

# AUTOMATIC AC POWER TRANSFER SWITCH



Model 1704-120-18-SW1 (Front & Back)

- ENABLES TWO AC SOURCES TO PROVIDE AUTOMATIC REDUNDANT POWER TO ESSENTIAL LOADS
- 120VAC, 60HZ, 1Ø UP TO 18A
- HIGH-SPEED TRANSFER CIRCUITRY
- COMPACT 1U (1.75" HIGH) ENCLOSURE

The Model 1704 automatic ac power transfer switch enables two 120-Vac, 60-Hz, single-phase power sources to operate in a redundant manner to provide backup power for essential ac loads. The unit integrates power-failure sensing and automatic high-speed switchover circuitry in a 1U (1.75-inch high) enclosure that is designed for mounting into a standard 19-inch or 23-inch equipment rack. Typical applications employ a dc-to-ac power inverter coupled with commercial ac power (or a second inverter) via the Model 1704 to provide an uninterruptible ac power system at equipment sites where battery backup is present such as wireless/wireline telecom facilities and electric-utility substations.

## SPECIFICATIONS

**Operating Voltage and Frequency**  
120 Vac, 60 Hz nominal

**Maximum Current Rating**  
18 Amperes

**Source Compatibility**  
Intended for installation using standard premises wiring practices wherein both ac sources share a *common neutral connection*. Intended for use with sine-wave ac power sources, but compatible with most "quasi-sine" and "stepped" waveshapes (consult factory for additional information).

**Automatic Transfer**  
The load power present at the output receptacles is normally provided by the preferred ac source. However, if the preferred source is interrupted, an internal transfer switch automatically transfers the load to the backup ac power source. The transfer time from preferred to backup is short (2-3 msec. typical), and such transfers are normally not detected by even highly sensitive loads. Upon restoration of the preferred source, the transfer circuitry monitors the ac line for about 4 seconds to verify its stability before transferring back to the preferred source.

**Temperature Range**  
Operating: -10°C to +50°C  
Storage: -40°C to +85°C

**Front-Panel Controls and Indicators**  
A combination circuit breaker/on-off switch (20-ampere rating) is provided in series with the ac line connection for each of the two power sources. Two LED status indicators display which ac source ("preferred" or "backup") is providing power to the output receptacles, and a third LED indicates the absence of one of the sources ("alarm" condition).

**Rear-Panel Wiring Connections**  
Flexible power cords (3-conductor / #12 AWG, 9 feet in length), terminated with NEMA type 5-20P plugs, are provided for connection to the two ac sources.

Standard ac receptacles facilitate power distribution to multiple loads (combined current not to exceed 18 amperes). The number and type of receptacles varies depending on model number (see "Model Numbering Information").

Access to a set of Form C contacts is provided via a three-position terminal block having maximum voltage, current and power ratings of 125 volts (ac or dc), 2 amperes and 60 watts, respectively. Connection to chassis ground is provided via a #10-32 stud and locking nut.

## Mechanical Description

Size - dimensions given in inches (millimeters):  
1.7 (44) high x 17.0 (432) wide x 5.5 (140) deep, excluding mounting brackets and front/rear panel protrusions.

Weight:  
Approximately 6 pounds

Mounting:  
Brackets are provided for installation into a standard 19-inch or 23-inch equipment rack.

## Model Numbering Information

The model number includes the product series (1704), the nominal voltage rating (120 Vac), the maximum current rating (18 amperes), and an "option" suffix. Standard options are: **SW1**, which provides 7 ac receptacles, NEMA type 5-15R, on the rear panel (rated for 15 A max. from any one receptacle) and **SW2**, which provides 2 ac receptacles, NEMA type 5-20R (rated for the unit's full 18-ampere capacity from any one receptacle). For example, the model number for the unit pictured in this bulletin is **Model 1704-120-18-SW1**. Additional options, including other input/output terminations, are available upon special request.

## Additional Information

For additional information about this and other Wilmore Electronics power conversion equipment, including dc-to-ac inverters, dc-to-dc converters and uninterruptible power systems, please contact our Sales Department by telephone (919) 732-9351 or fax (919) 732-9359, or visit our web site at [www.wilmoreelectronics.com](http://www.wilmoreelectronics.com).