

# Real Time Clock 560RTC03

## RTU560 product line



Real time clock for synchronization of the RTU560 with the standard time of the IRIG-B signal

### Application

A remote terminal unit RTU560 can be synchronized with the standard time of the IRIG-B signal using the module 560RTC03. The RTU560 reads the time and date from the module 560RTC03 and synchronizes its internal clock to the standard time by means of a minute pulse. The use of the module 560RTC03 ensures that indications from several terminal units are synchronized, if they include time information.

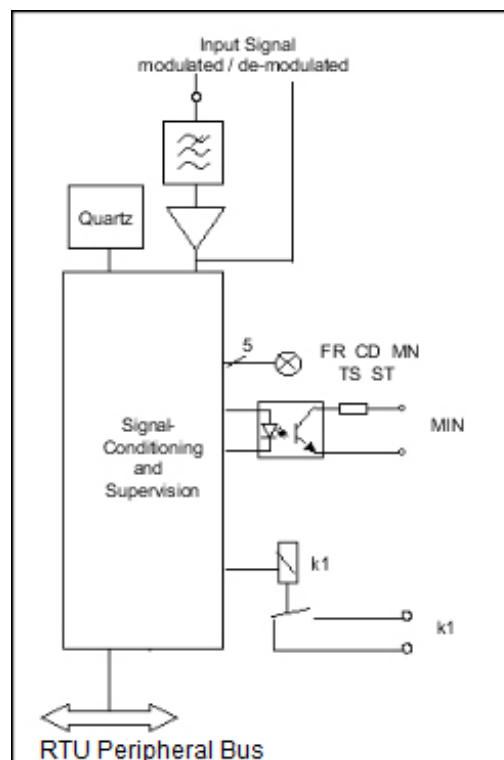


Figure 1: Block diagram 560RTC03

## Characteristics

The module 560RTC03 supports the following IRIG-B time codes:

AM Sinus Signal, 1kHz carrier (modulated)

- IRIG-B123
- IRIG-B122
- AFNOR NFS 87-500

DC Level Shift, pulse wide modulation

- IRIG-B003
- IRIG-B002
- AFNOR NFS 87-500 (DC)

The modulated input signals will be connected to the BNC connector on the front plate. The unmodulated signals will be connected to the backplane.

Because the IRIG-B time codes will not contain the complete date information, but only the number of the day within the year. That is why the year is not influenced by the clock signal. The year can be set by the Webserver dialogue, or after first contact to a connected PC.

The communication unit (CMU) synchronizes itself by the leading edge of the minute pulse MIN. The CMU reads the time and date via the RTU system bus.

In case of drop outs the clock on the 560RTC03 will continue using a highly accurate quartz clock. An internal condenser allows the 560RTC03 to continue the control of the clock (approx. 150 h), even when the station is switched off. After power up the RTU560 has a valid time at once.

If the signal fails for more than 2.5 h or as long as the 560RTC03 is not synchronized, the alarm relay contact closes.

The Real Time Clock 560RTC03 has 5 LED's on the front plate, indicating the current state of the clock:

- ST : Summary Alarm
- FR: Free Running  
560RTC03 is not synchronized by the IRIG-B time signal
- CD: Code  
The Receiver has detected a valid IRIG-B time code
- TS: Time Synchronized  
The internal clock is synchronized by the IRIG-B time signal
- MN: Minute Interrupt  
Is blinking, if the minute interrupt is transmitted

**Technical data**

In addition to the RTU500 series general technical data, the following applies:

<b>Mechanical layout</b>	
Dimensions	160 mm x 100 mm, 3HE euro card format 4R (20 mm) front panel
Housing type	Printed circuit board
Mounting	for mounting in RTU560 racks
Weight	0,3 kg

<b>Electrical layout</b>	
Decoder	IRIG-B122/B123 (modulated) IRIG-B003/B002 (unmodulated) AFNOR NFS 87-500
Accuracy	+/- 10 µs
AM Input (Galvanic isolated)	Input Signal (Mark): 600 mV <sub>SS</sub> ... 8 V <sub>SS</sub> Impedance 50Ω, 600Ω, 5 kΩ
DC Level Input (Galvanic isolated)	Serial Resistance: 220 Ω, max. input current: 50 mA Diode voltage 1,0 ... 1,3 V
Interface	MIN: opto-coupler output  prepared for TSY input of CMU
Alarm output	Contact (NC) 560RTC03 not synchronized, IRIG-B drop out > 2.5 h
Alarm contact	Max. switching voltage: 60 VDC Max. current: 0,5 A DC Max. power: 10 W
Standby supply	Gold-Cap-capacity capacity: approx. 150 h
Serial output to I/O bus (RS485)	Baudrate: 19 200 Bit/s

<b>Current consumption for power supplied via RTU560 backplane</b>	
5 V DC	140 mA
24 V DC	

<b>Preciseness</b>	
Minute pulse	1 ms
Free running	1 ppm = 110 <sup>-6</sup> = 86 ms/Tag

<b>Environmental conditions - climatic</b>	
Nominal operating temperature range EN 60068-2-14	0 °C... 70 °C

<b>Environmental conditions - climatic</b>	
Relative humidity EN 60068-2-30	5... 95 % (non condensing)

<b>Ordering information</b>	
560RTC03 R0001	1KGT012000R0001

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