

# DW 712 UTC

## GPS BASED EXACT TIME SERVER WITH TCP/IP INTERFACE

The core function of the DW 712 UTC exact time server is the exact synchronization to Universal Exact Time provided by the GPS system.

### FEATURES

- Protocol: standard SNTP
- Ethernet connection: 10 Mbit/s UTP
- Time synchronization precision:  $\pm 1$  ms

### SPECIAL CHARACTERISTICS

- Embedded Web server
- Diagnostic functions
- Watchdog
- Complete remote management
- Remote software update

### INDUSTRIAL DESIGN

- Operational temperature range -10°C to +60°C
- Protection: IP30
- Omega track mounting



The DW 712 UTC exact time server can be used in those process control or industrial information systems where an exact timestamp or the temporal synchronization of various sub - systems is an important requirement. The time synchronization between sub-systems is ensured even if there is no continuous high-speed TC/IP connection between them.

## TECHNICAL DATA

### FUNCTIONS

Ethernet standard:	10BaseT
Applied protocols:	ICMP, TCP, UDP, SNTP, ARP
Timestamp precision:	1ms
Typical revive time:	35s
Settings via web interface:	Yes

### CONNECTION INTERFACE

Ethernet jack:	8 pole RJ45
GPS Antenna jack:	50Ω SMC
DC jack:	4 pole terminal block

### GENERAL CHARACTERISTICS

Voltage:	24V DC $\pm$ 10%
Power consumption:	max. 550 mW
Operational temperature:	-10 °C to +60 °C
Storage temperature:	-40 °C to +120 °C
Relative humidity:	5% to 95% (non-condensing)
Vibration:	2.0G to 15-150Hz $\pm$ 2.5 mm amplitude

Size(LxWxH):	25x122x117mm
Protection against reversed voltage polarity:	Yes

### LED STATUS SIGNAL

POWER:	Presence of power supply
GPS PPS:	Exact time impulse
GPS Rx:	GPS receiver receiving data
GPS Tx:	GPS receiver sending data
ETH Coll.:	Ethernet collision
ETH Rx:	Ethernet data receive
ETH Tx:	Ethernet data send

### GPS RECEIVER CHARACTERISTICS

GPS receiver type:	$\mu$ -blox TIM-LH
Number of Channels:	16
Date mode:	WGS84
PPS precision:	43ns
Receiver sensitivity:	-152dBm
GPS antenna:	active/passive

## GENERAL INFORMATION

### THE PURPOSE OF THE DEVICE

The fundamental function of the device is time synchronization data service on the Ethernet networks with the SNTP protocol.

The device can be connected to directly on a 10 Mbit/s Ethernet network or on a 100 Mbit/s or faster network via applicable network tools, for example a 10/100 Mbit/s speed switch.

### OPERATION

The DW 712 UTC exact time server uses the GPS antenna delivered as an accessory and the integrated 16 channel GPS receiver to determine the exact time. It then converts it to a standard time format and transmits it with the SNTP protocol over the Ethernet network whenever other network devices request the exact time service.

When functioning continuously, the device refreshes the exact time every second based on signals received from the GPS satellites.

If for any reason the device is unable to determine the exact time, it will not respond to network requests for time synchronization.

### SETTINGS

Operational parameters and settings can be adjusted via the integrated web server and the HTML page it presents.

The verification and modification of network settings are handled via this page.

- IP address (local address)
- Network mask (subnet mask)
- Default gateway

### DIAGNOSTICS

The statistics page of the embedded web server supplies diagnostic information related to with the GPS receiver:

- Current week number
- Current week time in seconds
- „Leap second”
- Message delay

### REMOTE SOFTWARE UPDATE

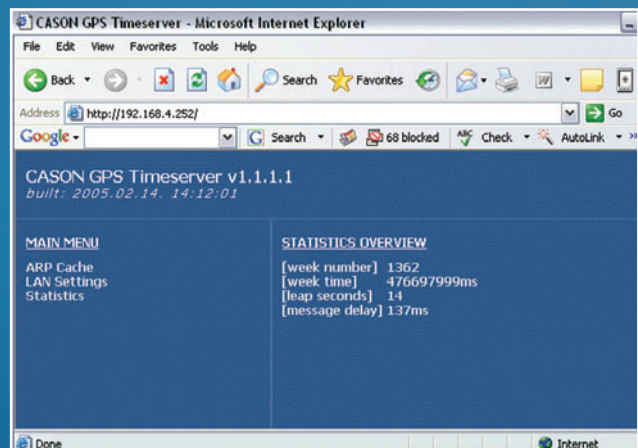
The software for the microcontroller can be remotely updated by reloading the program stored in FLASH memory.

The upload is performed using the DW 900 FWU software. “A90” extension Intel-extended format rendered files may be used for the upload which the manufacturer provides together with the software when a version upgrade is necessary.

During the software upgrade all other functions remain undisturbed and available.

Following a successful update, the device automatically restarts and the new version becomes active. If the update is unsuccessful, it can be repeated at any time.

The same function can be performed through the engineering Port (I2C bus) with DW 900 TWI software support.



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