

YCAV Safety Shutdowns	Trip	Auto Restart	System Fault	Unit Fault	Lockout
Chiller Safeties					
High Ambient Temp Fault	130°F	Yes @ 128°F		Yes	
Low Ambient Temp Fault	minus 2°F to 50°F	Yes 2°F Above Cutout		Yes	
Low Leaving Chilled Liquid Temp Fault (Water)	36°F	Yes 4°F Above Cutout		Yes	
Low Leaving Chilled Liquid Temp Fault (Glycol)	11° to 36°F	Yes 4°F Above Cutout		Yes	
VSD Communications Failure Fault	No comm between Control Board and VSD Logic Board @ startup, or loss of comm while running.	Yes		Yes	
VSD Safeties					
		Auto Restart	System Fault	Unit Fault	Lockout
Pre-charge Low DC Bus Voltage (Software) Fault	50 VDC/four sec. 500 VDC/19 sec.	Yes	On 4 comp's	On 2 or 3 comp's	3rd fault/90 min.
Pre-charge DC Bus Voltage Imbalance (Software) Fault	plus/minus 100 VDC of 325 VDC	No	On 4 comp's	On 2 or 3 comp's	1st fault
High DC Bus Voltage (Hardware) Fault	766 VDC	Yes	On 4 comp's	On 2 or 3 comp's	3rd fault/90 min.
Low DC Bus Voltage (Software) Fault	500 VDC	Yes	On 4 comp's	On 2 or 3 comp's	3rd fault/90 min.
DC Bus Voltage Imbalance (Software) Fault	plus/minus 100 VDC of 325 VDC	No	On 4 comp's	On 2 or 3 comp's	1st fault
High Motor Current (Hardware) Fault	575.5 Amps	Yes	Yes		3rd fault/90 min.
Motor Current Overload (Software) Fault	> 105% for 20 sec.	No	Yes		1st fault
Motor Current Overload (Hardware) Fault	> 105% for 30 sec.	No		Yes	1st fault
IGBT Gate Driver (Hardware) Fault	Gate Driver senses short circuit	Yes	Yes		3rd fault/90 min.
High Baseplate Temperature (Software) Fault	218°F/2&4 comp & 232°F/3 comp	Yes	yes		3rd fault/90 min.
High VSD Internal Ambient Temperature (Software) Fault	158°F	Yes @148°F		Yes	
Single Phase Input (Hardware) Fault	Single Phase condition	Yes	On 4 comp's	On 2 or 3 comp's	
Power Supply (Hardware) Fault	VSD Logic Board loses DC voltage	Yes			3rd fault/90 min.
Run Relay (Software) Fault - Software Run Signal - Chiller On	Loss of comm run signal from Control Board to Logic Board	Yes	Yes		3rd fault/90 min.
Run Relay (Software) Fault - Hardware Run Signal - Chiller Off	Loss of 115vac run signal from HPCO switch to Logic Board	Yes	Yes		3rd fault/90 min.
VSD Logic Board Failure (Software) Fault	Logic board did not respond back to the Control Board after voltage&freq. command was given				

System Safeties	Trip	Auto Restart	System Fault	Unit Fault	Lockout
High Discharge Pressure Cutout (Software) Fault	trips @ 274 psig/resets @ 259 psig	Yes	Yes		3rd fault/90 min.
High Discharge Pressure Cutout (Hardware) Fault	trips @297 psig/resets @ 230 psig	Yes	Yes		3rd fault/90 min.
Low Suction Pressure Cutout (Software) Fault (Water)	24 to 36 psig, default is 24 psig	Yes	Yes		3rd fault/90 min.
Low Suction Pressure Cutout (Software) Fault (Glycol)	5 to 36 psig, default is 24 psig	Yes	Yes		3rd fault/90 min.
Low Motor Current Cutout Fault	<10%FLA	Yes	Yes		3rd fault/90 min.
High Differential Oil Pressure Cutout Fault (Pressure drop across oil filter)	Discharge to Oil differential >65 psid	Yes	Yes		3rd fault/90 min.
Low Differential Oil Pressure Cutout Fault (differential between oil pressure & suction pressure)	Cutout is linearly ramped 0 to 30 psid in 5 to 10 min. based on ambient temp.	Yes	Yes		3rd fault/90 min.
High Discharge Temperature Cutout Fault (Shutdown)	Cutout @ 250°F, reset @ 200°F	Yes	Yes		3rd fault/90 min.
High Discharge Temperature Cutout Fault (Start Inhibit)	> 200°F	Yes	Yes		3rd fault/90 min.
High Oil Temperature Cutout Fault (Shutdown)	225°F	Yes	Yes		3rd fault/90 min.
High Oil Temperature Cutout Fault (Start Inhibit)	> 175°F	Yes			3rd fault/90 min.
Low Suction Superheat Cutout Fault (1st 30 seconds)	superheat safety ignored	Yes	No		3rd fault/90 min.
Low Suction Superheat Cutout Fault (Next 60 seconds) ¹	Linearly ramped from 0° to 2°F	Yes			3rd fault/90 min.
Low Suction Superheat Cutout Fault (While running) ²	Suction superheat <2°, discharge superheat <15°F for 10 sec, run time is = or >5min	Yes	Yes		3rd fault/90 min.
Low Suction Superheat Cutout Fault (While running) ³	Suction superheat <0.5°F, discharge superheat >15°F for 60 sec, run time is = or >5 min	Yes	Yes		3rd fault/90 min.
Low Suction Superheat Cutout Fault (While running) ⁴	Suction superheat < 5°F for 10 minutes	Yes	Yes		3rd fault/90 min.
Low Discharge Superheat Cutout Fault (1st 5 minutes)	safety ignored	Yes			3rd fault/90 min.
Low Discharge Superheat Cutout Fault (While running)	< 10.0° for 5 minutes	Yes	Yes		3rd fault/90 min.
High Motor Temperature Cutout Fault (Shutdown)	250°F	Yes	Yes		3rd fault/90 min.
High Motor Temperature Cutout Fault (Start Inhibit)	240°F	Yes			3rd fault/90 min.
High Flash Tank Level Cutout Fault (First 15 seconds)	safety ignored	Yes			3rd fault/90 min.
High Flash Tank Level Cutout Fault (While running)	> 85% for 10 seconds	Yes	Yes		3rd fault/90 min.
System Control Voltage Cutout Fault	Loss of 115 vac to System 1 or System 2	Yes	Yes		