

Model ARR

The Carnes Model ARR offers low pressure drop, low sound levels, and valve characteristics which create stable control conditions within the conditioned space.

This product is ideal for Hospitals, Labs, Schools, Government Buildings, i.e., anywhere Indoor Air Quality (IAQ) concerns exist.

Other Features Include:

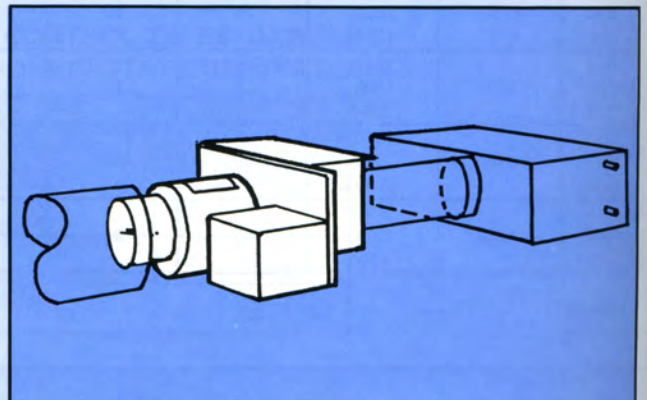
- Air flow capacities from full shut-off to 4200 CFM (0-3,000 FPM for each unit size).
- Round Inlet/outlet connections — 8 sizes.
- Low leakage damper design.
- Pneumatic, electric, electronic, or manual control options available.
- Averaging type air flow sensor at inlet of unit.
- Optional cross flow averaging type velocity sensor at inlet of unit.
- No insulation in the air stream makes this unit an excellent choice of application for Hospitals, Labs, Government Buildings, and Schools.
- Optional pressure independent and pressure dependent controls.
- Optional controls enclosure.
- Optional hanger brackets.
- Optional stainless steel design.
- Unit externally wrapped with 1/2" foil faced insulation that meet **UL** and **NFPA** standards.

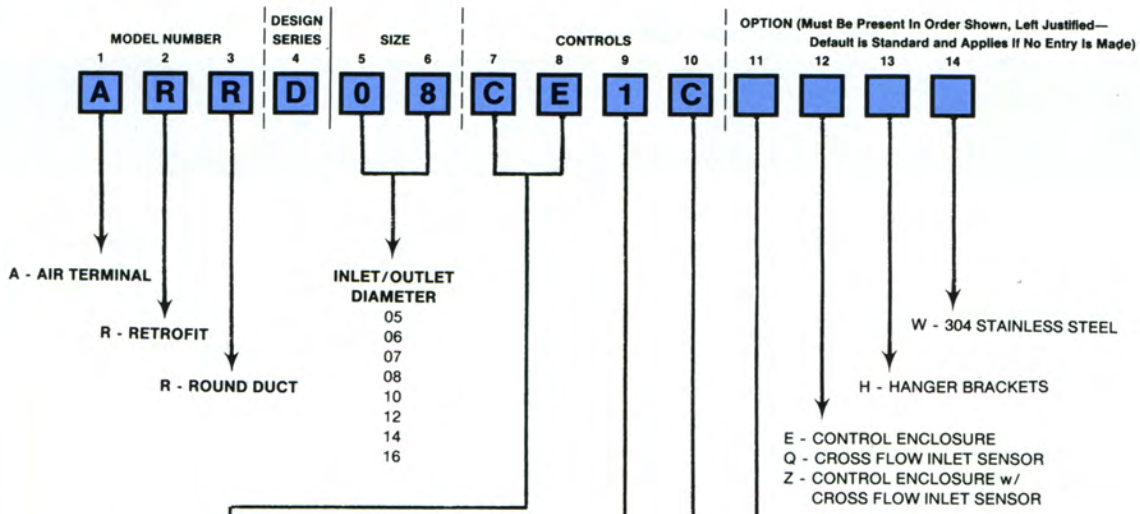
ENERGY CONSERVATION — VAV Retrofit

HIGH VELOCITY CONSTANT VOLUME REHEAT UNITS

The system with constant volume reheat terminal units can be easily converted to variable air volume by adding a retrofit unit upstream of the existing terminal unit which can now serve as a sound attenuator.

The unit for this conversion is the Model ARR Unit which replaces a short section of duct ahead of the existing terminal unit. The internal damper of the existing terminal unit should be removed, or placed in the full open position. This allows the existing terminal unit to act as a sound attenuator. The pneumatic thermostat which formerly activated the reheat coil, can now be used to control the ARR unit and the existing coil when required.





- CONTROL TYPE**
- CA - Pneumatic Actuator with Mechanical Max./Min. Stops by Carnes
 - CM - Pneumatic Actuator by Carnes
 - PA - Pneumatic Actuator by Others, Mounted by Carnes, with Mechanical Max./Min. Stops
 - PM - Pneumatic Actuator by Others Mounted by Carnes
 - CE - Pneumatic Actuator by Carnes, Reset Controller by Carnes
 - CX - Pneumatic Actuator by Carnes, (Multi-function) Reset Controller by Carnes
 - PE - Pneumatic Actuator by Others, Mounted by Carnes, Reset Controller by Carnes
 - PX - Pneumatic Actuator by Others, Mounted by Carnes, (Multi-function) Reset Controller by Carnes
 - EA - Electric Actuator by Carnes
 - † EB - Electric Actuator by Carnes, Changeover Thermostat by Carnes
 - ER - Electric Actuator with Reheat Switch by Carnes
 - EK - Electric Actuator with (2) Reheat Switches by Carnes
 - EC - Electronic Reset Controller (Cooling ONLY) and Actuator by Carnes
 - ET - Electronic Reset Controller w/Reheat Sequencing Capability, (Dual Minimum or Morning Warmup), Master/Slave, Night Setback and Actuator by Carnes
 - MA - Manual Damper by Carnes
 - NS - No Damper Controls, w/Carnes Inlet Sensor, w/Bare 3/8" Damper Shaft
 - NA - No Damper Controls, w/Carnes Inlet Sensor, w/Pneumatic Actuator Linkage (Must Specify Vendor)

† Minimum setting cannot be zero with these controls. Duct sensor needs at least 20% of maximum rated CFM to sense duct air temperature.

A Carnes Electronic Thermostat must be ordered with the electronic EC and ET Control Options.

- INLET/OUTLET DIAMETER**
- 05
 - 06
 - 07
 - 08
 - 10
 - 12
 - 14
 - 16

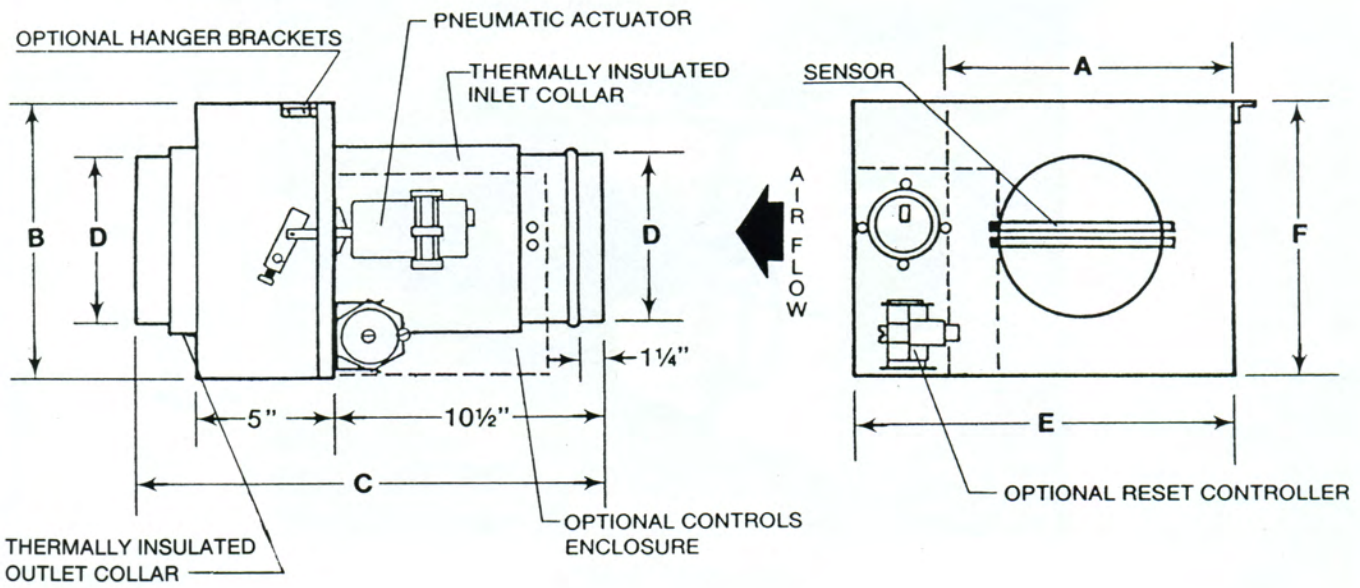
- ACTUATOR VENDOR**
- C - CARNES OEM (Pneu. or Elec.)
 - H - HONEYWELL (Pneu. Only)
 - J - JOHNSON (Pneu. Only)
 - P - POWERS (Pneu. Only)
 - R - ROBERTSHAW (Pneu. Only)
 - N - NOT APPLICABLE (NS Option Only)

- TRANSFORMER**
- T - 120/24V, 1 PHASE
 - U - 277/24V, 1 PHASE
 - R - 208/24V, 1 PHASE
 - S - 240/24V, 1 PHASE

NOTE: Hand of controls is determined by facing the averaging flow sensor (inlet of the unit) with the supply air hitting the back of your head.

- CONTROLS, DAMPER AND COIL ARRANGEMENT**
- * 1 - Normally Open—Right Hand Controls (All Electric/Electronic/Manual Control Types/NS, NA) (All Pneumatic Control Types for Reverse Acting Thermostat)
 - * 2 - Normally Open—Left Hand Controls (All Electric/Electronic/Manual Control Types/NS, NA) (All Pneumatic Control Types for Reverse Acting Thermostat)
 - 3 - Normally Closed—Right Hand Controls (All Pneumatic Control Types for Direct Acting Thermostat)
 - 4 - Normally Closed—Left Hand Controls (All Pneumatic Control Types for Direct Acting Thermostat)
 - 5 - Normally Open—Right Hand Controls (All Pneumatic Control Types for Direct Acting Thermostat)
 - 6 - Normally Open—Left Hand Controls (All Pneumatic Control Types for Direct Acting Thermostat)
 - 7 - Normally Closed—Right Hand Controls (All Pneumatic Control Types for Reverse Acting Thermostat)
 - 8 - Normally Closed—Left Hand Controls (All Pneumatic Control Types for Reverse Acting Thermostat)

*** Electric/Electronic Units DO NOT Fail Open. '1' or '2' is used for Model Numbering Only. Electric/Electronic Units are shipped with the Damper in the Closed Position. (Refer to the Controls Catalog AV-02 for additional operating information.)**



**PNEUMATIC CONTROLS SHOWN
ELECTRIC/ELECTRONIC AND
MANUAL AVAILABLE**

**LEFT HAND CONTROLS SHOWN
RIGHT HAND AVAILABLE**

DIMENSIONS LISTED IN INCHES						
UNIT SIZE	A	B	C	D	E	F
05	12	7½	17½	4⅞	15⅞	10⅞
06	12	7½	18	5⅞	15⅞	10⅞
07	12	10	18½	6⅞	15⅞	10⅞
08	12	10	19	7⅞	15⅞	10⅞
10	14	12½	20	9⅞	17⅞	12⅞
12	16	15	21	11⅞	19⅞	15⅞
14	20	17½	22	13⅞	23⅞	17⅞
16	24	17½	23	15⅞	27⅞	17⅞