



HF430 AC Drive Pocket Guide



SUMITOMO
MACHINERY CORPORATION OF AMERICA

Safety

Refer to the Safety section in the HF430 drive instruction manual for full details. As a minimum, observe the following.

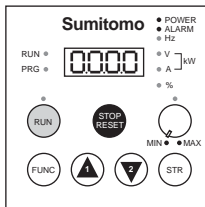
 DANGER	HAZARD OF ELECTRICAL SHOCK OR BURN. DISCONNECT INCOMING POWER BEFORE WORKING ON THIS CONTROL.
 DANGER	DC BUS CAPACITORS MAINTAIN A DANGEROUS VOLTAGE LEVEL EVEN AFTER POWER IS OFF. DO NOT WORK ON THIS DRIVE UNTIL THE POWER LED IS OFF.



**Wire-way Cover Removed
Exposing Power Terminals
& Control Terminals**

IMPORTANT: Insure that the drive and motor are solidly grounded using the provided ground terminals.

Digital Operator Panel (DOP)



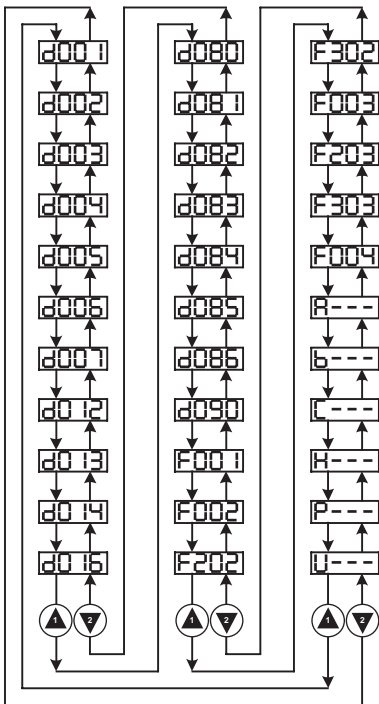
7-Segment Display Shows drive operation and parameter values.

LEDs: **Run** – Drive is running, **PRG** – Drive is in program mode, **Power** – Bus capacitors are charged, **Hz, V, A, %** – indicate display units, **Run Key** – local Run key controls drive operation, **Speed Pot** – local speed potentiometer controls output frequency. **Keys:** **Run** – Starts the drive when local control is selected (A02 = 02), **Stop/Reset** – Stops the drive and resets the drive if a trip occurs, **FUNC** (Function) – Accesses the program mode to view and/or modify drive parameters, **UP (1)** – increases a numeric value or scrolls up through the parameter list, **DOWN (2)** – decreases a numeric value or scrolls down through the parameter list, **STR (Store)** – Stores a new parameter value and returns to the parameter number (note: press FUNC to leave a parameter value without making a change). **Speed Pot** Controls output frequency when parameter A01 = 00. (Standard on 5 HP and under, optional on all others).

Setting HF430 Parameters

HF430 AC drives provide many parameters that can be used to customize a drive's performance. Review the diagram below.

Parameter Access Sequence



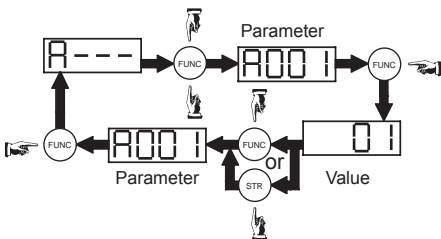
Parameter Listing

Display and Basic Parameters

Disp	Function	Units
Display Parameters (Read Only)		
D001	Display Frequency	Hz
D002	Display Current	A
D003	Rotation Direction	-
D004	PID Feedback	-
D005	Digital Input Monitor	-
D006	Digital Output Monitor	-
D007	Custom Speed View	-
D012	Torque	%
D013	Output Voltage	VAC
D014	Input Power	KW
D016	Run Time	H
D017	Power On Time	H
D080	Fault Trip Counter	-
D081	Fault History 1	-
D082	Fault History 2	-
D083	Fault History 3	-
D084	Fault History 4	-
D085	Fault History 5	-
D086	Fault History 6	-
D090	Warning	-
Basic Parameters (Read/Write)		
F001	Set Frequency	0.0
F002	Acceleration Time 1	30.0 S
F202	B Mode Accel Time 1	30.0 S
F302	C Mode Accel Time 1	30.0 S
F003	Deceleration Time 1	30.0 S
F203	B Mode Decel Time 1	30.0 S
F303	C Mode Decel Time 1	30.0 S
F004	Rotation Direction 00: FWD, 01: REV	00 (FWD)

Extended Parameter Access		
A---	Extended Group A	N/A
B---	Extended Group B	N/A
C---	Extended Group C	N/A
H---	Extended Group H	N/A
P---	Extended Group P	N/A

Extended Parameter Access Diagram



A – Group Parameters

Disp	Function	USA Default
A001	Frequency Command 00: Local Pot, 01: Terminals, 02: DOP, 03: RS485, 04: Option 1, 05: Option 2	01
A002	Run Command 01: Terminals, 02: DOP, 03: RS485, 04: Option 1, 05: Option 2	01
A003	Base Frequency	60 Hz
A203	B Mode Base Frequency	60 Hz
A303	C Mode Base Frequency	60 Hz

A – Group Parameters (continued)

Disp	Function	USA Default
A004	Maximum Frequency	60 Hz
A204	B Mode Maximum Frequency	60 Hz
A304	C Mode Maximum Frequency	60 Hz
A005	AUT Terminal Function 00: Switch VRF & IRF 01: Switch VRF & VRF2	00
A006	VRF2 Function 00: VRF2 is Only Freq. Cmd 01: Sum (positive only) 02: Sum (positive or negative)	00
A011	External Freq Setting Start	0 Hz
A012	External Freq Setting End	0 Hz
A013	External Freq Set Start Rate	0 %
A014	External Freq End Rate	100 %
A015	External Freq Start Pattern 00: Start Freq, 01: 0 Hz	01
A016	Analog In Sampling Rate	8
A019	Preset Speed Select Mode 00: Binary (1 – 4 inputs) 01: Individual (1 – 7 inputs)	00
A020	Preset Frequency 0	10.0 Hz
A220	B Mode Preset Frequency 0	10.0 Hz
A320	C Mode Preset Frequency 0	10.0 Hz
A021 - A035	Preset Frequency 1 - 15	Varies
A038	Jog Frequency	5.00 Hz
A039	Jog Stop Mode Jog Ignored After FR or RR 00: Coast, 01: Ramp, 02: DC Braking Jog Accepted After FR or RR 03: Coast, 04: Ramp 05: DC Braking	00

Shaded parameters can be changed while the drive is running.

A – Group Parameters (continued)

Disp	Function	USA Default
A041	Torque Boost Method 00: Manual, 01: Automatic	00
A241	B Mode Torq. Boost Method 00: Manual, 01: Automatic	00
A042	Torque Boost Value	1.0 %
A242	B Mode Torque Boost Value	1.0 %
A342	C Mode Torque Boost Value	1.0 %
A043	Torque Boost Freq	0.8 %
A243	B Mode Torque Boost Freq	0.8 %
A343	C Mode Torque Boost Freq	0.8 %
A044	Control Mode 00: V/F Const. Torque 01: V/F Variable Torque 02: V/F Custom 03: Sensorless Vector 04: 0 Hz Sensorless Vector 05: Closed Loop Vector (option)	00
A244	B Mode Control Mode (Choices 00 – 04 above)	00
A344	C Mode Control Mode (Choices 00 – 01 above)	00
A045	V/F Voltage Gain	100 %
A051	DC Braking Action 00: Disabled, 01: Enabled	00
A052	DC Braking Frequency	0.5 Hz
A053	DC Braking Delay Time	0.0 S
A054	DC Braking Power	0 %
A055	DC Braking On Time	0.0 S
A056	DC Braking Latch 00: Enabled, 01: Disabled	01
A057	DC Brake On Start Power	0 %
A058	DC Brake On Start On Time	0.0 S
A059	DC Braking Carrier Freq.	5.0 kHz

Shaded parameters can be modified while the drive is running.

A – Group Parameters (continued)

Disp	Function	USA Default
A061	Frequency Upper Limit	0.0 Hz
A261	B Mode Freq. Upper Limit	0.0 Hz
A062	Frequency Lower Limit	0.0 Hz
A262	B Mode Freq. Lower Limit	0.0 Hz
A063	Jump Frequency 1	0.0 Hz
A064	Jump Freq 1 Width	0.5 Hz
A065	Jump Frequency 2	0.0 Hz
A066	Jump Freq 2 Width	0.5 Hz
A067	Jump Frequency 3	0.0 Hz
A068	Jump Freq 3 Width	0.5 Hz
A069	Accel Stop Frequency	0.00 Hz
A070	Accel Stop Time	0.0 S
A071	PID Control Action 00: Disabled, 01: Enabled	00
A072	PID Proportional Gain	1.0
A073	PID Integral Gain	1.0
A074	PID Derivative Gain	0.0
A075	PID Display Multiplier	1.00
A076	Feedback Terminal Select 00: IRF, 01: VRF	00
A081	Auto Voltage Regulation 00: Always Active 01: Always Inactive 02: Active Except During Decel	00
A082	AVR Motor Voltage Set	230/460
A085	Operation Mode 00: Normal, 01: Energy Saving 02: Fuzzy	00
A086	Energy Saving Response	50.0
A092	Acceleration Time 2	30.0 S
A292	B Mode Acceleration Time 2	30.0 S
A392	C Mode Acceleration Time 2	30.0 S
A093	Deceleration Time 2	30.0 S
A293	B Mode Deceleration Time 2	30.0 S
A393	C Mode Deceleration Time 2	30.0 S

A – Group Parameters (continued)

Disp	Function	USA Default
A094	Accel 1 / 2 Select 00: Terminal, 01: Frequency	00
A294	B Mode Accel 1 / 2 Select 00: Terminal, 01: Frequency	00
A095	Accel 1 / 2 Shift Freq	0.00 Hz
A295	B Mode Accel 1 / 2 Shift Freq	0.00 Hz
A096	Decel 1 / 2 Shift Freq	0.00 Hz
A296	B Mode Decel 1 / 2 Shift Freq	0.00 Hz
A097	Accel Pattern Select 00: Linear, 01: S-Curve, 02: U-Curve, 03: inverted U	00
A098	Decel Pattern Select 00: Linear, 01: S-Curve, 02: U-Curve, 03: inverted U	00
A101	IRF 4 mA Frequency	0.00 Hz
A102	IRF 20 mA Frequency	0.00 Hz
A103	IRF Offset	20 %
A104	IRF Span	100 %
A105	IRF Start Freq. Select 00: A011 Value, 01: 0 Hz	01
A111	VRF2 0V Frequency	0.00 Hz
A112	VRF2 10V Frequency	0.00 Hz
A113	VRF2 Start	-100 %
A114	VRF2 End	100 %
A131	Accel Curve Constant (01-10)	02
A132	Decel Curve Constant (01-10)	02

B – Group Parameters

Disp	Function	USA Default
B001	Restart Mode Select 00: No Restart (Alarm Only) 01: Restart at Zero Hz 02: Catch-on-the-Fly 03: Same as 02 & Decel to Stop	00

B – Group Parameters (continued)

Disp	Function	USA Default
B002	UV Trip Time Delay	1.0 S
B003	Retry Delay Time	1.0 S
B004	UV Trip During Stop 00: No Trip or Alarm 01: Trip and Alarm 02: No Trip/Alarm at Stop	00
B005	UV Trip Retry Count 00: Retry 16 Times 01: Unlimited Retrys	00
B006	Single-Phase Protection 00: Disabled, 01: Enabled (trip)	00
B007	Minimum Match Freq.	0.00 Hz
B012	Overload Setting	Rated A
B212	B Mode Overload Setting	Rated A
B312	C Mode Overload Setting	Rated A
B013	Overload Characteristic 00: Standard Duty Motor (2:1) 01: Inverter Duty Motor (10:1) 02: Custom	01
B213	B Mode Overload Char. (see B013)	01
B313	C Mode Overload Char. (see B013)	01
B015	Custom OL Freq. 1	0 Hz
B016	Custom OL Current 1	0.0 A
B017	Custom OL Freq. 2	0 Hz
B018	Custom OL Current 2	0.0 A
B019	Custom OL Freq. 3	0 Hz
B020	Custom OL Current 3	0.0 A
B021	Stall Prevention Mode 00: Disabled 01: Accel & Constant Speed 02: Accel Only 03: Accel, Const Spd., Regen	03
B022	Stall Prevention Level	Rated A X 1.50

B – Group Parameters (continued)

Disp	Function	USA Default
B023	Stall Prevention Decel Rate	1.00
B024	Stall Prevention Mode 2 00: Disabled 01: Accel & Constant Speed 02: Accel Only 03: Accel, Const Spd., Regen	03
B025	Stall Prevention Level 2	Rated A X 1.50
B026	Stall Prevention Decel Rate 2	1.00
B031	Software Lock Mode When SFT Terminal is ON 00: Locked Except B031 01: Locked Except B031, F001 Independent of SFT Terminal 02: Locked Except B31 03: Locked Except B31 & F01 10: Change While Operating	01
B034	Time Activate Level	0 H
B035	Direction Restriction 00: No Restriction 01: FWD Only, 02: REV Only	00
B036	Reduced Voltage Start 00: Short to 06: Long	06
B037	Display Data Select (see HF430 Instruction Manual)	00
B040	Torque Limit Select 00: 4-Quadrant 01: Terminal Switching 02: Analog Input 03: Option Board 1 04: Option Board 2	00
B041	Torque Lim Fwd Driving	150 %
B042	Torque Lim Rev Regen	150 %
B043	Torque Lim Rev Driving	150 %
B044	Torque Lim Fwd Regen	150 %

Shaded parameters can be modified while the drive is running.

B – Group Parameters (continued)

Disp	Function	USA Default
B045	Torque Lim Accel/Decel Stop 00: Disabled 01: Enabled	00
B046	Reverse Prevention 00: Disabled (Reverse OK) 01: Enabled (No Reverse)	00
B050	UV Decel Select 00: Disabled, 01: Enabled	00
B051	UV Decel Start Voltage	0.0 VDC
B052	UV Decel Stop Voltage	0.0 VDC
B053	UV Decel Time	1.00 S
B054	UV Decel Frequency Width	0.00 Hz
B080	AMV Adjust	180
B081	FRQ Adjust	60
B082	Start Frequency Setting	0.5 Hz
B083	Carrier Frequency	5 kHz
B084	Data Reset Mode 00: Trip History Clear 01: Restore Factory Defaults * 02: Trip History and Data Reset *	00
B085	Data Set Select * 00: Japan Default Values 01: Europe Default Values 02: USA Default Values	00
B086	Custom Display Factor	1.0
B087	Stop Key Function 00: Always Active 01: Disabled for Terminal Control	00
B088	Free Run Stop Cancel 00: Restart From 0 Hz 01: Catch-on-the-Fly	00
B090	Dynamic Braking Duty Cycle	0.0 %
B091	Stopping Mode 00: Decel, 01: Coast	00

See factory reset procedure on p16.

B – Group Parameters (continued)

Disp	Function	USA Default
B092	Cooling Fan Control 00: Always On 01: Drive Run (power up) + 5 min	00
B095	DB Operating Mode 00: DB Disabled 01: DB During Run Only 02: DB Run and Stopping	00
B096	DB On Voltage Level (330 – 380 or 660 – 760)	360/720
B098	Motor Thermistor Mode 00: Disabled 01: PTC Thermistor 02: NTC Thermistor	00
B099	Thermistor Trip Level	3000 Ω
B100	Custom V/F Freq. 1	0 Hz
B101	Custom V/F Voltage 1	0.0 V
B102	Custom V/F Freq. 2	0 Hz
B103	Custom V/F Voltage 2	0.0 V
B104	Custom V/F Freq. 3	0 Hz
B105	Custom V/F Voltage 3	0.0 V
B106	Custom V/F Freq. 4	0 Hz
B107	Custom V/F Voltage 4	0.0 V
B108	Custom V/F Freq. 5	0 Hz
B109	Custom V/F Voltage 5	0.0 V
B110	Custom V/F Freq. 6	0 Hz
B111	Custom V/F Voltage 6	0.0 V
B112	Custom V/F Freq. 7	0 Hz
B113	Custom V/F Voltage 7	0.0 V

B – Group Parameters (continued)

Disp	Function	USA Default
B120	Motor Brake Control 00: Disabled, 01: Enabled	00
B121	Brake Release Delay	0.00 S
B122	Accel Wait Time	0.00 S
B123	Stop Wait Time	0.00 S
B124	Brake Confirm Wait Time	0.00 S
B125	Brake Release Frequency	0.00 Hz
B126	Brake Release Current	Rated A

Factory reset procedure is shown below.

Step 1: Set B085 & B084 as required.

Step 2: simultaneously press & hold:



If the display changes during the above step, the keys were not pressed together. Try again.

Step 3: While holding the keys above, press and release the Stop key.



When the segments begin rotating release all keys.

C – Group Parameters

Disp	Function	USA Default
C001	RST Terminal Function 01: RR (Reverse Run), 02: DFL (Multi-speed 1), 03: DFM (Multi-speed 2), 04: DFH (Multi-speed 3) 05: DFHH (Multi-speed 4) 06: JOG (Jog Mode Select) 07: DCB (Ext. DC Brake) 08: BMD (B Mode) 09: AD2 (Accel/Decel 2) 11: MBS (coast), 12: ES (External Trip), 13: USP (Restart Prevent) 14: CS (Motor Drive/Line switching) 15: SFT (Software Lock) 16: AUT (Analog In Select) 17: CMD (C Mode) 18: RST (Reset Fault) 20: STA (3-Wire Start) 21: STP (3-Wire Stop) 22: F/R (3-Wire Fwd/Rev) 23: PID (PID Mode On/Off) 24: PIDC (PID Reset) 26: CAS (Control Gain Sw.) 27: UP (Increase Freq.) 28: DWN (Decrease Freq.) 29: UDC (UP/DWN Clear) 31: OPE (Local/Remote) 32: SF1 (Multi-speed Bit 1) 33: SF2 (Bit 2), 34: SF3 (Bit 3) 35: SF4 (Bit 4), 36: SF5 (Bit 5) 37: SF6 (Bit 6), 38: SF7 (Bit 7) 39: OLR (OL Limit Change) 40: TL (Trq Limit Select) 41: TRQ1 (TL Switch 1) 42: TRQ2 (TL Switch 2) 43: PPI (P/PI Switch) 44: BOK (Brake Confirm) 45: ORT (Shaft Orient) 46: LAC (LAD Cancel) 47: PCLR (Position Clear) 48: STAT (Pulse Permit) no: NO (No Function)	18

* Encoder feedback board must be installed.

C – Group Parameters (continued)

C002	ES Terminal Function	12
C003	JOG Terminal Function	06
C004	MBS Terminal Function	11
C005	AD2 Terminal Function	09
C006	DFM Terminal Function	13
C007	DFL Terminal Function	02
C008	RR Terminal Function	01
C011	RST NO/NC Select 00: Normally Open (NO) 01: Normally Closed (NC)	00 (NO)
C012	ES NO/NC Select	00 (NO)
C013	JOG NO/NC Select	00 (NO)
C014	MBS NO/NC Select	00 (NO)
C015	AD2 NO/NC Select	00 (NO)
C016	DFM NO/NC Select	01 (NC)
C017	DFL NO/NC Select	00 (NO)
C018	RR NO/NC Select	00 (NO)
C019	FR NO/NC Select	00 (NO)
C021	UPF Terminal Function 00: DRV (Drive Running) 01: UPF1 (Fo = Set Freq.) 02: UPF2 (Fo > Set Freq.) 03: OL (Overload Imminent) 04: OD (PID Out Deviation) 05: AL (Fault Alarm) 06: UPF3 (Fo=C042/C043) 07: OTQ (Over Torque) 08: IP (Input Power Fail) 09: UV (Under Voltage) 10: TRQ (Torque Limit) 11: RNT (Run Time Over) 12: ONT (On Time Over) 13: THM (Overload Alert) 19: BRK (Brake Release) 20: BER (Brake Error) 21: ZS (Zero Speed Detect) 22: DSE (Speed Error) 23: POK (Position Comp.) 24: UPF4 (Fo=C045/C046) 25: UPF5 (Fo> C045/C046) 26: OL2 (OL Alert 2)	01

C – Group Parameters (continued)

Disp	Function	USA Default
C022	DRV Terminal Function (See C21 for selection)	00
C023	X1 Terminal Function (See C21 for selection)	13
C024	X2 Terminal Function (See C21 for selection)	07
C025	X3 Terminal Function (See C21 for selection)	08
C026	Relay Function (See C21 for selection)	05
C027	FRQ Terminal Function 00: Output Frequency 01: Output Current 02: Output Torque 03: Digital Output Freq. 04: Output Voltage 05: Input Power 06: Overload Rate 07: LAD Frequency	00
C028	AMV (0-10 VDC) Function 00: Output Frequency 01: Output Current 02: Output Torque 04: Output Voltage 05: Input Power 06: Overload Rate 07: LAD Frequency	00
C029	AMI (4-20 mA) Function (see C028)	00
C031	UPF NO/NC Select 00: Normally Open (NO) 01: Normally Closed (NC)	00 (NO)
C032	DRV NO/NC Select	00 (NO)
C033	X1 NO/NC Select	00 (NO)
C034	X2 NO/NC Select	00 (NO)
C035	X3 NO/NC Select	00 (NO)

C – Group Parameters (continued)

Disp	Function	USA Default
C036	Relay NO/NC Select	01 (NC)
C040	Current Detect Mode 00: Accel/Decel/Const. Spd 01: Constant Speed Only	00
C041	Current Detect Level	Rated A
C042	Accel Arrival Frequency	0.0 Hz
C043	Decel Arrival Frequency	0.0 Hz
C044	PID Deviation Level	3.0
C045	Accel Arrival Frequency 2	0.0 Hz
C046	Decel Arrival Frequency 2	0.0 Hz
C055	Over Torque FWD Driving	100 %
C056	Over Torque REV Regen	100 %
C057	Over Torque REV Driving	100 %
C058	Over Torque FWD Regen	100 %
C061	Overload Alert Level	85 %
C062	Alarm Code Select 00: Disabled 01: 3-Bit (UPF, DRV, X1) 02: 4-Bit (above + X2)	00
C063	Zero Speed Detect Level	0.00 Hz
C070	Data Command Source 02: Digital Operator Panel 03: RS485 Port 04: Option Board 1 05: Option Board 2	02
C071	Serial Port Speed 03: 2400 bps, 04: 4800 bps, 05: 9600 bps, 06: 19200 bps	
C072	Drive Station Number (1-32)	1
C073	Data Bits (7 or 8)	7
C074	Parity 00: No Parity, 01: Even Parity, 02: Odd Parity	00
C075	Stop Bits (1 or 2)	1
C078	Comm Loss Timer (0-1000 ms)	0 ms

C – Group Parameters (continued)

Disp	Function	USA Default
C081	VRF Calibration	Factory
C082	IRF Calibration	Factory
C084	VRF2 Calibration	Factory
C085	Thermistor Calibration	105.0
C086	AMV Offset (0-10.0)	0.0 V
C087	AMI Adjust (0-255)	80
C088	AMI Offset (0-20.0 mA)	Factory
C091	Debug Mode Select 00: Not Displayed, 01: Displayed	00
C101	Up/Down Select 00: Reset on Starting 01: Keep Last Setting	00
C102	Reset Selection 00: Reset on Leading Edge 01: Reset on Trailing Edge 02: Leading Edge (tripped only)	00
C103	Reset Start Mode 00: Start at Zero Freq. 01: Start w/Freq. Matching	00
C111	Current Detect Level	Rated A
C121	VRF Zero Calibration	Factory
C122	IRF Zero Calibration	Factory
C123	VRF2 Zero Calibration	Factory

H – Group Parameters

Disp	Function	Factory Value
H001	Autotuning Mode Select 00: No Autotuning 01: Autotuning without Rotation 02: Autotuning with Rotation	00

Shaded parameters can be changed while the drive is running.

H – Group Parameters (continued)

Disp	Function	USA Default
H002	Motor Constant Select 00: Sumitomo Standard Motor 01: Sumitomo AF Motor 02: Sumitomo Exp. Proof (Japan) 03: Autotuning Data 04: After Each Run Cycle	0
H202	B Mode Mtr Const. (see H002)	0
H003	Motor Power Rating (0.2 – 75) kW	Drive Rated
H203	B Mode Motor Power Rating (0.2 – 75) kW	Drive Rated
H004	Motor Poles (2, 4, 6, 8)	4
H204	B Mode Motor Poles (2,4,6,8)	4
H005	Speed Reg. Response	1.590
H205	B Mode Speed Reg. Resp.	1.590
H006	Stability Factor	100
H206	B Mode Stability Factor	100
H306	C Mode Stability Factor	100
H020	Motor R1 (Stator Resistance)	Typical
H220	B Mode Motor R1	Typical
H021	Motor R2 (Rotor Resistance)	Typical
H221	B Mode Motor R2	Typical
H022	Motor Inductance	Typical
H222	B Mode Motor Inductance	Typical
H023	No Load Current	Typical
H223	B Mode No Load Current	Typical
H024	Motor Inertia	Typical
H224	B Mode Motor Inertia	Typical
H030	Autotune R1	Typical
H230	B Mode Autotune R1	Typical
H031	Autotune R2	Typical
H231	B Mode Autotune R2	Typical
H032	Autotune Inductance	Typical
H232	B Mode Autotune Inductance	Typical

H – Group Parameters (continued)

Disp	Function	USA Default
H033	Autotune No Load Current	Typical
H233	B Mode Autotune No Load	Typical
H034	Autotune Inertia	Typical
H234	B Mode Autotune Inertia	Typical
H050	PI Proportional Gain	100.0
H250	B Mode PI Proportional Gain	100.0
H051	PI Integral Gain	100.0
H251	B Mode PI Integral Gain	100.0
H052	P Control Proportional Gain	1.00
H252	B Mode P Control Prop. Gain	1.00
H060	0 Hz SLV Limiter	100 %
H260	B Mode 0 Hz SLV Limiter	100 %
H070	PI Proportional Gain CAS ¹ on	100.0
H071	PI Integral Gain CAS ¹ on	100.0
H072	P Control Prop. Gain CAS ¹ on	100.0

¹ CAS (see Digital Input functions)

P – Group Parameters

Disp	Function	Factory Value
P001	Option 1 Error Action 00: Trip, 01: Continue Running	00
P002	Option 2 Error Action 00: Trip, 01: Continue Running	00
P010	Feedback Enable 00: Disabled, 01: Enabled	00
P011	Encoder Pulse Count (128 – 65000)	1024
P012	Speed/Position Select 00: Speed Regulated 01: Position Regulated	00

P – Group Parameters

Disp	Function	USA Default
P013	Pulse Train Mode 00: A-B 90° Phase Shifted 01: Single with Fwd/Rev Signal 02: Separate Fwd & Rev	00
P014	Orient Stop Position (0-4095)	0
P015	Orient Speed (0-120.0)	5.00 Hz
P016	Orient Direction 00: Forward, 01: Reverse	00
P017	Orient Complete Range	5
P018	Orient Complete Delay	0.00 S
P019	Electronic Gear Select 00: Feedback, 01: Reference	00
P020	Electronic Gear Numerator	1
P021	Electronic Gear Denominator	1
P022	Position Feed Forward Gain	0.00
P023	Position Loop Gain	0.50
P025	Secondary Res. Compensate 00: Disabled, 01: Enabled	00
P026	Over Speed Detect	135 %
P027	Speed Error Detect	7.5 Hz
P031	Digital Input Option Select 00: Operator, 01: Option 1, 02: Option 2	00
P032	Orient Stop Select 00: Operator, 01: Option 1, 02: Option 2	00

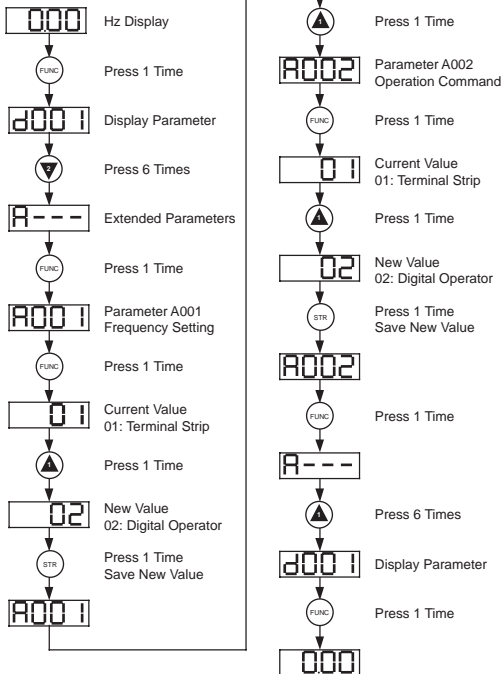
An optional encoder feedback board must be installed and the motor must be equipped with an encoder to use these parameters.

U – Group Parameters

Refer to the HF430 Instruction Manual for details on using U-Group parameters.

Setting Local Control Mode

Default Power-up



Protective Functions

Trip	Cause	Disp.
Over-current	Output short circuit, sudden heavy load or jam. At Constant Speed During Deceleration During Acceleration Others	E01 E02 E03 E04
Overload	Motor current is above the rating for a period of time.	E05
DBR OL	The DB resistor duty cycle is too high	E06
Over Voltage	The DC bus voltage has exceeded a preset level.	E07
EEPROM Error	Possible severe electrical noise or temperature too high.	E08
Under Voltage	The DC bus voltage has dropped below a preset level.	E09
CT Error	Electrical noise or problem with Current Transformer	E10
CPU Err.	Problem with the drive CPU.	E11
External Trip	A programmable terminal set for External Trip is activated.	E12
USP	Power was applied while FR or RR was active.	E13
Ground Fault	Excessive current is flowing between an inverter output terminal and ground. (For Equipment Protection Only)	E14
Input Over Volt	Input voltage is over a preset limit for 60 seconds.	E15
Temp. Pwr Loss	Power loss lasting for less than 15 ms which will allow restart.	E16
Thermal	Inverter module is over the allowed maximum.	E21
Gate Array Err.	Communication problem between CPU and gate array.	E23
Phase Loss	One of the input phases has been lost.	E24

Protective Functions (continued)

Trip	Cause	Disp.
Overload 2	An overload has occurred when the output freq. is under 0.2 Hz.	E25
IGBT Err.	An instantaneous over current (short) is detected on the output terminals.	E30
PTC Error	If a PTC thermistor is used to protect the motor, the temperature (resistance) is too high.	E35
Abnormal Brake	A problem in sequencing a motor brake	E36
Option 1	An error on option board 1	E60- E69
Option 2	An error on option board 2	E70- E79
UV Wait	The inverter is waiting for auto restart after an under voltage trip	----

Additional Fault Code Information

Many of the fault codes have additional information that will be presented in the form of a decimal point and an additional number. Refer to the following table for details.

Example:



No.	Meaning	No.	Meaning
0	During Reset	5	See Manual
1	During Stop	6	During Start
2	During Decel	7	During DB
3	At Const. Speed	8	During Overload Restriction
4	During Accel		

Drive Setup Record

Drive Serial No. _____

Machine or Application Designation

Modified Parameters (if any)

(Enter any changes from factory defaults)

Parameter	Value	Parameter	Value



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