



# Sensorless Vector Drives

## SG SERIES

STANDARD DUTY / HEAVY DUTY

### RATINGS

#### Variable Torque:

7.5 to 700HP @ 460V  
7.5 to 40HP @ 230V

#### Standard Duty:

7.5 to 600HP @ 460V  
7.5 to 40HP @ 230V

#### Heavy Duty:

5 to 500HP @ 460V  
5 to 30HP @ 230V



### Standard Features:

- ◆ Standard I/O:  
8 digital inputs, 2 analog inputs,  
2 analog outputs, 5 relay outputs
- ◆ Digital metering:  
Output current, output frequency,  
DC link voltage, motor RPM
- ◆ Protection:  
Over current, ground fault, over  
voltage, current limit, motor overload,  
phase loss, over heat, loss of signal,  
and more
- ◆ Communications:  
ModBus standard, optional DeviceNet  
and other fieldbus available
- ◆ Voltage tolerance:  
+/- 10%
- ◆ Control method:  
Open loop V/Hz
- ◆ V/Hz patterns:  
Linear, quadratic, sensorless vector
- ◆ Analog output functions:  
2 analog outputs 0-10VDC  
configurable to motor speed, output  
current, output voltage, DC link  
voltage, PID follower
- ◆ Analog inputs:  
4-20mA, 0-10VDC -10 - +10VDC
- ◆ Relay outputs:  
1 Form C relay output, 4 Form A  
relay outputs configurable to running,  
faulted, ready, at speed, high or low  
frequency levels, loss of signal,  
ready, and more
- ◆ Digital inputs:  
8 digital inputs configurable to  
forward run, reverse run, jog, preset  
speeds, motorized pot function,  
emergency stop, alternate ramp  
selections, HOA, and more
- ◆ User interface:  
2 line, 16 character per line  
LCD display
- ◆ Braking functions:  
Coast, decel, DC injection  
braking, flux braking and optional  
dynamic braking

## RSI SG Series Product Highlights:

The SG series is a compact, economical drive designed for the most demanding applications. The flexible power stack allows the user to apply it to heavy duty loads (150% for 60 secs), standard duty loads (120% for 60 secs), or variable torque loads (110% for 60 secs).

With over 250 programmable parameters, Benschaw's SG series drives are configurable to meet the needs of almost any industrial application, yet remain simple and easy to use.

### Key Advantages:

- ◆ Standard and heavy duty ratings
- ◆ Integral PID Control
- ◆ Sensorless vector control or V/Hz control
- ◆ Integral multiple motor control for pumping applications
- ◆ Uploadable / downloadable keypad
- ◆ Flexible, programmable I/O
- ◆ Economical, compact design
- ◆ Simple, easy to use LCD interface
- ◆ Standard ModBus port
- ◆ Windows-based software

### Guaranteed ... for two full years.

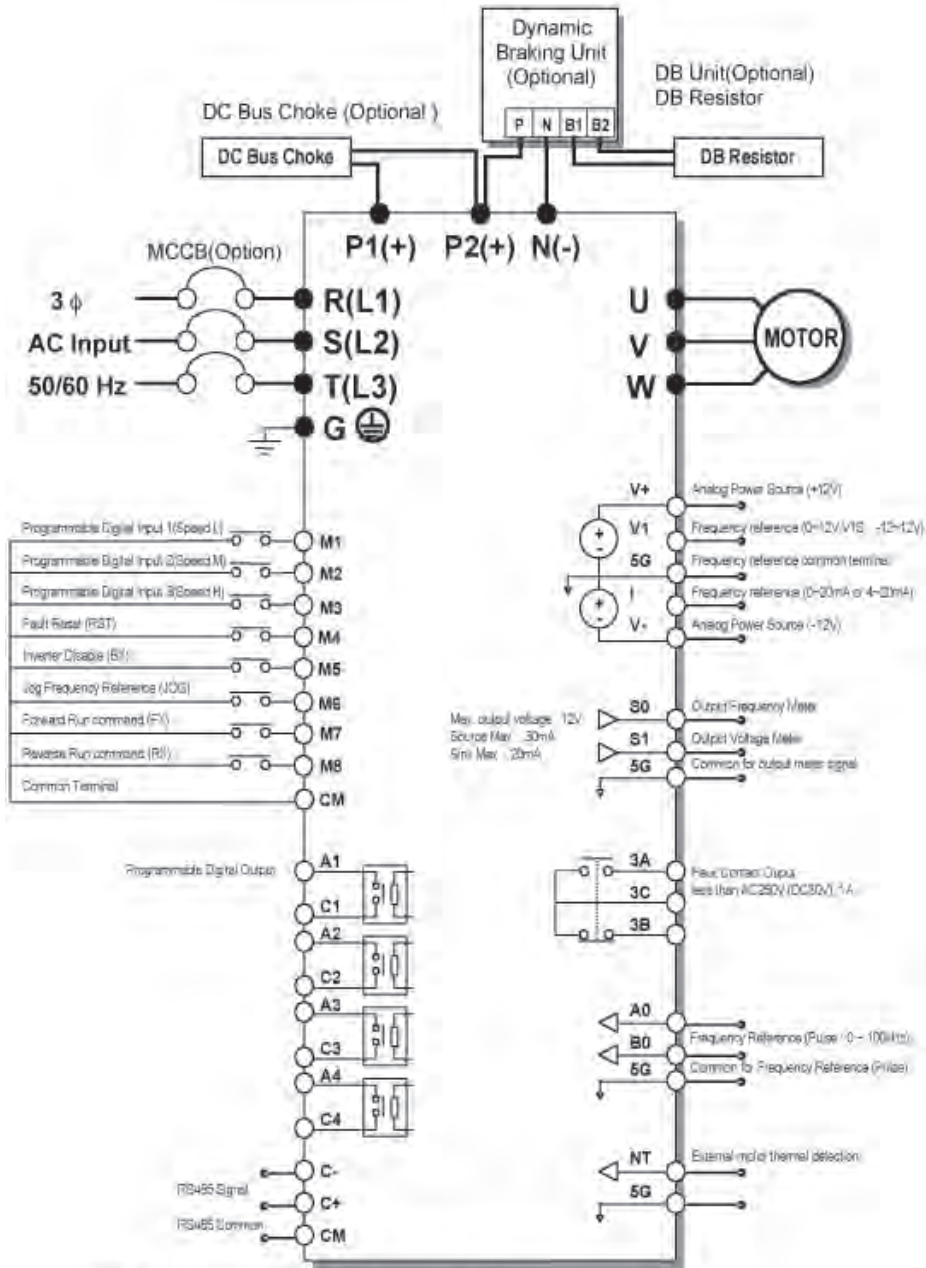
**Only Benschaw has a two year guarantee.**

Every Benschaw variable frequency drive is guaranteed for two full years. Other manufacturers limit their warranties to just one year. But at Benschaw, we believe that, because we build them better, we can guarantee them longer. We call that "the Benschaw Promise."



# SG Series Wiring Diagram

## BASIC WIRING DIAGRAM










Note : 1) 5G is Common Ground for Analog Input/Output.  
2) Use terminal V1 for V1/V1S (0-12V, -12-12V) input.



# Sensorless Vector Drives 230V

SG SERIES / NEMA 1

MODEL NUMBER	VARIABLE TORQUE		STANDARD DUTY		HEAVY DUTY		DIMENSIONS (IN)			WGT (LBS)	LIST PRICE
	HP	AMPS	HP	AMPS	HP	AMPS	H	W	D		
 RSI-007-SG-2-B	7.5	24	7.5	22	5	17	11.2	5.9	6.2	8	\$1,330.00
 RSI-010-SG-2-B	10	32	10	29	7.5	23	11.2	7.9	7.2	11	\$1,517.00
 RSI-015-SG-2-B	15	46	15	42	10	33	11.2	7.9	7.2	17	\$1,670.00
 RSI-020-SG-2-B	20	60	20	55	15	44	17.9	9.8	7.9	22	\$2,153.00
 RSI-025-SG-2-B	25	74	25	67	20	54	17.9	9.8	7.9	28	\$2,811.00
 RSI-030-SG-2-B	30	88	30	80	25	68	23.6	12	9.2	34	\$3,301.00
 RSI-040-SG-2-B	40	115	40	105	30	84	23.6	12	9.2	44	\$3,888.00

VARIABLE TORQUE = 110% current for 1 minute

STANDARD DUTY = 120% current for 1 minute

HEAVY DUTY = 150% current for 1 minute

 Web stocked



# Sensorless Vector Drives 460V

## SG SERIES

NEMA 1 / PROTECTED CHASSIS

MODEL NUMBER	VARIABLE TORQUE		STANDARD DUTY		HEAVY DUTY		DIMENSIONS (IN)			WGT (LBS)	LIST PRICE
	HP	AMPS	HP	AMPS	HP	AMPS	H	W	D		
☞ RSI-007-SG-4-B	7.5	12	7.5	11	5	8	11.2	5.9	6.2	8	\$1,340.00
☞ RSI-010-SG-4-B	10	16	10	14	7.5	11	11.2	7.9	7.2	11	\$1,627.00
☞ RSI-015-SG-4-B	15	24	15	22	10	17	11.2	7.9	7.2	17	\$1,770.00
☞ RSI-020-SG-4-B	20	30	20	27	15	22	17.9	9.8	7.9	22	\$2,213.00
☞ RSI-025-SG-4-B	25	39	25	35	20	28	17.9	9.8	7.9	28	\$2,644.00
☞ RSI-030-SG-4-B	30	45	30	41	25	34	23.6	12	9.2	34	\$3,337.00
☞ RSI-040-SG-4-B	40	61	40	55	30	44	23.6	12	9.2	44	\$4,007.00
☞ RSI-050-SG-4-B	50	75	50	68	40	55	25.3	12.1	10.5	60	\$4,916.00
☞ RSI-060-SG-4-B	60	91	60	83	50	66	25.3	12.1	10.5	60	\$6,459.00
☞ RSI-075-SG-4-B	75	110	75	100	60	80	25.3	12.1	11.2	64	\$7,548.00
☞ RSI-100-SG-4-B	100	152	100	139	75	111	30.2	14.5	12.1	95	\$8,768.00
☞ RSI-125-SG-4-B	125	183	125	167	100	134	30.2	14.5	12.1	95	\$10,694.00
☞ RSI-150-SG-4 ●	150	223	150	204	125	164	30.3	20.1	16.6	225	\$12,560.00
☞ RSI-200-SG-4 ●	200	264	200	242	150	194	30.3	20.1	16.6	225	\$15,065.00
☞ RSI-250-SG-4 ●	250	325	250	302	200	240	32.3	20.1	16.6	255	\$17,584.00
☞ RSI-350-SG-4 ●	350	432	300	396	250	317	40.5	27.2	17.3	450	\$22,871.00
☞ RSI-400-SG-4 ●	400	547	400	501	300	401	40.5	27.2	17.3	450	\$31,579.00
☞ RSI-500-SG-4 ●	500	613	450	562	350	450	43.7	30.8	17.4	540	\$38,656.00
☞ RSI-600-SG-4 ●	600	731	500	670	400	536	51.3	36.3	19.5	840	\$46,651.00
☞ RSI-700-SG-4 ●	700	877	600	804	500	643	51.3	36.3	19.5	840	\$55,981.00

VARIABLE TORQUE = 110% current for 1 minute

STANDARD DUTY = 120% Current for 1 Minute

HEAVY DUTY = 150% Current for 1 Minute

Units ending in a "B" designate NEMA 1. Units not ending in a "B" are protected chassis units.

- Protected chassis only (no cover on control or power terminals).

☞ Web stocked

