

# Electro-Pneumatic Servo Valves

# ER Series



Servo Valve

Model Shown: ER-1A2C200



**37-288**  
Brass Inlet Filter  
(Included when purchasing a servo-valve.)



Servo Valve with Booster

Model Shown: B2JA-ER-1A2C200

## SPECIFICATIONS

**Accuracy (servo valve with booster):**  $< \pm 2.5\%$  F.S.

**Analog Monitor Signal:**

**Voltage:** 0 – 10 VDC @ 20 ma maximum.

**Current:** 4 – 20 ma sinking (sourcing optional).

**Ambient/Media Temperature:**

32° to 158°F (0° to 70°C).

**Command Signal Impedance:**

**Voltage:** 4.7 k $\Omega$  . **Current:** 100  $\Omega$  .

**Command Signal Voltage/Current:**

0 – 10 VDC/4 – 20 ma.

**Electrical Connector:** 6-pin Brad Harrison.

**Fluid Media:** Compressed air.

**Housing:** Aluminum; powder coated.

**Input Pressure: Servo-valve With Regulator**

29.9 in Hg to 300 psig (760 mm Hg to 21 bar).

**Linearity/Hysteresis (servo valve with booster):**

$< \pm 2.0\%$  F.S. BFSL.

**Manifold:** Brass.

**Output Pressure:** 0 to 200 P.S.I..

**Repeatability (servo valve with booster):**

$< \pm 0.6\%$  F.S.

**Seals:** Fluorocarbon.

**Supply Voltage/Current:**

15 – 24 VDC/250 ma (required).

**Transducer:** Silicon, aluminum.

**Valves:** Nickel-plated brass.

**Note:** High-pressure servo-valve ( $\geq 175$  psi) - inlet and exhaust ports reversed from picture shown.

**"ER-" without booster accuracy:**  $< \pm 0.2\%$  F.S.

Linearity / Hysteresis:  $< \pm 0.15\%$  F.S. BFSL

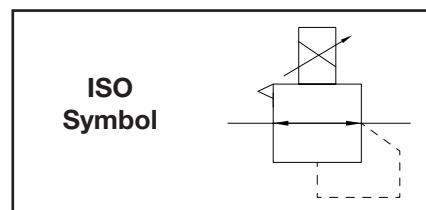
**Repeatability:**  $< \pm 0.02\%$  F.S.

The Series ER servo valve is Master Pneumatic's latest product using closed loop control technology. It incorporates many important standard features.

Standard flow rate of the valve is typically one scfm maximum. When used with a volume booster a flow rate in excess of 1,000 scfm can be achieved.

Check the items below to see how cost-effective these valves can be in your plant.

- ◆ Fits into very small space.
- ◆ Accurate to  $\pm 2.5\%$  F.S. (with booster)
- ◆ 0 – 10 VDC analog monitor output.
- ◆ NEMA 4 1P65 rating.
- ◆ Accepts analog command signal inputs.
- ◆ Servo-valve with regulator: control pressure ranges from vacuum to 300 psig.
- ◆ Valve is insensitive to shock, vibration, or mounting position.
- ◆ Easily repairable in the field.



## ORDERING INFORMATION for SERVO-VALVE ONLY

Change the letters in the sample model number below to specify the electro-pneumatic servo valve you want.

# ER-1 A 1 A 100

### LOOP

- Single loop ..... 1
- Double loop ..... 2

### PIN CONNECTOR

- 6 Pin Brad Harrison Connector ..... A

### COMMAND INPUT / TRANSDUCER FEEDBACK.

- 0-10 VDC / no feedback ..... 1  
(Use '1' option under 'LOOP' section).
- 4-20 MA / no feedback ..... 2  
(Use '1' option under 'LOOP' section).
- 0-10 VDC / 4-20 MA ..... 3  
(Use '2' option under 'LOOP' section  
Pressure transducer must be ordered  
separately. See below).
- 4-20 MA / 4-20 MA ..... 4  
(Use '2' option under 'LOOP' section  
Pressure transducer must be ordered  
separately. See below).
- 0-10 VDC / 0-10 VDC ..... 5  
(Use '2' option under 'LOOP' section  
Pressure transducer must be ordered  
separately. See below).
- 4-20 MA / 0-10 VDC ..... 6  
(Use '2' option under 'LOOP' section  
Pressure transducer must be ordered  
separately. See below).

### MAX INLET / MAX CALIBRATED RANGE VAC-500 PSIG

- Max Inlet: 35 PSI, 0-30 PSI ..... 030
- Max Inlet: 110 PSI, 0-50 PSI ..... 050
- Max Inlet: 110 PSI, 0-100 PSI ..... 100
- Max Inlet: 190 PSI, 0-100 PSI ..... A01
- Max Inlet: 330 PSI, 0-200 PSI ..... 200
- Max Inlet: 330 PSI, 0-300 PSI ..... 300
- 0-20 in.Hg (Vac) ..... V20  
(this option not available with volume  
booster)

Consult factory for pressure ranges not starting at "0" or any unspecified adjusting ranges not shown above.

### MONITOR SIGNAL

- 0-10 VDC ..... A
- 4-20 MA - Sinking ..... B
- 4-20 MA - Sourcing ..... C

**NOTE:** Cable must be ordered separately.  
Transducer feed back on option 'LOOP' must be ordered separately. See choices below.

Electro-Pneumatic Servo Valve, ER- Series

## Electro-Pneumatic Servo Valves Accessories

## ER- Series



**ER-SPS100**  
Switching power supply.



**CABLES**  
(6 pin Brad harrison connector).  
**ER-CBL-6** (6ft)  
**ER-CBL-12** (12ft)  
**ER-CBL-24** (24ft)

### PRESSURE TRANSDUCERS

- ER-DSI100-H24** (0-100 PSI, 4-20MA with 6FT cable)
- ER-DSI200-H24** (0-200 PSI, 4-20MA with 6FT cable)
- ER-DSI100-H251** (0-100 PSI, 4-20MA with 20FT cable)
- ER-DSI200-H251** (0-200 PSI, 4-20MA with 20FT cable)

- ER-DSY100-H24** (0-100 PSI, 0-10VDC with 6FT cable)
- ER-DSY200-H24** (0-200 PSI, 0-10VDC with 6FT cable)
- ER-DSY100-H251** (0-100 PSI, 0-10VDC with 20FT cable)
- ER-DSY200-H251** (0-200 PSI, 0-10VDC with 20FT cable)

### MOUNTING BRACKETS

- ER-BRK-1** (Used with Electro-Pneumatic Servo Valve only)

Brackets that are used with the servo valve and volume booster see mounting bracket section page.



## ORDERING INFORMATION for SERVO-VALVE with VOLUME BOOSTER

Change the letters in the sample model number below to specify the servo valve you want.

### REGULATOR

PRH100 .....	1
PRH180M .....	2
HPR100 (High-relief) .....	3
HPR180 (High-relief) .....	4

### INLET / OUTLET PORTS

Use '1' or '3' option under 'REGULATOR' section only)

1/4-NPTF .....	2	1/4-BSPP .....	B
3/8-NPTF .....	3	3/8-BSPP .....	C
1/2-NPTF .....	4	1/2-BSPP .....	D

Use '1', '2', or '4' option under 'REGULATOR' section only)

3/4-NPTF .....	6	3/4-BSPP .....	E
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Use '2' or '4' option under 'REGULATOR' section only)

1-NPTF .....	8	1-BSPP .....	F
1-1/4-NPTF .....	J	1-1/4-BSPP .....	G

Use '2' option under 'REGULATOR' section only)

1-1/2-NPTF .....	K	1-1/2-BSPP .....	K
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Model Shown: B2JA-ER-1A2C200

**B 1 2 A -ER- 1 A 1 A 100**

### LOOP

Single loop .....	1
Double loop .....	2

### PIN CONNECTOR

6 Pin Brad Harrison Connector .....	A
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### COMMAND INPUT / TRANSDUCER FEEDBACK.

0-10 VDC / no feedback .....	1	(Use '1' option under 'LOOP' section).
4-20 MA / no feedback .....	2	(Use '1' option under 'LOOP' section).
0-10 VDC / 4-20 MA .....	3	(Use '2' option under 'LOOP' section Pressure transducer must be ordered separately. See below).
4-20 MA / 4-20 MA .....	4	(Use '2' option under 'LOOP' section Pressure transducer must be ordered separately. See below).
0-10 VDC / 0-10 VDC .....	5	(Use '2' option under 'LOOP' section Pressure transducer must be ordered separately. See below).
4-20 MA / 0-10 VDC .....	6	(Use '2' option under 'LOOP' section Pressure transducer must be ordered separately. See below).

### GAUGES

no gauge .....	A
200-BDD (0-200 PSI) .....	B
600-BDD (0-600 PSI) .....	C
30BDD (0-30 PSI) .....	D
60BDD (0-60 PSI) .....	E

### MAX INLET / MAX CALIBRATED RANGE

Max Inlet: 35 PSI, 0-30 PSI .....	030
Max Inlet: 110 PSI, 0-50 PSI .....	050
Max Inlet: 110 PSI, 0-100 PSI .....	100

Consult factory for any other pressure ranges.

### MONITOR SIGNAL

0-10 VDC .....	A
4-20 MA - Sinking .....	B
4-20 MA - Sourcing .....	C

**NOTE:** Cable must be ordered separately.  
Transducer feed back on option 'LOOP' must be ordered separately. See choices below.



บริษัท ฟลูเทค จำกัด  
FLU - TECH CO., TD

845/3-4 หมู่ 3 ถ.เทพารักษ์ ต.เทพารักษ์ อ.เมือง จ.สมุทรปราการ 10270  
845/3-4 Thepharak RD., T. Thepharak, A. Muang, Samutprakran 10270 THAILAND  
Tel. 0 2384 6060, Fax 0 2384 5701, Email : sales@flutech.co.th, www.flutech.co.th