HITACHI

Invertek Drives.com

Member of Sumitomo Drive Technologies

Variable Speed Technology

Pre-qualified compressor and drive solution with full operating envelope running capability

How variable speed compressors can lower energy consumption:

Changing speed to match cooling demand – increased efficiency at part load – reduced pressure pulses due to less start/stops – no start up peak current – stable temperature lowering energy costs.

Precise temperature control improves overall system performance

Varying the compressor speed to match changing demand precisely – improves system performance – achieved without using hot gas bypass valve – lowers machine cost – smooth and dynamic response to system demand – stable temperature control reduces operating costs.

Fewer system components – lowering machine costs:

Soft Start managed by the drive – relays included in the drive – built in crankcase heater – Contactor-less solution utilising built-in STO in the drive

Simple and Easy to Use – reducing testing and setup costs

Drive & compressors pre-qualified – parameter set confirmed with each OEM – reducing testing time – shortens time to market – simple plug-in copy & paste tool – lowers machine setup time – eliminates programming errors – Stationary autotune to quickly identify motor characteristics

Improved reliability – low maintenance cost

Wide speed range – less compressor start stops – built-in soft start – lowers mechanical stress – extending machine life – system reliability – lower maintenance costs

Drive protection of compressors

Compressor start profile with individual ramp rate - Intelligent load management – over temperature – short circuit – safe torque off input – added system protection.

A2L

PROVEN SOLUTION!

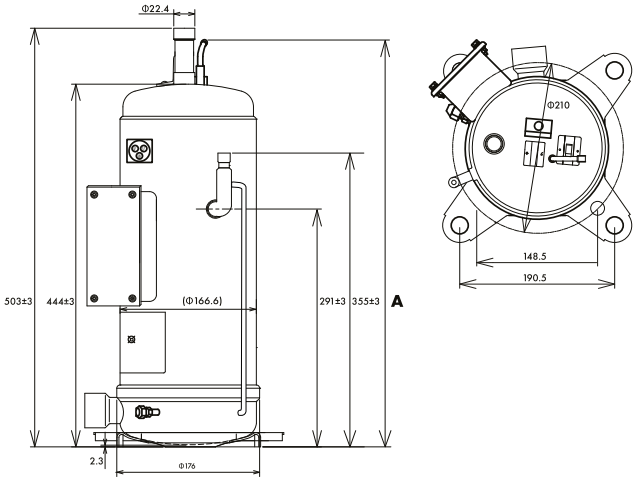
Optimal performance & reliability

Matched compressor and drive combinations

Compressor	Drive Model	Power Source	Refrigerant	Min Cooling Capacity (W)	Max Cooling Capacity* (W)
CLBA047DGA-YF4S	CV-240140-3FHE	3x380-480 +/-10% 50/60Hz	R454C	830	7,880
CLBA064DGA-YF4S	CV-240180-3FHE			1,450	11,050
CLBA090DGA-YF4S	CV-240240-3FHE			2,400	15,900
CLBA110DGA-YF4S	CV-240240-3FHE			3,170	19,670
CLBA047DGA-YF4S	CV-240140-3FHE		R455A	980	8,640
CLBA064DGA-YF4S	CV-240180-3FHE			1,660	12,080
CLBA090DGA-YF4S	CV-240240-3FHE			3,500	17,300
CLBA110DGA-YF4S	CV-240240-3FHE			3,520	21,430

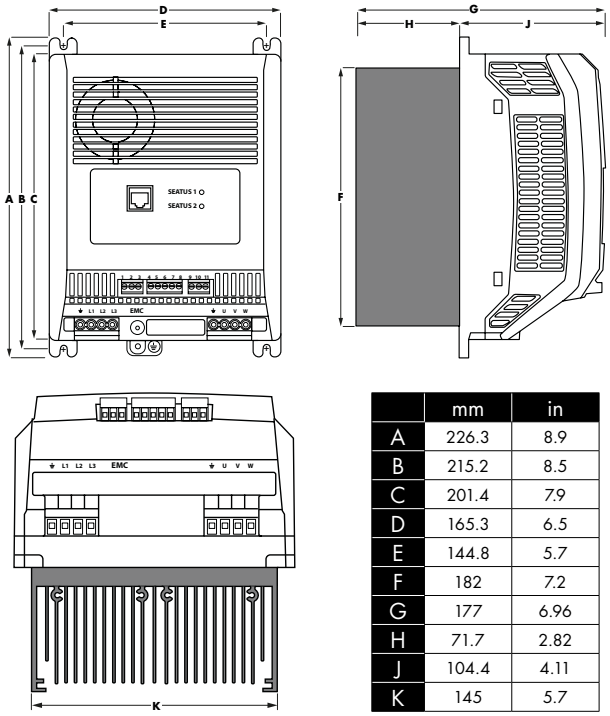
** Rating condition is ET=-10°C CT=45°C SH=10K SC=0K*

Compressor



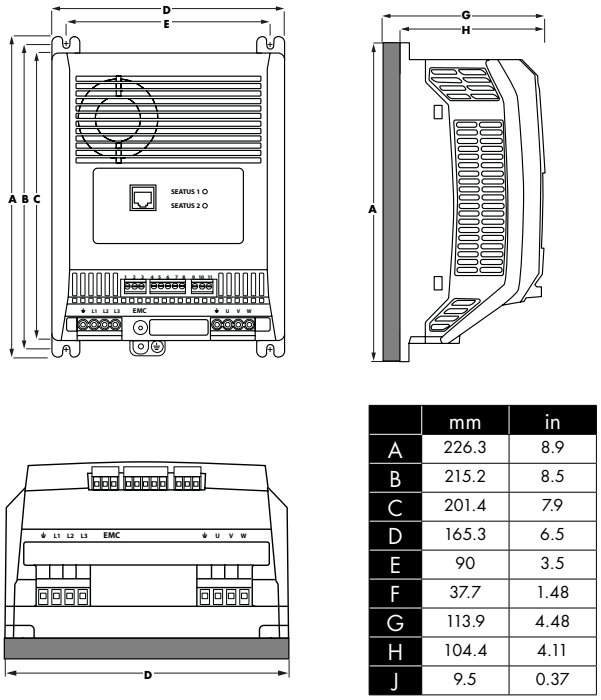
Compressor Model	A (mm)
CLBA047DGA-YF4S	448
CLBA064DGA-YF4S	492
CLBA090DGA-YF45	500
CLBA110DGA-YF4S	

Variable speed drive heatsink version



	mm	in
A	226.3	8.9
B	215.2	8.5
C	201.4	7.9
D	165.3	6.5
E	144.8	5.7
F	182	7.2
G	177	6.96
H	71.7	2.82
J	104.4	4.11
K	145	5.7

Variable speed drive coldplate version



	mm	in
A	226.3	8.9
B	215.2	8.5
C	201.4	7.9
D	165.3	6.5
E	90	3.5
F	37.7	1.48
G	113.9	4.48
H	104.4	4.11
J	9.5	0.37

Three-Phase Input Models (380-480Vac, 50/60Hz)	Rated Input Current	Rated Output Current	Output Power For Reference
CV-240140-3FHE	12 A	14 A	5.5 kW
CV-240180-3FHE	16 A	18 A	7.5 kW
CV-240240-3FHE	22 A	24 A	11 kW

Functionality	
3 - Stage start-up profile with 3 ramps	Yes
Minimum On/Off/Restart Time	
Safe Torque Off (STO)	
Motor De-magnetisation protection	
Drive and motor thermal management	
Intelligent Load Management Features	
Coldplate version available	
Low Harmonic - Compliant with EN 61000-3-12	
-20°C to +60°C ambient temperature operation (-4°F to +140°F)	
Analogue Input (0-20mA/4-20mA/0-10V)	
Digital Input and Relay Output	
Crankcase Heating Function built-in	
Control modes: analogue speed/PI regulator/Fieldbus	0-20mA/4-20mA/0-10Vdc
On-board Fieldbus Communication	Modbus RTU (RS485)

Product Certification		
CE	Low Voltage Directive (LVD)	2014/30/EU (EMC)
		2014/35/EU (LVD)
		2006/42/EC (Machinery Directive)
		2011/65/EU (RoHS 2)
		2009/125/EC (Eco-design)
	Product Safety	BSEN 61800-5-1:2007 &A1:2017
	Electromagnetic Compatibility (EMC)	BSEN 61800-3:2018
		BSEN 61000-3-2:2019+A1-2021
	Ecodesign	BSEN 61/00-9-2:2017
Functional Safety	Safe Torque Off (STO)	PL e / Cat. 3 according to EN ISO 13849-1
		SIL 3 / SIL CL 3 of IEC 61800-5-2 / IEC 6158 / IEC 62061
	Certification Body	TUV Rheinland
cUL*	Product Safety	ANSI/UL 61800-5-1, CAN/CSA C22.2 No. 274
	Certification Body	UL

** Pending*

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