

Cooling Capacity [Btuh]	37,000 *
Condensing Unit SEER:	13.0 **
Condensing Unit CFM:	2,200
Condenser Fan No./Type:	1/CENTRIFUGAL
Diameter x Width [in]:	12x12
Drive:	Adjustable Belt
Motor HP:	1.0
Condenser Coil Face Area:	7.03 [sq ft]
Rows/FPI:	3/12

Compressor No./Type:	1/Scroll
Refrigerant Circuits:	1/Independent
Capacity Steps (%):	100/0
Suction Line OD (in):	3/8
Liquid Line OD (in):	3/4
Refrigerant:	<b>R-410A</b>
Charge:	n/a
<b>Unit shipped with Nitrogen holding charge only</b>	
Operating Weight [lbs.]:	385
Shipping Weight [lbs.]:	425

\* Net Capacity in combination with ESV036 horizontal air handling unit.  
 \*\*Rated in accordance with DOE test procedures and ARI Standard 210-240.

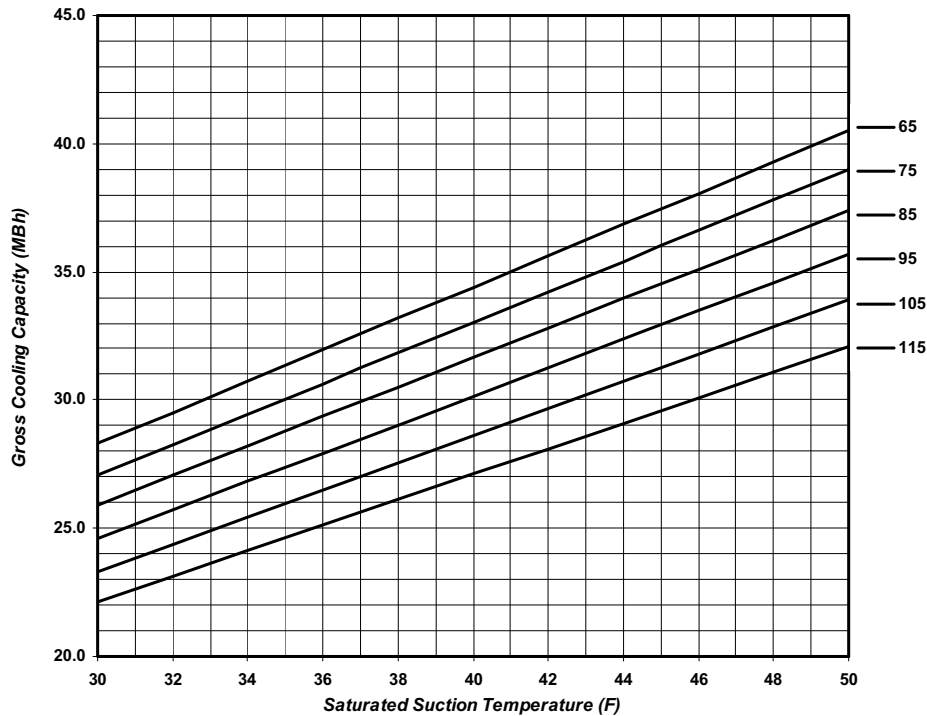
**CONDENSER FAN PERFORMANCE**

MODEL #	OUTDOOR CFM	EXTERNAL STATIC PRESSURE - Inches W.C.									
		0.2		0.4		0.6		0.8		1.0	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
DSV036A	2200	622	0.39	720	0.50	802	0.60	961	0.69	953	0.79

**ELECTRICAL DATA**

MODEL #	VOLTAGE	COMPRESSOR			CONDENSER FAN		MIN. CCT. AMPACITY	"MOP" Max Overcurrent Protection
		QTY	RLA	LRA	HP	FLA		
KSV036A1	208-230/1/60	1	@ 14.1	77.0	1.00	6.7	24.33	35
KSV036A2	208-230/3/60	1	@ 9.0	71.0	1.00	3.0	14.25	20
KSV036A4	460/3/60	1	@ 5.6	38.0	1.00	1.4	8.40	15
KSV036A5	575/3/60	1	@ 3.8	36.5	1.00	1.1	5.85	15

**VCN036H Condensing Unit Performance**



Performance data calculated at 15°F subcooling and 20°F superheat. Figures shown do not include capacity loss due to refrigerant line pressure drop.

Johnson Controls maintains a continuous product improvement policy; therefore specifications are subject to change without notice.



DESCRIPTION

KSV036 PERFORMANCE DATA  
 R-410A KSV SERIES  
 VERTICAL INDOOR CONDENSING UNITS

Form 145.29-PA1 (1108)

DATE:

November 2008

**GENERAL**

All models 3-5 tons ship as fully assembled and wired units. Units include "Scroll" type, R-410A, hermetic compressor, aluminum fin/copper tube condenser coil, condenser fan and motor, and all necessary controls. Units are shipped with a Nitrogen holding charge only. All models are designed for free standing mounting on the floor, or on a field fabricated structural steel stand.

**CABINET**

All cabinets are completely constructed of heavy gauge galvanized steel. The unit interior is insulated with 1/2" thick, 2-lb density insulation. Service panels are equipped with lifting handles for ease of removal and handling. Duct flanges for condenser discharge and condenser intake are provided with the unit for field installation.

**REFRIGERANT CIRCUITS**

All models utilize "Scroll" type, R-410A, hermetic compressors. Compressors are mounted on rubber isolators to minimize vibration transmission. Internal overload protection is provided. Each refrigeration circuit includes a thermal expansion valve (with external equalizer), liquid line filter drier, sight glass/moisture indicator, a high refrigerant pressure safety switch, a low refrigerant pressure switch (for compressor protection), and service gauge ports. Crankcase heaters are standard on all models.

**CONDENSER COILS**

The condenser coil is constructed of internally enhanced copper tubes mechanically bonded to rippled aluminum plate fins. Coils are employed in a draw-thru configuration.

**CONDENSER FAN AND MOTOR**

Forward curved, double inlet and double width centrifugal blowers are used for condenser air movement. Blower wheels are fabricated of galvanized steel. Blowers employ solid steel shafts, supported in permanently lubricated ball bearings. All blowers are belt driven. Variable-pitch motor sheaves allow for field adjustment of blower rpm. Motor shall be 1800 RPM, open drip proof design. Three-phase motors are provided with external manual reset overload protection. Single-phase motors feature auto reset internal overloads.

**ELECTRICAL/CONTROLS**

All units are completely factory wired with all necessary controls. A manual reset circuit is also provided on each compressor control circuit in the event of high/low pressure cut-out. A 24 volt control circuit, with oversize transformer, is provided for field connection.

**FACTORY INSTALLED OPTIONS**

**Corrosion Resistant Coatings.** Condenser coil shall receive a 1-mil thickness of a cathodic epoxy type electro-deposition coating, applied in a multiple dip and bake process.

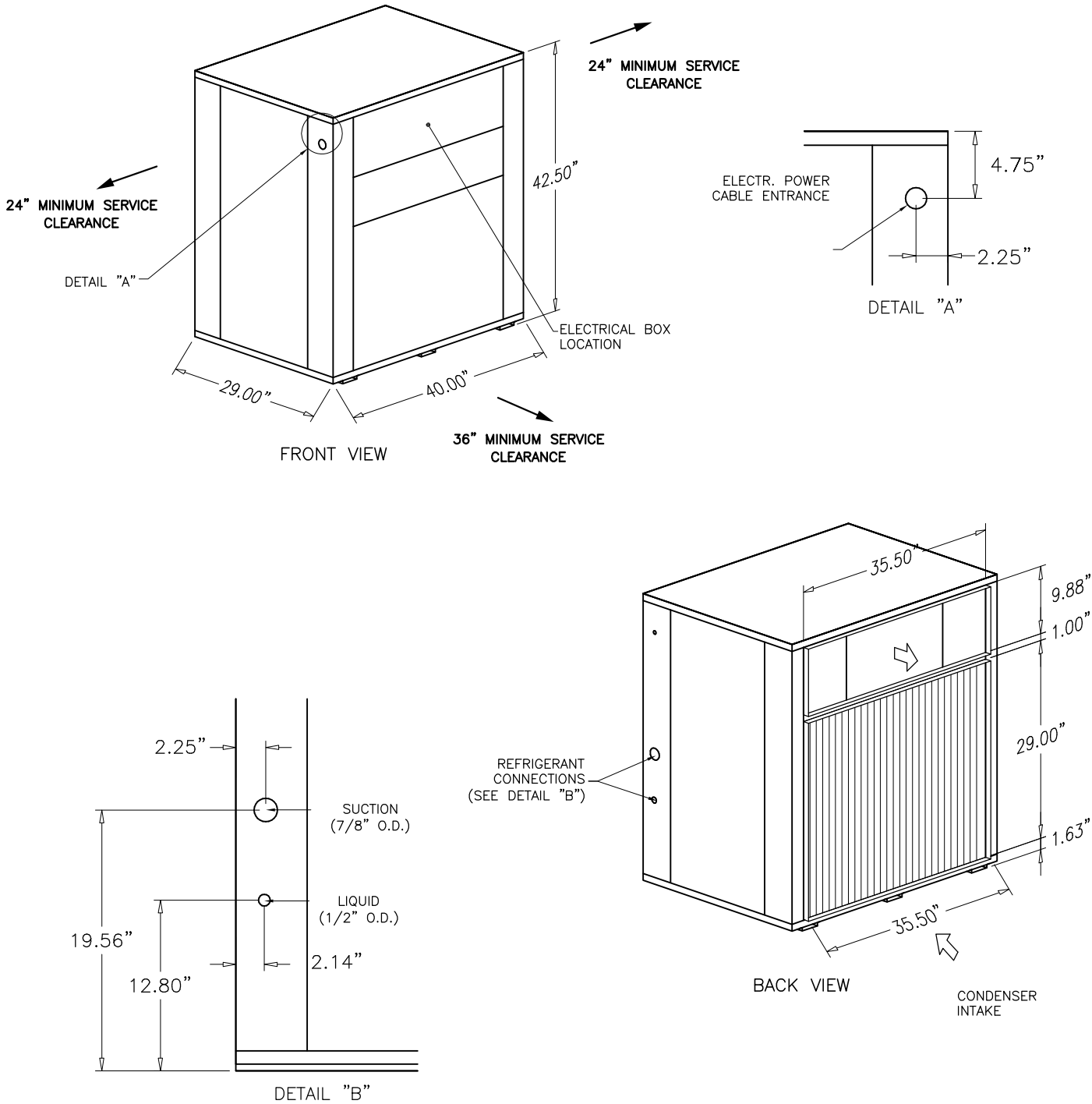
**Anti-Short Cycle Timer.** Time delay relay will be provided for each compressor circuit. Compressor will be locked out for 5 minutes when thermostat contact opens, or there is a momentary power outage.

**FIELD INSTALLED OPTIONS**

**Low Ambient Control.** Head pressure control damper kit will allow unit operation down to 0 F ambient. Damper assembly mounts on condenser air intake. The kit includes damper actuator and low pressure switch bypass timer(s).

Johnson Controls maintains a continuous product improvement policy; therefore specifications are subject to change without notice.

	DESCRIPTION MECHANICAL SPECIFICATION R-410A KSV SERIES VERTICAL INDOOR CONDENSING UNITS	Form 145.29-PA1 (1108)
		DATE: November 2008



DESCRIPTION: KSV036  
 VERTICAL AIR-COOLED CONDENSING UNITS  
 DIMENSIONAL DATA

Form 145.29-PA1 (1108)  
 DATE: November 2008

Cooling Capacity [Btuh]	50,100 *
Condensing Unit SEER:	13.0 **
Condensing Unit CFM:	2,600
Condenser Fan No./Type:	1/CENTRIFUGAL
Diameter x Width [in]:	12x15
Drive:	Adjustable Belt
Motor HP:	1.0
Condenser Coil Face Area:	7.94 [sq ft]
Rows/FPI:	4/14

Compressor No./Type:	1/Scroll
Refrigerant Circuits:	1/Independent
Capacity Steps (%):	100/0
Suction Line OD (in):	7/8
Liquid Line OD (in):	1/2
Refrigerant:	<b>R-410A</b>
Charge:	n/a
<b>Unit shipped with Nitrogen holding charge only</b>	
Operating Weight [lbs.]:	400
Shipping Weight [lbs.]:	440

\* Net Capacity in combination with ESV048 horizontal air handling unit.  
 \*\*Rated in accordance with DOE test procedures and ARI Standard 210-240.

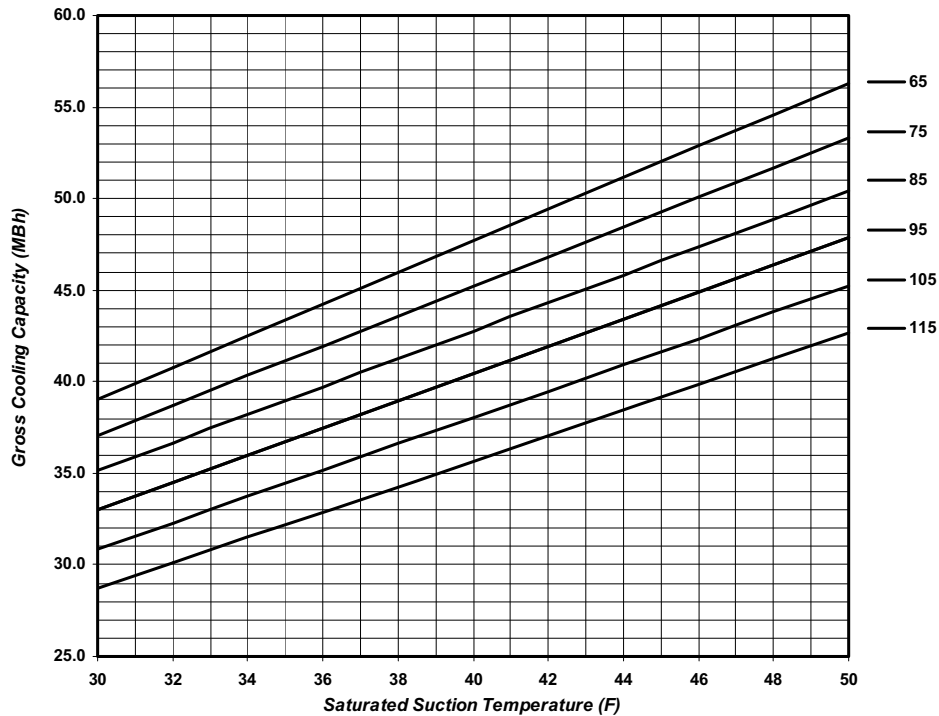
**CONDENSER FAN PERFORMANCE**

MODEL #	OUTDOOR CFM	EXTERNAL STATIC PRESSURE - Inches W.C.									
		0.2		0.4		0.6		0.8		1.0	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
DSV048A	2600	719	0.61	800	0.71	870	0.85	940	0.98	-	-

**ELECTRICAL DATA**

MODEL #	VOLTAGE	COMPRESSOR			CONDENSER FAN		MIN. CCT. AMPACITY	"MOP" Max Overcurrent Protection
		QTY	RLA	LRA	HP	FLA		
KSV048A1	208-230/1/60	1	@ 19.9	109.0	1.00	6.7	31.58	50
KSV048A2	208-230/3/60	1	@ 13.1	83.1	1.00	3.0	19.38	30
KSV048A4	460/3/60	1	@ 6.1	41.0	1.00	1.4	9.03	15
KSV048A5	575/3/60	1	@ 5.0	34.0	1.00	1.1	7.35	15

**VCN048H Condensing Unit Performance**



Performance data calculated at 15°F subcooling and 20°F superheat. Figures shown do not include capacity loss due to refrigerant line pressure drop.

Johnson Controls maintains a continuous product improvement policy; therefore specifications are subject to change without notice.



DESCRIPTION

KSV048 PERFORMANCE DATA  
 R-410A KSV SERIES  
 VERTICAL INDOOR CONDENSING UNITS

Form 145.29-PA2 (1108)

DATE:

November 2008

**GENERAL**

All models 3-5 tons ship as fully assembled and wired units. Units include "Scroll" type, R-410A, hermetic compressor, aluminum fin/copper tube condenser coil, condenser fan and motor, and all necessary controls. Units are shipped with a Nitrogen holding charge only. All models are designed for free standing mounting on the floor, or on a field fabricated structural steel stand.

**CABINET**

All cabinets are completely constructed of heavy gauge galvanized steel. The unit interior is insulated with 1/2" thick, 2-lb density insulation. Service panels are equipped with lifting handles for ease of removal and handling. Duct flanges for condenser discharge and condenser intake are provided with the unit for field installation.

**REFRIGERANT CIRCUITS**

All models utilize "Scroll" type, R-410A, hermetic compressors. Compressors are mounted on rubber isolators to minimize vibration transmission. Internal overload protection is provided. Each refrigeration circuit includes a thermal expansion valve (with external equalizer), liquid line filter drier, sight glass/moisture indicator, a high refrigerant pressure safety switch, a low refrigerant pressure switch (for compressor protection), and service gauge ports. Crankcase heaters are standard on all models.

**CONDENSER COILS**

The condenser coil is constructed of internally enhanced copper tubes mechanically bonded to rippled aluminum plate fins. Coils are employed in a draw-thru configuration.

**CONDENSER FAN AND MOTOR**

Forward curved, double inlet and double width centrifugal blowers are used for condenser air movement. Blower wheels are fabricated of galvanized steel. Blowers employ solid steel shafts, supported in permanently lubricated ball bearings. All blowers are belt driven. Variable-pitch motor sheaves allow for field adjustment of blower rpm. Motor shall be 1800 RPM, open drip proof design. Three-phase motors are provided with external manual reset overload protection. Single-phase motors feature auto reset internal overloads.

**ELECTRICAL/CONTROLS**

All units are completely factory wired with all necessary controls. A manual reset circuit is also provided on each compressor control circuit in the event of high/low pressure cut-out. A 24 volt control circuit, with oversize transformer, is provided for field connection.

**FACTORY INSTALLED OPTIONS**

**Corrosion Resistant Coatings.** Condenser coil shall receive a 1-mil thickness of a cathodic epoxy type electro-deposition coating, applied in a multiple dip and bake process.

**Anti-Short Cycle Timer.** Time delay relay will be provided for each compressor circuit. Compressor will be locked out for 5 minutes when thermostat contact opens, or there is a momentary power outage.

**FIELD INSTALLED OPTIONS**

**Low Ambient Control.** Head pressure control damper kit will allow unit operation down to 0 F ambient. Damper assembly mounts on condenser air intake. The kit includes damper actuator and low pressure switch bypass timer(s).

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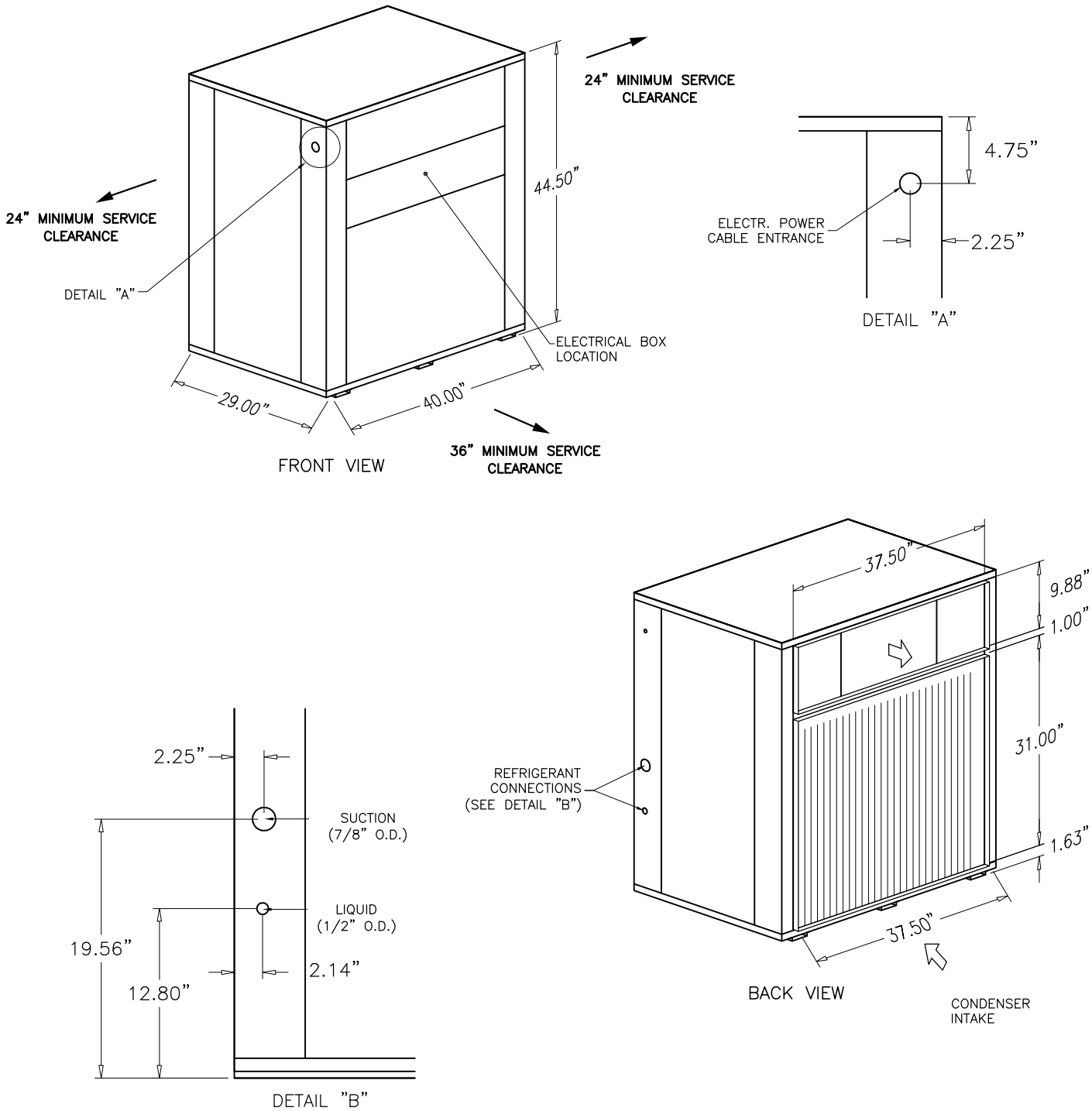
## DESCRIPTION

MECHANICAL SPECIFICATION  
R-410A KSV SERIES  
VERTICAL INDOOR CONDENSING UNITS

Form 145.29-PA2 (1108)

DATE:

November 2008



DESCRIPTION:  
 KSV048  
 VERTICAL AIR-COOLED CONDENSING UNITS  
 DIMENSIONAL DATA

Form 145.29-PA2 (1108)

DATE:  
 November 2008

Cooling Capacity [Btuh]	49,000 *
Condensing Unit SEER:	13.0 **
Condensing Unit CFM:	3,000
Condenser Fan No./Type:	1/CENTRIFUGAL
Diameter x Width [in]:	12x15
Drive:	Adjustable Belt
Motor HP:	1.5
Condenser Coil Face Area:	7.94 [sq ft]
Rows/FPI:	4/14

Compressor No./Type:	1/Scroll
Refrigerant Circuits:	1/Independent
Capacity Steps (%):	100/0
Suction Line OD (in):	1-1/8
Liquid Line OD (in):	1/2
Refrigerant:	<b>R-410A</b>
Charge:	n/a
<b>Unit shipped with Nitrogen holding charge only</b>	
Operating Weight [lbs.]:	435
Shipping Weight [lbs.]:	475

\* Net Capacity in combination with ESV036 horizontal air handling unit.  
 \*\*Rated in accordance with DOE test procedures and ARI Standard 210-240.

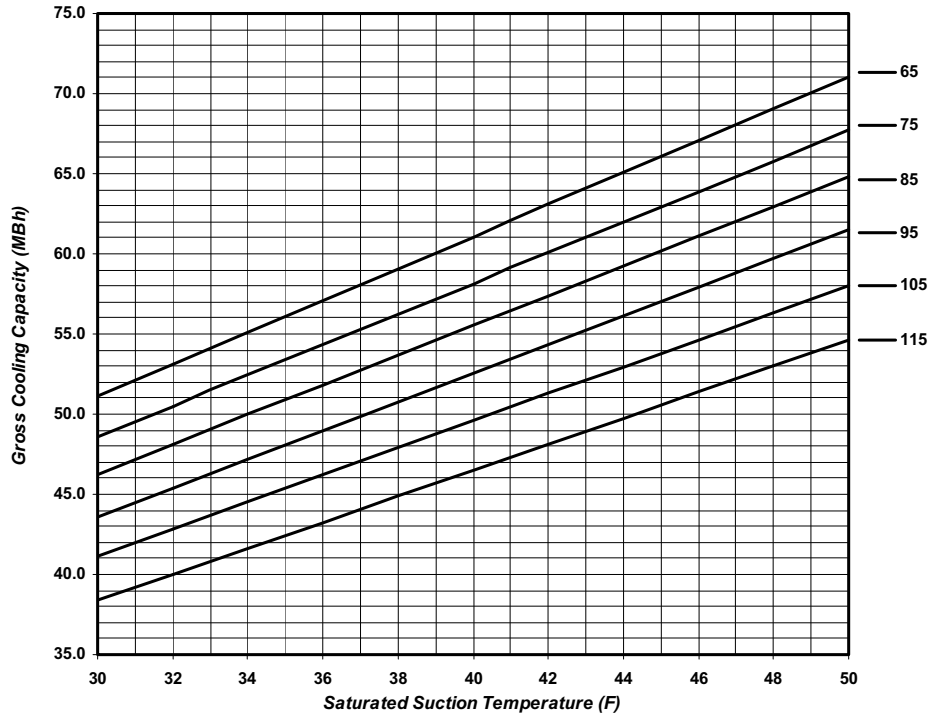
**CONDENSER FAN PERFORMANCE**

MODEL #	OUTDOOR CFM	EXTERNAL STATIC PRESSURE - Inches W.C.									
		0.2		0.4		0.6		0.8		1.0	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
DSV060A	3000	886	0.87	838	0.99	920	1.12	1002	1.29	1055	1.47

**ELECTRICAL DATA**

MODEL #	VOLTAGE	COMPRESSOR			CONDENSER FAN		MIN. CCT. AMPACITY	"MOP" Max Overcurrent Protection
		QTY	RLA	LRA	HP	FLA		
KSV060A2	208-230/3/60	1	@ 16.0	110.0	1.50	4.3	24.30	40
KSV060A4	460/3/60	1	@ 7.8	52.0	1.50	2.1	11.85	15
KSV060A5	575/3/60	1	@ 5.7	38.9	1.50	1.7	8.83	15

**VCN060H Condensing Unit Performance**



Performance data calculated at 15°F subcooling and 20°F superheat. Figures shown do not include capacity loss due to refrigerant line pressure drop.

Johnson Controls maintains a continuous product improvement policy; therefore specifications are subject to change without notice.

	DESCRIPTION	Form 145.29-PA3 (1108)
	KSV060 PERFORMANCE DATA R-410A KSV SERIES VERTICAL INDOOR CONDENSING UNITS	DATE: November 2008

**GENERAL**

All models 3-5 tons ship as fully assembled and wired units. Units include "Scroll" type, R-410A, hermetic compressor, aluminum fin/copper tube condenser coil, condenser fan and motor, and all necessary controls. Units are shipped with a Nitrogen holding charge only. All models are designed for free standing mounting on the floor, or on a field fabricated structural steel stand.

**CABINET**

All cabinets are completely constructed of heavy gauge galvanized steel. The unit interior is insulated with 1/2" thick, 2-lb density insulation. Service panels are equipped with lifting handles for ease of removal and handling. Duct flanges for condenser discharge and condenser intake are provided with the unit for field installation.

**REFRIGERANT CIRCUITS**

All models utilize "Scroll" type, R-410A, hermetic compressors. Compressors are mounted on rubber isolators to minimize vibration transmission. Internal overload protection is provided. Each refrigeration circuit includes a thermal expansion valve (with external equalizer), liquid line filter drier, sight glass/moisture indicator, a high refrigerant pressure safety switch, a low refrigerant pressure switch (for compressor protection), and service gauge ports. Crankcase heaters are standard on all models.

**CONDENSER COILS**

The condenser coil is constructed of internally enhanced copper tubes mechanically bonded to rippled aluminum plate fins. Coils are employed in a draw-thru configuration.

**CONDENSER FAN AND MOTOR**

Forward curved, double inlet and double width centrifugal blowers are used for condenser air movement. Blower wheels are fabricated of galvanized steel. Blowers employ solid steel shafts, supported in permanently lubricated ball bearings. All blowers are belt driven. Variable-pitch motor sheaves allow for field adjustment of blower rpm. Motor shall be 1800 RPM, open drip proof design. Three-phase motors are provided with external manual reset overload protection. Single-phase motors feature auto reset internal overloads.

**ELECTRICAL/CONTROLS**

All units are completely factory wired with all necessary controls. A manual reset circuit is also provided on each compressor control circuit in the event of high/low pressure cut-out. A 24 volt control circuit, with oversize transformer, is provided for field connection.

**FACTORY INSTALLED OPTIONS**

**Corrosion Resistant Coatings.** Condenser coil shall receive a 1-mil thickness of a cathodic epoxy type electro-deposition coating, applied in a multiple dip and bake process.

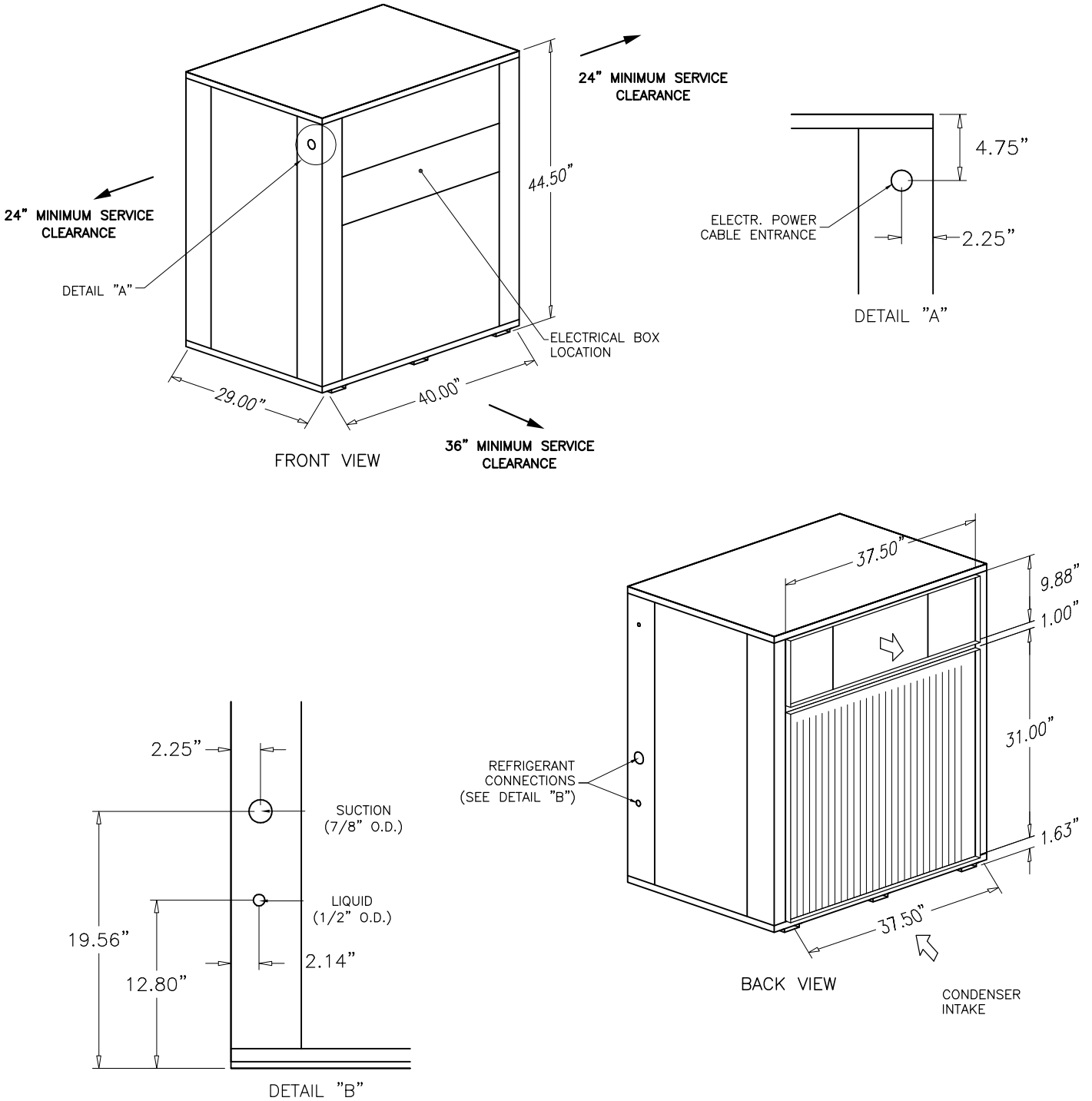
**Anti-Short Cycle Timer.** Time delay relay will be provided for each compressor circuit. Compressor will be locked out for 5 minutes when thermostat contact opens, or there is a momentary power outage.

**FIELD INSTALLED OPTIONS**

**Low Ambient Control.** Head pressure control damper kit will allow unit operation down to 0 F ambient. Damper assembly mounts on condenser air intake. The kit includes damper actuator and low pressure switch bypass timer(s).

Johnson Controls maintains a continuous product improvement policy; therefore specifications are subject to change without notice.

	DESCRIPTION MECHANICAL SPECIFICATION R-410A KSV SERIES VERTICAL INDOOR CONDENSING UNITS	Form 145.29-PA3 (1108)
		DATE: November 2008



DESCRIPTION:  
 KSV060  
 VERTICAL AIR-COOLED CONDENSING UNITS  
 DIMENSIONAL DATA

Form 145.29-PA3 (1108)

DATE:  
 November 2008