

## DESIGN ENVELOPE 4300 VIL | 50-125 (2x2x5) | 5012H-001.1 | SUBMITTAL

File No: 101.5427IEC  
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: \_\_\_\_\_ L/s (USgpm) Head: \_\_\_\_\_ m (ft)

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

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

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

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 bars at 49°C (232 psig at 120°F)  
7 bars at 150°C (100 psig at 300°F)
- PN 25**  
25 bars at 65°C (362 psig at 149°F)  
21 bars 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 BMS. The model readout will be factory tested to ensure ±5% accuracy.

### DEPM MOTOR AND CONTROL DATA

**kW:** 1.1

**RPM:** 3000

**Motor enclosure:** TEFC

**Volts /Phase:**  200-240V/1ph     380-480V/3ph

For 200-240V/3ph or 575V/3ph,  
see File #:101.5002IEC

**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:** See File 100.8131

**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 +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.

## 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



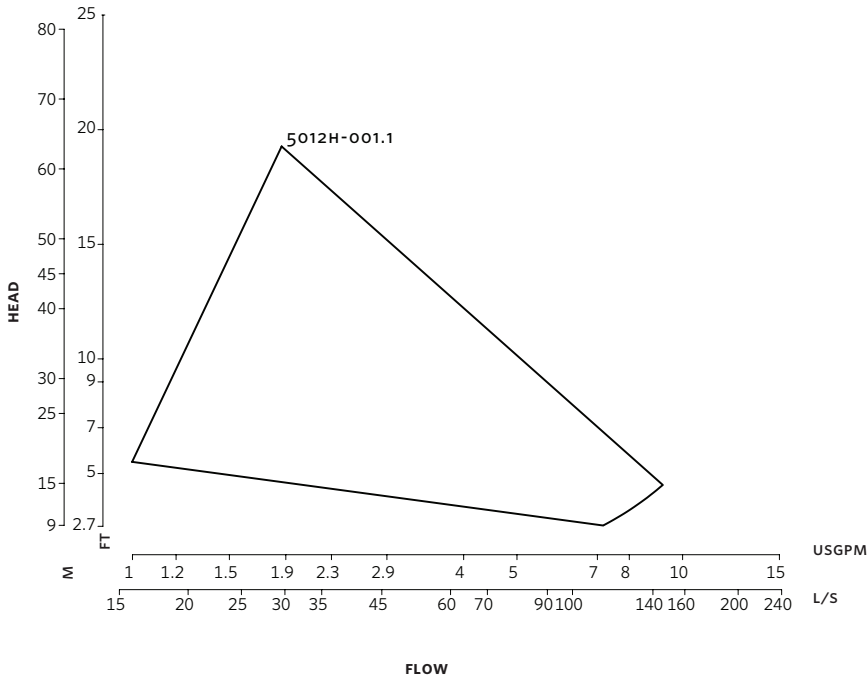
Online service for sustained pump performance and enhanced reliability.

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)

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**DIMENSION DATA**

	INDOOR (IP55/TEFC)	OUTDOOR (IP66/TEFC)
<b>Size:</b>	50-125	50-125
<b>kW:</b>	1.1	1.1
<b>RPM:</b>	3000	3000
<b>Frame:</b>	71	71
<b>AB:</b>	426 (16.77)	455 (17.91)
<b>B:</b>	109 (4.30)	109 (4.30)
<b>C:</b>	89 (3.50)	89 (3.50)
<b>CI:</b>	-	70 (2.75)
<b>D:</b>	152 (5.98)	152 (5.98)
<b>E:</b>	152 (5.98)	162 (6.38)
<b>S:</b>	178 (7.01)	178 (7.01)
<b>SD:</b>	331 (13.03)	331 (13.03)
<b>T:</b>	79 (3.12)	79 (3.12)
<b>Weight:</b>	29.5 (65)	29.5 (65)

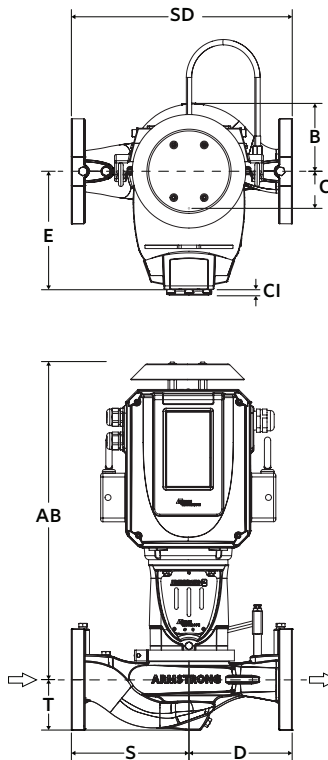
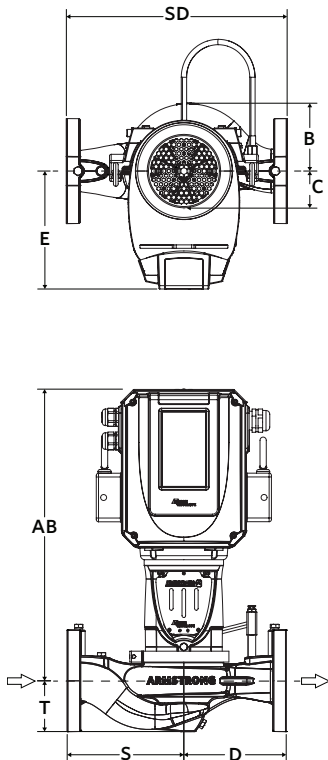
Dimensions - mm (inch)  
Weight - kg (lbs)

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

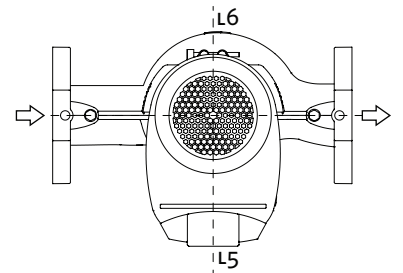
Performance curves are for reference only.  
Confirm current performance data with Armstrong ADEPT Quote or ADEPT Select selection software.

**INDOOR**

**OUTDOOR**



**CONTROL ORIENTATIONS**



**TORONTO**

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ARMSTRONG FLUID TECHNOLOGY  
ESTABLISHED 1934

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