



A Sierra Monitor Company

FieldServer Driver - Serial FS-8700-80 McQuay Microtech Open Protocol

Description

This is an active client protocol. The driver is capable of acting as a master or slave. As a master, the Fieldserver polls to read or write the McQuay device. As a slave the FieldServer accepts read/write request and responds appropriately.

The vendor equipment is limited to a maximum of 9600 baud. Given that each message packet can only transfer one byte of data and that some data of interest is multi-byte, users of this protocol should expect low data transfer rates.

The driver can poll for one or more specific data fields of interest at a rate set by the user or all available data can be read at a rate determined by the driver.

Scaling:

The driver scales data read/written by a factor identified in the driver manual. The values stored in many data fields are stored to allow for real numbers with fractional components to be stored as whole numbers. For example: *Oil Pressure – Feed (stored at memory location 0446-0447)* is stored as a number between 0 and 4500. The driver reports the value by storing a real number in the range 0.0-450.0 in a data array.

Additional scaling may be applied by the user by specifying scaling factors in the FieldServer configuration.

Functions:

Function	Description
Read	Reads a single data field.
Write	Writes a single data field to the McQuay device. Only some data fields in the McQuay device may be written to.

Formal Driver Type

Serial
Client or Server

Compatibility Matrix

FieldServer Model	Compatible with this driver
FS-B2010	Yes, No
FS-B2011	Yes, No
FS-B40	Yes



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Connection Information

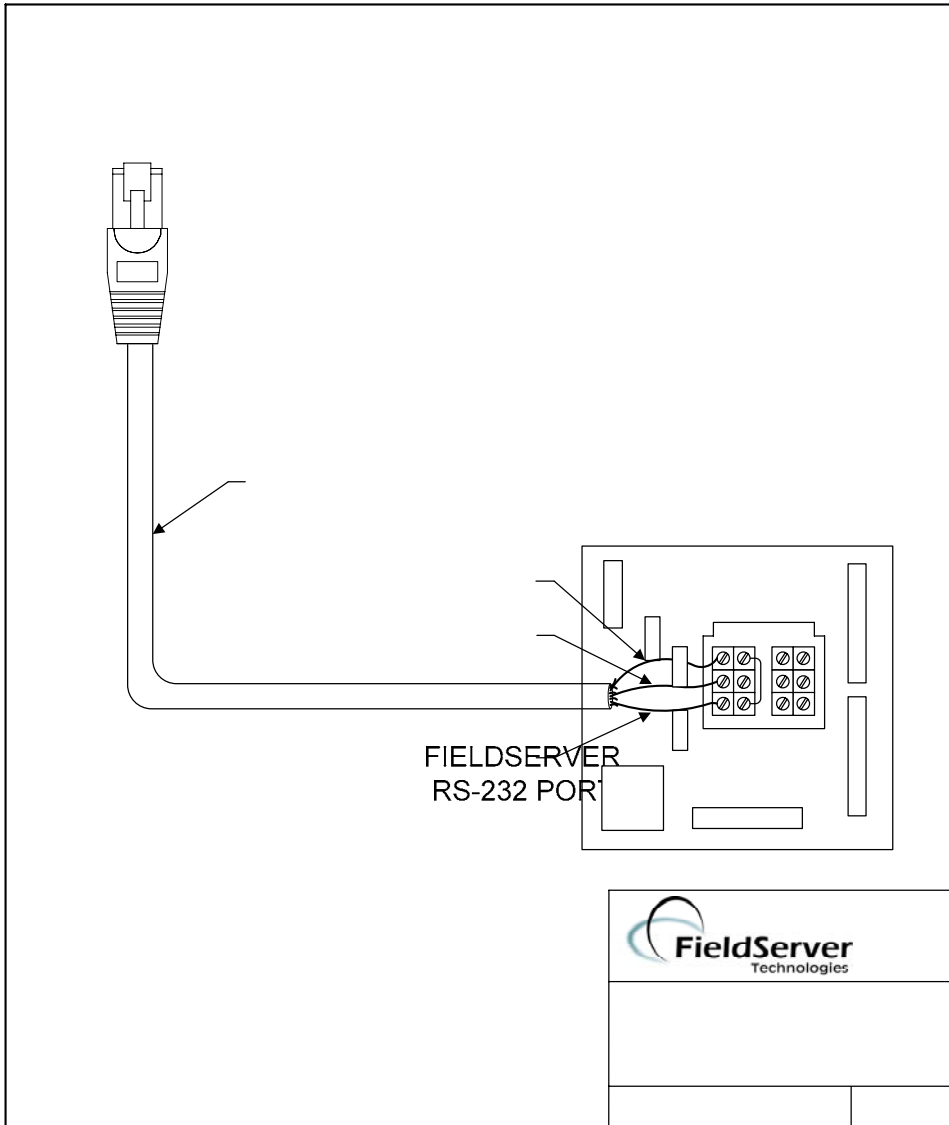
Connection type:	RJ45 Pigtail for RS-232/RS-485
Baud Rates:	110- 9600. (Vendor limited)
Data Bits:	7
Stop Bits:	1
Parity:	Even
Multidrop Capability	Yes



Connection configurations

The FieldServer is connected to the McQuay device as shown below.

Configure the McQuay device according to manufacturer's instructions.



Communications functions

Supported functions at a glance:

Data Types Supported

FieldServer Data Type	Description (or Device Data Type)
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Website: www.fieldserver.com



200CFC - 200 Series Centrifugal Chiller	Data fields of interest may be specified using the data field name or by specifying the 'address / memory location'
100CFC - 100 Series Centrifugal Chiller	
001ASC - Air Screw Chiller	
000SCU - Self Contained Unit	
0050RPC - Reciprocating Chiller	
Other devices	<p>Any other device which supports McQuay's Open Protocol™ Data Communications Information Packet Version 1.4 April, 1996 can be read or written using this driver.</p> <p>However, when read or writing these 'other' devices, the data fields of interest are specified using the 'address / memory location' specified as a hexadecimal number (obtained for the product specification.)</p> <p>At a customer's request the driver can be updated to allow the fields to be specified by their field names.</p>

Unsupported Functions and Data Types

As a slave the driver can have a maximum of one master connected per port.

The following important points and limitations should be noted.

1. Arising from a feature of the McQuay open protocol is the peculiarity, that when a multi-byte value is written to a McQuay device, the write is done one byte at a time (one byte of data can be transferred per poll/response message pair.) allowing for the possibility (at least for a short period) that the multi byte value is only partially correct until all the messages have been completed.
2. The vendor equipment is limited to a maximum of 9600 baud. Given that each message packet can only transfer one byte of data and that some data of interest is multi-byte, users of this protocol should expect low data transfer rates.
3. Port expansion is not supported for this driver.
4. A document identified as Ed15050 MicroTech Network Operations contains important and useful information regarding the connection requirements of 3rd party equipment (like the FieldServer) to a Microtech network. The document also defines a number of limitations for such connections.

The following quotations from this document outline some of this information.

PC Connection

The PC connection to a MicroTech controller is through an available port A that is



configured as TTY. It is best to connect the PC to a level-1 controller because data transmission is the fastest. However, a PC can be connected to any level-2 controller that does not have level-3 controllers connected to it or to any MicroTech level-3 controller. Regardless of where you connect the PC, you have access to the entire network.

You can connect two or more PCs to the network, but only one PC can be connected to a particular controller. The PC that you use most often should be connected to the level-1 controller for best performance. For example, you may have one PC that you use on site and another PC that you use off site. In this situation, you may want to connect the on-site PC to the level-1 controller and the modem for the off-site PC to a level-2 or level-3 controller.

If a PC is connected to a level-2 controller, a level-1 controller must poll that level-2 controller connected to the PC so that the PC has access to the entire network. Defining a level-2 controller in the level-1 controller slave list causes the level-1 controller to poll the level-2 controller.

Port Configuration: The communications port that the PC is connected to must be configured as a TTY port. As shown in **Error! Reference source not found.**, the default port configuration for most MicroTech controllers sets port A as TTY. The port configuration is a software setting.

A separate software setting defines the communications rate of each port. In most controllers, the default rate is 9600 bps.

TTY: A TTY port is used to connect a PC for monitoring purposes. It uses the RS232C interface standard and the Data Terminal Communications protocol.

5. The following quote from "MicroTech® Data Terminal Communication Packets, Open Protocol™ Data Communications Information Packet Version 1.4" is an important limitation of the protocol.

Data terminal communications may be sent via RS-232C or RS-485. Regardless of the electrical standard used for communications, this protocol is a single ended type (i.e., communications to one MicroTech controller maximum).

6. Each MicroTech controller is shipped from the factory with a unique job site password. The password is provided by the McQuay International representative at the time of startup.
7. The driver does not validate passwords when configured as a server. This means that requests to read or write data will succeed even if the password supplied with the request is incorrect.

Equipment Type: 200CFC 200 Series Centrifugal Chiller

Additional information may be obtained from McQuay International. Request the following document.

*MicroTech®
Series 200 Centrifugal Chiller*



*Data Communications Packet for Open Protocol™
Cent2_22.doc*

Array Location ¹	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method
1	r	Model	3	0x0A08	1
4	r	Refrigerant	1	0x0A0B	1
5	r	Units of Measure	1	0x0A0C	1
6	r	Software Version	2	0x0A0D	1
8	r	Software Revision	1	0x0A0F	1
11	r	Chiller Unit Temperature Type	1	0x084B	1
12	r	Communication Status	1	0x040C	1
13	r	Compressor Lift Pressure	2	0x046A	2
15	r	Compressor Motor Current	2	0x044C	1
17	r	Compressor Motor Current Percent	1	0x044A	1
18	r	Compressor Number of Starts	2	0x085F	1
20	r	Compressor Operating Hours	2	0x0851	1
22	r	Compressor Suction Temperature	2	0x043A	3
24	r	Compressor Superheat - Discharge	2	0x046E	2
26	r	Compressor Superheat - Suction	2	0x046C	2
28	r	Condenser Approach Temperature	2	0x0484	2
30	r	Condenser Heat Recovery Unit Present	1	0x083F	1
31	r	Condenser Heat Recovery Temperature - Delta	2	0x048A	2
33	r	Condenser Heat Recovery Water Temp. - Entering	2	0x0454	3
35	r	Condenser Heat Recovery Water Temp. - Leaving	2	0x0456	3
37	r	Condenser Pump Status	1	0x0425	1
38	r	Condenser Pump # 1 Operating Hours	2	0x085A	1
40	r	Condenser Pump # 2 Operating Hours	2	0x085D	1
42	r	Condenser Refrigerant Pressure	2	0x0440	2
44	r	Condenser Refrigerant Temperature	2	0x0466	3
46	r	Condenser Subcooling Temperature	2	0x0480	2
48	r	Condenser Water Flow Rate	2	0x0452	1
50	r	Condenser Water Flow Status	1	0x045F	1

¹ Array location refers to the position in the array when 'everything' is read from the McQuay device.



Array Location ¹	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method
51	r	Condenser Water Rate Sensor	1	0x083D	1
52	r	Condenser Water Temperature - Delta	2	0x0488	2
54	r	Condenser Water Temperature - Entering	2	0x0436	3
56	r	Condenser Water Temperature - Leaving	2	0x0434	3
58	r	Cooling Tower Control	1	0x0926	1
59	r	Cooling Tower Stage	1	0x049A	1
60	r	Cooling Tower Valve Position	1	0x049B	1
61	r	Discharge Refrigerant Temperature	2	0x043E	3
63	r	Evaporator Approach Temperature	2	0x0482	2
65	r	Evaporator Pump Status	1	0x0423	1
66	r	Evaporator Pump #1 Operating Hours	2	0x0854	1
68	r	Evaporator Pump #2 Operating Hours	2	0x0857	1
70	r	Evaporator Refrigerant Pressure	2	0x0438	2
72	r	Evaporator Refrigerant Temperature	2	0x0464	3
74	r	Evaporator Water Flow Rate	2	0x0450	1
76	r	Evaporator Water Flow Status	1	0x045E	1
77	r	Evaporator Water Rate Sensor	1	0x083C	1
78	r	Evaporator Water Temperature - Delta	2	0x0486	2
80	r	Evaporator Water Temperature - Entering	2	0x0432	3
82	r	Evaporator Water Temperature - Leaving	2	0x0430	3
84	r	Fault - Current Active	1	0x1C00	1
85	r	Last Start Hour	1	0x0861	1
86	r	Last Start Minute	1	0x0862	1
87	r	Last Start Month	1	0x0863	1
88	r	Last Start Date	1	0x0864	1
89	r	Last Start Year	1	0x0865	1
90	r	Last Stop Hour	1	0x0866	1
91	r	Last Stop Minute	1	0x0867	1
92	r	Last Stop Month	1	0x0868	1
93	r	Last Stop Date	1	0x0869	1
94	r	Last Stop Year	1	0x086A	1
95	r	Liquid Line Refrigerant Temperature	2	0x043C	3
97	r	Oil Pressure - Feed	2	0x0446	2



Array Location ¹	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method
99	r	Oil Pressure - Net	2	0x0468	2
101	r	Oil Pressure - Vent	2	0x04AC	2
103	r	Oil Temperature - Feed	2	0x0442	3
105	r	Oil Temperature - Sump	2	0x0444	3
107	r	Outdoor Air Temperature - Network	1	0x0474	2
108	r	Refrigerant Detection Sensor	1	0x083E	1
109	r	Refrigerant Leak Detection Limit	1	0x044B	1
110	r	Unit Status	1	0x0420	1
111	b	Capacity Limit Percent	1	0x0475	1
112	b	Clear Current Fault	1	0x041E	1
113	b	Chiller Operation Mode	1	0x0477	1
114	b	Chilled Water Temperature Setpoint	1	0x0476	1
115	b	Communications Signal	1	0x047D	4
116	b	Outdoor Air Temperature - BAS	1	0x0473	5
117	b	Master/Slave Setpoint	1	0x093C	1
118	b	Lead/Lag Mode Setpoint	1	0x093D	1
119	b	Enable Lag Setpoint	1	0x093E	1
120	b	Disable Lag Setpoint	1	0x093F	1
121	b	Lag Standby Setpoint	1	0x0942	1
122	b	Lead/Lag Switch Setpoint (Day)	1	0x0948	1
123	b	Lead/Lag Switch Setpoint (Hour)	1	0x0949	1
124	r	Lead/Lag Status	1	0x0401	1
125	r	Lead Unit	1	0x0402	1
126	r	Lead Unit Status	1	0x0403	1
127	r	Lag Unit Status	1	0x0404	1
128	r	Lead Motor Current	1	0x0405	1
129	r	Lag Motor Current	1	0x0406	1
130	r	Lead Status	1	0x0407	1
131	r	Lag Status	1	0x0408	1

Equipment Type: 050RPC Reciprocating Chiller

Additional information may be obtained from McQuay International. Request the following document.

MicroTech® Reciprocating Chiller



(American Manufacture)
Open Protocol™ Data Communications
Information Packet
Version 5.0
April, 1996

Array Location	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method*
3	r	Circuit #1 Condenser Approach Temperature	2	0x0497	2
5	r	Circuit #1 Condenser Pressure	2	0x0467	2
7	r	Circuit #1 Alarm Conditions: Condenser Pressure	2	0x0822	2
9	r	Circuit #1 Alarm Conditions: Evaporator Pressure	2	0x0820	2
11	r	Circuit #1 Alarm Conditions: Liquid Line Temp	2	0x0826	6
13	r	Circuit #1 Alarm Conditions: Suction Temperature	2	0x0824	6
14	r	Circuit #1 Current Alarm	1	0x0831	1
16	r	Circuit #1 Evaporator Pressure	2	0x0463	2
18	r	Circuit #1 Liquid Line Temperature	2	0x0479	6
19	r	Circuit #1 Previous Alarm	1	0x0833	1
20	r	Circuit #1 Status	1	0x0428	1
22	r	Circuit #1 Subcooling Temperature	2	0x049B	2
24	r	Circuit #1 Suction Temperature	2	0x0475	6
26	r	Circuit #1 Superheat Temperature	2	0x0493	2
28	r	Circuit #2 Condenser Approach Temperature	2	0x0499	2
30	r	Circuit #2 Condenser Pressure	2	0x0469	2
32	r	Circuit #2 Alarm Conditions: Condenser Pressure	2	0x082A	2
34	r	Circuit #2 Alarm Conditions: Evaporator Pressure	2	0x0828	2
36	r	Circuit #2 Alarm Conditions: Liquid Line Tempe	2	0x082E	6
38	r	Circuit #2 Alarm Conditions: Suction Temperature	2	0x082C	6
39	r	Circuit #2 Current Alarm	1	0x0832	1
41	r	Circuit #2 Evaporator Pressure	2	0x0465	2
43	r	Circuit #2 Liquid Line Temperature	2	0x047B	6
44	r	Circuit #2 Previous Alarm	1	0x0834	1
45	r	Circuit #2 Status	1	0x0429	1
47	r	Circuit #2 Subcooling Temperature	2	0x049D	2
49	r	Circuit #2 Suction Temperature	2	0x0477	6
51	r	Circuit #2 Superheat Temperature	2	0x0495	2
53	r	Compressor #1 Operating Hours	2	0x0862	1
55	r	Compressor #1 Starts	2	0x086A	1
57	r	Compressor #2 Operating Hours	2	0x0864	1

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Array Location	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method*
59	r	Compressor #2 Starts	2	0x086C	1
61	r	Compressor #3 Operating Hours	2	0x0866	1
63	r	Compressor #3 Starts	2	0x086E	1
65	r	Compressor #4 Operating Hours	2	0x0868	1
67	r	Compressor #4 Starts	2	0x0870	1
69	r	Condenser Entering Water Temperature	2	0x0470	6
71	r	Condenser Leaving Water Temperature	2	0x0472	6
73	r	Evaporator Entering Water Temperature	2	0x046E	6
75	r	Evaporator Leaving Water Temperature	2	0x0461	6
76	r	Heat/Cool Switch	1	0x08B4	1
78	r	OaT	2	0x047D	6
79	r	Stage of Capacity	1	0x042B	1
80	r	Unit % RLA	1	0x0474	1
81	r	Unit Status	1	0x0427	1
82	b	Clear Circuit #1 Alarm	1	0x091A	1
83	b	Clear Circuit #2 Alarm	1	0x091B	1
84	b	Condenser Leaving Water Temperature Setpoint	1	0x097D	1
85	b	Evaporator Entering Water Temperature Setpoint	1	0x090D	4
86	b	Evaporator Leaving Water Temperature Setpoint	1	0x0905	4
87	b	Maximum Water Reset Setpoint	1	0x090C	4
88	b	Network Command	1	0x044F	1
89	b	Network Demand Limit	1	0x044D	1
90	b	Network Leaving Water Temperature Reset	1	0x044E	1
91	b	Reset Option Setpoint	1	0x090B	1

Equipment Type: 100CFC 100 Series Centrifugal Chiller

Additional information may be obtained from McQuay International. Request the following document.

*MicroTech® Series 100 Centrifugal Chiller
Open Protocol™ Data Communications
Information Packet
Version 3.2
April, 1996*



Array Location	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method*
1	r	Alarm Contact	1	0x0217	1
2	r	Approach Condenser	1	0x0418	1
3	r	Calculated Leaving Evaporator Temp Setpoint	1	0x0420	7
4	r	Calculated Network Amp Limit Setpoint	1	0x0423	1
5	r	Compressor Discharge Temp.	1	0x0407	1
6	r	Compressor Suction Temp. - Lo Resolution	1	0x0403	1
7	r	Compressor Suction Temp. - Hi Resolution	1	0x041C	7
8	r	Condenser Pump	1	0X021C	1
9	r	Condenser Refrigerant Pressure	1	0x0411	1
10	r	Condenser Refrigerant Temp.	1	0x0408	1
11	r	Condenser Water Flow Switch	1	0X050F	1
12	r	Cooling Tower Stage 1	1	0x0218	1
13	r	Cooling Tower Stage 2	1	0x0219	1
14	r	Current Fault	1	0x0428	1
15	r	Fault Last	1	0x0834	1
16	r	Fault 2	1	0x0835	1
17	r	Fault 3	1	0x0836	1
18	r	Fault 4	1	0x0837	1
19	r	Fault 5	1	0x0838	1
20	r	Fault 6	1	0x0839	1
21	r	Fault 7	1	0x083A	1
22	r	Fault 8	1	0x083B	1
23	r	Entering Condenser Water Temp. - Lo Resolution	1	0x0405	1
24	r	Entering Condenser Water Temp. - Hi Resolution	1	0x041E	8
25	r	Entering Evaporator Water Temp. - Lo Resolution	1	0x0401	1
26	r	Entering Evaporator Water Temp. - Hi Resolution	1	0x041A	1
27	r	Entering Water Reset	1	0x0438	1
28	r	Evaporator Low Pressure Switch	1	0x050E	1
29	r	Evaporator Pump	1	0X021B	1
30	r	Evaporator Refrigerant Pressure	1	0x0410	1
31	r	Evaporator Refrigerant Temp. - Lo Resolution	1	0x0402	1
32	r	Evaporator Refrigerant Temp. - Hi Resolution	1	0x041B	7
33	r	Evaporator Water Flow Switch	1	0X050F	1
34	r	High Discharge Pressure Switch	1	0X050E	1
35	r	Hot Gas Solenoid	1	0x0212	1
36	r	Leaving Condenser Water Temp. - Lo Resolution	1	0x0406	1



Array Location	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method*
37	r	Leaving Condenser Water Temp. - Hi Resolution	1	0x041F	8
38	r	Leaving Evaporator Water Temp. - Lo Resolution	1	0x0400	1
39	r	Leaving Evaporator Water Temp. - Hi Resolution	1	0x0419	7
40	r	LED Front Panel	1	0x021F	1
41	r	Lift Pressure	1	0x0412	1
42	r	Liquid Injection Solenoid	1	0x0216	1
43	r	Liquid Line Refrigerant Temp. - Lo Resolution	1	0x0404	1
44	r	Liquid Line Refrigerant Temp. - Hi Resolution	1	0x041D	8
45	r	Liquid Subcool	1	0x0417	1
46	r	Load Solenoid	1	0x0211	1
47	r	Low Evaporator Pressure Limit	1	0x043B	1
48	r	Manual Amp Limit	1	0X043D	1
49	r	Manual Amp Limit Setpoint	1	0x0901	1
50	r	Maximum Amp Limit	1	0X043C	1
51	r	Motor Control Latch Relay	1	0x0213	1
52	r	Motor Control Relay	1	0x021E	1
54	r	Motor Current Amps	2	0x0435	1
55	r	Motor Current Percent	1	0x040C	1
56	r	Motor Temperature Switch	1	0x050E	1
58	r	Number of Starts	2	0X0432	1
59	r	Oil Delta Pressure	1	0X040D	1
60	r	Oil Feed Temp.	1	0x0409	1
61	r	Oil Gage Pressure	1	0x0415	1
62	r	Oil Heater	1	0x0215	1
63	r	Oil Pressure Differential Switch	1	0X050E	1
64	r	Oil Pump	1	0X021D	1
65	r	Oil Sump Temp.	1	0X040A	1
67	r	Operating Hours	2	0x0430	1
68	r	Panel Rocker Switch	1	0X050E	1
69	r	Remote Amp Limit	1	0X043E	1
70	r	Remote Chilled Water Reset	1	0x0439	1
71	r	Remote Reset or Amp Limit Signal	1	0X040B	1
72	r	Remote Start/Stop Switch	1	0X050F	1
73	r	Soft Load Limit	1	0X043A	1
74	r	Starter Fault Switch	1	0X050F	1
75	r	Starter Transition Switch	1	0X050F	1



Array Location	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method*
76	r	Superheat	1	0x0416	1
77	r	Surge Guard Switch	1	0X050E	1
78	r	Unit Status	1	0x0424	1
79	r	Unload Solenoid	1	0x0210	1
80	r	Vanes Closed Switch	1	0X050F	1
81	r	Watchdog Output	1	0x0214	1
82	b	Clear Current Fault	1	0X042A	1
83	b	Comm Port Baud Rate	1	0x0801	1
84	b	Correct Checksum	1	0x0800	1
85	b	Leaving Evaporator Temperature Setpoint	1	0x0900	7
86	b	Maximum Chilled Water Reset Setpoint	1	0x0820	9
87	b	Network Amp Reset	1	0x0450	1
88	b	Network Chilled Water Reset	1	0X044F	1
89	b	Network Start Stop	1	0x0451	1
90	b	Reset Option	1	0x0822	1
91	b	Soft Reset	1	0x0204	1
92	b	Start Mode	1	0x0824	1
93	b	Startup Differential Temp.	1	0x0826	9
94	b	Shutdown Differential Temp.	1	0x0827	9

Equipment Type : 001ASC Reciprocating Chiller

Additional information may be obtained from McQuay International. Request the following document.

*MicroTech® Air Cooled Screw Chiller
Open Protocol™ Data Communications
Information Packet
Version 2.2
November, 1999*

Array Location	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method*
1	r	Active Chilled Water Temperature Setpoint	1	0x045A	4
2	r	Ckt#1 Condenser Pressure	2	0x0467	2

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Array Location	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method*
4	r	Ckt#1 Alarm Conditions: Capacity	1	0x1F13	1
5	r	Ckt#1 Alarm Conditions: Condenser Pressure	2	0x1F09	2
7	r	Ckt#1 Alarm Conditions: Evap Leaving Water Temp	2	0x1F0F	1
9	r	Ckt#1 Alarm Conditions: Evap Pressure	2	0x1F07	2
11	r	Ckt#1 Alarm Conditions: Fan Stage	1	0x1F14	1
12	r	Ckt#1 Alarm Conditions: Liquid Line Temperature	2	0x1F0D	10
14	r	Ckt#1 Alarm Conditions: Outside Air Temp	2	0x1F11	10
16	r	Ckt#1 Alarm Conditions: Suction Temperature	2	0x1F0B	10
18	r	Ckt#1 Current Alarm	1	0x08B9	1
19	r	Ckt#1 Current Alarm HourMinuteMonthDateYear	1	0x1F02	1
20	r	Ckt#1 Evaporator Pressure	2	0x0463	2
22	r	Ckt#1 Liquid Line Temperature	2	0x0479	10
24	r	Ckt#1 Status	1	0x0428	1
25	r	Ckt#1 Subcooling Temperature	2	0x04DF	2
27	r	Ckt#1 Suction Temperature	2	0x0475	10
29	r	Ckt#1 Superheat Temperature	2	0x04D7	2
31	r	Compressor #1 Operating Hours	2	0x0862	1
33	r	Compressor #1 Starts	2	0x086A	1
35	r	Evaporator Entering Water Temperature	2	0x046E	10
37	r	Evaporator Leaving Water Temperature	2	0x0461	10
39	r	Outdoor Air Temperature	2	0x047D	10
41	r	Stage of Cooling	1	0x042B	1
42	r	Unit Status	1	0x0427	1
43	b	Clear Ckt#1 Alarm	1	0x091A	1
44	b	Evaporator Entering Water Temperature Setpoint	1	0x090D	2
45	b	Evaporator Leaving Water Temperature Setpoint	1	0x0905	2
46	b	Maximum Chilled Water Reset Setpoint	1	0x090C	2
47	b	Network Command	1	0x044F	1
48	b	Network Demand Limit	1	0x044D	1
49	b	Network Evaporator Leaving Water Temp Reset	1	0x044E	1
50	b	Reset Option Setpoint	1	0x090B	1

Equipment Type : CFC 100 Series Centrifugal Chiller

Additional information may be obtained from McQuay International. Request the following document.

MicroTech® Self-Contained Air Conditioning System



Open Protocol™ Data Communications

Array Location	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method*
1	r	Air Velocity	1	0x0434	1
2	r	Airflow Status	1	0x045C	1
3	r	Current Alarm	1	0x0801	1
4	r	Previous Alarm	1	0x1301	1
5	r	Building Static Pressure	1	0x0435	1
6	r	Compressor #1 Alarm	1	0x081C	1
7	r	Compressor #1 Operating Hours	2	0x08AF	1
9	r	Compressor #2 Alarm	1	0x081D	1
10	r	Compressor #2 Operating Hours	2	0x08B2	1
12	r	Compressor #3 Alarm	1	0x081E	1
13	r	Compressor #3 Operating Hours	2	0x08B5	1
15	r	Compressor #4 Alarm	1	0x081F	1
16	r	Compressor #4 Operating Hours	2	0x08B8	1
18	r	Compressor #5 Alarm	1	0x0820	1
19	r	Compressor #5 Operating Hours	2	0x08BB	1
21	r	Compressor #6 Alarm	1	0x0821	1
22	r	Compressor #6 Operating Hours	2	0x08BE	1
24	r	Control Temperature	1	0x0432	1
25	r	Cool Stage	1	0x043F	1
26	r	Cooling Control Status	1	0x044A	1
27	r	Dew Point Temperature	1	0x042F	1
28	r	Duct Static Pressure #1	1	0x0435	1
29	r	Duct Static Pressure #2	1	0x0434	1
30	r	Economizer Enable	1	0x045A	1
31	r	Economizer Operating Hours	2	0x08C4	1
33	r	Economizer Position	1	0x042E	1
34	r	Entering Water Temperature	1	0x042C	1
35	r	Fan - High Speed Operating Hours	2	0x08AC	1
37	r	Fan - Low Speed Operating Hours	2	0x08A9	1
39	r	Fan Operation	1	0x0462	1
40	r	Fan Speed	1	0x0436	1
41	r	Heat Stage	1	0x043E	1
42	r	Heating Control Status	1	0x044C	1
43	r	Heating Operating Hours	2	0x08C1	1



Array Location	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method*
45	r	Leaving Water Temperature	1	0x042D	1
46	r	Mixed Air Temperature	1	0x042B	1
47	r	Motor Amps	1	0x0436	1
48	r	Motor Speed	1	0x04BB	1
49	r	Network Communications Status	1	0x0470	1
50	r	Outdoor Air Damper Status	1	0x045F	1
51	r	Outdoor Air Temperature	1	0x0429	1
52	r	Override Hours	2	0x08C7	1
54	r	Refrigerant Pressure	1	0x0431	1
55	r	Relative Humidity	1	0x0431	1
56	r	Return Air Temperature	1	0x0428	1
57	r	Space Temperature	1	0x042A	1
58	r	Supply Air Temperature	1	0x0427	1
59	r	Supply Fan Status	1	0x045E	1
60	r	Unit Enabled Status	1	0x0488	1
61	r	Unit Status	1	0x043D	1
62	r	Variable Inlet Vane Position	1	0x0436	1
63	r	Water Flow Required	1	0x0445	1
64	r	Water Flow	1	0x045B	1
65	r	Water Pump Start/Stop	1	0x0461	1
66	b	Building Static Pressure Setpoint	1	0x0923	1
67	b	Clear Alarm	1	0x04CE	1
68	b	Clear Alarm Buffer	1	0x048A	1
69	b	Control Mode	1	0x044F	1
70	b	Control Temperature Source	1	0x0926	1
71	b	Cooling Control Deadband	1	0x088D	1
72	b	Cooling Control Setpoint	1	0x0907	1
73	b	Cooling Supply Deadband	1	0x0878	1
74	b	Cooling Supply Setpoint	1	0x090E	1
75	b	Dew Point Deadband	1	0x094E	1
76	b	Dew Point Sensor Type	1	0x0949	1
77	b	Dew Point Setpoint	1	0x094D	1
78	b	Duct Static Pressure Setpoint	1	0x0917	1
79	b	Duct Static/Building Static Pressure Deadband	1	0x089B	1
80	b	Economizer (Air) Changeover Differential	1	0x0932	1
81	b	Economizer (Air) Changeover Temperature Setpoint	1	0x0931	1



Array Location	Read/ Write/ Both	Field Name	Number of Bytes	Base Address	Device Scaling Method*
82	b	Economizer (Air) Method	1	0x083B	1
83	b	Economizer (Water) Changeover Temperature Offset	1	0x091A	1
84	b	Fan On Heating Setpoint	1	0x0939	1
85	b	Head Pressure Deadband	1	0x08E1	1
86	b	Head Pressure Setpoint	1	0x093A	1
87	b	Heating Control Deadband	1	0x0894	1
88	b	Heating Control Setpoint	1	0x0905	1
89	b	Heating Supply Deadband	1	0x0871	1
90	b	Heating Supply Setpoint	1	0x0914	1
91	b	Humidity Control Type	1	0x0947	1
92	b	Humidity Deadband	1	0x094C	1
93	b	Humidity Setpoint	1	0x094B	1
94	b	Low Entering H2O Comp. Lockout Differential	1	0x092C	1
95	b	Low Entering Water Compressor Lockout Setpoint	1	0x092B	1
96	b	Min Vane Position/Fan Speed	1	0x0951	1
97	b	Minimum Outdoor Air Damper Position	1	0x0934	1
98	b	Minimum Supply Air Temperature Control	1	0x0919	1
99	b	Unoccupied Cooling Space Differential	1	0x0904	1
100	b	Unoccupied Cooling Space Setpoint	1	0x0903	1
101	b	Unoccupied Heating Space Differential	1	0x0902	1
102	b	Unoccupied Heating Space Setpoint	1	0x0901	1
103	b	Water Flow Signal	1	0x0444	1

McQuay Equipment Types recognized by the driver.

The driver only recognizes the following equipment types.

Code	Description
200CFC	200 Series Centrifugal Chiller
100CFC	100 Series Centrifugal Chiller
001ASC	Air Screw Chiller
000SCU	Self Contained Unit
0050RPC	Reciprocating Chiller



Revision History

Date	Resp	Format	Driver Ver.	Doc. Rev.	Comment
					Uncontrolled Previous releases and changes
2/4/04	PMC		1.02	2	Added new supported device types
2/24/04	MF	MF	1.02	3	Updated formatting. Added new revision table. Added connection diagram.
12/29/04	JD		1.02	4	Releasing