

The MoCo module uses the rs485 Modbus protocol on 9600 8N1.					
Input registers are used to indicate the present values of the measured and calculated electrical quantities. Each parameter is held in two consecutive 16 bit register. The following table details the 3X register address, and the values of the address bytes within the message. Each parameter is held in the 3X registers. Modbus Protocol function code 04 is used to access all parameters. For example, to request: Amps 1 Start address=0006 No. of registers=0002 Amps 2 Start address=0008 No. of registers=0002 Each request for data must be restricted to 30 parameters or less. Exceeding the 30 parameter limit will cause a Modbus Protocol exception code to be returned.					
Address (Register)	Nr.	Description	Type	Units	Modbus registers Hi Byte Lo Byte Obis number vb
30001	1	Voltage F1	FLOAT	Volts	00 00 1-0:32.7.0(V)
30003	2	Voltage F2	FLOAT	Volts	00 02 1-0:52.7.0(V)
30005	3	Voltage F3	FLOAT	Volts	00 04 1-0:72.7.0(V)
30007	4	Current F1	FLOAT	Amps	00 06 1-0:31.7.0(A)
30009	5	Current F2	FLOAT	Amps	00 08 1-0:51.7.0(A)
30011	6	Current F3	FLOAT	Amps	00 0A 1-0:71.7.0(A)
30013	7	Import - Export Power F1	FLOAT	Watts	00 0C 1-0:21.7.0(kW)
30015	8	Import - Export Power F2	FLOAT	Watts	00 0E 1-0:41.7.0(kW)
30017	9	Import - Export Power F3	FLOAT	Watts	00 10 1-0:61.7.0(kW)
30049	10	Highest Current absolute value F123	FLOAT	Amps	00 30 Max I: I1 or I2 or I3 for EV charger
30051	11	Total import Power 3 phase	FLOAT	Watts	00 32 1-0:1.7.0(kW)
30053	12	Total export Power 3 phase	FLOAT	Watts	00 34 1-0:2.7.0(kW)
30055	13	Kwartiervermogen actueel	FLOAT	Watts	00 36 1-0:1.4.0(kW)
30057	14	Kwartiervermogen maand max	FLOAT	Watts	00 38 1-0:1.6.0(kW)
30073	16	Import H+L	FLOAT	kWh	00 48 1-0:1.8.1(kWh)+1-0:1.8.2(kWh)
30075	17	Export H+L	FLOAT	kWh	00 4A 1-0:2.8.1(kWh)+1-0:2.8.2(kWh)
30077	18	Mbus meter 1	FLOAT	Liter	00 4C 0-1:24.2.3(m3)
30079	19	Mbus meter 2	FLOAT	Liter	00 4E 0-2:24.2.1(m3)
30080	20	Import H	FLOAT	kWh	00 50 1-0:1.8.1(kWh)
30081	21	Import L	FLOAT	kWh	00 51 1-0:1.8.2(kWh)
30082	22	Export H	FLOAT	kWh	00 52 1-0:2.8.1(kWh)
30083	23	Export L	FLOAT	kWh	00 53 1-0:2.8.2(kWh)
30084	24	Mbus meter 1	FLOAT	Liter	00 54 0-1:24.2.3(m3)
30085	25	Mbus meter 2	FLOAT	Liter	00 55 0-2:24.2.1(m3)
30087	26	+Rc(QI)	FLOAT	kvarh	00 56 1-0:5.8.0(kvarh)
30089	27	+Rc(QII)	FLOAT	kvarh	00 58 1-0:6.8.0(kvarh)
30091	28	-Rc(QIII)	FLOAT	kvarh	00 5A 1-0:7.8.0(kvarh)
30093	29	-Rc(QIV)	FLOAT	kvarh	00 5C 1-0:8.8.0(kvarh)
30095	30	Teller 1	FLOAT	pulses	00 5E Input 1(number of pulses counted)
30097	31	Teller 2	FLOAT	pulses	00 60 Input 2(number of pulses counted)
30099	32	Instant reactive power import	FLOAT	kvar	00 62 1-0:3.7.0 total +Q (QI+QII)
30101	33	Instant reactive power export	FLOAT	kvar	00 64 1-0:4.7.0 total -Q (QIII+QIV)
30103	34	Import L	FLOAT	kWh	00 51 1-0:1.8.2(kWh)
30105	35	Export L	FLOAT	kWh	00 53 1-0:2.8.2(kWh)
30107	36	Mbus meter 2	FLOAT	Liter	00 55 0-2:24.2.1(m3)
Registers 80 to 85 are normally only for the MEGA.					
You can use them without MEGA, but you have to start with a pair of numbers (80-82-84)					
If the length is set to 4 (words), you will get 2 consecutive counters.					
(e.g. index = 80 and length = 8, then you get IH-IL-EH-EL = 16 bytes)					
Or you can use 80,82,84 length 2 words to read Import H, Export H, Meter 1					
and you can use 102,104,106 length 2 words to read Import L, Export L, Meter 2					

3. Configuration in a ReMI/ELAN and a MEMo3 web server:

As Modbus slave in ReMI/ELAN:

Import and export: Select Channel Type: "Modbus", Device Id "Master EMM.220" (Mono) or "Master EMM.630" (3-phase). Para1 will have the "Modbus address", para2 will have "0" for import, "1" for export.

CH11	Modbus	Master EMM220	1	0	kWh	☐	☐	MOCO IMP	☐
CH12	Modbus	Master EMM220	1	1	kWh	☐	☐	MOCO EXP	☐

Input pulses

1. T11 Weight: Send

2. T22 Weight: Send

Pulses: Set in MoCo2 weight 1000. In ReMI/ELAN para1:"Modbus address", at para2:number per unit, e.g. 1000 pulses per 1m³

CH108 Pulse Moco

Puls IN1

9

1000

m3 W

☐

☐

water

As a Modbus slave in a MEMo3:

Configuration is the same as an EMM meter. Select Type "EMM220-630", Mode "Energy". Enter Modbus address and Modbus subaddress, where: Subaddress 0: Import+F1; Subaddress 1: Export+F2; Sub-address 2: F3

CH12 EMM220-630

Energy

VOLT 230 V

CURRENT 10 A

POWER 230 W

VA 0 VA

PF 0.99

WbA+ 23000.76 kWh

WbA- 11100.44 kWh

Read One: 4

Read Two: 8

Read Three: 12

Read Four: 16

Read Five: 20

Read Six: 24

Read Seven: 28

Read Eight: 32

Read Nine: 36

Read Ten: 40

Read Eleven: 44

Read Twelve: 48

Read Thirteen: 52

Read Fourteen: 56

Read Fifteen: 60

Read Sixteen: 64

Read Seventeen: 68

Read Eighteen: 72

Read Nineteen: 76

Read Twenty: 80

Read Twenty-One: 84

Read Twenty-Two: 88

Read Twenty-Three: 92

Read Twenty-Four: 96

Read Twenty-Five: 100

Read Twenty-Six: 104

Read Twenty-Seven: 108

Read Twenty-Eight: 112

Read Twenty-Nine: 116

Read Thirty: 120

Read Thirty-One: 124

Read Thirty-Two: 128

Read Thirty-Three: 132

Read Thirty-Four: 136

Read Thirty-Five: 140

Read Thirty-Six: 144

Read Thirty-Seven: 148

Read Thirty-Eight: 152

Read Thirty-Nine: 156

Read Forty: 160

Read Forty-One: 164

Read Forty-Two: 168

Read Forty-Three: 172

Read Forty-Four: 176

Read Forty-Five: 180

Read Forty-Six: 184

Read Forty-Seven: 188

Read Forty-Eight: 192

Read Forty-Nine: 196

Read Fifty: 200

Read Fifty-One: 204

Read Fifty-Two: 208

Read Fifty-Three: 212

Read Fifty-Four: 216

Read Fifty-Five: 220

Read Fifty-Six: 224

Read Fifty-Seven: 228

Read Fifty-Eight: 232

Read Fifty-Nine: 236

Read Sixty: 240

Read Sixty-One: 244

Read Sixty-Two: 248

Read Sixty-Three: 252

Read Sixty-Four: 256

Read Sixty-Five: 260

Read Sixty-Six: 264

Read Sixty-Seven: 268

Read Sixty-Eight: 272

Read Sixty-Nine: 276

Read Seventy: 280

Read Seventy-One: 284

Read Seventy-Two: 288

Read Seventy-Three: 292

Read Seventy-Four: 296

Read Seventy-Five: 300

Read Seventy-Six: 304

Read Seventy-Seven: 308

Read Seventy-Eight: 312

Read Seventy-Nine: 316

Read Eighty: 320

Read Eighty-One: 324

Read Eighty-Two: 328

Read Eighty-Three: 332

Read Eighty-Four: 336

Read Eighty-Five: 340

Read Eighty-Six: 344

Read Eighty-Seven: 348

Read Eighty-Eight: 352

Read Eighty-Nine: 356

Read Ninety: 360

Read Ninety-One: 364

Read Ninety-Two: 368

Read Ninety-Three: 372

Read Ninety-Four: 376

Read Ninety-Five: 380

Read Ninety-Six: 384

Read Ninety-Seven: 388

Read Ninety-Eight: 392

Read Ninety-Nine: 396

Read One Hundred: 400

Read One Hundred-One: 404

Read One Hundred-Two: 408

Read One Hundred-Three: 412

Read One Hundred-Four: 416

Read One Hundred-Five: 420

Read One Hundred-Six: 424

Read One Hundred-Seven: 428

Read One Hundred-Eight: 432

Read One Hundred-Nine: 436

Read One Hundred-Ten: 440

Read One Hundred-Eleven: 444

Read One Hundred-Twelve: 448

Read One Hundred-Thirteen: 452

Read One Hundred-Fourteen: 456

Read One Hundred-Fifteen: 460

Read One Hundred-Sixteen: 464

Read One Hundred-Seventeen: 468

Read One Hundred-Eighteen: 472

Read One Hundred-Nineteen: 476

Read One Hundred-Twenty: 480

Read One Hundred-Twenty-One: 484

Read One Hundred-Twenty-Two: 488

Read One Hundred-Twenty-Three: 492

Read One Hundred-Twenty-Four: 496

Read One Hundred-Twenty-Five: 500

Read One Hundred-Twenty-Six: 504

Read One Hundred-Twenty-Seven: 508

Read One Hundred-Twenty-Eight: 512

Read One Hundred-Twenty-Nine: 516

Read One Hundred-Thirty: 520

Read One Hundred-Thirty-One: 524

Read One Hundred-Thirty-Two: 528

Read One Hundred-Thirty-Three: 532

Read One Hundred-Thirty-Four: 536

Read One Hundred-Thirty-Five: 540

Read One Hundred-Thirty-Six: 544

Read One Hundred-Thirty-Seven: 548

Read One Hundred-Thirty-Eight: 552

Read One Hundred-Thirty-Nine: 556

Read One Hundred-Forty: 560

Read One Hundred-Forty-One: 564

Read One Hundred-Forty-Two: 568

Read One Hundred-Forty-Three: 572

Read One Hundred-Forty-Four: 576

Read One Hundred-Forty-Five: 580

Read One Hundred-Forty-Six: 584

Read One Hundred-Forty-Seven: 588

Read One Hundred-Forty-Eight: 592

Read One Hundred-Forty-Nine: 596

Read One Hundred-Fifty: 600

Read One Hundred-Fifty-One: 604

Read One Hundred-Fifty-Two: 608

Read One Hundred-Fifty-Three: 612

Read One Hundred-Fifty-Four: 616

Read One Hundred-Fifty-Five: 620

Read One Hundred-Fifty-Six: 624

Read One Hundred-Fifty-Seven: 628

Read One Hundred-Fifty-Eight: 632

Read One Hundred-Fifty-Nine: 636

Read One Hundred-Sixty: 640

Read One Hundred-Sixty-One: 644

Read One Hundred-Sixty-Two: 648

Read One Hundred-Sixty-Three: 652

Read One Hundred-Sixty-Four: 656

Read One Hundred-Sixty-Five: 660

Read One Hundred-Sixty-Six: 664

Read One Hundred-Sixty-Seven: 668

Read One Hundred-Sixty-Eight: 672

Read One Hundred-Sixty-Nine: 676

Read One Hundred-Seventy: 680

Read One Hundred-Seventy-One: 684

Read One Hundred-Seventy-Two: 688

Read One Hundred-Seventy-Three: 692

Read One Hundred-Seventy-Four: 696

Read One Hundred-Seventy-Five: 700

Read One Hundred-Seventy-Six: 704

Read One Hundred-Seventy-Seven: 708

Read One Hundred-Seventy-Eight: 712

Read One Hundred-Seventy-Nine: 716

Read One Hundred-Eighty: 720

Read One Hundred-Eighty-One: 724

Read One Hundred-Eighty-Two: 728

Read One Hundred-Eighty-Three: 732

Read One Hundred-Eighty-Four: 736

Read One Hundred-Eighty-Five: 740

Read One Hundred-Eighty-Six: 744

Read One Hundred-Eighty-Seven: 748

Read One Hundred-Eighty-Eight: 752

Read One Hundred-Eighty-Nine: 756

Read One Hundred-Ninety: 760

Read One Hundred-Ninety-One: 764

Read One Hundred-Ninety-Two: 768

Read One Hundred-Ninety-Three: 772

Read One Hundred-Ninety-Four: 776

Read One Hundred-Ninety-Five: 780

Read One Hundred-Ninety-Six: 784

Read One Hundred-Ninety-Seven: 788

Read One Hundred-Ninety-Eight: 792

Read One Hundred-Ninety-Nine: 796

Read Two Hundred: 800

Read Two Hundred-One: 804

Read Two Hundred-Two: 808

Read Two Hundred-Three: 812

Read Two Hundred-Four: 816

Read Two Hundred-Five: 820

Read Two Hundred-Six: 824

Read Two Hundred-Seven: 828

Read Two Hundred-Eight: 832

Read Two Hundred-Nine: 836

Read Two Hundred-Ten: 840

Read Two Hundred-Eleven: 844

Read Two Hundred-Twelve: 848

Read Two Hundred-Thirteen: 852

Read Two Hundred-Fourteen: 856

Read Two Hundred-Fifteen: 860

Read Two Hundred-Sixteen: 864

Read Two Hundred-Seventeen: 868

Read Two Hundred-Eighteen: 872

Read Two Hundred-Nineteen: 876

Read Two Hundred-Twenty: 880

Read Two Hundred-Twenty-One: 884

Read Two Hundred-Twenty-Two: 888

Read Two Hundred-Twenty-Three: 892

Read Two Hundred-Twenty-Four: 896

Read Two Hundred-Twenty-Five: 900

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Read Two Hundred-Thirty-One: 924

Read Two Hundred-Thirty-Two: 928

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Read Two Hundred-Forty-Nine: 996

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Read Two Hundred-Fifty-Two: 1008

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Read Two Hundred-Fifty-Four: 1016

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Read Two Hundred-Fifty-Six: 1024

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Read Two Hundred-Seventy-Seven: 1108

Read Two Hundred-Seventy-Eight: 1112

Read Two Hundred-Seventy-Nine: 1116

Read Two Hundred-Eighty: 1120

Read Two Hundred-Eighty-One: 1124

Read Two Hundred-Eighty-Two: 1128

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Read Two Hundred-Eighty-Four: 1136

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Read Two Hundred-Eighty-Six: 1144

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Read Two Hundred-Ninety: 1160

Read Two Hundred-Ninety-One: 1164

Read Two Hundred-Ninety-Two: 1168

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Read Two Hundred-Ninety-Five: 1180

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Read Two Hundred-Seventy-Seven: 1508

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Read Two Hundred-Ninety-One: 1564

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Read Two Hundred: 1600

Read Two Hundred-One: 1604

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Read Two Hundred-Eleven: 1644

Read Two Hundred-Twelve: 1648

Read Two Hundred-Thirteen: 1652

Read Two Hundred-Fourteen: 1656

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Read Two Hundred-Seventeen: 1668

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Read Two Hundred-Twenty: 1680

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Read Two Hundred-Twenty-Three: 1692

Read Two Hundred-Twenty-Four: 1696

Read Two Hundred-Twenty-Five: 1700

Read Two Hundred-Twenty-Six: 1704

Read Two Hundred-Twenty-Seven: 1708

Read Two Hundred-Twenty-Eight: 1712

Read Two Hundred-Twenty-Nine: 1716

Read Two Hundred-Thirty: 1720

Read Two Hundred-Thirty-One: 1724

Read Two Hundred-Thirty-Two: 1728

Read Two Hundred-Thirty-Three: 1732

Read Two Hundred-Thirty-Four: 1736

Read Two Hundred-Thirty-Five: 1740

Read Two Hundred-Thirty-Six: 1744

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Read Two Hundred-Forty-One: 1764

Read Two Hundred-Forty-Two: 1768

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Read Two Hundred-Forty-Four: 1776

Read Two Hundred-Forty-Five: 1780

Read Two Hundred-Forty-Six: 1784

Read Two Hundred-Forty-Seven: 1788

Read Two Hundred-Forty-Eight: 1792

Read Two Hundred-Forty-Nine: 1796

Read Two Hundred-Fifty: 1800

Read Two Hundred-Fifty-One: 1804

Read Two Hundred-Fifty-Two: 1808

Read Two Hundred-Fifty-Three: 1812

Read Two Hundred-Fifty-Four: 1816

Read Two Hundred-Fifty-Five: 1820

Read Two Hundred-Fifty-Six: 1824

Read Two Hundred-Fifty-Seven: 1828

Read Two Hundred-Fifty-Eight: 1832

Read Two Hundred-Fifty-Nine: 1836

Read Two Hundred-S