lamaPLC: Communication with B+G E-Tech DS100 Serie Modbus

The digital bidirectional power meter in this series is designed for direct measurement in 3-phase AC systems with maximum loads of up to 100 A. This meter is MID B&D certified by SGS UK.

Technical data

- Type designation: DS100-009 (Article no. 1042204-M23)
- MID certified according to certificate 0120/SGS0622 from SGS UK
- 0.25-5A nominal current / 100A limit current (limit current = can be continuously loaded!)
- Electronic electricity meter (3-phase current according to EN 61036, for 4-wire three-phase networks) 3p4w
- digital LCD (backlit)
- 6 digital digits + 2 decimal places = 999999.99 kWh
- Connection: 3x230V/400V AC
- Operating range: 3*161/279 to 300/500 / 0.1 ~ 100A
- Frequency range: 50Hz +/- 10%
- Start current Cos-Phi = 1: 0.4% of Ib
- Self-consumption: ≤ 1W /12VA per phase
- Accuracy class: 1
- Pulse length: 80ms
- LED counting pulses: 1000imp/kWh
- Temp. range: -25°C to +55°C
- Rel. humidity: up to 75% - briefly up to 95%
- Mounting: DIN rail (DIN EN50022) / 4TE=71.5mm
- Dimensions: 71.5x90x72mm
- Weight: approx. 350g
- Approved for billing purposes to third parties

Modbus map

Address	Measuring	Var.type	Unit/resolution	Rel.addr
Input register block				
31024	Phase 1 to neutral volts	int32	mV	Basis 1024, 0x00, lenght: 80 word
31026	Phase 2 to neutral volts	int32	mV	0x02
31028	Phase 3 to neutral volts	int32	mV	0x04
31030	Phase L1 - L2 volts	int32	mV	0x06
31032	Phase L2 - L3 volts	int32	mV	0x08
31034	Phase L3 - L1 volts	int32	mV	0x0A
31036	Average line to neutral volts	int32	mV	0x0C
31038	Average line to line volts	int32	mV	0x0E

Address	Measuring	Var.type	Unit/resolution	Rel.addr
31040	Phase 1 current	int32	mA	0x10
31042	Phase 2 current	int32	mA	0x12
31044	Phase 3 current	int32	mA	0x14
31046	Neutral current	int32	mA	0x16
31048	Three-phase vector current	int32	mA	0x18
31050	Phase 1 active power	int32	W	0x1A
31052	Phase 2 active power	int32	W	0x1C
31054	Phase 3 active power	int32	W	0x1E
31056	Total active power	int32	W	0x20
31058	Phase 1 apparent power	int32	VA	0x22
31060	Phase 2 apparent power	int32	VA	0x24
31062	Phase 3 apparent power	int32	VA	0x26
31064	Total apparent power	int32	VA	0x28
31066	Phase 1 reactive power	int32	var	0x2A
31068	Phase 2 reactive power	int32	var	0x2C
31070	Phase 3 reactive power	int32	var	0x2E
31072	Total reactive power	int32	var	0x30
31074	Phase 1 frequency	int16	Hz/10	0x32
31075	Phase 2 frequency	int16	Hz/10	0x33
31076	Phase 3 frequency	int16	Hz/10	0x34
31077	Combinated frequency	int16	Hz/10	0x35
31078	Phase 1 power factor	int16	0.1	0x36
31079	Phase 2 power factor	int16	0.1	0x37
31080	Phase 3 power factor	int16	0.1	0x38
31081	Total power factor	int16	0.1	0x39
31082	Phase 1 active power forward	int32	W/10	0x3A
31084	Phase 2 active power forward	int32	W/10	0x3C
31086	Phase 3 active power forward	int32	W/10	0x3E
31088	Total active power forward	int32	W/10	0x40
31090	Phase 1 active power reverse	int32	W/10	0x42
31092	Phase 2 active power reverse	int32	W/10	0x44
31094	Phase 3 active power reverse	int32	W/10	0x46
31096	Total active power reverse	int32	W/10	0x48
31098	Phase 1 active power demand	int32	W/10	0x4A
31100	Phase 2 active power demand	int32	W/10	0x4C
31102	Phase 3 active power demand	int32	W/10	0x4E
31104	Total active power demand	int32	W/10	0x50
31082	Phase 1 reactive power forward	int32	var/10	0x52
31084	Phase 2 reactive power forward	int32	var/10	0x54
31086	Phase 3 reactive power forward	int32	var/10	0x56
31088	Total reactive power forward	int32	var/10	0x58
31090	Phase 1 reactive power reverse	int32	var/10	0x60
31092	Phase 2 reactive power reverse	int32	var/10	0x62
31094	Phase 3 reactive power reverse	int32	var/10	0x64
31096	Total reactive power reverse	int32	var/10	0x66

Address	Measuring	Var.type	Unit/resolution	Rel.addr
31098	Phase 1 reactive power demand	int32	var/10	0x68
31100	Phase 2 reactive power demand	int32	var/10	0x6A
31102	Phase 3 reactive power demand	int32	var/10	0x6C
31104	Total reactive power demand	int32	var/10	0x6E
Holding register block				
40270	Total active energy forward	int32	kWh/100	Basis 270, 0x00, lenght: 52 word
40280	Total active energy reverse	int32	kWh/100	0x0A
40290	Total active energy	int32	kWh/100	0x14
40300	Total reactive energy forward	int32	kvarh/100	0x1E
40310	Total reactive energy reverse	int32	kvarh/100	0x28
40320	Total reactive energy	int32	kvarh/100	0x32
41280	Phase 1 active energy	int32	kWh/100	Basis 1280, 0x00, lenght: – word
41290	Phase 1 active energy forward	int32	kWh/100	
41300	Phase 1 active energy reverse	int32	kWh/100	
41310	Phase 1 reactive energy forward	int32	kvarh/100	
41320	Phase 1 reactive energy reverse	int32	kvarh/100	
41330	Phase 1 reactive energy	int32	kvarh/100	
41380	Phase 2 active energy	int32	kWh/100	
41390	Phase 2 active energy forward	int32	kWh/100	
41400	Phase 2 active energy reverse	int32	kWh/100	
41410	Phase 2 reactive energy forward	int32	kvarh/100	
41420	Phase 2 reactive energy reverse	int32	kvarh/100	
41430	Phase 2 reactive energy	int32	kvarh/100	
41480	Phase 2 active energy	int32	kWh/100	
41490	Phase 2 active energy forward	int32	kWh/100	
41500	Phase 2 active energy reverse	int32	kWh/100	
41510	Phase 2 reactive energy forward	int32	kvarh/100	
41520	Phase 2 reactive energy reverse	int32	kvarh/100	
41530	Phase 2 reactive energy	int32	kvarh/100	