Data Aire Serial Protocol

Connector Configuration Parameters

RTS ON DelayX10ms

Enter a number from 0 to 255 (0 to 2.55 seconds) to delay sending a message after turning on Request To Send (RTS). Commonly used with modem communication to allow additional time for the modems to synchronize.

RTS OFF DelayX10ms

Enter a number from 0 to 255 (0 to 2.55 seconds) to keep RTS on after a message has been sent. Commonly used to keep a radio on for a short period of time at the end of a message.

Handshake Option

If Full Handshake is selected the Omnii-Comm will assert RTS and wait for CTS before sending a message. RTS will be turned off after the message has been sent. If Constant Carrier is selected the Omnii-Comm will assert RTS when it sends its first message and leave it asserted. It will wait for CTS before sending. If Ignore CTS is selected, RTS will be asserted before sending a message and removed at the end of the message. The CTS input will be ignored. If No Handshake is selected, RTS will be asserted when the Omnii-Comm sends its first message. RTS will not be turned off at the end of the message. The CTS input will be ignored. If Activity Monitor is selected, the Omnii-Comm will check the DCD input before sending a message. If DCD is ON, the Omnii-Comm will delay sending the message.

Retry Count

The number of times a message will be retried before an error is reported

DART ID (HEX)

Enter the DART ID in HEX that is connected to the Omnii-Comm.

Option Bit Parameters

Use Radio Key

If checked, Bit 0 in a register specified by the "Radio Key Address" on the Header configuration screen will be turned ON before a message is sent and turned OFF after the message has been completed.

Enable Commands

Check this box if commands will be used.

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Protocol Extension Table Parameters

The Protocol extension table is used to define additional parameters required for Data Aire operation. Click on the box to enable the Protocol Extension Table. Click on the button to bring up the specific options as detailed below.

CMD Flag Data Type and Flag Offset

The first two fields define the data type and starting offset that will be used to store the Command Flags. The Command Flags are monitored by the Omnii-Comm and when the state changes from OFF to ON, a command is built using information read from the Command Data words. For Data Aire protocol there are1 word of Command Flags. The least significant 8 bits are used to trigger the commands. The most significant bits are used to signal the command completion.

Bit	Function
0	Send Time
1	Send DART Configuration
2	Send DART Password
3	Send DAP Configuration
4	Reserved
5	Send DAP-046 Menu
6	Send Chiller Menu
7	Send DAP-080 Menu
8	Send Time Complete
9	Send DART Configuration Complete
10	Send DART Password Complete
11	Send DAP Configuration Complete
12	Reserved
13	Send DAP-046 Menu Complete
14	Send Chiller Menu Complete
15	Send DAP-080 Menu Complete

CMD Data 0,2,3 Data Type and Starting Offset

These two fields are used to specify that Data Type and Starting Offset will be usde to store the information required to build the Send Time, Send Dart Password or Send DAP Configuration command. A total of 32 words of command data are required as shown below:

Register	Function

Send Time

Register	Function
0	Unit ID
1	Seconds
2	Minutes
3	Hours
4	Day of Month
5	Month
6	Year
7	Day of Week

Send DART Password

Register	Function
8	Unit ID
9-18	20 Character Read Only Password, 2 characters per word, space pad
19-28	20 Character Read/Write Password, 2 characters per word, space pad

Send DAP Configuration

Register	Function
29	Unit ID
30	Zone (00 to 63)
31	Inhibit Bit Flags

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CMD Data 1 Type and Starting Offset

These two fields are used to specify that Data Type and Starting Offset will be usde to store the information required to build the Send DART Configuration command. A total of 150 words of command data are required as shown below:

Register	Function
0	Unit ID
1	Dart ID
2-12	Name of DART Site 2 ASCII characters per word, Space Pad
13-28	Address of DART Site, 2 ASCII characters per word, Space Pad
29-35	Phone Number of DART Site, 2 ASCII characters per word, Space Pad
36-42	Primary Phone Dial String, 2 ASCII characters per word, Space Pad
43-49	Secondary Phone Dial String, 2 ASCII characters per word, Space Pad
50-81	Unit 1 thru 32 Type, 1 word each
82-113	32 zones, one word for each unit
114	Callout Schedule for DART
115	Unit Rotation Time
116	Unit Rotation Schedule
117	DART Inhibit, 0=Don't allow Inhibits, 1=Allow Inhibits
118-149	DAP Network Inhibit Setting, 1 word for each

CMD Data 4 Type and Starting Offset

Currently not used. This command is not implemented

CMD Data 5 Type and Starting Offset

These two fields are used to specify that Data Type and Starting Offset will be usde to store the information required to build the Send DAP-046 Menu command. A total of 186 words of command data are required as shown below:

Register	Function
0	Unit ID
1-40	Custom Alarm Message #1, 2 ASCII characters per word, space pad
41-80	Custom Alarm Message #2, 2 ASCII characters per word, space pad
81-120	Custom Alarm Message #3, 2 ASCII characters per word, space pad
121-160	Custom Alarm Message #4, 2 ASCII characters per word, space pad
161-185	Custom Contact, 2 ASCII characters per word, space pad

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CMD Data 6 Type and Starting Offset

These two fields are used to specify that Data Type and Starting Offset will be usde to store the information required to build the Send Chiller Menu command. A total of 37 words of command data are required as shown below:

Register	Function
0	Unit ID
1	Chiller II adjustment rate (0-5 minutes)
2	Auto Acknowledge (0=off, 1=on)
3	Auxiliary cooling lockout temperature (450 to 750)
4	Number of modules reserved for backup (0 to 2)
5	Backup module activation setpoint (450 to 750)
6	Change modules on temperature alarm (0=no, 1=yes)
7	Compressor type (0=Primary, 1=Primare/Secondary)
8	Person to Contact (0=invalid, 1=data processing mgr, 2=maintenance eng., 3=service co., 4=custom contact message)
9	High Return temperature limit (340-750)
10	High Supply temperature limit (340-750)
11	policy 0=auto, 1=module 1 leads, 2=module 2 leads, 3=module 3 leads
12	Low Return temperature limit (340-750)
13	Low supply temperature limit (340-750)
14	Maintenance interval (hours) (0-1000)
15	Modules configured (0=none, 1=module,1 config. 2=module 2 config., 3=module 3 config,4=1 and 2 config., 5=1 and 3 config. 6=2 and 3 config. 7=1,2 and 3 config.)
16	Network ID (0-999)
17	Alarm #1 activation delay (0-900 seconds)
18	Alarm #2 activation delay (0-900 seconds)
19	Op 1 message (0=aux cooling avail, 1=custom msg #1, 2=Local alarm #1, 3=manual override, condensor flow alarm, 5=standby pump on)
20	Op 2 message (0=custom msg #2, 1=local alarm #2, 2=manual override,3=condensor flow alarm, 4=standby pump on, 5=on backup standby, 6=on total standby)
21	password
22	Relay mask 0
23	Relay mask 1
24	Relay mask 2
25	Restart mode (0=auto, no message or alarm, 1=auto, message+audio alarm, 2=manual message+audio alarm+relay)
26	Reverse valve (0=normal, 1=reverse acting H2O valve)
27	Short Cycle alarm (0=off, 1=on)
28	Start delay (5-600 seconds)
29	Supply temperature deadband (10-50)
30	Supply temperature setpoint (450-750)
31	Temperature scale (0=Fahrenheit, 1=Centigrade)
32	Water valve voltage range (0=0-10V, 1=4-7V, 2=6-9V, 3=7-10V)
33	Voice (0=off, 1=short tone, 2=long tone, 3=full on)
34	Chilled water valve (0=not used, 1=used)
35	Return temperature calibration offset
36	supply temperature calibration offset

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CMD Data 7 Type and Starting Offset

These two fields are used to specify that Data Type and Starting Offset will be usde to store the information required to build the Send DAP-080 Menu command. A total of 54 words of command data are required as shown below:

Register	Function
0	Unit ID
1	DAP Adjustment rate (0-5 minutes)
2	Alarm Delay #1 (0-900 seconds)
3	Alarm Delay #2 (0-900 seconds)
4	Alarm Delay #3 (0-900 seconds)
5	Alarm Delay #4 (0-900 seconds)
6	Alarm Select #1 Message (0-7)
7	Alarm Select #2 Message (0-7)
8	Alarm Select #3 Message (0-7)
9	Alarm Select #4 Message (0-7)
10	Humidity anticipation (0=off, 1=on)
11	Autoflush Time (0=No flush, 1=6 hr, 2=12 hr, 3=24 hr, 4=36 hr, 5=48 hr, 6=60 hr, 7=72 hr, 8=84 hr, 9=96 hr)
12	Auto acknowledge (0=off, 1=on)
13	Compressor Configuration (0=none, 1=pri, 2=pri/sec, 3=pri/pri, 4=pri/sec/pri/sec)
14	Control type (0=Smart Logic, 1= PID Logic, 2=Setpoint Deviation Logic)
15	Display mode (0=Fahrenheit, 1=Centigrade)
16	Water valve voltage range (0=0-10V, 1=4-7V, 2=6-9V, 3=7-10V)
17	Dehumidification Control (0=off, 1=1 comp, within reheat limits, 2=2 comp within limits, 3=1 comp, no limits, 4=2 comp, no limits)
18	Discharge temp calibration offset
19	Energy Saver (0=no saver, 1=1 comp for ES, 2=2 comp for ES)
20	Fire Limit Temperature (1000-1500)
21	Heater config (0=no heat strips, 1=1 heat strip, 2=2 heat strips, 3=3 heat strips, 4=hot water)
22	High Humidity limit (100-900)
23	High Temperature limit (500-900)
24	Humidity Configuration (0=none, 1=computer, non-modulating, 2=computer, modulating, 3=comfort, non-modulating, 4=comfort, modulating)
25	Humidity Calibration offset
26	Humidity deadband (0-150)
27	Lead/Lag (0=auto, 1=1 leads, 2=2 leads)
28	Low discharge temperature limit (450-610)
29	Low humidity limit (100-900)
30	Low temperature limit (500-900)
31	Maintenance interval (0-1000 hours)
32	Network ID (0-999)
33	Humidity Setpoint (300-700)
34	Password (0-99)
35	Person to contact (0=not used, 1=data processing mfr, 2=maintenance eng, 3=service co., 4=custom contact message)
36	Relay 1 mask 0
37	Relay 1 mask 1
38	Relay 1 mask 2
39	Relay 2 mask 0
40	Relay 2 mask 1
41	Relay 2 mask 2
42	Relay 3 mask 0
43	Relay 3 mask 1
44	Relay 3 mask 2
45	Reverse chilled H2O valve (0=normal, 1=reverse acting valve)
46	Reset mode (0=auto, no message or alarms, 1=auto, message+audio alarm, 3=manual, message+audio alarm)
47	Short Cycle alarms (0=alarms off, 1=alarms on)
48	Start delay (5-600 seconds)
49	Temperature calibration offset
50	Temperature deadband (10-50)
51	Temperature setpoint (600-800)
52	Valve Configuration (0=chilled H2O not used, 1=chilled H2O cooling, 2=energy saver cooling, 3=aux chilled H2O cooling)
53	Voice (0=off, 1=short tone, 2=long tone, 3=full on)

Parser Data Type and Starting Offset

These two words specify the Data Type and Starting Offset that will be used to store a parsing list that will be used to process poll table responses.

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Poll Table Read Parameters

DAP Address (Hex)

The Hex address of the Data Aire Processor unit. Valid addresses are from 0 to 103 Hex (0-259 decimal).

Query Type

The type of query to be sent by the poll. The parsing list number to be used to interpret the response is automatically set to the same number as the query type. There are 15 choices:

0	DART Diagnostic
1	DART Config
2	DART Pasword
3	DART Auto-Pass
4	DAP Log-Unit Type
6	DAP Status, 7-DAP Xtra
8	DAP Menu
9	DAP-046 Custom
10	Chiller Stat
11	Chiller-Xtra
12	Chiller Menu
13	DART Stat
14	DAP 080 Menu

Poll Table Write and Error Parameters

Data Aire write functions are not supported from the poll table. Use Commands to write to Data Aire.

Note: System Error Protocol Definitions are the same as Poll Table Write and Error Parameters

Database Extension Table Parameters

Index	Name	Size:Max Length
0	Type 00	2:256
1	Type 01	2:256
2	Type 02	2:256
3	Type 03	2:256
4	Type 04	2:256
5	Type 05	2:256
6	Type 06	2:256
7	Type 07	2:32
8	Type 08	2:32
9	Type 09	2:32
10	Type 10	2:64
11	Type 11	2:32
12	Type 12	2:32
13	Type 13	2:32
14	Type 14	2:32
15	Type 15	2:32
16	Type 16	2:32
17	Type 17	2:32
18	Type 18	2:32
19	Type 19	2:32
20	Type 20	2:256
21	Type 21	2:256