Application Note 2004

PQHY Cooling-Only Applications with Fluid Coolers

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Introduction

This Application Note provides an overview related to utilizing a fluid cooler to provide water to a PQHY unit for cooling only applications.

PQHY Connection Setup

You can use a CITY MULTI® system for cooling with outdoor ambient temperatures as low as -20°F. It is possible when you couple a Water-cooled unit (PQHY) with a fluid cooler. **Figure 1** displays a typical PQHY connection setup.

Outdoor Temperature range -20 - 95° F DB
Indoor Temperature range 59 – 75° F WB

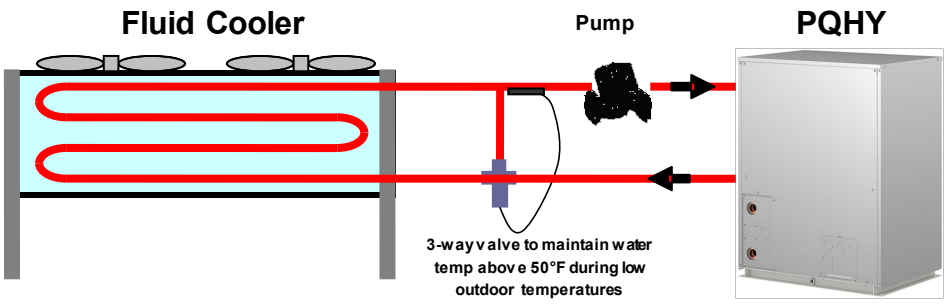

Figure 1. A PQHY connected with a fluid cooler.

Table 1. Fluid Cooler Models

	PQHY-P72TLMU	PQHY-P96TLMU
Design conditions		
Water Flow (gpm)	25	25
Water enter fluid cooler	110 F	110 F
Water leaving fluid cooler	100 F	100 F
Design ambient (MAX)	95 F	95 F
% Glycol	40%	40%
	Selected models	
BOHN Fluid Cooler Model	**DFT016 (21 circuits)**	**BFH035 (18 circuits)**
Actual Performance		
Water Flow (gpm)	25	30
Water enter fluid cooler	110 F	110 F
Water leaving fluid cooler	99.1F	100.3
Design ambient (MAX)	95 F	95 F
Fluid Cooler PD FT.	14.4	6.9
% Glycol	40%	40%
PQHY Unit Capacity [1]	**66,960**	**89,280**

[1] Capacity does not include other derates such as line lengths

Special Considerations

NOTE:
The fluid cooler models listed in **Table 1** are actual models available. Other fluid coolers can be used as long as they are selected for the design conditions above. The 40% glycol mix will provide burst protection down to approximately -20°F. It is the responsibility of the system designer to determine the glycol type, percentage used and all other applicable code requirements.

IMPORTANT: Some means must be provided to always maintain water temperature above 50°F as ambient drops. Options can be fan cycling on the fluid cooler and/or a temperature controlled bypass valve. Contact your fluid cooler manufacturer for a recommendation.