



Benefits of Vertical I/O Versus Horizontal I/O

This document covers the benefits of vertical I/O versus horizontal I/O.



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Introduction

This document covers the benefits of vertical I/O versus horizontal I/O.

Benefits of DeltaV Vertical I/O Versus Horizontal I/O

Vertical I/O is easier to wire up than horizontal I/O because cables coming from the bottom of cabinets may be fanned out and terminated without multiple wire bends. This is in line with current practices of cables coming out of the bottom of cabinets, especially in locations with raised-floor rooms.

Vertical I/O may be retrofitted into existing 19-inch cabinets more efficiently. A full DeltaV controller node's complement of I/O can physically fit into two existing cabinets (8 vertical I/O carriers with 64 card slots of I/O), and it is easier to stay under the 6-meter back plane limit for a node using vertical I/O carriers and cables for basic process control (BPCS) and safety instrumented systems (SIS) communications than when using horizontal I/O carriers.

Overall air-conditioned cabinet footprint can be reduced with vertical I/O, and it provides better thermal management and improved airflow in cabinets due to its orientation of cards. Since vertical I/O carriers may be stacked vertically in a cabinet, gravity helps keep them together and possible movement between carriers is less of a concern.



Supports both Basic Process Control System (BPCS) and Safety Instrumented System (SIS) components

Simple and easy to understand layout

Fewer cables to deal with



Figure 1 – Vertical I/O Carrier with DeltaV BPCS and SIS Components