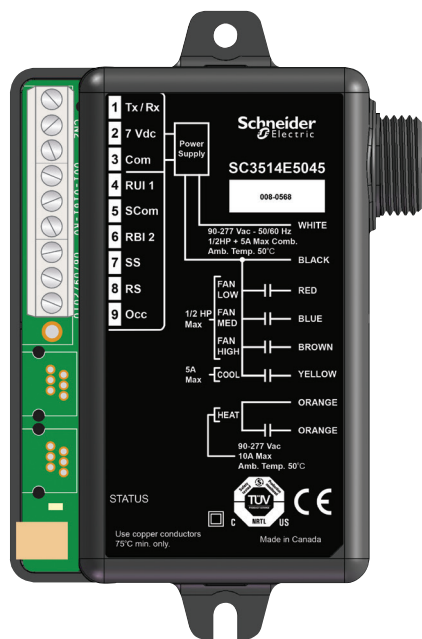


SC3000 Series

Line Voltage Switching Relay Pack Controllers Installation Guide

Commercial and Hotel/Lodging HVAC Fan Coil Applications



CONTENTS

Disclaimers	2
Installation	3
Communication Wiring to SERX3xxA	4
SC3xxx LED Operation	5
Wiring of Remote Inputs to SC3504E and SC3404E	5
Model Chart	6
Terminals, Wire Identification & Ratings	7
Typical Wiring Example	8
Dimensions	9

NOTE: This document is for the SER7000 and SER8000 Controllers

DISCLAIMERS

- The SER8000 series Room Controller is only used in conjunction with the SC3000 line voltage switching relay pack to operate controls for high voltage fan coil units.
- If replacing an existing Line Voltage FCU Controller, label all wires before you remove Room Controller.
- Electronic controls are static sensitive devices. Discharge yourself completely before you install Room Controller.
- A short circuit or incorrect wiring may permanently damage Room Controller. Ensure correct circuitry before powering up Room Controller.
- All SER8300 series Room Controllers controls are designed for use as operating controls only and are not safety devices. The devices have undergone rigorous tests and verification prior to shipping to ensure proper and reliable operation in the field. Whenever a control failure could lead to personal injury and/or loss of property, it becomes the responsibility of the user/installer/electrical system designer to incorporate safety devices such as relays, flow switches, thermal protections, and/or an alarm system to protect against any catastrophic failures
- Tampering with or any unintended application of Room Controller results in void of warranty.
- If Room Controller is used in a manner not specified by manufacturer, Room Controller performance may be impaired.
- The Room Controller is not serviceable and must be returned to supplier for any repair.
- A switch or circuit breaker must be installed to use Room Controller. Ensure it is suitably located, easily reached, and marked as disconnecting device.
- Never apply more than 24VDC to Room Controller.

IMPORTANT SYMBOLS



Products marked with this symbol state that the manuals must be consulted in all cases to any hazards.



This product has been tested to the requirements of CAN/CAS-C22.2 No. 61010-1, second edition, including Amendment 1, or a later version of the same standard incorporating the same level of testing requirements.



Alternating Current



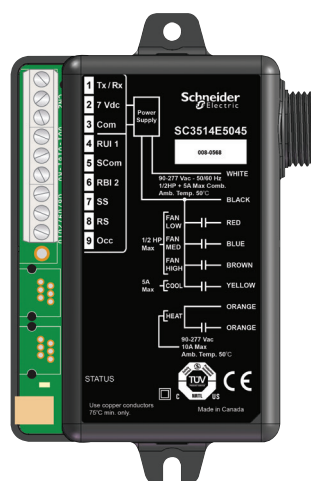
Direct Current



Equipment protected throughout by DOUBLE INSULATION or REINFORCED INSULATION



SER8300 Controller



SC3000 Relay Pack

INSTALLATION



All wiring must conform to the regulations of local and national electrical codes.

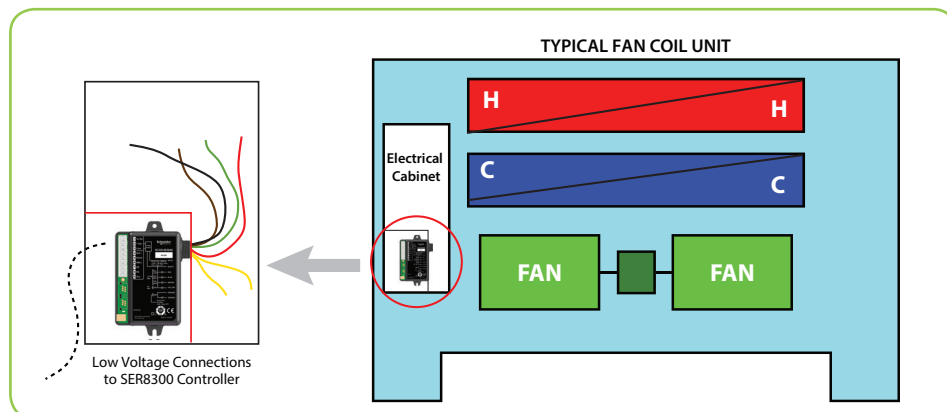
Read the following instructions carefully before proceeding with the installation. Failure to follow the instructions could damage the product or cause a hazardous condition. Installation must be performed by a qualified service technician or electrician. Disconnect the power supply before installing in order to prevent electrical shock.

Installation

There are three separate cases for installing the SC3000 transformer relay pack controller. Case 3 is dependent on local codes and requires a 4 inch x 4 inch junction box.

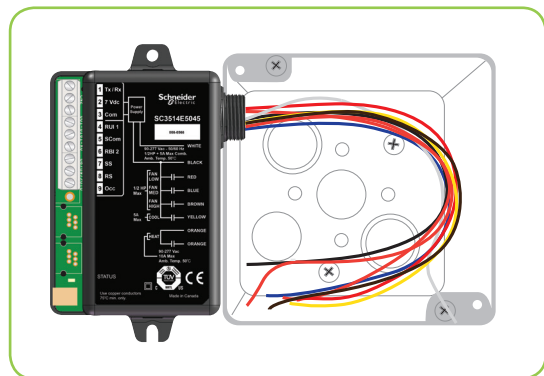
Case 1: Install Device inside Electrical Cabinet of Fan Coil Unit

1. Use plastic mounting tabs to secure unit to inside of electrical enclosure with screws.
2. Cut one or both plastic mounting tabs if space is needed inside enclosure.
3. Install low or high-voltage metal separator (if required).
4. Do not exceed the maximum rated temperature of unit (50 °C/122 °F).



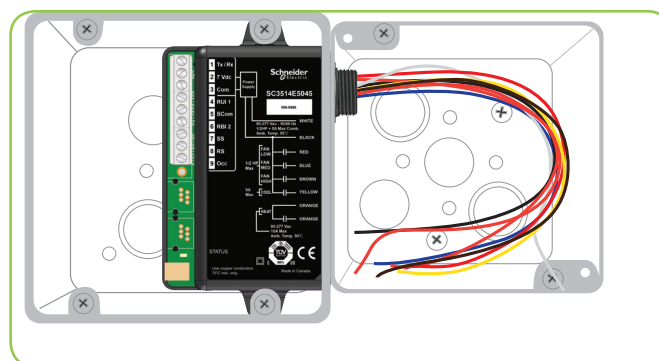
Case 2: Install Outside of Junction Box or Electrical Cabinet

1. Using supplied lock nut, secure transformer relay pack to either electrical junction box or electrical cabinet of fan coil unit.



Case 3: Install in Enclosed Low Voltage Junction Box

1. Cut one or both plastic mounting tabs if space is needed inside enclosure.
2. Using supplied lock nut, secure relay pack inside junction box to either main electrical junction box or electrical cabinet of the fan coil unit.



WARNINGS



Replacing Old Fan Coil Controller

If replacing old line voltage fan coil Room Controller, label wires before removal of old Room Controller.

Proper Installation and Use

SC3000 series transformer relay packs can only be used as operating controls. If installed incorrectly, the device may fail or cause injury or loss of property. It is the responsibility of the end user to ensure the device is correctly installed by a certified professional, and proper safety precautions have been taken to prevent failures.

COMMUNICATION WIRING TO SERX3xxA TERMINAL EQUIPMENT CONTROLLER

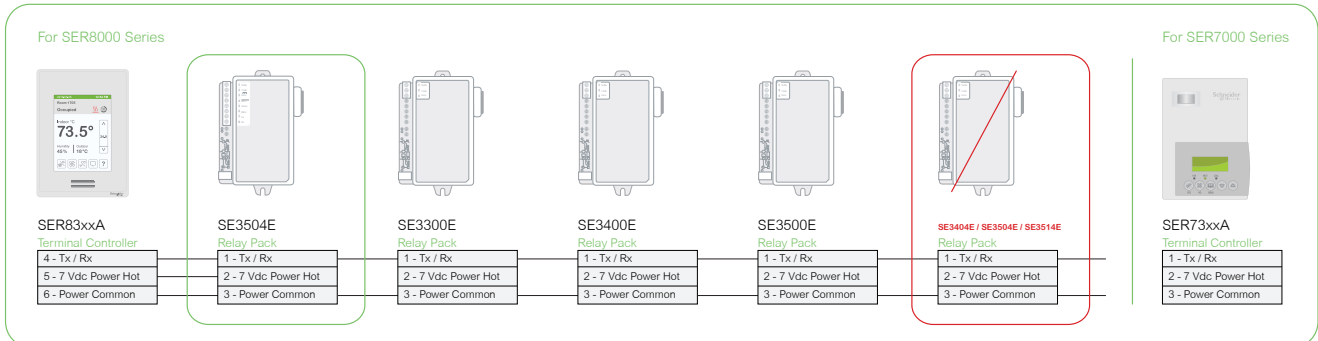
Only one SC3xxxX relay pack with remote monitoring inputs can be used under a single SERX3xxA Controller. All other slave units must be SC3xxxX relay pack(s) **without** remote inputs. A maximum of 10 SC3xxxX relay packs can be used for a single SERX3xxA Controller.

From SERX3xxA to first SC3xxxX Relay Pack

- Use existing or new field wires.
- A minimum of 3 (14-22 Ga, Solid, or Stranded) wires are required. Shield not necessary.

From first SC3xxxX Relay Pack to Controller to all other SC3xxxX Relay Pack(s)

- Use existing or new field wires.
- A minimum of 3 (14-22 Ga, Solid, or Stranded) wires are required. Shield not necessary.
- Connect only Power Common and Tx/Rx communication.

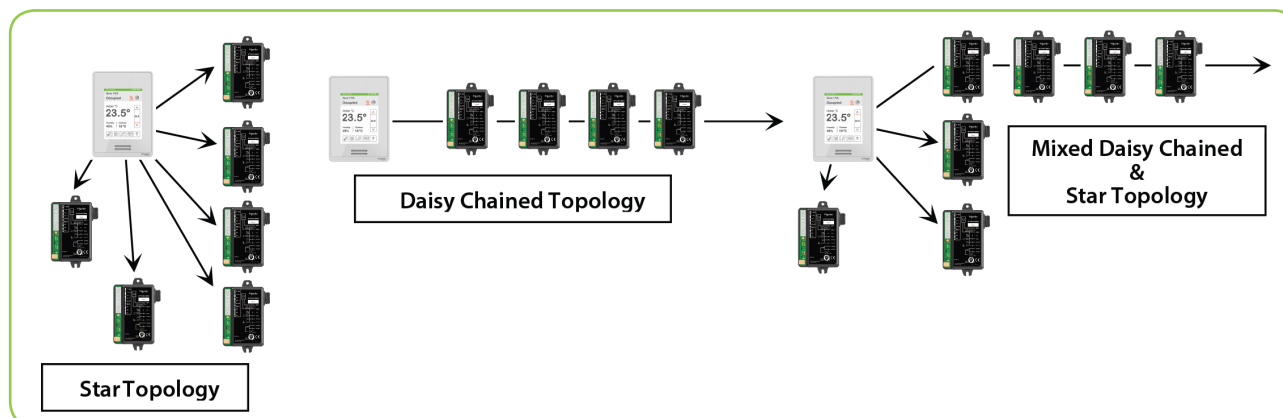


Warning:

- only the following models can be Slave Relays: SC3500E5045, SC3400E5045, and SC3300E5045.
- Only one SC3x4X Relay Pack with monitoring input can be used for a single SERX3xxA Room Controller.

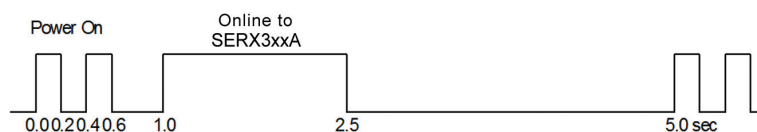
Network Wiring Topology

The SERX300 to SC3000 transformer relay pack can use any network wiring topology as required or based on topology of existing wires.



SC3XXX LED OPERATION

LED Status	Cause	Countermeasure
2 short blinks	No communication between SERX3xxA and SC3xxxX relay pack. The SC3xxxX relay pack resumes its output to no communication active status.	Check communication wiring and/or power cycle to controllers
2 short blinks and one long blink	Normal communication between SERX3xxA and SC3xxxX relay pack.	No action required



On/off LED vs. time (normal operation)

WIRE REMOTE INPUTS TO SC3504E AND SC3404E

Remote RUI1 Input by Configuration

- None (monitoring only)
- Local changeover sensor (10K type2 COS)
- Local changeover contact (COC NO or COC NC)
- Service alarm (Service)
- Filter Alarm (Filter)

Remote RBI 2 Input by Configuration

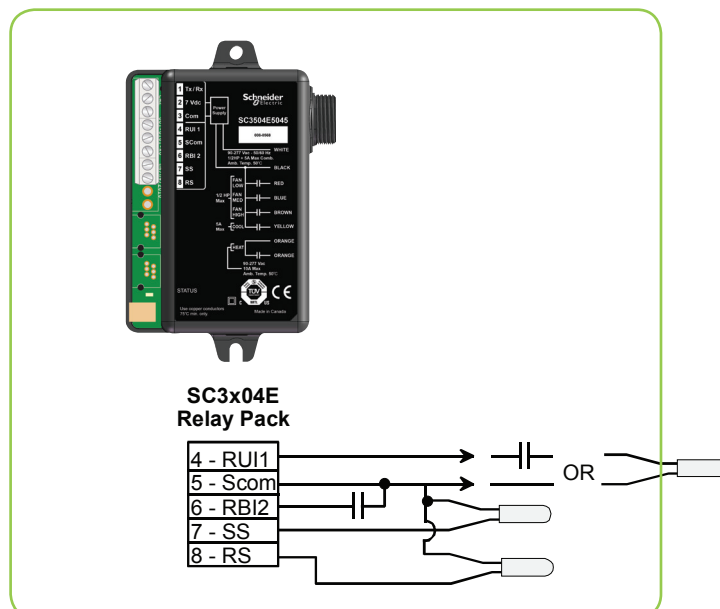
- None (monitoring only)
- Service alarm (Service)
- Filter Alarm (Filter)

S5 Supply Sensor

- 10K type2 monitoring only
- Auto detected

RS Return Air Sensor

- 10K type2 main temperature control
- Auto detected (bypasses SERX3xxA internal sensor)



Warning:

- only the following models can be Slave Relays: SC3500E5045, SC3400E5045, and SC3300E5045.
- Only one SC3x4X Relay Pack with monitoring input can be used for a single SERX3xxA Room Controller.

MODEL CHART

Part #	SC3500E5045	SC3504E5045	SC3514E5045 Occ. Output	SC3400E5045	SC3404E5045	SC3300E5045 Slave Fan Unit
Applications	2 pipes 2 pipes with reheat 4 pipes	2 pipes 2 pipes with reheat 4 pipes	2 pipes 2 pipes with reheat 4 pipes	2 pipes 2 pipes with modulating pulsed reheat	2 pipes 2 pipes with modulating pulsed reheat	Slave fan control only
Fan control	Up to 3 speed	Up to 3 speed	Up to 3 speed	Up to 3 speed	Up to 3 speed	Up to 3 speed
Monitoring inputs	None	4 FCU remote inputs	4 FCU remote inputs	None	4 FCU remote inputs	None
Control types	On-Off line switched valve output control - 1 heat / cool output - 1 cool output - 3 fan outputs	On-Off line switched valve output control - 1 heat / cool output - 1 cool output - 3 fan outputs	On-Off line switched valve output control - 1 heat / cool output - 1 cool output - 3 fan outputs - Occupancy output (7VDC)	On-Off line switched valve output control - 1 heat / cool output - 1 Modulating pulsed Vdc output for SSR electric reheat control - 3 fan outputs	On-Off line switched valve output control - 1 heat / cool output - 1 Modulating pulsed Vdc output for SSR electric reheat control - 3 fan outputs	Slave fan control only 3 fan outputs

Ordering Information Notes:

- Please refer to the “Operation overview” section for related information on SERX3xxA and SC3xxxX arrangements and possible combinations.
- More than one SC3xxxX Relay Pack can be used for a single SERX3xxA Room Controller.
- Only one SC3x4X Relay Pack with monitoring input can be used for a single SERX3xxA RoomController.

Ordering examples:

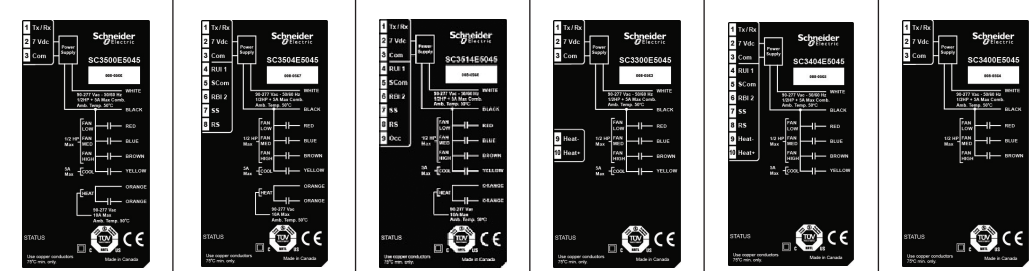
- A SC3500E5045 is for a 90 to 277 Vac powered, FCU-mounted relay pack with the following outputs:
Three 90 to 277 Vac switching fan relay outputs
Two 90 to 277 Vac switching valve relay outputs
- A SC3504E5045 is for a 90 to 277 Vac powered, FCU-mounted relay pack with the following inputs and outputs:
One configurable universal input
One configurable binary input
One dedicated discharge air temperature monitoring input
One dedicated return air temperature control input
Three 90 to 277 Vac switching fan relay outputs
Two 90 to 277 Vac switching valve relay outputs
- A SC3300E5045 is for a 90 to 277 Vac powered FCU-mounted relay pack with the following outputs:
Three 90 to 277 Vac switching fan relay outputs



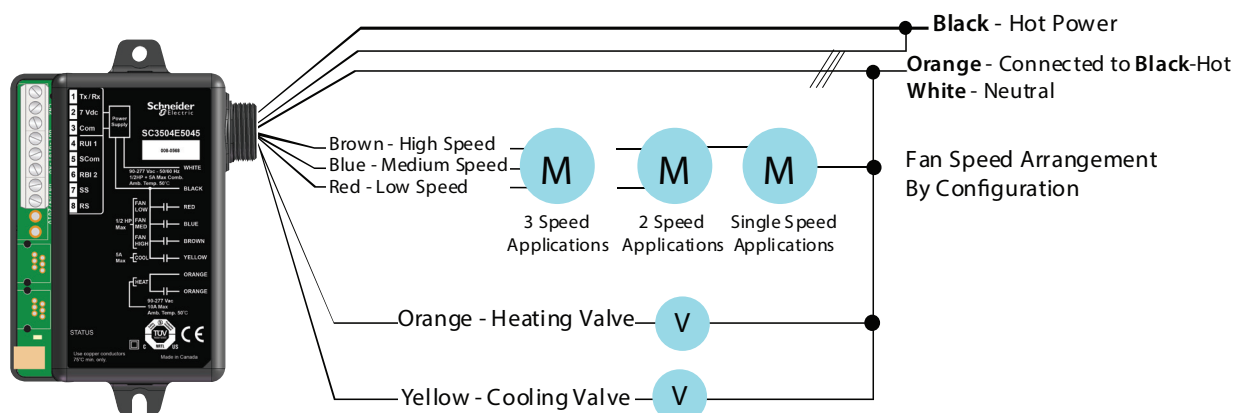
Warning:

- only the following models can be Slave Relays: SC3500E5045, SC3400E5045, and SC3300E5045.
- Only one SC3x4X Relay Pack with monitoring input can be used for a single SERX3xxA Room Controller.

TERMINALS, WIRE IDENTIFICATION & RATINGS

Part #	SC3500E5045	SC3504E5045	SC3514E5045 Occupancy Output	SC3400E5045	SC3404E5045	SC3300E5045 Slave Fan Unit
Low Voltage Terminals	No local inputs	Low voltage inputs	Low voltage inputs	No local inputs	Low voltage inputs	No local inputs
1	1- Tx/Rx	1- Tx/Rx	1- Tx/Rx	1- Tx/Rx	1- Tx/Rx	1- Tx/Rx
2	2- 7 VDC	2- 7 VDC	2- 7 VDC	2- 7 VDC	2- 7 VDC	2- 7 VDC
3	3- Com	3- Com	3- Com	3- Com	3- Com	3- Com
4		4- RUI 1	4- RUI 1		4- RUI 1	
5		5- Scom	5- Scom		5- Scom	
6		6- RBI 2	6- RBI 2		6- RBI 2	
7		7- SS	7- SS		7- SS	
8		8- RS	8- RS		8- RS	
9			9-Occ	9- Heat -	9- Heat -	
10				10- Heat +	10- Heat +	
LINE VOLTAGE CONNECTIONS						
Power Supply	Power supply: - 90 to 277 VAC (universal all models) - Black Hot L1 Power VAC (Switches: Brown, Blue, Red, and Yellow) - White neutral power VAC					
Fan line voltage contact Wire connection ½ HP Maximum	3 Fan Speed Control Wires Brown, Blue, Red	3 Fan Speed Control Wires Brown, Blue, Red	3 Fan Speed Control Wires Brown, Blue, Red	3 Fan Speed Control Wires Brown, Blue, Red	3 Fan Speed Control Wires Brown, Blue, Red	3 Fan Speed Control Wires Brown, Blue, Red
Valve line voltage contact output Yellow wire connection 10A maximum	4 Pipes Cool output Or 2 Pipes Heat / Cool output	4 Pipes Cool output Or 2 Pipes Heat / Cool output	4 Pipes Cool output Or 2 Pipes Heat / Cool output	2 Pipes Heat / Cool output	2 Pipes Heat / Cool output	N/A
Valve line voltage isolated contact output 2 x Orange wires connection 10A maximum	4 Pipes Heat output Or 2 Pipes reheat output	4 Pipes Heat output Or 2 Pipes reheat output	4 Pipes Heat output Or 2 Pipes reheat output	N/A	N/A	N/A
						

TYPICAL WIRING DIMENSIONS



SC3504E
Relay Pack

For 2 pipe applications use cooling valve yellow wire connection

For electric reheat applications where current draw is above 10 A
use a line powered coil pilot duty relay or contactor for the heating element
in place of the heating valve.

DIMENSIONS

