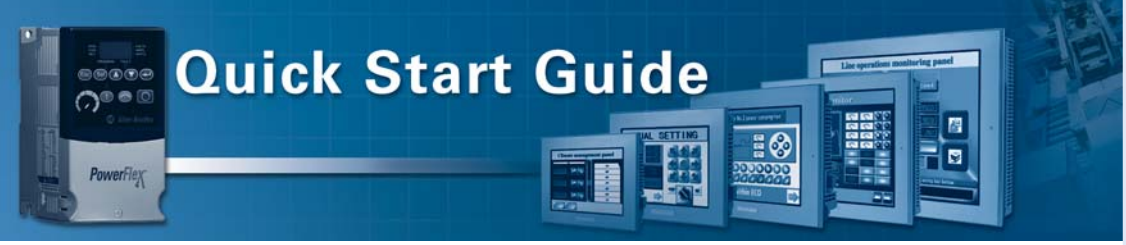


Pro-face

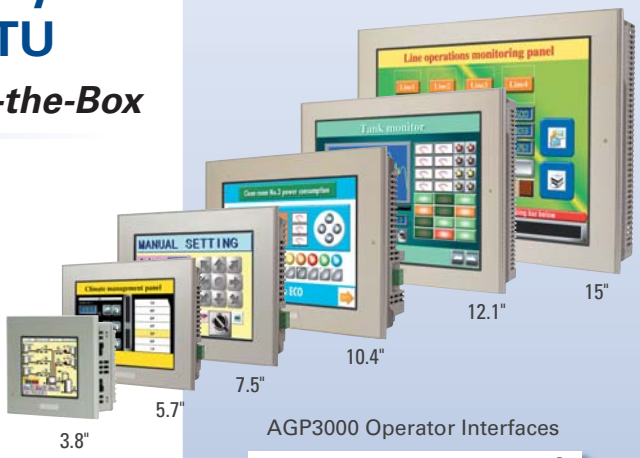
Pro-face AGP/AST3000 to Allen-Bradley PowerFlex® 4 VF Drive via Modbus RTU

Tested, Trusted, Out-of-the-Box

Pro-face AGP3300-T1

Modbus
Serial Cable

Allen-Bradley
PowerFlex 4 AF Drive



AGP3000 Operator Interfaces

Pro-face®

HMI Motion Control Quick Start Guides

Pro-face HMI motion control quick start guides make it easy to integrate variable speed drives directly to your operator interface and control system. With minimal knowledge, a user can quickly set up a variable speed drive operator interface without requiring a separate programmable controller and drive interface wiring.

Differentiating Value:

- Simple, fast installation, 3 step guide with a sample project you can use
- No PLC required, logic controller is built-in
- Reduce system cost, no need for analog interfaces and indicators, fewer push buttons
- Precision high resolution digital control

Applications:

- Conveyors
- Pumps and fans
- Packaging equipment
- Discrete manufacturing

This document and the downloadable sample project facilitate quickly connecting and establishing communications between a Pro-face AGP/AST using GP-Pro EX and an Allen-Bradley PowerFlex® 4 Variable Frequency AC Drive. For a full explanation of the sample project refer to Pro-face America Application Note 1160.

Rockwell Automation

Bringing Together Leading Brands in Industrial Automation

Materials:

1. Pro-face GP-Pro EX Screen and Logic Editing software v2.1 or higher
2. Pro-face AGP3000 or AST3000 Series HMI
3. Allen Bradley PowerFlex® 4 Variable Frequency AC Drive
4. Pro-face CA3-ADPCOM-01 Port Adapter or CA4-ADPONL-01 COM2 Port Adapter
5. Pro-face CA3-ADPTRM-01 Termination Adapter
6. Category 5 shielded 8-conductor cable with a shielded male RJ45 connector
7. The Pro-face sample project “APNT1160.zip” available at: https://www.hmisource.com/otasuke/files/appnotes/

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Pro-face

Right Size, Right Technology Solutions

Quick Start Guide: Pro-face AGP/AST3000 to Allen-Bradley PowerFlex® 4 VF Drive via Modbus RTU

Easy Configuration

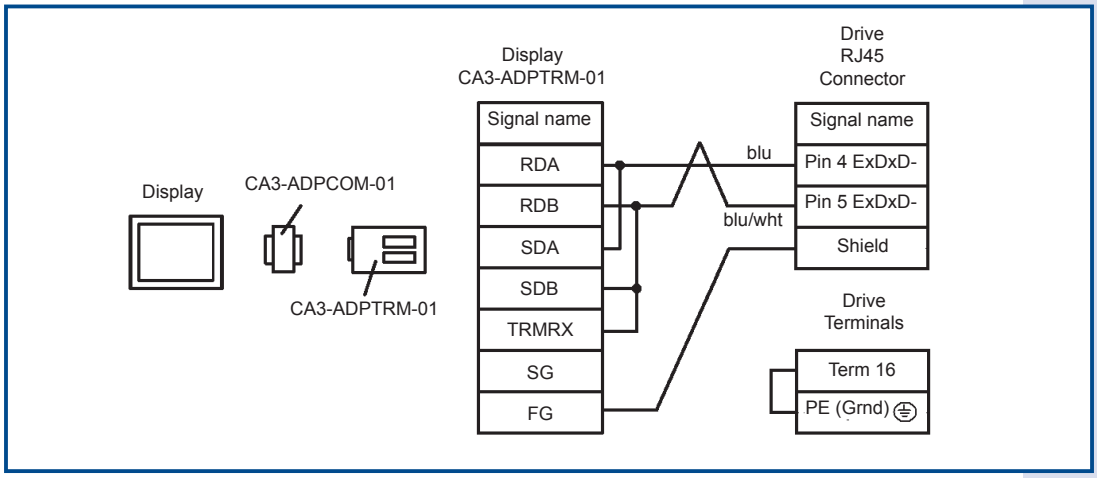
STEP 1 - Connecting to the Drive

The PowerFlex 4 Drive communicates using the Modbus RTU protocol via the RJ45 (DSI) port located on the front.

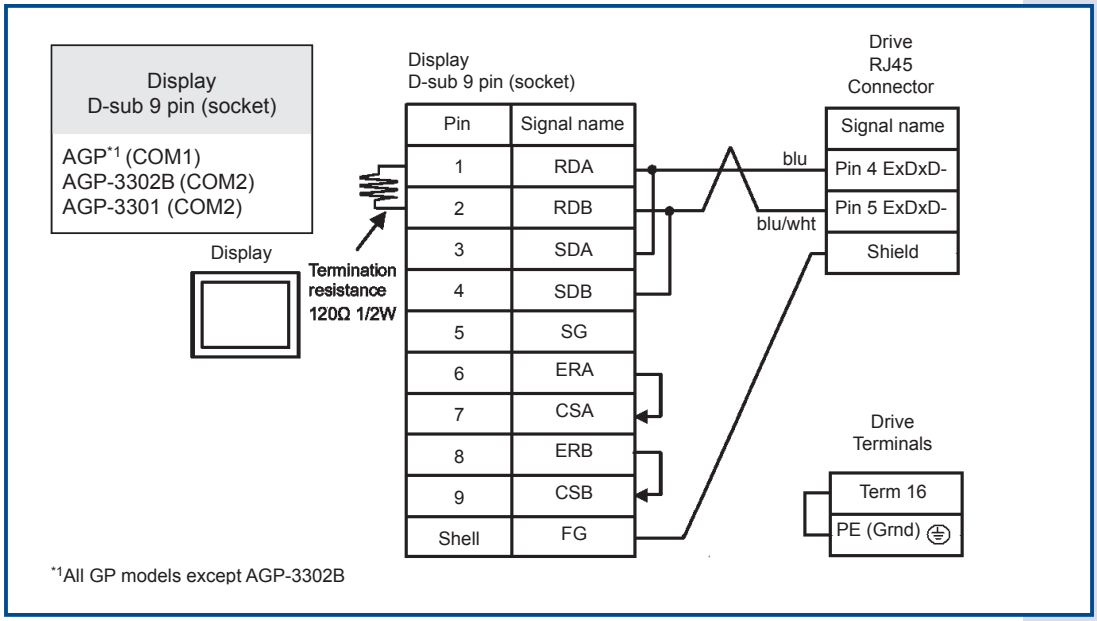
1. To make this cable connection quickly, use the following Pro-face cable adapters:
   a. CA3-ADPTRM-01 Breakout Adapter
   b. CA3-ADPCOM-01 Port Adapter for COM1 (*AGP3302B COM2) or CA4-ADPONL-01 Port Adapter for COM2 (*Not for use with AGP3202B)

2. In the sample project, COM1 on the AGP3300T is connected to the PowerFlex 4 Drive via RS422\485 2 Wire communication. For this reason, the following cable diagram (fig 2a) indicates to use the CA3-ADPCOM-01 adapter. If COM2 will be used in your project, simply substitute the CA4-ADPONL-01 adapter for the CA3-ADPCOM-01 adapter. The color codes shown in the diagrams match the RJ45 CAT5 TIA/EIA 568A and 568B cable standards. **These port adapters are not simply gender changers.**

2a - Cable Diagram



2b - Cable Diagram to build the cable without using the Pro-face adapters



*1All GP models except AGP-3302B

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STEP 1 - Cable Adapters:


CA3-ADPTRM-01


CA3-ADPCOM-01


CA4-ADPONL-01

STEP 2 - Configure the Drive

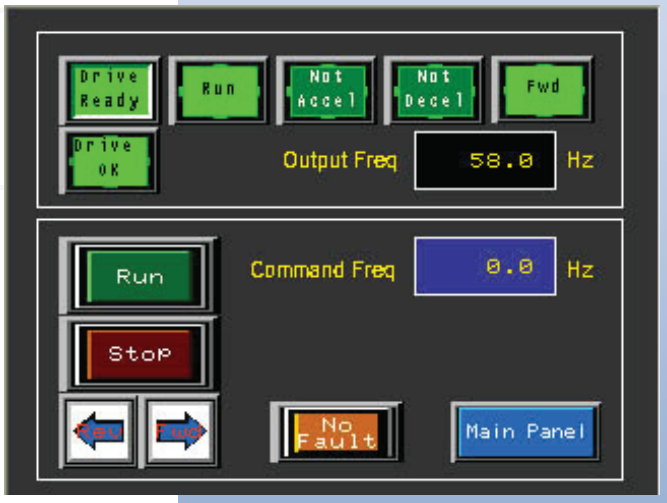
1. Terminal 16 [RS485 (DSI) Shield] of the drive terminal block needs to be wired to safety ground (PE) to use the RS-485 communications port.
2. Set up the following drive parameters as instructed in the AC PowerFlex 4 Drive Manual for use with the sample project.
   - P036 – 5 = [Start Source - RS485 (DSI) port.]
   - P037 – 5 = [Stop Source - RS485 (DSI) port.]
   - P038 – 5 = [Speed Reference - RS485 (DSI) port.]
   - A103 – 4 = [19.2K baud]
   - A104 – 1 = [Modbus Slave Node Address]

3. Power cycle the PowerFlex 4 drive to ensure the new settings take effect.

STEP 3 - Configure the Operator Interface

The sample project is already configured for an AGP3300. Simply download the project to the operator interface. When the download is complete press "Operator Panel" to view drive status and operate the drive.

Project Screen:



Using a Different Model AGP/AST/LT33xx:

The following models of the Pro-face 3000 series can be used with the sample project:

Panel Size	Series	Class/Type			
		Standard	Control	Multimedia	Hand-held
All	AGP3xxx	✓	✓	✓	✓
All	AST3xxx	✓	✗	✗	✗
All	LT33xx	✗	✓ *1	✗	✗

The sample project is configured for an AGP3300T. To use the project with a different model (AGP or AST) and screen size, follow these steps:

1. Open the enclosed GP-Pro EX project, click "Project (F)" then "System Settings (C)".
2. Click on "Display" in the System Settings menu then "Change Display Unit".
3. Select the series line and model of the your AGP. If the "Convert Resolution" prompt appears, check the box to automatically resize all screen objects in the application.
4. Click "OK" to the reminder to check the screen objects before downloading to an AGP.
5. Click "YES" to acknowledge that AGP models have hardware capabilities.
6. Save the project to a new file.

*Note: *1 To use the sample project with a LT33xx: Open the project in GP-Pro EX. Open another instance of GP-Pro EX and select the LT33xx model you are using. Copy the desired screens and the global script from the first instance to the second.*

Customizing the Project:

The sample project includes a screen "Operator Panel". It includes common operator interface controls on a single screen for your convenience. All other screens in the project can be deleted. If the "Main" screen is deleted a new startup screen must be selected in the Display Unit. If the "Operator Panel" is copied to another project, you will also need to copy the global script from this project. The global script is needed for the status indicators to function.

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