

Simplicity Smart Equipment Unit Control Boards (UCBs)

Submittal Data

SE-SPU1001-0 (031-03480-000A / 1149498),
 SE-SPU1002-0 (031-03481-000A / 1149499),
 SE-SPU1011-0 (031-03030-000A / 1089066) &
 SE-SPU1012-0 (031-03031-000A / 1089070)

Description

The Simplicity Smart Equipment Unit Control Boards (UCBs) provide multiple options for equipment, such as several inputs and outputs that provide thermostat interface and control of heating and cooling stages. All safety circuits are wired to the UCB for equipment protection. The UCB design and core asset foundation are based on the Metasys® system Field Equipment Controller (FEC) platform. The local display on the UCB is the main UI that lets you configure, self test, view information, and control the equipment.

The UCB offers a new USB drive feature that provides valuable access to history and trends that you can later view on any computer. The USB also lets you upgrade the software to the UCB and all the other connected controllers on the Sensor Actuator (SA) bus. One simple command through the UCB display invokes a software upgrade to all control boards.

Features

- thermostat input
- safety control
- Direct Digital Control (DDC) controller
- local LCD
- all control output for cooling and heating
- all input for sensors (space, return air, outside air, supply air, and smoke)
- SA bus to communicate with network sensors and all other optional controllers
- pluggable communication card for standard protocols, including BACnet®, MS/TP, MODBUS®, and N2
- super application to meet all application requirements

- factory installed for all 3-40 Ton packaged units and 7.5-50 Ton Split System products
- BACnet Testing Laboratories™ (BTL) certified

Figure 1: UCBs



Table 1: Selection Chart

Product Code Number	Description
SE-SPU1001-0 (031-03480-000A / 1149498)	Single-stage UCB, 9 analog inputs (AIs), 13 binary inputs (BIs), and 5 binary outputs (BOs)
SE-SPU1002-0 (031-03481-000A / 1149499)	Dual-stage UCB, 12 AIs, 16 BIs, 8 BOs, and 1 analog output (AO)
SE-SPU1011-0 (031-03030-000A / 1089066)	Single-stage UCB with comm., 9 AIs, 13 BIs, and 5 BOs
SE-SPU1012-0 (031-03031-000A / 1089070)	Dual-stage UCB with comm., 12 AIs, 16 BIs, 8 BOs, and 1 AO

Repair Information

If the UCB fails to operate within its specifications, replace the unit. For a replacement UCB, contact Source1.

Technical Specifications

Table 2: SE-SPU1001-0 (031-03480-000A / 1149498) & SE-SPU1002-0 (031-03481-000A / 1149499)

Product Code	SE-SPU1001-0 (031-03480-000A / 1149498) Single Stage Board SE-SPU1002-0 (031-03481-000A / 1149499) Dual Stage Board
Power Supply Requirement	24 VAC (nominal, 20 VAC minimum/30 VAC maximum), 50/60 Hz, power supply class 2 (North America), safety
Power Consumption	15 VA maximum Note: VA ratings do not include any power supplied to the peripheral devices connected to BOs.
Ambient Conditions	Operating: -40 to 158°F (-40 to 70°C) ; 10 to 90% RH noncondensing UI Operating: -4 to 158°F (-40 to 70°C); 10 to 90% RH noncondensing Storage: -40 to 194°F (-40 to 85°C); 5 to 95% RH noncondensing
Processor	RX631 Renesas® microcontroller
Memory	2 MB internal program flash, 32 KB internal E2data flash, 4 MB external serial flash memory
Input and Output Capabilities	SE-SPU1001-0 (031-03480-000A / 1149498) Single Stage Board: 9 AIs: 7: 10k resistance temperature detector (RTD), 1: 0 to 10 VDC, 1: 24 VAC voltage monitor 13 BIs: 24 VAC input with contact cleaning circuits 5 BOs: 4: relay outputs, 1: transistor output SE-SPU1002-0 (031-03481-000A / 1149499) Dual Stage Board: 12 AIs: 9:10k RTD, 2: 0 to 10 VDC, 1: 24 VAC voltage monitor 1 AO: 2 to 10 VDC, 10 mA maximum 16 BIs: 24 VAC input with contact cleaning circuits
Housing	Unpackaged printed circuit board (PCB) with silkscreen labels
Mounting	Mounted with nylon standoffs
Dimensions (H x W x D)	1.44 x 6.5 x 5.27 in. (36 x 165 x 133 mm)
Shipping Weight	SE-SPU1001-0 (031-03480-000A / 1149498) Single Stage Board: 3.3 lb (1.50 kg) SE-SPU1002-0 (031-03481-000A / 1149499) Dual Stage Board: 3.4 lb (1.54 kg)
Compliance	United States: UL Recognized, File E107041, UL 916, Energy Management Equipment, UL1995, Heating and Cooling Equipment; FCC Compliant to CFR47, Part 15, Subpart B, Class B Canada: UL Recognized, File E107041, CSA 22.2 No. 236, Signal Equipment Industry Canada, ICES-003 – Recognized

Table 3: SE-SPU1011-0 (031-03030-000A / 1089066) & SE-SPU1012-0 (031-03031-000A / 1089070)

Product Code	SE-SPU1011-0 (031-03030-000A / 1089066) Single State Board with Comm. SE-SPU1012-0 (031-03031-000A / 1089070) Dual State Board with Comm.
Power Supply Requirement	24 VAC (nominal, 20 VAC minimum/30 VAC maximum), 50/60 Hz, power supply class 2 (North America), safety
Power Consumption	15 VA maximum Note: VA ratings do not include any power supplied to the peripheral devices connected to BOs.
Ambient Conditions	Operating: -40 to 158°F (-40 to 70°C) ; 10 to 90% RH noncondensing UI Operating: -4 to 158°F (-40 to 70°C); 10 to 90% RH noncondensing Storage: -40 to 194°F (-40 to 85°C); 5 to 95% RH noncondensing
Processor	RX631 Renesas® microcontroller
Memory	1.5 MB internal program flash, 32 KB internal E2data flash, 4 MB external serial flash memory

Table 3: SE-SPU1011-0 (031-03030-000A / 1089066) & SE-SPU1012-0 (031-03031-000A / 1089070) (Continued)

Input and Output Capabilities	<p>SE-SPU1011-0 (031-03030-000A / 1089066) Single State Board with Comm.: 9 AIs: 7: 10k RTD, 1: 0 to 10 VDC, 1: 24 VAC voltage monitor 13 BIs: 24 VAC input with contact cleaning circuits 5 BOs: 4: relay outputs, 1: transistor output</p> <p>SE-SPU1012-0 (031-03031-000A / 1089070) Dual State Board with Comm.: 12 AIs: 9:10k RTD, 2: 0 to 10 VDC, 1: 24 VAC voltage monitor 1 AO: 2 to 10 VDC, 10 mA maximum 16 BIs: 24 VAC input with contact cleaning circuits 8 BOs: 7: relay outputs, 1: transistor output</p>
Housing	Unpackaged PCB with silkscreen labels
Mounting	Mounted with nylon standoffs
Dimensions (H x W x D)	1.44 x 6.5 x 5.27 in. (36 x 165 x 133 mm)
Shipping Weight	<p>SE-SPU1011-0 (031-03030-000A / 1089066) Single State Board with Comm.: 3.6 lb (1.63 kg) SE-SPU1012-0 (031-03031-000A / 1089070) Dual State Board with Comm.: 3.7 lb (1.68 kg)</p>
Compliance	<p>United States: UL Recognized, File E107041, UL 916, Energy Management Equipment, UL1995, Heating and Cooling Equipment; FCC Compliant to CFR47, Part 15, Subpart B, Class B</p>
	<p>Canada: UL Recognized, File E107041, CSA 22.2 No. 236, Signal Equipment Industry Canada, ICES-003 – Recognized</p>

Subject to change without notice. Printed in U.S.A.

Copyright © June 23, 2015 by Johnson Controls, Inc. All rights reserved.

5127911-USD-A-0515

Supersedes: Nothing

**York International Corporation
 5005 York Drive
 Norman, OK 73069**