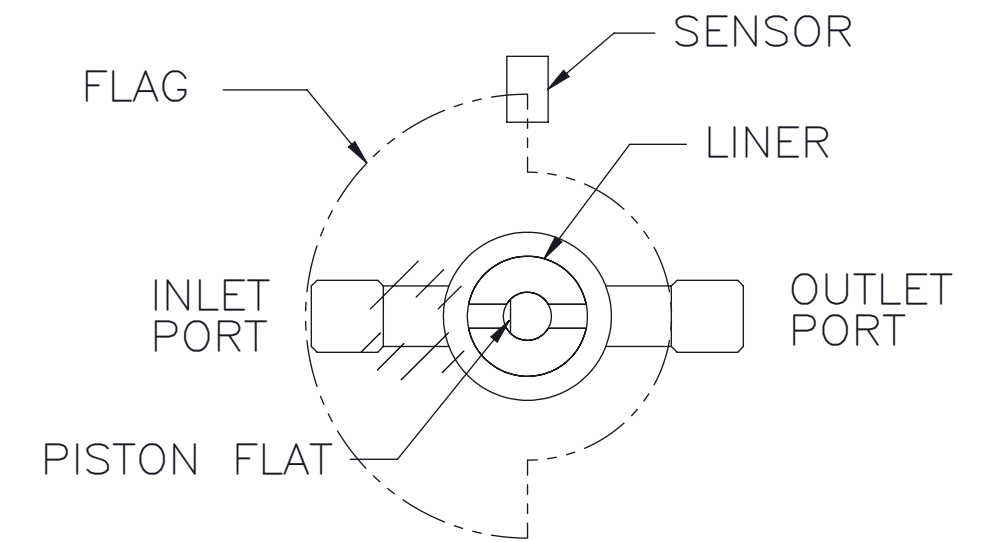
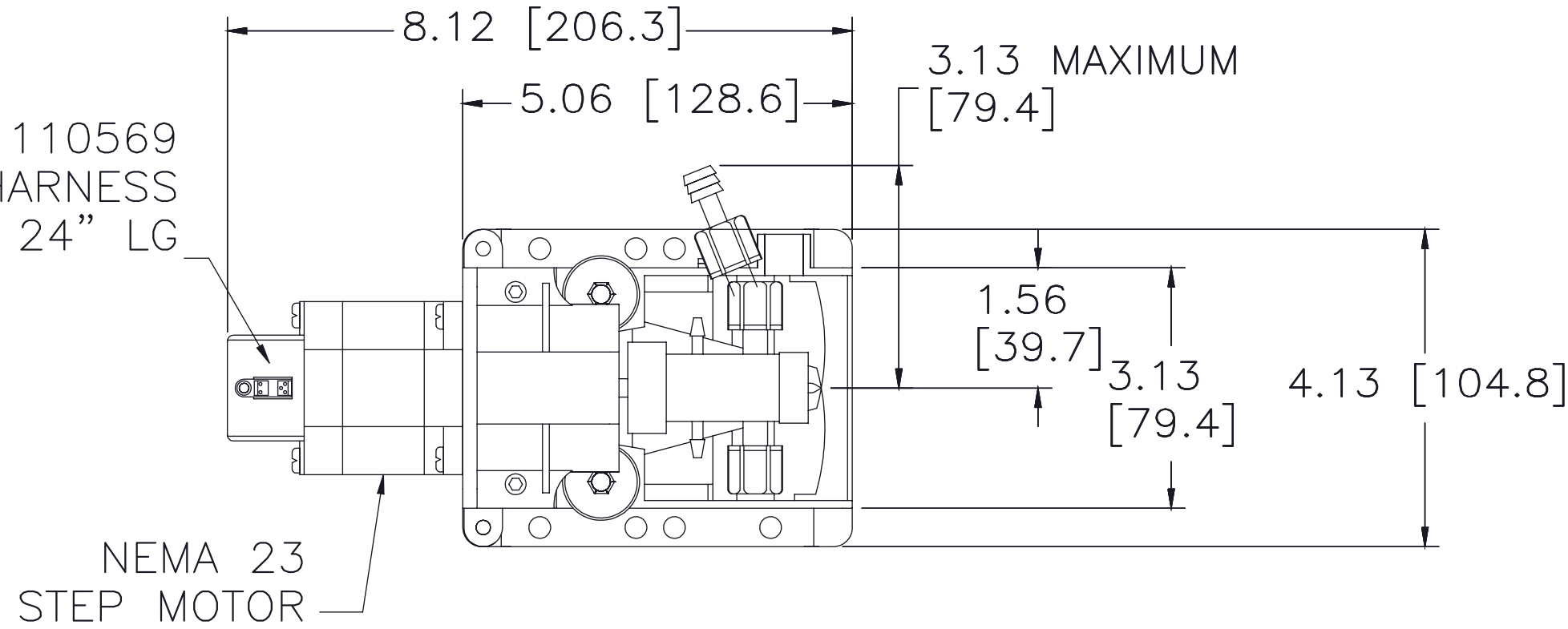


# FMI STQP PUMP DRIVE MODULE

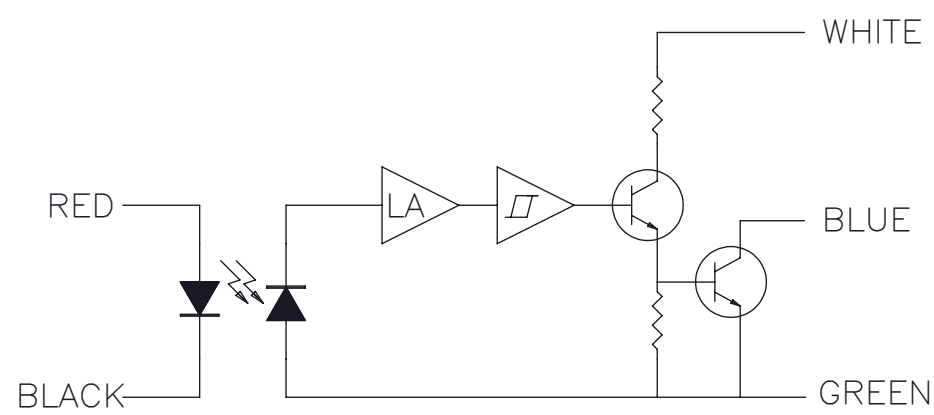
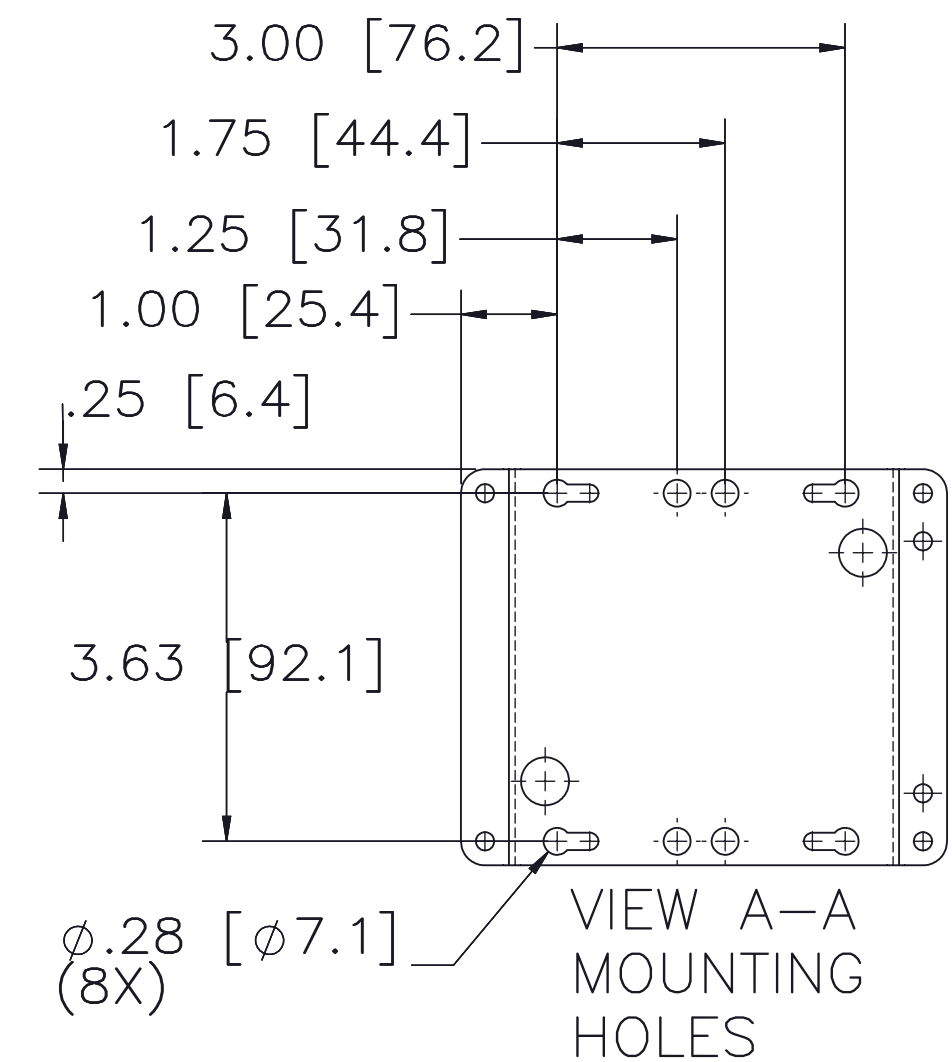
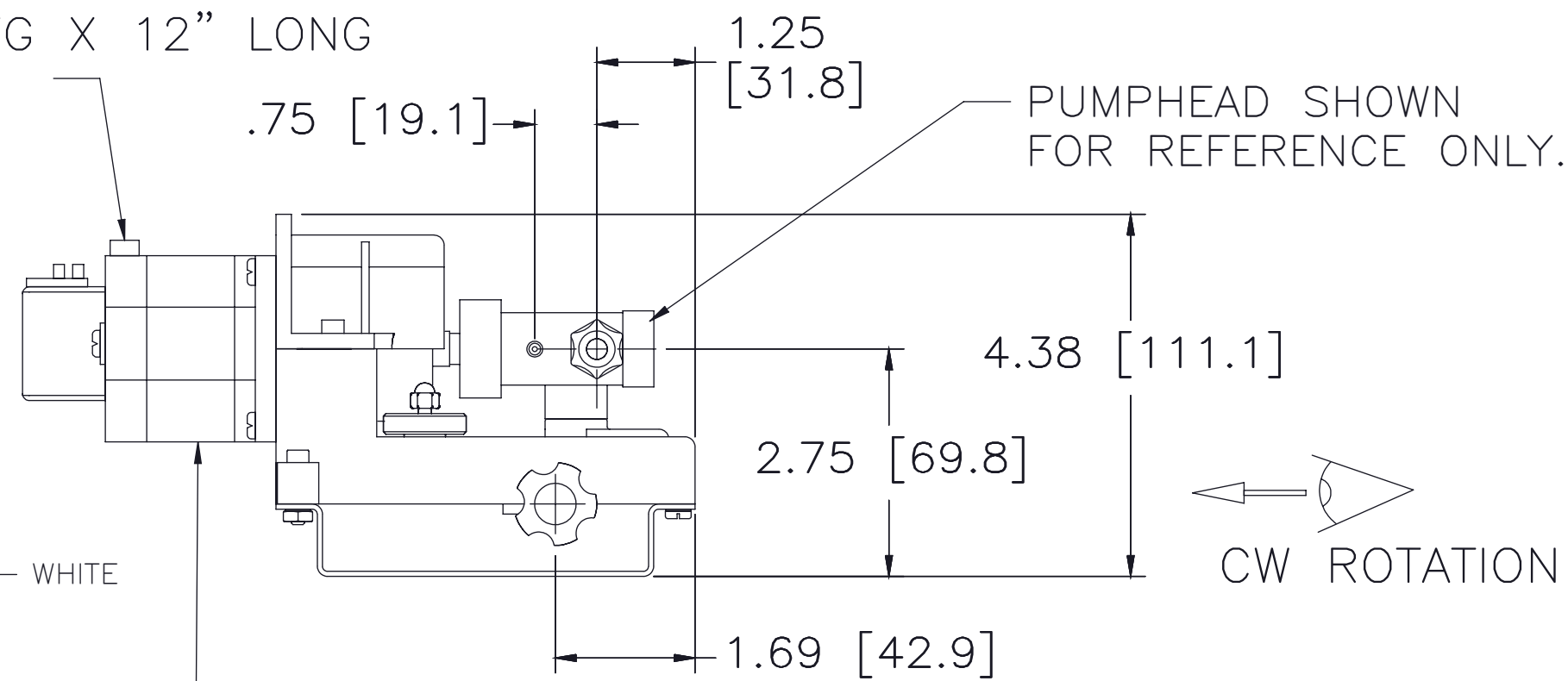
Note:

1. With pumphead positioned to the right side and motor rotation clockwise as viewed from front of pump, the piston flat will stop 1/2 way into the intake stroke.

\* FMI P/N 110569  
OPTICAL SENSOR HARNESS  
(5X) 26 AWG X 24" LG



MOTOR POWER HARNESS  
(8X) 22AWG X 12" LONG



110569 SCHEMATIC

REF - P/N 300615  
23 FRAME STEP MOTOR  
SEE SHEET #2 FOR ADDITIONAL  
MOTOR SPECIFICATIONS

\* FMI P/N 110569  
OPTICAL SENSOR

FUNCTION	WIRE COLOR
EMITTER CATHODE	BLACK
EMITTER ANODE	RED
DETECTOR GROUND / POWER SUPPLY GROUND	GREEN
DETECTOR SIGNAL	BLUE
POWER +5VDC	WHITE

NOTE: DIMENSIONS ARE IN INCHES [MILLIMETERS]  
TOLERANCES UNLESS OTHERWISE SPECIFIED:

.XX = ±.02 [.51]  
.XXX = ±.010 [.254]

FMI P/N STQP 23 - FRAME

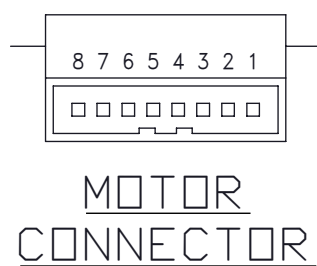
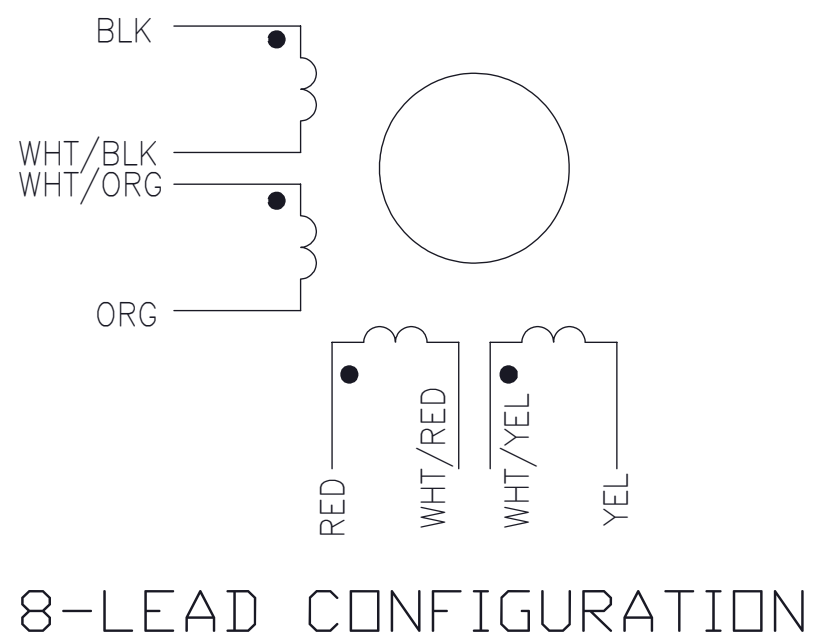


Fluid Metering Inc.  
5 Aerial Way, Suite 500  
Syosset, NY 11791

TITLE  
STQP ADJUSTABLE HIGH  
FLOW PUMP, 23 FRAME STEP  
MOTOR (STANDARD)

DWG NO 600123 REV F SHT NO 1 of 2

## FMI P/N 300615 - 23 FRAME STEP MOTOR



MOTOR VALUE DATA, ALL VALUES TYPICAL AT 40° C UNLESS OTHERWISE NOTED		UNITS	BI-POLAR 4-LEAD SERIES	* BI-POLAR 4-LEAD PARALLEL	UNIPOLAR 6-LEAD
IC	RATED CONT. CURRENT/PHASE (2)	AMPS	1.75	3.5	2.5
Ke	VOLTAGE CONSTANT/PHASE ± 10%	Vpk/RAD/SEC	0.412	0.206	0.206
Rp	RESISTANCE: 25°C ±10%	OHMS	2.22	.56	1.11
Lp	PHASE INDUCTANCE ±20% (3)	mH	9.2	2.3	2.3
Th	HOLDING TORQUE (2-PHASE ON) (1)	OZ_IN (Nm)	116 (0.82)	116 (0.82)	82 (0.58)
Tr	LOW SPEED RUNNING TORQUE (1)	OZ_IN (Nm)	89 (0.63)	89 (0.63)	63 (0.44)
Td	DETENT TORQUE	OZ_IN (Nm)	4.0 (0.028)		
Jm	ROTOR INERTIA	OZ-IN-SEC <sup>2</sup> (KG-M <sup>2</sup> 10 <sup>-3</sup> )	0.0017 (0.012)		
RTH	THERMAL RES, WINDINGS TO AMBIENT (2)	DEGREES C PER WATT	5.5		
STEP ANGLE		DEGREES OF ROTATION	1.8		

\* RECOMMENDED HOOK UP FOR BEST PERFORMANCE.

### DRIVER CONNECTION (5) DRIVER CONNECTION (5)

STEP	A	$\bar{A}$	B	$\bar{B}$
1	+	-	-	+
2	-	+	-	+
3	-	+	+	-
4	+	-	+	-
1	+	-	-	+

CCW ↓      ↑ CW

BIPOLAR FULL STEP PHASE SEQUENCING

STEP	A	B	C	D
1	GND	0	GND	0
2	0	GND	GND	0
3	0	GND	0	GND
4	GND	0	0	GND
1	GND	0	GND	0

CCW ↓      ↑ CW

UNIPOLAR FULL STEP PHASE SEQUENCING

+ = POSITIVE CURRENT FLOW  
 - = NEGATIVE FLOW  
 0 = OFF OR OPEN  
 GND = GROUND

CONNECTION	PIN	LEAD COLOR	DRIVER CONNECTION
4-LEAD BIPOLAR SERIES	6	BLK	A
	1	ORG	$\bar{A}$
	8	RED	B
	3	YEL	$\bar{B}$
	2 & 5	WHT/BLK & WHT/ORG	---
* 4-LEAD BIPOLAR PARALLEL	6 & 5	BLK & WHT/ORG	A
	1 & 2	ORG & WHT/BLK	$\bar{A}$
	8 & 7	RED & WHT/YEL	B
	3 & 4	YEL & WHT/RED	$\bar{B}$
6-LEAD UNIPOLAR	6	BLK	A
	1	ORG	B
	8	RED	C
	3	YEL	D
	2 & 5	WHT/BLK & WHT/ORG	+V
4 & 7	WHT/RED & WHT/YEL	+V	

**NOTES:**

- (1) WITH RATED CURRENT APPLIED.
- (2) WINDINGS AT 130°C MOTOR UNMOUNTED IN STILL AIR AT 40°C (AMBIENT).
- (3) SMALL SIGNAL INDUCTANCE AS MEASURED AT WITH IMPEDANCE BRIDGE @ 1 KHZ, 1 AMP.
- (4) SUGGESTED MATING CONNECTOR AMP# 641653-8 OR EQUIVALENT.
- (5) INDICATED DIRECTION WHEN VIEWED FROM MOTOR DRIVE SHAFT END.
- (6) OPERATING TEMPERATURE -20°C TO +40°C.

### FMI P/N STQP - 23 FRAME



**Fluid Metering Inc.**  
 5 Aerial Way, Suite 500  
 Syosset, NY 11791

TITLE

**STQP ADJUSTABLE HIGH FLOW PUMP, 23-FRAME STEP MOTOR (STANDARD)**

DWG NO	600123	REV F	SHT NO 2 Of 2
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