

DFC-0124

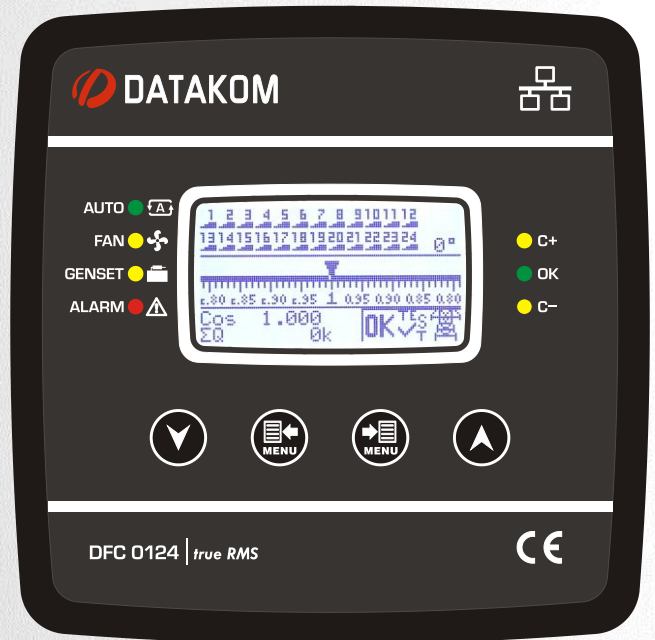
REACTIVE POWER CONTROLLER

The DFC-0124 is an advanced, precision 24 step power factor control and metering device offering unrivalled internet monitoring capabilities in a standard 144x144mm panel mount enclosure.

The unit can drive thyristor based solid state contactors for the precise compensation of fast changing reactive loads.

Thanks to its SVC outputs it can match the exact target pf value independently of capacitor rating selections.

The unit itself is a web page and can be opened through any browser for remote monitoring. The central monitoring feature can monitor thousands of meters on one screen.



FEATURES

- 24 step outputs**
- All outputs can drive static contactors**
- Always exact correction with SVC outputs**
- 0.5% measurement accuracy**
- Adjustable measurement period: 20 to 100ms**
- Power factor correction delay as low as 40ms**
- Easy automatic setup**
- Automatic detection of step failures**
- Long term data recording on USB flash memory**
- 250 event records with date-time**
- Graphic LCD display, 128x64 pixels**
- Harmonic distortion display (31 harmonics)**
- Oscilloscope, waveform display**
- Battery backed-up real time clock**
- User configurable display screens**
- User configurable relay outputs**
- Voltage transformer ratio for MV applications**
- Password protected front panel programming**
- Reduced panel depth**
- Sealed front panel (IP54)**

SVC OUTPUTS

SVC stands for "Static Var Compensation".

The unit has 3 SVC outputs which are duty cycle controlled PWMs that control 3 reactors with a precision of 1000 steps.

Thus the controller is able to supply almost any required reactive power, enabling matching the exact required PF, independently from capacitor bank selection.

COMMUNICATIONS

- Modbus RTU RS-485**
- Modbus TCP/IP**
- SNMP**
- TCP/IP server**
- TCP/IP client**
- UDP**
- SMTP**
- 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**

MEASUREMENTS

- Phase to phase voltages: U12-U23-U31-Uavg**
- Phase to neutral voltages: V1-V2-V3-Vavg**
- Phase currents: I1-I2-I3-Iavg-Itot**
- Active power: P1-P2-P3-ΣP**
- Reactive power: Q1-Q2-Q3-ΣQ**
- Apparent power: S1-S2-S3-ΣS**
- Power factor: cos1-cos2-cos3-Σcos**
- 2...31 Harmonics of any voltage or current**



COMMUNICATION DIAGRAM



DATA CONNECTION

The free monitoring and setup program connects to the unit through USB, RS-485 and internet.

MODBUS RTU – MODBUS TCP/IP

The device allows MODBUS RTU communication through its isolated RS-485 port. The MODBUS TCP/IP communication is performed through the ethernet port.

SNMP COMMUNICATION

The device allows SNMP communication through its ethernet port. The MIB file is available at Datakom Technical Support.

DETAILED DATA RECORDING

The unit records all measured values with the required period to the USB flash memory placed in the USB Host port. The memory capacity is unlimited and detailed data recording may continue during years.

EXTERNAL GSM MODEM

The external Datakom DKG-090 modem provides SMS, e-mail and central monitoring features.

E-MAIL SENDING

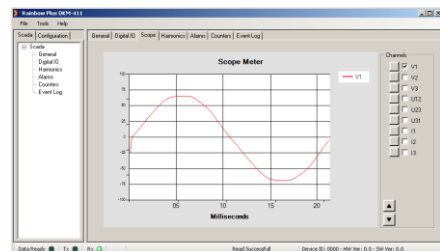
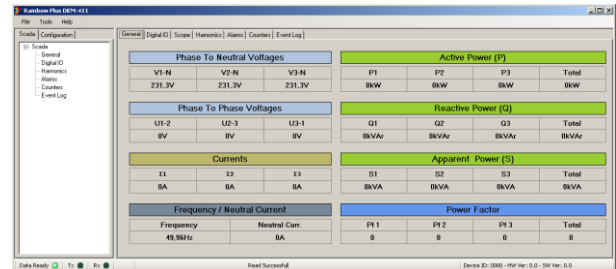
In case of fault or in preprogrammed conditions, the device is able to send e-mail messages to a maximum of 3 addresses. This features is provided through both ethernet and external GSM-modem.

SMS SENDING

In case of fault or in preprogrammed conditions, the device is able to send SMS messages to a maximum of 4 addresses. This features is provided through the external Datakom DKG-090 GSM-modem.

RAINBOW PROGRAM

The free Rainbow program allows monitoring, control and parameter setup of the device. It works both through USB, RS-485 and internet. In case of inaccessible devices behind firewall, an access path through the central monitoring program is also provided.



EMBEDDED WEBSITE

All important information of the device may be monitored through internet with any web browser. The embedded website is available through the ethernet port. Thanks to the dynamic DNS support, no static IP is required.

WEB Scada

ANA EKRAAN OLCUMLAR SAYAÇLAR OLAY KAYIT ALARMLAR KADEMELER

SİTTE NO : DATAKOM/UPC0124-----
 SERİ NO : 1234567890-----
 ALARM : Alarm yok
 MOD : FIBER
 GÖR : 1.000

AYLIK PERFORMANS						
TARİH	AVG	AVG(A)	AVG(C)	CSIS (I)	TARİH (A)	CSIS (C)
3/2013	0.0	0.0	0.0	0.000	0.0	0.000
2/2013	-	-	-	-	-	-
1/2013	-	-	-	-	-	-
12/2012	-	-	-	-	-	-
11/2012	-	-	-	-	-	-
10/2012	-	-	-	-	-	-
9/2012	-	-	-	-	-	-

GÜNCÜ PERFORMANS						
TARİH	AVG	AVG(A)	AVG(C)	CSIS (I)	TARİH (A)	CSIS (C)
23/ 3/2013	18.1	0.0	0.1	0.000	0.0	0.999

WEB Scada

ANA EKRAAN OLCUMLAR SAYAÇLAR OLAY KAYIT ALARMLAR

SEBEKE		GÜC		THD	
L1 Volt	210.3V	Top P	164 k	THD L1	1.8
L2 Volt	209.8V	Top Q	40 k	THD L2	2.9
L3 Volt	214.8V	Top S	169 k	THD L3	3.1
L1 Volt	364.5V	PowFactor	0.971	THD L12	2.2
L23 Volt	367.8V	Demand I1	0 A	THD L23	3.0
L31 Volt	367.2V	Demand I2	0 A	THD L31	3.1
L1 Akim	256 A	Demand I3	0 A	THD I1	1.7
L2 Akim	274 A	Demand Io	0 A	THD I2	6.6
L3 Akim	268 A	Demand P	0 k	THD I3	3.5
N Akim	20 A	Demand Q	0 k	THD In	84.8
Frekans	50.00 Hz				
V-ort	211.6V				
U-ort	366.5V				
I-ort	266 A				

WEB Scada

ANA EKRAAN OLCUMLAR SAYAÇLAR OLAY KAYIT ALARMLAR KADEMELER

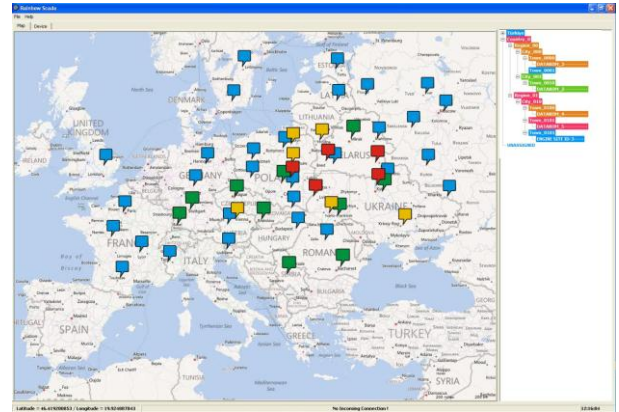
SAYAÇLAR				
NO	TİPİ	BRANŞ	ÖLÇÜM SIKLIĞI	DEĞERLER (GİRİŞ KURSU)
1	C / 1121	3.0 kWaz	5.0 Hz	0
2	C / 1121	3.0 kWaz	5.0 Hz	0
3	C / 1121	3.0 kWaz	5.0 Hz	0
4	C / 1121	3.0 kWaz	5.0 Hz	0
5	C / 1121	3.0 kWaz	5.0 Hz	0
6	C / 1121	3.0 kWaz	5.0 Hz	0
7	C / 1121	3.0 kWaz	5.0 Hz	0
8	C / 1121	3.0 kWaz	5.0 Hz	0
9	C / 1121	3.0 kWaz	5.0 Hz	0
10	C / 1121	3.0 kWaz	5.0 Hz	0
11	C / 1121	3.0 kWaz	5.0 Hz	0
12	C / 1121	3.0 kWaz	5.0 Hz	0
13	C / 1121	3.0 kWaz	5.0 Hz	0
14	C / 1121	3.0 kWaz	5.0 Hz	0
15	C / 1121	3.0 kWaz	5.0 Hz	0
16	C / 1121	3.0 kWaz	5.0 Hz	0
17	C / 1121	3.0 kWaz	5.0 Hz	0
18	C / 1121	3.0 kWaz	5.0 Hz	0
19	C / 1121	3.0 kWaz	5.0 Hz	0
20	C / 1121	3.0 kWaz	5.0 Hz	0
21	C / 1121	3.0 kWaz	5.0 Hz	0
22	C / 1121	3.0 kWaz	5.0 Hz	0
23	C / 1121	3.0 kWaz	5.0 Hz	0
24	C / 1121	3.0 kWaz	5.0 Hz	0
25	C / 1121	3.0 kWaz	5.0 Hz	0

CENTRAL MONITORING

Up to 100 units is monitored through internet with the free central monitoring software. The software supports devices with local IP or dynamic IP. This feature is provided through both ethernet and GSM modem.

Monitoring of more than 100 units is chargeable.

The central monitoring program allows remote control of the operating mode and the manual control of step outputs for remote testing purposes.



Rainbow Scada Ver:130214

File Help

Map Device

Summary Measurements Phasor Diagram Counters Demand/Min/Max Alarms

Tree Log

Country: 0
UNASSIGNED
DATAKOM

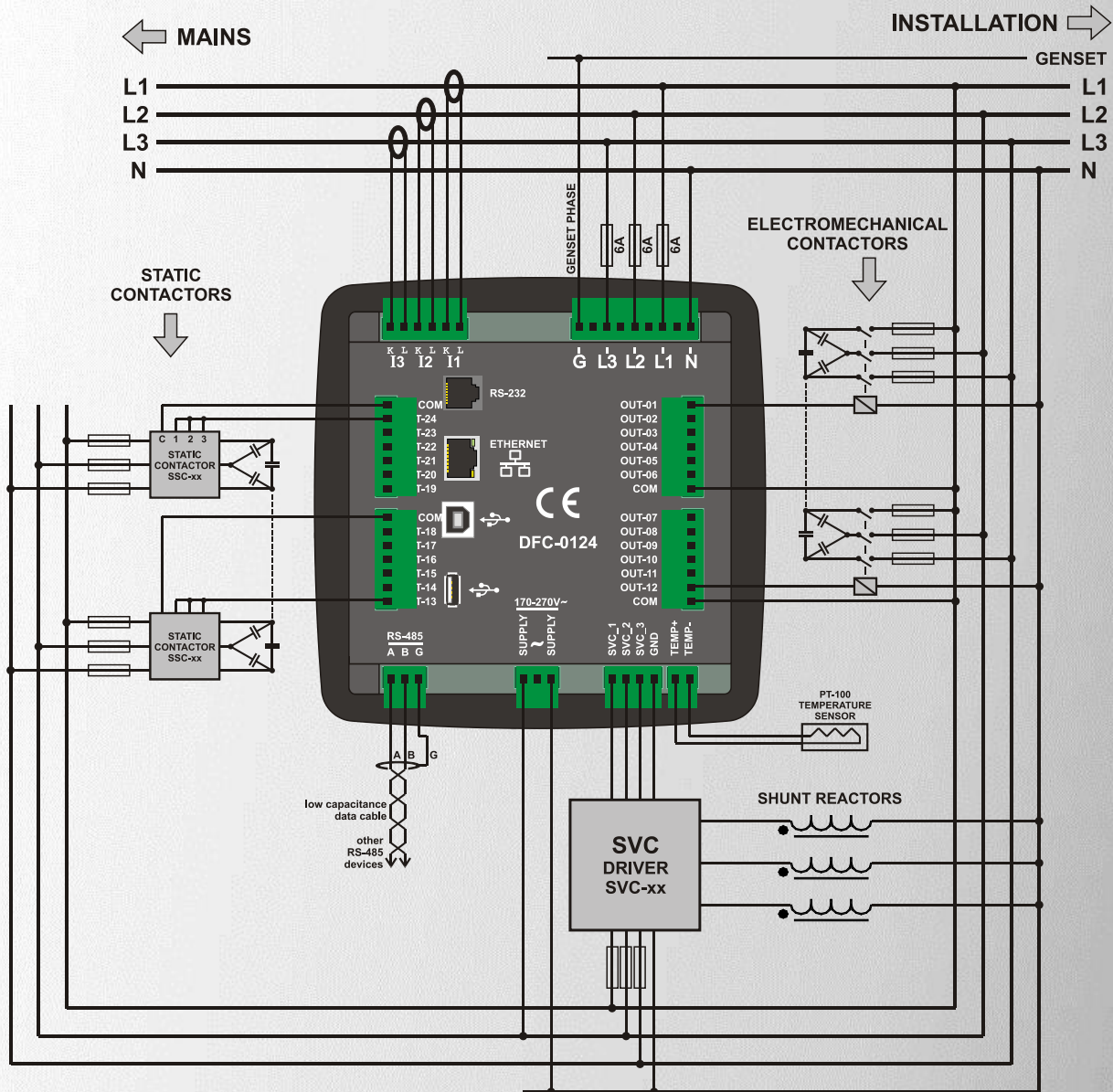
UniqueID = 000114145409575388: WAN-IP = 55.56.46.49
 Latitude = 41.001037598 LAN-IP = 192.168.2.6
 Longitude = 29.151548386 GSM-IP = 0.0.0.0
 Device Type = D411 Client-IP = 192.168.2.6:10002
 SW Version = 1.3 SITE-ID = DATAKOM/DKM411
 HW Version = 0.1 Serial Number = 1234567890
 Last Update Date = 04/03/2013 ModBus Port = 502
 Last Update Time = 17:53:43 ModBus Addr = 1
 Device Date = 04/03/2013 GSM Connection = 0
 Device Time = 17:53.16

Alarms

Shutdown:
High Voltage Alarm,

1, Warning : 0, Running : 0, Normal : 0, Si 17:54:36

INSTALLATION DIAGRAM



TECHNICAL SPECIFICATIONS

Power Supply Input:

170 to 275V AC
50 - 60Hz nominal ($\pm 10\%$)

Power Consumption:

< 15 VA

Measurement Input Range:

Voltage: 5 - 300 V AC (L-N)
10 - 520 V AC (L-L)
Current: 0.005 - 5.5 A AC
Frequency: 30 - 100 Hz

Accuracy:

Voltage: 0.5%+1 digit
Current: 0.5%+1 digit
Frequency: 0.2%+1 digit
Power(kW,kVAr): 1.0%+2 digit
Power factor: 0.5%+1 digit

Measurement Range:

CT range: 5/5A to 10'000/5A
VT range: 0.1/1 to 200.0/1
kW range: 0.1 kW to 6.5MW

Voltage burden:

< 0.1VA per phase

Current burden:

< 0.5VA per phase

Number of step outputs:

24

Relay Outputs:

5A @ 250V AC

Static Contactor Outputs:

50mA @ 12V DC

SVC Outputs:

50mA @ 12V DC

Temperature Input:

PT100

Operating Temperature:

-20°C to +70°C (-4 to +176 °F).

Maximum humidity:

95% non-condensing.

Degree of Protection:

IP 54 (Front), IP 30 (Back)

Enclosure:

Non-flammable, ROHS compliant

Installation:

Flush mounting with rear brackets

Dimensions:

164x164x69mm (WxHxD)

Panel Cutout:

140x140mm

Weight:

700 gr

EU Directives:

2006/95/EC (LVD)
2004/108/EC (EMC)

Norms of reference:

EN 61010 (safety)
EN 61326 (EMC)