

# Manual EMU Professional II Modbus

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## General

All registers available for Modbus read-out are listed in this document. The registers are read-only. The function code is <<Read Holding Registers - 03>>. In case you are integrating the EMU Professional II into an existing EMU Professional / Allrounder Modbus installation you can find the old register no. in the chapter "With EMU Professional Compatible Read-Out"

You can find a few examples of Modbus read-out with modpoll at the end of this document.



Note: This document assumes 1 as the starting point for the registers. Depending on the Modbus client used, an addition of -1 to the register no. might be needed.

## Data Types

The data type used for register read-out is unsigned integer (uInt). These values are unsigned with a codomain of 0 to 4'294'967'296 (32bit, uInt32) or 18'446'744'073'709'551'616 (64bit, uInt64) respectively.

For the momentary value read-out signed floats (sFloat, sFloat32) or signed integers with a codomain of -2'147'483'648 to 2'147'483'647 (32bit, sInt32) are used, as momentary values may be negative and in case of floats may possess one or more decimal places.

## Read-Out of Meter Information

Description	Register	No. of Register	Data Type
Serial No.	5000	2	uInt32
Factory No.	5002	2	uInt32
Current System-time	5026	4	uInt64

## Read-Out of Data logger

The data logger saves energy and power values at the end of the load profile interval.

Description	Unit	Resolution	Register	No. of Register	Data Type
Time Stamp of Entry	Epoch	Seconds	5900	2	uInt32
Active Energy Import L123 T1	Wh	1 Wh	5902	4	uInt64
Active Energy Import L123 T2	Wh	1 Wh	5906	4	uInt64
Active Energy Export L123 T1	Wh	1 Wh	5910	4	uInt64
Active Energy Export L123 T2	Wh	1 Wh	5914	4	uInt64
Reactive Energy Import L123 T1	varh	1 varh	5918	4	uInt64
Reactive Energy Import L123 T2	varh	1 varh	5922	4	uInt64
Reactive Energy Export L123 T1	varh	1 varh	5926	4	uInt64
Reactive Energy Export L123 T2	varh	1 varh	5930	4	uInt64
Active Power L123	W	1 W	5934	2	sFloat32
Active Power L1	W	1 W	5936	2	sFloat32
Active Power L2	W	1 W	5938	2	sFloat32
Active Power L3	W	1 W	5940	2	sFloat32
Current L123	mA	1 mA	5942	2	sFloat32
Current L1	mA	1 mA	5944	2	sFloat32
Current L2	mA	1 mA	5946	2	sFloat32
Current L3	mA	1 mA	5948	2	sFloat32
Current L4	mA	1 mA	5950	2	sFloat32
Voltage L1-N	mV	100mV	5952	2	sFloat32
Voltage L2-N	mV	100 mV	5954	2	sFloat32
Voltage L3-N	mV	100mV	5956	2	sFloat32
Power Factor L1	-1 .. 1	0.01	5958	2	sFloat32
Power Factor L2	-1 .. 1	0.01	5960	2	sFloat32
Power Factor L3	-1 .. 1	0.01	5962	2	sFloat32
Frequency	Hz	0.1 Hz	5964	2	sFloat32

# Register Read-Out Professional II

## Energy Register 64bit, Wh Resolution

### Active Energy

Description	Unit	Resolution	Register	No. of Register	Data Type
<b>Phase L123</b>					
Active Energy Import L123 Total	Wh	1 Wh	6000	4	uint64
Active Energy Import L123 T1	Wh	1 Wh	6004	4	uint64
Active Energy Import L123 T2	Wh	1 Wh	6008	4	uint64
Active Energy Import L123 T3	Wh	1 Wh	6012	4	uint64
Active Energy Import L123 T4	Wh	1 Wh	6016	4	uint64
Active Energy Export L123 Total	Wh	1 Wh	6020	4	uint64
Active Energy Export L123 T1	Wh	1 Wh	6024	4	uint64
Active Energy Export L123 T2	Wh	1 Wh	6028	4	uint64
Active Energy Export L123 T3	Wh	1 Wh	6032	4	uint64
Active Energy Export L123 T4	Wh	1 Wh	6036	4	uint64
<b>Phase L1</b>					
Active Energy Import L1 Total	Wh	1 Wh	6100	4	uint64
Active Energy Import L1 T1	Wh	1 Wh	6104	4	uint64
Active Energy Import L1 T2	Wh	1 Wh	6108	4	uint64
Active Energy Import L1 T3	Wh	1 Wh	6112	4	uint64
Active Energy Import L1 T4	Wh	1 Wh	6116	4	uint64
Active Energy Export L1 Total	Wh	1 Wh	6120	4	uint64
Active Energy Export L1 T1	Wh	1 Wh	6124	4	uint64
Active Energy Export L1 T2	Wh	1 Wh	6128	4	uint64
Active Energy Export L1 T3	Wh	1 Wh	6132	4	uint64
Active Energy Export L1 T4	Wh	1 Wh	6136	4	uint64
<b>Phase L2</b>					
Active Energy Import L2 Total	Wh	1 Wh	6140	4	uint64
Active Energy Import L2 T1	Wh	1 Wh	6144	4	uint64
Active Energy Import L2 T2	Wh	1 Wh	6148	4	uint64
Active Energy Import L2 T3	Wh	1 Wh	6152	4	uint64
Active Energy Import L2 T4	Wh	1 Wh	6156	4	uint64
Active Energy Export L2 Total	Wh	1 Wh	6160	4	uint64
Active Energy Export L2 T1	Wh	1 Wh	6164	4	uint64
Active Energy Export L2 T2	Wh	1 Wh	6168	4	uint64
Active Energy Export L2 T3	Wh	1 Wh	6172	4	uint64
Active Energy Export L2 T4	Wh	1 Wh	6176	4	uint64
<b>Phase L3</b>					
Active Energy Import L3 Total	Wh	1 Wh	6180	4	uint64
Active Energy Import L3 T1	Wh	1 Wh	6184	4	uint64
Active Energy Import L3 T2	Wh	1 Wh	6188	4	uint64
Active Energy Import L3 T3	Wh	1 Wh	6192	4	uint64
Active Energy Import L3 T4	Wh	1 Wh	6196	4	uint64
Active Energy Export L3 Total	Wh	1 Wh	6200	4	uint64
Active Energy Export L3 T1	Wh	1 Wh	6204	4	uint64
Active Energy Export L3 T2	Wh	1 Wh	6208	4	uint64
Active Energy Export L3 T3	Wh	1 Wh	6212	4	uint64
Active Energy Export L3 T4	Wh	1 Wh	6216	4	uint64

## Reactive Energy

Description	Unit	Resolution	Register	No. of Register	Data Type
<b>Phase L123</b>					
Reactive Energy Import L123 Total	varh	1 varh	6300	4	ulnt64
Reactive Energy Import L123 T1	varh	1 varh	6304	4	ulnt64
Reactive Energy Import L123 T2	varh	1 varh	6308	4	ulnt64
Reactive Energy Import L123 T3	varh	1 varh	6312	4	ulnt64
Reactive Energy Import L123 T4	varh	1 varh	6316	4	ulnt64
Reactive Energy Export L123 Total	varh	1 varh	6320	4	ulnt64
Reactive Energy Export L123 T1	varh	1 varh	6324	4	ulnt64
Reactive Energy Export L123 T2	varh	1 varh	6328	4	ulnt64
Reactive Energy Export L123 T3	varh	1 varh	6332	4	ulnt64
Reactive Energy Export L123 T4	varh	1 varh	6336	4	ulnt64
<b>Phase L1</b>					
Reactive Energy Import L1 Total	varh	1 varh	6400	4	ulnt64
Reactive Energy Import L1 T1	varh	1 varh	6404	4	ulnt64
Reactive Energy Import L1 T2	varh	1 varh	6408	4	ulnt64
Reactive Energy Import L1 T3	varh	1 varh	6412	4	ulnt64
Reactive Energy Import L1 T4	varh	1 varh	6416	4	ulnt64
Reactive Energy Export L1 Total	varh	1 varh	6420	4	ulnt64
Reactive Energy Export L1 T1	varh	1 varh	6424	4	ulnt64
Reactive Energy Export L1 T2	varh	1 varh	6428	4	ulnt64
Reactive Energy Export L1 T3	varh	1 varh	6432	4	ulnt64
Reactive Energy Export L1 T4	varh	1 varh	6436	4	ulnt64
<b>Phase L2</b>					
Reactive Energy Import L2 Total	varh	1 varh	6440	4	ulnt64
Reactive Energy Import L2 T1	varh	1 varh	6444	4	ulnt64
Reactive Energy Import L2 T2	varh	1 varh	6448	4	ulnt64
Reactive Energy Import L2 T3	varh	1 varh	6452	4	ulnt64
Reactive Energy Import L2 T4	varh	1 varh	6456	4	ulnt64
Reactive Energy Export L2 Total	varh	1 varh	6460	4	ulnt64
Reactive Energy Export L2 T1	varh	1 varh	6464	4	ulnt64
Reactive Energy Export L2 T2	varh	1 varh	6468	4	ulnt64
Reactive Energy Export L2 T3	varh	1 varh	6472	4	ulnt64
Reactive Energy Export L2 T4	varh	1 varh	6476	4	ulnt64
<b>Phase L3</b>					
Reactive Energy Import L3 Total	varh	1 varh	6480	4	ulnt64
Reactive Energy Import L3 T1	varh	1 varh	6484	4	ulnt64
Reactive Energy Import L3 T2	varh	1 varh	6488	4	ulnt64
Reactive Energy Import L3 T3	varh	1 varh	6492	4	ulnt64
Reactive Energy Import L3 T4	varh	1 varh	6496	4	ulnt64
Reactive Energy Export L3 Total	varh	1 varh	6500	4	ulnt64
Reactive Energy Export L3 T1	varh	1 varh	6504	4	ulnt64
Reactive Energy Export L3 T2	varh	1 varh	6508	4	ulnt64
Reactive Energy Export L3 T3	varh	1 varh	6512	4	ulnt64
Reactive Energy Export L3 T4	varh	1 varh	6516	4	ulnt64

## Energy Register 64bit, kWh Resolution

## Active Energy

Description	Unit	Resolution	Register	No. of Register	Data Type
<b>Phase L123</b>					
Active Energy Import L123 Total	kWh	1 kWh	7000	4	uInt64
Active Energy Import L123 T2	kWh	1 kWh	7008	4	uInt64
Active Energy Import L123 T1	kWh	1 kWh	7004	4	uInt64
Active Energy Import L123 T3	kWh	1 kWh	7012	4	uInt64
Active Energy Import L123 T4	kWh	1 kWh	7016	4	uInt64
Active Energy Export L123 Total	kWh	1 kWh	7020	4	uInt64
Active Energy Export L123 T1	kWh	1 kWh	7024	4	uInt64
Active Energy Export L123 T2	kWh	1 kWh	7028	4	uInt64
Active Energy Export L123 T3	kWh	1 kWh	7032	4	uInt64
Active Energy Export L123 T4	kWh	1 kWh	7036	4	uInt64
<b>Phase L1</b>					
Active Energy Import L1 Total	kWh	1 kWh	7100	4	uInt64
Active Energy Import L1 T1	kWh	1 kWh	7104	4	uInt64
Active Energy Import L1 T2	kWh	1 kWh	7108	4	uInt64
Active Energy Import L1 T3	kWh	1 kWh	7112	4	uInt64
Active Energy Import L1 T4	kWh	1 kWh	7116	4	uInt64
Active Energy Export L1 Total	kWh	1 kWh	7120	4	uInt64
Active Energy Export L1 T1	kWh	1 kWh	7124	4	uInt64
Active Energy Export L1 T2	kWh	1 kWh	7128	4	uInt64
Active Energy Export L1 T3	kWh	1 kWh	7132	4	uInt64
Active Energy Export L1 T4	kWh	1 kWh	7136	4	uInt64
<b>Phase L2</b>					
Active Energy Import L2 Total	kWh	1 kWh	7140	4	uInt64
Active Energy Import L2 T1	kWh	1 kWh	7144	4	uInt64
Active Energy Import L2 T3	kWh	1 kWh	7152	4	uInt64
Active Energy Import L2 T2	kWh	1 kWh	7148	4	uInt64
Active Energy Import L2 T4	kWh	1 kWh	7156	4	uInt64
Active Energy Export L2 Total	kWh	1 kWh	7160	4	uInt64
Active Energy Export L2 T1	kWh	1 kWh	7164	4	uInt64
Active Energy Export L2 T2	kWh	1 kWh	7168	4	uInt64
Active Energy Export L2 T3	kWh	1 kWh	7172	4	uInt64
Active Energy Export L2 T4	kWh	1 kWh	7176	4	uInt64
<b>Phase L3</b>					
Active Energy Import L3 Total	kWh	1 kWh	7180	4	uInt64
Active Energy Import L3 T1	kWh	1 kWh	7184	4	uInt64
Active Energy Import L3 T2	kWh	1 kWh	7188	4	uInt64
Active Energy Import L3 T3	kWh	1 kWh	7192	4	uInt64
Active Energy Import L3 T4	kWh	1 kWh	7196	4	uInt64
Active Energy Export L3 Total	kWh	1 kWh	7200	4	uInt64
Active Energy Export L3 T1	kWh	1 kWh	7204	4	uInt64
Active Energy Export L3 T2	kWh	1 kWh	7208	4	uInt64
Active Energy Export L3 T3	kWh	1 kWh	7212	4	uInt64
Active Energy Export L3 T4	kWh	1 kWh	7216	4	uInt64



## Reactive Energy

Description	Unit	Resolution	Register	No. of Register	Data Type
<b>Phase L123</b>					
Reactive Energy Import L123 Total	kvarh	1 kvarh	7300	4	uInt64
Reactive Energy Import L123 T1	kvarh	1 kvarh	7304	4	uInt64
Reactive Energy Import L123 T2	kvarh	1 kvarh	7308	4	uInt64
Reactive Energy Import L123 T3	kvarh	1 kvarh	7312	4	uInt64
Reactive Energy Import L123 T4	kvarh	1 kvarh	7316	4	uInt64
Reactive Energy Export L123 Total	kvarh	1 kvarh	7320	4	uInt64
Reactive Energy Export L123 T1	kvarh	1 kvarh	7324	4	uInt64
Reactive Energy Export L123 T2	kvarh	1 kvarh	7328	4	uInt64
Reactive Energy Export L123 T3	kvarh	1 kvarh	7332	4	uInt64
Reactive Energy Export L123 T4	kvarh	1 kvarh	7336	4	uInt64
<b>Phase L1</b>					
Reactive Energy Import L1 Total	kvarh	1 kvarh	7340	4	uInt64
Reactive Energy Import L1 T1	kvarh	1 kvarh	7344	4	uInt64
Reactive Energy Import L1 T2	kvarh	1 kvarh	7348	4	uInt64
Reactive Energy Import L1 T3	kvarh	1 kvarh	7352	4	uInt64
Reactive Energy Import L1 T4	kvarh	1 kvarh	7356	4	uInt64
Reactive Energy Export L1 Total	kvarh	1 kvarh	7360	4	uInt64
Reactive Energy Export L1 T1	kvarh	1 kvarh	7364	4	uInt64
Reactive Energy Export L1 T2	kvarh	1 kvarh	7368	4	uInt64
Reactive Energy Export L1 T3	kvarh	1 kvarh	7372	4	uInt64
Reactive Energy Export L1 T4	kvarh	1 kvarh	7376	4	uInt64
<b>Phase L2</b>					
Reactive Energy Import L2 Total	kvarh	1 kvarh	7380	4	uInt64
Reactive Energy Import L2 T1	kvarh	1 kvarh	7384	4	uInt64
Reactive Energy Import L2 T2	kvarh	1 kvarh	7388	4	uInt64
Reactive Energy Import L2 T3	kvarh	1 kvarh	7392	4	uInt64
Reactive Energy Import L2 T4	kvarh	1 kvarh	7396	4	uInt64
Reactive Energy Export L2 Total	kvarh	1 kvarh	7400	4	uInt64
Reactive Energy Export L2 T1	kvarh	1 kvarh	7404	4	uInt64
Reactive Energy Export L2 T2	kvarh	1 kvarh	7408	4	uInt64
Reactive Energy Export L2 T3	kvarh	1 kvarh	7412	4	uInt64
Reactive Energy Export L2 T4	kvarh	1 kvarh	7416	4	uInt64
<b>Phase L3</b>					
Reactive Energy Import L3 Total	kvarh	1 kvarh	7420	4	uInt64
Reactive Energy Import L3 T1	kvarh	1 kvarh	7424	4	uInt64
Reactive Energy Import L3 T2	kvarh	1 kvarh	7428	4	uInt64
Reactive Energy Import L3 T3	kvarh	1 kvarh	7432	4	uInt64
Reactive Energy Import L3 T4	kvarh	1 kvarh	7436	4	uInt64
Reactive Energy Export L3 Total	kvarh	1 kvarh	7440	4	uInt64
Reactive Energy Export L3 T1	kvarh	1 kvarh	7444	4	uInt64
Reactive Energy Export L3 T2	kvarh	1 kvarh	7448	4	uInt64
Reactive Energy Export L3 T3	kvarh	1 kvarh	7452	4	uInt64
Reactive Energy Export L3 T4	kvarh	1 kvarh	7456	4	uInt64

## Energy Register 32bit, kWh Resolution

## Active Energy

Description	Unit	Resolution	Register	No. of Register	Data Type
<b>Phase L123</b>					
Active Energy Import L123 Total	kWh	1 kWh	8000	2	uInt32
Active Energy Import L123 T1	kWh	1 kWh	8002	2	uInt32
Active Energy Import L123 T2	kWh	1 kWh	8004	2	uInt32
Active Energy Import L123 T3	kWh	1 kWh	8006	2	uInt32
Active Energy Import L123 T4	kWh	1 kWh	8008	2	uInt32
Active Energy Export L123 Total	kWh	1 kWh	8010	2	uInt32
Active Energy Export L123 T1	kWh	1 kWh	8012	2	uInt32
Active Energy Export L123 T2	kWh	1 kWh	8014	2	uInt32
Active Energy Export L123 T3	kWh	1 kWh	8016	2	uInt32
Active Energy Export L123 T4	kWh	1 kWh	8018	2	uInt32
<b>Phase L1</b>					
Active Energy Import L1 Total	kWh	1 kWh	8100	2	uInt32
Active Energy Import L1 T1	kWh	1 kWh	8102	2	uInt32
Active Energy Import L1 T2	kWh	1 kWh	8104	2	uInt32
Active Energy Import L1 T3	kWh	1 kWh	8106	2	uInt32
Active Energy Import L1 T4	kWh	1 kWh	8108	2	uInt32
Active Energy Export L1 Total	kWh	1 kWh	8110	2	uInt32
Active Energy Export L1 T1	kWh	1 kWh	8112	2	uInt32
Active Energy Export L1 T2	kWh	1 kWh	8114	2	uInt32
Active Energy Export L1 T3	kWh	1 kWh	8116	2	uInt32
Active Energy Export L1 T4	kWh	1 kWh	8118	2	uInt32
<b>Phase L2</b>					
Active Energy Import L2 Total	kWh	1 kWh	8120	2	uInt32
Active Energy Import L2 T1	kWh	1 kWh	8122	2	uInt32
Active Energy Import L2 T2	kWh	1 kWh	8124	2	uInt32
Active Energy Import L2 T3	kWh	1 kWh	8126	2	uInt32
Active Energy Import L2 T4	kWh	1 kWh	8128	2	uInt32
Active Energy Export L2 Total	kWh	1 kWh	8130	2	uInt32
Active Energy Export L2 T1	kWh	1 kWh	8132	2	uInt32
Active Energy Export L2 T2	kWh	1 kWh	8134	2	uInt32
Active Energy Export L2 T3	kWh	1 kWh	8136	2	uInt32
Active Energy Export L2 T4	kWh	1 kWh	8138	2	uInt32
<b>Phase L3</b>					
Active Energy Import L3 Total	kWh	1 kWh	8140	2	uInt32
Active Energy Import L3 T1	kWh	1 kWh	8142	2	uInt32
Active Energy Import L3 T2	kWh	1 kWh	8144	2	uInt32
Active Energy Import L3 T3	kWh	1 kWh	8146	2	uInt32
Active Energy Import L3 T4	kWh	1 kWh	8148	2	uInt32
Active Energy Export L3 Total	kWh	1 kWh	8150	2	uInt32
Active Energy Export L3 T1	kWh	1 kWh	8152	2	uInt32
Active Energy Export L3 T2	kWh	1 kWh	8154	2	uInt32
Active Energy Export L3 T3	kWh	1 kWh	8156	2	uInt32
Active Energy Export L3 T4	kWh	1 kWh	8158	2	uInt32

## Reactive Energy

Description	Unit	Resolution	Register	No. of Register	Data Type
<b>Phase L123</b>					
Reactive Energy Import L123 Total	kvarh	1 kvarh	8200	2	ulnt32
Reactive Energy Import L123 T1	kvarh	1 kvarh	8202	2	ulnt32
Reactive Energy Import L123 T2	kvarh	1 kvarh	8204	2	ulnt32
Reactive Energy Import L123 T3	kvarh	1 kvarh	8206	2	ulnt32
Reactive Energy Import L123 T4	kvarh	1 kvarh	8208	2	ulnt32
Reactive Energy Export L123 Total	kvarh	1 kvarh	8210	2	ulnt32
Reactive Energy Export L123 T1	kvarh	1 kvarh	8212	2	ulnt32
Reactive Energy Export L123 T2	kvarh	1 kvarh	8214	2	ulnt32
Reactive Energy Export L123 T3	kvarh	1 kvarh	8216	2	ulnt32
Reactive Energy Export L123 T4	kvarh	1 kvarh	8218	2	ulnt32
<b>Phase L1</b>					
Reactive Energy Import L1 Total	kvarh	1 kvarh	8300	2	ulnt32
Reactive Energy Import L1 T1	kvarh	1 kvarh	8302	2	ulnt32
Reactive Energy Import L1 T2	kvarh	1 kvarh	8304	2	ulnt32
Reactive Energy Import L1 T3	kvarh	1 kvarh	8306	2	ulnt32
Reactive Energy Import L1 T4	kvarh	1 kvarh	8308	2	ulnt32
Reactive Energy Export L1 Total	kvarh	1 kvarh	8310	2	ulnt32
Reactive Energy Export L1 T1	kvarh	1 kvarh	8312	2	ulnt32
Reactive Energy Export L1 T2	kvarh	1 kvarh	8314	2	ulnt32
Reactive Energy Export L1 T3	kvarh	1 kvarh	8316	2	ulnt32
Reactive Energy Export L1 T4	kvarh	1 kvarh	8318	2	ulnt32
<b>Phase L2</b>					
Reactive Energy Import L2 Total	kvarh	1 kvarh	8320	2	ulnt32
Reactive Energy Import L2 T1	kvarh	1 kvarh	8322	2	ulnt32
Reactive Energy Import L2 T2	kvarh	1 kvarh	8324	2	ulnt32
Reactive Energy Import L2 T3	kvarh	1 kvarh	8326	2	ulnt32
Reactive Energy Import L2 T4	kvarh	1 kvarh	8328	2	ulnt32
Reactive Energy Export L2 Total	kvarh	1 kvarh	8330	2	ulnt32
Reactive Energy Export L2 T1	kvarh	1 kvarh	8332	2	ulnt32
Reactive Energy Export L2 T2	kvarh	1 kvarh	8334	2	ulnt32
Reactive Energy Export L2 T3	kvarh	1 kvarh	8336	2	ulnt32
Reactive Energy Export L2 T4	kvarh	1 kvarh	8338	2	ulnt32
<b>Phase L3</b>					
Reactive Energy Import L3 Total	kvarh	1 kvarh	8340	2	ulnt32
Reactive Energy Import L3 T1	kvarh	1 kvarh	8342	2	ulnt32
Reactive Energy Import L3 T2	kvarh	1 kvarh	8344	2	ulnt32
Reactive Energy Import L3 T3	kvarh	1 kvarh	8346	2	ulnt32
Reactive Energy Import L3 T4	kvarh	1 kvarh	8348	2	ulnt32
Reactive Energy Export L3 Total	kvarh	1 kvarh	8350	2	ulnt32
Reactive Energy Export L3 T1	kvarh	1 kvarh	8352	2	ulnt32
Reactive Energy Export L3 T2	kvarh	1 kvarh	8354	2	ulnt32
Reactive Energy Export L3 T3	kvarh	1 kvarh	8356	2	ulnt32
Reactive Energy Export L3 T4	kvarh	1 kvarh	8358	2	ulnt32

## Momentary Values

### Power

Description	Unit	Resolution	Register	No. of Register	Data Type
Active Power L123	W	1 W	9000	2	sFloat32
Active Power L1	W	1 W	9002	2	sFloat32
Active Power L2	W	1 W	9004	2	sFloat32
Active Power L3	W	1 W	9006	2	sFloat32
Reactive Power L123	var	1 var	9010	2	sFloat32
Reactive Power L1	var	1 var	9012	2	sFloat32
Reactive Power L2	var	1 var	9014	2	sFloat32
Reactive Power L3	var	1 var	9016	2	sFloat32
Apparent Power L123	VA	1 VA	9020	2	sFloat32
Apparent Power L1	VA	1 VA	9022	2	sFloat32
Apparent Power L2	VA	1 VA	9024	2	sFloat32
Apparent Power L3	VA	1 VA	9026	2	sFloat32

### Current

Description	Unit	Resolution	Register	No. of Register	Data Type
Current L123	A	1 A	9100	2	sFloat32
Current L1	A	1 A	9102	2	sFloat32
Current L2	A	1 A	9104	2	sFloat32
Current L3	A	1 A	9106	2	sFloat32

### Voltage

Description	Unit	Resolution	Register	No. of Register	Data Type
Voltage L1-N	V	0.1 V	9200	2	sFloat32
Voltage L2-N	V	0.1 V	9202	2	sFloat32
Voltage L3-N	V	0.1 V	9204	2	sFloat32
Voltage L1-L2	V	0.1 V	9206	2	sFloat32
Voltage L2-L3	V	0.1 V	9208	2	sFloat32
Voltage L3-L1	V	0.1 V	9210	2	sFloat32

### Power Factor and Frequency

Description	Unit	Resolution	Register	No. of Register	Data Type
Power Factor L1	-1 .. 1	0.01	9300	2	sFloat32
Power Factor L2	-1 .. 1	0.01	9302	2	sFloat32
Power Factor L3	-1 .. 1	0.01	9304	2	sFloat32
Frequency	Hz	0.1 Hz	9310	2	sFloat32

# With EMU Professional Compatible Read-Out



Note: The EMU Professional II works with unsigned data types while the EMU Professional/Allrounder works with signed data types.

## Energy Register

Description	Unit	Resolution	Register	No. of Register
<b>32 bit</b>				
Active Energy Consumption Total	Wh	1 Wh	4631	2
Active Energy Consumption Tariff 1	Wh	1 Wh	4633	2
Active Energy Consumption Tariff 2	Wh	1 Wh	4635	2
Active Energy Supply Total	Wh	1 Wh	4637	2
Active Energy Supply Tariff 1	Wh	1 Wh	4639	2
Active Energy Supply Tariff 2	Wh	1 Wh	4641	2
Inductive Reactive Energy Total	varh	1 varh	4643	2
Inductive Reactive Energy Tariff 1	varh	1 varh	4645	2
Inductive Reactive Energy Tariff 2	varh	1 varh	4647	2
Capacitive Reactive Energy Total	varh	1 varh	4649	2
Capacitive Reactive Energy Tariff 1	varh	1 varh	4651	2
Capacitive Reactive Energy Tariff 2	varh	1 varh	4653	2
<b>32 bit</b>				
Active Energy Consumption Total	Wh	1 Wh	4202	4
Active Energy Consumption Tariff 1	Wh	1 Wh	4230	4
Active Energy Consumption Tariff 2	Wh	1 Wh	4246	4
Active Energy Supply Total	Wh	1 Wh	4282	4
Active Energy Supply Tariff 1	Wh	1 Wh	4310	4
Active Energy Supply Tariff 2	Wh	1 Wh	4326	4
Inductive Reactive Energy Total	varh	1 varh	4362	4
Inductive Reactive Energy Tariff 1	varh	1 varh	4390	4
Inductive Reactive Energy Tariff 2	varh	1 varh	4406	4
Capacitive Reactive Energy Total	varh	1 varh	4442	4
Capacitive Reactive Energy Tariff 1	varh	1 varh	4470	4
Capacitive Reactive Energy Tariff 2	varh	1 varh	4486	4

## Power

Description	Unit	Resolution	Register	No. of Register	Data Type
Active Power L123	W	1 W	4528	2	sInt32
Active Power L1	W	1 W	4522	2	sInt32
Active Power L2	W	1 W	4524	2	sInt32
Active Power L3	W	1 W	4526	2	sInt32
Reactive Power L123	var	1 var	4536	2	sInt32
Reactive Power L1	var	1 var	4530	2	sInt32
Reactive Power L2	var	1 var	4532	2	sInt32
Reactive Power L3	var	1 var	4534	2	sInt32
Apparent Power L123	VA	1 VA	4544	2	sInt32
Apparent Power L1	VA	1 VA	4538	2	sInt32
Apparent Power L2	VA	1 VA	4540	2	sInt32
Apparent Power L3	VA	1 VA	4542	2	sInt32

## Current and Voltage

Description	Unit	Resolution	Register	No. of Register	Data Type
Current L123	mA	1 mA	4598	2	sInt32
Current L1	mA	1 mA	4592	2	sInt32
Current L2	mA	1 mA	4594	2	sInt32
Current L3	mA	1 mA	4596	2	sInt32
Voltage L1-N	V	0.1 V	4568	1	sInt16
Voltage L2-N	V	0.1 V	4569	1	sInt16
Voltage L3-N	V	0.1 V	4570	1	sInt16
Voltage L1-L2	V	0.1 V	4571	1	sInt16
Voltage L2-L3	V	0.1 V	4572	1	sInt16
Voltage L3-L1	V	0.1 V	4573	1	sInt16

## Power Factor and Frequency

Description	Unit	Resolution	Register	No. of Register	Data Type
Power Factor L1	-1 .. 1	0.01	4624	2	float
Power Factor L2	-1 .. 1	0.01	4625	2	float
Power Factor L3	-1 .. 1	0.01	4626	2	float
Frequency	Hz	0.1 Hz	4627	2	float

# Examples for Modbus Read-Out

## With Command-Line Interface

These Examples use Modpoll to read-out the registers.

Please make sure you entered the correct IP address of your meter.

More information on Modpoll command arguments can be found at <https://www.modbusdriver.com/modpoll.html>.

### Energy Register

Active Energy Import Tariff 1 Total:

```
modpoll.exe -l -m tcp -t 4:int -i -f -r 5902 -c 1 10.255.255.119
```

Active Energy Export Phase L1 Tariff 2:

```
modpoll.exe -l -m tcp -t 4:int -i -f -r 6128 -c 1 10.255.255.119
```

Reactive Energy Export Total:

```
modpoll.exe -l -m tcp -t 4:int -i -f -r 7320 -c 1 10.255.255.119
```

### Momentary Values

Active Power Total:

```
modpoll.exe -l -m tcp -t 2:float -i -f -r 9000 -c 1 10.255.255.119
```

Apparent Power Phase L3:

```
modpoll.exe -l -m tcp -t 2:float -i -f -r 9026 -c 1 10.255.255.119
```

Power Factor Phase L1:

```
modpoll.exe -l -m tcp -t 2:float -i -f -r 9300 -c 1 10.255.255.119
```

## Information for Read-Out to a Loxone Miniserver

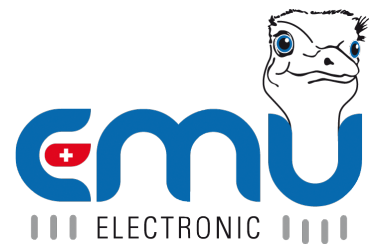
Be aware, that contrary to the EMU Professional/Allrounder, the EMU Professional II uses unsigned integers/floats. Registers with 2 and 4 registers used (32bit, 64bit respectively) need their register order reversed.

### Example:

Active Energy Consumption Total	
Register:	4630
Command:	3 – Read holding register(4x)
Data Type:	32-bit signed integer
2 Register for 32-bit:	yes
Register Order:	yes
Byte Order:	no
Unit:	Wh

<input type="checkbox"/> Visualisierung	
<input type="checkbox"/> Verwenden	
Erlaubte Benutzer lokal	Alle
Erlaubte Benutzer Internet	Alle
Kategorie	Nicht zugeordnet
Raum	Nicht zugeordnet
Bewertung	☆☆☆☆☆☆☆☆☆☆
<input type="checkbox"/> Als Favorit anzeigen	
<input type="checkbox"/> Fehlerausgang anzeigen	
IO-Adresse	4630
Befehl	3 - Read holding register(4x)
Datentyp	32-bit signed integer
<input checked="" type="checkbox"/> 2 Register für 32-bit	
<input checked="" type="checkbox"/> Registerreihenfolge	
<input type="checkbox"/> Byte-Reihenfolge	
Abfragezyklus	5
<input type="checkbox"/> Korrektur	





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