ARMSTRONG

DESIGN ENVELOPE 4380 VIL | 1×1×3 (25–80) | 0103–001.0 | SUBMITTAL

File No: 101.5707
Date: MARCH 25, 2021
Supersedes: 101.5707
Date: OCTOBER 18, 2019

Job: _____ Representative: _____

_____ Order No: _____ Date: _____

Engineer: _____ Submitted by: _____ Date: _____

Contractor: _____ Approved by: _____ Date: _____

PUMP DESIGN DATA

No. of pumps: _____ Tag: _____

Capacity: _____USgpm (L/s) Head: _____ft (m)

Liquid: _____ Viscosity: _____

Temperature: _____ °F (°C) Specific gravity: _____

Suction:1.5" MNPT Discharge:1.5" MNPT

UL STD 778 & CSA STD C22.2 NO.108 certified

Test report is supplied with each pump

MATERIALS OF CONSTRUCTION

☐ **ANSI 125**
CONSTRUCTION: LPDESF
E-coated ductile iron A536 Gr 65-45-12, stainless fitted

☐ **ANSI 250**
CONSTRUCTION: HPDESF
E-coated ductile iron A536 Gr 120-90-2, stainless fitted

MAXIMUM PUMP OPERATING CONDITIONS

☐ **ANSI 125**
175 psig at 150°F (12 bar at 65°C)
140 psig at 250°F (10 bar at 121°C)

☐ **ANSI 250**
300 psig at 150°F (20 bar at 65°C)
250 psig at 250°F (17 bar at 121°C)

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

HP: 1.5*
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 – UL Type 12 ☐ Outdoor – UL Type 4X
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

* Maximum power draw = 1 hp

** 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.

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.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
Temperature	up to 200°F / 93°C	over 200°F / 93°C	up to 200°F / 93°C	over 200°F / 93°C	up to 200°F / 93°C	over 200°F / 93°C
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 _____ ft (m)

* 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 _____ ft (m)

* 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 _____ gpm (L/s)

*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 _____ gpm (L/s)

*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 _____ gpm (L/s) at _____ ft (m)

Minimum system pressure to be maintained _____ ft (m)

Heating

Duty point _____ gpm (L/s) at _____ ft (m)

Minimum system pressure to be maintained _____ ft (m)

*Available in single pump operation only

OPTIONAL SERVICES

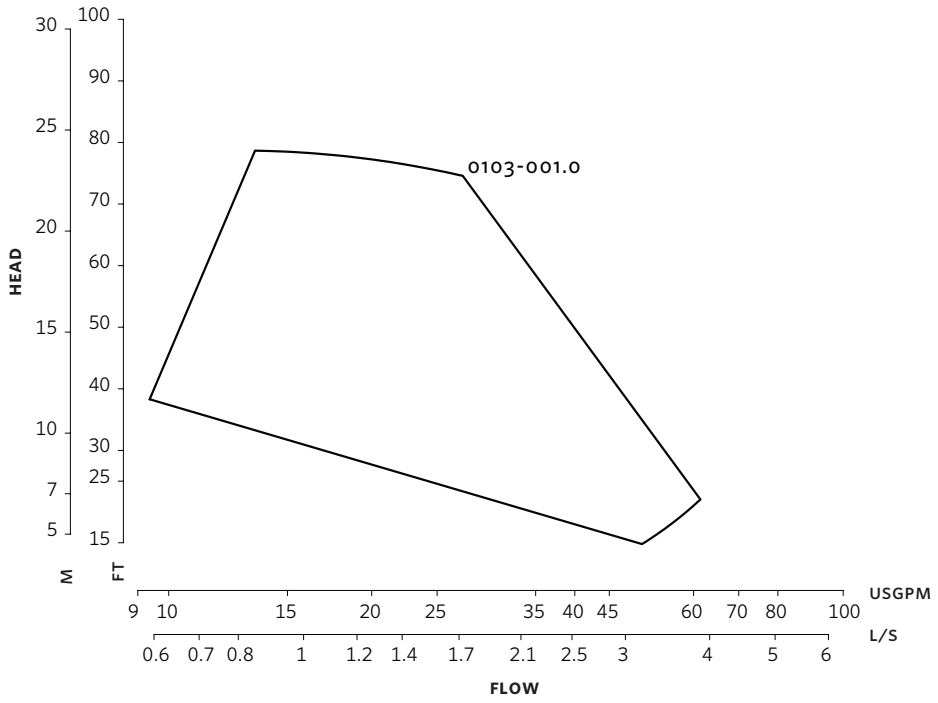
ON-SITE PUMP COMMISSIONING

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.

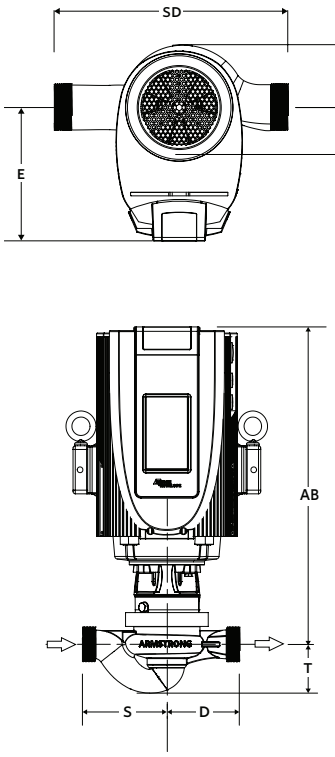
DIMENSION DATA

	INDOOR (UL TYPE 12/TEFC)	OUTDOOR (UL TYPE 4X/TEFC)
Size:	1×1×3	1×1×3
HP:	1	1
RPM:	4500	4500
Frame:	90S	90S
AB:	17.25 (464)	19.46 (494)
B:	2.47 (63)	2.47 (63)
C:	2.22 (56)	2.22 (56)
CI:	–	5.00 (127)
D:	4.01 (102)	4.01 (102)
E:	8.20 (208)	8.62 (219)
S:	4.64 (118)	4.64 (118)
SD:	8.66 (220)	8.66 (220)
T:	2.64 (67)	2.64 (67)
Weight:	32 (14.5)	32 (14.5)

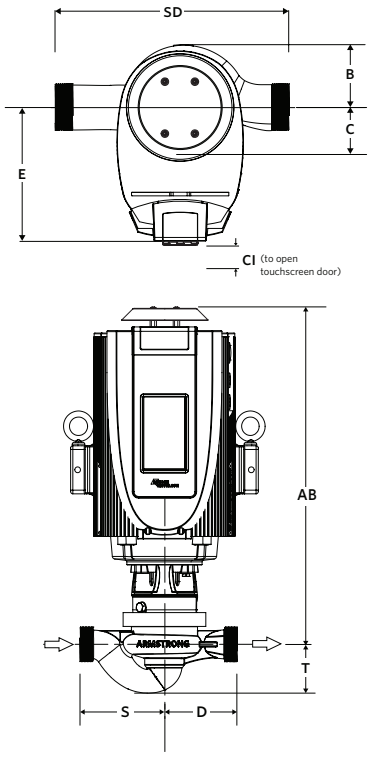
Dimensions – inch (mm)
Weight – lbs (kg)

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

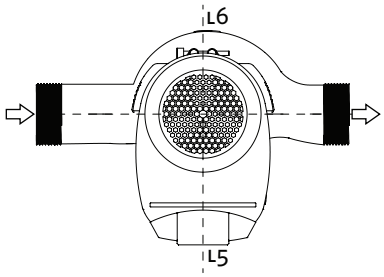
INDOOR



OUTDOOR



CONTROL ORIENTATIONS



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ARMSTRONG FLUID TECHNOLOGY
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