

Type E/F Simplex & Duplex Pump Controllers



Simplex Pump Controllers

A single KTA7 motor controller plus matching CA7 contactor can be combined in an enclosure as a Simplex Combination Controller for pumping applications. Additional space is provided for the customer to field addition of time clocks or float switches as required by the application. An environmentally approved thru-the-door handle provides for a required disconnect. These pump panels can be supplied with Suitable for Service Entrance (SUSE) label on demand. Type E/F pump panels are less expensive than the classic Construction Type A (Fusible) or Construction Type C (MCCB) versions shown in Section C of this catalog.

Type E/F Simplex Pump Controller Panels include:

- Contactor (with AC coil)
- Type E Self-protected motor controller
- “START” Momentary Push Button
- “HOA” Selector Switch
- A minimum of 6” x 10” extra back pan space
- UL Type rated enclosure

Duplex Pump Controllers

Two starter duplex panels can be fed from one power source or two power sources and include lead/lag control circuitry to meet customers’ need in pumping and many other applications. Two environmentally approved thru-the-door handle disconnect mechanisms means no main feeder device is required and smaller and less expensive panel than a classic duplex panel as offered in Section C of this catalog. The following pages include a selection of duplex controllers and you can contact your Sprecher + Schuh representative to modify the selection.

Type E/F Duplex Pump Controller Panels include:

- (2) Contactors (AC coil) and (2) Type E/F self protected motor controllers
- (1) Electronic alternating relay
- (1) UL type rated enclosure
- Designed per alternation control diagram shown at bottom of page F1.85



F
Enclosed Motor Circuit Controllers

Series CXP7 & Type E/F Combo Pump Panel

Max. Horsepower ①②③ Three Phase				Current Adjustment Range (A)	Magnetic Response Current	Type 3R Rainproof (Metal)	Dimension Code	Type 4X Watertight Corrosion Resistant Non-metallic	Dimension Code
200V	230V	460V	575V			Catalog Number ④⑤		Catalog Number ④⑥	
KTA9-32S Standard Interrupting Capacity									
~	~	~	~	0.10...0.16	2.2	CXP7-9-10-*-AS0.16A-A10-RG	0	CXP7-9-10-*-AS0.16A-A10-CG	R/F
~	~	~	~	0.16...0.25	3.5	CXP7-9-10-*-AS0.25A-A10-RG	0	CXP7-9-10-*-AS0.25A-A10-CG	R/F
~	~	~	~	0.25...0.40	5.6	CXP7-9-10-*-AS0.40A-A10-RG	0	CXP7-9-10-*-AS0.40A-A10-CG	R/F
~	~	~	~	0.40...0.63	8.8	CXP7-9-10-*-AS0.63A-A10-RG	0	CXP7-9-10-*-AS0.63A-A10-CG	R/F
~	~	1/2	1/2	0.63...1.0	14	CXP7-9-10-*-AS1.0A-A10-RG	0	CXP7-9-10-*-AS1.0A-A10-CG	R/F
~	~	3/4	~	1.0...1.6	22	CXP7-9-10-*-AS1.6A-A10-RG	0	CXP7-9-10-*-AS1.6A-A10-CG	R/F
1/2	1/2	1	1-1/2	1.6...2.5	35	CXP7-9-10-*-AS2.5A-A10-RG	0	CXP7-9-10-*-AS2.5A-A10-CG	R/F
3/4	3/4	2	3	2.5...4.0	52	CXP7-9-10-*-AS4.0A-A10-RG	0	CXP7-9-10-*-AS4.0A-A10-CG	R/F
1	1-1/2	3	~	4.0...6.3	88	CXP7-9-10-*-AS6.3A-A10-RG	0	CXP7-9-10-*-AS6.3A-A10-CG	R/F
2	2	5	~	6.3...10	140	CXP7-12-10-*-AS10A-A10-RG	0	CXP7-12-10-*-AS10A-A10-CG	R/F
3	5	10	~	10...16	224	CXP7-16-10-*-AS16A-A10-RG	0	CXP7-16-10-*-AS16A-A10-CG	R/F
KTA9-40H High Interrupting Capacity									
~	~	~	~	0.40...0.63	8.8	CXP7-9-10-*-AH0.63A-A10-RG	0	CXP7-9-10-*-AH0.63A-A10-CG	R/F
~	~	1/2	1/2	0.63...1.0	14	CXP7-9-10-*-AH1.0A-A10-RG	0	CXP7-9-10-*-AH1.0A-A10-CG	R/F
~	~	3/4	~	1.0...1.6	22	CXP7-9-10-*-AH1.6A-A10-RG	0	CXP7-9-10-*-AH1.6A-A10-CG	R/F
1/2	1/2	1	1-1/2	1.6...2.5	33	CXP7-9-10-*-AH2.5A-A10-RG	0	CXP7-9-10-*-AH2.5A-A10-CG	R/F
3/4	3/4	2	3	2.5...4.0	52	CXP7-9-10-*-AH4.0A-A10-RG	0	CXP7-9-10-*-AH4.0A-A10-CG	R/F
1	1-1/2	3	5	4.0...6.3	82	CXP7-9-10-*-AH6.3A-A10-RG	0	CXP7-9-10-*-AH6.3A-A10-CG	R/F
2	2	5	7-1/2	6.3...10	130	CXP7-12-10-*-AH10A-A10-RG	0	CXP7-12-10-*-AH10A-A10-CG	R/F
3	5	10	10	10...16	208	CXP7-16-10-*-AH16A-A10-RG	0	CXP7-16-10-*-AH16A-A10-CG	R/F
5	5	10	~	14.5...20	260	CXP7-23-10-*-AH20A-A10-RG	0	CXP7-23-10-*-AH20A-A10-CG	R/F
5	7-1/2	15	~	18...25	325	CXP7-23-10-*-AH25A-A10-RG	0	CXP7-23-10-*-AH25A-A10-CG	R/F
7-1/2	10	20	~	24...29	406	CXP7-30-10-*-AH29A-A10-RG	0	CXP7-30-10-*-AH29A-A10-CG	R/F
7-1/2	10	25	~	27...32	448	CXP7-37-10-*-AH32A-A10-RG	0	CXP7-37-10-*-AH32A-A10-CG	R/F
10	10	25	~	30...36	432	CXP7-37-10-*-AH36A-A10-RG	0	CXP7-37-10-*-AH36A-A10-CG	R/F
10	10	30	~	34...40	480	CXP7-43-10-*-AH40A-A10-RG	0	CXP7-43-10-*-AH40A-A10-CG	R/F
KTA7-45H High Interrupting Capacity									
3	3	7-1/2	10	6.3...10	130	CXP7-30-10-*-AH10A-A10-RG	Q	CXP7-30-10-*-AH10A-A10-CG	R/F
5	5	10	15	10...16	208	CXP7-30-10-*-AH16A-A10-RG	Q	CXP7-30-10-*-AH16A-A10-CG	R/F
5	7-1/2	15	20	14.5...20	260	CXP7-30-10-*-AH20A-A10-RG	Q	CXP7-30-10-*-AH20A-A10-CG	R/F
7-1/2	10	20	20	18...25	325	CXP7-30-10-*-AH25A-A10-RG	Q	CXP7-30-10-*-AH25A-A10-CG	R/F
7-1/2	10	20	25	23...32	416	CXP7-30-10-*-AH32A-A10-RG	Q	CXP7-30-10-*-AH32A-A10-CG	R/F
10	10	25	~	32...45	585	CXP7-37-10-*-AH45A-A10-RG	Q	CXP7-37-10-*-AH45A-A10-CG	R/F
10	15	30	~	32...45	585	CXP7-43-10-*-AH45A-A10-RG	Q	CXP7-43-10-*-AH45A-A10-CG	R/F

NOTE: Catalog Numbers, list Prices and enclosure dimensions reflect contactors with AC coils. Contact factory for DC applications.

Contactors AC Coil Codes (*) ⑤

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
024Z	24V	24V
0120	110V	120V
220W	200-220V	208-240V
0415	400-415V	~
0480 ⑤	440V	480V
0600 ⑤	550V	600V

① Horsepower ratings shown in the table above are for reference. The final selection of the controller 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 FLC = 4.2A; S.F. = 1.0. 4.2A x 0.9 = 3.78A. Select catalog number KTA9-32S-4.0A.

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

③ CXP7 may be applied to single phase loads. See footnote 1 for device selection criteria. To order single phase unit, change "CXP7" in catalog number to "CBX7". Three pole series connection will be provided. Ex: Change CXP7-9-10-*-0.16A-A10-RG to CBXP7-9-10-*-0.16A-A10-RG.

④ A red and yellow handle may be selected instead of the standard gray and black handle. Change "RG" suffix to "RJ". Ex: Change CXP7-9-10-*-0.16A-A10-RG to CXP7-9-10-*-0.16A-A10-RJ.

⑤ Other voltages available, see Section A in this catalog.

⑥ Catalog number (-A10) includes front-mounted auxiliary KT9-PE1-10 with 300 VAC maximum control circuit matching line voltage, or provided from separate source, used to de-energize contactor coil under fault condition (auxiliary not available for customer use). For control circuits greater than 300 VAC, which is common with line voltage, the auxiliary will not be wired into the control circuit since the contactor coil will be de-energized when KTA9 is tripped due to overload or short circuit; therefore, the KT9-PE1-10 auxiliary is available for customer use.

Ordering Instructions

Specify Catalog Number
Replace (*) with Coil Code
Factory Modifications available
See this page Contact factory

Series CXDP7 with Type E/F Combination Controller

Max. Horsepower Three Phase				Current Adjustment Range (A)	Magnetic Response Current	Type 3R Rainproof (Metal)	Dimension Code	Type 4X Watertight Corrosion Resistant Non-metallic	Dimension Code
200V	230V	460V	575V			Catalog Number ②		Catalog Number ②	
KTA9-32S Standard Interrupting Capacity									
~	~	~	~	0.10...0.16	2.2	CXDP7-9-10-*-AS0.16A-A10-RG	R/F	CXDP7-9-10-*-AS0.16A-A10-CG	R/F
~	~	~	~	0.16...0.25	3.5	CXDP7-9-10-*-AS0.25A-A10-RG	R/F	CXDP7-9-10-*-AS0.25A-A10-CG	R/F
~	~	~	~	0.25...0.40	5.6	CXDP7-9-10-*-AS0.4A-A10-RG	R/F	CXDP7-9-10-*-AS0.4A-A10-CG	R/F
~	~	~	~	0.40...0.63	8.8	CXDP7-9-10-*-AS0.63A-A10-RG	R/F	CXDP7-9-10-*-AS0.63A-A10-CG	R/F
~	~	1/2	1/2	0.63...1.0	14	CXDP7-9-10-*-AS1A-A10-RG	R/F	CXDP7-9-10-*-AS1A-A10-CG	R/F
~	~	3/4	~	1.0...1.6	22	CXDP7-9-10-*-AS1.6A-A10-RG	R/F	CXDP7-9-10-*-AS1.6A-A10-CG	R/F
1/2	1/2	1	1-1/2	1.6...2.5	35	CXDP7-9-10-*-AS2.5A-A10-RG	R/F	CXDP7-9-10-*-AS2.5A-A10-CG	R/F
3/4	3/4	2	3	2.5...4.0	52	CXDP7-9-10-*-AS4A-A10-RG	R/F	CXDP7-9-10-*-AS4A-A10-CG	R/F
1	1-1/2	3	~	4.0...6.3	88	CXDP7-9-10-*-AS6.3A-A10-RG	R/F	CXDP7-9-10-*-AS6.3A-A10-CG	R/F
2	2	5	~	6.3...10	140	CXDP7-12-10-*-AS10A-A10-RG	R/F	CXDP7-12-10-*-AS10A-A10-CG	R/F
3	5	10	~	10...16	224	CXDP7-16-10-*-AS16A-A10-RG	R/F	CXDP7-16-10-*-AS16A-A10-CG	R/F
KTA9-40H High Interrupting Capacity									
~	~	~	~	0.40...0.63	8.8	CXDP7-9-10-*-AH0.63A-A10-RG	R/F	CXDP7-9-10-*-AH0.63A-A10-CG	R/F
~	~	1/2	1/2	0.63...1.0	14	CXDP7-9-10-*-AH1.0A-A10-RG	R/F	CXDP7-9-10-*-AH1.0A-A10-CG	R/F
~	~	3/4	~	1.0...1.6	22	CXDP7-9-10-*-AH1.6A-A10-RG	R/F	CXDP7-9-10-*-AH1.6A-A10-CG	R/F
1/2	1/2	1	1-1/2	1.6...2.5	33	CXDP7-9-10-*-AH2.5A-A10-RG	R/F	CXDP7-9-10-*-AH2.5A-A10-CG	R/F
3/4	3/4	2	3	2.5...4.0	52	CXDP7-9-10-*-AH4.0A-A10-RG	R/F	CXDP7-9-10-*-AH4.0A-A10-CG	R/F
1	1-1/2	3	5	4.0...6.3	82	CXDP7-9-10-*-AH6.3A-A10-RG	R/F	CXDP7-9-10-*-AH6.3A-A10-CG	R/F
2	2	5	7-1/2	6.3...10	130	CXDP7-12-10-*-AH10A-A10-RG	R/F	CXDP7-12-10-*-AH10A-A10-CG	R/F
3	5	10	10	10...16	208	CXDP7-16-10-*-AH16A-A10-RG	R/F	CXDP7-16-10-*-AH16A-A10-CG	R/F
5	5	10	~	14.5...20	260	CXDP7-23-10-*-AH20A-A10-RG	R/F	CXDP7-23-10-*-AH20A-A10-CG	R/F
5	7-1/2	15	~	18...25	325	CXDP7-23-10-*-AH25A-A10-RG	R/F	CXDP7-23-10-*-AH25A-A10-CG	R/F
7-1/2	10	20	~	24...29	406	CXDP7-30-10-*-AH29A-A10-RG	R/F	CXDP7-30-10-*-AH29A-A10-CG	R/F
7-1/2	10	25	~	27...32	448	CXDP7-37-10-*-AH32A-A10-RG	R/F	CXDP7-37-10-*-AH32A-A10-CG	R/F
10	10	25	~	30...36	432	CXDP7-37-10-*-AH36A-A10-RG	R/F	CXDP7-37-10-*-AH36A-A10-CG	R/F
10	10	30	~	34...40	480	CXDP7-43-10-*-AH40A-A10-RG	R/F	CXDP7-43-10-*-AH40A-A10-CG	R/F
KTA7-45H High Interrupting Capacity									
3	3	7-1/2	10	6.3...10	130	CXDP7-30-10-*-AH10A-A10-RG	R/F	CXDP7-30-10-*-AH10A-A10-CG	R/F
5	5	10	15	10...16	208	CXDP7-30-10-*-AH16A-A10-RG	R/F	CXDP7-30-10-*-AH16A-A10-CG	R/F
5	7-1/2	15	20	14.5...20	260	CXDP7-30-10-*-AH20A-A10-RG	R/F	CXDP7-30-10-*-AH20A-A10-CG	R/F
7-1/2	10	20	20	18...25	325	CXDP7-30-10-*-AH25A-A10-RG	R/F	CXDP7-30-10-*-AH25A-A10-CG	R/F
7-1/2	10	20	25	23...32	416	CXDP7-30-10-*-AH32A-A10-RG	R/F	CXDP7-30-10-*-AH32A-A10-CG	R/F
10	10	25	~	32...45	585	CXDP7-37-10-*-AH45A-A10-RG	R/F	CXDP7-37-10-*-AH45A-A10-CG	R/F
10	15	30	~	32...45	585	CXDP7-43-10-*-AH45A-A10-RG	R/F	CXDP7-43-10-*-AH45A-A10-CG	R/F

F
Enclosed Motor Circuit Controllers

**Contactors
AC Coil Codes (*) ①**

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
024Z	24V	24V
0120	110V	120V
220W	200-220V	208-240V
0415	400-415V	~
0480 ②	440V	480V
0600 ②	550V	600V

NOTE: Catalog Numbers, list Prices and enclosure dimensions reflect contactors with AC coils. Contact factory for DC applications.

R/F - Experience has shown that applications using non-metallic enclosures often require customized pump panels (i.e. Door-in-Door or unique control circuit). Contact your Sprecher + Schuh representative for a customized price.

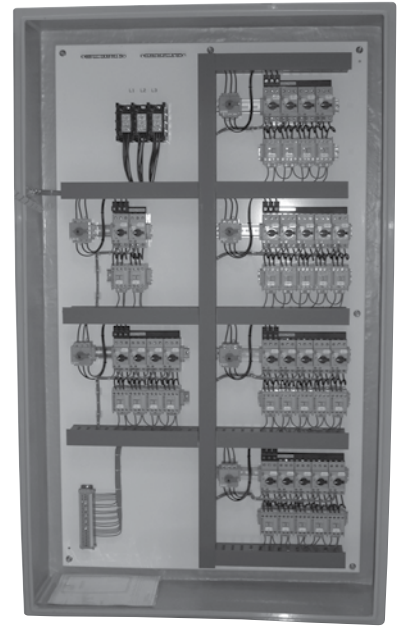
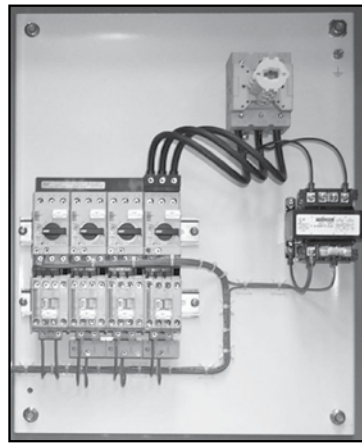
Ordering Instructions

Specify Catalog Number	
Replace (*) with Coil Code Factory Modifications available	See this page Contact factory

- ① Other voltages available, see Section A in this catalog.
- ② Catalog number (-A10) includes front-mounted auxiliary KT9-PE1-10 with 300 VAC maximum control circuit matching line voltage, or provided from separate source, used to de-energize contactor coil under fault condition (auxiliary not available for customer use). For control circuits greater than 300 VAC, which is common with line voltage, the auxiliary will not be wired into the control circuit since the contactor coil will be de-energized when KTA9 is tripped due to overload or short circuit; therefore, the KT9-PE1-10 auxiliary is available for customer use.

Custom Multi-Starter Control Panels

From 10 to 100 or more, consult the experts



Your Motor Control + Protection Consultant

Sprecher + Schuh's slogan is "Motor control + protection consultant". This means part of our job is to be knowledgeable about these issues and to help customers choose components that not only comply with UL, NEC and CSA standards but also maximizes the SCCR rating of the assembled multi-starter panel, leading to increased protection of equipment and personnel.

Multiple KTA9, KTB9 or KTC9 motor controllers plus matching CA7 contactors can be combined in a single assembly as a multi-motor starter custom control panel. Three, 33, 133 or more motor controllers and KTU9 molded case circuit breakers, as well as other power components and control circuits, can be designed and

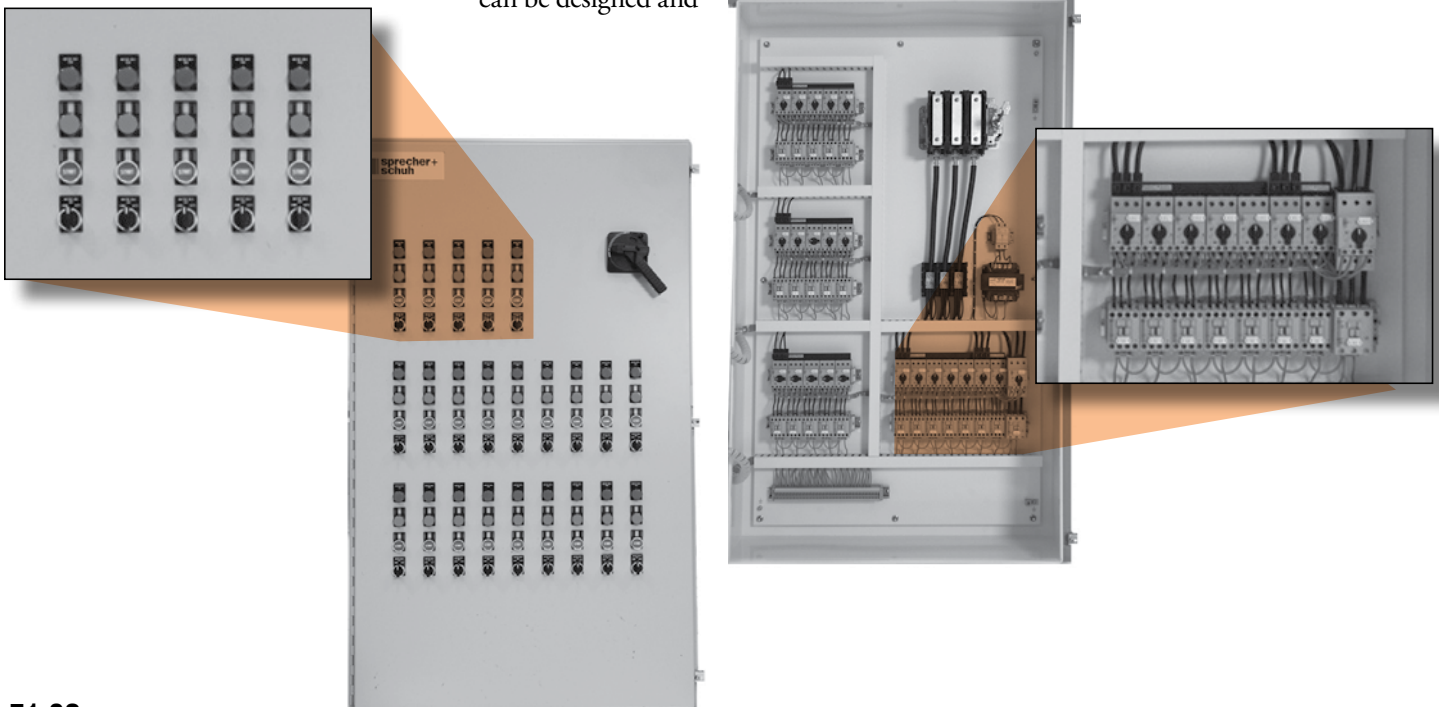
assembled into a custom multi-motor starter by Sprecher + Schuh to meet customers' unique application requirements. These pages include a few pictures of custom multi-starter control panels built by Sprecher + Schuh. Contact your Sprecher + Schuh motor control and protection representative for consultation regarding design, quotations, or help explaining the complex UL, NEC and CSA codes that apply to a custom assembly.

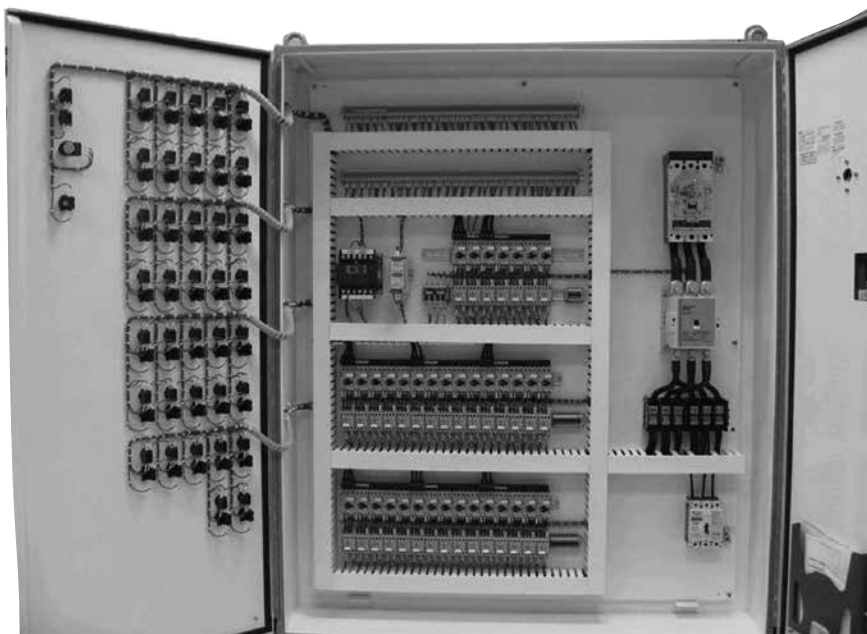
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Enclosed Motor Circuit Controllers

For your Custom application

contact
customquotes@sprecherschuh.com



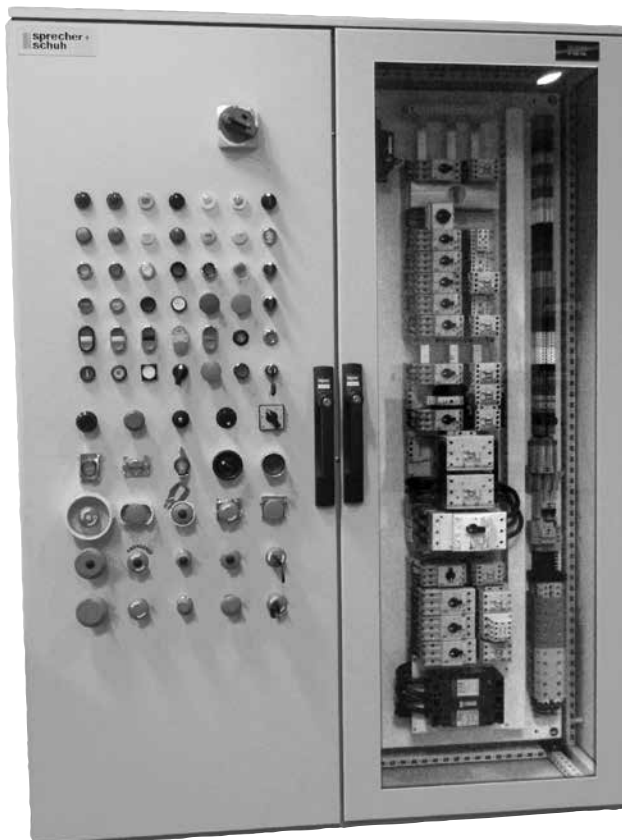


Short Circuit Current Ratings (SSCR)

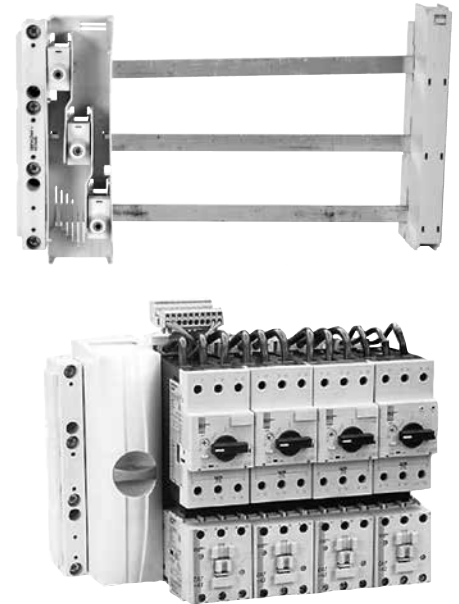
Short Circuit Current Ratings as defined by UL is a hot topic of discussion within the controls marketplace.

UL 508A Industrial Control Panel specifications require every multiple motor starter panel assembly to be labeled with the Short-Circuit Current Rating (SCCR), which depends on the weakest component's KAIC rating. The SCCR rules are complicated and UL conducts classes around the country on this subject. Sprecher + Schuh conducted a survey of multi-starter panel builders which indicated an increased concern on

the part of panel builders to comply with the UL regulations; yet many do not truly understand the complexity of the rules. This is another reason to consult the experts at Sprecher + Schuh.



3-Phase 60mm Bus Bar System vertically arranged to maximize space



Custom Bus Bar Systems

Sprecher + Schuh has teamed-up with *Wöhner* to supply 3-phase 60 mm bus bar systems. Bus Bar systems offer more flexibility, and a smaller, more economical alternative to a Motor Control Center that uses 'bucket' design.

- Sprecher + Schuh can supply 3-phase 60 mm bus bar components for customer assembly into a control panel.
- We can help design a 3-phase 60 mm bus bar system and provide it with or without components and ship to the customer as open assembly.
- Sprecher + Schuh can help design a 3-phase 60 mm bus bar system and integrate that bus system into an enclosed assembly or multi-starter custom control panel to meet customers' unique specifications.

Please contact your local Sprecher + Schuh Representative or our Technical Support Team to help design our components to meet your needs, which can include building the custom control.

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Enclosed Motor Circuit Controllers