



## Revolutionizing Sustainability and Savings with Advanced Technology

**ICE MAKERS NEED UNCOMPLICATED SYSTEM MANAGEMENT WITHOUT ADDITIONAL COMPLEXITIES OR HIDDEN COSTS.**



**Facilities deserve straightforward strategies that provide insight into what machines are doing and whether the system is doing it well.**



**The Sensori™ Chiller platform empowers arenas and curling clubs with advanced technology to optimize resources, achieve superior efficiency, minimize their footprint, ensure member safety, and achieve excellent ice quality.**



### ENERGY MANAGEMENT

Sensori™ elevates energy efficiency with its cutting-edge adaptive system management. Refrigeration is tailored to your facility's fluctuating demand. An integrated energy profile provides complete transparency.

### EQUIPMENT RELIABILITY

As a fully digitalized platform, Sensori™ seamlessly connects and controls all system devices with IoT precision, offering redundancy through multiple compressors and enhanced system protection via remote accessibility.

### SAFETY

Advanced low-pressure design prioritizes both the environment & your safety - using non-flammable, non-toxic, low GWP next generation refrigerants in a platform based on a 0-leak design. Fully recyclable.

 Lower Life-Cycle Costs    Smart Controls    Simplified Safety Requirements



# Upgrading Equipment? Important Decisions for Your Facility



## Conventional NH3 System

NH3 is highly toxic, flammable, and corrosive B2L rated - potential leaks can cause serious injury or death. Not suitable for all piping materials due to corrosivity.

Compressors turn on/off to control ice temperatures creating temperature swings. Fixed head pressures force equipment to run at maximum output - regardless of the ambient temperature or cooling demand.

Large charge size, leak detection/ventilation, specialized training required, extra safety devices required, increased servicing, insurance, and TSSA inspections. Requires large machine room, cooling tower, water consumption.

NH3 require full system change when upgrading equipment - no retrofit option

NH3 has high environmental manufacturing impact, and increased energy use during equipment operation which negates GWP value. Consumes additional natural resources. Requires large charge.

While potentially IoT connected, devices remain independent and do not communicate with other components. Notification of system anomalies are after-the-fact and service is reactive.

### Safety



### Energy



### Hidden Cost



### Adaptability



### Environment



### Maintenance



## Sensori<sup>™</sup> Chiller Platform

Uses non-toxic, non-flammable next generation HFO refrigerants with ultra-low GWP, A1 rating. Design based on a 0-leak rate.

System automatically accommodates refrigeration requirements in facility, responds to ambient, saves energy during unoccupied times, and avoids unnecessary temperature swings. Full energy profile is built-in.

No Hidden Extras - small charge size, no specialized training required, less complexities, installation flexibility frees up machine room, reduced maintenance, lower insurance cost.

Gradual implementation of system upgrades. Outdoor configurations offer flexibility with option for future relocation.

Digitalization optimizes performance, lowers energy use, and ensures system protection without added resources. Charge size significantly reduced

Proactive maintenance with monitoring, complete diagnostics, AI, machine learning, system self-regulation, remote access, and notifications that are designed-in and integrated with each device in the system - backed by full OEM support.

# Average Energy Use of Ontario Clubs with the Sensori Chiller Platform

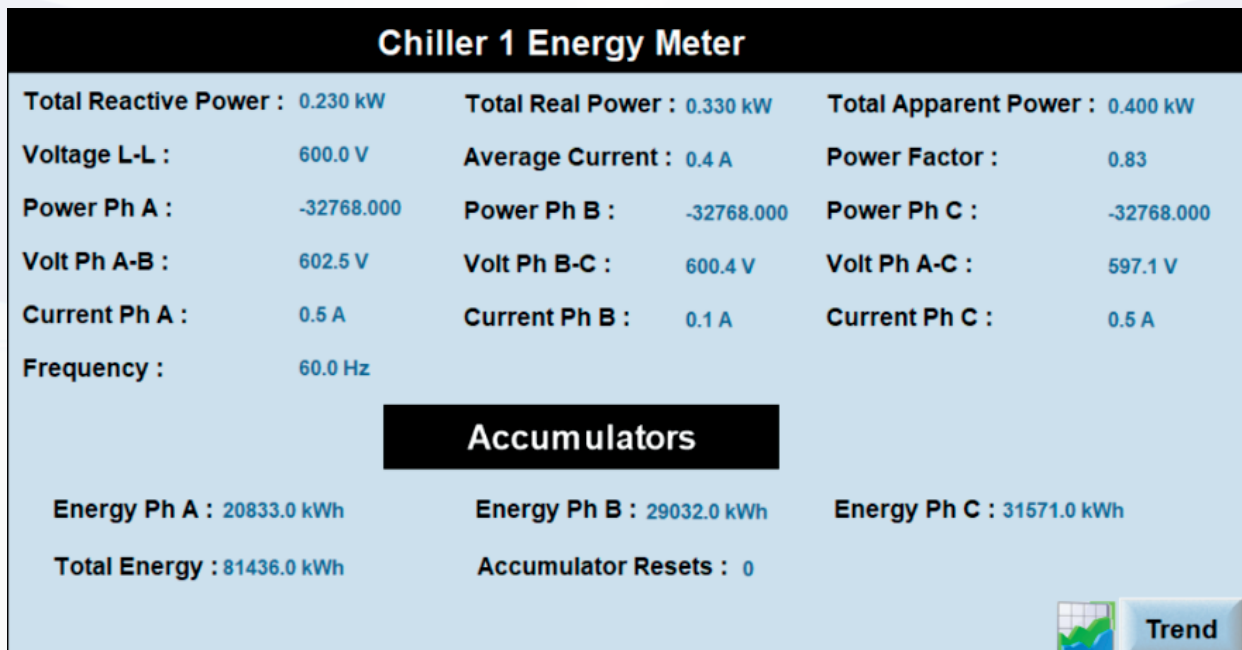


Facility Details	Cost/ kw	Energy kw/day	Energy \$/day	Energy \$/mon	Energy \$/yr
4 ice pads, cement base	\$0.15	254	\$38.10	\$1,144.80	\$6,945.12
4 ice pads, sand base	\$0.15	313	\$46.95	\$1,407.60	\$8,539.44
5 ice pads, cement base	\$0.15	340	\$51.00	\$1,530.00	\$9,282.00
8 ice pads, cement base	\$0.15	492	\$ 73.80	\$ 2,214.00	\$ 13,431.60

Total energy use encompasses the brine pump, temperature pull-down for season start-up, & energies required for ice production.

Average temperature delta for the ice typically ranges from plus to minus 1-2 degrees Fahrenheit

All systems include Sensori<sup>®</sup> platform, Remote Access System Architecture, Advanced Chiller Control, & Low-Pressure Platform Architecture



# Platform Features: One Unified System



## SUPERIOR PERFORMANCE

- Lower compression ratios for superior energy output & most efficient heat rejection
- Danfoss VFDs optimize efficiency and power consumption, providing smooth control for compressors, brine pump & condenser fans to match changing facility requirements
- Sensori's PLC platform establishes connections between all devices enabling intercommunication over ethernet to optimize performance

## RELIABILITY & LONGEVITY

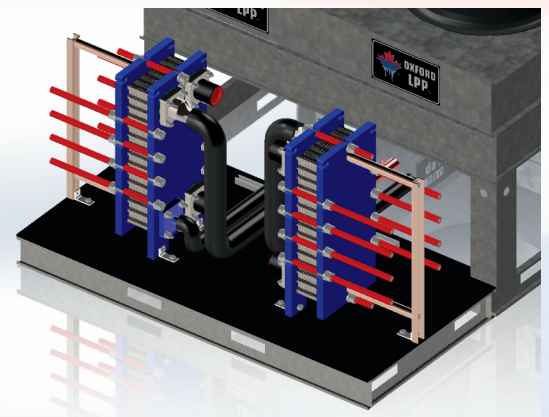
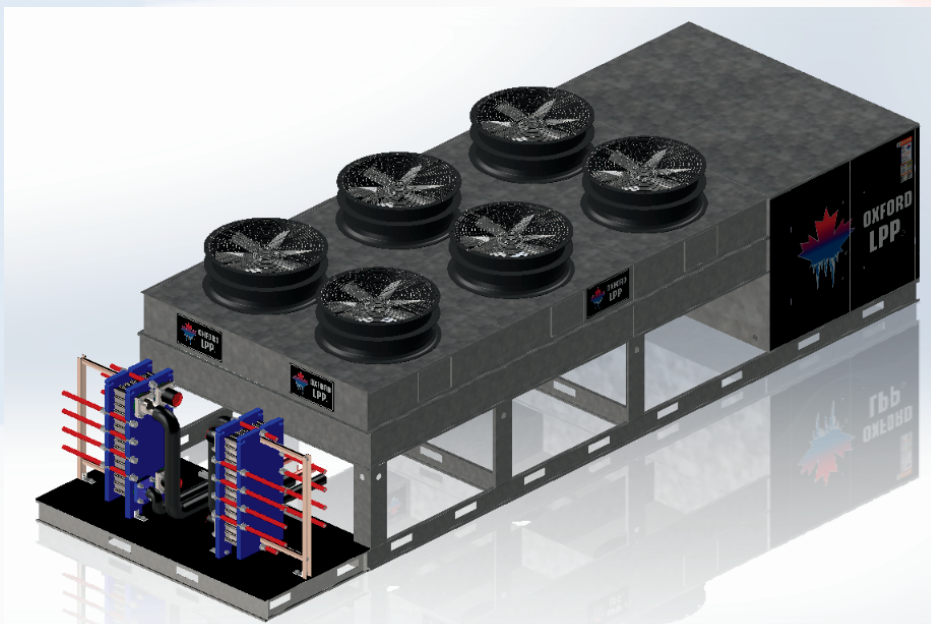
- Comprehensive system monitoring & diagnostics with Sensori<sup>™</sup> Control
- Multiple compact scroll compressors provide redundancy, safeguarding against potential system failures
- Secure remote access & email notification enables a proactive response to any event impacting operating costs, equipment management, or ice quality

## INSIGHTS

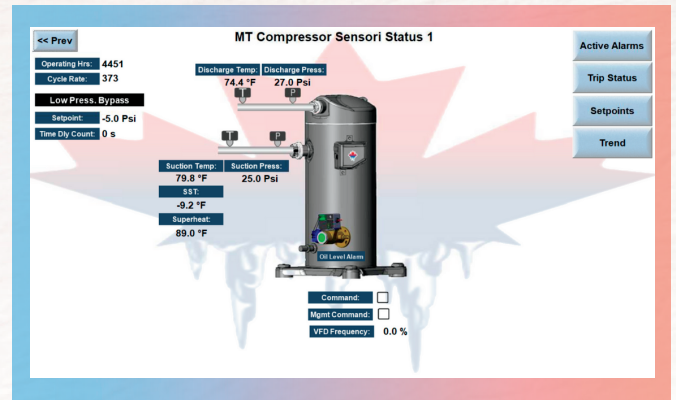
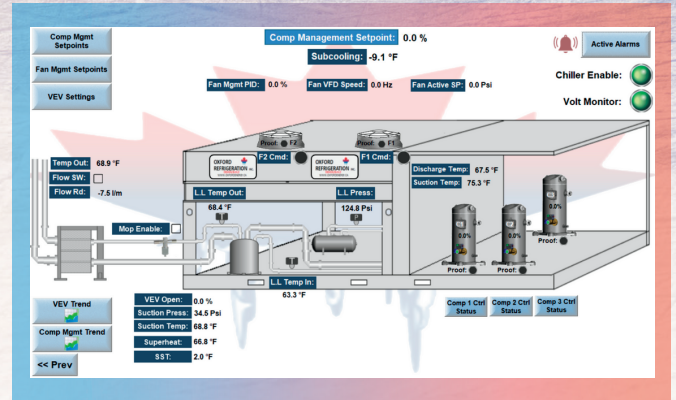
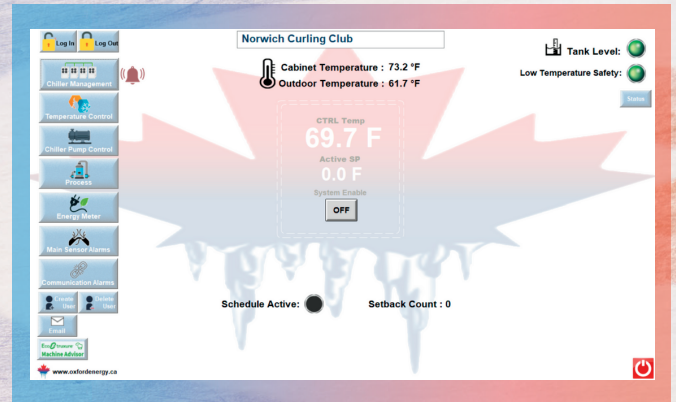
- A central HMI screen provides total transparency, displaying temperatures, pressures, oil levels, energy profiles
- Easily accessible graphing & logging features minimize required technician monitoring
- Insights available from any location with remote capabilities

## LOWER OPERATING COSTS

- Emerson/Danfoss EXVs provide larger capacity range for faster pull down and control through all stages of compression, without overloading compressors
- Complete floating head condenser control with extra subcooling circuit, utilizing lower ambient temperatures for enhanced energy savings
- Low Pressure design uses less energy to make components work
- Significant reductions in refrigerant charge, maintenance/overall labour, power



# You Can Only Manage Ice Temperature Performance & Energy Efficiency... If You Know What's Happening



- Simple ice temperature adjustments during flooding/pebbling with automatic reset functionality
- Detailed diagnostics for compressors, evaporators, and all connected components
- Oversee, configure, and troubleshoot the system from anywhere, using smartphones, touch screens, or computers - enhancing flexibility and efficiency
- Automatic email notifications and alarm management
- Full visibility into energy consumption, capacity, and pumping levels
- Flow rate optimization, brine level control
- User-friendly, cost effective solution with simplified setup and configuration - eliminates the need for elite skillsets or dedicated IT personnel

## One Integrated Management System.

Contact: 226-242-5674

www.oxfordenergy.ca

