DUCATI energia

HISTORY DRIVES THE FUTURE

Since 1926

Low voltage power factor correction: capacitors, components, fixed & automatic equipment and active harmonic filters

MODULO SD

Three phase capacitors

MODULO SD capacitors are used for the fixed and automatic PFC systems in a wide range of standard industrial applications.

The three elements are housed in a plastic container which, together with the impregnating agents, assures dual insulation between the wound cores and metal enclosure.

To guarantee perfect filling during the resin impregnation process, the process itself is carried out prior to the elements being placed in the enclosure; in this way the distribution and uniformity of the impregnation can be subjected to a complete visual and dimensional inspection. The overpressure protection system is specifically dimensioned so as to constantly ensure maximum safety in terms of ground protection and protection against the risk of arcing, even in conditions where there is a high energy density.

General Characteristics

Power Range	10 – 50 kVAr
Voltage range	400 ÷ 550 V
Rated frequency	50 Hz/60 Hz
Capacitance tolerance	-5 +10%
Duty	Continuous
Dielectric losses	≤ 0.2 W/kVAr
Life expectancy	≥ 130000h – 40/D
Max dV/dt	100 V /µs
Temperature class	-40/D
Max overload	4 x I_n
Max inrush current	200 I_n
Terminals	Screw Clamp
Protection rating	IP 20 (IP54 on request)
Internal construction	Delta
Discharge resistance	External (50V after 60")
Impregnating material	Eco-friendly resin
Altitude	≤ 4000 m s.l.m.
Storage Temperature	–40 +80 °C
Test voltage (AC) between terminals	2.15 U_n x 2"
Test voltage (AC) between terminals and case	3kV x 10 s (Un ≤ 660V)
Standards	IEC 831 - 1/2
Approvals	c UL us Excluding Ø 125 mm

MODULO SD *Three phase capacitors*

Un (V)	Qn (kVAr)	In (A)	C (µF)	DxH (mm)	Type	Pcs x box	Part n. 416.46	Dim. Box
400	10	14.4	3x66	75x255	A	6	**9100**	F
	12.5	18.0	3x82	75x255	A	6	**9110**	F
	15	21.7	3x99	85x255	A	6	**9120**	F
	20	28.9	3x132	90x255	A	6	**9130**	F
	25	36.1	3x165	100x255	A	4	**9140**	H
	30	43.3	3x198	116x255	A	4	**9150**	H
	40	57.7	3x265	116x290	A	4	**9160**	H
	50	72.2	3x331	116x370	B	4	**9170**	I
415	10	13.9	3x61	75x255	A	6	**9200**	F
	12.5	17.4	3x77	75x255	A	6	**9210**	F
	15	20.9	3x92	85x255	A	6	**9220**	F
	20	27.8	3x123	90x255	A	6	**9230**	F
	25	34.8	3x154	100x255	A	6	**9240**	G
	30	41.7	3x184	116x255	A	4	**9250**	H
	40	55.6	3x246	116x290	A	4	**9260**	H
	50	69.6	3x308	116x370	B	4	**9270**	I
440	10	13.1	3x54	75x255	A	6	**9300**	F
	12.5	16.4	3x68	75x255	A	6	**9310**	F
	15	19.7	3x82	85x255	A	6	**9320**	F
	20	26.2	3x109	90x255	A	6	**9330**	F
	25	32.8	3x137	100x255	A	6	**9340**	G
	30	39.4	3x164	116x255	A	4	**9350**	H
	40	52.5	3x219	116x290	A	4	**9360**	H
	50	65.6	3x274	116x370	A	4	**9370**	I
450	10	12.8	3x52	75x255	A	6	**9400**	F
	12.5	16.0	3x65	75x255	A	6	**9410**	F
	15	19.2	3x78	85x255	A	6	**9420**	F
	20	25.7	3x104	90x255	A	6	**9430**	F
	25	32.1	3x130	100x255	A	6	**9440**	G
	30	38.5	3x157	116x255	A	4	**9450**	H
	40	51.3	3x209	116x290	A	4	**9460**	H
	50	64.2	3x261	116x370	A	4	**9470**	I

Standard box dimensions: C= 190x285x325 mm **G=** 225x340x270 mm **E=** 195x390x255 mm
H= 330x340x225 mm **F=** 185x290x270 mm **I=** 270x270x450 mm
Weight: 10÷12 kg

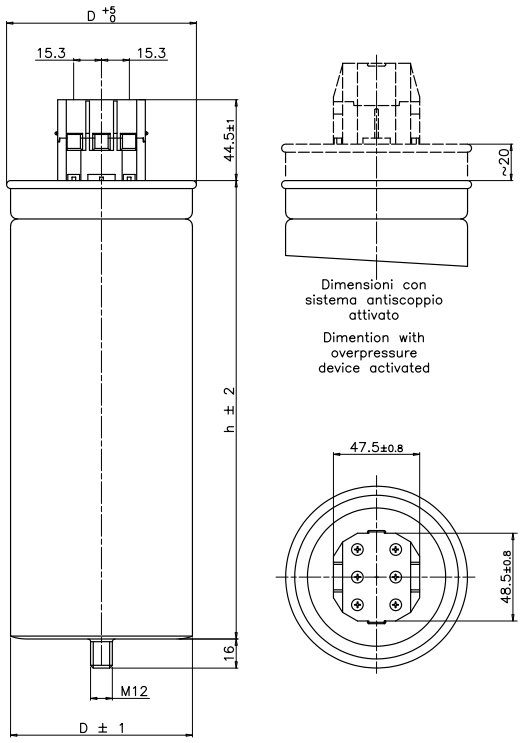
MODULO SD *Three phase capacitors*

Un (V)	Qn (kVAr)	In (A)	C (µF)	DxH (mm)	Type	Pcs x box	Part n. 416.46	Dim. Box
500	10	11.5	3x42	75x255	A	6	**9500**	F
	12.5	14.4	3x53	75x255	A	6	**9510**	F
	15	17.3	3x63	85x255	A	6	**9520**	F
	20	23.1	3x84	90x255	A	6	**9530**	F
	25	28.9	3x106	100x255	A	6	**9540**	G
	30	34.6	3x127	116x255	A	4	**9550**	H
	40	46.2	3x169	116x290	A	4	**9560**	H
	50	57.7	3x212	116x370	A	4	**9570**	I
525	10	11.0	3x38	75x255	A	6	**9600**	F
	12.5	13.7	3x48	75x255	A	6	**9610**	F
	15	16.5	3x57	85x255	A	6	**9620**	F
	20	22.0	3x76	90x255	A	6	**9630**	F
	25	27.5	3x96	100x255	A	6	**9640**	G
	30	33.0	3x115	116x255	A	4	**9650**	H
	40	44.0	3x153	116x290	A	4	**9660**	H
	50	55,0	3x192	116x370	A	4	**9670**	I
550	10	10,5	3x35	75x255	A	6	**9700**	F
	12.5	13.1	3x43	75x255	A	6	**9710**	F
	15	15.7	3x52	85x255	A	6	**9720**	F
	20	21.0	3x70	100x255	A	6	**9730**	G
	25	26,2	3x87	116x255	A	4	**9740**	H
	30	31.5	3x105	116x255	A	4	**9750**	H
	40	42.0	3x140	116x290	A	4	**9760**	H
	50	52.5	3x175	116x370	A	4	**9770**	I

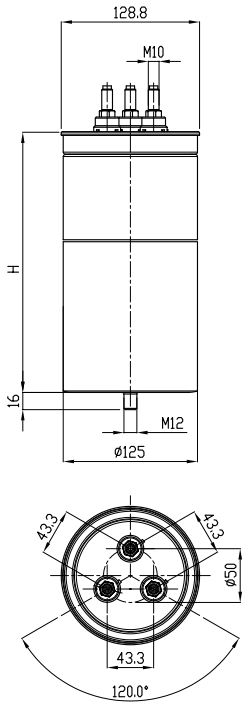
Standard box dimensions: C= 190x285x325 mm **G=** 225x340x270 mm **E=** 195x390x255 mm
H= 330x340x225 mm **F=** 185x290x270 mm **I=** 270x270x450 mm
Weight: 10÷12 kg

MODULO SD *Three phase capacitors*

TECHNICAL DRAWING TYPE A



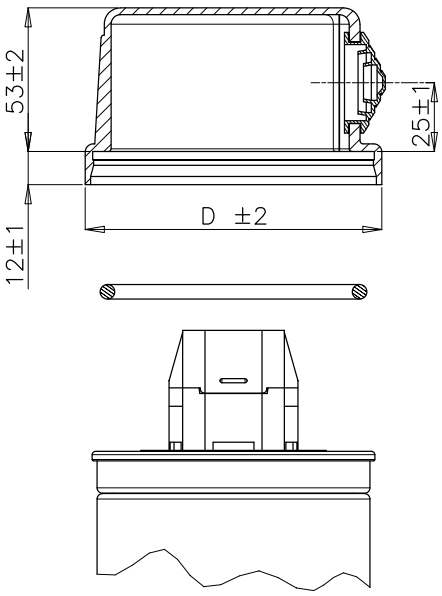
TECHNICAL DRAWING TYPE B



Terminals and stud	Fixing torque
Screw terminals	1.5 Nm
M10**	6 Nm**
M12	10 Nm

(**) Complete the tightening using two wrenches.

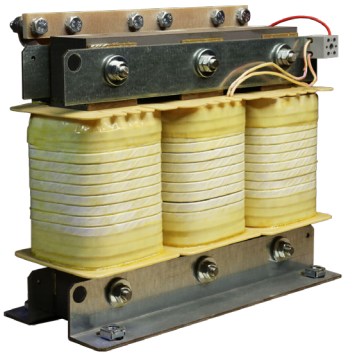
TERMINAL COVER IP54



Code 316.52	Diam (mm)	Packages n. pcs. per box
.3338	85	30
.3339	90	30
.3340	110	30
.3341	116	20
.3342	125	20

To enable the overpressure protection device to operate efficiently, it is necessary to leave a gap of at least 30 mm. above the element and use flexible leads for the connection.

ACCESSORIES AND COMPONENTS



rEvolution R5, R8, R14 e R6T

rEvolution SERIES R5, R8, R14 & R6T

Automatic reactive power regulators are intelligent microprocessor systems that automatically manage the batteries of capacitors to compensate the reactive power absorbed by the load and to avoid being charged penalties imposed by the Electricity and Gas Authority.

Thanks to the know-how acquired over years of designing and manufacturing analyzers for electrical measurements, DUCATI Energia has developed the innovative **rEvolution series of reactive power regulators**.

The compactness, the latest generation technology and the complete range of features make **the rEvolution models** extremely adaptable to any application context in the field of power factor correction systems for both single-phase and three-phase low and medium voltage networks in the presence or absence of energy generation systems (e.g. photovoltaic).

Depending on the model, it is possible to have the main connectivity options (SRD radio, NFC, Ethernet, RS485, Bluetooth, USB) both for on-site data exchange via the **"DUCATI Smart Energy" Android App**, and for remote monitoring of the performance of the equipment, the status of the capacitor banks and the events related to the electrical parameters of the system.

Model	Part. N.	Connectivity	Relays
R5	**415984050NNNN**	NFC	5
R5 RADIO 485	**415984050QNDN**	NFC, radio, RS-485	5
R8 RADIO	**415986080NNDN**	NFC, radio	8
R8 485 RADIO	**415986080QNDN**	NFC, radio, RS-485	8
R8 485 BT RADIO	**415986080QBDN**	NFC, radio, RS-485, Bluetooth	11
R8 ETH RADIO	**415986080ENDN**	NFC, radio, Ethernet	8
R14	**415988140NNNN**	NFC, radio	15
R14 485	**415988140QNNN**	NFC, radio, RS-485	15
R14 485-BT	**415988140QBNN**	NFC, radio, RS-485, Bluetooth	18
R14 ETH	**415988140ENNN**	NFC, radio, Ethernet	15
R6T USB	**415988160NSNN**	NFC, radio, RS-485, USB	6
R6T BT	**415988160NBNN**	NFC,radio, RS-485, bluetooth	6

App DUCATI Smart Energy

The dedicated **"DUCATI Smart Energy"** app is aimed at simplifying the set-up and control of all equipment with **rEvolution regulators**. Communication with the smartphone can take place thanks to the NFC connection present as standard on the entire range or via **Bluetooth** (on models that have it).

You will have the ability to manage and **organize infinite DUCATI regulators**, with the convenience of the graphic interface.

Main features:

- Easy and intuitive reading, modification and export of configuration parameters
- Firmware update
- Immediate control of the condition of the equipment (battery power, contactors manoeuvres, etc.)
- Download configuration file that can be sent by e-mail

rEvolution R5

Reactive power controller

The new **R5** by DUCATI Energia is a power factor regulator designed to allow quick and easy installation and correct start-up of the power factor correction equipment. The **R5** models are equipped with technology that allows the exchange of performance and system status data both on site via **Android App** (NFC) or **SRD radio**, and remotely **(RS485)** for monitoring purposes, through DUCATI Energia ENERGY BRIDGE datalogger devices.

The large display with red LED backlit icons has very large digits for remote reading of measurement values.

The 5-button keypad makes it easy to navigate the menus and intuitive to set the configuration parameters. One of the buttons is dedicated to fast switching from manual to automatic mode and vice versa.

The programming algorithms allow the controller to define in a completely automatic way both the recognition of the direction of the CT and the recognition of the phase on which the CT is installed, thus avoiding possible installation errors.

The dual power inputs, one at 230 VAC and one at 400 VAC, allows the regulator to be used in single-phase networks with neutral or in three-phase networks with and without neutral.

Thanks to the advanced features of the microprocessor, **R5** realizes the calculation of the true cosφ starting from the Voltage-Current phase shift of the fundamental harmonic at the mains frequency, as well as measuring the total harmonic distortion in voltage (THDV%) and current (THDI%) with an overall spectrum up to the 60th component.

Smart Communications

Communication with the standard NFC sensor, or the optional **SRD and RS485 radios**, allow the quick exchange of data with the **"DUCATI Smart Energy" Android App**, or with the ENERGY BRIDGE **datalogger**.

Technical features

Power supply:
- Rated voltage: 400 or 230 VAC
- Operating limits: 380÷415 VAC ±10% or 220÷240 VAC ±10%
- Frequency: 45 ÷ 66 Hz
- Power consumption: 2.5 W – 3 VA

Current Input:
- Rated current: 5 A
- Self-consumption: < 1.8 VA

Relay outputs:
- Number of Relay Outputs: 5 (1 common)
- Contact Type: NO (Normally Open)
- Maximum operating voltage: 440 VAC
- Rated capacity: AC1 6 A – 250 VAC, AC15 1.5 A - 440 VAC

Alarms:
- Overvoltage and overcurrent
- Undervoltage and undercurrent
- Maximum Harmonic Distortion in current (THDI) and voltage (THDV)
- Over-temperature
- No power factor correction (low cosφ)
- Other alarms (see manual)

Ambient operating conditions:
- Operating temperature: -20 ÷ 70 °C
- Overvoltage category: |||, Measurement category: 3
- Insulation voltage: 600 VAC
- Relative humidity: < 80%

Container:
- Size: 96x96 built-in
- Degree of protection: IP51 on the front – IP20 on the terminals
- Weight: 350 g.

RS485 Interface:
- Modbus-RTU
- Ascii-Ducbus

SRD Radio Interface:
- Carrier Frequency: 868 MHz
- Frequency band: 868.0 – 868.6 MHz
- Maximum output power: 12.5mW
- Protocol: Modbus-RTU

NFC Interface:
- Frequency: 13.56 MHz
- Data exchange with smartphone via antenna behind the display

Standard Compliance:
- Image that contains text, clock Auto-generated description
- EN 61000-6-2
- EN 61000-6-4
- EN 61326-1
- EN 62311
- EN 301-489-1
- EN 301-489-3
- EN 300-220-2
- EN 300-330

rEvolution R8

Reactive power controller

The new **R8** by **DUCATI Energia** is an innovative power factor regulator characterized by advanced functions suitable for any application context, a wide range of sizes and various communication solutions, all concentrated in the compact 96x96 mm dimensions.

The R8 models are equipped with all the main connectivity options (Bluetooth, USB, Wireless-radio, NFC, Ethernet, RS485) both for local data exchange and for remote monitoring of the performance of the equipment. A clear user guide, with texts translated into 9 languages, makes the R8 models easy to use both during equipment commissioning and during normal operation of the power factor correction system.

The large 128x128 pixel graphic matrix LCD display backlit with white LEDs allows the display of data, waveforms, histograms and icons.

The programming algorithms allow the controller to define in a completely automatic way both the recognition of the direction of the CT and the recognition of the phase on which the CT is installed, thus avoiding possible installation errors.

Thanks to the advanced features of the microprocessor (voltage and current measurements with 1% accuracy), **R8** realizes the calculation of true cosφ from the voltage-current phase shift of the fundamental harmonic at the mains frequency, as well as measuring the total harmonic distortion in voltage (THDV%) and current (THDI%) with an overall spectrum up to the 60th component.

Smart Communications

The following are standard:

- NFC sensor for downloading/uploading configuration parameters via App Android “DUCATI Smart Energy”
- Internal event memory with data history up to 1 year and battery-powered RTC sensor
- 868 MHz SRD radio communication interface for coupling to the **ENERGY BRIDGE datalogger**

The optional "485" models with RS485 interface have a Modbus-RTU communication protocol for interfacing with the **DUCATI ENERGIA BRIDGE datalogger** or other devices such as PC or SCADA.

The optional "ETH" models with Ethernet network card, isolated RJ45 connector have integrated Webserver functionality and Modbus-TCP protocol. The optional "USB" models are characterized by a USB Host interface for downloading data to memory and/or uploading FW updates.

The optional "BT" models are characterized by a Bluetooth interface for configuration and management of the controller from the **"DUCATI Smart Energy" Smartphone App**.

Technical features

Supply:
- Rated voltage: 400 or 230 or 110 VAC
- Operating limits: 110÷415 V AC/DC ±10%
- Frequency range: DC or 45 ÷ 66 Hz
- Power consumption: 2.5 W
- Maximum power consumption: 10 W (for "USB ETH" model)

Voltage Input:
- Measuring range: 50 ÷ 525 VAC
- Accuracy: 1% ± 0.5 digits

Current Input:
- Rated current: 5 A
- Accuracy: 1% ± 0.5 digits

Relay outputs:
- Total number of outputs: 8 (11 for "USB" and "BT" models)
- Contact type: 6 NO (common C1) + 1 NO (common C2) + 1 NO/NC (common C3)

Contact type for "USB" and "BT" models:
- 6 NO (common C1)
- 1 NO (common C2)
- 1 NO/NC (Common C3)
- 2 NO (common C4)
- 1 NO (common C5)

Alarms:
- Overvoltage and overcurrent
- Undervoltage and undercurrent
- Maximum Harmonic Distortion in current (THDI) and voltage (THDV)
- Over-temperature
- No power factor correction (low cosφ)
- Other alarms (see manual)

Ambient operating conditions:
- Operating temperature: -20 ÷ 70 °C
- Overvoltage category: |||; Size category: 3
- Relative humidity: < 80%

Container:
- Size: 96x96 built-in
- Degree of protection: IP51 on the front – IP20 on the terminals
- Weight: 350 g.

Wireless Interface to SRD Radio:
- Carrier Frequency: 868 MHz
- Frequency band: 868.0 – 868.6 MHz
- Maximum output power: 12.5mW
- Protocol: Modbus-RTU

NFC Interface:
- Frequency: 13.56 MHz
- Data exchange with smartphone via antenna behind the display

RS485 Interface:
- Protocols: Modbus-RTU, Ascii-Ducbus

Ethernet Interface:
- Galvanically isolated RJ45 connector with auto-crossover MDI/MDX function
- Built-in webserver
- Modbus-TCP protocol

USB Interface:
- Type: USB-Host 2.0

Bluetooth Interface:
- Bluetooth Low Energy (BLE) type

Standard Compliance:
IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/ EN 61000-6-4, EN 61326-1, EN 62311, EN 301-489-1, EN 301-489-3 EN 300-220-2, EN 300-330, EN 300-328-1

rEvolution R14

Reactive power controller

The new **R14** regulators are dedicated to the power factor correction of high-power systems in low and medium voltage networks. The models integrate up to 29 relay outputs, useful for switchboards where many capacitor banks are used to achieve fast and accurate power factor adjustment, or to achieve a high degree of reliability in systems based on multiple bank redundancy. Thanks to the static data, the recorded performance curves and the accessory sensors, you can guarantee safe management of the benches and accurate diagnostics on the status of all components of the power factor correction system. These features avoid extraordinary maintenance and allow you to schedule the replacement of the most worn parts well in advance. The display texts help the installer in the commissioning of the power factor correction panel and are available in 8 languages. The DUCATI SMART ENERGY APP allows you to easily manage both the programming of the regulator and the reading and sharing of diagnostic data using your smartphone. Connectivity options also include a USB port for downloading recorded events, RS485 interface for Modbus-RTU networks and Ethernet-LAN interface for convenient remote management via browser and for Modbus-TCP communication networks. In addition, all R14 models integrate an SRD 868MHz radio module as standard, which can be used for IoT wireless networks.

Technical features

Power Supply:
- Rated voltage: 400 or 230 or 110 VAC
- Operating limits: 99÷460 V AC/DC
- Frequency range: DC or 45÷66 Hz
- Power consumption: 2.5W (max 10W for models with "USB and ETH")
- Fuses: 1A Quick

Voltage Input:
- Measuring range: 50÷525 VAC
- Accuracy: 0.5% ± 0.5 digits
- Frequency range: 45÷400 Hz

Current Input:
- Input type: current shunt (use external CTs of appropriate size for the power of the system to be re-phased)
- Rated Current: 5A
- Measuring range: 0.025÷6 A
- Accuracy: 0.5% ± 0.5 digits
- Self-consumption: <1.8VA

Relay outputs:
- Total number of outputs: 15 (expandable up to 29)
- Contact type: up to 28 NO + 1 NO/NC (up to 9 separate commons)
- Maximum operating voltage NO contacts: 440 V~
- Maximum operating voltage NO/NC contact: 400 V~
- Nominal NO contact rating: AC1 6A-250V~, AC15 1.5A-440V~
- Nominal NO/NC contact rating: AC1 6A-250V~, AC15 1.5A-440V~
- Mechanical/electrical durability of NO contacts: > 30x106 / > 2x105 manoeuvres
- Mechanical/electrical life of NO/NC contacts: > 1x107 / > 1x104 manoeuvres

User interface:
- 5-button keypad
- Display: 128x128 pixel STN graphic matrix LCD backlit with white LEDs - LCD visual area size: 72.3x57mm
- Languages: Italian, English, French, German, Spanish, Portuguese, Russian, Arabic, Chinese
- Backlight & Contrast: Adjustable levels from settings menu

Environmental conditions:
- Operating temperature: -20÷70°C
- Storage temperature: -30÷80°C
- Overvoltage category: ||| - Size category: 3
- Insulation Voltage: 600VAC

Connection terminals:
- Type: pull-out
- Conductor cross-section: 0.2÷2.5 mm2 (24÷12 AWG)
- Tightening torque: 0.5 Nm - Stripping length: 7 mm

Container:
- Size: 144x144 built-in, material: PBT – Pocan B4225; Weight: 800g
- Degree of protection: IP54 on the front (with adhesive gasket for coupling to the panel of the panel) - IP20 on the terminals

Radio SRD (Short Range Device) interface:
- Carrier Frequency: 868MHz - Frequency Band: 868.0 – 868.6 MHz
- Maximum output power: 12.5mW

13.56 MHz NFC interface:
- Data exchange with smartphone via antenna behind the display; use the DUCATI SMART ENERGY APP for Android devices
- https://play.google.com/store/apps/details?id=it.ducatienergia.smartenergy

Current Inputs for Monitoring Capacitor Banks:
- No. of inputs: 2
- Input Type: Built-in CTs (use 2 external CTs of appropriate size for the power of the capacitor banks)
- Rated Current: 5A
- Measuring range: 0.025÷6 A
- Current measurement accuracy: 0.5% ± 0.5 digits
- Autoconsumption: < 10mW

Input for external temperature sensors:
- Type of external sensors: Pt100, Pt1000
- Measuring range: -15÷70°C
- Accuracy: 0.3 °C
- Insulation Voltage: 600V~

4-20mA Input for External Sensors:
- Input span: 0-20mA or 4-20mA configurable from settings menu
- Accuracy: 0.2% FS
- Input Resistance: 50 Ohms

RS485 interface:
- Protocols: Modbus-RTU, Ascii-Ducbus
- Baud rate: 9600÷115200 bps
- Termination Resistor: 120Ohm – integrated (jumper on connection terminal)
- Insulation Voltage: 600V~

Ethernet Interface:
- 10/100Base-T network card with galvanically isolated RJ45 connector
- MDI/MDX auto-crossover function for patch or cross cable recognition
- Built-in Web Server
- Modbus-TCP protocol
- Insulation Voltage: 600V~

USB gate:
- USB-Host 2.0 type
- Compatible with pendrives with FAT32 filesystem
- Insulation Voltage: 600V~

Bluetooth Interface:
- Bluetooth Low Energy (BLE) type
- use the DUCATI SMART ENERGY APP for Android devices
- https://play.google.com/store/apps/details?id=it.ducatienergia.smartenergy

Standard Compliance:
IEC/EN61010-1, IEC/EN61000-6-2, IEC/EN61000-6-4, IEC/EN 61326-1; EN301-489-1, EN301-489-3, EN300-220-2, EN300-330, EN300-328-1

rEvolution R6T

Three Phase Reactive Power Regulators

DUCATI Energia presents the new and innovative R6T three-phase power factor regulators. The compactness, the latest generation technology and the complete range of features make the R6T models extremely adaptable to any application context in the field of power factor correction systems for three-phase low and medium voltage networks. They allow adjustment according to the cosphi of one of the phases, the equivalent three-phase cosphi or the more inductive or more capacitive phase cosphi. The type of cosphi target and its value can be chosen according to the daily time slots that can be set for each day of the calendar. The R6T models are equipped with all the necessary connectivity options (Bluetooth, USB, Wireless-radio, NFC, RS485) both for on-site data exchange and for remote monitoring of equipment performance, capacitor bank status and events related to the electrical parameters of the system. A clear user guide, with texts translated into 9 languages, makes the R6T models easy to use both during the commissioning of the equipment and during the normal operation of the power factor correction system with useful tips for troubleshooting the connection of the regulator to the power grid, the setting of configuration parameters and in general the events detected on the quality of voltage and current signals.

Technical features

Power supply:
- Rated voltage: 110÷415V~
- Operating limits: 99÷460 V AC/DC
- Frequency range: DC or 45÷66 Hz
- Power consumption for LV model: < 2.5W
- Power consumption per USB model: < 6W
- Fuses: 1A Quick

Voltage Inputs:
- Rated voltage: 400 or 230 or 110VAC V~
- Measuring range: 50÷525 V~ L-N
- Accuracy: 1% ± 0.5 digits
- Frequency range: 45÷400 Hz
- Type of measurement: true RMS (TRMS)

Current Inputs:
- Input Type: TA
- Rated current: 5A
- Measuring range: 0.025÷6 A
- Accuracy: 1% ± 0.5 digits
- Type of measurement: true RMS (TRMS)
- Self-consumption: <10mVA

Relay outputs:
- Total number of outputs: 6
- Contact type: 1 NO (common C1) + 2 NO (common C2) + 2 NO (common C3) + 1 NO/NC (common C4)
- Maximum operating voltage NO contacts: 440 V~
- Maximum operating voltage NO/NC contact: 400 V~
- Nominal rating of NO contacts: AC1 6A–250V~, AC15 1.5A-440V~
- NO/NC contact rated rating: AC1 6A–250V~, AC15 1.5A-440V~
- Mechanical/electrical durability NO contacts: > 30x106/ > 2x105 manoeuvres
- Mechanical/electrical durability NO/NC contacts: > 1x107/ > 1x104 manoeuvres

User interface:
- 5-button keypad
- Display: 128x128 pixel graphic matrix STN LCD backlit with white LEDs
- LCD view area size: 72.3x57mm
- Backlight & Contrast: Adjustable levels from settings menu

Ambient operating conditions:
- Operating temperature: -20÷70°C
- Storage temperature: -30÷80°C
- Humid Heat Sequence: According to IEC60068-2-30 (temperature levels
- 25°C/40°C – humidity levels 93% / >95%)
- Static humid heat: according to IEC60068-2-78 (temperature level 40°C, humidity level 93%)
- Overvoltage category: |||
- Size category: 3
- Insulation Voltage: 600V~

Connection terminals:
- Type: pull-out
- Conductor cross-section: 0.2÷2.5 mm2 (24÷12 AWG)
- Tightening torque: 0.5 Nm
- Stripping length: 7 mm

Container:
- Size: 96x96 built-in
- Material: PBT Thermoplastic Polyester
- Degree of protection: IP51 on the front – IP20 on the terminals
- Weight: 350g.

Radio-frequency wireless interface:
- Carrier Frequency: 868MHz
- Frequency band: 868.0 – 868.6 MHz
- Maximum output power: 12.5mW
- Protocol: Modbus
- We suggest the use of the DUCATI ENERGY BRIDGE datalogger-gateway

13.56 MHz NFC interface:
- Data exchange with smartphone via antenna behind the display; use the DUCATI SMART ENERGY APP for Android devices
- https://play.google.com/store/apps/details?id=it.ducatienergia.smartenergy

RS485 interface:
- Insulation Voltage: 4kV~
- Protocols: Modbus-RTU, Ascii-Ducbus
- Baud rate: 9600÷115200 bps
- We suggest the use of the DUCATI ENERGY GEAR datalogger-gateway

USB Interface:
- USB-Host 2.0 type

Bluetooth Interface:
- Bluetooth Low Energy (BLE), use the DUCATI SMART ENERGY
- https://play.google.com/store/apps/details?id=it.ducatienergia.smartenergy Android device app

Standard Compliance:
IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/ EN 61000-6-4, IEC/EN 61326-1; EN 301-489-1, EN 301-489-3, EN 300-220-2, EN 300-330, EN 300-328-1

DUCATI energia

HISTORY DRIVES THE FUTURE

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Low voltage power factor correction: capacitors, components, fixed & automatic equipment and active harmonic filters