



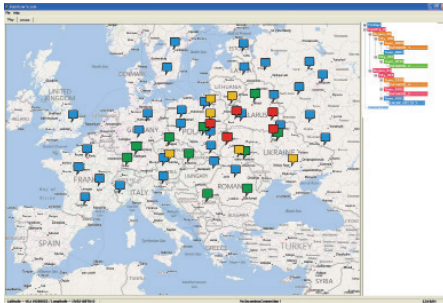
DATAKOM



GENSET PRODUCTS



METERING & CONTROL



REMOTE MONITORING

PRODUCT CATALOGUE



About us

Datakom was founded in 1988 as an electronics design house of 3 people, exclusively providing electronic device design services with two engineers.

Datakom established its manufacturing department in 1990. Since 1994 the company has adopted the strategy of designing and producing company's own products. Today, Datakom is a top player in the generator electronics sector, offering the largest product portfolio in the market. Datakom's constant search for innovation and improvement assures that it will remain a leading name in the generator electronics market and will continue to increase the company's market share.

Datakom plans to progress in fields of energy quality, monitoring of electrical transmission and distribution network along with carbon footprint analysis and reporting. Datakom prioritizes energy quality in company's future plans and allocates a sizeable budget for R&D investments on this field.

Most products recently designed in Datakom offer internet based communication. These devices connect to the Rainbow SCADA internet monitoring service directly, without any additional module. Rainbow SCADA requires no installation and adds new features frequently, offering a minimal cost of ownership. The advantages of Rainbow SCADA has quickly made it the preferred monitoring tool of many companies.

Datakom has design, production, technical support, sales and after sales departments on site, which reduces production costs and provides a better service quality to its customers. Datakom believes in unconditional customer satisfaction. The company uses only the highest quality materials and constantly seeks for improvement in the quality of products. The quality management system plays a critical role in leading the world market.

Datakom is a firm believer that constant improvement is the key to securing a strong position in the market. Datakom redirects most of its investments to the R&D department, to ensure dynamism and productivity. Currently 23% of Datakom's employees are directly part of the R&D team, while 30% of all employees are involved in the R&D activities. Datakom allocates 15% of company's turnover to R&D, exceeding the average investment of the electronics sector.

Today Datakom manufactures more than 400 genuine electronic products and employs 70 people, of which 30% are experienced electrical and electronics engineers graduated from leading universities of our country. Datakom is ambitious to become one of Turkey's first ranked technology companies and take a seat among the technological leaders of the world.

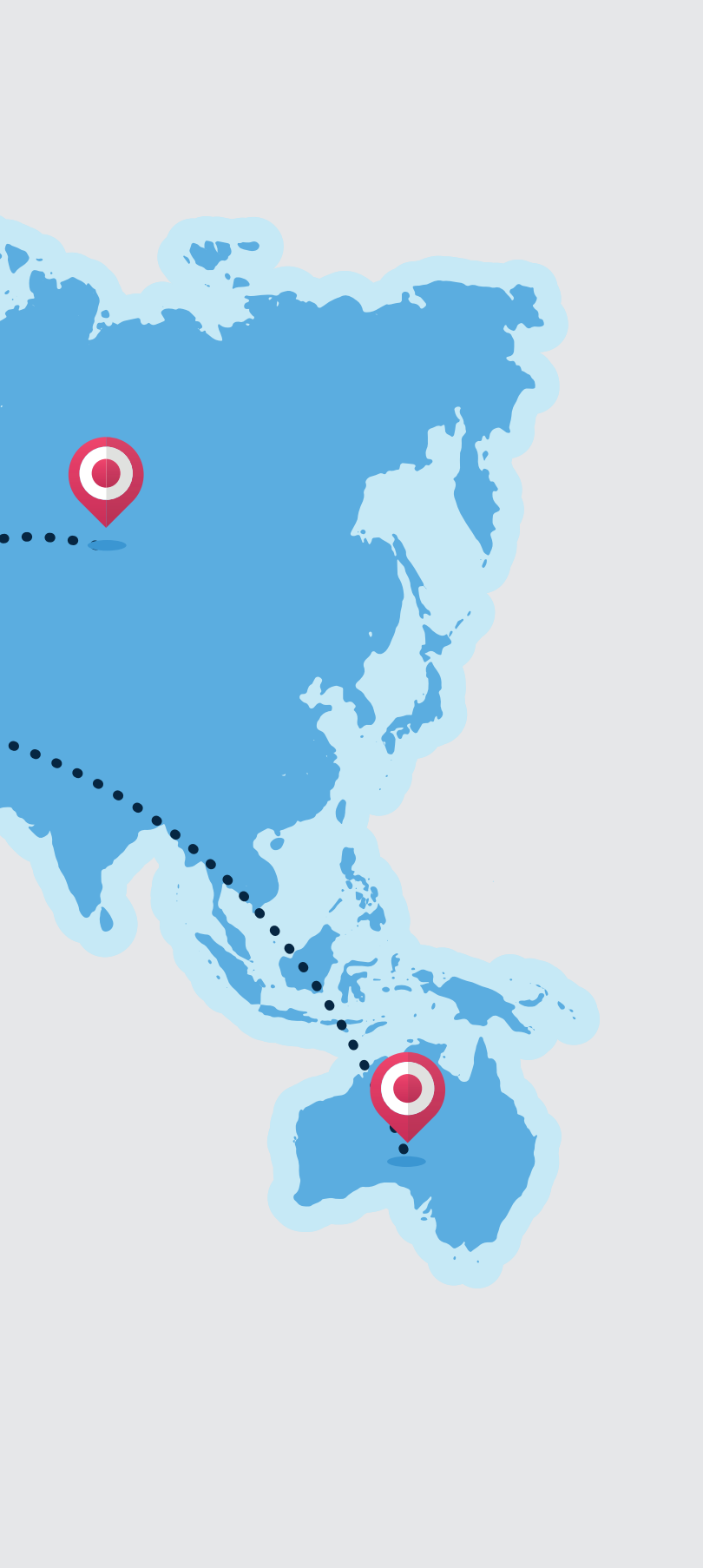
Datakom is proud to preserve its originality in the market, while marching with firm and strong steps towards the company's goals.

General Manager
Mehmet Metin HEKIMOGLU





“Datakom by the numbers”



- Founded in
1988

- Number of products
400+

- Production
150'000 units / year

- Present in
80+ countries

- Workers
70

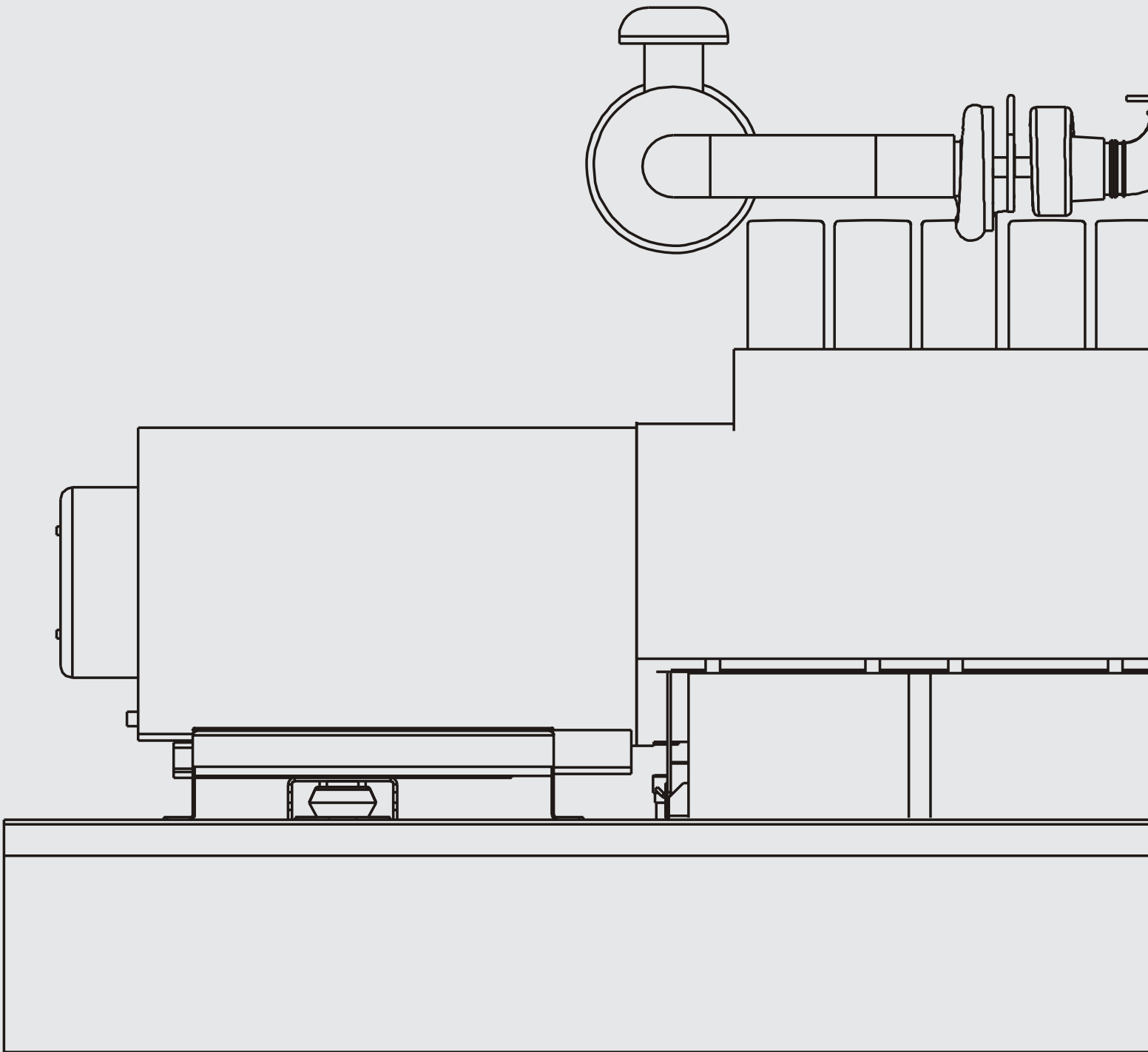
- Engineers
20

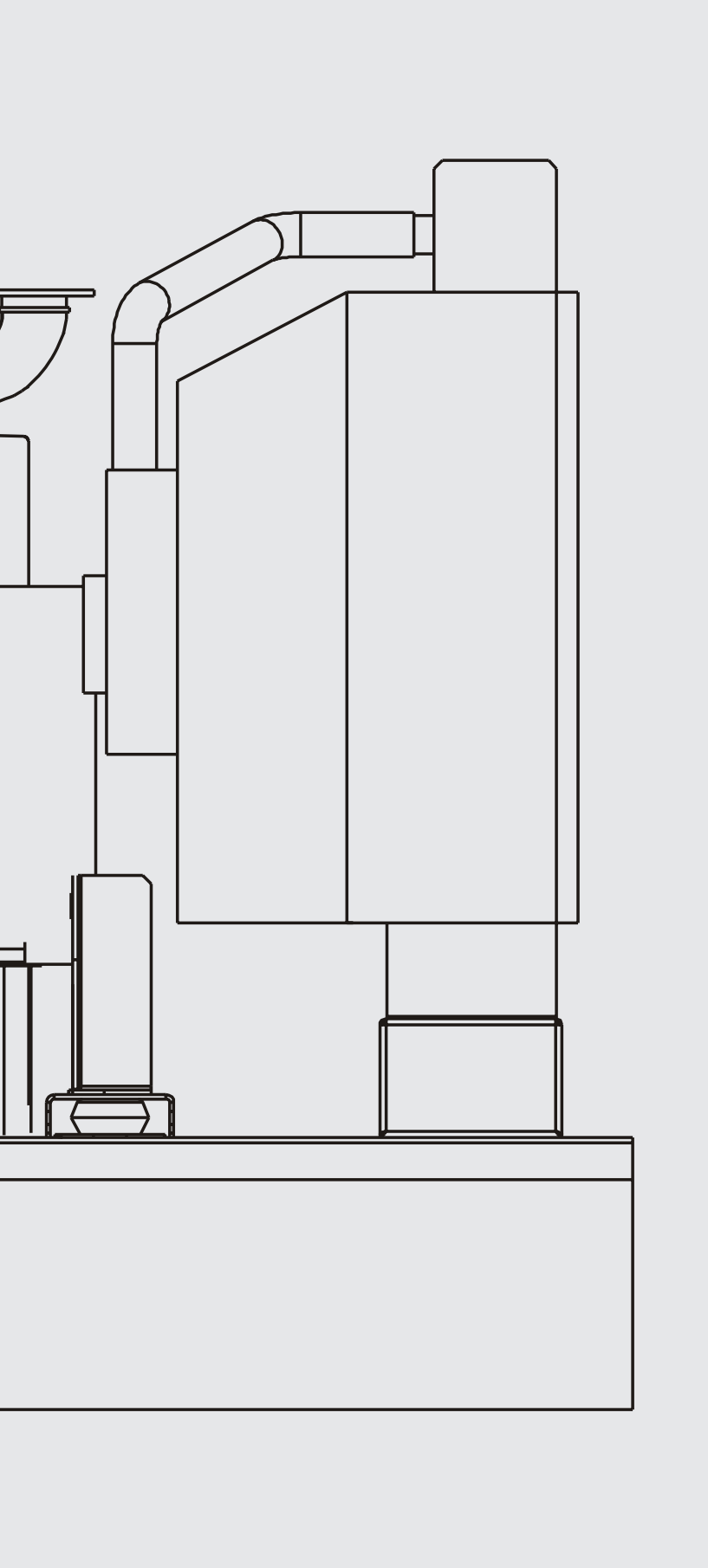


“Your technology partner Datakom, innovative products, affordable prices.”

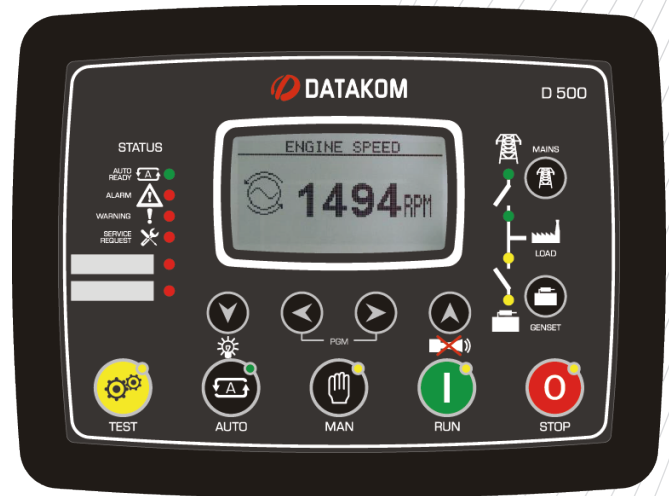
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GENSET PRODUCTS

Synchronization Products / D-700 TFT MK2 / D-500 MK2

FEATURES

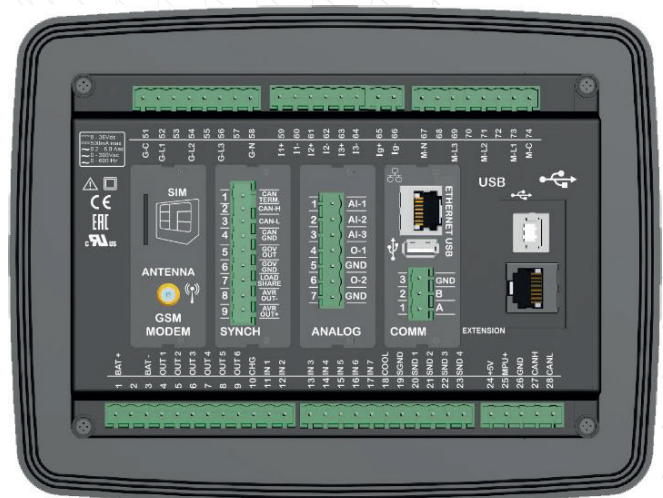
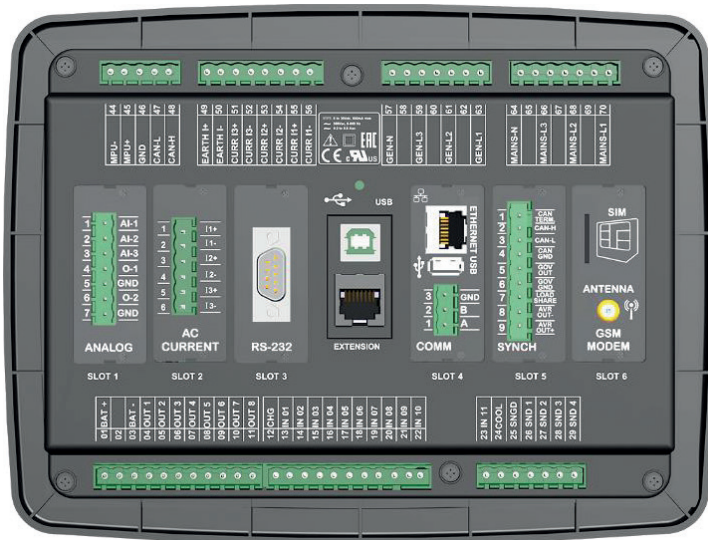
- Diesel and gas genset support
- 400Hz operation support
- 400 event logs, full snapshot
- All parameters front panel editable
- 3 level configuration password
- 128x64 graphical LCD display
- Downloadable languages
- Waveform display of V & I
- Harmonic analysis of V & I
- Synchroscope & check synch
- Allows closed transfers
- 16Amp MCB & GCB outputs
- 8 configurable digital inputs
- Inputs expandable to 40
- 8 configurable digital outputs
- Outputs expandable to 40
- 7 configurable analog inputs
- Both CANBUS-J1939 & MPU
- 3 configurable service alarms
- Multiple topologies
- 6xCT, true mains metering
- Supports up to 48 gensets
- Automatic learning/self adjust
- Direct governor & AVR control
- Voltage and phase matching
- kW & kVAR load sharing
- True soft transfer in both ways
- PLC functions
- Peak Lopping / peak shaving
- Mains de-coupling protection
- R.O.C.O.F protection
- Vector shift protection
- Reverse power protection
- Over/under freq. Protection
- Over/under voltage protection
- Smart load management
- Smart genset sequencing
- Run/stop priority support
- Equal aging of gensets
- Base load (power export)
- Unmanaged distributed power export support
- AVR & GOV droop support
- Dead bus sensing
- Multiple automatic exerciser
- Weekly operation schedule
- Dual mutual standby withequal aging of gensets
- Manual "speed fine adjust" on selected ECUs
- Automatic fuel pump control
- Disable protections feature
- Excess power protection
- Reverse power protection
- Overload IDMT protection
- Load shedding, dummy load
- Multiple load management
- Current unbalance protection
- Voltage unbalance protection
- Fuel filling & fuel theft alarms
- Contactor & MCB drive
- Battery back-up real time clock
- Idle speed control
- Battery charge run enabled
- Combat mode support
- Multiple nominal conditions
- 4 quadrant genset power counters
- Mains power counters
- Fuel filling counter
- Fuel consumption counter
- Modem & ethernet diagnostics
- Configurable through USB, RS-485, Ethernet and GPRS
- Free configuration program
- Allows SMS controls
- Ready for central monitoring ethernet & GPRS
- Mobile genset support
- Automatic GSM geo-location
- GPS connectivity (USB&RS232)
- Dynamic DNS support
- Easy USB firmware upgrade
- IP65 rating with standard gasket

Dimensions

D-700 TFT MK2 : 245 x 188 x 36mm (WxHxD)

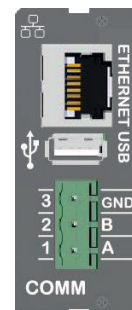
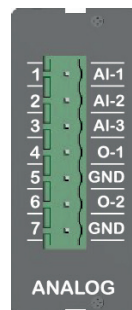
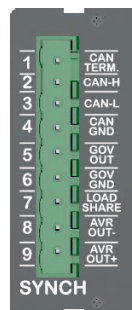
D-500 MK2 : 211 x 162 x 42mm (WxHxD)

Synchronization Products / D-700 TFT MK2 / D-500 MK2



PLUG-IN MODULES

- 2G GSM Modem
- 3G GSM Modem
- 4G GSM Modem
- Wi-Fi (802.11 b/g/n)
- Ethernet 10/100 Mbits
- USB Host
- RS-232 (isolated)
- RS-485 (isolated)
- Synchro/LoadShare Module
- 3x AC Current Inputs
- 3x Analog Inputs
- DC Voltage & Current Input
- Tilt Detector



FUNCTIONALITIES

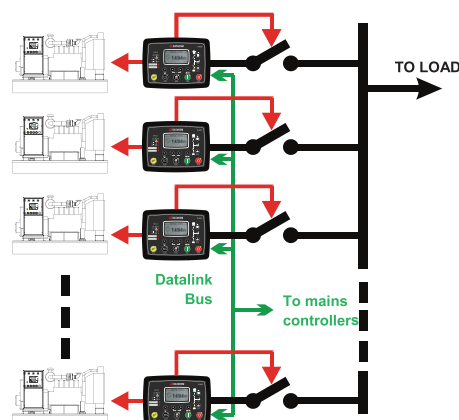
- Multi genset synch & load share
- Mains synchronization
- Single genset parallel with mains
- AMF unit (uninterrupted transfer)
- ATS unit (uninterrupted transfer)
- Remote start controller
- Manual start controller
- Engine controller
- Remote display panel

COMMUNICATIONS

- Central Monitoring
- Embedded Web Server
- USB
- GPS (geo-location)
- SMS
- E-mail
- Modbus
- Modbus TCP/IP
- SNMP 1.0 with trap
- HTML
- UDP
- SNTP

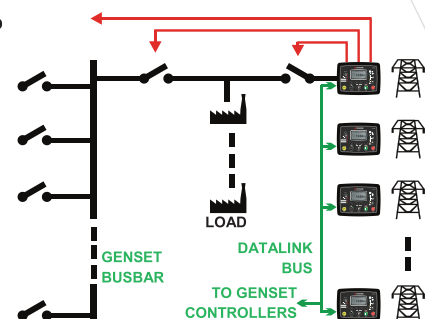
MULTI GENSET SYNCHRONIZATION

Up to 48 gensets may be paralleled on the same busbar. Smart load management is a standard feature.

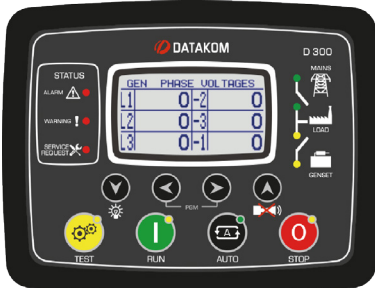
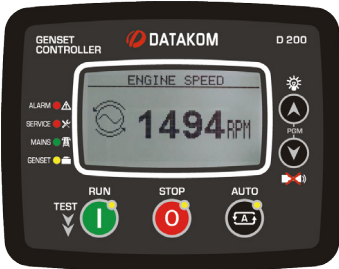
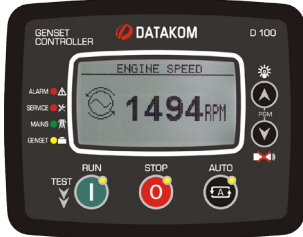


MAINS SYNCHRONIZATION

Up to 16 mains controller per system are supported . Mains controllers provide the REMOTE START signal and handle synchronization of the complete genset system with mains.



➤ Multifunctional Units /D-500 LITE MK2 / D-300 MK2 / D-200 MK2 / D-100 MK2



COMMUNICATION

D-100 MK2

- USB Device
- J1939-CANBUS (optional)
- Geo-locating through GSM
- Internet Central Monitoring
- SMS message sending
- Free PC software: Rainbow Plus
- Modbus RTU

COMMUNICATION

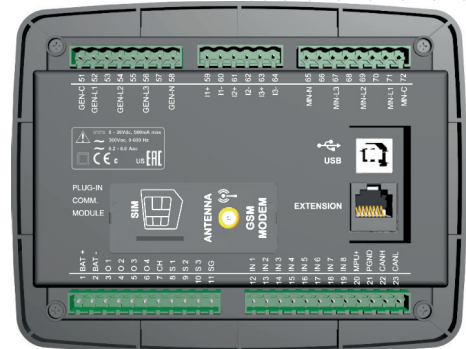
D-200 MK2 / D-300 MK2 D-500 LITE MK2

- USB Device
- J1939-CANBUS
- Geo-locating through GSM
- Internet Central Monitoring
- SMS message sending
- E-mail sending
- Free PC software: Rainbow Plus
- Modbus RTU (2400-57600baud)
- ModbusTCP/IP
- HTML
- UDP

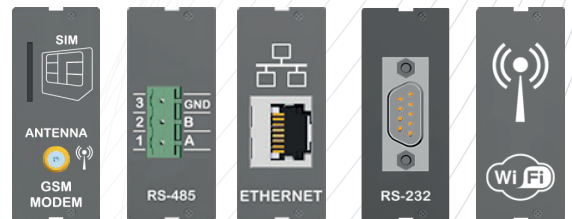
MEASUREMENTS

- Mains & genset PN/PP voltages
- Mains & genset frequency
- Mains & genset phase currents
- Mains & genset neutral currents
- Mains & genset, phase & total, kW, kVA, kVAR, pf
- Engine speed
- Battery voltage

PLUG-IN MODULES



Backpanel view



FUNCTIONALITIES

- AMF unit
- ATS unit
- Remote start controller
- Manual start controller
- Engine controller
- Remote display panel

TOPOLOGIES

- 3 ph 4 w, star & delta
- 3 ph 3 w, 2 CTs
- 2 ph 3 w
- 1 phase 2 wires

FEATURES

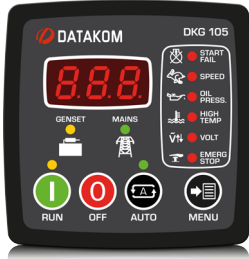
- Diesel and gas genset support
- 400 event logs, full snapshot
- All parameters front panel editable
- 3 level configuration password
- 128x64 graphical LCD display
- 4 configurable digital inputs
- 5 configurable digital outputs
- 3 configurable analog inputs
- CANBUS-J1939
- 3 configurable service alarms
- Dual mutual standby with equal aging of gensets
- Manual "speed fine adjust" on selected ECUs
- Automatic fuel pump control
- Disable protections feature
- Excess power protection
- Reverse power protection
- Overload IDMT protection
- Load shedding, dummy load
- Multiple load management
- Current unbalance protection
- Voltage unbalance protection
- Fuel filling & fuel theft alarms
- Idle speed control
- Battery charge run enabled
- Combat mode support
- Multiple nominal conditions
- Contactor & MCB drive
- 4 quadrant genset power counters
- Mains power counters
- Fuel consumption counter

- Modem diagnostics display
- Configurable from USB & GPRS
- Free configuration program
- Allows SMS controls
- Ready for central monitoring
- Mobile genset support
- Automatic GSM geo-location
- Easy USB firmware upgrade
- IP65 rating with optional gasket

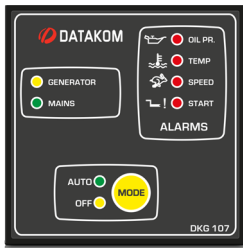
Genset Products

► Multifunctional Units/Comparison Chart

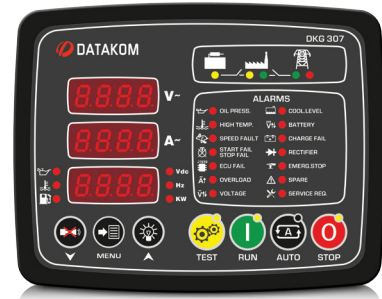
	D-100 MK2	D-200 MK2	D-300 MK2	D-500 LITE-MK2	D-500 MK2	D-700 TFT MK2
2.9" B&W LCD Display	■	■	■	■	■	-
4.3" Color LCD Display	-	-	-	-	-	■
Display Heating for -40°C Operation	Opt	Opt	Opt	Opt	Opt	-
USB Port	■	■	■	■	■	■
Mains Genset Phase Voltage Inputs	3/3	3/3	3/3	3/3	3/3	3/3
Genset Phase CT Inputs	3	3	3	3	3	3
Ground CT Input	-	-	-	-	1	1
Total Digital Inputs	4	6	8	8	8	12
Coolant Level AC Input	-	-	■	■	■	■
16A Outputs	-	2	2	2	2	-
Total Outputs	5	5	6	6	8	8
Analog Inputs	3	3	3	3	4	5
CANBUS-J1939	Opt	Opt	■	■	■	■
MPU Input	-	Opt	■	■	■	■
Digital I/O Expansion	-	-	■	■	■	■
Total Number of Plug-in Modules	1	1	1	1	4	6
Modem Plug-in Positions -2G or 3G Modem -Ethernet -WiFi -RS485 -RS232	1	1	1	1	1	2
Analog Plug-in Positions -3x Analog Inputs + 2x Analog Outputs -3x Mains CT Inputs -DC Voltage and Current Inputs -Tilt Detector	-	-	-	-	1	2
Synchronization Plug-in Positions	-	-	-	-	1	1
Communication Module Plug-in Positions (Ethernet+USB Host+RS485)	-	-	-	-	1	1


DKG-105

- Digital engine run-hours display
- Automatic mains failure monitoring
- Digital display of generator frequency
- Provision for energize to stop, preheat & choke outputs
- Digitally adjustable timers
- Dimensions: 78x78x54mm (WxHxD)


DKG-107

- Automatic mains failure monitoring
- Automatic engine starting and stopping
- 3 phase mains voltage inputs
- 1 phase genset voltage input
- Dimensions: 72x72x52mm (WxHxD)


DKG-307

- J1939 CANBUS or MPU input option
- True RMS measurements
- Genset kW and PF measurements
- Battery backed-up real time clock
- Weekly operation schedule programs
- Built in daily / weekly / monthly exerciser
- Event logging with time stamp and measurements
- RS-232 serial port
- MODBUS communication
- Operating temp.: -40°C to +70°C
- Dimensions: 172x134x46mm (WxHxD)


DKG-207

- Genset kW and PF measurements(1phase)
- Periodic maintenance request indicator
- Logic level serial port used with the optional RS-232 adapter
- Dimensions 133x107x39mm (WxHxD)

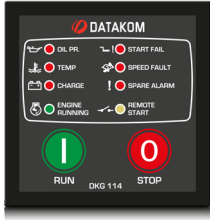

DKG-309

- J1939 CANBUS or MPU input option
- True RMS measurements
- Multiple language support (TR, EN, CN)
- Genset kW and PF measurements
- Battery backed-up real time clock
- Weekly operation schedule programs
- Built in daily / weekly / monthly exerciser
- Event logging with time stamp and measurements
- GSM SMS message sending on fault
- GSM and PSTN modem support
- MODBUS communication
- Dimensions: 172x134x46mm(WxHxD)


DKG-109

- J1939 CANBUS or MPU input option
- True RMS measurements
- Multiple language support (TR, EN, CN)
- Genset kW and PF measurements(1phase)
- Event logging with time stamp and measurements
- Logic level serial port
- Dimensions: 96x96x53mm (WxHxD)

Genset Products / Manual and Remote Start Units



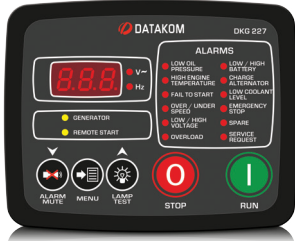
DKG-114

- Optional energize to stop or preheat output,
- Offers jumper selectable operating parameters
- 50/60Hz selection
- Selectable engine running signal (from genset voltage or charge alternator),
- Dimensions: 72x72x43mm (WxHxD)



DKG-116

- Suitable for both gasoline and diesel gensets
- True RMS measurements
- Tamper proof engine hours display
- Dimensions: 102x55x40mm (WxHxD)



DKG-227

- Genset kW and PF measurements
- Engine hours run counter
- Periodic maintenance request indicator
- Statistical counters
- Dimensions: 133x107x46mm (WxHxD)



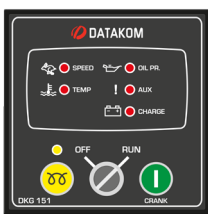
DKG-119

- J1939 CANBUS or MPU input option
- True RMS measurements
- Genset kW and PF measurements(1phase)
- Event logging with time stamp and measurements
- Logic level serial port
- Dimensions: 102x102x53mm (WxHxD)



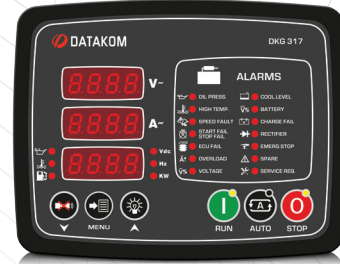
DKG-110

- DIN rail mounted
- 10A fuel and alarm relay outputs,
- High temp. and low oil press. protection
- High/low speed protection
- 3 semiconductor lamp outputs
- Generator voltage input
- Standard dimensions, 36mm width



DKG-151

- 10A fuel and crank relay outputs,
- Charge alternator input
- High temp. and low oil press. protection
- High/low speed protection
- Spare alarm input
- 50/60Hz nominal frequency selection
- Energize to stop/start option
- Dimensions: 72x72x38mm (WxHxD)



DKG-317

- J1939 CANBUS or MPU input option
- True RMS measurements
- Genset kW and PF measurements
- Weekly operation schedule programs
- Built in daily / weekly / monthly exerciser
- Event logging with time stamp and measurements
- RS-232 serial port
- MODBUS communication
- Operating temp.: -40°C to +70°C
- Dimensions: 172x134x46mm (WxHxD)



DKG-319

- J1939 CANBUS or MPU input option
- True RMS measurements
- Multiple language support (TR, EN, CN)
- Genset kW and PF measurements
- Battery backed-up real time clock
- Weekly operation schedule programs
- Built in daily / weekly / monthly exerciser
- Event logging with time stamp and measurements
- GSM SMS message sending on fault
- GSM and PSTN modem support
- MODBUS communication
- Dimensions: 172x134x46mm (WxHxD)



DKG-155

- 16A fuel and crank relay outputs,
- Charge alternator input
- High temp. and low oil press. protection
- High/low speed protection
- Spare alarm input
- 50/60Hz nominal frequency selection
- Dimensions: 72x72x52mm (WxHxD)



AUTOMATIC MAINS FAILURE UNIT WITH INTERNAL CHARGER

DKG-225, is a low cost AMF controller for 12V-DC gensets, featuring an internal battery charger.

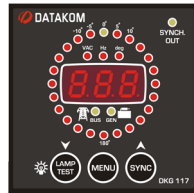
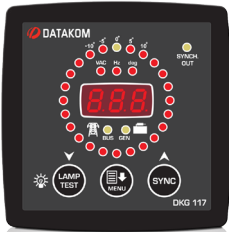
Internal fuel and crank relays are rated at 40Amps@12V-DC and do not require external relays.

Thus a typical transfer panel will simply consist on one DKG-225 and two contactors, reducing material cost, panel size and production time.

FEATURES

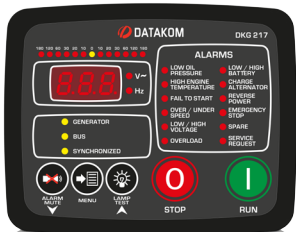
- Internal battery charging rectifier
- 40 Amp rated Fuel and Crank outputs
- Front panel adjustable parameters
- Stop, preheat and choke output capability
- Survives cranking voltage dropouts
- Compact dimensions, panel mounted

Genset Products/ Manual Synchronization



DKG-117 96x96 mm ve 72x72 mm

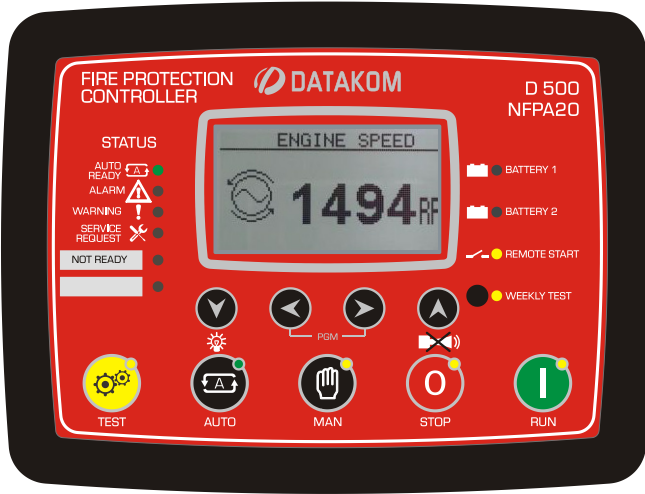
- 10A check synch relay output
- Programmable ΔV , Δf , $\Delta \theta$ for check synch relay
- 1 phase genset voltage input
- 1 phase busbar voltage input
- Synch Check Enable input
- Dead Bus Enable input
- Auto power off
- Adjustable parameters
- Dimensions: 102x102x53mm (WxHxD)
- Dimensions: 72x72x52mm (WxHxD)



DKG-217

- Zero power consumption at rest
- 10A check synch relay output
- Programmable ΔV , Δf , $\Delta \theta$ for check
- 3 phase genset voltage inputs
- 1 phase genset CT input
- 1 phase busbar voltage input
- Engine oil pressure measurement
- Engine coolant temperature measurement
- Configurable digital inputs:5
- Genset kW and PF measurements(1phase)
- Periodic maintenance request indicator
- Front panel configurable
- Engine hours run counter
- Dimensions: 133x107x46mm (WxHxD)

► Fire Pump Controller D-500 MK2



FIRE PUMP CONTROLLER D-500-MK2

- NFPA 20
- INTERNET BASED
- MULTI-PROTOCOL
- FLEXIBLE WITH
- PLUGIN MODULES

The D-500-MK2 Fire Pump Controller is a next generation controller for single diesel fire pump sets.

The engine is operated on a switch signal, usually coming from a pressure switch.

Functional features of the controller correspond to NFPA 20 standard.

The controller supports dual independent starter batteries with dual independent crank motors.

The controller is capable of measuring and displaying the voltage and charging current of each battery-rectifier set. Charger failure alarms are also monitored and retransmitted through internet.

Cranking is attempted alternatively through each crank motor in order to achieve better readiness for operation required in safety equipment.

The controller supports a comprehensive set of protections and alarms. All fault conditions are transferrable to a central monitoring system in order to keep the system up and ready for operation all times.

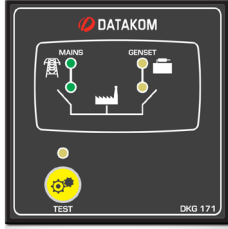
In AUTO mode, all alarms (except Emergency Stop and Critical Overspeed) are disabled and the engine runs to death.

The controller supports the NFPA 110 compliant DKG-224 annunciator for displaying alarms in an additional remote location through its RS-485 port. The internet communication capabilities of the controller includes GSM (2G/3G-4G-NB/IOT), Ethernet and WiFi connections.

The controller comes ready for internet monitoring, control and maintenance. It supports GSM-SMS controls and commands

FEATURES

- Diesel and gas engine support
- 400 event logs, full snapshot
- All parameters front panel editable
- 3 level configuration password
- Downloadable languages
- 8 configurable digital inputs
- 8 configurable digital outputs
- Input and output expansion
- 4 configurable analog inputs
- Input for second battery voltage
- Inputs for battery charge currents
- CANBUS-J1939 & MPU operation
- 3 configurable service alarms
- PLC functions
- Multiple automatic exerciser
- Automatic fuel pump control
- Fuel filling & fuel theft alarms
- Battery charge run enabled
- Fuel filling counter
- Fuel consumption counter
- Configurable through USB, RS-485, Ethernet and GPRS
- Free configuration program
- Allows SMS controls
- Ready for central monitoring ethernet , GPRS & WiFi
- GPS connectivity (USB&RS232)
- IP65 rating with standard gasket



DKG-171

DKG-171 is a low cost, microprocessor controlled unit designed to monitor 3-phase mains voltages, send remote start command to the generating set and make changeover of both generator and mains contactors. The genset is supposed to be controlled by a Remote Start type control unit.



DKG-173

DKG-173 is a DIN Rail mounted ATS controller not requiring DC supply. The unit monitors 3-phase mains voltages, sends remote start command to the generating set and performs changeover of both generator and mains contactors.



DKG-175

DKG-175 is a DIN Rail mounted microprocessor controlled ATS controller without requiring DC supply. The unit monitors 3-phase mains voltages, sends remote start command to the generating set and performs changeover of both generator and mains contactors.



DKG-329

DKG-329 is designed to monitor 3-phase mains voltages, send remote start command to generating sets and control the changeover of both generator and mains contactors.

DKG-329-DUAL

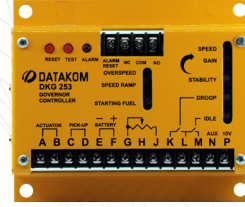
The DKG-329 is designed to control a 3-phase transfer panel having 1 mains and 2 gensets. It monitors 3-phase mains voltages, send remote start command to generating sets 1 and 2 and control the changeover of both generator and mains contactors.

Genset Products / Governor Controllers



DKG-255

The DKG-255 is a microprocessor controlled digital speed control unit designed to control the engine speed with fast and accurate response to load changes. The DKG-255 connects to a forward acting proportional electric actuator and a magnetic speed sensor.



DKG-253

The DKG-253 is a low cost electronic governor control unit designed to control the engine speed with fast and accurate response to load changes. The unit features an adjustable internal overspeed alarm relay with indicating led. This relay provides supplementary speed protection in case of speed control failure

FEATURES

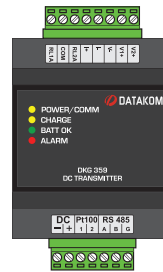
- 12 and 24V operation
- Capable of governing various engines
- Forward acting actuator output
- Fast and accurate response
- Starting fuel adjustment
- Speed ramp adjustment
- 10 Amps continuous current output
- Overspeed alarm output
- Adjustable rated and idle speeds
- Isochronous and droop operation
- Gain and stability adjustments
- External speed adjustment capability
- Synchronizing and load sharing input
- Switchmode output circuit
- Speed sensor failure detection
- Battery reverse voltage protection
- Output short circuit protection
- Rugged design
- Enamel protected electronic circuit
- Small dimensions (130x110x27mm)
- Low cost

Genset Products / Battery Charger Controller



DKG-190

DKG-190 is a high tech product, designed to decrease genset operating engine hours mainly in telecommunication industry. DKG-190 prevents the genset from running by feeding it with AC voltage until battery voltage level is lower than the set point. The genset starts running when AC voltage from DKG-190 is cut. Therefore, genset runtime is controlled by the DKG-190.



DKG-359

DKG-359 is a precision measurement tool designed for DC power systems to measure DC voltage and DC current. The unit has 2 voltage measurement inputs, and one DC shunt type current measurement input.



DKG-379

The DKG-379 is an advanced DC genset controller for both variable and fixed speed systems. It is presented in 3 different versions, as ANALOG DRIVE, POWER DRIVE and CANBUS DRIVE.

The controller has a precision PID loop providing exact matching of the optimal charging characteristics, as well as overvoltage, overcurrent, overspeed, overheat protections.

The POWER DRIVE version provides a 7 Amp-DC output, interfacing directly to the engine actuator or alternator excitation winding without the need for a governor controller or AVR.

The CANBUS DRIVE version connects to ECU driven electronic engines providing engine control, protection and instrumentation without extra senders. ECU alarms are displayed in text.

All versions offer a 0-10V analog output for speed or voltage control.

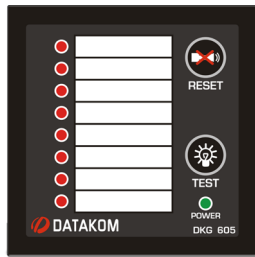
The fixed speed operation stops the genset precisely when batteries are fully charged, providing fuel economy and maintenance cost reductions.

The unit has precision, fully isolated measuring inputs for the battery bank voltage and the charge current. It supports both "positive to ground" and "negative to ground" installations. The current is measured through a DC current shunt placed in positive or negative output of the genset.

FEATURES

- Compatible with 12V, 24V and 48V DC systems
- DC power drive output (7A-DC)
- ECU connection through J1939 CAN option
- 0-10V analog control output
- Isolated Volt - Amp measurements
- Battery temperature input for PT100 sensor
- Optimal charging, provides longer battery life
- Temperature dependent battery charging
- Thermal protection, short circuit protection
- Dual genset mutual standby operation
- 100 event logs with time stamp and measurements
- Battery backed-up real time clock
- Built in daily / weekly / monthly exerciser
- Field adjustable parameters
- RS-232 serial port
- Free MS-Windows Remote monitoring SW
- GSM and PSTN modem support
- GSM SMS message sending on fault
- MODBUS communications
- Multiple language support

DKG-605 Alarm Annunciator Unit



The DATAKOM model DKG-605 is a compact 8 channel programmable alarm annunciator unit used in generating sets and diesel engines.

Multiple DKG-605 units may be connected in parallel to form a larger scale alarm system.

The unit is designed to be used as either an alarm extension module or a stand-alone alarm annunciator and shutdown device.

The programming is made through the DKG-605-P hand terminal unit.

FEATURES

- Panel mounted,
- 8 input channels,
- 2 relay outputs,
- 8 semiconductor outputs,
- 44 programmable parameters,
- Generator voltage input,
- Survives cranking dropouts,
- Configurable inputs,
- Standard dimensions, 72x72mm,
- Plug-in connection system
- Low cost

ТАМОЖЕННЫЙ СОЮЗ

СЕРТИФИКАТ СООТВЕТСТВИЯ

№ TC RU C-TR.HA10.B.01761

Серия RU № 0758070

ОРГАН ПО СЕРТИФИКАЦИИ Орган по сертификации продукции машиностроения Общество с ограниченной ответственностью «Эксперт-Сертификация». Место нахождения: 305000, Российская Федерация, Курская область, город Курск, улица Почтовая, дом 23, помещение 8. Телефон: 84712770491, адрес электронной почты: info@expert-cert.ru. Аттестат аккредитации регистрационный № RA.RU.11HA10. Дата регистрации аттестата аккредитации 18.12.2017 года.

ЗАЯВИТЕЛЬ общество с ограниченной ответственностью «Мир Технологии». Основной государственный регистрационный номер: 118774649096. Место нахождения: 117042, Российская Федерация, город Москва, улица Адмирала Руднева, дом 4, этаж 6, помещение IV, офис 613. Телефон: 89154152183, адрес электронной почты: MirTechnology@gmail.com.

ИЗГОТОВИТЕЛЬ «DATAKOM ELEKTRONIK MUHENDISLIK SANAYI VE TICARET ANONIM SIKETI». Место нахождения: ТУРЦИЯ, Şerifali Mahallesi, Bayraktar Bulvarı, Kutup Sokak No:26 34775 UMRANIYE / ISTANBUL.

ПРОДУКЦИЯ Пульты управления генераторами, торговой марки «DATAKOM», моделей: (смотри приложение - бланк № 0569304). Продукция изготовлена в соответствии с Директивами 2014/35/EU «Низковольтное оборудование», 2014/30/EU «Электромагнитная совместимость». Серийный выпуск.

КОД ТН ВЭД ТС 8537 10 910 0

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ Технического регламента Таможенного союза ТР ТС 004/2011 "О безопасности низковольтного оборудования"; Технического регламента Таможенного союза ТР ТС 020/2011 "Электромагнитная совместимость технических средств".

СЕРТИФИКАТ ВЫДАН НА ОСНОВАНИИ протокола испытаний № 2769-2989-18 от 08.11.2018 года, выданного испытательной лабораторией «ИЛ БТ» Общество с ограниченной ответственностью «Испытательная лаборатория электротехнической продукции ЭМС», аттестат аккредитации регистрационный № RA.RU.21MLJ31; акта анализа состояния производства от 01.11.2018 года органа по сертификации продукции машиностроения Общество с ограниченной ответственностью «Эксперт-Сертификация»; руководства по эксплуатации, паспорта.

Схема сертификации: 1с

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ Срок службы, срок и условия хранения указаны в эксплуатационной документации, приложенной к изделию. Стандарты, обеспечивающие соблюдение требований Технических регламентов Таможенного союза ТР ТС 004/2011 "О безопасности низковольтного оборудования", ТР ТС 020/2011 "Электромагнитная совместимость технических средств": (смотри приложение - бланк № 0569305).

СРОК ДЕЙСТВИЯ С 08.11.2018 **ПО** 07.11.2023 **ВКЛЮЧИТЕЛЬНО**

Руководитель (уполномоченное лицо) органа по сертификации: Павел Эдуардович Андронов (подпись, печать)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)): Дмитрий Игоревич Михайлов (подпись, печать)

nqa.

Certificate of Registration

This is to certify that the Quality Management System of
Datakom Elektronik Mühendislik Sanayi ve Ticaret Anonim Şirketi

Şerifali Mahallesi, Kutup Sokak, no:26 Ümraniye, İstanbul, Turkey

applicable to

Design, manufacture, marketing, repair and service of electronic equipment

has been assessed and registered by NQA against the provisions of

ISO 9001:2015

This registration is subject to the company maintaining a quality management system, to the above standard, which will be monitored by NQA.

Managing Director: [Signature]

Certificate No: 22547
Date: 10 April 2007
Reissued: 29 March 2018
Valid Until: 29 March 2021
EAC Code: 19

UKAS
615

The use of the UKAS Accreditation Mark indicates accreditation in respect of those activities covered by the accreditation certificate number 615 held by NQA. NQA is a trading name of NQA Certification Limited. Registration No. 05017726. Registered Office: Warwick House, Houghton Hall Park, Houghton Regis, Dunstable, LU5 2EX, UK. This certificate is the property of NQA and must be returned on request.

CERTIFICATE OF COMPLIANCE

Certificate Number 20140725-E314374
Report Reference E314374-20101224
Issue Date 2014-JULY-25

Issued to: DATAKOM ELEKTRONIK MUHENDISLIK LTD STI
SERIFALI MAHALLESİ, BAYRAKTAR BULVAR
KUTUP SOKAK NO:26
UMRANIYE
34775 TURKEY

This is to certify that representative samples of COMPONENT - ENGINE GENERATOR CONTROLS
SEE ADDENDUM PAGE

Standard(s) for Safety: UL 6200, Controls for Stationary Engine Driven Assemblies
CSA C22.2 No. 14-13, Industrial Control Equipment

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Only those products bearing the UL Recognized Component Marks for the U.S. and Canada should be considered as being covered by UL's Recognition and Follow-Up Service and meeting the appropriate U.S. and Canadian requirements.

The UL Recognized Component Mark for the U.S. generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: **RA**, may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions. The UL Recognized Component Mark for Canada consists of the UL Recognized Mark for Canada: **RA** and the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Recognized Component Mark on the product.

William R. Carney
William R. Carney, Director, North American Certification Programs
UL LLC

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UL

Page 1 of 2

nqa.

Certificate of Registration

This is to certify that the Environmental Management System of
Datakom Elektronik Mühendislik Sanayi ve Ticaret Anonim Şirketi

Şerifali Mahallesi, Kutup Sokak, no:26 Ümraniye, İstanbul, Turkey

applicable to

Design, manufacture, marketing, repair and service of electronic equipment

has been assessed and registered by NQA against the provisions of

ISO14001 : 2015

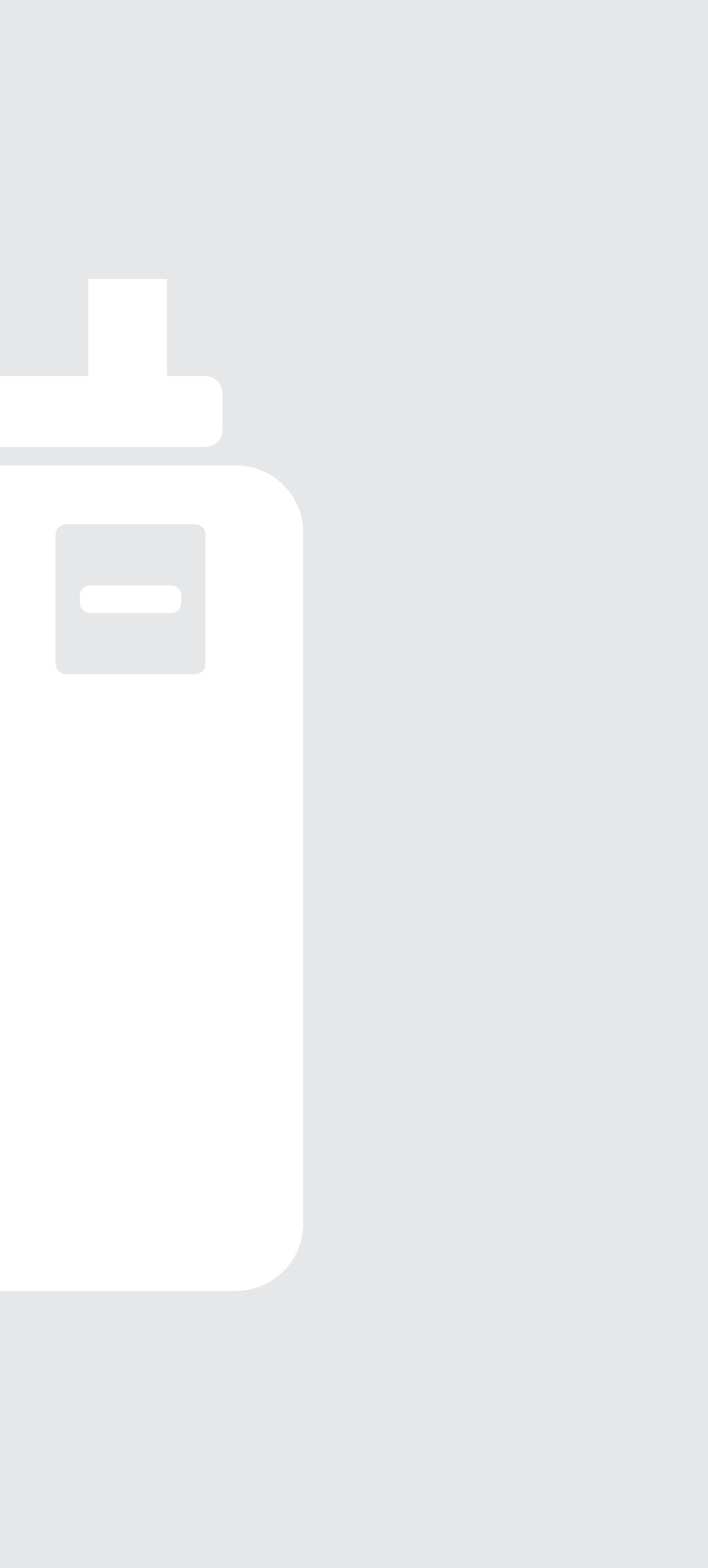
This registration is subject to the company maintaining an environmental management system, to the above standard, which will be monitored by NQA.

Managing Director: [Signature]

Certificate No: 91755
Date: 29 March 2018
Valid Until: 29 March 2021
EAC Code: 19

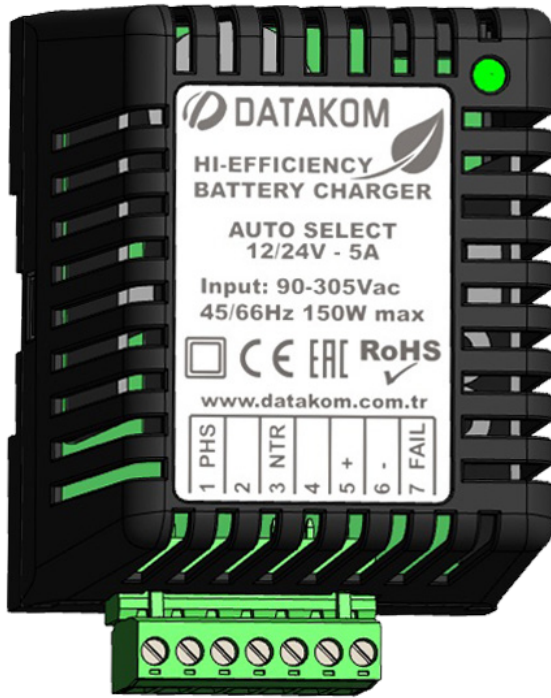
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The use of the UKAS Accreditation Mark indicates accreditation in respect of those activities covered by the accreditation certificate number 615 held by NQA. NQA is a trading name of NQA Certification Limited. Registration No. 05017726. Registered Office: 26-28 Bedford Row, London, WC1R 4EJ. This certificate is the property of NQA and must be returned on request.



BATTERY CHARGERS

BC-5A 12/24V 5AMP AUTO SELECT SMART BATTERY CHARGERS (DIN RAIL)

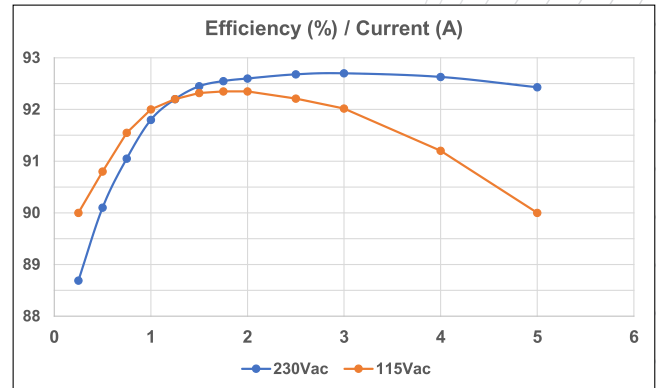


BC-5A series are microprocessor controlled, high efficiency and compact battery chargers featuring a smart charging algorithm allowing faster charge and longer battery life.

The overload protection is current limiting type, not hiccup. Chargers deliver their rated current indefinitely under short circuit or overload conditions. In case of overheating, the charger will reduce the output current automatically and continue operation without interruption.

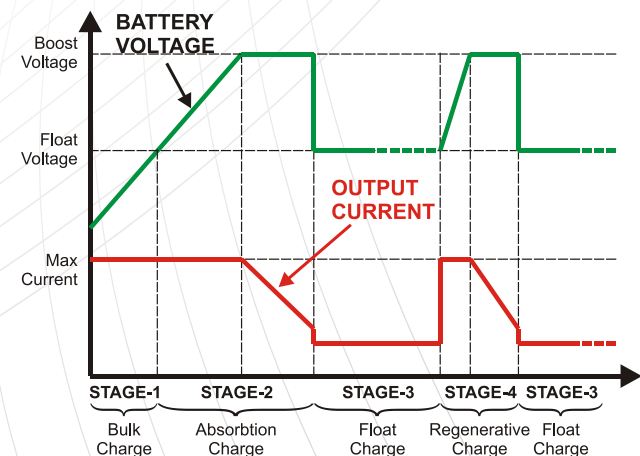
Chargers offer green mode of operation that consists on reducing the operating frequency when the load decreases. Thus chargers reduce their losses helping protection of the environment. At very small loads, they enter into a burst mode to reduce the consumption further.

The peak efficiency of chargers exceed 92%, resulting in lower long-term operational costs.

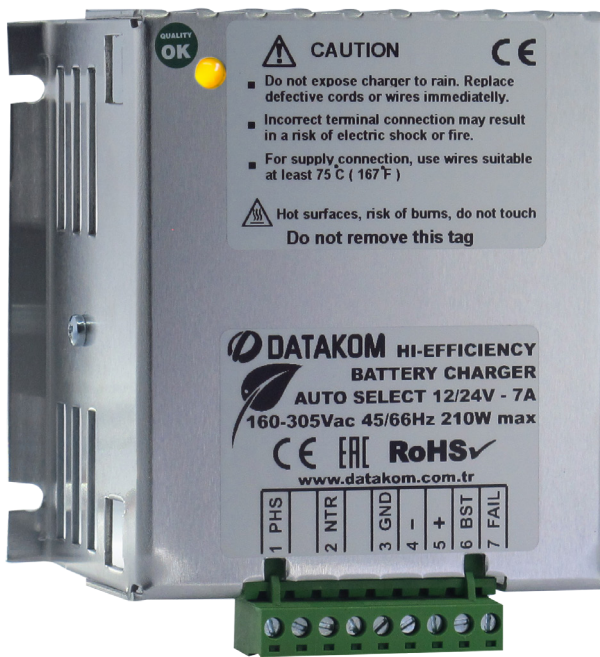


FEATURES

- Very high efficiency, up to 92.7% (see curves)
- Wide operating voltage range (90-305VAC)
- Reverse battery connection protected
- LED status indicator
- Low power consumption at no-load (<0.5W)
- Green mode operation
- Output short circuit and overload protections
- High temperature protection
- Rectifier fail output
- 4 stage charging with smart control
- Easy to use, DIP switch selections
- Supports lead-acid and NiCd batteries
- Wide operating temperature range
- DIN rail mounted, small dimensions



BC-7A 12/24V 7AMP AUTO SELECT SMART BATTERY CHARGERS

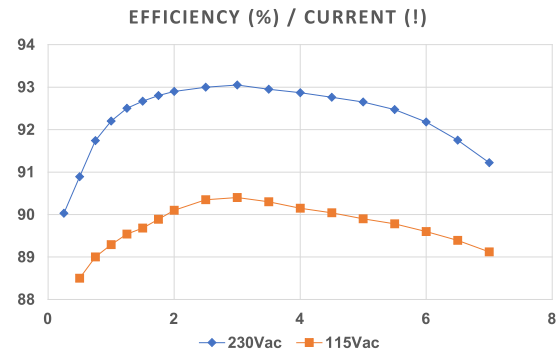


BC-7A series are microprocessor controlled, high efficiency and compact battery chargers featuring a smart charging algorithm allowing faster charge and longer battery life.

The overload protection is current limiting type, not hiccup. Chargers deliver their rated current indefinitely under short circuit or overload conditions. In case of overheating, the charger will reduce the output current automatically and continue operation without interruption.

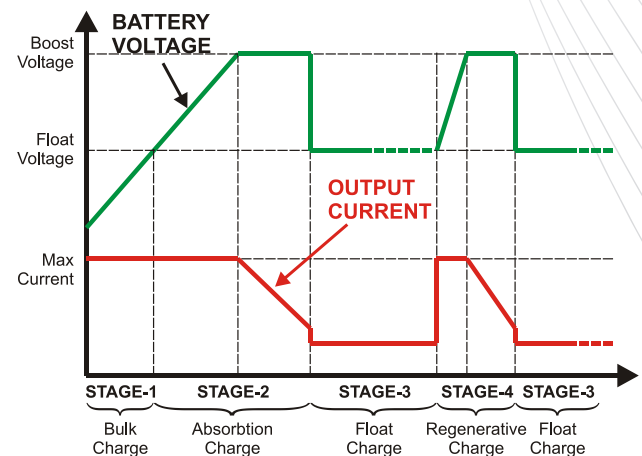
Chargers offer green mode of operation that consists on reducing the operating frequency when the load decreases. Thus chargers reduce their losses helping protection of the environment. At very small loads, they enter into a burst mode to reduce the consumption further.

The peak efficiency of chargers reaches 93%, resulting in lower long-term operational costs.



FEATURES

- Very high efficiency, up to 93.0% (see curves)
- Reverse battery connection protected
- LED status indicator
- Low power consumption at no-load (<0.5W)
- Green mode operation
- Output short circuit and overload protections
- High temperature protection
- Rectifier fail output
- 4 stage charging with smart control
- Easy to use, DIP switch selections
- Supports lead-acid and NiCd batteries
- Wide operating temperature range



BC-10A 12/24V 10AMP AUTO SELECT 300 WATTS 91.5 %



FEATURES

- 100 kHz forward switchmode architecture
- High efficiency > 91.0%
- Life extending regenerative charging feature
- Automatic output voltage selection: 12/24V
- Microprocessor controlled
- Easy to use, DIP switch selections
- Selectable two, three or four stage charging
- Supports lead-acid and NiCd batteries
- Analog current reading output (0-10V)
- Output voltage and current display (optional)
- Rectifier fail output
- Boost charge input
- Overload and short circuit protected
- Wide operating temperature range
- Thermal protection
- Low output ripple
- Low line and load regulation
- Wide operating voltage range
- Small dimensions
- Low weight
- Rugged design for industrial environments

BC-10A chargers are designed in high efficiency, forward 100 kHz switchmode technology. Thanks to their smart charging algorithm, they charge batteries faster than conventional chargers.

Fast charging is achieved by maintaining the highest possible charging voltage at battery terminals and resuming to the float charge voltage when the battery is fully charged.

The regenerative charging algorithm extends battery life by applying periodic regenerative charging cycles. Chargers offer automatic battery voltage detection. Thus the same unit operates as 12V or 24V without the need of a manual selection, removing human errors.

The charger continuously measures its internally its output voltage. If the voltage is below 18V, it operates in 12V mode. If the voltage is above 18V then it operates in 24V mode. If no battery is connected then it will operate in 12V mode.

BC-10A charges both lead-acid and Nickel-Cadmium batteries. It is specially designed for permanent connection to genset starter batteries and does not require disconnection during cranking. Thanks to its continuous DC outputs, it may also be used in a wide range of industrial applications where DC power is required.

SMART BATTERY CHARGER SMPS-2420

24V 20AMP 600 WATTS 92.5 %



FEATURES

- 100kHz half-bridge switchmode architecture
- Small dimensions
- Low weight
- Constant voltage output
- Current limited
- Rugged design for industrial environments
- Wide operating voltage range
- Analog voltage adjustment input (0-10V)
- Rectifier fail output
- Quick charge input
- Short circuit protection
- Overload protection
- High temperature protection
- Analog output current signal: 0-10VDC

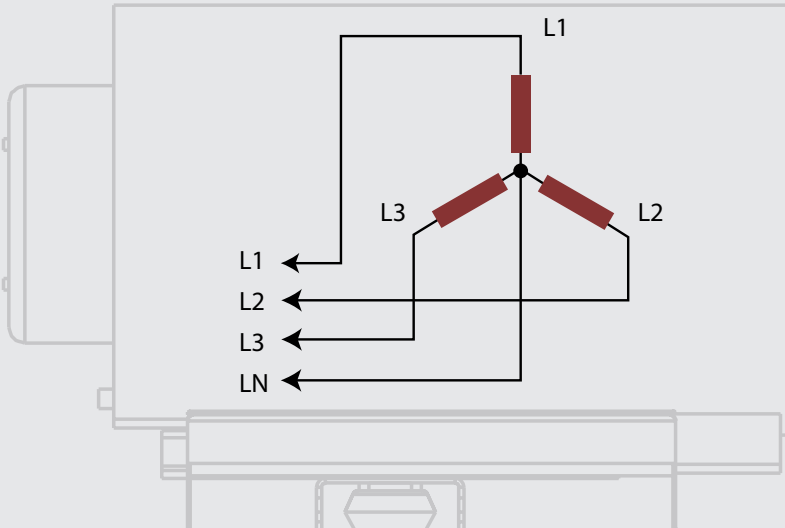
DATAKOM SMPS-2420 series are fixed output voltage, current limited lead acid and Nickel- Cadmium switchmode battery chargers specially designed for permanent connection to genset starter batteries. They maintain the batteries fully charged, without overcharging or gassing. They may also be used in a wide range of industrial applications where DC power is required.

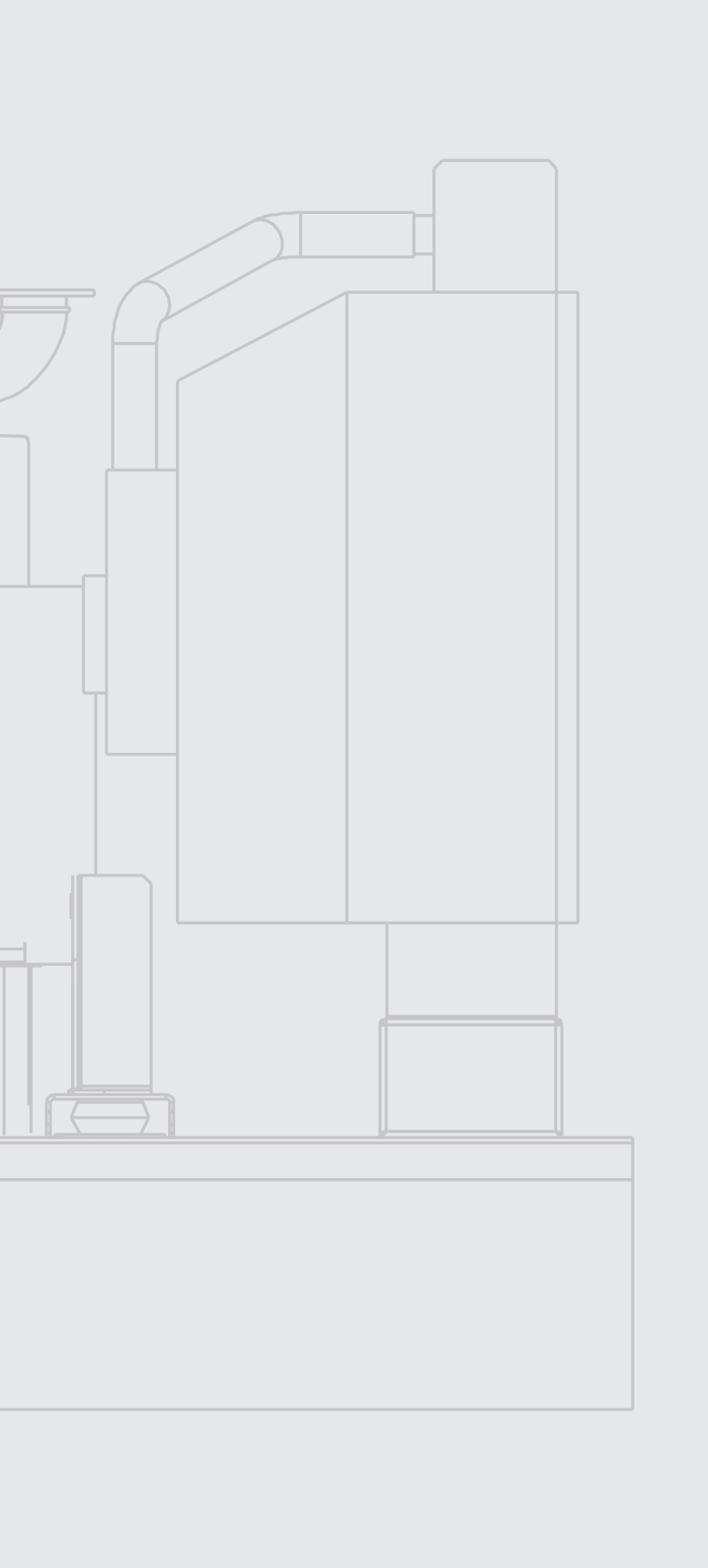
The chargers are designed in high efficiency, halfbridge 100kHz switchmode technology. Their rugged design allows surviving in harsh electromagnetic environments found in automotive industry. The output voltage of the charger is adjustable between 21.00 and 28.80V with external 0-10V analog signal. This feature allows application of any desired "V-I-t" charge characteristic via an external control unit.

When no signal is applied, the charger provides its float charge voltage of 26.80V. Via logic signals it can be switched to "quick charge" and "boost charge" modes. The maximum efficiency of the charger exceeds 93%, meaning lower energy losses and lower longterm operation costs. As an example, compared to a charger of 80% efficiency, with 30% average load and 30 years of operational life, it will consume 8'400 kW-h less electrical energy. This corresponds approximately to 840 USD less energy expenses.

The unit has overload, short circuit and high temperature protections. This feature makes the unit deliver only the rated current during short circuit or overload conditions. In case of excessive temperature, it will protect itself by reducing the current output. Chargers have open chassis, metal cased design, suitable for bolt and stud mounting in an enclosed panel. The low weight of the unit makes it ideal for use in highly vibrating environments. Small dimensions allow compact panel design.

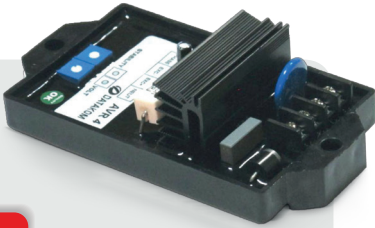
Chargers are able to operate in parallel with other battery chargers. Multiple units may be connected in parallel in order to obtain higher current ratings.





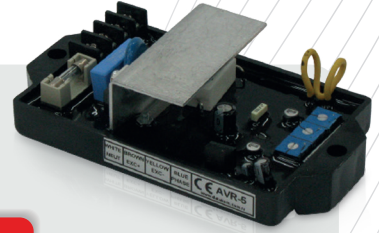
VOLTAGE REGULATORS

125x68x35mm



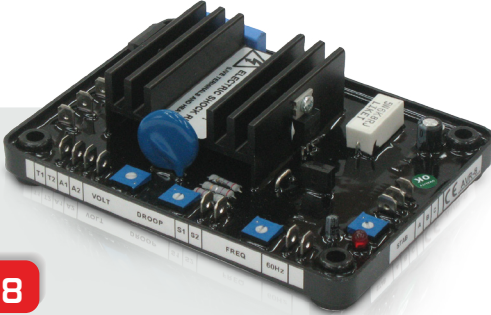
AVR - 4

126x68x35mm



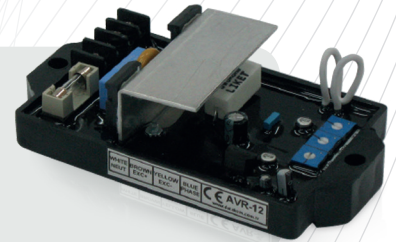
AVR - 5

133x98x35mm



AVR - 8

126x68x35mm



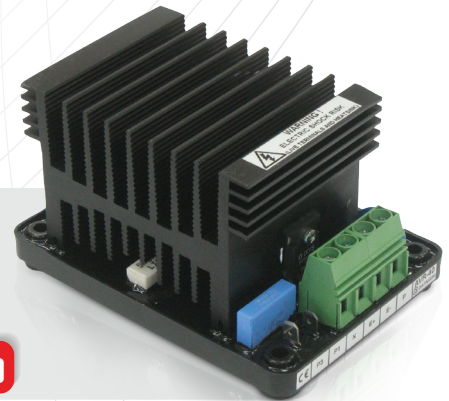
AVR - 12

126x68x35mm



AVR - 20

Height: 80mm



AVR - 40

Alternator Voltage Regulators

Voltage Regulator is an electronic device which lets the alternator to produce fixed output voltage. It has open chassis, resin molded design and is intended to be mounted in the alternator's terminal box.

AVR measures the voltage between one of the alternator phases and the neutral point and adjusts the DC voltage applied to the excitation winding until reaching the desired voltage.

The output stage of the device is a Half Wave thyristor output associated with a free wheeling diode. Basically the unit is compatible with all brushless type alternators. A stability adjustment potentiometer is also provided for this purpose.

The AVR has a special relay-less electronic circuit design. The required minimum residual voltage for build up is 5 VAC. The unit does not include moving parts; therefore it is able to operate in highly vibrating environments.

	AVR-4	AVR-5	AVR-8	AVR-12	AVR-20	AVR-40	AVR8-380
Output Current	4A	5A	8A	10A	20A	40A	8A
Min. Input Voltage (V)	190	190	190	190	190	190	190
Max. Input Voltage (V)	260	260	260	260	260	260	450
Max. Output @230V L-N	115	115	115	115	115	115	200
Voltage Adjust Pot		■	■	■	■	■	■
External Voltage Adjust	■	■	■	■	■	■	■
Stability Adjustment	■	■	■	■	■	■	■
50 / 60 Hz selection	■	■	■	■	■	■	■
Low Freq. Protection	■	■	■	■	■	■	■
Voltage Adjust Input	■	■	■	■	■	■	■
CT Droop Input			■			■	■
Overload Protection			■			■	■
High Temp. Protection			■			■	■
Input Low Voltage Prot.			■			■	■
Output Current Limit			□			□	
Isolated Measuring Input							■



EARTHQUAKE DETECTORS

Earthquake Detectors / DSD-50



FEATURES

- Conformal to ANSI Z.21-70 (1981)
- Conformal to ASCE 25-97
- Conformal to TS 12884
- Microprocessor controlled
- Semiconductor acceleration sensors
- Dual axis
- Non-seismic accelerations filtered
- High current relay output
- Maintenance free
- Capable of performing self-test
- Operates on 170 to 270 V-AC
- Direct interface to 12V-DC valves
- Plug-in connection system for easy replacement
- Small dimensions (232x200x65mm)
- Low cost

DSD-050 is a high-tech unit which detects seismic motion. On the occurrence of an earthquake it gives audible and visible alarms and closes a relay contact to shutdown gas and industrial valves.

Thus it is possible to minimize the fire risk after an earthquake. DSD-050 is a very cost effective device for shutdown applications. The unit is based on highly reliable dual axis seismic sensors. It is small, maintenance free and capable of performing selftest.

The unit operates on mains power. It incorporates a lead-acid battery and an automatic battery charger which allow uninterrupted operation even in case of AC power failures. During long mains failures, if the internal battery gets weak, the unit gives audible and visible alarms.

The seismic properties of the unit are conformal to ANSI Z.21-70(1981), ASCE 25-97 and TS 12884 standards.

Earthquake Detectors / DSD-60



FEATURES

- Conformal to ANSI Z.21-70 (1981)
- Conformal to ASCE 25-97
- Microprocessor controlled
- Semiconductor acceleration sensors
- Dual axis
- Non-seismic accelerations filtered
- Separate outputs for standard and high sensitivity
- Maintenance free
- Capable of performing self-test
- Operates on 10 to 30 volts DC
- Direct interface to gensets, elevators and alarm systems
- Overload protected relay outputs
- Resin molded design

DSD-060 is a high-tech unit which detects seismic acceleration. On the occurrence of an earthquake it closes relay contacts to shutdown any critical devices such as generators, elevators, valves and industrial equipment. Thus it is possible to minimize the probable damage that occurs after an earthquake.

DSD-060 is a very cost effective device for shutdown applications. The device is based on highly reliable dual axis silicon micromachined acceleration sensors. It is lightweight, small, maintenance free and capable of performing selftest.

The unit has two independent relay outputs. The seismic properties of the standard output are conformal to ANSI Z.21-70(1981) and ASCE 25-97 standards. The auxiliary relay output which is more sensitive is intended for warning purposes. The unit has a user adjustable sensitivity potentiometer. The adjustment range is between low and high limits allowed by the standards.

Earthquake Detectors / DSD-80



FEATURES

- Wide operating voltage range (85-305VAC)
- Conformal to international earthquake standards
- Triple axis motion detection
- Automatic self-test
- Internal audible warning
- Internal 24V battery
- 5 programmable relay outputs (5Amp)
- Visual indicators for battery status
- Wide operating temperature range (-10...70°C)

DSD-080 Seismic Security Panel monitors seismic motions of a strong earthquake and provides relay output signals from it. Output signals are used to shut-off critical installations as natural gas and LPG systems, generators, elevators and the like.

The unit helps reducing damages of a probable earthquake. On its graphical display screen, the unit shows system status. DSD-080 incorporates highly sensitive triple axis seismic sensors. The unit is maintenance free and capable of making self-test.

The earthquake sensing specifications of DSD-080 conforms to both ANSI Z21.80 (1981), ASCE 25-97 and TS-12884(2002) standards.

DSD-080 operates on mains with a battery backup. 24V/1.2A-h batteries are incorporated to the unit. The unit provides automatic battery charging feature. During long mains failures, if batteries get low, the unit gives audible and visible alarm.

Sensor Specifications

Sensor type: Triple axis polysilicon semiconductor acceleration sensors.

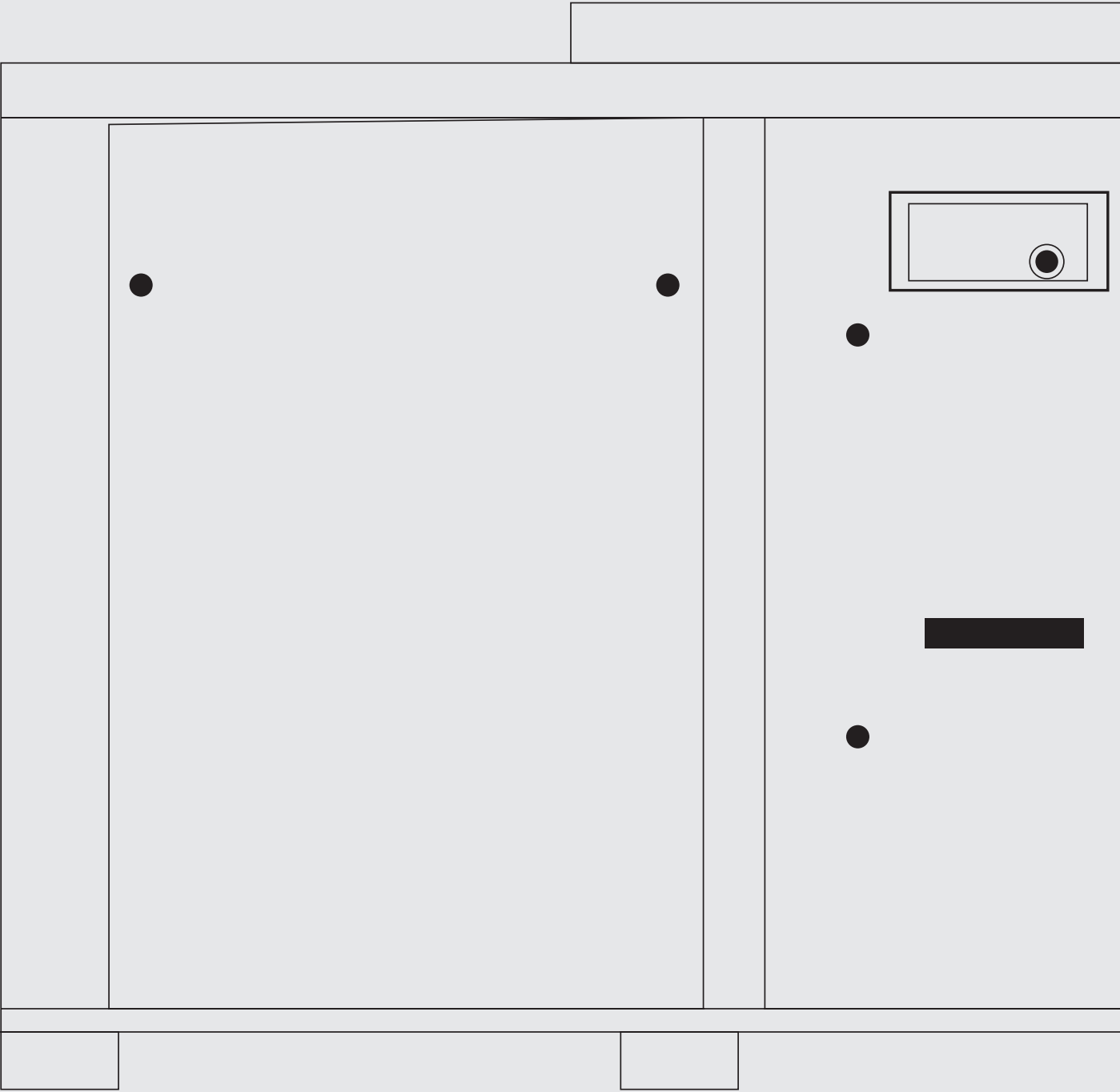
Sensor operating limits: $\pm 2g$.

Sensor failure limit: more than 50g.

Acceleration threshold: TS12884, ANSI Z21.80 (1981), ASCE 25-97

Detection delay: 0.5sn. maximum

Frequency range: 0.5Hz to 25Hz





COMPRESSOR CONTROLLERS

Diesel Compressor Controller / DK-30



The DK-30 is a high-tech product providing control and protection of diesel engine driven, screw or piston type air compressors. The controller incorporates all functions needed in a compressor control panel. Thus no additional modules are necessary resulting in lower panel cost.

The controller features full engine protection and instrumentation through analog and digital inputs and outputs. It acts also as an overspeed protection relay protecting the engine from overspeeding. In order to prevent battery drain, in STOP mode, the controller turns completely off, consuming zero current. The engine rpm is read through the magnetic pickup sender installed on the engine flywheel.

FEATURES

- Automatic operation via output pressure
- Load solenoid control
- Analog speed control output
- Multiple compressor support
- Comprehensive engine instrumentation
- Detailed engine protection
- Engine overspeed protection
- Zero power consumption at rest
- Flexible engine hours calculation algorithm
- Early start function preventing pressure drop
- History records
- 5 independent service counters
- Magnetic pickup input
- 6 programmable digital outputs
- 6 programmable digital inputs
- 3 programmable engine analog sender inputs
- 2 air pressure sensor inputs
- 2 air temperature sensor inputs
- Adjustable sensor characteristics
- Logic level serial port
- MODBUS-RTU communications
- Password protected front panel programming
- Low panel depth, easy installation
- Wide operating temperature range
- Sealed front panel (IP65 with gasket)

Electric Compressor Controller / DK-45 MK2



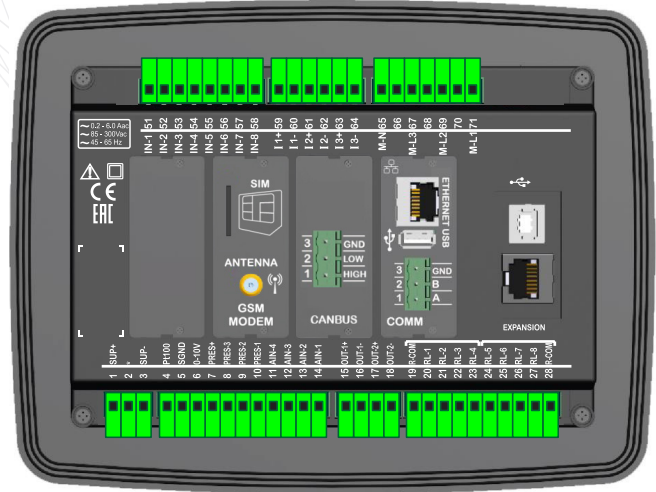
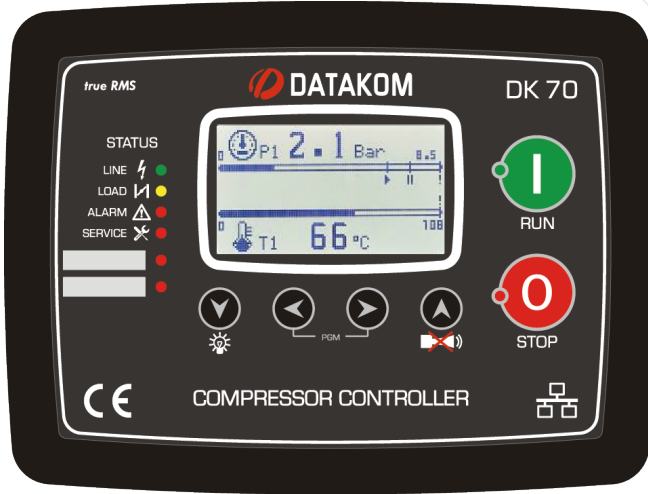
DK-45 is a high-tech product providing control of screw or piston type air compressors driven by electric motors. The unit incorporates all functions needed in a compressor control panel; thus, it eliminates the need for additional modules, resulting in lower panel cost.

The unit is directly supplied from the 400/230V utility network. It provides fail contact and sensor supplies internally, removing the need for a supply transformer in the panel.

FEATURES

- Graphical LCD screen: 128x64 pixels, 2.9"
- Automatic operation from output pressure
- Voltage protection relay function
- Phase order protection function
- Flexible motor hours calculation algorithm
- 0-10V Analog speed control output
- Multiple compressor support
- Early start function preventing pressure drop
- Dryer control function
- Event records
- 5 independent service counters
- Supports various topologies
- Wide operating temperature range
- Sealed front panel (IP65 with gasket)
- Displays utility mains voltages
- No external transformer needed
- Star / Delta start-up
- Frequency inverter driving capability
- Load solenoid control
- 5 programmable relay outputs
- Optically isolated, programmable digital inputs
- 2 pressure sensor inputs
- 2 temperature sensor inputs
- Adjustable sensor characteristics
- USB communication port
- RS-485 MODBUS communication
- Password protected front panel programming
- Low panel depth, easy installation

Electric Compressor Controller / DK-70 MK2



DK-70 is a next generation compressor controller providing control of screw or piston type air compressors driven by electric motors. The same controller provides the combination of wide communication capabilities together with a reliable and low-cost design.

The unit incorporates all functions needed in a compressor control panel; thus, it eliminates the need for additional modules, resulting in lower panel cost.

The early start function analyzes the air consumption trend and runs the compressor before the pressure falls below the low limit. Using the Weekly Schedule Exerciser and Pressure Calendar functions, the compressor can be scheduled to work on given hours and days of the week with given set pressure values.

The unit is directly supplied from the 400/230V utility network. It provides fail contact and sensor supplies internally, removing the need for a supply transformer in the panel.

The unit complies and mostly exceeds world's tightest safety, vibration and environmental standards for the industrial category. Software features are complete with easy firmware upgrade process through USB port. The Windows based PC software allows monitoring and programming through USB, RS-485, Ethernet and GPRS. The Rainbow Scada web monitoring service allows monitoring and control of an unlimited number of gensets through any web browser.

FEATURES

- Ethernet (optional)
- GSM-GPRS-SMS (optional)
- WiFi (optional)
- Embedded Web Server
- Web programming and monitoring
- Multiple compressor support (optional)
- Modbus RS-485 (optional)
- RS-232 (optional)
- Modbus TCP/IP- SNMP
- USB Host (optional)
- USB Device

FUNCTIONALITIES

- Equal aging, multiple compressor support
- Weekly Schedule Exerciser and Pressure Calendar functions
- 5 independent service counters
- Star / Delta start-up
- 0-10V and 4-20mA Analog speed control output
- 8 programmable relay outputs
- 8 programmable digital inputs
- 3 pressure sensor inputs
- 4 temperature sensor inputs
- Adjustable sensor characteristics
- V&I harmonic distortion and scopemeter
- Sealed front panel (IP65 with gasket)

► Remote Monitoring & Control

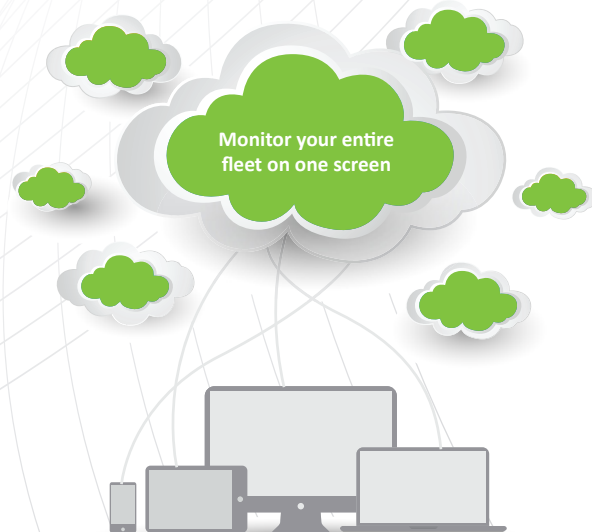
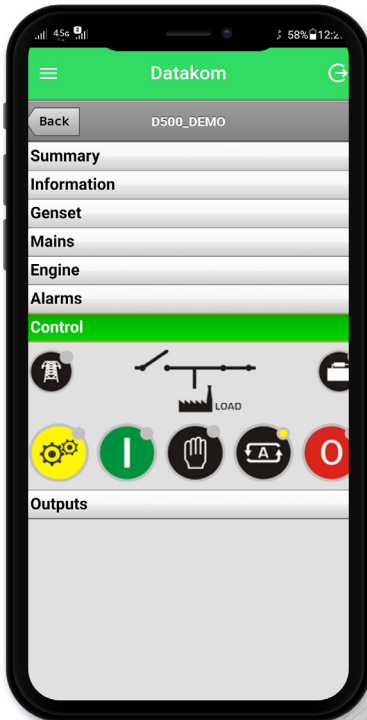


Remote Monitoring & Control

Rainbow Scada is an internet based universal remote monitoring and control program, flexible enough to integrate all kinds of intelligent control modules, independently of the manufacturer and function.

FEATURES

- Rainbow SCADA is Internet-based universal remote monitoring and control software
- Each type of control module can be integrated regardless of the manufacturer or function
- Plug-and-play with push structure
- Single server supports up to 60'000 devices
- Provides data security, data is sent to only server
- Uses internet-based interactive World map
- Real time display of status of devices are shown on the map, and on side panel
- Hierarchical configuration and clustering
- Remote control of devices
- Supports all Datakom products, which are integrated with DKG 210 gateway
- Supports all devices, which supports Modbus protocol, by integrating DKG 210 gateway
- Data recording, analysis and reporting
- Tablet and smartphone interfaces



Remote Monitoring

➤ Remote Monitoring / Modem and Gateway



DKG-090 GSM-GPRS Modem

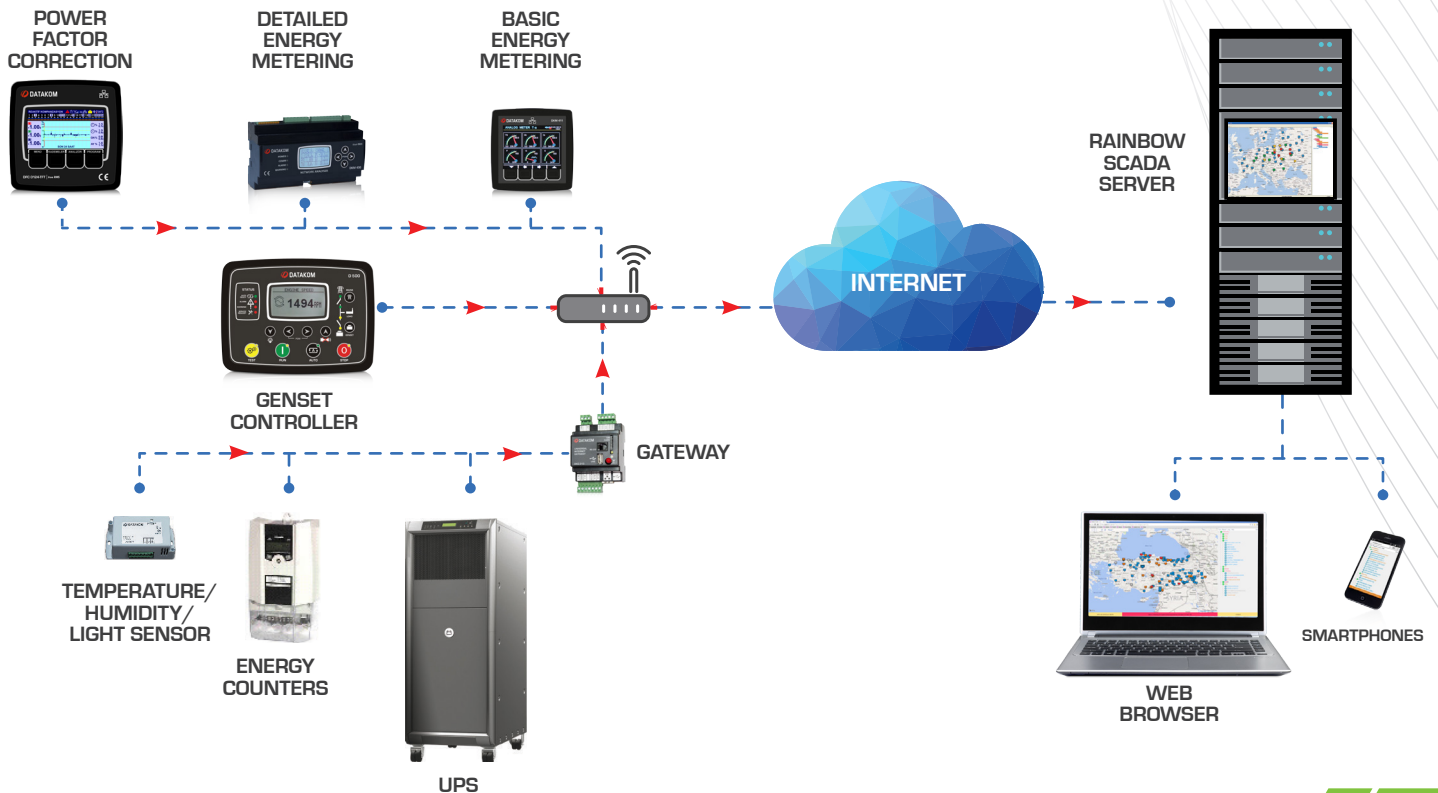
- Quad-band GSM/GPRS 850/900/1800/1900MHz
- GPRS Class 12 communication
- Magnetic antenna with 2m cable supplied together with module
- Allows remote monitoring, control, parameter setting through GPRS network
- Connects all Datakom IP enabled modules to Rainbow Scada
- Supports E-Mail and SMS sending
- Lock-up free operation with Datakom IP enabled models
- DIN Rail mounted

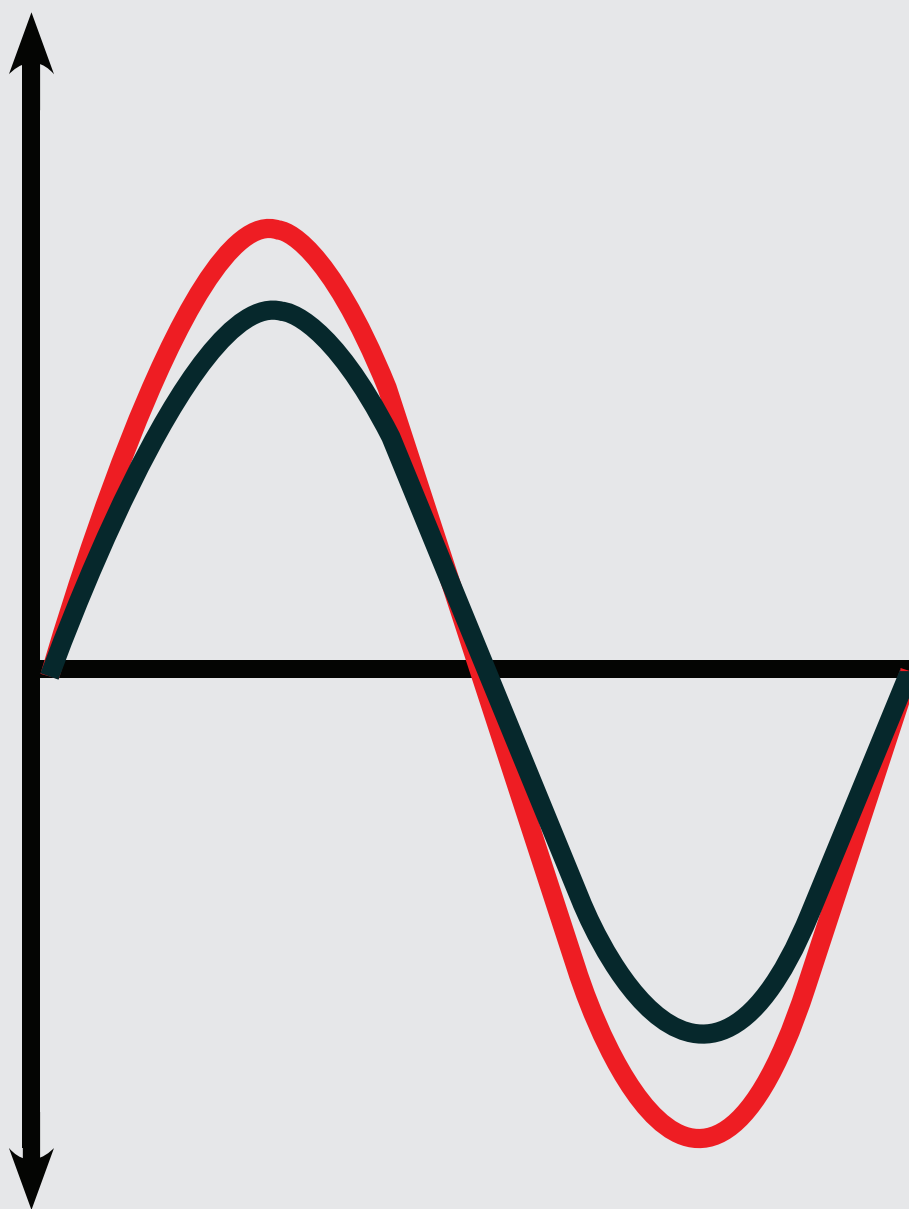


DKG-210 Gateway

- Plug & play IP system, easy installation
- Provides data security with dynamic IP
- AC and DC supply types available
- Free PC configuration software
- Internal GPRS modem with magnetic antenna
- Ethernet and GPRS connection support
- Dual RS-485 ports
- RS-232 port
- USB Host port
- 2 x Digital inputs
- 2 x Relay Outputs
- GPRS can back-up the Ethernet
- DIN rail mounted

DATAKOM RAINBOW SCADA REMOTE MONITORING SYSTEM







METERING & CONTROL

Power Factor Controllers


DFC-0124-TFT

Reactive Power Controller

FEATURES

- 5" color LCD display, 480x272 pixels
- 30 days long graphical compensation history
- User friendly menu system, ease of use
- Easy and fast setup
- Automatically corrects faulty voltage/current connections
- Automatic setup under load
- MV current measuring version available
- Adjustable measurement period: 10-100ms
- Power factor correction delay as low as 20ms
- 120 MIPS, 32 bit ARM core microprocessor
- 24-18-12 step output options
- All outputs can drive static contactors
- All outputs can drive 1-2-3 phase capacitors or reactors
- Always exact correction with SVC outputs
- 0.5% measurement accuracy, true RMS measurements
- 32 bit power measurements
- Operation in low currents (3mA)
- Ready for remote monitoring through Ethernet and GPRS
- Remote control of steps
- Remote parameter editing
- Automatic geo-positioning through GPRS
- Embedded website
- Long term data recording on USB flash memory
- 250 event records with date-time and measurements
- Independent target COS for the generator
- Display of 1-2-3 phased steps on screen
- 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: 69mm
- Sealed front panel (IP65 with gasket)

TECHNICAL SPECIFICATIONS

Power supply	: 85-305V AC, 45-65Hz
Power Consump.	: < 10 VA
Voltage	: 5- 300 V AC (F-N) 10- 520 V AC (F-F)
Current	: 0.003- 6.5 A AC
Frequency	: 30- 100 Hz
Accuracy:	
Voltage/Current	: % 0.5 + 1digit
Frequency	: % 0.2 + 1 digit
Power(kW,kVAr)	: % 1.0 + 2 digit
Power factor	: % 0.5 + 1 digit
SVC Outputs	: 50mA @ 12V DC
Current burden	: < 0.5VA (per phase)
Voltage burden	: < 0.1VA (per phase)
Dimensions	: 164x164x69mm (WxHxD)

COMMUNICATIONS

- Modbus RTU RS-485, 2400-115200 baud
- Modbus TCP/IP
- SNMP
- TCP/IP server
- TCP/IP client
- UDP
- SMTP
- SNTP
- Dynamic DNS support
- Embedded website, HTML
- GSM-SMS sending
- E-mail sending
- Central Monitoring through IP

COMMUNICATION PORTS

- Internal GPRS modem
- Internal 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

➤ Power Factor Controllers



DFC-0124

Reactive Power Controller

FEATURES

- User friendly menu system, ease of use
- Easy and fast setup
- Automatically corrects faulty voltage/current connections
- Automatic setup under load
- MV current measuring version available
- Adjustable measurement period: 10-100ms
- Power factor correction delay as low as 20ms
- 100 MIPS, 32 bit ARM core microprocessor
- 24-18-12 step output options
- All outputs can drive static contactors
- All outputs can drive 1-2-3 phase capacitors or reactors
- Always exact correction with SVC outputs
- 0.5% measurement accuracy, true RMS measurements
- 32 bit power measurements
- Operation in low currents (3mA)
- Ready for remote monitoring through Ethernet and GPRS
- Remote control of steps
- Remote parameter editing
- Automatic geo-positioning through GPRS
- Embedded website
- Long term data recording on USB flash memory
- 250 event records with date-time and measurements
- Independent target COS for the generator
- Display of 1-2-3 phased steps on screen
- 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: 69mm
- Sealed front panel (IP65 with gasket)

COMMUNICATIONS

- Modbus RTU RS-485, 2400-115200 baud
- Modbus TCP/IP
- SNMP
- TCP/IP server
- TCP/IP client
- UDP
- SMTP
- SNTP
- Dynamic DNS support
- Embedded website, HTML
- GSM-SMS sending
- E-mail sending
- Central Monitoring through IP

COMMUNICATION PORTS

- Internal GPRS modem
- Internal 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

TECHNICAL SPECIFICATIONS

Power supply	: 85-305V AC, 45-65Hz
Power Consump.	: < 10 VA
Voltage	: 5- 300 V AC (F-N) 10- 520 V AC (F-F)
Current	: 0.003- 6.5 A AC
Frequency	: 30- 100 Hz
Accuracy:	
Voltage/Current	: % 0.5 + 1 digit
Frequency	: % 0.2 + 1 digit
Power(kW,kVAr)	: % 1.0 + 2 digit
Power factor	: % 0.5 + 1 digit
SVC Outputs	: 50mA @ 12V DC
Current burden	: < 0.5VA (per phase)
Voltage burden	: < 0.1VA (per phase)
Dimensions	: 164x164x69mm (WxHxD)

Power Factor Controllers



DFC-0112 Reactive Power Controller

FEATURES

- 12 step outputs
- Always exact correction with SVC outputs
- 0.5% measurement accuracy
- Measurement period: 100ms
- Easy automatic setup
- Automatic correction of connection faults
- Automatic detection of step failures
- 250 event records with time stamp
- Alphanumeric LCD display, 2x16 characters
- Isolated RS-485 communication port
- Optional RS-232 GPRS modem port
- Reduced panel depth
- Sealed front panel (IP54)

COMMUNICATION PORTS

- RS-485 isolated (Modbus RTU)
- RS-232 for external GPRS modem (optional)

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.

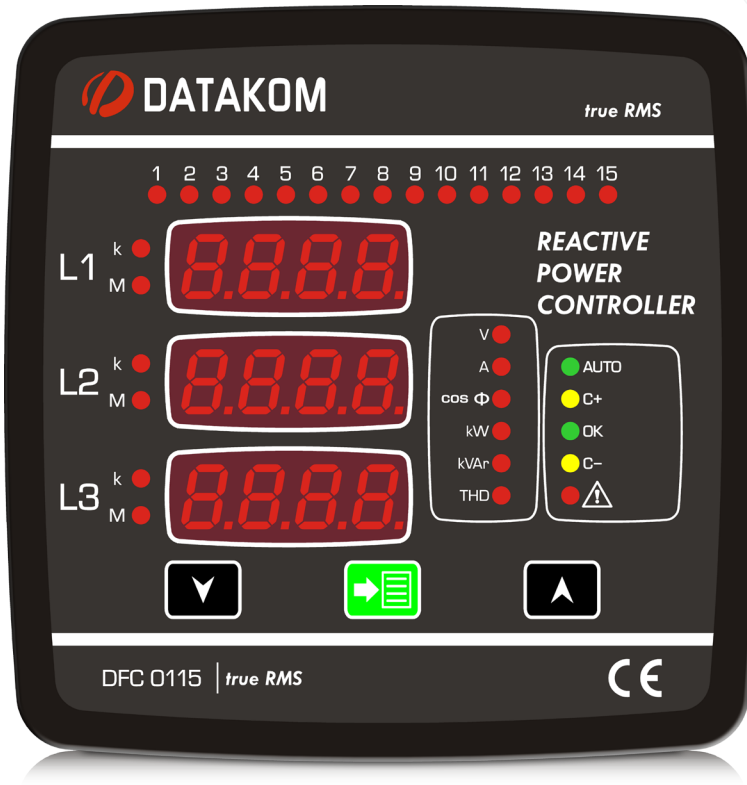
Thus the controller is able to supply almost any required reactive power on each phase, enabling matching the exact required PF, independently from capacitor bank selection.

MEASUREMENTS

Phase to phase voltages	: U12-U23-U31-Uavg
Phase to neutral voltages	: V1-V2-V3-Vavg
Phase currents	: I1-I2-I3-In-lavg-Itot
Active power	: P1-P2-P3
Reactive power	: Q1-Q2-Q3
Power factor	: cos1-cos2-cos3-tg1-tg2-tg3
Harmonic Distortion	: THDI1-THDI2-THDI3

COMMUNICATIONS

- Modbus RTU RS-485, 2400-115200 baud
- TCP/IP client
- SMTP
- GSM-SMS sending
- e-mail sending
- Central Monitoring through IP
- Free configuration & monitoring software



DFC-0115

Reactive Power Controller

- 12 / 15 STEP OUTPUTS
- HARMONIC DISTORTION DISPLAY
- RS-485 Modbus RTU

DFC-0115 is a high technology controller allowing the power factor of the installation to be stabilized to the requested value by switching capacitor and reactor banks through contactors. The unit allows also the visualization of various AC parameters like a network analyzer.

The unit makes harmonic analysis up to the 31th component. The THD values of all voltages and currents are available.

Stepping algorithms are selectable between various types. Thanks to the automatic setup function, the commissioning and programming are made easy. Each step can be capacitors or reactors following requirements.

The unit fits into a standard 140x140mm panel opening.

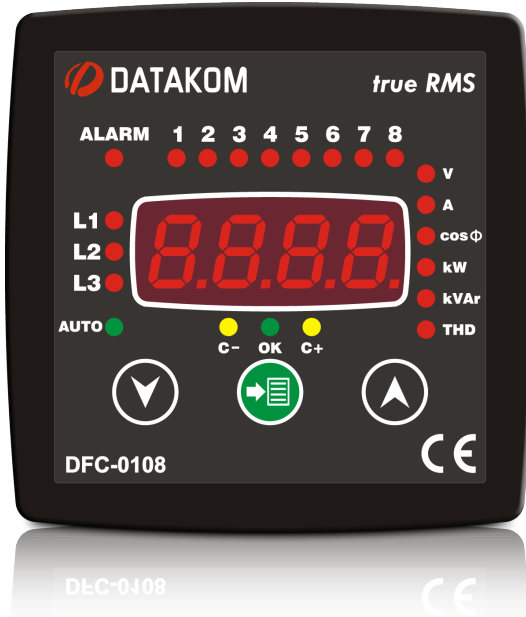
FEATURES

- 12-15 step output options
- Cost effective and high performance
- All outputs can drive 1-2-3 phase capacitors or reactors
- True RMS AC measurements, high accuracy
- Easy commissioning through automatic setup
- Automatic CT reverse polarity correction
- Electronic/mechanical power counter selection
- Per-phase regulation capability
- Connection/disconnection of all banks at once
- Equal aging of contactors
- Per phase and total V-A-kW-kVAr-cos display
- THD display of all V-I parameters (31 harmonic)
- Genset voltage input (optional)
- Alarm relay output (optional)
- Isolated RS-485 Modbus RTU (optional)
- Voltage transformer ratio for MV applications
- Password protected front panel programming
- Reduced panel depth
- Wide temperature range
- Sealed front panel (IP54)
- Plug-in connection system, easy replacement

MEASUREMENTS

- Phase to phase voltages: L12-L23-L31
- Phase to neutral voltages: L1-L2-L3
- Phase currents: I1-I2-I3
- Network frequency: Fr
- 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: ΣP
- Total reactive power: ΣQ
- Total apparent power: ΣS
- Total power factor: $\Sigma \cos$
- Total Harmonics of any voltage or current
- Step bank ratings: CAP1...CAP15

Power Factor Controllers



FEATURES

- Small size
- Cost effective and high performance
- True RMS AC measurements, high accuracy
- Easy commissioning through automatic setup
- Automatic CT reverse polarity correction
- Automatic detection of faulty banks
- Electronic/mechanical power counter selection
- Supports single-phase and tri-phase banks
- Per-phase regulation capability
- Connection/disconnection of all banks at once
- Dynamic update of capacitor ratings
- Adjustable delay timers
- Equal aging of contactors
- Per phase and total V-A-kW-kVAr-cos display
- THD display of all V-I parameters (31 harmonic)
- VT ratio for MV applications
- kW and kVAr tick output possibility
- Front panel programmable
- Low panel depth, easy installation
- Wide temperature range
- Sealed front panel (IP54)
- Plug-in connection system, easy replacement

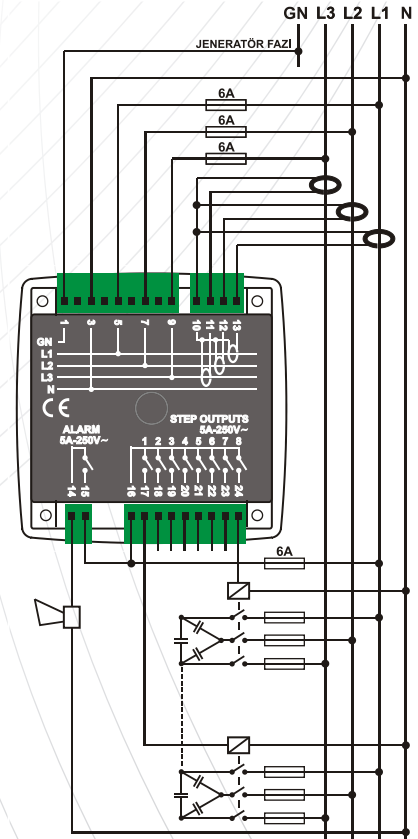
MEASUREMENTS

- Phase to phase voltages: L12-L23-L31
- Phase to neutral voltages: L1-L2-L3
- Phase currents: I1-I2-I3
- Network frequency: Fr
- 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: ΣP
- Total reactive power: ΣQ
- Total apparent power: ΣS
- Total power factor: $\Sigma \cos$
- Total Harmonics of any voltage or current
- Step bank ratings: CAP1...CAP8

DFC-0108

Reactive Power Controller

DFC-0108 is a high technology controller allowing the power factor of the installation to be stabilized to the requested value by switching capacitor banks through contactors. The unit allows also the visualization of various AC parameters like a network analyzer. The unit makes harmonic analysis up to the 31th component. The THD values of all voltages and currents are available. Stepping algorithms are selectable between various types. Thanks to the automatic setup function, the commissioning and programming are made easy. The optimal stepping program provides longest contactor and capacitor life cycles. The unit fits into a standard 96x96mm panel opening.



Energy Quality

	Relay Output	Thyristor Output	SVC Output	Character LCD	Graphic LCD	RS-485	RS-232	USB Device	USB Host	Ethernet	GPRS Modem	Remote Monitor	E-mail	SMS
DFC-0112	12		■	■										
DFC 0112 - 485	12		■	■		■								
DFC 0112 - 485 - MODEM	12		■	■		■					■	■	■	■
DFC 0124 - 12R	12		■		■	■								
DFC 0124 - 12R - C	12		■		■	■	■	■	■	■		■	■	
DFC 0124 - 12R - M	12		■		■	■					■	■	■	■
DFC 0124 - 12R - C - M	12		■		■	■	■	■	■	■	■	■	■	■
DFC 0124 - 18R	18		■		■	■								
DFC 0124 - 18R - C	18		■		■	■	■	■	■	■		■	■	
DFC-0124-18R-M	18		■		■	■					■	■	■	■
DFC 0124 - 18R - C - M	18		■		■	■	■	■	■	■	■	■	■	■
DFC 0124 - 24R	24		■		■	■								
DFC 0124 - 24R - C	24		■		■	■	■	■	■	■		■	■	
DFC 0124 - 24R - M	24		■		■	■					■	■	■	■
DFC 0124 - 24R - C - M	24		■		■	■	■	■	■	■	■	■	■	■
DFC 0124 - 12T		12	■		■	■								
DFC 0124 - 12T - C		12	■		■	■	■	■	■	■		■	■	
DFC 0124 - 12T - M		12	■		■	■					■	■	■	■
DFC 0124 - 12T - C - M		12	■		■	■	■	■	■	■	■	■	■	■
DFC 0124 - 24T		24	■		■	■								
DFC 0124 - 24T - C		24	■		■	■	■	■	■	■		■	■	
DFC 0124 - 24T - M		24	■		■	■					■	■	■	■
DFC 0124 - 24T - C - M		24	■		■	■	■	■	■	■	■	■	■	■
DFC 0124 - 12R - 12T	12	12	■		■	■								
DFC 0124 - 12R - 12T - C	12	12	■		■	■	■	■	■	■		■	■	
DFC 0124 - 12R - 12T - M	12	12	■		■	■					■	■	■	■
DFC 0124 - 12R - 12T - C - M	12	12	■		■	■	■	■	■	■	■	■	■	■
DFC 0124 - 18R - 6T	18	6	■		■	■								
DFC 0124 - 18R - 6T - C	18	6	■		■	■	■	■	■	■		■	■	
DFC 0124 - 18R - 6T - M	18	6	■		■	■					■	■	■	■
DFC 0124 - 18R - 6T - C - M	18	6	■		■	■	■	■	■	■	■	■	■	■
DFC 0124 - OG - 24R - C	24		■		■	■	■	■	■	■		■	■	
DFC 0124 - OG - 24R - C - M	24		■		■	■	■	■	■	■	■	■	■	■
DFC 0124 - OG - 24T - C		24	■		■	■	■	■	■	■		■	■	
DFC 0124 - OG - 24T - C - M		24	■		■	■	■	■	■	■	■	■	■	■
DFC 0124 - OG - 12R - 12T - C	12	12	■		■	■	■	■	■	■		■	■	
DFC 0124 - OG - 12R - 12T - C - M	12	12	■		■	■	■	■	■	■	■	■	■	■

➤ SVC Inductive Reactor Driver/ SVC- 05 / SVC- 10 / SVC- 20 / SVC- 30



FEATURES

- Compact design
- Up to 30kVAr continuous power
- Up to 3x50A continuous current
- Reactor driving between 0-100% rating
- Immediate turn-on
- Zero current turn-off
- Electrically noiseless operation
- High I²T, A²S, di/dt resistance
- Overvoltage rating: 1600 V peak
- Overload capacity: 1.5 In during 1 minute
- Reactor thermostat input
- Led indicators
- Sınırsız anahtarlama ömrü
- Silent operation
- Maintenance free

The SVC-30 is a thyristor based switch designed for reactive power compensation panels.

It has 3 switching elements of 50A current carrying capacity and drives 3 single-phase inductive reactors.

The driver is designed to be connected to SVC outputs of DFC-0112 and DFC-0124 series reactive power control relays.

Thanks to the SVC system, inductive reactors can be driven between 0% and 100% duty cycle providing the exact amount of reactive energy to the grid.

With its 3 x single-phase structure, the unit helps to improve phase unbalances of the reactive power.

Main advantages of inductive load drivers are silent operation, fast switching, unlimited switching life and electrically noiseless operation.

The fan turns on only when necessary, providing longer life and energy efficiency.

	Rating	Voltage	Phase	Reactor Rating	Nominal Current	Operating Temp.	Automatic Fan	Temp. Input	Dimensions (mm)	Weight (kg)
SVC - 05	5kVAr	230 / 400V	3	3x1.7kVAr	8A	55°C		■	95x112x115	1.0
SVC - 10	10kVAr	230 / 400V	3	3x3.4kVAr	16A	55°C	■	■	95x164x112	1.7
SVC - 20	20kVAr	230 / 400V	3	3x6.7kVAr	30A	55°C	■	■	115x170x140	1.7
SVC - 30	30kVAr	230 / 400V	3	3x10kVAr	50A	55°C	■	■	115x250x160	2.9

➤ Solid State Contactors / SSC-05 / SSC - 10 / SSC - 15 / SSC - 30 / SSC - 50 / SSC - 100



FEATURES

- Compact design
- Up to 100kVAr continuous power
- Up to 160A continuous current
- Fast switching: 20ms max.
- Capacitor and inductive reactor driving
- Zero Voltage Turn-on
- Zero current turn off
- Zero Voltage Turn-on
- Zero current turn off
- Electrically noiseless operation
- Silent operation
- Protects capacitor life
- Air cooling
- High I²T / A²S
- High di/dt
- Over voltage rating : 1600 V peak
- Overload capacity 1.5 I_n during 1 min
- Led switching indicators
- Designed for 230/400V networks
- Unlimited switching life
- Maintenance free n

The Datakom SSC series are solid state switches for capacitor banks and inductive reactors used in power factor compensation systems.

These devices turn-on at zero voltage difference and turn-off at zero current without any disturbing inrush currents.

They are the most convenient solutions for the compensation of electrical noise sensitive or fast varying reactive loads, in the range of 0.05 to 10 seconds.

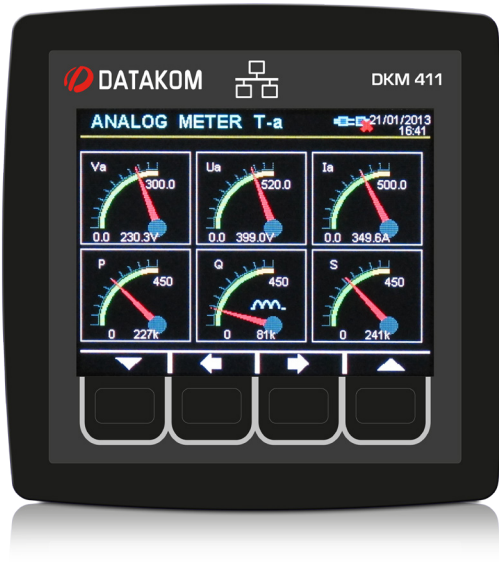
Static switches offer important advantages compared to electromechanic contactors. These are silent operation, fast switching, unlimited switching life and electrically noiseless operation.

Thanks to integrated protection functions, devices are protected against overload and high temperature failures.

The fan turns on only when necessary, providing longer life and energy efficiency.

	Rating	Voltage	Switching Element	Current	Operating Temp.	Trigger Signal	Automatic Fan	Temp. Input	Dimensions (mm)	Weight (kg)
SSC-05	5kVAr	230 / 400V	3	3x8A	55°C	DC 10 - 28V		■	120x100x115	1.0
SSC-10	10kVAr	230 / 400V	3	3x16A	55°C	DC 10 - 28V	■	■	115x170x140	1.7
SSC-15	16kVAr	230 / 400V	3	3x24A	55°C	DC 10 - 28V	■	■	115x170x140	1.7
SSC-30/3	30kVAr	230 / 400V	3	3x50A	55°C	DC 10 - 28V	■	■	115x250x160	2.9
SSC-30/2	30kVAr	400V	2	2x50A	55°C	DC 10 - 28V	■	■	115x170x140	2.2
SSC-50/2	50kVAr	400V	2	2x80A	55°C	DC 10 - 28V	■	■	115x250x160	2.9
SSC-100/2	100kVAr	400V	2	2x160A	55°C	DC 10 - 28V	■	■	125x250x220	7.5

► Network Analysers



DKM-411 Network Analyser

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

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 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
- Configurable user counters
- Voltage transformer ratio for MV applications
- Password protected front panel programming
- Reduced panel depth
- Sealed front panel (IP54)

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

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

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



➤ Network Analysers

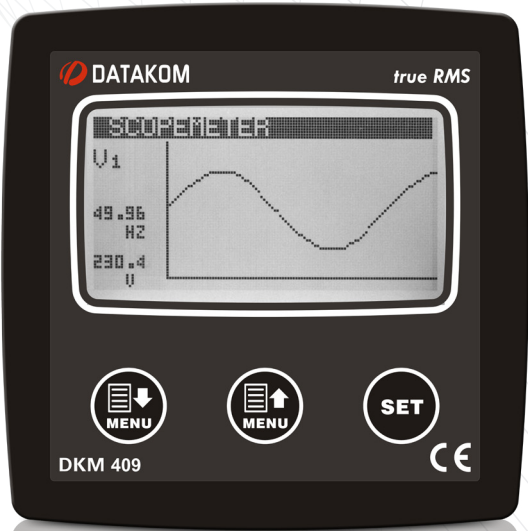
DKM-409 Series
Network Analyser

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.

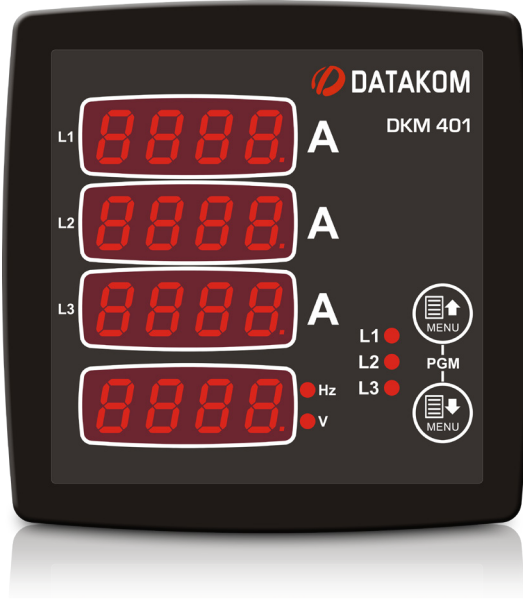
The graphic screen allows display of waveforms and harmonic analysis graphs. Various display screens can be scrolled automatically.

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



	B&W Screen (2.9")	Color Screen (3.5")	RS-485 Modbus	Digital Inputs	Digital Outputs	Analog Outputs	USB Port	Isolated Current Input	Ground Current Input	DC Supply	AC Supply	1 mA Measurement	Record Memory	Real Time Clock	Accuracy %	True RMS	Harmonics	Micro-SD Card	Ethernet	USB Host	External GPRS Modem
DKM-409 - S	■									□	■				0,5	■	31				
DKM-409 - S4	■		■							□	■				0,5	■	31				
DKM-409	■		■	2	2					□	■				0,5	■	31				
DKM-409-T-S	■						■	■			■	■	1MB	■	0,5	■	49				
DKM-409-T-S4	■		■				■	■			■	■	1MB	■	0,5	■	49				
DKM-409-T	■		■	4	2		■	■			■	■	1MB	■	0,5	■	49				
DKM-409 - Pro	■		■	4	2	2	■		■	□	■		1MB	■	0,5	■	31	■			
DKM-409 - Pro - At - AC	■		■	4	2	3	■	■		□	■	■	1MB	■	0,5	■	49				
DKM-411		■	■	2	2		■			□	■			■	0,2	■	63		■	■	■

➤ Network Analysers



DKM-401

Multimeter

The DKM-401 is a low cost precision instrument designed to display various AC parameters in a 3-phase distribution panel.

The standard unit is designed for 230/400V network. A different version is available for 120/208V systems.

The unit fits into a standard 92x92mm panel opening.

FEATURES

- True RMS measurements
- Class 0,5
- Flush mount
- Front panel programming
- Reduced panel depth
- Wide operating temperature range
- Sealed front panel (IP54)
- Plug-in connection system
- Low cost

DKM-405

Network Analyser

The DKM-405 is a low cost precision instrument designed to display various AC parameters in a 3-phase distribution panel.

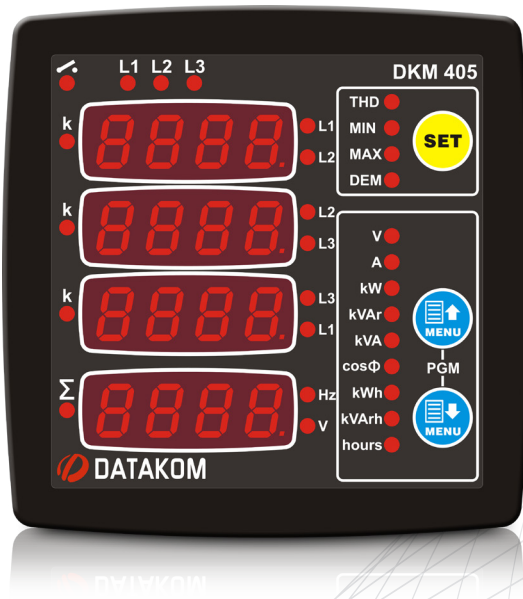
The standard unit is designed for 230/400V network. A different version is available for 120/208V systems.

FEATURES

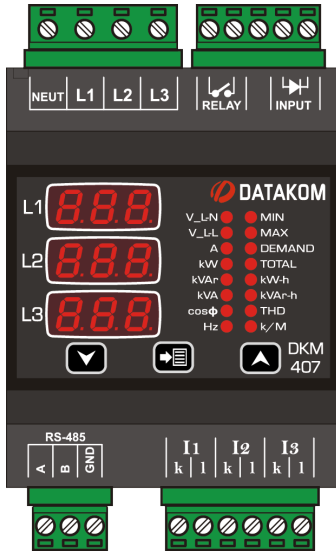
- True RMS measurements
- Total harmonic distortion display
- Max demand display
- Configurable relay output
- Energy pulse output capability
- Optically isolated, configurable digital input
- Active-reactive power counters
- Hour counter
- Voltage transformer ratio for MV applications
- Front panel programming
- Reduced panel depth
- Wide operating temperature range
- Sealed front panel (IP54)
- Plug-in connection system

MEASUREMENTS

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: ΣP



Network Analysers



DKM-407 DIN RAIL TYPE NETWORK ANALYSER

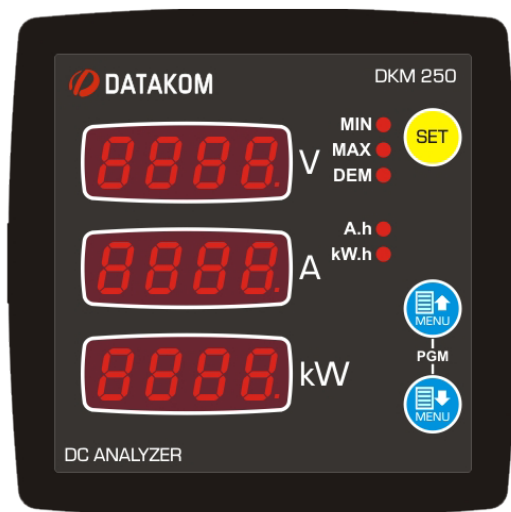
The DKM-407 is a DIN rail mounted precision and low cost unit allowing measurement and remote monitoring of AC parameters of a distribution panel.

Main applications are remote monitoring and energy management. The unit is supplied between L1 and Neutral terminals. Thanks to the supply range of 85- 305V, it is not affected by voltage fluctuations and is capable of operating in any network.

FEATURES

- True RMS measurements
- 0.5 % measurement precision
- Total harmonic distortion display
- Demand, Min and Max records
- Fully isolated RS-485 serial port
- MODBUS-RTU communications
- Programmable relay output
- Energy pulse output capability
- Isolated, programmable digital input
- kW and kVar energy counters
- Hours run counter
- VT ratio for medium voltage applications
- Front panel programming
- Wide operating temperature range
- 2 part connectors

DC Energy Analyser



DKM-250 DC ENERGY ANALYZER & EARTH LEAKAGE DETECTOR

The DKM-250 is a precision instrument designed for measuring, displaying and remote monitoring earth leakage and various DC parameters in a DC distribution box.

FEATURES

- Displays earth leakage in %
- Various current input options
- 2 programmable relay outputs
- 2 programmable digital inputs
- Programmable 4-20mA analog output
- Demand, Min & Max records
- Fully isolated RS-485 serial port
- MODBUS-RTU communications
- Bidirectional current & power measurement
- Bidirectional kW-h energy counter
- Bidirectional A-h counter
- Hours run counter
- Front panel programming
- Wide operating temperature range
- Sealed front panel (IP65 with gasket)
- Two part connection system

➤ Multiple Network Analyser



DKM-430

Multiple Network Analyser

- EQUIVALENT TO 10 ANALYSERS
- 30 x CT INPUTS
- 1MB RECORD MEMORY
- HARMONIC ANALYSIS
- INTERNAL GPRS MODEM

DATAKOM DKM-430 is a precision instrument allowing the measurement, recording and remote monitoring of 10 3-phased or 30 single-phased feeders (or any combination of these two) in AC distribution panels. The number and flexibility of current inputs allow the unit to be used in a variety of applications like power distribution network monitoring, ISO50001 energy efficiency or home and factory automation. The unit can be mounted on a DIN rail or backpanel. It can be easily adapted to existing panels. Current inputs of the unit are designed for 0.1A output current transformers (CTs). CTs are shipped together with the unit and can be installed on cables in order to minimize space occupation in distribution cabinets. Each CT can be assigned to any phase voltage and any virtual analyser. Inputs can be moved between analysers without modifying connections. Independently adjustable current limits for each phase provide pre-alarms and help to reduce energy failures. All measurement values and program parameters may be displayed on the graphic LCD screen.

The unit logs all fault conditions together with date and time information. The internal real time clock is capable of running 10 years without energy.

The astronomical relay function calculates sunrise and sunset times precisely for daylight based applications.

Any fault or warning signal can be connected to digital inputs of the unit. Input functions are selected from list.

Any function can be assigned to relay outputs of the unit. Relays may be remotely operated through the central monitoring program.

The isolated RS-485 MODBUS RTU data port is unaffected by ground potential differences and allows safe transmission of information to monitoring and automation systems.

The optional internal GPRS modem allows remote monitoring and control of the distribution panel without the use of any additional module. Parameter setting of the unit is made either manually or through the USB port using the free PC program. The unit records electrical parameters in its 1MB internal memory with programmed period. Records are read through Modbus.

FEATURES

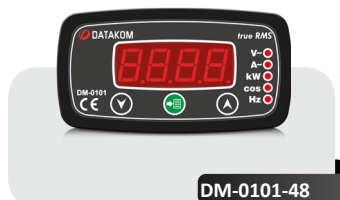
- Equivalent to 10 3-phase analysers
- True RMS measurements
- 0.5% measurement precision
- Internal record memory: 1MB
- Internal battery backed-up real time clock
- Astronomical relay function
- Isolated RS-485 serial port
- MODBUS-RTU communication
- Internal GPRS modem (optional)
- 2 programmable relay outputs
- 2 optically isolated programmable inputs
- Active-reactive energy counters
- USB port for programming
- Free programming software
- Graphic LCD, 128x64 pixels
- Wide supply range: 85-305VAC / 88-450VDC
- DC supply version available
- Wide operating temperature range

Energy Quality

➤ Ammeter, Frequency, Voltmeter

	V(Phase)	I(Phase)	Hz	kW	PF	Display Number	96x96mm	96x48mm	72x72mm
DM-0301	1	1	■	■	■	3			■
DA-0303		3				3			■
DVF-0303	3		■			3			■
DM-0101	1	1	■	■	■	1	■	■	■
DA-0103		3				1		■	■
DA 0101		1				1	■	■	■
DV 0101	1		■			1	■	■	■
DF 0101			■			1	■	■	■
DVF 0101	1		■			1		■	■
DVF 0103	3		■			1		■	■

Energy Quality / Single-Phase Digital Multimeter



FEATURES

- True RMS measurements
- Accuracy: V-A-Hz: 0.5% kW: 1.0%- pf: 0.5%
- 5A current transformer input
- Programmable current transformer ratio
- kW-meter or pf-meter feature
- Operation Temperature -40 / +70 °C
- Flush mount
- Sealed front panel (IP54)
- Reduced panel depth
- Low cost

Energy Quality / Digital Frequencymeter



DF-0101-96



DF-0101-72



DF-0101-48

FEATURES

- 0.5% accuracy
- Operation Temperature -40 / +70 °C
- Plug-in connection system
- Sealed front panel (IP54)
- Low cost

Energy Quality / Single-Phase Digital Voltmeter



DV-0101-96



DV-0101-72

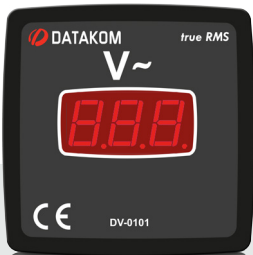


DV-0101-48

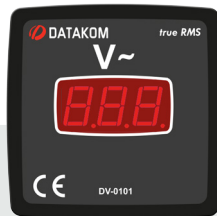
FEATURES

- 0.5% accuracy
- Operation Temperature -40 / +70 °C
- Plug-in connection system
- Sealed front panel (IP54)
- Low cost

Energy Quality / Single-Phase Digital Voltmeter (Isolated supply)



DV-0101-96-I



DV-0101-72-I

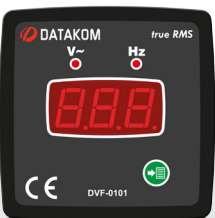


DV-0101-48-I

FEATURES

- 0.5% accuracy
- Operation Temperature -40 / +70 °C
- Plug-in connection system
- Sealed front panel (IP54)
- Isolation voltage: 1000VAC/1dk
- Measurement range: 0-600VAC
- Low cost

Energy Quality / Single-Phase Volt / Frequencymeter



DVF-0101-72



DVF-0101-48

FEATURES

- 0.5% accuracy
- Operation Temperature -40 / +70 °C
- Plug-in connection system
- Reduced panel depth
- Sealed front panel (IP54)
- Low cost

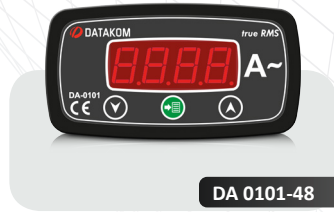
Energy Quality / Single-Phase Digital Voltmeter



DA 0101-96



DA 0101-72



DA 0101-48

FEATURES

- True RMS
- 0.5% accuracy
- 5A current transformer input
- Programmable current transformer ratio
- Operation Temperature -40 / +70 °C
- Plug-in connection system
- Reduced panel depth
- Sealed front panel (IP54)
- Low cost

Energy Quality / 3 Phase Digital Ammeter



DA 0303-72



DA 0103-72

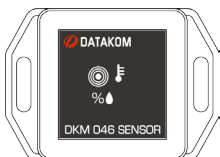
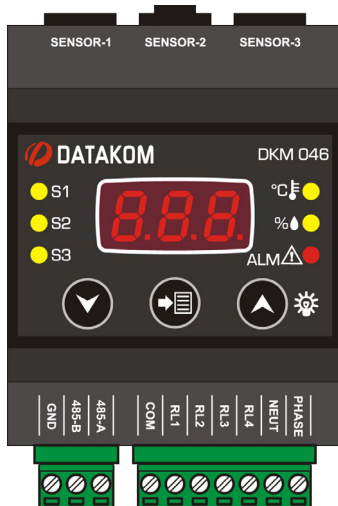


DA 0103-48

FEATURES

- True RMS
- 0.5% accuracy
- Operation Temperature -40 / +70 °C
- Plug-in connection system
- Reduced panel depth
- Sealed front panel (IP54)
- Low cost

Energy Quality / Temperature & Humidity Controller



DKM-046 TEMPERATURE & HUMIDITY CONTROLLER

DKM-046 is a DIN Rail mounted precision unit capable of measuring temperature and humidity in three different locations, provide protection with 4 relay outputs and serve data to remote monitoring and control systems.

Sensing modules are separated from the base unit, connecting with cables. One sensor comes together with the base unit. Additional sensors may be purchased separately.

FEATURES

- Supports 3 temperature & humidity sensors
- AC and DC auxiliary supply versions
- Programmable relay outputs: 4
- Temperature and relative humidity control
- Independent cooling / heating / humidification / dehumidification functions for each sensor
- Temperature measuring range: -40...+80°C
- Humidity measuring range: 0% ... 100%
- Humidity accuracy: $\pm 3.5\%$, 20 ... +80%
- Temperature accuracy: $\pm 1^\circ\text{C}$, 0 ... +60 °C
- Factory calibrated sensors
- Front panel programming
- Supports Modbus programming
- DIN rail mounted, easy installation
- Operating temp range: -20°C ... +70 °C
- Two part connection system

Protection Relays / DPR-400

DPR-400

Protection Relay

DPR-400 is a directional protection relay in standard panel dimensions. Thanks to its low depth, it provides space economy in panels.

The large color screen allows simultaneous display of multiple measurements. The DPR-400 features dual current measurement circuits. It is both a precise analyzer and a 50In protection relay.

Through RS-485 and ethernet comports, the unit is easily connected to Scada and automation systems. Parameter adjustment is done through the USB or ethernet ports.

The basic unit offers 4 digital inputs and 4 relay outputs. Additional 16 inputs and 16 relay outputs are optionally available



FEATURES

- 4.3" color graphic screen, 480x272 pixels
- Accurate power analyzer (Class 0.5%)
- 4 quadrant energy counters
- Multiple protection curves
- Self test, internal failure monitoring
- Cold reclosure
- Configurable digital inputs
- Configurable relay outputs
- Load detecting relay outputs
- 3 independent adjustment sets
- Multiple languages
- All parameters front panel adjustable
- 3 level password protection
- Setup through USB, ethernet and RS-485
- Free PC program for setup
- 16 x configurable front panel leds
- Manual & Scada driven closing and opening
- Firmware upgrade through USB
- IP65 protection (with optional gasket)
- Low panel depth, only 55mm

STANDARDS

- EN60255 Electrical Relays
- EN61010 Safety Requirements
- EN61326 Electromagnetic Compatibility
- EN60068 Environmental Conditions
- EN60529 Protection Levels

PROTECTION CURVES

- IEC Standard / Very / Extreme Inverse
- UK Long Term Inverse
- IEEE Medium / Very / Extreme Inverse
- US Normal Inverse, Short Time Inverse

ANSI CODE	DESCRIPTION
27/27S	Under Voltage (Ph-Ph / Ph-N)
46	Negative Sequence Overcurrent
46BC	Broken Conductor
47	Negative Sequence Over Voltage
49RMS	Thermal Overload
50,51	Overcurrent
50N,51N	Ground Overcurrent
50BF	Interrupter Failure
59	Over Voltage (Ph-Ph / Ph-N)
67	Directional Overcurrent
74	Circuit Connection Monitoring
79	Reclosure
81O	High Frequency
81U	Under Frequency
CLP	Cold Load Pickup



DPR-350

NETWORK ANALYZER & PROTECTION RELAY

DPR-350 is a state of the art network analyzer and directional protection relay in 96x96mm standard panel dimensions. Thanks to its low depth, it provides space economy in panels. The large graphic screen allows simultaneous display of multiple measurements.

The DPR-350 features dual current measurement circuits. It is both a precise analyzer and a 25Amp protection relay. Protection curves are selected between various IEC, ANSI, UK and US types. Multiple curves may be enabled simultaneously.

Through RS-485 comport, the unit is easily connected to Scada and automation systems. Parameter adjustment is done through USB port.

The unit records all electrical parameters with adjustable period in its 1MB record memory (optional 16MB). Records are read through Modbus.

The unit offers 4 digital inputs, 3 analog outputs and 2 relay outputs. Analog outputs can give any measured parameter in 4-20mA format.

FEATURES

- 128x64 pixel graphic screen
- Accurate MV power analyzer (Class 0.5%)
- 4 quadrant energy counters
- Multiple protection curves
- 1MB record memory
- Self test, internal failure monitoring
- Cold reclosure
- Configurable digital inputs
- Configurable relay outputs
- Configurable analog outputs
- 2 independent adjustment sets
- Multiple languages
- All parameters front panel adjustable
- 3 level password protection
- Setup through USB and RS-485
- Free PC program for setup
- Manual & Scada closing and opening
- Firmware upgrade through USB
- Wide supply voltage range: 19-150VDC
- IP65 protection (with optional gasket)
- Low panel depth, only 53mm

PROTECTION CURVES

- IEC Standard / Very / Extreme Inverse
- UK Long Term Inverse
- IEEE Medium / Very / Extreme Inverse
- US Normal Inverse, Short Time Inverse

COMMUNICATIONS

- USB 2.0 PC connection
- RS-485 (isolated) 2400-115200 baud
- Modbus RTU
- IEC60870-5-103

RECORD MEMORY

- 35 x event records with time stamp
- 15.000 x periodic records with time stamp
- Adjustable record period
- Total 1MB record memory

ANALYZER MEASUREMENTS

- Phase voltages: V1-V2-V3-U12-U23-U31
- Phase currents: I1-I2-I3-Inötr-Ignd
- Active power: P1-P2-P3-ΣP
- Reactive power: Q1-Q2-Q3-ΣQ
- Apparent power: S1-S2-S3-ΣS
- Power factor: cos1-cos2-cos3-Σcos
- Frequency: F
- Negative sequence currents and voltages
- Zero sequence currents and voltages
- T32Q value

STANDARDS

- EN60255 Electrical Relays
- EN61010 Safety Requirements
- EN61326 Electromagnetic Compatibility
- EN60068 Environmental Conditions
- EN60529 Protection Levels

Protection Relays / DPR 02 / DPR 03 / DPR 05 / DPR 06

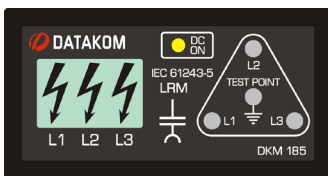
Protection Relays

DPR-02/03/05/06 relays are three-phase voltage protection relays designed to be used for voltage protection in distribution substations, generators, motors, transformers and capacitors in compensation systems.

TECHNICAL SPECIFICATIONS

Supply Voltage	: Capacitive 3 phase
Frequency Range	: 47-63Hz
Power Consumption	: 30VA / 2W (max)
Ölçüm Metodu	: True RMS
Trip Delay Setup:	: 0.5 – 20 sec. adjustable
Reset Delay Setup	: 0.5 – 20 sec. adjustable
Relay Output	: : 6A @ 277V-AC, 1800VA, 300W
Terminal wire range	: maks 2.5mm ² (12AWG)
Screw-on Force	: 0.4 Nm (3.6 lb.in)
Operating temp	: -30°C ile +70 °C arası
Maximum humidity	: % 95 (non-condensing)
Dimensions	: 36,0x90,6x58,4mm
Weight	: 100 gr (approx)

	Phases	Topology	Low Voltage Protection	High Voltage Protection	Phase Order Protection	Phase Loss Protection	Adjustable Trip Delay	Adjustable Reclose Delay	DIN Rail Mount	Adjustable Voltage Low Limit	Adjustable Voltage High Limit	Asymmetry Protection	6A/277V AC Relay Output	Output Type
DPR-02 Phase Protection	3	Ph-N	■	■	■	■	■	■	■	■	■		■	NC-NO
DPR-03 Phase Protection	3	Ph-Ph	■	■	■	■	■	■	■	■	■		■	NC-NO
DPR-05 Motor Protection	3	Ph-N	■	■	■	■	■	■	■			■	■	NC-NO
DPR-06 Motor Protection	3	Ph-Ph	■	■	■	■	■	■	■			■	■	NC-NO

Capacitive Voltage Indicator (LRM)


The DKM-185 is a passive voltage detector designed for medium voltage systems.

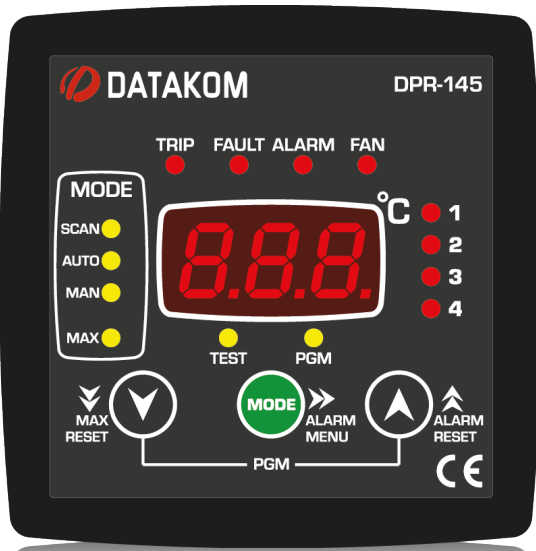
It indicates visually the existence of high voltage on the 3-phase busbar without the need of an external supply.

It conforms to IEC 61243-5 (LRM) standard.

FEATURES

- Wide operating voltage range [1kV-52kV]
- EN61243-5 LRM conformal detection
- Independent indicators for each phase
- Test terminals (3 phase + ground)
- 1 relay output (5Amp)
- DC-ON led indicator
- Wide DC supply range (19-150VDC)
- Isolated power supply
- Wide operating temperature range (-20...+70°C)

Protection Relays / DPR-I45 MV Temperature Protection Relay



DPR-145 TEMPERATURE PROTECTION RELAY

PT100 INPUTS: 4
RELAY OUTPUTS: 4
RS-485 MODBUS PORT
19-150VDC SUPPLY

DPR-145 is a precision unit designed for the temperature protection of dry type or resin filled MV transformers. The unit offers a high degree of protection against electromagnetic disturbances.

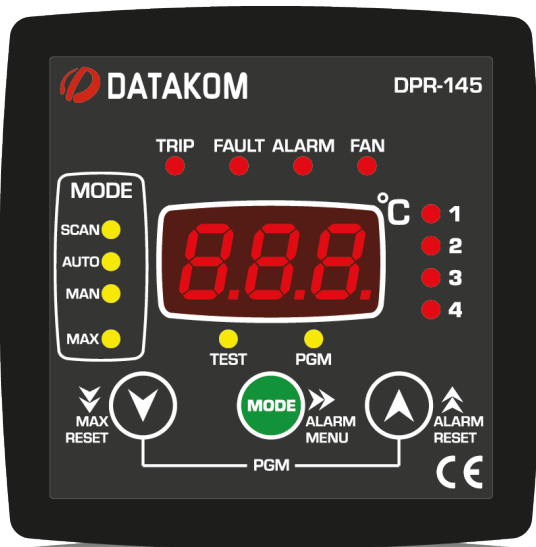
The unit has 4 temperature inputs of PT100 type. Three of them are used for the transformer protection.

The fourth input may be used as core temperature protection or ambient temperature monitoring. Alarm and trip levels of the unit are independently adjustable for first 3 sensors and the fourth sensor input.

FEATURES

- 1 degrees C measurement precision
- 4 x PT100 analog inputs
- Allows cable length compensation
- Automatic detection of sensor failures
- Automatic and manual self test
- 4 x relay outputs, 5A/250Vac
- Fully isolated RS-485 serial port
- MODBUS-RTU communication
- Recording of maximum temperatures
- Front panel programmable
- 2 alarm thresholds for channels 1-2-3
- 2 alarm thresholds for channel 4
- Easy to read, 3 digit 14mm led display
- Wide supply voltage range: 19-150VDC
- AC supply version available (85-305VAC)
- Reduced panel depth, easy to install
- Wide operating temperature range, -20 to +70°C
- Sealed front panel (IP65 with gasket)
- 2 part connection system

DPR-I65 Transformer Step & Temperature Indicator



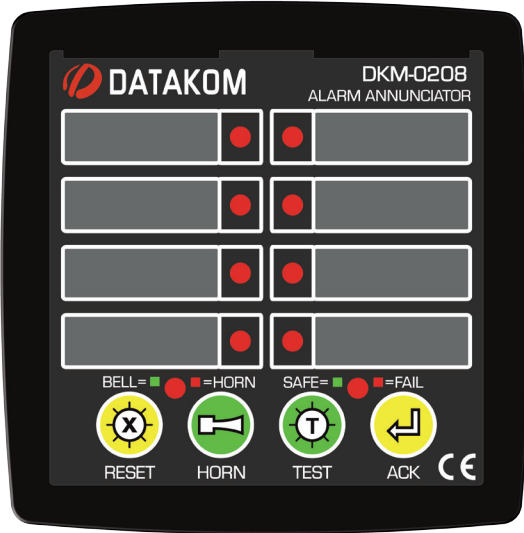
DPR-165 TRANSFORMER STEP & TEMPERATURE INDICATOR

DPR-165 is a microprocessor controlled precision instrument displaying steps and temperatures of MV/HV transformers. The unit has a high degree of protection against electromagnetic noises.

The unit determines the step by measuring the resistive converter of the transformer.

FEATURES

- Up to 50 steps
- Installation without energy interruption
- Accurate step measurement input, 10 bit
- 16 bit analog output accuracy
- 10 bit analog input accuracy
- PT100 temperature input, 1°C accuracy
- Cable length compensation
- Automatic sensor failure detection
- 2 relay outputs, 6A/250Vac
- Fully isolated RS-485 serial port
- MODBUS-RTU communications
- Logging of maximum temperature
- Front panel adjustable parameters
- Temperature alarm threshold level
- Easy to read, 4 digits 14mm led display
- Minimum 20 years data retention
- Wide supply range: 88-400 VDC (85-270VAC)
- Low panel depth, easy installation
- Wide operating temp. range, -20...+70°C
- Sealed front panel (IP65 with gasket)
- Two part connection system



DKM-208 / DKM-224

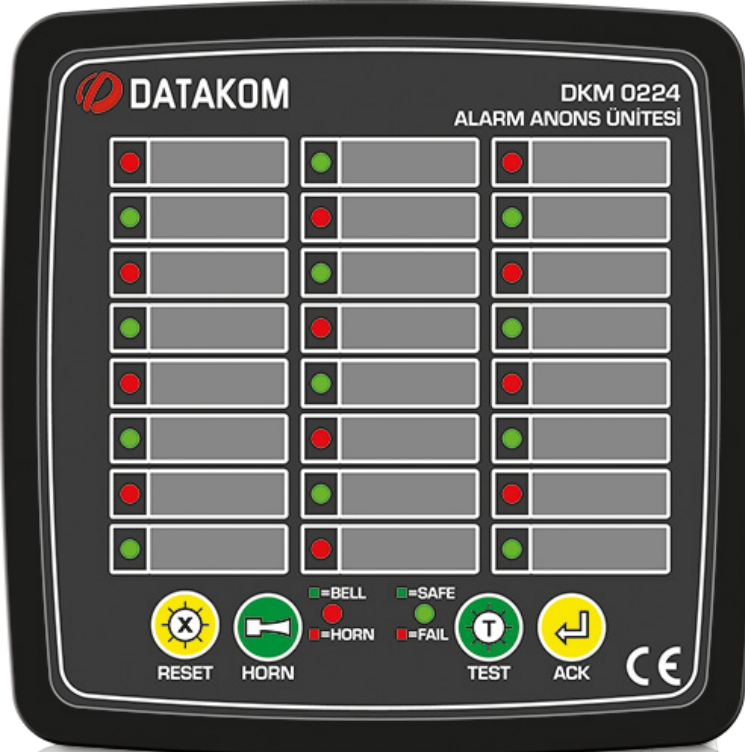
ALARM ANNUNCIATORS

The DKM-0224 is a 24 channel, 144x144mm alarm annunciator, designed to be used in energy and automation systems. Optically isolated digital inputs are equipped with noise suppressing filters and are capable of operating smoothly in high electrical noise environments.

The detection delay of inputs are adjustable between 2 and 500ms. The module features 3 relay outputs rated at 5Amp. Relays provide Horn, Bell and Internal Failure functions. An additional buzzer is provided inside the unit for audible alarms.

The unit features ultra-bright, bicolor (red-green) led indicators. Alarms may be assigned to different priority levels in order to reduce confusion. Using front panel pushbuttons, alarms may be acknowledged and reset, the unit tested.

The configuration of the module is performed with DIP Switches placed on the back panel.



ALARM LEDS

FAST FLASH: at the first detection of the fault or if fault is detected at LED steady on condition.

SLOW FLASH: activated when the ACK (alarm acknowledge) pushbutton is pressed and if the fault signal is still active.

STEADY ON: activated if the fault signal disappears at SLOW FLASH condition. Alarm led will fast flash fast if fault signal reoccurs.

LED OFF: the alarm led turns off when RESET pushbutton is pressed and fault signal is not present

RELAY OUTPUTS

HORN RELAY: If any "red" alarm led turns on, then the horn relay will also turn on. The relay turns off when ACK pushbutton is pressed. The HORN RELAY can be made active/passive by holding pressed the HORN button for 3 seconds.

BELL RELAY: If any "green" alarm led turns on, then the bell relay will turn on. The relay turns off when ACK pushbutton is pressed.

WATCHDOG RELAY: At startup the relay turns on. If the board fails, then the watchdog relay turns off.

ТАМОЖЕННЫЙ СОЮЗ

СЕРТИФИКАТ СООТВЕТСТВИЯ

№ TC RU C-TR.HA10.B.01761

Серия RU № 0758070

ОРГАН ПО СЕРТИФИКАЦИИ Орган по сертификации продукции машиностроения Общество с ограниченной ответственностью «Эксперт-Сертификация». Место нахождения: 305000, Российская Федерация, Курская область, город Курск, улица Почтовая, дом 23, помещение 8. Телефон: 8471270491, адрес электронной почты: info@ekspert-sert.ru. Аттестат аккредитации регистрационный № RA.RU.11HA10. Дата регистрации аттестата аккредитации 18.12.2017 года.

ЗАЯВИТЕЛЬ общество с ограниченной ответственностью «Мир Технологий». Основной государственный регистрационный номер: 118774649996. Место нахождения: 117042, Российская Федерация, город Москва, улица Адмирала Руднева, дом 4, этаж 6, помещение IV, офис 613. Телефон: 89154152183, адрес электронной почты: MirTechnology@gmail.com.

ИЗГОТОВИТЕЛЬ «DATAKOM ELEKTRONIK MUHENDISLIK SANAYI VE TICARET ANONIM SIKETI». Место нахождения: ТУРЦИЯ, Şerifali Mahallesi, Bayraktar Bulvarı, Kutup Sokak No:26 34775 UMRANIYE / ISTANBUL.

ПРОДУКЦИЯ Пульты управления генераторами, торговой марки «DATAKOM», моделей: (смотри приложение - бланк № 0569304). Продукция изготовлена в соответствии с Директивами 2014/35/EU «Низковольтное оборудование», 2014/30/EU «Электромагнитная совместимость». Серийный выпуск.

КОД ТН ВЭД ТС 8537 10 910 0

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ Технического регламента Таможенного союза ТР ТС 004/2011 "О безопасности низковольтного оборудования"; Технического регламента Таможенного союза ТР ТС 020/2011 "Электромагнитная совместимость технических средств".

СЕРТИФИКАТ ВЫДАН НА ОСНОВАНИИ протокола испытаний № 2769-2989-18 от 08.11.2018 года, выданного испытательной лабораторией «ИЛЛ БТ» Общество с ограниченной ответственностью «Испытательная лаборатория электротехнической продукции ЭМС», аттестат аккредитации регистрационный № RA.RU.21MLJ31; акта анализа состояния производства от 01.11.2018 года органа по сертификации продукции машиностроения Общество с ограниченной ответственностью «Эксперт-Сертификация»; руководства по эксплуатации, паспорта.

Схема сертификации: 1с

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ Срок службы, срок и условия хранения указаны в эксплуатационной документации, приложенной к изделию. Стандарты, обеспечивающие соблюдение требований Технических регламентов Таможенного союза ТР ТС 004/2011 "О безопасности низковольтного оборудования", ТР ТС 020/2011 "Электромагнитная совместимость технических средств" (смотри приложение - бланк № 0569305).

СРОК ДЕЙСТВИЯ С 08.11.2018 **ПО** 07.11.2023 **ВКЛЮЧИТЕЛЬНО**

Руководитель (уполномоченное лицо) органа по сертификации Павел Эдуардович Андронов (инициалы, фамилия)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) Дмитрий Игоревич Михайлов (инициалы, фамилия)

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Certificate of Registration

This is to certify that the Quality Management System of
Datakom Elektronik Mühendislik Sanayi ve Ticaret Anonim Şirketi

Şerifali Mahallesi, Kutup Sokak, no:26 Ümraniye, İstanbul, Turkey

applicable to

Design, manufacture, marketing, repair and service of electronic equipment

has been assessed and registered by NQA against the provisions of

ISO 9001:2015

This registration is subject to the company maintaining a quality management system, to the above standard, which will be monitored by NQA

Managing Director

Certificate No: 22547
Date: 10 April 2007
Reissued: 29 March 2018
Valid Until: 29 March 2021
EAC Code: 19

UKAS
615

The use of the UKAS Accreditation Mark indicates accreditation in respect of those activities covered by the accreditation certificate number 615 held by NQA. NQA is a trading name of NQA Certification Limited. Registration No. 05051726. Registered Office: Warwick House, Houghton Hall Park, Houghton Regis, Dunstable, LU5 2EX, UK. This certificate is the property of NQA and must be returned on request.

CERTIFICATE OF COMPLIANCE

Certificate Number 20140725-E314374
Report Reference E314374-20101224
Issue Date 2014-JULY-25

Issued to: DATAKOM ELEKTRONIK MUHENDISLIK LTD STI
SERIFALI MAHALLESİ, BAYRAKTAR BULVAR
KUTUP SOKAK NO:26
UMRANIYE
34775 TURKEY

This is to certify that representative samples of COMPONENT - ENGINE GENERATOR CONTROLS
SEE ADDENDUM PAGE

Standard(s) for Safety: UL 6200, Controls for Stationary Engine Driven Assemblies
CSA C22.2 No. 14-13, Industrial Control Equipment

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Only those products bearing the UL Recognized Component Marks for the U.S. and Canada should be considered as being covered by UL's Recognition and Follow-Up Service and meeting the appropriate U.S. and Canadian requirements.

The UL Recognized Component Mark for the U.S. generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark, **UL**, may be used in conjunction with the required Recognition Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions. The UL Recognized Component Mark for Canada consists of the UL Recognized Mark for Canada, **UL**, and the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Recognized Component Mark on the product.

William R. Carney
William R. Carney, Director, North American Certification Programs
UL LLC

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Page 1 of 2

nqa.

Certificate of Registration

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Datakom Elektronik Mühendislik Sanayi ve Ticaret Anonim Şirketi

Şerifali Mahallesi, Kutup Sokak, no:26 Ümraniye, İstanbul, Turkey

applicable to

Design, manufacture, marketing, repair and service of electronic equipment

has been assessed and registered by NQA against the provisions of

ISO14001 : 2015

This registration is subject to the company maintaining an environmental management system, to the above standard, which will be monitored by NQA

Managing Director

Certificate No: 91755
Date: 29 March 2018
Valid Until: 29 March 2021
EAC Code: 19

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DATAKOM

Address : Serifali Mahallesi, Bayraktar Bulvari, Kutup Sokak
No:26 - 34775 - Umraniye / ISTANBUL - TURKEY
Phone : +90 - 216 466 84 60 / +90 - 216 466 84 61
Fax : +90 - 216 364 65 65
e-mail : datakom@datakom.com.tr
www.datakom.com.tr