# Suggested Specifications

# Retrofit Terminal Units

# 3600 Series

## 36VR Series

## Model 36VRR • Basic Unit

1. Furnish and install **Nailor Model 36VRR Round External Duct Retrofit Terminal Unit** of the sizes and capabilities as indicated on the drawings. Units shall be pressure independent with (DDC, electronic, analog electronic, pneumatic) controls. Units shall reset to any flow between minimum and the maximum cataloged airflow as allowed by the specific controller.

2. The entire terminal unit shall be designed and built as a single unit. The unit shall be provided with a variable air volume damper that controls the air quantity in response to a (DDC, analog electronic or pneumatic) control signal. The unit shall also include all options such as control enclosure, transformer and toggle disconnect. The space limitations shall be reviewed carefully to insure that all units will fit into the space allowed.

3. Unit casings on sizes 4 through 12 shall be constructed of 22 ga. (.86) rolled galvanized steel with integral concentric stiffening beads. Unit sizes 14 and 16 shall be constructed of 20 ga. (1.00) rolled galvanized steel with integral concentric stiffening beads. Units shall be a minimum of 18" (457) in length. Length of the unit varies with size, not to exceed 22" (559) in length.

4. The damper shall be round and of laminated 2 x 20 ga. (1.00) galvanized steel construction with a polyurethane peripheral gasket and a solid steel 1/2" (13) diameter shaft, pivoted in corrosion free Celcon® bearings. Dampers shall be screwed through the shaft to insure that no slippage occurs. Damper leakage shall not exceed 2% of the terminal rated airflow at 3" w.g. (750 Pa) inlet static pressure as rated by ASHRAE standard 130.

5. Unit side mounting plate shall be constructed of 22 ga. (.86) galvanized steel and shall not be secured to casing with mechanical fasteners. Control enclosures, provided standard with Nailor mounted controls, shall meet the requirements of NEMA 1 classification and be fabricated of 22 ga. (.86) galvanized steel. The control enclosures shall not be secured to the mounting plate by the use of mechanical fasteners.

6. The terminal unit shall be capable of operation as described herein with a minimum inlet static pressure that shall not exceed .32" w.g. (80 Pa). (The sequence of operations should be described here, if not part of the controls specifications.) Each unit shall be complete with factory mounted (DDC, analog electronic or pneumatic) controls. Each unit shall be supplied with an aluminum multi-point averaging sensor. Gauge tap ports shall be supplied in the piping between the sensor and the controller.

7. Each unit shall be constructed with single point electrical or pneumatic connection. All electrical components shall be ETL or UL listed or recognized and installed in accordance with the National Electrical Code. All electrical components shall be installed in a control enclosure. The entire assembly shall be ETL listed and so labeled.

8. All sound data shall be compiled in an independent laboratory and in accordance with the latest version of AHRI Standard 880 and ANSI/ASHRAE Standard 130. Tabulated NC levels shall be calculated and presented in accordance with latest edition of AHRI Standard 885.

# OPTIONS

## Stainless Steel Construction:

**(Substitute the following paragraphs:)**

3. Unit casings on sizes 4 through 12 shall be constructed of 22 ga. (.86) rolled 304/316 [select one] stainless steel with integral concentric stiffening beads. Unit sizes 14 and 16 shall be constructed of 20 ga. (1.00) rolled 304/316 [select one] stainless steel with integral concentric stiffening beads. Units shall be a minimum of 18" (457) in length. Length of the unit varies with size, not to exceed 22" (559) in length.

4. The damper shall be round and of laminated 2 x 20 ga. (1.00) 304/316 [select one] stainless steel construction with a polyurethane peripheral gasket and a solid stainless steel 1/2" (13) diameter shaft, pivoted in corrosion free Celcon® bearings. Dampers shall be screwed through the shaft to insure that no slippage occurs. Damper leakage shall not exceed 2% of the terminal rated airflow at 3" w.g. (750 Pa) inlet static pressure as rated by ASHRAE standard 130.

5. Unit side mounting plate shall be constructed of 22 ga. (.86) 304/316 [select one] stainless steel and shall not be secured to casing with mechanical fasteners. Control enclosures, provided standard with Nailor mounted controls, shall meet the requirements of NEMA 1 classification and be fabricated of 22 ga. (.86) 304/316 [select one] stainless steel. The control enclosures shall not be secured to the mounting plate by the use of mechanical fasteners.

6. The terminal unit shall be capable of operation as described herein with a minimum inlet static pressure that shall not exceed .32" w.g. (80 Pa). (The sequence of operations should be described here, if not part of the controls specifications.) Each unit shall be complete with factory mounted (DDC, electronic, analog electronic or pneumatic) controls. Each unit shall be supplied with a stainless steel multi-point averaging sensor. Gauge tap ports shall be supplied in the piping between the sensor and the controller.

**Control Transformer:**

**[Add the following paragraph(s):]**

• Provide a 120 VAC or 208 VAC or 240 VAC or 277 VAC or 480 VAC or 600 VAC or 24/24 Isolation VAC control power transformer with an integral or separately mounted primary and/or secondary overcurrent protection device in accordance with NEC requirements.

**Disconnect Switch:**

**[Add the following paragraph(s):]**

• A 2-position, toggle type, disconnect switch shall be installed, labeled and rated to disconnect line voltage from the terminal unit.

# 36VR Series

## Model 36VRS • Basic Unit

**1.** Furnish and install **Nailor 36VRS Series Slide-In Retrofit Terminal Unit** of the sizes and capabilities as indicated on the drawings. Units shall be pressure independent with (DDC, analog electronic, pneumatic) controls. Units shall reset to any flow between minimum and the maximum cataloged airflow as allowed by the specific controller.

**2.** The entire terminal unit shall be designed and built as a single unit. The unit shall be provided with a variable air volume damper that controls the air quantity in response to a (DDC, analog electronic or pneumatic) control signal. The unit shall also include all options such as control enclosure, transformer and toggle disconnect. The space limitations shall be reviewed carefully to insure that all units will fit into the space allowed.

**3.** Damper assemblies of 16 ga. (1.6) galvanized steel shall be multiple opposed blade construction and arranged to close at 45 degrees from full open to minimize air turbulence and provide near linear operation. Damper blades shall be fitted with flexible seals for tight closure and minimized sound generation. Damper blades shall be screwed through ½" (13) plated solid steel shaft(s) to insure that no slippage occurs. Blade shafts shall pivot on corrosion free Celcon® bearings. In the fully closed position, air leakage past the closed damper shall not exceed 2% of the nominal catalog rating at 3" w.g. (746 Pa) inlet static pressure as rated by ASHRAE Standard 130.

**4.** Unit side mounting plate shall be constructed of 22 ga. (.86) galvanized steel and contain overlap flanges, top and bottom, to interface with ductwork. Control enclosures, provided standard with Nailor mounted controls, shall meet the requirements of NEMA 1 classification and be fabricated of 22 ga. (.86) galvanized steel.

**5.** The terminal units shall be capable of operation as described herein with a minimum inlet static pressure that shall not exceed .43" w.g. (107 Pa). (The sequence of operations should be described here, if not part of the controls specifications.) Each unit shall be complete with factory mounted (DDC, analog electronic or pneumatic) controls. Gauge tap ports shall be supplied in the piping between the flow pick up and the controller.

**6.** Each unit shall be constructed with single point electrical or pneumatic connection. All electrical components shall be ETL or UL listed or recognized and installed in accordance with the National Electrical Code. All electrical components shall be installed in a control enclosure. The entire assembly shall be ETL listed and so labeled.

**7.** All sound data shall be compiled in an independent laboratory and in accordance with the latest version of AHRI Standard 880 and ANSI/ASHRAE Standard 130. Tabulated NC levels shall be calculated and presented in accordance with latest edition of AHRI Standard 885.

**8.** The Slide-In Retrofit terminal unit shall be fully gasketed to provide a seal between terminal unit and ductwork.

# OPTIONS

**[Add the following paragraph(s):]**

**Control Transformer:**

• Provide a 120 VAC or 208 VAC or 240 VAC or 277 VAC or 480 VAC or 600 VAC or 24/24 Isolation VAC control power transformer with an integral or separately mounted primary and/or secondary overcurrent protection device in accordance with NEC requirements.

**Disconnect Switch:**

• A 2-position, toggle type, disconnect switch shall be installed, labeled and rated to disconnect line voltage from the terminal unit.