Product Engineering Guide

OSM v20 McQuayF4 v10

Introduction

The McQuayF4 v10 OSM links McQuay International's Frame 4 chillers to ObServer.

The purpose of a chiller is to cool the water that passes through it. When the unit is operating, the controller monitors the leaving chilled water temperature and compares it to the chilled water temperature setpoint. If the water temperature is not the desired value, the controller will adjust unit operation to achieve the setpoint temperature.

A Frame 4 chiller has up to four compressors, each with its own controller. The controller attached to compressor 1 should be fitted with a RS485 card and connected to ObServer via an RS232/485 converter. The driver can communicate with up to 31 chillers.
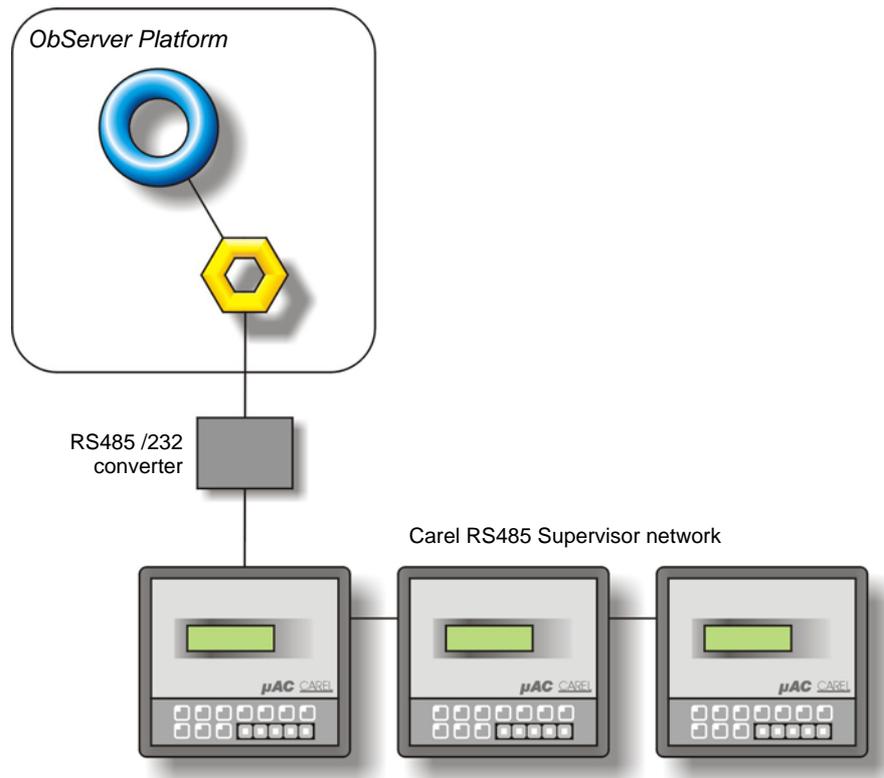
Supported Range

- McQuay Frame 4 Chiller

Notes

Values from other McQuay units fitted with Microtech controllers are available using the range of driver modules available – *use North Helper to search for driver modules "McQy" for further details.*

Engineering

Step 1 – Install OSM

The McQuayF4 OSM is installed automatically with all ObSys editions. Refer to the 'ObSys CD sleeve' for details on how to install ObSys.

Step 2 – Configure the McQuay International Frame 4 Chillers

The engineering of the McQuay International Frame 4 Chillers needs to be completed before making a connection to ObServer. Each chiller may be fitted with up to four pCO controllers, one per compressor. Only the controller attached to compressor 1 needs to be fitted with a RS485 serial card. Insert the RS485 serial card to the Carel pCO controller in slot 'J7 Serial'.

From the keypad configure the Supervisor settings with an address, unique on the RS485 network, and a baud rate (e.g. 19200 baud).

Step 3 – Connect COM Port to Chiller Controller

Connect the McQuay supervisor network cable to the RS485 terminal block of the RS485/232 converter. Refer to the section '_Cable_' below for details of the cable.

Step 4 – Plug in McQuayF4 OSM to ObServer

Use object-engineering software, such as ObView, to locate the ObServer Setup object. Assign the McQuayF4 OSM to an available channel. Refer to the '_ObServer v20 Application Engineering Guide_'.

Note: After inserting the OSM, your engineering software may need to re-scan the ObServer object in order to view the OSM.

Step 5 – Configure McQuayF4 OSM

The COM port, baud rate, device type, direct connect, alarm destination and maximum address on the supervisor network are configured using objects. Use object engineering software, such as ObView, to view and modify the objects within the OSM.

If only a single controller/chiller is attached to the OSM set Direct Connect to 'yes'.

Configure the device type to match the pCO controller version, e.g. 'Unit v7' or 'Unit v10'.

Step 6 – Access Objects within the McQuay System

The controllers are polled for their values, which are then stored by the OSM. These values are made available as objects from ObServer. Any object software that is connected to ObServer can access these objects.

Engineering Reference

Cable Specification

The cable between the RS485 converter and the pCO RS485 serial card is as follows. Refer to the RS485/232 converter documentation for details of the cable from converter to COM port.

```
┌─────────────────────────────────────┐   ┌─────────────────────────────────────┐
│ RS485 Converter end      Carel card  │   │ RS485 Converter end      Carel card  │
│ Terminal block      Terminal block   │   │ Terminal block      9-male D-type    │
│    + ──────────────────── +          │   │    + ──────────────────── 2          │
│    - ──────────────────── -          │   │    - ──────────────────── 3          │
│                                      │   │                                      │
│     Maximum Cable Length = 1000m     │   │     Maximum Cable Length = 1000m     │
└─────────────────────────────────────┘   └─────────────────────────────────────┘
```
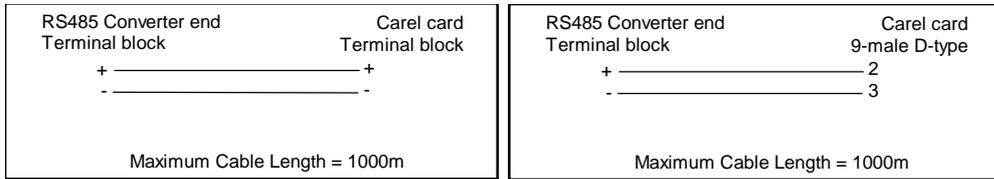
Objects

When the OSM is loaded the following objects are created within ObServer, use object software to access these objects.

Object[1]	Label	R/W	Type
S*c*	McQuay System connected to channel *c*	-	*[McQuayF4 v10]*[2]
M*c*	McQuay Module connected to channel *c*	-	*[OSM v20\McQuayF4 v10]*

Notes

[1]   The ObServer channel number, *c*, is a number in the range 1…40.

[2]   This object has a variable content and as such requires scanning.

Notes

Revision History

Version	Build Date	Details
1.0	26/3/03	Driver released
1.0	7/6/04	Baud Rate now adjustable. Added support for Device Type.
1.0	14/11/05	Added support for McQuay version 21 controllers: Device Type 'Unit v21' Removed alarm polling for old version 7 software.