



# PumpSmart<sup>®</sup> MV (Medium Voltage) Variable Speed Drive Solutions

Power and Control in your hands!



**ITT**

ENGINEERED FOR LIFE

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## Medium Voltage Pump Monitoring and Control Powered by PUMPSMART<sup>®</sup>

ITT Goulds Pumps is a leading global manufacturer of industrial process pumps. Leveraging 160+ years in pump machinery design, manufacture and operations, ITT's aftermarket solutions provider, ITT PRO Services<sup>®</sup> has one goal - improving the profitability of your plant. Our products and services address your operation's biggest issues: process, maintenance management and energy costs.

PumpSmart<sup>®</sup>, an industry award-winning and patented pump controller, delivers real-time control and protection of your pumps while also providing valuable process insight. By protecting against unplanned pump failure due to process upsets, PumpSmart keeps your operation running longer and reduces unplanned repair activities and expense. By right-sizing your pumps to your system, we can reduce not only your energy consumption, but also wear & tear on your process systems.

PumpSmart Control Solutions now has the ability to control your medium voltage applications with award winning and patented pumping logic.

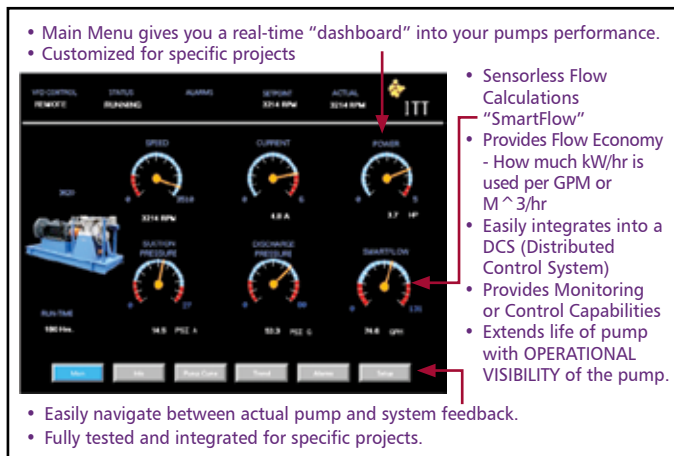


Fig. 1 – 12" Touchscreen display for the PumpSmart MV.

## Take More Control of your Pump System

High power rotating machines like centrifugal pumps are critical systems which need to be efficiently monitored and controlled to maximize the best process output.

## 2 PumpSmart MV Control Solutions

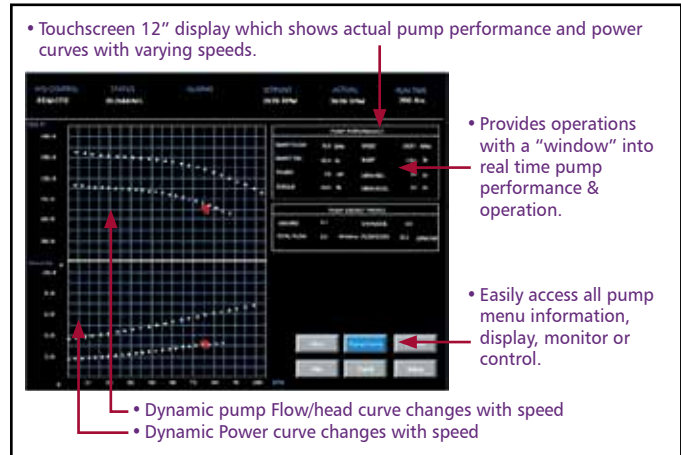


Fig 2. – Dynamic Pump Curve Generator.

Whether it is a tank pipeline service or large boiler feed systems, it is more critical to keep the pump at or near the Best Efficiency Point (BEP) of original design during varying loads. The PumpSmart solution uses patented, tested and applied hydraulic logic, which effectively takes the power of the pump and puts it in your control! Transform your pumping system into a more efficient and productive part of operations.

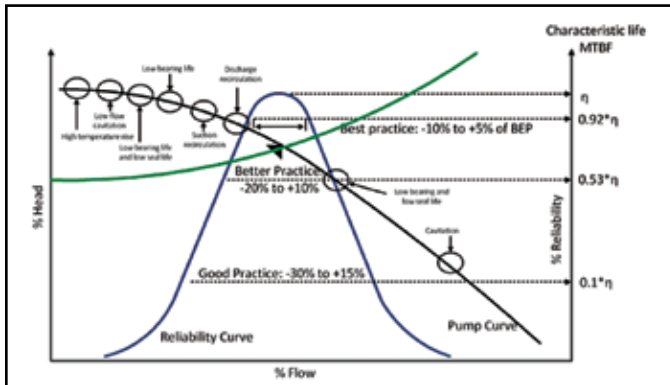
## Pump Protection and Predictive Monitoring



Protection against process upsets are the main concern for keeping critical processes running efficiently and maximizing output.

PumpSmart MV solutions takes intelligent control of your pumping system to ensure it operates within the parameters needed for maximized output PLUS it can also prevent damage due to process upsets which cause critical "downtime".

- No flow or "shut-off" conditions
- Minimum Flow warning
- "Run-out" or overflow (allows operators to visually see pump operation)
- NPSH margin



The Barringer-Nelson curve shows reliability impact of centrifugal pump operation away from BEP. (Source: Paul Barringer)

- Best Efficiency Point Calculation
- Minimum and Maximum speed limits

For best operation, a centrifugal pump requires proper NPSH and running near the Best Efficiency Point. PumpSmart MV provides the operator a real-time view of how the pump performance is compared to system requirements. With active monitoring, alarms can be programmed to provide a BEP indication and protect the pump from low flow and cavitation.

### Multi-Pump Control - Load Balancing



PumpSmart logic has the ability to monitor or control multiple pumps while operating in parallel or series piping plans. Multi-Pump operation for Medium Voltage systems

is now easier to use and manage with PumpSmart. The patented and proven logic of PumpSmart evenly balances your process pump during minimum and maximum loads, while keeping the pump close to Best Efficiency! Many years of pumping experience and application knowledge allows PumpSmart to automatically:

- Stage (on) and De-stage (off) during various load conditions
- Alternate pump work based on run/operating hours
- Fault back up for each pump
- Maximize efficiency/energy of each pump

- Operate pumps only when required
- Operate up to 8 pumps
- Eliminate control valves
- Constant Pressure or Flow control
- Easily integrate to the DCS (Distributed Control System)
- All from one Global company, ITT PRO Services

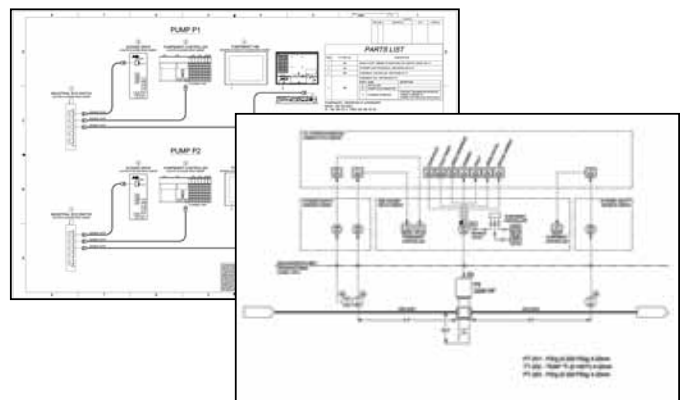


This is a picture of an actual job for an engineered system with PumpSmart MV.

### Engineered Solutions

ITT PRO Services can lead with developing an integrated electrical pump control system which provides higher energy pumps smooth pressure or flow operation for any industry. From order support, documentation, drawings, outdoor eHouses, communication and systems networking; ITT has the global technical skills and support management for complex pumping projects.

- Dedicated Project Management
- Electrical Engineering Support
- Software Development
- Custom controls and panels
- System integration and testing
- Site commissioning and support
- Aftermarket Support



Visit our website at  
[www.ittproservices.com](http://www.ittproservices.com)

## Upgrade and Improve your standard Medium Voltage VFD Pumping System!

- PumpSmart MV has the ability to analyze existing VFD controlled systems and give operators visibility of pumping systems
- Provides better operation and less down-time due to process pump visibility
- Patented logic can improve overall system visibility and predictive monitoring
- More than just AMPS and SPEED; real-time pump performance equates to better operation and protection of high energy pumps



Intelligent and Powerful monitoring or control for your Medium Voltage industrial process pumping system is **finally here**. PumpSmart MV systems combines the experience and knowledge of over 160 years of pump system design and support, with the latest in monitoring and control. ITT PRO services can engineer and integrate your pumping mechanical, hydraulic and electrical system for advanced system monitoring and control.

# Wherever you are, we're there too.



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ITT Industrial Process  
Seneca Falls Operations  
240 Fall Street  
Seneca Falls, NY 13148  
[www.itt.com](http://www.itt.com)

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