

## DESIGN ENVELOPE 4380 VIL | 2x2x5 (50-125) | 0205-002.0 | SUBMITTAL

File No: 101.5744  
Date: NOVEMBER 08, 2021  
Supersedes: NEW  
Date: NEW

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: 2" (50 mm) Discharge: 2" (50 mm)

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

**Test report is supplied with each pump**

### MATERIALS OF CONSTRUCTION

**ANSI 125**  
CONSTRUCTION: LPDEBF  
E-coated ductile iron A 536 Gr 565-45-12, bronze 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)

### 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.

### 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:** 2  
**RPM:** 3000  
**Motor enclosure:** TEFC  
**Volts /Phase:**  200-240V/1ph  380-480V/3ph  
For 200-240V/3ph or 575V/3ph,  
see File #: 101.5507  
**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 12,  
tested to TYPE 4X  
**Fused disconnect switch:** See File 100.8131  
**EMI/RFI control:** Integrated filter designed to meet  
EN61800-3  
**Harmonic suppression:** Equivalent: 5% AC line reactor - Sup-  
porting IEEE 519-1992 requirements\*\*  
**Cooling:** Fan-cooled, surface cooling  
**Ambient temperature:** -10°C to +40°C up to 1000 meters above  
sea level (+14°F to +104°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.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
Temperature	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
Rotating face	Silicone carbide		Resin bonded carbon	Antimony loaded carbon	Resin bonded carbon	
Seat elastomer	EPDM (L-cup)	EPDM (O-ring)	EPDM (L-cup)	EPDM (O-ring)	EPDM (L-cup)	EPDM (O-ring)
Material code	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



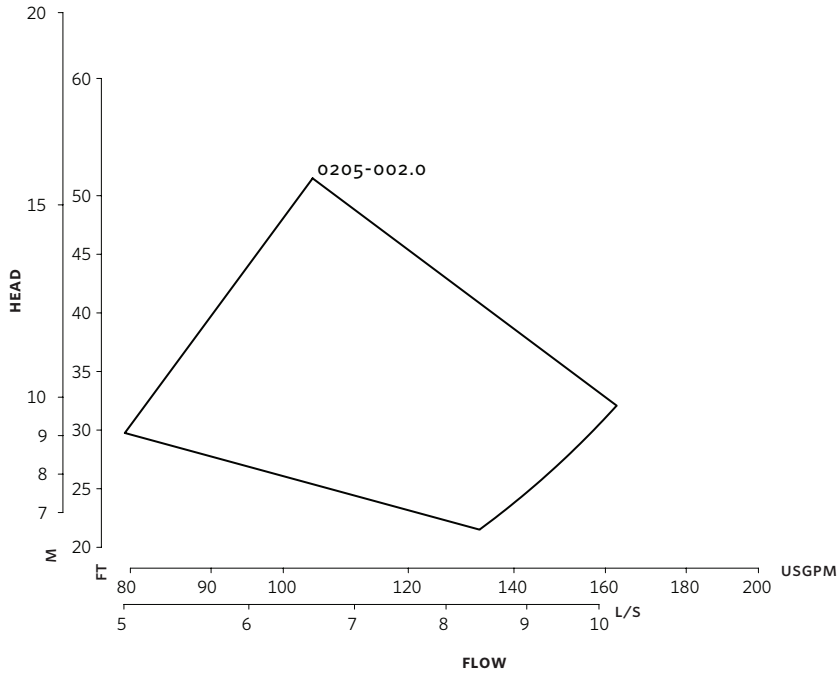
Online service for sustained pump performance and enhanced reliability.

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)

3



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

**DIMENSION DATA**

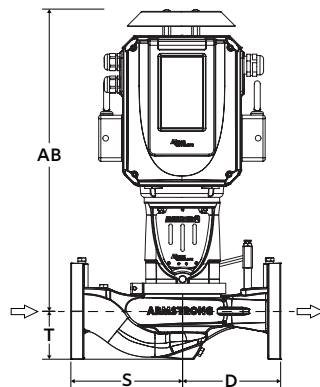
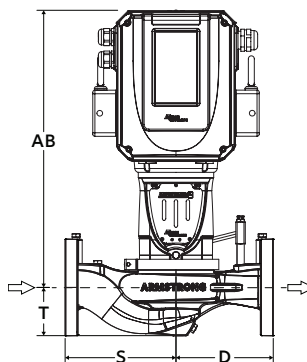
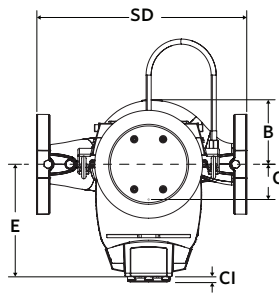
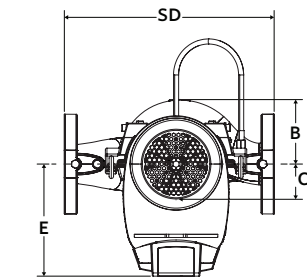
	INDOOR (UL TYPE 12/TEFC)	OUTDOOR (UL TYPE 12, TESTED TO TYPE 4X)
<b>Size:</b>	2×2×5	2×2×5
<b>HP:</b>	2	2
<b>RPM:</b>	3000	3000
<b>Frame:</b>	71	71
<b>AB:</b>	14.37 (364)	15.5 (394)
<b>B:</b>	4.31 (109)	4.31 (109)
<b>C:</b>	3.49 (89)	3.49 (89)
<b>CI:</b>	-	2.75 (70)
<b>D:</b>	6.01 (153)	6.01 (153)
<b>E:</b>	5.99 (152)	6.40(163)
<b>S:</b>	7.01 (178)	7.01 (178)
<b>SD:</b>	13.02 (331)	13.02 (331)
<b>T:</b>	3.12 (79)	3.12 (79)
<b>Weight:</b>	63 (28.6)	63 (28.6)

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

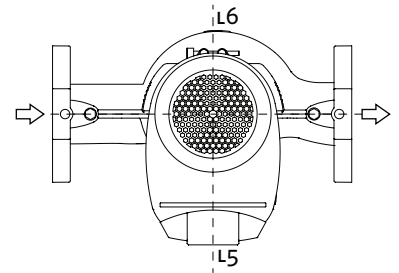
- Tolerance of ±0.125" (±3 mm) should be used
- For exact installation, data please write factory for certified dimensions

**INDOOR**

**OUTDOOR**



**CONTROL ORIENTATIONS**



**TORONTO**

23 BERTRAND AVENUE  
TORONTO, ONTARIO  
CANADA, M1L 2P3  
+1 416 755 2291

**BUFFALO**

93 EAST AVENUE  
NORTH TONAWANDA, NEW YORK  
U.S.A., 14120-6594  
+1 716 693 8813

**DROITWICH SPA**

POINTON WAY,  
STONEBRIDGE CROSS BUSINESS PARK  
DROITWICH SPA, WORCESTERSHIRE  
UNITED KINGDOM, WR9 0LW  
+44 8444 145 145

**MANCHESTER**

WOLVERTON STREET  
MANCHESTER  
UNITED KINGDOM, M11 2ET  
+44 8444 145 145

**BANGALORE**

#59, FIRST FLOOR, 3RD MAIN  
MARGOSA ROAD, MALLESWARAM  
BANGALORE, INDIA, 560 003  
+91 80 4906 3555

**SHANGHAI**

UNIT 903, 888 NORTH SICHUAN RD.  
HONGKOU DISTRICT, SHANGHAI  
CHINA, 200085  
+86 21 5237 0909

**SÃO PAULO**

RUA JOSÉ SEMIÃO RODRIGUES AGOSTINHO,  
1370 GALPÃO 6 EMBU DAS ARTES  
SAO PAULO, BRAZIL  
+55 11 4785 1330

**LYON**

93 RUE DE LA VILLETTE  
LYON, 69003 FRANCE  
+33 4 26 83 78 74

**DUBAI**

JAFZA VIEW 19, OFFICE 402  
P.O.BOX 18226 JAFZA,  
DUBAI - UNITED ARAB EMIRATES  
+971 4 887 6775

**MANNHEIM**

DYNAMOSTRASSE 13  
68165 MANNHEIM  
GERMANY  
+49 621 3999 9858

**JIMBOLIA**

STR CALEA MOTILOR NR 2C  
PO: 305400, JIMBOLIA  
ROMANIA  
+40 256 360 030

ARMSTRONG FLUID TECHNOLOGY  
ESTABLISHED 1934

ARMSTRONGFLUIDTECHNOLOGY.COM