Rack-Mounted Process Coolant Chillers It's What We Do

Rack-Mount Version

Free-Standing Version

1,400/2,000 watts (4,780/6,800 BTU's)

K-O Model DMC-14/-20-G2

Ideal for Demanding Laser, Medical, Industrial, & Aerospace Applications

CHILLER MODULE FEATURES

K-O Concepts Model DMC-14/-20-G2

- **K-O Model DMC-G2**
  SECOND GENERATION (G-2) rack-mounted coolant chiller. Standard 19 inch, rack mounted configuration allows the cooling module to be integrated with the equipment to be cooled. Fully enclosed cabinet is equipped with handles for ease of installation. Weights from 76-85 lbs. / 35-39 kg. The chiller is air-cooled for portability.
- **Standard 19 inch Enclosed Rack-Mount Chassis**
  All models: 12.19 H x 17.12 W x 22.34 D inches (cabinet dimensions)
  Front panel dimensions: 12.19 H x 19.00 W (7U height cabinet)
  Request interface control drawing (ICD) number 25434000 for detailed dimensions.
- **Accurate Process Coolant Temperature Control**
  New 1/16 DIN "PID" controller offers more communication options and now has a visible symbol when controller is communicating with other devices. Maintains the desired process coolant temperature to within 0.1°C of set temperature.
- **Heating**
  Waste heat is harvested from the system's compressor to quickly raise the temperature of the process coolant. Approximately 40% of the BTU rating of the chiller unit is available for heating the process coolant up to 50°C without any external heat load.
- **Communication Options**
  Standard RS-485 communications or optional RS-232, Modbus RTU, TCP, USB 2.0, DeviceNet or Profibus DP. Optional 2 Digital Input/Output alarm signals via communications.
- **Electrical Highlights**
  Both DMC models operate from single phase power. K-O chillers are power miserly and use about 33-50% of the power of competing chillers. If green is your color K-O is your chiller.
- **CFC Free Refrigerant**
  All models use environmentally friendly R134a (HFC-134a) refrigerant. Chiller units using this refrigerant can be sold into Europe and Asia.
- **Process Coolant Pumps**
  Standard positive displacement (sliding vane) style process coolant pump with eight (8) speed settings provides flow from 3-10 liters per minute @ 70 psi (4.8 bar) available pressure. Optional positive displacement (sliding vane) style process coolant pump with seven (7) speed settings provides flow from 6-16 liters per minute. Optional centrifugal coolant pumps are also available.
- **Optional Deionized (DI) Water Package**
  Includes nickel-brazed heat exchanger, ion (DI) cartridge assembly, water filter, and upgraded 316 stainless steel fittings. Easy service to the DI cartridge is accomplished from the rear panel.
- **Easy To Service & Maintain**
  Chillers are designed for easy service and maintenance. Convenient process coolant fill & drain features on all models. Access panels for ease of electrical service.
- **Free - Standing Conversions**
  Converts rack-mount cabinet to free-standing chiller with casters.
- **End-User Printed Circuit Board**
  The EU-PCB monitors and reports interface signals via front panel LED's, audible alarms and/or power down on any or all fault signals.
- **Optional Digital Pressure Gauge**
  The DPG is an upgrade to the mechanical pressure gauge. The transducer operates from 0-145psi and has a 0.25% BFSL accuracy rating. The transducer has all stainless steel parts with no o-rings. The controller displays "in-range" pressure values in green and "out-of-range" pressure values in red.

Chiller Module Specifications & Options
K-O Concepts Model DMC-14/-20-G2

MODEL NUMBERS		DMC-14	DMC-20
Cooling Capacities[1]	Watts	1,400	2,000
	BTU/hour	4,780	6,800
Cooling Process	Compressor	All models use refrigerant based compressors.	
Refrigerant Type	R134a	All models use R134a (HFC-134a) / CFC-free.	
Heat Dissipation **Note:** Air flows from front to rear of cabinet.	Air (air cooled)	All models dissipate heat to ambient air via fan.	
Process Coolant Temperature Range	°C / °F	5-35° / 41-95°	
Ambient Temperature Range	°C / °F	15-35° / 59-95°	
Process Coolant Temperature Stability[2]	°C	±0.1°	
Process Coolant Tank Capacity	Gallons / liters	1.3 / 4.9	
Process Coolant Maintenance	Fill / drain	All models feature fill & drain via front panel.	
Process Coolant Pump Performance Standard Pump: Positive displacement type. Optional Pumps: Centrifigal & PDM type.	Gallon / liters per minute	Standard Pump (Model PDM): 0.75-2.63 GPM / 3-10 LPM See optional pumps on page 4 of 4.	
Process Coolant Pump Pressures **Note:** Other pressures offered.	PSI / bar	Standard Pump: 70 / 4.8 available pressure. See optional pumps on page 4 of 4.	
Process Coolant Pump Head Materials Standard & Optional Process Coolant Pumps.	Model PDM Model RD	Standard/Optional PDM: Stainless steel w/ graphite vanes. Optional Centrifugal pump: Glass-reinforced polyethylene.	
Process Coolant Connections (FNPT)	Inches	Standard Feature: ½ Optional Feature: ⅜	
Input Power Requirements	Volts AC Single phase	Standard 208-230VAC 60Hz 200VAC 50Hz	Standard 208-230VAC 60Hz 200VAC 50Hz
		Optional 115VAC 60Hz 100VAC 50Hz	Optional 115VAC 60Hz 100VAC 50Hz
		NA	Optional 230VAC 50/60Hz
Full Load Amperage (typical) **Note:** Typical line current @ 60 Hz.	Amps @ 230VAC 60 Hz	3	4.2
	Amps @ 115VAC 60 Hz	5.8	6.6
Circuit Breakers	DPST	Lighted circuit breakers (2x) located on front.	
Weight	Dry lbs. / kg.	76 / 35	85 / 39
Cabinet Dimensions (W x D x H) **Note:** Standard 19 inch rack-mount configuration, fully enclosed, w/ 12.19 inch / 7 unit (U) high front panel.	Width: in / mm Depth: in / mm Height: in / mm Panel: in / mm	17.12 / 435 22.34 / 567 12.19 / 310 19.0 W x 12.19 H / 482.6 W x 310 H	
Process Coolant Temperature Controller	Standard Feature: 1/16 DIN digital (PID) controller w/ dual display.		
Electrical Interface Signals **Note:** All interface signals are contact closures & are normally closed (N.C.) in the passed condition. Interface signals accessed via (DA 15S) connector located on the back panel.	Standard Feature: Process coolant flow signal (reed switch). Standard Feature: Process coolant level signal (reed switch). Optional Feature: Secondary process coolant level signal (reed switch). Standard Feature: Process coolant temperature alarm (relay contact). Standard Feature: Compressor temperature warning (bi-metal switch).		
Condenser Fan	Standard Feature: Speed-controlled for quiet operation.		
Air Filter	Standard Feature: Front panel mounted air filter assembly.		
Communications **Note:** Communication ports located on back panel. RS-485, RS-232, Profibus DP and USB 2.0 via COMM port. CAT6 & DeviceNet via optional communications port.	Standard: RS-485 serial communication. Optional: RS-232, Modbus RTU, TCP, USB 2.0, DeviceNet, Profibus DP. Optional: 2 Digital Input/Output alarm signals via communications.		
Process Coolant Types **Note:** Coolant additives (including glycol) available.	Standard Feature: Demineralized (steam distilled) water compatible. Optional Feature: Deionized (DI) water compatible. Optional Feature: PAO synthetic coolant oil compatible.		
Coolant Particle Filter	Optional Feature: Canister or cartridge style, coolant particle filters.		
Deionized (DI) Water Package	Optional Feature: Materials upgrade for DI water compatibility.		
Free-Standing Chiller Conversion	Optional Feature: Converts rack-mount to free standing chiller w/casters.		
End-user printed circuit board	Optional Feature: Monitors and reports interface signals via front panel LED's/audible alarm and/or power down on any/or all fault signal(s).		
Digital Pressure Gauge	Optional Feature: 0-145psi, SS Pressure transducer w/ digital controller.		

Notes:

[1] Cooling capacity ratings are with process coolant @ 20°C / 68°F.

[2] Temperature stability performance requires a stable heat load input.

* Data shown is with 27°C / 81°F (unrestricted) ambient air.

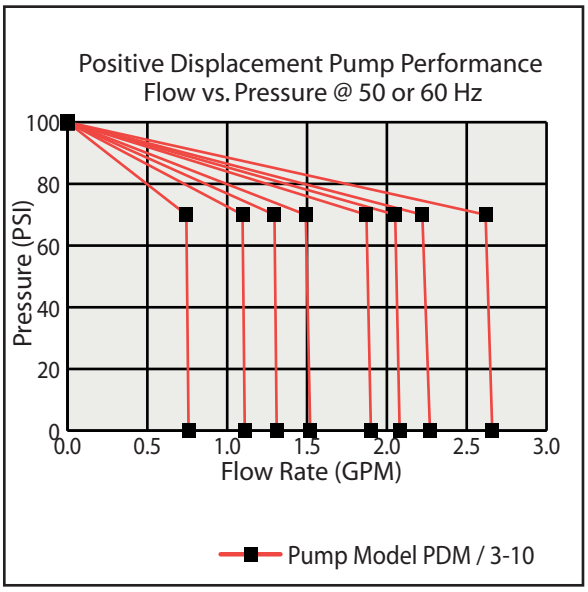
* See Thermal Performance chart for cooling capacities @ other process temperatures.

* Specifications are subject to change without notice.

HILLER MODULE PERFORMANCE DATA

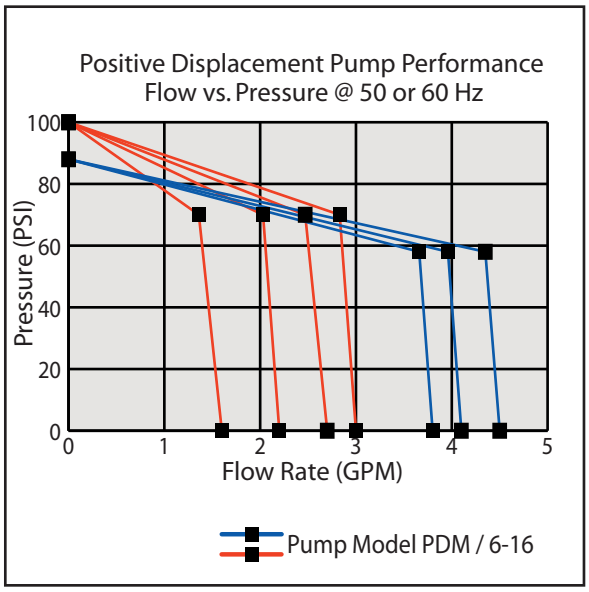
K-O Concepts Model DMC-14/-20-G2

Process Coolant Pump Performance



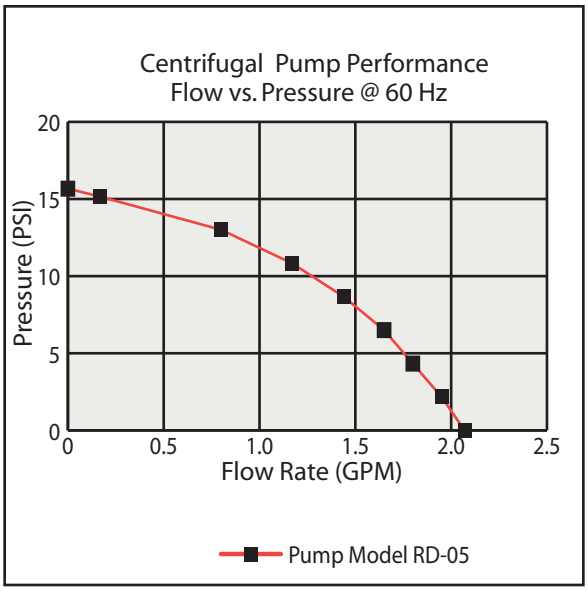
Note: Pump Model "PDM / 3-10" provides eight "8" selectable flow vs. pressure curves as shown. Internal valve setting shown starts coolant bypass @ 70 PSI / 4.8 bar & dead heads @ 100 PSI / 6.8 bar. Other pump curves & bypass values available upon request.

Optional Coolant Pump Performance

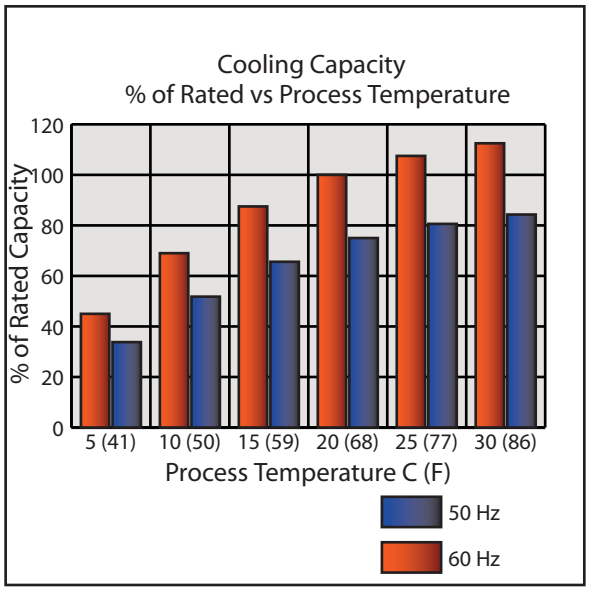


Note: Pump Model "PDM / 6-16" provides seven "7" selectable flow vs. pressure curves as shown. Internal valve settings shown with red lines starts coolant bypass @ 70 PSI / 4.8 bar & dead heads @ 100 PSI / 6.8 bar. Internal valve settings shown with blue lines starts coolant bypass @ 58 PSI / 4 bar & dead heads @ 88 PSI / 6 bar.

Optional Coolant Pump Performance



Thermal Performance



INTERFACE CONTROL DRAWING #: 25434000 AVAILABLE UPON REQUEST

K-O Concepts, Incorporated
4375 South Street
Titusville, Florida, 32780
Phone: 407/296-7788 • Fax: 321/567-0046
E-Mail: Sales@K-OConcepts • Web: www.K-OConcepts.com

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