SIEMENS

Installation Instructions
Document No. 129-122
Rev. 2, September, 2000

RC 195 Single Input Receiver-Controller

Product Description

The RC 195 Single Input Receiver-Controller is a pneumatic instrument that receives one pneumatic input either direct acting (DA) or reverse acting (RA). It produces a pneumatic control signal based on the net pneumatic input and the mechanical settings of set point and percent proportional band.

Product Number

195-0011

Required Tools

- Screwdriver
- Two No. 8 or No. 10 screws

Expected Installation Time

35 minutes

Troubleshooting

Before troubleshooting the operation of the RC 195 Single Input Receiver-Controller, ensure that:

1. The supply pressure at the unit is 22 psi (152 kPa).
2. The transmitter input being used is between 3 and 15 psi (21 to 103 kPa).
3. Only one restrictor supplies the transmitter.
4. The transmitter calibration is correct.

Table 1. Troubleshooting Check List.

Complaint	Check		Probable Cause	Corrective Action
Control pressure stays at approximately zero	Rotate set point adjustment screw counterclockwise	Pressure increases	Transmitter sensing medium which is above (RA) or below (DA) the proportional band	None
			Receiver controller out of calibration	Recalibrate
		Pressure remains unchanged	Plugged pilot relay restrictors	Replace Pilot Relay Restrictors
			Receiver Controller is defective	Replace Receiver-Controller
Control pressure stays at approximately supply pressure	Rotate set point adjustment screw clockwise	Pressure decreases	Transmitter sensing medium which is above (DA) or below (RA) the proportional band	None
			Receiver-Controller out of calibration	Recalibrate
		Pressure remains unchanged	Receiver-Controller is defective	Replace Receiver-Controller

Prerequisites

- Clean, dry, oil-free air supply.
- Constant air supply. The receiver-controller and transmitter are calibrated at the factory with a 22 psig (152 kPa) air supply.

Installation

1. Mount the RC 195 Single Input Receiver-Controller in any position on any vertical surface using two No. 8 or No. 10 screws. The integral mounting tabs are located on the top and bottom of the case.

   NOTE: Small vibrations such as those from an air handling unit will not affect the operation of the instrument.

Installation, Continued

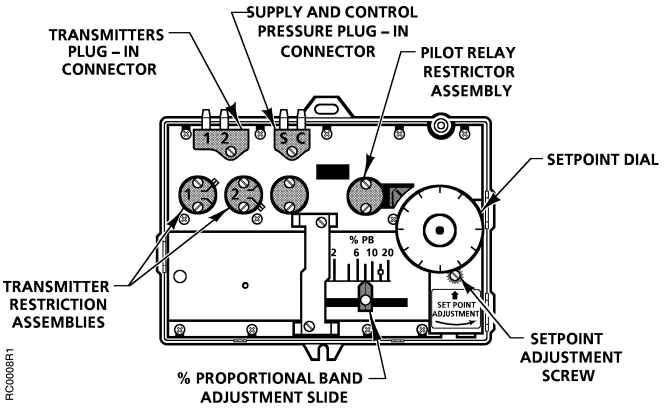


Figure 1. Single Input Receiver-Controller.

2. Connect the transmitter tubing to the plug-in connector. Direct acting (DA) Port is marked "1", and reverse acting (RA) Port is marked "2". Connect the supply air tubing to the plug-in connector stamped "S", and the control pressure tubing to plug-in connector stamped "C".
3. Remove the cover for access to internal restrictors, percent proportional band adjustment, the set point dial, and the set point dial adjustment. Pull the cover to the right and pull forward. Then pull cover to the left and lift.

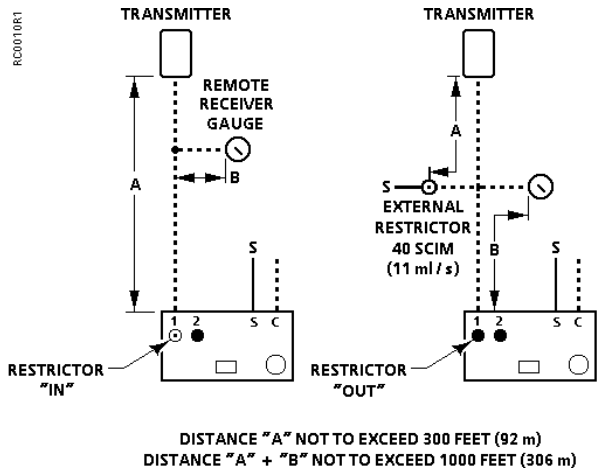


Figure 2. Maximum Distances for External Restrictors and Remote Gauges.

Figure 2 gives the maximum recommended distances for using the internal restrictor, external restrictor, and remote gauges. If the maximum distances are exceeded, there will be excessive pressure drops and time delays which will produce faulty indication and unsatisfactory operation.

4. To use an internal restrictor, move the restrictor tab to the "in" position. Restrictors are in the "out" position when shipped from the factory. If the transmitter input line is connected to "1", use restrictor "1". If the transmitter input line is connected to "2", use restrictor "2".
   a. Loosen both restrictor screws two full turns.
   b. Move the restrictor tab back and forth between the full travel limits a minimum of two times or until there is no sensation of drag against the lever. This will allow the gasket to return to its proper position.
   c. Retighten both screws with the restrictor lever fully in position against its stop. Do not overtighten the screws. Screws should be tight enough to provide a good seal without warping the restrictor assembly.

NOTE: When an input is not being used, the restrictor should be in the “out” position and the input connection should be open to the atmosphere.

Calibration

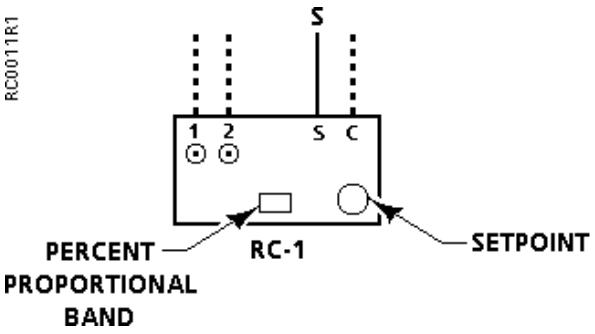


Figure 3. Calibration Settings.

1. Determine the proportional band setting and set point setting by referring to the control diagram or use the R-C Calibration Slide Rule Part Number 153-054 to determine the setting.
2. Set proportional band pointer to value shown on control diagram.
3. Connect 22 psi (152 kPa) supply air to Port "S".
4. Connect pressure gauge to Port "C".
5. Place one of the stick-on scales provided with the unit on the set point dial to match the #1 or #2 input transmitter range. Each scale is marked DA or RA to match the required action for the receiver-controller.

Installation, Continued

6. Apply set point pressure to selected input (#1/DA or #2/RA) and with a screwdriver, turn the set point adjustment screw until control pressure reaches 8 psi (55 kPa) or midpoint pressure of the spring range of actuator.
7. Calibrate set point dial by pulling it up, turning it to agree with the transmitter input, and then releasing it.
8. Turn the set point adjustment screw until the dial agrees with the control diagram. Once the sensor-controller system is completely installed and the sensor has been calibrated, some tuning of the control loop may be required. If output continuously cycles, increase percent proportional band. If hunting (large offset) is present, decrease percent proportional band.

   NOTE: Whenever the proportional band is changed, the set point dial must be recalibrated.

The RC 195 Simulator (195-100) is a tool designed to simplify the calibration and set up of the RC 195 Single Input Receiver-Controller. It can simulate one transmitter (one pipe) and indicate its corresponding simulated pressure.

The installation is now complete.

Accessories

Restriction Repair Kit
(Four restriction plates and gaskets) 195-066

RC 195 Input Pressure Simulator 195-100

Terminal Strip
(for ten 1/4-inch O.D. plastic tubes) 195-082

Scale Conversion Card (Pkg. of 25) 144-022

Set Point Dial Sheets 195-130
(See *Technical Instructions 155-036P25* or the *Powers Controls Catalog* for scale ranges)

Receiver Gauges a variety of 1-1/2 inch (38 mm), 2-1/2 inch (64 mm), and 3-1/2 inch (89 mm) diameter receiver gauges are available to monitor transmitter input signals. Request *Technical Instructions 155-023P25* (GA 142-2) from your nearest Siemens Building Technologies office.

Receiver-Controller Calibration
Slide Rule 153-054

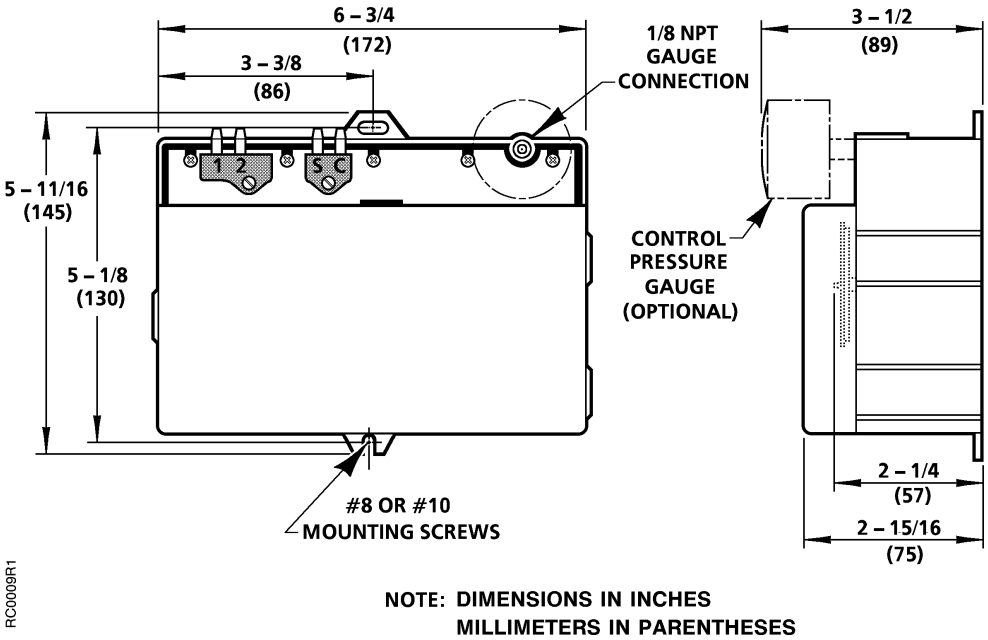
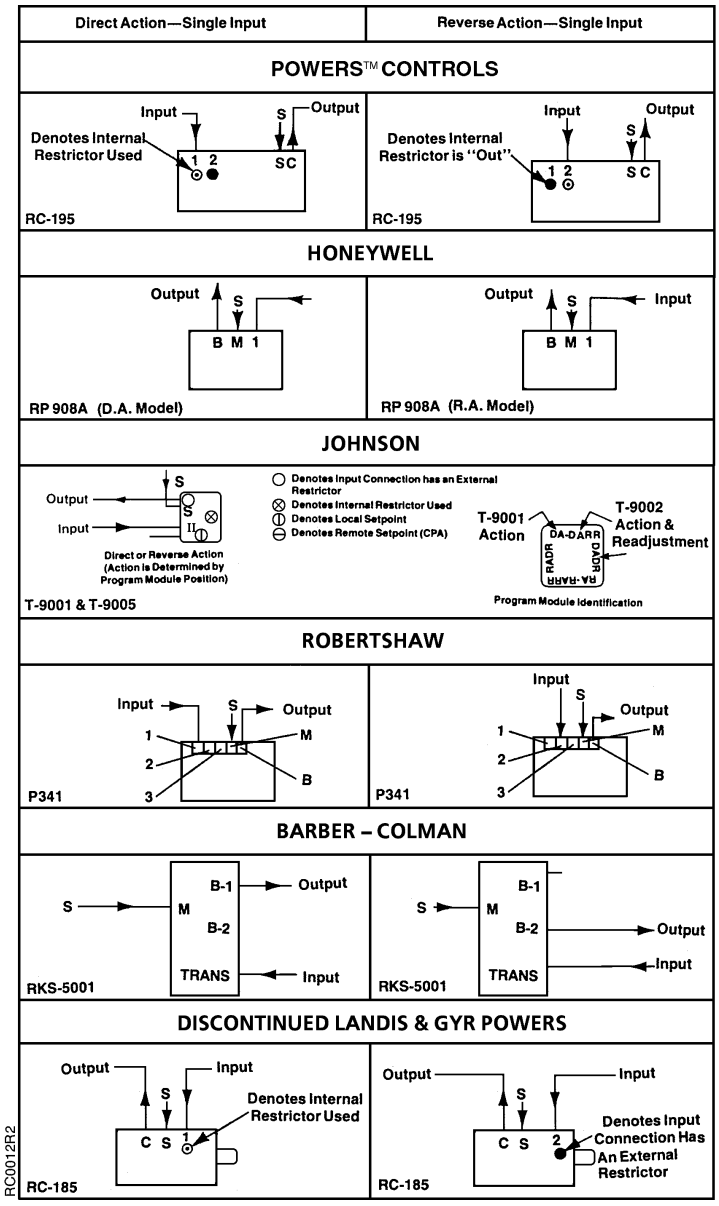


Figure 4. Dimensions.

Table 2. Retrofit Cross Reference.



References

RC 195-4
Operation and adjustment information
155-119P25

RC 195-3
Calibration and set-up procedure using simulator
155-103P25

AB 19 (formerly AE 19)
Application information
144-004

Siemens Building Technologies, Inc.
Landis & Staefa Division
1000 Deerfield Parkway
Buffalo Grove, IL 60089-4513
U.S.A.

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