

QUICK REFERENCE TO STOCK INDUSTRIAL CONTROLS

LEESON Canada stocks a wide variety of products for your Industrial Control needs. The following pages contain many of the most popular starters, switches and accessories. Other products are available by either calling your local LEESON branch or by **requesting your LEESON Canada/Industrial Control catalogue.**



IEC Motor Control
Page 136



Direct-On-Line Starters
Page 133



Cables and Connectors
Page 144



Disconnects
Page 135



22mm Control Devices
Page 138



Manual Motor Controller
Page 134



Motor Soft-Starters
Page 130



Enclosed Starters
Contact LEESON



Electrical Products
Page 140

Also Available:



Proximity Sensors



Relays, Timers & Sockets



Industrial Cam Switches



Limit Switches



Terminal Blocks



Warning Tower Lights

PB SOFTSTARTERS

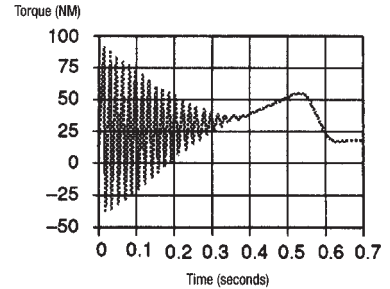


**Economical and easy to use
Reduces starting surge and downtime**

The PB Softstarter is a compact and economical solid state controller designed for single and three phase, low horsepower squirrel cage motors (up to 20HP @ 575V). The unit is designed to work in conjunction with an electro-mechanical motor starter. No additional control is required. Series PB Softstarters are ideal for constant torque starting applications such as conveyors, bridge cranes and overhead doors.

Decreases downtime

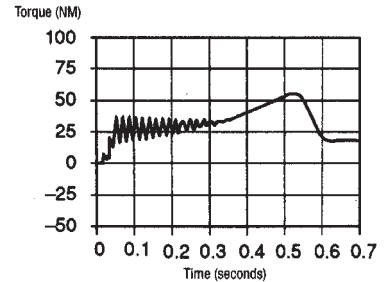
In operation, the PB Softstarter reduces the starting torque surge typical of across-the-line starting. This provides smoother starts and decreases equipment downtime caused by shock and vibration problems.



Starting torque typical with across-the-line starting

For use anywhere

Four voltage ranges between 120V and 600V assure that these units can be used anywhere in the world.



Starting torque typical when using PB Softstarter

Many convenient features

PB Softstarters are completely self contained and require minimal mounting and installation. Digital rotary switches are quickly and easily set to the exact value. In addition, the units are maintenance-free with no mechanical parts to wear out.

PB Softstarters

Maximum Horsepower						Current Rating	Catalogue Number	List Price
Single Phase			Three Phase					
115V	230V	200V	230V	460V	575V			
0.5						11	PBS-011-120V	\$639
1						16	PBS-016-120V	696
1.5						22	PBS-022-120V	755
	1.5	3	3			11	PBS-011-240V	639
	2	3	5			16	PBS-016-240V	696
	3	5	7.5			22	PBS-022-240V	755
				7.5		11	PBS-011-480V	639
				10		16	PBS-016-480V	696
				15		22	PBS-022-480V	755
					10	11	PBS-011-600V	931
					10	16	PBS-016-600V	987
					20	22	PBS-022-600V	1048

International standards and approvals

All PB Softstarters are UL-listed and CSA-approved. They also carry the CE mark.

Discount Symbol K

PCS SOFTSTARTERS

The DIN-rail mounted softstarter with terrific features in a small package (for 3-phase motors up to 85A)



The PCS Softstarter Controller has rich features at an economical price. This softstarter is specifically designed to start 3-phase motors (up to 60HP@460V - 75HP@575V), but is very compact, easy to use and DIN-rail mountable.

Four standard starting modes are available with the PCS Controller:

- Soft Start
- Soft Start with Selectable Kick-Start
- Current Limit Starting
- Soft Start with Soft Stop

Self contained and ready to install

In one small package, PCS Controllers offer a built-in overload relay, a bypass contactor and a microprocessor controller that provides softstarting for most industrial applications. The standard Soft Start mode provides a smooth voltage ramp-up to full motor speed, while the Current Limit Starting mode limits inrush in high inertia applications. A Soft Stop feature ramps down high friction loads smoothly, eliminating sudden deceleration in these applications.

For use anywhere

PCS Softstarters come in seven sizes, from 3A through 85A. Units are available in two voltage ranges; from 200V...480V; and from 200V...600V - 50/60 Hz. This assures the devices can be used anywhere in the world.

Many convenient features

- Easy Set-up
- Built-in Overload Protection
- Bypass Contactor
- Over Temperature Protection
- Phase Reversal Protection
- Phase Loss/Open Load -The PCS will not attempt to start if there is a single phase condition on the line. Prior to every start, the unit checks load connections to the motor. If there is a missing motor connection to the PCS Controller, the start is aborted and the load loss fault is indicated.
- Phase Imbalance - To prevent motor damage, PCS Softstarters will trip if a phase imbalance exceeds specified limits.
- Shorted SCR - Prior to every start, the unit checks all SCRs for shorts and unit load connections to the motor. If any short or open load is detected, the start is aborted and the shorted SCR/open load fault is indicated.

Discount Symbol K

PCS SOFTSTARTERS

Maximum HP Three Phase								Current Rating	Overload Adjustment Range	With 100...240V AC Control Voltage		With 24V AC/DC Control Voltage	
200V	200V	230V	230V	460V	460V	575V	575V			Catalogue No.	List Price	Catalogue No.	List Price
Starting Duty													
350%	450%	350%	450%	350%	450%	350%	450%						
0.5	0.5	0.5	0.5	1.5	1	2	1	3	1...3	PCS-003-600V	\$541	PCS-003-600V-024	\$541
2	1.5	2	2	5	3	7.5	5	9	3...9	PCS-009-600V	609	PCS-009-600V-024	609
3	3	5	3	10	7.5	10	10	16	5.3...16	PCS-016-600V	676	PCS-016-600V-024	676
5	3	5	3	10	10	15	10	19	6.3...19	PCS-019-600V	737	PCS-019-600V-024	737
7.5	5	7.5	5	15	10	20	15	25	8.3...25	PCS-025-600V	900	PCS-025-600V-024	900
7.5	5	10	7.5	20	15	25	20	30	10...30	PCS-030-600V	928	PCS-030-600V-024	928
10	7.5	10	10	25	20	30	25	37	12.3...37	PCS-037-600V	947	PCS-037-600V-024	947
10	7.5	15	10	30	20	40	30	43	14.3...43	PCS-043-600V	1568	PCS-043-600V-024	1568
15	10	20	15	40	30	50	40	60	20...60	PCS-060-600V	2090	PCS-060-600V-024	2090
25	20	30	20	60	50	75	60	85	28.3...85	PCS-085-600V	2787	PCS-085-600V-024	2787
30	30	40	40	75	75	100	100	108	27...108	PCS-108-600V	3607	PCS-108-600V-024	4809
40	40	50	50	100	100	125	125	135	34...135	PCS-135-600V	3607	PCS-135-600V-024	4809

Industrial Control

PF SOFTSTARTERS



The PF softstarter Controller provides intelligence, unmatched performance, flexibility, and diagnostics in a modular compact design for controlling either a standard squirrel-cage induction motor or a star-delta motor. Seven standard, and two optional modes of operation are available within a single controller.

Standard Modes of Operation

- Soft Start with Selectable Kick Start
- Current Limit Starting
- Dual Ramp Start
- Full Voltage Starting
- Linear Speed Acceleration
- Preset slow speed
- Soft stop

Optional Modes of Operation

- Pump Control
- Brake Control - Intelli-Brake, Intelli-Stop and Slow Speed with Braking

Product Features

- Built-in SCR Bypass/Run Contactor
- Built in Electronic Motor Overload Protection
- CT on each phase
- LCD Display
- Keypad programming
- Four programming Auxiliary Contacts

The PF Softstarter is available for motors rated 1...480A, 200...600V AC, 50 and 60Hz. In addition to motors, the PF Softstarter can be used to control resistive loads.

The PF Softstarter reduces both product size and the total cost to the customer.

International standards and approvals

All PB Softstarters are UL-listed and CSA-approved. They also carry the CE mark.

The intelligent controller with extensive starting and stopping configurations up to 500HP (3-wire), 900HP (6-wire)

OPEN TYPE CONTROLLER - LINE CONNECTED

Rated Voltage [V AC]	Motor Current (Amps) ²	kW 50 Hz	Hp 60 Hz ²	100...240V AC 50/60Hz Control Voltage		24V AC/DC ¹ Control Voltage	
				Catalogue Number	List Price	Catalogue Number	List Price
200/208	1...5	-	0.5...1	PFS-0005-600V	\$2738	PFS-0005-600V-024	\$2738
	5...25	-	1.5...5	PFS-0025-600V	2950	PFS-0025-600V-024	2950
	8.6...43	-	3...10	PFS-0043-600V	3084	PFS-0043-600V-024	3084
	12...60	-	5...5	PFS-0060-600V	3440	PFS-0060-600V-024	3440
	17...85	-	5...25	PFS-0085-600V	3718	PFS-0085-600V-024	3718
	27...108	-	10...30	PFS-0108-600V	4152	PFS-0108-600V-024	4152
	34...135	-	15...40	PFS-0135-600V	5599	PFS-0135-600V-024	5599
	100...201	-	40...60	PFS-0201-600V	6256	PFS-0201-600V-024	6256
	125...251	-	50...75	PFS-0251-600V	6935	PFS-0251-600V-024	6935
	158...317	-	60...100	PFS-0317-600V	7280	PFS-0317-600V-024	7280
230	180...361	-	75...25	PFS-0361-600V	7815	PFS-0361-600V-024	7815
	240...480	-	100...150	PFS-0480-600V	11043	PFS-0480-600V-024	11043
	1...5	0.18 ...1.1	0.5...1	PFS-0005-600V	2738	PFS-0005-600V-024	2738
	5...25	1.1...5.5	1.5...7.5	PFS-0025-600V	2950	PFS-0025-600V-024	2950
	8.6...43	2.2...11	3...15	PFS-0043-600V	3084	PFS-0043-600V-024	3084
	12...60	3 ...15	5...20	PFS-0060-600V	3440	PFS-0060-600V-024	3440
	17...85	5.5...22	7.5...30	PFS-0085-600V	3718	PFS-0085-600V-024	3718
	27...108	11...30	10...40	PFS-0108-600V	4152	PFS-0108-600V-024	4152
	34...135	11...37	15...50	PFS-0135-600V	5599	PFS-0135-600V-024	5599
	100...201	37...55	40...75	PFS-0201-600V	6256	PFS-0201-600V-024	6256
400/415/460	125...251	45...75	50...100	PFS-0251-600V	6935	PFS-0251-600V-024	6935
	158...317	55...90	60...125	PFS-0317-600V	7280	PFS-0317-600V-024	7280
	180...361	75...110	75...150	PFS-0361-600V	7815	PFS-0361-600V-024	7815
	240...480	90 ...132	100 ...200	PFS-0480-600V	11043	PFS-0480-600V-024	11043
	1...5	0.37...2.2	0.5...3	PFS-0005-600V	2738	PFS-0005-600V-024	2738
	5...25	2.2 ...11	5...15	PFS-0025-600V	2950	PFS-0025-600V-024	2950
	8.6...43	4...22	7.5...30	PFS-0043-600V	3084	PFS-0043-600V-024	3084
	12...60	7.5...30	10...40	PFS-0060-600V	3440	PFS-0060-600V-024	3440
	17...85	11...45	15...60	PFS-0085-600V	3718	PFS-0085-600V-024	3718
	27...108	15...55	20...75	PFS-0108-600V	4152	PFS-0108-600V-024	4152
500/575	34...135	18.5 ...75	25...100	PFS-0135-600V	5599	PFS-0135-600V-024	5599
	100...201	75...110	75...150	PFS-0201-600V	6256	PFS-0201-600V-024	6256
	125...251	75...132	100...200	PFS-0251-600V	6935	PFS-0251-600V-024	6935
	158...317	90...160	125...250	PFS-0317-600V	7280	PFS-0317-600V-024	7280
	180 ...361	110...200	150 ...300	PFS-0361-600V	7815	PFS-0361-600V-024	7815
	240...480	160 ...250	200...400	PFS-0480-600V	11043	PFS-0480-600V-024	11043
	1...5	0.55...2.2	0.5...3	PFS-0005-600V	2738	PFS-0005-600V-024	2738
	5...25	3...15	5...20	PFS-0025-600V	2950	PFS-0025-600V-024	2950
	8.6...43	5.5...22	7.5...40	PFS-0043-600V	3084	PFS-0043-600V-024	3084
	12...60	7.5...37	15 ...50	PFS-0060-600V	3440	PFS-0060-600V-024	3440
17...85	11...55	15...75	PFS-0085-600V	3718	PFS-0085-600V-024	3718	
27...108	18.5 ...75	25...100	PFS-0108-600V	4152	PFS-0108-600V-024	4152	
34...135	30...90	40 ...125	PFS-0135-600V	5599	PFS-0135-600V-024	5599	
100...201	75...132	100 ...200	PFS-0201-600V	6256	PFS-0201-600V-024	6256	
125...251	90...160	125 ...250	PFS-0251-600V	6935	PFS-0251-600V-024	6935	
158...317	100 ...200	200 ...300	PFS-0317-600V	7280	PFS-0317-600V-024	7280	
180...361	132 ...250	200 ...350	PFS-0361-600V	7815	PFS-0361-600V-024	7815	
240...480	200 ...315	250 ...500	PFS-0480-600V	11043	PFS-0480-600V-024	11043	

Industrial Control

Discount Symbol K

Catalogue numbers in blue are NEW items.

COUNT ON LEESON FOR YOUR DAY-TO-DAY STARTERS!



LEESON Canada offers a broad selection of pre-assembled or "build-from-stock" starters housed in either a CUL-approved Type 1, 12K enclosure or a UL-Approved Type 4, 4X, 12 enclosure. Built for convenience, space savings and economy, our D-O-L starters are efficiently designed to use stock CA7 contactors and CT7K thermal overload relays or the advanced CEP7 solid state overload. Contactor and overload are either pre-wired and pre-mounted onto the enclosure's built-in DIN-rail or may be ordered as separate components.

- Direct-on-line starters
- Compact-style enclosures
- Top shelf line protection
- Long life contactor design
- Single-phasing protection
- cUL NEMA Type 1 and 12

	Single Phase		AC3 Amps	Overload Trip Range	Stop/Start Cat. No.	List* Price	Reset Only Cat. No.	List* Price		
	115VAC	230VAC								
Single Phase	-	1/4 - 1/3	9	2.7 - 4.0	LKS9505●	\$277	LKR9505●	\$254		
	1/6 - 1/4	1/2	9	4.0 - 6.0	LKS9506●	277	LKR9506●	254		
	1/3	3/4 - 1	9	6.0 - 9.0	LKS9501●	277	LKR9501●	254		
	1/2	1.5 - 2	12	9.0 - 12.5	LKS9502●	311	LKR9502●	288		
	3/4 - 1	3	16	12.5 - 17.5	LKS9503●	334	LKR9503●	311		
	1.5	3	23	12 - 32	LKS9504●	351	LKR9504●	328		
	2	5	30	12 - 37	LKS9706●	413	LKR9706●	390		
	-	(5)	37	12 - 37	LKS9707●	451	LKR9707●	428		
	3	7.5	43	14 - 45	LS9708●	660	LR9708●	604		
	5	10	60	26 - 85	LS9709●	777	LR9709●	717		
	Three Phase				AC3 Amps	Overload Trip Range	Stop/Start Cat. No.	List* Price	Reset Only Cat. No.	List* Price
	208VAC	230VAC	480VAC	575VAC						
Three Phase	1/4	1/4	1/2	1/2	9	0.8 - 1.2	LKS9601●	\$277	LKR9601●	\$254
	1/3	1/3	3/4	3/4	9	1.2 - 1.8	LKS9602●	277	LKR9602●	254
	1/2	1/2	1	1.5 - 2	9	1.8 - 2.7	LKS9609●	277	LKR9609●	254
	3/4	3/4	1.5 - 2	3	9	2.7 - 4.0	LKS9603●	277	LKR9603●	254
	1	1 - 1.5	3	5	9	4.0 - 6.0	LKS9604●	277	LKR9604●	254
	1.5 - 2	2	5	7.5	9	6.0 - 9.0	LKS9605●	277	LKR9605●	254
	3	3	7.5	10	12	9.0 - 12.5	LKS9606●	311	LKR9606●	288
	5	5	10	15	16	12.5 - 17.5	LKS9607●	334	LKR9607●	311
	5	7.5	15	15	23	12 - 32	LKS9805●	351	LKR9805●	328
	7.5	10	20	20 - 25	30	12 - 37	LKS9806●	413	LKR9806●	390
	(7.5)	10	25	30	37	12 - 37	LKS9807●	451	LKR9807●	428
	10	15	30	(30)	43	14 - 45	LS9808●	660	LR9808●	604
	15	20	40	40 - 50	60	26 - 85	LS9909●	777	LR9909●	717

Notes:

- "()"= Recommended for applications with higher running amps. Please check motor nameplate for FLA to correctly size starter.
- 9, 12 and 16 amp starters have CT7K thermal overloads. 23, 30, 37, 43 & 60 amp starters have CEP7 solid state overloads.

• Coil Voltage Suffix

60Hz	24V	120V	208-240V	440-480V	575V
50Hz	24V	110V	190-200V	380-415V	
●Suffix	3	1	2	4	5

Discount Symbol K

Industrial Control

KTA7 SERIES MOTOR CIRCUIT CONTROLLER

Sprecher + Schuh's new KTA series of Motor Circuit Controllers are some of the most versatile and technologically advanced control products available today.



In one small package, KTAs combine the functions of:

- Current limiting short circuit protection
- Class 10 thermal overload protection
- Switching and
- Signaling

These devices can be used in a variety of control schemes that reduce panel space, simplify installation and eliminate the need for more expensive equipment. Designed for multiple applications UL rules allow KT7 Motor/Circuit Controllers to be used in a wide variety of applications including:

- Manual Starter Applications
- Traditional Group Motor Applications
- Motor Disconnect Applications
- Self-Protected Manual Combination Starter Applications (Type E)

KTA BASE UNIT

Maximum Horsepower						Current Adjustment Range [A]	Magnetic Release Response Current [A]	Catalogue Number ①	List Price
Typical Single Phase ①		Typical Three Phase [HP] ①							
115V	230V	200V	230V	460V	575V				
KTA7-25S — Standard Interrupting Capacity									
—	—	—	—	—	—	0.10...0.16	2.1	KTA7-25S-0.16 B C	\$128
—	—	—	—	—	—	0.16...0.25	3.3	KTA7-25S-0.25A B C	128
—	—	—	—	—	—	0.25...0.40	5.2	KTA7-25S-0.4A B C	128
—	—	—	—	—	—	0.40...0.63	8.2	KTA7-25S-0.63A B C	148
—	—	—	—	1/2	3/4	0.63...1.0	13	KTA7-25S-1A B C	148
—	1/10	—	—	—	1	1.0...1.6	21	KTA7-25S-1.6A B C	148
1/10	1/6	1/2	3/4	1-1/2	2	1.6...2.5	33	KTA7-25S-2.5A B C	148
1/8	1/3	1	1	3	3	2.5...4	52	KTA7-25S-4A C	148
1/4	3/4	1-1/2	2	5	5	4...6.3	82	KTA7-25S-6.3A C	148
1/2	1-1/2	3	3	7-1/2	10	6.3...10	130	KTA7-25S-10A C	148
1	3	3	5	10	15	10...16	208	KTA7-25S-16A C	169
1-1/2	3	5	7-1/2	15	20	14.5...20	260	KTA7-25S-20A	169
2	3	7-1/2	7-1/2	15	20	18...25	325	KTA7-25S-25A	169

B Devices without a thermal trip (i.e., current adjustment range) are also available if separate motor overload protection is required. To order these products, change the "A" in the catalogue number to a "B". Example: **KTA7-25S-0.16A** becomes **KT**B**7-25S-0.16A**.

C Devices with a fixed magnetic trip set at 16...20x the maximum value of the current adjustment range are available if nuisance tripping occurs (as with some high-efficiency motors). To order these products, change the "A" in the catalogue number to a "C". Example: **KTA7-25S-0.16A** becomes **KT**C**7-25S-0.16A**.

① **Horsepower ratings shown in the table above are for reference. The final selection of the manual starter depends on the actual motor full load current and service factor.**

• For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example Motor F.L.C. = 4.2A; S.F. = 1.0. —4.2A x 0.9 = 3.78A. Select Catalogue Number **KTA7-25S-4.0A**.

② Magnetic trip is fixed at 13x the maximum value of the current adjustment range.

CONNECTING MODULES

Accessory	Description	Connects...	Catalogue Number	List* Price
	Connecting Modules—25 A	KT7-25S to CA4-9	KT7-25S-PEM12	\$23
	• Provides electrical and mechanical interconnection of KT7 and CA4 (with AC or DC coils) or CA7 (with AC coils) for use as combination starters	KT7-25S to CA7-9...23	KT7-25S-PEC23	28
	• Suitable for reversing and star/delta kits	KT7-25H to CA7-9...23	KT7-25H-PEC23	28
	• Allows mounting of Ecombo starter on single DIN Rail (KT7 on DIN Rail)			
	Connecting Modules—45 A	KT7-45H to CA7-30...37	KT7-45H-PNC37	28
	• Electrical interconnection between KT7-45H motor protector and CA7 contactors (with AC coils) • Contactor and motor protector must be mounted separately	KT7-45H to CA7-43	KT7-45H-PNC43	28

***DISCOUNT SYMBOL K**

Catalogue numbers in blue are NEW items.

ENCLOSED MOTOR DISCONNECTS

The L7 line incorporates the latest modular design techniques to provide maximum functionality with the fewest number of parts.

These rugged switches are compact, reliable and the ideal choice for all disconnect applications including motor disconnects.

L7 Disconnect Switches are non-fusible and available in four frame sizes up to 100 amps. The smaller L7s come in four and six pole models, as well as three pole change-over switches. A full complement of switch

handles and accessories including auxiliary contact blocks, ground and neutral terminals make the L7 line broad enough to tackle virtually any disconnect duty.

Shown here are our available enclosed disconnects. LEESON can provide you with a comprehensive catalogue featuring all of the available disconnect products.

UL/ CSA Amps	Horsepower					Catalogue Number	List* Price	Dim.	Catalogue Number	List* Price	Dim.	Catalogue Number	List* Price	Dim.	Catalogue Number	List* Price	Dim.
	10		30														
	120V	240V	240V	480V	600V												
3 Pole – ON/OFF																	
25	0.5	1.5	5	10	10	LA7-25-1753-WN	\$540	A	LA7-25-1753-CN	\$613	C	LA7-25-1753-CR	\$738	C	LA7-25-1753-SR	\$1989	A
32	1	2	7.5	15	15	LA7-32-1753-WN	576	A	LA7-32-1753-CN	648	C	LA7-32-1753-CR	774	C	LA7-32-1753-SR	2030	A
40	2	3	10	20	20	LA7-40-1753-WN	630	A	LA7-40-1753-CN	706	C	LA7-40-1753-CR	828	C	LA7-40-1753-SR	2084	A
63	3	5	15	25	25	LA7-63-1753-WN	698	A	LA7-63-1753-CN	770	C	LA7-63-1753-CR	895	C	LA7-63-1753-SR	2151	A
80	5	10	25	40	50	LA7-80-1753-WN	788	B	LA7-80-1753-CN	1116	D	LA7-80-1753-CR	1260	D	LA7-80-1753-SR	3100	B
100	7.5	15	30	50	50	LA7-100-1753-WN	886	B	LA7-100-1753-CN	1215	D	LA7-100-1753-CR	1359	D	LA7-100-1753-SR	3200	B

***DISCOUNT SYMBOL K**



NON-ENCLOSED DISCONNECTS

Non-enclosed disconnects are available for many applications. Call LEESON Canada for your complete catalogue of disconnect solutions.



Sprecher + Schuh's broad line of IEC contactors combine performance and reliability in space saving designs that are well proven and used the world over. A comprehensive selection of contactors, overloads and accessories is available which allows for a practically infinite contactor and starter combinations, in open and enclosed.



NON-REVERSING

REVERSING

I _n [A]		Ratings for Switching AC Motors (AC2 / AC3 / AC4)										Auxiliary Contacts per Contactor		Open Type		Auxiliary Contacts per Contactor		Open Type			
		kW (50 Hz)				UL/CSA HP (60 Hz)								Catalogue Number	List* Price			Catalogue Number	List* Price		
		AC-3	AC-1	230V	415V 400V	500V	690V	1 Ø		3 Ø										NO	NC
						115V	230V	200V	230V	460V	575V										
9	32	3	4	4	4	1/3	1	2	2	5	7-1/2	1	0	CA7-9-10-*	\$111	1	1	CAU7-9-22-*	\$367		
												0	1	CA7-9-01-*							
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	1	0	CA7-12-10-*	145	1	1	CAU7-12-22-*	439		
												0	1	CA7-12-01-*							
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	15	1	0	CA7-16-10-*	162	1	1	CAU7-16-22-*	484		
												0	1	CA7-16-01-*							
23	32	7.5	11	11	10	2	3	5	7-1/2	15	15	1	0	CA7-23-10-*	179	1	1	CAU7-23-22-*	527		
												0	1	CA7-23-01-*							
30	65	10	15	15	15	2	5	7-1/2	10	20	25	0	0	CA7-30-00-*	205	0	1	CAU7-30-02-*	589		
												1	0	CA7-30-10-*		223	1	1		CAU7-30-22-*	632
												0	1	CA7-30-01-*		223	1	1			
37	65	11	20	20	18.5	3	5	10	10	25	30	0	0	CA7-37-00-*	243	0	1	CAU7-37-02-*	679		
												1	0	CA7-37-10-*		262	1	1		CAU7-37-22-*	720
												0	1	CA7-37-01-*		262	1	1			
43	85	13	22	22	22	3	7-1/2	10	15	30	30	0	0	CA7-43-00-*	262	0	1	CAU7-43-02-*	751		
												1	0	CA7-43-10-*		280	1	1		CAU7-43-22-*	792
												0	1	CA7-43-01-*		280	1	1			
60	100	18.5	30	30	30	5	10	15	20	40	50	0	0	CA7-60-00-*	314	0	1	CAU7-60-02-*	938		
												1	0	CA7-60-10-*		333	1	1		CAU7-60-22-*	979
												0	1	CA7-60-01-*		333	1	1			
72	100	22	37	37	37	5	15	20	25	50	60	0	0	CA7-72-00-*	367	0	1	CAU7-72-02-*	1062		
												1	0	CA7-72-10-*		383	1	1		CAU7-72-22-*	1103
												0	1	CA7-72-01-*		383	1	1			
85	100	25	45	45	45	7-1/2	15	25	30	60	60	0	0	CA7-85-00-*	420	0	1	CAU7-85-02-*	1183		
												1	0	CA7-85-10-*		437	1	1		CAU7-85-22-*	1226
												0	1	CA7-85-01-*		437	1	1			
95	160	30	50/55	63	90	7-1/2	15	25	30	60	75	1	1	CA6-95-11-*	643	1	1	CAU6-95-22-*	1890		
110	160	32	55/63	75	100	10	25	40	40	75	100	1	1	CA6-110-11-*		810	1	1		CAU6-110-22-*	2070
														CA6-110-EI-11-*	945			CAU6-110-EI-22-*	2275		
140	250	45	75/80	100	110	15	30	40	50	100	125	1	1	CA6-140-11-*	1150	1	1	CAU6-140-22-*	3049		
														CA6-140-EI-11-*		1325				CAU6-140-EI-22-*	3402
180	250	55	90/100	90	135	—	40	50	60	150	150	1	1	CA6-180-EI-11-*	1800	1	1	CAU6-180-EI-22-*	4549		
210	350	63	110/125	150	200	—	50	60	75	150	200	1	1	CA6-210-EI-11-*	2000	1	1	CAU6-210-EI-22-*	5000		
250	350	80	132/150	160	250	—	—	75	100	200	250	1	1	CA6-250-EI-11-*	2300	1	1	CAU6-250-EI-22-*	5780		
300	420	90	160/160	200	300	—	—	100	125	250	300	1	1	CA6-300-EI-11-*	2549	1	1	CAU6-300-EI-22-*	6221		
420	500	132	220/250	300	425	—	—	150	175	350	400	1	1	CA6-420-EI-11-*	4500	1	1	CAU6-420-EI-22-*	11000		

*DISCOUNT SYMBOL K

COIL CODES

CA7		
A.C.	Voltage Range	
Coil Code	50 Hz	60 Hz
24Z	24V	24V
120	110V	120V
208	—	208V
220W	—	208V-240V
240	220V	240V
277	240V	277V
347	—	347V
380	380V-400V	440V
480	440V	480V
600	550V	600V

COIL CODES

CA6-95/110/140/180			
A.C.	Voltage Range		
Coil Code	50 Hz	60 Hz	
24	21V	24V	
120B	105V	120V	
208	180V	208V	
220Z	190V	220V	
240Z	210V	240V	
277Z	240V	277V	
380	440-460V	380-400V	
480	415V	480V	
575	500V	575V	

CA6-95EI...CA6-250EI			
A.C.	Voltage Range		
Coil Code	50 Hz	60 Hz	
24	24-28V	24-28V	
120	110-130V	110-130V	
220W	208-277V	208-277V	
380	380-400V	380-400V	

CA6-300ET...CA6-420EI			
A.C.	Voltage Range		
Coil Code	50 Hz	60 Hz	
120	110-130V	110-130V	
220W	208-277V	208-277V	
380	380-400V	380-400V	

Ordering Instructions

- Specify Catalogue Number
 - Replace (*) With Coil Code
- See Coil Code table on this page for codes.

Ⓜ The NC auxiliary contacts are supplied as part of the mechanical interlock (Cat.# CM7-02) and are used to electrically interlock the contactors.

Ⓝ The NO auxiliary contacts supplied are side mounted. Top mount NO auxiliary contacts must be special ordered. Contact your Sprecher + Schuh representative.

SOLID STATE OVERLOAD RELAYS • AUTOMATIC/MANUAL



Advanced solid state motor protection

The introduction of the second generation of CEP7 solid state overload relays advances Sprecher + Schuh's leading edge technology with several improved features like:

- Selectable trip class and field-installable modules
- A wider (5:1) set current adjustment range
- A more robust mechanical and electrical mounting
- Self-sealed latching mechanism

The basic concept of utilizing Application Specific Integrated Circuits (ASICs) resulting in an affordable solid state overload relay remains unchanged. This kind of versatility and accuracy was simply not

possible with traditional bimetallic or eutectic alloy electromechanical overload relays.

• CEP7-EE is full-deatured, selectable trip class (10, 15, 20 & 30) 3-phase application overload relay with provision for field-mountable modules to handle remote reset, stall and other functions previously available only in higher priced electronic overload relays. Manual reset or automatic reset can be selected with dip switches on the new CEP7-EE models.

• CEP7S-EE is a 1-phase application overload relay packing all the features of the 3-phase CEP7-EE model.

THREE PHASE

Directly Mounts to Contactor	Adjustment Range (A)	Trip Class 10	
		Catalogue Number	List Price*
CA7-9...CA7-23	0.1...0.5	CEP7-EEAB	\$79
	0.2...1.0	CEP7-EEBB	79
	1.0...5.0	CEP7-EECB	79
	3.2...16	CEP7-EEDB	79
CA7-30...CA7-43	5.4...27	CEP7-EEEB	124
	1.0...5.0	CEP7-EECD	124
	3.2...16	CEP7-EEDD	124
	5.4...27	CEP7-EEED	124
CA7-60...CA7-85	9...45	CEP7-EEFD	124
	5.4...27	CEP7-EEEE	140
	9...45	CEP7-EEFE	140
	18...90	CEP7-EEGE	145

SINGLE PHASE

Directly Mounts to Contactor	Adjustment Range (A)	Trip Class 10	
		Catalogue Number	List Price*
CA4-9...CA7-23	1.0...5.0	CEP7S-EEPB	\$79
	3.2...16	CEP7S-EERB	79
	5.2...27	CEP7S-EESB	79
CA7-30...CA7-43	9...45	CEP7S-EETD	124
CA7-60...CA7-85	18...90	CEP7S-EEUE	145

LARGE AMP CEP7 RELAYS

Directly Mounts to Contactor	CT Ratio	Adjustment Range (A)	Trip Class 10	
			Catalogue Number	List Price*
CA6-95...-180	150:5	30...150	CEP7-EEHF	\$293
	200:5	40...200	CEP7-EEJF	381

Automatic or Manual Reset for 30 Applications ① ②

Contactors noted will physically attach to the overload relays listed. This reference is not intended to be a guide for selecting contactors. Size overload relays using the full load current of the motor.

CEP7 overload relays are shipped with a CA4 wiring adaptor (labeled "A") in the box which replaces the CA7 wiring adaptor (labeled "B") that is installed on the overload as standard.

CEF1 ELECTRONIC MOTOR PROTECTOR

Motor Protector	Description	Catalogue Number	List Price*
	CEF1 Electronic Motor Protector (basic) - With protection functions: • Thermal Overload Protection • Single-phase / Phase unbalance Protection		
	Amperage Range: 0.5 to 180 FLA 160 to 400 FLA	CEF1-11-* CEF1-41-* (Replace * with Supply Voltage Code from table)	\$546 953

SUPPLY VOLTAGE CODES

Voltage Code (replace *)	Voltage Range			Price Adder
	50 Hz	60 Hz	VDC	
24V50/60	24V	24V	—	—
24VDC	—	—	24V	\$159
36V50/60	36V	36V	—	—
48V50/60	48V	48V	—	—
48VDC	—	—	48V	159
110V50/60	110V	110V	—	—
120V50/60	120V	120V	—	—
240V50/60	240V	240V	—	—
380V50/60	380V	380V	—	—
415V50/60	415V	415V	—	—
440V50/60	440V	440V	—	—

ACCESSORIES

Description	For Use With...	Catalogue Number	List Price*
 DIN-rail / Panel Mount Adaptor - ① For separately mounting CEP7 solid state overload relays	CEP7(S)-M/A32...and	CEP7-37-P-A	\$22
	CEP7(S)-M/A37...	CEP7-45-P-A	27
	CEP7(S)-M/A45...	CEP7-85-P-A	37
	CEP7(S)-M/A85...		
 Thermistor Protection Relays - used in applications requiring exact temperature monitoring	Automatic Overload	RST3-M-*V50/60	\$251
	Auto/Manual Overload	RT3-A-*V50/60	330

① To install CEP7-xx-P-A, the CA7 close-couple adaptor must be removed, while maintaining conductor separation as panel mount adaptor is pushed into position.

Replace "*" in catalogue number with supply voltage code:
AC: 110,220,240,380, 415 or 440
DC: Change "V50/60" to "24VDC" or "48VDC"

***DISCOUNT SYMBOL K**

Industrial Control

PUSHBUTTON OPERATORS



NON-ILLUMINATED • METAL MOMENTARY

Style	Catalogue Number	List Price*
Flush	D7MF-■	\$7.95
Extended	D7ME-■	10.15



NON-ILLUMINATED • PLASTIC MOMENTARY

Style	Catalogue Number	List Price*
Flush	D7PF-■	\$6.60
Extended	D7PE-■	8.80



EMERGENCY STOP 40mm Colour Cap **NEW**

Style	Catalogue Number	List Price*
Metal	D7M-MT44	\$29.60
Plastic	D7P-MT44	32.90



ILLUMINATED • METAL MOMENTARY

Style	Catalogue Number	List Price*
Flush	D7MLF-★	\$13.20
Extended	D7MLE-★	15.40



PILOT LIGHT • METAL & PLASTIC

Style	Catalogue Number	List Price*
Metal	D7MP-★	\$6.75
Plastic	D7PP-★	5.40

COLOUR SELECTION

■ NON-ILLUMINATED

Suffix	Colour
-1	White
-2	Black
-3	Green
-4	Red
-5	Yellow
-6	Blue
-8	Grey

★ ILLUMINATED

Suffix	Colour
-3	Green
-4	Red
-5	Amber
-6	Blue
-7	Clear

To make a complete pilot device: OPERATOR + MOUNTING LATCH + CONTACT BLOCK(S).

MOUNTING LATCH

Style	Catalogue Number	List Price*
Metal	D7-ALM	\$4.95
Plastic	D7-ALP	3.85

CONTACT BLOCKS

Style	Catalogue Number	List Price*
NO	D7-X10	\$8.80
NC	D7-X01	8.80
NO, early make	D7-X10E	8.80
NC, late break	D7-X01L	8.80

SELECTOR SWITCHES

METAL



Position	Operator Function	Catalogue Number	List Price*
2	Maintained	D7MSM2-■	\$13.45
2	Spring Return Left	D7MSL2-■	13.45
3	Maintained	D7MSM3-■	13.45
3	Spring Return Left	D7MSL3-■	13.45

PLASTIC



Position	Operator Function	Catalogue Number	List Price*
2	Maintained	D7PSM2-■	\$12.10
2	Spring Return Left	D7PSL2-■	12.10
3	Maintained	D7PSM3-■	12.10
3	Spring Return Left	D7PSL3-■	12.10

LAMPS & ELEMENTS

Component	Catalogue Number	List Price
Lamp elements (no bulb)		
Full voltage	D7-D0C	\$20.90
Incandescent lamps		
6V 1.2W	D5-N65	4.40
12V 1.4W	D5-N141	
24V 1.4W	D5-N157	
48V 1.4W	D5-N48	
130V 2.4W	D5-N130	
Neon Lamps		
220V-240V	D5-N240	4.40

LED (integral) Lamp

Colour	Volts	Cat. Number	List Price
Amber	24VAC/DC	D7-N3A	\$25.30
Amber	120VAC	D7-N5A	25.30
Amber	240VAC	D7-N7	25.30
Blue	24VAC/DC	D7-N3B	25.30
Blue	120VAC	D7-N5B	25.30
Blue	240VAC	D7-N7B	25.30
Green	24VAC/DC	D7-N3G	25.30
Green	120VAC	D7-N5G	25.30
Green	240VAC	D7-N7G	25.30
Red	24VAC/DC	D7-N3R	25.30
Red	120VAC	D7-N5R	25.30
Red	240VAC	D7-N7R	25.30
White	24VAC/DC	D7-N3W	25.30
White	120VAC	D7-N5W	25.30
White	240VAC	D7-N7W	25.30

DISCOUNT SYMBOL K

PENDANT STATIONS

These pendant stations are designed for heavy duty hoist and crane applications. They employ a rugged lightweight double-insulated thermoplastic enclosure designed for easy handling and simple operation.

The standard units shown are available from stock and are complete with standard nameplates, booted pushbuttons and contact blocks.

All button pairs are mechanically interlocked. All buttons are momentary.

Many custom variations are available and can be assembled quickly from stock components. Consult LEESON for details.



PO2 Series • Pistol Grip

PENDANT STATIONS FEATURE:

- Rugged, high impact, corrosion and chemical resistant thermoplastic enclosure
- Stainless steel screws
- Contact blocks have standard double-break, self-cleaning, silver contacts
- Chemical resistant neoprene gaskets, cable sleeves and pushbutton glands.
- Mechanical interlock standard on 1, 2, 3 speed pairs.
- Heavy duty steel hanger allows easy installation of strain relief cable.
- Tapered round cable entry sleeve can be cut to match cable diameter. Large internal plastic clamp tightens the cable firmly in the enclosure housing
- High visibility, bright yellow finish
- Easy to read nameplates or directional arrows.
- Simplified field wiring. All buttons, contact blocks, strain relief block, and cable entrance are mounted in the upper 1/2 of the station. To wire the station, simply remove the lower cover to expose the contact blocks, and cable entrance opening. The cover screws are self retained in the lower cover. Pull the entrance cable through the cable sleeve, attach the cable wires to the contact blocks, position the cable wires, and then attach the lower cover to the station.
- TYPE 4X (IP65) rated enclosure

OPTIONS FOR P03 & PL SERIES

- "SNAP ON" 1, 2, 3, speed contact blocks
- Knob type selector switch
- Keyed selector switch
- "Turn to Release" mushroom button for emergency stop
- Pilot light

P02 SERIES • PISTOL GRIP

Description	Catalogue Number	List* Price
Cable Sleeve Style		
2 Button - 1 NO - All Single Speed	P02.1	\$67
2 Button - 2 NO - All Two Speed	P02.2	77

P02 Series stations have directional arrow type legend plates.

P03 SERIES • PISTOL GRIP with E-Stop



PO3 Series • Pistol Grip

Description	Catalogue Number	List* Price
Cable Sleeve with "Turn to Release" Mushroom E-Stop Button		
3 Button - 1 NO - All Single Speed	P03.1	\$151
3 Button - 2 NO - All Two Speed	P03.2	164

P03 Series stations have standard pendant station type legend plates. Additional legend plates are available. Please call factory.

PL SERIES • PISTOL GRIP with E-Stop

Description	Catalogue Number	List* Price
Cable Sleeve with "Turn to Release" Mushroom E-Stop Button		
5 Button - All Single Speed	PL05	\$234
5 Button - 2 Two Speed, 2 Single Speed	PL05D2	271
7 Button - All Single Speed	PL07	292
7 Button - 2 Two Speed, 4 Single Speed	PL07D4	328
8 Button - All Single Speed (E-Stop, 6 op's + Horn)	PL08	326
10 Button - All Single Speed (E-Stop, 8 op's + Horn)	PL10	424

SPECIFICATIONS

- **Electrical ratings:**
P02 Series = 10 AMP: A600/Q600, A300/Q300
P03 & PL Series = 16 AMP
- **Operating temperature:** -20°F to +170°F
- **Shock resistance:** 110G
- **Mechanical life:** 1 million operations



PL Series • Ergonomic