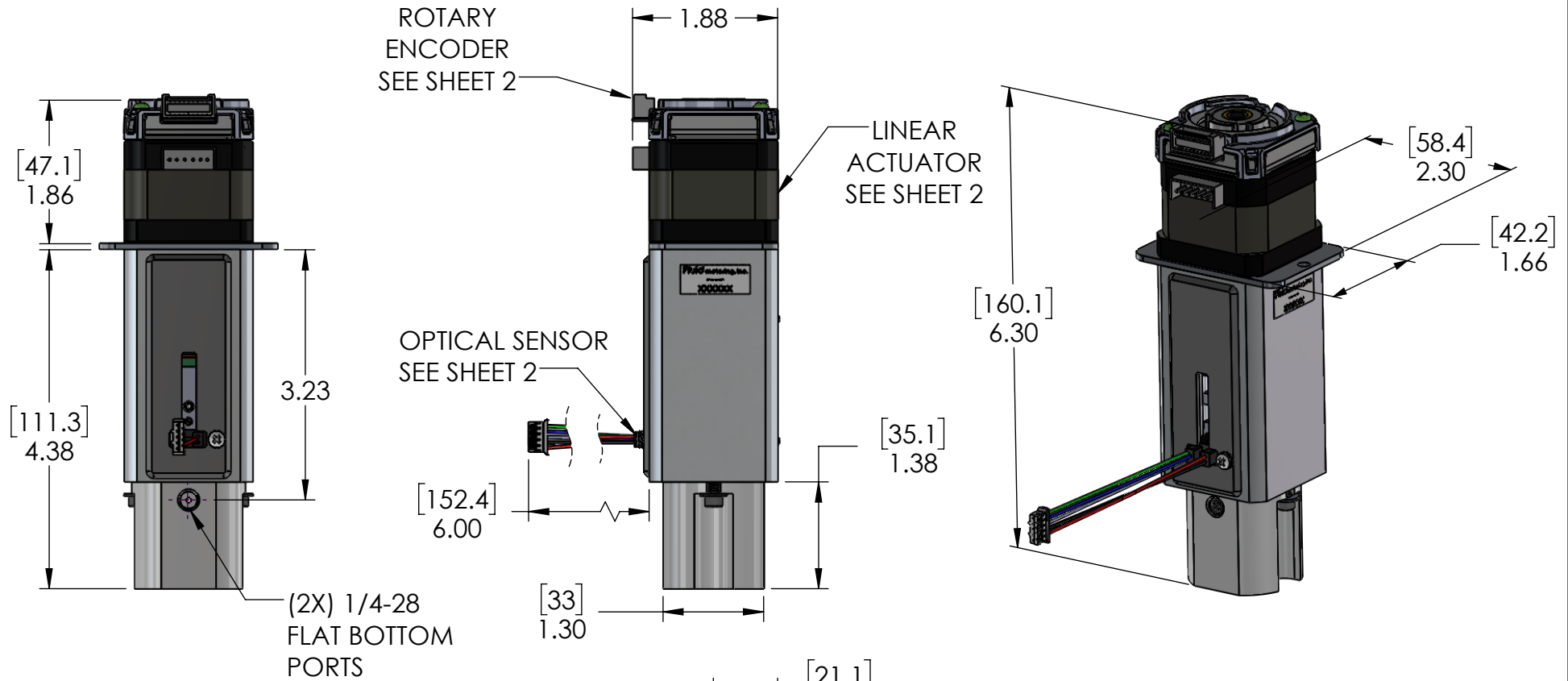


# FMI DIRECT DRIVE DIMENSIONS AND MOUNTING



**PATENT PENDING**

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FMI P/N 400818

TOLERANCES  
UNLESS OTHERWISE SPECIFIED

.X = ±.06 [1.5]  
.XX = ±.02 [0.5]  
.XXX = ±.01 [0.25]

DO NOT SCALE

SURFACE FINISH 63

DRAWN BY	NM	DATE	01/09/23
CHECKED BY	TB	DATE	01/09/23
APPVD BY	RH	DATE	02/10/23

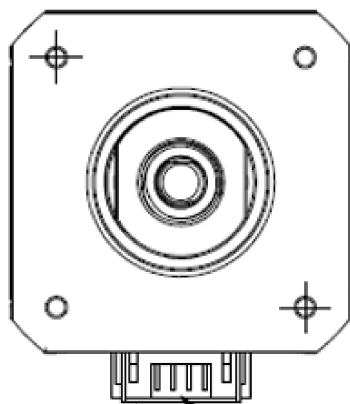
**Fluid metering, inc.**

5 Aerial Way, Suite 500, Syosset, NY 11791  
800.223.3388 P: 516.922.6050 F: 516.624.8261 www.fluidmetering.com

TITLE		FMI DIRECT DRIVE, 1/8"	
DWG NO.	600425	REV	A
SHT NO 1 of 4			

# ELECTRICAL SPECIFICATIONS

## MOTOR CONNECTOR



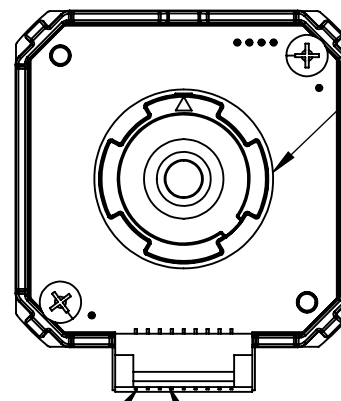
### MOTOR PINOUT TABLE

PIN #	PHASE
1	A+
3	A-
4	B-
6	B+

**MOTOR CONNECTOR:**  
JST-S6B-PH-K-S(LF)(SN)

PIN 1

## ENCODER CONNECTOR



ENCODER:  
CUI  
AMT132Q-4096-1000

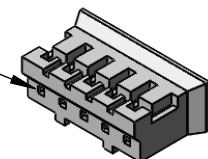
### ENCODER PINOUT TABLE

PIN #	DESC
1	RX_ENC+
2	TX_ENC+
4	GND
6	+5V
8	A+
9	A-
10	B+
11	B-
12	Z+
13	Z-
14	MCLR
18	NOISE GND

**ENCODER CONNECTOR:**  
JST-SM18B-ZPDSS-TF

PIN 1

## SENSOR CONNECTOR



PIN 1

JST-PHR5

### MOTOR SWITCHING SEQUENCE

#### SWITCHING SEQUENCE-VIEWED FROM MOUNTING END

CCW	STEP	A	A-	B	B-
↓	1	+	-	+	-
	2	+	-	-	+
	3	-	+	-	+
	4	-	+	+	-
	1	+	-	+	-

### SENSOR WIRING TABLE

PIN #	WIRE COLOR	FUNCTION
1	GREEN	GROUND
2	BLUE	OUTPUT
3	WHITE	Vcc
4	BLACK	CATHODE
5	RED	ANODE

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UNLESS OTHERWISE .XX = ±.02 [0.5]  
SPECIFIED .XXX = ±.01 [0.25]

DO NOT SCALE SURFACE FINISH 63

DRAWN BY NM DATE 01/09/23

CHECKED BY TB DATE 01/09/23

APPVD BY RH DATE 02/10/23

FMI P/N 400818

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FMI DIRECT DRIVE,  
1/8"

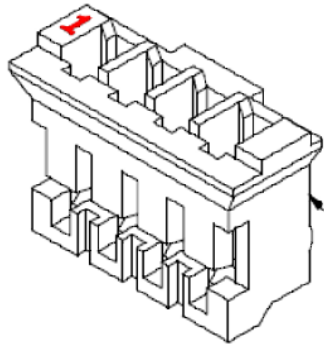
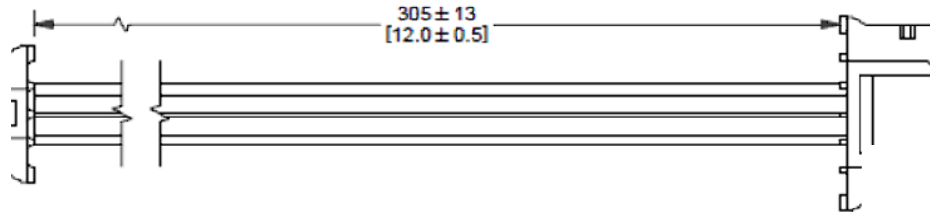
DWG NO.  
600425

REV  
A

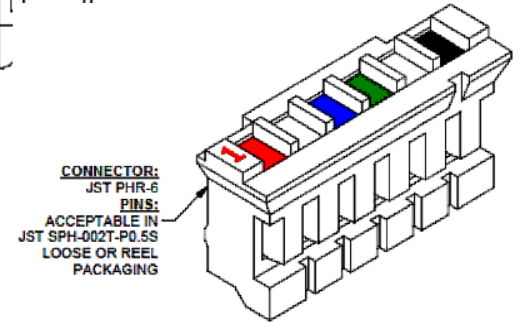
SHT NO 2 of 4

# CABLE SPECIFICATIONS

## MOTOR CABLE

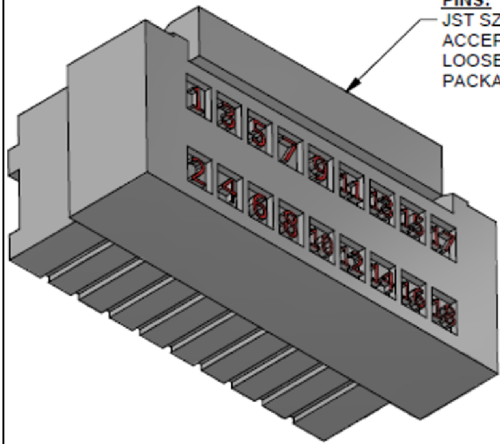
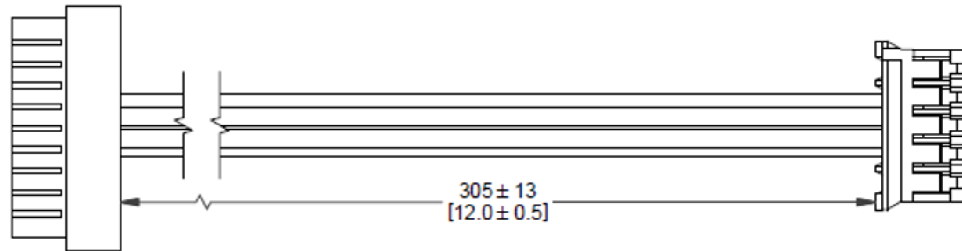


**CONNECTOR:**  
JST PHR-4  
**PINS:**  
ACCEPTABLE IN  
JST SPH-002T-P0.5S  
LOOSE OR REEL  
PACKAGING



**CONNECTOR:**  
JST PHR-6  
**PINS:**  
ACCEPTABLE IN  
JST SPH-002T-P0.5S  
LOOSE OR REEL  
PACKAGING

## ENCODER CABLE



**CONNECTOR:**  
JST ZPDR-18V-S  
**PINS:**  
JST SZPD-002T-P0.3  
ACCEPTABLE IN  
LOOSE OR REEL  
PACKAGING

FMI P/N 400818

**NOTES:**

1. ENCODER CABLE FOR SINGLE ENDED CONFIGURATION.

TOLERANCES UNLESS OTHERWISE SPECIFIED		.X = ±.06 [1.5] .XX = ±.02 [0.5] .XXX = ±.01 [0.25]				5 Aerial Way, Suite 500, Syosset, NY 11791 800.223.3388 P: 516.922.6050 F: 516.624.8261 www.fluidmetering.com		
DO NOT SCALE		SURFACE FINISH				TITLE		
DRAWN BY	NM	DATE	01/09/23	FMI DIRECT DRIVE, 1/8"				
CHECKED BY	TB	DATE	01/09/23					
APPVD BY	RH	DATE	02/10/23	DWG NO.	600425	REV	A	SHT NO 3 of 4

# PUMP PERFORMANCE AND SPECIFICATIONS

## PUMP VOLUMETRIC PERFORMANCE

VOLUME RESOLUTION		.031 $\mu$ L / FULL STEP	
VOLUME	STEP COUNT	ACCURACY	PRECISION
1 $\mu$ L (TYPICAL)	31.5	< $\pm$ 2%	< 1%
3 $\mu$ L	94.5	$\leq$ $\pm$ 2%	$\leq$ 1%
150 $\mu$ L (FULL STROKE)	4725	$\leq$ $\pm$ 0.1%	$\leq$ 0.1%

## OPERATING SPECIFICATIONS

PISTON SIZE	1/8"
DIPSENSE/ASPIRATE RESOLUTION	.031 $\mu$ L / FULL STEP
MAX TRAVEL FROM HOME	5200 STEPS
MAX OPERATING PRESSURE	100 PSI
MAX FLUID TEMPERATURE	100 $^{\circ}$ F
MIN FLOW RATE	0.105 $\mu$ L/s @ 1 RPM
MAX FLOW RATE	62.8 $\mu$ L/s @ 600 RPM
LIFE EXPECTANCY	> 1 MILLION CYCLES

\* MAX SPEED BASED ON MOTOR DRIVER

## DRIVE SPECIFICATIONS

RATED CURRENT	1.5AMP/PHASE
MOTOR FRAME	NEMA 17
STEP ANGLE	1.8 $^{\circ}$
MAX SPEED	2000 STEP/S*
MOTOR CW	ASPIRATE
MOTOR CCW	DISPENSE

## GENERAL INFORMATION

FLUID PATH MATERIALS	CERAMIC (ZIRCONIA) PVDF   UHMW-PE   FKM
SEAL MATERIALS	UHMW-PE   FKM
CERTIFICATIONS	REACH   RoHS
WEIGHT	1.3 LBS

FMI P/N 400818

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DO NOT SCALE

SURFACE FINISH  $\sqrt{63}$

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TITLE

FMI DIRECT DRIVE,  
1/8"

DWG NO.	600425
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SHT NO 4 of 4