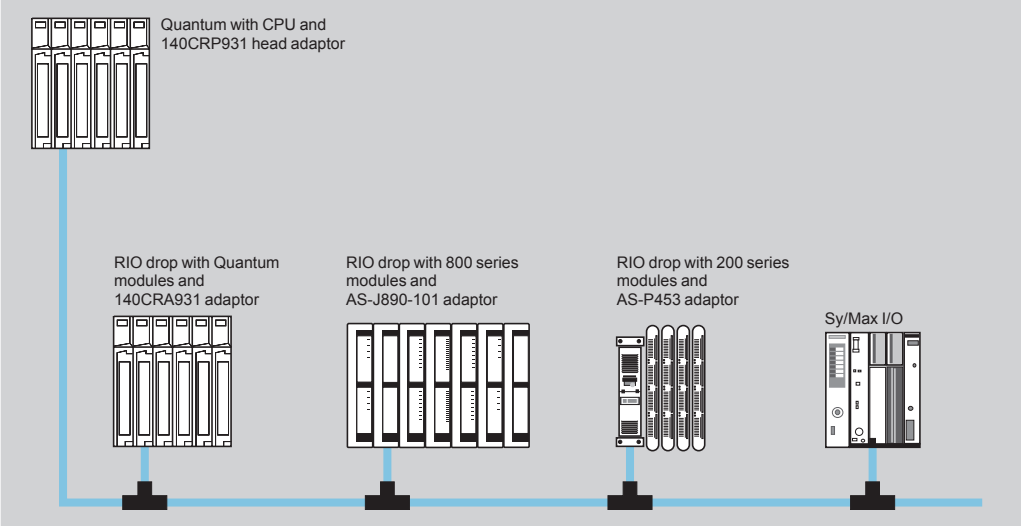
Modicon Quantum automation platform
I/O architectures
Remote I/O (RIO)
S908 bus

Presentation

For applications that require remotely mounted I/O drops, a higher I/O capacity and/or connectivity to existing Modicon I/O installations, Quantum provides a remote I/O (RIO) architecture solution.

Based on the S908 RIO network technology, this network is compatible with existing Modicon I/O installations, including those with 800 and 200 series I/O modules and Sy/Max I/O. Retrofit installations can therefore incorporate an installed I/O base to reduce installation costs.



The RIO architecture uses coaxial cabling and provides long distance capability up to 4572 m with a CATV cable, or longer with an optional optical fibre cable. It is a high-performance network, operating at 1.544 Mbps, providing a high I/O data throughput.

The RIO cabling system consists of a linear trunk cable, with line taps and drop cables for connection to each remote drop.
Up to 31 remote drops can be configured. Each drop can support up to 128 I/O words (64 input words/64 output words).

Segment scheduler mechanism

The segment scheduler mechanism increases the performance of the RIO network by interleaving I/O scanning and program execution.

The segment scheduler breaks the application program into logical segments, then co-ordinates the scanning of the inputs and the updating of the outputs in conjunction with the execution of the program associated with the segment. The inputs are read before the program is processed and the outputs are written after the program is processed. This avoids having to wait for an entire scan before the outputs are set, thus giving a faster system response time. This means that an RIO architecture does not reduce system performance.

For most systems, throughput of local or remote I/O can be estimated at no less than two times scan (with 24 V ⎓ I/O modules). Analog values and words are updated automatically, as fast as discrete I/O, with no user programming.

Compatibility with 800 and 200 series I/O products

Quantum is compatible with 800 and 200 series I/O, which are earlier generation products *(1)*. Using the same RIO head adaptor, 800 series I/O are connected via J890, J892, P890 or P892 RIO adaptors and 200 series I/O are connected via P453/J290 and P451/J291 RIO adaptors.

Other standard components are also compatible with this system, including **MA0185100** network T-connectors and **MA0186100** splitter boxes. The Quantum remote I/O system also takes Sy/Max I/O drops.

Configuration rules

To ensure a valid configuration, add together the consumptions (in mA) of the modules in the rack, for each drop, and check that the total is less than the power available with the selected power supply.

(1) For the entry-level HSBY CPU model, 140CPU67060 is not compatible with the S908 RIO bus.

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