DESIGN DATA

BP & BPV
Standard Pumps

Stepper Motor
Stepper Motor Step Size and Winding Data
Note: Minimum Stepper Motor Driver requirement is a BiPolar Chopper @ 24 VDC, 350ma phase or equivalent

Resistance, each winding	9.1 OHMS
Inductance, each winding	14.3mH
Degrees per step	7.5û

Stepper Motor Drive Sequence

LEAD STEP	RED	GRAY	YELLOW	BLACK
1	+	-	+	-
2	+	-	-	+
3	-	+	-	+
4	-	+	+	-
1	+	-	+	-

CCW

CW

DC Valve Motor

The valve drive motor is a DC gear motor with a 3-pole commutator and carbon brushes.

Electrical Characteristics

Nominal Voltage	12 VDC
Voltage Range	7-15 VDC
No-Load Current (@ nominal voltage)	<=.90 mA
Max. Load Current (@ nominal voltage)	290mA

Electrical Connections

BP (without valve)
For mating connector, use AMP 746286-4 or equivalent.
Refer to the “Schematic Diagram” for pinouts.

BPV (with valve)
For mating connectors, use AMP 746286-4 or equivalent.
Refer to the “Schematic Diagram” for pinouts.

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TRICONTINENT™
HANDLING LIQUIDS...PRECISELY

BP & BPV
Standard Pumps

Opto-Interrupters

Absolute Maximum Ratings - 25ûC	
Infared Emitting Diode - Emitter	
Power Dissipation	100mW (derate 1.33 mW/û C above 25û C)
Forward Current (continuos)	60mA
Forward Current (peak)	
PW <1ms, PRR <300/s	3A
Reverse Voltage	6V

Individual Electrical Characteristics (25ûC)

Emitter

Reverse Breakdown Voltage @ 10 mA	6V
Forward Voltage @ 60 mA	1.7V
Reverse Current @ 5V	100mA
Capacitance	30pF

Coupled Electrical Characteristics (25ûC)

I C-E (on), I =mA, V C-E =5v	.3mA, min.
I C-E (on), I =20mA, V C-E =5V	2.0mA, min.
I C-E (on), I =30mA, V C-E =5V	3.0mA, min.
V C-E (sat), I =30mA, I C =1.8mA	0.40 V, max.
t on, VCC =5v, I =30mA, R =2.5K	8µs, typ.
t off, VCC =5v, I =30mA, R =2.5K	50µs, typ.

Detector

Breakdown Voltage @ 1mA (collector current)	30 V, min.
Breakdown Voltage @ 100µA (emitter current)	6 V, min.
Collector Dark Current @ 25 C-E	100mA, Max
Capacitance @ 5 V C-E	3.3 - 5pF

Phototransistor (Detector)

Power Dissipation	15mW (derate 2.0mW/û C above 25û C)
Collector Current (continuos)	100 mW
Collector -Emitter Voltage	30 V
Emitter -Collector Voltage	6 V

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