

Application Reference Guide

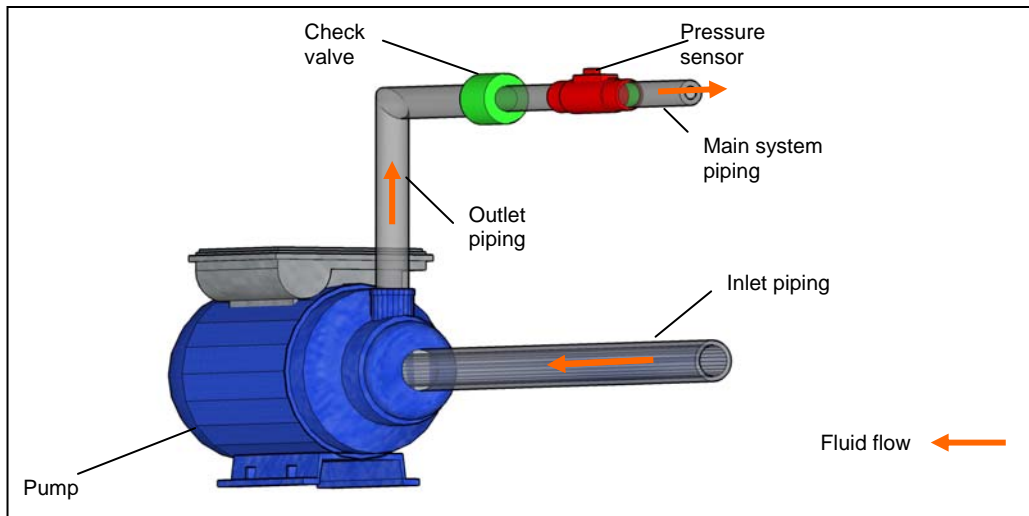
Pumping Applications

Mitsubishi Solution

Inverter: **FR-A700 (NA5 firmware)**
Sensor: **3rd party pressure transducer**

HMI: **GOT1000 (Optional)**
Motor: **3rd party motor**

Application:



System configuration:



◇ Overview

Pumping can be defined as the ability to compress or drive a fluid. Within applications pumping can mean passing a fluid into or out of a system where either fluid pressure or flow rate is controlled. Typically an inverter operates at the center of the application determining the control characteristics of the pump.

◇ Example Applications

Pumping applications sit within a variety of different industries. Examples are listed below:

- Waste water treatment
- Building water management
- Irrigation
- Household water management

◇ Solution features, advantages and benefits

Features

Advantages/Benefits

<i>Built-in PLC for independent inverter control</i>	<ul style="list-style-type: none"> • Additional PLC cost no longer necessary • 20% Reduced cabinet space for control system • Improved system functionality such as user created error checks. i.e. transducer failure.
<i>Open networking:</i>	<ul style="list-style-type: none"> • Remote maintenance of the application • Enhanced connectivity to third party devices within the application • Improved data management
<i>Precise speed and torque control</i> - Ultra-precise speeds across the control range +/-0.01%	<ul style="list-style-type: none"> • Precise control for pressure sensitive applications • Fast pressure equalization
<i>Simplified parameter setup with Auto-tuning</i>	<ul style="list-style-type: none"> • Up to 60%+ energy saving • Optimized parameter setup • Compensates for changes caused by temperature fluctuation
<i>Straightforward design:</i> - Removable terminal block	<ul style="list-style-type: none"> • Up to 80% reduced setup time when replacing the inverter
<i>Self-diagnostics:</i> - Monitoring of internal components prevents unnecessary downtime - System protection and overload functions	<ul style="list-style-type: none"> • Enables accurate planning for maintenance checks of the pumping application • Avoids prolonged downtime of application
<i>Unmatched product reliability:</i> - A700 Service life of up to 20 years	<ul style="list-style-type: none"> • 50% reduction in machine service costs over life time
<i>Direct connection to HMI</i>	<ul style="list-style-type: none"> • Simplified machine operation for operator • Straightforward machine maintenance
<i>FR-Configurator software</i>	<ul style="list-style-type: none"> • Up to 80% time reduction pumping application setup time.
<i>GT1020 direct connection</i> - Dedicated FREQROL driver - Low cost HMI	<ul style="list-style-type: none"> • Intuitive screens for pumping control, monitoring and parameter setting and alarm logging. • Up to 60%+ reduced programming time

*Note: The values listed in the table are based on a real world application.

◇ Customer Testimonials

- ❖ “The A700 has reduced both my day to day running costs and simplified setup of the pumping system”