

Model 7700 Pump Director

Valve and Pump Motor Interface Controller





Model 7700A Pump Director

The GA Model 7700A Pump Director provides all the external logic necessary for the proper start-up and normal shutdown sequencing of the pump motor and any GA Industries Pump Control Valve. The Model 7700A also automatically recognizes common fault situations, initiates a pump control valve and pump motor emergency shutdown sequence, and provides both visual and electronic fault notification and diagnostics.

The Model 7700A Pump Director is the latest version of the original Model 7600A, thousands of which have been installed since its introduction in 1975. The Model 7700A incorporates enhanced features not available on earlier models, such as PLC-based logic, touch screen control, digital communication capabilities, an emergency stop button, NEMA 4X enclosure, and five adjustable timer settings.

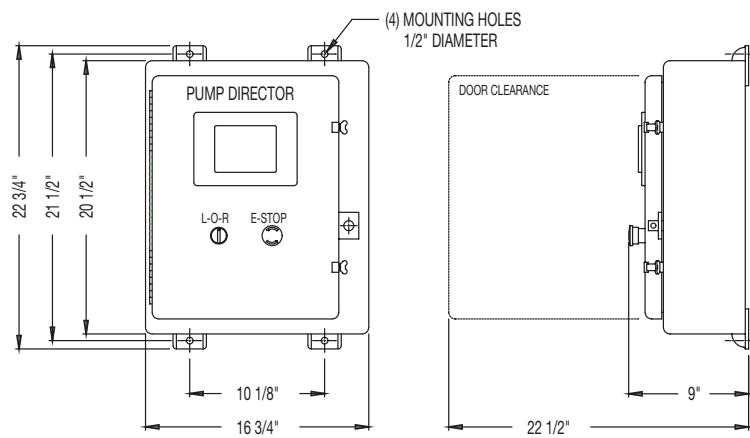
Normal Pump Operation

With the selector switch in local, pump start up and normal shutdown sequences are initiated via the START and STOP buttons on the touch screen or on a computer screen via the RS-232 connection. With the selector switch in remote, pump start up and normal shutdown are initiated via remote signals to dry contacts in the Model 7700A Pump Director.

Emergency Pump Shutdown

Emergency shutdown can be manually initiated by depressing the E-Stop button on the Model 7700A enclosure door or automatically upon power outage or other pre-set emergency situations to protect the pump, motor and pump control valve.

Five adjustable digital timers and setup options allow pump motor and pump control valve normal and emergency sequencing to be customized to suit virtually any pumping situation.

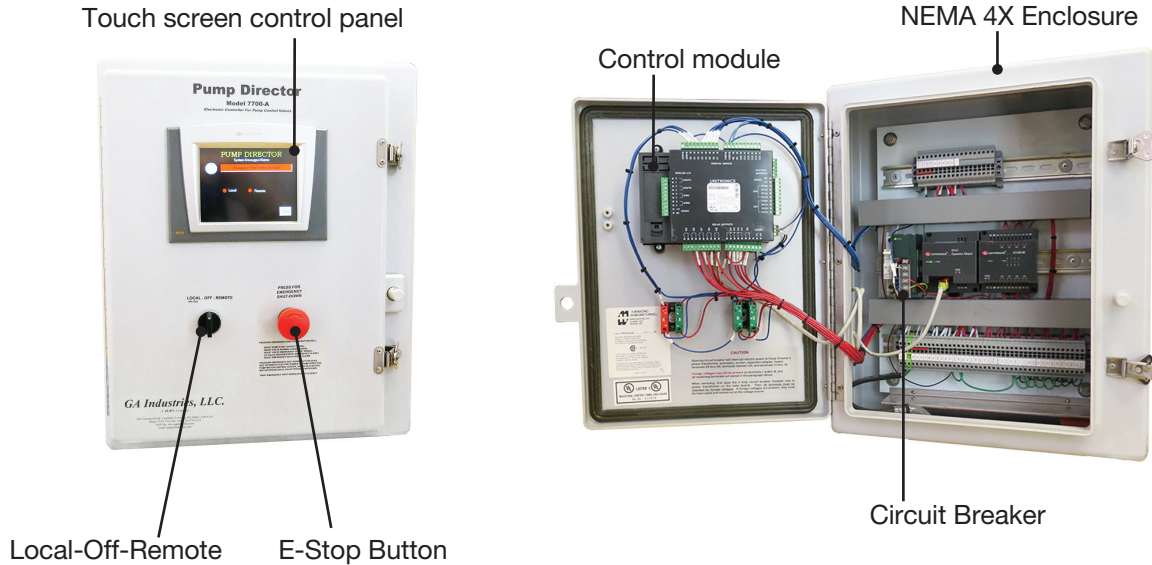


Installation

Each pump control valve has its own dedicated Model 7700A Pump Director. It can be installed near the valve it controls or at a more convenient location, as shown above for a (4) pump arrangement.

Model 7700A Pump Director

Pre-wired Valve and Pump Motor Interface Controller



Simple and Reliable

The Model 7700A is a simple interface that provides all the necessary logic to reliably sequence the normal and emergency operation of the pump control valve and the pump motor.

Pre-Wired, Programmed and Tested

The Model 7700A's pre-programmed logic accommodates all the normal and emergency situations that occur in pumping operation.

Touch Screen Technology

User-friendly with easily understandable graphic displays for system setup, pump start, pump stop, as well as real time valve status, fault diagnostics, and alarms.

Local and Remote Operation

The pump start and stop sequence can be initiated locally through the Model 7700A's touch screen or remotely via its RS-232 port or input signals to the terminal strip.

Facilitates Installation

Terminal connections are clearly labeled and field wiring is minimized, reducing installation time and start-up issues.

Emergency Stop Button

The Model 7700A includes an emergency stop button on the enclosure door. Depressing this button overrides all other operating commands and initiates an immediate pump shutdown and emergency pump control valve closure.

Easy Setup

Five timer settings can be easily adjusted and default operating options selected either locally using the touch screen or on a remote computer via the Pump Director's RS-232 port.

Versatile

The Model 7700A works in conjunction with any GA Industries pump control valve whether installed on centrifugal, turbine, or submersible pumps with constant or variable speed drives.

GA Industries water and wastewater pump control valves include:

- CHECKtronic® Pump Control Valves
- Resilient Seated Ball Valves
- Metal Seated Ball Valves
- Electric Check Valves

Specification for Pump Director, Model 7700-A

Electronic Controller For Pump Control Valves

GENERAL: The Pump Director controller shall function as the interface between the pump control valve and the pump starter. The Pump Director shall properly sequence and control the pump start-up and pump shut-down procedure, providing both visual and electronic status outputs for operating personnel.

The Pump Director shall include automatic recognition of common fault conditions and shall provide proper fault response sequencing to the pump control valve and pump starter as well as visual and electronic fault notification to operating personnel.

CONSTRUCTION: The Pump Director shall include a solid state processor capable of monitoring a minimum of (10) digital input signals, and providing a minimum of (4) powered output signals and (15) digital output signals. The processor shall have a minimum of 2 MB logic memory, minimum 120 K database memory, and 9 μ sec scan time.

Local operator status shall be provided by illuminated LCD touchscreen panel, minimum 5.7" screen size, 256 color. Data input shall be possible by virtual keypad via the touchscreen panel. Remote communication and status monitoring shall be available by means of an RS232 port connection.

A regulated power supply shall be provided, suitable for 115 to 120 VAC single phase supply voltage, 50/60 hz, with maximum 30 amp surge current rating. Output voltage shall be regulated 24 VDC \pm 5%, 0.6 amp rated with 0.8 amp over-current protection. A separate 5 amp circuit breaker shall be provided on the incoming supply voltage connection.

The Pump Director shall be housed in a NEMA 4X fiberglass enclosure with gasketed door, gasketed touchscreen panel, continuous stainless steel hinge, stainless steel twist/latch door fasteners, and padlockable door hasp.

The enclosure shall include a minimum 120 watt heater with integral thermostat. A gasketed Local-Off-Remote (L-O-R) selector switch shall be provided. A gasketed emergency shut-down pushbutton shall be provided (locking type, with manual reset). Labeled, screw-type terminal blocks shall be provided for all input and output connections and supply voltage connection. A minimum of (8) spare terminal blocks shall be provided.

INPUTS: The Pump Director shall be capable of monitoring the following inputs: presence of supply voltage, status of L-O-R selector switch, status of Emergency Shutdown pushbutton, digital remote pump start/stop command signal, two (2) digital valve closed/not closed signals, digital pump discharge pressure switch signal, digital auxiliary system override/shut-down signal, digital remote alarm reset signal. All digital inputs shall be dry contact type and shall be

powered by the Pump Director 24 VDC power supply. Local inputs shall be entered by means of the LCD touchscreen panel and shall include: set-up screen for setting of timers and user-selectable options, local pump start command, local pump stop command, local alarm override command.

OUTPUTS: The Pump Director shall provide the following powered outputs: motor start signal, normal solenoid pilot/valve open signal, emergency solenoid pilot, valve close signal. Powered outputs shall be powered by the incoming VAC supply voltage and protected by the 5 amp circuit breaker. The Pump Director shall provide the following non-powered digital outputs: motor start signal, normal valve open signal, normal valve close signal, emergency valve close signal, L-O-R switch in Local signal, L-O-R switch in Remote signal, valve not fully closed alarm, auxiliary system override/shutdown alarm, insufficient pressure on start-up alarm, valve failed to open on start-up alarm, loss of pressure while pumping alarm, valve closed without command alarm, valve failed to close after shut-down command alarm, emergency shut-down button activated alarm, power failure alarm. Non-powered outputs shall be dry contact, isolated relay type rated for 230 VAC / 30 VDC with maximum allowable 3 amp rating (resistive load). Remote monitoring of the Pump Director shall be possible by communication via the RS232 port connection provided within the processor.

TIMERS AND SETTINGS: The Pump Director shall include the following timers and settings, programmable from a set-up screen and virtual keypad:

VDT Timer - Allowable time for pump to develop pressure on start-up.

VDT-2 Timer - Delay valve opening after pressure developed on start-up.

VIT Timer- Allowable time for valve to begin opening.

VCD Timer - Allowable time for valve to close.

PFT Timer - Delay time for automatic pump re-start following power failure.

If valve fails to close within VCD timer setting, Pump Director can be set to allow pump to continue to run or to initiate an emergency shut-down sequence of valve and pump.

Following a power failure, upon restoration of power, Pump Director can be set to require a reset of the power failure alarm or to permit an automatic restart of the pump upon restoration of power and expiration of the PFT timer setting

MANUFACTURER: The controller shall be GA Industries Model 7700 as manufactured by VAG USA, LLC Mars, PA USA.

For more information about GA Industries' products, or to contact a sales representative, visit gainindustries.com.

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