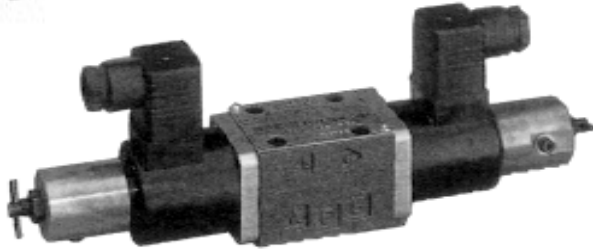


## ELECTRO-HYDRAULIC PROPORTIONAL DIRECTIONAL & FLOW CONTROL VALVE PACKAGE



This is an electro-hydraulic proportional control valve which is composed of DC proportional solenoids in addition to the conventional 4-way solenoid valve to provide both directional control and flow control functions. The available sizes are 01 size of the direct acting system and the 03, 06, and 10 sizes of the pilot system.

Directional control is performed by applying an input current on one of the two proportional solenoids. And the flow volume is controlled by changing the magnitude of the input current. Remote control and shockless acceleration and deceleration control are possible and the hydraulic circuit can be simplified.

*\*Includes\**

- D03 Dual Side Ported 3/8 NPT Aluminum Subplate with Plugs and Screws
- D03 4 Way - 3 Position Double DC Proportional Solenoid, 6.6 GPM, 3000 PSI
- Signal Amplifier
  - Open Loop Amplifier
  - Controller / Amplifier
- Power Supply
  - 24 VDC 1.25 AMP

PROPORTIONAL VALVE PACKAGE					ORDER INFORMATION	
SIZE	GPM	# OF SOLENOIDS	CONTROL	REFERENCE	STOCK NUMBER	PRICE
D03	6.6	DOUBLE/DC	OPEN LOOP AMPLIFIER	ESD-G01-C5-20-E-EDA	3L00160	1605.99
D03	6.6	DOUBLE/DC	CONTROLLER AMPLIFIER	ESD-G01-C5-20-E-EDC	3L00165	1874.50

### INDIVIDUAL COMPONENTS

D03 - STANDARD DUAL SIDE PORTED SUBPLATE		ORDER INFORMATION	
SIZE	REFERENCE	STOCK NUMBER	PRICE
3/8" NPT	AD03SPSB6P	GP03100	47.00

PROPORTIONAL VALVE						ORDER INFORMATION		
SIZE	GPM	P.S.I. (MAX.)	# OF SOLENOIDS	# OF POSITIONS	ELECTRICAL	REFERENCE	STOCK NUMBER	PRICE
D03	6.6	3000	DOUBLE	THREE	DC	ESD-G01-C5-20-E11	NI50000	872.14

AMPLIFIER			ORDER INFORMATION	
ELECTRICAL	TYPE	REFERENCE	STOCK NUMBER	PRICE
DC 24V	OPEN LOOP AMPLIFIER	EDA-PD1-NWZ-D2-11	NI75100	504.00
DC 24V	CONTROLLER / AMPLIFIER	EDC-PC6-AWZ-D2-20	NI75600	801.31

DC POWER SUPPLY				ORDER INFORMATION	
INPUT VOLTAGE	OUTPUT VOLTAGE	AMP	REFERENCE	STOCK NUMBER	PRICE
100/120/220/230/240 AC	24V DC	1.25	DC POWER SUPPLY	3L00170	153.77

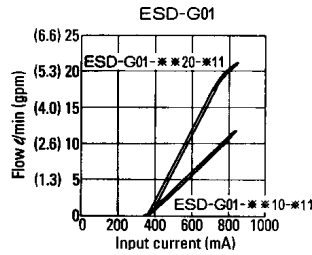
## ESD SERIES

### Performance Curve

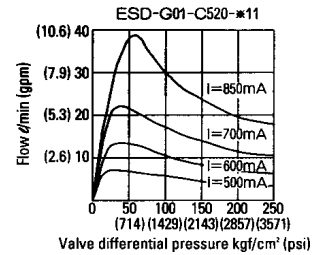
#### Oil Viscosity = 32 cSt

The input current - flow rate characteristics are the characteristics when the control valve pressure drop DP of PgA or PgB is 10 kgf/cm<sup>2</sup> (143 psi) (DP = 10 kgf/cm<sup>2</sup> (143 psi)). The valve differential pressure represented by the abscissa in the pressure - flow performance curve indicates the overall pressure drop of the control valve (pressure drop of P-A-B-T). The flow rate is measured by an oil motor.

#### Input Current - Flow Rate Characteristics



#### Pressure - Flow Rate Characteristics



**NOTE: ESD VALVE SERIES ARE METER IN / METER OUT DESIGN**

### Specifications

- Note 1) This is the value when the PgA or PgB pressure drop DP of PgA = 10 kgf/cm<sup>2</sup> (143 psi).
- Note 2) This value indicates the maximum flow between respective ports.
- Note 3) This value indicates the difference between the pilot port and tank port or between the pilot port and drain port.
- Note 4) This is the value when the response time from zero to rated current is assumed to be 0.1 sec. (0.3 sec. in case of G10 size).
- Note 5) This is the hysteresis when NACHI's amplifier is provided for the valve.
- Note 6) Response time is measured at 140 kgf/cm<sup>2</sup> (2000 psi), oil temp. 40°C (104°C), oil viscosity 40 cSt.

Item	Model	ESD-G01 10 ***-**-**11 20
Max. operating pressure kgf/cm <sup>2</sup> (psi)		3000
Rated flow l/min (gpm)		10/20 (2.6/5.3) (Note 1)
Max. flow l/min (gpm)		25 (16.6) (Note 2)
Pilot pressure kgf/cm <sup>2</sup> (psi)		-
Pilot flow l/min (gpm)		-
Allowable back-pressure of T port kgf/cm <sup>2</sup> (psi)		25 (357)
Rated current (mA)		850
Coil resistance (Ω)		68°F
Hysteresis (%)		5 or less
Response time (sec)		0.04 (Note 6)
Weight kgf (lbs)		2.2 (4.9)

## EDA SERIES, EDC SERIES SMALL TYPE AMPLIFIER SERIES FOR ELECTRO-HYDRAULIC PROPORTIONAL VALVE DRIVE

#### EDA-PD1-NWZ-D2-11



#### EDC-PC6-AWZ-D2-20



Item	Model	EDA-PD1-NWZ-D2-11	EDC-PC6-AWZ-D2-20
Function		Amp. type	Amp./Controller type
Input Number		1 DC input	2 DC input/6 channel input
Max. output current		900mA (20 Ω solenoid)	
Input voltage		-10 ~ +10VDC	0 ~ +10VDC
Input impedance		50kΩ	50kΩ
External setting variable resistor		10kΩ	10kΩ
Driven solenoid		SOL a, SOL b	SOL 1, SOL 2
Zero point adjust (NULL)		0 ~ 900mA	0 ~ 900mA
Gain adjust (GAIN)		0 ~ 900 mA 2.5V	0 ~ 900 mA 2.5V
External supply power		+5VDC (5mA) -5VDC (5mA)	+5VDC (5mA)
Time lag (LAG)		0 ~ 2 sec	0 ~ 2 sec
Dither frequency (DITHER)		80 ~ 250 Hz	80 ~ 250 Hz
Electric power source		DC24V (DC24 ~ 30V)	DC24V (DC24 ~ 30V)
Power consumption		30VA	60VA
Permissible ambient temperature		0 ~ 122°F	0 ~ 122°F
Temperature drift		0.2ma/°C	0.2ma/°C
Weight		0.3kg (0.7lbs)	0.4kg (0.9lbs)
Driven valve		Pressure/Flow/Directional and flow control valve	

These are compact and multi-function power amplifiers using high-technology of HIC (Hybrid IC).

- Compact and Space Saving  
Less than 1/2 of old model.
- High Reliability  
All functions are concentrated in a printed circuit board without any internal wiring.
- Multi Function  
- This amplifier can operate 2 valves at a time.  
- Controller also has amplifier function. (EDC-PC6-AWZ-D2-20)  
- Dither frequency is adjustable.

GRAND RAPIDS

TOLL FREE 1-800-968-0188  
PHONE: (616) 949-8844  
FAX: (616) 949-6598

KALKASKA

TOLL FREE 1-800-355-4338  
PHONE: (616) 258-4338  
FAX: (616) 258-2696