

## DESIGN ENVELOPE 4300 VIL | 80-125 (3x3x5) | 8012-007.5 | SUBMITTAL

File No: 101.5035IEC  
Date: APRIL 18, 2018  
Supersedes: 101.5035IEC  
Date: FEBRUARY 13, 2018

Job: \_\_\_\_\_ Representative: \_\_\_\_\_

\_\_\_\_\_ Order No: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### PUMP DESIGN DATA

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_

Capacity: \_\_\_\_\_ L/s (USgpm) Head: \_\_\_\_\_ m (ft)

Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_

Temperature: \_\_\_\_\_ °C (°F) Specific gravity: \_\_\_\_\_

Suction: 80 mm (3") Discharge: 80 mm (3")

MEI ≥ 0.70

### MATERIALS OF CONSTRUCTION

**PN 16**

CONSTRUCTION: LPDESF

E-coated ductile iron A536 Gr 65-45-12, stainless fitted

**PN 25**

CONSTRUCTION: HPDESF

E-coated ductile iron A536 Gr 120-90-2, stainless fitted

### MAXIMUM PUMP OPERATING CONDITIONS

**PN 16**

16 bar at 49°C (232 psig at 120°F)

7 bar at 150°C (100 psig at 300°F)

**PN 25**

25 bar at 65°C (362 psig at 149°F)

21 bar at 150°C (304 psig at 300°F)

### MECHANICAL SEAL DESIGN DATA

See file no. 43.50 for standard mechanical seal details as indicated below

Armstrong seal reference number

c1 (a)  Others: \_\_\_\_\_

### FLOW READOUT ACCURACY

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

### IECM MOTOR AND CONTROL DATA

**kW:** 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 - IP 55

Outdoor - IP 66

**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.

## 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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm)

at \_\_\_\_\_ m (ft)

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

#### Heating

Duty point \_\_\_\_\_ L/s (gpm)

at \_\_\_\_\_ m (ft)

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

## OPTIONAL SERVICES

### ON-SITE PUMP COMMISSIONING



### PUMP MANAGER



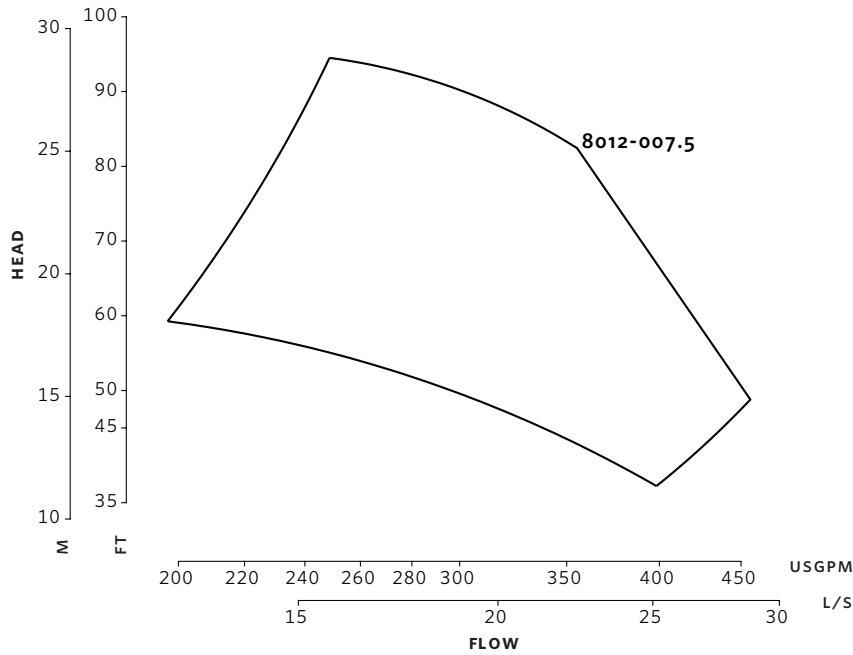
Online service for sustained pump performance and enhanced reliability.

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



**DIMENSION DATA**

INDOOR (IP 55/TEFC)

- Size:** 80-125
- kW:** 7.5
- RPM:** 3600
- AB:** 624 (24.56)
- B:** 122 (4.81)
- C:** 93 (3.65)
- D:** 205 (8.06)
- E:** 191 (7.54)
- S:** 236 (9.31)
- SD:** 441 (17.38)
- T:** 127 (5.00)
- Weight:** 61.2 (135)

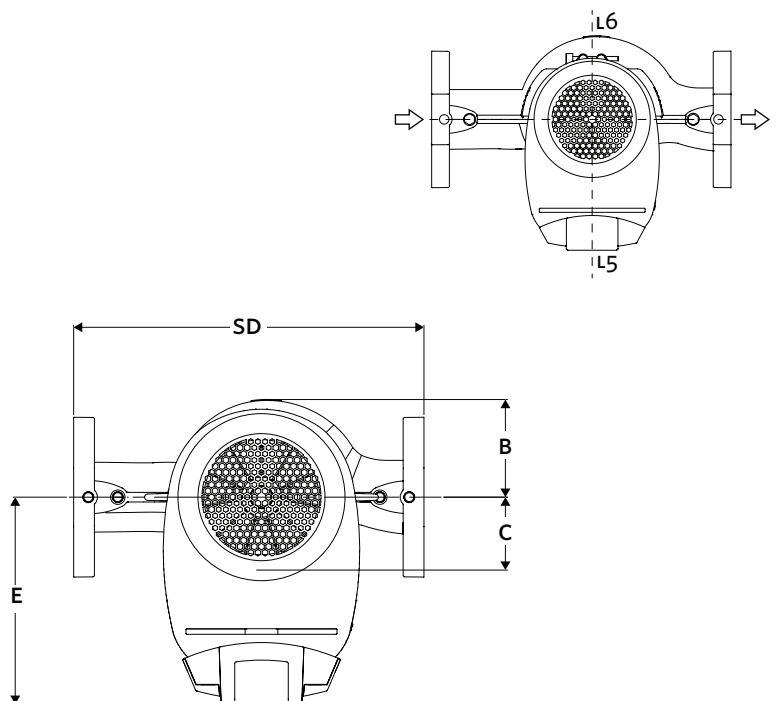
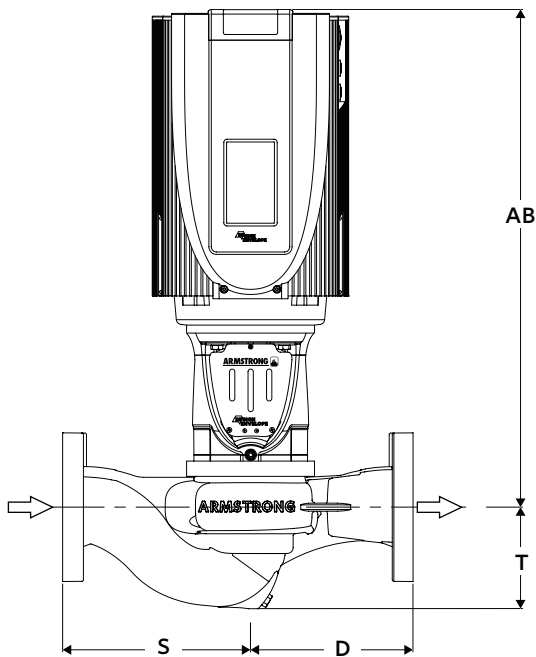
Consult factory for **OUTDOOR**  
(IP 66/TEFC) dimensions

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

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

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

**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

**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  
SÃO PAULO, BRAZIL  
+55 11 4781 5500

ARMSTRONG FLUID TECHNOLOGY  
ESTABLISHED 1934

ARMSTRONGFLUIDTECHNOLOGY.COM

MAKING  
ENERGY  
MAKE  
SENSE™