

ASCO® 7000 SERIES Microprocessor Controller



Fig. 14: 7000 SERIES Microprocessor Controller.

The 7000 SERIES Microprocessor Based 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.

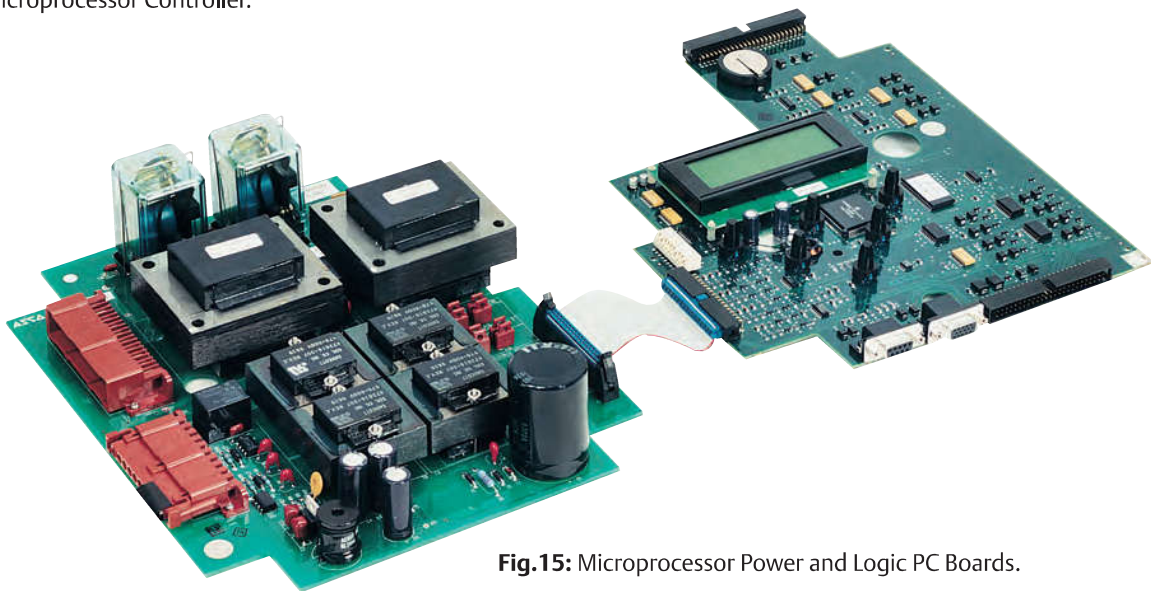


Fig.15: Microprocessor Power and Logic PC Boards.

7000 SERIES Microprocessor Based 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

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 72E.
- Load shed option for bus optimization applications. Specify optional accessory 30B.
- Historical event log
- Statistical ATS systems monitoring information

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.
- 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.
- Event log displays 99 logged events with the time and date of the event, event type and event reason.
- Output signals for remote indication of normal and emergency source acceptability
- Statistical ATS/System monitoring data screens which provide:
 - Total number of ATS transfers.
 - Number of ATS transfers caused by power source failure.
 - 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 cool down - adjustable 0 to 60 minutes.
- Pre and post transfer signal time delay for selective load disconnect with a programmable bypass on source failures - adjustable 0 to 5 minutes. This signal can be used to drive a customer furnished relay, or for (2) sets of double throw contacts rated 3 amps at 480 volts AC, specify ASCO optional accessory 31Z.
- 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.
 - In synch time delay - 0 to 3 seconds.
 - Failure to synchronize - 1 to 5 minutes.
 - Extended parallel - 0.1 to 1.0 seconds.
- Delayed transition load disconnect time delay - adjustable 0 to 5 minutes.

Automatic Transfer Switch Bill of Material

Webster University

Designation	Amps	Poles	Neutral	Voltage	Service Entrance	Bypass	Transition	Catalog Number	Accessories Included
ATS-LS	230	4	Switched	480	No	Yes	Delayed	J7ADTB30230N5XC	18B,18G,31Z,72EE2
ATS-SB	400	4	Switched	480	No	Yes	Delayed	J7ADTB30400N5XC	18B,18G,31Z,67JB,72EE2

ACCESSORIES DESCRIPTION

Accessory Code	Description
18B/18G	2pole D/T contacts that operate when emergency and normal source voltage is present at transfer switch terminals
31Z	Selective Load disconnect circuit to provide a pre-transfer and/or post transfer signal when transferring from emergency to normal and/or normal to emergency. The signal can be programmed to occur during all transfers or only when the transfer is occurring between two live sources. The length of the pre and post transfer delays can be set to 0-5 minutes 59 seconds.
67JB	Side pullbox for J Bypass Switch 150A-600A
72EE2	5170 Quad-Ethernet Module provides transfer switch dashboard screen with password protected control capabilities, email alerts and open protocol support in a single module with an integrated 4 port Ethernet switch.

ATS-LS Detailed Information

AMPS : 0400			
Product Description	: 7000 Series, Delayed Open Transition, Not Service Entrance Rated	Catalog Number	: J7ADTB30400N5XC
Service Voltage	: 277/480	Optional Accessories	: 18B/18G,31Z,67JB,72EE2
By-pass Isolation	: Yes NO See Addendum 2-2	Number of Poles	: 4, Switched [B] Neutral
Withstand Rating	: See WCR table above	Quantity of Cables & Lug Size	: (2) 1/0 – 250 MCM AL/CU or (1) #4 – 600 MCM AL/CU
Frame = J, Switch Rating = 0400 , Series = 7000			
Enclosure	1(C) Type 1 Enclosure	Service	: Three Phase, 4-wire

ACCESSORIES DESCRIPTION

Accessory Code	Description
18B/18G	2pole D/T contacts that operate when emergency and normal source voltage is present at transfer switch terminals
31Z	Selective Load disconnect circuit to provide a pre-transfer and/or post transfer signal when transferring from emergency to normal and/or normal to emergency. The signal can be programmed to occur during all transfers or only when the transfer is occurring between two live sources. The length of the pre and post transfer delays can be set to 0-5 minutes 59 seconds.
67JB	Side pullbox for J Bypass Switch 150A-600A
72EE2	5170 Quad-Ethernet Module provides transfer switch dashboard screen with password protected control capabilities, email alerts and open protocol support in a single module with an integrated 4 port Ethernet switch.

DRAWINGS FOR APPROVAL

Drawing Number	Description
802093	Composite Enclosure Outline and Mounting Diagram
806099-003	Three Phase Wiring Diagram

ATS-SB Detailed Information

AMPS : 0400			
Product Description	: 7000 Series, Delayed Open Transition, Not Service Entrance Rated	Catalog Number	: J7ADTB30400N5XC
Service Voltage	: 277/480	Optional Accessories	: 18B/18G,31Z,67JB,72EE2
By-pass Isolation	: Yes NO See Addendum 2-2	Number of Poles	: 4, Switched [B] Neutral
Withstand Rating	: See WCR table above	Quantity of Cables & Lug Size	: (2) 1/0 – 250 MCM AL/CU or (1) #4 – 600 MCM AL/CU
Frame = J, Switch Rating = 0400 , Series = 7000			
Enclosure	1(C) Type 1 Enclosure	Service	: Three Phase, 4-wire

ACCESSORIES DESCRIPTION

Accessory Code	Description
18B/18G	2pole D/T contacts that operate when emergency and normal source voltage is present at transfer switch terminals
31Z	Selective Load disconnect circuit to provide a pre-transfer and/or post transfer signal when transferring from emergency to normal and/or normal to emergency. The signal can be programmed to occur during all transfers or only when the transfer is occurring between two live sources. The length of the pre and post transfer delays can be set to 0-5 minutes 59 seconds.
67JB	Side pullbox for J Bypass Switch 150A-600A
72EE2	5170 Quad-Ethernet Module provides transfer switch dashboard screen with password protected control capabilities, email alerts and open protocol support in a single module with an integrated 4 port Ethernet switch.

DRAWINGS FOR APPROVAL

Drawing Number	Description
802093	Composite Enclosure Outline and Mounting Diagram
806099-003	Three Phase Wiring Diagram

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: July 27, 2016

Attention: stl-cac@cannondesign.com

Contact Person / WTA Field Inspector:
Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Bill Shaw

Project No. WT 14127.01

☐

UPS

☐

Courier

☒

Email

Copies	No.	Description
1 PDF	264000E02	(Submittal No. 264000-002)
		• ATS Distribution

Remarks:

c: **Kelvin Patel**
Kpatel@cannondesign.com

☐ Furnish as Submitted

☒ **Furnish as Noted**

☐ Rejected

☐ Revise & Resubmit

☐ Reviewed

☐

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.

WTASHOP - Webster ISB - 26 4000-002

From: STL-CAC <STL-CAC@CANNONDESIGN.COM>
To: 'Patrick Garner' <pgarner@wmtao.com>, WTASHOP <wtashop@wmtao.com>
Date: 7/5/2016 11:41 AM
Subject: Webster ISB - 26 4000-002
Cc: "Patel, Kelvin" <kpatel@CANNONDESIGN.COM>, "Grossman, Lynn" <lgrossman@C...>
Attachments: 264000-002 ATS Distribution.pdf

Attached for review.

Melissa Pirtle
Construction Admin

CANNONDESIGN

1100 Clark Ave
St. Louis, Missouri 63102
T [314.425.8797](tel:314.425.8797) • M
cannondesign.com



77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0115

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 07/05/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

RE: ATS Distribution

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☒ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	SENT VIA:	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☒ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	Package	Code	Rev.	Copies	Date	Description	Status
Submittal		264000-002	1		07/05/2016	ATS Distribution	Submitted

NOTES:

CC: Paric Corporation, Kathy Bathe

Project Coordinator: Paric Corporation, Kathy Bathe

Signed: _____
Devin Gates

Transmittal

To Paric Corporation

Date 7/1/16

Job Number 11317

Job Name Webster Univ. ISB Building

Attention Devin Gates

Transmittal Number 11317-006

We are sending you:

☒ Attached

☐ Under separate cover, the following:

☐ Preliminary Drawings

☐ Samples

☐ Construction Drawings

☐ Copy of Letter

☐ Specifications

☐ Other _____

Quantity	Drawing #	Date/Revision	Description
1			Submittal for ATS Distribution - Spec Section
			26 40 00

These are transmitted as checked:

☒ For Your Review & Comment

☐ Approved As Noted

☒ For Approval

☐ Returned For Corrections

☐ For Your File

☐ Approved As Submitted

☐ As Requested

☐

Copy:

Transmittal

Enclosure

Rick Branstetter

Signed: Rick Branstetter, Project Manager