

DKM-411

POWER ANALYSER

- COLOUR TFT SCREEN
- IP COMMUNICATIONS
- HARMONIC ANALYSIS
- SCOPEMETER

The DKM-411 is an advanced precision metering device offering a 3.5" size, 320x240 pixel color TFT, together with unrivalled remote monitoring capabilities over internet in a compact and low-cost package.

The unit itself is a web page and can be opened through any browser for remote monitoring.

The central monitoring feature allows monitoring of thousands of meters from one central PC.

FEATURES

True RMS measurements, 0.2% accuracy
3.5" TFT LCD, 320x240 pixels
Harmonic distortion display (63 harmonics)
Oscilloscope, waveform display
Phasor diagram display
Internal battery backed-up real time clock
Max demand display
User configurable display screen
2 configurable relay outputs
Energy pulse output capability
2 opto-isolated, configurable digital inputs
Dual active-reactive power counters
Both mains/generator energy metering
4 quadrant energy counters
Configurable user counters
Voltage transformer ratio for MV applications
Password protected front panel programming
Universal supply input (both AC & DC)
Reduced panel depth
Sealed front panel (IP54)

MEASUREMENTS

Phase to phase voltages: U12-U23-U31-Uavg
Phase to neutral voltages: V1-V2-V3-Vavg
Phase currents: I1-I2-I3-Iavg-I_{tot}
Active power: P1-P2-P3-ΣP
Reactive power: Q1-Q2-Q3-ΣQ
Apparent power: S1-S2-S3-ΣS
Power factor: cos1-cos2-cos3-Σcos
Active and reactive counters: Pimp1-Pexp1-
Qcap1-Qind1, Pimp2-Pexp2-Qcap2-Qind2
User counters: USR1-USR2-USR3-USR4
2...63 Harmonics of any voltage or current
Phase to neutral voltages vector angles
Phase to phase voltages vector angles
Phasor vector diagram



COMMUNICATIONS

Modbus RTU RS-485
Modbus TCP/IP
SNMP
TCP/IP server
TCP/IP client
UDP
SMTP
Embedded web server
Web monitoring
Web programming
GSM-SMS sending
e-mail sending
Central Monitoring through IP
Free configuration & monitoring software

COMMUNICATION PORTS

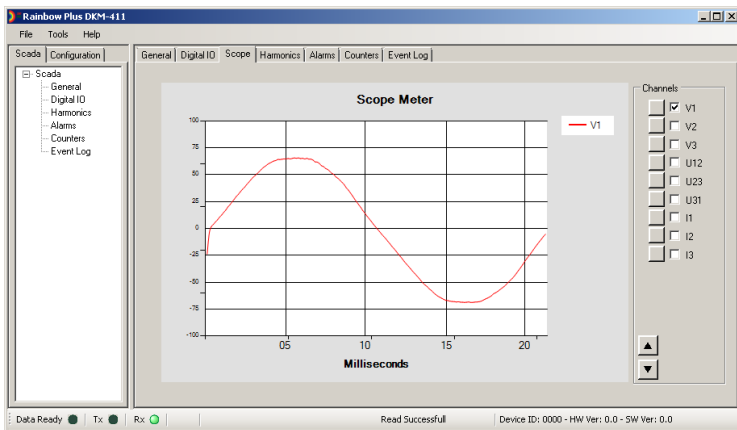
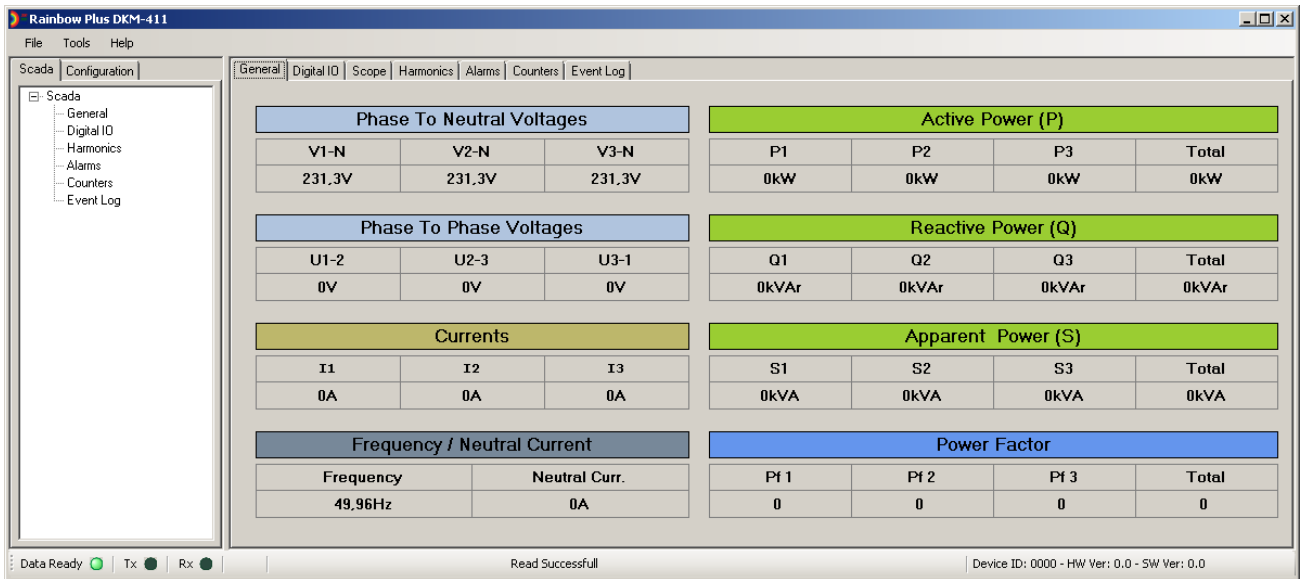
Ethernet 10/100Mb
RS-485 isolated (Modbus RTU)
RS-232 for external GPRS modem
USB Host for data recording on flash memory
USB Device for PC connection

SUPPORTED TOPOLOGIES

3 phases 4 wires, star
3 phases 3 wires, 3 CTs
3 phases 3 wires, 2 CTs (L1-L2)
3 phases 3 wires, 2 CTs (L1-L3)
3 phases 4 wires, delta
2 phases 3 wires, L1-L2
2 phases 3 wires, L1-L3
1 phase 2 wires



RAINBOW PROGRAM



Cancel Scada Data

Serial Port TCP/IP USB Rainbow Scada

Buttons: Connect, Disconnect, Return

TCP/IP

IP Address: 192.168.2.6 | Device Address: 1 | Modbus Port: 502 | Scan Interval: 1500 ms

Status: No Connection, State, TX, RX

Timers

- Duration Time for Volt. Alarms: 30 sec
- Duration Time for Freq. Alarms: 30 sec
- Dur. Time for Act. Pow. Alarms: 30 sec
- Dur. Time Reac. Pow. Alarms: 30 sec
- Dur. Time for Cos. Alarm: 30 sec
- Dur. Time for Current Alarm: 30 sec
- Dur. Time for THD-V Alarm: 30 sec
- Dur. Time for THD-I Alarm: 30 sec
- Volt. Unbalance. Duration: 30 sec
- Curr. Unbalance Duration: 30 sec

Buttons: Read From Device, Read From File, Write To Device, Write To File

Status: Data Ready, Tx, Rx. Read Successful. Device ID: 0000 - HW Ver: 0.0 - SW Ver: 0.0

CENTRAL MONITORING

Chizaj Değerleri (ENERJİ ANALIZÖRÜ)

Ozet | **Ölçümler** | Sayacılar | Talep/Min/Max | Alarmlar

V1 : 221.3 V	P1 : -0.02 kW	THD_V1 : 2.4	Frekans : 49.99 Hz
V2 : 227.9 V	P2 : 0.06 kW	THD_V2 : 2.0	V_internal : 18.0 Vdc
V3 : 219.7 V	P3 : 0.16 kW	THD_V3 : 1.9	V_ave : 222.9 V
U12 : 387.5 V	Q1 : -0.90 kVAr	THD_U12 : 1.6	U_ave : 386.1 V
U23 : 385.9 V	Q2 : -1.22 kVAr	THD_U23 : 3.0	I_ave : 4.3 A
U31 : 385.0 V	Q3 : 0.77 kVAr	THD_U31 : 2.4	V_dengesiz : 0.7 %
I1 : 4.1 A	S1 : 0.90 kVA	THD_I1 : 19.0	I_dengesiz : 4.6 %
I2 : 5.4 A	S2 : 1.22 kVA	THD_I2 : 27.0	
I3 : 3.6 A	S3 : 0.78 kVA	THD_I3 : 15.7	
In : 12.9 A		THD_In : 61.2	
P_tot : 0.20 kW	pf_L1 : -0.022		
Q_tot : -1.35 kVAr	pf_L2 : -0.049		
S_tot : 2.90 kVA	pf_L3 : 0.205		
Q/P_avg : -0.068	Q/P_L1 : 100.0		
	Q/P_L2 : 100.0		
	Q/P_L3 : 100.0		

EMBEDDED WEB SERVER

WEB Scada

Measurement | Counters | Events | Alarms

LINE	POWER	THDS	
L1 Volt	230.2V	Tot P 200.7 kW	THD L1 0.4 %
L2 Volt	230.1V	Tot Q 51.1 kVAr	THD L2 1.6 %
L3 Volt	230.1V	Tot S 207.1 kVA	THD L3 1.6 %
L12 Volt	399.0V	PowerFactor 0.959 ind	THD L12 1.9 %
L23 Volt	398.5V	Demand I1 300.2 A	THD L23 3.3 %
L31 Volt	398.5V	Demand I2 300.6 A	THD L31 2.1 %
I1 Amps	300.5 A	Demand I3 300.4 A	THD I1 0.4 %
I2 Amps	300.1 A	Demand I0 300.5 A	THD I2 1.5 %
I3 Amps	300.3 A	Demand P 207.9 W	THD I3 1.6 %
N Amps	0.0 A	Demand Q 51.3 kVAr	THD In 0.0 %
Frequency	50.00 Hz		
V-avg	230.1 V		
U-avg	398.7 V		
I-avg	300.3 A		

Web Monitoring

WEB Scada

Measurement | Counters | Events | Alarms

COUNTERS

Import Power (kWh-In) 1368.2 kWh
 Export Power (kWh-Ek) 504.3 kWh
 Inductive Power (kVarh-In) 13.8 kVarh
 Capacitive Power (kVarh-Cp) 42.4 kVarh

Import Power (kWh-In) 0.0 kWh
 Export Power (kWh-Ek) 0.0 kWh
 Inductive Power (kVarh-In) 0.0 kVarh
 Capacitive Power (kVarh-Cp) 0.0 kVarh

Input Counter 1 (InCnt-1) 0
 Input Counter 2 (InCnt-2) 0

Web Monitoring

WEB Scada

Measurement | Counters | Events | Alarms

Event	Alarm	Date	Time	Status	I1	I2	I3	I0	Frequency	I1	I2	I3	I0	I1	I2	I3	I0	
1	Resistor 0	2010-08-02	08:11:10	176 V	176 V	176 V	50.0 Hz	305 V	305 V	305 V	100 V	100 V	100 V	148 V				
2	Resistor 0	2010-08-02	08:11:10	176 V	176 V	176 V	50.0 Hz	305 V	305 V	305 V	100 V	100 V	100 V	148 V				
3	Resistor 0	2010-08-02	08:11:10	176 V	176 V	176 V	50.0 Hz	305 V	305 V	305 V	100 V	100 V	100 V	148 V				
4	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				
5	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				
6	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				
7	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				
8	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				
9	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				
10	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				
11	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				
12	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				
13	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				
14	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				
15	Resistor 0	2010-08-02	08:11:10	0 V	0 V	0 V	0 Hz	0 V	0 V	0 V	0 V	0 V	0 V	0 V				

Event Log Display

