SHORT MANUAL
Modbus/TCP Server Version 2 for Data Loggers blueberry COMPACT and NDL485 Research

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This version of the modbus server implements several data fields to make realtime data and statistics accessible. Both actual values and historical values can be accessed, but only within boundaries of the internal ringbuffer.

- Compatibility: NDL485 Version 3.0, blueberry COMPACT Version 3.2.19 or higher
- Installable Module: ndl485-modbus-server-2-0.install

Some changes have been done in respect to the previous version of Modbus/TCP:

- Integer data is now represented as long integer, occupying 2 Modbus registers each
- The first 2 data fields contain now timestamp and period
- The offset for float registers is now 10000
- If the requested register range is not entirely available, unavailable data is marked as NAN. This is represented as -9999 in integer registers. In the previous implementation, the entire request was returned with an error in this case.

Please note: A deactivation of the Modbus/TCP server is not yet implemented. Measurement data will be accessible to anybody who can access TCP port 502 of the NDL485.

Modbus Register Map

Modbus/TCP Server Register Map		
Address	**Type**	**Contents**
Realtime		
1	int32	Timestamp (Unix time)
3	int32	Period (fixed point, 1 decimal precision)
5,7, ...	int32	Samples (fixed point, 1 decimal precision)
Statistics		
1001	int32	Timestamp (Unix time)
1003	int32	Period (fixed point, 1 decimal precision)
1005,1007, ...	int32	Statistics Data (fixed point, 1 decimal precision)
Historical Samples		
2001	int32	Timestamp (Unix time)
2003	int32	Period (fixed point, 1 decimal precision)
2005,2007, ...	int32	Samples (fixed point, 1 decimal precision)
Historical Statistics		
3001	int32	Timestamp
3003	int32	Period (fixed point, 1 decimal precision)
3005,3007, ...	int32	Statistics Data (fixed point, 1 decimal precision)
Float Data		
integer-addr + 10000	ieee32	All int registers are mirrored as float at the respective address + 10000
		Note: float timestamps represent second and fractional second of the day

Accessing Historical Data

To access historical data, the Modbus client writes the requested timestamp into the timestamp register. At the next read request to the same data area, the corresponding data set is retrieved. If a corresponding dataset is not available, a neighboring dataset is retrieved instead. The timestamp corresponds always to the dataset, not necessarily to the requested time.