

Express Catalog

2017



MICROENER



Visit card of your contact:

Notes and information :



The express catalog presents all our solutions to protect and manage your LV and MV and HV electrical network.

Indeed you will find in this catalog a short description and the commercial reference of our protective relays and SCADA systems and services.

You will find more information about the solution which interest you on our web site :

www.microener.com

Or directly contacting our commercial service.

Our company Partners Contact us

Electrical protection in complete serenity

Centrales, Postes & Industries (CP&I) Infrastructure Ferroviaire (IF) Services Informations complémentaires Recherche

Search

Contact

49 Rue de l'Université
F-93191 noisy le grand
Tel : +33 1 43 05 08 00
Fax : +33 1 43 05 08 24

[Contact us](#)

MICROENER

ENERGY PRODUCTION

TRANSPORT/ENERGY DISTRIBUTION - INDUSTRY

RAILWAY

TERTIARY

SERVICES

MICROENER proposes and builds systems and protective gear for electrical performance at high and medium voltage.

The know-how acquired over many years in the field by our staff puts us among one of the actors of the first rank in our profession. Our Commercial and Technical teams are at your disposal to answer all your inquiries from the definition of a simple protection relay to SCADA as a whole.



MICROENER is a manufacturer and integrator operating in the electrical energy and railway infrastructure fields. MICROENER offers these markets both « catalog products » and « personalized global solutions ». Since 1997, the date of its incorporation, the know-how acquired in these activities by technical teams and partners places MICROENER as one of the players in the vanguard of these markets.

MICROENER's strength lies partly in its reactivity and in the adaptability of its standard solutions, but also in the fact that it listens to and understands its clients' needs. As a result of this characteristic, MICROENER has both a client approach and product approach, thanks to its extremely wide and varied catalog.

Its commercial network therefore offers original and economically interesting solutions within both these fields of activity.

Real-time monitoring of its clients and products allows the technical teams to design and develop or adapt solutions that respond to client or market requirements at all times. The permanent dialogue that MICROENER holds with its clients creates a climate of trust and thus ensures a calm, friendly and lasting relationship.

During the various design or project completion phases, the involvement of the cabling or manufacturing work-shops as early as possible eases the move into production. This plays a large role in the quality and reliability of the solutions proposed by MICROENER and also eases the factory acceptance phase.

Lastly, the presence of a customer service department, an applications department and a training department highlights MICROENER's professionalism. These departments allow it to assist or guide client or future clients in choosing the most suitable solution for their requirements, providing assistance with commissioning, improving the company's feedback and explaining the originality of the solutions offered.

MICROENER is located in Marne la Vallée east of Paris.

MICROENER designs, develops and offers its solutions in the following sectors :

Energy production

- Protection for all types power station
- Inverters
- Synchro-couplers
- Protection cabinets and medium-voltage panels
- Measurement and signage



Transport / Energy Distribution / Industry

- High/medium/low-voltage electrical protection
- Automatic Controls – digital controlling - monitoring
- Source transfer system
- Voltage regulator for transformers
- Control panel units-medium-voltage cells and panels rectifiers
- Rectifiers
- Measurement and signage
- Earthing resistors

Railway

- Protection and automatic control for catenaries or overhead contact lines
- Medium-voltage or DC cells and panels
- Rectifiers
- Isolator, switches and contactors
- Measurement and signage



Tertiary

- Medium-voltage loop protection and reconfiguration systems
- Permanent insulation monitoring devices for hospitals
- Measurement and signage

Service

- Engineering, expert appraisals, control, maintenance, training
- Complementary products (test units, perturbographs, cores, etc...)





Index

Current relays.....	6
Reclosers	7
Earth fault relays	7
Voltage and frequency relays	7
Generator protections.....	8
Power relays	8
Transformer protections	8
Voltage regulator for transformers.....	9
Bus bar protections.....	9
Lines and cables protections	9
Motor protections.....	10
Capacitor bank protection.....	10
Temperature relays.....	10
SynchrocheCk relays	10
Control and supervision relays.....	10
Measurement units	11
Annunciator and alarm systems.....	11
SCADA systems	11
Services	12
Configuration softwares.....	12
Accessories	12
Measure transformers	12
Training- Applications.....	12
Railway relays	12
Railway infrastructures	12
Contactors	13
Abandoned relays	13



CURRENT RELAYS



BI20

- Two phase + earth fault overcurrent relay : 50/51, 50N/51N, 68, 86

BF3

- Three phase breaker failure relay : 50BF

BF20

- Two phase and earth fault breaker failure relay : 50/51, 68, 86

PB1

- Dual level current relay : 50/51, 68, 86

PB2

- Dual level current relay : 50/51, 68, 86

PB3

- Dual level current relay : 50/51, 68, 86



N-DIN/F

- Feeder Protection Relay : 50/51, 50N/51N, 49C, 51BF, 68, 86



MC20

- Overcurrent and Earth Fault Relay : 50/51, 50N/51N, 51BF, 68, 68

MC20/R

- Overcurrent and Earth Fault + Autoreclosing – Relay : 50/51, 50N/51N, 51BF, 68, 79

MC30

- Three Phase Overcurrent and Earth Fault Relay : 50/51, 50N/51N, 51BF, 68



IM30/AP

- Three-phase overcurrent and earth fault relay : 50/51, 50N/51N, 51BF; 68, 86

IM30/AB

- Three-phase overcurrent earth fault relay – dual setting : 50/51, 50N/51N, 51BF, 68, 86

IM30/SA

- Three-phase overcurrent, earth fault and sensitive earth fault relay : 50/51, 46, 50Ns/51Ns, 51BF, 68, 86

IM30-SR

- Three-phase overcurrent, sensitive earth fault and autoreclose relay : 50/51, 50Ns/51Ns, 79, 51BF, 68, 86

IM30/DR

- Three-phase overcurrent with directional earth fault + autoreclose relay : 50/51, 50N/51N/67N, 46, 79, 51BF, 68, 86

IM30/D

- Three-phase overcurrent + directional earth fault relay: 50/51, 50N/51N/67N, 51BF, 68, 86



UMRAV

- Feeder Manager Relay : 67/50/51, 67N/50N/51N, 51BF, 27, 59, 59N, 81, 68, 86



UFMR

- Feeder Manager Relay : 67/50/51, 67/50N/51N, 51BF, 27, 59, 59N, 81, 79, 68, 86



UMWH

- Feeder manager relay : 50/51, 50N/51N, 51BF, 32N, 68, 86



DTIVA/F

- Multifunction relay : 50/51, 50N/51N, 68, 46, 49, 79, 60, 50BF



DTIVA/Fr

- Directionnal multifunction relay : 50/51/67, 50N/51N/67N, 27, 59, 59N, 47, 68, 46, 49, 79, 60, 50BF, 32, 81, df/dt (81R)



DTIVA-S24/F

- Three phase overcurrent and motor protection : 50/51, 50N/51N, 68, 46, 49, 37, 48, 66, 79, 50BF



DTIVA-S24/Fr

- Directionnal earth fault multifunction relay : 50/51/67, 50N/51N/67N, 51V, 27, 59, 59N, 47, 68, 46, 49, 79, 50BF, 78, 81, df/dt (81R)



GBI/30

- Three-phase overcurrent and earth fault relay : 50/51, 50N/51N, 68, 46, 49, 74, 79, 50BF



RECLOSERS



RIA-123

- Programmable sequence up to 3 shots – high resolution electronic timing microprocessor logic : 79



MAR-513

- Multi-shot Programmable Single/Three-Phase Autoreclose : 79

EARTH FAULT RELAYS

ELR

- Earth leakage relay : 64/51N



RI - HRI

- Insulation monitoring for isolated neutral networks : 64/51N



ELRC1

- Earth leakage relay : 50N/51N



UBO/A

- Earth fault current relay desensitized to the third harmonic : 50N/51N, 51BF, 68, 86

UBO/ATR

- High impedance differential relay : 87N/87REF/64REF, 51BF; 68, 86

RBVA

- Directional earth fault relay : 50N/51N, 51BF, 68, 86

UBO

- Zero sequence voltage relay desensitized to the third harmonic: 59, 68, 86



MCOA

- Multifunction zero Sequence over current earth fault / Sensitive Earth Fault Relay: 50N/51N, 51BF, 68



IM30/B00

- Earth Fault Relay - Dual Setting : 50N/51N, 51BF, 68, 86

MBVA

- earth fault current relay desensitized to the third harmonic : 59N, 51BF, 68, 86

VOLTAGE AND FREQUENCY RELAYS



UBC

- DC Under voltage relay : 80, 86, 68

UBC

- DC Over voltage relay : 45, 86, 68

UB1/27

- Single phase under voltage relay : 27, 86, 68

UB1/59

- Single phase over voltage relay : 59, 86, 68

UB3/27

- Three phase under voltage relay : 27, 86, 68

UB3 /59

- Three phase over voltage relay : 59, 86, 68

UB1/60 or UB3/60

- Voltage balance relay : 60, 86, 68

UBC/2

- Over + under DC voltage : 80, 45, 86, 68

UB1/2

- Single phase dual level voltage relay : 27, 59, 86, 68

UB3/2

- Three phase dual level voltage relay : 27, 59, 86, 68



MC1V

- Multifunction Single Phase Overvoltage / Under voltage Relay : 27, 59, 81, 68

MC3V

- Multifunction Three Phase Overvoltage / Under voltage Relay : 27, 59, 81, 68, 59N, 27d, 47



UM30-A

- Three-phase voltage, frequency, zero sequence voltage : 27, 59, 81, 59N, 27d/59d, 59s, 68, 86

UM30-SV

- Three-Phase Voltage, Frequency, Zero Sequence Voltage with Vector Shift Detection : 27, 59, 81, 59/81, 59Vo, 27d/59d, 59s, 68, 86

UFD34

- Three-phase digital 4-stage frequency relay with df/dt, dv/dt : 27, 59, 81, df/dt, dv/dt, 68, 86

UFD14

- Digital 4-stage frequency relay with df/dt control : 81, df/dt, 68, 86



DTIVA/U

- Multifunction voltage and frequency relay : 27, 59, 59N, 81, df/dt,

DTIVA/Fr

- Multifunction relay : 50/51/67, 50N/51N/67N, 27, 59, 59N, 47, 81, df/dt, 68, 46, 49, 79, 60, 50BF, 32



DTIVA-S24/Fr

- Multifunction relay : 50/51/67, 50N/51N/67N, 51V, 27, 59, 59N, 47, 68, 46, 49, 79, 60, 50BF, 78, 81, df/dt (81R)

DTIVA-S24/U

- Voltage and frequency relay : 27, 59, 59N, 81, df/dt (81R), 25

GENERATOR PROTECTIONS



UBO/100

- Relay for 100% generator stator earth fault protection : 64S, 86, 68

UBO/A

- Earth fault current relay desensitized to the third harmonic : 64S, 51BF, 68, 86

UBO/CR

- Rotor earth fault relay : 64R, 86

B12C

- Dual level D.C current relay : 76, 86

RHS

- Rotating diode failure detection relay : 58, 86

RBZ

- Under impedance relay : 21, 86, 68



IM30/G

- Multifunction generator protection relay : 46, 50/51, 64S, 32, 40, 51BF, 68, 86

IM30/GOS

- Multifunction Relay for Generator out-of-step Protection : 50/51, 78, 51BF, 68, 86

MG30

- Generator protection and management relay : 21, 46, 50V/51V, 49, 27, 59, 81, 60FL, 50/27, 24, 59N/64S, 32, 37, 40, 51BF, 68, 86

MG30/I

- Generator Protection & Management Relay : 21, 46, 50V/51V, 49, 27, 59, 81, 60FL, 50/27, 24, 51N/64S, 32, 37, 40, 51BF, 68, 86

MD32-G

- Percentage biased generator differential relay : 87G, 87N/64REF/64S, 50/51, 51BF, 68, 86

SPM21

- Generator synchronizing relay : 25, 90, 27, 59, 81



DTRV/TG

- Protection for generator and transformer : 50/51, 50N/51N, 87T, 78, 46, 49, 59, 27, 59N, 47, 81, 81R, 24, 40, 25, 60, 50BF



DTRV/G

- Complete protection for generator: 50/51, 50N/51N, 87G, 78, 46, 49, 59, 27, 59N, 47, 81, 81R, 24, 40, 25, 60, 50BF

POWER RELAYS



RBW

- Directional overcurrent relay : 32P/32Q, 68, 86



MW33

- Power management relay : 32P, 32Q, 55, 78, 81, 27, 59



DTIVA/P

- Multifunction power relay : 51, 51N, 27, 59, 59N, 81, 60, 50BF, 32

TRANSFORMER PROTECTIONS



PB1

- Dual level current relay : 50/51, 68, 86



N-DIN/F

- Two phase and earth fault : 50/51, 50N/51N, 49C, 51BF, 68, 86



IM30/B00

- Earth Fault Relay - Dual Settings : 50/51, 51BF; 68, 86

IM30-T

- Three-phase thermal + overcurrent + earth fault relay : 46, 49, 50/51, 50N/51N, I²t, 51BF, 68, 86



IM30-DT

- Three-phase thermal + overcurrent + directional earth fault relay: 46, 49, 50/51, 67N, I²t, 51BF, 68, 86

MD32-T

- Percentage biased transformer differential relay : 87T, 87N/87REF/51N, 51BF, 68, 86

MD33-T

- Percentage biased differential relay for 3-winding transformer : 87T, 50/51, 51BF, 68, 86



DTRM32

- Differential transformer relay for 2 winding transformer : 87T, 87N/87REF/51N, 51BF, 68, 86

DTRM33

- Differential Transformer Relay for 3 winding transformer : 87T, 87N/87REF/51N, 51BF, 68, 86



DTRV/T2

- Complete 2 winding transformer current transformer : 50/51, 50N/51N, 46, 49, 87T, 87N, 60, 50BF

DTRV/T2V

- Complete 2 winding transformer protection: 50/51, 50N/51N, 46, 49, 87T, 87N, 59, 27, 59N, 47, 81, 81R, 24, 60, 50BF

DTRV/T2R

- 2 winding transformer protection with voltage regulation : 50/51, 50N/51N, 46, 49, 87T, 87N, 59, 27, 59N, 47, 81, 81R, 24, 60, 50BF, 90

DTRV/T3

- Complete 3 winding transformer current transformer : 50/51, 50N/51N, 46, 49, 87T, 87N, 60, 50BF

DTRV/T3V

- Relais complet pour la protection des transformateurs à trois enroulements : 50/51, 50N/51N, 46, 49, 87T, 87N, 59, 27, 59N, 47, 81, 81R, 24, 60, 50BF

DTRV/T3R

- 3 winding transformer protection with voltage regulation : 50/51, 50N/51N, 46, 49, 87T, 87N, 59, 27, 59N, 47, 81, 81R, 24, 60, 50BF, 90

DTRV/TZ

- Impedance relay for transformer : 51, 51N/67N, 21, 46, 87N, 59, 27, 59N, 24, 60

TRIM3

- Inrush current minimizer relay



DTIVA-S24/T

- Protection relay for transformer : 50/51, 50N/51N, 68, 46, 49, 87T, 50BF

Express Catalog

VOLTAGE REGULATOR FOR TRANSFORMERS



MTR33

- Transformer on-load tap-changer control relay : 90, AVR

MTR33/P

- Transformer On-Load Tap-Charger Control Relay with current circulation control : 90, AVR



DTRV/TR

- Voltage regulator for transformer : 46, 59, 27, 60, 90

BUS BAR PROTECTIONS



UBO/ATR

- High impedance differential relay : 87B



M-LIB3

- Modular low-impedance bus-bar protection : 87B, 50BF



OGYD

- Decentralized differential bus bar protection: 87B, 50BF

DGYD

- Centralized differential bus bar protection : 87B, 50BF

LINES AND CABLES PROTECTIONS



MFP-5

- Pilot wire differential relay : 50/51, 87C, 68, 50BF

M-HIB3

- Percentage biased differential relay for bus-bar and cable : 87C, 50BF



DTIVA/L

- Back up protection for HV lines : 50/51/67, 50N/51N/67N, 21, 27, 59, 59N, 47, 81, df/dt, 68, 46, 49, 79, 60, 50BF, 32

DTIVA/DI

- Differential MV line protection : 50/51/67, 50N/51N/67N, 87L, 27, 59, 59N, 47, 81, df/dt, 68, 46, 49, 79, 60, 50BF, 32



DTVA/L

- Distance protection : 50/51/67, 50N/51N/67N, 21, 78, 27, 59, 59N, 47, 81, df/dt, 25, 68, 46, 49, 79, 60, 50BF, 32

DTVA/Di

- Differential HV line protection : 50/51/67, 50N/51N/67N, 21, 87L, 78, 27, 59, 59N, 47, 81, df/dt, 25, 68, 46, 49, 79, 60, 50BF, 32



DTVA-S24/L

- Line protection : 21, 50/51/67, 50N/51N/67N, 68, 46, 49, 27, 59, 59N, 47, 81, 81R, 25, 79, 50BF

DTVA-S24/LD

- Differential line protection : 87L, 50/51, 50N/51N, 68, 46, 49, 79, 50BF

MOTOR PROTECTIONS



DB3

- Negative sequence voltage sensitive relay : 47, 68, 86

SB3

- Negative sequence current protection relay : 46, 68, 86



N-DIN/MA

- LV motor Protection Relay : 37, 46, 47, 48, 49, 50/51, 51LR, 64, 66, 68, 86



MM30

- MV motor protection relay : 37, 46, 47, 48, 49, 50/51, 51LR, 64, 66, 68, 86

MM30-D

- MV motor protection with directional earth fault relay : 37, 46, 47, 48, 49, 50/51, 51LR, 67N, 66, 68, 86

MM30-W

- MV motor protection relay with voltage & power control : 37, 46, 47, 48, 49, 50/51, 51LR, 64, 66, 27/59, 81, 55/78, 14, 68, 86



UFMW

- Complete MV motor protection : 50/51, 50N/51N, 27, 59, 59N, 47, 27D, 27S, 68, 46, 49, 48, 37, 66, 50BF



DTIVA/M

- Complete MV motor protection : 50/51, 50N/51N, 27, 59, 59N, 47, 27D, 68, 46, 49, 48, 37, 66, 50BF

DTIVA/MF

- Complete synchronous motor protection : 50/51, 50N/51N, 87G, 27, 59, 59N, 47, 27D, 81, 68, 46, 49, 48, 37, 66, 60, 50BF



DTIVA-S24/F

- Feeder protection : 50/51, 50N/51N, 68, 46, 49, 37, 48, 66, 79, 50BF

CAPACITOR BANK PROTECTION



IM30/C

- Capacitor overload and unbalance protection: 50/51, 50N/51N, 37, 46N, 51BF, 68, 86



DTIVA/C

- Capacitor bank protection : 51, 51N, 60

TEMPERATURE RELAYS



CTT4

- Programmable thermal control unit up to 4 inputs from PT100 sensors : 26

CTT8

- Programmable thermal control unit up to 8 inputs from PT100 sensors : 26

SYNCHROCHECK RELAYS



SCM11

- Synchrocheck (1 input) : 25, 27, 59, 81

SCM21

- Three inputs synchrocheck relay: 25, 27, 59, 81

SCX

- Fast busbar transfer system: 25, 27, 27R, 59, 81



HSBT

- Fast incoming transfer system : 25, 27, 27R, 59, 81



DTIVA-S24/U

- Voltage relay - fréquence : 27, 59, 59N, 81, df/dt (81R), 25

CONTROL AND SUPERVISION RELAYS



TCS

- Relay for permanent control of the mccb's tripping circuit : 74, TCS



RCA

- Trip circuit supervision relay : 74, TCS

RB4

- Lock out relay : 86



RSR

- Static relay for motor re-start and reacceleration



REX-8

- Expansion module for m-line relays: 74



MX7/5

- Programmable interface and control module (7 inputs-5 outputs)

MX14/5

- Programmable interface and control module (14 inputs-5 outputs)

MEASUREMENT UNITS



MU30

- Multifunction three-phase measuring unit : V,I

MUCC

- Multifunction DC multimeter including oscillography – load profile recording – serial communication – 8 adjustable trip levels – event recording : Vcc, Icc



EMA

- Electrical parameter analyser : V, I, F, P, Q, S, cos, THD.



EMS

- Electrical measurement supervisor: V, I, F, P, Q, S, cos, THD.



EMM

- Multifunctional multimeter : V,I



EMT

- Multifunctional transducer without visualization :V,I



EMC

- Energy meters : V,I

ANNUNCIATOR AND ALARM SYSTEMS



COMPALARM

- Panel signaling



COMPALARM

- Rack alarm annunciator

SCADA SYSTEMS



DECADE

- Events recorder



SYSCEEO

- Oscillography recorder



SIRACUS

- MV loop reconfiguring system



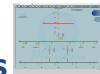
CMP5 – CP5

- Bay control unit. Protocol : MODBUS RTU, MODBUS TCP/IP



EUROGATEWAY

- Buy control unit and gateway. Protocol : MODBUS TCP/IP, IEC61-850, IEC61-870



MYOSOTIS

- Supervision system for industrial substation. Protocol : MODBUS, IEC61-870, IEC61-850



EUROSTATION

- Supervision system for substation. Protocol : MODBUS, IEC61-870, IEC61-850



MX7/5

- Programmable interface and control module (7 inputs-5 outputs)

MX14/5

- Programmable interface and control module (14 inputs-5 outputs)



SERVICES



ENGINEERING

- Selectivity and engineering studies.



SET UP ON SITE

- Commissioning and tests.

CONFIGURATION SOFTWARES

MSCOM2

- Configuration software for : M, MC, UM, N-DIN relays.

EUROCAP

- Configuration software for PROTECTA line relays.

NRG

- Software to monitor measurement and counting devices

ACCESSORIES

USB-RS485

- Convertor for USB – RS485 line relays NDIN, M, MC and ULTRA-M

CFV-BL

- blocking and intertripping signal transmitter.

CPSC

- Communication Interface Converters (RS232/RS485)

CPSC-CFV

- Communication Interface Converters (RS485/optical fiber)

EXIO

- Input/Output Expansion Module for N-DIN relays

REX8

- Expansion module for M-line relays

CPB

- Profibus Converter Module.

EXPB

- PROFIBUS converter module.

TP11 – TT11

- Test Panel and Test Sockets.

MEASURE TRANSFORMERS



CT & VT

- Current transformers and voltage transformers.

TRAINING- APPLICATIONS



TRAINING

- Engineering training sessions for technical people using protective relays.

RAILWAY RELAYS



RI15

- Isolation relays for DC networks : 64



N-DIN/MSG

- Earth fault relay for DC networks : 64



N-DIN/TO

- Earth fault relay for DC switchboard : 76, 64



MC11

- Multifunction relay for railway applications (AC) : di/dt, Di, 51, 21, 59, 27, 49



DRFP

- Catenary protection : 21 50/51, 27, 59, 49, 79, 85



CVT

- DC Voltage relay for indoor using : 45, 80



PV 3000

- DC Voltage relay for outdoor using : 45, 80

RAILWAY INFRASTRUCTURES



SFI

- Disconnectors for railway applications.



LB

- Switches for railway applications



CONTACTORS



Bar type contactors

- For Industrial and power plant applications



Compact contactors

- Contactors for low power installations (less than 250kVA)



Industrial contactors

- AC or DC contactors for industrial applications.

ABANDONED RELAYS

DM30 ; IM3GV ; GMR ; RDE ; RSR ; UFM



For any information please contact

Tél. +33 1 48 15 09 09

Mail : info@microener.com

Fax. +33 1 43 05 08 24

The website features a navigation bar at the top with links for "Our company", "Partners", and "Contact us" in English, and "Centrales, Postes & Industries (CP&I)" and "Infrastructure Ferroviaire (IF)" in French. Below the navigation is a banner with the text "Electrical protection in complete serenity". The main content area is divided into several sections: "ENERGY PRODUCTION", "TRANSPORT/ENERGY DISTRIBUTION - INDUSTRY", "RAILWAY", "TERTIARY", and "SERVICES". A search bar and a contact form are also present.

Our company **Partners** **Contact us**

Electrical protection in complete serenity

ENERGY PRODUCTION

TRANSPORT/ENERGY DISTRIBUTION - INDUSTRY

RAILWAY

TERTIARY

SERVICES

Search

Contact

49 Rue de l'Université
F-93191 noisy le grand
Tel : [+33 1 48 15 09 09](tel:+33148150909)
Fax : +33 1 43 05 08 24
[Contact us](#)

MICROENER

MICROENER proposes and builds systems and protective gear for electrical performance at high and medium voltage.

The know-how acquired over many years in the field by our staff puts us among one of the actors of the first rank in our profession. Our Commercial and Technical teams are at your disposal to answer all your inquiries from the definition of a simple protection relay to SCADA as a whole.



MICROENER

49 rue de l'Université - 93160 Noisy le Grand – Tél : +33 1 48 15 09 01 – Fax : +33 1 43 05 08 24
info@microener.com – www.microener.com