

# RTB-NB/RTBD-NB

No Break Bypass/Isolation Switches



*Russelectric*  
POWER CONTROL PEOPLE YOU CAN RELY ON

# RTB-NB/RTBD-NB

## No Break Bypass/Isolation Switches

Russelectric RTB-NB and RTBD-NB No Break Bypass/Isolation Switches combine all the functions of an Automatic Transfer Switch (ATS) plus a method for manually bypassing power from a dead source to a live source in the event the transfer switch is disabled. They also allow the transfer switch to be isolated and deenergized for maintenance, testing, or repair without interrupting power to the load. The ATS is a standard open transition Russelectric Model RMT or RMTD. RTB-NB and RTBD-NB switches are identical in size and carry the same closing and withstanding ratings as Russelectric Standard RTB and RTBD Bypass/Isolation Switches.

### The Industry's Highest 3-Cycle Closing and Withstand Ratings

Russelectric RTB-NB and RTBD-NB Bypass/Isolation Switches have the same closing and withstand ratings as the ATS, which are the highest 3-cycle closing and withstand ratings of any switches available today (see chart).

#### 3-Cycle Closing and Withstand Ratings RMS Symmetrical Amperes 480 VAC Based on Testing Under UL-1008

Switch Rating Amperes	Closing and Withstand
100 - 400	42,000
600 - 800	65,000
1000 - 1200	85,000
1600 - 4000	100,000

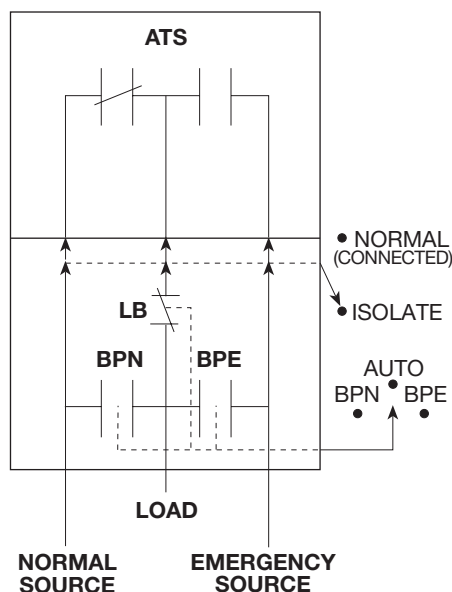
These 3-cycle ratings mean that Russelectric switches are not restricted to specific manufacturer's circuit breakers, but are fully rated and labeled for use with any manufacturer's circuit breaker with instantaneous trip. These unrestricted ratings are extremely important, since they allow engineers to apply switches without problems of coordination with different breaker types.

Underwriters Laboratories, Inc. requires a transfer switch to be able to close in on

the same amount of fault current as it can withstand before they allow it to be listed with a short circuit rating. In view of this, fuse protection becomes mandatory where extremely high short circuit current is available. All Russelectric switches have closing and withstand ratings of 200,000 amperes when coordinated with current limiting fuses.

### Operation

To bypass normal to load, emergency to load, or to return from either bypassed position, the bypass switch must parallel the source to which the ATS is connected.



When the ATS is connected to the normal source, bypass normal to load may be accomplished. When the ATS is connected to the emergency source, bypass emergency to load may be accomplished. A solenoid interlock prevents bypassing to a source that is not connected.

### Bypass

Pushing the solenoid interlock button and moving the bypass handle to the "Bypass" position closes the bypass contacts (BP), paralleling them with the ATS contacts (see figure). After the BP

contacts are closed, mechanical interlocks immediately open the load break contacts (LB), disconnecting the load from the transfer switch while maintaining power to the load through the BP contacts. Coming out of bypass reverses this procedure, closing the LB contacts before opening the BP contacts, restoring power flow through the ATS without power interruption.

### Test

After bypassing the ATS as described above, power is no longer flowing through the ATS, but control power is still maintained to the ATS controls. Complete operational testing capability is available, including transferring the ATS from source to source, without disturbing the load.

### Isolate

After bypassing the ATS as described above, moving the isolation handle to the "Isolate" position simultaneously disconnects primary power and control power from the ATS. This operation physically releases the transfer switch base, which is equipped with casters so that it may be removed from the enclosure for inspection, maintenance, and repair. When reinserting the switch base, moving the isolation handle to the "Normal" position draws the switch base into the connected position, reconnecting both primary power and control power while maintaining power flow through the bypass contacts. The transfer switch is now ready to come out of bypass.

### Switching Between Bypassed Sources

The bypass/isolation switch is designed to operate as a manually operated backup transfer switch when the transfer switch is in the "Isolate" position. Moving the bypass handle from the "Bypass" position of the connected source to the "Auto" position and then moving it again to the "Bypass" position of the alternate source manually transfers the load from the initially connected source to the alternate source. This transfer is done "open transition".

For further information or a specification on RTB-NB and RTBD-NB switches, consult factory.