

Technical Note 040

ACH580-01 into an existing ACH550 E-Clipse

Replacement of an ACH550-UH drive

Introduction

An ACH550 with E-Clipse bypass is a packaged solution that includes a drive and bypass. The base ACH550-UH drive in the package may be replaced with an ACH580-01 drive. The ACH580-01 must be properly configured to communicate with the existing E-Clipse package. This document describes the programming changes required to allow the new ACH580-01 to communicate with the existing E-Clipse package. This document does not go into detail on the physical mounting or power wiring needs, as those needs vary based on the package. ABB does offer retrofit kits to assist with the physical mounting of the ACH580-01 into an existing ACH550 vertical or box style E-Clipse package. The kit also includes a replacement bypass-to-drive communication cable. This document assumes a retrofit kit is not being used, as a retrofit kit will come with its own set of detailed instructions.

What models are affected?

ACH550-VCR, ACH550-VDR, ACH550-BCR, and ACH550-BDR

What needs to be done?

The following steps outline, at a high level, how to replace the ACH550-UH with the ACH580-01.

1. Physically replace the ACH550-UH base drive with the ACH580-01 drive.
2. Install the bypass-to-drive communication wires on drive terminals 29 B+, 30 A- and 31 DGND.
 - a. Note: The communication cable has a 5-pin connector on the drive end. The connector should be cut and removed. The red, black, and clear wires will be used. Strip back those three wires. Red is connected to terminal 29, black to terminal 30, and clear to terminal 31.
3. Set parameter 95.21 (HW options word 2) bit 8 to 1. Bit 8 is Legacy bypass present. This bit enables legacy bypass mode and programs the ACH580-01 to be compatible with an ACH550 based E-Clipse package.
 - a. Note: Parameter 95.21 bit 5 should be left at the default of 0, do NOT change bit 5 to 1 for bypass present. Bit 5 is intended only for E-Clipse packages that originally came with an ACH580 drive. Bit 8 is used for E-Clipse packages that originally came with an ACH550 drive.

Setting parameter 95.21 bit 8 to 1 automatically configures the following parameters:

- 20.01 Ext1 command to Embedded fieldbus
- 20.06 Ext2 command to Embedded fieldbus
- 20.40 Run permissive to Embedded fieldbus
- 20.41 Start interlock to Embedded fieldbus
- 58.01 Protocol enable to Modbus RTU
- 58.03 Node Address to 1
- 58.04 Baud rate to 76.8 kb/s
- 58.05 Parity to 8 EVEN 1
- 58.25 Control profile to DCU profile
- 96.78 550 Legacy Modbus mapping to Enable

Note that there are some variations with older firmware revisions. Items to be aware of include:

- Parameter 95.21 bit 8 may not automatically update all the previously mention parameters. If the bypass still displays a "Drive Link Fault," "Drive Link Error," or "Drive Setup" warning, then set 95.21 bit 8 back to 0, and manually configure the previous 10 parameter settings as needed. If Group 58 parameters required updating, then either cycle power or use parameter 58.06 to refresh settings so the communication protocol settings are saved.
- In 2.12.0.1 or older firmware, parameter 96.78 was called 550 Compatibility mode, and was set to "1" to Enabled. In 2.12.0.3 or newer firmware, parameter 96.78 was renamed to Legacy Modbus mapping.
- In 2.12.0.3 or newer firmware, setting parameter 96.79 was added and should be left as Not selected.

Additional information

You can find more info on the programming and wiring in the manuals listed below. This document is a supplement to the following drive manuals:

- 3AXD50000044839 – ACH580 Hardware manual
- 3AXD50000027537 – ACH580 Firmware manual
- 3AXD50000289554 – ACH580 E-Clipse bypass manual
- 3AUA0000081823 – ACH550 User's manual (includes E-Clipse bypass information)