Air-Z Flex

TRICONTINENT
An Ingersoll Rand Business

PRODUCT OVERVIEW

> Full featured, fully programmable, automated air displacement pipette with automatic detection of liquid levels and tip blockage

> Prevention of cross contamination and carryover during sample transfer and reagent aliquoting

> Eliminate tubing and priming normally required for liquid handling

FEATURES

> High resolution encoder for dependable step loss detection

> Pressure-based liquid level detection (pLLD)

> Real time pressure data for aspirate and dispense verification and blocked tip detection

> Optional mounting configurations with horizontal or vertical orientations

> Configurable for single unit operation or address up to 16 pumps individually

> Functional status feedback with LED indicators

> Available in 1000 µL, 250 µL, and 50 µL, volumes

> Optional tip adaptor and disposable tips

> Allows custom tip adaptors in orientations and sizes to fit your instrument design

CONFIGURED OPTIONS

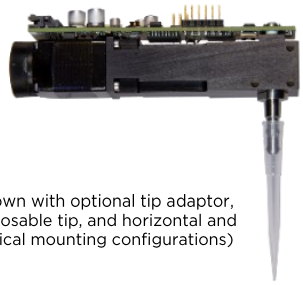
Disposable Tip Sizes	1000 µL, 200 µL, 50 µL clear tips with or without filter barrier
Accessory Items	Optional tip adapter for up to 1000uL

BASE MODELS

> 1000 µL

> 250 µL

> 50 µL



(shown with optional tip adaptor, disposable tip, and horizontal and vertical mounting configurations)

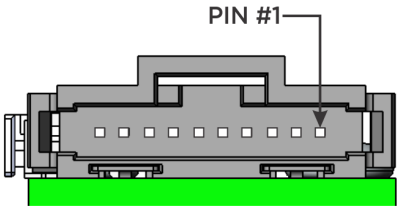
AIR-Z FLEX PRODUCT SPECIFICATIONS	
Drive Design	Stepper motor driven linear actuator with high resolution optical encoder for step loss detection
Dispense Speed	Pump volume 1000 µL: 1 µL/ second up to 1800 µL/second Pump volume 250 µL: 1 µL/second up to 450 µL/second Pump volume 50 µL: 1 µL/second up to 150 µL/second
Volume Resolution	Pump volume 1000 µL: 0.301 µL/half step increment with 3700 increments/full stroke Pump volume 250 µL: 0.075 µL/half step increment with 3500 increments/full stroke Pump volume 50 µL: 0.025 µL/half step increment with 2450 increments/full stroke
Communication Interfaces	RS232, RS485 or CAN (using industry specific communication protocols)
Addressing	Maximum of 16 pumps individually
Operating Noise	<60 dBA, Indoor use only
Operating Temperature and Humidity	15°C to 40°C (59°F to 104°F) and 20% to 95% RH at 40°C (104°F) non-condensing
Non-Operating Temperature and Humidity	-20°C to 65°C (-4°F to 149°F) and 30% to 85% RH, non-condensing
Media Temperature	15°C to 40°C (59°F to 104°F)
Overall Dimensions (H x W x D) (with tip adaptor and without disposable tip)	Vertical orientation: 5.13 in. [130.4 mm] X 1.20 in. [30.6 mm] X .83 in. [21.0 mm] Horizontal orientation: 2.11 in. [53.6 mm] X 4.24 in. [107.7 mm] X .83 in. [21.0 mm]
Weight	125 gm
Fluid Contact Materials (in case of accidental fluid aspiration)	1000 µL & 250 µL—Acetal, PTFE, Silicone lubricant, Silicone, PPS, Neoprene, Borosilicate glass, Viton and Stainless steel 50 µL—Acetal, BunaN, Silicone lubricant, Silicone, PPS, Neoprene, Viton and Stainless steel

FUNCTIONAL PARAMETERS WITH FULL ELECTRONICS *	
Imprecision (full volume) in 50 µL, 200 µL, 1000 µL Tips	≤0.75% CV
Inaccuracy (full volume)	≤1% Tip volume
10% Tip volumes Imprecision Inaccuracy	 ≤1% CV ≤2%
Power requirement	24VDC, 500 mA
Power rating	<500 mA (peak)

*Specifications were determined gravimetrically using a precision balance, an automated robotic handling system with optimized pump protocol, and tightly controlled environmental conditions; test temperature 23C ±2C, relative humidity 35% ±5%, pump and test liquid (distilled water) temperature ≤ ±1 C of room temperature. Results may vary in other environmental conditions, with other liquids, with disposable tips used, and depending on pump handling methods.

Mechanical Envelope and Interface

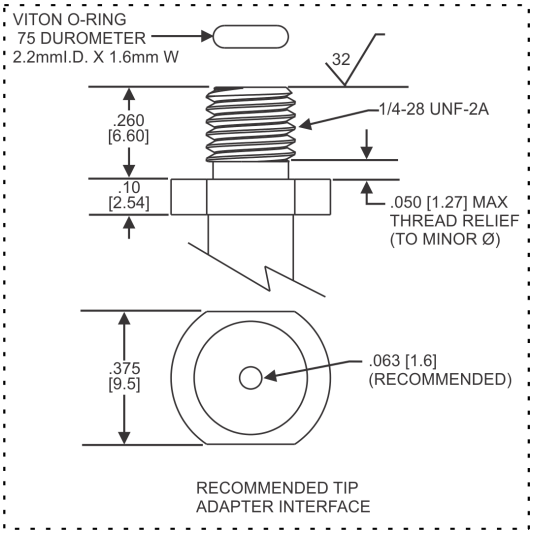
(Dimensions reference only)



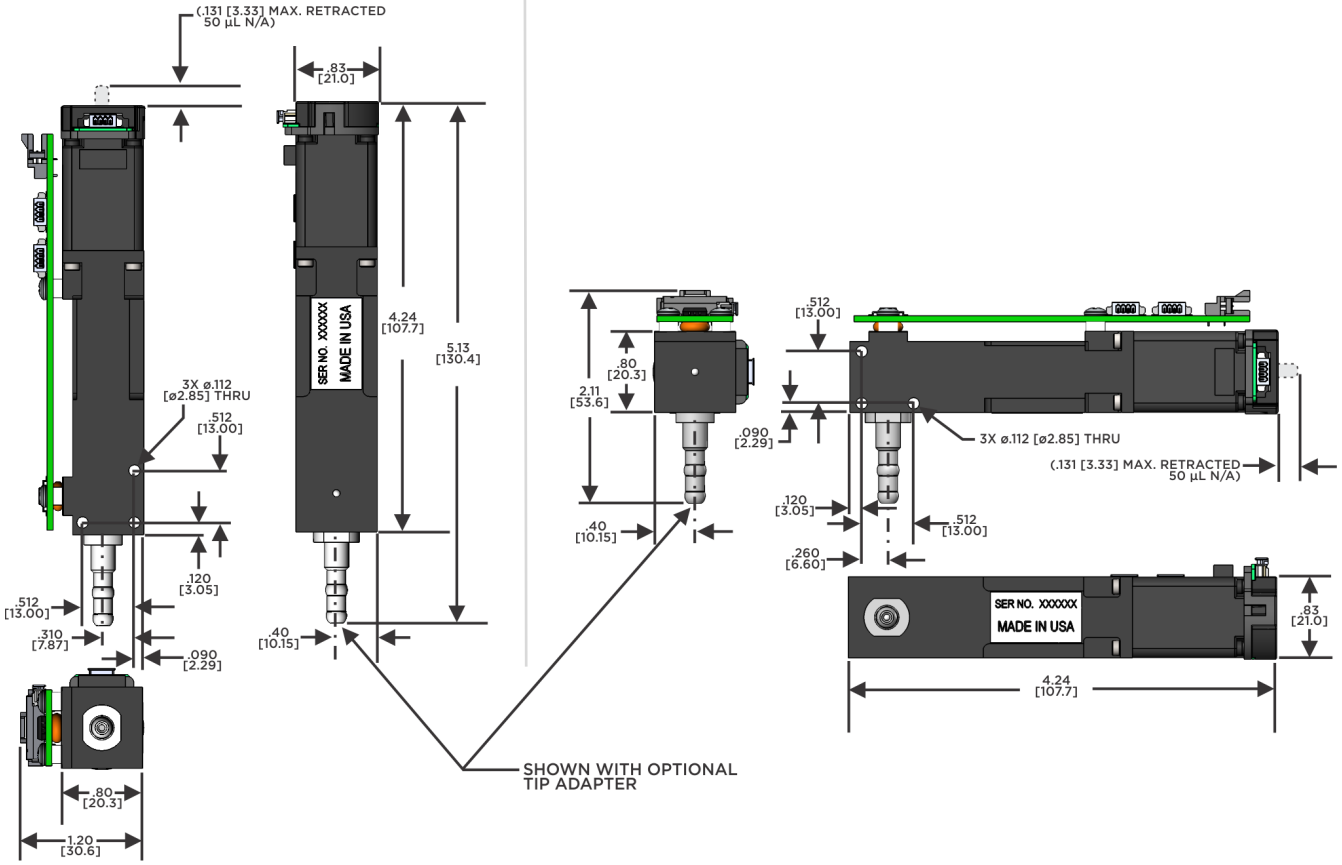
CONNECTOR VIEW
CONNECTOR HEADER
10 POSITION .050 INCH R/A

CONNECTOR PINOUT INFORMATION FOR CUSTOMER CABLE INTERFACE TO PCBA

PIN	FUNCTION
1	+ 24 VDC
2	GND
3	RS232-Tx
4	RS232-Rx
5	I/O-1
6	I/O-2
7	RS485 A
8	RS485 B
9	CAN +
10	CAN -

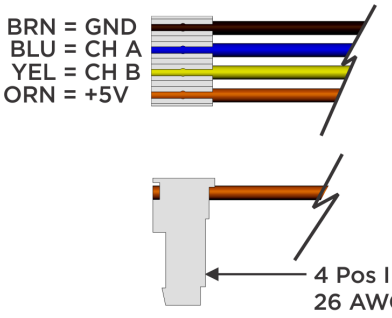


RECOMMENDED TIP
ADAPTER INTERFACE

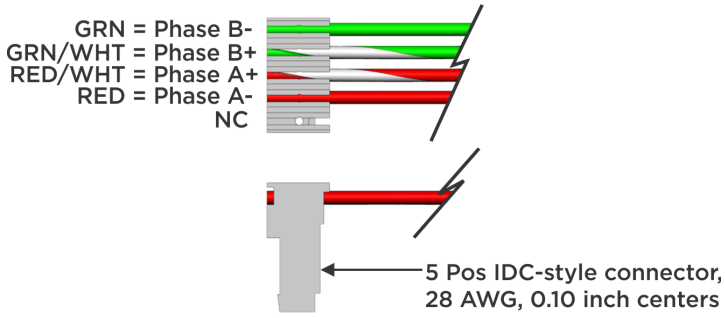


Note: Dimensions in inches [mm] unless otherwise specified.

OEM Optional Configuration
Mechanical Envelope and Interface
(Dimensions reference only)



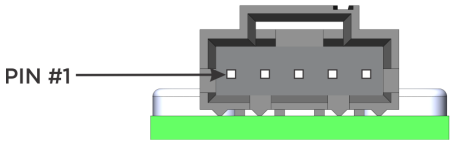
ENCODER WIRE PIN OUT



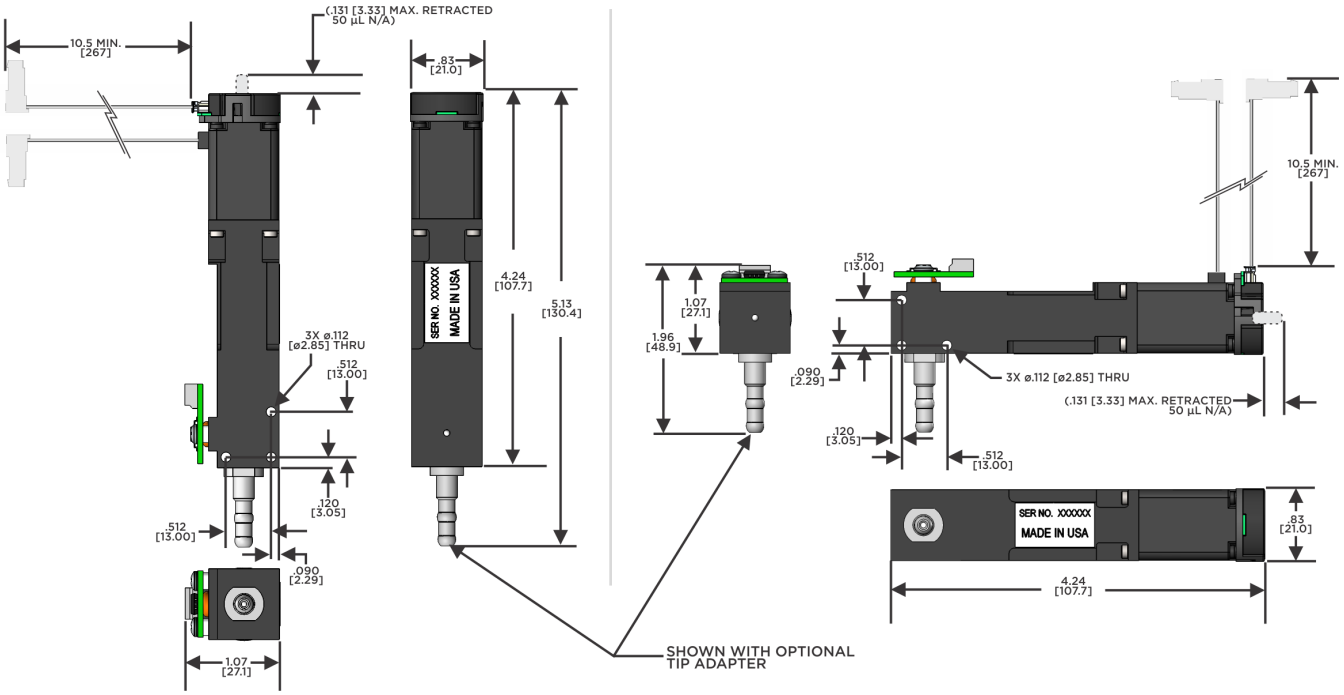
MOTOR WIRE PIN OUT

CONNECTOR PINOUT
INFORMATION FOR CUSTOMER
CABLE INTERFACE TO PCBA

PIN	FUNCTION
1	Shield
2	GND
3	Vout-
4	Icc
5	Vout+



CONNECTOR VIEW
CONNECTOR HEADER
5 POSITION .050 INCH

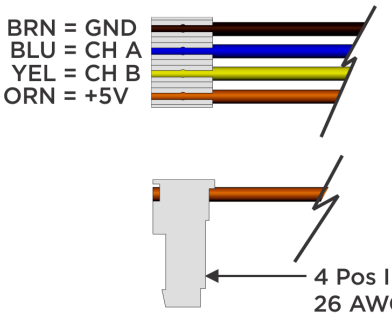


Note: Dimensions in inches [mm] unless otherwise specified.

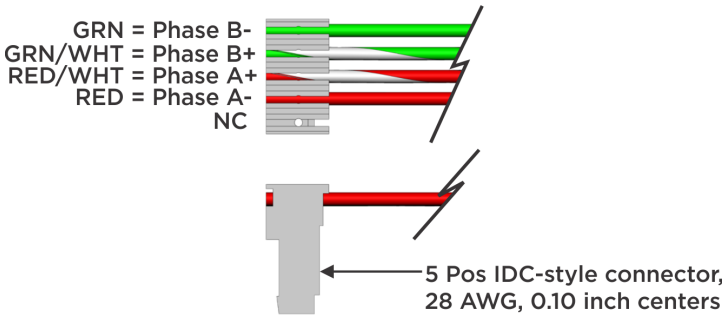
OEM AIR-Z FLEX INTERFACE DETAILS (WITHOUT PRESSURE SENSOR/WITHOUT CONTROL ELECTRONICS)

OEM Optional Configuration
Mechanical Envelope and Interface

(Dimensions reference only)



ENCODER WIRE PIN OUT



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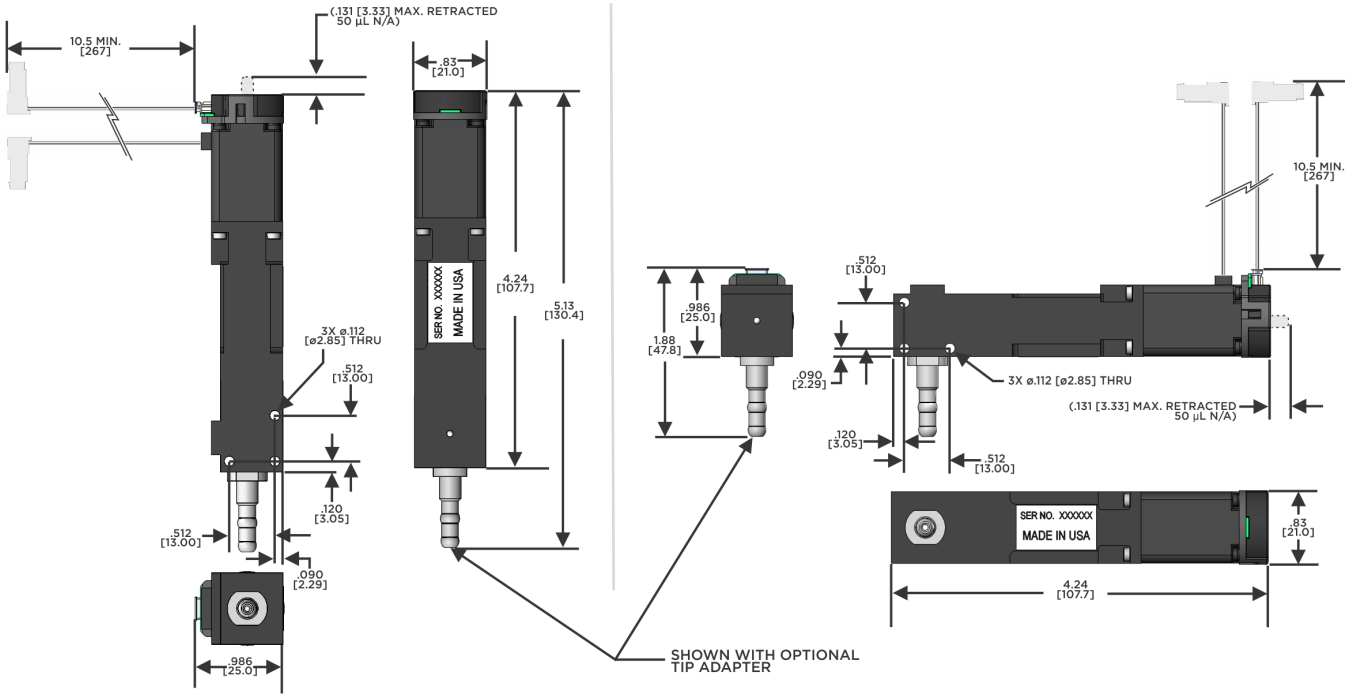

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LIQUID HANDLING SOLUTIONS FOR OEMS WORLDWIDE

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