

# Appendix 3 - PRO380-Mod

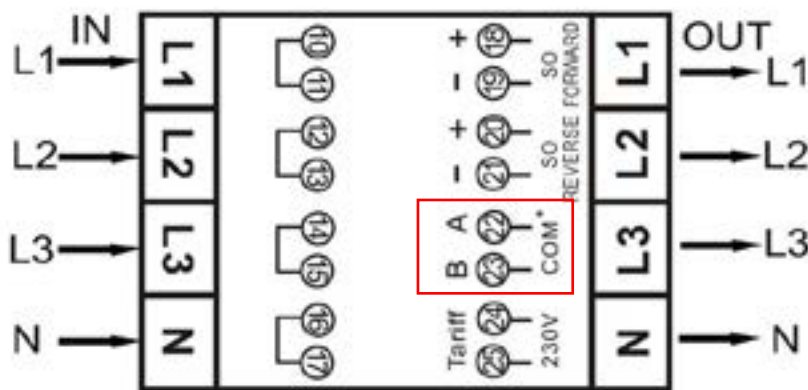
## A3.1 Communicating via the Modbus output

The meter can communicate with your PC. In order to read out the meter registers first install and configure the PC software. Use an RS485 level converter to connect the PC and the meter. The cable should be connected to terminals 22 and 23. The default communication address of the meter is 01.

The PRO380-Mod can be connected for Modbus communication. The Modbus implementation used is Modbus basic (standard). This means the following:

- Baud rate 9600
- 8 data bits
- Even parity
- 1 stop bit

The baud rate can be lowered to values 4800, 2400, 1200, 600 and 300. The parity can be set to none or odd. Data and stopbit cannot be changed.



*When connecting the meter through a serial converter (RS485) for testing, please be aware that because of not implementing the complete Modbus infrastructure, there will be a need to put an additional resistor (120 ohms/ 0,25 watts) across the terminals (22 & 23) on the meter side.*

For the registers used in the meter and how to interpret the data, please use the Modbus register map on the next pages. Please note that the old (V1.14) Modbus registers still can be used. You can find the old Modbus register map on [www.inprometering.com/manuals/new](http://www.inprometering.com/manuals/new).

More info on Modbus can be found:

Physical: [http://www.modbus.org/docs/Modbus\\_over\\_serial\\_line\\_V1\\_02.pdf](http://www.modbus.org/docs/Modbus_over_serial_line_V1_02.pdf)

Protocol: [http://www.modbus.org/docs/Modbus\\_Application\\_Protocol\\_V1\\_1b3.pdf](http://www.modbus.org/docs/Modbus_Application_Protocol_V1_1b3.pdf)

## A3.2 Modbus register map

Reg. address	Content	Function code	Register length	Unit	Data type
4000	Serial number	03	2	-	HEX
4002	Meter code	03	1	-	HEX
4003	Modbus ID	03	1	-	Signed
4004	Baud rate	03	1	-	Signed
4005	Protocol version	03	2	-	Float ABCD
4007	Software version	03	2	-	Float ABCD
4009	Hardware version	03	2	-	Float ABCD
400B	Meter amps	03	1	A	Signed
400C	CT ratio	03	1	A	HEX
400D	S0 output rate	03	2	imp/kWh	Float ABCD
400F	Combination code	03	1	-	Signed
4010	LCD cycle time	03	1	sec.	HEX
4011	Parity setting	03	1	-	Signed
4012	Current direction	03	1	-	ASCII
4013	L2 Current direction	03	1	-	ASCII
4014	L3 Current direction	03	1	-	ASCII
4015	Error code*	03	1	-	Signed
4016	Power down counter	03	1	-	Signed
4017	Present quadrant	03	1	-	Signed
4018	L1 Quadrant	03	1	-	Signed
4019	L2 Quadrant	03	1	-	Signed
401A	L3 Quadrant	03	1	-	Signed
401B	Checksum	03	2	-	HEX
401D	Active status word	03	2	-	HEX
401F	CT mode	03	1	A	Signed

Reg. address	Content	Function code	Register length	Unit	Data type
5000	Voltage*	03	2	V	Float ABCD
5002	L1 Voltage	03	2	V	Float ABCD
5004	L2 Voltage	03	2	V	Float ABCD
5006	L3 Voltage	03	2	V	Float ABCD
5008	Grid frequency	03	2	Hz	Float ABCD
500A	Current*	03	2	A	Float ABCD
500C	L1 Current	03	2	A	Float ABCD
500E	L2 Current	03	2	A	Float ABCD
5010	L3 Current	03	2	A	Float ABCD
5012	Total active power	03	2	kW	Float ABCD
5014	L1 Active power	03	2	kW	Float ABCD
5016	L2 Active power	03	2	kW	Float ABCD
5018	L3 Active power	03	2	kW	Float ABCD
501A	Total reactive power	03	2	kvar	Float ABCD
501C	L1 Reactive power	03	2	kvar	Float ABCD
501E	L2 Reactive power	03	2	kvar	Float ABCD
5020	L3 Reactive power	03	2	kvar	Float ABCD
5022	Total apparent power	03	2	kVA	Float ABCD
5024	L1 Apparent power	03	2	kVA	Float ABCD
5026	L2 Apparent Power	03	2	kVA	Float ABCD
5028	L3 Apparent Power	03	2	kVA	Float ABCD
502A	Power factor	03	2	-	Float ABCD
502C	L1 Power factor	03	2	-	Float ABCD
502E	L2 Power factor	03	2	-	Float ABCD
5030	L3 Power factor	03	2	-	Float ABCD

Reg. address	Content	Function code	Register length	Unit	Data type
6000	Total active energy	03	2	kWh	Float ABCD
6002	T1 Total active energy	03	2	kWh	Float ABCD
6004	T2 Total active energy	03	2	kWh	Float ABCD
6006	L1 Total active energy	03	2	kWh	Float ABCD

6008	L2 Total active energy	03	2	kWh	Float ABCD
600A	L3 Total active energy	03	2	kWh	Float ABCD
600C	Forward active energy	03	2	kWh	Float ABCD
600E	T1 Forward active energy	03	2	kWh	Float ABCD
6010	T2 Forward active energy	03	2	kWh	Float ABCD
6012	L1 Forward active energy	03	2	kWh	Float ABCD
6014	L2 Forward active energy	03	2	kWh	Float ABCD
6016	L3 Forward active energy	03	2	kWh	Float ABCD
6018	Reverse active energy	03	2	kWh	Float ABCD
601A	T1 Reverse active energy	03	2	kWh	Float ABCD
601C	T2 Reverse Active Energy	03	2	kWh	Float ABCD
601E	L1 Reverse active energy	03	2	kWh	Float ABCD
6020	L2 Reverse active energy	03	2	kWh	Float ABCD
6022	L3 Reverse active energy	03	2	kWh	Float ABCD
6024	Total reactive energy	03	2	kvarh	Float ABCD
6026	T1 Total reactive energy	03	2	kvarh	Float ABCD
6028	T2 Total reactive energy	03	2	kvarh	Float ABCD
602A	L1 Total reactive energy	03	2	kvarh	Float ABCD
602C	L2 Total reactive energy	03	2	kvarh	Float ABCD
602E	L3 Total reactive energy	03	2	kvarh	Float ABCD
6030	Forward reactive energy	03	2	kvarh	Float ABCD
6032	T1 Forward reactive energy	03	2	kvarh	Float ABCD
6034	T2 Forward reactive energy	03	2	kvarh	Float ABCD
6036	L1 Forward reactive energy	03	2	kvarh	Float ABCD
6038	L2 Forward reactive energy	03	2	kvarh	Float ABCD
603A	L3 Forward reactive energy	03	2	kvarh	Float ABCD
603C	Reverse reactive energy	03	2	kvarh	Float ABCD
603E	T1 Reverse reactive energy	03	2	kvarh	Float ABCD
6040	T2 Reverse reactive energy	03	2	kvarh	Float ABCD
6042	L1 Reverse reactive energy	03	2	kvarh	Float ABCD
6044	L2 Reverse reactive energy	03	2	kvarh	Float ABCD
6046	L3 Reverse reactive energy	03	2	kvarh	Float ABCD
6048	Tariff	03	1	-	Signed
6049	Resettable day counter	03	2	kWh	Float ABCD

### Write

Reg. address	Content	Function code	Register length	Unit	Data type
4003	Modbus ID	06	1	-	Signed
Command:	01 06 4003 000A (new ID: 10)		01~247 - 01 default - 00 broadcast		
4004	Baud rate	06	1	-	Signed
Command:	01 06 4004 25 80 (new Baudrate: 9600)		300 - 600 - 1200 - 4800 - 9600		
400D	S0 output rate	10	2	imp/kWh	Float ABCD
Command:	01 10 400D 0002 04 41 20 00 00 (new S0: 10)		10.000 - 2.000 - 1.000 - 100 - 10 - 1 - 0,1 - 0,01		
400F	Combination code	06	1	-	Signed
Command:	01 06 400F 000A (new code: 10 F-R)		01, 04, 05, 06, 09, 10, 11		
4010	LCD cycle time	06	1	sec.	HEX
Command:	01 06 4010 0025 (new time: 25 sec.)		01~30		
4011	Parity setting	06	1	-	Signed
Command:	01 06 4011 0002 (new parity: none)		01: even - 02: none - 03: odd		
4016	Power down counter	06	1	-	Signed
Command:	01 06 4016 0000		Reset to 0		
6048	Tariff	06	1	-	Signed
Command:	01 06 6048 0002 (new tariff: 2)		01: T1 - 02: T2 - 11: T1 not saved - 12: T2 not saved		
6049	Resettable day counter	10	1	kWh	Float ABCD
Command:	01 10 6049 0002 04 0000 0000		Reset to 0		

\*PRO1 only