



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR OSHPD SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

APPLICATION #: **OSP – 0 213 – 10**

**OSHPD Special Seismic Certification Preapproval (OSP)**

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: YORK Unitary Engineering /Johnson Controls Incorporated

Manufacturer's Technical Representative: Jason Carter, LEED AP

Mailing Address: Johnson Controls, 5005 York Dr., Norman, OK 73069

Telephone: (405) 419-6586 Email: jason.m.carter@jci.com

**Product Information**

Product Name: Unitary Product Group Packaged Rooftop Units

Product Type: Air Handling Equipment

Product Model Number: ZR/ZJ/ZH/ZF/ZT/XP/ZK/ZW/ZU/ZS/XA and J-Series UPG Packaged Rooftop Units, 3 to 12.5ton  
(List all unique product identification numbers and/or part numbers)

General Description: Air cooled outdoor mounted packaged units in cooling only, reheat and heat pump models, ranging from 3 to 12.5 tons of cooling capacity. Seismic enhancement made to the test units and modifications required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Units are approved for rigid or flexible curb mounting.

**Applicant Information**

Applicant Company Name: Dynamic Certification Laboratories, LLC

Contact Person: Joseph La Brie, S.E., Managing Partner

Mailing Address: 1315 Greg St., Suite 109, Sparks, NV 89431

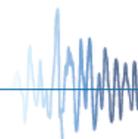
Telephone: (775) 358-5085 Email: labrie@makeitright.net

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant:  Date: 12/2/13

Title: Managing Partner Company Name: Dynamic Certification Laboratories, LLC

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dvnamic Needs"





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

**California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)**

Company Name: Dynamic Certification Laboratories, LLC

Name: Dr. Ahmad Itani, S.E. California License Number: SE-5220

Mailing Address: 1315 Greg St., Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085 Email: itani@shaketest.com

**Supports and Attachments Preapproval**

- Supports and attachments are preapproved under OPM- \_\_\_\_\_  
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

**Certification Method**

- Testing in accordance with:  ICC-ES AC156
- Other (Please Specify): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Testing Laboratory**

Company Name: Dynamic Certification Laboratories, LLC

Contact Name: Austin Brown, P.E., Laboratory Manager

Mailing Address: 1315 Greg St., Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085 Email: austin@shaketest.com





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**Seismic Parameters**

Design in accordance with ASCE 7-10 Chapter 13:  Yes  No

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.5 (for  $S_{DS}=2.0$  g), 1.9 (for  $S_{DS}=2.5$  g)

$S_{DS}$  (Design spectral response acceleration at short period, g) = 2.5 g (3 to 10 Ton units), 2.0 g (12 Ton units)

$a_p$  (In-structure equipment or component amplification factor) = 2.5

$R_p$  (Equipment or component response modification factor) = 6.0 (Rigid), 2.0 (Flexible)

$\Omega_0$  (System overstrength factor) = 2.5

$I_p$  (Importance factor) = 1.5

$z/h$  (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = SEE ATTACHMENT

Overall dimensions and weight (or range thereof) = SEE ATTACHMENT

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15:  Yes  No

Design Basis of Equipment or Components ( $V/W$ ) = \_\_\_\_\_

$S_{DS}$  (Design spectral response acceleration at short period, g) = \_\_\_\_\_

$S_{D1}$  (Design spectral response acceleration at 1 second period, g) = \_\_\_\_\_

$R$  (Response modification coefficient) = \_\_\_\_\_

$\Omega_0$  (System overstrength factor) = \_\_\_\_\_

$C_d$  (Deflection amplification factor) = \_\_\_\_\_

$I_p$  (Importance factor) = 1.5

Height to Center of Gravity above base = \_\_\_\_\_

Equipment or Component Natural Frequencies (Hz) = \_\_\_\_\_

Overall dimensions and weight (or range thereof) = \_\_\_\_\_

Tank(s) designed in accordance with ASME BPVC, 2010:  Yes  No

**List of Attachments Supporting Special Seismic Certification**

Test Report(s)  Drawings  Calculations  Manufacturer's Catalog

Other(s) (Please Specify): \_\_\_\_\_

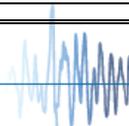
**OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2019**

Signature:  Date: 3/25/2014

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to :  $S_{DS}$  (g) = See Above  $z/h$  = 1.0

Condition of Approval (if applicable): \_\_\_\_\_



**Special Seismic Certification  
Approved Units**



**Manufacturer:** Unitary Product Group (York, Johnson Controls, Coleman, Luxaire, Evcon, Fraser-Johnston and Ready Ship)

**Product Line:** Unitary Product Group Packaged Rooftop Units (UPG)

**Certified Product Construction:**  
Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Certified Options:**  
230-575 V, economizer, power exhaust, electric or gas heater, variable frequency drive

**Certified Mounting Description:**  
Equipment is certified for rigid or flexible curb mounting

| Product Line                           | Model Number*     | Dimensions (inches) |       |        | Operating Weight (lb) | Nominal Cooling Capacity (Tons) | Size                     | Sds level Approved | Unit         |
|--|-------------------|---------------------|-------|--------|-----------------------|---------------------------------|--------------------------|--------------------|--------------|
|  |                   | Depth               | Width | Height |                       |                                 |                          |                    |              |
| Predator Air Handling Units (Short)    | ZH/ZU/JA3* 037    | 89                  | 59    | 42     | 860*                  | 3                               | Smallest<br>↓<br>Largest | 2.5                | 3            |
|  | ZJ/ZW/JA3* 037    | 89                  | 59    | 42     | 740                   | 3                               |                          |                    | Interpolated |
|  | ZR/ZK/JA3* 037    | 89                  | 59    | 42     | 980*                  | 3                               |                          |                    | 1            |
|  | ZT/ZV/JA3* 037    | 89                  | 59    | 42     | 922                   | 3                               |                          |                    | Interpolated |
|  | ZH/ZU/JA4* 049    | 89                  | 59    | 42     | 763                   | 4                               |                          |                    | Interpolated |
|  | ZJ/ZW/JA4* 049    | 89                  | 59    | 42     | 762                   | 4                               |                          |                    | Interpolated |
|  | ZR/ZK/JA4* 049    | 89                  | 59    | 42     | 880                   | 4                               |                          |                    | Interpolated |
|  | ZT/ZV/JA4* 049    | 89                  | 59    | 42     | 960                   | 4                               |                          |                    | Interpolated |
|  | ZH/ZU/JA5* 061    | 89                  | 59    | 42     | 772                   | 5                               |                          |                    | Interpolated |
|  | ZJ/ZW/JA5* 061    | 89                  | 59    | 42     | 1,070*                | 5                               |                          |                    | 4            |
|  | ZR/ZK/JA5* 061    | 89                  | 59    | 42     | 1,070*                | 5                               |                          |                    | 2            |
|  | ZT/ZV/JA5* 061    | 89                  | 59    | 42     | 968                   | 5                               |                          |                    | Extrapolated |
| Predator Air Handling Units (Standard) | XP/XA/J06* 078    | 89                  | 59    | 42     | 970*                  | 6.5                             | Smallest<br>↓<br>Largest | 2.5                | 7            |
|  | ZF/ZS/J06* 078    | 89                  | 59    | 42     | 1,090*                | 6.5                             |                          |                    | 10           |
|  | ZH/ZU/J06* 078    | 89                  | 59    | 42     | 910                   | 6.5                             |                          |                    | Interpolated |
|  | ZJ/ZW/J06* 078    | 89                  | 59    | 51     | 1,030                 | 6.5                             |                          |                    | Interpolated |
|  | ZR/ZK/J06* 078    | 89                  | 59    | 51     | 1,060*                | 6.5                             |                          |                    | 5            |
|  | ZF/ZS/J07*/T* 090 | 89                  | 59    | 42     | 860                   | 7.5                             |                          |                    | Interpolated |
|  | ZH/ZU/J07*/T* 090 | 89                  | 59    | 42     | 910                   | 7.5                             |                          |                    | Interpolated |
|  | ZJ/ZW/J07*/T* 090 | 89                  | 59    | 51     | 1,081                 | 7.5                             |                          |                    | Interpolated |
|  | XP/XA/J07*/T* 090 | 89                  | 59    | 42     | 920                   | 7.5                             |                          |                    | Interpolated |
|  | ZR/ZK/J07*/T* 090 | 89                  | 59    | 42     | 965                   | 7.5                             |                          |                    | Interpolated |
|  | ZF/ZS/J08* 102    | 89                  | 59    | 51     | 1,020                 | 8.5                             |                          |                    | Interpolated |
|  | ZH/ZU/J08* 102    | 89                  | 59    | 51     | 1,030                 | 8.5                             |                          |                    | Interpolated |
|  | ZJ/ZW/J08* 102    | 89                  | 59    | 51     | 1,060                 | 8.5                             |                          |                    | Interpolated |
|  | XP/XA/J08* 102    | 89                  | 59    | 51     | 1,135                 | 8.5                             |                          |                    | Interpolated |
|  | ZR/ZK/J08* 102    | 89                  | 59    | 51     | 1,200                 | 8.5                             |                          |                    | Interpolated |
|  | ZF/ZS/J10*/T* 120 | 89                  | 59    | 51     | 1,060                 | 10                              |                          |                    | Interpolated |
|  | ZH/ZU/J10*/T* 120 | 89                  | 59    | 51     | 1,090                 | 10                              |                          |                    | Interpolated |
|  | ZJ/ZW/J10*/T* 120 | 89                  | 59    | 51     | 1,070                 | 10                              |                          |                    | Interpolated |
|  | XP/XA/J10*/T* 120 | 89                  | 59    | 51     | 1,135                 | 10                              |                          |                    | Interpolated |
|  | ZR/ZK/J10*/T* 120 | 89                  | 59    | 51     | 1,200                 | 10                              |                          |                    | Interpolated |
|  | ZF/ZS/J12*/T* 150 | 119.5               | 59    | 51     | 1,253                 | 12.5                            |                          |                    | Interpolated |
|  | ZH/ZU/J12*/T* 150 | 119.5               | 59    | 51     | 1,250*                | 12.5                            |                          |                    | 11           |
|  | XP/XA/J12*/T* 150 | 119.5               | 59    | 51     | 1,510*                | 12.5                            |                          |                    | 8            |
|  | ZJ/ZW/J12*/T* 150 | 119.5               | 59    | 51     | 1,570*                | 12.5                            |                          |                    | 9            |
| ZR/ZK/J12*/T* 150                      | 119.5             | 59                  | 51    | 1,600* | 12.5                  | 6                               |                          |                    |              |

\*Note: Weights listed for tested units are actual, not approximate weights. The weights listed for interpolated units are maximum weights, assuming all optional features are included. Optional features are summarized in the table below.

| Unit Accessory           | Operating Weight (lbs.) |
|--------------------------|-------------------------|
| Economizer               | 85                      |
| Power Exhaust            | 35                      |
| Electric Heat            | 49                      |
| Gas Heat                 | 110                     |
| Variable Frequency Drive | 30                      |

1. Weight given is for the maximum electric heater size available.
2. Weight given for the gas heater is for the maximum number of tube heat exchangers available (8 tube).
3. Weight includes mounting hardware, controls and manual bypass option.

# Special Seismic Certification Approved Components



**Manufacturer:** Unitary Product Group

**Product Line:** Unitary Product Group Packaged Rooftop Units (UPG)

| <b>Compressor</b>   |                     |                        |              |
|---------------------|---------------------|------------------------|--------------|
| <i>Model Number</i> | <i>Manufacturer</i> | <i>Description</i>     | <i>Unit</i>  |
| H82J263             | Bristol             | Refrigerant Compressor | 1            |
| H82J283             | Bristol             | Refrigerant Compressor | 3            |
| H82J293             | Bristol             | Refrigerant Compressor | Interpolated |
| H82J303             | Bristol             | Refrigerant Compressor | 10           |
| H82J353             | Bristol             | Refrigerant Compressor | Interpolated |
| H82J373             | Bristol             | Refrigerant Compressor | Interpolated |
| H82J403             | Bristol             | Refrigerant Compressor | Interpolated |
| H82J483             | Bristol             | Refrigerant Compressor | 2, 4         |
| H83C363             | Bristol             | Refrigerant Compressor | 7            |
| H83R443             | Bristol             | Refrigerant Compressor | Interpolated |
| H83R513             | Bristol             | Refrigerant Compressor | Interpolated |
| H83R683             | Bristol             | Refrigerant Compressor | 8            |
| ZPK36K              | Copeland            | Refrigerant Compressor | 5            |
| HRH038              | Danfoss             | Refrigerant Compressor | Interpolated |
| HRH044              | Danfoss             | Refrigerant Compressor | Interpolated |
| HRH051              | Danfoss             | Refrigerant Compressor | Interpolated |
| HLH068              | Danfoss             | Refrigerant Compressor | 6            |
| HLH068              | Danfoss             | Refrigerant Compressor | 11           |
| ZP51K5E             | Copeland            | Refrigerant Compressor | 9            |
| ZP42K5E             | Copeland            | Refrigerant Compressor | Interpolated |

| <b>Outdoor Fan Motors</b> |                     |                                 |                       |
|---------------------------|---------------------|---------------------------------|-----------------------|
| <i>Model Number</i>       | <i>Manufacturer</i> | <i>Description</i>              | <i>Unit</i>           |
| F48T                      | AO Smith            | 1/3 HP Motor                    | 1,2,3,4               |
| F48N                      | AO Smith            | 1/3 to 3/4 HP Motor, 2 to 4 Qty | 5, 6, 7, 8, 9, 10, 11 |

Options: ODF Blades - Lau T10, ODF Grilles - Premier

# Special Seismic Certification Approved Components



**Manufacturer:** Unitary Product Group

**Product Line:** Unitary Product Group Packaged Rooftop Units (UPG)

| Coils        |              |                              |                |
|--------------|--------------|------------------------------|----------------|
| Model Number | Manufacturer | Description (Total Sq Ft)    | Unit           |
| JCI#449602   | Delphi       | Outdoor Coil, 11.9           | 3              |
| JCI#666492   | Delphi       | Outdoor Coil, 11.9           | 1              |
| JCI#670762   | Delphi       | Outdoor Coil, 11.9           | 2              |
| JCI#449598   | Delphi       | Outdoor Coil, 18.5           | 10             |
| JCI#513695   | Delphi       | Outdoor Coil, 18.5           | Interpolated   |
| JCI#449600   | Delphi       | Outdoor Coil, 23.8           | 4              |
| JCI#519832   | Delphi       | Outdoor Coil, 23.8           | Interpolated   |
| JCI#520526   | Delphi       | Outdoor Coil, 23.8           | Interpolated   |
| JCI#551643   | Delphi       | Outdoor Coil, 23.8           | Interpolated   |
| JCI#579297   | Delphi       | Outdoor Coil, 23.8           | 5              |
| JCI#579313   | Delphi       | Outdoor Coil, 23.8           | Interpolated   |
| JCI#519833   | Delphi       | Outdoor Coil, 29             | Interpolated   |
| JCI#519834   | Delphi       | Outdoor Coil, 29             | 11             |
| JCI#513697   | Delphi       | Outdoor Coil, 29             | Interpolated   |
| JCI#519833   | Delphi       | Outdoor Coil, 29             | Interpolated   |
| JCI#579319   | Delphi       | Outdoor Coil, 29             | Interpolated   |
| JCI#520697   | Delphi       | Outdoor Coil, 47.5           | 9              |
| JCI#85075    | Delphi       | Outdoor Coil, 47.5           | 6              |
| 256903       | JCI          | Outdoor Coil, fin/tube, 23.8 | 7              |
| 260544       | JCI          | Outdoor Coil, fin/tube, 23.8 | Interpolated   |
| 176560       | JCI          | Outdoor Coil, fin/tube, 29.0 | Interpolated   |
| 177201       | JCI          | Outdoor Coil, fin/tube, 29.0 | Interpolated   |
| 253771       | JCI          | Outdoor Coil, fin/tube, 47.5 | 8              |
| 83725        | JCI          | Indoor Coil, 8.0             | 3              |
| 74105        | JCI          | Indoor Coil, 10.56           | 2              |
| 83730        | JCI          | Indoor Coil, 10.6            | 1, 4, 5, 7, 10 |
| 83694        | JCI          | Indoor Coil, 13.2            | Interpolated   |
| 83748        | JCI          | Indoor Coil, 13.2            | 6, 8, 9, 11    |
| 286479       | JCI          | Indoor Reheat Coil, 6.6      | 5              |
| 635816       | JCI          | Indoor Reheat Coil, 10.0     | 6              |

Delphi: 1 to 2 rows, 1 to 2 coils per unit

JCI Outdoor Coils: Up to 2 rows and 2 coils per unit

JCI Indoor Coils: 3 to 4 rows per unit

JCI Indoor Reheat Coils: 2 rows per unit

## Special Seismic Certification Approved Components



**Manufacturer:** Unitary Product Group

**Product Line:** Unitary Product Group Packaged Rooftop Units (UPG)

### Reversing Valve with Coil

| Model Number | Manufacturer         | Description               | Unit |
|--------------|----------------------|---------------------------|------|
| STF04U23G    | Danfoss (Saginomiya) | Reversing Valve with Coil | 7    |
| STF07U21G    | Danfoss (Saginomiya) | Reversing Valve with Coil | 8    |

### Thermostatic Expansion Valves

| Model Number | Manufacturer | Description | Unit         |
|--------------|--------------|-------------|--------------|
| BBIZE-3      | Sporlan      | 3/8"        | 5, 7, 10     |
| BBIZE-4      | Sporlan      | 3/8"        | Interpolated |
| BBIZE-5      | Sporlan      | 3/8"        | Interpolated |
| BBIZE-6      | Sporlan      | 3/8"        | 5, 8, 9, 11  |

Note: 2 valves per unit.

### Indoor Blower Motor, Standard

| Model Number | Manufacturer | Description        | Unit                  |
|--------------|--------------|--------------------|-----------------------|
| P63PYC       | Emerson      | 1.5 to 2.0 HP      | 1, 2, 3, 4, 5, 7, 10  |
| U*56T        | Marathon     | 1.5 to 3.0 HP/575V | 5, 6, 7, 8, 9, 10, 11 |
| 8-158756PP   | AO Smith     | 2.0 HP/230-460V    | 5, 7, 10              |
| Q56T         | Marathon     | 3.0 HP/230-460V    | 6, 8, 9, 11           |
| 36J448       | Baldor       | 5.0 HP/230-460V    | 6, 8, 9, 11           |
| 36B106       | Baldor       | 5.0 HP/575V        | 6, 8, 9, 11           |

### Indoor Blower Motor, Variable Frequency Drive

| Model Number | Manufacturer | Description     | Unit  |
|--------------|--------------|-----------------|-------|
| 35Y377S      | Baldor       | 1.5 HP 230/460V | 10    |
| 35Y041P      | Baldor       | 2 HP 230/460V   | 10    |
| 35Y041M      | Baldor       | 1.5 HP 575V     | 10    |
| 35Y377S      | Baldor       | 2 HP 575V       | 10    |
| 35Y041T      | Baldor       | 3 HP 230/460V   | 9, 11 |
| 35Y041S      | Baldor       | 3 HP 575V       | 9, 11 |
| 36M381       | Baldor       | 5.0 HP/230-460V | 9, 11 |
| 36M382       | Baldor       | 5.0 HP/575V     | 9, 11 |

## Special Seismic Certification Approved Components



**Manufacturer:** Unitary Product Group

**Product Line:** Unitary Product Group Packaged Rooftop Units (UPG)

| <b>Exhaust Fan Motor</b> |                     |                    |              |
|--------------------------|---------------------|--------------------|--------------|
| <i>Model Number</i>      | <i>Manufacturer</i> | <i>Description</i> | <i>Unit</i>  |
| F48X26                   | A.O. Smith          | 230V Motor         | 4            |
| F48X06                   | A.O. Smith          | 460V Motor         | Interpolated |
| F48W97                   | A.O. Smith          | 575V Motor         | 10           |

| <b>Variable Frequency Drive</b> |                     |                     |             |
|---------------------------------|---------------------|---------------------|-------------|
| <i>Model Number</i>             | <i>Manufacturer</i> | <i>Description</i>  | <i>Unit</i> |
| MVX002A0-2                      | Eaton               | 1.5 to 2.0 HP, 230V | 10          |
| MVX002A0-4                      | Eaton               | 1.5 to 2.0 HP, 460V | 10          |
| MVX002A0-5                      | Eaton               | 1.5 to 2.0 HP, 575V | 10          |
| MVX003A0-2                      | Eaton               | 3.0 HP, 230V        | 9, 11       |
| MVX003A0-4                      | Eaton               | 3.0 HP, 460V        | 9, 11       |
| MVX003A0-5                      | Eaton               | 3.0 HP, 575V        | 9, 11       |
| MVX005A0-2                      | Eaton               | 5.0 HP, 230V        | 9, 11       |
| MVX005A0-4                      | Eaton               | 5.0 HP, 460V        | 9, 11       |
| MVX005A0-5                      | Eaton               | 5.0 HP, 575V        | 9, 11       |

| <b>Economizer</b>   |                     |                       |                                      |
|---------------------|---------------------|-----------------------|--------------------------------------|
| <i>Model Number</i> | <i>Manufacturer</i> | <i>Description</i>    | <i>Unit</i>                          |
| 2EE04706024         | JCI                 | Horizontal Economizer | 1, 2, 3, 4, 5, 6, 7,<br>8, 9, 10, 11 |
| 2EE04705824         | JCI                 | Slab Economizer       | 1, 2, 3, 4, 5, 7, 10                 |
| 2EE04705724         | JCI                 | Slab Economizer       | 6, 8, 9, 11                          |
| 2MD04703724         | JCI                 | 2-Position Economizer | 1, 2, 3, 4, 5, 6, 7,<br>8, 9, 10, 11 |

# Special Seismic Certification

## Approved Components



**Manufacturer:** Unitary Product Group

**Product Line:** Unitary Product Group Packaged Rooftop Units (UPG)

| <b>Electric Heater</b> |                     |   |              |
|------------------------|---------------------|---|--------------|
| <i>Model Number</i>    | <i>Manufacturer</i> | <i>Description</i>                                    | <i>Unit</i>  |
| 2TP04520925            | Tutco               | 9kW, 230V, Standard Predator, 50" cabinet, AC and HP  | Interpolated |
| 2TP04520946            | Tutco               | 9kW, 460V, Standard Predator, 50" cabinet, AC and HP  | Interpolated |
| 2TP04520958            | Tutco               | 9kW, 575V, Standard Predator, 50" cabinet, AC and HP  | Interpolated |
| 2TP04531825            | Tutco               | 18kW, 230V, Standard Predator, 50" cabinet, AC and HP | Interpolated |
| 2TP04531846            | Tutco               | 18kW, 460V, Standard Predator, 50" cabinet, AC and HP | Interpolated |
| 2TP04521858            | Tutco               | 18kW, 575V, Standard Predator, 50" cabinet, AC and HP | Interpolated |
| 2TP04532425            | Tutco               | 24kW, 230V, Standard Predator, 50" cabinet, AC and HP | Interpolated |
| 2TP04532446            | Tutco               | 24kW, 460V, Standard Predator, 50" cabinet, AC and HP | Interpolated |
| 2TP04522458            | Tutco               | 24kW, 575V, Standard Predator, 50" cabinet, AC and HP | Interpolated |
| 2TP04533625            | Tutco               | 36kW, 230V, Standard Predator, 50" cabinet, AC and HP | Interpolated |
| 2TP04533646            | Tutco               | 36kW, 460V, Standard Predator, 50" cabinet, AC and HP | Interpolated |
| 2TP04523658            | Tutco               | 36kW, 575V, Standard Predator, 50" cabinet, AC and HP | Interpolated |
| 2HP04535425            | Tutco               | 54kW, 230V, Standard Predator, 50" cabinet, heat pump | Interpolated |
| 2HP04535446            | Tutco               | 54kW, 460V, Standard Predator, 50" cabinet, heat pump | Interpolated |
| 2HP04535458            | Tutco               | 54kW, 575V, Standard Predator, 50" cabinet, heat pump | 8            |
| 2TP04525425            | Tutco               | 54kW, 230V, Standard Predator, 50" cabinet, AC only   | Interpolated |
| 2TP04525446            | Tutco               | 54kW, 460V, Standard Predator, 50" cabinet, AC only   | Interpolated |
| 2TP04525458            | Tutco               | 54kW, 575V, Standard Predator, 50" cabinet, AC only   | Interpolated |
| 2TP04540925            | Tutco               | 9kW, 230V, Standard Predator, 42" cabinet, AC and HP  | 7            |
| 2TP04540946            | Tutco               | 9kW, 460V, Standard Predator, 42" cabinet, AC and HP  | Interpolated |
| 2TP04540958            | Tutco               | 9kW, 575V, Standard Predator, 42" cabinet, AC and HP  | Interpolated |
| 2TP04541825            | Tutco               | 18kW, 230V, Standard Predator, 42" cabinet, AC and HP | Interpolated |
| 2TP04541846            | Tutco               | 18kW, 460V, Standard Predator, 42" cabinet, AC and HP | Interpolated |
| 2TP04541858            | Tutco               | 18kW, 575V, Standard Predator, 42" cabinet, AC and HP | Interpolated |
| 2TP04542425            | Tutco               | 24kW, 230V, Standard Predator, 42" cabinet, AC and HP | Interpolated |
| 2TP04542446            | Tutco               | 24kW, 460V, Standard Predator, 42" cabinet, AC and HP | Interpolated |
| 2TP04542458            | Tutco               | 24kW, 575V, Standard Predator, 42" cabinet, AC and HP | Interpolated |
| 2TP04543625            | Tutco               | 36kW, 230V, Standard Predator, 42" cabinet, AC and HP | Interpolated |
| 2TP04543646            | Tutco               | 36kW, 460V, Standard Predator, 42" cabinet, AC and HP | Interpolated |
| 2TP04543658            | Tutco               | 36kW, 575V, Standard Predator, 42" cabinet, AC and HP | Interpolated |

# Special Seismic Certification Approved Components



**Manufacturer:** Unitary Product Group

**Product Line:** Unitary Product Group Packaged Rooftop Units (UPG)

| <b>Heat Cells (Heat Type and Nominal Heat Capacity)</b> |                     |  |              |
|---|---------------------|--|--------------|
| <i>Model Number</i>                                     | <i>Manufacturer</i> | <i>Description (Smallest/Largest MBH Output)</i> | <i>Unit</i>  |
| Single Stage Natural Gas Heat Options                   |                     |  |              |
| A05   | JCI                 | 49 MBH Output Aluminized Steel, Single Stage     | 1            |
| A07   | JCI                 | 65 MBH Output Aluminized Steel, Single Stage     | Interpolated |
| A09   | JCI                 | 97 MBH Output Aluminized Steel, Single Stage     | Interpolated |
| A13   | JCI                 | 129 MBH Output Aluminized Steel, Single Stage    | 2            |
| B05   | JCI                 | 49 MBH Output Stainless Steel, Single Stage      | Interpolated |
| B07   | JCI                 | 65 MBH Output Stainless Steel, Single Stage      | Interpolated |
| B09   | JCI                 | 97 MBH Output Stainless Steel, Single Stage      | Interpolated |
| B13   | JCI                 | 129 MBH Output Stainless Steel, Single Stage     | Interpolated |
| Two Stage Natural Gas Heat Options                      |                     |  |              |
| N05   | JCI                 | 49 MBH Output Aluminized Steel, Two Stage        | Interpolated |
| N07   | JCI                 | 65 MBH Output Aluminized Steel, Two Stage        | Interpolated |
| N09   | JCI                 | 97 MBH Output Aluminized Steel, Two Stage        | Interpolated |
| N10   | JCI                 | 100 MBH Output Aluminized Steel, Two Stage       | 5            |
| N13   | JCI                 | 129 MBH Output Aluminized Steel, Two Stage       | Interpolated |
| N15   | JCI                 | 150 MBH Output Aluminized Steel, Two Stage       | Interpolated |
| N20   | JCI                 | 200 MBH Output Aluminized Steel, Two Stage       | 6            |
| S05   | JCI                 | 49 MBH Output Stainless Steel, Two Stage         | 3            |
| S07   | JCI                 | 65 MBH Output Stainless Steel, Two Stage         | Interpolated |
| S09   | JCI                 | 97 MBH Output Stainless Steel, Two Stage         | Interpolated |
| S10   | JCI                 | 100 MBH Output Stainless Steel, Two Stage        | 10           |
| S13   | JCI                 | 129 MBH Output Stainless Steel, Two Stage        | 4            |
| S15   | JCI                 | 150 MBH Output Stainless Steel, Two Stage        | Interpolated |
| S20   | JCI                 | 200 MBH Output Stainless Steel, Two Stage        | 9            |

Note: All heat cells are either stainless or aluminized steel.

| <b>Filters</b>      |                     |                                     |                                   |
|---------------------|---------------------|-------------------------------------|-----------------------------------|
| <i>Model Number</i> | <i>Manufacturer</i> | <i>Description</i>                  | <i>Unit</i>                       |
| 198                 | American Air Filter | 16" x 24" x 2" Fiberglass TA Filter | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 |
| 300X                | American Air Filter | 16" x 24" x 2" Pleated Filter       | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 |
| AA1300              | American Air Filter | 16" x 24" x 4" Pleated Filter       | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 |

## Special Seismic Certification Approved Components



**Manufacturer:** Unitary Product Group

**Product Line:** Unitary Product Group Packaged Rooftop Units (UPG)

| <b>Miscellaneous</b>   |                        |  |                                      |
|------------------------|------------------------|--|--------------------------------------|
| <b>Model Number</b>    | <b>Manufacturer</b>    | <b>Description</b>   | <b>Unit</b>                          |
| CY017                  | Advanced Controls Inc. | VFD Bypass Switch  | 9, 10, 11                            |
| 5KCP39N                | GE                     | 230 / 460V Power Exhaust Fan Motor                                       | 1, 2, 3, 4, 5, 6, 7,<br>8, 9, 10, 11 |
| F48P                   | AO Smith               | 575V Power Exhaust Fan Motor   | 1, 2, 3, 4, 5, 6, 7,<br>8, 9, 10, 11 |
| YD4120                 | System Sensor          | Smoke Detector   | 1, 2, 3, 4, 5, 6, 7,<br>8, 9, 10, 11 |
| FHL/KHL/JGL            | Square D               | Electrical Disconnect Switch   | 1, 2, 3, 4, 5, 6, 7,<br>8, 9, 10, 11 |
| AE 00203               | Ayrshire               | Simplicity Lite Board gas/elec   | 1, 2, 3, 4                           |
| AE 00401               | Ayrshire               | Simplicity 1A Board gas/elec   | 5, 6, 9, 10, 11                      |
| AE 00501               | Ayrshire               | Simplicity 1A Board heat pump  | 7, 8                                 |
| 1159-10                | United Technologies    | Intelli Comfort Board  | 1,2,3,4, 10                          |
| AE 1010044             | Ayrshire               | VAV Board  | 9, 10                                |
| 1084-900               | United Technologies    | Defrost Board  | 7, 8                                 |
| 65674 (026-39484-000A) | JCI                    | Evap Coil Drain Pan (20 ga 304 Stainless Steel), 56.56"L x 4.13"W x 4"D  | 1, 2, 3, 4, 5, 6, 7,<br>8, 9, 10, 11 |
| 10241 (032-00184-000)  | JCI                    | Evap Coil Drain Pan (Plastic), 56.56"L x 4.13"W x 4"D Polymer, 0.200"THK | 1, 2, 3, 4, 5, 6, 7,<br>8, 9, 10, 11 |

## Nomenclature

### 3-12.5 Ton Model Number Nomenclature

Z U -10 N24 A T A AA 5 0 1 2 4 A

|   |
|---|
| <b>Product Category</b><br>Z = A/C, Single Pkg., R-410A   |
| <b>Product Identifier</b><br>U = 11.7-11.8 EER<br>W = 12.2 EER<br>K = Reheat  |
| <b>Nominal Cooling Capacity</b><br>-A3 = 3 Ton<br>-A4 = 4 Ton<br>-A5 = 5 Ton<br>-06 = 6.5 Ton<br>-07 = 7.5 Ton<br>-08 = 8.5 Ton<br>-10 = 10.0 Ton<br>-12 = 12.5 Ton   |
| <b>Heat Type and Nominal Heat Capacity (Unit Size Allowed)</b><br>C00 = Cooling Only. No heat installed   |
| <b>Single Stage Natural Gas Heat Options</b><br>A06 = 60 MBH Input Aluminized Steel, Single Stage (-A3, -A4)<br>A08 = 80 MBH Input Aluminized Steel, Single Stage (-A3, -A4, -A5)<br>A11 = 120 MBH Input Aluminized Steel, Single Stage (-A3, -A4, -A5)<br>A16 = 160 MBH Input Aluminized Steel, Single Stage (-A5)<br>B06 = 60 MBH Input Stainless Steel, Single Stage (-A3, -A4)<br>B08 = 80 MBH Input Stainless Steel, Single Stage (-A3, -A4, -A5)<br>B11 = 120 MBH Input Stainless Steel, Single Stage (-A3, -A4, -A5)<br>B16 = 160 MBH Input Stainless Steel, Single Stage (-A5)  |
| <b>Two Stage Natural Gas Heat Options</b><br>N06 = 60 MBH Output Aluminized Steel, Two Stage (-A3, -A4)<br>N08 = 80 MBH Input Aluminized Steel, Two Stage (-A3, -A4, -A5)<br>N11 = 120 MBH Input Aluminized Steel, Two Stage (-A3, -A4, -A5)<br>N16 = 160 MBH Input Aluminized Steel, Two Stage (-A5)<br>S06 = 60 MBH Input Stainless Steel, Two Stage (-A3, -A4)<br>S08 = 80 MBH Input Stainless Steel, Two Stage (-A3, -A4, -A5)<br>S11 = 120 MBH Input Stainless Steel, Two Stage (-A3, -A4, -A5)<br>S16 = 160 MBH Input Stainless Steel, Two Stage (-A5)<br>N12 = 120 MBH Input Aluminized Steel, Two Stage (-06, -07, -08)<br>N18 = 180 MBH Input Aluminized Steel, Two Stage (-06, -07, -08, -10, -12)<br>N24 = 240 MBH Input Aluminized Steel, Two Stage (-10, -12)<br>S12 = 120 MBH Input Stainless Steel, Two Stage (-06, -07, -08)<br>S18 = 180 MBH Input Stainless Steel, Two Stage (-06, -07, -08, -10, -12)<br>S24 = 240 MBH Input Stainless Steel, Two Stage (-10, -12) |
| <b>Electric Heat Options</b><br>E03 = 3 KW (-A3)<br>E06 = 6 KW (-A3, -A4, -A5)<br>E08 = 9 KW (-A3, -A4, -A5)<br>E09 = 9 KW (-06, -07, -08)<br>E15 = 15 KW (-A3, -A4, -A5)<br>E18 = 18 KW (-06, -07, -08, -10, -12)<br>E20 = 20 KW (-A4, -A5)<br>E23 = 24 KW (-A5)<br>E24 = 24 KW (-06, -07, -08, -10, -12)<br>E36 = 36 KW (-06, -07, -08, -10, -12)<br>E54 = 54 KW (-10, -12)   |

|  |
|--|
| <b>Product Style</b><br>A = Style A<br>B = Style B<br>C = Style C  |
| <b>Configuration Options (not required for all units)</b><br>These four digits will not be assigned until a quote is requested, or an order placed.  |
| <ul style="list-style-type: none"> <li><input type="checkbox"/> SS Drain Pan</li> <li><input type="checkbox"/> CPC Controller, DFS, APS</li> <li><input type="checkbox"/> Johnson Controller UNT 1126 (N2 protocol), DFS, APS</li> <li><input type="checkbox"/> Honeywell Controller, DFS, APS</li> <li><input type="checkbox"/> Novar Controller, DFS, APS</li> <li><input type="checkbox"/> Simplicity IntelliComfort Controller</li> <li><input type="checkbox"/> Simplicity IntelliComfort Controller w/Simplicity@LINC</li> <li><input type="checkbox"/> Hot Gas Bypass (Standard on VAV, Optional on CV)</li> <li><input type="checkbox"/> Variable Air Volume, VFD (not available with factory installed BAS options)</li> <li><input type="checkbox"/> Variable Air Volume, VFD with Simplicity@LINC (not available with factory installed BAS options)</li> <li><input type="checkbox"/> Variable Air Volume, VFD and Manual Bypass (not available with factory installed BAS options)</li> <li><input type="checkbox"/> Variable Air Volume, VFD and Manual Bypass with Simplicity@LINC (not available with factory installed BAS options)</li> <li><input type="checkbox"/> Variable Air Volume, VFD (BAS ready)</li> <li><input type="checkbox"/> Variable Air Volume, VFD and Manual Bypass (BAS ready)</li> <li><input type="checkbox"/> Variable Air Volume, VFD Ready (for customer-provided, field-installed drive)</li> <li><input type="checkbox"/> Variable Air Volume, VFD Ready with Simplicity@LINC (for customer-provided, field-installed drive)</li> <li><input type="checkbox"/> 2" Pleated filters</li> <li><input type="checkbox"/> 4" Pleated filters</li> <li><input type="checkbox"/> BAS Ready Economizer (2-10 V.D.C. Actuator without a Controller)</li> <li><input type="checkbox"/> Shipping Bag</li> <li><input type="checkbox"/> Any Combination of Additional Options that Don't Have an Option Code Pre-assigned</li> </ul> |

|  |   |
|--|---|
| <b>Product Generation</b><br>5 = Fifth Generation  | <b>Additional Options</b>   |
| <ul style="list-style-type: none"> <li>AA = None</li> <li>AB = Phase Monitor</li> <li>AC = Coil Guard</li> <li>AD = Dirty Filter Switch</li> <li>AE = Phase Monitor &amp; Coil Guard</li> <li>AF = Phase Monitor &amp; Dirty Filter Switch</li> <li>AG = Coil Guard &amp; Dirty Filter Switch</li> <li>AH = Phase Monitor, Coil Guard &amp; Dirty Filter Switch</li> <li>RC = Coil Guard, Shipping Bag &amp; American Flag</li> <li>TA = Technicoat Condenser Coil</li> <li>TJ = Technicoat Evaporator Coil</li> <li>TS = Technicoat Evaporator &amp; Condenser Coils</li> </ul> | <p>ZZ = If desired option combination is not listed above, ZZ will be assigned and configuration options will be located in digits 15-18.</p> |

|                  |
|------------------|
| <b>Voltage</b>   |
| T = 208/230-3-60 |
| W = 460-3-60     |
| X = 575-3-60     |

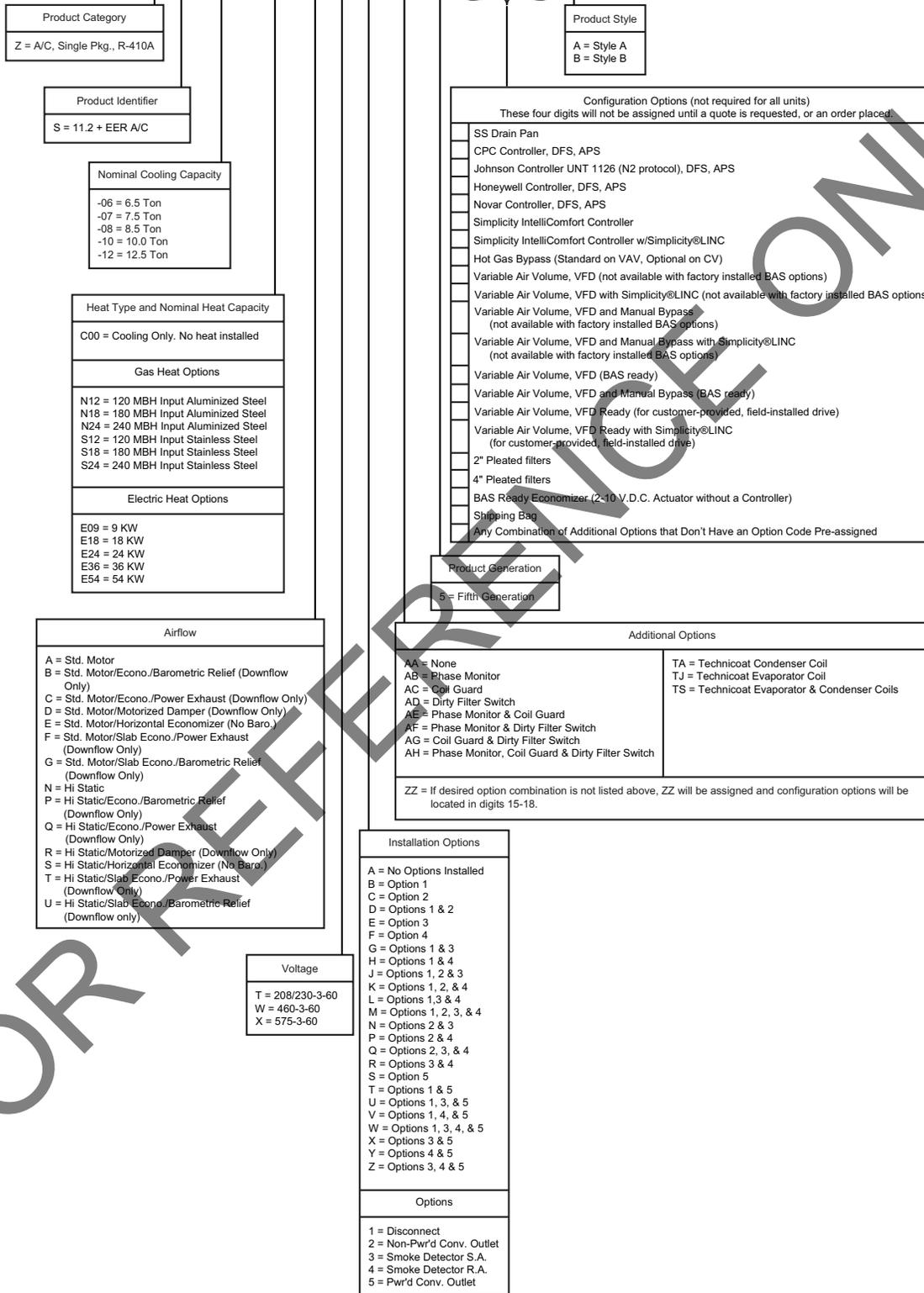
|   |
|---|
| <b>Installation Options</b>   |
| <ul style="list-style-type: none"> <li>A = No Options Installed</li> <li>B = Option 1</li> <li>C = Option 2</li> <li>D = Options 1 &amp; 2</li> <li>E = Option 3</li> <li>F = Option 4</li> <li>G = Options 1 &amp; 3</li> <li>H = Options 1 &amp; 4</li> <li>J = Options 1, 2 &amp; 3</li> <li>K = Options 1, 2, &amp; 4</li> <li>L = Options 1, 3 &amp; 4</li> <li>M = Options 1, 2, 3, &amp; 4</li> <li>N = Options 2 &amp; 3</li> <li>P = Options 2 &amp; 4</li> <li>Q = Options 2, 3, &amp; 4</li> <li>R = Options 3 &amp; 4</li> <li>S = Option 5</li> <li>T = Options 1 &amp; 5</li> <li>U = Options 1, 3, &amp; 5</li> <li>V = Options 1, 4, &amp; 5</li> <li>W = Options 1, 3, 4, &amp; 5</li> <li>X = Options 3 &amp; 5</li> <li>Y = Options 4 &amp; 5</li> <li>Z = Options 3, 4 &amp; 5</li> </ul> |
| <b>Options</b>  |
| <ul style="list-style-type: none"> <li>1 = Disconnect</li> <li>2 = Non-Pwr'd Conv. Outlet</li> <li>3 = Smoke Detector S.A.</li> <li>4 = Smoke Detector R.A.</li> <li>5 = Pwr'd Conv. Outlet</li> </ul>  |

|   |
|---|
| <b>Airflow</b>  |
| <ul style="list-style-type: none"> <li>A = Std. Motor</li> <li>B = Std. Motor/Econo./Barometric Relief (Downflow Only)</li> <li>C = Std. Motor/Econo./Power Exhaust (Downflow Only)</li> <li>D = Std. Motor/Motorized Damper (Downflow Only)</li> <li>E = Std. Motor/Horizontal Economizer (No Baro.)</li> <li>F = Std. Motor/Slab Econo./Power Exhaust (Downflow Only)</li> <li>G = Std. Motor/Slab Econo./Barometric Relief (Downflow Only)</li> <li>N = Hi Static</li> <li>P = Hi Static/Econo./Barometric Relief (Downflow Only)</li> <li>Q = Hi Static/Econo./Power Exhaust (Downflow Only)</li> <li>R = Hi Static/Motorized Damper (Downflow Only)</li> <li>S = Hi Static/Horizontal Economizer (No Baro.)</li> <li>T = Hi Static/Slab Econo./Power Exhaust (Downflow Only)</li> <li>U = Hi Static/Slab Econo./Barometric Relief (Downflow only)</li> </ul> |

Nomenclature

6.5-12.5 Ton Single Package Model Number Nomenclature

Z S -10 N18 A T A AA 5 0 1 2 4 A



FOR REFERENCE ONLY

Nomenclature

6.5-12.5 Ton Single Package Model Number Nomenclature

X A -10 N18 A T A AA 5 0 1 2 4 A

Product Category  
X = HP, Single Pkg., R-410A

Product Identifier  
A = 11.0+ EER HP

Nominal Cooling Capacity  
-06 = 6.5 Ton  
-07 = 7.5 Ton  
-08 = 8.5 Ton  
-10 = 10.0 Ton  
-12 = 12.5 Ton

Heat Type and Nominal Heat Capacity  
C00 = Cooling Only. No heat installed

Electric Heat Options  
E09 = 9 KW  
E18 = 18 KW  
E24 = 24 KW  
E36 = 36 KW  
E54 = 54 KW

Airflow  
A = Std. Motor  
B = Std. Motor/Econo./Barometric Relief (Downflow Only)  
C = Std. Motor/Econo./Power Exhaust (Downflow Only)  
D = Std. Motor/Motorized Damper (Downflow Only)  
E = Std. Motor/Horizontal Economizer (No Baro.)  
F = Std. Motor/Slab Econo./Power Exhaust (Downflow Only)  
G = Std. Motor/Slab Econo./Barometric Relief (Downflow Only)  
N = Hi Static Mtr.  
P = Hi Static Mtr./Econo./Barometric Relief (Downflow Only)  
Q = Hi Static Mtr./Econo./Power Exhaust (Downflow Only)  
R = Hi Static Mtr./Motorized Damper (Downflow Only)  
S = Hi Static Mtr./Horizontal Economizer (No Baro.)  
T = Hi Static Mtr./Slab Econo./Power Exhaust (Downflow Only)  
U = Hi Static Mtr./Slab Econo./Barometric Relief (Downflow Only)

Voltage  
T = 208/230-3-60  
W = 460-3-60  
X = 575-3-60

Product Style  
A = Style A  
B = Style B

Configuration Options (not required for all units)  
These four digits will not be assigned until a quote is requested, or an order placed.

- SS Drain Pan
- CPC Controller, DFS, APS
- Johnson Controller, DFS, APS
- Honeywell Controller, DFS, APS
- Novar Controller, DFS, APS
- Simplicity IntelliComfort Controller
- Simplicity IntelliComfort Controller w/ModLinc
- 2" Pleated filters
- 4" Pleated filters
- BAS Ready Economizer (2-10 V.D.C. Actuator without a Controller)
- Shipping Bag
- Any Combination of Additional Options that Don't Have an Option Code Pre-assigned

Product Generation  
5 = Fifth Generation

Additional Options

|  |   |
|--|---|
| AA = None<br>AB = Phase Monitor<br>AC = Coil Guard<br>AD = Dirty Filter Switch<br>AE = Phase Monitor & Coil Guard<br>AF = Phase Monitor & Dirty Filter Switch<br>AG = Coil Guard & Dirty Filter Switch<br>AH = Phase Monitor, Coil Guard & Dirty Filter Switch | TA = Technicoat Condenser Coil<br>TJ = Technicoat Evaporator Coil<br>TS = Technicoat Evaporator & Condenser Coils |
|--|---|

ZZ = If desired option combination is not listed above, ZZ will be assigned and configuration options will be located in digits 15-18.

Installation Options

- A = No Options Installed
- B = Option 1
- C = Option 2
- D = Options 1 & 2
- E = Option 3
- F = Option 4
- G = Options 1 & 3
- H = Options 1 & 4
- J = Options 1, 2 & 3
- K = Options 1, 2, & 4
- L = Options 1, 3 & 4
- M = Options 1, 2, 3, & 4
- N = Options 2 & 3
- P = Options 2 & 4
- Q = Options 2, 3, & 4
- R = Options 3 & 4
- S = Option 5
- T = Options 1 & 5
- U = Options 1, 3, & 5
- V = Options 1, 4, & 5
- W = Options 1, 3, 4, & 5
- X = Options 3 & 5
- Y = Options 4 & 5
- Z = Options 3, 4 & 5

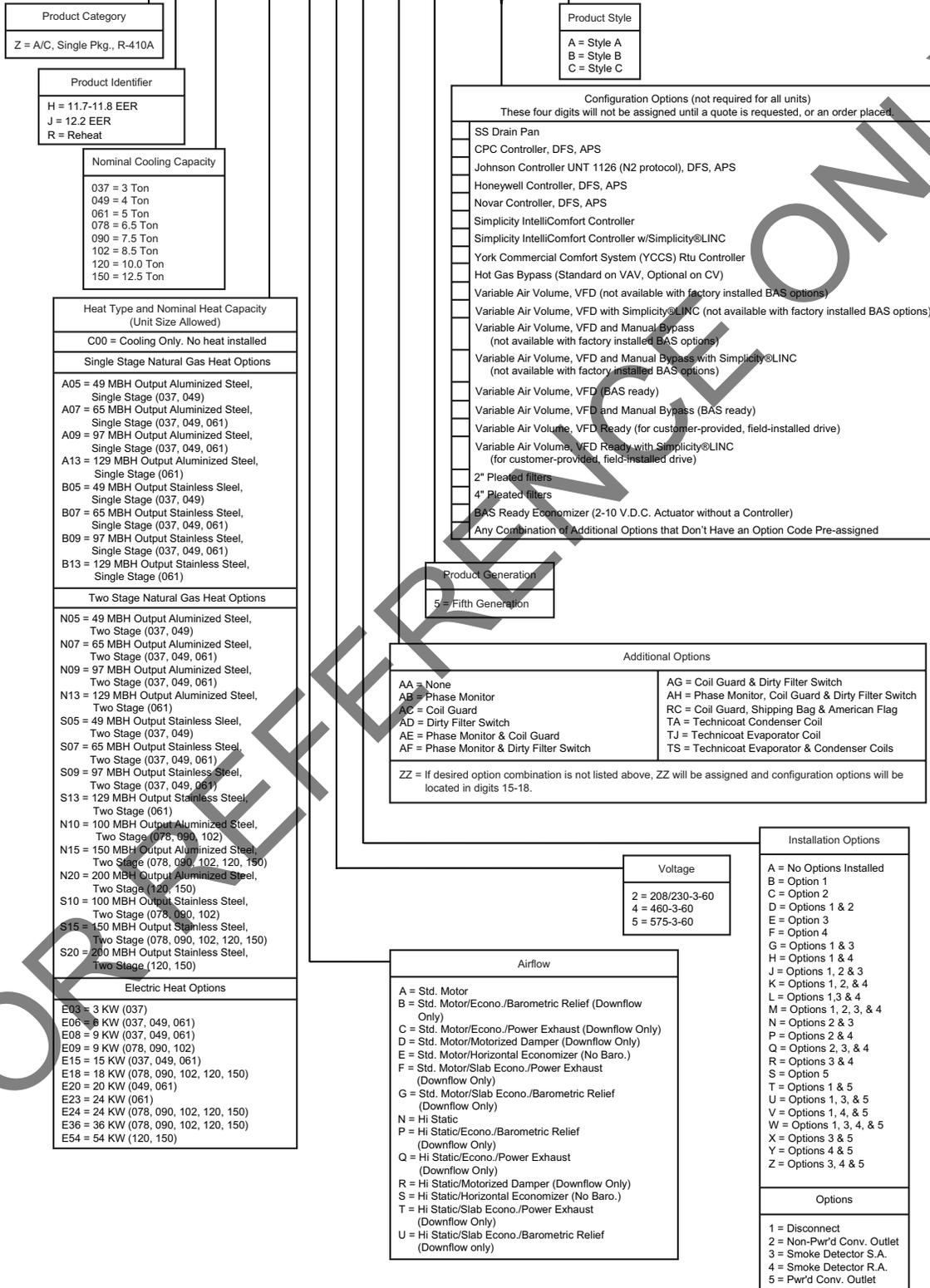
Options

- 1 = Disconnect
- 2 = Non-Pwr'd Conv. Outlet
- 3 = Smoke Detector S.A.
- 4 = Smoke Detector R.A.
- 5 = Pwr'd Conv. Outlet

Nomenclature

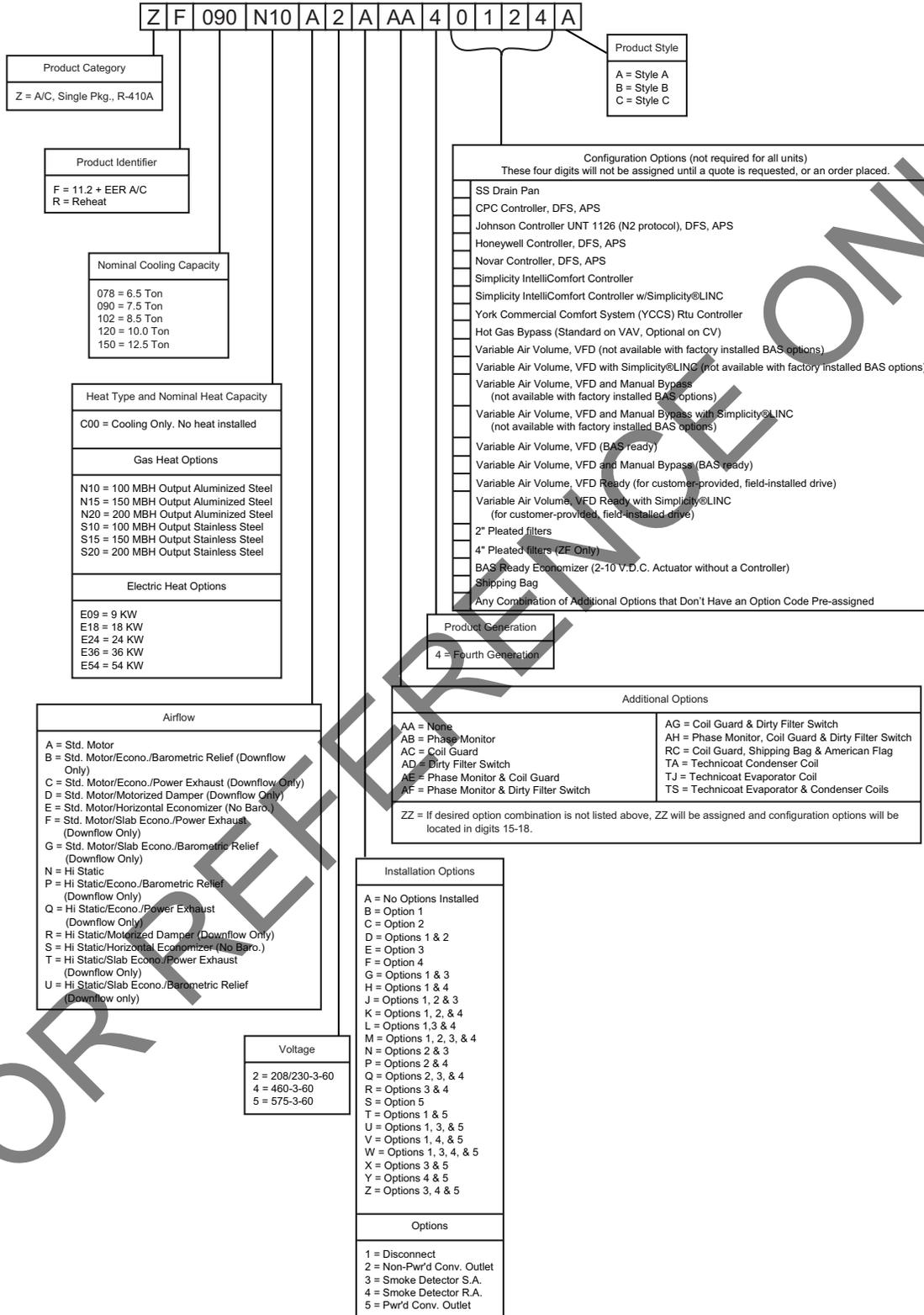
3-12.5 Ton York® Model Number Nomenclature

Z H 090 N10 A 2 A AA 5 0 1 2 4 A



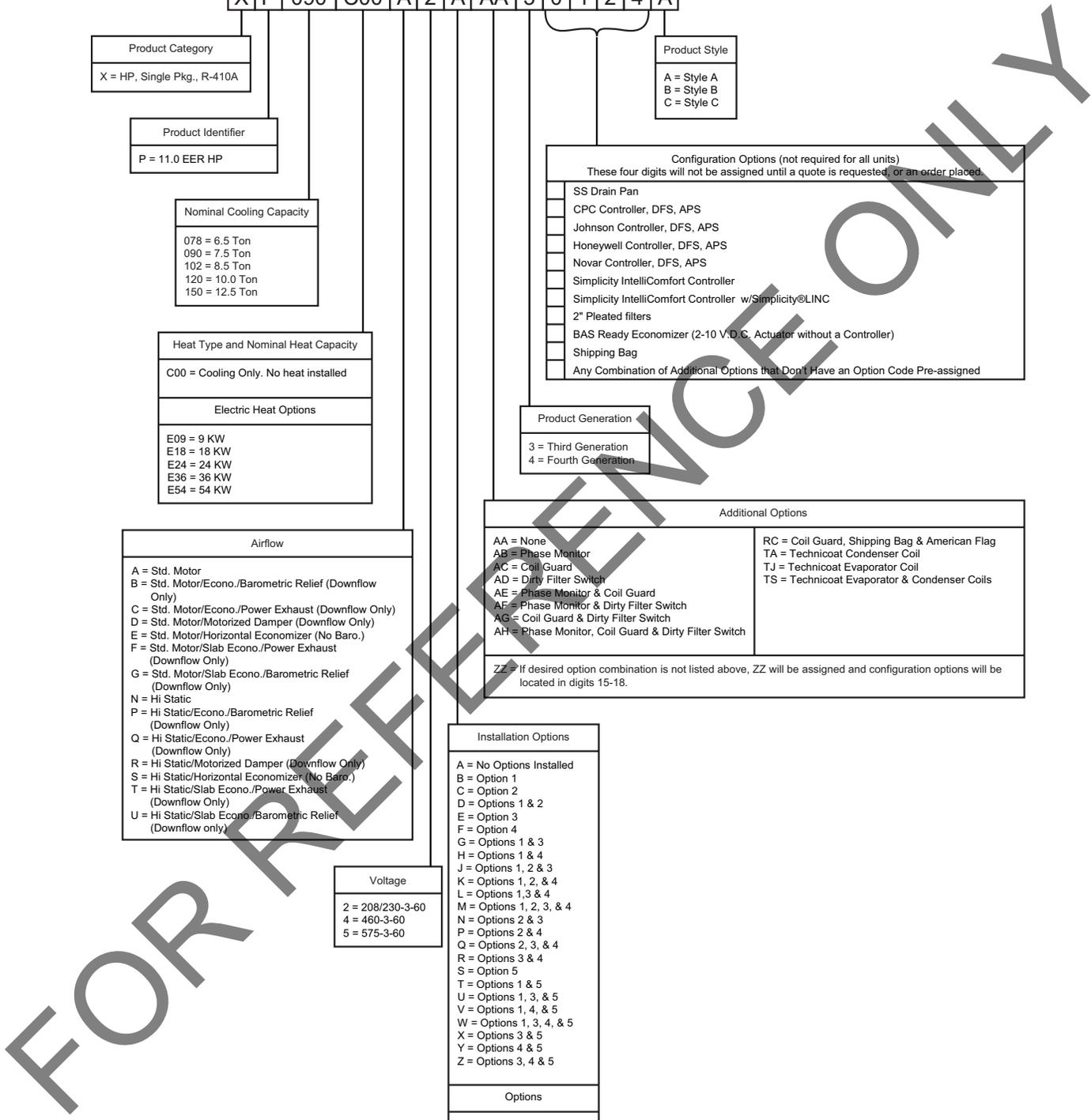
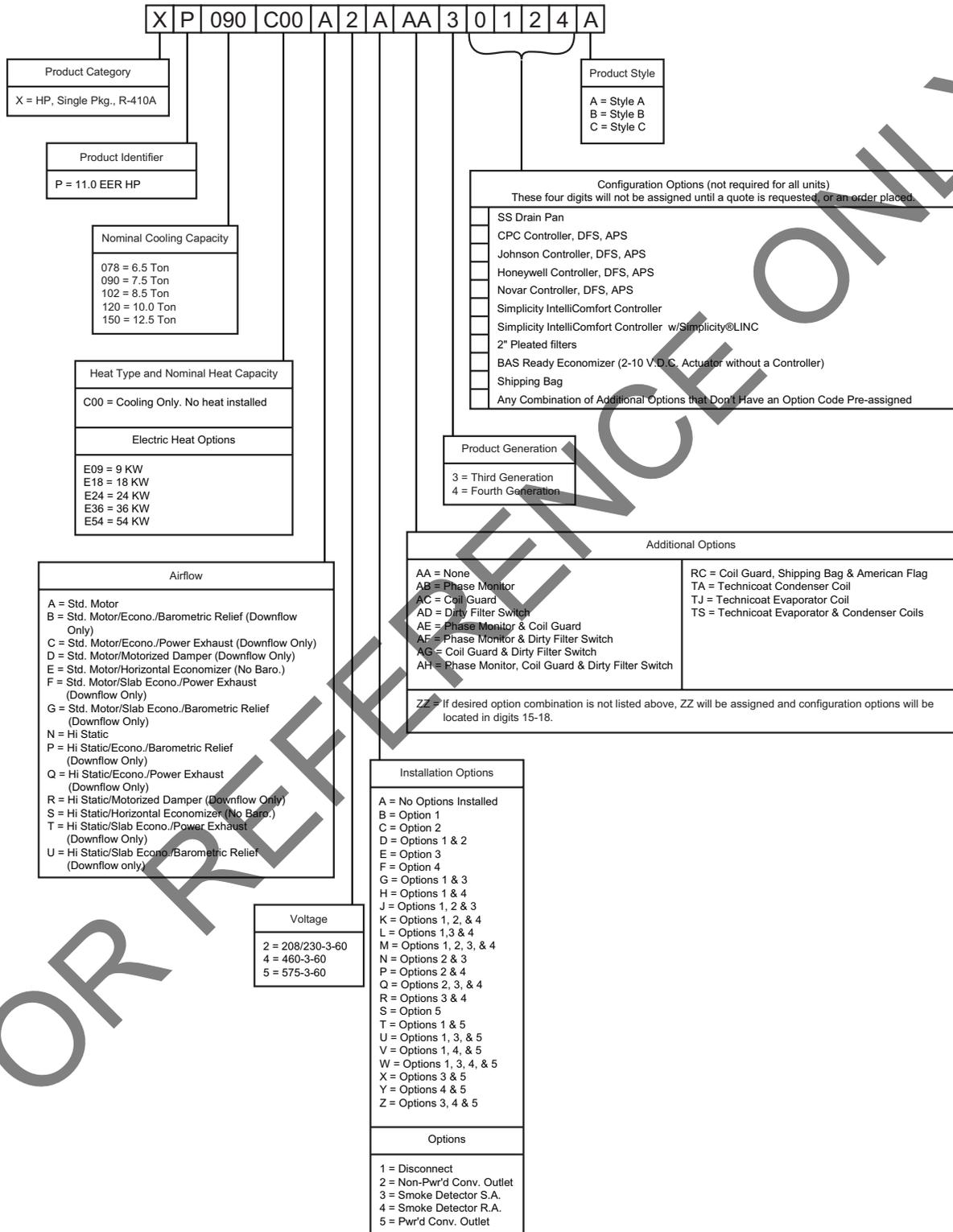
Nomenclature

6.5-12.5 Ton York® Model Number Nomenclature



Nomenclature

6.5-12.5 Ton York® Model Number Nomenclature

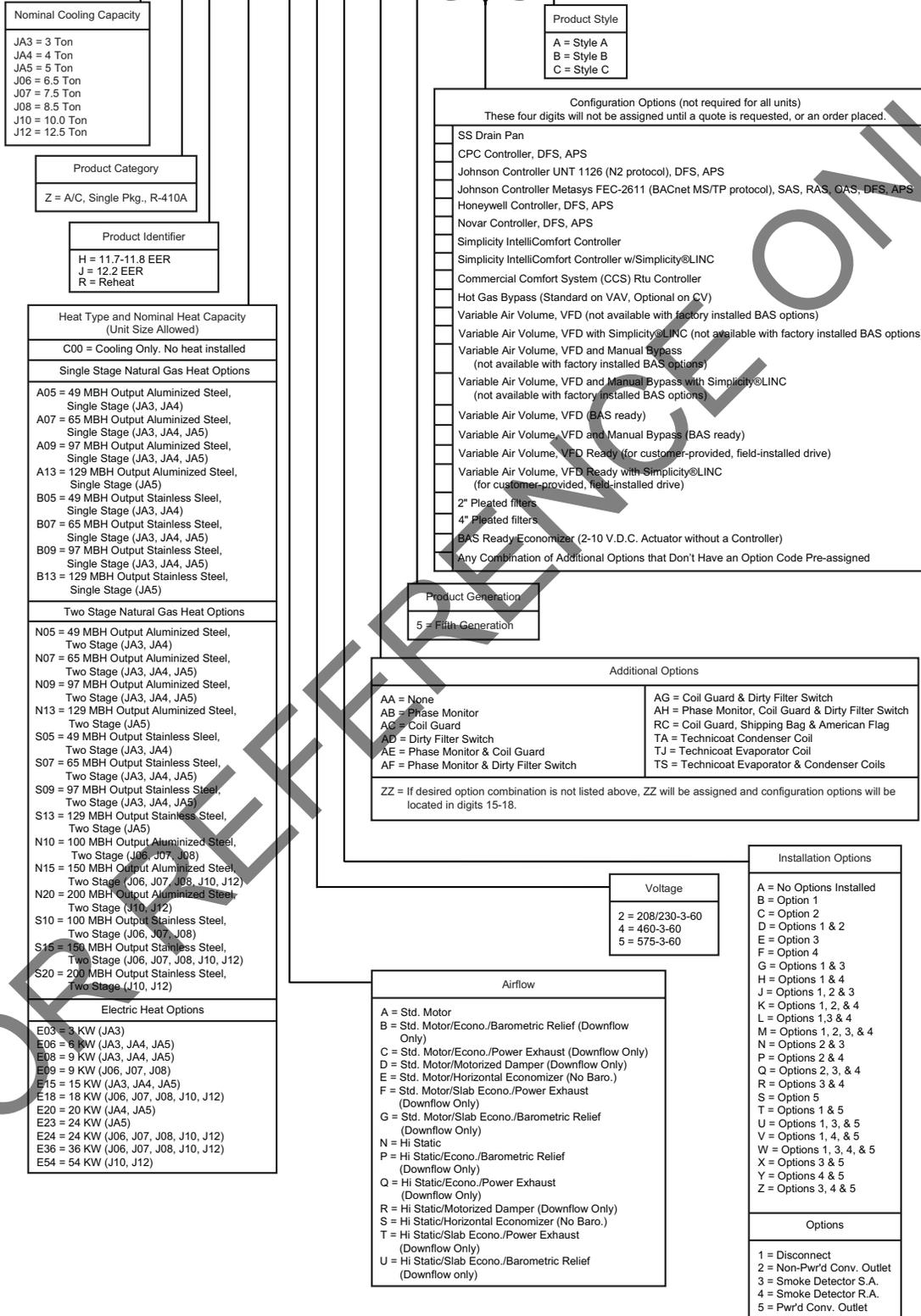


# J-Unit Nomenclature

## Nomenclature

### 3-12.5 Ton JCI Series 10 Model Number Nomenclature

J10 Z H N24 A 2 A AA 5 0 1 2 4 A



Nomenclature

6.5-12.5 Ton Series 10 Model Number Nomenclature

J07 Z F N10 A 2 A AA 5 0 1 2 4 A

| Nominal Cooling Capacity  |
|---|
| J06 = 6.5 Ton<br>J07 = 7.5 Ton<br>J08 = 8.5 Ton<br>J10 = 10.0 Ton<br>J12 = 12.5 Ton |

| Product Style                             |
|---|
| A = Style A<br>B = Style B<br>C = Style C |

| Product Category             |
|------------------------------|
| Z = A/C, Single Pkg., R-410A |

| Product Identifier |
|--------------------|
| F = 11.2 + EER A/C |

| Heat Type and Nominal Heat Capacity   |
|---|
| C00 = Cooling Only. No heat installed   |
| Gas Heat Options  |
| N10 = 100 MBH Output Aluminized Steel<br>N15 = 150 MBH Output Aluminized Steel<br>N20 = 200 MBH Output Aluminized Steel<br>S10 = 100 MBH Output Stainless Steel<br>S15 = 150 MBH Output Stainless Steel<br>S20 = 200 MBH Output Stainless Steel |
| Electric Heat Options   |
| E09 = 9 KW<br>E18 = 18 KW<br>E24 = 24 KW<br>E36 = 36 KW<br>E54 = 54 KW  |

| Configuration Options (not required for all units)   |
|--|
| These four digits will not be assigned until a quote is requested, or an order placed.                     |
| SS Drain Pan   |
| CPC Controller, DFS, APS   |
| Johnson Controller UNT 1126 (N2 protocol), DFS, APS  |
| Johnson Controller Metasys FEC-2611 (BACnet MS/TP protocol), SAS, RAS, OAS, DFS, APS                       |
| Honeywell Controller, DFS, APS   |
| Novar Controller, DFS, APS   |
| Simplicity IntelliComfort Controller   |
| Simplicity IntelliComfort Controller w/ModLinc   |
| Commercial Comfort System (CCS) Rtu Controller   |
| Hot Gas Bypass (Standard on VAV, Optional on CV)   |
| Variable Air Volume, VFD (not available with factory installed BAS options)                                |
| Variable Air Volume, VFD with ModLINC (not available with factory installed BAS options)                   |
| Variable Air Volume, VFD and Manual Bypass (not available with factory installed BAS options)              |
| Variable Air Volume, VFD and Manual Bypass with ModLINC (not available with factory installed BAS options) |
| Variable Air Volume, VFD (BAS ready)   |
| Variable Air Volume, VFD and Manual Bypass (BAS ready)   |
| Variable Air Volume, VFD Ready (for customer provided, field installed drive)                              |
| Variable Air Volume, VFD Ready with ModLINC (for customer-provided, field-installed drive)                 |
| 2" Pleated filters   |
| 4" Pleated filters   |
| BAS Ready Economizer (2-10 V.D.C. Actuator without a controller)   |
| Double Wall Construction   |
| Any Combination of Additional Options that Don't Have an Option Code Pre-assigned                          |

| Product Generation   |
|----------------------|
| 5 = Fifth Generation |

| Airflow   |
|---|
| A = Std. Motor<br>B = Std. Motor/Econo./Barometric Relief (Downflow Only)<br>C = Std. Motor/Econo./Power Exhaust (Downflow Only)<br>D = Std. Motor/Motorized Damper (Downflow Only)<br>E = Std. Motor/Horizontal Economizer (No Baro.)<br>F = Std. Motor/Slab Econo./Power Exhaust (Downflow Only)<br>G = Std. Motor/Slab Econo./Barometric Relief (Downflow Only)<br>N = Hi Static<br>P = Hi Static/Econo./Barometric Relief (Downflow Only)<br>Q = Hi Static/Econo./Power Exhaust (Downflow Only)<br>R = Hi Static/Motorized Damper (Downflow Only)<br>S = Hi Static/Horizontal Economizer (No Baro.)<br>T = Hi Static/Slab Econo./Power Exhaust (Downflow Only)<br>U = Hi Static/Slab Econo./Barometric Relief (Downflow only) |

| Additional Options  |   |
|---|---|
| AA = None<br>AB = Phase Monitor<br>AC = Coil Guard<br>AD = Dirty Filter Switch<br>AE = Phase Monitor & Coil Guard<br>AF = Phase Monitor & Dirty Filter Switch | AG = Coil Guard & Dirty Filter Switch<br>AH = Phase Monitor, Coil Guard & Dirty Filter Switch<br>RC = Coil Guard, Shipping Bag & American Flag<br>TA = Technicoat Condenser Coil<br>TJ = Technicoat Evaporator Coil<br>TS = Technicoat Evaporator & Condenser Coils |
| ZZ = If desired option combination is not listed above, ZZ will be assigned and configuration options will be located in digits 15-18.                        |   |

| Installation Options   |
|--|
| A = No Options Installed<br>B = Option 1<br>C = Option 2<br>D = Options 1 & 2<br>E = Option 3<br>F = Option 4<br>G = Options 1 & 3<br>H = Options 1 & 4<br>J = Options 1, 2 & 3<br>K = Options 1, 2, & 4<br>L = Options 1,3 & 4<br>M = Options 1, 2, 3, & 4<br>N = Options 2 & 3<br>P = Options 2 & 4<br>Q = Options 2, 3, & 4<br>R = Options 3 & 4<br>S = Option 5<br>T = Options 1 & 5<br>U = Options 1, 3, & 5<br>V = Options 1, 4, & 5<br>W = Options 1, 3, 4, & 5<br>X = Options 3 & 5<br>Y = Options 4 & 5<br>Z = Options 3, 4 & 5 |
| Options  |
| 1 = Disconnect<br>2 = Non-Pwr'd Conv. Outlet<br>3 = Smoke Detector S.A.<br>4 = Smoke Detector R.A.<br>5 = Pwr'd Conv. Outlet   |

| Voltage  |
|--|
| 2 = 208/230-3-60<br>4 = 460-3-60<br>5 = 575-3-60 |

Nomenclature

6.5-12.5 Ton Series 10 Model Number Nomenclature

J07 X P C00 A 2 A AA 5 0 1 2 4 A

Nominal Cooling Capacity  
 J06 = 6.5 Ton  
 J07 = 7.5 Ton  
 J08 = 8.5 Ton  
 J10 = 10.0 Ton  
 J12 = 12.5 Ton

Product Category  
 X = HP, Single Pkg., R-410A

Product Identifier  
 P = 11.0 EER HP

Heat Type and Nominal Heat Capacity  
 C00 = Cooling Only. No heat installed

Electric Heat Options  
 E09 = 9 KW  
 E18 = 18 KW  
 E24 = 24 KW  
 E36 = 36 KW  
 E54 = 54 KW

Airflow  
 A = Std. Motor  
 B = Std. Motor/Econo./Barometric Relief (Downflow Only)  
 C = Std. Motor/Econo./Power Exhaust (Downflow Only)  
 D = Std. Motor/Motorized Damper (Downflow Only)  
 E = Std. Motor/Horizontal Economizer (No Baro.)  
 F = Std. Motor/Slab Econo./Power Exhaust (Downflow Only)  
 G = Std. Motor/Slab Econo./Barometric Relief (Downflow Only)  
 N = Hi Static  
 P = Hi Static/Econo./Barometric Relief (Downflow Only)  
 Q = Hi Static/Econo./Power Exhaust (Downflow Only)  
 R = Hi Static/Motorized Damper (Downflow Only)  
 S = Hi Static/Horizontal Economizer (No Baro.)  
 T = Hi Static/Slab Econo./Power Exhaust (Downflow Only)  
 U = Hi Static/Slab Econo./Barometric Relief (Downflow only)

Voltage  
 2 = 208/230-3-60  
 4 = 460-3-60  
 5 = 575-3-60

Product Style  
 A = Style A  
 B = Style B  
 C = Style C

Configuration Options (not required for all units)  
 These four digits will not be assigned until a quote is requested, or an order placed.

- SS Drain Pan
- CPC Controller, DFS, APS
- Johnson Controller UNT 1126 (N2 protocol), DFS, APS
- Johnson Controller Metasys FEC-2611 (BACnet MS/TP protocol), SAS, RAS, OAS, DFS, APS
- Honeywell Controller, DFS, APS
- Novar Controller, DFS, APS
- Simplicity IntelliComfort Controller
- Simplicity IntelliComfort Controller w/ModLinc
- 2" Pleated filters
- 4" Pleated filters
- BAS Ready Economizer (2-10 V.D.C. Actuator without a controller)
- Any Combination of Additional Options that Don't Have an Option Code Pre-assigned

Product Generation  
 5 = Fifth Generation

Additional Options

|  |  |
|--|--|
| AA = None<br>AB = Phase Monitor<br>AC = Coil Guard<br>AD = Dirty Filter Switch<br>AE = Phase Monitor & Coil Guard<br>AF = Phase Monitor & Dirty Filter Switch<br>AG = Coil Guard & Dirty Filter Switch<br>AH = Phase Monitor, Coil Guard & Dirty Filter Switch | RC = Coil Guard, Shipping Bag & American Flag<br>TA = Technicoat Condenser Coil<br>TJ = Technicoat Evaporator Coil<br>TS = Technicoat Evaporator & Condenser Coils |
|--|--|

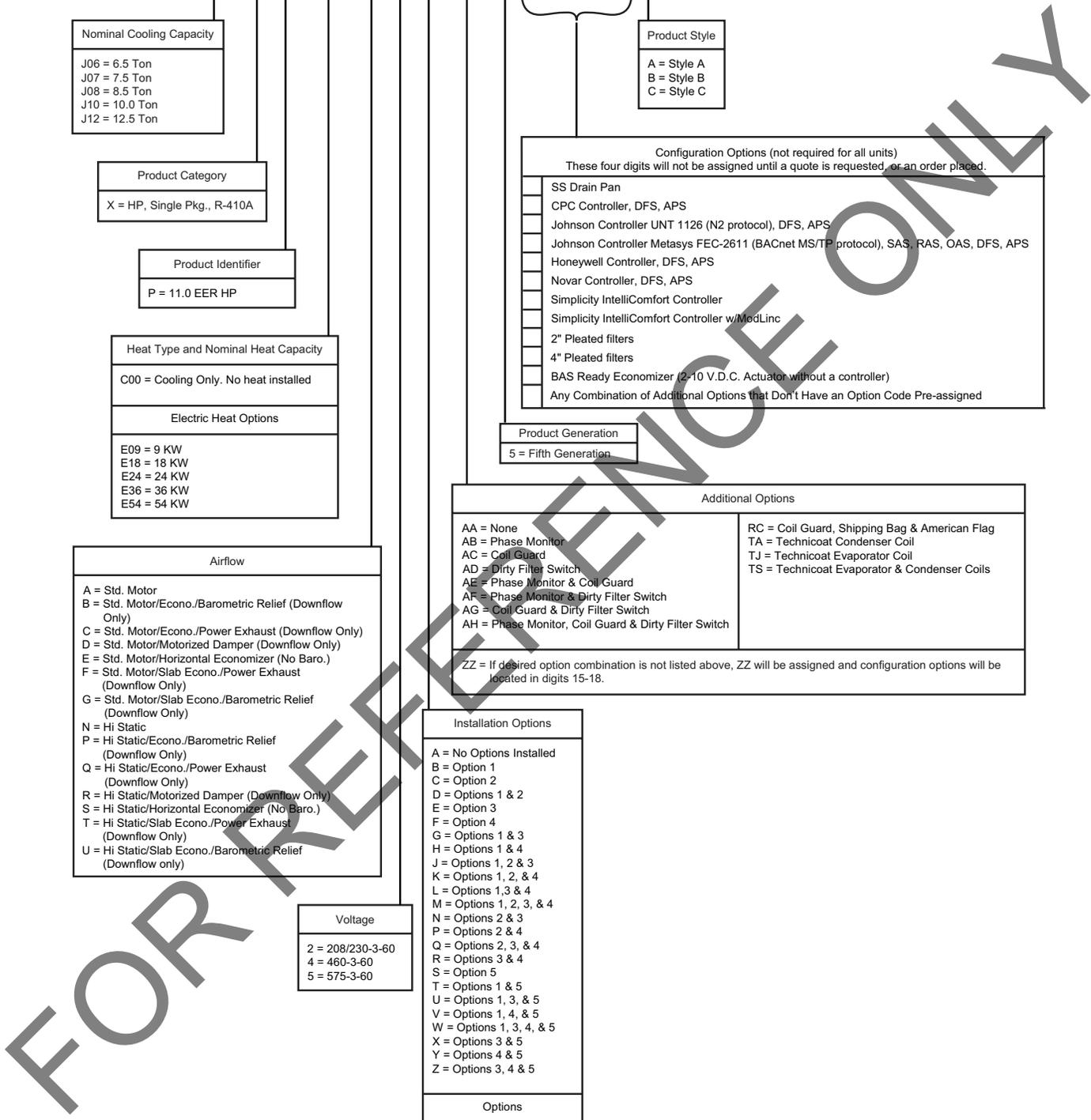
ZZ = If desired option combination is not listed above, ZZ will be assigned and configuration options will be located in digits 15-18.

Installation Options

- A = No Options Installed
- B = Option 1
- C = Option 2
- D = Options 1 & 2
- E = Option 3
- F = Option 4
- G = Options 1 & 3
- H = Options 1 & 4
- J = Options 1, 2 & 3
- K = Options 1, 2, & 4
- L = Options 1,3 & 4
- M = Options 1, 2, 3, & 4
- N = Options 2 & 3
- P = Options 2 & 4
- Q = Options 2, 3, & 4
- R = Options 3 & 4
- S = Option 5
- T = Options 1 & 5
- U = Options 1, 3, & 5
- V = Options 1, 4, & 5
- W = Options 1, 3, 4, & 5
- X = Options 3 & 5
- Y = Options 4 & 5
- Z = Options 3, 4 & 5

Options

- 1 = Disconnect
- 2 = Non-Pwr'd Conv. Outlet
- 3 = Smoke Detector S.A.
- 4 = Smoke Detector R.A.
- 5 = Pwr'd Conv. Outlet



Nomenclature

3-5 Ton York® Model Number Nomenclature

Z T 061 N05 A 2 A ZZ 6 0 1 2 4 A

Product Category  
Z = A/C, Single Pkg., R-410A

Product Identifier  
T = 18 SEER Ultra High Eff. A/C

Nominal Cooling Capacity  
037 = 3 Ton  
049 = 4 Ton  
061 = 5 Ton

Heat Type and Nominal Heat Capacity  
C00 = Cooling Only. No heat installed

Single Stage Natural Gas Heat Options  
A05 = 49 MBH Output Aluminized Steel, Single Stage (037,049)  
A07 = 65 MBH Output Aluminized Steel, Single Stage (037, 049, 061)  
A09 = 97 MBH Output Aluminized Steel, Single Stage (037, 049, 061)  
A13 = 129 MBH Output Aluminized Steel, Single Stage (061)  
B05 = 49 MBH Output Stainless Steel, Single Stage (037, 049)  
B07 = 65 MBH Output Stainless Steel, Single Stage (037, 049, 061)  
B09 = 97 MBH Output Stainless Steel, Single Stage (037, 049, 061)  
B13 = 129 MBH Output Stainless Steel, Single Stage (061)

Two Stage Natural Gas Heat Options  
N05 = 49 MBH Output Aluminized Steel, Two Stage (037, 049)  
N07 = 65 MBH Output Aluminized Steel, Two Stage (037, 049, 061)  
N09 = 97 MBH Output Aluminized Steel, Two Stage (037, 049, 061)  
N13 = 129 MBH Output Aluminized Steel, Two Stage (061)  
S05 = 49 MBH Output Stainless Steel, Two Stage (037, 049)  
S07 = 65 MBH Output Stainless Steel, Two Stage (037, 049, 061)  
S09 = 97 MBH Output Stainless Steel, Two Stage (037, 049, 061)  
S13 = 129 MBH Output Stainless Steel, Two Stage (061)

Electric Heat Options  
E03 = 3 kW (037)  
E06 = 6 kW (037, 049, 061)  
E08 = 9 kW (037, 049, 061)  
E15 = 15 kW (037, 049, 061)  
E20 = 20 kW (049, 061)  
E23 = 24 kW (061)

Product Style  
A = Style A  
B = Style B  
C = Style C

- Configuration Options (not required for all units)
- SS Drain Pan
  - CPC Controller, DFS, APS
  - Johnson Controller UNT 1126 (N2 protocol), DFS, APS
  - Honeywell Controller, DFS, APS
  - Novar Controller, DFS, APS
  - York Commercial Comfort System (YCCS) Rtu Controller
  - Simplicity IntelliComfort II Controller
  - Simplicity IntelliComfort II Controller w/Simplicity@Linc
  - York Commercial Comfort System (YCCS) Rtu Controller
  - 2" Pleated Filters, MERV 7
  - 4" Pleated Filters, MERV 13
  - BAS Ready Unit with Economizer
  - Phase Monitor
  - Coil Guard
  - Dirty Filter Switch
  - Shipping Bag
  - American Flag
  - Technicoat Condenser Coil
  - Technicoat Evaporator Coil
  - ElectroFin Condenser Coil
  - ElectroFin Evaporator Coil
  - Any Combination of Additional Options that Don't Have an Option Code Pre-assigned

Product Generation  
6 = Sixth Generation

Additional Options  
ZZ = If desired option combination is not listed above, ZZ will be assigned and configuration options will be located in digits 15-18.

Voltage  
2 = 208/230-3-60  
4 = 460-3-60  
5 = 575-3-60

Airflow  
A = Std. Motor  
B = Std. Motor/Econo./Barometric Relief (Downflow Only)  
C = Std. Motor/Econo./Power Exhaust (Downflow Only)  
D = Std. Motor/Motorized Damper (Downflow Only)  
E = Std. Motor/Horizontal Economizer (No Baro.)  
F = Std. Motor/Slab Econo./Power Exhaust (Downflow Only)  
G = Std. Motor/Slab Econo./Barometric Relief (Downflow Only)  
N = Hi Static  
P = Hi Static/Econo./Barometric Relief (Downflow Only)  
Q = Hi Static/Econo./Power Exhaust (Downflow Only)  
R = Hi Static/Motorized Damper (Downflow Only)  
S = Hi Static/Horizontal Economizer (No Baro.)  
T = Hi Static/Slab Econo./Power Exhaust (Downflow Only)  
U = Hi Static/Slab Econo./Barometric Relief (Downflow Only)

Installation Options  
A = No Options Installed  
B = Option 1  
C = Option 2  
D = Options 1 & 2  
E = Option 3  
F = Option 4  
G = Options 1 & 3  
H = Options 1 & 4  
J = Options 1, 2 & 3  
K = Options 1, 2, & 4  
L = Options 1,3 & 4  
M = Options 1, 2, 3, & 4  
N = Options 2 & 3  
P = Options 2 & 4  
Q = Options 2, 3, & 4  
R = Options 3 & 4  
S = Option 5  
T = Options 1 & 5  
U = Options 1, 3, & 5  
V = Options 1, 4, & 5  
W = Options 1, 3, 4, & 5  
X = Options 3 & 5  
Y = Options 4 & 5  
Z = Options 3, 4 & 5

Options  
1 = Disconnect  
2 = Non-Pwr'd Conv. Outlet  
3 = Smoke Detector S.A.  
4 = Smoke Detector R.A.  
5 = Pwr'd Conv. Outlet

**Special Seismic Certification  
Tested Units**



**Manufacturer:** Unitary Product Group (York, Johnson Controls, Coleman, Luxaire, Evcon, Fraser-Johnston and Ready Ship)

**Product Line:** Unitary Product Group Packaged Rooftop Units (UPG)

**Tested Product Construction:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Tested Options:**

230-575 V, economizer, power exhaust, electric or gas heater, variable frequency drive

**Tested Mounting Description:**

Equipment was tested with both rigid or flexible curb mounting

| Product Line                           | Model Number*      | Dimensions (inches) |       |        | Operating Weight (lb) | Nominal Cooling Capacity (Tons) | Mount                      | Sds level Approved | Unit |    |
|--|--------------------|---------------------|-------|--------|-----------------------|---------------------------------|----------------------------|--------------------|------|----|
|  |                    | Depth               | Width | Height |                       |                                 |                            |                    |      |    |
| Predator Air Handling Units (Short)    | ZR037A05D2DAE5     | 89                  | 59    | 42     | 980                   | 3                               | Rigid Roof Curb Mounted    | 2.5                | 1a   |    |
|  |                    |                     |       |        |                       |                                 | Isolated Roof Curb Mounted |                    | 1b   |    |
|  | ZR061A13S5GZZ50001 | 89                  | 59    | 42     | 1,070                 | 5                               | Rigid Roof Curb Mounted    |                    | 2a   |    |
|  |                    |                     |       |        |                       |                                 | Isolated Roof Curb Mounted |                    | 2b   |    |
|  | ZH037S05A2HZZ50001 | 89                  | 59    | 42     | 860                   | 3                               | Rigid Roof Curb Mounted    |                    | 3a   |    |
|  |                    |                     |       |        |                       |                                 | Isolated Roof Curb Mounted |                    | 3b   |    |
|  | ZJ061S13T5BZZ50001 | 89                  | 59    | 42     | 1,070                 | 5                               | Rigid Roof Curb Mounted    |                    | 4a   |    |
|  |                    |                     |       |        |                       |                                 | Isolated Roof Curb Mounted |                    | 4b   |    |
| Predator Air Handling Units (Standard) | ZR078N10D2DZZ5001  | 89                  | 59    | 53     | 1,060                 | 6.5                             | Rigid Roof Curb Mounted    | 2.5                | 5a   |    |
|  |                    |                     |       |        |                       |                                 | Isolated Roof Curb Mounted |                    | 5b   |    |
|  | XP078E09A2BAC5     | 89                  | 59    | 42     | 970                   | 6.5                             | Rigid Roof Curb Mounted    |                    | 7a   |    |
|  |                    |                     |       |        |                       |                                 | Isolated Roof Curb Mounted |                    | 7b   |    |
|  | ZF078S10F2BZZ5001  | 89                  | 59    | 42     | 1,090                 | 6.5                             | Rigid Roof Curb Mounted    |                    | 10a  |    |
|  |                    |                     |       |        |                       |                                 | Isolated Roof Curb Mounted |                    | 10b  |    |
|  | ZH150C00A2BAC5     | 119.5               | 59    | 51     | 1,250                 | 12.5                            | Rigid Roof Curb Mounted    |                    | 11a  |    |
|  |                    |                     |       |        |                       |                                 | Isolated Roof Curb Mounted |                    | 11b  |    |
|  | ZR150N20N5GZZ50001 | 119.5               | 59    | 42     | 1,600                 | 12.5                            | Rigid Roof Curb Mounted    |                    | 2    | 6a |
|  |                    |                     |       |        |                       |                                 | Isolated Roof Curb Mounted |                    |      | 6b |
|  | XP150E54N5HZZ50001 | 119.5               | 59    | 51     | 1,510                 | 12.5                            | Rigid Roof Curb Mounted    |                    |      | 8a |
| Isolated Roof Curb Mounted             |                    |                     |       |        |                       |                                 | 8b                         |                    |      |    |
| ZI150S20S5BZZ50001                     | 119.5              | 59                  | 51    | 1,570  | 12.5                  | Rigid Roof Curb Mounted         | 9a                         |                    |      |    |
|  |                    |                     |       |        |                       | Isolated Roof Curb Mounted      | 9b                         |                    |      |    |

# UUT1a



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator (Short 3-5 Ton)

**Model Number:** ZR037A05D2DAE5

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

Aluminized 3-ton natural gas fired heat exchanger, 230V, with solenoid valves and indoor (ID) reheat coil, IDB motor, 12"x9" wide blower wheel, micro channel OD coil, a single reciprocating type compressor, and a single refrigeration circuit. The unit uses TXV for modulating refrigerant control. An optional Motorized economizer/no power exhaust (PE), non-powered convenience outlet, standard controller, phase monitor (PM), no Dirty Filter Switch (DFS), standard plastic drain pan & standard 2" throw-away (TA) fiberglass filters were selected. The ZR/ZK and ZI/ZW 3 ton series uses a single outdoor fan (ODF) motor deck arrangement.

#### UUT Properties

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 980         | 89                  | 59    | 42     | 7.8                           | 7.5           | 13.3         |

#### Seismic Test Parameters

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

#### Unit Mounting Description:



Description: Unit was mounted to a rigid roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 12Ga anchoring pockets, (2) on the each of the long side of the curb. The unit was attached to each of the pockets using (6) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT1b



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator (Short 3-5 Ton)

**Model Number:** ZR037A05D2DAE5

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

Aluminized 3-ton natural gas fired heat exchanger, 230V, with solenoid valves and indoor (ID) reheat coil, IDB motor, 12"x9" wide blower wheel, micro channel OD coil, a single reciprocating type compressor, and a single refrigeration circuit. The unit uses TXV for modulating refrigerant control. An optional Motorized economizer/no power exhaust (PE), non-powered convenience outlet, standard controller, phase monitor (PM), no Dirty Filter Switch (DFS), standard plastic drain pan & standard 2" throw-away (TA) fiberglass filters were selected. The ZR/ZK and ZI/ZW 3 ton series uses a single outdoor fan (ODF) motor deck arrangement.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 980         | 89                  | 59    | 42     | 3.0                           | 2.5           | 4.0          |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to an isolated roof curb supplied by Ruskin. The unit rested on the perimeter of the curb. The curb had (6) 10Ga anchoring pockets, (2) on the each of the long side of the curb and (1) on each short side. The unit was attached to each of the pockets using (4) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (8) 3/8"-dia Gr. 5 bolts. The bolts were spaced 5-inches in from each side of the curb. The steel plate was attached to the shake table with (12) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT2a

## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator (Short 3-5 Ton)

**Model Number:** ZR061A13S5GZZ50001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

Short 5-ton reheat unit with aluminized gas heat section, 575V, solenoid valves, ID reheat coil, IDB motor, 12"x9" wide blower wheel, micro channel OD coil, a single reciprocating type compressor, and a single refrigeration circuit. The unit uses TXV for modulating refrigerant control. An optional fully modulating horizontal economizer/no power exhaust (PE), no convenience outlet, standard controller, no PM, optional DFS, optional supply air (SA) smoke detector, optional stainless steel drain pan & 2" pleated air filters were selected. The ZR/ZK and ZJ/ZW 4 & 5 ton use a dual outdoor fan (ODF) motor deck arrangement.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,070       | 89                  | 59    | 42     | 6.8                           | 6.0           | 6.5          |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to a rigid roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 12Ga anchoring pockets, (2) on each of the long side of the curb. The unit was attached to each of the pockets using (6) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT2b



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator (Short 3-5 Ton)

**Model Number:** ZR061A13S5GZZ50001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

Short 5-ton reheat unit with aluminized gas heat section, 575V, solenoid valves, ID reheat coil, IDB motor, 12"x9" wide blower wheel, micro channel OD coil, a single reciprocating type compressor, and a single refrigeration circuit. The unit uses TXV for modulating refrigerant control. An optional fully modulating horizontal economizer/no power exhaust (PE), no convenience outlet, standard controller, no PM, optional DFS, optional supply air (SA) smoke detector, optional stainless steel drain pan & 2" pleated air filters were selected. The ZR/ZK and ZJ/ZW 4 & 5 ton use a dual outdoor fan (ODF) motor deck arrangement.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,070       | 89                  | 59    | 42     | 3.0                           | 2.8           | 5.3          |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to an isolated roof curb supplied by Ruskin. The unit rested on the perimeter of the curb. The curb had (6) 10Ga anchoring pockets, (2) on the each of the long side of the curb and (1) on each short side. The unit was attached to each of the pockets using (4) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (8) 3/8"-dia Gr. 5 bolts. The bolts were spaced 5-inches in from each side of the curb. The steel plate was attached to the shake table with (12) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT3a



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator (Short 3-5 Ton)

**Model Number:** ZH037S05A2HZZ50001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

Short 3-ton cooling only unit with single ODF deck construction, stainless steel natural gas fired heat exchanger, 230V, IDB motor, 12"x9" wide blower wheel, a single reciprocating type compressor and a single refrigeration circuit. The unit uses TXV for refrigerant control. Standard controller, standard plastic drain pan, and 4" high efficiency pleated filters were selected.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 860         | 89                  | 59    | 42     | 6.5                           | 5.8           | 5.8          |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to a rigid roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 12Ga anchoring pockets, (2) on each of the long side of the curb. The unit was attached to each of the pockets using (6) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT3b



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator (Short 3-5 Ton)

**Model Number:** ZH037S05A2HZZ50001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

Short 3-ton cooling only unit with single ODF deck construction, stainless steel natural gas fired heat exchanger, 230V, IDB motor, 12"x9" wide blower wheel, a single reciprocating type compressor and a single refrigeration circuit. The unit uses TXV for refrigerant control. Standard controller, standard plastic drain pan, and 4" high efficiency pleated filters were selected.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 860         | 89                  | 59    | 42     | 3.3                           | 2.8           | 4.3          |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to an isolated roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 10Ga, 11-inch side anchoring pockets, (2) on the each of the long side of the curb. The unit was attached to each of the pockets using (8) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT4a



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator (Short 3-5 Ton)

**Model Number:** ZJ061S13T5BZZ50001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

Short 5-ton cooling-only unit with stainless steel natural gas fired heat exchanger, 575V, IDB motor, 12"x9" wide blower wheel, a single reciprocating type compressor and a single refrigeration circuit. The unit uses TXV for refrigerant control. Full modulating slab economizer with PE, optional IntelliComfort controller, standard plastic drain pan & standard 2" TA air filters were selected.

#### UUT Properties

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,070       | 89                  | 59    | 42     | 6.8                           | 5.8           | 6.0          |

#### Seismic Test Parameters

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

#### Unit Mounting Description:



Description: Unit was mounted to a rigid roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 12Ga anchoring pockets, (2) on the each of the long side of the curb. The unit was attached to each of the pockets using (6) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT4b



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator (Short 3-5 Ton)

**Model Number:** ZJ061S13T5BZZ50001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

Short 5-ton cooling-only unit with stainless steel natural gas fired heat exchanger, 575V, IDB motor, 12"x9" wide blower wheel, a single reciprocating type compressor and a single refrigeration circuit. The unit uses TXV for refrigerant control. Full modulating slab economizer with PE, optional IntelliComfort controller, standard plastic drain pan & standard 2" TA air filters were selected.

#### UUT Properties

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,070       | 89                  | 59    | 42     | 3.3                           | 3.3           | 4.3          |

#### Seismic Test Parameters

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to an isolated roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 10Ga, 11-inch side anchoring pockets, (2) on the each of the long side of the curb. The unit was attached to each of the pockets using (8) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT5a



## Unit Under Test (UUT) Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator (Standard 6.5-12.5 Ton)

**Model Number:** ZR078N10D2DZZ5001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

6.5-ton standard reheat unit with aluminized natural gas fired heat exchanger, 230V, solenoid valves, indoor (ID) reheat coil, IDB motor, 12"x12" blower wheel, micro channel OD coils, dual reciprocating type compressors, and dual refrigeration circuits. These units use TXV for modulating refrigerant control. An optional Motorized economizer/no power exhaust (PE), non-powered convenience outlet, standard controller, standard plastic drain pan, & 2" pleated air filters were selected. The ZR/ZK 6.5 ton series uses a dual ODF motor deck arrangement.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,060       | 89                  | 59    | 53     | 6.0                           | 5.5           | 5.8          |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to a rigid roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 12Ga anchoring pockets, (2) on each of the long side of the curb. The unit was attached to each of the pockets using (6) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT5b



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator (Standard 6.5-12.5 Ton)

**Model Number:** ZR078N10D2DZZ5001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

6.5-ton standard reheat unit with aluminized natural gas fired heat exchanger, 230V, solenoid valves, indoor (ID) reheat coil, IDB motor, 12"x12" blower wheel, micro channel OD coils, dual reciprocating type compressors, and dual refrigeration circuits. These units use TXV for modulating refrigerant control. An optional Motorized economizer/no power exhaust (PE), non-powered convenience outlet, standard controller, standard plastic drain pan, & 2" pleated air filters were selected. The ZR/ZK 6.5 ton series uses a dual ODF motor deck arrangement.

#### UUT Properties

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,060       | 89                  | 59    | 53     | 2.8                           | 2.8           | 4.5          |

#### Seismic Test Parameters

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

#### Unit Mounting Description:



Description: Unit was mounted to an isolated roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 10Ga, 11-inch side anchoring pockets, (2) on the each of the long side of the curb. The unit was attached to each of the pockets using (8) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT6a



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator

**Model Number:** ZZR150N20N5GZZ50001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

12.5-ton standard reheat unit with aluminized gas heat section, 575V, solenoid valves, ID reheat coil, IDB motor, 12x15" wide blower wheel, micro channel OD coils, dual reciprocating type compressors, and dual refrigeration circuits. The unit uses TXV for modulating refrigerant control. Standard controller was used. An optional supply air (SA) smoke detector, stainless steel drain pan, & 4" pleated air filters were selected.

#### UUT Properties

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,600       | 119 1/2             | 59    | 42     | 6.8                           | 4.0           | 5.0          |

#### Seismic Test Parameters

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2   | 1.0 | 1.5 | 3.2    | 2.4    | 1.34   | 0.54   |

#### Unit Mounting Description:



Description: Unit was mounted to a rigid roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 12Ga anchoring pockets, (2) on the each of the long side of the curb. The unit was attached to each of the pockets using (6) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT6b



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator

**Model Number:** ZZR150N20N5GZZ50001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

12.5-ton standard reheat unit with aluminized gas heat section, 575V, solenoid valves, ID reheat coil, IDB motor, 12x15" wide blower wheel, micro channel OD coils, dual reciprocating type compressors, and dual refrigeration circuits. The unit uses TXV for modulating refrigerant control. Standard controller was used. An optional supply air (SA) smoke detector, stainless steel drain pan, & 4" pleated air filters were selected.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,600       | 119 1/2             | 59    | 42     | 2.8                           | 2.5           | 5.8          |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2   | 1.0 | 1.5 | 3.2    | 2.4    | 1.34   | 0.54   |

**Unit Mounting Description:**



Description: Unit was mounted to an isolated roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 10Ga, 11-inch side anchoring pockets, (2) on the each of the long side of the curb. The unit was attached to each of the pockets using (8) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT7a



## Unit Under Test (UUT) Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator

**Model Number:** XP078E09A2BAC5

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

6.5 ton standard heat pump unit with 9kW electric heat section, 230V, finned/tube OD coils, IDB motor, 12"x12" wide blower wheel, fin/tube OD coils, dual scroll type compressors, and dual refrigeration circuits. The unit uses TXV for modulating refrigerant control on both ID/OD coils. A standard controller, standard plastic drain pan, 2" fiberglass TA air filters and dual outdoor fan (ODF) motor deck arrangement were used.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 970         | 89                  | 59    | 42     | 12.3                          | 8.3           | 13.8         |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to a rigid roof curb supplied by Ruskin. The unit rested on the perimeter of the curb. The curb had (12) 12Ga anchoring pockets, (2) on each of the short sides of the curb and (4) on each of the long sides of the curb. The unit was attached to each of the pockets using (2) # 14 - 5 inch long self tapping screws. The curb was attached to a 3/4" thick steel plate with (8) 3/8"-dia Gr. 2 bolts. There were two bolts on each side of the unit. The bolts were mounted five inches inward from the edge of the curb flange. The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT7b



Unit Under Test (UUT)

Summary Sheet

Manufacturer: Johnson Controls Incorporated

Product Line: Predator

Model Number: XP078E09A2BAC5

Product Construction Summary:

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

Options / Component Summary:

6.5 ton standard heat pump unit with 9kW electric heat section, 230V, finned/tube OD coils, IDB motor, 12"x12" wide blower wheel, fin/tube OD coils, dual scroll type compressors, and dual refrigeration circuits. The unit uses TXV for modulating refrigerant control on both ID/OD coils. A standard controller, standard plastic drain pan, 2" fiberglass TA air filters and dual outdoor fan (ODF) motor deck arrangement were used.

UUT Properties

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 970         | 89                  | 59    | 42     | 2.8                           | 2.5           | 3.5          |

Seismic Test Parameters

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

Unit Mounting Description:



Description: Unit was mounted to an isolated roof curb supplied by Ruskin. The unit rested on the perimeter of the curb. The curb had (6) 10Ga anchoring pockets, (2) on the each of the long side of the curb and (1) on each short side. The unit was attached to each of the pockets using (4) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (8) 3/8"-dia Gr. 5 bolts. The bolts were spaced 5-inches in from each side of the curb. The steel plate was attached to the shake table with (12) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT8a



## Unit Under Test (UUT) Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator

**Model Number:** XP150E54N5HZZ50001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

12. 5 ton standard heat pump with 54 kW electric heat section, 575V, finned/tube OD coils, IDB motor, 15x15" wide blower wheel, fin/tube OD coils, dual scroll type compressors, and dual refrigeration circuits. The unit uses TXV for modulating refrigerant control. Optional IntelliComfort controller, optional return air (RA) smoke detector, standard plastic drain pan & standard 2" fiberglass TA air filters were used.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,510       | 119 1/2             | 59    | 51     | 9.8                           | 6.0           | 14.8         |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2   | 1.0 | 1.5 | 3.2    | 2.4    | 1.34   | 0.54   |

**Unit Mounting Description:**



Description: Unit was mounted to a rigid roof curb supplied by Ruskin. The unit rested on the perimeter of the curb. The curb had (12) 12Ga anchoring pockets, (2) on the each of the short sides of the curb and (4) on each of the long sides of the curb. The unit was attached to each of the pockets using (2) # 14 - 5 inch long self tapping screws. The curb was attached to a 3/4" thick steel plate with (8) 3/8"-dia Gr. 2 bolts. There were two bolts on each side of the unit. The bolts were mounted five inches inward from the edge of the curb flange. The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT8b



Unit Under Test (UUT)

Summary Sheet

Manufacturer: Johnson Controls Incorporated

Product Line: Predator

Model Number: XP150E54N5HZZ50001

Product Construction Summary:

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

Options / Component Summary:

12. 5 ton standard heat pump with 54 kW electric heat section, 575V, finned/tube OD coils, IDB motor, 15x15" wide blower wheel, fin/tube OD coils, dual scroll type compressors, and dual refrigeration circuits. The unit uses TXV for modulating refrigerant control. Optional IntelliComfort controller, optional return air (RA) smoke detector, standard plastic drain pan & standard 2" fiberglass TA air filters were used.

UUT Properties

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,510       | 119 1/2             | 59    | 51     | 2.0                           | 2.3           | 3.5          |

Seismic Test Parameters

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2   | 1.0 | 1.5 | 3.2    | 2.4    | 1.34   | 0.54   |

Unit Mounting Description:



Description: Unit was mounted to an isolated roof curb supplied by Ruskin. The unit rested on the perimeter of the curb. The curb had (6) 10Ga anchoring pockets, (2) on the each of the long side of the curb and (1) on each short side. The unit was attached to each of the pockets using (4) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (8) 3/8"-dia Gr. 5 bolts. The bolts were spaced 5-inches in from each side of the curb. The steel plate was attached to the shake table with (12) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT9a



## Unit Under Test (UUT) Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator

**Model Number:** ZJ150S20S5BZZ50001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

12. 5 ton standard cooling only unit with stainless steel gas heat section, 575V, IDB motor, 15x15" wide blower wheel, Micro Channel OD coils, dual reciprocating type compressors, dual refrigeration circuits, 4 ODFs, and a "W" shaped OD condenser coil. The unit uses TXV for modulating refrigerant control. An optional VFD w/ manual bypass switch, fully modulating horizontal economizer/no PE, no convenience outlet, standard controller, standard plastic drain pan & standard 2" TA air filters were used.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,570       | 119 1/2             | 59    | 51     | 7.8                           | 5.5           | 10.3         |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2   | 1.0 | 1.5 | 3.2    | 2.4    | 1.34   | 0.54   |

**Unit Mounting Description:**



Description: Unit was mounted to a rigid roof curb supplied by Ruskin. The unit rested on the perimeter of the curb. The curb had (12) 12Ga anchoring pockets, (2) on the each of the short sides of the curb and (4) on each of the long sides of the curb. The unit was attached to each of the pockets using (2) # 14 - 5 inch long self tapping screws. The curb was attached to a 3/4" thick steel plate with (8) 3/8"-dia Gr. 2 bolts. There were two bolts on each side of the unit. The bolts were mounted five inches inward from the edge of the curb flange. The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT9b



## Unit Under Test (UUT) Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator

**Model Number:** ZJ150S20S5BZZ50001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

12.5 ton standard cooling only unit with stainless steel gas heat section, 575V, IDB motor, 15x15" wide blower wheel, Micro Channel OD coils, dual reciprocating type compressors, dual refrigeration circuits, 4 ODFs, and a "W" shaped OD condenser coil. The unit uses TXV for modulating refrigerant control. An optional VFD w/ manual bypass switch, fully modulating horizontal economizer/no PE, no convenience outlet, standard controller, standard plastic drain pan & standard 2" TA air filters were used.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,570       | 119 1/2             | 59    | 51     | 2.8                           | 2.5           | 2.8          |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2   | 1.0 | 1.5 | 3.2    | 2.4    | 1.34   | 0.54   |

**Unit Mounting Description:**



Description: Unit was mounted to an isolated roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 10Ga, 11-inch side anchoring pockets, (2) on each of the long side of the curb. The unit was attached to each of the pockets using (8) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT10a



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator

**Model Number:** ZF078S10F2BZZ5001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

6.5 ton standard cooling only unit with smallest stainless steel natural gas fired heat exchanger, 230V, 12"x12" wide blower wheel, Micro Channel OD coils, dual reciprocating type compressors, and dual refrigeration circuits. TXV used for modulating refrigerant control. Optional VFD used with fully modulating slab economizer with PE, standard controller, standard plastic drain pan & standard 2" TA air filters. Dual outdoor fan (ODF) motor deck arrangement.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,090       | 89                  | 59    | 42     | 11.3                          | 7.5           | 9.0          |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to a rigid roof curb supplied by Ruskin. The unit rested on the perimeter of the curb. The curb had (12) 12Ga anchoring pockets, (2) on the each of the short sides of the curb and (4) on each of the long sides of the curb. The unit was attached to each of the pockets using (2) # 14 - 5 inch long self tapping screws. The curb was attached to a 3/4" thick steel plate with (8) 3/8"-dia Gr. 2 bolts. There were two bolts on each side of the unit. The bolts were mounted five inches inward from the edge of the curb flange. The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT10b



## Unit Under Test (UUT) Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator

**Model Number:** ZF078S10F2BZZ5001

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

6.5 ton standard cooling only unit with smallest stainless steel natural gas fired heat exchanger, 230V, 12"x12" wide blower wheel, Micro Channel OD coils, dual reciprocating type compressors, and dual refrigeration circuits. TXV used for modulating refrigerant control. Optional VFD used with fully modulating slab economizer with PE, standard controller, standard plastic drain pan & standard 2" TA air filters. Dual outdoor fan (ODF) motor deck arrangement.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,090       | 89                  | 59    | 42     | 2.8                           | 2.5           | 4.5          |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to an isolated roof curb supplied by MicroMetl. The unit rested on the perimeter of the curb. The curb had (4) 10Ga, 11-inch side anchoring pockets, (2) on the each of the long side of the curb. The unit was attached to each of the pockets using (8) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (14) 1/2"-dia Gr. 2 bolts. The min spacing for the bolts was 8". The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT11a



## Unit Under Test (UUT) Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator

**Model Number:** ZH150C00A2BAC5

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

12.5 ton standard cooling only unit with single V OD coil design, 230V, 12x12" wide blower wheel, micro channel OD coils, dual scroll type compressors, dual refrigeration circuits, and 4 ODFs. The unit uses TXV for modulating refrigerant control. No heat section (cooling only), VAV, no economizer/no power exhaust (PE), no convenience outlet, standard controller, no phase monitor or dirty filter switch, no smoke detectors, standard plastic drain pan & standard 2" fiberglass air filters were selected.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,250       | 119 1/2             | 59    | 51     | 7.8                           | 6.3           | 12.8         |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to a rigid roof curb supplied by Ruskin. The unit rested on the perimeter of the curb. The curb had (12) 12Ga anchoring pockets, (2) on the each of the short sides of the curb and (4) on each of the long sides of the curb. The unit was attached to each of the pockets using (2) # 14 - 5 inch long self tapping screws. The curb was attached to a 3/4" thick steel plate with (8) 3/8"-dia Gr. 2 bolts. There were two bolts on each side of the unit. The bolts were mounted five inches inward from the edge of the curb flange. The steel plate was attached to the shake table with (22) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UUT11b



## Unit Under Test (UUT)

### Summary Sheet

**Manufacturer:** Johnson Controls Incorporated

**Product Line:** Predator

**Model Number:** ZH150C00A2BAC5

**Product Construction Summary:**

Cabinet is constructed of G90 galvanized 1,000 hour salt spray (per ASTM-B117) rated powder-coated 20 gage carbon steel wrapper and duct panel with integral corner posts, all attached at the base to four (4) full perimeter 14 gage base rails with #10 sheet metal screws.

**Options / Component Summary:**

12.5 ton standard cooling only unit with single V OD coil design, 230V, 12x12" wide blower wheel, micro channel OD coils, dual scroll type compressors, dual refrigeration circuits, and 4 ODFs. The unit uses TXV for modulating refrigerant control. No heat section (cooling only), VAV, no economizer/no power exhaust (PE), no convenience outlet, standard controller, no phase monitor or dirty filter switch, no smoke detectors, standard plastic drain pan & standard 2" fiberglass air filters were selected.

**UUT Properties**

| Weight (lb) | Dimensions (inches) |       |        | Lowest Natural Frequency (Hz) |               |              |
|-------------|---------------------|-------|--------|-------------------------------|---------------|--------------|
|             | Depth               | Width | Height | Front-Back (X)                | Side-Side (Y) | Vertical (Z) |
| 1,250       | 119 1/2             | 59    | 51     | 2.5                           | 2.3           | 3.8          |

**Seismic Test Parameters**

| Building Code | Test Criteria | Sds | z/h | Ip  | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---------------|---------------|-----|-----|-----|--------|--------|--------|--------|
| CBC 2010      | ICC-ES AC156  | 2.5 | 1.0 | 1.5 | 4      | 3      | 1.67   | 0.67   |

**Unit Mounting Description:**



Description: Unit was mounted to an isolated roof curb supplied by Ruskin. The unit rested on the perimeter of the curb. The curb had (6) 10Ga anchoring pockets, (2) on the each of the long side of the curb and (1) on each short side. The unit was attached to each of the pockets using (4) # 12 self tapping screws. The curb was attached to a 3/4" thick steel plate with (8) 3/8"-dia Gr. 5 bolts. The bolts were spaced 5-inches in from each side of the curb. The steel plate was attached to the shake table with (12) M12 threaded studs.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.