The Recognized Leader in Power Transfer Switch Technology
Offers the Most Advanced Transfer Switches in the World.

4000 SERIES POWER TRANSFER SWITCHES PRODUCT FEATURES

• Conventional two-position transfer configuration, plus closed and delayed transition modes of operation. All configurations available with either automatic or non-automatic control.

• UL listed to 1008 Transfer Switch Equipment & CSA certified to CSA 22.2 No.178-1978 Automatic Transfer Switches.

• Qualified to IEC 60947-6-1, CE marked (optional). (Limited to certain accessories.)

• Rated up to 600 VAC, 30 through 4000 amperes. Reliable and field proven solenoid operating mechanism.

• High withstand and close-on ratings including short time withstand current rating for optimum flexibility in circuit breaker coordination (800-4000 amperes).

• Solid, switched neutral configurations available.

Fig. 1: Three Pole 4000 SERIES Automatic Transfer Switch rated 800 amperes

4000 SERIES

ASCO Power Transfer Switches are the standard of the industry. High speed transfer of loads between alternate sources of power, regardless of ampacity size, is achieved by a reliable, field proven solenoid operating mechanism. When combined with a programmable microprocessor controller with keypad and LCD display, they offer the most advanced method of transferring all types of loads, such as motors, electronic drives, UPS’s and microprocessor based systems. 4000 SERIES Power Transfer Switches are available open or enclosed, in ampacity sizes from 30 through 4000 amperes with a limited selection of optional accessories.
ASCO Delayed-Transition Transfer Switches are designed to provide transfer of loads between power sources with a timed load disconnect position for an adjustable time period. Applications include older style variable frequency drives, rectifier banks, and load management applications.

- Available 150 through 4000 amperes.
- Utilizes reliable, field proven solenoid operating mechanisms.
- Mechanical interlocks to prevent direct connection of both sources.
- Indicator light (LED Type) for load disconnect position.
- Adjustable time delay for load disconnect position.

ASCO Automatic Closed-Transition Transfer Switches feature main contacts that overlap, permitting the transfer of electrical loads without power interruption. The switch transfers in a make-before-break mode if both sources are within acceptable parameters. Control logic continuously monitors source conditions and automatically determines whether the load transfer should be open (conventional non-overlap mode) or Closed-Transition. Available 150 through 4000 amperes. Closed-Transition Transfer within 5 electrical degrees is achieved passively, without control of engine generator set. Therefore, no additional control wire runs are required between the ATS and engine generator set governor. Plus, protective relaying may not be required under normal operation since the contact overlap time is less than 100 milliseconds (consult your local utility on protective relay requirements). Failure to synchronize indication, extended parallel time protection, and transfer switch lock out are standard features.
**NON-AUTOMATIC TRANSFER SWITCHING**

ASCO Non-Automatic Transfer Switches are electrically operated units which are operated with manual control switches mounted locally or at remote locations.

- Sizes from 30 through 4000 amperes.
- Microprocessor based controller provides for addition of optional accessories.
- Controller prevents inadvertent operation under low voltage conditions.
- Low control circuit operating currents allow for long line runs between remotely mounted manual control switches and the transfer switch.
- Source acceptability lights inform operator if sources a

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**WITHSTAND AND CLOSING RATINGS FOR ALL 4000 SERIES PRODUCTS**

<table>
<thead>
<tr>
<th>SWITCH RATING (AMPS)</th>
<th>UL 1008 WITHSTAND AND CLOSE-ON RATINGS</th>
<th>RECOMMENDED FUSES</th>
<th>SHORT TIME RATINGS 480V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SPECIFIC BREAKER</td>
<td>&quot;ANY&quot; BREAKER</td>
<td>VOLTS MAXIMUM</td>
</tr>
<tr>
<td>30</td>
<td>10KA</td>
<td>600V</td>
<td>100KA</td>
</tr>
<tr>
<td>70, 100, 125, 150</td>
<td>22KA</td>
<td>480V</td>
<td>10KA</td>
</tr>
<tr>
<td>200</td>
<td>10KA</td>
<td>600V</td>
<td>100KA</td>
</tr>
<tr>
<td>230</td>
<td>22KA</td>
<td>480V</td>
<td>10KA</td>
</tr>
<tr>
<td>260, 400, 600</td>
<td>50KA</td>
<td>480V</td>
<td>65KA</td>
</tr>
<tr>
<td></td>
<td>42K</td>
<td>600V</td>
<td>42KA</td>
</tr>
<tr>
<td>800-1200</td>
<td>65KA</td>
<td>600V</td>
<td>50KA</td>
</tr>
<tr>
<td>1600-2000</td>
<td>125KA</td>
<td>480V</td>
<td>100KA</td>
</tr>
<tr>
<td>2600-3000</td>
<td>-</td>
<td>600V</td>
<td>100KA</td>
</tr>
<tr>
<td>4000</td>
<td>-</td>
<td>600V</td>
<td>100KA</td>
</tr>
</tbody>
</table>

1) All WCR values indicated are tested in accordance with the requirements of UL 1008. See ASCO Pub. 1128 for more WCR information.
2) Application requirements may permit higher WCR for certain sizes of switch. Contact ASCO for guidance if application requires higher WCR.
3) Based on 3 cycles for 260-4000 A and 1.5 cycles for 33-230A switches. Applicable to circuit breakers with instantaneous trip elements.
4) Optional front connectors service (Accy 40MY and 40NY) limits 1600 and 2000 AG Frame switches to 85 kA Any breaker rating.
5) J Frame switches utilizing overlapping neutral (code “C”) are limited to 35 kA Any Breaker rating at 480V. 
6) J Frame switches utilizing overlapping neutral (code “C”) are limited to 35 kA Any Breaker rating at 480V.

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Fig. 4: Three pole Non-Automatic, electrically operated 200 ampere switch shown in Type 1 enclosure.
The 4000 SERIES microprocessor controller is used with all sizes of Power Transfer Switches from 30 through 4000 amperes. It represents the most advanced digital controller in the industry and includes, as standard, all of the voltage, frequency, control, timing and diagnostic functions required for most emergency and standby power applications.

Because of severe voltage transients frequently encountered with industrial distribution systems, the microprocessor logic board is separated and isolated from the power board as shown below. This improves electrical noise immunity performance and helps assure compliance with the rigorous transient suppression standards highlighted below.

**Fig. 5: 4000 SERIES Microprocessor Controller.**

**Fig. 6: Microprocessor Power and Logic PC Boards.**

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**4000 SERIES Microprocessor Controller**

| Emission Standard - Group 1, Class A | EN 55011:1991 |
| Generic Immunity Standard, from which: | EN 50082-2:1995 |
| Electrostatic Discharge (ESD) Immunity | EN 61000-4-2:1995 |
| Radiated Electromagnetic Field Immunity | ENV 50140:1993 |
| Electrical Fast Transient (EFT) Immunity | EN 61000-4-4:1995 |
| Surge Transient Immunity | EN 61000-4-5:1995 |
| Conducted Radio-Frequency Field Immunity | EN 61000-4-6:1996 |
| Voltage Dips, Interruptions and Variations Immunity | EN 61000-4-11:1994 |
4000 SERIES MICROPROCESSOR CONTROLLER

FEATURES

• Digital microprocessor.
• Touch pad programming of features and settings without the need for meters, or variable power supplies.
• Sixteen (16) selectable operating voltages available in a single controller.
• On-board diagnostics provide control panel and ATS status information to analyze system performance.
• Displays and counts down active timing functions.
• Selectable multi-language display (English, German, Portuguese, Spanish, or French. For others contact ASCO)
• Password protection to prevent unauthorized tampering of settings.
• Remote monitoring and control with ASCO PowerQuest® communications products. Specify optional accessory 72A or 72E.
• Load shed option for bus optimization applications. Specify optional accessory 30B.
• Lamp Test - Provides a convenient way to verify functionality of all LED's on the user interface.

VOLTAGE AND FREQUENCY SENSING

• 3-Phase under and over voltage settings on normal and emergency sources.
• Under and over frequency settings on normal and emergency.
• True RMS Voltage Sensing with +/- 1% accuracy; Frequency Sensing Accuracy is +/- 0.2%.
• Selectable settings: single or three phase voltage sensing on normal and emergency; 50 or 60Hz.
• Phase sequence sensing for phase sensitive loads.
• Voltage unbalance detection between phases.

STATUS AND CONTROL FEATURES

• Output contact (N/O or N/C) for engine-start signals.
• Selection between “commit/no-commit” on transfer to emergency after engine start and normal restores before transfer.
• Terminals for remote test or customer contact for peak shaving applications
• Advanced inphase algorithm which automatically measures the frequency difference between the two sources and initiates transfer at appropriate phase angles to minimize disturbances when transferring motor loads.
• Output signals for remote indication of normal and emergency source acceptability.
• Statistical ATS/System monitoring data screens which provide:
  • Total number of ATS transfers.
  • Total number of days ATS has been in operation.
  • Total number of hours that the normal and emergency sources have been available.

TIME DELAYS

• Engine start time delay - delays engine starting signal to override momentary normal source outages - adjustable 0 to 6 seconds.
• Transfer to emergency time delay - adjustable 0 to 60 minutes.
• Emergency source stabilization time delay to ignore momentary transients during initial generator set loading - adjustable 0 to 6 seconds.
• Retransfer to normal time delay with two settings:
  • Power failure mode - 0 to 60 minutes.
  • Test mode - 0 to 10 hours.
• Unloaded running time delay for engine cooldown - adjustable 0 to 60 minutes.
• Fully programmable engine exerciser with seven independent routines to exercise the engine generator, with or without loads, on a daily, weekly, bi-weekly or monthly basis.
• Contains all alarm signals, logic and time delays for use with closed transition switches.
• Insynch time delay - 0 to 3 seconds.
• Failure to synchronize - 1 to 5 minutes.
• Extended parallel time - 0.1 to 1.0 seconds.
• Transfer switch locked out.
• Delayed transition load disconnect time delay - adjustable 0 to 5 minutes. (Delayed Transition Switches only.)
Provides voltage and frequency setting values for normal and emergency sources. Voltage pick-up, dropout and trip settings are set in percentage of nominal voltage and are also displayed in rms voltage values.

Displays direct reading display for setting time delays.

Displays voltage for each phase, frequency, phase rotation and voltage unbalance for both normal and emergency sources.

Displays the relative phase angle between sources and frequency differential to indicate the controller is awaiting an inphase condition.

Seven independent programs, load/no load selection, flexible run times and daily, weekly, bi-weekly and monthly exercise routines.

Standard features can be activated with the keypad. As an example, when enabled, the “shed load” option causes the transfer switch to transfer the load off of the specified source. If desired, the load shed transfer can be made inphase.

Instant availability of statistical information on total number of ATS transfers, number of transfers caused by power failures and total days controller has been energized, plus more.
CUSTOMER CONTROL CIRCUITS

30A Load-shedding circuit initiated by opening of a customer-supplied contact.

30B Load-shedding circuit initiated by removal of customer-supplied control voltage. (Specify voltage).

44G Strip Heater with thermostat recommended for outdoor applications on temperatures below 32°F (0°C) to prevent condensation and freezing.

ADD-ON BOARDS

18Z Includes one Form C contact (Rated 2A @ 30VDC or .5A @ 125VAC) for each of the following:
- Normal Source Acceptability.
- Emergency Source Acceptability.
- Selective Load Disconnect - Pre and post transfer signal time delay for selective load disconnect with a programmable bypass on source failures - adjustable 0 to 5 minutes.
- Fourth contact can be set to mimic the acceptability contacts or annunciate any combination of the acceptability contacts and/or any switch alarm conditions available:
  - Extended Parallel Time (Closed transition),
  - Failure to Synchronize (Closed transition),
  - Transfer Switch Locked Out (Closed transition),
  - Load Disconnected (Delayed transition).
- Accessory 18Z includes an extension of the engine start time delay (feature) to 60 seconds if an external 24VDC supply is connected to a 4000 SERIES controller. This external power source will also allow the LCD display to be active when both normal and emergency sources are unavailable.

18Z2 Includes two 18Z accessory boards. (Maximum of two 18Z accessory boards allowed.)

TIME DELAYS

2C Provides an extended time delay on engine starting. The standard feature one time delay is adjustable from zero to six seconds. Accessory 2C allows this time delay to be adjustable from zero to sixty minutes in one second intervals factory set at five minutes.

1G Similar to accessory 2C except using an external 24 volt DC power input. Available only as a feature of accessory 18Z.

INDICATORS & CONTROLS

14A/14B Additional auxiliary contact sets to indicate switch position. Two sets are typically standard. Maximum number of two additional sets. (Varies by configuration)

6C Reset Switch for manual retransfer to normal with automatic override upon emergency source failure.

NEUTRAL CONDUCTOR OPTIONS

• Solid neutral, with fully-rated terminals. (AL-CU) UL Listed.
• Conventional neutral switching pole.
Note: Specify neutral option in catalog number, see page 18 for instructions.

COMMUNICATIONS OPTIONS

72EE2 Ethernet connectivity module for remote communications to ASCO POWERQUEST® products. Contains embedded web pages for the remote monitoring of ASCO products as well as some 3rd party devices. Also provides Serial-to-Ethernet link with ability to communicate using Modbus/TCP.

Fig. 9: 4000 SERIES Accessory 18Z mounting on User Interface
**POWER METERING**

- **Voltage:**
  - Line - Line: VAB, VBC, VCA, VAVERAGE
  - Line - Neutral: VAN, VBN, VCN, VAVERAGE
- **Frequency:** 45.0 to 66.0 Hertz
- **Current:** IA, IB, IC, IAVERAGE
- **Unbalance %:** Voltage, Amps
- **Real Power:** KWA, KWB, KWC, KWNET
- **Reactive Power:** KVVARA, KVARB, KVARC, KVARNET
- **Apparent Power:** KVVARA, KVVARB, KVVARC, KVARNET
- **Real Energy:** KWHIMPRT, KWHEXPRT, KWHNET
- **Reactive Energy:** KVARHIMPRT, KVARHEXPRT, KVARHNET
- **Power Factor:** PFA, PFB, PFC, PFNET

**DATA ACCESS**

- Eight digital inputs, four relay outputs.
- Input/Output 15-character, user definable screen display for identification of input/output signals.

**CONFIGURABLE DESIGNATIONS**

- **Local** - A four line, 20 character LCD backlit display.
- **Remote** - With optional Acc. 72A or 72E and Power Meter monitoring systems.
  - Provides user programmable setpoints based on twelve metering and I/O parameters. Each setpoint allows the user to select the parameter, the trip & reset levels, the trip & reset time delays and the alarm type or relay output to trigger. This can be used for protective relaying and peak shaving applications.

**INTEGRATED ATS FEATURES**

When configured on load of ATS:

- Displays ATS position.
- Displays power data as a function of ATS position (normal/emergency).
- Accumulates energy data separately for normal and emergency sources.

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**4000 SERIES OPTIONAL ACCESSORIES**

**ASCO 5200 SERIES POWER METER**

The ASCO 5200 SERIES Power Meter is a microprocessor based metering device that provides real-time measurements of single and three phase power systems. The Power Meter uses digital signal processing technology to measure voltage and current per phase; real, reactive and apparent power, and bi-directional energy. All measurements can be viewed locally with a backlit liquid crystal display and/or displayed remotely with ASCO PowerQuest® products.

Direct voltage input for systems up to 600 Volts AC can be monitored without the use of external potential transformers (PTs). Measures three phase currents and a fourth current input is available for measuring current in the neutral conductor. The Power Meter includes one discrete input for transfer switch position, eight general purpose discrete inputs, and four relay outputs for monitoring and controlling external devices.

**POWER SYSTEM TOTAL**

404 KW +1.00 PF
0 KVAR 60.00 Hz
404 KVA ATS°n NORM

**ASCO 5200 SERIES**

The ASCO Power Manager is also available as a separate unit for monitoring electrical parameters anywhere in the power distribution system.

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**Optional Configurations and Connection Arrangements**

<table>
<thead>
<tr>
<th>Connected To</th>
<th>With Display</th>
<th>Without Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load</td>
<td>Acc. 85L</td>
<td>Acc. 75L</td>
</tr>
<tr>
<td>Normal</td>
<td>Acc. 85N</td>
<td>Acc. 75N</td>
</tr>
<tr>
<td>Emergency</td>
<td>Acc. 85M</td>
<td>Acc. 75M</td>
</tr>
</tbody>
</table>

Add suffix ‘K’ to above designations if neutral conductor monitoring is required.

Note: Accessory 75 and 85 includes component mounting, CTs, shorting blocks and all necessary interwiring.

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Note: The ASCO Power Manager is also available as a separate unit for monitoring electrical parameters anywhere in the power distribution system.
4000 SERIES POWER MONITORING & CONTROL

ASCO POWERQUEST SOLUTIONS
ASCO POWERQUEST® communications products allow for the monitoring and control of power transfer switches in your Emergency or Standby Power Distribution System. Local Area networks and Remote networks are supported with either single or multiple points of access, and web-enabled communications allow access to your power system from anywhere around the world.

FEATURES
- Monitors and controls Power Transfer Switches and Engine Generators
- Monitors normal and emergency voltages and frequency
- Indicates transfer switch position and source availability
- Provides transfer and re-transfer of loads for system testing
- View normal and emergency voltage and frequency settings
- View transfer switch time-delay settings
- Provides transfer switch rating and identification
- Automatic paging notifies personnel, by e-mail or text message, of selected system alarms
- View current, power and power factor with ASCO Power Managers Connected to the System
- View transfer switch event log
- Provides transfer switch test schedule

TYPICAL NETWORK ARCHITECTURE
5150 CONNECTIVITY MODULE

The 5150 Connectivity Module is used to bring several different serial devices that communicate at different baud rates and with different protocols to a common Ethernet media. The module is used to connect 4000 SERIES transfer switches, and ASCO Remote Annunciators to a standard Ethernet TCP/IP network with standard 10base T(RJ-45) connectors. The module has customized embedded JAVA™ applets (program applications for an internet browser) for each monitored device that loads automatically to a standard Web Browser. The module is designed to communicate with up to 8 clients such as Web applications (web pages), POWERQUEST®, or third party Modbus® devices simultaneously over an Ethernet connection.

5350 REMOTE ANNUNCIATOR

The ASCO Power Transfer Switch Remote Annunciator is a stand-alone, industrial grade interface device providing you with the most critical transfer switch status indication and transfer/retransfer control for up to eight switches. Ethernet technology is built in for faster and more reliable communications. LEDs indicate switch status and position, while separate push buttons individually initiate transfer switch operation and testing. Transfer switch annunciators can be set up in multiple locations to monitor various transfer switches, allowing redundant and distributed annunciation.
POWERQUEST 32.15

ASCO 32.15 POWER INTERFACE SOFTWARE
The ASCO 32.15 Power Interface is a computer-based monitoring and control software package. When combined with ASCO 72E/72A Communications Interface modules and the ASCO 5200 SERIES Power Manager, it provides a centralized and comprehensive monitoring and control interface of power transfer switches and engine generators. A one-line diagram, power metering information, transfer switch controls and event-log data, and engine-generator screens are available to users with password protected controls.

CURRENT AND HISTORICAL ALARMS
The Current Alarm screen displays all currently active alarms. It provides the date of the alarm, along with IP and Name of the device with the issue. In addition, a detailed description of the alarm is provided to help the operator in pinpointing the issue. All historical alarms can be viewed as well by selecting the “Historical” tab.

CONVENIENT ONE-LINE DIAGRAM
• Colored icons highlighted to show source availability and which source is connected to load.
ENGINE-GENERATOR DETAILS

- Voltage: Phase to phase; Phase to neutral
- Current for each phase.
- Kilowatts and kilowatt hours total.
- Frequency and power factor.
- Status and control of four digital outputs which can be customized by the user.
- Status of eight digital inputs.
- "Alarm Enabled" selection. These alarms flash the "engine-generator" icon on the summary screen.
- Digital inputs for engine malfunctions are derived from engine mounted sensors (supplied by others).

TRANSFER SWITCH DETAIL SCREEN

- ATS rating and identification data is displayed.
- Allows remote testing and time delay bypass.
- Voltage, frequency, phase sequence, voltage unbalance and time delay settings can be checked.
- Viewing of engine exercise schedules.
- Displays phase to phase voltage on normal and emergency.
- Provides complete system status message from 4000 microprocessor controller.
- View event log on the last 99 events for each ATS.
- Arrange test schedules for transfer switches.
- Provides for monitoring of local site or remote sites.

POWER MANAGER DETAIL SCREEN

- Voltage: phase to phase; phase to neutral and voltage unbalance.
- 3 phase currents and neutral (optional).
- Frequency.
- Kilowatt hours - normal and emergency.
- Status and control of four relay outputs.
- Status of eight digital inputs.
- Device ratings: CT and PT ratio.

ENGINE-GENERATOR DETAILS

- Voltage: Phase to phase; Phase to neutral
- Current for each phase.
- Kilowatts and kilowatt hours total.
- Frequency and power factor.
- Status and control of four digital outputs which can be customized by the user.
- Status of eight digital inputs.
- "Alarm Enabled" selection. These alarms flash the "engine-generator" icon on the summary screen.
- Digital inputs for engine malfunctions are derived from engine mounted sensors (supplied by others).
5500 SERIES THIN WEB SERVER

The ASCO Thin Web Server is an internet-based thin client application, which provides monitoring and control of transfer switches and engine generators from anywhere in the world. With ASCO 72E/72A Communications Interface modules and ASCO 5200 SERIES Power Managers, it brings the power interface to your browser with your user name and password. Alarms and event logs are provided through the browser, while simultaneously transmitting an email indicating that an alarm has occurred with one or more transfer switches.

![Thin Web Server](image)

**COMMUNICATIONS PRODUCTS FOR 4000 SERIES TRANSFER SWITCHES**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>ACC. OPTION</th>
<th>CATALOG NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Module</td>
<td>72A</td>
<td>5110</td>
</tr>
<tr>
<td>Connectivity Module</td>
<td>72E</td>
<td>5150</td>
</tr>
<tr>
<td>Power Manager with Display*</td>
<td>85L</td>
<td>5220D</td>
</tr>
<tr>
<td>Thin Web Server*</td>
<td>-</td>
<td>5510E</td>
</tr>
<tr>
<td>Software Package*</td>
<td>-</td>
<td>32.15</td>
</tr>
</tbody>
</table>

* These products are available as separate items only. They can be ordered by catalog numbers shown in above chart.

**SOLUTIONS COMPARISON**

<table>
<thead>
<tr>
<th>ASCO CONNECTIVITY SOLUTION GUIDE FEATURE</th>
<th>POWERQUEST® 32.15</th>
<th>5500 THIN WEB SERVER</th>
<th>5150 CONNECTIVITY MODULE</th>
<th>5350 REMOTE ANNUNCIATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity of Monitored / Controlled Power Transfer Switches per LAN</td>
<td>32</td>
<td>64</td>
<td>1024+</td>
<td>8</td>
</tr>
<tr>
<td>Number of Monitored / Controlled Gensets</td>
<td>4</td>
<td>8</td>
<td>1024+</td>
<td>0</td>
</tr>
<tr>
<td>Control &amp; Monitoring Capability</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Embedded Web Pages</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Ethernet Network Compatible</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Monitor Multiple Protocols &amp; Baud Rates (ASCO I, ASCO II, Modbus)</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Monitor Multiple Sites</td>
<td>INTRANET</td>
<td>INTERNET</td>
<td>INTRANET</td>
<td>INTRANET</td>
</tr>
<tr>
<td>Multiple Client Access</td>
<td>NO</td>
<td>UP TO 8</td>
<td>UP TO 8</td>
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<tr>
<td>Client Software Required</td>
<td>YES</td>
<td>INTERNET EXPLORER</td>
<td>INTERNET EXPLORER</td>
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<tr>
<td>Monitors Dissimilar ASCO Controllers on Common LAN</td>
<td>NO</td>
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<td>YES</td>
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<tr>
<td>Communicates with ASCO Remote Annunciators</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Email / Paging Alarms</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Historical Trending Option Alarms</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td>YES**</td>
</tr>
</tbody>
</table>

* Internet Explorer only required for initial communications setup.
** Historical trending not available on Remote Annunciator.
4000 SERIES USER INTERFACE

USER INTERFACE FEATURES

• **Convenient One Line Diagram** - Provides a clear view of the position of the transfer switch, as well as the acceptability of the Normal and Emergency sources.

• **Source Acceptability LEDs** - Provide true indication of the acceptability of each source, as determined by the voltage, frequency, voltage unbalance, and phase sequence settings of the control panel.

• **Transfer Switch Position LEDs** - Provide an indication of which source the transfer switch is connected to.

• **Transfer Test** - Allows the user to test the operation of the transfer switch under a simulated failure of the normal source. Holding for 15 seconds allows time for the engine generator to come online and the transfer switch to transfer the load.

• **Retransfer to Normal** - Allows the user to bypass the programmed Retransfer to Normal time delay upon the return of the normal source when the switch has transferred to emergency either during normal operation or a transfer test.

• **Lamp Test** - Provides a convenient way to verify the functionality of all LEDs on the User Interface.

• **User Controls Locked** - Visually displays the status of the keypad lock feature of the control panel. When illuminated, the buttons of the User Interface are disabled and the user must enter a password into the control panel to unlock the switch. When LED is blinking, the controls are temporarily unlocked for five minutes from the last button pressed.

ADDITIONAL CLOSED TRANSITION USER INTERFACE

FEATURES

• **Extended Parallel Time** - Provides visual indication when the pre-set extended parallel time has been exceeded. The controls automatically open the emergency or normal main contacts. Separate contact also available to shunt trip to an external breaker.

• **Failure To Synchronize** - Visually displays a failure to synchronize alarm if the time delay settings is exceeded, during closed transition transfer operation.

• **Transfer Switch Locked Out** - Prevents transfer in either direction if the extended parallel time is exceeded.

• **Alarm Reset** - Resets extended parallel and failure to synchronize alarms.

• **Closed Transition Bypass** - Pushbutton allows transfer between sources in an open transition mode.
To order an ASCO 4000 Series Power Transfer Switch, complete the following catalog number:

```
4          A                     TS                          A                 3              400                 N             5X                                     C
```

*Note:
1. 200 and 230 amp switch limited to 480 volts maximum.
2. Type 304 Stainless steel is standard. To provide improved corrosion resistance in salt or marine environments, specify optional type 316 stainless steel.

**TRANSFER SWITCH CONFIGURATIONS**

4ATS, 4NTS, 4ADTS, 4NDTS, 4ACTS, 4NCTS

Sizes of UL-Listed Solderless Screw-Type Terminals for External Power Connections

```
<table>
<thead>
<tr>
<th>SWITCH RATING AMPS</th>
<th>MAX # OF CONDUCTORS PER TERMINAL</th>
<th>RANGE OF AL-CU CONDUCTOR SIZES</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 - 230³ ATS, NTS</td>
<td>One</td>
<td>#14 to 4/0 AWG</td>
</tr>
<tr>
<td>150 DTS, CTS</td>
<td>One</td>
<td>#4 AWG to 600 MCM</td>
</tr>
<tr>
<td></td>
<td>Two</td>
<td>#1/0 AWG to 250 MCM</td>
</tr>
<tr>
<td>260-400</td>
<td>One</td>
<td>#4 AWG to 600 MCM</td>
</tr>
<tr>
<td></td>
<td>Two</td>
<td>#1/0 AWG to 250 MCM</td>
</tr>
<tr>
<td>600</td>
<td>Two</td>
<td>#2 AWG to 600 MCM</td>
</tr>
<tr>
<td>800-1200</td>
<td>Four</td>
<td>#1/0 AWG to 600 MCM</td>
</tr>
<tr>
<td>1600-2000⁳</td>
<td>Six</td>
<td>#1/0 AWG to 600 MCM</td>
</tr>
<tr>
<td>2600, 3000⁴</td>
<td>Twelve</td>
<td>#1/0 AWG to 600 MCM</td>
</tr>
<tr>
<td>4000⁴</td>
<td>Twelve</td>
<td>#2/0 AWG to 600 MCM</td>
</tr>
</tbody>
</table>
```

Notes:
1. 200 and 230 amp rating for copper conductors only.
2. All main terminals are rear connected. 1600 & 2000 amp switches are available in optional front connected arrangement. Specify optional accessory 40MY for 1600 amp and 40NY for 2000 amp. WCR rating limited to 85,000 amp rms symmetrical. See pages 20, 21 for enclosure dimensions.

The Example Catalog Number above is 4ATSA3400N5XC
(X is used to specify optional accessories).

*Notes:
1. 200 and 230 amp switch limited to 480 volts maximum.
2. Type 304 Stainless steel is standard. To provide improved corrosion resistance in salt or marine environments, specify optional type 316 stainless steel.