



## LAN Movement for NTP synchronization

# NBU 190t S 24/PoE

Self-setting movement for indoor and outdoor slave clocks used in LAN based time systems.

It is available in different variants: For clocks with or without illumination, to display hours and minutes or hours, minutes and seconds.

This high technology LAN device can be synchronized from a timeserver or a Net Master Clock via NTP Multicast or Unicast (IP based). IPv4 and IPv6 networks are supported.

The NBU 190 can be powered via PoE (Power over Ethernet) and/or 24 VDC.

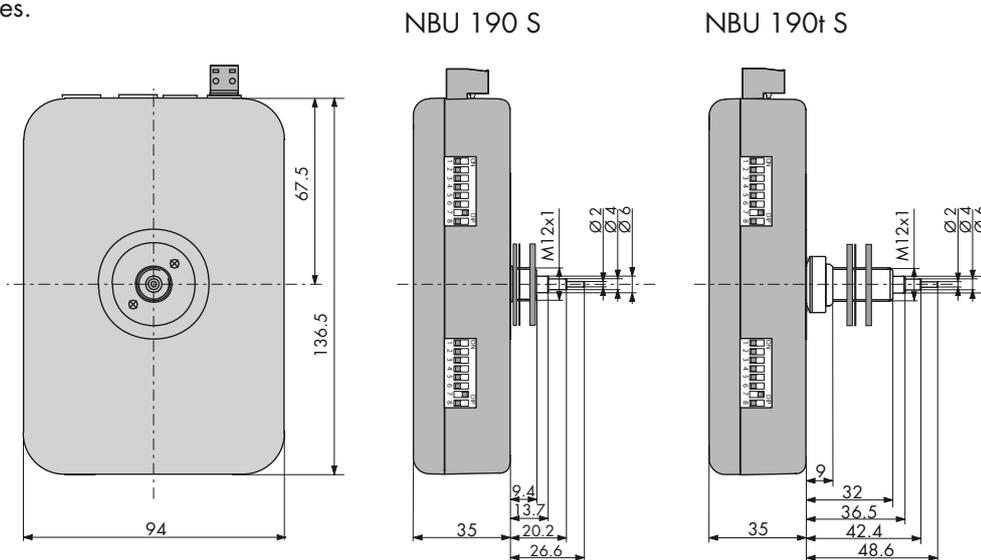
In Unicast mode, DHCP can be used to simplify IP configuration during installation.

Additionally the NBU 190 can be configured by using a special software.

Cascading of up to three slave movements is possible. The slave movements are synchronized, supervised and supplied by the master movement.

## Features of NBU 190(t) (S) 24/PoE

- Synchronization by an NTP server in an IPv4 and IPv6 network.
- Automatic acceptance of network configuration (IP address, gateway address, subnet mask, NTP server address) using DHCP.
- Alternatively use of a multicast IP address for synchronization / communication (selectable by means of DIP switches for minimal configuration effort).
- Automatic daylight saving time change according to 1 out of 30 predefined daylight saving time rules.
- Alternatively automatic daylight saving time change according to 1 out of 15 daylight saving time rules provided by a MOBATIME Timezone Server in the network.
- All necessary configuration settings selectable by means of 2 x 8 DIP-switches.
- Signalization of missing NTP synchronization after 24 hours by setting the hands to the 12:00 position.
- Different running modes of the second hand selectable by means of DIP-switches: stepwise (wobbling) or continuous. Revolution within 58 s with stop at 12-o'clock position or revolution within 60 s without stop. (S type only).
- Power supply PoE (Power over Ethernet) and/or DC input. Allows supply redundancy.
- Cascade of up to three slave movements possible. Synchronization, supply and supervision by the master movement.



Technical Specification	NBU 190(t) S 24/PoE	NBU 190(t) 24/PoE
Art. No.	204003 t: 203433	204005 t: 204004
Ethernet connection	10/100 MBit/s Ethernet controller, RJ45 connector, IPv4 / IPv6	
Time signal input	Network Time Protocol (NTP)	
Accuracy	+/- 50 ms	
Synchronization time	< 10 seconds	
Setting time (to reference position 12:00)	< 6 minutes	
Power supply	PoE, phantom or pins 4, 5 and 7, 8 and/or +24 VDC +/- 20 %	
Power consumption	max. 60 mA @ 24 VDC	
Stand-by reserve during power failure	none	
Time keeping	Autonomous quartz based operation over 24 hours	
Number of motors	2 (h / min. + sec.)	1 (h / min.)
Dial diameter	250 – 800 mm	
Max. dial thickness	4 mm	t: 14.5 mm
Operating Temperature	-30 to +70 °C, 10-90% relative humidity, non-condensing	
Weight	400 g	380 g