HC900 Redundant Hybrid Controller

GET MORE VALUE AND PERFORMANCE FROM HONEYWELL

Redundant, Reliable, Simple

Honeywell
The HC900 is designed to cost-effectively automate process equipment, either standalone or with open Ethernet Modbus/TCP connectivity. Offering a blend of process, logic and sequence control algorithms, a modular design and graphics configuration tool, the HC900 is easily applied in applications across many industries. Redundant CPUs, power supplies and network communications provide additional security to maximize process availability.

Redundant Controllers
The HC900 redundancy feature provides redundant controllers for seamless failover under fault conditions. Two redundant C70R CPUs operate in a separately mounted controller rack, each with an independent power supply. A Redundant Switch Module (RSM) is located in the rack between the two CPUs and visually indicates which CPU is the Lead and which is the Reserve. A key switch on the RSM allows the user to change the operating mode of the Lead and Reserve CPUs. In operation all control functions and host communication exchanges are handled by the Lead CPU, including control configuration. The Lead CPU updates the Reserve CPU with all the information needed for the Reserve to assume control in the event of a fault of the Lead CPU.

After power-up the first available CPU becomes the Lead. The Lead may be transferred to the reserve CPU by:
- failure of the Lead CPU
- failure of the Lead power supply
- loss of I/O communication
- manual RSM key switch change
- command via host communication

There is no I/O in the controller rack. The CPUs communicate with up to 5 racks of I/O over a 100 base-T Ethernet physical communication link. When more than one I/O rack is used, Ethernet switching hubs are required, one for each scanner connection.

Redundant Host Networks
Redundant networks for host communications are provided on the C70R CPU. Both network ports are continuously active on the Lead controller. The network ports on the Reserve CPU become active when the CPU assumes the lead. A PC based OPC server is available to support redundant Ethernet communications and automatic communications transfer.

Redundant Power
A second (redundant) power supply can be added to each HC900 I/O rack. An extended rack is available that expands the standard I/O rack to accommodate a second (redundant) power supply and PSM.

A Power Status Module (PSM) provides visual indication of the status of both power supplies.

Remote I/O
Up to two Ethernet switches may be used in each I/O connection to extend the distance between the CPU rack and the most distant I/O rack to 300 meters (984 feet).

Operator Interface
1042 and 559 Series Operator Interfaces are supported with the C70R CPU. The RS-485 serial connection is made to the serial communication ports of both CPUs. The operator interface communication to the controller follows the Lead controller assignment.

Status/Diagnostics
An output parameter of the system monitor block of C70R CPUs provides a digital status of the Reserve controller to allow integration of this information into the control strategy. C70R CPUs also provide diagnostic status on redundancy operation that may be observed using Hybrid Control Designer configuration software. A Redundancy status monitor window is also available to view redundant controller operation.

Configuration
Controller Configuration is performed using Hybrid Control Designer Configuration software on a PC operating with a Microsoft Windows® operating system. Configuration files may be built independently on the PC and downloaded to the controller in a separate operation. Validation of proper physical I/O to support the configuration is provided along with appropriate warnings.