PORTABLE TIME SYNCHRONIZER US-200
FOR INDUSTRIAL EQUIPMENT

satelita GPS

RS-232C

US - 200

komputery i sieci komputerowe
analizatory, rejestratory
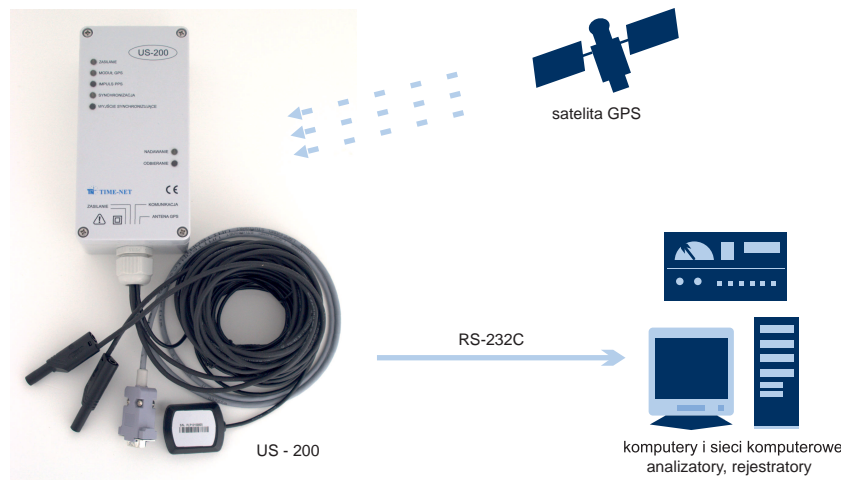
✳ Digital interface RS232C for time synchronization on industrial equipment, recorders, analysers and PC computers.
✳ Possibility to simulate DCF signals on the serial port.
✳ Transmission of time information in various digital protocols (to be agreed according to the Customer's needs).
✳ Operating within any time zone.
✳ Function of automatic winter/summer time change in accordance with the regulations of the European Union, with a possibility of its modification.
✳ Synchronization to the GPS atomic time standard.
✳ Simple exploitation and servicing.
✳ Housing with a high class of protection IP-65 enabling exploitation of the device under severe operating conditions.
✳ Device may be technically adjusted to the individual orders – upon agreement with the Customer.

APPLICATION

The US-200 synchronizer is a modern, simple in operation and reliable device to be used for:

✳ time synchronization on analyzers and registers manufactured by various producers
✳ time synchronization on computer networks or on individual PC computers
✳ time synchronization on industrial equipment

CHARACTERISTICS

US-200 is equipped with an external antenna and built-in GPS satellite receiver (Global Positioning System), and its internal autonomously operating clock is synchronized continuously to the atomic time standard thanks to which it does not require any manual settings and/or adjustments.

US-200 is also provided with RS-232C interface. This interface enables transmission of real time and date to the external equipment. As a standard, the RS-232C interface can operate in one of four operating modes (contents of the transmitted information):

✳ immediate response: time and date
✳ immediate response: milliseconds, time and date
✳ response after change of: time and date
✳ local time in DCF standard

The transmission can be conveyed based on popular digital protocols. It is also possible to transmit the time information in DCF standard or any other protocol as defined by the Customer (upon agreement).

At the Customer's request, the device can be delivered along with the ready-developed software for Windows 2000/XP/7/8 environment allowing automatic synchronization of the system time on PC computers working locally or within LAN network.
On the front panel LED indicators are mounted that inform about operational status of the device.
Programming of all device settings is performed via RS232C interface and any terminal application (e.g. HyperTerminal).

TECHNICAL DATA

Supply voltage (see the rating plate)	230VAC altern. -20%+20%, 50Hz±5% overvoltage resistant up to 400VAC±10%
Power consumption	at 230V ca. 2VA; at 400V ca. 6VA
Protection class	II according to EN 61140
Time zone programming	by indication of time shift in relation to GMT time
Winter/summer time change programming	by determination of the key (the shift method)
Accuracy for the overall range of temperatures: - at automatic operation - at operation with GPS antenna	$\pm 1.1 \times 10^{-5}$ (below ± 1sec./24hr) equals to the atomic time accuracy
Transmission parameters for RS-232: - configuration - transmission rate - transmitted information content	8 bits, 1 stop bit, no parity checking 4800 bods see the first page
Galvanic isolation of RS-232 interface from power supply	4kVAC
Housing dimensions including stuffing-box	160/190x80x57 (see the drawing below)
Mass	max. 800g
Housing material	polycarbonate
Housing class of protection	IP 65 according to EN 60529
Climatic conditions of exploitation: - temperature range - pressure range - humidity - water vapour condensation	-20°C÷ + 55°C 86÷106 kPa max.100% allowed
GPS receiver operation indicator	Yes – LED diode on the device front panel
Received GPS signal indicator	Yes – LED diode on the device front panel pulsing in time with 1PPS signal
Synchronization indicator	Yes – LED diode on the device front panel
Synchronization indicator flash duration	120 hr from the last synchronization
Serial port status indicators	Yes – LED diode on the device front panel

Female DB-9 connector of DCE device
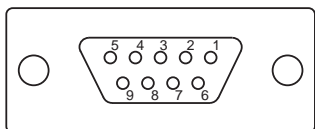
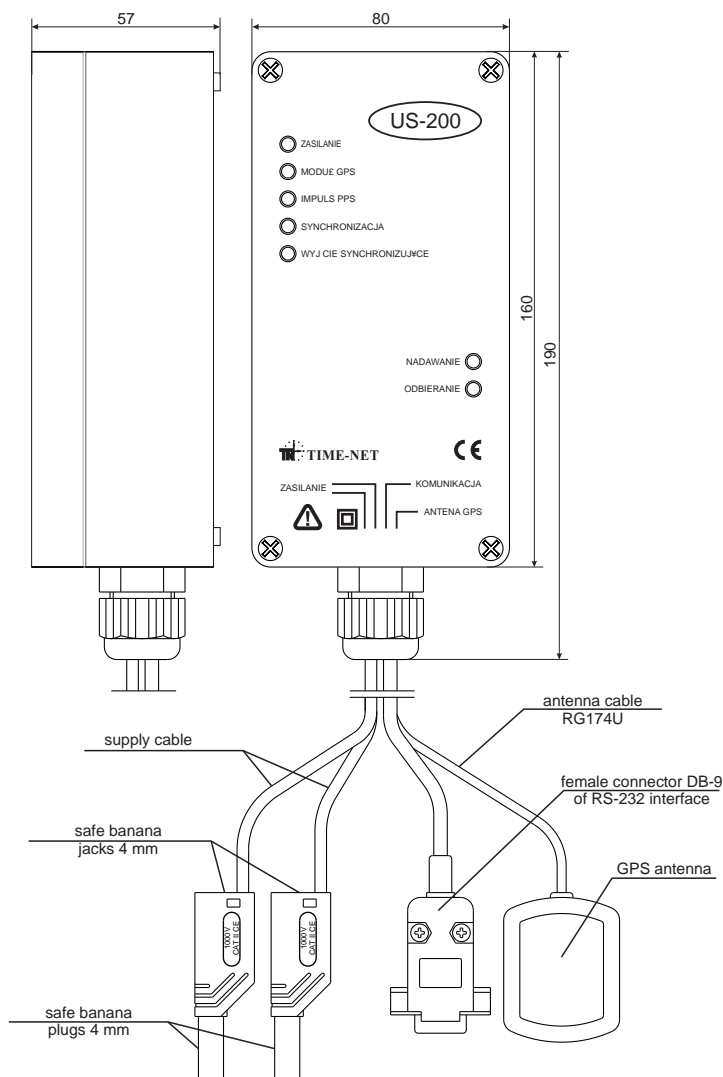Pin number:
1,4,6,7,8, and 9 – are not used
2 – output on external DTE (RXD) device
3 - input from external DTE (TXD) device
5 – mass (GND)

Description of RS-232 interface outputs.

Technical data of GPS antenna connected to the synchronizer:

- Mass   40g
- Dimensions/fixing   max.45x45x15/magnet
- Housing class of protection   IP 65 according to EN 60529
- Power supply   3V
- Power consumption   max.30mA
- Operating frequency   1575,42MHz
- Operating temp. range   from -40°C up to 100°C
- Cable length and type   10 m – RG174U concentric (optionally 25m)

The manufacturer reserves the right to introduce changes in the construction of the product being the subject of this catalogue card

TIME-NET / US-200/ver.1 / 2014-06-16

View and overall dimensions of synchronizer.