

HC900 Redundant Hybrid Controller Assemblies

Model Selection Guide

| Power Supplies | MODEL NUMBER |
|-----------------|-------------------------------|
| 120/240VAC, 60W | 900P01 -0001 |
| 120/240VAC, 28W | Note 5 900P02 -0001 |
| 24Vdc, 60W | 900P24 -0001 |

| Redundant Controller Rack | |
|--------------------------------------|----------------------------------|
| Redundant CPU Rack | 900RR0 - 0001 |
| Controller C70R CPU Config.SW & Docs | 900C71R-0100-44 |
| Controller C70R CPU | Note 1 900C72R-0100-44 |
| Redundant Switch Module | 900RSM - 0001 |

| Remote I/O Rack | |
|---------------------------------------|-----------------|
| I/O Scanner - 2 Port (1 per I/O rack) | 900C73R-0100-44 |
| 4 I/O Slot Rack | 900R04-0001 |
| 8 I/O Slot Rack | 900R08 - 0101 |
| 12 I/O Slot Rack | 900R12 - 0101 |
| 8 Slot Rack -Red. Power | 900R08R - 0101 |
| 12 Slot Rack - Red. Power | 900R12R - 0101 |
| Redundant Power Status Module | 900PSM - 0001 |

| I/O Module Selections | |
|---|---------------|
| Analog Input (8 channel) | 900A01 - 0102 |
| Analog Input Hi level (16ch) | 900A16 - 0001 |
| Analog Output, 0 to 20mA, (4 channel) | 900B01 -0101 |
| Analog Output, 0 to 20mA, (8 channel) | 900B08-0001 |
| Analog Output, 0 to 20mA, (16 channel) | 900B16-0001 |
| Digital Input, Contact type, (16 channel) | 900G01 - 0102 |
| Digital Input, 24VDC (16 channel) | 900G02 - 0102 |
| Digital Input, 120/240 VAC, (16 channel) | 900G03 - 0102 |
| Digital In, 120/240 VAC, 125 VDC(16 channel-Isolated) | 900G04 - 0001 |
| Digital Input, 24VDC (32 channel) | 900G32 - 0001 |
| Digital Output, Relays (8 channel) | 900H01 - 0102 |
| Digital Output, 24VDC (16 channel) | 900H02 - 0102 |
| Digital Output, 120/240 VAC (8 channel) | 900H03 - 0102 |
| Digital Output, 24VDC (32 channel) | 900H32 - 0001 |
| Pulse/Freq/Quad (4chan, 1Quad) | 900K01 - 0001 |

| Terminal Boards | | MODEL NUMBER |
|---|---------------|---------------------|
| Low Voltage Terminal Block (Euro style) | Note 3 | 900TEK - 0001 |
| Low Voltage Terminal Block (Barrier Style) | Note 3 | 900TBK - 0001 |
| High Voltage Terminal Block (Euro style) | Note 3 | 900TER - 0001 |
| High Voltage Terminal Block (Barrier Style) | Note 3 | 900TBR - 0001 |
| Low voltage Terminal Block (36 pos) | Note 3 | 900TCK - 0001 |
| | | |
| Analog Input Remote Terminal Panel (RTP) | Note 6 | 900RTA - L001 |
| Relay Output Remote Terminal Panel (RTP) | Note 6 | 900RTR - H001 |
| DI, DO, AO Remote Terminal Panel (RTP) | Note 6 | 900RTS - 0001 |
| Low Voltage RTP Cable (1.0M, 3.28ft.) | Note 6 | 900RTC - L010 |
| Low Voltage RTP Cable (2.5M, 8.2ft.) | Note 6 | 900RTC - L025 |
| Low Voltage RTP Cable (5.0M, 16.4ft.) | Note 6 | 900RTC - L050 |
| High Voltage RTP Cable (1.0M, 3.28ft.) | Note 6 | 900RTC - H010 |
| High Voltage RTP Cable (2.5M, 8.2ft.) | Note 6 | 900RTC - H025 |
| High Voltage RTP Cable (5.0M, 16.4ft.) | Note 6 | 900RTC - H050 |
| LV RTP Cable (32/16 channel) (1.0M, 3.28ft) | Note 6 | 900RTC - 3210 |
| LV RTP Cable (32/16 channel) (2.5M, 8.2ft) | Note 6 | 900RTC - 3225 |
| LV RTP Cable (32/16 channel) (5.0M, 16.4ft) | Note 6 | 900RTC - 3250 |
| 8 ch A/O RTP Cable (1M, 3.3ft) | Note 6 | 900RTC-B810 |
| 8 ch A/O RTP Cable (2.5M, 8.2ft) | Note 6 | 900RTC-B825 |
| 8 ch A/O RTP Cable (5.0M, 16.4ft) | Note 6 | 900RTC-B850 |
| Filler Block Terminal Cover | | 900TNF - 0001 |
| Shield Terminal Strip (package of 2) | | 900TSS - 0001 |
| Terminal board jumpers (10, two pos jumpers) | Note 4 | 900J02 - 0001 |
| Terminal board jumpers (10, ten pos.jumpers) | Note 4 | 900J10 - 0001 |
| | | |
| Manuals | | |
| Full Document set on CD (<i>supplied with CPU 900C71R---</i>) | Note 2 | 900ME1-0044-44 |
| Full document set, hard copy - English | Note 2 | 900ME2-0044-44 |
| | | |
| Software | | |
| HC Designer Config. Software CD (<i>supplied with CPU 900C71R---</i>) | | 900W01-0044-44 |
| HC Utilities Software/Documentation CD | | 900W02-0044-44 |
| HC Historian Software | | 50045756-001 |
| | | |

Note 1: Documentation and Hybrid Control Designer Configuration Software are not provided with this model. If required, specify CPU model number 900C71R-00NN-NN or order items separately.

Note 2: A full documentation set on CD is provided with CPU 900C71R-00NN-NN. If additional copies or if a hard copy manual set is desired, specify them as separate items. The manual set contains one each of all HC900 product manuals. Documentation (CD and hard copy) is available only in English language.

Note 3: Terminal blocks for I/O modules must be ordered separately. Two styles are available for each of the two types--Euro style and Barrier style. The type of terminal block (gold or tin contacts) must be matched to the appropriate I/O board type. See table below for proper selections. The CPU, Scanner and power supply cards do not require separate terminal blocks.

| Card Type | Terminal Blocks | |
|---|-----------------|-------------|
| Analog Input (8 channel) | 900TEK-0001 | 900TBK-0001 |
| Analog Output, 0 to 20mA, (4 channel) | 900TEK-0001 | 900TBK-0001 |
| Analog Output, 0 to 20mA, (8 channel) | 900TCK - 0001 | |
| Analog Output, 0 to 20mA, (16 channel) | 900TCK - 0001 | |
| Digital Input, Contact type, (16 channel) | 900TEK-0001 | 900TBK-0001 |
| Digital Input, 24VDC (16 channel) | 900TEK-0001 | 900TBK-0001 |
| Digital Input, 120/240 VAC, (16 channel) | 900TER-0001 | 900TBR-0001 |
| Digital In, 120/240VAC 125VDC (16ch Iso) | 900TCK - 0001 | |
| Digital Output, Relays (8 channel) | 900TER-0001 | 900TBR-0001 |
| Digital Output, 24VDC (16 Channel) | 900TEK-0001 | 900TBK-0001 |
| Digital Output, 120/240 VAC (8 channel) | 900TER-0001 | 900TBR-0001 |

Note 4: Jumpers available for Barrier Style terminals only.

Note 5: How to choose an AC Power Supply

| | A | B | C | D | E |
|--|----------------|-------------------|--------------------|------------------------------------|-------------------------------------|
| Module type | Enter Quantity | Max Current @ 5 V | Max Current @ 24 V | Calculate 5V current (D = A * B) | Calculate 24V current (E = A * C) |
| Controller (C30) | () | 820 mA | 0 mA | () | (0) |
| Controller (C50) | () | 930 mA | 0 mA | () | (0) |
| Controller (C70) | () | 1150 mA | 0 mA | () | (0) |
| Controller (C70R) | () | 1500 mA | 0 mA | () | (0) |
| Scanner 1 Port | () | 670 mA | 0 mA | () | (0) |
| Scanner 2 Port | () | 770 mA | 0 mA | () | (0) |
| Power Status Module (PSM) | () | 22 mA | 0 mA | () | (0) |
| Analog Input(8 pts) | () | 40 mA | 25 mA | () | () |
| Analog Input(16 pts) | () | 75 mA | 50 mA | () | () |
| Analog Output(4 pts)* | () | 40 mA | 200 mA | () | () |
| Analog Output(8 pts)** | () | 225 mA | 350 mA | () | () |
| Analog Output(16 pts)** | () | 350 mA | 700 mA | () | () |
| AC Digital Input (16 pts) | () | 130 mA | 0 mA | () | (0) |
| DC Digital Input (16 pts) | () | 130 mA | 0 mA | () | (0) |
| Contact Input (16 pts) | () | 130 mA | 40 mA | () | () |
| DC Digital Input (32 pts) | () | 215 mA | 0 mA | () | (0) |
| AC Digital Output (8 pts) | () | 220 mA | 0 mA | () | (0) |
| DC Digital Output (16 pts) | () | 340 mA | 0 mA | () | (0) |
| DC Digital Output (32 pts) | () | 235 mA | 0 mA | () | (0) |
| Relay Output (8 pts) | () | 110 mA | 100 mA | () | () |
| Pulse/Frequency/Quadrature** | () | 110 mA | 250 mA | () | () |
| *Limit 10 Analog Output modules per I/O rack. ** Limit 4 PFQ modules per I/O rack. *** Limit 2 16-pt. modules per rack. Limit 5 8-pt. modules per rack with internal power supply. Use 0 mA for 24V value when using an external 24V supply. | | | | Total mA @ 5V = () | Total mA @ 24V= () |
| Complete columns A, D and E above. | | | | | |
| Is column D total mA @ 5V less than 2000mA? Yes/No | | | | | |
| Is column E total mA @ 24V less than 900mA? Yes/No | | | | | |
| If the answers to 1 <u>and</u> 2 are YES, go to 4. If the answer to 1 <u>or</u> 2 is NO, use power supply 900P01-0001. | | | | | |
| Multiply 5V total by 5.1. () | | | | | |
| Multiply 24V total by 24.5. () | | | | | |
| Sum results of 4 and 5. () | | | | | |
| Divide results of 6 by 1000 () | | | | | |
| Is the result of 7 less than 28? Yes/No | | | | | |
| If the answer to 8 is Yes, use power supply 900P02-0001 | | | | | |
| If the answer to 8 is No, use power supply 900P01-0001 | | | | | |

Note 6

Using the table below, select a Remote Terminal Panel and Cable Assembly to match the module type.

| Module Types | Module Model | Remote Terminal Panel | Acceptable Cables |
|--|--|-------------------------------|--|
| Analog Input Module | 900A01 – 010X | 900RTA – L001 | 900RTC – L010 900RTC – L025 900RTC – L050 |
| Relay Output Module | 900H01 – 010X | 900RTR – H001 | 900 RTC – H010 900 RTC – H025 900 RTC – H050 |
| Analog Output Module Contact Discrete Input Module DC Discrete Input Module DC Discrete Output Module | 900B01 – 010X 900G01 – 010X 900G02 – 010X 900H02 – 010X | 900RTS - 0001 | 900RTC – L010 900RTC – L025 900RTC – L050 |
| AC Discrete Input Module AC Discrete Output Module | 900G03 - 010X 900H03 – 010X | 900RTS - 0001 | 900 RTC – H010 900 RTC – H025 900 RTC – H050 |
| Digital Input , 32 channel Digital Output, 32 Channel Analog Input, 16 Channel | 900G32-000X 900H32-000X 900A16-000X | 900RTS - 0001 (2 required) | 900RTC – 3225 900RTC – 3210 900RTC – 3250 |
| Analog Output Module 8 Channel | 900B08-0001 | 900RTS - 0001 | 900RTC – B810 900RTC – B825 900RTC – B850 |
| Analog Output Module 16 Channel | 900B16-0001 | 900RTS – 0001 (2 required) | 900RTC – 3210 900RTC – 3225 900RTC - 3250 |