

# Explosion-proof Starters

Safe and reliable starting in hazardous applications

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Explosion-Proof Starters

ISO9001, UL508 & UL1203 (NNNY)



ATEX

Certified Panel Shop



Explosion Proof motor control panel mounted directly to motor and pump frame.

Sprecher + Schuh offers explosion-proof starters for environments covered by the following classifications:

**NEMA:** Type 4/4X, 7BCD, 9EFG

**NEC:** Class I, Div. 1 Groups B, C, D  
Class II, Div. 1 Groups E, F, G  
Class III

**UL:** Standard 1203  
Hazardous (Classified)  
Locations

**CSA:** Standard 22.2 No. 25 & 30

Explosion-proof combination starters also comply with NEMA Type 3, 3R, 4 & 4X. Optional ATEX certification is available in Class I, Zone 1, AExd I1B, Exd I1B+H2, IEXEx.

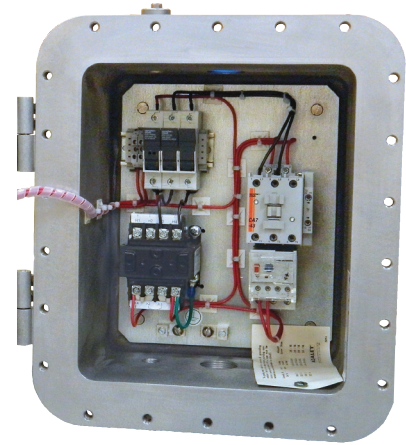
## NEMA Type 4, 4X, 7, & 9 protection

NEMA Type 7 enclosures are designed to provide protection against an internal explosion when operated in a hazardous gas environment. NEMA Type 9 enclosures protect from internal explosion in a hazardous dust environment.

Both types must also prevent enclosed heat generating mechanisms from causing external surfaces to reach temperatures capable of igniting explosive gas-air mixtures in the surrounding atmosphere. Sprecher + Schuh explosion-proof starters meet all requirements of both classifications. Inclusive with the selection of these explosion proof starters is a gasket inserted into the flange of the enclosure. This included gasket also gives the enclosures a NEMA Type 4 watertight and NEMA Type 4X corrosion resistance approval.

## Starting with the best

At the heart of all explosion-proof starters is Sprecher + Schuh's CAT7 and CAT9 line of motor starters. These starters are compact and offer intermediate sizes to better match specific motor requirements. This equates to generous wiring space and less wasted horsepower capacity.



## Top line protection...

Explosion Proof starters are equipped with Sprecher + Schuh's CEP7 solid state overload relay standard. Unlike traditional overload relays that indirectly sense motor current through heater elements, CEP7 solid state overload relays measure motor current directly through integrated current transformers and on board electronics. The electronics provide numerous advantages over electromechanical relays.

## Combination starters for protection and convenience

Explosion-proof combination starters can include either a UL489 approved Thermal Magnetic Circuit Breaker (MCCB) or non-fusible disconnect. The MCCB utilizes the instantaneous trip ability of a magnetic breaker for short circuit currents combined with the overload tolerance of thermal circuit breakers for normal starting demands. An MCCB can also be quickly reset after the fault has been cleared.

A molded case switch (MCS) is used in applications requiring only a non-fused disconnect.

**Series CAT7 & CAT9**

Maximum Horsepower Three Phase				Without Short Circuit Protection	DIM	MCCB Amps	With Thermal Magnetic Circuit Breaker (MCCB)	DIM	With Non Fusible Disconnect	Price	DIM
200V	230V	460V	575V	Catalog No.			Catalog No.		Catalog No.		
2	2	5	5	CAT7-30-*◆-E0	A7	15	CAT7-30-*◆-TB15E0	E7			
2	2	5	5	CAT7-30-*◆-E0	A7	15	CAT7-30-*◆-TBH15E0	E7			
3	3	7.5	10	CAT7-30-*◆-E0	A7	20	CAT7-30-*◆-TB20E0	E7			
3	3	7.5	10	CAT7-30-*◆-E0	A7	20	CAT7-30-*◆-TBH20E0	E7			
~	5	10	~	CAT7-30-*◆-E0	A7	30	CAT7-30-*◆-TB30E0	E7			
5	~	~	15	CAT7-30-*◆-E0	A7	35	CAT7-30-*◆-TB35E0	E7			
5	~	~	15	CAT7-30-*◆-E0	A7	35	CAT7-30-*◆-TBH35E0	E7			
~	7.5	15	20	CAT7-30-*◆-E0	A7	40	CAT7-30-*◆-TB40E0	E7			
~	7.5	15	20	CAT7-30-*◆-E0	A7	40	CAT7-30-*◆-TBH40E0	E7			
7.5	10	20	25	CAT7-30-*◆-E0	A7	50	CAT7-30-*◆-TB50E0	E7			
7.5	~	20	25	CAT7-30-*◆-E0	A7	50	CAT7-30-*◆-TBH50E0	E7			
10	10	25	30	CAT7-37-*◆-E0	A7	50	CAT7-37-*◆-TB50E0	E7			
10	10	~	30	CAT7-37-*◆-E0	A7	50	CAT7-37-*◆-TBH50E0	E7			
~	~	30	~	CAT7-43-*◆-E0	A7	70	CAT7-43-*◆-TB70E0	E7			
~	15	~	~	CAT7-43-*◆-E0	A7	80	CAT7-43-*◆-TB80E0	E7			
15	20	40	40	CAT7-55-*◆-E0	A7	80	CAT7-55-*◆-TB80E0	E7			
15	20	40	40	CAT7-55-*◆-E0	A7	80	CAT7-55-*◆-TBH80E0	E7			
~	~	~	40	CAT7-60-*◆-E0	A7	80	CAT7-60-*◆-TB80E0	F7			
~	~	~	40	CAT7-60-*◆-E0	A7	80	CAT7-60-*◆-TBH80E0	F7			
15	20	40	50	CAT7-60-*◆-E0	A7	100	CAT7-60-*◆-TB100E0	F7			
15	20	40	50	CAT7-60-*◆-E0	A7	100	CAT7-60-*◆-TBH100E0	F7			
20	25	50	60	CAT7-72-*◆-E0	A7	125	CAT7-72-*◆-TB125E0	F7			
20	25	50	60	CAT7-72-*◆-E0	A7	125	CAT7-72-*◆-TBH125E0	F7			
25	30	60	~	CAT7-85-*◆-E0	A7	125	CAT7-85-*◆-TB125E0	F7			
~	~	~	75	CAT7-97-*◆-E0	A7	150	CAT7-97-*◆-TB150E0	F7			
~	~	~	75	CAT7-97-*◆-E0	A7	150	CAT7-97-*◆-TBH150E0	F7			
30	~	75	~	CAT7-97-*◆-E0	A7	175	CAT7-97-*◆-TB175E0	F7			
30	~	75	~	CAT9-116-*◆-E0	B7	175	CAT9-116-*◆-TB175E0	G7			
~	40	~	100	CAT9-116-*◆-E0	B7	200	CAT9-116-*◆-TB200E0	G7			
40	~	100	125	CAT9-146-*◆-E0	B7	225	CAT9-146-*◆-TB225E0	G7			
~	50	~	~	CAT9-146-*◆-E0	B7	250	CAT9-146-*◆-TB250E0	G7			
50	60	125	150	CAT9-190-*◆-E0	C7	300	CAT9-190-*◆-TB300E0	H7			
60	75	150	200	CAT9-205-*◆-E0	C7	350	CAT9-205-*◆-TB350E0	H7			
75	~	175	~	CAT9-265-*◆-E0	D7	400	CAT9-265-*◆-TB400E0	H7			
~	100	200	250	CAT9-265-*◆-E0	D7	450	CAT9-265-*◆-TB450E0	H7			
100	~	~	~	CAT9-305-*◆-E0	D7	500	CAT9-305-*◆-TB500E0	H7			
~	125	250	300	CAT9-305-*◆-E0	D7	600	CAT9-305-*◆-TB600E0	H7			
~	~	~	350	CAT9-370-*◆-E0	D7	600	CAT9-370-*◆-TB600E0	H7			
125	150	300	~	CAT9-370-*◆-E0	D7	700	CAT9-370-*◆-TB700E0	H7			
125	150	~	400	CAT9-400-EI-*◆-E0	D7	700	CAT9-400-EI-*◆-TB700E0	H7			
~	~	350	~	CAT9-400-EI-*◆-E0	D7	800	CAT9-400-EI-*◆-TB800E0	H7			
150	~	~	~	CAT9-460-EI-*◆-E0	D7	800	CAT9-460-EI-*◆-TB800E0	H7			
~	200	400	500	CAT9-460-EI-*◆-E0	D7	1000	CAT9-460-EI-*◆-TB1000E0	H7			
200	~	~	600	CAT9-580-EI-*◆-E0	R/F	1000	CAT9-580-EI-*◆-TB1000E0	R/F			
~	250	500	~	CAT9-580-EI-*◆-E0	R/F	1200	CAT9-580-EI-*◆-TB1200E0	R/F			

To order, select equivalent Thermal-Magnetic Circuit Breaker catalog number from this chart. Specify on order, "With molded case switch."

**NOTE:** Catalog numbers and enclosure dimensions reflect contactors with AC coils. For DC coils, select Coil Code from the DC Coil Code table on page C104 and follow the instructions for modifying catalog numbers.

Larger sizes and reversing starters available. Contact your Sprecher + Schuh representative.

**Ordering Instructions**

Specify Catalog Number	
Replace (*) with Coil Code	See page C104 See pages C105-C106 See pages C107-C111
Replace (◆) with O/L Relay	
Factory Modifications available	

- ① Dimensional information starts on page C122.
- ② Enclosures have gaskets for outdoor use (Type 4).
- ③ Applicable to 600Y/347V only.
- ④ The short circuit and kAIC is relegated to the contactor's 10kA. Contact your Sprecher + Schuh representative for a higher kAIC.
- ⑤ CAT9-116...CAT9-370 starters are available with "EI" option for PLC interface. Change catalog number to include "-EI". Example: CAT9-116-\*◆-TB175E0 becomes CAT9-116-EI-\*◆-TB175E0. See page C104 for price adder.

#### Pilot Device Kits – NEMA Type 4/4X/7/9 Applications (For use with Explosion Proof Enclosures)

Kits	Description	Contact Blocks included		Catalog Number
		NO	NC	
	<b>START Pushbutton</b> Green, Non-illuminated, momentary, with legend ❶❷	1	0	XHPB-BT4-XNP
	<b>STOP Pushbutton</b> Red, Non-illuminated, momentary, with legend ❶❷	0	1	XHPB-BT5-XNP
	<b>DUAL Pushbutton</b> Non-illuminated, momentary	1	1	XHDPB-BT1A
	<b>OFF-ON Selector Switch</b> Non-illuminated, maintained, with legend	1	0	XHSS-1-BT4-XNP/OFF-ON
	<b>HAND-AUTO Selector Switch</b> Non-illuminated, maintained, with legend	1	1	XHSS-1-BT1A-XNP/HAND-AUTO
	<b>HAND-OFF-AUTO Selector Switch</b> Non-illuminated, maintained, with legend	2	0	XHSS-3-BT2-XNP/HAND-OFF-AUTO
	<b>FWD-OFF-REV Selector Switch</b> Non-illuminated, maintained, with legend	2	0	XHSS-3-BT2-XNP/FWD-OFF-REV
	<b>RED EMERGENCY STOP Pushbutton</b> Non-illuminated, maintained push-pull, with legend	1	1	XHPPM-BT1A-XNP/ESTOP
	<b>Mechanical RESET Pushbutton</b>	0	0	XRB
	<b>GUARDED Pilot Light ❸</b> 120V incandescent, screw terminations	Amber Blue Clear Green Red White		XLAT-GH XLBT-GH XLCT-GH XLGT-GH XLRT-GH XLWT-GH
	<b>PUSHBUTTON LOCKOUT - Accessory</b> Padlock device to activate pushbutton	~		XHPL
	<b>OPERATOR PROTECTIVE BOOT</b> Rubber push button cap	Green Red		XBG XBR
	<b>OPERATOR PROTECTIVE BOOT</b> Rubber selector switch cap	Black		XBSB
	<b>COMBINATION BREATHER/DRAIN ❹</b> Install on top of enclosure for Breather Install in bottom of enclosure for Drain	Stainless steel		XDBH2

❶ Legend Plates are anodized aluminum with engraved letters on black background (XNP).

❷ STOP has red background. START has green background.

❸ One of the NPSM hole locations on the A7 dimensional enclosure could create the need for a short pilot light. Refer to factory for details.

❹ Requires purchase of 2 pcs for application of both Breather and Drain.