



**CONTROLLERS**

**HVAC**

# TIGER'S EYE CONTROLLERS

## State-of-the-Art System Control:

- Mark II Pressure Booster - Constant Speed
- Mark III Tank Level
- Mark IV HVAC Multi-Zone - Constant Speed
- Mark V Pressure Booster - Variable Speed
- Mark VI HVAC Multi-Zone - Variable Speed
- Mark VII Chiller Sequencing - Variable Speed
- Mark VIII Data Center Control
- Mark X Plant Controller

## TIGERFLOW Control Sequences:

- Pressure Sequencing
- Flow Sequencing
- Suction, Discharge Pressure
- Level Sequencing
- Best Efficiency Monitoring
- Wire to Water Efficiency
- Variable Primary Control
- Primary/Secondary Control
- Chiller Sequencing
- Boiler Sequencing
- BTU Calculations & Sequences
- Variable Volume, Constant Speed
- Cooling Tower Control
- Automated Valve Control
- Temperature Control
- Data Logging
- Energy Management System Interface

## TYPICAL APPLICATIONS

- Domestic Booster System
- HVAC System Loops
- Cooling Tower Sequencing
- Chiller/Boiler Sequencing
- Heat Transfer / Temperature Control Municipal Tank Level Control
- Municipal Plant Water Systems
- Landscape Irrigation Systems.

Standard TIGER'S EYE Controller							
	MARK II	MARK III	MARK IV	MARK V	MARK VI	MARK VII	MARK VIII
Function	Booster	Level	HVAC	Booster	HVAC	Chiller Seq	Data Center
Constant Speed	S	S	S				S
Variable Speed Pumps				S	S	S	S
PLC with touch screen HMI	S	S	S	S	S	S	S
Maximum pumps per controller	4*	4*	4*	4*	4*	4*	4*
Tank level control		S					
System Pressure transducer	S	S	S	S			
Suction Pressure Transducer	S	S	S	S			
Differential Pressure Transducer			!		S	S	S
Flow Meter	!	!	!	!	!	!	!
Float / Level Switch	E	E		E			
Flow Switch	E	E		E			
Common alarm horn & dry contacts	S	S	S	S	S	S	S

\* Custom programming available to accommodate more than 4 pumps.  
 S Standard feature  
 E Enabled feature for field supplied switch  
 ! Optional feature  
 N/A Not applicable

To place your order, please contact:  
 214-337-8780  
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## MARK V – E SERIES CONTROLLER

The E-Series - Mark V is a variable speed booster system with a PLC based controller. This system is capable of controlling up to a four pump package system utilizing a user-friendly color touchscreen HMI (Human Machine Interface) to monitor the system conditions, and adjust the system settings. This system monitors the system discharge pressure via a 4-20 mA signal pressure transducer. This provides a precise pressure control and user flexibility. In addition to this sensor, a suction pressure transducer and/or a flow meter can be added to extend the control and flexibility of the system. The main objective of this pumping package is to maintain a constant pressure, adjusting the speed and amount of pumps to run according to the building's demand. The system is capable of staging pumps on and off based on pressure and/or flow, while alternating pumps to keep the run times balanced between them. The Mark V controller uses the TIGERFLOW "TAP" Technology, ASHRAE 90.1 compliant, to adjust the pressure setpoint and reduce the energy consumption. BAS integration with the E-Series controller is possible through Modbus or BACnet communication protocols. See the HMI's specification for further details.

### With this state of the art controller you get:

- System control based on PLC/HMI technology
- Non-volatile memory for all user setpoints
- 6" Color touch screen HMI (TIGERFLOW or Red Lion)
- "TAP" Technology Setpoint adjustment
- Individual HOA pump operation
- Individual pump run indication/verification
- Pump sequencing based on pressure and/or flow
- Field adjustable settings including:
  - » Pump Start/Stop pressure setpoints
  - » Pump ON and OFF time delays
  - » Low suction pressure set point
  - » Low system/discharge pressure set point
  - » High system/discharge pressure set point
  - » Individual alarm ON/OFF time delays
  - » Manual/Automatic alarm reset
- Pump alternation:
  - » Automatic on lead pump shutdown
  - » Daily / weekly / monthly
  - » Manual alternation
- Event history records up to 100 past events that include:
  - » Pump starts / stops
  - » Triggered alarms
  - » Alarm acknowledgements
  - » Alarm reset
  - » Pump alternation
  - » Date and Time of each event
- Suction & discharge pressure read out in PSI
- High suction economy mode
- 7 Password protected levels of security
- Field adjustable passwords
- Touch safe DC power supply
- 24 VDC digital I/O
- BAS Communication:
  - » Modbus RTU
  - » BACnet UDP/IP
  - » BACnet MS/TP
- Thru door disconnect(s) with individual motor fused protection
- Alarm horn

### SPECIFICATIONS

#### PLC

- 24 VDC (± 10%) Power supply voltage
- 3.5 W Max power consumption
- 0-55 °C Operation ambient temperature
- UL Listed
- 24 VDC Digital I/O
- Analog modules Wwith 0/4-20 mA and/or 0/2-10 VDC signal I/O

#### TIGERFLOW HMI

- 24 VDC (± 10%) Power supply voltage
- 3.0 W Power consumption
- 0-50 °C Operation ambient temperature
- UL Listed
- Nema 4x / IP65
- RS-232 Serial Communication port
- Modbus RTU Communication
  - » RO Monitoring Information
  - » R/W System setpoint
- See Modbus point list for specifics

#### Variable Frequency Drives Control

- 0-10 VDC Speed signal reference
- 24 VDC Discrete run command signal
- 24 VDC Discrete run feedback signal

#### Pressure Transducers

- Pressure ranges from 0-15 psi up to 0-500 psi
- 8-30 VDC Power supply
- 4-20 mA signal output
- ¼ NPT process connection
- Accuracy ≤ ± 1.0 (with 0.5% non-linearity)
- UL Listed

#### Red Lion HMI

- 24 VDC (± 20%) Power supply voltage
- 8 W Power consumption
- 0-50 °C Operation ambient temperature
- UL Listed
- Nema 4x / IP66
- RS485 Serial communication port
- Ethernet Port
- Modbus RTU Communication
  - » RO Monitoring Information
  - » R/W System setpoint
- BACnet MS/TP or UDP/IP
  - » RO Monitoring Information
  - » R/W System setpoint
- See Modbus/BACnet point list for specifics
- Full remote control over Ethernet IP

#### Additional Options

- 4-20 mA or pulse output flow meter
- Flow switch
- Level switch
- Individual alarm dry contacts
- Pump run validation DP switches
- Telemetry - Local / Remote
- Pressure signal retransmission 4-20 mA
- Flow signal retransmission 0-10 V DC
- Power monitor w/ alarm
- Surge suppression
- Multiple power feeds
- Data Logging
- Wire to water efficiency
- Custom programmed features
- Phase Monitor
- Lightning arrestor
- Circuit Breakers
- Motor Overload Alarm
- NEMA 4X – Stainless Steel Enclosure
- NEMA 4X – Fiberglass Enclosure
- 8", 10" HMI



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