ARMSTRONG

# DESIGN ENVELOPE 4372 TANGO

## 65–125 (2.5×2.5×5) | 6512–003.0 | SUBMITTAL

**File No:** 102.5125IEC
**Date:** APRIL 18, 2018
**Supersedes:** 102.5125IEC
**Date:** FEBRUARY 13, 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: _____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: 65 mm (2.5") Discharge: 65 mm (2.5")

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)
10 bar at 121°C (145 psig at 250°F)

☐ **PN 25**
20 bar at 65°C (290 psig at 149°F)
17 bar at 121°C (247 psig at 250°F)

### 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.

### iECM MOTOR AND CONTROL DATA

**kW:** 3.0
**RPM:** 3000
**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.

### MECHANICAL SEAL DESIGN DATA

**Seal type:** 2A **Stationary seat:** Silicone carbide **Secondary seal:** EPDM **Spring:** Stainless steel **Rotating hardware:** Stainless steel

| 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 (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

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)

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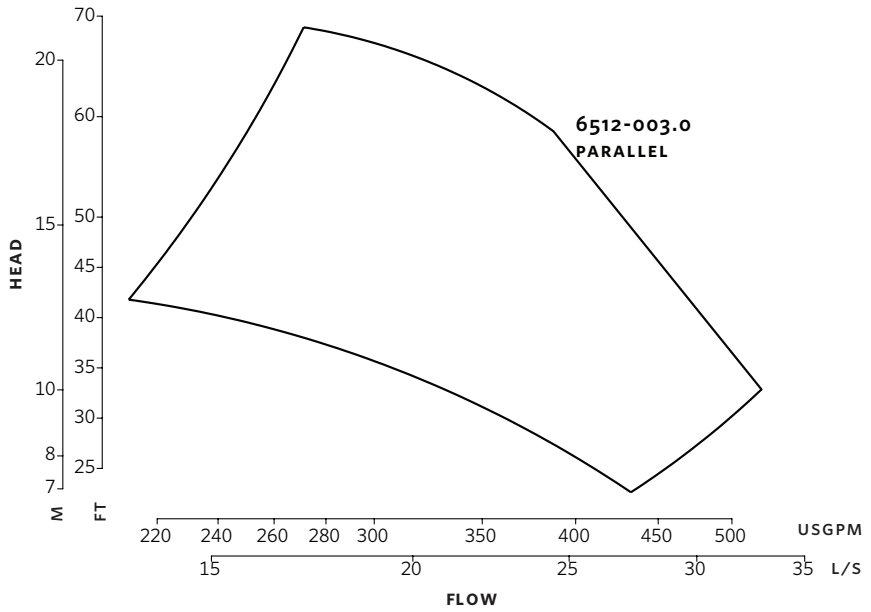



Performance curves are for reference only.
Confirm current performance data with Armstrong ACE Online selection software.

## DIMENSION DATA

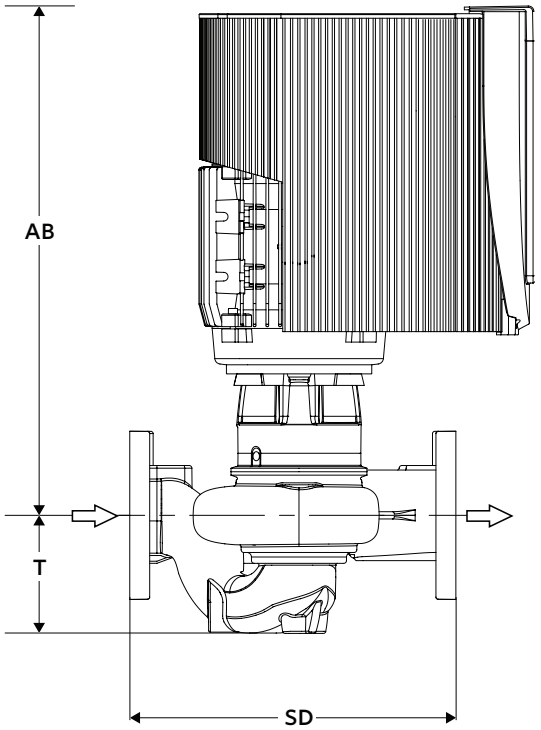
INDOOR (IP 55/TEFC)

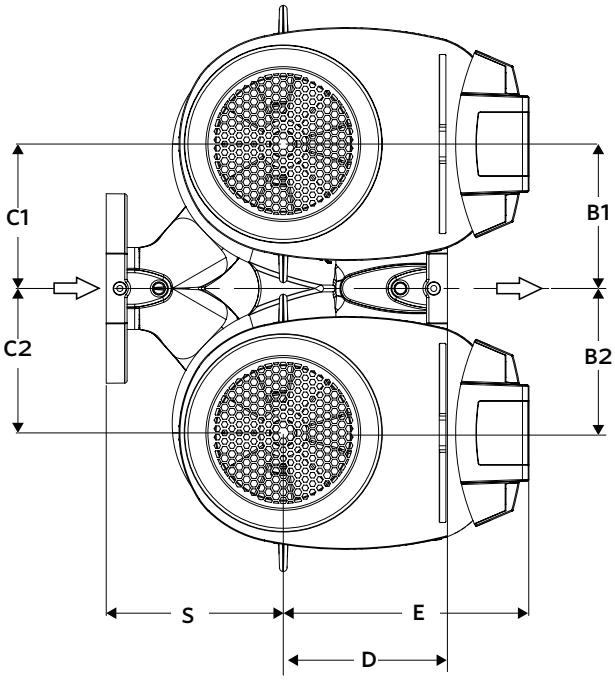
| | |
|---|---|
| **Size:** | 65–125 |
| **kW:** | 3.0 |
| **RPM:** | 3000 |
| **AB:** | 460 (18.11) |
| **B1:** | 140 (5.50) |
| **B2:** | 140 (5.50) |
| **C1:** | 241 (9.50) |
| **C2:** | 241 (9.50) |
| **D:** | 184 (7.24) |
| **E:** | 191 (7.54) |
| **S:** | 156 (6.15) |
| **SD:** | 340 (13.39) |
| **T:** | 130 (5.12) |
| **Weight:** | 62.6 (138) |

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

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



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