

**DESIGN ENVELOPE 4322 TANGO** |  
 40-125 (1.5×1.5×5) | 4012-001.1 | **SUBMITTAL**

**File No:** 102.50611EC  
**Date:** FEBRUARY 14, 2019  
**Supersedes:** NEW  
**Date:** NEW

Job: \_\_\_\_\_ Representative: \_\_\_\_\_  
 \_\_\_\_\_ Order No: \_\_\_\_\_ Date: \_\_\_\_\_  
 Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

**PUMP DESIGN DATA**

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_  
 Total system design flow: \_\_\_\_\_ L/s (USgpm)  
 Head: \_\_\_\_\_ m (ft) Capacity split \_\_\_\_\_ %  
 Flow per pump head: \_\_\_\_\_ L/s (USgpm)  
 Parallel flow: \_\_\_\_\_ L/s (USgpm)  
 Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_  
 Temperature: \_\_\_\_\_ °C (°F) Specific gravity: \_\_\_\_\_  
 Suction: 40 mm (1.5") Discharge: 40 mm (1.5")  
 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 BMS. The model readout will be factory tested to ensure ±5% accuracy.

**DEPM MOTOR AND CONTROL DATA**

**kW:** 1.1  
**RPM:** 3300  
**Motor enclosure:** TEFC  
**Volts:** \_\_\_\_\_  
**Phase:** 3  
**Efficiency:** IE5  
**Orientation:** Standard  
**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 (STANDARD)



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

Maximum 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

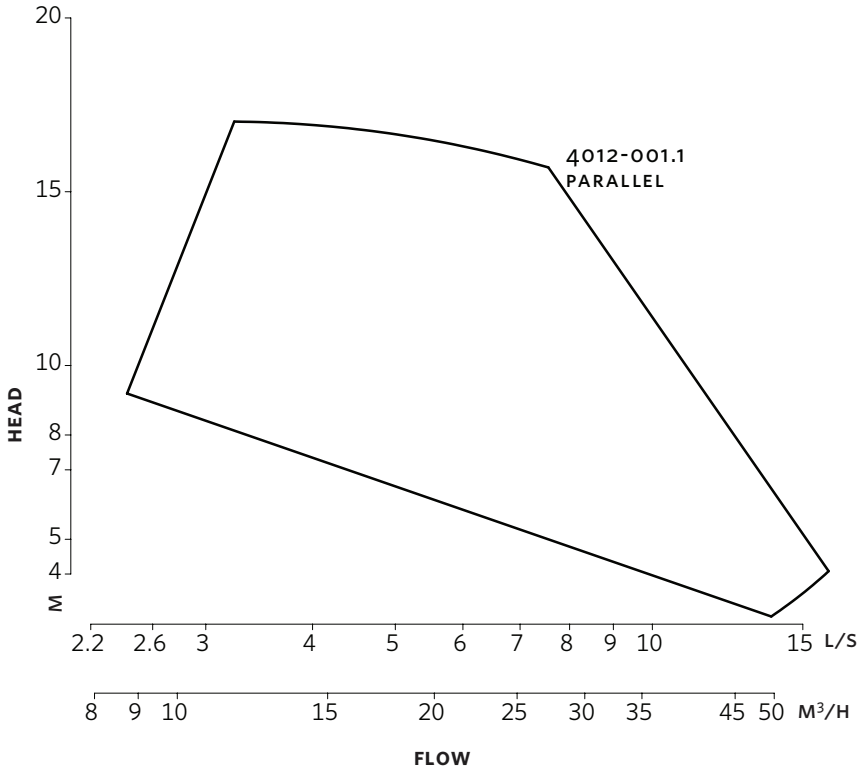


Online service for sustained pump performance and enhanced reliability.

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)

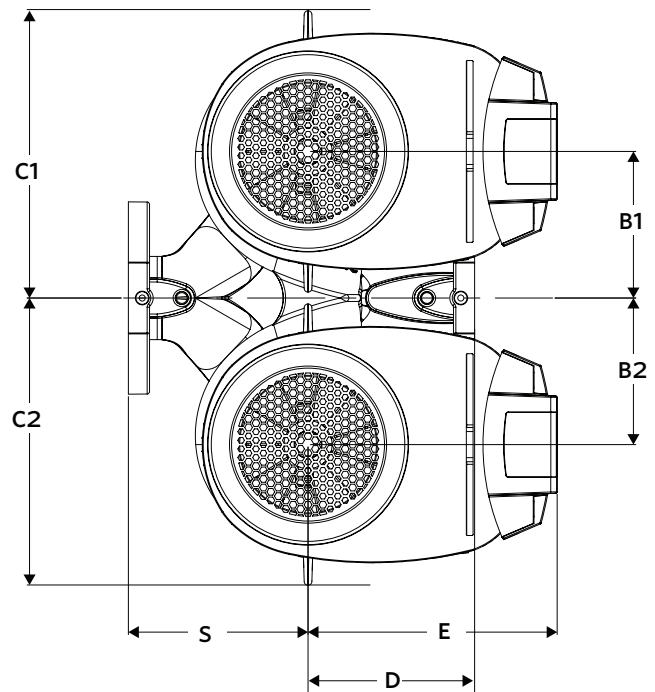
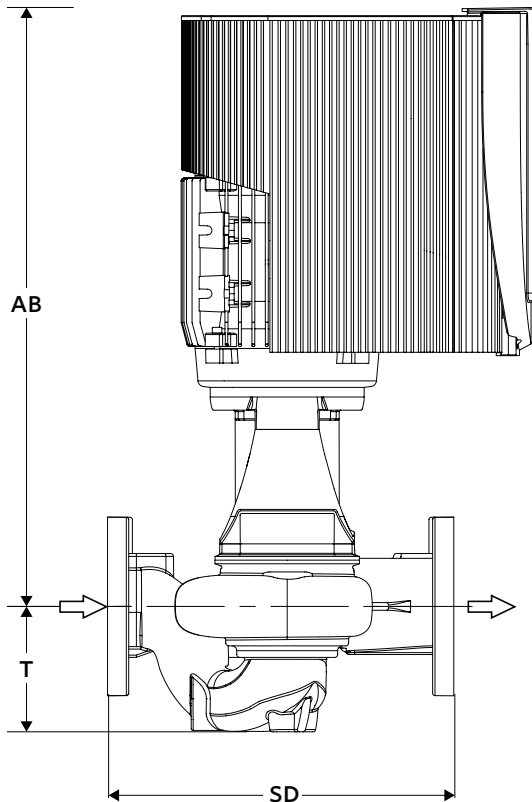
<b>Size:</b>	40-125
<b>kW:</b>	1.1
<b>RPM:</b>	3300
<b>Frame:</b>	90S
<b>AB:</b>	545 (21.47)
<b>B1:</b>	149 (5.86)
<b>B2:</b>	149 (5.86)
<b>C1:</b>	279 (11.00)
<b>C2:</b>	279 (11.00)
<b>D:</b>	176 (6.92)
<b>E:</b>	205 (8.08)
<b>S:</b>	104 (4.10)
<b>SD:</b>	280 (11.02)
<b>T:</b>	102 (4.00)
<b>Weight:</b>	58.1 (128)

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

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

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

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



**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 4785 1330

ARMSTRONG FLUID TECHNOLOGY  
ESTABLISHED 1934

ARMSTRONGFLUIDTECHNOLOGY.COM

**MAKING  
ENERGY  
MAKE  
SENSE™**