Satellite Time Signal Receiver

GNSS 3000

The GNSS 3000 is a time signal receiver intended for receiving time signals from navigation satellites. It can receive and process GLONASS and GPS signals. With this high precise time source as reference, the GNSS 3000 is designed to be a synchronization source for master clocks and time servers. To this end, it generates a 1 PPS signal (one pulse per second) or a DCF time code signal, which is following successful synchronization. In addition, the information from NMEA standards (GGA, ZDA) are available is serial telegrams. The dome-like form of the antenna sheds water and snow and prevents failures during winter. The GNSS 3000 has different operating modes which allow a diagnosis of the reception quality.

M O B A *TIME*

GNSS 3000 - Technical details

General description

The satellite time signal receiver GNSS 3000 receives 1,5 GHz signals from satellites orbiting approx. 20'000 km from the earth's surface. Each satellite is carrying high precise time references. The received time information is evaluated in our receiver and sent to any master clock or time base.

Consequently, all clocks and master clocks accepting DCF 77 (UTC) or NMEA code, capable to calculate local time, can be connected to a GNSS 3000.

Technical data		
Input voltage		12 - 60 VDC
Power consumption		< 3 W
Operating temperature		Antenna: -40 … +85° C
		Receiver box: -20 … +60° C
Degree of protection		Antenna: IP 67
		Receiver box: IP 20
Dimensions		Antenna: 81 x H 184 (without bracket)
		Receiver box: L 164 x W 110 x H 50 mm
		Bracket and antenna: L 110 x W 100 x H 248 mm
Weight		Antenna: 650 g (with mounting kit)
		Receiver box: 610 g
Cable	Antenna to receiver box	RG 58: max. 30 m
	Receiver box to master clock	Up to 200 m possible
		- DCF 77 current loop: 4 x 0.25 mm² twisted pair (cable type AWG 23)
		- NMEA RS 422: 8 x 0.25 mm² twisted pair (cable type AWG 23)
Outputs	DCF 77	Time code (UTC, DCF 77 coded)
		Typical pulse duration: logical 0: 100 ms: logical 1: 200 ms
		- Current loop passive interface (open collector)
		- RS 422
	1 PPS	Typical pulse duration: 100 ms
		- Current loop passive interface (open collector)
		- RS 422
	NMEA	RS 422 - 4800 bit/s, 8 data bits, no parity, 1 stop bit
Satellites		32 channel satellite tracking, min. 3 satellites required
Accuracy of leading edge		better ± 5 µs
Synchronization time		Cold start < 15 min. / Warm start < 5 min.
Display elements (LEDs)		green LED on, power ok
		yellow LED, flashing once a second (DCF signal or 1 PPS pulse)
		green LED on, synchronization ok
		red LED on, alarm active