

AC Rectifiers for use with Armature Actuated Brakes



NOTE: For brake response times with and without AC rectifiers see page 94.

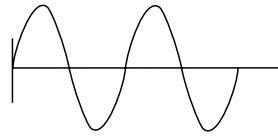
Product Overview

Full Wave

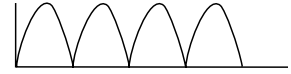
A rectifier in which both positive and negative half-cycles of the incoming (AC) signal are rectified to produce a unidirectional (DC) current through the load. The DC output voltage of a full wave rectifier is $V_{DC} = .90V_{AC}$.

Maximum operating voltage is +10% of nominal, frequency 50/60 Hz, maximum ambient temperature range of -40°C to 65°C

Input



Output

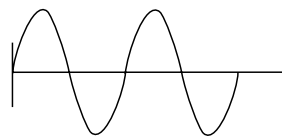


Half Wave

A rectifier in which only alternate half-cycles of the incoming (AC) signal are rectified to produce a unidirectional (DC) current through the load. The DC output voltage of a half wave rectifier is $V_{DC} = .45V_{AC}$.

Maximum operating voltage is +10% of nominal, frequency 50/60 Hz, maximum ambient temperature range of -40°C to 65°C

Input



Output



Combination Full and Half Wave

Provides option of utilizing either full or half wave rectification. Maximum operating voltage is +10% of nominal, frequency 50/60 Hz. Maximum ambient temperature range is -40°C to 65°C

TOR-AC Full and Half Wave

Provides coil turn off nearly as fast as DC side switching. Includes line filter for AC drive applications or whenever electrical filtering is required to protect the rectifier from high-frequency electrical line pulses. Must be switched on/off by a switch in an AC lead of the TOR-AC. Maximum operating voltage +10% of nominal, frequency 50/60 Hz. Maximum ambient temperature range is -40°C to 65°C

QuickSet

A rectifier that provides a quick brake response time even when the rectifier is permanently wired across the windings of an AC motor. The QuickSet Rectifier detects the decaying, motor generated voltage that occurs when power is removed from the motor circuit, and interrupts brake coil current in response. QuickSet Rectifiers can be specified full wave or half wave.

Operating voltage is ±10% of nominal, frequency 50/60 Hz. Maximum ambient temperature range is -40°C to 65°C

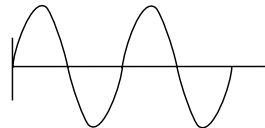
QuickSet/QuickRelease

A rectifier that provides a timed, full wave rectified “over-excitation” brake release function, followed by continuous, half wave rectified brake released “holding” function, when used in conjunction with an appropriate brake coil voltage rating.

USED AS WATTSAVER: Provides a timed, full wave rectified brake release function, followed by continuous, half wave rectified brake released “wattsaver” function, when used in conjunction with an appropriate brake coil voltage rating. The Wattsaver serves to reduce the electrical power consumption and dissipation of the brake in the released state.

Operating voltage is ±10% of nominal, frequency 50/60 Hz. Maximum ambient temperature varies by part number - see information by part number on following pages.

Input

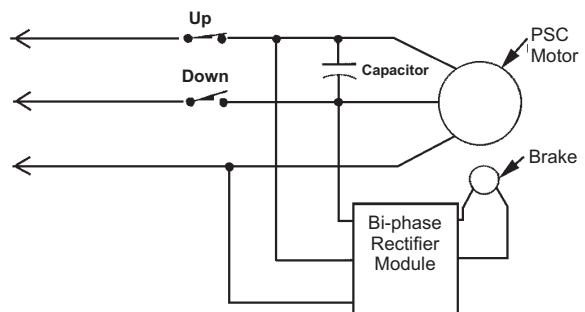


Output



Bi-Phase Rectifiers

A rectifier that is typically used in single phase, reversing, permanent split capacitor (PSC) motor applications. A single phase, reversing, PSC motor typically has two windings of equivalent resistance. The winding which serves as the main winding is connected directly across the power line, the winding which serves as the auxiliary winding is connected in series with a run capacitor across the power line. The direction of rotation is reversed by interchanging the function of the two windings. The Bi-Phase Rectifier provides the same voltage to the brake coil regardless of the direction of rotation of the motor. The Bi-Phase Rectifier has five leads and comes in standard response and QuickSet versions. Bi-Phase Rectifiers are application specific. Please contact factory for more information.



AC Rectifiers Continued Selection & Pricing

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Discount Symbol R3

115 Vac Input Voltage	Full Wave								
	Brake Sizes	Part Number	AC Input 50/60 Hz	DC Output	Brake Coil Voltage/Letter Designation	Switching	Connection	Max Current (amps)	List Price
	72-196	412029101K	115	103	K or J	ac or dc side or connect across motor terminals	ac leads dc terminal block	.8	\$46.00
	ALL	412029201K	115	103	K or J	ac or dc side or connect across motor terminals	ac terminal block dc terminal block	1.6	\$70.00
ALL	412029203K	115	103	K or J	ac or dc side or connect across motor terminals	ac leads dc leads	1.6	\$70.00	
Combination Full and Half Wave									
Brake Sizes	Part Number	AC Input	DC Output	Brake Coil Voltage/ Letter Designation		Switching	Connection	Max Current (amps)	List Price
*	412049101K	115/230 460/575	50/103 207/259 414/517	50 Vdc = G 207 Vdc = M 414 Vdc = B	103 Vdc = K* 259 Vdc = S 517 Vdc = A	ac or dc side or connect across motor terminals	ac terminal block dc terminal block	.8	\$90.00

*At 50 Vdc coil voltage, this rectifier can be used on brake sizes 72-112. At 103 Vdc coil voltage, this rectifier can be used on brake sizes 72-196. At all other listed coil voltages, this rectifier can be used on any brake size.

230 Vac Input Voltage	Full Wave								
	Brake Sizes	Part Number	AC Input 50/60 Hz	DC Output	Brake Coil Voltage/Letter Designation	Switching	Connection	Max Current (amps)	List Price
	ALL	412029101K	230	207	M	ac or dc side or connect across motor terminals	ac leads dc terminal block	.8	\$46.00
	ALL	412029201K	230	207	M	ac or dc side or connect across motor terminals	ac terminal block dc terminal block	1.6	\$70.00
ALL	412029203K	230	207	M	ac or dc side or connect across motor terminals	ac leads dc leads	1.6	\$70.00	
Combination Full and Half Wave									
Brake Sizes	Part Number	AC Input	DC Output	Brake Coil Voltage/ Letter Designation		Switching	Connection	Max Current (amps)	List Price
*	412049101K	115/230 460/575	50/103 207/259 414/517	50 Vdc = G 207 Vdc = M 414 Vdc = B	103 Vdc = K 259 Vdc = S 517 Vdc = A	ac or dc side or connect across motor terminals	ac terminal block dc terminal block	.8	\$90.00
TOR-AC Rectifier with Line Filter, Full Wave									
Brake Sizes	Part Number	AC Input 50/60 Hz	DC Output	Brake Coil Voltage/ Letter Designation	Switching	Connection	Max Current (amps)	List Price	
ALL	412029401K 412029402K	230	207	M	ac side only	Terminals Leadwires	.6	\$115.00	
QuickSet									
Brake Sizes	Part Number	AC Input 50/60 Hz	DC Output	Brake Coil Voltage/ Letter Designation	Switching	Connection	Max Current (amps)	List Price	
ALL	412029601K	230	207	M	NONE-connect across motor terminals	ac terminal block dc terminal block	.6	\$120.00	
QuickSet/QuickRelease or 205 Vdc Wattsaver									
Brake Sizes	Part Number	Max Ambient Temp	AC Input 50/60 Hz	DC Output	Brake Coil Voltage/ Letter Designation	Switching	Connection	Max Current (amps)	List Price
72-230	412029301K	65°C	230	207 Vdc over-excitation 103 Vdc sustaining	K or J	ac side only or connect across motor terminals	ac terminal block dc terminal block	2.0 1.0	\$480.00

460 Vac Input Voltage

Half Wave

Brake Sizes	Part Number	AC Input 50/60 Hz	DC Output	Brake Coil Voltage/Letter Designation	Switching	Connection	Max Current (amps)	List Price
ALL	412049301K	400	180	L	ac or dc side or connect across motor terminals	ac terminal block dc terminal block	.8	\$46.00
		460	207	M				

Combination Full and Half Wave

Brake Sizes	Part Number	AC Input	DC Output	Brake Coil Voltage/Letter Designation	Switching	Connection	Max Current (amps)	List Price
**	412049101K	115/230 460/575	50/103 207/259 414/517	50 Vdc = G 207 Vdc = M 414 Vdc = B	103 Vdc = K* 259 Vdc = S 517 Vdc = A	ac or dc side or connect across motor terminals	ac terminal block dc terminal block	.8 \$90.00

TOR-AC with Line Filter

Brake Sizes	Part Number	AC Input	DC Output	Brake Coil Voltage/Letter Designation	Switching	Connection	Max Current (amps)	List Price
ALL	412049404K	460	414	B / Full	ac side only	Terminals	0.3	\$102.00
ALL	412049405K	460	414	B / Full	ac side only	Leadwires	0.3	\$102.00
ALL	412049411K	460	207	M / Half	ac side only	Terminals	0.3	\$102.00
ALL	412049412K	460	207	M / Half	ac side only	Leadwires	0.3	\$102.00
ALL	412049413K	460	207	M / Half	ac side only	Terminals	0.6	\$187.00
ALL	412049414K	460	207	M / Half	ac side only	Leadwires	0.6	\$187.00

QuickSet

Brake Sizes	Part Number	AC Input	DC Output	Brake Coil Voltage/Letter Designation	Switching	Connection	Max Current (amps)	List Price
ALL	412049801K	460	414	B Fullwave	NONE-connect across motor terminals	ac terminal block dc terminal block	.3	\$120.00
ALL	412049811K	460	207	M Halfwave	NONE-connect across motor terminals	ac terminal block dc terminal block	.6	\$120.00

QuickSet/QuickRelease or 414 Vdc Wattsaver

Brake Sizes	Part Number	Max Ambient Temp	AC Input 50/60 Hz	DC Output	Brake Coil Voltage/Letter Designation	Switching	Connection	Max Current (amps)	List Price
72-230	412049601K	45°C	460	414 Vdc over-excitation	M	ac side only or connect across motor terminals	ac terminal block dc terminal block	1.0	\$480.00
				207 Vdc sustaining				0.5	

575 Vac Input Voltage

Half Wave

Brake Sizes	Part Number	AC Input 50/60 Hz	DC Output	Brake Coil Voltage/Letter Designation	Switching	Connection	Max Current (amps)	List Price
ALL	412059101K UL E71115	400	180	L	ac side only or connect across motor terminals	ac leads dc terminal block	.8	\$46.00
		575	259	S				
ALL	412059103K	400	180	L	ac side only or connect across motor terminals	ac leads dc leads	.8	\$46.00
		575	259	S				

Combination Full and Half Wave

Brake Sizes	Part Number	AC Input	DC Output	Brake Coil Voltage/Letter Designation	Switching	Connection	Max Current (amps)	List Price
**	412049101K	115/230 460/575	50/103 207/259 414/517	50 Vdc = G 207 Vdc = M 414 Vdc = B	103 Vdc = K 259 Vdc = S 517 Vdc = A	ac or dc side or connect across motor terminals	ac terminal block dc terminal block	.8 \$90.00

QuickSet

Brake Sizes	Part Number	AC Input 50/60 Hz	DC Output	Brake Coil Voltage/Letter Designation	Switching	Connection	Max Current (amps)	List Price
ALL	412059811K	575	258	S	NONE-connect across motor terminals	ac terminal block dc terminal block	.6	\$120.00

TOR-AC with Line Filter - Half Wave

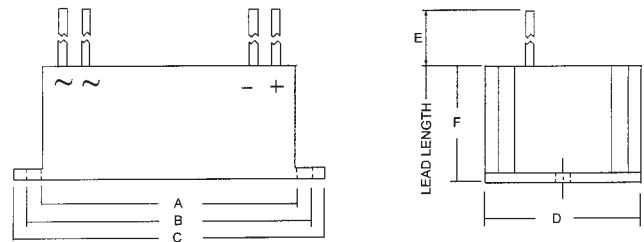
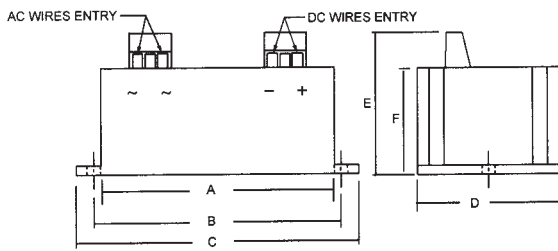
Brake Sizes	Part Number	AC Input 50/60 Hz	DC Output	Brake Coil Voltage/Letter Designation	Switching	Connection	Max Current (amps)	List Price
ALL	412059411K	575	259	S	ac side only	terminals	.6	\$102.00
	412059412K					leadwires		

**At 50 Vdc coil voltage, this rectifier can be used on brake sizes 72-112. At 103 Vdc coil voltage, this rectifier can be used on brake sizes 72-196. At all other listed coil voltages, this rectifier can be used on any brakes size.

Rectifier Dimensions

Tape Mount

Part Number	Length	Width	Ht	Connection	
				AC	DC
4-1-20291-01K	1.4	0.6	1.0	Leadwire, 7" long	Terminal
4-1-20292-01K	1.38	1.06	0.94	Terminal	Terminal
4-1-20292-03K	1.38	1.06	0.9	Leadwire, 2.5" long	Leadwire, 2.5" long
4-1-20491-01K	2.25	1.25	1.0	Terminal	Terminal
4-1-20591-03K	1.4	0.75	0.9	Leadwire, 7" long	Leadwire, 7" long
4-1-20591-01K	1.4	0.75	1.0	Leadwire, 7" long	Terminal



Terminal location or connection may differ from sketch
Flange or Tape Mount

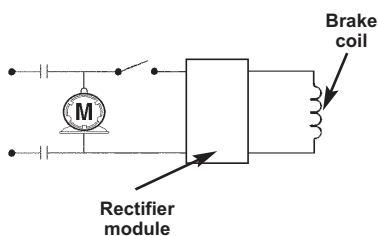
Part Number	A	B	C	D	E	F
4-1-20293-01K	4.6	5	5.5	3.3	2.03	1.25
4-1-20294-01K	3	3.5	4	2	2	1.5
4-1-20296-01K	3	3.5	4	3	2	1.5
4-1-20493-01K	2	2.5	3	1.5	1.6	1
4-1-20494-04K	3	3.5	4	2	2	1.5
4-1-20494-11K	3	3.5	4	2	2	1.5
4-1-20494-13K	3	3.5	4	2	2	1.5
4-1-20496-01K	4.6	5	5.5	3.3	2	1.25
4-1-20498-01K	3	3.5	4	3	2	1.5
4-1-20498-11K	2	2.38	2.6	2	2.1	1.3
4-1-20594-11K	3	3.5	4	2	2	1.5
4-1-20598-11K	2	2.38	2.6	2	2.1	1.3

Part Number	A	B	C	D	E	F	Mount
4-1-20494-01K	2.3			1.32	6	0.86	Tape
4-1-20294-02K	3	3.5	4	2	6	1.5	Flange
4-1-20494-05K	3	3.5	4	2	6	1.5	Flange
4-1-20494-12K	3	3.5	4	2	6	1.5	Flange
4-1-20494-14K	3	3.5	4	2	6	1.5	Flange
4-1-20594-12K	3	3.5	4	2	6	1.5	Flange

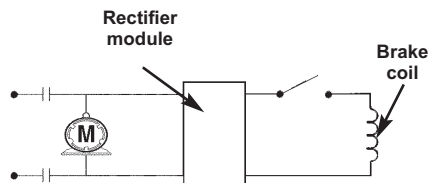
Wiring Diagrams/Switching

NOTE: For brake response times with and without AC rectifiers see page 94

AC Side Switching

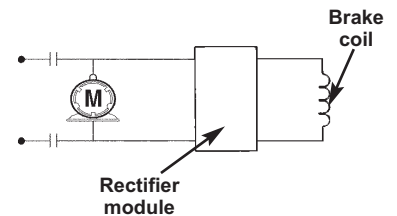


DC Side Switching



Use DC side switching with the following
Rectifiers ONLY: 4-1-20291-01K, 4-1-20292-01K,
4-1-20292-03K, 4-1-20493-01K, 4-1-20491-01K

Connected Across Motor Terminals (No switching)



Electronic Brake Release Indicator (Proving Switch) Armature-Actuated Brake Series

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Indicates when the brake is released by sensing the change in the brake coil current waveform.
For use with the Series 333/350/360 brakes



Features

- Mount in remote location (control cabinet)
- Operating temperature -40°C through 65°C
- Not susceptible to common problems of mechanical switches, such as mechanical fatigue, tolerances, and vibration.
- Relay contacts are silver-cadmium oxide
- Utilize either normally-open contacts (UL rated 2-20A, inductive or resistive, at 12-240 VAC and CSA rated 10A, inductive or resistive at 240 VAC) or normally-closed contacts (UL rated 2-10A, inductive or resistive, at 12-240 VAC and CSA rated 10A, inductive or resistive, at 240 VAC)

Brake Operation

When electrical power is applied to the armature-actuated brake coil, the armature is attracted by the electromagnetic force generated by the magnet body, which overcomes spring action. This allows the friction disc to rotate freely. When electrical power is interrupted, the electromagnetic force is removed and the pressure spring mechanically forces the armature plate to clamp the friction disc between itself and the pressure plate. This develops torque to stop or hold the load.

Switch Operation

When the brake armature is pulled in to the magnet body to release the brake, a change in the brake coil current waveform occurs. By tracking this change in the brake coil current, the electronic switch indicates when the brake is released.

Ordering Information

List Price	Discount Symbol
\$330.00	R3

Part Number Example: 4 - 4 - 0 7 0 9 0 - X X

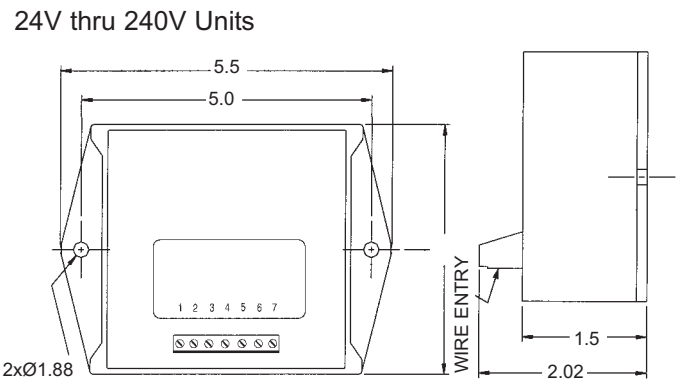
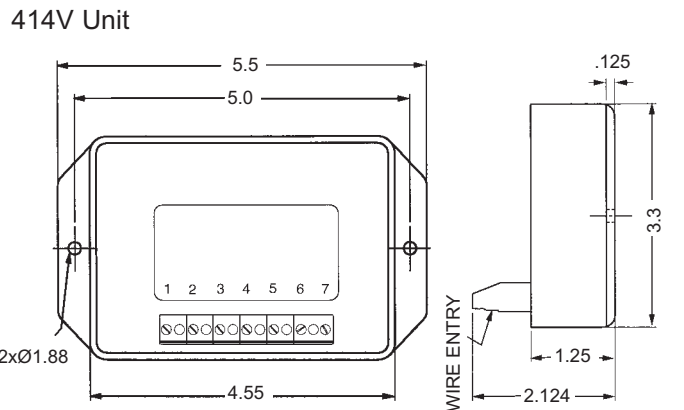
DC Voltage*	Characters To Insert
24	024
90	090
103	103
180	180
205	205
258	258
414	414

*Standard voltages listed. For other voltages, contact factory.

Specify brake model number. The last 2 digits of the switch part number will depend upon the brake size

Wiring Instructions: See sheet P/N 8-178-000-03

Dimensions



*Standard voltages listed. For other voltages, contact factory.

NOTE: Cannot be used with half-wave rectifier. Use with full-wave or TOR-AC full-wave rectifier only.

Combination Tor-AC Rectifiers *and* Line Filters

~ For Stearns AAB Brakes - all sizes

Application

Stearns has upgraded the Tor-AC rectifier line by now including line filters. This new combination product can be used for AC Drive applications and whenever electrical filtering is required, to protect the rectifier from high-frequency electrical line pulses.

This combination product is easier to use than installing/wiring separate components - and the cost is lower.

Use with any size Stearns AAB brake.

Mounting (for all models) with #8 screws or double sided tape.



Stearns Part Number - Combination Tor-AC Rectifier and Line Filter	AC Input (Volts)	DC Output (Volts)	Rectifier Type	Recommended Coil Rating (Volts)	Brake Coil Voltage - Letter Designation	Connections	Maximum Current (Amps)	List Price
412029401K	230	207	Full	205	M	Terminals	0.6	\$115
412029402K	230	207	Full	205	M	Leadwires	0.6	\$115
412049404K	460	414	Full	414/432	B	Terminals	0.3	\$102
412049405K	460	414	Full	414/432	B	Leadwires	0.3	\$102
412049411K	460	207	Half	205	M	Terminals	0.3	\$102
412049412K	460	207	Half	205	M	Leadwires	0.3	\$102
412049413K	460	207	Half	205	M	Terminals	0.6	\$187
412049414K	460	207	Half	205	M	Leadwires	0.6	\$187
412059411K	575	259	Half	258	S	Terminals	0.6	\$102
412059412K	575	259	Half	258	S	Leadwires	0.6	\$102

Switching (for all of above) - AC side only

Ordering Information

Use the above part number to order - either as an accessory with a new brake, or as a replacement unit. For more information, contact your local Stearns Representative.



Rexnord Industries, LLC
 Stearns Division
 5150 S. International Drive
 Cudahy, WI 53110
 Ph: 414.272.1100
 Fax: 414.277.4364
 www.stearns.rexnord.com



Count on Stearns® Division
 for Consistent Quality and Innovation

Stearns® is a Registered Trademark of Rexnord Industries, LLC, Stearns Division.

INSTALLATION and SERVICE INSTRUCTIONS

Important

Please read these instructions carefully before installing, operating, or servicing your Stearns brake and rectifier. Failure to comply with these instructions could cause injury to personnel and/or damage to property if the brake is installed or operated incorrectly. For definition of limited warranty/liability, contact Rexnord Industries, LLC, Stearns Division, 5150 S. International Dr., Cudahy, Wisconsin 53110, (414) 272-1100.

OEM's and subsystem suppliers, please forward these instructions with your components to the final user.

Caution

1. Servicing shall be in compliance with applicable local safety codes including Occupational Safety and Health Act (OSHA). All wiring and electrical connections must comply with the National Electric Code (NEC) and local electric codes in effect.
2. To prevent an electrical hazard, disconnect power source before working on the brake. If power disconnect point is out of sight, lock disconnect in the *off* position and tag to prevent accidental application of power to system.

3. Maximum operating ambient temperature for these rectifiers should not exceed 65°C (150° F).
4. Refer to specific brake Installation and Service Instructions for proper mounting of brake.
5. When use of these rectifiers is in conjunction with a motor operated by a variable frequency drive, the input wiring to the rectifier should be run in a wireway that does not contain the motor wires. Shielded cable should be used in applications where the rectifier and motor wires must be run together.

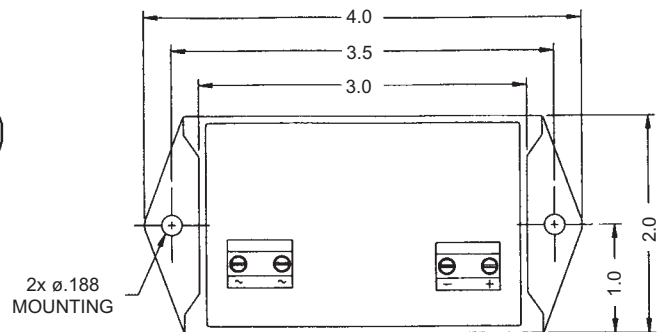
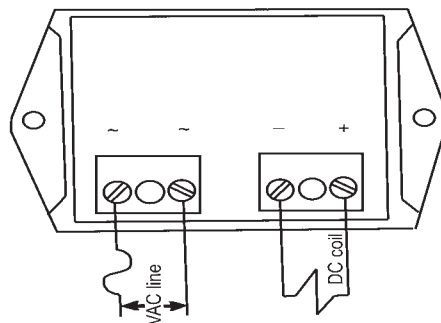
Wiring

Note 1: For screw terminal rectifiers only, check that terminals are fully opened *before* inserting wires. Maximum #16 AWG.

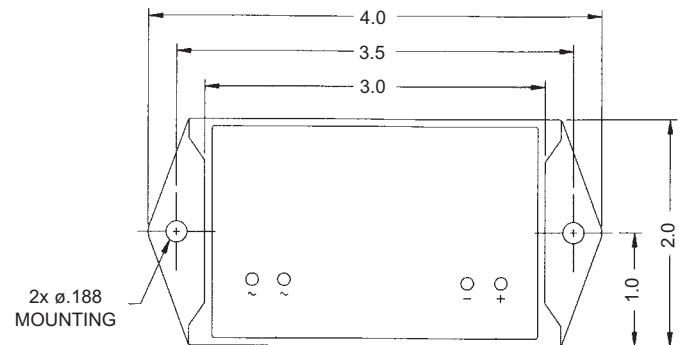
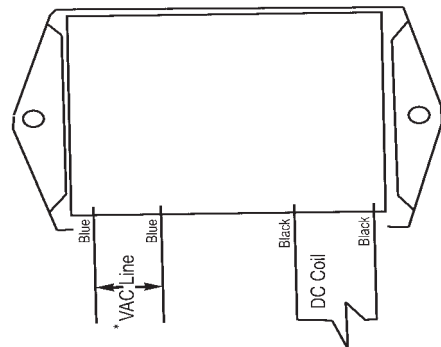
1. Connect coil leadwires to DC OUTPUT side rectifier. (Polarity does *not* matter.) Tighten screw terminals, or wire nut, as required.
2. Connect rectifier input AC INPUT to AC power source. Tighten screw terminals, or wire nut, as required.

Note 2: For each nominal AC line voltage, use table (on reverse side) to determine the proper DC coil rating requirement.

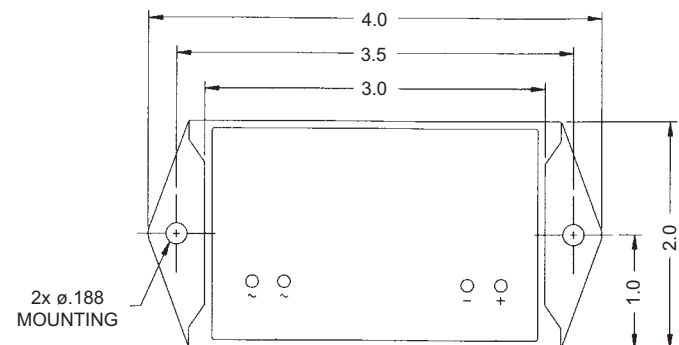
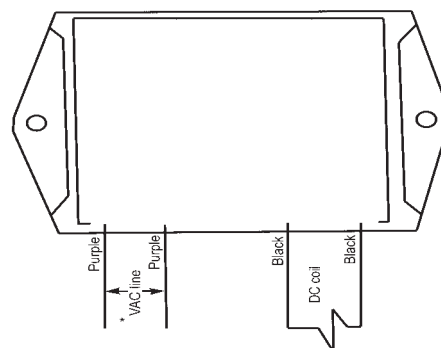
Part Number	Replaces P/N
412-0294-01K	412-0290-11K
412-0494-04K	412-0492-02K & 412-0492-04K
412-0494-11K	412-0494-02K
412-0494-13K	412-0497-02K
412-0594-11K	---



Part Number	Replaces P/N
412-0294-02K	---



Part Number	Replaces P/N
412-0494-05K	412-0492-03K
412-0494-12K	412-0494-01K
412-0494-14K	---
412-0594-12K	---



Electronic Brake Release Indicator (Proving Switch) Armature-Actuated Brake Series

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For use with the Series 333/350/360 brakes



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Switch Operation

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Ordering Information

List Price	Discount Symbol
\$330.00	R3

Part Number Example: 4 - 4 - 0 7 0 9 0 - X X

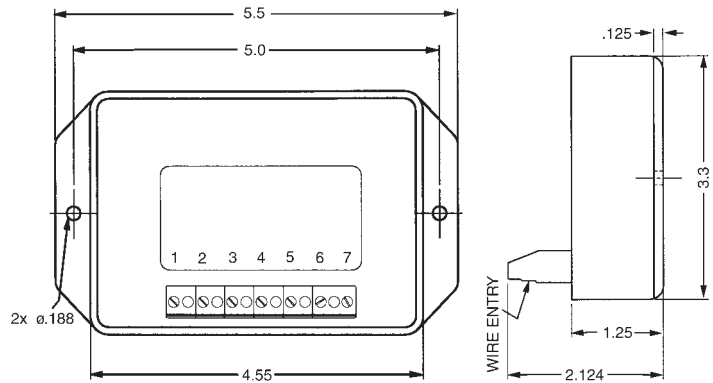
DC Voltage*	Characters To Insert
24	024
48	048
90	090
103	103
180	180
205	205
240	240
414	414

Specify brake model number. The last 2 digits of the switch part number will depend upon the brake size

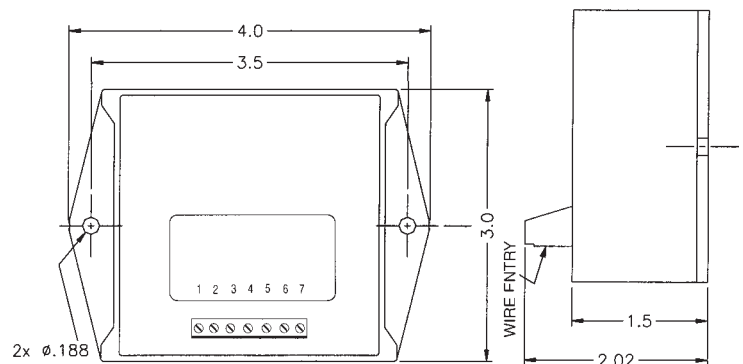
*Standard voltages listed. For other voltages, contact factory.

Dimensions

414V Unit



24V thru 240V Units



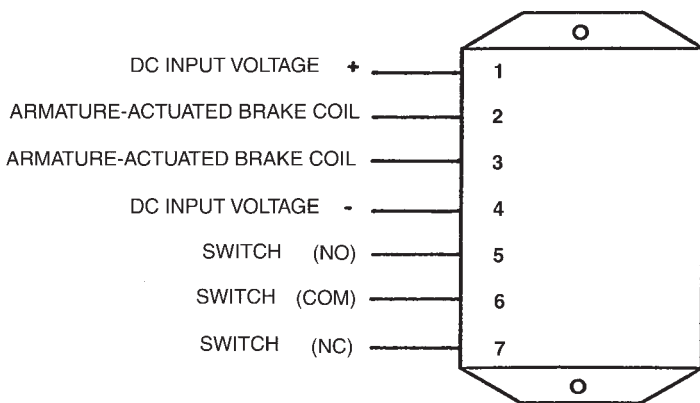
NOTE: Cannot be used with half-wave rectifier. Use with full-wave or TOR-AC full-wave rectifier only.

Wiring Instructions

IMPORTANT: Please read these instructions carefully before installing, operating or servicing your Stearns switch. Failure to comply with these instructions could cause injury to personnel and/or damage to property if the switch is installed or operated incorrectly. For definition of limited warranty/liability, contact Rexnord Industries, Inc., Stearns Division, 5150 S International Drive, Cudahy, Wisconsin 53110, (414) 272-1100.

CAUTION!

1. Installation and servicing must be made in compliance with all local safety codes including Occupational Safety and Health Act (OSHA). All wiring and electrical connections must comply with the National Electrical Code (NEC) and local electrical codes in effect.
2. To prevent an electrical hazard, disconnect power source before working on equipment. If the power disconnect is out of sight, lock the disconnect in the off position and tag it to prevent accidental application of power.
3. Make sure voltage rating of the switch corresponds to the voltage rating shown on the nameplate of the brake.
4. Installation and servicing should be performed only by qualified personnel familiar with the construction and operation of this equipment.



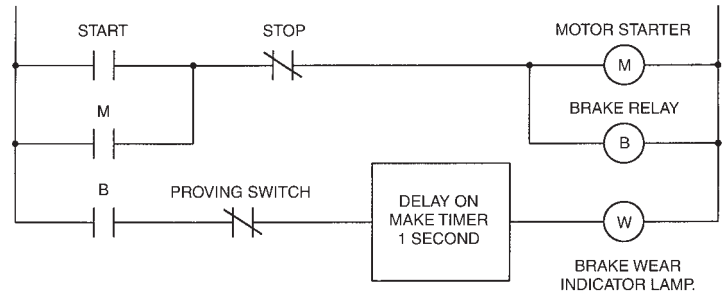
WARNING!

This switch is designed for use with a full wave rectifier only, **DO NOT USE THIS SWITCH WITH A HALF WAVE RECTIFIER.**

Applications

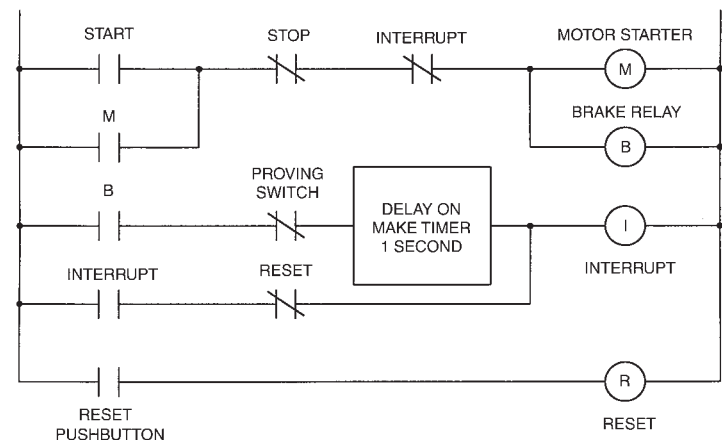
The Stearns electronic proving switch has been designed to detect and analyze the brake or clutch coil current waveform "signature" and thereby determine the operational status of the power transmission device. This operational status signal is delivered via a single pole, double throw relay contact. The status signal can be utilized in a wide variety of control and warning functions, as described in diagrams A and B.

A. SIMPLE BRAKE WEAR INDICATOR



LOGIC: If, within one second after application of power to the motor and brake, the proving switch N.C. contact does not open, the brake has not released, or has not released in an appropriate manner. The brake wear indicator lamp will illuminate, alerting the user that brake wear is excessive and service is required.

B. BRAKE RELEASE DETECTOR WITH SYSTEM SHUTDOWN



LOGIC: If, within one second after application of power to the motor and brake, the proving switch N.C. contact does not open, the brake has not released, or has not released in an appropriate manner. Interrupt relay "I" is energized and latched, disabling motor starter "M" and brake relay "B". An indicator lamp may be wired in parallel with the interrupt relay coil, indicating "Brake not Released". Adjust/repair brake, depress "Reset" push-button, depress "Start" button, system resumes operation. Control voltage may simply be interrupted to eliminate "Reset" function, if desired. Proving switch contact must be utilized to interrupt both motor starter and brake relay !!! If only motor starter is interrupted, load may be free to fall !!!



Rexnord Industries, LLC
 Stearns Division
 5150 S. International Dr.
 Cudahy, Wisconsin 53110
 (414) 272-1100 Fax: (414) 277-4364 www.stearns.rexnord.com

For Convenience, Safety and Energy Savings, Look to Stearns® Rectifier Controls.

Perfectly matched to Stearns DC actuated clutches, brakes or combination units, Stearns rectifier controls offer solid-state reliability that also takes into account important human use factors, making them easy to utilize and maintain.

Stearns rectifier controls are available in fixed or adjustable output models with compact housings to simplify installation.

For ultimate convenience, all wiring connections are readily

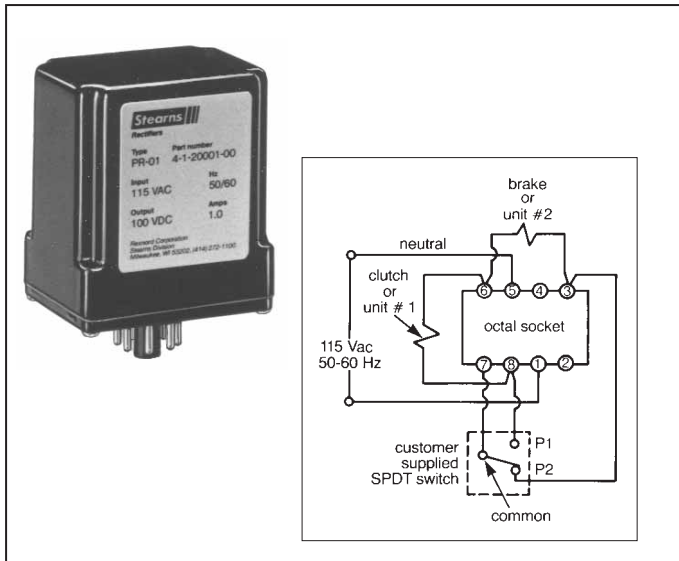
accessible. The PR Series even goes one step further, offering the ease of modular plug-in designs connecting directly to octal sockets.

For safety, all models offered are fused to provide protection against overload and feature an arc suppression circuit, minimizing arcing and extending contact life. In the PR Series, the internal fuse can be changed only by removing the rectifier from its socket - eliminating a potential shock hazard.

For energy savings, efficiency is built into Stearns rectifiers. The adjustable voltage output on the PR-33, for example, uses thyristor control for a low 4-watt power loss-87% less than some competitive units.

When you need reliable performance and more, look to Stearns rectifier controls.



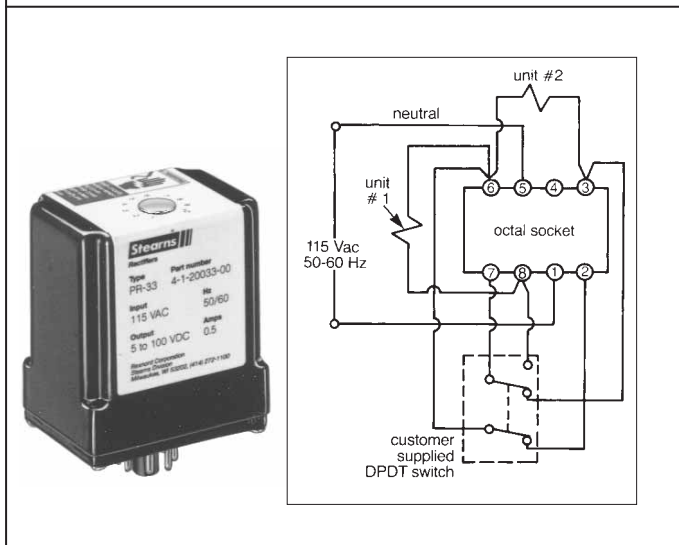


Rectifier Controls

Model PR-01

Two fixed 100 volt outputs.

- Modular plug-in design uses octal socket for easy mounting and wiring connection.
- Internally fused for overload protection.
- Operates one clutch or one brake, or both, one on at a time.



Model PR-33

One fixed 100 volt output and one adjustable 15-100 volt output to allow reduced torque starts or stops for "soft" cushioned engagement.

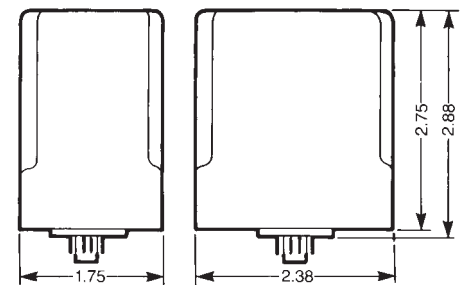
- Adjustable control on top of housing for easy accessibility.
- Modular plug-in design uses octal socket for each mounting and wiring connection.
- Internally fused for overload protection.
- Operates one clutch or one brake, or both, one on at a time.

Enclosure dimensions apply to both PR-01 and PR-33.

Performance/List Price Data

Rectifier Part Number	AC Input Voltage	Nominal DC Output			Control Circuits		Switching Relay	List Price ②	Discount Symbol
		Volts	Max. Amp①	Max. Watts	#1	#2			
PR-01 4-1-20001-00	115 50-60 Hz	100	1.0	100	Fixed	Fixed	No	\$266.00	X-1
PR-33 4-1-20033-00	115 50-60 Hz	15-100	0.5	50	Fixed	Variable	No	642.00	X-1

① Based on ambient temperature of 104°F.
② List prices subject to change without notice.

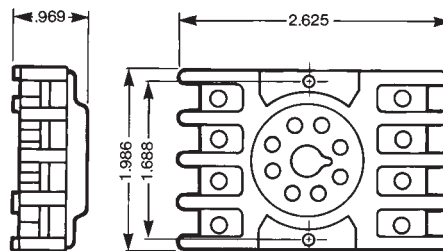


Octal Socket(s)

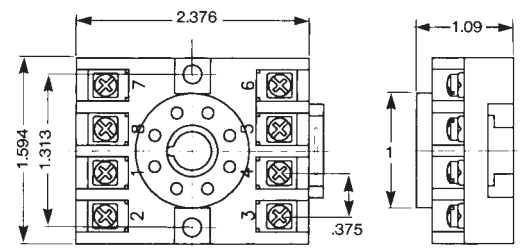
Supplied with terminal screws and clips



Part Number: 9-61-0153-00
Dimensions



Part Number: 9-61-0153-01
Dimensions



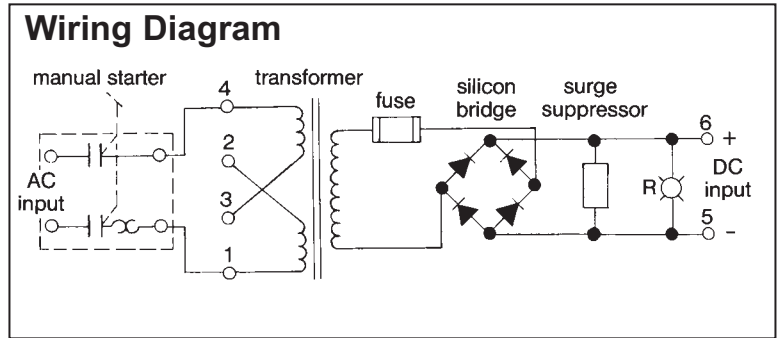
List Price Data

Octal Socket Part Number	List Price	Discount Symbol
9-61-0153-00	\$128.00	X-1
9-61-0153-01	48.00	X-1

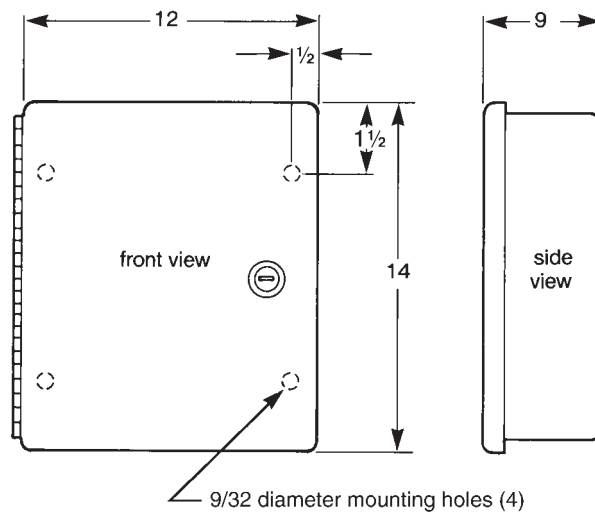
Rectifier Controls

Series 12000 Silicon Rectifiers

Heavy duty single-phase rectifier for use with Stearns heavy duty clutches and brakes. Incorporates a solid-state silicon bridge circuit for high efficiency and excellent voltage regulation. Available with outputs of 115 or 230 Vdc; power ratings of up to 1150 watts. A transformer provides isolation and dual AC input capability... 115/230 or 230/460 Vac. Each rectifier is housed in a NEMA 1 steel cabinet and includes a separately housed manual starter with overload heaters.



Dimensional Data



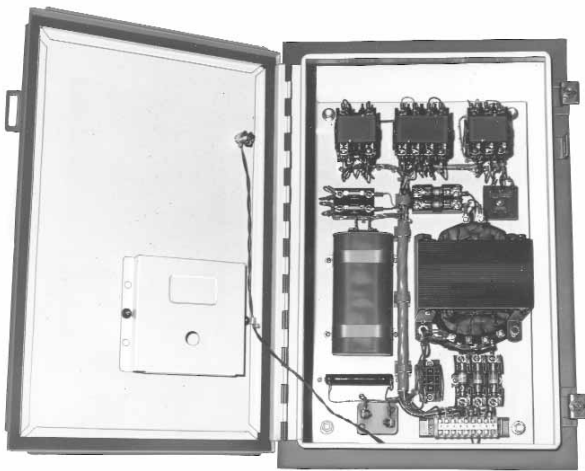
Performance Data

Stock Number	AC Input (50/60 Hz Single-Phase)		DC Output		
	Volts	Amps	Volts	Amps ^①	Watts
4-1-12102-00	115/230	2.5/1.3	115	2.0	230
4-1-12104-00	115/230	6.4/3.2	115	5.0	575
4-1-12202-00	230/460	1.3/0.7	115	2.0	230
4-1-12205-00	230/460	3.2/1.6	115	5.0	575
4-1-12302-00	115/230	5.2/2.6	230	2.0	460
4-1-12305-00	115/230	13.0/6.5	230	5.0	1150
4-1-12402-00	230/460	2.6/1.3	230	2.0	460
4-1-12405-00	230/460	6.4/3.2	230	5.0	1150

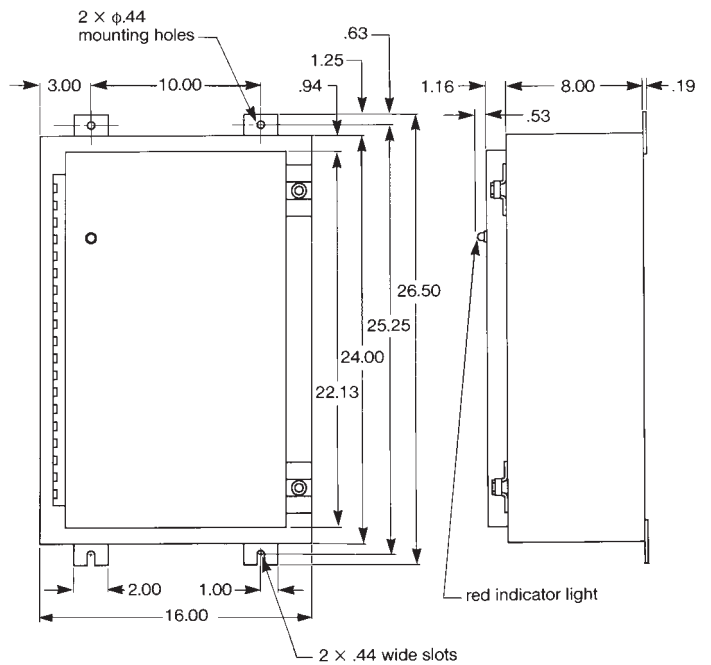
① Based on ambient temperature of 104°F.

Forcing Circuits

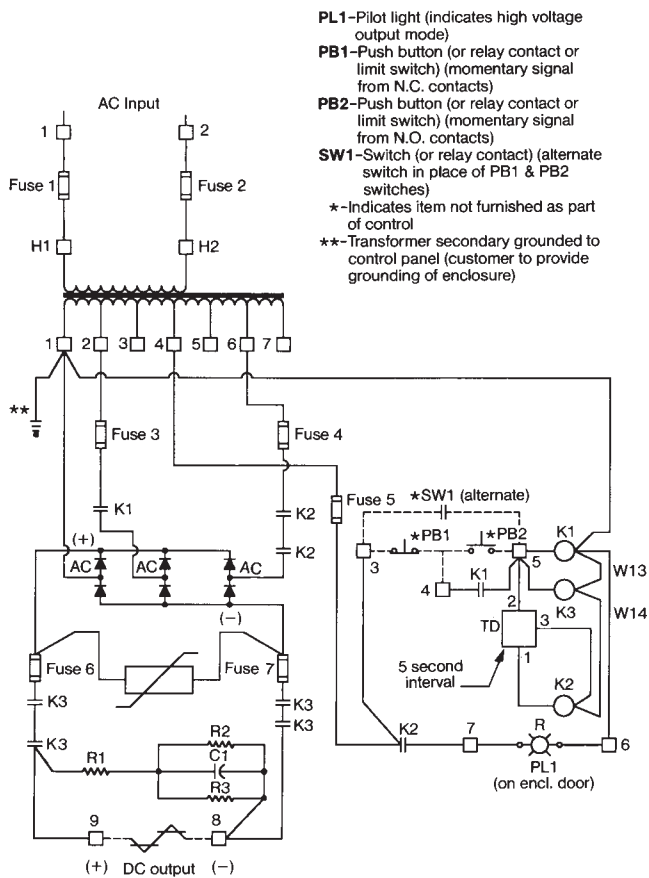
Combination forcing circuit and rectifier for use with Stearns SCE spring-set clutches and SCEB spring-set brakes. Suitable for use with all sizes from 800 through 1600. Provides the momentary forcing voltage necessary to release a clutch or brake. Units are available for 115, 208, 230, 460 and 575 Vac, 50/60 Hz input. The output of each unit is a forcing voltage of 230 Vdc which, after a 5 second delay, drops to a holding voltage of 70 Vdc. Circuitry includes surge suppression network to protect coil and minimize contact arcing. Complete circuit is housed in a NEMA 12 enclosure.



Dimensional Data



Wiring Diagram



Performance Data

Stock Number	AC Input Voltage 50/60 Hz	DC Input			Approx. Shipping Wt. (lbs.)
		Forcing Volts	Holding Volts	Watts	
4-3-00115-12	115 Vac	230	70	1000	60
4-3-00208-12	208 Vac	230	70	1000	60
4-3-00230-12	230 Vac	230	70	1000	60
4-3-00460-12	460 Vac	230	70	1000	60
4-3-00575-12	575 Vac	230	70	1000	60

Technical Data

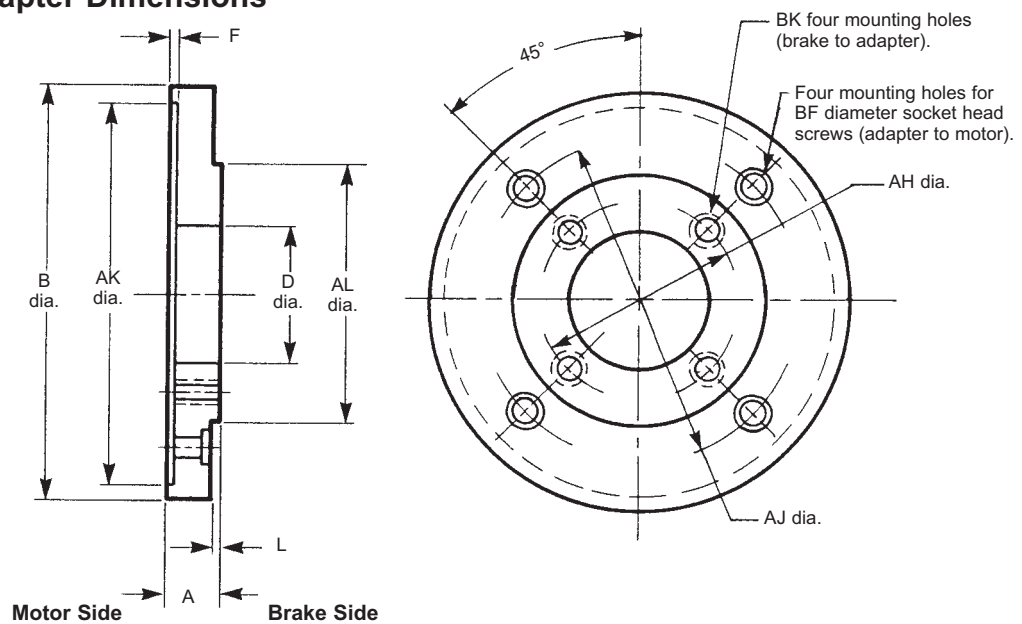
SAB Motor Frame Adapter Dimensions

Selection

To select an adapter for a specific brake, refer to the *Motor Frame Adapter Tables* as shown in the brake series sections of this Catalog. After selecting the adapter stock number, refer to the Tables below for dimensions.

All adapters are constructed with an opening for internal lead wire connection, corresponding to the NEMA standard location for the motor frame size.

Screws for mounting adapter to motor must be provided by customer. Socket head cap screws are supplied for mounting brake to adapter.



Dimensions for estimating only. For installation purposes, request certified prints.

Brake Series	Torque (lb-ft)	Adapter Stock Number	Dimensions in Inches (Dimensions in Millimeters)											Add'l Shaft Length Req'd	List Price	Discount Symbol			
			A	AH	AJ	AK	AL	B	BF	BK Hole	D	F	L						
56,000	1.5 - 6	5-55-5041-00				8.500 (215.900)	4.497 (114.325)											\$700	B4
65,300*		5-55-5046-00	1.25 (31.75)	5.88 (149.22)	7.25 (184.15)	8.502 (215.900)	4.500 (114.325)	9.00 (228.60)	.50 (12.70)	3/8 - 16 x 1/2 deep	4.00 (101.60)	.19 (4.76)	.12 (3.18)	.94 (23.88)				\$700	B4
56,000 and 56,800*	10 - 25	5-55-5043-00																	
87,000 and 87,800*	6 - 105	5-55-7046-00	1.06 (26.99)		11.00 (279.40)	12.501 (317.525)	8.499 (215.875)	13.00 (330.20)	.62 (15.88)		4.12 (104.78)			.87 (22.10)				\$875	B2
87,300		5-55-7054-00		7.25 (184.15)		12.504 (317.602)	8.497 (215.849)					.19 (4.76)		.38 (9.52)					
87,000 and 87,800*	6 - 105	5-55-7055-00	1.00 (25.40)		9.00 (228.60)	10.500 (266.700)	8.499 (215.875)	11.00 (279.40)	**		6.25 (158.75)			.81 (20.57)				\$450	B2
87,300*		5-55-7045-00				10.502 (266.751)	8.497 (215.849)						.25 (6.35)	.25 (6.35)					
87,000, 87,800* and 87,300*	6 - 105	5-55-7043-00	.75 (19.05)	7.25 (184.15)	5.88 (149.35)	4.502 (114.35)	8.499 (215.875)	8.75 (222.25)	.62 (15.75)	1/2 - 13 through	4.00 (101.60)	.19 (4.76)	.25 (6.35)	.56 (14.23)				\$1,300	B2
81,000	125 - 130	5-55-2045-00	1.06 (26.99)	11.00 (279.40)	14.00 (355.60)	16.002 (406.451)	12.499 (317.475)	16.50 (419.10)	.62 (15.88)	5/8 - 11 through	9.75 (247.65)	.19 (4.76)	.25 (6.35)	.87 (22.10)				\$1,875	C1
81,000	125 - 230	5-55-2041-00			7.25 (184.15)	8.500 (215.900)	12.499 (317.475)	12.499 (317.398)	.50 (12.70)		6.00 (152.40)			.93 (23.62)				\$1,325	C1
81,000		5-55-2043-00	1.12 (28.58)	11.00 (279.40)		10.500 (266.700)	12.496 (317.398)	12.496 (317.398)	.50 (12.70)	5/8 - 11 through	7.75 (196.85)	.19 (4.76)	---	.93 (23.62)					
82,000 and 82,300*	125 - 550	5-55-2046-00	1.94 (49.21)		14.00 (355.60)	16.002 (406.451)	12.499 (317.398)	16.50 (419.10)	.62 (15.88)	5/8 - 11 x 1 deep	9.50 (241.30)			1.75 (44.45)				\$1,875	C1
82,000 and 82,300*		5-55-2042-00	1.38 (34.92)	11.00 (279.40)	7.25 (184.15)	8.500 (215.900)	12.496 (317.475)	13.25 (336.55)	.50 (12.70)	5/8 - 11 through	6.00 (152.40)	.19 (4.76)	.25 (6.35)	1.19 (30.23)				\$1,325	C1
82,000 and 82,300*		5-55-2044	1.38 (34.92)		9.00 (228.60)	10.500 (266.700)	12.499 (317.398)	13.25 (336.55)			7.75 (196.85)			1.19 (30.23)				\$2,075	C1
86,000	500 - 1000	5-55-6041-00	1.56 (38.69)	14.00 (355.60)	11.00 (279.40)	12.500 (317.500)	16.000 (406.400)	16.19 (411.16)	.62 (15.88)	5/8 - 11 x 3/4 deep	8.62 (219.08)	.19 (4.76)	.25 (6.35)	1.37 (34.80)				\$2,800	C1

* 1/2-13 flat head screws are supplied with adapter.

** When adding an adapter to a hazardous location brake, refer to the "mounting requirements" on the product page for the recommended brake series for accommodating adapters.