



EARTHLINKED
TECHNOLOGIES

Product line training

Gregor Vialette – June 2016

Outline

- I. Overview**
- II. Compressor units**
- III. Air Handlers**
- IV. Earth Loops**
- V. Finding information**
- VI. Q & A**



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Overview

Product Line

🌿 Prime Series (x3)

- Two-stage units with all advanced features

🌿 Classic Series (x5)

- Single stage units with standard features

🌿 Air Handlers (x3)

- Four-speed, Variable Speed and High Velocity

🌿 Earth Loops (x7)

- Vertical (x3), Diagonal (x3), Horizontal (x1)

→ **Price Book / Ordering Tool**

Product Line

PRODUCT SERIES	COMP. UNIT	AIR HTG.	AIR CLG.	HYDRONIC HTG.	HYDRONIC CLG.	DOMESTIC WATER HTG.	ENERGY STAR
PRIME Series (two-speed)	PSC	✓	✓				✓
	PSD	✓	✓			✓	✓
	PSDH	✓	✓	✓		✓	✓
Classic Series (single speed)	SC	✓	✓				✓
	SD	✓	✓			✓	✓
	SDH	✓	✓	✓		✓	✓
	SCW			✓	✓		
	SCWD			✓	✓	✓	

Recent product changes

- ✦ New Air Handlers by Arcoaire and Unico – Virtualized distribution
- ✦ No more TXVs – systems controlled by proprietary Liquid Flow Control (LFC)
- ✦ Nano-PLC (Programmed Logic Controller)
- ✦ H1B loops (Horizontal)
- ✦ New liquid manifolds (with check valve) for Vertical and Diagonal loops

→ 2016 Dealer Conference Media



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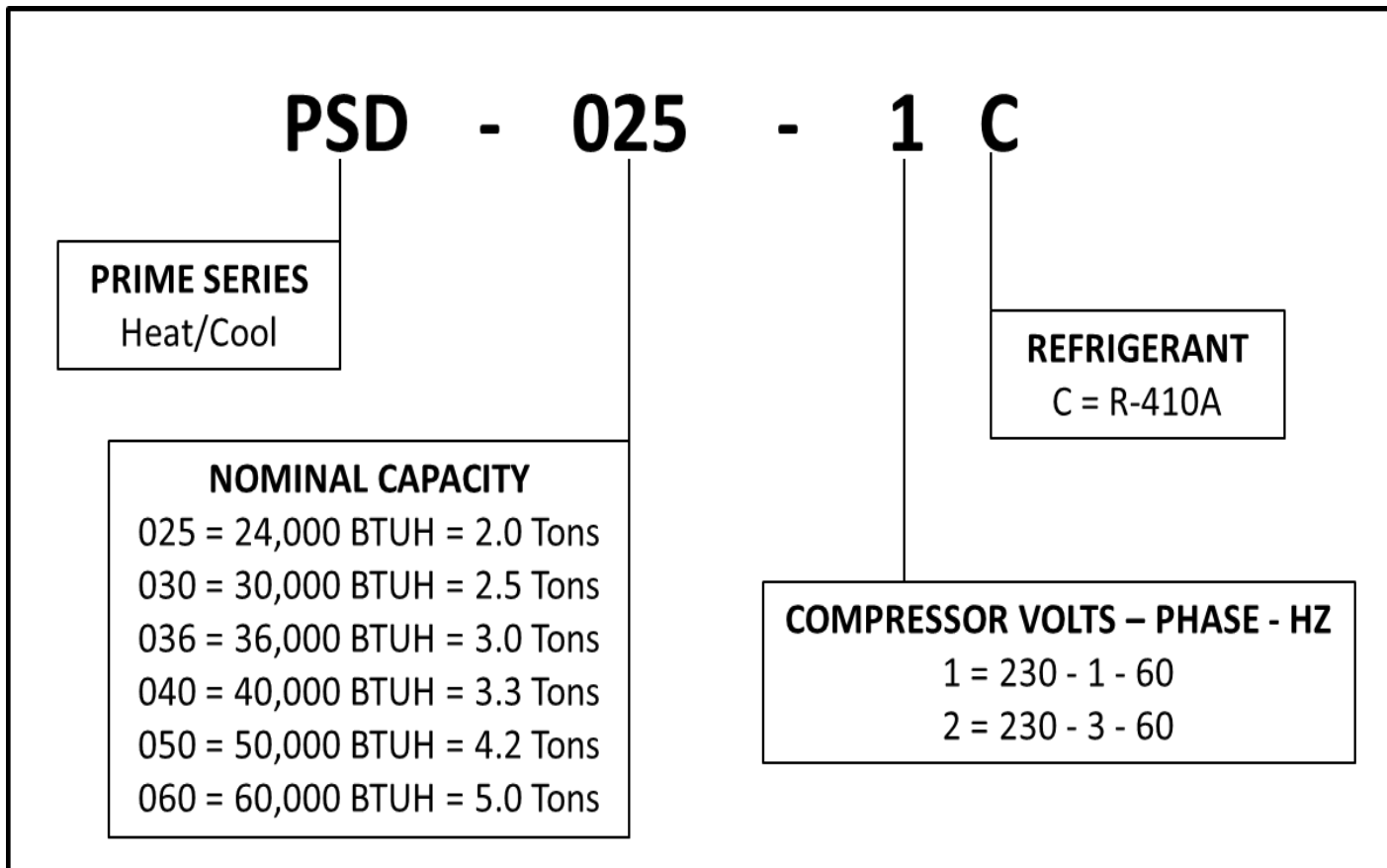
Compressor units

Overview

- ✦ R-410A since 2010
- ✦ Single-phase and Three-phase
- ✦ 4-step start-up process
 - 1) **System leak check** (pressure testing)
 - 2) **Evacuation** (down to 400 microns or less. System pressure must not exceed 500 microns within 15 minutes)
 - 3) **Initial charge** (3 pounds per nominal ton)
 - 4) **Final charge** (top Active Charge Control sight glass - in air heating mode, second stage, forced air)
- ✦ Noise cancelling: insulated panels, vibration absorber, vibration plate, compressor blanket, discharge muffler*

Overview

Model number



PRIME Series

- ❧ Models: PSC, PSD and PSDH
- ❧ Two-stage
- ❧ Sizes: 025, 030, 036, 040, 050, 060
- ❧ EarthLinked Diagnostics & Monitoring system (**EDM**): real-time remote monitoring of pressures, temperatures, power consumption and thermostat signals
- ❧ Nano-PLC
- ❧ On-board Earth Loop Protection system (**EPS**)
- ❧ SureStart
- ❧ Warranty: Ten-Year Parts & Five-Year Labor



→ Prime Quick-start guides

PRIME Series – PSC/PSD

- ✔ **PSC**: provide **Forced air heating and cooling** with Air Handler or Cased Coil
- ✔ **PSD**: provide **Forced air heating and cooling** with Air Handler or Cased Coil; and **domestic water heating** during heating and cooling mode operation with Heat Recovery Module (HRM) factory-installed
- ✔ Discharge muffler (Silencing kit)

→ [Price Book / Ordering Tool](#)



PRIME Series – PSDH

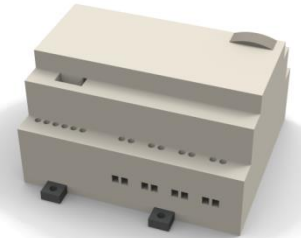
- ✔ **PSDH**: provide **Forced air heating and cooling** with Air Handler or Cased Coil and **Hydronic heat** with Hydronic Water Module; and **domestic water heating** during heating and cooling mode operation with Heat Recovery Module (HRM) factory-installed.
 - Nano-PLC allows for Forced air heating and cooling as well as Radiant floor hydronic heating.

→ [Price Book / Ordering Tool](#)



Nano-PLC functions – PSC/PSD

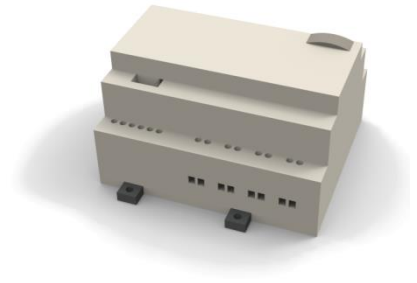
- ✔ True **two-speed** system
- ✔ Automatically **controls Heating and Cooling staging** - both of the Geothermal system and the Auxiliary Heat
- ✔ Comes with **Dual fuel** mode capability - Gas or Electric
- ✔ **Thermostat-agnostic**: works with most thermostats on the market. Minimum requirement: single stage Heat/Cool thermostat
- ✔ Eliminates the need for external balance point control or for an outdoor sensor
- ✔ **Zoning-friendly** for air applications (relies on a zone damper system by others). Compatible with most zoning systems



→ **PSC/PSD Quick-start guides, 2016 Dealer Conference Media**

Nano-PLC functions - PSDH

- ✔ Same as PSC/PSD
- ✔ Option to **prioritize Air or Hydronic** heating
- ✔ **Split Zoning capabilities:** ability to heat one zone / floor with Hydronic heat and another zone / floor with Forced air
- ✔ **Seasonal Zoning capabilities:** seasonal switching between Forced air and Hydronic
- ✔ Quiet and reliable switch-over between Air and Hydronic



→ PSDH Quick-start guides, 2016 Dealer Conference Media

CLASSIC Series

- ❧ Models: SC, SD, SDH, SCW and SCWD
- ❧ Single stage
- ❧ Sizes: 024, 030, 036, 042, 048, 060, 066
- ❧ Nano-PLC for SDH, SCW and SCWD models
- ❧ On-board EPS
- ❧ EDM and SureStart **optional**
- ❧ Warranty: Five-Year Parts & Labor

→ **Classic Quick-start guides**



CLASSIC Series – SC/SD

- ❧ **SC**: provide **Forced air heating and cooling** with Air Handler or Cased Coil
- ❧ **SD**: provide **Forced air heating and cooling** with Air Handler or Cased Coil; and **domestic water heating** during heating and cooling mode operation with Heat Recovery Module (HRM) factory-installed
- ❧ Silencing kit **optional**

→ **Price Book / Ordering Tool**



CLASSIC Series – SDH

- ✓ **SDH:** provide **Forced air** heating and cooling with Air Handler, Cased Coil and **Hydronic heat** with Hydronic Water Module; and **domestic water heating** during heating and cooling mode operation with Heat Recovery Module (HRM) factory-installed.
 - The Nano-PLC allows for Forced air heating and cooling as well as Radiant floor heating.



→ [Price Book / Ordering Tool](#)

CLASSIC Series – SCW/SCWD

- ❧ **SCW**: provide radiant panel **Hydronic heating and chilled water cooling** with internal refrigerant to water heat exchanger.
- ❧ **SCWD**: provide radiant panel **Hydronic heating and chilled water cooling** with internal refrigerant to water heat exchanger; and **domestic water heating** during heating and cooling mode operation with Heat Recovery Module (HRM) factory-installed
- ❧ Require primary circuit circulating water **pump**

→ **Price Book / Ordering Tool**



Options and kits

- ✦ **Options:** EDM, SureStart, Silencing kit
- ✦ EPS kit (Anode, Anode wire, Plug connector and Coke breeze)
- ✦ Hybrid Cooling Module (HCM)
- ✦ Heating Performance Enhancement kit (HPE)
- ✦ **Thermostats:** compatible with all single-stage heating/cooling no need for external balance point control or for an outdoor temperature sensor
- ✦ **Water heating kits:** Flow meter, Strainer, Freeze Protection, Temperatures controls

➔ **Price Book / Ordering Tool**



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Air Handlers

Air Handlers

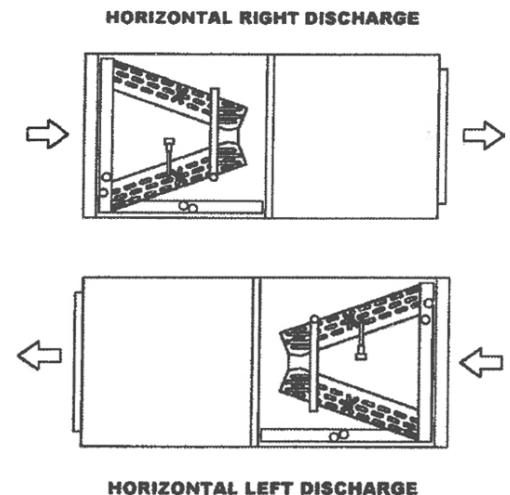
- ✓ Unico high-velocity (HVA) – order through Unico directly
 - ✓ Requires **Label kit** (AHLB-KIT)
-
- ✓ Arcoaire four-speed (AVS) and variable speed (AVV)
 - Fully variable ECM blower motor option preferred for air zoning
 - ✓ Aluminum coils
 - ✓ No TXV
 - ✓ Air flow = 400 CFM/nominal ton
 - ✓ Order through EarthLinked - picked up / delivered by local United Refrigeration, Inc. center.



→ 2016 Dealer Conference Media

Arcoaire AVS and AVS

- ✓ Air Handler kit: a mandatory kit for all Air Handlers
 - Prime or Classic
 - Features Air Handler labels as well as various field adaptation components.
- ✓ Aux. Heat required on all systems. Electric strip heat kits: 5, 10, 15 or 20 kW
- ✓ Field modified for orientation (specify when ordering)
- ✓ Horizontal installation: specify Right or Left discharge
 - Horizontal Right kit
- ✓ Vertical application: specify Up or Down flow
 - AVS and AVV Down flow kits



→ **Price Book / Ordering Tool**

Alternatives

- ✔ Cased Coils: to integrate into an existing furnace
- ✔ Hydronic Water Module - for SDH and PSDH (combo units)

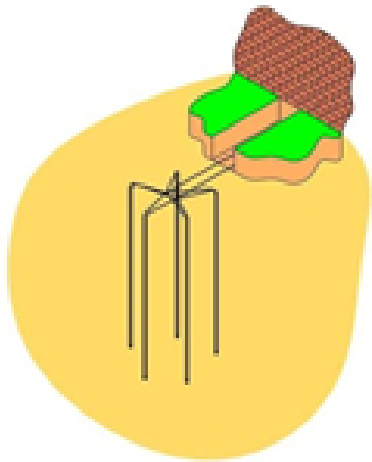




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Earth Loops

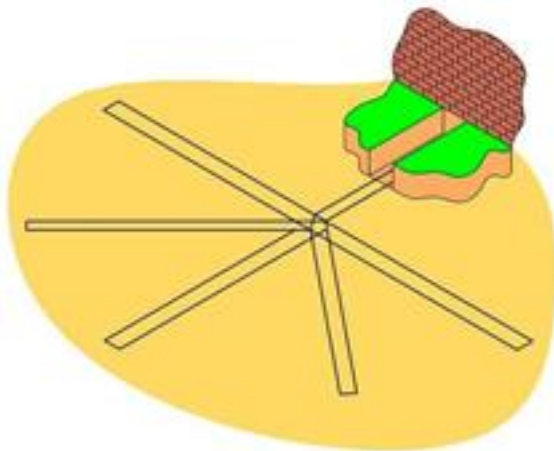
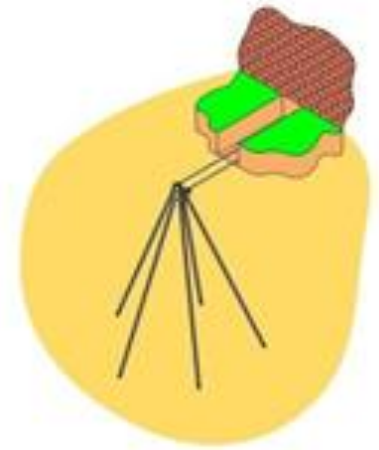
Loop types



V2/D2 Bore System - 2 x 75' per ton

V1.5/D1.5 Bore System - 1½ x 100' per ton

V1/D1 Bore System - 1 x 100' per ton

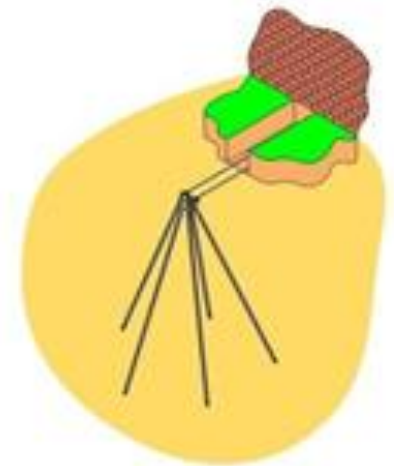
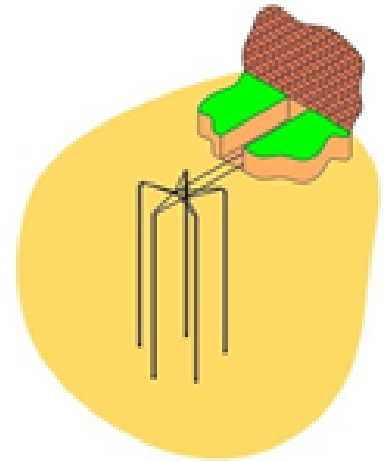


H1B - 125' per ton

Trench or Horizontal Bore

Vertical and Diagonal

- ✔ Minimum vertical loop separation 7'
- ✔ Vertical loops: **15 ft.** between earth loop systems
- ✔ Diagonal loops: **20 ft.** between manifold sets
- ✔ ETI approved grouts (graphite yes as long as approved)
 - No sand or bore hole tailings
- ✔ Minimum line set separation recommended: 1'



→ VEL Quick-start guide, Earth Loop installation manual

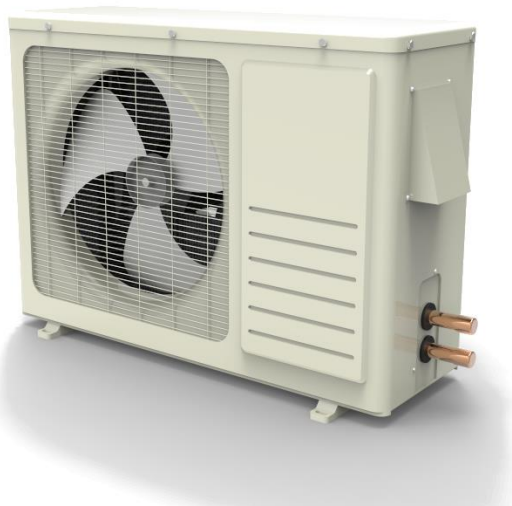
Horizontal

- ✓ H1B New for 2016 - 125' per ton (out and back)
 - Trench: 1' recommended spacing between tubes. 4' between trenches.
 - Where soil conditions allow, can be installed in a 4" wide trench using a trencher
 - Bore: 3" to 4" horizontal bore hole. 4' between bore holes
- ✓ Minimum depth: at least 5' and no less than 18" below frost line. Deeper is better (6'-8')
- ✓ Minimum recommended line set separation of 1'
- ✓ ETI List of Approved Grouts (graphite yes as long as approved)
 - No sand or bore hole tailings

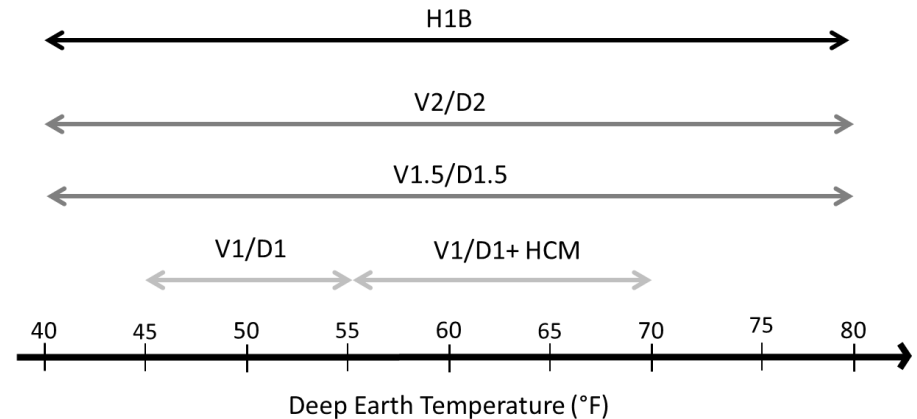
→ **HEL Quick-start guide, Earth Loop installation manual**

HCM

- Hybrid Cooling Module (HCM): enhance cooling mode system **efficiency** and **performance** for cooling dominant applications having **low thermal conductivity** soils or applications with sustained **high summer temperatures** above cooling design temperature.



Earth Loops : range of use*



*Hybrid Cooling Module (HCM) should be used in any Cooling dominant application where soil thermal conductivity is unknown or known to be less than 1 BTU/hr.ft.°F

→ SSPT sizing manual



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Finding Information

Resources

- ✦ <https://earthlinked.com/dealers/>
- ✦ Technical Manuals, Data and Work Sheets, Product Literature
- ✦ Ordering Tool / Price Book
- ✦ EDM dashboard <http://earthlinked.info/dashboard/>
- ✦ LoopLink
- ✦ Savings Calculator
- ✦ Warranty
- ✦ News board – 2016 Dealer Conference

Technical manuals section

- Heating and Cooling Systems
 - Design
 - Quick-starts
- Earth Loops
 - Installation
 - Quick-starts
 - Plan Views
- Distribution Systems
 - Air Handlers
 - Cased Coils
 - Hydronic
- Water Heating
 - Domestic
 - Commercial
- Modules, Kits and Parts
- Thermostats
- Sheets & Forms
 - Bulletins
 - Sizing Worksheets
 - Data sheets and Worksheets

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- Data sheets and Worksheets

“System Sizing & Performance Tables”

- Range of use of loops
- HCM requirements
- Sizing worksheets
- ASHRAE outdoor temperatures

Technical manuals

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- Data sheets and Worksheets

“PSD Quick-start guide”

- Matching Component Model Numbers
- General Layout of System Components
- Compressor clearance
- Line Set Sizes
- Power requirements
- Functions of PLC
- Basic troubleshooting

Technical manuals

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- Quick-starts

- **Earth Loops**

- **Installation**
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- Plan Views

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- Modules, Kits and Parts

- Thermostats

- Sheets & Forms

- Bulletins
- Sizing Worksheets
- Data sheets and Worksheets


“EL-SIS Earth Loop manual”

- Complete installation procedures
- Line set sizes
- Grouting instructions
- EPS
- Plan views

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 - Thermostats
 - Sheets & Forms
 - Bulletins
 - Sizing Worksheets
 - Data sheets and Worksheets
- “HEL/VEL Quick-starts”*
- Essential installation procedures
 - Design/installation requirements

Technical manuals

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 - Sizing Worksheets
 - Data sheets and Worksheets
- “HWM manual”*
- Complete specifications
 - Diagrams and applications
 - Start-up instructions
- 

Technical manuals

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- **Data sheets and Worksheets**

“Domestic Hot Water Tank - Sizing Worksheet”

Q & A



Quiz

<http://goo.gl/forms/UjT2Q5ECZ1ry9Zr82>

