

ASCO® 7000 SERIES Ordering Information

To order an ASCO 7000 SERIES Power Transfer Switch, complete the following catalog number:

7 A TS + A + 3 + 400 + N + 5X + C

		Product		Neutral Code*		Phase Poles	Amperes	Voltage Code		Grp Code	Enclosure	
A	Automatic	TS	Conventional 2-Position	---	No Neutral	2	30	A	115	5X- optional accessories	---	No enclosure
		TB	Open Transition Bypass	A	Solid Neutral	3	70	B	120		C	Type 1 enclosure
N	Non-Automatic	CTS	Closed Transition	B	Switched Neutral	2	100	C	220	N	F	Type 3R ³ enclosure
		CTB	Closed Transition Bypass				D	230	G		Type 4 enclosure	
		DTS	Delayed Transition	C	Overlapping Neutral		E	240	H		Type 4X ² enclosure (304 stainless steel)	
							L	440	L		Type 12 enclosure	
M	Manual Operated	DTB	Delayed Transition Bypass	C	Overlapping Neutral	200 ¹	H	380	J	400	M	Type 3R ³ secure double door
						230 ¹	K	415	N	Type 4 secure double door		
		260	L			440	P	Type 4X ² secure double door (304 stainless steel)				
		400	M			460	Q	Type 12 secure double door				
		600	N			480	R	Type 3RX ² secure double door (304 stainless steel)				
		800	P			550	U	Type 4X enclosure (316 stainless steel)				
		1000	Q			575	V	Type 4X secure double door (316 stainless steel)				
		1200	R			600						

*Notes: 1. 200 and 230 amp switch limited to 480 volts maximum.

- Type 304 stainless steel is standard. To provide an improved reduction in corrosion in salt or marine environments, specify optional type 316 stainless steel.
- Type 3R enclosures are not suitable for installations conducive to windblown snow or rain conditions.
- Conventional switch neutral is provided on closed and delayed transition transfer products when specified.

5. A comprehensive ASCO Limited Guardian Warranty covers 7000 Series Power Transfer Switch(s) and warrants the product to be free of defects in material and workmanship from date of shipment. The warranty provides:

- 2 years for labor and travel expenses (extendable in 1 year increments up to 5 years for a nominal fee).
- 5 years for parts (2 years for circuit breakers).
- 10 years for main contacts.

Refer to Publication 3227 for warranty details, terms and conditions.

The Example Catalog Number above is 7ATS3400N5XC (X is used to specify optional accessories).

Transfer Switch Configurations

7ATS, 7NTS, 7ADTS, 7ACTS, 7NDTS, 7NCTS
 Sizes of UL-Listed Solderless Screw-Type Terminals for External Power Connections

Switch Rating amps	Max # of Conductors per Terminal	Range of AL-CU Conductor Sizes
30 - 230 ³ ATS & NTS Only	One	#14 to 4/0 AWG
150*, 260, 400 *150 for CTS and DTS Only	One	#4 AWG to 600 MCM
	Two	#1/0 AWG to 250 MCM
600	Two	#1/0 AWG to 600 MCM
800-1200 ¹	Four	#1/0 AWG to 600 MCM
1600-2000 ²	Six	#1/0 AWG to 600 MCM
2600-3000 ²	Twelve	#1/0 AWG to 600 MCM
4000 ²	Twelve	#2/0 AWG to 600 MCM

Notes: 1. Unit is designed for top cable entry of emergency and load and bottom entry of normal. Optionally, the switch may be supplied with reverse source and/or bottom entry load, when specified.

2. All main terminals are rear connected.

Transfer/Bypass Configurations

7ATB, 7NTB, 7ADTB, 7ACTB, 7NDTB, 7NCTB
 Sizes of UL-Listed Solderless Screw-Type Terminal for Power Connections

Switch Rating amps	Max # of Conductors per Terminal	Range of AL-CU Conductor Sizes
150, 200, 230 260,400	One	# 4 AWG to 600 MCM
	Two	# 1/0 AWG to 250 MCM
600 ⁴	Two	# 2 AWG to 600 MCM
800,1000,1200 Front Connect	Three	# 1/0 AWG to 600 MCM
800,1000,1200 ⁴	Four	# 1/0 AWG to 600 MCM
1600-2000 ⁴	Six	# 1/0 AWG to 600 MCM
2600, 3000 ⁴	Ten	# 1/0 AWG to 600 MCM
4000 ⁴	Twelve	# 2 AWG to 600 MCM

3. 200 and 230 amp rating for copper conductors only for transfer switch configurations only.

4. All main terminals are rear connected. A front connected version is available in 600 and 1200 amp ratings only with top cable entry only. See pages 25-27 for dimensional data and additional information.

ASCO[®] 7000 SERIES Optional Accessories

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 24 volt DC external input signal. 7000 SERIES controller remains active when both power sources are de-energized*
- 1GB Same as accessory 1G except using 120 volt AC external input*

* add suffix 1 to include external power to power manager or power meter when applicable

Manual Controls for Automatic Transfer Switches

- 6C Reset switch for manual retransfer to normal with automatic retransfer in the event of emergency source failure.

6D Selector switch for automatic/manual retransfer to normal. Automatic bypass if emergency fails.

Indicators

- 14A/14B Additional auxiliary contact sets to indicate switch position. Two sets are standard. Specify total number of sets if more are required.

18B Two-pole, double-throw contacts operate when emergency source voltage is present at transfer switch terminals.

18G Two-pole, double-throw contacts operate when normal source voltage is present at transfer switch terminals.

- 99 "Push-to-Test" feature on all pilot light indicators.

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).

31Z Selective load disconnect control contacts (two provided) which operate with time delay prior to and/or after load transfer and retransfer.

- 43R Terminal block for all customer control connections on 30-150 amp only (standard on all other sizes).

Note: An externally operable quick-make, quick-break (QMQB), manual handle is available on some 7000 SERIES product configurations. (Consult ASCO for guidance.)

Neutral Conductor Options

- Solid neutral, with fully-rated terminals. (AL-CU) UL Listed.
- Conventional neutral switching pole.
- Overlapping neutral transfer contacts. Allows for proper ground-fault sensing and avoids generator voltage transients during transfer.

Note: Specify neutral option in catalog number, see page 22 for instructions.

Extension Harness

37B Six foot (6') extension harness to increase distance between transfer switch and control panel on open-type units.

Communications

72E 5150 Ethernet Connectivity Module offers communication to transfer switch and metering with embedded webpages.

- 72SW An Industrial Ethernet Switch mounted in the enclosure used in conjunction with 5150 Connectivity Module (acc. 72E) metering device. Includes 2 available Ethernet ports and 2 multimode ST Fiber connectors.

Surge Protection

ASCO Pulsar 450 rated 65KA

- 73AC1 Normal source protection. (3Ø, 4wire WYE)
73AC2 Emergency source protection. (3Ø, 4wire WYE)
73AC3 Load side protection. (3Ø, 4wire WYE)

Note: Other distribution voltages available (Contact ASCO).

Special Applications

- 45 Custom Alphanumeric nameplate mounted on the front of the switch
- 111A Generator - to - Generator for Standby Applications
- 111B Generator - to - Generator for Prime Power Applications
- 125 Seismic Certification to the requirements of the international building code for electrical equipment
- 131 Certification of compliance with the American Recovery & Reinvestment ACT (Buy American Provision) - Must be specified at time of order placement

Bypass-Isolation Switch Options

- 14A1 Auxiliary contact to close in "Bypass to Normal" position.
- 14B1 Auxiliary contact to close in "Bypass to Emergency" position.
- 14T Auxiliary contact to close when transfer switch is in "Automatic" position.
- 14U Auxiliary contact to close when transfer switch is in "Isolate" position.
- 14V Auxiliary; contact to close when transfer switch is in "Test" position.
- 82C Automatic shutters for bus isolation when transfer switch is withdrawn. (see page 6 for details)
- 82E LED Bypass status indicator, optional on G frame 1600A-4000A only. Standard for all other size switches

ASCO 5200 SERIES METERING

Power Manager

The ASCO 5200 SERIES Power Meters are microprocessor based metering devices that provides real-time measurement of single and three phase power systems. The 5200 SERIES 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 5200 SERIES includes one discrete input for transfer switch position.

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: KVARA, KVARB, KVARC, KVARNET
- Apparent Power: KVAA, KVAB, KVAC, KVANET
- Real Energy: KWHIMPORT, KWHEXPORT, KWHNET
- Reactive Energy: KVARHIMPORT, KVARHEXPORT, KVARHNET
- Power Factor: PFA, PFB, PFC, PFNET

5220 Power Manager Data Access

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

Communications

- Modbus RTU and TCP/IP capability
- Ethernet compatible when combined with 5150 Connectivity Module (72E).

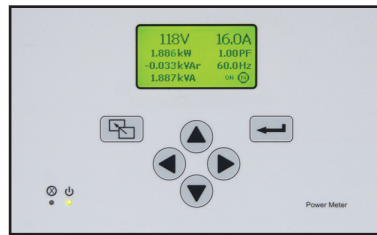


Fig. 19: ASCO 5210 SERIES Power Meter.



Fig. 20: ASCO 5220 SERIES Power Manager.

Configurable Designations

- Local - A four line, 20 character LCD backlit display.
- 5220 Power Manager 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.
- 100 event data logging feature.

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.



Optional Configurations and Connection Arrangements

Connected To:	5210	5220
Load	Acc. 135L	Acc. 85L
Normal	Acc. 135L	Acc. 85N
Emergency	Acc. 135E	Acc. 85M
Load (BPS only)	N/A	Acc. 85SB*

Add suffix A1 to above metering designation if neutral conductor monitoring is required

Note: Accessory 85L and 135L includes component mounting, CTs, shorting blocks and all necessary interwiring.

*Bypass & isolation switch contacts wired to discrete Power Manager inputs.

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