

UNIVERSAL+ 7WR M1 electrical protection unit with automatic reclosures, mains analysis, cutting-edge instrumentation, logging, input-output automation and control. Display, programming and control via WebServer over Internet/Intranet directly with Web browser + Modbus TCP/IP.

Very high-speed electrical multi-protections upon mains failure. Built-in reclosure motor-drive.

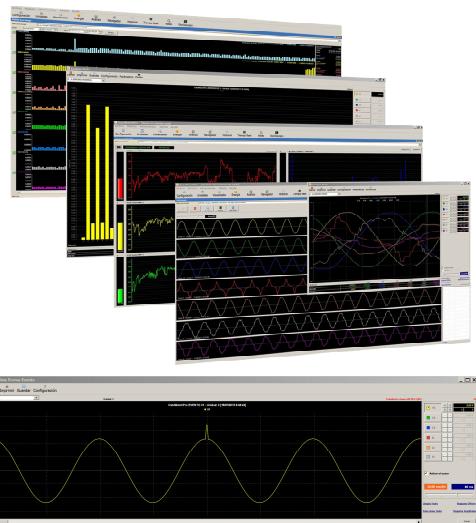


M1: MCB from 6 to 63A, 2 and 4-pole (Icu 10-15kA)



Ultra-immunised
differential protection

Medidas			
Tensión RMS	Tensión Pk	Tensión entre fases	Frecuencia
V_L1 = 221.71	V_Pk L1 = 231.86	V_L12 = 397.66	H.L1 = 46.0
V_L2 = 227.32	V_Pk L2 = 216.17	V_L23 = 396.31	H.L2 = 46.9
V_L3 = 220.45	V_Pk L3 = 218.90	V_L13 = 400.27	H.L3 = 50.0
Intensidad RMS	Intensidad Pk	Intensidad Neutra	Intensidad diferencial RMS
A_L1 = 1.09	APk_L1 = 1.75	A_LN = 5.67	ImA = 254.4
A_L2 = 1.06	APk_L2 = 1.55		RPk = 407.0
A_L3 = 0.97	APk_L3 = 15.17		
Desarrollada tensión	THD Intensidad k-req	Desarrollada intensidad	THD Intensidad k-req
% L1 = 0.8	% L1 = 1.4	% L1 = 4.6	% L1 = 2.6
% L2 = 1.0	% L2 = 1.4	% L2 = 4.6	% L2 = 4.0
% L3 = 0.2	% L3 = 1.5	% L3 = 42.2	% L3 = 15.2
Factor de cresta tensión	Factor de cresta intensidad	Impedancia	Temperatura x Humedad
L1 = 1.289	L1 = 1.612	Z_L1 = 212.57	T_C = 425.6
L2 = 1.390	L2 = 1.347	Z_L2 = 22.59	W_RH = 65.0
L3 = 1.385	L3 = 1.492	Z_L3 = 22.65	Z_L123 = 400.1
Potencia Aparente	Potencia Activa	Potencia reactiva	Potencia retorcida
VA_L1 = 252.2	W_L1 = 160.1	Ww_L1 = 181.7	W_L1 = 21.6
VA_L2 = 228.2	W_L2 = 228.2	Ww_L2 = 238.2	W_L2 = 6.0
VA_L3 = 234.5	W_L3 = 212.0	Ww_L3 = 214.0	W_L3 = 11.1
ZL123 = 406.9	ZL123 = 407.2	ZL123 = 406.9	ZL123 = 20.7
Potencia Reactiva Intensiva	Potencia Reactiva Clásica	Factor de Potencia	Máxima Potencia Activa
VAC_L1 = 0.0	VAC_L1 = 196.2	PF_L1 = 0.621	W_L1 = 0.0
VAC_L2 = 0.0	VAC_L2 = 196.2	PF_L2 = 0.999	W_L2 = 0.0
VAC_L3 = 0.0	VAC_L3 = 98.0	PF_L3 = 0.997	W_L3 = 0.0
ZL123 = 0.0	ZL123 = 117.2		
Tensión AC	Intensidad AC	Potencia AC	Intensidad diferencial AC
Vac_L1 = 221.70	Anc_L1 = 1.08	Wat_L1 = 160.5	ImAcc = 362.3
Vac_L2 = 227.31	Anc_L2 = 10.08	Wat_L2 = 2239.5	
Vac_L3 = 220.44	Anc_L3 = 10.16	Wat_L3 = 2129.5	
Tensión DC	Intensidad DC	Potencia DC	Intensidad diferencial DC
Vdc_L1 = 0.24	Adc_L1 = 0.02	Wdc_L1 = 0.0	ImAdc = 0.5
Vdc_L2 = 0.44	Adc_L2 = 0.12	Wdc_L2 = 0.0	
Vdc_L3 = 0.25	Adc_L3 = 0.04	Wdc_L3 = 0.0	



Other models

M2: MCB from 10 to 125A, 2 and 4-pole with automatic reclosure (Icu 50kA), or moulded -case circuit-breaker from 80 to 250A-2000A, 4-pole with automatic reclosure.

M5: SHUNT TRIP for external MCB, manual reclosure from 6 to 10000A, 2 and 4-pole. M3: External relay/contactor from 25 to 1250A, 2 and 4-pole with automatic reclosure.

Electrical protections/alarms, programmable in both value and delay, with automatic reclosures programmable in number, time and reset	Mains analysis, electrical RMS, Peak, AC and DC metering
Differential intensity, RMS and Pk (type A/B); $\Delta I_{\text{an}} = 30-1000 \text{ mA}$; Δt from 40ms to 1000ms	Report generator for data stored in unit in EXCEL, PDF and DOC files
Differential intensity: Versions 10-3000mA, 30-10000mA, 100-3000mA	Differential intensity, RMS, Pk, AC and DC
Oversupply: RMS and Pk L1, L2, L3 and low voltage RMS L1, L2, L3	RMS, Pk, AC and DC voltage L1, L2, L3 ; RMS voltage phases L1-2, L2-3, L3-1
Line over-intensity: RMS and Pk L1, L2, L3	RMS, Pk, AC and DC intensity L1, L2, L3 (measurement up to 10.000A)
Neuter intensity: Power factor L1, L2, L3	Active power W RMS, AC and DC and apparent power L1, L2, L3, $\Sigma L123$
Phase sequence and phase failure L1, L2, L3	Active power L1, L2, L3, (Maximeter-integration programmable 10 secs. to 15
Voltage and Intensity THD (total harmonic distortion) L1, L2, L3	Reactive, inductive and capacitive power L1, L2, L3, $\Sigma L123$
From harmonic 2 – 63, programmable by harmonic and harmonics range	Voltage and intensity THD L1, L2, L3 as from harmonic 2 – 63, programmable by harmonic and harmonics range
Power 1 W L1, L2, L3	Requested and returned power L1, L2, L3, $\Sigma L123$ and neuter intensity
Power 2 W L1, L2, L3 (Maximeter-integration programmable 10 secs. to 15 mins.)	Imported and exported active and reactive energy counters L1, L2, L3, $\Sigma L123$
Voltage and intensity unbalance L1, L2, L3	Power factor, Line frequency and impedance L1, L2, L3
Over and low frequency L1, L2, L3	Voltage and intensity unbalance and crest factor L1, L2, L3
Built to allow reconnection of the new digital counters	Voltage %HD (harmonic distortion) L1, L2, L3 of harmonic k 0 to 63
Over and low temperature + over and low humidity	Intensity %HD (harmonic distortion) L1, L2, L3 of harmonic k 0 to 63
Preventive cut-off upon AC power failure – insufficient power	Voltage and intensity L1, L2, L3, of harmonic k 0 to 63 (64 harmonics)
Remote input 1, Remote input 2. Programmable (ON/OFF and Reset reclosure)	Temperature, relative humidity + temperature, humidity of 6 remote sensors

Cutting-edge instrumentation for electrical parameters in mains analysis

Oscilloscope event-logger with pre-trigger and autoscale, differential intensity channel. Built-in 600-event memory.	960ms-log with 840ms pre-trigger.. With horizontal zoom functions, and value and time measurement cursor .. 4 alarms-trigger, programmable in value and delay. Chronological register per type of alarm., .
6-channel oscilloscope event-logger with pre-trigger and autoscale voltage and intensity channels (6 capture channels for each event: V1, V2, V3, I1, I2, I3). Built-in 600-event memory	Three modes of record length in 6 channels 160ms,320ms and 640ms (pre-trigger 40ms, 80ms and 160ms) + three modes in 6 channels 20s, 40s and 80s (pre-trigger 5s, 10s and 20s). With horizontal zoom functions, and value and time measurement cursor .. 10 alarms-trigger programmable in value and delay, Chronological register per type of alarm., . 3 channels
7-channel oscilloscope, auto-refreshing (differential I, V1, V2, V3, I1, I2, I3)	with autoscale, auto-refreshing, axis scaling, automatic or manual, 3 V/I mathematical channels. Includes instantaneous value measurement cursor in all channels. Continuously refreshed display (every 1.5 secs.).
Oscilloscope with auto-refreshing (differential I)	With autoscale, auto-refreshing, axis scaling, automatic or manual. - Includes instantaneous value measurement cursor . Continuously refreshed display (every 1.5 secs.).
64-harmonic spectrum analysis, 7 channels with auto-refreshment (distortion range in % and value V – A, + THD). Display auto-refreshed every 1.5 secs.)	Voltage V1, Intensity I1, Voltage V2, Intensity I2
Graphic history (months, days, hours and minutes) of active and reactive energy with costs and emissions . Energy report generator permits unit-stored data to be exported to EXCEL, PDF and DOC files.	Voltage V3, Intensity I3, Differential intensity ID
300-event graphic logger, 12 channels (46 measurements) with autoscale and variable refreshing (1-600 secs.) with temporary Max. Min. Avg measuring	Bar and line graphic display. Active Imported - exported and reactive energy. Includes measurement cursor.. Active imported-exported energy consumption log as also reactive by months, days, hours and minute. Built-in 3-year memory.

Log

Historic LOG, logs ON, OFF and alarm information	Chronological register of alarms. OFF/ON and power failure / start-up
Report generator for unit-stored data to EXCEL, PDF and DOC files	Year, month, day, hour and minute measurement value
Automatic data dispatch to a remote server via Internet/Intranet	Every 5 minutes to log all measurements and I/O in Safeline Web Service
Individual MCB cut-off counters	55 independent counters, counting from 0 to 65536
Maximum and minimum measurement log	45 independent logs
Chronological log of most recent cut-off and alarm	Year, month, day, hour and minute measurement value

Automation and control of inputs-outputs (10 logic outputs [relays] and 10 logic inputs + 4 remote outputs [relays])

Programmable enablement/disablement of 10 relays + 4 remote relays	For one or various alarms, reclosure block, internal time programmer., 8 timers
Manual enablement/disablement of outputs and monitoring of inputs	10 logic outputs (relays) and 10 logic inputs + 4 remote outputs (relays)
Weekly astronomical programmer	for each geographical location up to 160000 ("Safeline Web Service" administration software)
Thousand of time programmers (up to 16000)	daily / monthly / yearly, vacations, holidays ("Safeline Web Service" administration software)
Programmable enablement/disablement of 10 relays (DataWatchPro software)	Programmable automation of relays with level alarms in time-frame for each unit

High safety (The 230V versión units withstand overvoltages of 450V permanent and 1000V Pk)

Very high-speed cut-off of the MCB	2ms 2-pole, 5ms 4-pole
Real ,incremental, manual and automatic differential intensity test,+ autotest	Automatic prior to reclosure. .Real, conclusive differential tester..
Double cut-off device for MCB	Energy storage which permits MCB cut-off, even without power
Programming protected by security code, default configuration exfactory, acoustic warnings, configurable in English or Spanish, 3-year guarantee.	
Standards: EN 60947-2 (annexe B):2018, UNE-EN 62053-22:2003 CLASE 0.5S, EN 62053-23:2003 CLASE 2, UNE 20-600-77, EN 50550:2011 (consult manual)	
Technical mechanical endurance Safeline reclosure module: 100,000 complete ON OFF manoeuvres, Measurement precision version 0,2% and 0,4% (V, I).	

Display directly with Web browser via Internet/Intranet, with no need for software

Armónicos

%hd(x) k₀, k₁ = 0

Thd $k_{(2-43)} = 17.9\%$

k	k	k	k	k	k	k	k
0: 3.1	8: 0.2	16: 0.3	24: 0.2	32: 0.0	40: 0.0	48: 0.0	56: 0.1
1: 100.0	9: 3.0	17: 1.2	25: 1.3	33: 1.2	41: 1.4	49: 1.4	57: 0.2
2: 0.0	10: 0.2	18: 0.1	26: 0.4	34: 0.3	42: 0.1	50: 0.3	58: 0.1
3: 10.2	11: 3.6	19: 0.9	27: 3.1	35: 0.6	43: 0.9	51: 0.6	59: 0.8
4: 0.2	12: 0.2	20: 0.1	28: 0.4	36: 0.2	44: 0.3	52: 0.4	60: 0.0
5: 8.4	13: 3.5	21: 4.6	29: 1.3	37: 0.3	45: 0.3	53: 0.1	61: 0.6
6: 0.3	14: 0.1	22: 0.1	30: 0.3	38: 0.1	46: 0.1	54: 0.2	62: 0.0
7: 6.9	15: 2.1	23: 1.9	31: 1.5	39: 1.5	47: 0.5	55: 0.3	63: 0.7

Medida por armónico

Tensión	Intensidad	Potencia *	Factor de Potencia *
V _x L1 = 229.63	A _x L1 = 0.88	W _x L1 = 32.3	PF _x L1 = 0.159
V _x L2 = 225.68	A _x L2 = 7.22	W _x L2 = 1634.5	PF _x L2 = 1.000
V _x L3 = 230.03	A _x L3 = 5.08	W _x L3 = 1051.7	PF _x L3 = 0.898
Intensidad diferencial		ZL123 = 2718.5	
mA _x = 247.3			

Osciloscopio registrador de eventos con pre-trigger, canal intensidad diferencial

Previous Next N°: 2 / 10 Mostrar Reset Zoom

Intensidad Diferencial 10/9/19 11:35:53

The figure shows an oscilloscope display for a differential intensity channel. The y-axis ranges from -1500.0 to 1600.0. A horizontal reference line is at 0.0. A sharp vertical spike occurs at approximately -530 on the x-axis. Following this, there are several periodic oscillations between -500 and 1000. The x-axis scale is from -840 to 110.

Osciloscopio registrador de eventos con pre-trigger, canales voltaje e intensidad

Previous Next N°: 10 / 600 Mostrar Reset Zoom

Transitorio en hueco AV Pk L3 15/7/20 22:28:44

The figure displays an oscilloscope screen with a grid background. It shows several waveforms representing different voltage levels over a time range from -15ms to 15ms. A prominent feature is a sharp, narrow negative pulse centered at 0ms, which appears to be a pre-trigger signal. The waveforms are color-coded: green, yellow, red, and purple. The green and yellow waves have larger amplitudes, while the red and purple waves are smaller. The x-axis is labeled with time markers at -15ms, -13ms, -10ms, -8ms, -5ms, -3ms, 0ms, 3ms, 5ms, 8ms, 10ms, 13ms, and 15ms. The y-axis has numerical labels from -400.0 to 400.0.

Costes kWh y emisiones kgCO₂

Activa Importada:

0.115187 €/kWh 0.650000 kgCO₂

Activa Exportada:

0.301281 €/kWh 0.850000 kgCO₂

PIN
Guardar

Historial de energía activa y reactiva (kWh-kQh):

15/07/20 12:55 — 01/09/20 18:25

Refrescar

15 / 08 / 2020 12:00

Buscar

Previous
Next
 Meses
 Días
 Horas
 Minutos

27/08/20 - 08/09/20
42.65889 kWh
4.44130 k
27.005174 kgCO₂

Día	Actividad (kWh)	Reactividad (kQh)
01	~50	~15
02	~45	~15
03	~45	~15
04	~30	~15
05	~35	~15
06	~60	~15
07	~55	~15
08	~65	~15
09	~55	~15
10	~45	~15
11	~40	~15
12	~50	~15
13	~50	~15
14	~35	~15
15	~35	~15
16	~45	~15
17	~55	~15
18	~40	~15
19	~40	~15
20	~55	~15
21	~40	~15
22	~30	~15
23	~40	~15
24	~45	~15
25	~30	~15
26	~45	~15
27	~45	~15
28	~35	~15
29	~10	~15
30	~20	~15
31	~30	~15

Tiempo real

Refresco 1 s (1 - 60)

Escala eje X: • Auto • Manual: min 0 max 500

[Pause]

V1
V2
V3
I1
I2
I3
IO (mA)
Temp.
Hum.
W1
W2
W3

V1: Max: 242.00 Min: 240.91 Avg: 241.86 Act: 241.63
V2: Max: 238.00 Min: 236.91 Avg: 237.10 Act: 236.91
V3: Max: 240.01 Min: 237.80 Avg: 238.00 Act: 239.27

The figure shows an oscilloscope interface with the following details:

- Y-axis scale:** Escala eje Y: Auto (selected), Manual: min -500, max 500.
- Annotations:** A box labeled "312.47 Vp" is positioned above a green waveform at approximately x=32.5.
- Legend:**
 - V1
 - V2
 - V3
 - I1 $\downarrow \uparrow$
 - I2 $\downarrow \uparrow$
 - I3 $\downarrow \uparrow$
 - V1*I1
 - V2*I2
 - V3*I3
 - ID (mA)
- Time Scale:** 20ms (selected).

Complementos	Medidas personalizables remotas	Policomparador energético remoto	Generador de informes
<p>Este nuevo complemento permite personalizar y organizar las medidas que necesita de la multitud de equipos, para así poderles comparar entre ellas en tiempo real.</p>	<p>Una vez configurado el complemento, se podrán comparar los consumos de varios lugares; con este complemento solo tendrá que añadir las IPs de los equipos a comparar y listo!</p>	<p>Generar un informe sobre la información del equipo, las medidas y el registrador log de multitud de equipos y exportarlos a pdf, o doc de una manera rápida e intuitiva.</p>	
<h4 data-bbox="971 1740 1110 1751">Generador de informes energéticos</h4> <p>Esta aplicación permite generar un informe sobre el historial de energía. Podrá exportar a pdf, excel o doc los consumos, costes y emisiones de multitud de equipos.</p>	<h4 data-bbox="1110 1740 1288 1751">Multigenerador de informes energéticos</h4> <p>(Novedad!) Genera un informe sobre el historial de energía de multitud de equipos "Universal" en paralelo y permite exportar el informe en pdf, excel o doc (consumos, costes etc.). Incluye totales de todas las unidades</p>		

Software Safeline Web Service V1.1.0 (dedicated server)

Administration and control software via Internet/Intranet for multiple Sureline Universal+ 7WR units

Storage of measurement and I/O status data sent by the units

Unit register and geographical location management from map via Google Maps

Weekly astronomical programmer for each geographical location (output relays) assignable to groups of units

Thousands of independent hourly programmers (assignable to groups of units):

- Daily / weekly

- Daily / monthly / yearly

- Daily / monthly/ yearly (vacations and holidays)

Output relay management and logical input management

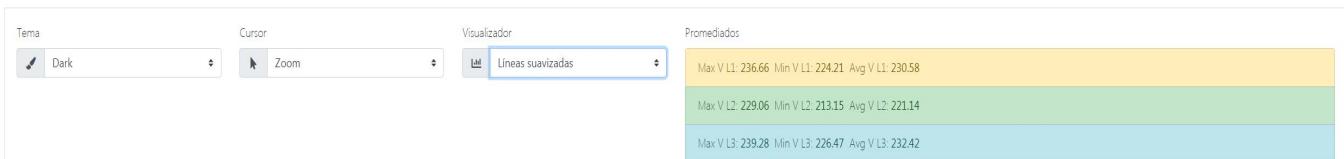
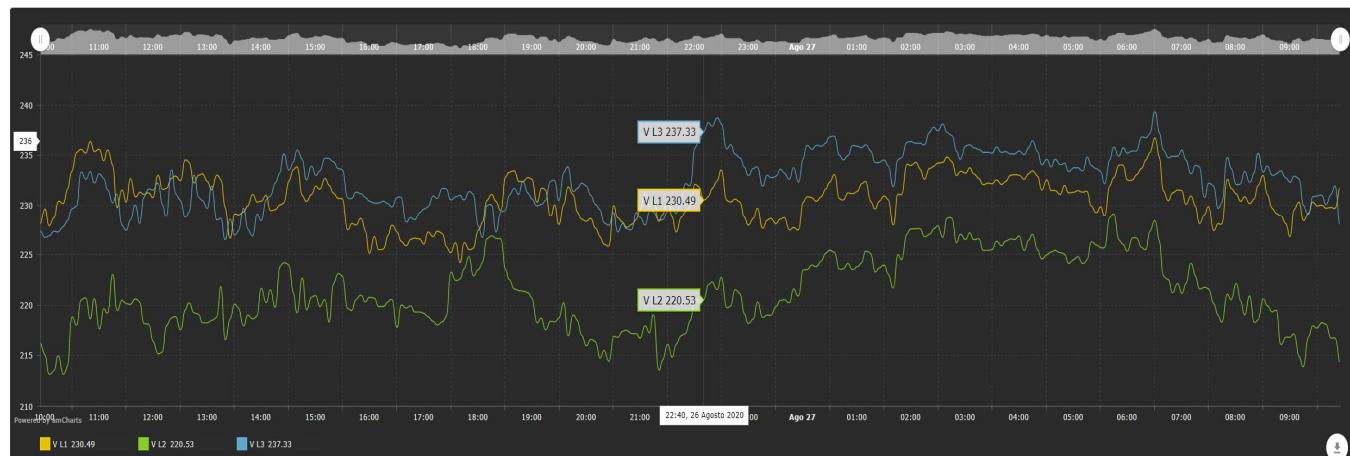
Graphical analysis of measurements

Management of measurement alarms and logical input for each unit, with notifications via e-mail

Unit management by labels. Attribute search engine.

Auto-register of units in the server

Administration capacity: 16000 Sureline units. Configurable in English or Spanish



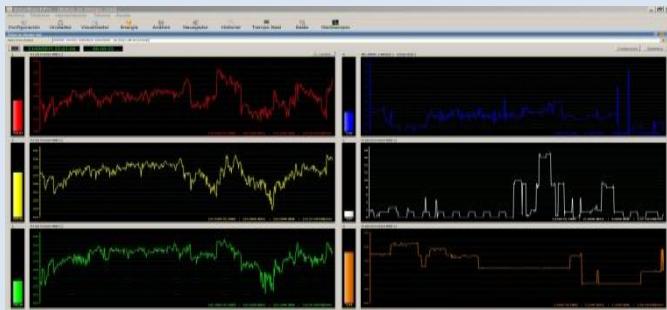
The dashboard provides a quick overview of the system's status:

- Units: 8 Registered units
- Analysis: 22,698,564 Stored measures
- Alarms: 0 Configured alarms
- Status and relay control: 11 Active relays
- Input status: 1 Active input
- Astronomical programmer: 0 Configured programs
- Daily/weekly prog.: 0 Configured programs
- Daily/monthly/yearly prog.: 0 Configured programs
- Vacations/holiday prog.: 0 Configured programs
- Tags: 10 Configured tags
- Notifications: 0 Unread notifications

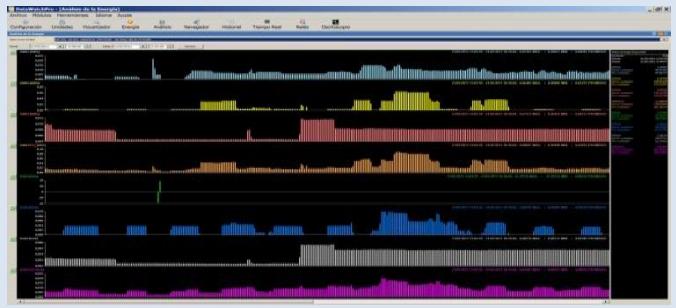
DataWatchPro included for all the UNIVERSAL+ 7WR M1, M2, M3, M5, M4, Rogowski M4 and 7WR MINI range
Professional software with database and graphic data analysis

- Multi-thread communication with a multitude of remote units via Internet/Intranet (reading and command)
- 200-parameter chronological logger in database for each unit.
- Independent notifications via e-mail of 249 programmable alarms for each unit
- Programmable automation/tele-control of relays with level alarms in time frame for each unit
- Module: numerical data analysis
- Module: graphic data analysis
- Module: history analysis
- Configurable in English or Spanish

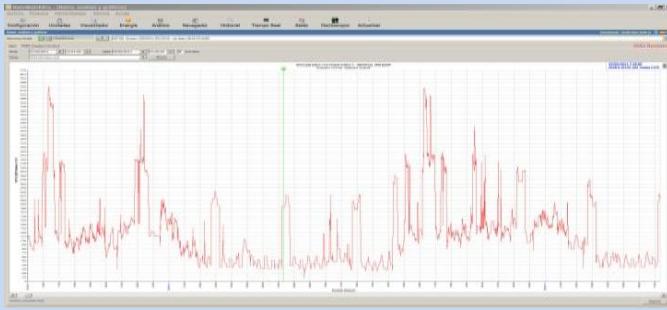
• Module: real time



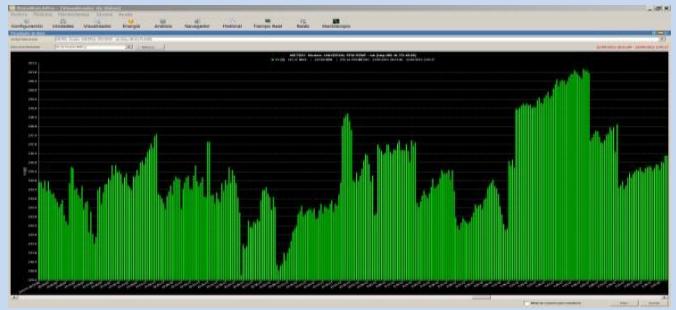
• Module: graphic energy analysis



• Module: graphic plotter (graphic long period analysis)



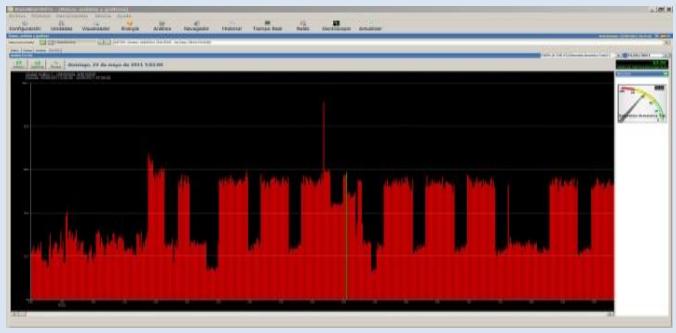
• Module: graphic display (rapid analysis)



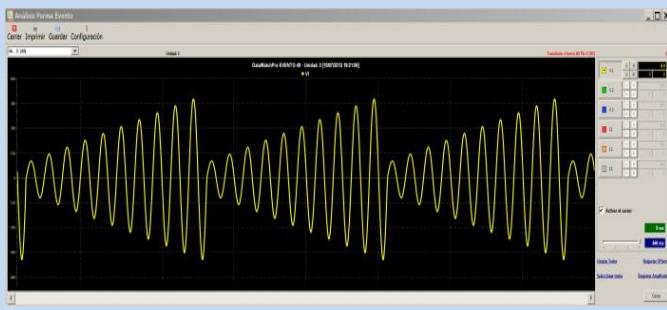
• Module: 7-channel oscilloscope. With autoscale and functions.



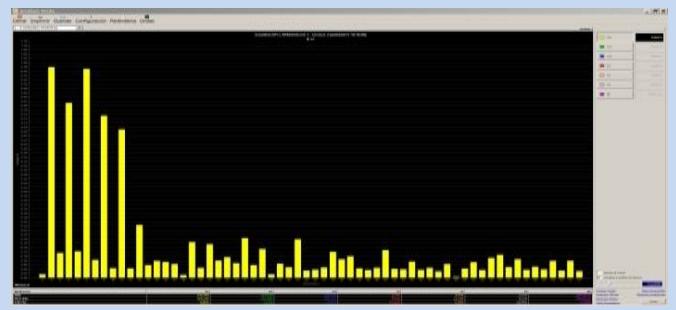
• Module: daily analysis



• Module: 6-channel oscilloscope event-logger in waveform
with pre-trigger and autoscale



• Module: 7-channel harmonics spectrum .
with autoscale (63 harmonics, range in % and value V - A).



Wiring diagrams

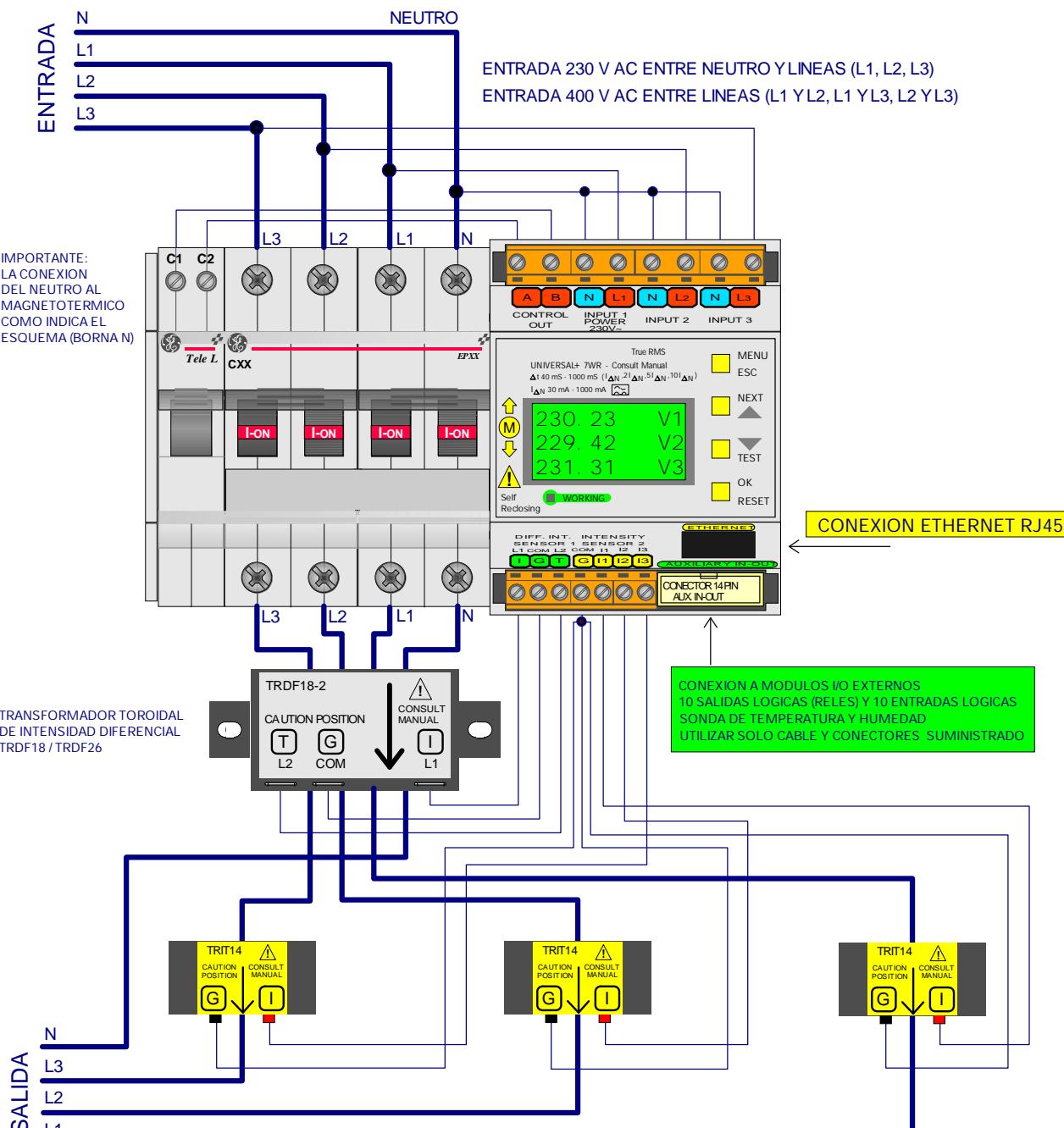
UNIDAD UNIVERSAL+ 7WR M1 VERSION INTENSIDAD DIFERENCIAL TIPO A

MODELO UNIVERSAL+ 7WR - M1 - T

CONFIGURACION TRIFASICA 4 POLOS 6, 10, 16, 20, 25, 32, 40, 50, 63A.



VERSION INTENSIDAD
DIFERENCIAL TIPO A



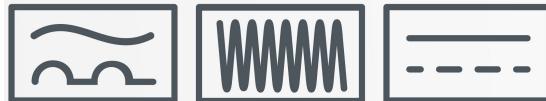
TRDF18 / TRDF26:
TRANSFORMADOR TOROIDAL DE INTENSIDAD DIFERENCIAL
PASAR LOS CONDUCTORES L1, L2, L3 Y NEUTRO
POR EL ORIFICIO DEL TRANSFORMADOR TOROIDAL
INDIVIDUALMENTE EMPAREJADO Y AJUSTADO PARA SU MODOULO
NO INTERCAMBIAR Y POSICIONARLO SEGUN SENTIDO FLECHA

TRIT14 / TRIT18:
TRANSFORMADOR TOROIDAL DE INTENSIDAD DE LINEA
INDIVIDUALMENTE EMPAREJADO Y AJUSTADO PARA SU MODOULO
NO INTERCAMBIAR Y POSICIONARLO SEGUN SENTIDO FLECHA



CONSULTAR MANUAL DE INSTRUCCIONES

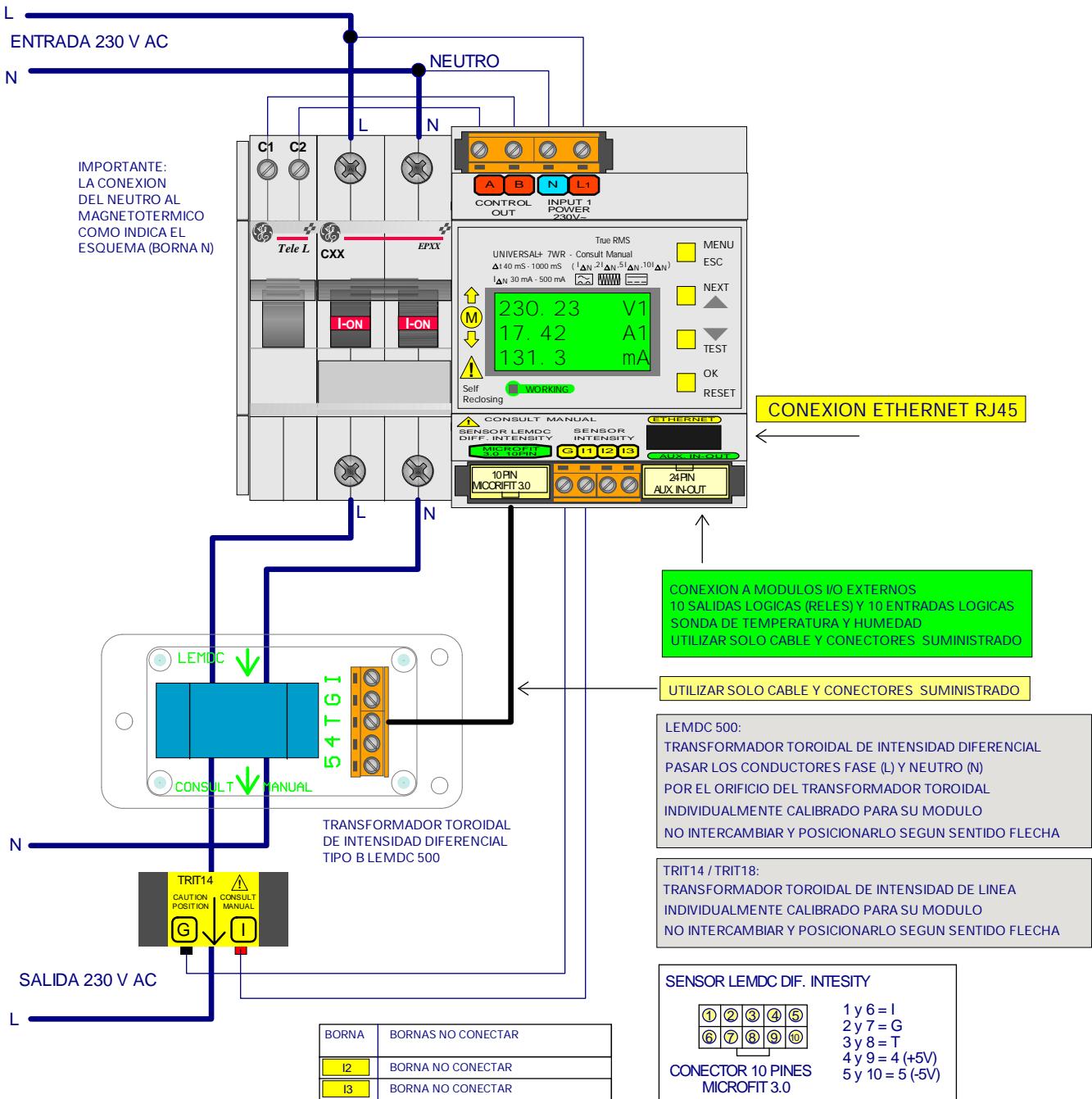
UNIDAD UNIVERSAL+ 7WR M1



VERSION INTENSIDAD DIFERENCIAL TIPO B

MODELO UNIVERSAL+ 7WR - M1 - M

CONFIGURACION MONOFASICA 2 POLOS 6, 10, 16, 20, 25, 32, 40, 50, 63A.



CONSULTAR MANUAL DE INSTRUCCIONES



SAFELINE, S.L.
Edificio Safeline
Cooperativa, 24
E 08302 MATARÓ
(Barcelona) ESPAÑA
www.safeline.es
safeline@safeline.es

Commercial
T. +34 938841820
T. +34 937630801
comercial@safeline.es

Factory, R + D
T. +34 937411010
T. +34 607409841
inves@safeline.es

Administration
T. +34 937630801
T. +34 607409841
admin@safeline.es

Made in EU



SAFE LINE