EMBRACO VCC for Commercial Refrigeration

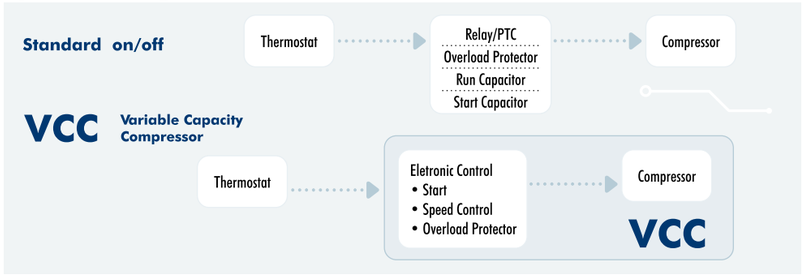
THE MOST ADVANCED TECHNOLOGY ON THE MARKET.

Since its release in 2001 Embraco's Variable Capacity Compressors (EMBRACO VCC) have been used in domestic applications where a better performance, fine temperature control, lower power consumption and very low noise levels were required. This is possible thanks to the use of an electronic inverter capable of driving the compressor at different speeds and consequently, controlling its refrigeration capacity.

The EMBRACO VCC family for Commercial Refrigeration makes now available for L/MBP and HBP commercial applications the same advantages already consolidated in the domestic segment.

An innovating feature of the EMBRACO VCC compressors is the possibility of a self-controlled mode, where the speed is automatically adjusted by the electronic inverter. This allows the EMBRACO VCC to be an immediate replacement for the standard fixed speed compressor, even keeping the standard electromechanical thermostat. The so-called Drop In control mode actually causes the compressor "to feel" the thermal load variations on the system and adjusts the compressor speed automatically, looking for the most efficient operation.

System Configuration



EMBRACO VCC for Commercial Refrigeration is also compatible with electronic thermostats and controllers, making it possible to get its speed controlled by either a frequency signal or a serial interface.

Whatever may be the control mode, the selection of the most efficient operation speed and the reduction of on/off cycles enable a significant decrease in the application's power consumption.

EMBRACO VCC for Commercial Refrigeration technological innovations

- Intelligent Drop In mode, which adapts automatically the compressor's capacity to the system needs, always searching for the most efficient operation;
- Compatibility with electronic and electromechanical thermostats (On/Off);
- LED for easy troubleshooting;
- Serial communication port for control, monitoring and remote diagnosis;
- Electronic inverter with DSP (Digital Signal Processor);
- Connections flexibility, thus facilitating the integration with existing systems;
- Robust operation: current/power limitation, thermal, under and over voltage protection.

EMBRACO VCC for Commercial Refrigeration in the practice

- Power consumption reduction of the refrigeration system of up to 40%, relative to an operation with a conventional compressor.
- Considerable reduction of the noise levels in comparison with most of the models used in commercial applications.
- Guaranteed operation in a wider input voltage range, in comparison with standard compressors.
- The first hermetic compressor with VCC technology for commercial refrigeration intended for applications in Beverage Coolers, Vending Machines, Food Storage Refrigerators and Freezers.

EMBRACO VCC APPLICATION TABLE

COMPRESSOR												INVERTER				
Refrigerant	Application	Model	HP	Min-Max Cooling Capacity		@ Min-Max Rotation RPM	Cooling Capacity @ 3600 RPM		Cooling Capacity @ 3000 RPM		Test Conditions	Model	AC Input Voltage V*	Assembly	Control Mode	Max Output Power W
				Btu/h	W		Btu/h	W	Btu/h	W						
R-134a	L/MBP	VEMY6HH	1/10	340-790	100-231	1600-4500	683	200	600	176	ASHRAELBP32	VCC3	115/220	AT / SA	Drop in Frequency Serial	200
	HBP			1450-2800	425-820	1600-4500	2611**	765**	2486	728	ASHRAEHBP32	VCC3-CO	115/220*	SA		320
	L/MBP	VEGT8HB	1/4	479-1188	140-348	1600-4500	996**	292**	869	255	ASHRAELBP32	VCC3	115/220	AT / SA		200
												VCC3-CO	115/220*	SA		320
	L/MBP	VEGT11HB	1/2	653-1463	191-429	1800-4500	1289	378	1100	322	ASHRAELBP32	VCC HP	220V	SA		550W
R-404A	M/HBP	VNEK609GK	3/4	1593-3255	467-954	2000-4500	2670	783	2310	677	ARI 540	VCC HP	115V	SA		1000W
		VNEK606GK	3/4 -	1440-3098	422-908	2000-4500	2518	738	2115	620	ARI 540	VCC HP	220V	SA		800W
	LBP	VNEK2126GK	1 -	1453-2913	426-854	2000-4500	2415	708	2054	602	ASHRAELBP32	VCC HP	220V	SA		800W
		VNEK2066GK	1/2	774-1641	227-481	2000-4500	1341	393	1125	330	ASHRAELBP32	VCC HP	220V	SA		500W
R-290		VNEK213U	1	1525-3043	447-892	2000-4500	2483	728	2105	617	ASHRAELBP32	VCC HP	220V	SA		800W
		VNEK207U	1/2	778-1740	228-510	2000-4500	1375	403	1136	333	ASHRAELBP32	VCC HP	220V	SA		500W

* 220V - under development. | *Please, contact us for checking the availability.
** Approximate data.

LBP = Low Back Pressure
MBP = Medium Back Pressure
HBP = High Back Pressure
AT = Attached Inverter
SA = Stand Alone Inverter

Conversions
1 Watt = 3.41 Btu/h
1 Watt = 0.86 kcal/h
1 kcal/h = 3.97 Btu/h

Test Conditions	Evaporating Temp °C (°F)	Condensing Temp °C (°F)
ASHRAELBP32	-23.3 (-9.9)	+54.4 (+129.9)
ASHRAEHBP32	+7.2 (+45.0)	+54.4 (+129.9)

Note: After replacement, the compressor and its accessories must have proper processing, and the components must be recycled according to the material group (ferrous, non-ferrous, polymers, oils, ...) directives. These recommendations are intended to minimize the adverse impacts that may be caused to the environment.

www.embraco.com

Rui Barbosa, 1020 - P.O. Box 91
89219-901 - Joinville - SC - Brazil
Phone: +55 47 3441-2121
Fax: +55 47 3441-2780

Embraco is participating in the United Nations Global Compact.