

The Application Note is pertinent to the AC Drives

## A Replacement Solution from Prism to Commander SE or Commander SK

The Prism is an analog, PWM, bipolar transistor adjustable frequency ac motor controller. It was designed for single or three phase-input power with a three phase output for 3-phase squirrel induction motors. Six models were available covering the range of ¼ to 5 horsepower, two 240vac, two 380vac and two 480vac models. The units were chassis models with a plastic front cover available with or without operators and a digital frequency meter option. A dynamic braking module was also available. The table below is a cross-reference of available replacement drives.

### 208/240 VAC Models

Prism Model	Input Voltage	Typical HP	Output Amps	Commander SE	Input Voltage	Typical Hp	Output Amps
2950-8000	208/240, 1ph	¼ to 1/3	1.5	SE11200025	208/240, 1ph	¼ to 1/3	1.5
	208/240, 1ph	½	2.3	SE11200037	208/240, 1ph	½	2.3
	208/240, 1ph	¾	3.1	SE11200055	208/240, 1ph	¾	3.1
	208/240, 1ph	1	4.3	SE11200075	208/240, 1ph	1	4.3
	208/240, 1ph	1	4.3	SE2D200075	208/240, 1ph	1	4.3
	208/240, 1ph	2	7.6	SE2D200150	208/240, 1ph	2	7.5
	208/240vac,3ph	1	4.3	SE2D200075	208/240, 3ph	1	4.3
	208/240vac,3ph	2	7.6	SE2D200150	208/240, 3ph	2	7.5
2950-8001	208/240vac,1ph	3	10.6	SE2D200220	208/240vac,1ph	3	10.6
	208/240vac,3ph	3	10.6	SE2D200220	208/240vac,3ph	3	10.6
	208/240vac,3ph	5	17.6	SE23200400	208/240vac,3ph	5	17

### 380/415/480 VAC Models

Prism Model	Input Voltage	Typical HP	Output Amps	Commander SE	Input Voltage	Typical Hp	Output Amps
2950-8002	415/480vac, 3ph	¼-3	5.6	SE23400075	415/480vac, 3ph	1	2.1
				SE23400150	415/480vac, 3ph	2	4.2
				SE23400220	415/480vac, 3ph	3	5.8
	415/480vac, 1ph	¼-2	4.2	<b>Not Available</b>	---	---	---
2950-8003	415/480vac, 3ph	5	8.8	SE23400400	415/480vac, 3ph	5	9.5
2950-8004	380vac, 3ph	¼-2.5	5.6	SE23400075	380vac, 3ph	1	2.1
				SE23400150	380vac, 3ph	2	4.2
				SE23400220	380vac, 3ph	3	5.8
2950-8005	380vac, 3ph	3 to 4	8.8	SE23400400	415/480vac, 3ph	5	9.5

### 208/240 VAC Models

Prism Model	Input Voltage	Typical HP	Output Amps	Commander SK	Input Voltage	Typical Hp	Output Amps
2950-8000	208/240, 1ph	¼ to 1/3	1.5	SKA1200025	208/240, 1ph	¼ to 1/3	1.7
	208/240, 1ph	½	2.3	SKA1200037	208/240, 1ph	½	2.2
	208/240, 1ph	¾	3.1	SKA1200055	208/240, 1ph	¾	3.0
	208/240, 1ph	1	4.3	SKA1200075	208/240, 1ph	1	4.0
	208/240, 1ph	1	4.3	SKBD200110	208/240, 1ph	1.5	5.2
	208/240, 1ph	2	7.6	SKBD200150	208/240, 1ph	2	7.0
	208/240vac,3ph	1	4.3	SKBD200110	208/240, 3ph	1.5	5.2
	208/240vac,3ph	2	7.6	SKBD200150	208/240, 3ph	2	7.0
2950-8001	208/240vac,1ph	3	10.6	SKCD200220	208/240vac,1ph	3	9.6
	208/240vac,3ph	3	10.6	SKCD200220	208/240vac,3ph	3	9.6
	208/240vac,3ph	5	17.6	N/A			

### 380/415/480 VAC Models

Prism Model	Input Voltage	Typical HP	Output Amps	Commander SK	Input Voltage	Typical Hp	Output Amps
2950-8002	415/480vac, 3ph	¼-3	5.6	SKB3400075	415/480vac, 3ph	1	2.1
				SKB3400150	415/480vac, 3ph	2	3.8
				SKC3400220	415/480vac, 3ph	3	5.1
	415/480vac, 1ph	¼-2	4.2	<b>Not Available</b>	---	---	---
2950-8003	415/480vac, 3ph	5	8.8	SKC3400400	415/480vac, 3ph	5	9.0
2950-8004	380vac, 3ph	¼-2.5	5.6	SKB3400075	380vac, 3ph	1	2.1
				SKB3400150	380vac, 3ph	2	4.2
				SKC3400220	380vac, 3ph	3	5.1
2950-8005	380vac, 3ph	3 to 4	8.8	SKC3400400	415/480vac, 3ph	5	9.0

The Prism AC Motor controller was also brand labeled for two other Emerson Divisions; EPT (Emerson Power Transmission -- Morse and Browning) and USEM (US Electric Motors). The table below gives the part number cross-reference.

Prism Model	EPT Morse / Browning	USEM (Varidyne 1000)
2950-8000	WP8000	C540
2950-8001	WP8001	C541
2950-8002	WP8002	C542
2950-8003	WP8003	C543
2950-8004	WP8004	F770
2950-8005	WP8005	F771

The Commander SE and SK are fully digital PWM type, open loop vector ac motor controllers. Just as the Prism (with the plastic front cover option), the drive has start/stop, fwd/rev and a "digital" speed pot on the front cover. In addition to the simple features provided with the Prism, the Commander SE has many advanced features (PID loop, MOP function, Preset speeds, S-ramp and DC injection braking to mention a few) available including serial communications and field bus connectability. For Units requiring dynamic braking, use size 2 Commander SE.

## Outline Dimensions



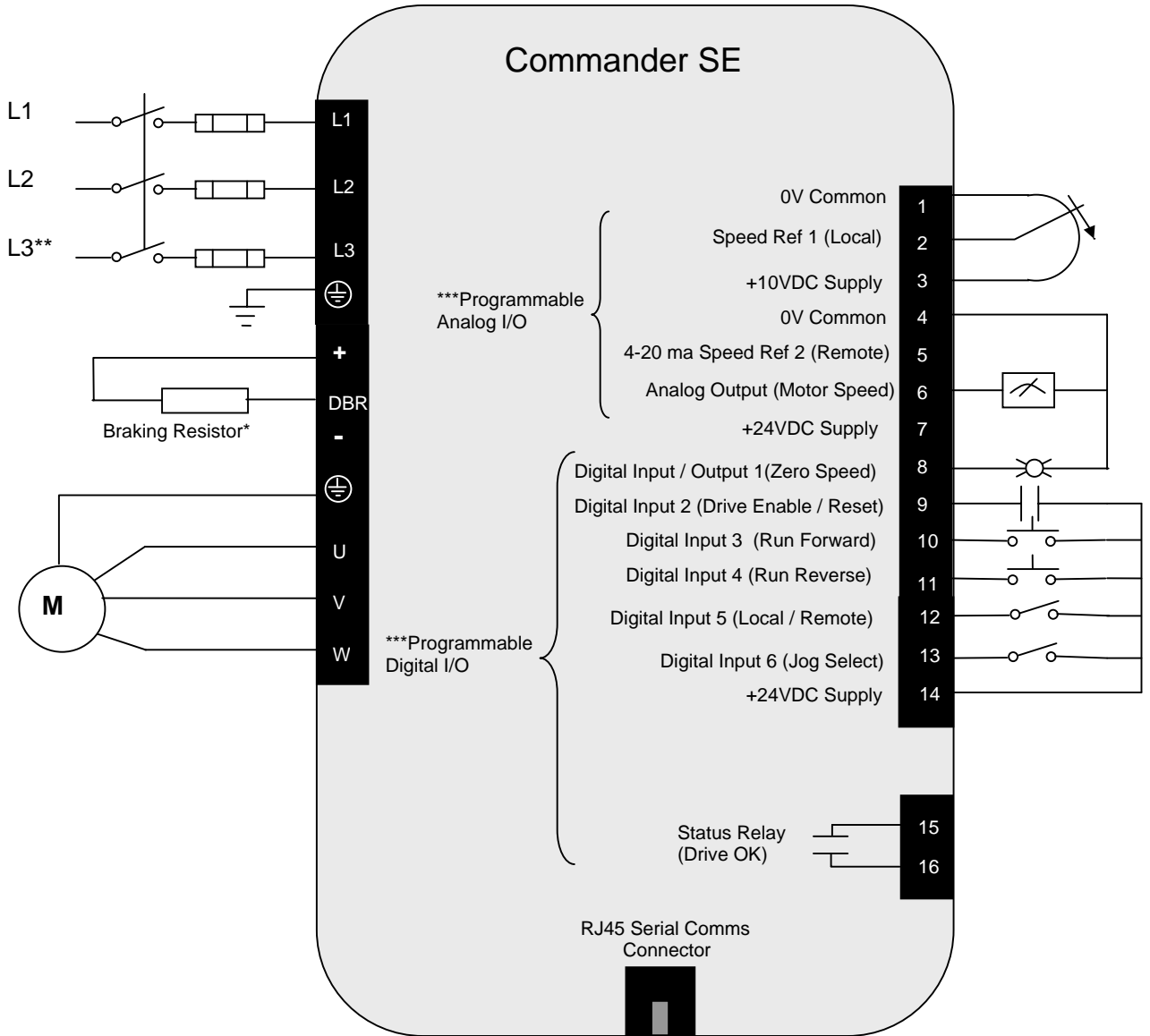
Click on the link below to obtain more information on the Commander SE

[http://www.emersonct.com/download\\_usa/literature/06catalogpdfs/06cat\\_d\\_acccommander\\_se.pdf](http://www.emersonct.com/download_usa/literature/06catalogpdfs/06cat_d_acccommander_se.pdf)

Click on the link below to obtain more information on the Commander SK

[http://www.emersonct.com/download\\_usa/literature/06catalogpdfs/06cat\\_c\\_acccommander\\_sk.pdf](http://www.emersonct.com/download_usa/literature/06catalogpdfs/06cat_c_acccommander_sk.pdf)

# Terminal Diagram

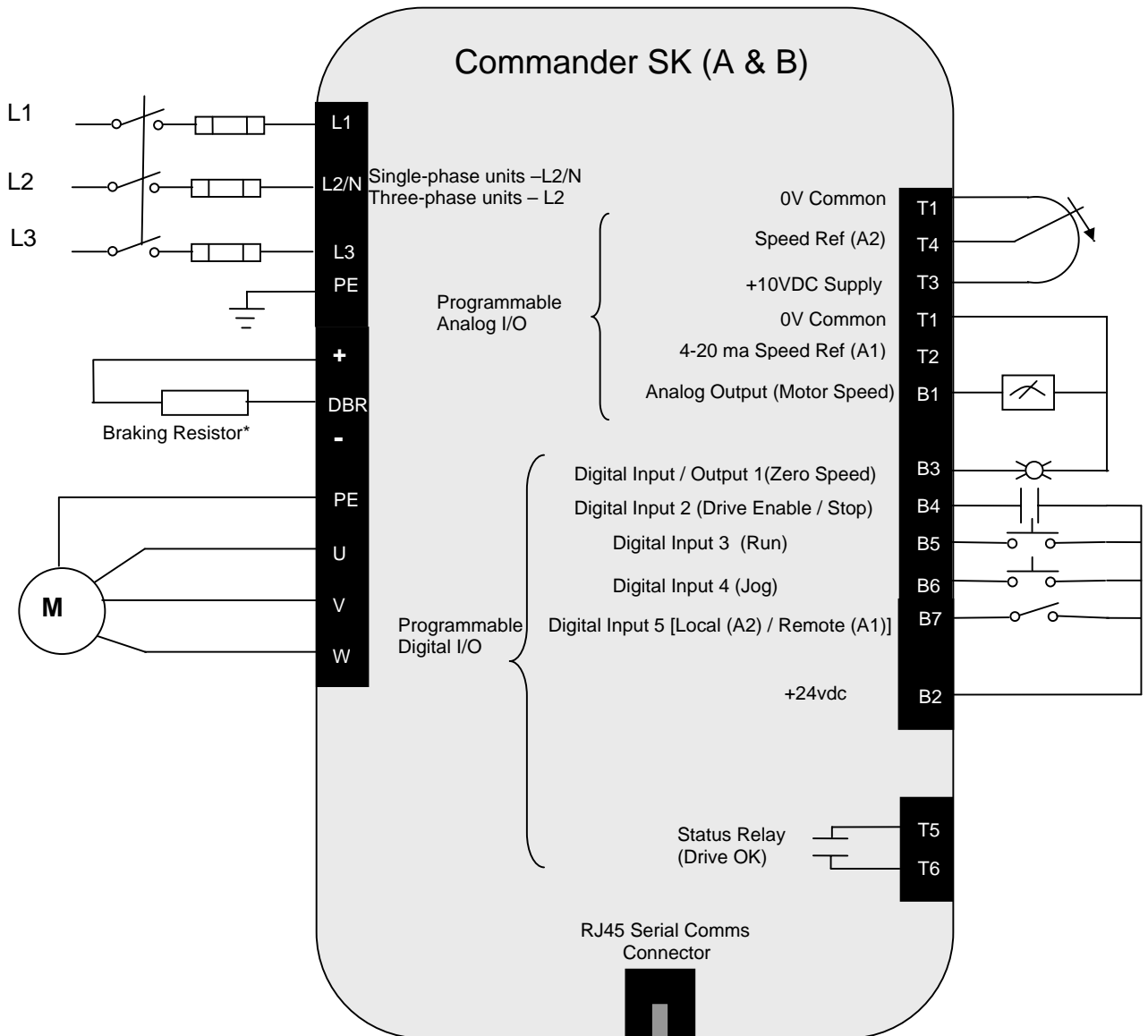


## Notes

- \* Thermal protection required.  
Not available on Commander SE Size1
- \*\* Commander SE Size 1 is single-phase input only.
- \*\*\* Some programmable I/O may be modified via menu Level1 (L1). Enhanced configuration may be done using SE Soft or through the use of the optional CTKP.

For complete instructions, refer to the Commander SE User Guide.

# Terminal Diagram



## Notes

\* Thermal protection required.

\*\* Commander SK Size A is single-phase input only.

For complete instructions, refer to the Commander SK User Guide.

**Questions: Ask the author ??**

Steve Zaleski Email: <mailto:steve.zaleski@emersonct.com>

Tel: 716-774-0093