



WorldWide Electric Corporation
3540 Winton Place
Rochester, NY 14623 USA
Phone: 800-808-2131
www.worldwideelectric.net



WORLD DRIVE WDFC

Quick Start Guide



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

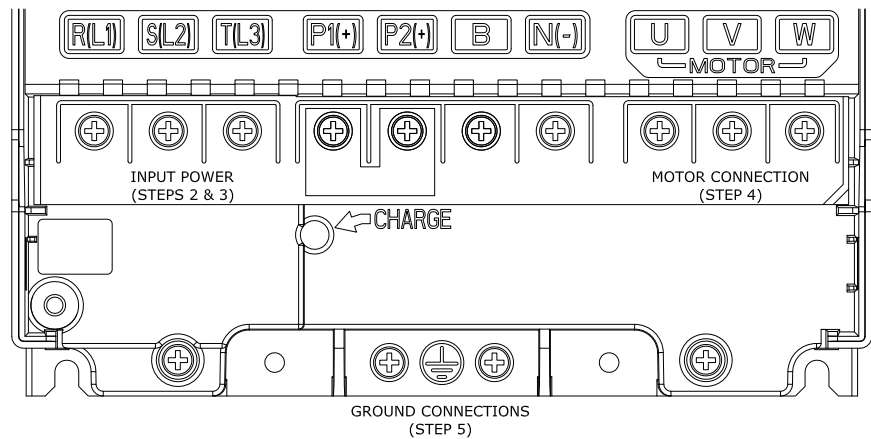
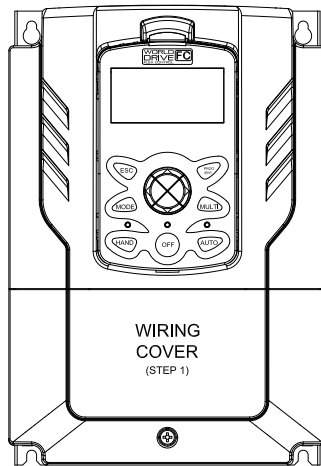
For all other configurations, please refer to the specific setup and configuration instructions available on the WorldWide Electric website: wwec.co/WDFC

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.

Input Power and Motor Wiring

1. Remove screw and wiring cover.
2. Wire the incoming power to terminals **R(L1) S (L2) T (L3)**.
3. For single phase input applications use **R(L1) and T (L3)**.
4. Wire the motor to terminals U, V, W.
5. Be sure to connect the incoming power and motor cabling ground conductors to the ground connections.

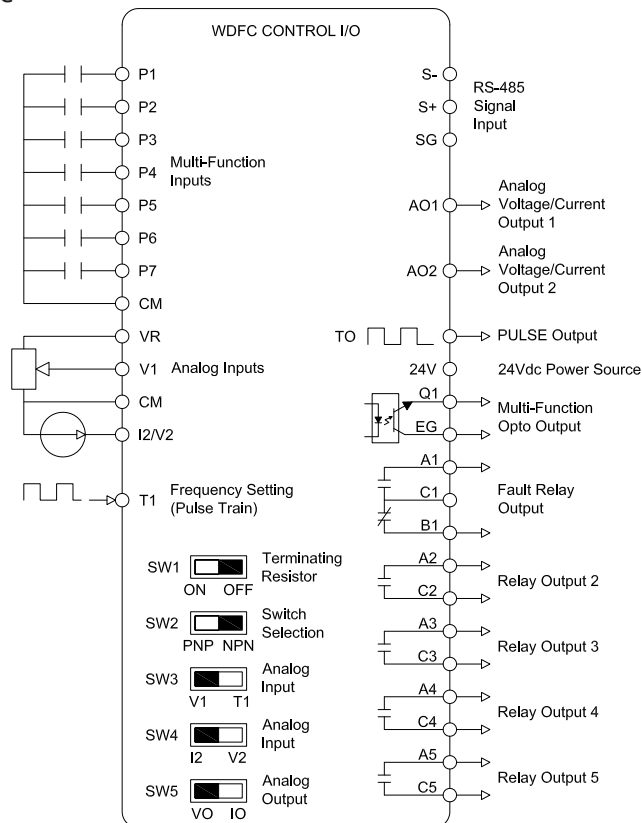


Control Input and Output Wiring Diagram

Inputs P1-P7 are programmable

Factory Defaults

P1 = FX Forward
 P2 = RX Reverse
 P3 = BX Block output
 P4 = RST Reset
 P5 = Speed-L
 P6 = Speed-M
 P7 = Speed-H
 CM = Common



WDFC Quick Start Guide



EzStart Steps

EzStart N STP 0.0Hz
 99 Start Easy Set
 0 ----- No ----- D
1 ----- Yes ----- C

PROG
/ENT

When the drive powers on, the Quick Start Easy Set menu will come on the display.
Select Yes (Program/Enter key) to Continue.

D = Default value setting
C = Current (present) value setting

EzStart N STP 0.0Hz
 99 Macro Select
0 Basic D
 1 Compressor
 2 Supply Fan

PROG
/ENT

Select 0 - Basic Macro
Basic Macro simplifies setup and support.

EzStart N STP 0.0Hz
 BAS10 60/50 Hz Sel
0 60 Hz DC
 1 50 Hz

PROG
/ENT

Select the correct Hz for your motor.

EzStart N STP 0.0Hz
 DRV14 Motor Capacity
 5 3.0 HP
 6 4.0 HP
7 5.0 HP DC

PROG
/ENT

Select the correct HP for your motor.

Sample Motor Nameplate

		PREMIUM EFFICIENCY 3-PHASE INDUCTION MOTOR		CC006A ISO9001	259277
Model			Ser No.		
HP	S.F.	Type	Encl	IP	
Frame	P.F.	Ins Cl	Rating	°C AMB Cont	
Voltage	230/460	Hz	Design	DE Brng	
Amps		RPM	Code	ODE Brng	
Nom. Eff.	FL	% 3/4	%	230/460V	Date
Usable on 208V network at		Amps 1.0SF	Class I DIV. 2 Groups A B C D	Amb. 40°C	T3C(160°C)
10:1 CT 20:1 VT PWM VFD		1.0SF	Class I Zone 2 IIC	Amb. 55°C	T3A(180°C)
60Hz		HP	V	A	rpm S.F1.0
WorldWide Electric Corporation					


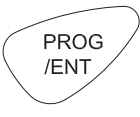



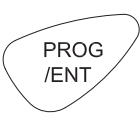

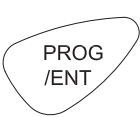
Low Voltage

6	4	5
7	8	9
1	2	3
L1	L2	L3




High Voltage

4	5	6
7	8	9
1	2	3
L1	L2	L3

EzStart Steps (continued)

EzStart <input type="text" value="N"/> STP 0.0Hz BAS13 Rated Curr 8.0 A 0.0 ~ 1000.0 A D:3.6 C:8.0			Input FLA from the nameplate of the motor.
EzStart <input type="text" value="N"/> STP 0.0Hz BAS15 Rated Volt 460V 170 ~ 480 V D:0 C:0			Input the motor voltage .
EzStart <input type="text" value="N"/> STP 0.0Hz BAS11 Pole Number 4 2 ~ 48 D:4 C:4			Input the number of poles for the motor.
EzStart <input type="text" value="N"/> STP 0.0Hz BAS19 AC Input Volt 460 V 320 ~ 528 V D:220 C:380			Input the correct service voltage .

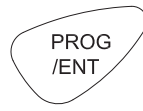
Sample Motor Nameplate

 		PREMIUM EFFICIENCY 3-PHASE INDUCTION MOTOR		259277 CC006A ISO9001		
Model			Ser No.			Low Voltage 6 4 5 7 8 9 1 2 3 L1 L2 L3 High Voltage 4 5 6 7 8 9 1 2 3 L1 L2 L3
HP	S.F.	Type	Encl	IP		
Frame	P.F.	Ins Cl	Rating	°C AMB Cont		
Voltage	230/460	Hz	Design	DE Brng		
Amps		RPM	Code	ODE Brng		
Nom. Eff.	FL	% 3/4	%	230/460V	Date	
Usable on 208V network at		Amps 1.0SF	Class I DIV. 2 Groups A B C D		Amb. 40°C	T3C(160°C)
10:1 CT 20:1 VT PWM VFD		1.0SF	Class I Zone 2 II C		Amb. 55°C	T3A(180°C)
60Hz		HP	V	A	rpm	S.F1.0
WorldWide Electric Corporation						

EzStart Steps

EzStart [N] STP 0.0Hz
PRT08 RST Restart

D:
C:



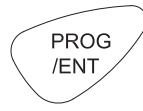
Press Program / Enter to continue
This menu is to program input the restart functions.
Please refer to the manual for further instructions.
(WorldDrive Flex Control - VFD - The WDFC: Operation and Instructional Manual)

wwec.co/WDFC-Manual

EzStart [N] STP 0.0Hz
PRT09 Retry Number

0 ~ 10

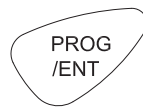
D:0 C:0



Press Program / Enter to continue. This menu will input the number of auto restarts. Please refer to the manual for further instructions.

EzStart [N] STP 0.0Hz
COM96 PowerOn Resume

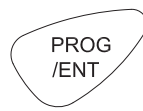
0 -----No -----DC
1 -----Yes-----



Select Yes if operation is to resume running when the power is restored.

EzStart [N] STP 0.0Hz
CON71 Speed Search

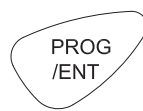
D:
C:



Press Program / Enter to continue. This menu is to set the Speed Search.
Please refer to the manual for further instructions.

EzStart [N] STP 0.0Hz
DRV06 Cmd Source

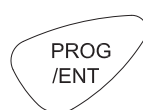
0 Keypad
1 Fx/Rx-1 DC
2 Fx/Rx-2



Input the command source.
If the keypad is to start and stop operation, select "0".
"1" Fx/Rx-1 is common for controls wired to input terminal strip.

EzStart [N] STP 0.0Hz
DRV07 Freq Ref Src

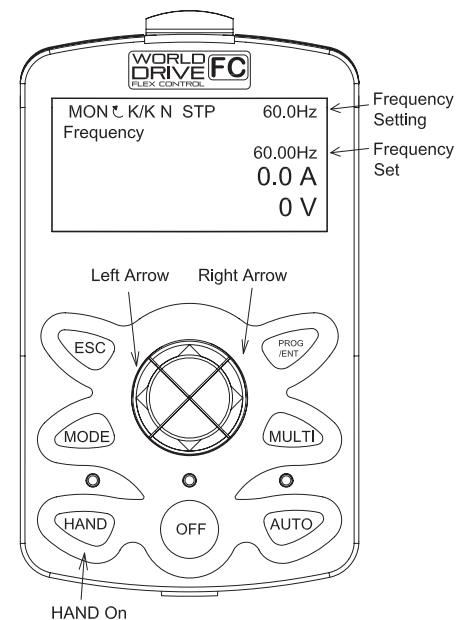
0 Keypad-1 DC
1 Keypad-2
2 V1



Input your reference source.

Verify Motor Rotation:

1. On the Keypad DRV menu, set DRV07 to "1 - Keypad"
2. On the Keypad MON menu, use Left /Right/Up/Down arrow keys to set the a 10.00 Hz frequency reference value (see keypad display upper right corner)
3. Press the [HAND] key to start / bump the motor then press the [OFF] key
4. If rotation is backward: power-down, wait 5-minutes, and swap any "TWO" output cables at drive output terminals U, V or W



Parameter Groups

Group - Drive - DRV

Default Parameters Shown

1	Cmd Frequency	0.00 Hz
2	Keypad Run Dir	Forward
3	Acc Time	20.0 sec
4	Dec Time	30.0 sec
6	Cmd Source	FX/RX-1
7	Freq Ref Src	Keypad
9	Control Mode	V/F
14	Motor Capacity	xx HP
20	Max Freq	60.00 Hz

Group - Basic - BAS

Default Parameters Shown

4	Cmd 2 nd Src	Fx/Rx-1
5	Freq 2 nd Src	Keypad-1
6	Input Phase	3 Phase
11	Pole Number	4
12	Rated Slip	40 rpm
13	Rated Curr	xx.x amps
14	Noload Curr	xx.x amps
15	Efficiency	72.0%
19	AC Input Volt	220 or 460V
20	Auto Tuning	None

Group - Advanced - ADV

Default Parameters Shown

1	Acc Pattern	Linear
2	Dec Pattern	Linear
8	Stop Mode	Dec
9	Run Prevent	None
10	Power-on Run	No
24	Freq Limit	0 = No
25	Freq Limit Lo	0.50 Hz
26	Freq Limit Hi	60.00 Hz
64	FAN Control	During Run
74	RegenAvd Sel	No
75	RegenAvd Level	350 or 700vdc
76	CompFreq Limit	1.00Hz
77	RegenAvd Pgain	50.0%
78	RegenAvd Igain	500ms

Group - Config - CON

Default Parameters Shown

4	Carrier Freq	3.0kHz
70	Speed Search	Flying Start-1
71	Speed Search	b0000

Group - Inputs - IN

1	Freq at 100%	60.00Hz
5	V1 Monitor[V]	0.00V
6	V1 Polarity	Unipolar
16	V1 Inverting	No
35	V2 Monitor[V]	0.00V
46	V2 Inverting	No
50	I2 Monitor[mA]	0.00mA
65	P1 Define	FX
66	P2 Define	RX
67	P3 Define	BX
68	P4 Define	RST
69	P5 Define	Speed-L
70	P6 Define	Speed-M
71	P7 Define	Speed-H
72	P8 Define	None
73	P9 Define	None
87	DI NC/NO Sel	b 000 0000
90	DI Status	b 000 0000

Group - Outputs - OUT

1	AO1 Mode	Frequency
2	AO1 Gain	100.0%
3	AO1 Bias	0.0 %
4	AO1 Filter	5ms
6	AO1 Monitor	0.0%
7	AO2 Mode	Frequency
8	AO2 Gain	100.0%
9	AO2 Bias	0.0 %
10	AO2 Filter	5ms
12	AO2 Monitor	0.0%
31	Relay 1	Trip
32	Relay 2	Run
33	Relay 3	None
34	Relay 4	None
35	Relay 5	None
41	DO Status	b 00 0000
50	DO On Delay	0.00sec
51	DO Off Delay	0.00sec
52	DO NC/NO Sel	b 00 0000

Jump = fast access to parameters

Parameters & values depend upon
configurations & options involved.

Group - Communication - COM

Default Parameters Shown

1	Station ID	1
2	485 Protocol	Modbus RTU
3	485 Baud Rate	9600 bps
4	485 Mode	D8 / PN / S1

Group - Proportional Integral Derivative - PID

Default Parameters Shown

1	PID Select	No
4	Ref Value	0 pid
5	Fdb Value	0 pid
10	Ref 1 Source	Keypad
11	Ref 1 Setpoint	15000 pid
20	Fdb Source	V1
25	P-Gain 1	50.00%
26	I-Time 1	10.0 sec

Group - Application 1 – AP1

Default Parameters Shown

7	PID Sleep 1 DT	20.0 sec
8	PID Sleep 1 Freq	0.00 Hz
9	PID WakeUp 1 DT	20.0 sec
10	PID WakeUp 1 Dev	% value

Group - Application 2 – AP2

Default Parameters Shown

15	Pump Clean 1	0 = None
16	Pump Clean 2	0 = None
22	Pump Clean Acc Tim	10.0 sec
23	Pump Clean Dec Tim	10.0 sec

Group - Protection - PRT

Default Parameters Shown

4	Load Duty	0 = normal duty
5	Phase Loss Chk	b00 bit
8	RST Restart	b00 bit
9	Retry Number	0
10	Retry Delay	5.0 sec
21	Overload Trip	120%
22	Overload Time	60.0 sec

LCD Keypad Menu - CNF

Default Parameters Shown

2	LCD Contrast	Brightness
20	AnyTime Parameters	0
21	Monitor Line 1	
22	Monitor Line 2	
23	Monitor Line 3	
40	Para Init / factory default	0
41	Changed Parameters	0
43	Macro Selection	0
44	Erase Trip History	0
46	Parameter read	0
47	Parameter write	0

For more information, please refer to the WDFC Product Manual at wwec.co/WDFC_Manual

Common Parameters

Group Name	Description See drive manual for complete configuration capabilities NOTE: Press [ESC] key to escape from a Group	Default Value	Value Range	New Value
99 Macro	Select in Easy Start Menu: 0 -Basic Macro simplifies setup and support - do not change	0		
CNF-61	Easy Start Settings: 0 = Disabled ; 1 = Enabled	1	0-1	
CNF-40	CNF-40 = 1 Defaults ALL Groups in VFD: 0 = No ; see manual for full selection chart	0	0-15	
Restarting the VFD will activate Easy Start On. Set KEYPAD values as follows:				
DRV-01	Cmd Frequency: set by the keypad	Hz	Low/High Freq	
DRV-06	Command Source: 0 = Keypad; 1 = FX/RX1; 2 = FX/RX2; 3 = Int 485; 4 = Field bus	1	0-5	
DRV-07	Frequency Setting Method: 0 = Keypad; 2 = V1; 4 = V2; 5 = I2; 6 = Int485; 8 = FldBus	0	0-11	
BAS-10	Base frequency: 0 = 60Hz ; 1 = 50Hz (input power freq)	0		
DRV-14	Motor HP size / capacity			
BAS-11	Pole Number = motor pole number (Ex: 2-pole = 3600rpm; 4-pole = 1800rpm; 6-pole = 1200rpm)	4	2~48	
BAS-13	Rated Curr = Set to motor rated current			
BAS-15	Motor rated voltage			
BAS-19	VFD AC input power voltage			
PRT-08	Select start at trip reset: Set Bit 00 or 11	b00	b00-b11	
PRT-09	Restart number of attempts	0	0-9	
DRV	Drive Group			
DRV01	Cmd Frequency: set by the keypad	Hz	Low/High Freq	
DRV02	Keypad - VFD Run Direction: 0= Reverse ; 1 = Forward	Fwd	Fwd/Rev	
DRV03	Accel Time in seconds (default values change on larger HP units)	20.0	0.0-600.0	
DRV04	Decel Time in seconds (default values change on larger HP units)	30.0	0.0-600.0	
DRV06	Command Source: 0 = Keypad; 1 = FX/RX1; 2 = FX/RX2; 3 = Int 485; 4 = Field bus	1	0-5	
DRV07	Frequency Setting Method: 0 = Keypad; 2 = V1; 4 = V2; 5 = I2; 6 = Int485; 8 = FldBus	0	0-11	
DRV09	Control Mode: 0 = V/F; 1 = Slip Comp; 2= Resv; 3 = IM Sensorless; 4 = PM Sensorless	0	0-4	
DRV14	Motor HP size / capacity		.5-800	
DRV15	Torque Boost: 0 = Manual ; 1 = Auto 1 ; 2 = Auto 2	0	0-2	
DRV18	Base Frequency: VFD output frequency when running at rated voltage	60.00	30-400hz	
DRV19	Start frequency: frequency VFD starts voltage output	0.50	0.01-10.00hz	
DRV20	Maximum Frequency in Hz: set upper & lower frequency limits	60.00	4.00-500.00Hz	
DRV21	Displayed units: Hz/RPM Select: 0=Hz Display and 1 = RPM Display	0	0-1	
DRV30	kW/HP Unit Selection: 0 = kW ; 1 = HP	1	0-1	
BAS	Basic Group			
BAS07	V/F Pattern: 0 = Linear; 1 = Square; 2 = User V/F; 3 = Square 2	0	0-3	
BAS09	Time scale for Acc/Dec Ramps: 0 = 0.01 sec ; 1 = 0.1 sec ; 2 = 1 sec	0	0-2	
BAS10	Base frequency: 0 = 60Hz ; 1 = 50Hz (input power freq)	60.00	60/50Hz	
BAS11	Motor pole number (total poles - NOT pole pairs): Ex: 4-pole = 1800rpm motor	4	2~48	
BAS13	Rated Current: Motor nameplate Full Load Amps			
BAS14	Motor No Load Current in Amps (typical value of 20-40% of FLA) 30% of FLA is common			
BAS15	Motor rated voltage		230/460v	
BAS19	VFD AC input power voltage		230/460v	
BAS20	Auto tuning: 0=None; 1=All Rotation; 2= All Static; 3= Rotate Lsigma; 6=Static	0	0~6	

Note: Shaded areas above denote most frequently used parameters

Common Parameters (continued)

Group Name	Description See drive manual for complete configuration capabilities NOTE: Press [ESC] key to escape from a Group	Default Value	Value Range	New Value
ADV	Advanced Group			
ADV01	Acc Pattern: 0=Linear and 1 = S-Curve	0	0-1	
ADV02	Decel Pattern: 0=Linear and 1 = S-Curve	0	0-1	
ADV08	Stop mode: 0 = Decel; 1 = DC Brake; 2 = Free Run; 3 = Resv; 4 = Power braking	0	0-4	
ADV09	Run Prevent: 0 = None; 1 = FWD Prevent; 2 = REV Prevent	0	0-2	
ADV24	Frequency limit: 0= No and 1 = Yes; must enable to set ADV25 & ADV26	0	0-1	
ADV25	Frequency low limit: 0.0 to high limit	0.50	0-400 Hz	
ADV26	Frequency high limit: minimum frequency to maximum frequency	60.00	0.1-400 Hz	
ADV64	Cooling fan control: 0 = During Run; 1 = Always On; 2 = Temp Control	0	0-2	
CON	Control Group			
CON-04	Carrier Frequency Select in kHz	3kHz	1.0-15.0kHz	
IN	Input Terminal Group (most inputs can be set to values 0-55 as needed - details in manual)			
IN65	P1 Define Digital input 1: 0 = None; 1 = FX; 2 = RX; 3 = RST; 4 = Ext Trip; 5 = BX; 6 = Jog	1	0-55	
IN66	P2 Define Digital input 2: 7 = Speed-Low; 8 = Speed-Medium; 9 = Speed-High; 15 = Run Enable	2	0-55	
IN67	P3 Define Digital input 3: 16 = 3-wire; 17 = 2nd Source; 19 = Up; 20 = Down; 22 = UP/DN Clear	5	0-55	
IN68	P4 Define Digital input 4: 25 = Open Loop; 26 = PID Gain 2; 27 = PID Ref Change; 29 = Interlock 1	3	0-55	
IN69	P5 Define Digital input 5: 30 = Interlock 2; 34 = Pre-Excite; 35 = Timer In; 38 = FWD Jog; 39 = REV Jog	7	0-55	
IN70	P6 Define: Digital input 6: 40 = Fire Mode; 43 = Time Event Enable; 44 = Pre-heat; 46 = Pump Clean	8	0-55	
IN71	P7 Define: Digital input 7: 49 = Sleep Wake Change; 50 = PID Step Ref-L; 51 = PID Step Ref-M; 52 = Step-H	9	0-55	
IN87	Digital Inputs: Normally Open / Normally Closed selection: 0 = NO ; 1 = NC; Inputs 1-7	b0000000	b000000-111111	
IN90	Digital Input status: troubleshooting tool: 0 = OFF and 1 = ON (dependent upon NO/ NC contact)	0	0-1	
OUT	Output Terminal Group (most outputs can be set to values 0-58 as needed - details in manual)			
OUT01	AO1 assignment: 0 = Freq; 1 = Out Amps; 2 = Out Volt; 3 = DC Bus; 4 = Out Pwr; 7 = Target Freq	0	0-12	
OUT07	AO2 assignment: 8 = Ramp Freq; 9 = PID Value; 10 = PID Fdk Value; 11= PID Output; 12 = Const %	0	0-12	
OUT31	Relay 1: 0 = None; 1 = FDT1; 5 = OL; 6 = IOL; 7 = Under Load; 9 = Stall; 10 = OV; 11 = UV	23	0~58	
OUT32	Relay 2: 12 = Over heat; 13 = Lost Cmd; 14 = Run; 15 = Stop; 16 = Steady; 20 = Ready; 21 = MMC	14	0~58	
OUT33	Relay 3: 22 = Timer Out; 23 = Trip; 25 = DB Warn % ED; 26 = On/Off Control; 27 = Fire Mode	0	0~58	
OUT34	Relay 4: 28 = Pipe broken; 29 = Damper Err; 30 = Lubrication; 31 = Pump Clean; 32 = Cap warning	0	0~58	
OUT35	Relay 5: 35 = Fan Exchange; 36 = AUTO; 37 = HAND; 38 = TO; 41 = Broken belt; 42 = Brake Cntrl	0	0~58	
OUT36	Q1 Open Collector Output Define: 0 = None (selections same as Relay outputs)	0	0~58	
OUT41	Digital Output status: troubleshooting tool: 0 = OFF and 1 = ON	b0000	b00-11 status	
OUT 52	Digital Output Normally Open / Normally Closed selection: 0 = NO ; 1 = NC; Relays 1-5	b00000	b00000-11111	

Note: Shaded areas above denote most frequently used parameters

Common Parameters (continued)

Group Name	Description See drive manual for complete configuration capabilities NOTE: Press [ESC] key to escape from a Group	Default Value	Value Range	New Value
COM	Communication Group			
AP	Application Group			
AP2-15	Pump Clean Mode 1; 0 = None; 1 = DI Dependent; 2 = Output Power; 3 = Output current	0	0-3	
AP2-16	Pump Clean Mode 2; 0 = None; 1 = Start; 2 = Stop; 3 = Start & Stop	0	0-3	
AP2-38	Decel Valve Freq: in Hertz	40.00	Low/High Freq	
AP2-39	Decel Valve Time: in seconds	0.0	6000.0	
AP3	Configures the time event related features: See manual		AP03 1-87	
PRT	Protection Group			
PRT04	Load Duty: 0 = Normal Duty; 1 = Heavy Duty	1	0-1	
PRT05	Input/output open phase protection: Bit low = Off ; Bit High = ON (see manual)	0	0-1	
PRT06	Open-phase input voltage band: adjustable (see manual)	40	1-100v	
PRT08	Select start at trip reset: Set Bit 00 or 11 (Caution - VFD may start automatically when enabled)	b00	b00-b11	
PRT09	Retry Number: Auto Restart number of attempts	0	0-10	
PRT10	Auto Restart delay time in seconds	0.0	0-60	
PRT20	Overload Trip Select: 0 = None; 1 = Free-Run; 2 = Decel	0	0-2	
PRT21	Overload Trip Level	120	30-150%	
PRT22	Overload Trip Time	60.0 sec	0-60.0 sec	
CNF	LCD Keypad Operations: Control Function Group:			
CNF10	VFD Software Version			
CNF20	Any Time Parameters: User display para - 0= Freq ; 1=Speed; 2=Out Curr; 6=DC Bus	0	0-19	
CNF21	Monitor Mode: user defined monitor items from CNF-21 - CNF-23	0	0-19	
CNF24	Monitor Mode: Enable to activate CNF-20-23: 0 = Disable ; 1 = Enable	0	0-1	
CNF40	Factory Default reset: 0 = No ; 1 = All Groups	0	0-15	
CNF41	Changed Parameter: 0 = Display all parameter ; 1 = Display only changed parameters	0	0-1	
CNF43	Macro Selection: 0=Basic (recommended for true factory default)	0	0-7	
CNF44	Erase trip history: 0 = No ; 1 = Yes	0	0-1	
CNF46	Parameter read: 1 = read (LCD Keypad)	0	0-1	
CNF47	Parameter write: 1 = write: VFD'S must be same FW Rev (LCD Keypad)	0	0-1	

Note: Shaded areas above denote most frequently used parameters