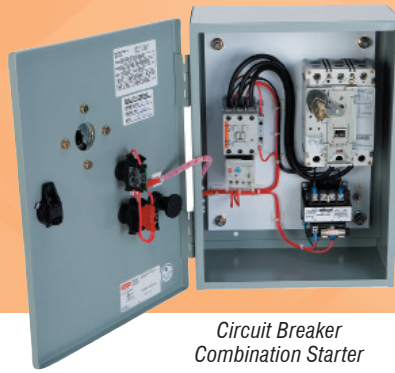


*Duplex
Pump Control*



*Circuit Breaker
Combination Starter*



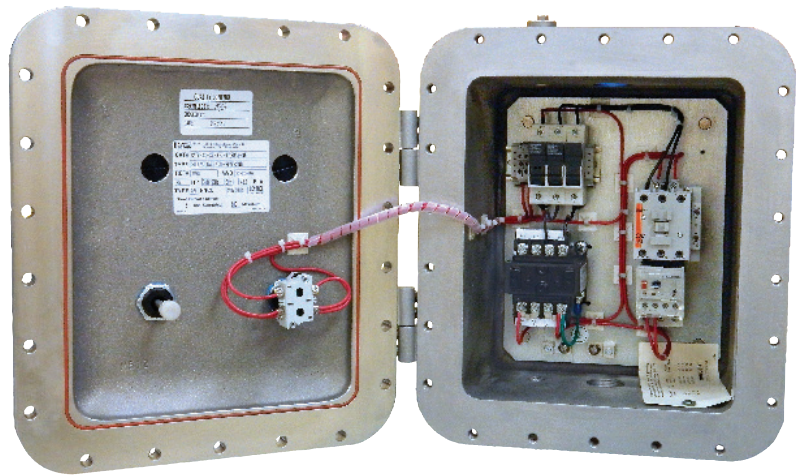
*Pump Control
Panel*

back pan. Outsourced components are industrial control quality from name brand manufacturers. Control wiring and device function is electrically tested before the panel leaves our facility.

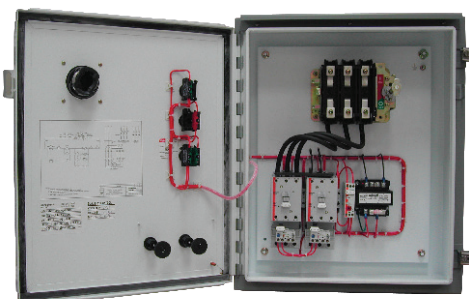
ISO 9001 and ATEX Certified

Sprecher + Schuh is committed to a quality system, focused on customer solutions. This is achieved through superior products and services, excellent customer service, technical expertise, supplier partnerships, and industry leadership.

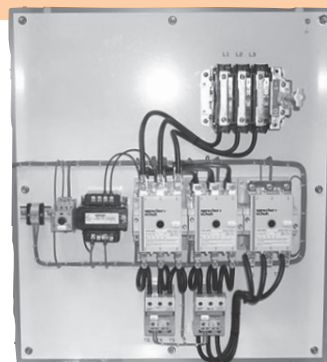
Our facility is ISO 9001 certified. That was the catalyst in allowing Sprecher + Schuh to obtain Atmospheres Explosives certification (ATEX). ATEX certification permits us to build explosion-proof equipment and panels to be supplied across the European Union, including Canada.



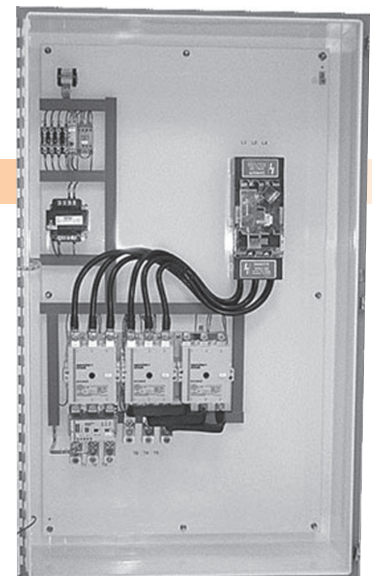
*Explosion Proof
Non-combination Starter*



Part-Winding Starter



Multi-Speed Starter



Wye-Delta Starter

Catalog Number Coding

Standard Starters and Enclosed Contactors

FMS and KWIKstarters do not use these principles

CAT 7-30 - 480

Contactors or Starter Type

Contactor Size

Coil Code (or CPT)

Non-reversing

- CA** Contactor
- CAT** Starter
- CBT** Starter (Single Phase)
- CATN** Starter (NEMA- Three Phase)
- CBTN** Starter (NEMA- Single Phase)

Reversing

- CAU** Reversing Contactor
- CBU** Reversing Contactor (Single Phase)
- CAUT** Reversing Starter
- CBUT** Reversing Starter (Single Phase)
- CAUTN** Reversing Starter (NEMA)

Multi-speed

- CAZTT** Multispeed-Two Wind. (Conts/VAR TQ)
- CAZHT** Multispeed-Two Wind. (Const. HP)
- CAETT** Multispeed-One Wind. (Conts/VAR TQ)
- CAEHT** Multispeed-One Wind. (Const. HP)

Reduced Voltage

- CAAT** Autotransformer Starter
- CAYT** Wye-Delta Starter
- CAPWT** Part Winding Starter

Pump Panels

- CAPT** Simplex Pump Panel
- CAPTN** Simplex Pump Panel (NEMA Size)
- CADPT** Duplex Pump Panel

Small - Series CA7 ①

- 7-9(E)
- 7-12(E)
- 7-16(E)
- 7-23(E)
- 7-30(E)
- 7-37(E)
- 7-43(E)
- 7-55(E)
- 7-60(D)
- 7-72(D)
- 7-85(D)
- 7-97(D)

Medium - Series CA9

- 9-116(-EI)
- 9-146(-EI)
- 9-190(-EI)
- 9-205(-EI)
- 9-265(-EI)
- 9-305(-EI)
- 9-370(-EI)
- 9-400-EI
- 9-460-EI
- 9-580-EI
- 9-750-EI
- 9-860-EI
- 9-1060-EI

AC

- 24Z
- 120
- 220W
- 277
- 415
- 480
- 600

DC

- 12E
- 24E, 24DD
- 24W
- 36E
- 48E
- 110E, 110DD
- 220E

AC/DC

- 24W
- 48W
- 120W
- 480W

Control Transformer

Code	Primary	Secondary
XA	208	120
XB	240	120
XC	480	120
XD	575	120
XE	240	24
XF	480	24
XG	380	110

For additional **Control Transformer Codes**, refer to Modification pages in this section.

**This illustration is for reference only.
Turn to the appropriate page to determine
specific catalog number.**

① (D) & (E) suffix designates contactors with DC coils

EED

TB20

G

3

Overload Relay

Short-Circuit / Disconnect

Enclosure

Enclosure Cover Control

Options

CEP7 Second Generation - Solid State
CA7-9 thru CA9-1060-EI

D1... CEP7 O/L Relay, 3Ø, Class 10, man. reset
E... CEP7S O/L Relay, 1Ø, (selectable)
E... CEP7 O/L Relay, 3Ø, (selectable)
CT.. Current Transformers

CT7N - Bimetallic Thermal
CA7-9 thru CA7-97

...A-C CT7N O/L Relay, Class 10, manual or automatic reset
...P CT7N O/L Relay, Class 10, manual or automatic reset, separate mount

G General Purpose - Type 1
D Dusttight - Type 12
W Watertight - Type 4
C Watertight Corrosion Resistant - Type 4X
R Raintight - Type 3R
E Explosion proof - Type 7

Non-Reversing

- 1 Pilot Light Only
- 2 Pilot Lights (2) Only
- 3 "Start-Stop" PB
- 4 "On-Off" PB
- 5 "Hand-Auto" S/S
- 6 "Off-On" S/S
- 7 "Hand-Off-Auto" S/S
- 9 "Emergency Stop" PB
- 0 None

Reversing

- 2 Pilot Lights (2) Only
- 3 "For-Stop-Rev" PB
- 4 "Up-Stop-Down" PB
- 5 "Open-Stop-Close" PB
- 6 "For-Off-Rev" S/S
- 7 "Up-Off-Close" S/S
- 8 "Open-Off-Close" S/S
- 0 None

Multi-speed

- 2 Pilot Lights (2) Only
- 3 "High-Stop-Low"
- 4 "Fast-Stop-Slow"
- 5 "High-Off-Low"
- 6 "Fast-Off-Slow" S/S

For additional **Cover Control Codes**, refer to Modifications page in this section.

Through-the-Door Operated Combo					
Thermal Magnetic Circuit Breaker		Fusible Disconnect		Non Fusible Disconnect	
TB(H)15	15 Amp	JF61	600V/30A	JU61	600V/30A
TB20	20 Amp	JF62	600V/60A	JU62	600V/60A
TB25	25 Amp	JF63	600V/100A	JU63	600V/100A
	↓ thru ↓	JF64	600V/200A	JU64	600V/200A
		JF65	600V/400A	JU65	600V/400A
		JF66	600V/600A		
		JF67	600V/800A		
Blank	None	Blank	None	Blank	None

* TBH represents high interrupt capacity breaker

For complete listing of **Option Codes**, refer to Modification pages in this section.

NEMA / UL Enclosure Type Definitions


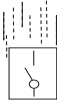

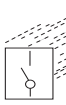
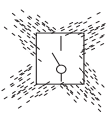
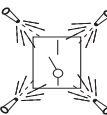
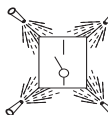
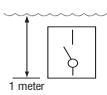
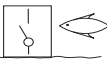

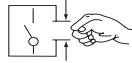
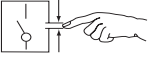
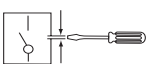
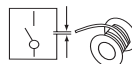

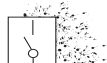
For a degree of protection against:	NEMA / UL Type (IP Equivalent ①)								
	Indoor Use			Outdoor Use		Indoor or Outdoor Use			
	1 (IP23)	12 (IP55/65)	13 (IP65)	3R	3 (IP64)	4 (IP66)	4X (IP66)	6P	6 (IP67)
Incidental contact with enclosed equipment	✓	✓	✓	✓	✓	✓	✓	✓	✓
Falling dirt	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rust	✓	✓	✓	✓	✓	✓	✓	✓	✓
Circulating dust, lint, fibers and flyings		✓	✓		✓	✓	✓	✓	✓
Windblown dust					✓	✓	✓	✓	✓
Falling liquids and light splashing		✓	✓		✓	✓	✓	✓	✓
Rain (limited water allowed inside)				✓	✓	✓	✓	✓	✓
Rain (no water allowed inside)					✓	✓	✓	✓	✓
Snow and sleet				✓	✓	✓	✓	✓	✓
Hosedown and splashing water						✓	✓	✓	✓
Occasional prolonged submersion								✓	✓
Oil or coolant spraying or splashing			✓						
Corrosive agents							✓	✓	
Occasional temporary submersion								✓	✓

Explosion-Proof Enclosure Type Definitions

NEMA Classifications - Marked with Rated Class, Division, and Group	
NEMA 7	For use in indoor locations classified as Class I, Groups A, B, C or D, as defined in the National Electrical Code
NEMA 8	For use in indoor or outdoor locations classified as Class I, Groups A, B, C or D, as defined in the National Electrical Code - oil immersed
NEMA 9	For use in indoor locations classified as Class II, Groups E, F or G, as defined in the National Electrical Code
Summary of NEC Classes and Group Examples	
Group	Class I (Potentially explosive gas or vapor)
A	Acetylene
B	Hydrogen, Ethylene Oxide, Propylene Oxide
C	Ether, Hydrogen Sulfide, Hydrazine, Nitroethane
D	Methane, Acetone, Benzene, Gasoline, Naptha
Group	Class II (Potentially explosive dusts)
E	Metallic Dusts (all metals)
F	Carbonaceous Dusts (coal, asphalt, etc.)
G	Nonconductive Dusts (grain, drugs, pesticides, plastics, dyes, etc.)
Summary of NEC Divisions	
Division 1	Potentially explosive substance present under normal operating conditions
Division 2	Potentially explosive substance present under abnormal operating conditions

① IP Equivalents are only approximate. It is the responsibility of the user to verify the enclosure rating necessary for the given application.

IP Ratings Definitions

<p>IP Ratings Definitions</p> <p>The first IP number (left side of chart) is protection against solid objects. The second IP number (across top) is protection against liquids. The chart itself shows degrees of protection according to IEC 529.</p>	 No protection IP...0	 Protected against vertically falling drops of water (condensation) IP...1	 Protected against dripping water with enclosure up to 15° from vertical IP...2	 Protected against sprayed water up to 60° from vertical IP...3	 Protected against sprayed water from all directions (limited ingress permitted) IP...4	 Protected against low pressure water jets from all directions (limited ingress permitted) IP...5	 Protected against strong jets of water from all directions IP...6	 Protected against immersion up to one meter IP...7	 Protected against long periods of immersion under pressure IP...8
<p>IP0...</p>  No protection IP00									
<p>IP1...</p>  Protected against solid objects up to 50mm (accidental touch by hands) IP10		IP11	IP12						
<p>IP2...</p>  Protected against solid objects up to 12mm (fingers, knuckles) IP20		IP21	IP22	IP23					
<p>IP3...</p>  Protected against solid objects up to 2.5mm (tools, wires) IP30		IP31	IP32	IP33	IP34				
<p>IP4...</p>  Protected against solid objects up to 1mm (wires) IP40		IP41	IP42	IP43	IP44				
<p>IP5...</p>  Protected against dust (limited ingress permitted) IP50				IP53	IP54	IP55	IP56		
<p>IP6...</p>  Totally protected against dust IP60						IP65	IP66	IP67	

Custom Control Panels

Designed and built to meet *Your* needs

C
Custom Control Panels



Need Custom Control Panels? You Got It

Sprecher + Schuh is your go to builder for custom motor control panels. Our panel shops are UL508 and CSA approved. This means our knowledgeable team can design your panel for custom applications to meet UL/CSA, ATEX, UL1203, and CE standards. Our engineering and custom quotes staff work with the customer one-on-one in designing a motor control panel that best fits the customer's needs. No job is too small or too big for our staff to take on.

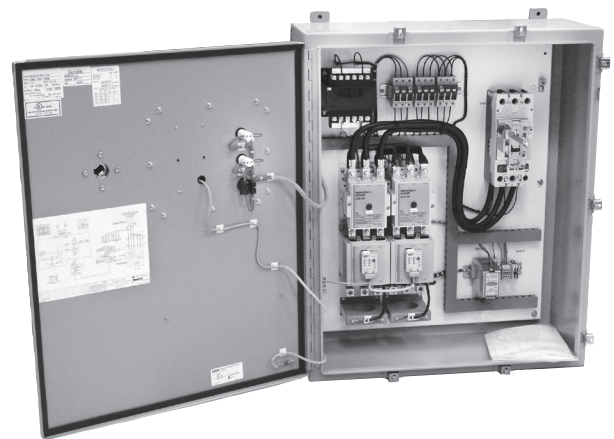
We continuously strive to develop innovative, new products and improve existing designs. We constantly strive to maintain a superior level of service including our ISO 9001 Certification.

Our large panel shop is designed to accommodate our customers' needs. We stock not only Sprecher + Schuh components but also MCCB and popular enclosures in a variety of sizes and types (metallic, non-metallic, and explosion-proof). This means we can design, assemble, wire, and quickly ship a variety of custom panels.

What Can We Build For You?

Regardless of your industry or custom control panel needs, we at Sprecher + Schuh have the engineering experience and manufacturing facilities to design and build your panels. Whether your need is to design an OEM panel that will be repeated, or a one-of-a-kind, we have an experienced engineering and quality control team dedicated to providing the best solution to your custom control panels. Our manufacturing facilities are staffed with experienced wiring and installation technicians, ensuring your custom panel meets safety and performance criteria. Through this commitment to service, and never-ending attention to detail, we continue to be the first and last words in motor protection.

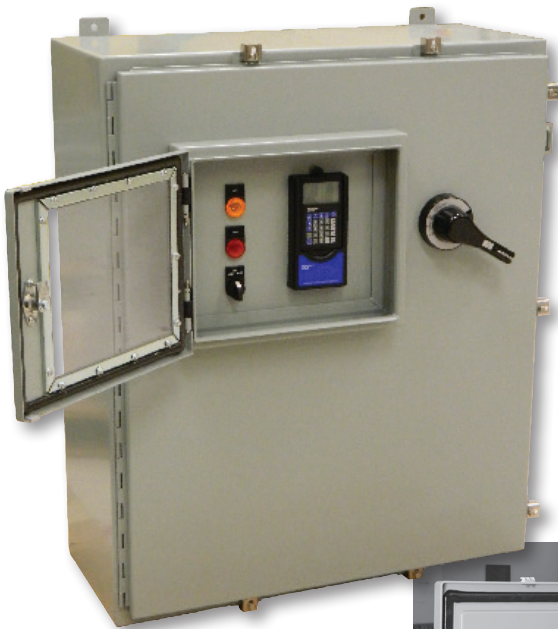
ISO9001, UL508 & UL1203 (NNNY) 
ATEX
Certified Panel Shop



Custom Built Panels

Custom built to your specifications!

- Multi-Motor Starter Panels
- Combination & Non-Combination Motor Starters
- Reduced Voltage Starters
- Softstarter Panels (see Section D)
- Multi-plex Pump Panels
- Door-in-Door Panels
- Explosion-Proof Starters
- UL508/CSA Labeled Custom Panels
- ATEX Explosion Proof Panels
- Labeled Service Entrance Rated Panels
- and many more!



For your
*Custom
application*

contact:
customquotes@sprecherschuh.com

