xylem

Let's Solve Water

TECHNOFORCE™ –
MODBUS COMMUNICATIONS PRIMER

Benefits of Modbus

- Modbus communication allows the TechnoForce to communicate through supervisory control and data acquisition (SCADA) and Building Automation Systems (BAS).

- Pump System Specific "Points"
    - View:
        - System Pressures
        - Alarm Status
        - Individual Pump Run Status
        - System Power Draw (HP)
    - View/Modify
        - Setpoints
        - System Start/Stop Status

- Universally accepted as the most common protocol with Johnson Metasys N1 and BACnet available as alternate communicaton protocols.

WHAT IS TECHNOFORCE?

- Preconfigured variable speed pressure booster packages.
- Pending booster package system certification for NSF/ANSI Standard 61 and NSF 61 Annex G.
- All wetted materials from system suction to system discharge have been extensively tested and certified.
- Xylem e-SV (Vertical Multistage), SSH (End Suction) and NPE (End Suction) pumps
- Safe potable water distribution.

Modbus is a serial communication protocol developed and published by Modicon® in 1979 for use with its programmable logic controllers (PLCs). In simple terms, it is a method used for transmitting information over serial lines between electronic devices. The device requesting the information is called the Modbus Master and the devices supplying information are Modbus Slaves. In a standard Modbus network, there is one Master and up to 247 Slaves, each with a unique Slave Address from 1 to 247. The Master can also write information to the Slaves.

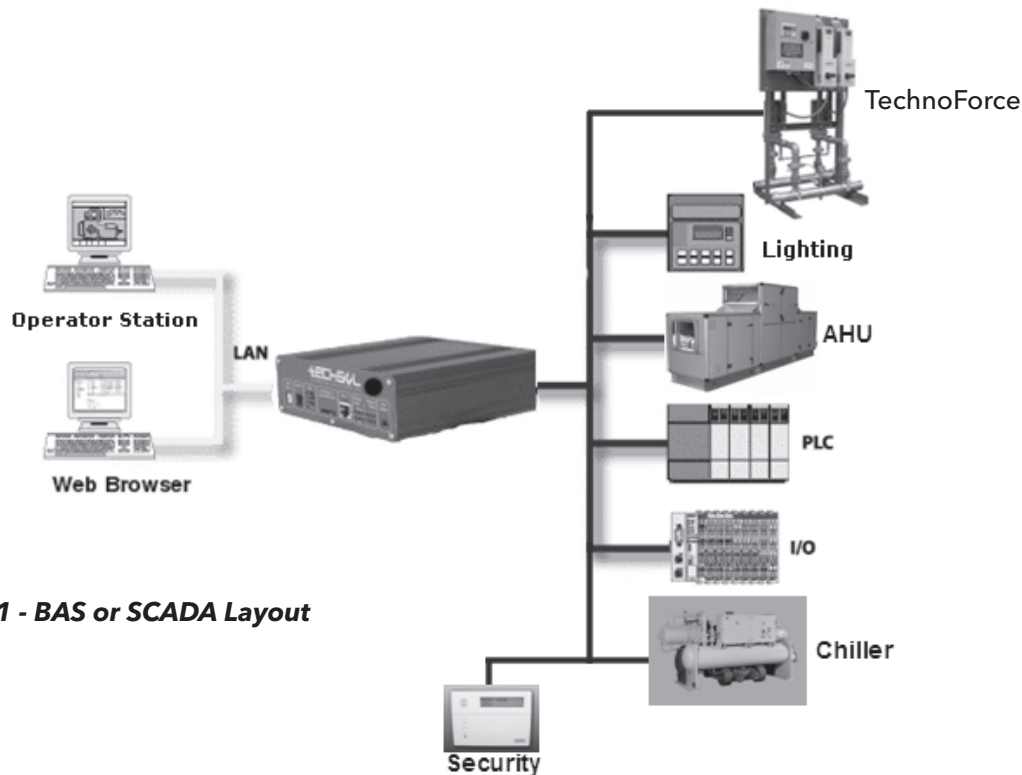# TECHNOFORCE™ –
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Figure 1 - BAS or SCADA Layout

Network Overview

In the network above, the TechnoForce is tied to a network where system data (points) are viewed or modified from the operator station. Several different devices are tied to the building network including the TechnoForce Pump Station. At the operator station, the user may be interested in changing the setpoint remotely depending on the time of day or on demand. Also, with regards to any device on the network, the operator is interested if the system is in alarm or whether pumps are running. The idea is to remotely monitor the system as if you are in front of the unit accessing the controller directly.

Working with Controls Contractors

Controls Contractors will typically need 1) a copy of the points list to understand what system data is available and 2) wiring schematic to show which terminals to land the control wiring on. The communications wiring is landed inside the TechnoForce control panel. The IOM which ships inside every control panel has points list and basic wiring information.

The controls contractor will need to provide the Baud Rate (57600, 38400, 19200, and 9600) and the address (1 – 247) for the TechnoForce. The baud rate is the speed of the communications. All devices on the network must "talk" at the same speed. An address is required to uniquely identify or name each device on the network. The unique address allows the users network system to know who to "ask" the question to, and who "responded" with an answer.

In the case of troubleshooting, all troubleshooting outside of the TechnoForce panel is the responsibility of the controls contractor.

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