

## DESIGN ENVELOPE 4280 END SUCTION | 50-125 (2x1.5x5) | 4012-007.5 | SUBMITTAL

File No: 103.5721IEC  
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Date: SEPTEMBER 5, 2019

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: 50 mm (2") Discharge: 40 mm (1.5")

MEI ≥ 0.70

### MATERIALS OF CONSTRUCTION

**PN 16**

CONSTRUCTION: LPDES F

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

**PN 25**

CONSTRUCTION: HPDES F

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)

### 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.

### 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

**kW:** 7.5

**RPM:** 4500

**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

**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.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
Temperature	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F
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 \_\_\_\_\_ 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  
\*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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ 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)

\*Available in single pump operation only

### OPTIONAL SERVICES

#### ON-SITE PUMP COMMISSIONING



#### PUMP MANAGER

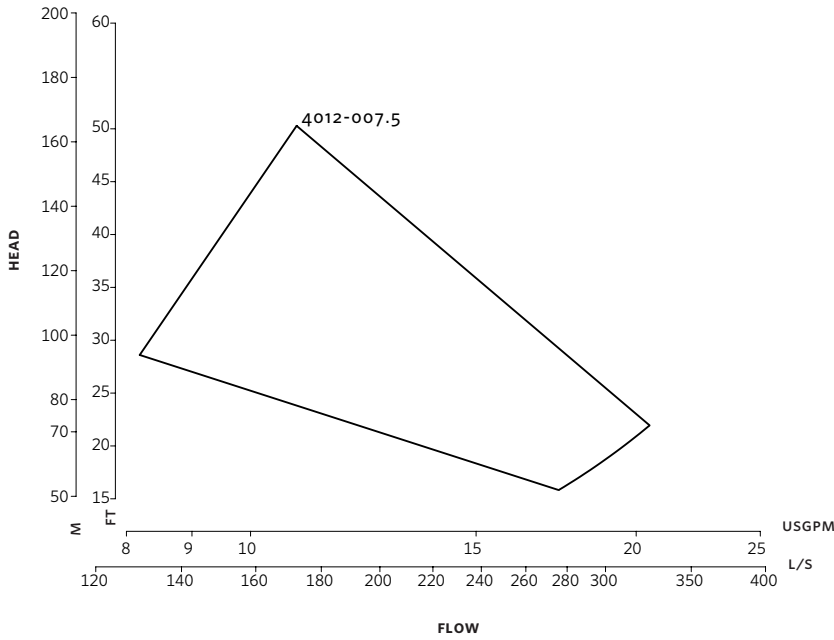


Online service for sustained pump performance and enhanced reliability.

Available in 3 or 5 year terms

\* Requires an internet connection to be provided by building

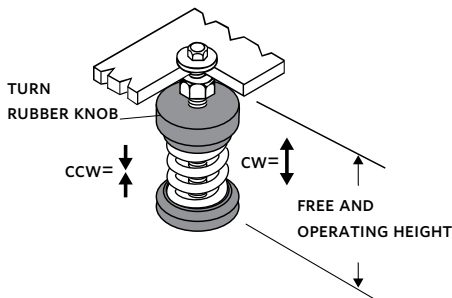
\* Includes an extended warranty for parts and labour (wearable parts excluded)



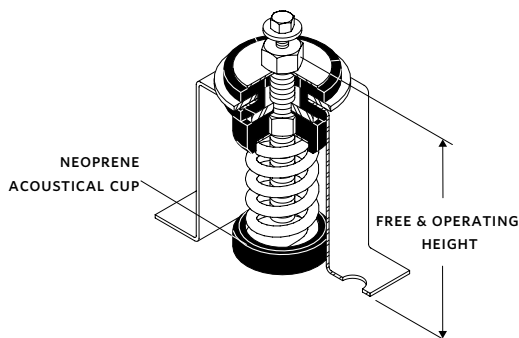
Performance curves are for reference only.

Confirm current performance data with Armstrong ADEPT Quote or ADEPT Select selection software.

**STANDARD**



**SEISMIC MOUNT OPTION**



**NOTE:**  
All springs have additional travel to solid equal to 50% of the rated deflection.

**DIMENSION DATA**

**STANDARD**

<b>Size:</b>	2×1.5×5
<b>κW:</b>	7.5
<b>RPM:</b>	4500
<b>HA:</b>	338 (13.31)
<b>HD:</b>	222 (8.75)
<b>HI:</b>	556 (21.91)
<b>HV:</b>	258 (10.18)
<b>X:</b>	178 (7.00)
<b>Y:</b>	102 (4.00)
<b>Free &amp; operating height:</b>	95 (3.75)
<b>Weight:</b>	60 (132.3)

**SPRING DATA**

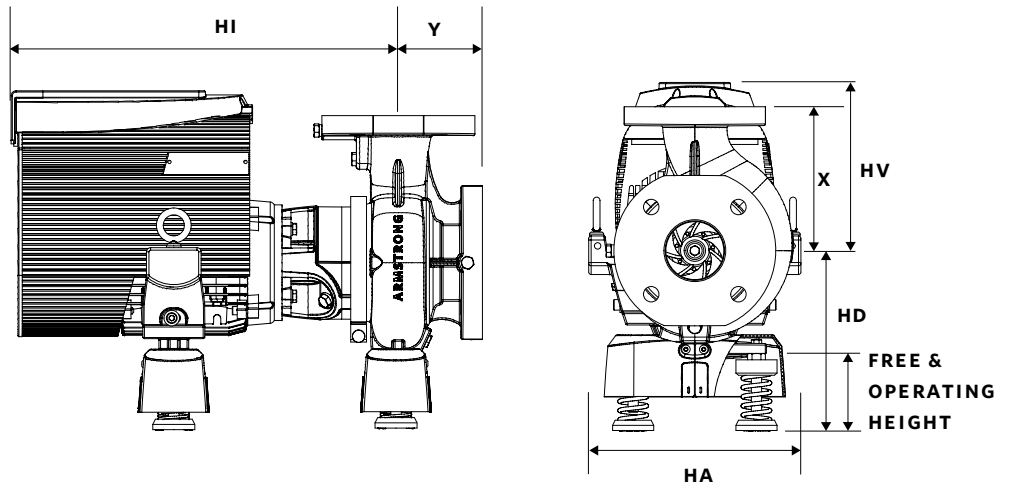
<b>Rated Capacity per spring</b>	kgs (lbs): 51.0 (113)
<b>Rated Deflection</b>	mm (inch): 25 (1.00)
<b>Mount Constant</b>	kg/mm (lbs/in): 2.0 (113)

**SEISMIC MOUNT OPTION**

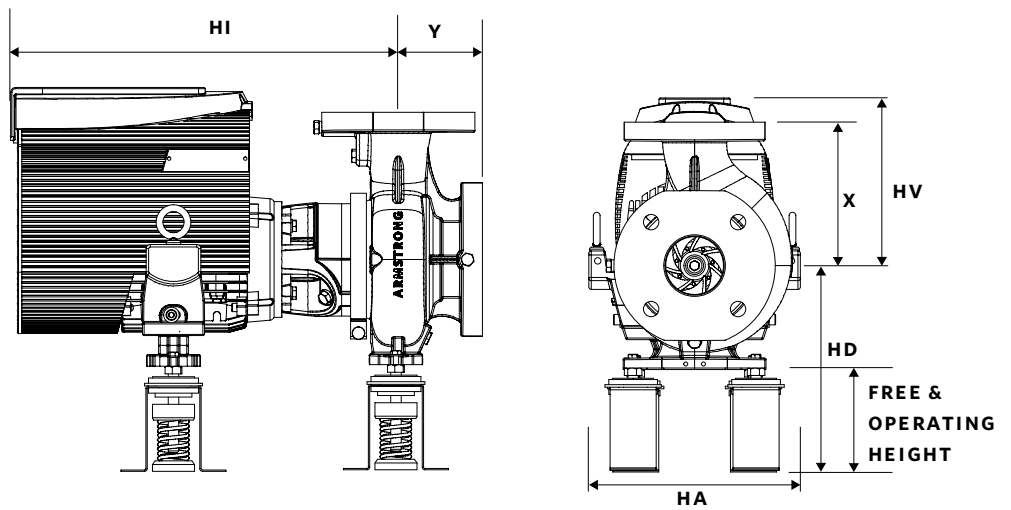
<b>2E:</b>	267 (10.50)
<b>F:</b>	102 (4.00)
<b>G:</b>	152 (6.00)
<b>H:</b>	12 (0.50)
<b>HA:</b>	324 (12.75)
<b>HD:</b>	254 (10.00)
<b>N:</b>	190 (7.48)
<b>Free &amp; operating height:</b>	127 (5.00)
<b>Max. horizontal static G rating:</b>	3.2

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

**STANDARD**



**SEISMIC MOUNT OPTION**



**TORONTO**  
+1 416 755 2291

**BUFFALO**  
+1 716 693 8813

**BIRMINGHAM**  
+44 (0) 8444 145 145

**MANCHESTER**  
+44 (0) 8444 145 145

**BANGALORE**  
+91 (0) 80 4906 3555

**SHANGHAI**  
+86 (0) 21 5237 0909

**SÃO PAULO**  
+55 11 4785 1330

**LYON**  
+33 (0) 420 102 625

**DUBAI**  
+971 4 887 6775

**MANNHEIM**  
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