

CSS Magnum Plus

Fresh or frozen. faster is better

- Lowest temperature
- Fast pull-down
- Precise temperature control
- Low energy consumption
- Proven technology and simple design
- Global service

TECHNICAL DATA		
General		Features
Unit type		High capacity Refrigeration unit for installation in 10, 20, 40 or 45 ■ containers for stationary applications. All Aluminum "Picture frame" R-404A or R-452A Refrigerant. Charge 4.0 kg (8.8 lbs) Copeland Scroll compressor. Emerson MP4000 controller
Required heat leakage of box		42 Watt/°K @ 20C wall temperature, to ensure set-point at ambient
Container protection		Pressure equalization valve (1400 Pascal / 140 mm WG) to avoid excessive vacuum in the container
Setpoint Range		-40°C to +30°C (-40°F to 86°F)
Ambient temperature Range		-30°C to
		Fresh Air Exchange
		Unit allow fresh air exchange to cargo area. Using: Rotating disk in 0-100 m ³ /h. And hinged door for 100 m ³ /h, 150 m ³ /h, 175 m ³ /h, 215 m ³ /h, or 225 m ³ /h. Optional to get sensor and log in datalogger.
		Noise level
		Soundpower per ISO 3744:2010 is 90.1 dB(A) with set-point -30°C running 400V/50 Hz. 94.9dB(A) with set-point -30°C running 400V/60 Hz.
		Certifications and design standards
		ISO1496-2 CE Pharma GDP AHRI ATO (former Sprenger Institute) ATP American Bureau of Shipping, Lloyds and Bureau Veritas USDA TIR

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	+50°C (-22°F to 122°F)
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	(International Customs Regulations for Containers)
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Cooling Capacity @ ambient temperature +37.8°C (100°F)	
At setpoint +21.1°C (70°F)	16,500 watt @ 460V/60Hz 14,220 watt @ 400V/50Hz
At setpoint +1.7°C (35°F)	11,900 watt @ 460V/60Hz 10,260 watt @ 400V/50Hz
At setpoint -17.8°C (0°F)	7,200 watt @ 460V/60Hz 6,210 watt @ 400V/50Hz
At setpoint -28.9°C (-20°F)	5,000 watt @ 460V/60Hz 4,310 watt @ 400V/50Hz
At setpoint -40°C (-40°F)	3,700 watt @ 460V/60Hz 3,190 watt @ 400V/50Hz
Max heating capacity	5,250 watt @ 460V/60Hz

Electricity	
Power supply	A/C 400 to 500 Volt 3 phase 60 Hz ±2,5% A/C 360 to 460 Volt 3 phase 50 Hz ±2,5%
Main circuit breaker	25 Amp
Power cable	18.3 m (60 LF) cable (4phase and ground) with CEE17 power plug (32 Amp; ground 3h). Control box is equipped with a 3 m cable 230V/16 Amp 3 phase power plug to provide output for light, man-trap alarm
Heaters for defrost / heating mode	3 * 1,360 watt electrical resistance heaters. Optional to get 3*2,000 watt heater, and allow cargo temperature +40C

Controller	
General	Advanced Microprocessor MP4000 Emerson Controls Temperature control using 5 PT1000 sensors and 1 NTC for compressor. Main control temperature sensors for Supply

and Return
air are
PT1000
Class A per
EN60751:20
08 i.e. with
accuracy of
 $\pm 0.15^{\circ}\text{C}$
($\pm 0.27^{\circ}\text{F}$)
Temperatur
e accuracy
in "non-
optimized
energy
savings
mode":
Chilled
temperatur
e $\pm 0.25^{\circ}\text{C}$
($\pm 0.45^{\circ}\text{F}$)
Frozen
temperatur
e set-
points: $\pm 1^{\circ}\text{C}$
($\pm 1.8^{\circ}\text{F}$)
Datalogger
document
system
parameters
and
changes,
results of
Pre-Trip
Inspections,
Alarms &
messages,
as well as
temperatur
e logs.
Temperatur
e logs are
defaulted to
1 hour
interval, and
user can
change to
other
interval.
Datalogger
memory
allow 15,000
temperatur
e logs When
power is
disconnect
ed,
datalogger
continue to
log
temperatur
es for 120
logs (3 days
* 24 hr
interval). 4
USDA cargo

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sensor ports with Deutsch receptacles (Option supply of 15m (49 LF) long cables with NTC sensor (accuracy +/- 0.15°C (+/-0.27°F)) Telematics (option) to allow two-way communication with controller. Using Global Network Satellite System and Global cellular LTE, 2G, 3G signal) Datalogger can be retrieved via serial port on unit, via SD-card or via Telematics Controller continuously monitor health of system and components, an early indication can trigger a "message" and a critical issues trigger an "alarm" Unit controller has LED that flash red if "Alarm" is active Defrost: To melt ice entering with cargo, and/or from door openings electrical defrost heaters are

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installed with capacity 4,080 watt @ 460/60Hz and 3,520 watt @ 400V/50Hz.

Defrost activates after 2 hour, after that controller monitor coil temperature, and allow upto 48 hour before a timed defrost.

Controller monitor between evaporator coil sensor and return air sensor.

Dehumidification:
Humidity in cargo area can be controlled between 50 and 98 rH%.

This is controlled by re-heating the evaporator air with the defrost heaters.

Accuracy at rH set-point: 50% to 75%: +/-1.5% 75% to 95%: +/-3.0%