

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.

Matched compressor and drive combinations

Compressor	Drive Model	Supply Voltage	Refrigerant	Min Cooling Capacity (W)	Max Cooling Capacity* (W)
AA55PHDG-D1Y6	CV-340300-3FHE	3 x 380-480V +/-10% 50/60Hz	R-32	7,118	38,950
DA65PHDG-D1Y6	CV-340300-3FHE **	3 x 380-480V +/-10% 50/60Hz	R-32	8,495	44,961
DA80PHDG-D1Y6	CV-340390-3FHE **	3 x 380-480V +/-10% 50/60Hz	R-32	10,985	54,553
DD110PHDG-D1Y6	CV-440460-3FHE **	3 x 380-480V +/-10% 50/60Hz	R-32	14,643	79,145

* Performance at condition 7.2°C/54.4°C/SH=11.1K/SC=8.3K

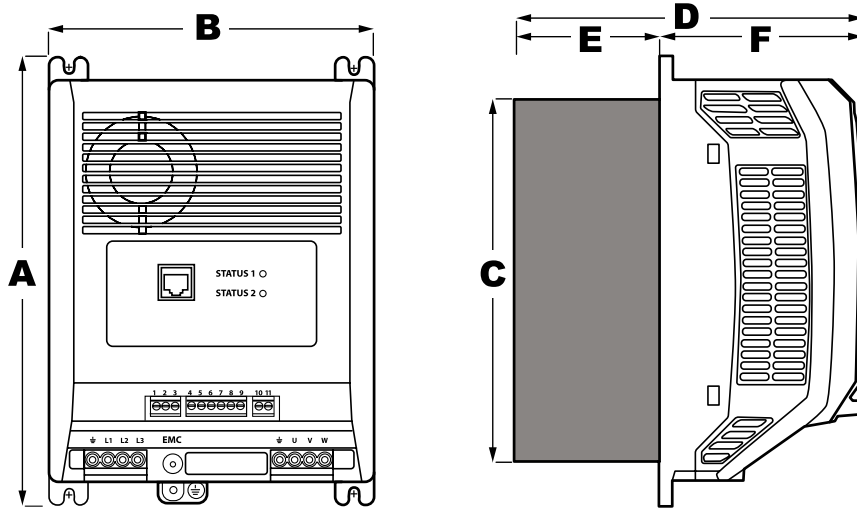
** If Gas Injection is required, the next rating up of Coolvert may be required. Contact us for further information



**PROVEN
SOLUTION!**

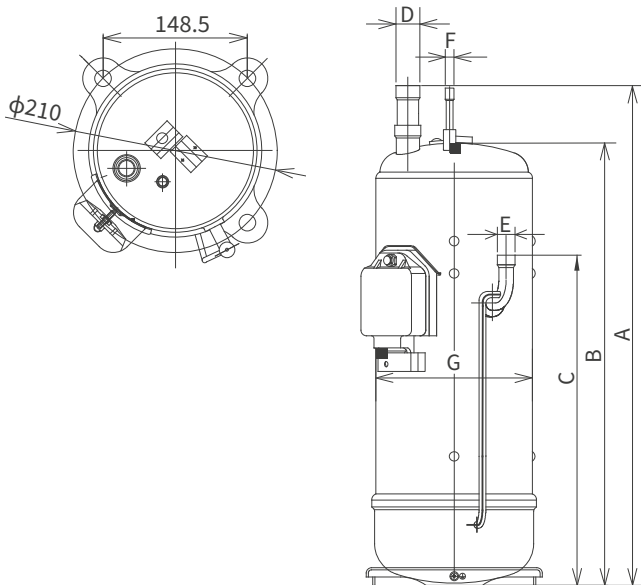
Optimal performance
& reliability

Variable speed drive



Drive Size	A		B		C		D		E		F	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
3	277.5	10.9	193.6	7.6	224	8.8	200.3	7.9	84.3	3.3	116	4.6
4	310	12.2	239.5	9.4	291.5	11.5	230.6	9.1	98	3.9	133	5.2

Compressor



Model	A	B	C	D	E	F	G
AA55PHDG-D1Y6	555	492	310	22.4	16.1	9.7	168
DA65PHDG-D1Y6	555	496	357	22.4	16.1	9.7	168
DA80PHDG-D1Y6	555	496	357	22.4	16.1	9.7	168
DD110PHDG-D1Y6	597	530	408	28.9	18.3	12.9	168

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 61000-3-2	
-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	
Oil Return feature built-in	
Control modes: analogue speed/PI regulator/Fieldbus	
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	Electromagnetic Compatibility (EMC)	BSEN 61800-5-1:2007 & A1:2017	
		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		UL	
cUL	Product Safety	ANSI/UL 61800-5-1, CAN/CSA C22.2 No. 274	
	Certification Body		UL

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