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Cruisair Controller

Information Sheet for Crimson v2.0

Compatible Devices

- Cruisair Tempered Water Controller

Verified Device

- Cruisair Tempered Water Controllers in network.

Driver Options: Maximum Response Time –This value must be increased when multiple chillers are used. 1000 * the number of chillers will be a reasonable initial value. The higher the value, the greater the update time if an assigned chiller is not present, but the more likely a response will be seen.

Port Settings: These must remain at 4800, Eight, None, One.

Device Options: Chiller Selection –Each chiller to be used must have a Device assigned to it, and that Device assigned a unique number from 1 to 6. These numbers will follow the Chiller Numbers on the Cruisair display.

General Description of Configuration Dialog Box:
Drop-down lists segregate the possible selections.
CHILLER STATUS: Parameters specific to each chiller.
FAULTS AND FAULT HISTORY: Fault codes specific to each chiller.
INPUT/OUTPUT LOGS: Logged values specific to each chiller.
GLOBAL PARAMETERS: Parameters relevant to all chillers. These may be programmed in any active device, but Chiller 1 is recommended.
GLOBAL CONTROL: Commands to execute functions for all chillers. These may be programmed in any active device, but Chiller 1 is recommended.

PGEN: This item allows the selection of any generic command number. It is located in GLOBAL PARAMETERS. 0-999 will issue a global command, 1000-1999 will issue a command to chiller 1, 2000-2999 to chiller 2, and so forth. Should additional commands be created for the product, this will permit the database programmer to add the desired function without requiring an update to the configuration software. PGEN may be programmed in any active device, but Chiller 1 is recommended.

Accessible Data

CHILLER STATUS

Prefix	Description	Information
	CHILLER STATUS...	HEADER (NOTE 1)
CSN	Current Stage number	Read Only
LFS	Loop Water flow switch	Read Only
SVN	Software Version #90-xx	Read Only
SIT	Seawater Inlet Temp	Read Only
SOT	Seawater Outlet Temp	Read Only
LST	Loop Supply Temp	Read Only
LRT	Loop Return Temp	Read Only
LFT	Loop Freeze Temp	Read Only
RLP	R22 Low Pressure	Read Only
RHP	R22 High Pressure	Read Only
LPR	Loop Pressure	Read Only
SPR	Seawater Pressure	Read Only
CCU	Compressor Current	Read Only
SPC	Seawater Pump Current	Read Only
LPC	Loop Pump Current	Read Only
ACV	AC Voltage	Read Only
CRT	Compressor run time	Read Only
RVT	Reversing Valve run time	Read Only
SPT	Seawater Pump run time	Read Only
LPT	Loop Pump run time	Read Only
HRT	Heater run time	Read Only
MODE	Operating Mode	Read Only
IMT	Immersion Heater Temperature	Read Only
TGR	Toggle Rotate On/Off	Not 0 = Execute
ISN	Increment Stage Number	Not 0 = Execute
DSN	Decrement Stage Number	Not 0 = Execute
TGC	Toggle Chiller On/Off	Not 0 = Execute
C1LG	Clear All Logs, this device	Not 0 = Execute
C1FH	Clear Fault History	Not 0 = Execute
C1IO	Clear I/O Limits	Not 0 = Execute
C1HH	Clear Heater Hours	Not 0 = Execute
C1CH	Clear Compressor Hours	Not 0 = Execute

FAULTS AND FAULT HISTORY

Prefix	Description	Information
	FAULTS AND FAULT HISTORY...	HEADER (NOTE 1)
FCN	Number of faults	Read Only
FAB	Fault Active Bits	Read Only
ACL	Low AC voltage fault count	Read Only
FSW	Flow Switch fault count	Read Only
HDS	High Discharge fault count	Read Only
LLT	Loop Low Temp fault count	Read Only
LHT	Loop High Temp fault count	Read Only
SLT	Seawater Low Temp fault count	Read Only
EEC	Eprom Error count	Read Only
LOP	Loop Out Probe fault count	Read Only
LSP	Loop Supply Probe fault count	Read Only
FCT	Total Fault Count	Read Only
FCAC	AC Voltage Fault Count	Read Only
FCFS	Flow Switch Fault Count	Read Only
FCLF	Low Freon Suction Fault Count	Read Only
FCHF	High Freon Discharge Fault Count	Read Only
FCLL	Loop Low Temp Error Fault Count	Read Only
FCLH	Loop High Temp Error Fault Count	Read Only
FCSL	Seawater Low Temp Err Fault Count	Read Only
FCEE	Eprom Error Fault Count	Read Only
FCLO	Loop Out Probe Error Fault Count	Read Only
FCLS	Loop Supply Probe Err Fault Count	Read Only
FCSO	SeawaterOut Probe Err Fault Count	Read Only
FCSI	SeawaterIn Probe Err Fault Count	Read Only
FCLR	Loop Rtn Probe Err Fault Count	Read Only
FCNC	Network Conn Error Fault Count	Read Only
FCLD	Loop Temp Diff. Error Fault Count	Read Only
FCSD	Seawater Temp Diff Err Fault Count	Read Only
FCIH	Immr. Htr. Hi Temp Err Fault Count	Read Only
FCIP	Immr. Htr. Probe Error Fault Count	Read Only
FADD	Additional Fault Bits	Read Only

INPUT/OUTPUT LOG

Prefix	**Description**	**Information**
	INPUT/OUTPUT LOG...	HEADER (NOTE 1)
SPN	Min Suction Pressure	Read Only
DPX	Max Discharge Pressure	Read Only
CCX	Max Compressor current	Read Only
SWPN	Min Seawater Pressure	Read Only
LPN	Min Loopwater pressure	Read Only
SPCX	Max Seawater Pump Current	Read Only
LPCX	Max Loop Pump Current	Read Only
ACLN	Min AC voltage	Read Only
ACLX	Max AC voltage	Read Only
RLTN	Min Return Loop Temp	Read Only
RLTX	Max Return Loop Temp	Read Only
LSTN	Min Loop Supply Temp	Read Only
LSTX	Max Loop Supply Temp	Read Only
SITN	Min Seawater In Temp	Read Only
SITX	Max Seawater In Temp	Read Only
SOTN	Min Seawater Out Temp	Read Only
SOTX	Max Seawater Out Temp	Read Only
LOTN	Min Loop Out Temp	Read Only
LOTX	Max Loop Out Temp	Read Only
IHTN	Min Immersion Heater Temp	Read Only
IHTX	Max Immersion Heater Temp	Read Only

GLOBAL PARAMETERS

Prefix	**Description**	**Information**
	GLOBAL PARAMETERS...	HEADER (NOTE 2)
HSP	Heating Setpoint	(NOTE 3)
HDF	Heating Differential	(NOTE 3)
CSP	Cooling Setpoint	(NOTE 3)
CDF	Cooling Differential	(NOTE 3)
LFLT	Loop Freeze Limit Temp	Read/Write
LFLD	Loop Freeze Limit Differential	Read/Write
LHLT	Loop Hi Limit Temp	Read/Write
LHLD	Loop Hi Limit Differential	Read/Write
SFLT	Seawater Freeze Limit Temp	Read/Write
SFLD	Seawater Freeze Limit Diff.	Read/Write
SPL	Suction pressure Limit	Read/Write
SPLD	Suction pressure Limit Diff.	Read/Write
DPL	Discharge pressure Limit	Read/Write
DPLD	Discharge pressure Limit Diff.	Read/Write
IHLT	Immersion Heater Temp Limit	Read/Write
CRD	Compressor restart delay	Read/Write
ERD	Error retry delay	Read/Write
NET	Network Status	Read Only
PGEN	Generic Item	NOTE 4

NOTE 3):
HSP, HDF, CSP, CDF –For these selections, enter the required Stage number when configuring.

NOTE 4):
PGEN – This selection permits the entry of any parameter number from 0 to 999, allowing the 1000's digit to select a particular chiller, or 0xxx for global values. Enter the parameter/command number of the new item.

GLOBAL CONTROL

Prefix	**Description**	**Information**
	GLOBAL CONTROL…	HEADER (NOTE 2)
SOFF	Off	Not 0 = Execute
COOL	Cool	Not 0 = Execute
HEAT	Heat	Not 0 = Execute
BOTH	Cool + Heat	Not 0 = Execute
RESH	Resistance Heat	Not 0 = Execute
FAHR	Fahrenheit	Not 0 = Execute
CENT	Centigrade	Not 0 = Execute
HILD	High Load Limits	Not 0 = Execute
LOLD	Low Load Limits	Not 0 = Execute
INIT	Initialize	Not 0 = Execute
RDEF	Restore Defaults	Not 0 = Execute
BUZZ	Buzzer	1 = On, 0 = Off
CALL	Clear All Logs	Not 0 = Execute
CAFH	Clear All Fault Histories	Not 0 = Execute
CAIO	Clear All I/O Limits	Not 0 = Execute
CLPH	Clear Loop Pump Hours	Not 0 = Execute
CSPH	Clear Seawater Pump Hours	Not 0 = Execute
CAHH	Clear All Heater Hours	Not 0 = Execute
CACH	Clear All Compressor Hours	Not 0 = Execute

NOTES:

1) Headers are not programmable. Selecting a Header opens the associated list of items for that section. The listed items affect only the selected device.

2) Headers are not programmable. Selecting a Header opens the associated list of items for that section. The listed items affect Global values. The Driver will ignore the Device Number under which these items are assigned, but it is recommended that these be assigned to device 1, for fastest response.
When a read is performed on the items in GLOBAL CONTROL, 0 is returned. (BUZZ returns a large number ending in 5 decimal 0's, or 4 hex 0's, so that a 0 value can be written to turn off the buzzer). Only 1 digit need be displayed. Write a 1 to execute the command. The display will return to 0 once the item is re-read, which may take several seconds, depending on the number of displayed items.

CAUTION: The driver does not verify any values written to the controllers. The programmer is responsible for ensuring that only valid values can be written.

Application note for general programs permitting an unspecified number of chillers.

1) Program an internal tag called Chiller_Count, with Format / Data Limits set to Minimum=1 and Maximum=6. Protect the tag from unauthorized writes.
2) In Programming, copy the following code into Program "Chiller_Access":

```
int i;
for( i = 0; i < 6; i++ ) {
        if( i < Chiller_Count )
            EnableDevice( i );
        else
            DisableDevice( i );
        }
```

3) Insert Chiller_Count on a set-up page and, in Display Pages, set Pages / Properties / On Load to: Chiller_Count = 1,Chiller_Access()
4) On the page, set the tag's Data Entry: Yes. Open "Data Entry" tab and set "On Entry Complete" to: Chiller_Access(). When a number "n" is entered, chillers 1,2..n will be enabled, n+1...6 will be disabled. This will minimize the update time.
Note: Chillers can be disabled (requires a download to change) in Device Settings. Then the above steps are not used.

Cable Information – RS-232 only