Time Central
PROLINE II

General description
Westerstrand time centrals are built around a 19" modular concept of the type "Distributed intelligence" which means that all modules have its own intelligence and thus there is no central module that the other modules are depending on. Thereby you get a system of high reliability required in e.g. power plants or airports.

A large number of modules, battery packs and power supplies are available. A passive backplane is connecting the modules together and all modules are of plug and play type which means that they can be plugged in and out online without any disturbance to the other modules.

The Time Centrals are built up by a 19" modular system with a height of 3HE (height units). The backbone of the system consist of closed 19" casing to be mounted in a stand or open 19" casing to be mounted in a cabinet. Each module occupies 4-48 TE (width units). There is room for 84 TE (width units) in the casings, but max 20 pc of 4TE modules can be placed in one casing.

The dimensioning of a time central is started with one or two time base modules. At least one time base module should be included in every time central since the programming is conducted from this module. Then you add the number of modules required in the system and the power supply required is calculated and finally the number of casings required. Planning for future expansion is recommended. Empty slots are covered with cover plates.

A priority list is stored in the modules that tell them which module they shall synchronize the time to. If the module with the highest priority is unavailable the next module in the list is used as the time reference. If all modules in the time central are unavailable, the modules will continue to run on their own built in time base. When a module with priority is available again, the time is synchronized to that module. This is done automatically and no manual programming is needed.

The highest priority is normally given to a synchronization module with a GPS-receiver/antenna connected. If the time central is equipped with an Ethernet module acting as an NTP-client this should be set to top priority. The time central with Ethernet module can act as NTP time server and/or client.

Each module has LED’s on the front indicating status, alarm and primary timeserver. Each module also has LED’s to indicate module specific tasks. A sum alarm is available in the back of the time central via a potential free switchover contact.

There are also modules to connect different types of slave clocks, relay outputs and different types of communication interfaces etc. See separate leaflets.

The time central can be configured via the Ethernet module which also can be used for supervision and alarm handling.

Power supplies are available in different voltage and current versions. Dual power supplies can be used for higher stability and redundancy.
**Modules**

- **Time Base module PL-TB. 123720-00**
The programming of the time central is conducted from this module. The Time Base module can also be equipped with an oscillator with high accuracy if an external synchronization is not available.

- **Synchronization module PL-SYNC 123755-00**
This module can be synchronized from external source e.g. a GPS-antenna/receiver.
The PL-SYNC module normally has the highest priority in the time central and the other modules synchronize their time to this module.

- **Ethernet module PL-ETH. 123784-10**
The Ethernet module can act as a NTP time server and thereby synchronize all network connected equipment supporting this standard protocol. Or act as a NTP-client.
The Ethernet module also have support for the standard protocol SNMP and HTTP which can be used for supervision and alarm. Remote control is possible by application software.

- **Impulse amplifier PL-IMP. 123770-00**
This module has an output of 24VDC 1A and can be configured with different types of impulse systems e.g. polarized 1/1-minute, 1/2-minute, 1/1-second or Time Code. The time can be presented as local time, normal time or UTC. The impulse amplifier is also available with other voltage and current ratings.

- **Measurement module PL-MEAS. 123787-00**
The measurement module is used together with the impulse amplifier and can measure the output voltage and current. The measurement module is also equipped with an earth alarm function.

- **Time code sender PL-IRIGB. 123763-00**
This module is sending a modulated time message according to IRIG-B standard. The time can be presented as local time, normal time or UTC.

- **Relay output module PL-Y8. 123740-00**
The relay output module is equipped with 4 closing and 4 switchover potential free relay contacts which also can be forced from the front. Max 8 modules can be mounted in a time central with a total of 64 relay outputs.

- **Serial communication PL-RS232. 123760-00**
(1xRS232)

- **Serial communication PL-RS. 123762-00**
(1xRS232 and 1xRS485)
These modules are used for communication to other systems e.g. in ships and oil rigs.

- **Power supply PL-ACDC.**
- 123791-00 230VAC, 24V 2.5A
- 123792-00 85-264VAC, 24V 5A
- 123793-00 85-264VAC, 24V 10A
- 123794-00 85-264VAC, 24V 20A
With protection against overload and short circuit. Alarm handling and measurement of voltage, current and temperature. Programmable alarm levels. Automatic switch off when the voltage is to low.

- **Power supply PL-DC.**
- 123795-00 24VDC
- 123795-15 48VDC
- 123795-20 60VDC
Capacity depending on connected power.

- **Battery pack PL-BATT**
- 123801-00 24VDC 2.9Ah
- 123802-00 24VDC 10Ah
- 123803-00 24VDC 20Ah
Battery pack is used as a running reserve at power failures.

- **Software for Remote control of the buttons and display of the time central.**
- 123701-00
- 123703-00 Alarm software.
Controlling the alarm status and can send log files to a computer.

- **Software for programming of the relay outputs.**
- 123704-00