

## DESIGN ENVELOPE 4380 VIL | 3x3x5 (80-125) | 0305-007.5 | SUBMITTAL

**File No:** 101.5531  
**Date:** MARCH 25, 2021  
**Supersedes:** 101.5531  
**Date:** APRIL 18, 2018

Job: \_\_\_\_\_ Representative: \_\_\_\_\_  
Order No: \_\_\_\_\_ Date: \_\_\_\_\_  
Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_  
Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### PUMP DESIGN DATA

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_  
Capacity: \_\_\_\_\_ USgpm (L/s) Head: \_\_\_\_\_ ft (m)  
Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_  
Temperature: \_\_\_\_\_ °F (°C) Specific gravity: \_\_\_\_\_  
Suction: 3" (80 mm) Discharge: 3" (80 mm)

**UL STD 778 & CSA STD C22.2 NO.108 certified**

**Test report is supplied with each pump**

### MATERIALS OF CONSTRUCTION

- ANSI 125**  
CONSTRUCTION: LPDES F  
E-coated ductile iron A536 Gr 65-45-12, stainless fitted
- ANSI 250**  
CONSTRUCTION: HPDES F  
E-coated ductile iron A536 Gr 120-90-2, stainless fitted

### MAXIMUM PUMP OPERATING CONDITIONS

- ANSI 125**  
175 psig at 150°F (12 bar at 65°C)  
140 psig at 250°F (10 bar at 121°C)
- ANSI 250**  
300 psig at 150°F (20 bar at 65°C)  
250 psig at 250°F (17 bar at 121°C)

### MECHANICAL SEAL DESIGN DATA

**Seal type:** 2A **Stationary seat:** Silicone carbide  
**Secondary seal:** EPDM **Spring:** Stainless steel  
**Rotating hardware:** Stainless steel

### DEPM MOTOR AND CONTROL DATA

**HP:** 7.5  
**RPM:** 3600  
**Motor enclosure:** TEFC  
**Volts:** \_\_\_\_\_  
**Phase:** 3  
**Efficiency:** IE5  
**Orientation:**  L5 (default)  L6  
**Protocol (standard):**  BACnet™ MS/TP  BACnet™ TCP/IP  
 Modbus RTU  
**Control enclosure:**  Indoor - UL TYPE 12  
 Outdoor - UL TYPE 4X  
**Fused disconnect switch:** Consult factory  
**EMI/RFI control:** Integrated filter designed to meet EN61800-3  
**Harmonic suppression:** Equivalent: 5% AC line reactor - Supporting IEEE 519-1992 requirements\*\*  
**Cooling:** Fan-cooled, surface cooling  
**Ambient temperature:** -10°C to +45°C up to 1000 meters above sea level (+14°F to +113°F, 3300 ft)  
**Analog I/O:** Two inputs, one output. Output can be configured for voltage or current  
**Digital I/O:** Two inputs, two outputs. Outputs can be configured as inputs  
**Relay outputs:** Two programmable  
**Communication port:** 1-RS485

\*\* If supplied with the system electrical details, Armstrong will run a computer simulation of the system wide harmonics. If system harmonic levels are exceeded Armstrong can also recommend additional harmonic mitigation and the costs for such mitigation.

### FLOW READOUT ACCURACY

The Design Envelope model selected will provide flow reading on the controls local keypad & digitally for the BMS. The model readout will be factory tested to ensure ±5% accuracy.

| FLUID TYPE            | ALL GLYCOLS > 30% WT CONC |                   | ALL OTHER NON-POTABLE FLUIDS |                        | POTABLE (DRINKING) WATER |                   |
|-----------------------|---------------------------|-------------------|------------------------------|------------------------|--------------------------|-------------------|
| <b>Temperature</b>    | up to 200°F / 93°C        | over 200°F / 93°C | up to 200°F / 93°C           | over 200°F / 93°C      | up to 200°F / 93°C       | over 200°F / 93°C |
| <b>Rotating face</b>  | Silicone carbide          |                   | Resin bonded carbon          | Antimony loaded carbon | Resin bonded carbon      |                   |
| <b>Seat elastomer</b> | EPDM (L-cup)              | EPDM (O-ring)     | EPDM (L-cup)                 | EPDM (O-ring)          | EPDM (L-cup)             | EPDM (O-ring)     |
| <b>Material code</b>  | SCsc L EPSS 2A            | SCsc O EPSS 2A    | C-sc L EPSS 2A               | ACsc O EPSS 2A         | C-sc L EPSS 2A           | C-sc O EPSS 2A    |

## OPTIONS

### SENSORLESS BUNDLE (STANDARD)



Operation of pump without a remote sensor. Includes:

- Sensorless control
- Flow readout
- Constant flow
- Constant pressure

Minimum system pressure to be maintained \_\_\_\_\_ ft (m)

\* If minimum maintained system pressure is not known: Default to 40% of design head

### PARALLEL SENSORLESS



Operation of multiple pumps without a remote sensor

Minimum system pressure to be maintained \_\_\_\_\_ ft (m)

\* If minimum maintained system pressure is not known: Default to 40% of design head

### ENERGY PERFORMANCE BUNDLE



Provides energy savings on oversized systems by adjusting pump parameters to on-site conditions. Includes:

- **Auto-flow balancing** - Automatically determines control curve between design flow at on-site system head, and minimum (zero-head) flow for energy savings
- **Maximum flow control** - Limits flow rate to pre-set maximum for potential energy savings

Maximum flow rate \_\_\_\_\_ gpm (L/s)

\*Only available if sensorless bundle is enabled

\*Available in single pump operation only

### PROTECTION BUNDLE



Protects other flow sensitive equipment by setting limits of pump operation. Includes:

- **Minimum flow control** - Attempts to maintain flow rate to pre-set minimum to protect equipment in system
- **Bypass valve control** - Actuates a bypass valve to protect flow sensitive equipment if pre-set minimum flow rate is reached

Minimum flow rate \_\_\_\_\_ gpm (L/s)

\*Only available if sensorless bundle is enabled

### DUAL SEASON SETUP



Pre-sets heating and cooling parameters for pumps in 2-pipe systems

#### Cooling

Duty point \_\_\_\_\_ gpm (L/s) at \_\_\_\_\_ ft (m)

Minimum system pressure to be maintained \_\_\_\_\_ ft (m)

#### Heating

Duty point \_\_\_\_\_ gpm (L/s) at \_\_\_\_\_ ft (m)

Minimum system pressure to be maintained \_\_\_\_\_ ft (m)

\*Available in single pump operation only

## OPTIONAL SERVICES

### ON-SITE PUMP COMMISSIONING



### PUMP MANAGER



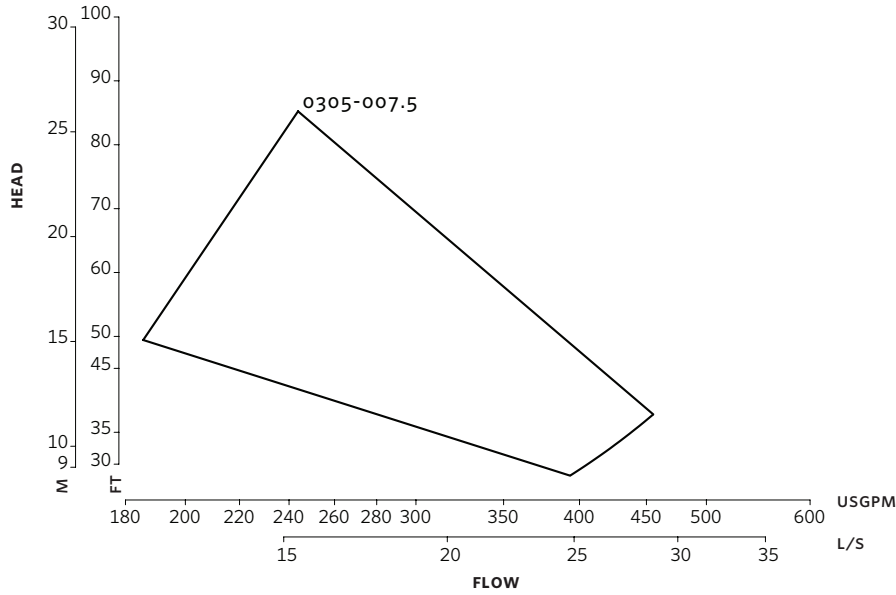
Online service for sustained pump performance and enhanced reliability.

Available in 3 or 5 year terms

\* Requires an internet connection to be provided by building

\* Includes an extended warranty for parts and labour (wearable parts excluded)

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**DIMENSION DATA**

|                | INDOOR<br>(UL TYPE 12/TEFC) | OUTDOOR<br>(UL TYPE 4X/TEFC) |
|----------------|-----------------------------|------------------------------|
| <b>Size:</b>   | 3×3×5                       | 3×3×5                        |
| <b>HP:</b>     | 7.5                         | 7.5                          |
| <b>RPM:</b>    | 3600                        | 3600                         |
| <b>AB:</b>     | 18.45 (468)                 | 20.66 (525)                  |
| <b>B:</b>      | 4.80 (122)                  | 4.80 (122)                   |
| <b>C:</b>      | 3.66 (93)                   | 3.66 (93)                    |
| <b>CI:</b>     | -                           | 5.00 (127)                   |
| <b>D:</b>      | 8.01 (203)                  | 8.01 (203)                   |
| <b>E:</b>      | 8.20 (208)                  | 8.62 (219)                   |
| <b>S:</b>      | 9.25 (235)                  | 9.25 (235)                   |
| <b>SD:</b>     | 17.26 (438)                 | 17.26 (438)                  |
| <b>T:</b>      | 5.00 (127)                  | 5.00 (127)                   |
| <b>Weight:</b> | 123 (55.8)                  | 123 (55.8)                   |

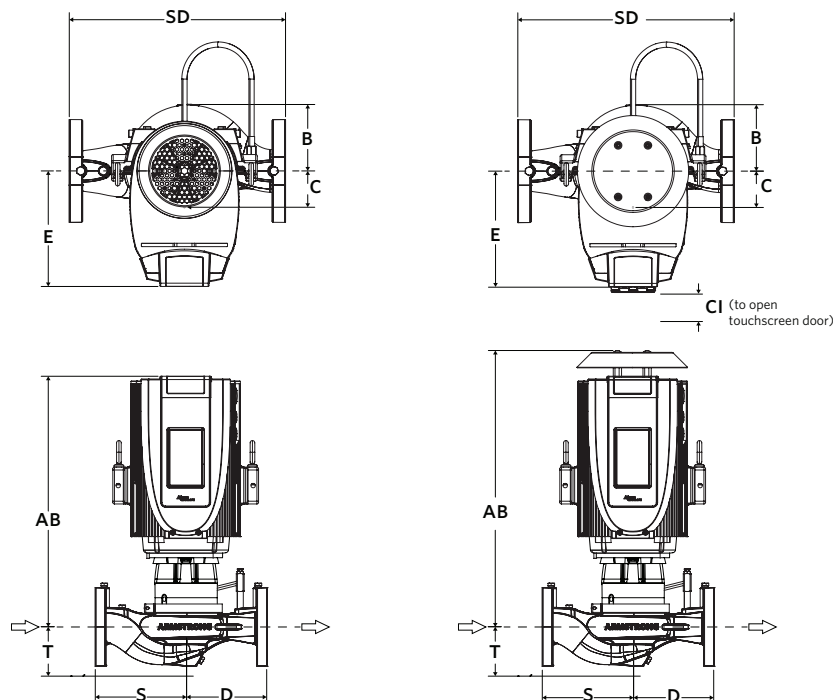
Performance curves are for reference only.  
Confirm current performance data with Armstrong ADEPT Quote or ADEPT Select selection software.

Dimensions - inch (mm)  
Weight - lbs (kg)

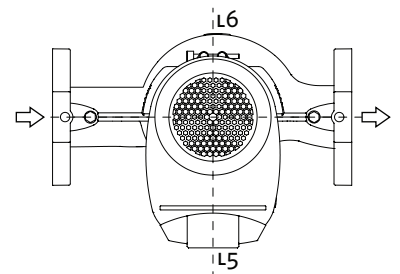
- Tolerance of ±0.125" (±3 mm) should be used
- For exact installation, data please write factory for certified dimensions

**INDOOR**

**OUTDOOR**



**CONTROL ORIENTATIONS**



**TORONTO**

23 BERTRAND AVENUE  
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+1 416 755 2291

**BUFFALO**

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