

Large-Format Displays For Use With Arbiter's GPS Satellite-Controlled Clocks

For those applications which require large-format displays of time of day or other data available from the Arbiter Systems®, Inc. GPS Satellite-Controlled Clock, we recommend displays manufactured by Vorne Industries, Inc., Itasca, Illinois, USA. These displays accept the RS-232 "Vorne broadcast" output string available from the Arbiter clocks and display the data associated with the programmed address. These displays offer a character height of 101 mm (4 inches) for visibility at distances of over 30 meters (100 feet).

The following information will help you select the proper display for your application and configure it to operate properly with your Arbiter GPS Satellite-Controlled Clock. Make sure DIP switch 2 is OFF (down) to enable custom operation at the following parameters: baud rate, 9600; data bits, 8; parity, off; and stop bits, 1. The address setting of each display should correspond to the desired display function, as shown in the following tables.

Standard Output

Address	Serial Data Format ¹	Display Format	Description	Arbiter Order Number for the Vorne Display
44	44hhmmss<CR><LF>	hh:mm:ss	(UTC) Local Time	AS0072600
55	55ddd<CR><LF>	ddd	Day of Year	AS0084900
11	11ss<CR><LF>	ss	Out of Lock Time	AS0084300

With Power System Time, Frequency, and Phase Monitor (Option 28)

Address	Serial Data Format ¹	Display Format	Description	Arbiter Order Number for the Vorne Display
11	11ss<CR><LF>	ss	Out of Lock Time	AS0084300
44	44hhmmss<CR><LF>	hh:mm:ss	(UTC) Local Time	AS0072600
22	22±ffff<CR><LF>	±ff.fff	Frequency Deviation	AS0084400
33	33±sss<CR><LF>	±s.ss	Time Deviation	AS0084500
34	34±sssss<CR><LF>	±sss.ss	Time Deviation	AS0072800
66	66hhmmss<CR><LF>	hh:mm:ss	System Time	AS0084600
77	77ffff<CR><LF>	ff.fff	System Frequency	AS0072700
88	88ppppp<CR><LF>	ppp.pp	System Phase	AS0084700
89	89vvvvv<CR><LF>	vvv.vv	System Amplitude	AS0084800
55	55ddd<CR><LF>	ddd	Day of Year	AS0084900

¹ The transmitted data format does not include the punctuation (decimal points and colons) shown above. These are provided by the display.

Multiple Display Operation

Because all of these functions are multiplexed onto a single data path, you may have any one or more of these display formats by simply obtaining the necessary display models and setting them as required. Each display includes an RS-485 input as well as an RS-485 output, so that the displays in a group can be 'daisy-chained' to reduce loading of the RS-232 driver in the Arbiter GPS Satellite Controlled Clock. Units receiving the RS-485 signal do not need to use their RS-485 outputs, other than to boost the signal in situations where there are a large number of displays or the network stretches out over a great distance. One Vorne RS-485 output can drive 30 Vorne displays. Please reference the Vorne manual for details.

Vorne Industries Contact Information

Vorne Industries also offers a wide variety of options for their displays. Feel free to contact them directly with your questions or request literature.

Vorne Industries, Inc.
1445 Industrial Drive
Itasca, Illinois 60143-1849 USA
Tel. (630) 875-3600
FAX (630) 875-3609
<http://www.vorne.com>

Cross Reference:

Address	Arbiter Part Number	Vorne Part Number
11	AS0084300	87/232-4S-3, XXX=Arbiter Address=11
44	AS0072600	87/232-4S-6CX=Arbiter Address=44
22	AS0084400	87/232-4S-6, XXX.XXX=Arbiter Address=22
33	AS0084500	87/232-4S-4, XXXX=Arbiter Address=33
34	AS0072800	87/232-4S-6, XXXX.XX=Arbiter Address=34
66	AS0084600	87/232-4S-6CX=Arbiter Address=66
77	AS0072700	87/232-4S-6, XXX.XXX=Arbiter Address=77
88	AS0084700	87/232-4S-6, XXXX.XX=Arbiter Address=88
89	AS0084800	87/232-4S-6, XXXX.XX=Arbiter Address=89
55	AS0084900	87/232-4S-3, XXX=Arbiter Address=55