

25 - 40 kw

Variable Speed Screw Compressors



Standard Equipment

- Air inlet filter
- Fully automatic capacity control: variable speed air production based on system air demand
- Air Smart™ Controller
- One button operator interface
- EMC filter
- High efficiency AC inverter drive
- TEFC electric motors: IP 55, F-class insulation, thermistor protection
- Emergency stop
- Safety devices for
 - Motor over temperature
 - Compressor over temperature
 - Compressor over pressure
 - Current limiter
- Alarms for
 - Oil filter ΔP
 - Air inlet filter ΔP
 - Oil separator element ΔP
 - Compressor over temperature (alarm at 100° C and tripping at 115° C)
 - Service interval
- Safety valve
- Running condition indicators:
 - Pressures
 - Temperatures
 - Hour meter; total running hours, full load hours
- Automatic re-start after power failure
- Epoxy powder coated enclosure
- After cooler and moisture separator with automatic drain
- Smart thermal mixing oil control valve
- Integrated TEMPEST® unit with ENDURO® Plus air end

Optional Equipment

- Special voltages
- Integrated dryer; the refrigerant used in the integrated dryers fulfills the EC norm No 2037/2000 requirements

Auxiliary Equipment

- Multi-compressor controller for several compressors
- Compressed air after treatment products

KDV 25/30/40

Efficiency

The KDV series from Airkrone is the newest generation of variable speed rotary screw compressors. The time proven ENDURO® Plus air end insures that maximum reliability and the highest efficiency are incorporated in these compact packages. The KDV series utilizes a rotor profile improvement that allows the lowest specific power over the widest operating range. We have minimized energy consumption throughout the entire package to bring you the lowest possible energy cost of operation.

Flexibility

The modern KDV series compressor packages are the smarter solution to your complex system needs. The Air Smart™ controller maintains a target pressure band of $\pm 0,1$ bar through the entire operating range of 100-20% of the compressor's capacity. The variable speed drive/motor/compressor combination and the controller is designed to supply the varying demands of your system at the lowest possible specific power [kW/m³]. This feature benefits you in the form of energy cost savings. These packages have the

option of an integrated refrigeration dryer that allows 3°C (37°F) pressure dewpoint air at the discharge of the package.

Serviceability

The design of these packages assures the service points are readily accessible. The inlet valve is easy to access and has a simple design that minimizes the number of moving parts resulting in lower maintenance costs. The enclosure side doors are hinged and removable to allow complete access to all service points.

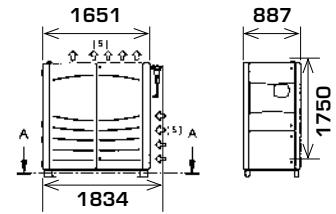
Proven Technology

Airkrone leads product development with new technologies such as Computational Fluid Dynamics, Finite Element Analysis and Thermography. These tools allow Airkrone to design and build smarter solutions to the complex needs of today's compressed air systems. With this technology, we have been able to develop both a compact and serviceable design at the same time.

AIR KRONE®

Technical Data

25 - 40 kw



| PRODUCT DATA / 400V - 50Hz | KDV 25 | | | KDV 30 | | | KDV 40 | | |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Pressure [bar] | 7 | 9 | 12 | 7 | 9 | 12 | 7 | 9 | 12 |
| Minimum Operating Pressure [bar] | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Inlet Capacity*: | | | | | | | | | |
| Capacity 100% Package Power - (m³/min) | 4,02 | 3,39 | 2,78 | 6,04 | 5,25 | 4,58 | 6,87 | 6,34 | 5,28 |
| Capacity 75% Package Power - (m³/min) | 2,98 | 2,49 | 1,99 | 4,53 | 3,90 | 3,33 | 5,13 | 4,47 | 3,88 |
| Capacity 50% Package Power - (m³/min) | 1,92 | 1,54 | - | 2,90 | 2,47 | 2,12 | 3,30 | 3,02 | 2,38 |
| Capacity 35% Package Power - (m³/min) | 1,26 | 0,99 | - | 1,99 | 1,62 | - | 2,23 | 2,00 | 1,53 |
| Capacity Minimum package Power - (m³/min) | 0,93 | 0,91 | 1,39 | 1,02 | 0,98 | 1,72 | 0,94 | 0,90 | 1,38 |
| Package Power air cooled* [1] | | | | | | | | | |
| Package Power @ 100% [kW] | 27,19 | 26,05 | 26,74 | 40,66 | 37,86 | 41,06 | 46,46 | 47,92 | 46,29 |
| Package Power @ 75% [kW] | 20,14 | 19,68 | 20,82 | 29,81 | 27,40 | 31,05 | 33,92 | 35,24 | 34,63 |
| Package Power @ 50% [kW] | 13,75 | 13,82 | - | 19,67 | 19,72 | 22,29 | 21,69 | 23,60 | 24,16 |
| Package Power @ 35% [kW] | 10,08 | 10,40 | - | 14,37 | 14,74 | - | 15,76 | 17,46 | 18,49 |
| Minimum Package Power - [kW] | 8,38 | 9,98 | 16,66 | 9,27 | 10,65 | 19,66 | 8,97 | 10,92 | 17,41 |
| Package Amps (max) - [A] | 43 | 34 | | 65 | 60 | 68 | 77,8 | 71,7 | 70,2 |
| Package Power water cooled* [1] | | | | | | | | | |
| Package Power @ 100% [kW] | 26,59 | 25,45 | 26,14 | 39,41 | 36,61 | 39,81 | 45,21 | 46,67 | 46,04 |
| Package Power @ 75% [kW] | 19,54 | 19,08 | 20,22 | 28,56 | 26,15 | 29,80 | 32,67 | 33,99 | 33,38 |
| Package Power @ 50% [kW] | 13,15 | 13,22 | - | 18,42 | 18,47 | 21,04 | 20,44 | 22,35 | 22,91 |
| Package Power @ 35% [kW] | 9,48 | 9,80 | - | 13,12 | 13,49 | - | 14,51 | 16,21 | 17,24 |
| Minimum Package Power - [kW] | 7,78 | 9,38 | 16,06 | 8,02 | 9,4 | 18,41 | 7,72 | 9,67 | 16,16 |
| Package Amps (max) - [A] | 42 | 33 | 42 | 63 | 58 | 66 | 75,8 | 69,7 | 68,2 |
| Electrical Data: | | | | | | | | | |
| El. Supply: Voltage [V] / Frequency [Hz] / Phase | 400/50/3 | 400/50/3 | 400/50/3 | 400/50/3 | 400/50/3 | 400/50/3 | 400/50/3 | 400/50/3 | 400/50/3 |
| Fuse type / size [A] | gG / 63 | gG / 63 | gG / 63 | gG / 80 | gG / 80 | gG / 80 | gG / 100 | gG / 100 | gG / 100 |
| Control Voltage [V] | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| Drive Motor Speed (max) - rpm | 3551 | 3052 | 2662 | 5235 | 4563 | 4166 | 5935 | 5519 | 4702 |
| Drive Motor Speed (min) - rpm | 967 | 995 | 1497 | 1051 | 1061 | 1833 | 1001 | 1001 | 1502 |
| Max Frequency [Hz] | 120 | 103 | 90 | 174 | 151,5 | 138 | 199,0 | 185,0 | 157,6 |
| Min Frequency [Hz] | 33 | 34 | 51 | 34 | 34,4 | 60 | 33,9 | 34,1 | 50,9 |
| Drive Motor Insulation [Class] | F | F | F | F | F | F | F | F | F |
| Drive Motor protection degree [IP] | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| El. box [vfd] protection degree [IP] | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| EMC - filter | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| Permitted Ambient Temperature: | | | | | | | | | |
| Min / Max Operating Temperature (°C) | 0/45 | 0/45 | 0/45 | 0/45 | 0/45 | 0/45 | 0/45 | 0/45 | 0/45 |
| Air End Data: | | | | | | | | | |
| Male Rotor Speed (max) - (rpm) | 3551 | 3052 | 2662 | 5235 | 4563 | 4166 | 5935 | 5519 | 4702 |
| Male Rotor Speed (min) - (rpm) | 967 | 995 | 1497 | 1051 | 1061 | 1833 | 1001 | 1001 | 1502 |
| Transmission | direct | direct | direct | direct | direct | direct | direct | direct | direct |
| Heat load: | | | | | | | | | |
| Oil cooler heat rejection - [kW] (max) | 21,12 | 21,22 | 20,43 | 33,84 | 33,79 | 33,94 | 35,19 | 36,12 | 34,99 |
| After-cooler heat rejection - [kW] (max) [2] | 3,31 | 2,79 | 2,29 | 4,98 | 4,95 | 3,78 | 5,66 | 5,22 | 4,35 |
| Radiated heat rejection - [kW] (max) [3] | 2,48 | 2,50 | 2,40 | 3,98 | 3,98 | 3,99 | 2,9 | 3,0 | 4,1 |
| Air Cooled Data: | | | | | | | | | |
| Cooling air flow [m³/s] (max) | 1,6 | 1,6 | 1,6 | 2,8 | 2,8 | 2,8 | 2,8 | 2,8 | 2,8 |
| Cooling air temperature rise [°C] | 12,7 | 12,5 | 11,8 | 11,5 | 11,3 | 11,2 | 12,2 | 12,3 | 11,7 |
| Max Total Stat Press drop [mbar] | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 |
| Water Cooled Data: | | | | | | | | | |
| Water flow rate - [l/s] | 0,19 | 0,19 | 0,18 | 0,31 | 0,30 | 0,30 | 0,32 | 0,33 | 0,31 |
| Water temperature [in/out] [°C] | 20/50 | 20/50 | 20/50 | 20/50 | 20/50 | 20/50 | 20/50 | 20/50 | 20/50 |
| Minimum water circuit pressure drop [bar] | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 |
| Maximum water pressure [bar] | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Oil Quantity: | | | | | | | | | |
| Total Lubricant System Capacity - [l] | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| Oil Reservoir Capacity - [oil] [l] | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Connection and Weights: | | | | | | | | | |
| Weights [kg] | 830 | 830 | 830 | 862 | 862 | 862 | 915 | 915 | 915 |
| Discharge Connection Size [G] | G 11/4" | G 11/4" | G 11/4" | G 11/4" | G 11/4" | G 11/4" | G 11/4" | G 11/4" | G 11/4" |
| Moisture Drain Connection Size | ø 6mm crimp | ø 6mm crimp | ø 6mm crimp | ø 6mm crimp | ø 6mm crimp | ø 6mm crimp | ø 6mm crimp | ø 6mm crimp | ø 6mm crimp |
| Noise Data **: | | | | | | | | | |
| Sound Pressure Level [Lp]: | | | | | | | | | |
| at 100% load [dB(A)] [air/water] | 64,5 | 63,9 | 63,0 | 70,2 | 70,4 | 71,0 | 70,5 | 69,7 | 69,9 |
| at 50% load [dB(A)] [air/water] | 62,6 | 63,9 | 63,2 | 67,4 | 68,2 | 69,0 | 68,2 | 68,2 | 68,5 |
| Uncertainty K _{eq} [dB] | ± 2 | ± 2 | ± 2 | ± 2 | ± 2 | ± 2 | ± 2 | ± 2 | ± 2 |

* Capacity and Power measurements according to ISO 1217, ed. 3, Annex C - 1996 test code.
 ** Noise values determined according to ISO 2151 and ISO 3744.

(1) Total package power includes all losses (fans, converter, etc).
 (2) Ambient temperature +20°C, pressure 1 bar and relative humidity 0 %.
 (3) Radiated heat is total of compressor, converter and motor heat loss.

The manufacturer reserves the right to modify without advise the technical characteristics above mentioned.

For additional information please contact your local representative or :

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