

# Methods of Applying Protection Devices with Sprecher + Schuh Products

## Per UL508A Electrical Industrial Control Panels

### 1 Branch Circuit Protection Device (BCPD)

Acceptable components

- Branch circuit protection device (UL489)
- Self-protected Type E manual motor controller (UL508-E)

### 2 Control Transformer Primary Protection

Acceptable components

- UL-listed fuses (UL512)
- Branch circuit protection device (UL489)
- Supplementary protective device (UL1077)

### 3 Control Transformer Secondary Protection

Acceptable components

- Supplementary protective device (UL1077)
- Miscellaneous, miniature and micro fuses

### 4 Supplementary Circuit Protection

Acceptable components

- Supplementary protective device (UL1077)
- Branch circuit protection device (UL489)
- Miscellaneous, miniature and micro fuses

### 5 Power Transformer Fuse/Branch Circuit Protection ( $\geq 1$ kVA)

Acceptable components

- Branch circuit protection device or power-related transformer fuses (UL489/512)

### 6 Power Transformer Fuse/Branch Circuit Protection

Acceptable components

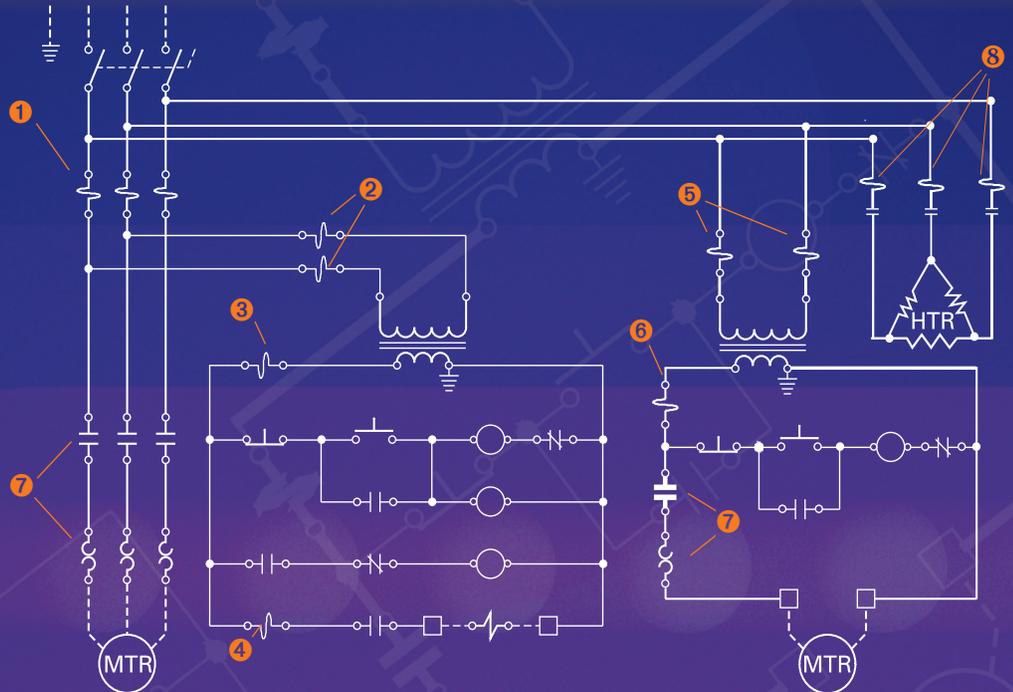
- Branch circuit protection device or power-related transformer fuses (UL489/512)

### 7 Motor Load Protection

- Manual motor controllers (UL508-E)

### 8 Non-Motor load

- Branch circuit protection device (UL489)



L11/L10 Disconnect Switch



V7 Fuse Blocks



KT7 Motor Circuit Protector



KTU7 Molded Case Circuit Breaker



L8 Supplementary Protector



L9 Miniature Circuit Breaker



AMBUS Fuse Holder



This information is a guide for protection devices in North American applications per UL/NEC. Be sure to consider all applicable local and national codes for your particular installation.

# Defining Electrical Standards Relating to Protection Devices

Circuit protection devices should be applied in accordance with the product specifications, as well as local and national electrical codes. Sprecher+Schuh protection devices offer equipment manufacturers a product that meets both US and international protection standards. A variety of Sprecher+Schuh Protection Devices are approved by Underwriters Laboratory's standards and are applicable for use under the guidelines of the National Electric Code (NEC). Internationally, Sprecher+Schuh Protection Devices are CE marked and meet CSA and IEC standards for worldwide acceptance.

Sprecher+Schuh Protection Devices are an excellent choice for a wide variety of electrical protection circuits. See the listings below to gain a broader understanding of additional electrical standards pertaining to other types of circuit protection.

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## UL 508 Manual Motor Controllers

A manual motor controller is suitable for use as an ON/OFF (make/break) controller for motors and other loads. These devices also have an overload tripping function which must be compliant with applicable tests for an overload relay. In addition, an overload tripping device must operate independently of the manipulation of the handle (trip free).

A listed Manual Motor Controller, additionally marked "Suitable as a Motor Disconnect," shall be permitted as a disconnecting means where installed between the final motor branch-circuit short-circuit, transformer protection, device and the motor. General uses: control circuit, transformer protection, motor loads, general use loads, lighting loads, resistive loads.

Although Sprecher+Schuh Supplementary Protectors are not listed as UL 508 manual motor controllers, Sprecher + Schuh offers our KT7 Motor Controller series, which does meet the UL 508 standard at a competitive price.

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## UL 489 Branch Circuit Protection

Products UL Listed for Branch Circuit Protection, which are approved and evaluated according to the UL 489 Standard for "Molded Case Circuit Breakers" (usually applicable at 240V maximum when associated with Supplementary Protectors). General uses: Branch Circuit Protection Device (BCPD), protect motor loads, protect external loads such as receptacles or HVAC & refrigeration equipment.



## CSA C22.2 No. 5.1

Products evaluated according to the Canadian Standards Association (CSA), which are intended to protect branch circuits in accordance with the Canadian Electric Code (CEC). The CSA C22.2 No. 5.1 standard is closely related to the UL 489 standard.

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## UL 1077 Supplementary Protection

UL recognized supplementary protectors evaluated according to UL 1077 standard. Supplementary protectors are intended for use as overcurrent protection within an appliance or other electrical equipment where branch circuit protectors shall not be used as substitutes for UL 489 branch circuit protective devices. General uses: control circuit components such as relay coils, starter coils, timers and remote solenoids... etc.; control transformers protection (primary & secondary); sensitive internal electronic circuitry.



## CSA C22.2 No. 235

The CSA C22.2 No. 235 Standard is closely related to the UL 1077 Supplementary Protector standard.



## IEC 60947-2 Standard

Electrical standards for industrial applications using circuit protection.

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