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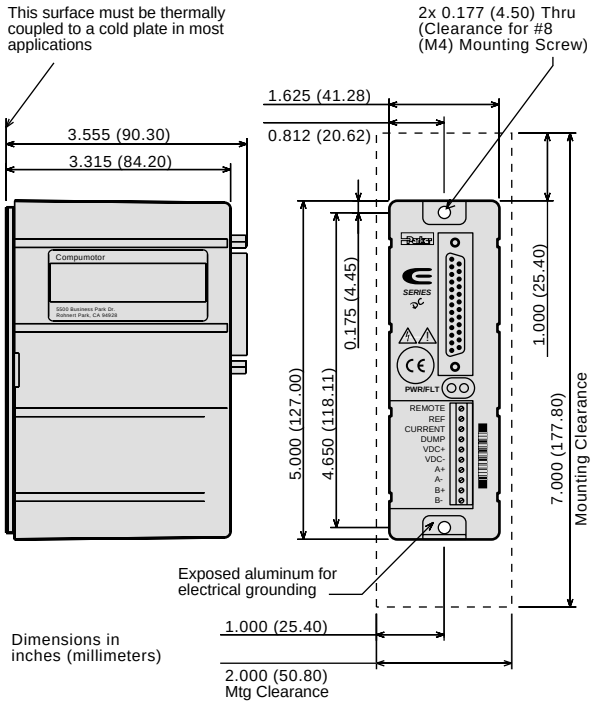
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Dimensions



Input/Output Specifications

INPUTS All inputs are optically isolated

STEP:

minimum pulse width:	200 nanoseconds
maximum input frequency:	2MHz
minimum turn on current:	6.5mA

DIRECTION:

minimum setup time:	200 microseconds
minimum turn on current:	8mA

REMOTE:

minimum turn on current: 3.5mA

When input is activated, drive reduces motor current by ratio set by R_{remote}, a resistor connected between REMOTE and CURRENT, as follows:

R_{remote} = 13,300 (3750 + R_C)/(R_C - R_S), where

R_C = resistor asociated with operating current

R_S = resistor asociated with desired standby current

NOTE: for zero current, short REMOTE and CURRENT

GEAR SHIFT:

minimum turn on current: 3.5mA

When input is activated, the drive multiplies each step pulse it receives by a factor of 8.

FAULT OUTPUT

Optically isolated; open collector/emitter output. Normally active (output turns off on a fault condition). To clear fault: cycle power.

maximum collector current: 10mA

E-DC Hardware Installation Guide
is available online in PDF format:
http://www.compumotor.com
(part number 88-020714-01)

Current & Resistor Selection

SW3-#7 Off/#8 Off Current (amps*)	Resistor (ohms)	SW3-#7 On/#8 Off Current (amps*)	Resistor (ohms)
4.80	0	1.58	0
4.68	205	1.52	619
4.62	412	1.46	1.27 K
4.56	619	1.39	2.05 K
4.49	825	1.33	2.80 K
4.43	1.02 K	1.27	3.57 K
4.37	1.27 K	1.20	4.53 K
4.30	1.54 K	1.14	5.49 K
4.24	1.78 K	1.08	6.49 K
4.18	2.05 K	1.01	7.68 K
4.11	2.26 K	0.95	8.87 K
4.05	2.55 K	0.89	10.5 K
3.99	2.80 K	0.82	12.1 K
3.92	3.09 K	0.76	13.7 K
3.86	3.32 K	0.70	15.8 K
3.80	3.57 K	0.63	18.2 K
3.73	3.92 K	0.57	20.5 K
3.67	4.22 K	0.51	22.6 K
3.61	4.53 K		
3.54	4.87 K		
3.48	5.11 K		
3.42	5.49 K		
3.35	5.76 K	**SW3-#7 Off/#8 On**	
3.29	6.19 K	Current (amps*)	Resistor (ohms)
3.23	6.49 K	1.27	0
3.17	6.81 K	1.20	787
3.10	7.32 K	1.14	1.62 K
3.04	7.68 K	1.08	2.49 K
2.98	8.06 K	1.01	3.57 K
2.91	8.45 K	0.95	4.64 K
2.85	8.87 K	0.89	5.90 K
2.79	9.53 K	0.82	7.32 K
2.72	10.0 K	0.76	8.87 K
2.66	10.5 K	0.70	10.7 K
2.60	11.0 K	0.63	13.0 K
2.53	11.5 K	0.57	15.4 K
2.47	12.1 K	0.51	18.2 K
2.41	12.7 K	0.44	21.5 K
2.34	13.3 K		
2.28	13.7 K		
2.22	14.3 K		
2.15	15.0 K		
2.09	15.8 K	**SW3-#7 On/#8 On**	
2.03	16.5 K	Current (amps*)	Resistor (ohms)
1.96	17.4 K	0.50	0
1.90	18.2 K	0.38	2.21 K
1.84	19.1 K	0.32	5.36 K
1.77	20.0 K	0.25	10.0 K
1.71	20.5 K	0.19	16.2 K
1.65	21.5 K	0.13	27.4 K
1.58	22.6 K		

Settings for Compumotor Motors:

SW3-#7 Off/#8 Off (amps*)	(ohms)	Motor
3.0 **S****	7.68 K	OS2HA
4.8 **S****	0	OS21A, 22A
3.0 **P****	7.68 K	VS12B, 13B
4.8 **P****	0	VS21B, 23B
4.0 **P****	2.80K	VS22B
4.8 **P****	0	VS31B, 32B

*Current is specified in peak amperes per phase.
S = Series current; **P** = Parallel current;

Protective Circuits

Short Circuit Protection:
- phase-to-phase motor short
- phase-to-ground motor short

Drive Overtemperature Protection
- trips at 55°C (131°F) internally

Motor Performance Specifications

Accuracy:	+/- 5 arcminutes typical (unloaded motor, bi-directional) with OS or VS Motors
Repeatability:	+/- 5 arcseconds typical (unloaded motor, bi-directional motion)
Hysteresis:	less than 2 arcminutes—0.0334° (unloaded motor, bi-directional motion)

Environmental Specifications

Operating Temperature:	0°C – 50°C (32°F – 122°F)
Storage Temperature:	-40°C – 80°C (-40°F – 176°F)
Humidity:	0 – 95%, non-condensing
Drive Weight:	0.8 pounds (0.4 kg)

SERIES

E-DC Drive



Hardware Installation Guide
available at: www.compumotor.com

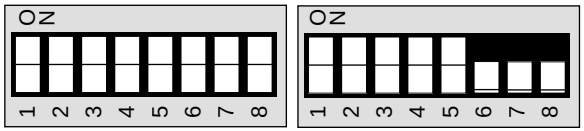
Quick Reference Guide

Compumotor Division
Parker Hannifin Corporation
p/n 88-020592-01 A (effective May 22, 2002)

Parker

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DIP Switch Settings



Factory Default Configuration Shown →

Anti-resonance (SW 2, switch 1)

Anti-res. Disabled	off
Default Anti-res. Enabled	on

Resolution (Steps per Revolution) (SW 2, switches 2–5)

	2	3	4	5
50,800	on	on	on	off
50,000	on	on	off	on
36,000	on	on	off	off
25,600	on	off	on	on
25,400	on	off	on	off
Default Setting 25,000	**on**	**on**	**on**	**on**
21,600	on	off	off	on
20,000	on	off	off	off
18,000	off	on	on	on
12,800	off	on	on	off
10,000	off	on	off	on
5,000	off	on	off	off
2,000	off	off	on	on
1,000	off	off	on	off
400	off	off	off	on
200	off	off	off	off

Waveform (SW 2, switches 6–8)

	6	7	8
Pure Sine	off	off	on
-2% 3rd Harmonic	off	on	off
-4% 3rd Harmonic	off	off	off
Default Setting -4% 3rd Harmonic	**on**	**on**	**on**
-4% 3rd Harmonic	off	on	on
-6% 3rd Harmonic	on	off	off
-8% 3rd Harmonic	on	off	on
-10% 3rd Harmonic	on	on	off

Automatic Standby (SW 3, switches 1–2)

	1	2
Default Setting Full Current	on	on
75% Current	off	on
50% Current	on	off
25% Current	off	off

Automatic Test (SW 3, switch 3)

	3
Default Setting Automatic Test Disabled	on
Automatic Test Enabled	off

Current Loop Gain (SW 3, switches 4–6)

(See *Hardware Guide* for gain settings with non-Compumotor motors)

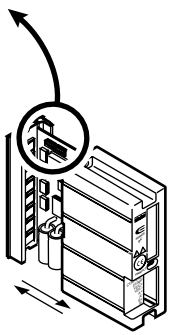
Compumotor Motors	Gain at 24VDC	Gain at 48VDC
OS2HA, 21A	16	8
OS22A	32	16
VS12B, 13B	32	16
VS21B	16	8
VS22B, 23B, 31B	32	16
VS32B	64	32

	4	5	6
1	off	off	off
2	on	off	off
4	off	on	off
Default 8	**on**	**on**	**off**
16	off	off	on
32	on	off	on
64	off	on	on
64	on	on	on

Current Range (SW 3, switches 7–8)

For Compumotor **OS, VS Motors**, use default setting: #7 off, #8 off.

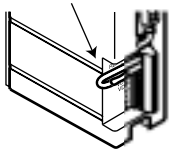
	7	8
Default Setting 1.58 – 4.80 amps	**off**	**off**
0.51 – 1.58 amps	on	off
0.44 – 1.27 amps	off	on
0.13 – 0.50 amps	on	on



For access to **DIP switches**, remove plastic cover

To use **Remote Input** to reduce motor current, connect a resistor between REMOTE and CURRENT. See back cover for equations.

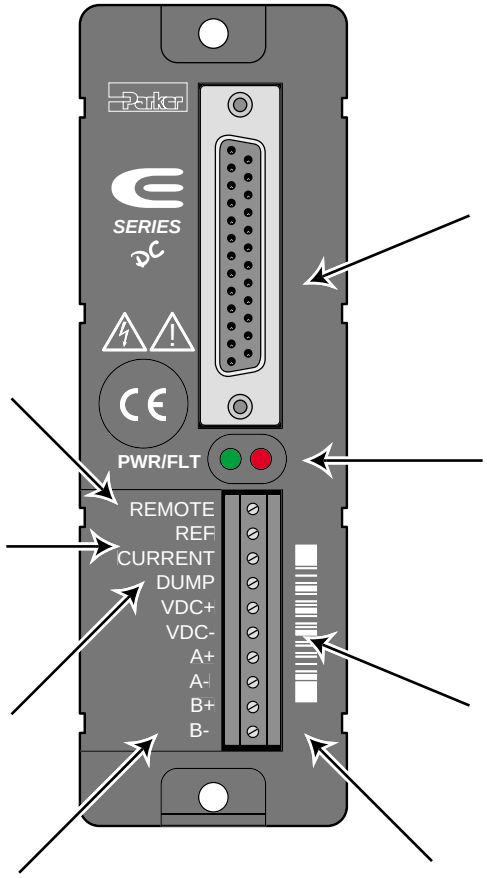
For **Motor Current** selection, connect a resistor between CURRENT and REF terminals. See back cover for values.



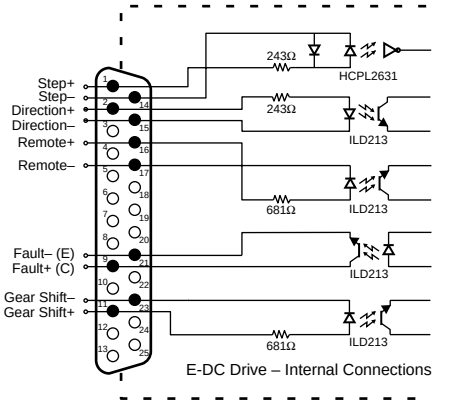
For **Power Dump**, connect a 35 ohm, 10W power resistor (e.g. Dale RH-10) between DUMP and VDC+.
- turns on at 85VDC
- 100 joules maximum dissipation

SERIES

E-DC Drive



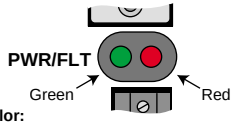
25 Pin D-Connector – Inputs and Outputs



E-DC Drive – Internal Connections

Input/Output Specifications – see back cover

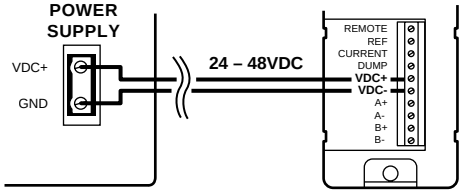
LEDs



LED Color: Green	Red	Indicated State:
Off	Off	No AC power applied
On	Off	AC power applied
On	On	Fault Condition:

- drive overtemperature; or
- short circuit detected

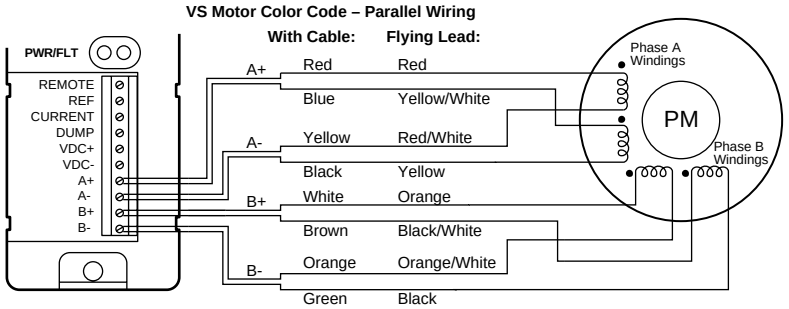
DC Input Connections



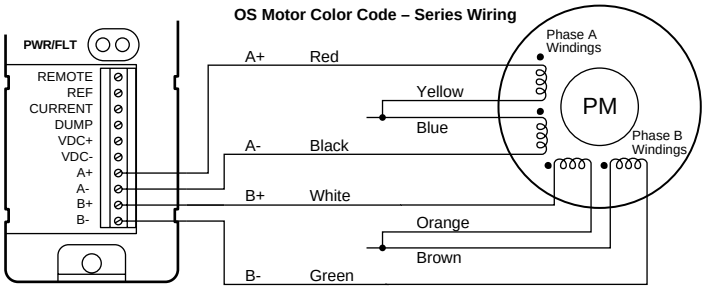
Hardware Installation Guide

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(part number 88-020714-01)

VS Motor Connections – Parallel Wiring



OS Motor Connections – Series Wiring



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