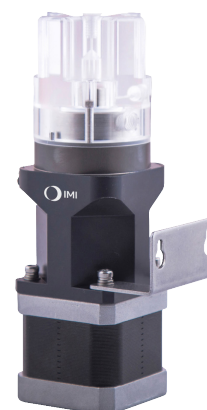


# IP 4000 Series Inline Pump

- Positive displacement design with a transparent manifold housing for micro fluid dispensing
- High accuracy
- High precision
- High chemical compatibility
- Seal wash option
- For precise dispensing application in analytical chemistry & diagnostics



## Technical features

### Physical

**Height:**  
25,4 mm

**Width:**  
41,9 mm

**Length:**  
135,9 mm

**Weight:**  
Up to 0,6 kg

### Mechanical

**Operation:**  
Any orientation  
(Vertical preferred)

**Mounting configuration:**  
*See Figure 1*

**Pump Resolution:**  
1,8 Degree Full Step  
Two resolutions available  
(2000 and 4000 full steps)

**Pressure:**  
6,8 bar (100 psig)

**Full volume dispense:**  
50 µL to 5 mL  
(Customised volumes available  
on request)

**Linear dispense:**  
Accuracy: <0,5% at full dispense

**Linear dispense:**  
Precision: <1% CV at  
2% dispense

**Life cycle:**  
High reliability  
(≥5 million cycles)

### Environmental

**Operating temperature:**  
0 ... 45°C (32°F to 131°F)

**Operating humidity:**  
5 to 95% RH, non-condensing at  
55°C (131°F)

**Storage temperature:**  
–25 ... 55°C (13°F to 131°F)  
RoHS 3.0 Compliant

### Electrical Interface

**Motor wiring diagram:**  
*See Figure 2*

**Optical sensor:**  
Series: OPB880 (Standard)

**Sensor wiring diagram:**  
*See Figure 3*  
(Sensor model can be customised  
on request)  
NEMA 17 Bipolar Stepper Motor (4  
lead) (Standard)

### Chemical:

**Wetted materials:**  
Acrylic, 316 Stainless steel,  
Z80 (Polyethylene), EPDM

(Above are wetted materials for our  
standard variant. Materials may change  
for customised variants)

**Ancillary Items:**  
Operation manual

**Note:**  
One Mounting bracket will be supplied  
with standard IP 4000 series.  
Suggested hardware for thru hole  
mounting: Screw M3

# Option selector

Volume selector	Substitute
100 µl	1
500 µl	2
1000 µl	3
50 µl	4
250 µl	5
2500 µl	6
5000 µl	7
Special/Customised	S*
Seal wash (optional)	Substitute
No	0
Yes	1
Plunger & seal material	Substitute
SS 316 L with EPDM Seals	1
PEEK with EPDM Seals	2
Ceramic with EPDM Seals	3
SS 316 L with FKM/FFKM Seals	4
PEEK with FKM/FFKM Seals	5
Ceramic with FKM/FFKM Seals	6

IP 4000 ★★★★★★

Head material & port size	Substitute
Acrylic with 1/4-28 UNF-2B	1
Acrylic with M6	2
PTFE with 1/4-28 UNF-2B	3
PTFE with M6	4
PEEK with 1/4-28 UNF-2B	5
PEEK with M6	6
Encoder with stepper motor	Substitute
No	0
Yes	1
Pump Resolution	Substitute
2000 full steps – Bipolar	1
4000 full steps – Bipolar	2
2000 full steps – Unipolar	3
4000 full steps – Unipolar	4
2000 full steps – Bipolar AB nut	5
4000 full steps – Bipolar AB nut	6
2000 full steps – Unipolar AB nut	7
4000 full steps – Unipolar AB nut	8

\*For customised volume, mention volume in µl at the end of part number.  
Ex – For 60 µl, IP4000S11101/60

## Dimensions

### Mounting Details

Shown without valve and encoder option

Dimensions in mm  
Projection/first angle

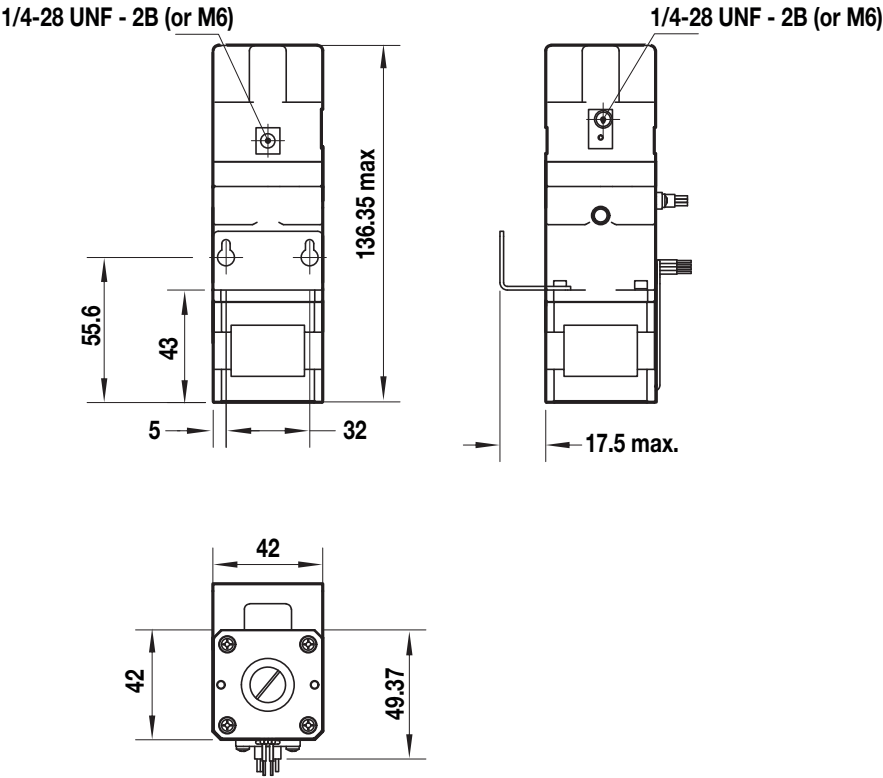


Figure 1

## Dimensions

### Motor wiring diagram

#### Exciting Sequence vs. Direction of Rotation

Dimensions in mm

Projection/first angle

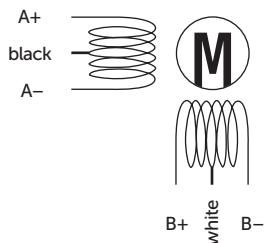


Figure 2

#### Clockwise view from mounting side

Clockwise →					
Red	A+	+		-	
Red White	A-	-		+	
Green	B+		+		-
Green White	B-		-		+
Counter Clockwise ←					

## Sensor wiring diagram

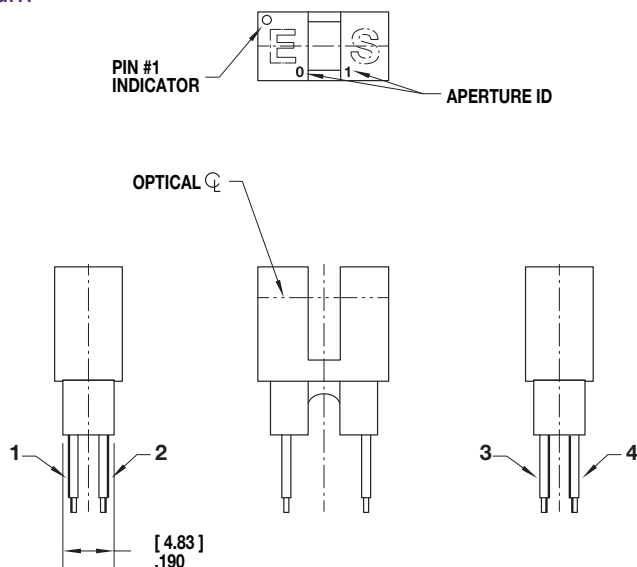


Figure 3

Pin #	Emitter	Pin #	Transistor/Diode
1	Anode	3	Collector/Anode
2	Cathode	4	Emitter/Cathode

## Warning

These products are intended for use in industrial DI water and fluid systems only. Do not use these products where pressures and temperatures can exceed those listed under »Technical features/data«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult Norgren, IMI Norgren Herion Pvt. Ltd.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.