = RX; 3 = RX; 4 = EX Ting 5 = BX; 6 = Jog         1         0-52           India         P3 Define Digital input 3: 14 = Jowne; 15 = 2nd Source; 17 = Up; 18 = Down         5         0.52           India         P3 Define Digital input 3: 14 = Jowne; 15 = 2nd Source; 17 = Up; 18 = Down         5         0.52           India         P3 Define Digital input 3: 14 = Jowne; 15 = 2nd Source; 17 = Up; 18 = Down         5         0.52           India         Digital Input 3: 14 = Jowne; 16 = CX (Jowne; 24 = PX; 2 = RX; 34 = PX; 5 = PXr         0         0.1           Output femical input stute; 24 = Out Current; 2 = Out Volt; 3 = DC Bus; 4 = T0; 5 = PXr         0         0.1           Output selections are typically assignment; 0 = Freq; 1 = Out Current; 2 = Out Volt; 3 = DC Bus; 4 = T0; 5 = PXr         0         0.15           Output selections are typically assignment; 0 = Freq; 1 = Out Current; 2 = Out Volt; 3 = DC Bus; 4 = T0; 5 = PXr         0         0.15           Output selections are typically assignment; 0 = Freq; 1 = Out Current; 2 = Out Volt; 3 = DC Bus; 4 = T0; 5 = PXr         0         0.41           Output selections are typically assignment; 0 = Freq; 1 = PUI         0         0.40         0.33         0	Cn70	Speed Search modes: <b>0</b> = Flying Start-1; <b>1</b> = Flying Start-2	1		
Input Terminal Group Imput selections are typically assignable for digital inputs P1 thru P5 P1 Define Digital input 1: 0 = None; 1 = PX, 2 = RX, 3 = RST, 4 = Ext Trip; 5 = BX, 6 = Jog         I         0-52           In66         P1 Define Digital input 1: 2 = Speed 1: 8 = Speed MX, 9 = Speed 1: 1 = Run Enable         2         0.52           In67         P3 Define Digital input 4: 23 = Open Loop; 26 = Jod Motor; 34 = Pre-Excite         3         0.52           In68         P4 Define Digital input 5: 38 = Timer Ind, 64 = Fixel Jg; 35 User's 68; 35 = Fire Mode         7         0.52           In69         Digital Input status; for troubleshooting (dependent upon NO/IN contact)         0         0-1           Output Terminal Group         Output Selections are typically assignable for digital outputs OU31 thru OU35         0         0-15           OU1         AOI assignment: 0 = Freq; 1 = Out Current 2 = Out Valt; 3 = DC Bus; 4 = 10; 5 = Porr         0         0.15           OU3         Relay; 10 = None; 1 = FD1; 5 = OL; 7 = Londer Load; 9 = Sail; 10 = OV; 11 = UV         0         0-40           OU32         Relay; 10 = None; 1 = FD1; 5 = OL; 7 = Londer Load; 9 = Sail; 10 = OV; 11 = UV         0         0-40           OU33         Relay; 3 = None; 1 = FD1; 5 = OL; 7 = Londer Load; 9 = Sail; 10 = OV; 11 = UV         0         0 = 0.11           OU34         Relay; 3 = None; 1 = FD1; 5 = OL; 7 = Londer Load; 9 = Sail; 10 = OV; 11 = UV         0	Cn71	Speed Search: affects restart after power interruption: Also Ad10 = <b>1</b>	b0000		
Imput selections are typically assignable for digital inputs P1 thru P5         Immedia         Immedia </td <td></td> <td>Input Terminal Group</td> <td></td> <td></td> <td></td>		Input Terminal Group			
In65         P1 Define Digital Input 1: 0 = None: 1 = FX 2 = RX 3 = RST. 4 = DX TIP: 5 = RX 6 = Jog         1         0-52           In66         P2 Define Digital Input 3: 14 = 3wire; 15 = 2nd Source; 17 = Up; 18 = Down         5         0-52           In68         P5 Define Digital Input 3: 14 = 3wire; 15 = 2nd Motor; 34 = Pre-Extre         3         0-52           In68         P5 Define Digital Input 3: 14 = 3wire; 15 = 2nd Motor; 34 = Pre-Extre         3         0-52           In69         P5 Define Digital Input 3: 14 = 3wire; 15 = 2nd Motor; 34 = Pre-Extre         3         0-52           In69         P5 Define Digital Input 3: 14 = 3wire; 15 = 2nd Motor; 34 = Pre-Extre         3         0-52           Output selections are typically assignable for digital outputs OUT thru OUTS         0         0-1           Output selections are typically assignable for digital outputs OUT thru OUTS         0         0-40           OUT         A01 assignment: 0 = Freq; 1 = Out Current: 2 = Out Volt; 3 = DC Bus; 4 = TQ; 5 = Pwr         0         0-15           OUT         A02 assignment: 0 = Freq; 1 = Out Current: 2 = Out Volt; 3 = DC Bus; 4 = TQ; 5 = Pwr         0         0-40           OUT         A02 assignment: 0 = Freq; 1 = Out Current: 2 = Out Volt; 3 = DC Bus; 4 = TQ; 5 = Pwr         0         0 = 0 = 0           OUT         Relay: 0 = None; 1 = FDT; 5 = Out; 7 = Under Load; 9 = Sail; 10 = OV; 11 = UV         0		Input selections are typically assignable for digital inputs P1 thru P5			
Info         P2 Define Digital input 2: 75 Speed L 8 * Speed M; 9 * Speed H; 13 * Run Enable         2         0.52           Inf7         P3 Define Digital input 3: 14 = 2+wire; 15 = 2nd Surces T1 = Up; 18 Demo         5         0.52           Inf8         P4 Define Digital input 5: 33 = Timer in; 46 = Pwilp; 15 = Dwine; 15 = Fire Mode         7         0.52           Inf8         P5 Define: Digital input 5: 33 = Timer in; 46 = Pwilp; 30 = User Se; 51 = Fire Mode         7         0.52           Inf8         P4 Define Digital input 5: 33 = Timer in; 46 = Pwilp; 30 = User Se; 51 = Fire; Mode         7         0.52           Inf8         P4 Define Digital input 5: 33 = Timer in; 46 = Pwilp; 30 = User Se; 51 = Fire; Mode         7         0.52           Inf8         Digital input 5: 30 = Treq; 1 = Out Current: 2 = Out Volt; 3 = DC Bus; 4 = TQ; 5 = Pwr         0         0.15           OUT         AO2 assignment: 0 = Freq; 1 = Out Current: 2 = Out Volt; 3 = DC Bus; 4 = TQ; 5 = Pwr         0         0.15           OU3         Relay: 2 = None; 1 = FDT; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV         0         0.40           OU33         Q1 Open Collector Output Define; 0 = None; 14 = Rus; 2 = RDT; 2 = FDT;	In65	P1 Define Digital input 1: $0$ = None: $1$ = RX: $2$ = RX: $3$ = RST: $4$ = Ext Trip: $5$ = BX: $6$ = log	1	0-52	
IP30 Define Digital input 3: 42 = Swire; 15 = nd Source; 17 = Up; 18 = Down       5       0-52         In68       P4 Define Digital input 5: 38 = Timer in; 45 = Avd Boje; 30 = User Seq; 51 = Fire Mode       7       0-52         In69       P5 Define: Digital input 5: 38 = Timer in; 45 = Avd Boje; 30 = User Seq; 51 = Fire Mode       7       0-52         In69       Digital input status: for troubleshooting (dependent upon NO/NC contact)       0       0       1         Output Selections are typically assignable for digital outputs OU31 thru OU35       0       0.1       0         OU1       AOI assignment: 0 = Freq; 1 = Out Current: 2 - Out Voit; 2 = DC Bus; 4 = TQ; 5 = Pwr       0       0.15         OU3       Relay 1: 0 = None; 1 = EDT1; 5 = OL; 7 = Under Loads 9 = Stall: 10 = OV; 11 = UV       0       0       -40         OU3       Relay 1: 0 = None; 1 = FDT1; 5 = OL; 7 = Under Loads 9 = Stall: 10 = OV; 11 = UV       0       0       -40         OU34       Relay 3: 0 = None; 1 = FDT1; 5 = OL; 7 = Under Loads 9 = Stall: 10 = OV; 11 = UV       0       0       -40         OU41       Digital input 3: 42 = Pore; 1 = PDT1; 2 = FDT2; 2 = FDT3; 4 = FDT4       0       00-11       E         APP Application Group       -       -       -       -       -       -         AP1       App Note; 0 = None; 1 = Reserved; 2 = Process PID       0	In66	P2 Define Digital input 2: $7$ = Speed L: $8$ = Speed M: $9$ = Speed H: $13$ = Run Enable	2	0-52	
Ines         PA Define Digital input 4: 32 a Open Loop: 36 - 2nd More; 34 - Pre-Excite         3         0.52           Ines         P5 Define: Digital input 5: 38 a Time: in 46 - Prod Jos; 50 - User Segs 15 piro Mode         7         0.52           Ines         Output Terminal Group         0         0-1           Output selections are phylically assignable for digital outputs OU31 thru OU35         0         0.15           OU1         AO1 assignment: 0 = Freq; 1 = Out Current 2 - Out Volt; 3 = DC Bus; 4 = TO; 5 = Pwr         0         0.15           OU3         Relay 1: 0 = None; 1 = FOT; 5 = O; 7 = Under Load; 9 - Stall; 10 = OV; 11 = UV         0         0-40           OU33         Relay 1: 0 = None; 1 = FOT; 5 = O; 7 = Under Load; 9 - Stall; 10 = OV; 11 = UV         0         0-40           OU34         Relay 1: 0 = None; 1 = FOT; 5 = O; 7 = Under Load; 9 - Stall; 10 = OV; 11 = UV         0         0-40           OU35         Relay 1: 0 = None; 1 = FOT; 5 = O; 7 = Under Load; 9 - Stall; 10 = OV; 11 = UV         0         0-40           OU41         Digital Output Status; troubleshot: 0 = None; 1 = FDT; 2 = FD	In67	P3 Define Digital input 3: <b>14</b> = 3-wire: <b>15</b> = 2nd Source: <b>17</b> = Up: <b>18</b> = Down	5	0-52	
In69         P5 Define: Digital input 5: 38 - Timer in; 48 - Fivel Jog; 50 - User Seq; 51 - Fire Mode         7         0-52           In90         Digital Input status; for troubleshooting (dependent upon NO/NC contact)         0         0-1           Output Terminal Group               0011         A01 assignment: 0 = Freq; 1 = Out Current: 2 = Out Volt; 3 = OC Bus; 4 = TO; 5 = Pwr         0         0-15           0013         Relay 1: 0 = None; 1 = FDT1; 5 = O; 7 = Under Load; 9 = Salt; 10 = OV; 11 = UV         0         0-40           0033         Relay 1: 0 = None; 1 = FDT1; 5 = O; 7 = Under Load; 9 = Salt; 10 = OV; 11 = UV         0         0-40           0033         Q1 Open Collector Output Define: 0 = None; 1 = Rot; 2 = Salt; 10 = OV; 11 = UV         0         0-40           0034         Relay 3: 0 = None; 1 = FDT1; 5 = O; 7 = Under Load; 9 = Salt; 10 = OV; 11 = UV         0         0-40           0033         Relay 4: 0 = None; 1 = FDT1; 5 = O; 7 = Under Load; 9 = Salt; 10 = OV; 11 = UV         0         0-40           0041         Digital Output status; troubleshoot: 0 = None; 1 = FDT1; 2 = FDT2; 3 = FDT3; 4 = FDT4         0         0-1           Communication Group            0         0           AP1         App Mode: 0 = None; 1 = Roserved; 2 = Process PID         0         0         0	In68	P4 Define Digital input 4: <b>23</b> = Open Loop: <b>26</b> = 2nd Motor: <b>34</b> = Pre-Excite	3	0-52	
In90         Digital Input status: for troubleshooting (dependent upon NO/NC contact)         0         0-11           Output Selections are upoically assignable for digital outputs OU31 thru OU35              OU1         A01 assignment: 0 = Freq; 1 = Out Current: 2 = Out Volt; 3 = DC Bus; 4 = TO; 5 = Pwr         0         0-15           OU3         A02 assignment: 0 = Freq; 1 = Out Current: 2 = Out Volt; 3 = DC Bus; 4 = TO; 5 = Pwr         0         0-40           OU33         Relay 1: 0 = None; 1 = FDT1; 5 = O; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV         0         0-40           OU33         Q Open Collector Output Define 0 = None; 14 = RN; 22 = Ready         14         0-40           OU34         Relay 1: 0 = None; 1 = FDT1; 5 = O; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV         0         0-40           OU35         Relay 4: 0 = None; 1 = FDT1; 5 = O; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV         0         0-40           OU41         Digital Output status: troubleshoot: 0 = None; 14 = REDT-1; 2 = FDT3; 4 = FDT3         0         0-11 bit           Cmmunication Group         ////////////////////////////////////	In69	P5 Define: Digital input 5: <b>38</b> = Timer in; <b>46</b> = Fwd Jog; <b>50</b> = User Seg; <b>51</b> = Fire Mode	7	0-52	
Output terminal Group         Output selections are typically assignable for digital outputs OU31 thru OU35         Image: Control of C	In90	Digital Input status: for troubleshooting (dependent upon NO/NC contact)	0	0-1	
Output Selections are typically assignable for digital outputs OU31 thru OU35         Image: Constraint of Con					
Output selections are typically assignable for digital outputs 0/03 thru 0/035         Output selections are typically assignable for digital outputs 0/03 thru 0/035           0U1         A02 assignment: 0 = Freq; 1 = 0/01 Current: 2 = 0/01 Volt; 3 = DC Bus; 4 = T0; 5 = Pwr         0         0-15           0U2         Ac02 assignment: 1 = FDT; 5 = 0; 7 = Under Load; 9 = Stall; 10 = 0V; 11 = UV         0         0-40           0U33         Q1 Open Collector Output Define: 0 = None; 14 = Run; 22 = Ready         0         0-40           0U34         Relay 2: 0 = None; 1 = FDT; 15 = 0; 7 = Under Load; 9 = Stall; 10 = 0V; 11 = UV         0         0-40           0U35         Relay 4: 0 = None; 1 = FDT; 15 = 0; 7 = Under Load; 9 = Stall; 10 = 0V; 11 = UV         0         0-40           0U35         Relay 4: 0 = None; 1 = FDT; 5 = 0; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV         0         0-40           0U41         Digital Output status: troubleshoot: 0 = None; 1 = FDT - 1; 2 = FDT2; 3 = FDT3; 4 = FDT4         0         00-11 bit           Cm         Communication Group         0         0         0         0           AP1         App Mode: 0 = None; 1 = Reserved; 2 = Process PID         0         0         0           AP10         PID definet overse: 0 = Kryand; 1 = V1; 3 = V2; 4 = 12; 5 = Int 485         0         0         0           AP11         PID deference Subit         0<		Output Terminal Group			
OUT         AO1 assignment: 0 = Freq; 1 = Out Current: 2 = Out Volt; 3 = DC Bus; 4 = T(2; 5 = Pwr         0         0-15           OUT         AO2 assignment: 0 = Freq; 1 = Out Current: 2 = Out Volt; 3 = DC Bus; 4 = T(2; 5 = Pwr         0         0-15           OU31         Relay 1: 0 = None; 1 = FOTT; 5 = O; 7 = Under Load; 9 = Stall; 10 = OY; 11 = UV         0         0-40           OU32         Relay 2: 0 = None; 1 = FOTT; 5 = O; 7 = Under Load; 9 = Stall; 10 = OY; 11 = UV         0         0-40           OU34         Relay 3: 0 = None; 1 = FOTT; 5 = O; 7 = Under Load; 9 = Stall; 10 = OY; 11 = UV         0         0-40           OU34         Relay 3: 0 = None; 1 = FOTT; 5 = O; 7 = Under Load; 9 = Stall; 10 = OY; 11 = UV         0         0-40           OU41         Digital Output status; troubleshoot: 0 = None; 1 = FDT-1; 2 = FDT2; 3 = FDT3; 4 = FDT4         0         00-11 bit           Cm         Communication Group         0         0         0         0           AP1         App Mode: 0 = None; 1 = Reserved; 2 = Process PID         0         0         0         0           AP1         App Mode: 0 = None; 1 = Reserved; 2 = Process PID         0         0         0         0           AP1         App Mode: 0 = None; 1 = Reserved; 2 = Process PID         0         0         15         0           AP1         ApD Reference Setpoint <td></td> <td>Ouput selections are typically assignable for digital outputs OU31 thru OU35</td> <td></td> <td></td> <td></td>		Ouput selections are typically assignable for digital outputs OU31 thru OU35			
OU1         AD2 assignment: 0 = rreq; 1 = Out out; 3 = DC Bus; 4 = 1Q; 5 = Pwr         0         0-15           OU31         Relay 1: 0 = None; 1 = FDT1; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV         0         0-40           OU32         Relay 2: 0 = None; 1 = FDT1; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV         0         0-40           OU33         Q1 Open Collector Output Define: 0 = None; 14 = Run; 22 = Ready         14         0-40           OU34         Relay 3: 0 = None; 1 = FDT1; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV         0         0-40           OU35         Relay 4: 0 = None; 1 = FDT1; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV         0         0-40           OU41         Digital Output status: troubleshoot: 0 = None; 1 = FDT1; 2 = FDT2; 3 = FDT3; 4 = FDT4         0         00-11 bit           Cm         Communication Group         0         0         -2           AP1         App Mode: 0 = None; 1 = Reserved; 2 = Process PID         0         0         -2           AP16         PID output         0.00         PID         -15           AP18         PID Reference Subit         50.00         %         -15           AP20         PID Reference Sub; 0         0         0-14         -430.00         -14           AP21         PID FGasource; 0 = VI;	001	AO1 assignment: $0$ = Freq; $1$ = Out Current: $2$ = Out Volt; $3$ = DC Bus; $4$ = IQ; $5$ = Pwr	0	0-15	
OUS1       Relay 1: 0 = None; 1 = FD11; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OY; 11 = UY       0       0-40         OUS2       Relay 2: 0 = None; 1 = FD11; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OY; 11 = UY       0       0-40         OUS3       Q1 Open Collector Output Define; 0 = None; 14 = Run; 22 = Ready       14       0-40         OUS3       Relay 3: 0 = None; 1 = FD11; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OY; 11 = UY       0       0-40         OUS3       Relay 4: 0 = None; 1 = FD11; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OY; 11 = UY       0       0-40         OUS4       Digital Output status; troubleshoot: 0 = None; 1 = FD11; 2 = FD12; 3 = FD13; 4 = FD14       0       00-40         OUS4       Digital Output status; troubleshoot: 0 = None; 1 = FD11; 2 = FD12; 3 = FD13; 4 = FD14       0       00-40         OUS4       Digital Output status; troubleshoot: 0 = None; 1 = FD11; 2 = FD12; 3 = FD13; 4 = FD14       0       00-11 bit         Cmmunication Group       -       -       -       -         AP1       App Mode: 0 = None; 1 = Reserved; 2 = Process PID       0       0 - 2         AP17       PID Reference Source: 0 = Keypad; 1 = V1; 3 = V2; 4 = I2; 5 = Int 485       0       0 - 14         AP20       PID Reference Source: 0 = Keypad; 1 = V1; 3 = V2; 4 = I2; 5 = Int 485       0       0 - 14         AP21       PID Fdis       N	007	AO2 assignment: $0 = \text{Freq}$ ; $1 = \text{Out Current: } 2 = \text{Out Volt}$ ; $3 = \text{DC Bus}$ ; $4 = \text{IQ}$ ; $5 = \text{Pwr}$	0	0-15	
C032         C1 Open Collectro Output Define: 0 = None; 14 = Nun; 22 = Ready, 11 = OV         0         0-40           OU33         Q1 Open Collectro Output Define: 0 = None; 14 = Run; 22 = Ready, 11 = UV         0         0-40           OU34         Relay 3: 0 = None; 1 = FDT1; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV         0         0-40           OU35         Relay 4: 0 = None; 1 = FDT1; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV         0         0-40           OU41         Digital Output status: troubleshoot: 0 = None; 1 = FDT1; 2 = FDT2; 3 = FDT3; 4 = FDT4         0         00-11 bit           Cm         Communication Group         0         0         0         0           AP1         App Mode: 0 = None; 1 = Reserved; 2 = Process PID         0         0         0         0           AP16         PID Output         0.00         PID         0         0         1           AP18         PID Feedback Value         0.00         PID         0         0         14           AP22         PID Reference Sature: 0 = Keypad; 1 = V1; 3 = V2; 4 = 12; 5 = Int 485         0         0         14           AP23         PID FIF Source: 0 = V; 2 = V2; 3 = 12; 4 = Int 485;         0         0         14           AP23         PID Fif Source: 0 = V; 2 = V2; 3 = 12; 4 = Int 485;         0<	0031	Relay 1: $0$ = None; $1$ = FDT1; $5$ = OL; $7$ = Under Load; $9$ = Stall; $10$ = OV; $11$ = OV	0	0~40	
C033         C1 Open Collector Output Define: U = None; V = None	0032	Relay 2: $0$ = None; $1$ = FDTT; $5$ = OL; $7$ = Under Load; $9$ = Stall; $10$ = OV; $11$ = OV	0	0~40	
OUS4         Relay 3: 0 - None; 1 = FDT; 5 - OL; 7 = Under Load; 9 = Stali; 10 = OV; 11 = UV         0         0-40           OUS5         Relay 4: 0 - None; 1 = FDT; 5 - OL; 7 = Under Load; 9 = Stali; 10 = OV; 11 = UV         0         00-40           OU41         Digital Output status: troubleshoot: 0 = None; 1 = FDT: 1; 2 = FDT2; 3 = FDT3; 4 = FDT4         0         00-40           Cm         Communication Group         0         0         0         0           AP         Application Group         0         0         0         0           AP1         App Mode: 0 = None; 1 = Reserved; 2 = Process PID         0         0         0         0           AP1         PID Output         0.00         PID         0         0         0         0           AP1         PID Reference Statual         0.00         PID         0         0         0         11           AP20         PID Reference Stepoint         50.00         %         60.00 Hz         -/+ 30.00 Hz           AP23         PID Step frequency in Hz         10 sec         0         0         14           AP23         PID Limit Hi         60.00 HZ         -/+ 30.00 Hz         4730.00 Hz           AP34         PID Step frequency in HZ         60.00 HZ         -/+ 30.00 Hz <td>0033</td> <td>Q1 Open Collector Output Define: <math><b>0</b> = \text{None}</math>; <math><b>14</b> = \text{Run}</math>; <math><b>22</b> = \text{Ready}</math></td> <td>14</td> <td>0~40</td> <td></td>	0033	Q1 Open Collector Output Define: $0 = \text{None}$ ; $14 = \text{Run}$ ; $22 = \text{Ready}$	14	0~40	
OUSS         Nelsy 4: 0 = None; 1 = PD1'; 5 = OL; 7 = Under Loady 9 = Stall; 10 = OV; 11 = UV         O         O-40           OU41         Digital Output status: troubleshoot: 0 = None; 1 = EDT1; 2 = FDT2; 3 = FDT3; 4 = FDT4         0         00-11 bit           Cm         Communication Group         0         0         02           AP1         App Mode: 0 = None; 1 = Reserved; 2 = Process PID         0         0         02           AP16         PID Output         0.000         PID         AP17           AP10 Reference Value         0.000         PID         AP17           AP11         PID Reference Stapint         50.00         %           AP23         PID Reference Stepaint         50.00         %           AP24         PID Reference Stepaint         50.00         %           AP23         PID Reference 0 = Keypad; 1 = V1; 3 = V2; 4 = 12; 5 = Int 485         0         0         0-14           AP23         PID FGain         50.00         %         -/+ 300.00 Hz         -/+ 300.00 Hz         -/+ 300.00 Hz           AP34         PID Sleep detection time in seconds         60.00         Sec         -/+ 300.00 Hz         -/+ 300.00 Hz           AP37         PID Sleep detection time in seconds         60.00         Sec         -/+ 300.00 Hz	0034	Relay 3: $0 = None; 1 = FDT1; 5 = OL; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV$	0	0~40	
Outin         Digital output status: trobuleshoot: 0 = Nohe; 1 = PD1-1; 2 = PD12; 3 = PD13; 4 = PD14         0         00-11 bit           Cm         Communication Group	0035	Relay 4: $0$ = None; $1$ = FDT1; $5$ = OL; $7$ = Under Load; $9$ = Stall; $10$ = OV; $11$ = OV	0	0~40	
Communication Group         Image: Communication Group         Image: Communication Group           AP         App Mode;: 0 = None; 1 = Reserved; 2 = Process PID         0         0-2           AP1         App Mode;: 0 = None; 1 = Reserved; 2 = Process PID         0.00         PID           AP1         App Mode;: 0 = None; 1 = Reserved; 2 = Process PID         0.00         PID           AP1         App Mode;: 0 = None; 1 = Reserved; 2 = Process PID         0.00         PID           AP1         App Mode;: 0 = None; 1 = Reserved; 2 = Process PID         0.00         PID           AP1         App Reference Setpoint         0.00         PID           AP20         PID Reference Source: 0 = V1; 2 = V2; 3 = I2; 4 = I2; 5 = Int 485         0         0.14           AP22         PID FedBack Value         10 sec         0         0.14           AP23         PID Frime         10 sec         0         0.14           AP33         PID Limit Low         60.00 Hz         -/+ 300.00 Hz         -/+ 300.00 Hz           AP34         PID Seep frequency in Hz         0.00         Hz         -/- 300.00 Hz           AP34         PID Seep frequency in Hz         0.00         Hz         -/- 300.00 Hz           AP34         PID Seep frequency in Hz         0.00         0	0041	Digital Output status: troubleshoot: $0$ = None; $1$ = FD1-1; $2$ = FD12; $3$ = FD13; $4$ = FD14	0		
APApplication GroupomomAP1App Mode: 0 = None; 1 = Reserved; 2 = Process PID00.2AP16PID Output0.00PIDAP17PID Reference Value0.00PIDAP18PID Feederace Value0.00PIDAP19PID Reference Setpoint50.00%AP20PID Reference Source: 0 = Keypad; 1 = V1; 3 = V2; 4 = 12; 5 = Int 48500.14AP21PID F/B Source: 0 = V1; 2 = V2; 3 = 12; 4 = Int 485;00.14AP22PID F/G Source: 0 = V1; 2 = V2; 3 = 12; 4 = Int 485;00.14AP23PID Irime10 sec0 - 200.0 secAP23PID Limit Hi60.00 Hz-/+ 300.00 HzAP30PID Limit Low-/+ 300.00 Hz-/+ 300.00 HzAP33PID Sleep detection time in seconds60.0SecAP34PID Sleep frequency in Hz0.00HzAP35PID Sleep frequency in Hz35%AP36PID Sleep frequency in Hz00-1AP37PID Sleep frequency in Hz10-1AP38PID Sleep frequency in Hz00-1AP39PID Wake-up level in %35%Pr4Load Duty: 0 = Normal Duty: 1 = Heav Duty10.1Pr5Iput/output open phase protection: Bit low = Off ; Bit High = ON (see manual)401-100VPr6Open-phase input voltage band: adjustable (see manual)4000-1Pr6Open-phase input voltage band: adjustable (see manual)00-	Cm	Communication Group			
AP1         App Mode: 0 = None; 1 = Reserved; 2 = Process PID         0         02           AP16         PID Output         0.00         PID           AP17         PID Reference Value         0.00         PID           AP18         PID Reference Setpoint         50.00         %           AP20         PID Reference Setpoint         50.00         %           AP21         PID Reference Setpoint         50.0         %           AP22         PID Reference Setpoint         50.0         %           AP23         PID P-Gain         50.0         %           AP23         PID Limit         60.00 Hz         -/+ 30.00 Hz           AP30         PID Limit Low         -60.00 Hz         -/+ 300.00 Hz           AP33         PID Seep detection time in seconds         60.0         Sec           AP34         PID Seep frequency in Hz         0.00         Hz           AP34         PID Seep frequency in Hz         35         %           AP34         PID Seep frequency in Hz         0         0.01           AP35         PID Seep frequency in Hz         0         0.01           Protection Group         1         0-1         0           Pr5         Input/output open phase	AP	Application Group			
AP16         PID Output         0.00         PID           AP17         PID Reference Value         0.00         PID           AP18         PID Feedback Value         0.00         PID           AP19         PID Reference Setpoint         50.00         %           AP20         PID Reference Source: 0 = Keypad; 1 = V1; 3 = V2; 4 = 12; 5 = Int 485;         0         0.014           AP21         PID F/B Source: 0 = V1; 2 = V2; 3 = 12; 4 = Int 485;         0         0.00         %           AP23         PID I-Time         10 sec         0.200, 0 sec            AP23         PID Limit Hi         60.00 Hz         -/+ 300,00 Hz            AP33         PID Sleep detection time in seconds         60.00         Sec            AP34         PID Sleep frequency in Hz         0.00         Hz            AP37         PID Sleep frequency in Hz         0.00         Hz            AP38         PID Sleep frequency in Hz         0.00         Hz            AP37         PID Wake-up level in %         35         %            Protection Group         1         0.1         0.1            Pr4         Load Duty; 0 = Normal Duty ; 1 = Heavy	AP1	App Mode: <b>0</b> = None; <b>1</b> = Reserved; <b>2</b> = Process PID	0	0 -2	
AP17       PID Reference Value       0.00       PID         AP18       PID Feedback Value       0.00       PID         AP19       PID Reference Setpoint       50.00       %         AP20       PID Reference Setpoint       50.00       %         AP21       PID F/B Source: 0 = Vi; 2 = V2; 3 = 12; 4 = Int 485;       0       0-14         AP22       PID P-Gain       50.0       %         AP23       PID I-Time       10 sec       0 - 200.0 sec         AP33       PID Limit Hi       60.00 Hz       -/+ 300.00 Hz         AP34       PID Sleep detection time in seconds       60.0       Sec         AP38       PID Sleep frequency in Hz       0.00       Hz         AP39       PID Sleep frequency in Hz       0.00       Hz         AP39       PID Vake-up level in %       35       %         Tertection Group         Pr4       Load Duty: 0 = Normal Duty; 1 = Heavy Duty       1       0.1         Pr5       Input/output open phase protection: Bit low = Off; Bit High = ON (see manual)       0       0         Pr6       Open-phase input voltage band: adjustable (see manual)       0       0       1         Pr6       Open-phase input voltage band: adjustable (see manual)	AP16	PID Output	0.00	PID	
AP18         PID Feedback Value         0.00         PID           AP19         PID Reference Setpoint         50.00         %           AP20         PID Reference Source: 0 = Keypad; 1 = V1; 3 = V2; 4 = I2; 5 = Int 485         0         0.14           AP21         PID F./5 Source: 0 = V1; 2 = V2; 3 = I2; 4 = Int 485;         0         0.14           AP22         PID F.Gain         50.00         %           AP23         PID F.Gain         10 sec         0 - 200.0 sec           AP30         PID Limit H         60.00 Hz         -/+ 300.00 Hz           AP33         PID Sleep detection time in seconds         60.0         Sec           AP34         PID Sleep frequency in Hz         0.00         Hz           AP37         PID Sleep frequency in Hz         0.00         Hz           AP38         PID Wake-up level in %         35         %           Vertection Group         1         0-1           Pr4         Load Duty: 0 = Normal Duty; 1 = Heavy Duty         1         0           Pr5         Input/output open phase protection: Bit low = Off; Bit High = ON (see manual)         0         0-1           Pr5         Auto Restart time in seconds         0.0         0-1         0           Pr10         Auto Restart	AP17	PID Reference Value	0.00	PID	
PID         PID         PiD         Reference Source: 0 = Keypad; 1 = V1; 3 = V2; 4 = 12; 5 = Int 485;         0         0         0-14           AP20         PID PcGain         50.0         %           AP23         PID         File Reference Source: 0 = Keypad; 1 = V1; 3 = V2; 4 = 12; 5 = Int 485;         0         0         0-14           AP22         PID F-Gain         50.0         %           AP34         PID File Reference Source: 0 = Keypad; 1 = V1; 3 = V2; 4 = 12; 5 = Int 485;         0         0         0-14           AP23         PID I-Time         10 sec         0         0.00         K           AP33         PID Limit Low         66.00 Hz         -/+ 300.00 Hz         -/+ 300.00 Hz           AP37         PID Sleep frequency in Hz         0.00         Hz         -           AP38         PID Sleep frequency in Hz         0.00         Hz         -           AP39         PID Wake-up level in %         35         %         -           Pr4         Load Duty: 0 = Normal Duty ; 1 = Heavy Duty         1         0-1         -           Pr5         Input/output open phase protection: Bit low = Off ; Bit High = ON (see manual)         0         0         -1           Pr6         Open-phase input volt	AP18	PID Feedback Value	0.00	PID	
AP20       F1D Keteretine source: 0 = V1; 2 = V2; 3 = 12; 4 = Int 485;       0       0       0-14         AP21       PID F/B source: 0 = V1; 2 = V2; 3 = 12; 4 = Int 485;       0       0       0-14         AP22       PID P-Gain       10 sec       0 = 0-200, sec       0         AP33       PID Limit Hi       60.00 Hz       -/+ 300.00 Hz       -/+ 300.00 Hz         AP30       PID Limit Low       -60.00 Hz       -/+ 300.00 Hz       -/+ 300.00 Hz         AP37       PID Sleep detection time in seconds       60.0       Sec	AP19	PID Reference Setpoint DID Reference Seturce: $0 = K_{0}$ and $1 = 1/1$ : $2 = 1/2$ : $4 = 12$ : $5 = 1$ of 485	50.00	% 0.15	
AP22       PID P-Gain       50.0       %         AP23       PID I-Time       10 sec       0 - 200.0 sec         AP30       PID Limit Hi       60.00 Hz       -/+ 300.00 Hz         AP37       PID Sleep detection time in seconds       60.00       Sec         AP38       PID Sleep frequency in Hz       0.00       Hz         AP39       PID Wake-up level in %       35       %         Protection Group         Pr4       Load Duty: 0 = Normal Duty ; 1 = Heavy Duty       1       0-1         Pr5       Input/output open phase protection: Bit low = Off ; Bit High = ON (see manual)       0       0         Pr6       Open-phase input voltage band: adjustable (see manual)       0       0-1         Pr6       Open-phase input voltage band: adjustable (see manual)       0       0-1         Pr9       Retry Number       0       0-10       0         Pr10       Auto Restart time in seconds       0.00       0-60       0         Pr21       Overload Trip Level       180       30-200%       0         Pr22       Overload Trip Dene None or No fault recorded       1       0       0         Pr90       Warning Information       60 sec       0       0       0 </td <td>ΔΡ21</td> <td>PID Reference source: <math><b>0</b> = \text{Keypau}</math>, <math><b>1</b> = \sqrt{1}</math>, <math><b>3</b> = \sqrt{2}</math>, <math><b>4</b> = 12</math>, <math><b>5</b> = 110,485</math></td> <td>0</td> <td>0-13</td> <td></td>	ΔΡ21	PID Reference source: $0 = \text{Keypau}$ , $1 = \sqrt{1}$ , $3 = \sqrt{2}$ , $4 = 12$ , $5 = 110,485$	0	0-13	
PID 1-Time         D 1-Time           AP23         PID 1-Time         10 sec         0 - 200.0 sec           AP29         PID Limit Low         -/+ 300.00 Hz         -/+ 300.00 Hz           AP30         PID Limit Low         -60.00 Hz         -/+ 300.00 Hz           AP37         PID Sleep detection time in seconds         60.0         Sec           AP38         PID Sleep frequency in Hz         0.00         Hz           AP39         PID Wake-up level in %         35         %           Protection Group         1         0-1           Pr4         Load Duty: 0 = Normal Duty ; 1 = Heavy Duty         1         0-1           Pr5         Input/output open phase protection: Bit low = Off ; Bit High = ON (see manual)         0         0-1           Pr6         Open-phase input voltage band: adjustable (see manual)         0         0-1           Pr6         Open-phase input voltage band: adjustable (see manual)         0         0-1           Pr8         Actor Restart: 0 = No; 1 = Yes         0         0         0-1           Pr9         Retry Number         0         0         0         0           Pr10         Auto Restart: 0 = No; 1 = Free-Run; 2 = Decel         0         0         0         0	AP22	PID P-Gain	50.0	%	
AP29       PID Limit Hi       60.00 Hz       -/+ 300.00 Hz         AP30       PID Limit Low       -60.00 Hz       -/+ 300.00 Hz         AP37       PID Sleep detection time in seconds       60.0       Sec         AP38       PID Sleep frequency in Hz       0.00       Hz         AP39       PID Wake-up level in %       35       %         ***********************************	AP23	PID I-Time	10 sec	0 - 200.0 sec	
AP30PID Limit Low(+ 300.00 Hz)-/+ 300.00 HzAP37PID Sleep detection time in seconds60.0SecAP38PID Sleep frequency in Hz0.00HzAP39PID Wake-up level in %35%Protection GroupPr4Load Duty: 0 = Normal Duty; 1 = Heavy Duty10.1Pr5Input/output open phase protection: Bit low = Off; Bit High = ON (see manual)00.1Pr6Open-phase input voltage band: adjustable (see manual)401.100VPr8Auto Restart: 0 = No; 1 = Yes00.1Pr10Auto Restart: 0 = No; 1 = Free-Run; 2 = Decel00-2Pr21Overload Trip Evel00.2Pr22Overload Trip Level60 sec0-60 secPr93Fault history 1 - nOn = None or No fault recorded60 sec0-60 secPr94Fault history 3Fault history 3Fault history 41Pr94Fault history 410-1Pr95Fault history 0 = No; 1 = Yes (clears recorded faults in Pr91 - Pr95)00-1	AP29	PID Limit Hi	60.00 Hz	-/+ 300.00 Hz	
AP37PID Sleep detection time in seconds60.0SecAP38PID Sleep frequency in Hz0.00HzAP39PID Wake-up level in %35%Protection GroupPr4Load Duty: 0 = Normal Duty ; 1 = Heavy Duty10-1Pr5Input/output open phase protection: Bit low = Off ; Bit High = ON (see manual)00-1Pr6Open-phase input voltage band: adjustable (see manual)401-100VPr8Auto Restart: 0 = No; 1 = Yes00-1Pr10Auto Restart: 0 = No; 1 = Yes00.10Pr20Overload Trip Select: 0 = None; 1 = Free-Run; 2 = Decel00-2Pr21Overload Trip Level18030-200%Pr92Fault history 1 - NOn = None or No fault recorded66 sec0-60 secPr93Fault history 3Inton y 1 = Yes (clears recorded faults in Pr91 - Pr95)00Pr95Fault history 4Pr95Fault history 5000-1	AP30	PID Limit Low	-60.00 Hz	-/+ 300.00 Hz	
AP38PID Sleep frequency in Hz0.00HzAP39PID Wake-up level in %35%Protection Group35%Pr4Load Duty: 0 = Normal Duty ; 1 = Heavy Duty10-1Pr5Input/output open phase protection: Bit low = Off ; Bit High = ON (see manual)00-1Pr6Open-phase input voltage band: adjustable (see manual)401-100VPr8Auto Restart: 0 = No; 1 = Yes00-1Pr10Auto Restart: 0 = No; 1 = Yes00-10Pr10Auto Restart time in seconds0.00-60Pr20Overload Trip Select: 0 = None; 1 = Free-Run; 2 = Decel00-2Pr21Overload Trip Level18030-200%Pr22Overload Trip Time60 sec0-60 secPr93Fault history 1 - nOn = None or No fault recordedPr94Fault history 3Fault history 4Pr95Fault history 500-1-Pr96Fault history 500-1-	AP37	PID Sleep detection time in seconds	60.0	Sec	
AP39PID Wake-up level in %35%Protection GroupPr4Load Duty: 0 = Normal Duty ; 1 = Heavy Duty10-1Pr5Input/output open phase protection: Bit low = Off ; Bit High = ON (see manual)00-1Pr6Open-phase input voltage band: adjustable (see manual)401-100VPr8Auto Restart: 0 = No; 1 = Yes00-1Pr9Retry Number00-10Pr10Auto Restart time in seconds0.00-60Pr21Overload Trip Select: 0 = None; 1 = Free-Run; 2 = Decel00-2Pr22Overload Trip Level18030-200%Pr22Overload Trip Ime60 sec0-60 secPr90Warning Information60 sec0-60 secPr91Fault history 1 - nOn = None or No fault recorded11Pr93Fault history 311Pr94Fault history 411Pr95Fault history 500-1Pr96Fault history 411Pr96Fault history deletion: 0 = No; 1 = Yes (clears recorded faults in Pr91 - Pr95)00-1	AP38	PID Sleep frequency in Hz	0.00	Hz	
Protection GroupImage: constraint of the second	AP39	PID Wake-up level in %	35	%	
Pr4Load Duty: 0 = Normal Duty ; 1 = Heavy Duty10-1Pr5Input/output open phase protection: Bit low = Off ; Bit High = ON (see manual)00-1Pr6Open-phase input voltage band: adjustable (see manual)401-100VPr8Auto Restart: 0 = No; 1 = Yes00-1Pr9Retry Number00-10Pr10Auto Restart time in seconds0.00-60Pr20Overload Trip Select: 0 = None; 1 = Free-Run; 2 = Decel00-2Pr21Overload Trip Level18030-200%Pr22Overload Trip Ime60 sec0-60 secPr90Warning Information60 sec0-60 secPr91Fault history 1 - nOn = None or No fault recordedPr92Fault history 3Pr93Fault history 4Pr94Fault history 5Pr95Fault history 500~1-		Protection Group			
Pr5Input/output open phase protection: Bit low = Off ; Bit High = ON (see manual)00-1Pr6Open-phase input voltage band: adjustable (see manual)401-100VPr8Auto Restart: 0 = No; 1 = Yes00-1Pr9Retry Number00-10Pr10Auto Restart time in seconds0.00-60Pr20Overload Trip Select: 0 = None; 1 = Free-Run; 2 = Decel00-2Pr21Overload Trip Level18030-200%Pr22Overload Trip Time60 sec0-60 secPr90Warning Information60 sec0-60 secPr91Fault history 1 - nOn = None or No fault recorded11Pr92Fault history 3111Pr94Fault history 4111Pr95Fault history 500-1Pr96Fault history deletion: 0 = No; 1 = Yes (clears recorded faults in Pr91 - Pr95)00~1	Pr4	Load Duty: <b>0</b> = Normal Duty : <b>1</b> = Heavy Duty	1	0-1	
Pr6         Open-phase input voltage band: adjustable (see manual)         40         1-100V           Pr8         Auto Restart: 0 = No; 1 = Yes         0         0-1           Pr9         Retry Number         0         0-10           Pr10         Auto Restart time in seconds         0.0         0-60           Pr20         Overload Trip Select: 0 = None; 1 = Free-Run; 2 = Decel         0         0-2           Pr21         Overload Trip Level         180         30-200%           Pr22         Overload Trip Ime         60 sec         0-60 sec           Pr90         Warning Information         60 sec         0-60 sec           Pr91         Fault history 1 - nOn = None or No fault recorded         1         1           Pr92         Fault history 1 - nOn = None or No fault recorded         1         1           Pr93         Fault history 3         1         1         1           Pr94         Fault history 4         1         1         1           Pr95         Fault history 5         0         0         0           Pr96         Fault history deletion: 0 = No; 1 = Yes (clears recorded faults in Pr91 - Pr95)         0         0         0	Pr5	Input/output open phase protection: Bit low = $Off$ : Bit High = $ON$ (see manual)	0	0-1	
Pr8Auto Restart: 0 = No; 1 = Yes00-1Pr9Retry Number00-10Pr10Auto Restart time in seconds0.00-60Pr20Overload Trip Select: 0 = None; 1 = Free-Run; 2 = Decel00-2Pr21Overload Trip Level18030-200%Pr22Overload Trip Time60 sec0-60 secPr90Warning Information60 sec0-60 secPr91Fault history 1 - nOn = None or No fault recorded	Pr6	Open-phase input voltage band: adjustable (see manual)	40	1-100V	
Pr 9         Retry Number         0         0-10           Pr10         Auto Restart time in seconds         0.0         0-60           Pr20         Overload Trip Select: <b>0</b> = None; <b>1</b> = Free-Run; <b>2</b> = Decel         0         0-2           Pr21         Overload Trip Level         180         30-200%           Pr22         Overload Trip Ime         60 sec         0-60 sec           Pr90         Warning Information         60 sec         0-60 sec           Pr91         Fault history 1 - nOn = None or No fault recorded         180         30-200%           Pr92         Fault history 2         -         -         -           Pr93         Fault history 3         -         -         -           Pr94         Fault history 5         -         -         -           Pr95         Fault history 5         0         0         -	Pr8	Auto Restart: <b>0</b> = No; <b>1</b> = Yes	0	0-1	
Pr10Auto Restart time in seconds0.00-60Pr20Overload Trip Select: <b>0</b> = None; <b>1</b> = Free-Run; <b>2</b> = Decel00-2Pr21Overload Trip Level18030-200%Pr22Overload Trip Time60 sec0-60 secPr90Warning Information60 sec0-60 secPr91Fault history 1 - nOn = None or No fault recorded180180Pr92Fault history 2180180180Pr93Fault history 3180180180Pr94Fault history 4180180180Pr95Fault history 5000-1	Pr 9	Retry Number	0	0-10	
Pr20Overload Trip Select: <b>0</b> = None; <b>1</b> = Free-Run; <b>2</b> = Decel000-2Pr21Overload Trip Level18030-200%Pr22Overload Trip Time60 sec0-60 secPr90Warning Information60 sec0-60 secPr91Fault history 1 - nOn = None or No fault recorded11Pr92Fault history 2101Pr93Fault history 3111Pr94Fault history 4111Pr95Fault history 5000-1	Pr10	Auto Restart time in seconds	0.0	0-60	
Pr21Overload Trip Level18030-200%Pr22Overload Trip Time60 sec0-60 secPr90Warning Information60 sec0-60 secPr91Fault history 1 - nOn = None or No fault recorded180180Pr92Fault history 2180180180Pr93Fault history 3180180180Pr94Fault history 4180180180Pr95Fault history 5000-1	Pr20	Overload Trip Select: <b>0</b> = None; <b>1</b> = Free-Run; <b>2</b> = Decel	0	0-2	
Pr22Overload Trip Time60 sec0-60 secPr90Warning Information60 sec60 secPr91Fault history 1 - nOn = None or No fault recorded60 sec60 secPr92Fault history 260 sec60 secPr93Fault history 360 sec60 secPr94Fault history 460 sec60 secPr95Fault history 560 sec60 secPr96Fault history deletion: 0 = No; 1 = Yes (clears recorded faults in Pr91 - Pr95)00~1	Pr21	Overload Trip Level	180	30-200%	
PryuWarning InformationImage: Constraint of the second of the seco	Pr22	Overload Trip Time	60 sec	0-60 sec	
Pr91       Fault history 1 - hOh = Nohe or No fault recorded       Image: Constraint recorded         Pr92       Fault history 2       Image: Constraint recorded       Image: Constraint recorded         Pr93       Fault history 3       Image: Constraint recorded       Image: Constraint recorded         Pr94       Fault history 4       Image: Constraint recorded faults in Pr91 - Pr95       Image: Constraint recorded faults in Pr91 - Pr95         Pr96       Fault history deletion: <b>0</b> = No; <b>1</b> = Yes (clears recorded faults in Pr91 - Pr95)       Image: Constraint recorded faults in Pr91 - Pr95	Pr90	Warning Information			
Pr93     Fault history 3     Image: Constraint of point of	Pr91 Dr02	Fault history 1 - nOn = None or NO fault recorded			
Pr94     Fault history 4       Pr95     Fault history 5       Pr96     Fault history deletion: <b>0</b> = No; <b>1</b> = Yes (clears recorded faults in Pr91 - Pr95)	P192 Pr93	Fault history 3			
Pr95     Fault history 5     0     0~1       Pr96     Fault history deletion: <b>0</b> = No; <b>1</b> = Yes (clears recorded faults in Pr91 - Pr95)     0     0~1	Pr94	Fault history 4			
Pr96 Fault history deletion: <b>0</b> = No; <b>1</b> = Yes (clears recorded faults in Pr91 - Pr95) 0 0~1	Pr95	Fault history 5			
	Pr96	Fault history deletion: <b>0</b> = No; <b>1</b> = Yes (clears recorded faults in Pr91 - Pr95)	0	0~1	

Note: Shaded areas above denote most frequently used parameters

WorldWide Electric Motor WD4X Quick Start Guide This guide and all referenced information is intended for qualified personnel only. For additional information, please consult the WD4X User Manual (Document No: MC-OM-4XS0618.R01)