# Heat. Fluid. Data.
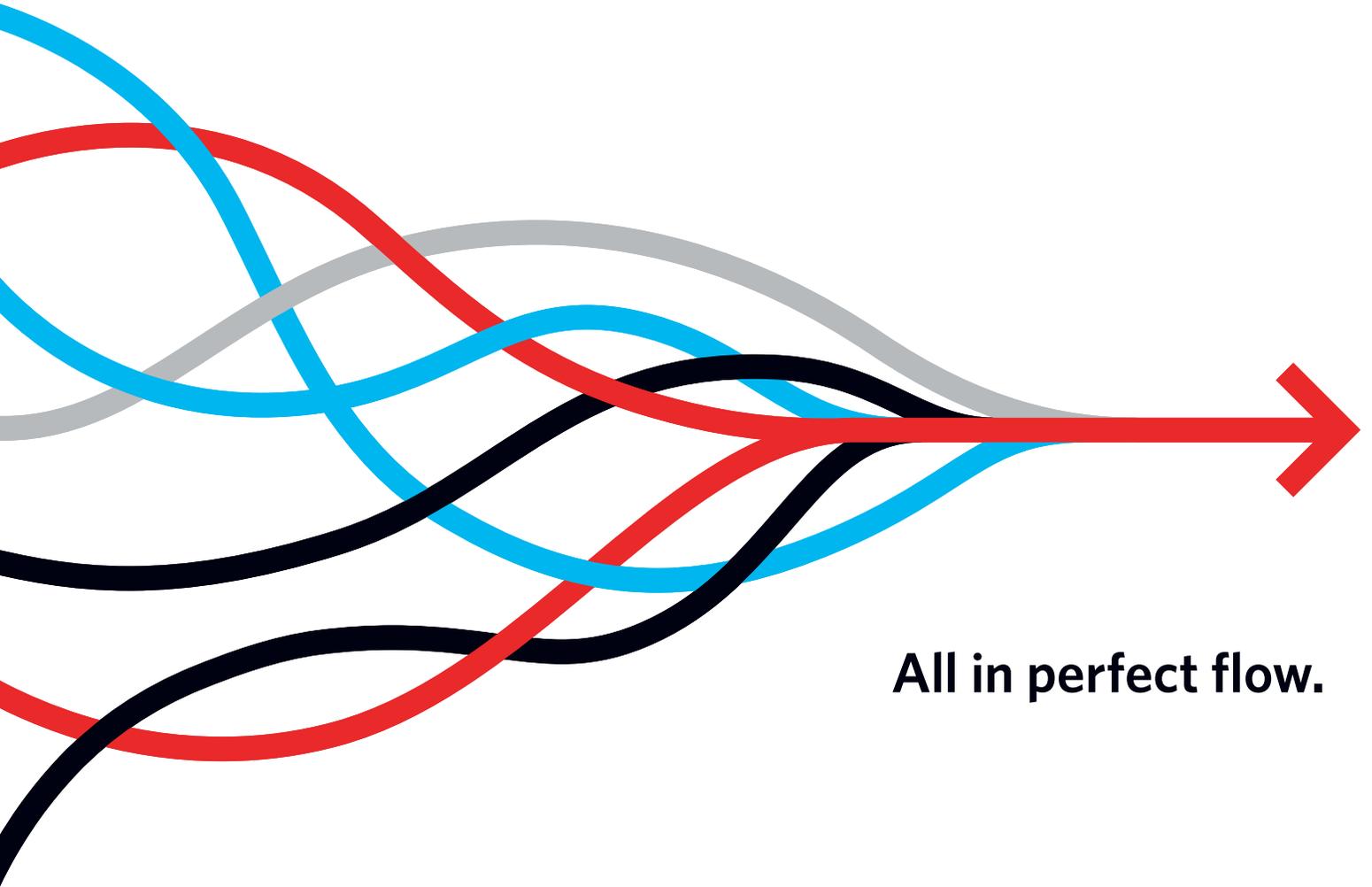
## All in perfect flow.

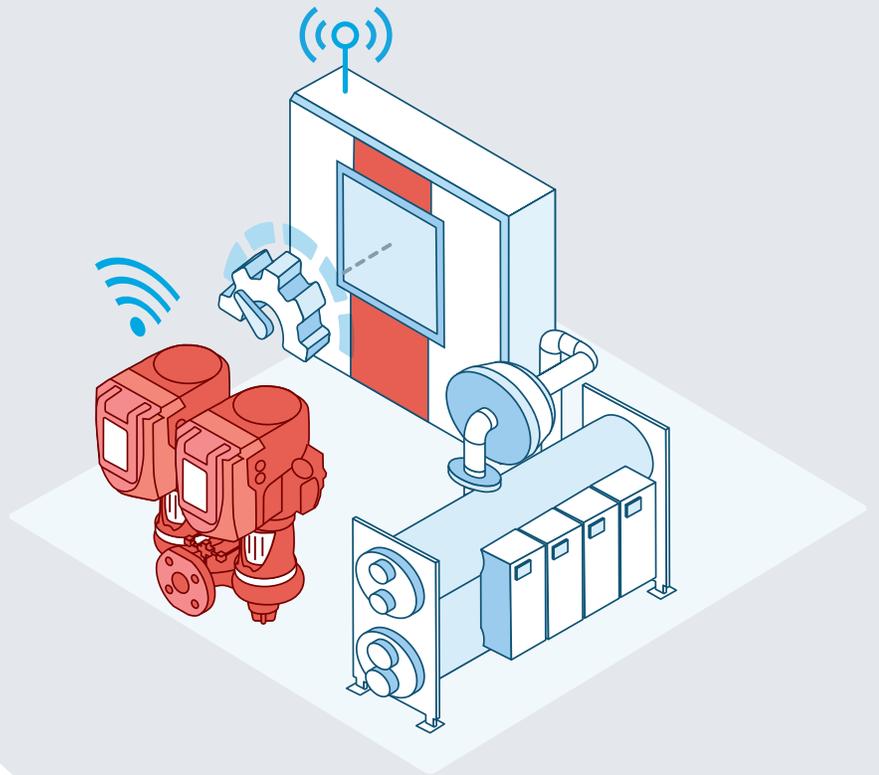Welcome to Armstrong Envelope.
**The world's most efficient cooling system.**

# Decades of heat transfer and fluid dynamics knowledge.

Plus the latest in data-optimized controls.
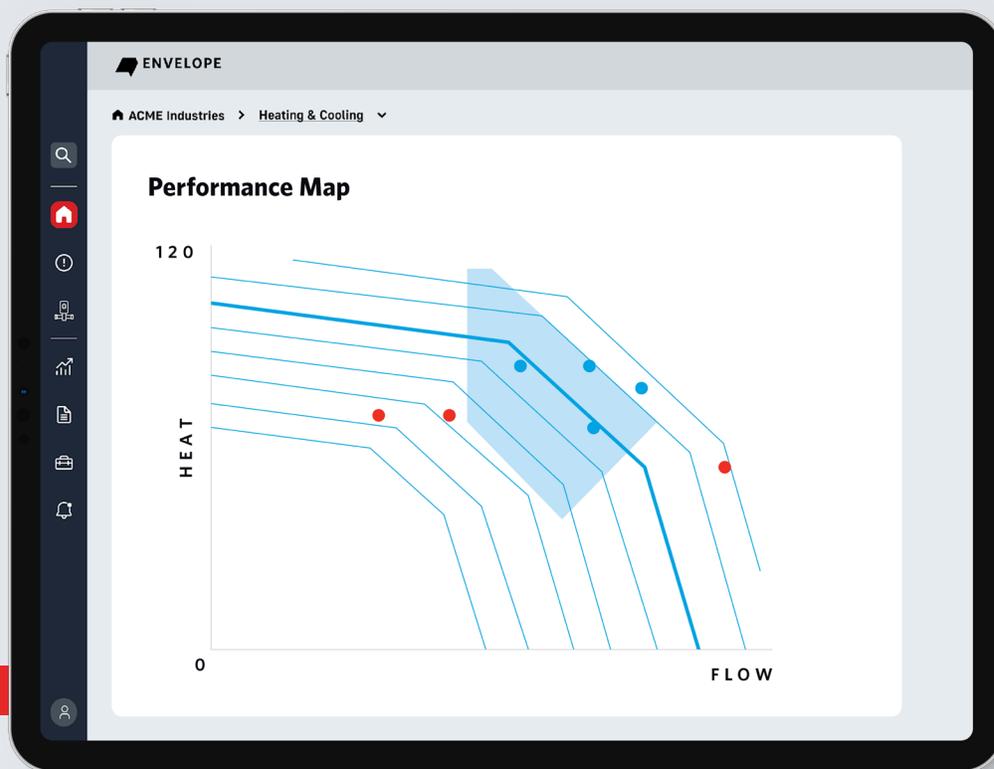**In a single package.**

**Enterprise Envelope delivers comprehensive, systems-level thinking.**
We build the world's most efficient systems by taking the complexity out.

# Performance Mapping: Nobody sees the whole system the way Armstrong does.

Enterprise Envelope identifies all components in a system, studies how they work together and creates performance maps.



Demand for cooling is always changing, so Enterprise Envelope is always updating the performance map to find the most efficient strategy for cooling. At every moment, it operates the right number of pumps, chillers and cooling tower fans at the right levels.

System components work in perfect unison, always in their most efficient range. **That's how Envelope delivers the best COP in the industry.**

# Out-of-the-box brilliance.

Instantly unite components to create a single optimized HVAC system.

Pre-programmed and field adjustable

Powered by the Niagara Framework

Local or remote operation for easy troubleshooting

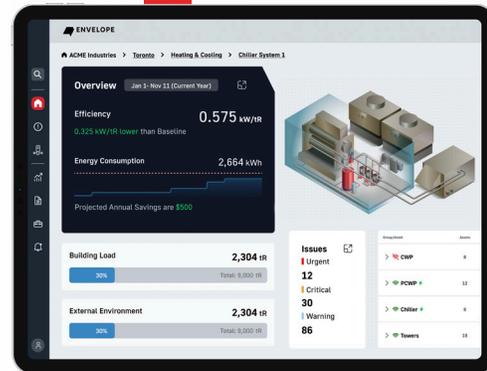Near instant software upgrades for uninterrupted plant operation

Responds to sudden changes in demand load with ease

Limitless plant cooling capacity

# Access your building performance. Anywhere. Anytime.

EcoPulse™ is a cloud analytics service that stays in constant contact with your water-cooled HVAC system and sends you the most important insights.



Constantly compares performance against efficiency targets
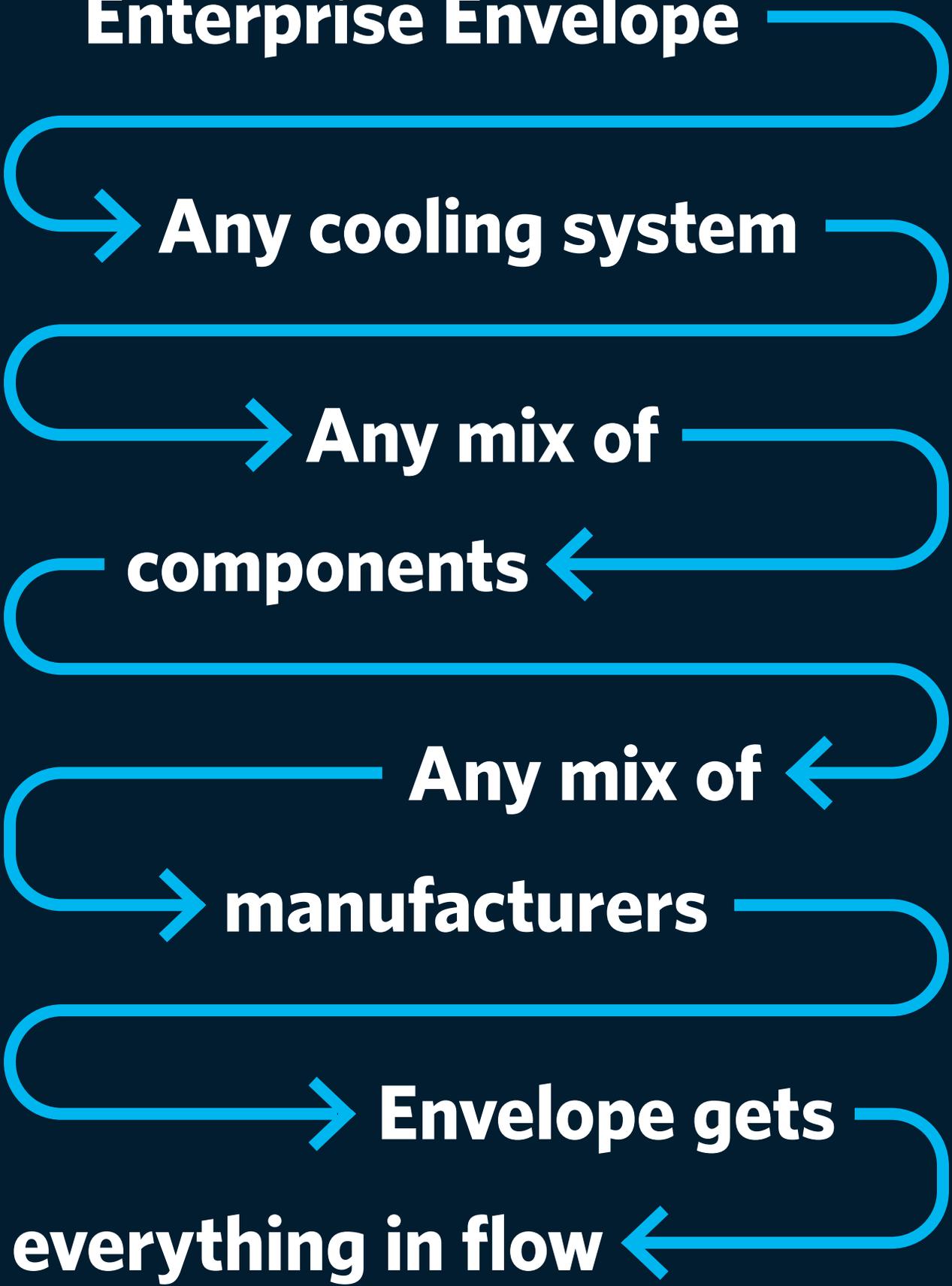
Clean, intuitive user interface

Issues are detected before they become performance stealing problems

Performance data and trends are reviewed by Armstrong experts, quarterly

# Enterprise Envelope

## Any cooling system

## Any mix of components

## Any mix of manufacturers

## Envelope gets everything in flow

# Stop hunting target temps. Predict the curve. Save big.

Enterprise Envelope takes a different approach to provide consistent temperatures:

- Uses Dynamic Compensation control to anticipate demand

- Uses continuous, real-time monitoring to fine tune output

- Delivers seamless performance of output variables

- Stages plant components based on best efficiency

Enterprise Envelope modulates components to create one unified system.
The result is **maximum efficiency and minimum wear** from excessive on/off cycling.
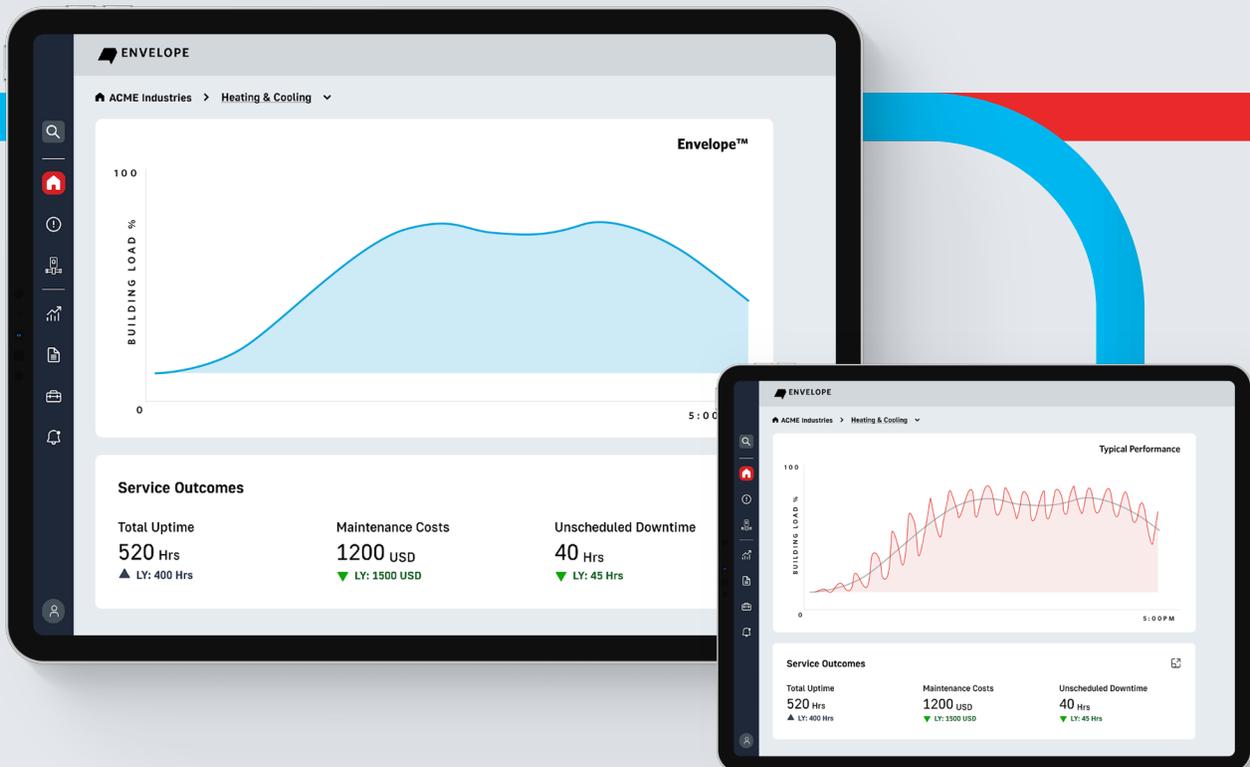
# Optimizing your system with Enterprise Envelope is an easy decision.



ECO-PULSE

REMOTE WEB DISPLAY

EE-W20

BUILDING BMS
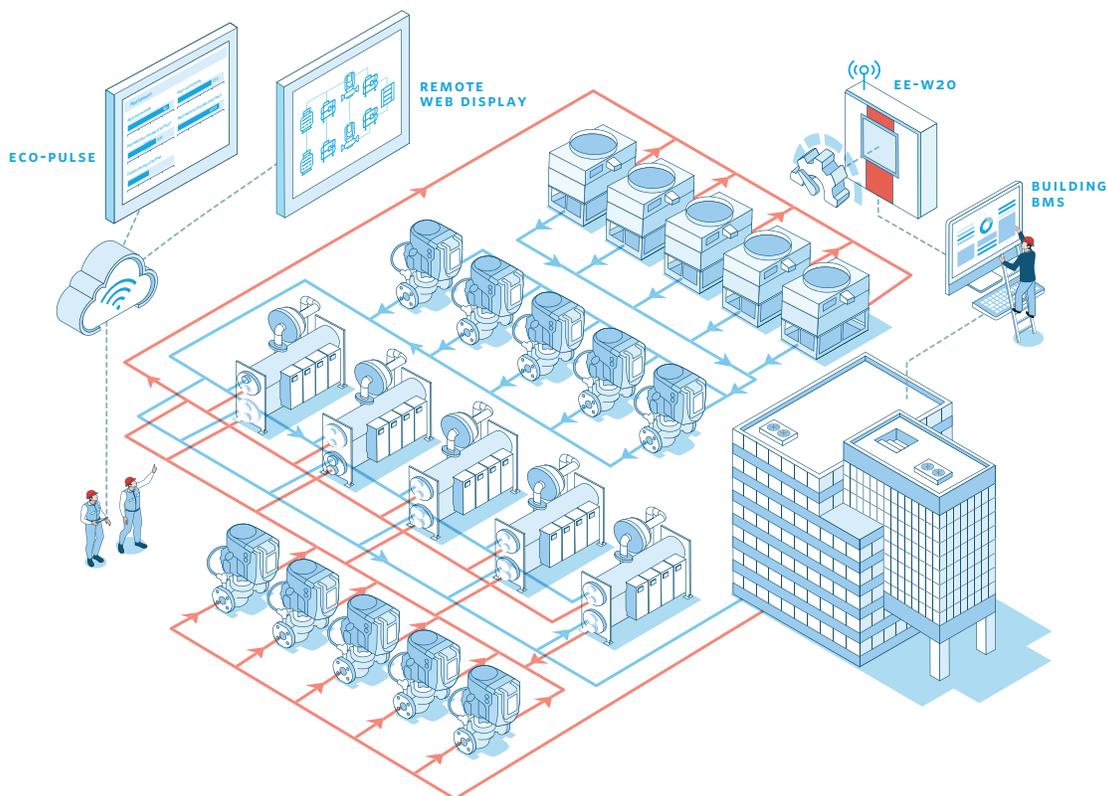
## Choosing the size is even easier.

**EE-W10**
Up to three (3) chillers, cooling tower fans and pumps

**EE-W20**
Up to five (5) chillers, cooling tower fans and pumps

**Systems with 6+ chillers, cooling tower fans and pumps**
Armstrong engineers will promptly custom design your ideal unit.

# Enterprise Envelope
# EE-W10

| Product Type | Enterprise Envelope EE-W10 |
|---|---|
| BACNET CONFORMANCE | Conforms to the BACnet Building Controller (B-BC) Standard Device profile, as defined in BACnet 135-2012 Annex L, Protocol Revision 14 |
| BACNET OBJECTS | Maximum number of BACnet objects: 500 |
| 3RD PARTY INTEGRATION | Supports up to 500 total BACnet and/or Modbus integration points |
| POWER | 24 V AC ±10%, 50–60 Hz, 24A \| 24 V DC, 24W |
| | COMMUNICATION |
| ETHERNET PORTS | 2 × 10/100 Mbps (RJ45 connector) |
| SERIAL PORT 1 | RS-485 serial port with 3-screw connector |
| SERIAL PORT 2 | RS-485 serial port with 3-screw connector |
| USB PORT | Mini-B USB USB Client Connector utilizes 5-pin Mini-B USB cable.  Mini USB |
| HMI | Phoenix WP6101-WXPS IP55 Touch Panel with 10.1" widescreen (16:9) XGA, PCAP display. Software:Qt browser |
| MICROPROCESSOR | 1 GHz AM335X ARM Cortex A8 |
| PLC | JENEsys Edge 534 with options fitted to support 5 devices and 500 points |
| ENVIRONMENTAL RANGE | 0–60 °C (32–140 °F)  5–95% RH, non-condensing |
| MEMORY | 512 MB DDR3L 800 MHz, 4 Gb 8-bit embedded MMC on-board flash |
| REAL TIME CLOCK | Battery-powered clock included to store description/setup values including year, month, date, hours, minutes and seconds |
| COMPLIANCE | Approved: FCC 47CFR Parts 15b and 18, EN 55022, EN 55011, ICES-003, RoHS, UL 916, CSA c22.2 No. 205–17, EN 61010-1: 2010, IEC 61010-1, 3rd edition |
| | ENVIRONMENTAL SPECIFICATIONS |
| ENCLOSURE | IP55 / NEMA 4 panel rating |
| PLASTIC RATING | Fire retardant plastic ABS  UL94-5VA |
| MOUNTING | Flat panel and 35mm DIN rail mounting options standard |

# Enterprise Envelope
# EE-W20

| Product Type | Enterprise Envelope EE-W20 |
|---|---|
| BACNET CONFORMANCE | Conforms to the BACnet Building Controller (B-BC) Standard Device profile, as defined in BACnet 135-2012 Annex L, Protocol Revision 14 |
| BACNET OBJECTS | Maximum number of BACnet objects: 1,250 |
| 3RD PARTY INTEGRATION | Supports up to 1,250 total BACnet and/or Modbus integration points |
| POWER | 24 V AC ±10%, 50–60 Hz, 24A \| 24 V DC, 24W |
| | COMMUNICATION |
| ETHERNET PORTS | Dual 10/100 Base T Ethernet ports supporting BACnet over IP and/or BACnet/Ethernet or Modbus TCP/IP |
| SERIAL PORT 1 | For communication with the following: |
| | BACnet/MSTP network at 9,600 to 115,200 bps |
| | Modbus serial network at 9,600 to 115,200 bps |
| SERIAL PORT 2 | For communication with the following: |
| | BACnet/MSTP network at 9,600 to 115,200 bps |
| | Modbus serial network at 9,600 to 115,200 bps |
| USB PORT | USB type A connector (Back-up and restore support) |
| HMI | Phoenix WP6101-WXPS IP55 Touch Panel with 10.1" widescreen (16:9) XGA, PCAP display. Software:Qt browser |
| MICROPROCESSOR | TI AM3352: 1000MHz ARM® Cortex™-A8 |
| PLC | Lynxspring JENE-PC8000 controller with 25 Device Core & 1,250 points. Includes standard open drives. Supports up to 25 devices and 1,250 points.  Requires Niagara 4.0 and higher. |
| ENVIRONMENTAL RANGE | (-20 to 60 °C (-4 to 140 °F)) |
| MEMORY | 1Gb DDR3 SDRAM Removable micro-SD card with 4Gb flash total storage/2Gb user storage |
| REAL TIME CLOCK | Yes |
| COMPLIANCE | UL 916 CE EN 61326-1 FCC Part 15 Subpart B, Class B FCC Part 15 Subpart C C-UL listed to Canadian Standards Association (CSA) C22.2 NO. 205-M1983 "Signal Equipment" 1999/5/EC R&TTE Directive CCC SRRC RSS RoHS |
| | ENVIRONMENTAL SPECIFICATIONS |
| ENCLOSURE | IP55 / NEMA 4 panel rating |
| PLASTIC RATING | Fire retardant plastic ABS UL94-5VA |
| MOUNTING | Base: Plastic, DIN rail or screw mount options. Cover: Plastic |
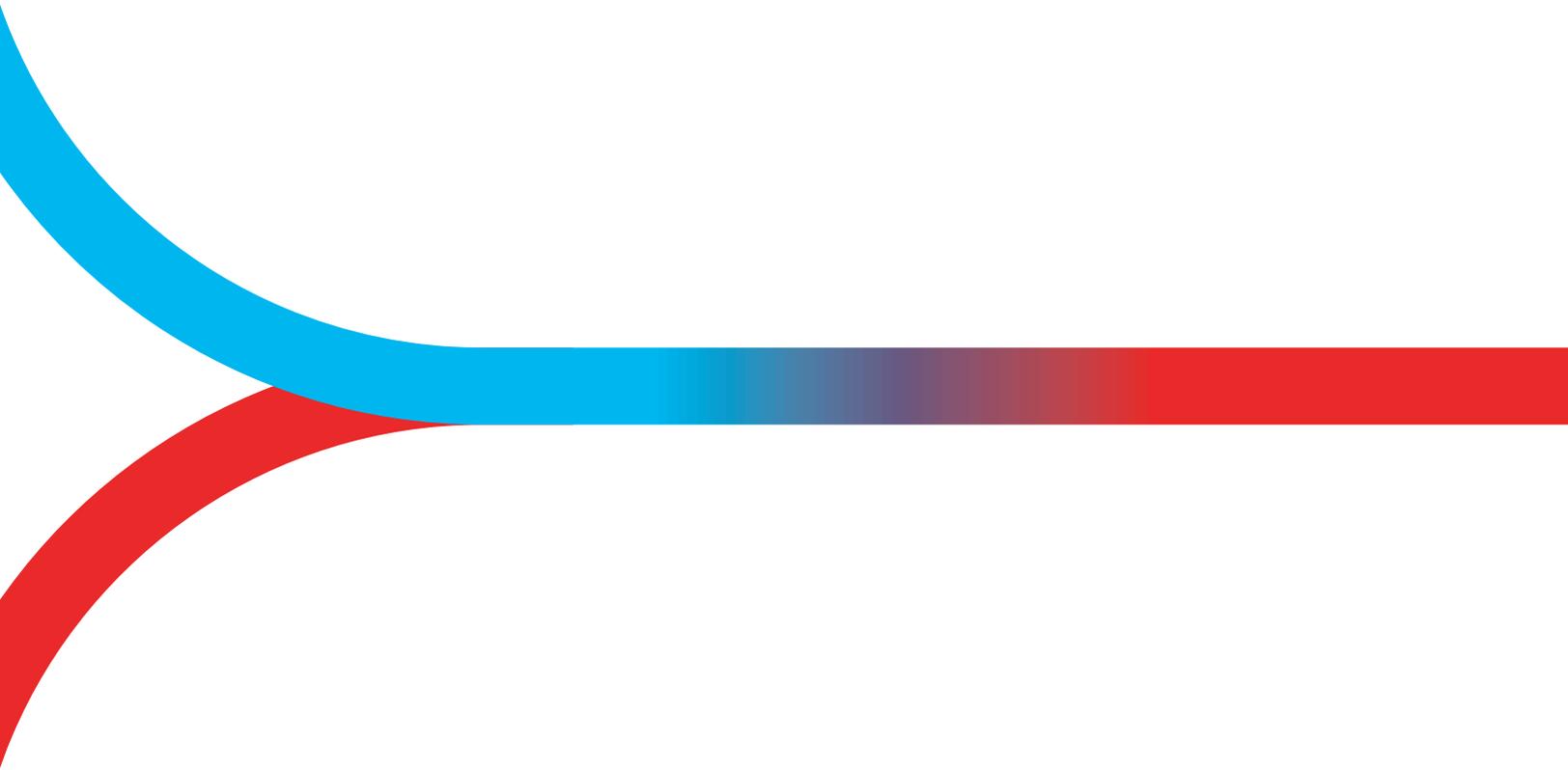
For more information, contact your
Armstrong representative or visit us at:
**ArmstrongFluidTechnology.com/ContactUs**