PRODUCTION

Founded in 1953,
Microelettrica Scientifica
has developed a wide range of products,
divided into **three main lines:**

ELECTRONIC RELAYS:

For Transmission, Distribution and Machinery protection.

"**A-Line**" Electronic analogic.
"**M**-**Line**" Digital Draw-out LED DIsplay.
"**N-DIN**-**Line**" Digital DinRail mounting for MCC/PCC.
"**MC-Line**" Digital Compact Draw-out LCD Display.
"**ULTRA-Line**" Digital Draw-out Graphical LCD Display.

CONTACTORS:

A.C./D.C. low and medium voltage Contactors and Disconnetting Switches.

N-Series:
Bar Contactors ranging up to 6000A - 1000V A.C./D.C.
LTH-Series:
Specially designed for traction up to 1250A - 1500V D.C.
LTHH-Series:
Specially designed for traction up to 1750A - 4000V D.C.
LTHH-Series:
Disconnecting Switches elettromagnetic, pneumatic or motor driven ranging up to 1750A - 4000V D.C.

RESISTORS:

For any voltage and power rating, neutral or forced air cooled.

For "**Industria**l" application: load, regulation, earthing,filter.

For "**Railway**" application: braking, filter.

JAN 2005 - SF11 - Rev.0

www.bonobodesign.it

ULTRA

MICROPROCESSOR PROTECTION RELAYS THE ULTRA LINE

NUMERICAL MULTIFUNCTION INTELLIGENT DEVICE FOR PROTECTION SUPERVISION, METERING AND CONTROL

Microelettrica Scientifica

MICROELETTRICA SCIENTIFICA MANUFACTURES A COMPLETE RANGE OF DIGITAL PROTECTION RELAYS DEVIDED IN DIFFERENT LINES FOR SPECIFIC APPLICATIONS.
Among these lines the ULTRA-M is the top one designed to meet the most demanding specifications for any application in Trasmission, Distribution and Electric Machinery protection

The **ULTRA** is a very powerful hardware platform on which different firmware programs can be downloaded to accomplish the combination of a number of functions needed for different applications (Feeder protection, Generator Protection, Motor)

- Conformance to all IEC 60255, IEC 61000, ANSI-IEEE C37, CE Directive, CCC Directive.

- Modular fully draw-out exexution in individual flush mounting enclosure IP44 (on request IP54) or in 19"-3U chassis for standard Rack panel.

- Large graphical LCD display with mimic indication of the C/B status.

- User frindly four-buttons key board for complete local management.

- On-Off Breaker Control push buttons on front face.

- RS232 port for local P.C. interface with Modbus-protocol (communication speed: 9600 to 57600bps)

- RS485 communication port for connection to Supervision System. with Double Communication Protocol Modbus RTU and IEC870-5-103. (communication speed: 9600 to 38400bps)

- Field-bus (CANBUS) port for control of additional periferic units.

- Multivoltage autoranging fully isolated power supply.

- Four transformer isolated current inputs (selectable 1-5A). Four transformer isolated voltage inputs (programmable 50   150V)

- Completely programmable settings and Time Current Curves.

- Six internal output relays, expandable by additional D.O. modules, all user programmable.

- Four internal, self powered, optoisolated Digital Inputs expandable by additional D.I. modules, all user programmable.

- Self-contained Trip Circuit Supervision (F74).

- Real time and recorded measurement directly in System Transformers primary values.

- Time tagging with synchronization from serial communication.

- Trip and event recording with time tag and input values.

- Programmable oscillography of all input wave forms.

- Comprehensive continuous self-diagnostic.

NUMERICAL
MULTIFUNCTION
INTELLIGENT DEVICE
FOR PROTECTION,
SUPERVISION,
METERING
AND CONTROL

CE

SERIAL COMMUNICATION AND MAN MACHINE INTERFACE

The ULTRA series is supported by an advanced communication software with very comprehensive functionality and yet remaining extraordinarily user friendly and versatile. Microelettrica Scientifica has developed and realized **MSCom II**: a communication program for Windows systems available in two versions:

PROFESSIONAL (MSCOM II PRO):

it is the full version program which allows to:
- Simultaneously communicate on multi-serial ports with up to 250
  Microelettrica Scientifica relays on each serial com port Modbus-RTU protocol.
- On-line Firmware updating.
- Save on disk data coming from relays.
- Program or modify settings and configurations.
- Prepare off-line relay settings files and directly upload relay's memory.
- Print data tables and oscillographic wave form recordings.

- Periodically poll the relays and save any data directly in the hard disk or send data to a printer.
- Access the relays over TCP/IP protocol.

LITE (MSCOM II LITE):

this version is freeware and supports all the microprocessor relays manufactured by Microelettrica Scientifica.
It allows to:
- Communicate only with one relay at a time.
- On-line Firmware updating.
- Save on disk data coming from relay.
- Print data tables and oscillographic wave form recordings.

MS-TD PRO 32

is the customer designed multi-protocol software used by Microelettrica Scientifica to implement SCADA (Supervision Control and Data Acquisition) systems based on data and measurements coming from the Protection, Metering and Control devices.
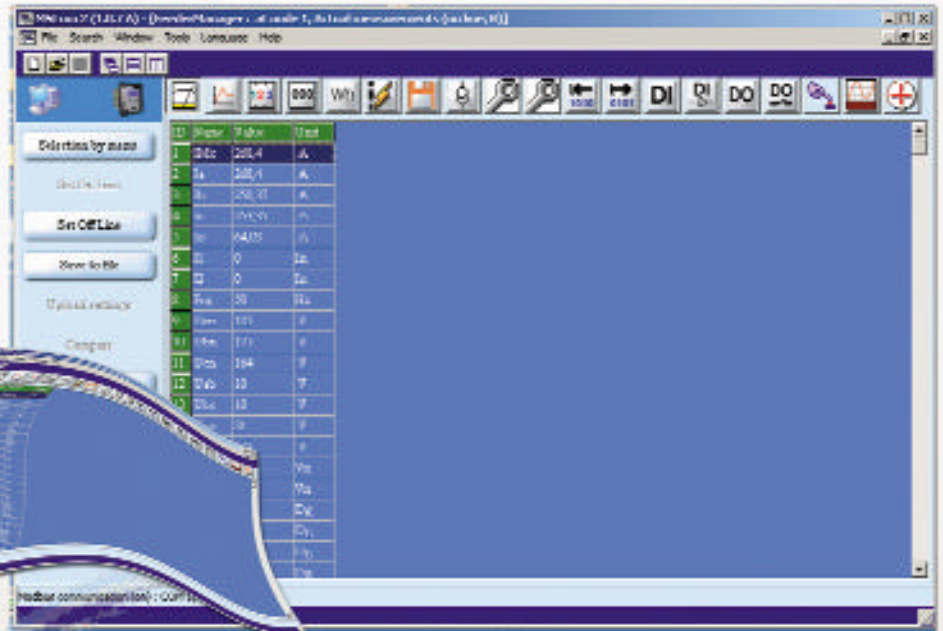
ELECTRICAL CHARACTERISTICS

Rated Current:
In = 1 or 5A; On = 1 or 5A

Current Overload:
80In x 1sec;
4In continuous

Burden on current inputs:
phase: 0.01VA@1A, - 0.2VA@5A,
earth: 0.01VA@1A, - 0.2VA@5A

Rated Voltage
Un = 100-125Vac

Voltage overload:
2 Un continuous

Burden on voltage input:
0.1VA phase@ Un

Averange power supply consumption:
<10VA

Output Relays:
Rating 5A - 250V
A.C. resistive switching
1100W, 380 Vac
Make=30A peak   0.5 sec

Break: 0.3A, 110Vdc. L/R = 40msec

Operation ambient temperature:
-10°C / +55°C

Storage temperature:
-25°C / +70°C

Reference standards:
IEC60255, IEC61000, IEEE C37
CE: EN50081-2, EN50082-2
EN50263, ENV50204

Dielectric test voltage:
IEC60255-5   2kV, 1 min.

Impulse test voltage:
IEC60255-5
5kV(cm),2kV(dm)-1.2/50 us

HF disturbance test (1 MHz burst test):
IEC60255-22-1 class 3

Electrostatic discharge test:
IEC61000-4-2 level 4

Conducted disturbance immunity test:
IEC61000-4-6 level 3

Radiated electromagnetic field immunity test:
IEC61000-4-3 level 3

Electrical fast transient/burst:
IEC61000-4-4 level 4

Surge immunity test
IEC61000-4-5 level 4

Oscillatory waves (ring waves):
IEC61000-4-12 level 4

Power frequency magnetic test:
IEC61000-4-8 level 5

Pulse magnetic field:
IEC61000-4-9 level 5

Damped oscillatory magnetic field:
IEC61000-4-10 level 5

Voltage interruptions:
IEC61000-4-11 200ms

HF induced voltage:
IEC61000-4-1-A.2.6 level 4

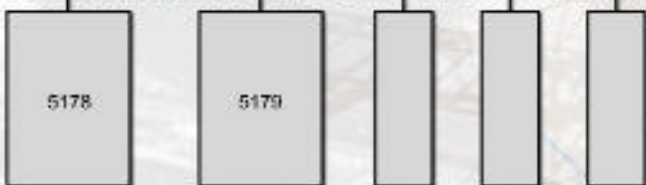**Resistance to vibrations and shocks:**
IEC60255-21-1 and 21-2

DCS

RS485

ULTRA-M

6 Output Relays

4 Digital Inputs

CANBUS

5178	5179

EX/IO Expansion Modules

Laptop PC

ULTRA-S

ULTRA-S RELAY

UX10-4

6+4 Output Relays

4+10 Digital Inputs

RS485

Laptop PC

ULTRA 19"

ULTRA RELAY

RACK 19"

Variable composition up to 100 I/O + 3 Analogue Outputs

RS485

Laptop PC

PROTECTION DEGREE IP44 (IP54 ON REQUEST)

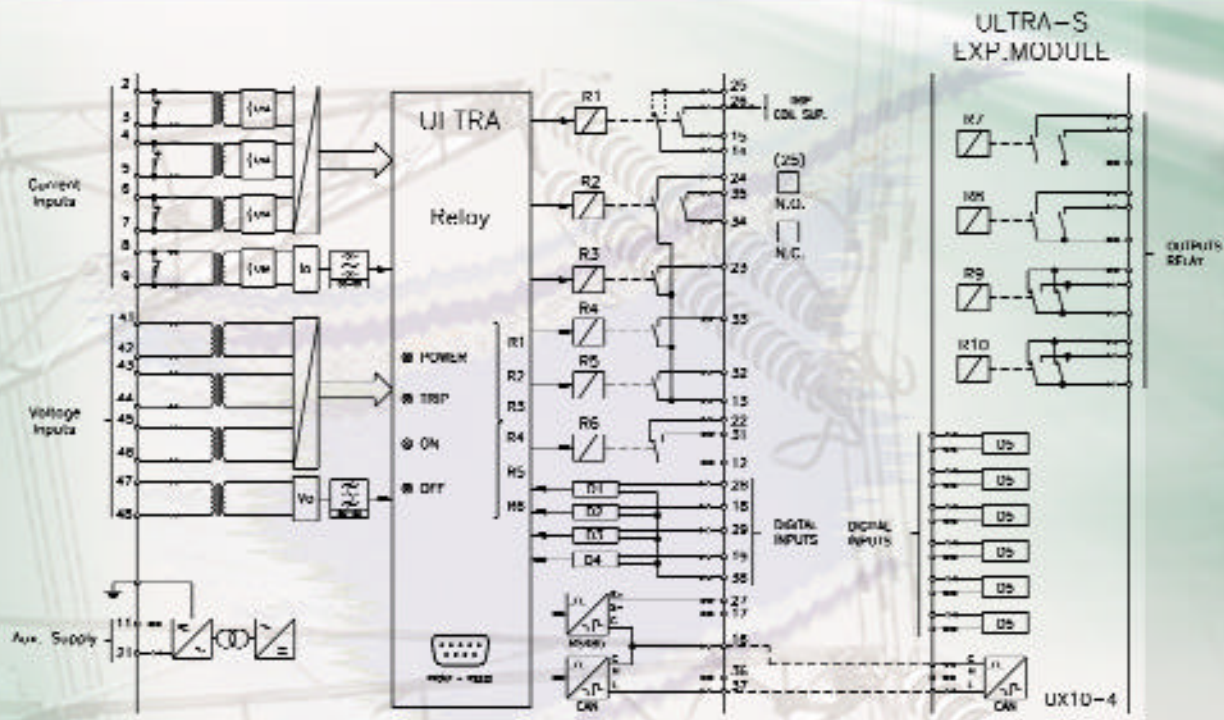ACCESSORIES FOR SURFACE MOUNTING

PANEL CUT-OUT
113x142 (LxH)
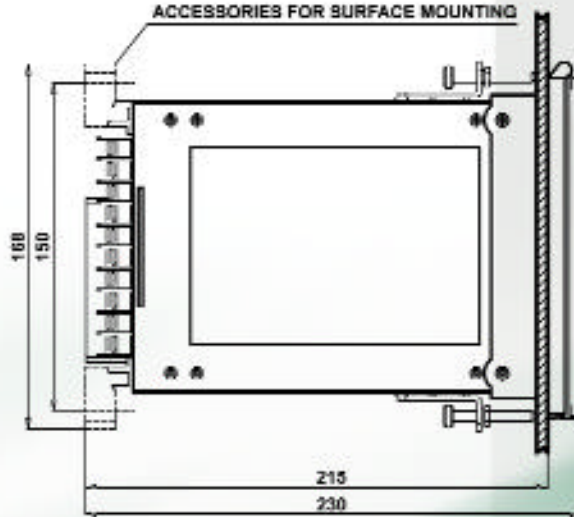
19" Panel can house up to 8 modules 51 mm wide.
Each **ULTRA** relay is 2 module wide (102 mm)

ULTRA – S PANEL

has the dimensions corresponding
to 3 modules n=3

ULTRA-S
EXP.MODULE