

## KBDA PROGRAMING PARAMETERS WITH EXTERNAL CONTROLS

### FUNCTION GROUP 0 – MOTOR AND DRIVE PARAMETERS

#### Function

No. Description Range/Code

Factory Setting

Recommended Setting when change indicated

0.00\* Rated Motor Frequency (Hz)

**0000:** 60 Hz

**0001:** 50 Hz

**0002:** Special (Set by Function No. 0.05)

**0000**

**0002**

0.01\* Motor Nameplate Current (Amps) — (1)

0.02\* Motor Type

**0000:** Inverter Duty, TEFC

**0001:** External Fan Cooled

**0000**

0.03\* Torque Mode

**0000:** Constant Torque (Machinery)

**0001:** Variable Torque (HVAC)

**0000**

0.04\* GFCI Operation(2)

**0000:** GFCI Operation Disabled

**0001:** GFCI Operation with Standard GFCI

**0002:** GFCI Operation with Sensitive GFCI

**0000**

0.05\* Motor Frequency (Hz)(3), (4) **30 – 240**

**60**

**90**

0.06\* Motor Nameplate Voltage (% Drive Output)(5) **0 – 100.0**

100

### FUNCTION GROUP 1 – RUN/STOP MODE

1.00\* Run/Stop-Forward/Reverse Control

**0000:** Keypad

**0001:** External Contacts(1)

**0002:** Communication(2)

**0000**

**0001 for external switch contacts/relays**

1.01\* Forward/Reverse Control

**0000:** Instant Reverse

**0001:** Stop Command Must be Given

Prior to Reverse Command

**0002:** Reverse Command Disabled

**0003:** Forward Command Disabled

**0000**

1.02\* Motor Direction

**0000:** Forward

**0001:** Reverse

**0000**

1.03\* Start Command

**0000:** Accelerates to Last Set Frequency

**0001:** Accelerates to Lower Frequency Limit

(See Function No. 3.01)

**0000**

1.04\* Start Mode

**0000:** Spin Start

**0001:** Stop Before Restart

**0000**

1.05\* Auto/Manual Start Mode

**0000:** Manual Start Mode

**0001:** Manual Start with Ride-Through

(Set by Function No. 1.06)

**0002:** Auto Start After Undervoltage Fault Clears

**0003:** Auto Start All Faults (Except Short Circuit Fault)(3)

**0004:** Auto Start All Faults

(Except I2t, I•t, and Short Circuit Faults)

**0000**

1.06\* Ride-Through Time (Seconds) **0.0 – 2.0**

**0.5**

1.07\* Number of Restart Attempts **0 – 10**

**3**

1.08\* Auto Start Delay Time (Seconds) **0 – 240**

**0**

1.09\* Stop Mode

**0000:** Regenerate-to-Stop

**0001:** Coast-to-Stop

**0002:** Regeneration with Injection Brake-to-Stop

(Set by Function Nos. 1.11 – 1.13)

**0000**

1.10\* Holding Torque in Stop Mode (%) **0 – 10**

**1**

**0**

1.11 Injection Brake Start Frequency (Hz) **0.00 – 240.0**

**0.00**

1.12 Injection Brake Level (%) **0 – 30**

**0 Start with this value first, if braking is not quick enough than change as follows**

**15 Try to increase to improve braking time**

1.13 Injection Brake Time (Seconds) **0.0 – 25.5**

**0.0 Start with this value first, if braking is not quick enough than change as follows**

**1.0 Try 1.0 second or 1.5, this is the time the injection braking time is applied.**

## **FUNCTION GROUP 2 – FREQUENCY CONTROL**

**No. Description Code**

**Factory**

**Setting**

2.00\* Frequency Control

**0000:** Keypad

**0001:** Built-In Potentiometer

**0002:** Analog Signal 1(1)

**0003:** Analog Signal 2(1)

**0004:** Communication(2)

**0005:** Up/Down Using MFITs(1)

**0000 Should be based on the source of the speed control**

**0002 (Analog Signal 1)**

2.01\* Up Key, Down Key Operation Mode

**0000:** Frequency Change Requires Enter Command

**0001:** Direct Frequency Change

**0002:** Keypad Disable

0000

2.02\* Jog-Local/Remote(3), (4)

0000: Jog Enabled

0001: Jog Disabled

0002: Jog Disabled; Local/Remote Enabled  
(Keypad Operation)(1)

0003: Jog Disabled; Local/Remote Enabled  
(Built-In Speed Pot Operation)(1)

0000

### FUNCTION GROUP 3 – DRIVE OPERATING PARAMETERS

3.00 Stored Set Frequency (Hz) 0.00 – 240.0

5.00

3.01 Lower Frequency Limit (Hz) 0.00 – 240.0

0.00

3.02 Upper Frequency Limit (Hz)(1) 0.00 – 240.0

60.0

90.0

3.03 Accel Time (Seconds)(2) 0.1 – 180.0

1.5

3.04 Decel Time (Seconds)(2) 0.3 – 180.0

1.5

3.05 S-Curve Time Accel (Seconds)(2) 0.0 – 30.0

0.0

3.06 S-Curve Time Decel (Seconds)(2) 0.0 – 30.0

0.0

3.07\* Skip Frequency (Hz) 0.00 – 240.0

0.00

3.08\* Skip Frequency Bandwidth ( $\pm$  Hz) 0.00 – 2.00 0.00

3.09\* Motor Overload Protection 0000: I<sup>2</sup>t with Current Limit

0001: I•t with Current Limit

0000

3.10\* I<sub>t</sub> with Current Limit Trip Time (Seconds) **1.0 – 20.0**

**6.0**

3.11 Boost Value (%) **0.0 – 28.0**

**7.0**

3.12\* Jog Mode

**0000**: Momentary

**0001**: Latching

**0000**

3.13 Jog Frequency (Hz) **0.00 – 240.0**

**5.00**

3.14 Jog Accel/Decel Time (Seconds) **0.3 – 10.0** 1.0

3.15\* Switching Frequency (kHz)

**0000**: 8

**0001**: 10

**0002**: 12

**0000**

**0001 or 0002 depending on the degree of motor whine**

3.16 Flux Vector Compensation (%) **0.0 – 10.0** 5.0

#### **FUNCTION GROUP 4 – DIGITAL DISPLAY MODES**

4.00 Display Mode

**0000**: Frequency

**0001**: RPM(1)

**0002**: Custom Units

**0000**

**Can also do RPM or scaling per below, if 0002 can scale to RPM which would be the base speed rpm x (Max Hz/60) = maximum RPM**

4.01 Custom Units Significant Digits **0 – 9999** 100

4.02 Custom Units Display

**0000**: Whole Numbers

**0001**: One Decimal Place

**0002**: Two Decimal Places

**0003**: Three Decimal Places

**0000**

4.03 Display in Stop Mode

**0000:** Displays Last Run Setting

**0001:** Displays “StoP”

**0002:** Displays “0000”

**0000**

4.04 Motor Current Display(2), (3) **0000:** Disabled

**0001:** Enabled

**0000**

4.05 Motor Voltage Display(2), (3) **0000:** Disabled

**0001:** Enabled

**0000**

4.06 Bus Voltage Display(2), (3) **0000:** Disabled

**0001:** Enabled

**0000**

## **FUNCTION GROUP 5 – ONBOARD MULTI-FUNCTION OUTPUT RELAY OPERATING MODE**

5.00 Relay Operation Mode

**0000:** Run

**0001:** Fault(1)

**0002:** Target Frequency

(Function No. 5.01  $\pm$  Function No. 5.02)

**0003:** Frequency Threshold Level

(> Function No. 5.01 – Function No. 5.02)(2)

**0004:** Frequency Threshold Level

(< Function No. 5.01 + Function No. 5.02)(3)

**0005:** I<sub>2t</sub> or I<sub>∫t</sub> Fault

**0006:** Load Loss (See Function No. 5.03)

**0000**

5.01 Frequency Reached (Hz) **0.00 – 240.0**

**0.00**

5.02 Frequency Bandwidth (Hz) **0.00 – 30.00**

**1.00**

5.03 Load Loss Threshold(4)

(% Motor Current, set by 0.01)

**25 – 90**

**60**

## FUNCTION GROUP 7 – MULTI-FUNCTION INPUT TERMINALS

**0000:** Preset Frequency Operation(2)

**0001:** Preset Frequency Operation(2)

**0002:** Preset Frequency Operation(2)

**0003:** Up Frequency Command (See Function No. 7.14)(3)

**0004:** Down Frequency Command (See Function No. 7.14)(3)

**0005:** Accel/Decel 2 (See Function No. 7.16)

**0006:** Forward/Stop Command(4)

**0007:** Reverse/Stop Command(4)

**0008:** External Fault (N.O. Contact)

**0009:** Reset

**0010:** N.O. Start (2-Wire or 3-Wire Start/Stop)(4)

**0011:** N.C. Stop (3-Wire Start/Stop)(4)

**0012:** External Fault (N.C. Contact)

0000

7.00\* Multi-Function Input Terminal 1

**0000**

**0006 FOR/STOP - TERMINAL**

7.01\* Multi-Function Input Terminal 2

**0001**

**0007 REV/STOP - TERMINAL**

7.02\* Multi-Function Input Terminal 3

**0002**

**0000 MULTI SPEED 5HZ RUN - JOG TERMINAL (Note: there is no "Jog" specific input on this I/O board)**

7.03\* Multi-Function Input Terminal 4

**0009**

7.04\* Multi-Function Input Terminal 5

**0010**

7.05\* Multi-Function Input Terminal 6

**0003**

7.06\* Multi-Function Input Terminal 7

**0004**

7.07 Preset Frequency 1 (Hz) **0.00 – 240.0**

**5.00**

7.08 Preset Frequency 2 (Hz) **0.00 – 240.0**  
**10.00**

7.09 Preset Frequency 3 (Hz) **0.00 – 240.0**  
**20.00**

7.10 Preset Frequency 4 (Hz) **0.00 – 240.0**  
**25.00**

7.11 Preset Frequency 5 (Hz) **0.00 – 240.0**  
**30.00**

7.12 Preset Frequency 6 (Hz) **0.00 – 240.0**  
**35.00**

7.13 Preset Frequency 7 (Hz) **0.00 – 240.0**  
**40.00**

7.14 Up/Down Frequency Control Mode  
**0000**: Free-Running(5)  
**0001**: Incremental Change (See Function No. 7.15)  
**0000**

7.15 Increment of Up/Down Frequency (Hz) **0.01 – 30.00**  
**1.00**

7.16 Accel/Decel 2 Time (Seconds) **0.3 – 180.0**  
**1.5**