

AN5000-1 Input Power Sharing

This application note is to be used in conjunction with the application note “ANX-POE-Power” which shows how to calculate the available power in real terms. This document provides additional considerations that need to be considered when power sharing from two inputs.

The Ag5000 has been designed to meet the power requirements of equipment that exceeds the IEEE802.3af specification. To achieve this the Ag5000 has been designed to accept power using the following modes: -

Mode 1 is shown in Figure 1, is where the Power Sourcing Equipment (PSE) supplies the power on the Data Pair to the Device (PD).

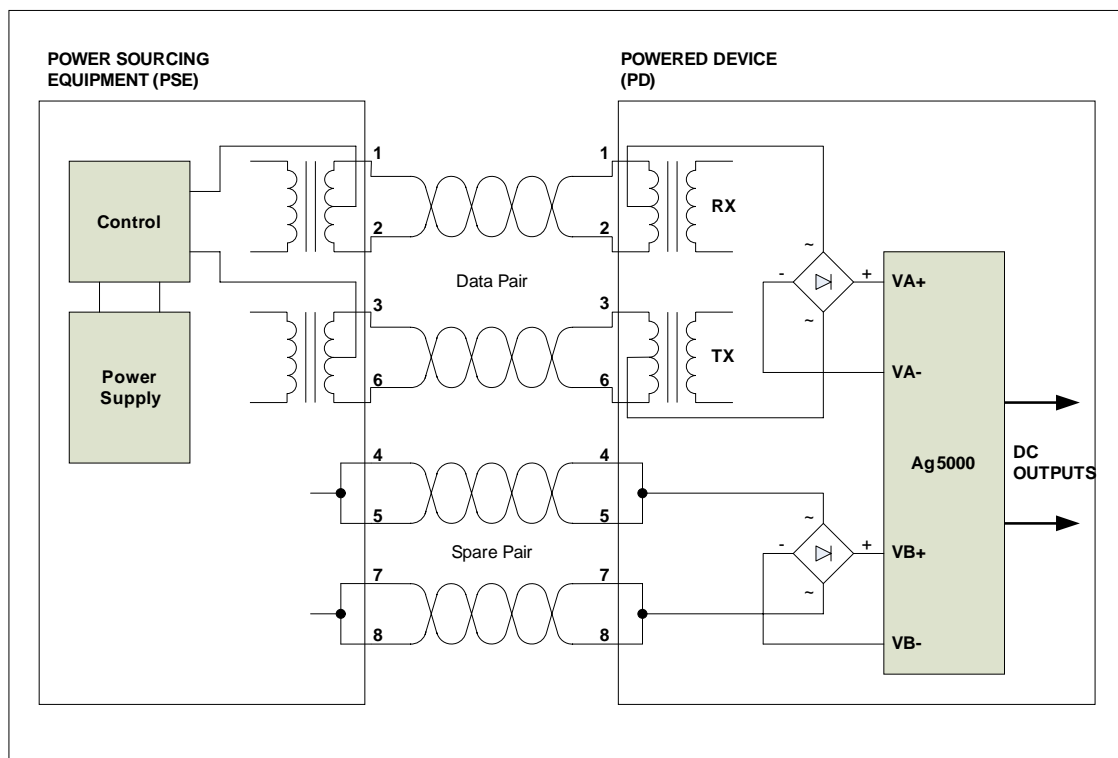


Figure 1: Single input on Data Pair

Mode 2 is shown in Figure 2, is where the PSE supplies the power on the Spare Pair to the PD.

AN5000-1 Input Power Sharing

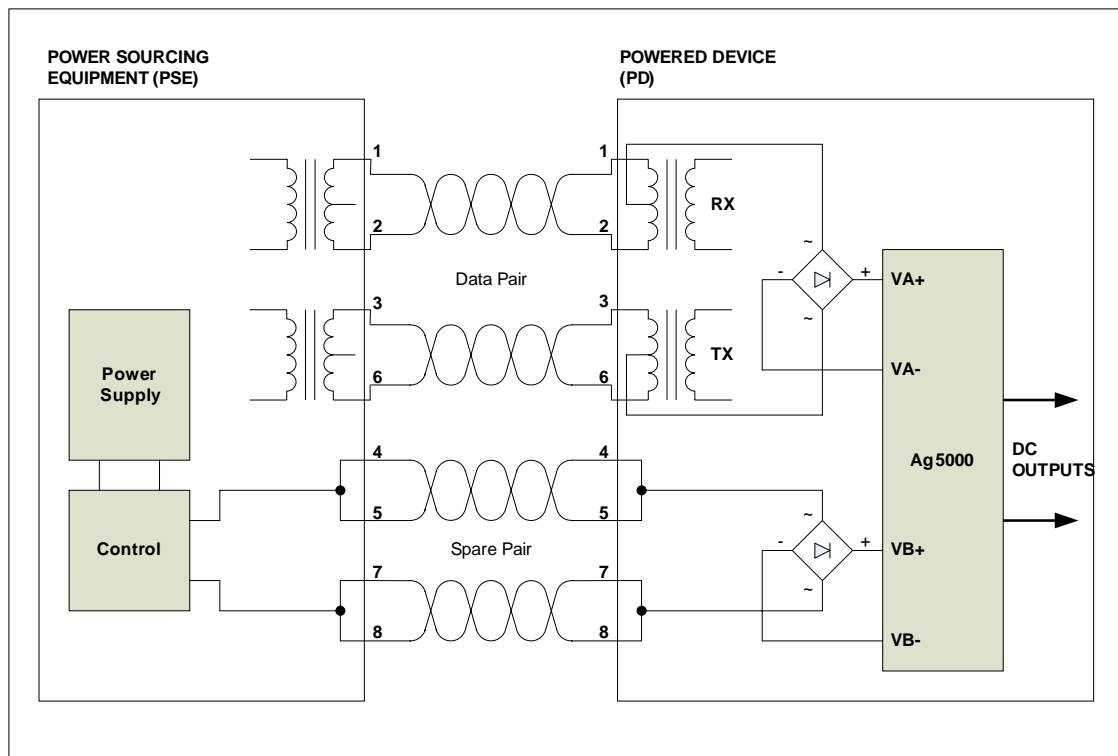


Figure 2: Single input on Spare Pair

Mode 3 is shown in Figure 3, is where the PSE supplies the power over both the Data and Spare Pairs.

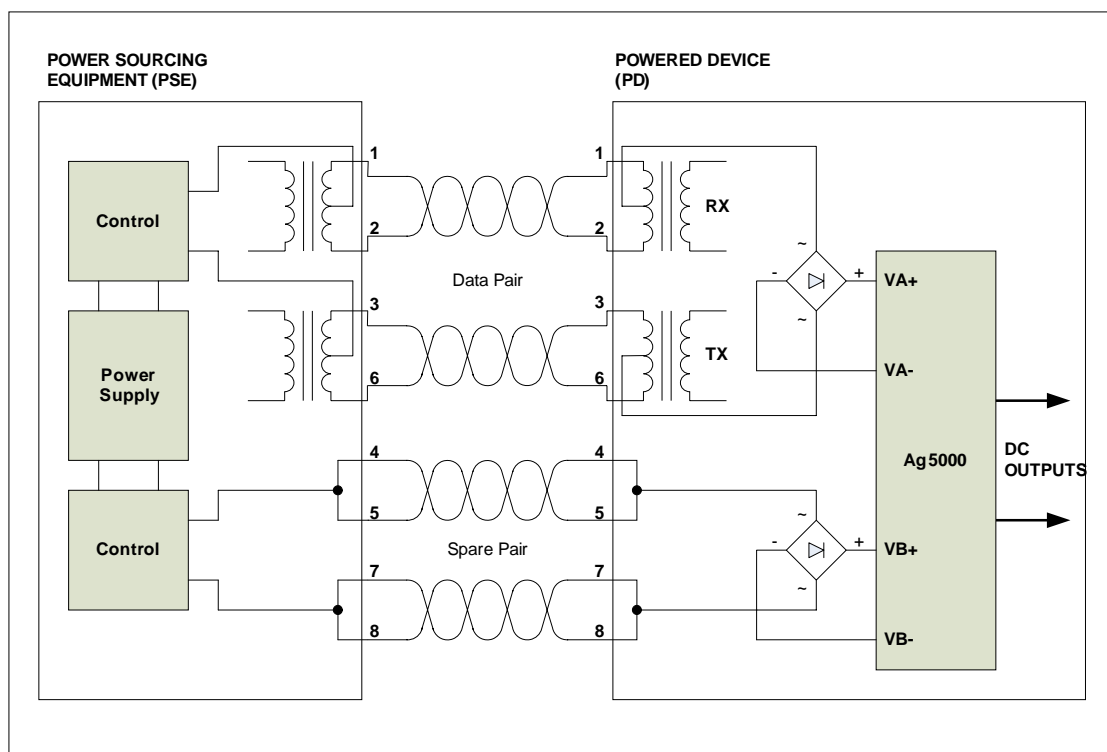


Figure 3: Dual input from one PSE

AN5000-1 Input Power Sharing



Mode 4 can be connected as shown in Figure 4 (4a and 4b) as the Ag5000 has been designed to work with two completely independent PSE's. When connected the Ag5000's will allow sufficient time for both inputs to become active; before it starts its dc/dc converter and applying power to the output load.

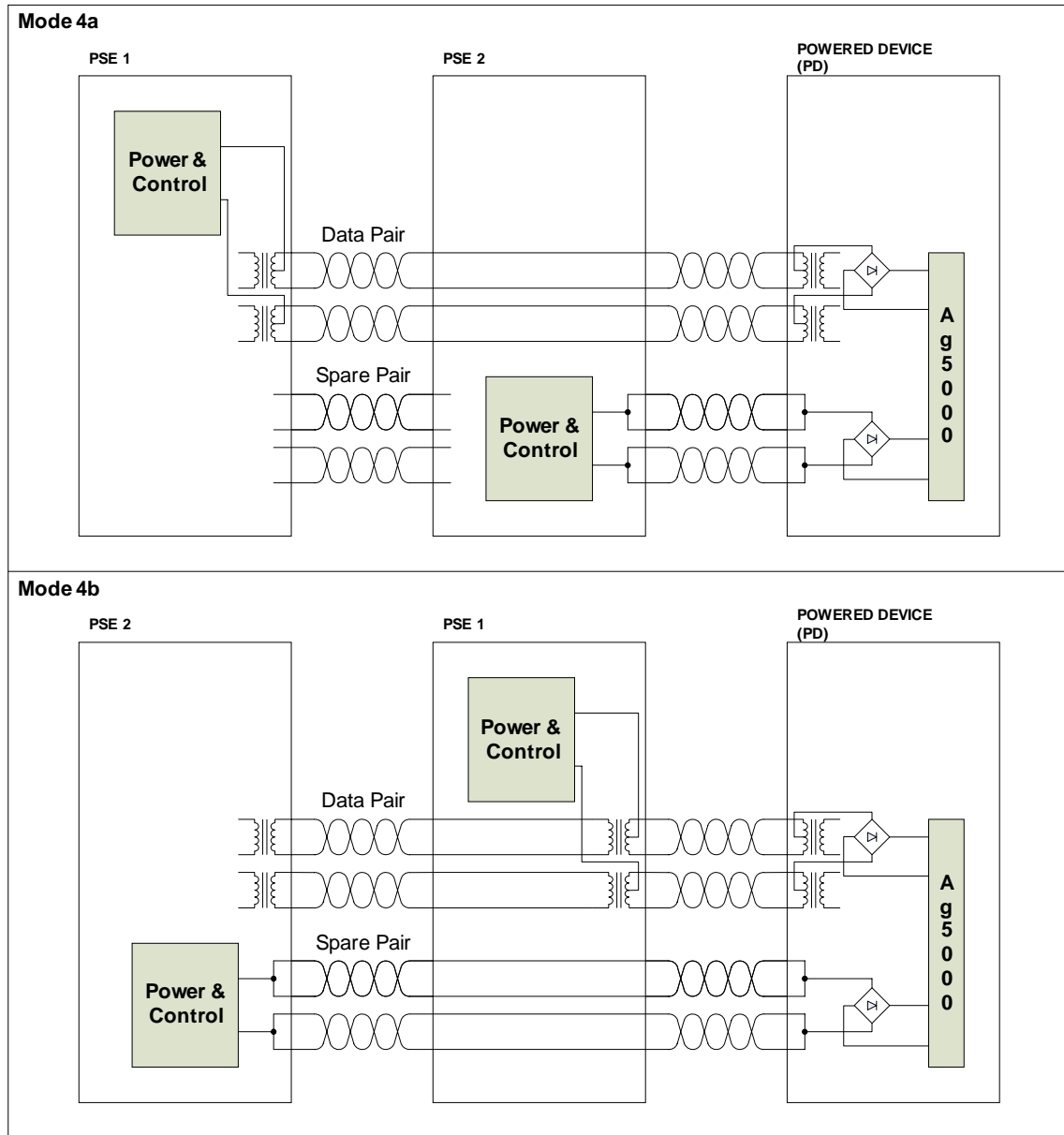


Figure 4: Dual input from two independent PSE's

The Ag5000's dynamic input power sharing will automatically balance the current drawn by both inputs (even if the PSE output voltages are different). Because the Ag5000 has no way of knowing what PSE is connected to its input, it is important to remember that the total input current is limited to capability of the lowest current PSE x 2. So if PSE 1 is a POE30U-560 (550mA) and PSE 2 is a PSA16U-480 (320mA), then the combined input current will be limited to that of PSE 2 = 320mA x 2 (640mA).