

DATAKOM DKM-409 NETWORK ANALYSER WITH HARMONIC MEASUREMENT AND SCOPEMETER

INTRODUCTION

The DKM-409 is a precision instrument designed for displaying various AC parameters in 3-phase distribution panels.

Thanks to its isolated RS-485 Modbus RTU communication port, the device is free from ground potential difference issues and measured parameters are safely transferred to factory and building automation systems.

The power supply of the unit is isolated, thus the same device can be used in both 230/400V and 120/208V systems.

The graphic screen allows display of waveforms and harmonic analysis graphs.

Various display screens can be scrolled automatically. The user configurable screen where any measured parameter set can be displayed, transforms the unit to a custom designed measurement panel.

The unit fits into a standard 92x92mm panel opening.

MEASURED PARAMETERS

Phase to phase voltages: U12-U23-U31

Phase to neutral voltages: V1-V2-V3

Phase currents: I1-I2-I3

Phase active power: P1-P2-P3

Phase reactive power: Q1-Q2-Q3

Phase apparent power: S1-S2-S3

Phase power factor: cos1-cos2-cos3

Total active power: $\sum P$

Total reactive power: $\sum Q$

Total apparent power: $\sum S$

Total power factor: $\sum \cos$

Active power counters: Pc1-Pc2

Reactive power counters: Qc1-Qc2

User counters: USR1-USR2-USR3-USR4

2...31 Harmonics of any voltage or current



FEATURES

True RMS measurements

Harmonic distortion display (31 harmonics)

Oscilloscope, waveform display

Max demand display

User configurable display screen

Fully isolated RS-485 serial port

MODBUS-RTU communication

2 configurable relay outputs

Energy pulse output capability

Optically isolated, configurable digital inputs

Switched dual active-reactive power counters

Independent mains/generator energy metering

Configurable user counters

Voltage transformer ratio for MV applications

Password protected front panel programming

High visibility, 128x64 pixels graphic LCD

Reduced panel depth

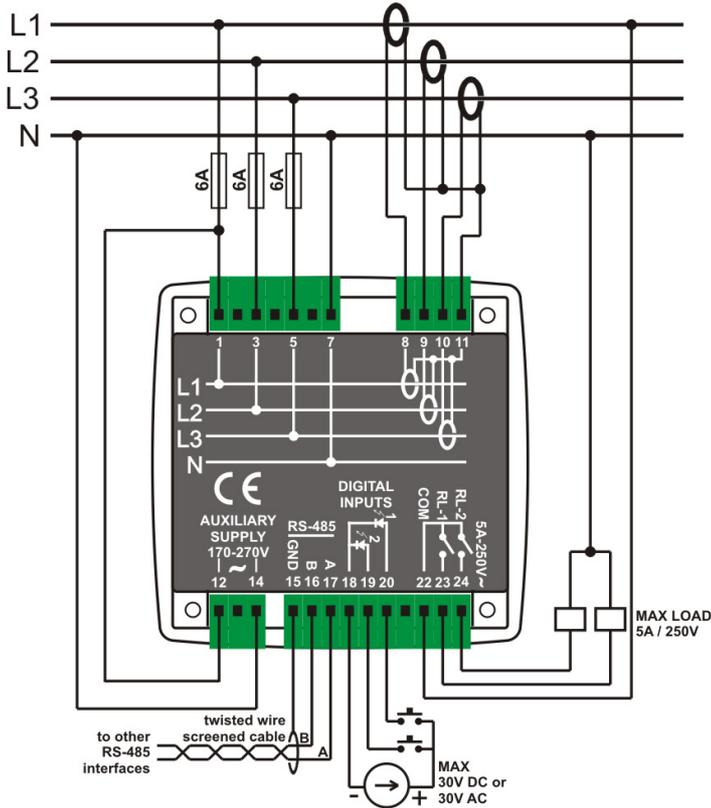
Wide operating temperature range

Sealed front panel (IP54)

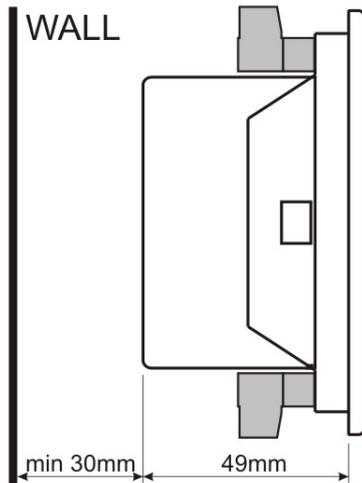
Plug-in connection system



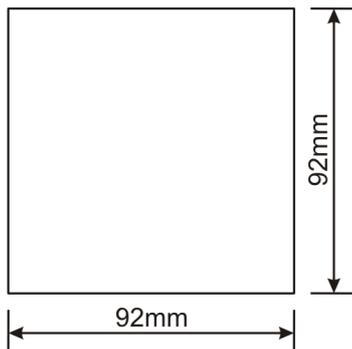
CONNECTION DIAGRAM



MOUNTING TOLERANCES



PANEL CUTOUT



TECHNICAL SPECIFICATIONS

Power Supply Input:

170 - 275VAC,
50 - 60Hz nominal ($\pm 10\%$)
Different supply voltages available.

Measurement Input Range:

Voltage: 10 - 300 V AC (L-N)
20 - 520 V AC (L-L)

Current: 0.2 - 5.5 A AC

Frequency: 30 - 100 Hz

Accuracy:

Voltage: 0.5%+1 digit

Current: 0.5%+1 digit

Frequency: 0.5%+1 digit

Power(kW,kVAr): 1.0%+2digit

Power factor: 2.0%+2digit

Measurement Range:

CT range: 5/5A to 5000/5A

VT range: 1.0/1 to 5000.0/1

kW range: 1.0 kW to 50.0 MW

Power Consumption:

< 4 VA

Voltage burden:

< 0.1VA per phase

Current burden:

< 1VA per phase

Relay Outputs:

5A @ 250V AC

Digital Inputs:

Active level: 5 to 30V-DC or AC

Min pulse: 250ms.

Isolation: 1000V AC, 1 minute

Serial Port:

Signal level: RS-485

Protocol: Modbus RTU

Data Rate: 9600 bauds

Isolation: 500V AC, 1 minute

Operating Temperature:

-20 °C to +70 °C (-4 to +158 °F).

Maximum humidity:

95% non-condensing.

Degree of Protection:

IP 54 (Front Panel)

IP 30 (Back panel)

Enclosure:

Non-flammable, ROHS compliant

Installation:

Flush mounting with rear brackets

Dimensions:

102x102x53mm (WxHxD)

Panel Cutout:

92x92mm

Weight:

350 gr

EU Directives:

2006/95/EC (LVD)

2004/108/EC (EMC)

Norms of reference:

EN 61010 (safety)

EN 61326 (EMC)

PACKAGING INFORMATION

Pieces per Package: 12 pieces

Package Size: 280 x 170 x 215mm

Package Weight: 4.4 kg

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