ARMSTRONG

# DESIGN ENVELOPE 4382 DUALARM | 0606–005.0 | SUBMITTAL

**File No:** 104.5507
**Date:** JULY 8, 2019
**Supersedes:** 104.5507
**Date:** AUGUST 1, 2018

Job: _____ Representative: _____

_____ Order No: _____ Date: _____

Engineer: _____ Submitted by: _____ Date: _____

Contractor: _____ Approved by: _____ Date: _____

## PUMP DESIGN DATA

No. of pumps:_____ Tag: _____

Total system design flow: _____USgpm(L/s)

Head: _____ft(m) Capacity split _____%

Flow per pump head: _____USgpm(L/s)

Parallel flow: _____USgpm(L/s)

Liquid: _____ Viscosity: _____

Temperature: _____ °F (°C) Specific gravity: _____

Suction: 6" (150mm) Discharge: 6" (150mm)

**OSHPD Seismic Certification OSP-0422-10**
**UL STD 778 & CSA STD C22.2 NO.108 certified**
**Test report is supplied with each pump**

## MOTOR DESIGN DATA

HP: ___ RPM:____ Frame size: _____ Enclosure: _____ Volts: __

Hertz: 60 Hz Phase: 3 Efficiency: NEMA premium 12.12

## MAXIMUM PUMP OPERATING CONDITIONS

**ANSI 125 - (CONSTRUCTION: BF)**

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.

## CONTROLS DATA

**Protocol (standard):** ☐ BACnet™ MS/TP
☐ BACnet™ TCP/IP
☐ Modbus RTU

**Enclosure:** ☐ Indoor – UL TYPE 12
☐ Outdoor – UL TYPE 4X with Weather Shield
☐ Outdoor – UL TYPE 4X less Weather Shield

**Fused disconnect switch:** ☐

**EMI/RFI control:** Integrated filter designed to meet EN61800-3

**Harmonic suppression:** Dual DC-link reactors (Equivalent: 5% AC line reactor) Supporting IEEE 519-1992 requirements**

**Cooling:** Fan-cooled through back channel

**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 current or voltage inputs, one speed output

**Digital I/O:** Two inputs, two outputs

**Pulse inputs:** Two programmable

**Relay outputs:** Two programmable

**Communication port:** 1-RS485

** The IVS drive is a low harmonic drive via built-in DC line reactors. This does not guaranty performance to any system wide harmonic specification or the costs to meet a system wide specification. 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.

## MECHANICAL SEAL DATA

**Seal Type:** 2A **Stationary Seat:** Silicon carbide **Secondary Seal:** EPDM **Rotating Hardware:** Stainless steel **Spring:** Stainless steel

| 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** | Silicon 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 (STANDARD)

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

### ☐ 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

### ☐ ZONE OPTIMIZATION BUNDLE

Controls pumps to ensure multiple zones are satisfied for heating or cooling

- 2 sensor control – Controls pumps in a 2-zone application to ensure both zones are always satisfied for heating or cooling

### ☐ 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)

## OPTIONAL SERVICES

### ON-SITE PUMP COMMISSIONING

Where purchased and applicable, onsite commissioning by an Armstrong representative will include setting up communication with the Pump (not wiring to BAS), adjusting parameters to match on-site conditions, register the pumps for enhanced warranty and connect the pumps to the router as part of the activation of Pump Manager.

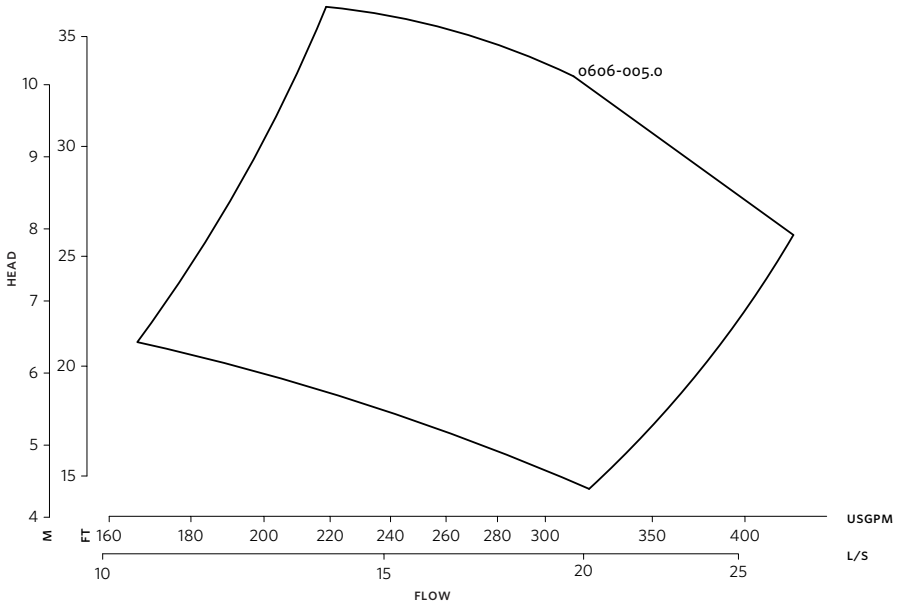
### PUMP MANAGER

As a Performance Management Service, Pump Manager is an online automated fault detection and diagnostic service for sustained performance and enhanced reliability. It includes advanced trending, alerts of variance in performance and automated reports.

Available in yearly increments. Includes an option for a price discount on the Extended Warranty Service.

*The Service requires an active internet connection.

**3**




Performance curves are for reference only.
Confirm current performance data with Armstrong ACE Online selection software.

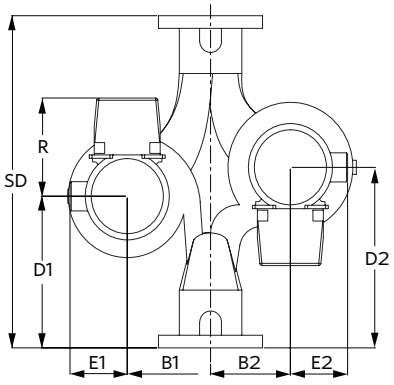
## DIMENSION DATA

| | INDOOR (UL TYPE 12/ODP) | OUTDOOR (UL TYPE 4X/TEFC) |
|---|---|---|
| **Frame size:** | 182 | 182 |
| **Size:** | 6×6×6 | 6×6×6 |
| **HP:** | 5 | 5 |
| **RPM:** | 1800 | 1800 |
| **AB:** | 24.47(622) | 24.47(622) |
| **B1:** | 7.39(188) | 7.39(188) |
| **B2:** | 7.39(188) | 7.39(188) |
| **C1:** | 13.63(346) | 13.63(346) |
| **C2:** | 14.31(364) | 14.31(364) |
| **D1:** | 16.81(427) | 16.81(427) |
| **D2:** | 16.81(427) | 16.81(427) |
| **E:** | 7.50(191) | 7.50(191) |
| **F:** | 16.02(407) | 16.02(407) |
| **P:** | 9.50(241) | 9.50(241) |
| **SD:** | 33.50(851) | 33.50(851) |
| **T:** | 7.75(197) | 7.75(197) |
| **XY:** | 20.25(514) | 20.25(514) |
| **Weight:** | 675(306.2) | 709(321.5) |

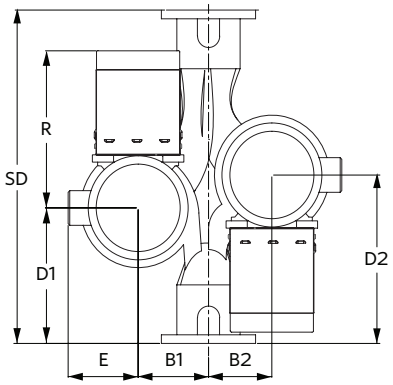
Dimensions – inch (mm)
Weight – lbs (kg)

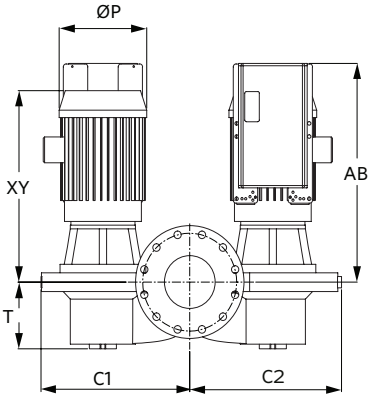
- Tolerance of ±0.125" (±3 mm) should be used
- For exact installation, data please write factory for certified dimensions

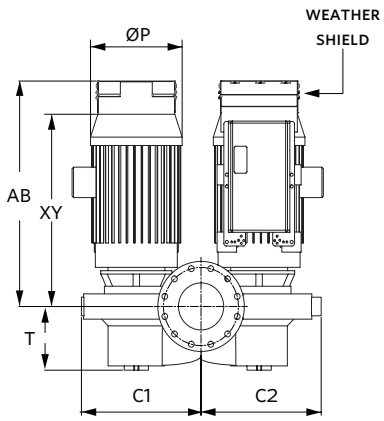
**INDOOR**




**OUTDOOR**



**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

**BIRMINGHAM**

HEYWOOD WHARF, MUCKLOW HILL
HALESOWEN, WEST MIDLANDS
UNITED KINGDOM
B62 8DJ
+44 (0) 8444 145 145

**MANCHESTER**

WOLVERTON STREET
MANCHESTER
UNITED KINGDOM
M11 2ET
+44 (0) 8444 145 145

**BANGALORE**

#59, FIRST FLOOR, 3RD MAIN
MARGOSA ROAD, MALLESWARAM
BANGALORE, INDIA
560 003
+91 (0) 80 4906 3555

**SHANGHAI**

UNIT 903, 888 NORTH SICHUAN RD.
HONGKOU DISTRICT, SHANGHAI
CHINA
200085
+86 (0) 21 5237 0909

**SÃO PAULO**

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

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