ABB Drive Commissioning Guide

Setup

1. Set node number

|  |  |  |
| --- | --- | --- |
| **Parameter Number** | **Parameter Name** | **Value** |
| 51.03 | Node ID | 100 + Drive Number |

1. Power cycle drive
   * This lets the node number update take effect.
2. Restart the ABB driver task in the PLC. Or perform warm restart of PLC.
   * This writes the parameters to the drive.
3. Check drive is ON-REMOTE
   * Top left corner of drive display should be Rem for remote and not Loc for local.
   * To change, press Back button then select Loc/Rem icon and adjust.

Belt Tracking

1. Set drive to local (manual) mode, see Setup step 4. (above)
2. Set frequency
3. Press run

This can all be done using the interface on the front of the drive.

Remember to set the drive back to remote after tracking.

Troubleshooting

1. Module OK is FALSE.
   * Check node numbers match.
     1. Physical view hardware node number.
     2. Drive node number. See setup step 1.
     3. PLC code. ABB\_EPL. Drives [n].Cmd.Node
   * Check Powerlink interface address is correct.
     1. plkInterface := 'IF3'; //Set this to the Powerlink interface address
     2. This can be found in ABB\_Driver init task.
2. Brake failing
   * Check parameters on drive

|  |  |  |
| --- | --- | --- |
| **Parameter Number** | **Parameter Name** | **Value** |
| 44.06 | Brake control enable | 1 |
| 10.24 | RO1 source | 22 |

* + Parameters are not set
    1. Check error status in PLC. encodeParameters ACTION in ABB\_Driver task.

paramsToWrite[n].status should be 0. If it is 1 then it has not attempted to write the parameter yet. Check any other error numbers for description.

paramsToWrite[n].errorInfo provides further diagnostic codes.

* + 1. See step 1 and check module OK.
  + Parameters are set
    1. Check wiring see drawing ####-SB1-MKM or ####-TB1-MKM. Where #### is project number.

1. Frequency won’t go above 60Hz
   * 60Hz is default max frequency
     1. Can be adjusted in ABB\_Driver encodeParameters, number 30.14. PLC will need restarting after adjustment.
2. Drive fails to run
   * 20Hz is minimum speed
     1. Target velocity must be set higher than 20Hz to enable drive.
     2. Can be adjusted in ABB\_Driver init task.

minTargetVelocity := 20; //Min frequency of motor to run at

PLC will need restarting after adjustment.

* + Safety is off
    1. Ensure drive.QuickStop is TRUE.
    2. Check state of STO.
       1. Zone safe outputs must be on
       2. Check wiring see drawing ####-SB1-MKM or ####-TB1-MKM. Where #### is project number. Drive terminals S1 & S2 must be connected to SGND. Via safe plc or safe relay.

1. Drive fails to run at target velocity
   * Maximum current exceeded
     1. Compare status.ActCurrent in belt task with maximum current parameter setting. Can be found in ABB\_Driver encodeParameters, number 30.17.
2. Default drive
   * To default the drive set the following parameter

|  |  |  |
| --- | --- | --- |
| **Parameter Number** | **Parameter Name** | **Value** |
| 96.06 | Parameter restore | 34560 |

Parameters Set By PLC

The following table shows all the parameters that are set over PowerLink by the PLC. These parameters must be set. And can be viewed for confirmation purposes in “modified parameters” option on the drive interface.

|  |  |  |
| --- | --- | --- |
| **Parameter Number** | **Parameter Name** | **Value** |
| 10.24 | RO1 source | 22 |
| 20.01 | External commands | 12 |
| 28.11 | External frequency Ref | 4 |
| 30.14 | Max frequency | 60 |
| 30.17 | Max current | 2.0 |
| 31.01 (Optional) | External fault 1 | 2 |
| 44.06 | Brake control enable | 1 |
| 99.04 | Control mode | 1 |
| 99.07 | Nominal voltage | 415 |
| 99.08 | Nominal frequency | 50 |
| 99.11 | Power factor | 0.8 |