DKM-411 POWER ANALYZER

The DKM-411 is an advanced precision metering device offering an 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 analyzers from one central PC.

User configurable screens where any measured parameter set can be displayed, transforms the unit to a custom designed measurement panel.

SAFETY NOTICE
Failure to follow below instructions will result in death or serious injury

* Electrical equipment should be installed only by qualified specialist. No responsibility is assured by the manufacturer or any of its subsidiaries for any consequences resulting from the non-compliance to these instructions.

* Check the unit for cracks and damages due to transportation. Do not install damaged equipment.

* Do not open the unit. There is no serviceable parts inside.

* Fuses of fast type (FF) with a maximum rating of 6A must be connected to the power supply and phase voltage inputs, in close proximity of the unit.

* Disconnect all power before working on equipment.

* When the unit is connected to the network do not touch terminals.

* Short circuit terminals of unused current transformers.

* Any electrical parameter applied to the device must be in the range specified in the user manual.

* Do not try to clean the device with solvent or the like. Only clean with a dump cloth.

* Do not allow water to come in the unit.

* Verify correct terminal connections before applying power.

* Only for front panel mounting.

INSTALLATION

Before installation:

- Read the user manual carefully, determine the correct connection diagram.
- Remove all connectors and mounting brackets from the unit, then pass the unit through the mounting opening.
- Put mounting brackets and tighten. Do not tighten too much, this can brake the enclosure.
- Make electrical connections with plugs removed from sockets, then place plugs to their sockets.
- Make sure to use adequate fuses.
- Do not subject the unit to water spill.

Below conditions may damage the device:

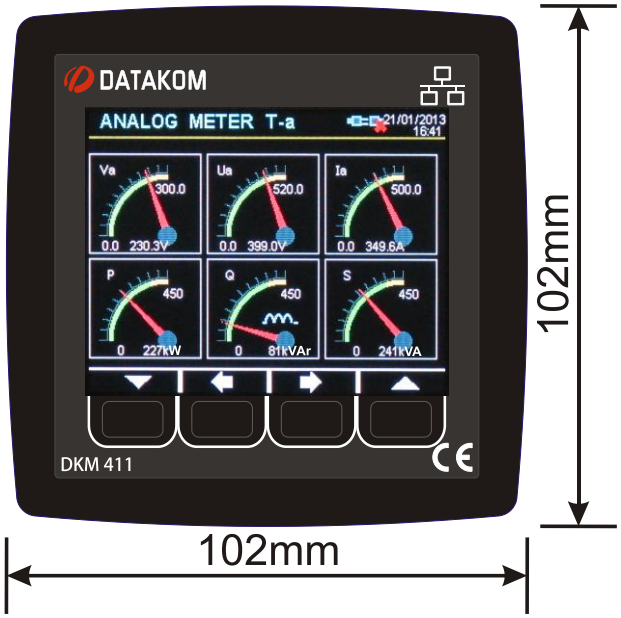
- Incorrect connections.
- Incorrect power supply voltage.
- Voltage at measuring terminals beyond specified range.
- Current at measuring terminals beyond specified range.
- Connecting or removing data terminals when the unit is powered-up.
- Overload or short circuit at relay outputs
- Voltage applied to digital inputs over specified range.
- High voltage applied to communication ports.

Below conditions may cause abnormal operation:

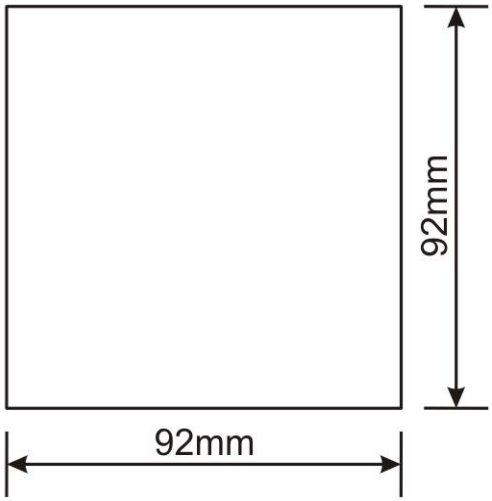
- Power supply voltage below minimum acceptable level.
- Power supply frequency out of specified limits
- Phase order of voltage inputs not correct.
- Current transformers not matching related phases.
- Current transformer polarity incorrect.

Detailed user manual of this product may be downloaded at:
www.datakom.com.tr

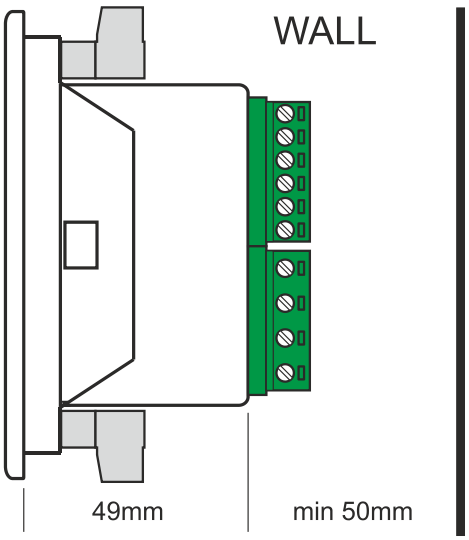
DIMENSIONS



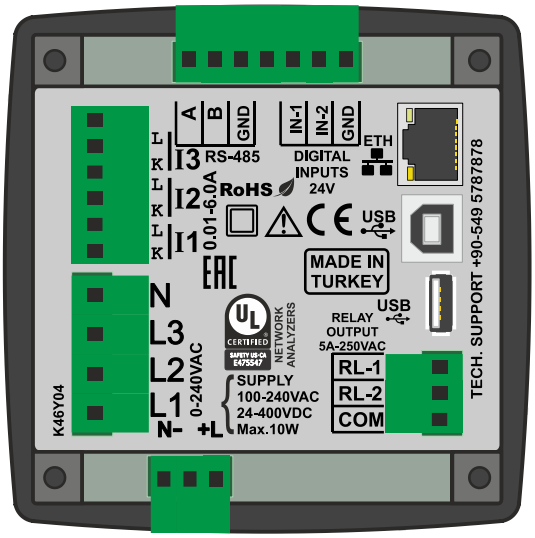
PANEL CUTOUT



REQUIRED PANEL DEPTH



VIEW FROM BACK



ELECTRICAL INSTALLATION

Do not install the unit close to high electromagnetic noise emitting devices like contactors, high current busbars, switchmode

Although the unit is protected against electromagnetic disturbances, excessive disturbance can affect the operation, measurement precision and data communication quality.

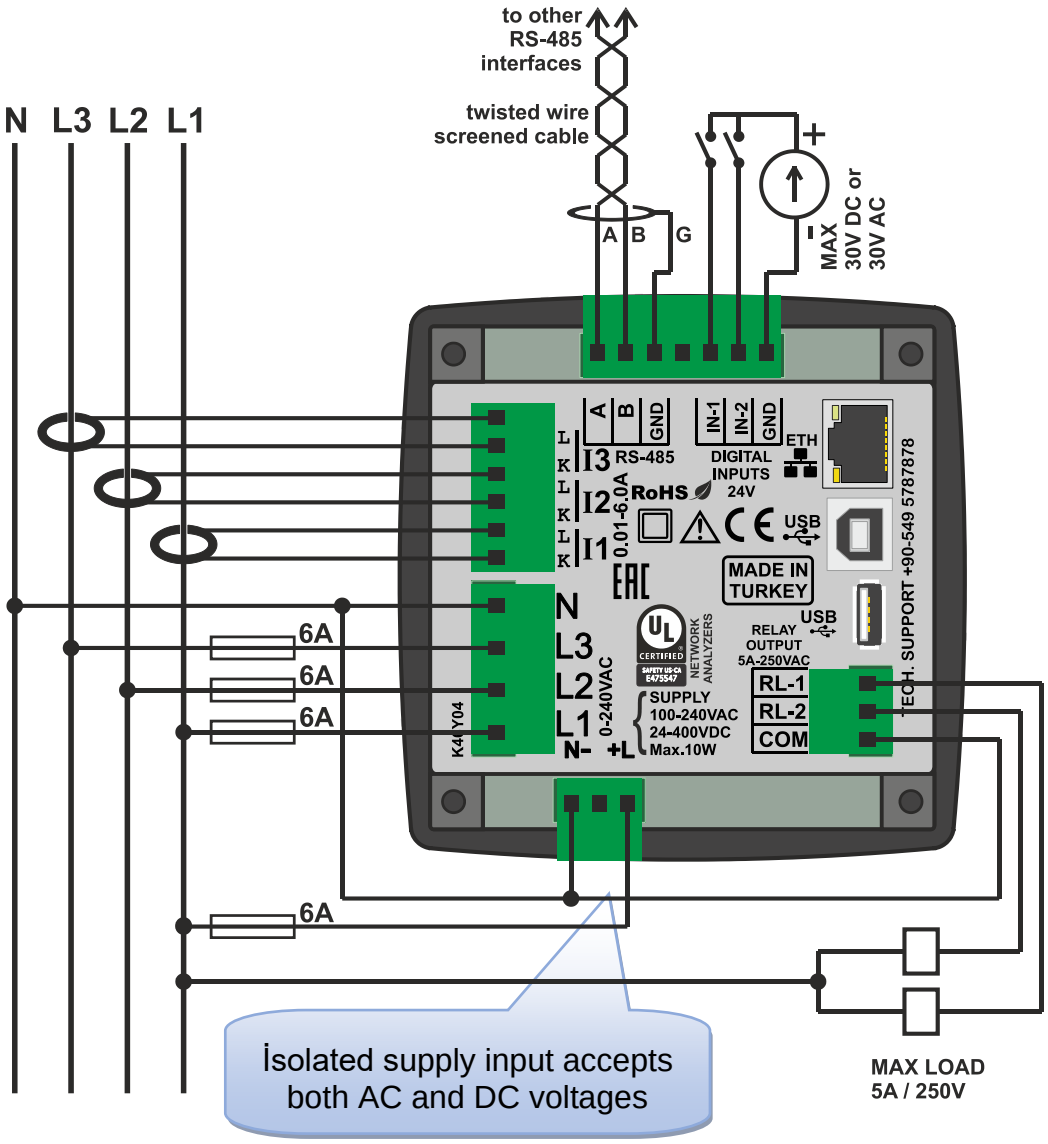
- **Use adequate cable section, at least 0.75mm² (AWG18).**
- **For current transformer inputs, use at least 1.5mm² section (AWG15) cable.**
- **The current transformer cable length should not exceed 1.5 meters. If longer cable is used, increase the cable section proportionally.**
- **Current transformers must have 5A output.**

Current Transformers must be used for current measurement.

No direct connection allowed.

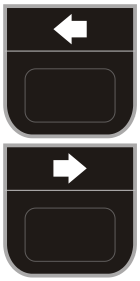
Do not overload relay outputs. Use extra contactors if required.

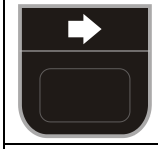
CONNECTION DIAGRAM FOR 230/400V NETWORK



PUSHBUTTON FUNCTIONS

Four buttons on the front panel provide access to configuration and measurement screens.

BUTTON	FUNCTION
	**WHEN HELD PRESSED FOR 5 SECONDS:** enters or exits PROGRAMMING mode.

BUTTON	FUNCTION
	Selects next display screen in the same display group. **WHEN HELD PRESSED FOR 5 SECONDS:** Makes the current display screen the default screen that comes up at power-on.
	Selects previous display group.
	Selects next display group.
	Selects previous display screen in the same display group. Resets the ALARM RELAY. **WHEN HELD PRESSED FOR 5 SECONDS:** Cancels all alarms.

DEVICE CONFIGURATION

To **enter the program mode**, press together with ◄ and ► buttons for 5 seconds.

When the program mode is entered, below password entry screen will be displayed.

A 4 digit password must be entered using ▼, ▲ and ↵ buttons. **The factory default password is** "9876"**.** The ▼, ▲ buttons modify the value of the current digit. The ↵ button steps to the next digit.

To exit the program mode **press** ▲ **and** ESC buttons together during 5 seconds**.**

The program mode is driven with a two level menu system. The top menu consists on program groups and each group consists on various program parameters.

When program mode is entered, a list of available groups will be displayed. Navigation between different groups are made with ▼ and ▲ buttons. Selected group is shown in a different color. In order to enter inside a group, please press ↵ button. In order to exit from the group to the main list please press ESC button.

Inside a group a list of available parameters will be displayed. Navigation between parameters are made with ▼ and ▲ buttons. To modify the parameter, please press ↵ button. In order to exit from the group to the main list please press ESC button.

TECHNICAL SPECIFICATIONS

Power Supply: Universal and isolated input
50-305VAC (45 - 500Hz)
19-400VDC
Power Consumption: < 10 W
Measurement Input Range:
Voltage: 5 - 300 V AC (L-N)
10 - 520 V AC (L-L)
Current: 0.1 - 5.5 A AC
Frequency: 30 - 500 Hz
Accuracy:
Voltage: 0.2%+1digit
Current: 0.2%+1 digit
Frequency: 0.1%+1 digit
Power (kW, kVAr): 0.4%+2digit
Power factor: 0.2%+1digit
Measurement Range:
CT range: 5**/**5A to 10'000**/**5A
VT range: 0.1**/**1 to 5000.0**/**1
kW range: 0.1 kW to 50MW
Voltage burden: < 0.1VA per phase
Current burden: < 0.5 VA per phase
Ethernet Port: 10/100 Mbits
USB Device Port: USB 2.0 Full speed
USB Host Port: USB 2.0 Full speed
RS-485 Port: selectable baud rate
Modem Port: logic level serial data, selectable baud rate
Relay Outputs: 5A @ 250VAC/30VDC
Digital Inputs:
Active level: 5 to 30V-DC or AC
Min pulse: 250ms.
Isolation: 1000V AC, 1 minute
Operating Temperature:
-20°C to +50°C (-4 to +122 °F).
Storage Temperature:
-30°C to +70°C (-22 to +158 °F).
Maximum humidity: 95% non-condensing.
Degree of Protection:
IP 65 (Front Panel) with optional gasket
IP 30 (Back panel)
Enclosure: Non-flammable, ROHS compliant
Installation: Flush mounting with rear brackets
Dimensions: 102x102x53mm (WxHxD)
Panel Cutout: 92x92mm
Weight: 350 gr

UL-CSA Certification:
UL 61010-1, 3rd Edition, 2012-05, CAN/CSA-C22.2
File: E475547, Vol. D1

EU Directives Conformity:
2006/95/EC (low voltage)
2004/108/EC (EMC)
Norms of reference:
EN 61010 (safety requirements)
EN 61326 (EMC requirements)