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Hydraulic Controllers, PHC, HS

General

Model HMC-1000 controllers, industry recognized for over a decade, provide field proven reliability for all hydraulic elevator applications. MCE manufactures two series of Model HMC-1000 controllers for hydraulic elevators, Series “PHC” (Programmable Hydraulic Controller) and Series “HS.” Depending on project requirements, a consultant, contractor or building owner can choose which control system is appropriate for a specific application.

In This Section

- PHC Recommended Use
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PHC Recommended Use

Series PHC Programmable Hydraulic Control brings sophisticated elevator control technology to hydraulic applications. These systems are ideal when low cost and the flexibility of field programmable controls are desired.

The user friendly PHC LCD display provides access to a comprehensive list of options, easily programmed using the 32-character alphanumeric display. Everything you need comes with the controller — no external tools or computers required.

Each PHC model is available in both simplex and duplex configuration for up to 16 landings. This series duplex configuration (PHC-D), with a computer for each controller, assigns cars on a real time basis using estimated time of arrival (ETA).

To create a Series PHC specification:

- See [Section 2](#).
- See [“Specification Text, PHC & HS General Specifications”](#) on page 5-2.
- See [“Specification Text, PHC Programmable Logic”](#) on page 5-3.

Specification Text, PHC & HS General Specifications

The elevator shall not require the functioning or presence of the microprocessor to operate on car top inspection or hoistway access operation (if provided) to provide a reliable means of moving the car if the microprocessor fails.

A motor limit timer function shall be provided which, in the event the pump motor is energized longer than a predetermined time, shall cause the car to descend to the lowest landing, park, open the doors automatically, and then close them. Car calls shall be canceled and the car taken out of service automatically. Operation may be restored by cycling the main line disconnect switch or putting the car on access or inspection operation. Door reopening devices shall remain operative.

A valve limit timer shall be provided which shall automatically cut off current to the down valve solenoids if they have been energized longer than a predetermined time. The car calls shall then be canceled and the car taken out of service automatically. Operation may be restored by cycling the main line disconnect switch or putting the car on access or inspection operation. Door reopening devices shall remain operative.

A selector switch shall be provided on the controller to select high or low speed during access or inspection operation as long as contract speed does not exceed 150 feet per minute.

The controller shall include absolute floor encoding, which upon power up, shall move the car to the closest floor to identify the position of the elevator.

Optional - Viscosity control (valve design must allow the use of this option) shall cause the car to accomplish the following operation. If a temperature sensor determines the oil is too cold, and if there are no calls registered, the car shall go to the bottom landing and, as long as the doors are closed, the pump motor shall run without the valve coils energized to circulate and heat the oil to the desired temperature. In the event that the temperature sensor fails, a timer shall prevent continuous running of the pump motor.

Optional - MCE Hydraulic Controllers are available with a battery lowering device pre-wired, pre-tested and integrated into the standard enclosure. For freight doors applications, a stand-alone battery lowering device can be provided.

Optional - MCE offers both solid state and mechanical starters for three and six or twelve lead motors (ATL and Y-Delta). MCE-supplied starters will be mounted within the controller enclosure unless a remote starter enclosure is specified.

Specification Text, PHC Programmable Logic

All available programming options (consult your MCE Sales Representative) or parameters shall be field programmable, without need for any external device or knowledge of any programming languages. Programmable options and parameters shall be stored in nonvolatile memory. At a minimum, there shall be a 32-character alphanumeric display used for programming and diagnostics. Programmable parameters and options shall include, but are not limited to, the following:

- Number of Stops/Opening Served (Each Car)
- Simplex/Duplex
- Single Automatic Pushbutton
- Selective Collective/Single Button Collective
- Programmable Fire Code Options/Fire Floors (Main, Alternates)
- Floor Encoding (Absolute PI)
- Digital PIs/Single Wire PI's
- Programmable Door Times
- Programmable Motor Limit Timer
- Nudging
- External Car Shutdown Input (e.g., battery lowering device)
- External Low Oil Sensor Input
- External Viscosity Control Input
- Parking Floors
- Hall or Car Gong Selection
- Retiring Cam Option for Freight Doors
- Independent Rear Doors
- MCE Standard Security
- Emergency Hospital Service
- Attendant Service
- Anti-nuisance - Light Load Weighing and Photo Eye

Field selectable, preprogrammed Fire Service operations compliant with the following Fire Codes:

- ASME A17.1
- California
- Hawaii
- Massachusetts
- City of Chicago
- City of Detroit
- City of Houston
- New York City
- Veterans Administration
- Washington DC
- Australia
- British
- Canadian B44

For duplex configurations, each elevator shall have its own computer and dispatching algorithm. Should one computer lose power or become inoperative, the other shall be capable of accepting and answering all hall calls. When both computers are in operation, only one shall assume the role of dispatching hall calls to both elevators.

The dispatching algorithm for assigning hall calls shall be real time, based on estimated time of arrival (ETA). In calculating the estimated time of arrival for each elevator, the dispatcher shall consider, but not be limited to, the location of the elevator, the direction of travel, the existing hall call and car call demands, the door time, flight time, lobby removal time penalty and coincidence calls.

The controller shall have field programmable outputs to activate different functions based on customer needs. These functions can be outputs as listed below.

- Fire Phase I Return Complete Signal
- Fire Phase II Output Signal
- Hall Call Reject Signal
- Emergency Power Return Complete

The controller shall have field programmable inputs to initiate special operations based on customer needs. These functions can be inputs as listed below.

- Fire Phase I Bypass Input
- Fire Phase II Call Cancel Input
- Fire Phase II Hold Input
- Attendant Service Input
- Building Security Input
- Hospital Emergency Operation Input

Optional - The controller shall have a serial port for communication with a data or computer terminal such as a CRT terminal, modem or CMS remote monitoring.

HS Recommended Use

Series HS using the HMC Group System provides coordinated dispatching for up to twelve Series HS hydraulic elevator controllers, each serving up to 16 landings. For multiple car hydraulic group operation use the Series HS controller. Series HS can be used for complex operations other than group. (Consult your MCE Sales Representative.)

Easily installed, the HMC Group System brings sophisticated traction control dispatching to hydraulic applications, ensuring the shortest possible waiting time for passengers while minimizing unnecessary elevator movement. **This series uses an HMC Group System; refer to Section 7.0.**

To create a Series HS specification:

- See [Section 2](#).
- See “[Specification Text, PHC & HS General Specifications](#)” on page 5-2.

