

Hubbell Industrial Controls, Inc.

HD5000 Fire Pump Controller - Diesel Engine Driven Fire Pumps, Microprocessor Type

Catalog • April 2011, Replaces July 2010

PATENT PENDING



UL Listed · cUL Listed
FM Approved
CE Available

COMPACT SIZE

Dimensions & Weight:

| | |
|--------|--------|
| Width | 20" |
| Height | 24" |
| Depth | 8" |
| Weight | 90 lbs |



hubbell industrial controls, inc.



Hubbell HD5000 Fire Pump Controllers are small, lightweight, technologically advanced microprocessor based combined automatic and manual diesel engine driven fire pump controllers. These controllers are specifically designed and tested to start and monitor fire pump diesel engines. They are available for use with 12 or 24 volt lead acid batteries and with an AC voltage input range of 115 or 220 volts, 50/60 Hertz. The HD5000 monitors, displays and records the fire pump system information.

Approvals

Hubbell's fire pump controllers are Listed by Underwriters' Laboratories Inc., in accordance with UL218, UL/cUL Listed, Approved by Factory Mutual, in accordance with FM 1321/1323 and available with CE. They are built to meet or exceed the requirements of NFPA 20 (Installation of Centrifugal Fire Pumps), NFPA 70 (National Electrical Code), as well as NEMA and the approving authorities.

Standard Features

- Door mounted display/interface panel with 4x20 character Vacuum Fluorescent Display easily read in dimly lit pump rooms. User interface panel includes state of the art capacitance to digital switches for long life and reliability due to no moving parts or contacts. High intensity display LED's for ease of viewing and long life
- Self anti-condensating
- Re-programmable software
- Multilingual, up to three languages per controller
- Type 4, indoor/outdoor enclosure supplied on FM Approved and CE marked controllers. UL Listed controllers are available with Type 2 enclosures only. Both are wall mounted and available with optional floor mounting kit
- Small compact modular design
- Illuminated Crank 1 and Crank 2 pushbuttons, can be pressed simultaneously if needed to crank from both batteries
- Illuminated Auto-Manual selector switch
- Illuminated Stop pushbutton
- Two pre-punched conduit holes for bottom enclosure entry greatly reduce the possibility of metal chips and cutting oil falling on electrical components resulting in possible failure
- PC board diagnostic LED's on inputs and outputs for ease of troubleshooting
- All PC boards have locking plug-in connectors for reliability, easy removal and replacement
- FM and CE marked controllers utilizes 600 PSI pressure transducer and test solenoid valve mounted on a common manifold with 4000 PSI burst pressure for improved reliability. UL listed controllers available with 290 PSI rating only. Both for use in freshwater applications.
- Front panel Lamp Test
- Alarm Silence button (only used for non NFPA 20 required alarms)
- Tamper proof cranking sequence with dead battery lockout and sequence change-over to alternate cranking circuit
- Quick Start Menu steps the user through essential set points one at a time

- Three illuminated AC line circuit breakers/disconnects
- Manual Test PB
- Minimum Run timer
- Weekly Test Timer
- Engine Run Time Meter
- Automatically adjusts for Daylight Savings Time, can be disabled if required
- Remote Start input
- Deluge Valve Start
- Shutdown Interlock input

Data/Event Recording

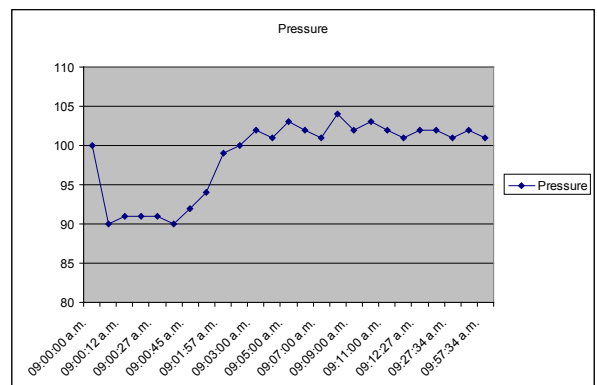
Event history is continuously downloaded to USB Flash Drive that is supplied as standard with the controller. Data/Event log can store on board over 3000 time and date stamped events. With 1GB Flash Drive (included), expected data logging is lifetime of the controller with typical use. Real time clocks accurate to plus/minus 2 minutes per year over the full temperature range. The event history can be viewed by scrolling on the display or by saving it to a USB flash drive. The event history is recorded as a .CSV file and can be easily opened as an Excel file.

Pressure recording

- The system pressure is monitored and changes are recorded with time and date stamp. Pressure accuracy is greater than 98%.

| Date | Time | Pressure | Unit | Alarm/Event |
|----------|---------------|----------|------|-----------------------------|
| 7/8/2008 | 09:00:00 a.m. | 100 | PSI | |
| 7/8/2008 | 09:00:02 a.m. | 90 | PSI | Low Pressure Alarm |
| 7/8/2008 | 09:00:12 a.m. | 91 | PSI | Begin Automatic Start Cycle |
| 7/8/2008 | 09:00:12 a.m. | 91 | PSI | Crank Battery #1 |
| 7/8/2008 | 09:00:27 a.m. | 91 | PSI | Stop Crank Battery #1 |
| 7/8/2008 | 09:00:42 a.m. | 90 | PSI | Crank Battery #2 |
| 7/8/2008 | 09:00:45 a.m. | 92 | PSI | Engine Started Running |
| 7/8/2008 | 09:01:45 a.m. | 94 | PSI | |
| 7/8/2008 | 09:01:57 a.m. | 99 | PSI | |
| 7/8/2008 | 09:02:00 a.m. | 100 | PSI | Low Pressure Alarm cleared |
| 7/8/2008 | 09:03:00 a.m. | 102 | PSI | |
| 7/8/2008 | 09:04:00 a.m. | 101 | PSI | |
| 7/8/2008 | 09:05:00 a.m. | 103 | PSI | |
| 7/8/2008 | 09:06:00 a.m. | 102 | PSI | |
| 7/8/2008 | 09:07:00 a.m. | 101 | PSI | |
| 7/8/2008 | 09:08:00 a.m. | 104 | PSI | |
| 7/8/2008 | 09:09:00 a.m. | 102 | PSI | |
| 7/8/2008 | 09:10:00 a.m. | 103 | PSI | |
| 7/8/2008 | 09:11:00 a.m. | 102 | PSI | |
| 7/8/2008 | 09:12:00 a.m. | 101 | PSI | |
| 7/8/2008 | 09:12:27 a.m. | 102 | PSI | STOP BUTTON depressed |
| 7/8/2008 | 09:12:34 a.m. | 102 | PSI | Engine Stopped |
| 7/8/2008 | 09:27:34 a.m. | 101 | PSI | |

- Pressure can easily be viewed in Excel as a text file or in a graph format as shown below.



- Pressure is logged every 60 minutes or when the pressure changes by 5 PSI or more. The sample rate and pressure deviation is user adjustable.

Display LED's

- Charger 1 Trouble
- Charger 2 Trouble
- Battery 1 Trouble
- Battery 2 Trouble
- System Ready
- Pressure Switch Start
- Engine Low Oil Pressure
- Low Fuel Level
- Engine Running
- Engine Start Failure
- High Coolant Temperature
- Auto Shutdown On



Pressure/Battery VI Display

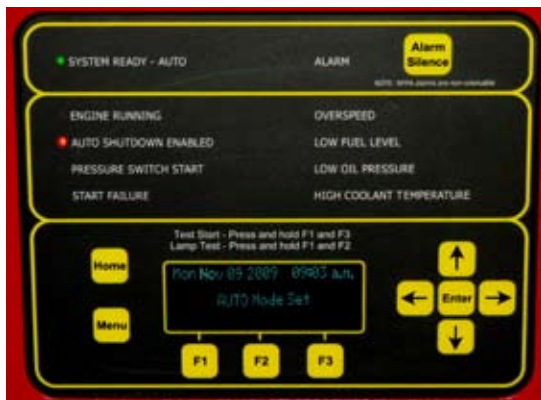
- System water pressure digital display
- Start pressure digital display
- Simultaneous digital display of amperes and voltages for battery 1 and battery 2

Event/Alarm Messages

- Memory near full message
- Low Suction Pressure message
- Crank Cycle Status indication shows number of starting attempts and crank/rest time remaining
- Up to 4 programmable custom alarm messages

Alarms

- Pump run contacts, one Form C
- Louvers/Engine Running, one Form C contact
- Low Fuel Level, one Form C contact
- Main Switch Not In Auto, one form C contact
- Trouble 1, one Form C contact for controller trouble
- Trouble 2, one Form C contact for engine trouble
- Up to 7 programmable pump house alarm inputs



User Interface Panel/Display



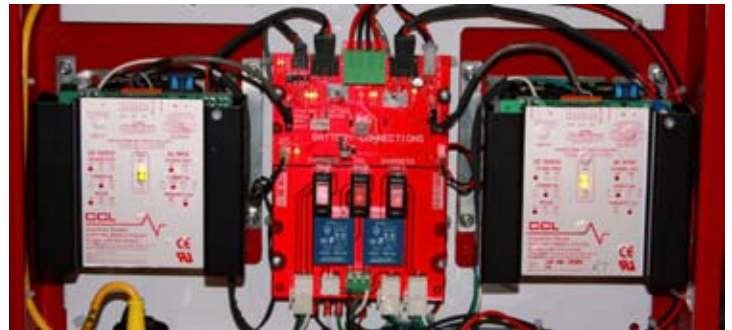
Main I/O board with terminals for field connection of pump house alarm inputs and alarm output contacts

Communications

- The HD5000 is equipped with RS485, RS232 and CAN Bus serial communications ports
- Three internal and one external high speed USB open serial communication ports are provided to cover a variety of communication protocols. One port is used for the USB Flash Drive for event/data recording; three are available to the user for additional devices such as a printer

Battery Chargers

Dual battery chargers, advanced electronic 3 stage industrial style, 10 ampere, for 12 volt or 24 volt DC lead acid batteries; 115 or 220 Volts AC, for use with lead acid batteries.



HD5000 Battery Chargers

Options

- NEMA 4X Stainless Steel enclosure (available on FM and CE controllers only)
- Sea water applications
- Additional pump house alarms and contacts
- Leg kit
- Printer
- Consult factory for additional options



HD5000 with Leg Kit



Engine Relay Board for field engine connections including ECM engines and PLD engines



600 PSI manifold assembly with pressure transducer and test solenoid valve, 4000 PSI burst pressure, individually tested at 1000 PSI. Available on FM and CE controllers only. UL Listed controllers available with 290 PSI maximum rating.

Dimensions & Weight:

| | |
|--------|--------|
| Width | 20" |
| Height | 24" |
| Depth | 8" |
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Ordering Information:

EXAMPLE CATALOG NUMBER:

HD50-12-L-N-1-6-G1

MODEL
HD50 = Model HD5000
Diesel Controller

DC VOLTAGE
12 = 12 V
24 = 24 V

BATTERY TYPE
L = Lead Acid

OPTIONS
See Options Table

AC VOLTAGE
1 = 115 V
2 = 220 V
3 = 380-415 V
4 = 460-480 V
5 = 575-600 V

SYSTEM GROUND
N = Negative Ground

Hz
5 = 50 Hz
6 = 60 Hz

Example: HD5012LN1G1

HD5000 Microprocessor Type Diesel Fire Pump Controller, for use with 12 Volt, lead acid batteries, negative ground, 115 Volts AC, 60 HZ, with option (G1) low fuel level switch



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