

### 1 DESCRIPTION

The HE200TIM100 is a GPS (Global Positioning System) Time Server that monitors GPS satellite time. It takes the time information received from the GPS satellites and translates it to a signal that can be sent over the CAN network. This signal is used by the HE693SER300 to accurately time stamp events as they occur in the PLC. The HE200TIM100 Time Server provides a stable 100 microsecond time reference to the CAN bus and is used to keep the HE693SER300s in sync with each other.

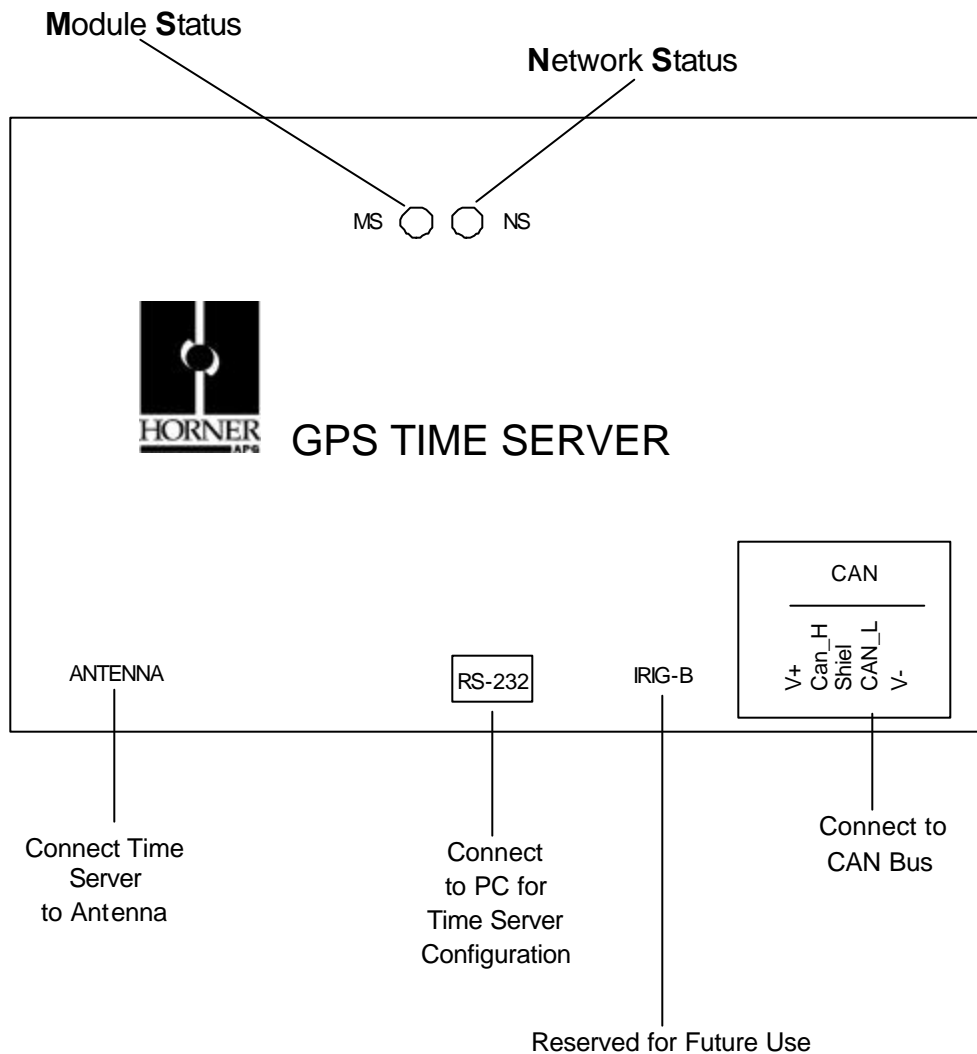


Figure 1 – Top View

## 2 WIRING

### 2.1 Wiring Rules (Refer to Figure 1 and Figure 2.)

1. Use high quality shielded wire for the CAN bus.
2. Connect V- to the negative terminal of the user's 24VDC supply. Also, connect V+ to the positive terminal of the 24VDC supply.
3. The RS-232 port must be connected to COM1 of the user's IBM-compatible PC for configuration using the Smart Configurator (HECFG.EXE).
4. Connect the antenna cable between the GPS Time Server and the antenna.

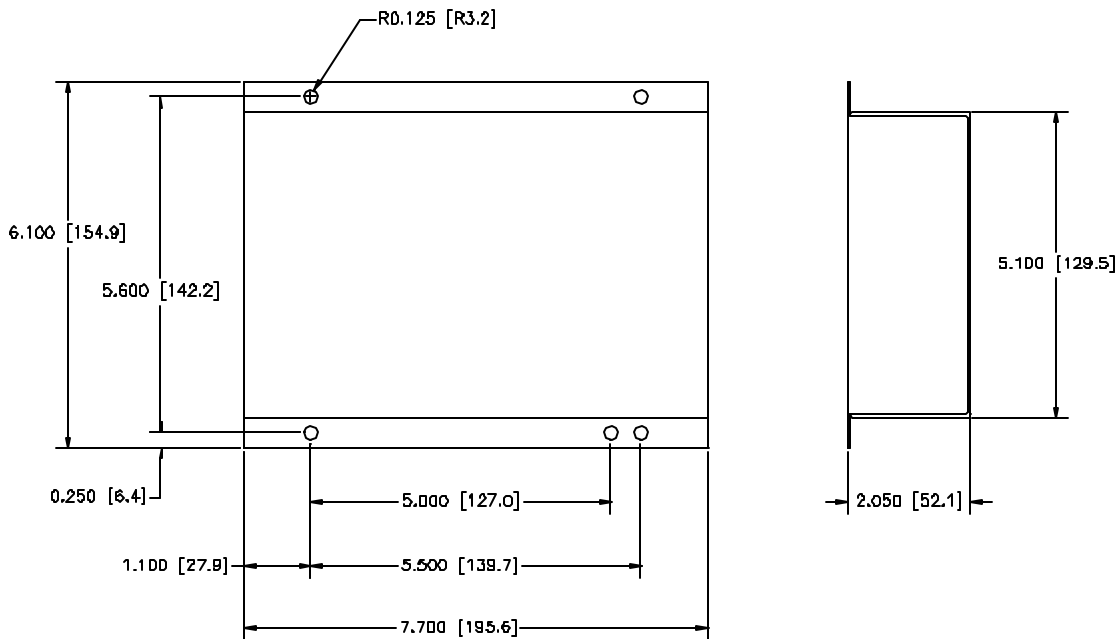


Figure 2 – Dimensions and Hole Pattern

## 3 CONFIGURATION

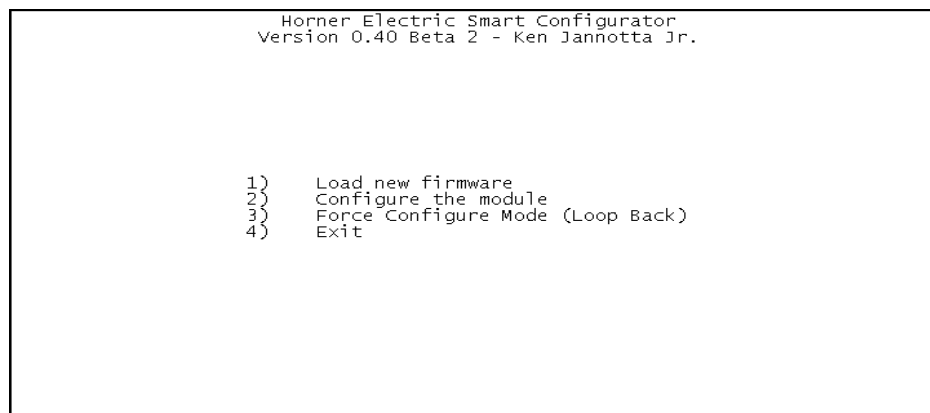


Figure 3 – Startup Screen

1. Execute the Smart Configurator (HECFG.EXE) from the diskette or your local disk drive.
2. A startup screen will appear (see Figure 3 above). Press the "2" key to configure the module.

Horner Electric Smart Configurator  
Version 0.40 Beta 2 - Ken Jannotta Jr.

```
HE200TIM100 GPS Time Server
Firmware Version: 1.00 August 13, 1997
CAN ID: 00000
Baud Rate: 1MEG
Time Zone Hours from UTC (GMT): -0005
Time Zone Minute Offset: 00
Daylight Saving Time: No
Number of satellites tracked: 00000

Use ↑ and ↓ to select and <ENTER> to modify the parameter
ESC = Back F2 = Stop Target F3 = Start Target F4 = Reset Target F9 = Load
```

**Figure 4 – Configuration Screen**

3. The screen in Figure 4 is displayed.
4. The **CAN ID** is a read-only parameter and CANNOT be modified. The default ID is 0.
5. Use the "arrow" keys to select the **Baud Rate** parameter. Press the "Enter" key. Use the "Space Bar" to select the appropriate CAN baud rate (125K, 250K, 500K or 1Meg). Press the "Enter" key to return to the main configuration menu.
6. Select the **Time Zone Hours** parameter and press the "Enter" key.
7. Enter the appropriate value.
8. Press the "Enter" key to return to the main menu.
9. Select the **Time Zone Minute Offset** parameter and press the "Enter" key.
10. Use the "Space Bar" to toggle between the correct offset (00, 30, 44, 45).
11. Press the "Enter" key to return to the main menu.
12. Choose the **Daylight Savings** parameter and press the "Enter" key.
13. Use the "Space Bar" to select YES or NO. Hit the "Enter" key.
14. The Horner Electric GPS Time Server is now configured. Press the "Esc" to return to the startup screen. Press the "4" key to exit the Smart Configurator.

## 4 LEDs

### a. TIM100 LEDs

Table 1 – TIM100 NS LED Status	
NS LED INDICATOR (Network Status)	NS LED STATES
RED element ON	Network fault
GREEN element ON:	Network OK

Table 2 – TIM100 MS LED Status	
MS LED INDICATOR (Module Status)	MS LED STATES
RED element ON:	During Initialization
GREEN element ON:	Tracking satellites
MS lamps OFF	Not tracking satellites

### b. Additional LEDs (SER300 and CDC300)

The TIM100 is used with the SER300 and CDC300. For your convenience, the LED indicator states for these units are provided.

#### 1. SER300 LEDs

The HE693SER300 features two bi-color LED indicators which provide information for front panel diagnostics and indicate the current status of the unit. The two LED indicators are the **NS Lamp** (Network Status) and the **MS Lamp** (Module Status).

a. The **MS Lamp** shows the status of the module by indicating if the SER300s are being synchronized by the GPS Time Source. It depicts if events have been captured and stored in memory. The MS Lamp also indicates if the SER300's Event Buffer is full. (1,000 events may be stored in each SER300). It is important to note that if the Event Buffer is full, no new events are over written or stored in memory.

b. The **NS Lamp** indicates whether the network is operating normally or if the network is inoperative. It also shows the reliability of the network by indicating if excessive CAN network errors are recorded.

Table 3 – SER300 MS LED Status	
MS LED INDICATOR (Module Status)	MS LED STATES
GREEN element ON:	Sync with GPS Time Source (Satellite)
GREEN element OFF:	No GPS Time Source sync.
RED element ON:	Events have been captured and are being stored in the Events Table.
RED element OFF:	No events are being stored in the Events Table.
RED element FLASHING:	The event buffer is full. (Note: When the event buffer is full, new events are ignored.)
ORANGE	Occurs when GREEN and RED elements are both ON at the same time.

Table 4– SER300 NS LED Status	
NS LED INDICATOR (Network Status)	NS LED STATES
GREEN element ON:	Network operating normally
RED element ON:	CAN network power not available or network inoperative (Network communications not possible)
RED element BLINKING (1 Hz)	Excessive CAN network errors recorded. (Communications unreliable)

## 2. CDC300 LEDs

Table 5 – CDC300 NS LED Status	
NS LED INDICATOR (Network Status)	NS LED STATES (Bi-Color LEDS)
GREEN element Flashes Irregularly:	CDC300 transmits data to CAN Network
RED element Flashes Irregularly	CDC300 receives data from CAN Network
RED element Blinks @ 1Hz rate	CAN Network down
RED element Solid ON	CAN connector is not powered

Table 6 – CDC300 MS LED Status	
MS LED INDICATOR (Module Status)	MS LED STATES (Bi-Color LED)
RED element OFF:	MS LED not used – always OFF
GREEN element OFF:	MS LED not used – always OFF

## 5 TECHNICAL ASSISTANCE

For assistance, contact Technical Support at the following locations:

### North America:

(317) 916-4274  
[www.heapg.com](http://www.heapg.com)

### Europe:

(+) 353-21-4321-266  
[www.horner-apg.com](http://www.horner-apg.com)

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