CHAUVIN®
ARNOUX
CHAUVIN ARNOUX GROUP

metrix®

2009
Catalogue

CHAUVIN ARNOUX GROUP

European Leader in Measurement

The Chauvin Arnoux Group, the European leader in the measurement sector, now proposes a comprehensive product offering in the field of measurement by drawing on its three core areas of expertise: portable measurement instruments, heat and electricity, provided respectively by the three French companies Chauvin Arnoux Test & Measurement, Pyro-Contrôle and Enerdis.

Whether it involves a product with a unique, original design created in one of the Group's six Research and Development Centres and manufactured at one of its production sites (4 in France, 1 in the USA and 1 in Italy), or a standard product listed in its catalogue, the Chauvin Arnoux Group responds to each customer request. In this way, self-employed electricians, industrial companies and government authorities benefit from a choice of 5,000 product references every year.

Alongside this comprehensive offering, 15 agencies under the Manumesure brand name provide full, top-quality After-Sales Service (repair, metrological verification, calibration, measurement of pollution, etc.) throughout France.

A network of 10 subsidiaries in Europe, the United States and China, backed by export sales teams, support the Chauvin Arnoux Group's international development, allowing it to market its Chauvin Arnoux®, Metrix®, Enerdis® and Pyro-Contrôle® brands on all five continents.

The Chauvin Arnoux Group is certified ISO 9001 version 2000 by the international MOODY Agency. Every year, the Group invests 11% of its turnover in Research and Development to maintain its technological leadership and its reputation as a permanent innovator and design engineer in the measurement sector.

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Industrial or tertiary applications

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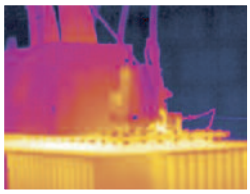
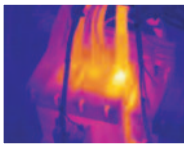
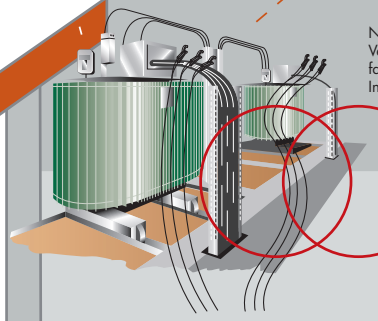
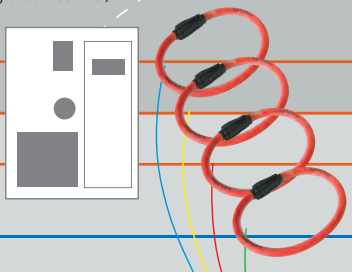




Raytm

No-contact detection:
Verification of clamping / overheating of connections /
faulty fuses / load imbalance
Inspection of HV lines





C.A 42
Measurement of electrical
and magnetic fields
Check electromagnetic
exposure in your
environment

C.A 760
Voltage detection
for separation

C.A 8342
Energy analysis
EN61000-4-30 Class A, all measurements

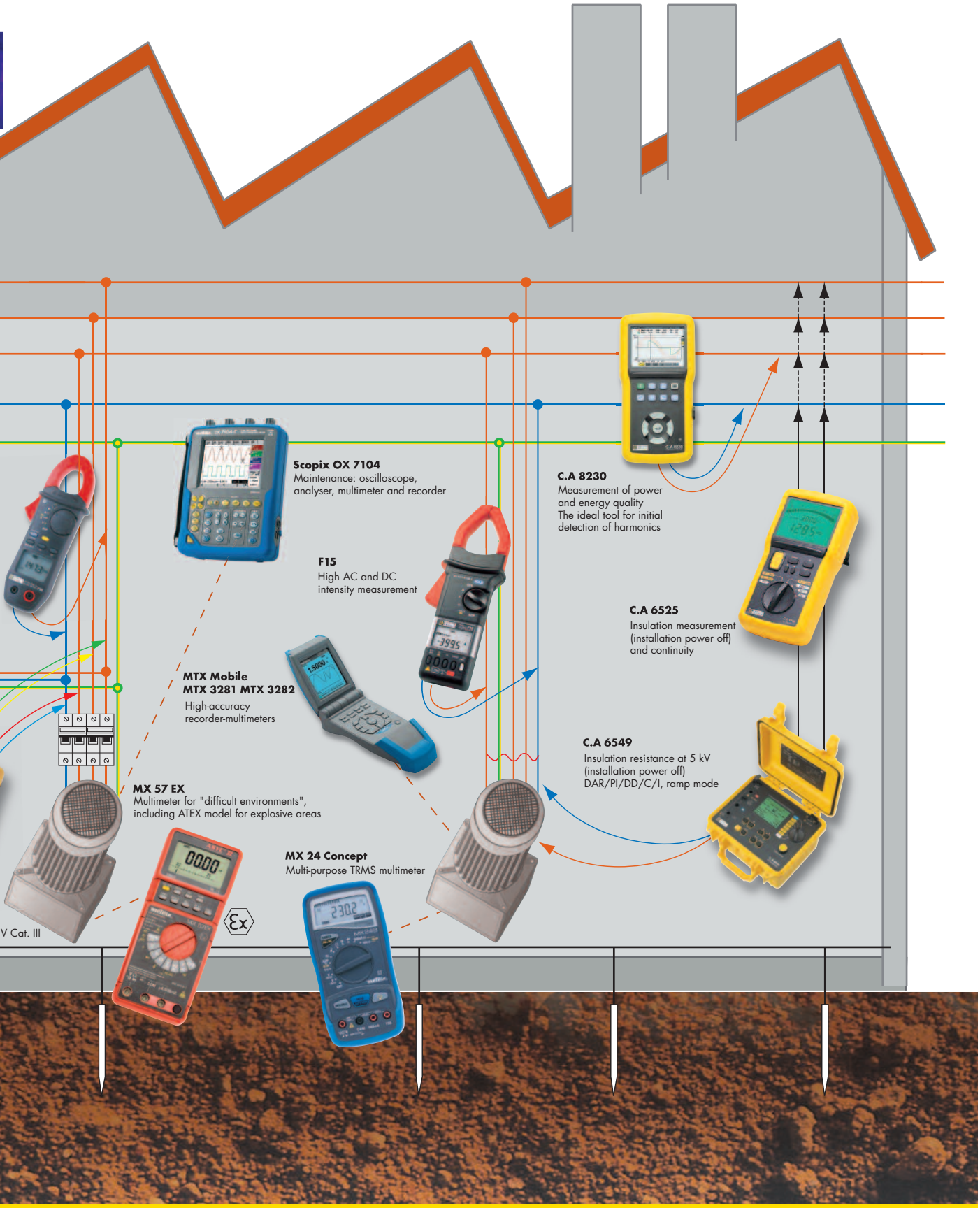
F09
Power
measurements
(W, var, VA, FP, etc.)
TRMS AC, DC
and AC+DC values

F65
For measuring leakage currents
and searching for insulation faults
on live lines

Gamme Qualistar
Measurement of energy quality
IEC 61010 600 V Cat. IV, 1000

C.A 6415
Earth loop measurement

Industrial or tertiary applications



Domestic applications

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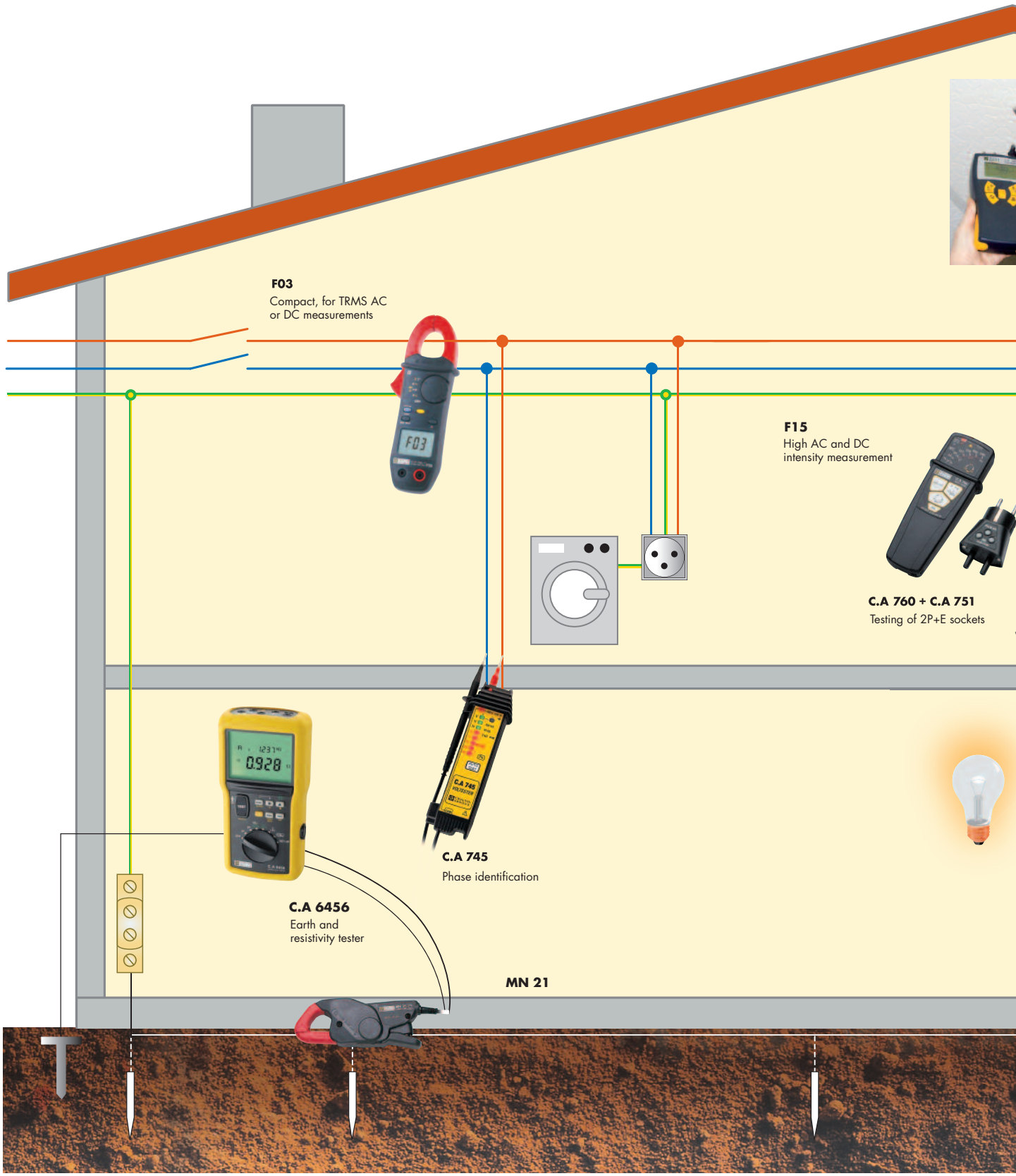


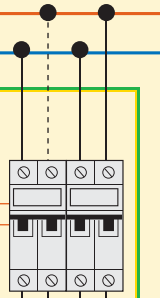
Domestic applications

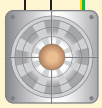
C.A 1051
Measurement of air speed,
flow rate, humidity and pressure

C.A 6115 N
Electrical installation testing

F01
AC current measurement

C.A 6523
Insulation and continuity
measurement





C.A 811
Lighting measurement

MX 22
Continuity, voltage, current and Min/Max

C.A 871
Verification of heat
diffusion in a room

Testers, voltage detectors and voltage absence testers



	C.A 745	C.A 760	C.A 704
	TESTER	DDT/VAT	
	Voltage and Continuity	*The safety voltage tester (voltage detector/voltage absence tester)*	*The safety multimeter (voltage detector/voltage absence tester)*
Reference	**P01.1917.36Z**	**P01.1917.31Z**	**P01.1917.32Z**
Display	9 LED	10 LED	2000-ct LCD with backlighting
Voltage test	690 V	690 V	
Polarity test	yes	yes	
Phase position	yes	yes	
Resistance measurement			2000 Ω
Voltage absence tester		yes	
Impedance	when high, does not trip the RCDs	when high, does not trip the RCDs	
Continuity with buzzer	yes	yes	
Phase rotation		yes	
Frequency	DC and 45-65 Hz	DC and 45-65 Hz and 400 Hz	
Differential circuit breaker test		with C.A 751	
Socket test		yes	
IP2X leads	with accessories	with accessories	
Guarantee	1 year	2 years	
Auto-test	yes	yes	
Outdoor use (IP 65)		yes	
Electrical safety	600 V cat. III	600 V cat. III and IEC 61243-3	
Dimensions	193 x 47 x 36 mm	163 x 63.6 x 40 mm	
Weight	170 g	210 g	
State of delivery	blister-packed with 9 V battery and test leads	blister-packed with 9 V battery, test leads and wrist strap	

The C.A 751 can be used alone or with the C.A 760 and C.A 704

C.A 751
Ref.: P01.1019.97Z
The 2P+E socket tester adaptator

Digital pocket multimeters

Cat. IV / 600 V


	C.A 702	C.A 703
	Flexibiliy and safety	*AC current detection*
Reference	**P01.1917.39Z**	**P01.1917.40Z**
Vdc / Accuracy	200 mV / ±0.5 % R + 3 D 2.000 V ; 20.00 V ; 200.0 V ; 600 V / ±1.2 % R + 3 D > 600 V / outside specification	
Vac / Accuracy (40-400 Hz)	2.000 V ; 20.00 V / ±1.0 % R + 8 D 200.0 V ; 600 V / ±2.3 % R + 10 D > 600 V / outside specification	
I dc / Accuracy		200.0 µA ; 2000 µA / ±2.0 % R + 8 D 20.00 mA ; 200.0 mA / ±2.0 % R + 8 D 200 mA / 500 V electronic fuse
Protection		
I ac / Accuracy		200.0 µA ; 2000 µA / ±2.5 % R + 10 D 20.00 mA ; 200,0 mA / ±2.5 % R + 10 D 200 mA / 500 V electronic fuse
Protection		
Resistance / Accuracy	200.0 Ω / ±0.8 % R + 5 D 2.000 kΩ, 20.00 kΩ, 200.0 kΩ /±1.2 % R + 5 D 2.000 MΩ /±5.0 % R + 5 D 20.00 MΩ / ±10.0 % R + 5 D	
Protection	600 V rms	
Diode test Test Alarm	1.999 V V Test ≤ 1.5 V I Test ≤ 1.5 mA	
Protection	600 V rms	
Continuity sound test Buzzer	199.9 Ω R < approx. 60 Ω	
Protection	600 V rms	

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Digital multimeters

The MX 57Ex is certified ATEX & IECEx and can be used in both explosive and non-explosive environments.

The MX HD range of IP 67 multimeters fulfils the requirements for difficult environments. They are totally protected against:
– dust
– the effects of temporary immersion

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	MX 22	MX 24B	MX 44HD	MX 58HD	MX 59HD	MX 57Ex
Reference	**MX0022-Z**	**MX0024-G**	**MX0044HD**	**MX0058HD**	**MX0059HD**	**MX0057CX**
Display	4,000 counts	5,000 counts	4,000 counts	5,000 counts	50,000 counts	50,000 counts
Bargraph	Yes			Analogue, 34 segments, 20 meas./s		
Type of measurement	AVG	TRMS	AVG	TRMS AC & AC+DC		
DC voltage	600 V	1,000 V	1,000 V	5 calibres from 500 mV to 600 V		
AC voltage	600 V	750 V	750 V	5 calibres from 500 mV to 600 V		
Bandwidth	500 Hz	1kHz	1kHz	50kHz	100kHz	50kHz
AC/DC current	400 µA, 4-40-400 mA, 4 A, 10 A	500 mA/10 A	40 mA/10 A	5 mA, 50 mA 500 mA, 10 A	500 µA, 5 mA, 50 mA and 500 mA	
Frequency	40 MHz	500 kHz	–	Range from 0.62 Hz to 500 mA		
Other measurements						
Resistance	40 MΩ	50 MΩ	6 ranges from 400 Ω to 40 MΩ	6 ranges from 500 Ω to 50 MΩ		
Audible continuity	< 40 Ω	10 to 20 Ω	20 to 44 Ω	Detection threshold from 10 Ω to 20 Ω - resp. time 1 ms		
Diode test	0 to 4 V	0 to 2 V	0 to 3 V	from 0 to 2 V		
Capacitance	–	50 nF to 50 mF	4 nF to 40 µF	7 ranges from 50 nF to 50 mF		
Temperature	–	–	–	–	-200 °C to +800 °C / Pt100 and Pt1000 probes	
Other measurements	Min / Max	Min / Max		Duty cycle	Duty cycle – dB function	Duty cycle – dB function and U2/R resistive power Pulse width – timer Event counting
Protection rating	IP 40		IP 67			
Safety	CAT III 600 V		CAT II 600 V	IEC 61010-1 CAT IV 600 V – CAT II 1,000 V		EN 50-014 and EN 50-020 EEX ib IIC T6 or EEX ib I IEC 61010-1 CAT III 600 V
Dimensions	170 x 80 x 35 mm		189 x 82 x 40 mm	230 x 155 x 65 mm		189 x 82 x 40 mm
Weight	300 g		400 g	500 g		400 g
State of delivery	Elastomer sheath, set of 2 safety leads, 9 V battery (installed), verification certificate and operating manual		Set of safety test-probe leads, protective sheath, 2 x 1.5 batteries, 2 fuses installed and operating manual	Set of PVC safety test-probe leads, protective sheath, 9 V battery, 2 fuses installed and operating manual	Set of silicone safety test-probe leads, protective sheath, 9 V battery, 2 fuses installed and operating manual	Carrying case, set of safety test-probe leads, 1 spare intrinsic-safety fuse, operating manual

Digital multimeter clamps

	F01	F03	F09	F15
	RMS measurement at a small price	*The RMS reference*	*TRMS industrial top of range (AC+DC)*	*The (AC+DC) TRMS clamp*
Reference	**P01.1209.01Z**	**P01.1209.13Z**	**P01.1209.09**	**P01.1207.55**
Measurement method	AC RMS	AC RMS / DC	TRMS (AC+DC)	AC RMS / DC
Clamping diameter	26 mm			42 mm
Display	4,000 counts			
Backlighting		yes		
AC/DC auto selection	yes			
Auto ranging selection	yes			yes and manual
Bandwidth	40 Hz to 2 kHz / 5 kHz	40 Hz to 1 kHz / 2 kHz	40 Hz to 1 kHz	45 to 450 Hz
Crest factor	3.5 to full scale			1.5 to 5
Current AC	0.20 to 40 - 400 A/600 A peak			0.5 to 400 - 1,000 A
Current DC				0.2 to 400 - 1,400 A
Basic Accuracy	1.50 %			2.50 %
Zero DC [1]	yes			yes
Voltage DC	0.2 to 40 – 400 – 600 V/900 V peak			200 mV to 400 mV – 4 V – 40 V – 400 V – 600 V
Voltage AC				
Basic accuracy	1 %			1 % DC, 1.5 % AC
Input impedance	1 MΩ			10 MΩ
Resistance	400 Ω	400 Ω – 4,000 Ω	400 Ω - 4 kΩ – 40 kΩ	400 Ω – 4 kΩ – 40 kΩ – 400 kΩ – 4 MΩ
Basic accuracy	1 %			1.50 %
Continuity (buzzer)	R < 40 Ω	R < 40 Ω adjustable		R < 40 Ω
Semi-conductor test	yes			
Frequency			10 Hz to 20 kHz	100 Hz / 1 kHz / 4 kHz
Basic accuracy			0.40 %	0.10 %
Power measurement (single-phase) with power factor			5 to 4000 W – 40 kW – 240 kW (2 %) / in W, VA, var and FP	
Phase rotation order			yes	
Temperature		yes		
Functions	Hold			
		Min/Max (100 ms) – Peak (500 µs)		Min/Max
	V live [2]			
	last calibration date			
Electrical safety	IEC 61010, 1,000 V cat. II/ 600 V cat.III / 300 V cat. IV			
Guarantee	1 year			
Battery life	100 h	75 h	70 h	60 h
Dimensions	193 x 70 x 37 mm			254 x 97 x 46 mm
Weight	260 g			600 g
State of delivery	with carrying case, 2 test probe leads and 9 V battery	with carrying case, 2 test probe leads, 9 V battery, 1 K couple adapter	with carrying case, 2 test probe leads, 9 V battery, and 1 crocodile clip	with carrying case, 2 test probe leads and one 9 V battery

(1) automatic Zero adjustment in IDC (2) hazardous voltage indication

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Expert tools

For on-site testing, monitoring and measurement, Metrix® provides electricians and electronics engineers with portable oscilloscopes and measurement instruments.
In order to meet all requirements, Metrix® provides reliable, innovative solutions in terms of mobility, ergonomics, versatility and modernity, notably through multiple means of communication. After launching the Scopix® – the first ever portable 4-channel oscilloscope on the market – Metrix® is revolutionizing multimeters with the MTX concept®, and is continuing to innovate to meet its customers' requirements.

Genuine "all-terrain" instruments!

Designed for on-site use, the emphasis is on optimizing operation (through direct or simplified access to functions), ensuring products are easy to handle (compact and lightweight) and providing readable displays. In the laboratory or in the field, these instruments can be used hand-held or placed on a flat surface. With new functions, improved measurement accuracy and an excellent safety/performance ratio the SCOPIX® and MTX Mobile® models enjoy a long battery charge life and also offer a universal communication mode.

Ergonomics and Man-Machine Interface

For greater efficiency and legibility, Metrix® has equipped its products with a large backlit colour LCD screen. On the MTX Mobile®, you can even choose its orientation. To operate them, there is a "one-handed" direct access switch on the MTX Mobile®, while the SCOPIX® models offer a touch screen.

Safe connection

Safety management is optimized on both the MTX Mobile® and Scopix® models.
The MTX Mobile® models are equipped with safe access to the batteries and ensure consistency between the wiring configuration and the commands used. The Scopix® are used with PROBIX® accessories offering "plug and play" simplicity for measurement. These are immediately identified once they are connected. Vital during maintenance repairs, the PROBIX® system guarantees fast implementation without any risk of error.

Performance and controlled measurements

These comprehensive portable measurement instruments include an increasing number of simple and complex functionalities. They also provide improved performance: wider measurement ranges, highly accurate measurement results, guaranteed reliability over time, etc., thus helping to make advanced analysis simpler.

Universal communication

To deal with the complex working environments encountered, measurement instruments increasingly offer a complete range of communication possibilities:

- RS232 interface
- USB
- Bluetooth
- Ethernet
- WiFi

This means there are no longer any barriers to transmitting the results instantaneously and activating real-time monitoring or analysis.

Expert tools

MTX Mobile® range

metrix®

	MTX 3283	MTX 3282	MTX 3281
	Multimeters in the MTX Mobile® family : • Direct one-handed access to the functions thanks to the electronic measurement switch • Large orientable graphic LCD screen • Dedicated "A" or "V" measurement terminals allowing automatic selection of the corresponding function, in mode AC +DC with automatic range by default • Optical RS232 and USB ports, BlueTooth port		
Reference	**See below**		
Display resolution	1 or 4 simultaneous displays of 100,000 counts each		
Analogue display	Fast bargraph associated with the graph or the digital measurements		
Graph of measurements over time	automatic display of the measurements from the last 60 s		
Backlighting / Auto power-off	backlighting time adjustable from 10 s to permanent / Activatable by the user		
TRMS measurements	AC & AC+DC for voltages and currents		
Basic accuracy for DC voltage	0.02 % +8 D	0.03 % +8 D	0.1 % +8 D
Bandwidth	200 KHz	100KHz	50KHz
AutoPeak for crest factor	detection and automatic management of the crest factor of the signals measured		
Measurements available			
AC & DC voltage ranges	ranges from 100.000 mV to 1,000.00 V		
Basic accuracy for AC voltage	0.3 % +40 D	0.3 % +40 D	0.7 % +40 D
AC & DC current	ranges from 1,000.00 mA to 20.000 A		
Basic accuracy for DC / AC current	0.08 % +8 D / 0.3 % +30 D		0.08 % +8 D / 1 % +30 D
Single A terminal / simultaneous U & I	automatic ranges on single A terminal, 1 fuse / using 3 leads		
Resistance / Continuity test	ranges from 1,000.00 Ω to 50.000 MΩ / 5 ms quick continuity test		
Frequency / Period / Duty cycle	0.6200 Hz to 2.000 MHz / yes / yes		
Pulse width / Metering	100 µs to 12.5 s / 99,999		no / no
Capacitance / Diode test	ranges from 10.00 nF to 10.00 mF / from 0 to 2.6000 V 50 mF		
Temperature Pt100/1000 / J/K TC	yes / yes		no / yes
dBm / Resistive power	yes / yes	no / no	
U & I peak / Crest factor	periodic or single peaks lasting 250 ms min. / calculation of signal crest factor		
Measurement processing			
Display hold	Manual (Hold) Or Automatic On Stable Measurement (AutoHold)		
Min / Max / Avg monitoring	calendar date and time		relative date and time
Relative measurements	absolute deviation, deviation in % and reference / display of frequency and deviation in dB		
Measurements of physical quantities	"Favourite measurement" key , scaling and physical unit		
Measurement storage	6,500 measurements + graph		4 x 150 measurements + graph
Time/date-stamping	calendar date and time		relative date and time
SPEC function	display of the instrument's tolerances for each type of measurement		
Interfaces (depending on model)	insulated optical RS232 / insulated optical USB / wireless BlueTooth (100 m without obstructions)		
Measurement processing			
EMC / Safety	emission and immunity as per EN61326-1 / IEC61010 Cat. IV-600 V, Cat. III-1,000 V		
V/A selection / Input alarm	automatic according to lead position / buzzer and visual alarm for A		
Orientable protected display	use on benchtop or worn on belt (hands-free) / protection during transport		
Electronic switch	no more mechanical failures / all-round safety management		
Protected battery/fuse access	separate compartments with mandatory disconnection of leads		
"Closed-case" software calibration	optimization of adjustments (optional SX-MTX328x calibration software)		

Product package

MTX3281: MTX 3281 delivered with set of banana leads Ø 4 mm, set of 3 LR6 batteries, HRC fuse 10x38 mm 1,000 V-T11A-20 kA and a short operating manual in 5 languages
MTX3282: MTX 3282 delivered with set of banana leads Ø 4 mm, set of 3 AA NiMH rechargeable batteries with mains adapter/charger, HRC fuse 10x38 mm 1,000 V-T11A-20 kA and a short operating manual in 5 languages
MTX3283: MTX 3283 delivered with set of banana leads Ø 4 mm, set of 3 AA NiMH rechargeable batteries with mains adapter/charger, HRC fuse 10x38 mm 1,000 V-T11A-20 kA and a short operating manual in 5 languages.

MTX3281-COM: MTX3281, RS232+USB kit
MTX3282-COM: MTX3282, RS232+USB kit
MTX3283-COM: MTX3283, RS232+USB kit
MTX3281-BT: MTX3281 BlueTooth version
MTX3282-BT: MTX3282 BlueTooth version
MTX3283-BT: MTX3283 BlueTooth version

Expert tools

On-site instrumentation
SCOPIX® range

Quick selection	OX 7042	OX 7062	OX 7102	OX 7104
Bandwidth	40 MHz	60 MHz	100 MHz	100 MHz
Number and type of channels Safety as per IEC 61010	2 isolated channels Cat. III – 600 V			4 isolated channels Cat. III – 600 V
Sampling rate per channel	1 GS/s in one-shot mode, 50 GS/s for periodic signals			
Transient detection	capture of glitches lasting 2 ns minimum			
Vertical resolution	12 bits, giving a vertical resolution of 0.025 %			
Display modes	vector, interpolation, persistence (envelope), averaging (factors 2 to 64)			
Scaling and physical units	definition of a factor and the corresponding unit			
Digital oscilloscope				
Input sensitivity	2.5 mV to 200 V/div (150 µV with zoom, thanks to the 12-bit resolution)			
Time base	1 ns to 200 s/div, Roll mode from 100 ms to 200 s/div			
Memory	up to 200 curves of 2,500 points (including "universal text" format)			
Reference curves on screen	1 per active (1 to 4) / direct storage by pressing dedicated key			
Automatic measurements with marker	10 measurements over time and 9 simultaneous level measurements			
Triggering	edge, pulse width, delay, metering, video with line counter			
Calculation functions on channels	FFT on 2048 points, +, -, x, /, and complex function generator			
TRMS multimeter (AC, AC+DC)				
Measurement channels 200 kHz bandwidth	2 isolated channels			4 isolated channels
Measurement functions	voltage, current, frequency, resistance, capacitance, temperature (Pt100, K TC), diode test and audible continuity, relative mode, Min / Max mode			
Graph of measurements with cursors	duration from 5 min to 31 days, data storage in "universal text" format			
Harmonic analyser*				
Multi-channel analysis (2 or 4 depending on model)	31 orders, fundamental frequency from 40 Hz to 450 Hz			
Simultaneous measurements	Total Vrms, THD and selected order (% fundamental, phase, frequency, Vrms)			
12-bit digital recorder*				
Multi-channel recording	duration from 2 s to 31 days, normal mode or capture of 510 faults with pre-trigger			
Recording conditions	on thresholds or window, simultaneous conditions on several channels			
Analysis of recordings	scale and physical units, measurement by cursors, search for faults, zoom			
General specifications				
"Windows-like" operator interface	B & W or colour*			colour
Simultaneous display of traces	up to 4 traces + 4 references on the screen / full-screen" trace mode			
PC communication and printing	isolated RS232*, USB* or 10 Mb Ethernet / network or Centronics printers*			
Power supply by rechargeable battery	battery life up to 4 hrs, fast charging in 2 hrs without removing the batteries			

** Depending on model or option*

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Assess the electrical safety of installations

The measurements according to the applicable European standards: EN 61557, NFC 15-100, VDE 0100, NIN/NIV, IEE 16th.

Whatever the environment, electrical installation testers help electricians to certify that the infrastructures under their responsibility are safe.

INSULATION (IEC/EN 61557-2)
Measurement with power off

Why measure insulation?

- To check that no conductor has suffered mechanical damage
- To check that all conductors are isolated from earth

Voltage of installation	Test voltage	Insulation required
< 50 V	250 V	≥ 250 kΩ
50 V to 500 V	500 V	≥ 500 kΩ
> 500 V	1000 V	≥ 1 MΩ

CONTINUITY (IEC/EN 61557-4)
(I ≥ 200 mA)

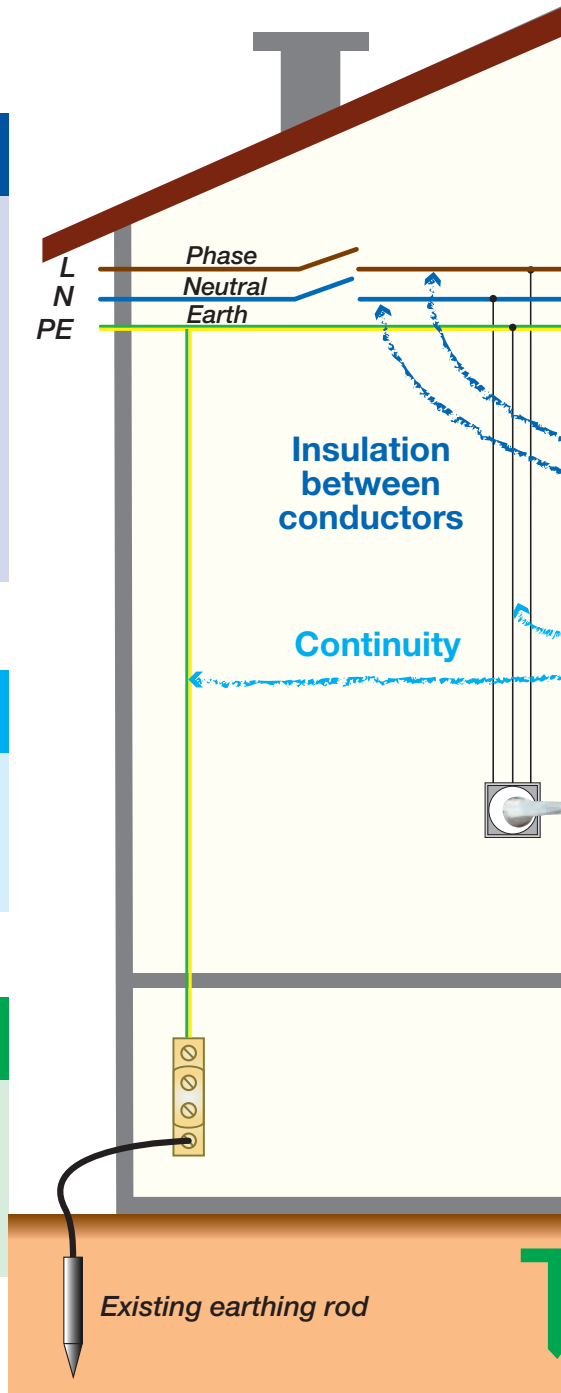
Why check continuity?

- A PE conductor in good condition and properly connected to the earth bar will drain faults to earth.

EARTH (IEC/EN 61557-5)

Why and how is the earth measured?

- By the single auxiliary rod method (TT & impedant IT networks)
- The RA must be as low as possible to allow fault currents to flow to earth



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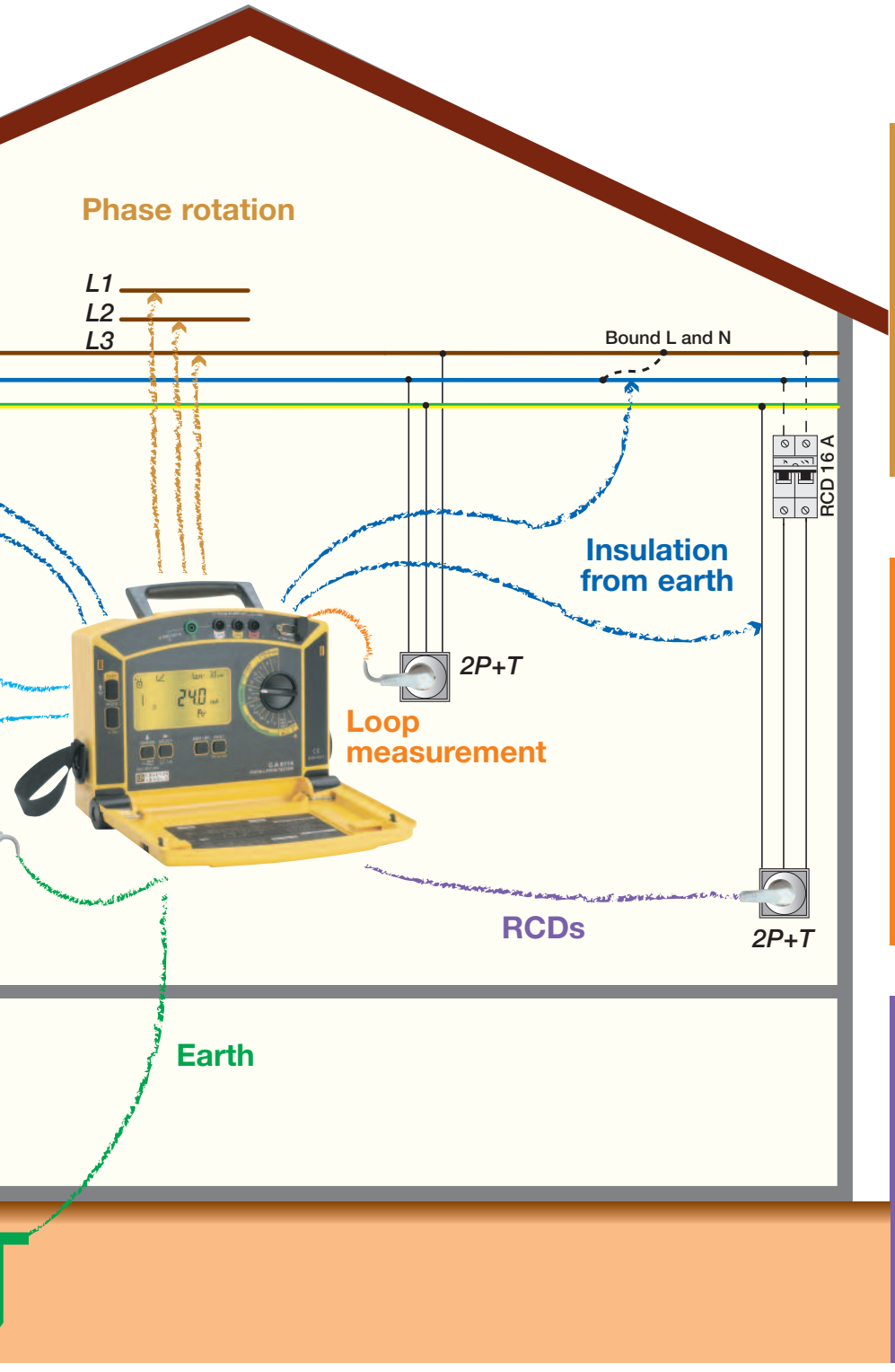

PHASE ROTATION (IEC/EN 61557-7)

How are the different phases in a three-phase network identified?

- By a clear indication of their rotation direction.

LOOP (IEC/EN 61557-3)

Why measure loops?

- To measure the earth by excess, without using rods
- To calculate the short-circuit current to ensure safety devices are proportionate
- To check fault voltage (with probe connected)

RCDs (IEC/EN 61557-6)

Why test RCDs?

To check that they trip

- At Itest = IΔN
- In preventive maintenance, in less than 300 ms, at a current between I$\Delta_{N/2}$ and IΔ_N.

Installation testers

	C.A 6030	C.A 6454	C.A 6456
	Complete, accurate testing of RCDs and measurement of earth loop	*Testing of installation by loop measurement*	*Universal earth tester, for all installation configurations*
Reference	**P01.1915.11**	**P01.1235.11**	**P01.1235.12**
Voltage measurement	2 to 550 V (DC or RMS) upon connection		
Frequency measurement	15.3 to 450 Hz upon connection		
Polarity test	yes		
Phase position checking			
RCD test (EN 61557-5)	10 / 30 / 100 / 300 / 500 mA		
I∅n	+ variable from 6 mA to 650 mA		
Trip failure test	1/2 IΔN		
Tripping time	IØN, 2 IØN, 5 IØN		
Tripping current	ramp mode		
Earth	Live 1P (without trigger 30 mA)	Live 1P (without trigger 30 mA)	Live 1P (with or without trigger) Power off 2P/3P: 0.5 Ω to 40 Ω
Selective Earth		with a current clamp (optional)	
Loops (without RCD trip > 30 mA)	L-PE loop (Z and R) 0.1 Ω to 4,000 Ω (with or without RCD trigger)	L-PE loop (Z and R) 0.1 W to 4,000 Ω (with or without RCD trigger) L-N, L-L loops, 0.1 W to 4,000 Ω (without RCD trigger)	
Ip-p	up to 40 kA		
Phase rotation	90 < voltage present < 550 V		
Current/leakage current	with a current clamp		
Alarms	available in each function		
Memory	100 measurements		
Communication output	optical interface		
Power supply	6 x 1.5 V batteries		
Electrical safety	IEC 61010-1 cat. III 600 V		
Battery charge indicator	yes		
Display	4,000-count backlit LCD		
Dimensions	211 x 108 x 60 mm		
Weight	0.9 kg		
State of delivery	1 "hands-free" bag with 1 accessory case containing: 1 power supply cable, 1 measurement cable with 3 wires, 3 test probes / 3 crocodile clips, 1 user's manual in 5 languages, 1 data acquisition software, 1 communication lead		

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Installation testers

	C.A 6115N
	Everything needed for making IEE 16th tests in a single instrument *Current clamp connection - RCDs: 6 to 1,000 mA*
Reference	**P01.1454.11B (F)**
Voltage measurement	10 to 440 VAC / DC upon connection
Frequency measurement	15.3 to 450 Hz upon connection
Insulation	
Method	bipolar + automatic L-N-PE
U^{test}	100 / 250 / 500 V
R	5 k to 600 MΩ
RCD test	10 / 30 / 100 / 300 / 500 mA
IØN	+ variable between 6 mA and 1,000 mA
Trip failure test	1/2 IØN
Tripping time	IΔN, 2 x IΔN, 5 x IΔN, 150 mA, 250 mA + ramp mode
Tripping current	ramp mode
Earth	1P method: 0.15 Ω to 10 kΩ
Selective Earth	with current clamp (optional)
Loops (without RCD trip ≥30 mA)	L-PE, L-N and L-L loops impedance and resistance: 0.08 to 200 Ω
Selective L-PE loop	with current clamp (optional)
Continuity	0.16 Ω to 2 kΩ at 200 mA (audible beep)
Phase rotation	if 20 VAC< voltage present < 440 VAC
Current/leakage current	with current clamp (optional)
Alarms	in each function
Memory	800 measurements
RS 232	yes
Power supply	NiMH battery with built-in charger
Electrical safety	IEC 61010-1 cat. III 300 V
Dimensions	295 x 230 x 108 mm
Weight	2.1 kg
State of delivery	Accessory case containing: 1 measurement / recharge mains plug cable, 1 measurement cable with 3 wires, 3 crocodile clips, 3 test probes, 1 lead + 1 test probe (for 1P measurement)

Accessories

PC software
> **P01.1019.02**

MN21 clamp
> **P01.1204.18**

C103 clamp
> **P01.1203.03**

Remote control probe
> **P01.1019.35**

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Digital insulation testers

	C.A 6523	C.A 6525
	Insulation at 1,000 V, continuity	*Insulation at 1,000 V, continuity, resistance*
Reference	**P01.1408.02D**	**P01.1408.03D**
Voltage	0 to 600 VAC/DC	
Insulation	500 / 1,000 VDC	250 / 500 / 1,000 VDC
Range	100 kΩ to 2 GΩ	50 kΩ to 2 GΩ
Continuity	-20 Ω to 20 Ω	
Current reversal	yes	
Buzzer	yes	
Lead compensation	yes	
Resistance		0 to 400 kΩ
Alarms	yes	
Chronometer		0 to 15 min
Display	LCD + bargraph	
isBacklighting	yes	
Power supply	6 x 1.5 V batteries	
Electrical safety	IEC 61010 cat. II 300 V	
Dimensions	211 x 108 x 60 mm	
Weight	830 g	
State of delivery	"hands-free" operator's carrying case containing 2 leads, 1 crocodile clip, 1 test probe	

	C.A 6541	C.A 6543	C.A 6545	C.A 6547	C.A 6549
	Quantitative and qualitative measurement	*Measurement storage Rechargeable battery*	*Insulation, capacitance, current*	*Storage and communication*	*The "Pro" in preventive maintenance*
Reference	**P01.1389.01**	**P01.1389.02**	**P01.1397.01**	**P01.1397.02**	**P01.1397.03**
Voltage	1 to 1,000 V AC/DC		1 to 5,100 V AC/DC		
Insulation	50 / 100 / 250 / 500 / 1,000 VDC		500/1,000/2,500/5,000 VDC + variable of 50 V to 5,100 VDC (by 10 or 100 V increments)		
Range	2 kΩ to 4 TΩ		10 kΩ to 10 TΩ		
Continuity	0.01 to 40 Ω (buzzer + comp. leads)				
Resistance	0.01 to 400 kΩ				
Capacitance	0.005 to 4.999 µF		0.005 to 49.99 µF		
Current			0.0001 nA to 3,000 µA		
Step voltage mode					5 steps
R calcul. (ref. t°)					yes
Alarms	yes				
Smooth display	yes				
Chronometer	yes				
Programmable test run times	yes				
Quality ratios	DAR / PI		DAR / PI / DD		
R(t)	sample storage		sample storage		display on the screen
Memory		128 kbytes		128 kbytes	
RS 232		bi-directional		bi-directional	
Power supply	8 x LR14 batteries		NiMH battery		
Electrical safety	IEC 61010-1 cat. III 600 V - IEC 61557		IEC 61010-1 cat. III 1,000 V (cat. I 2500 V)- IEC 61557		
Display	giant LCD + bargraph		giant LCD + bargraph		graphic
Backlighting	yes				
Dimensions	240 x 185 x 110 mm		270 x 250 x 180 mm		
Weight	3.4 kg		4.3 kg		
State of delivery	carrying case containing: 3 leads 2.5 m in length (one guarded), 3 crocodile clips, 1 test probe + batteries or power supply lead		carrying case containing: 3 HV leads 3 m in length with large crocodile clips(one guarded), 1 lead with rewinder (35 cm) + power supply lead		

Multimeter clamps for leakage current measurement

	F62	F65 RMS
Reference	**P01.1207.60**	**P01.1207.61**
Wide insertion diameter	28 mm	
Display	10,000 counts	
Bandwidth	50 Hz to 500 Hz	500 Hz to 3 kHz
Peak factor	3 at full scale	
AC Current	30 µA to 100 A	
Basic accuracy	1.20 %	
Zero DC[1]	yes	
Voltage AC/DC	600 V	
Basic accuracy	1 % DC, 1.2 % AC	
Continuity (with buzzer)	R < 35 Ω	
Frequency	100 Hz to 1 kHz	
Basic accuracy	0.50 %	
Functions	Hold Max = 100 ms	
Electrical safety	IEC 61010-1 + IEC 61010-2 + IEC 61010-032, 1 000 V cat. II / 600 V cat. III / 300 V cat. IV	
Warranty	3 years	
Battery life	45 h	
Size	218 x 64 x 30 mm	
Weight	280 g	
State of delivery	1 set of elbowed leads with test probes, 1 set of 2 x 1.5 V batteries (AAA or LR3), and 1 carrying case	

Artificial Neutral Box

Ref.: P01.1972.01
Artificial Neutral model **AN1** with shoulder bag, batteries, set of leads, croc-clips and user's manual.

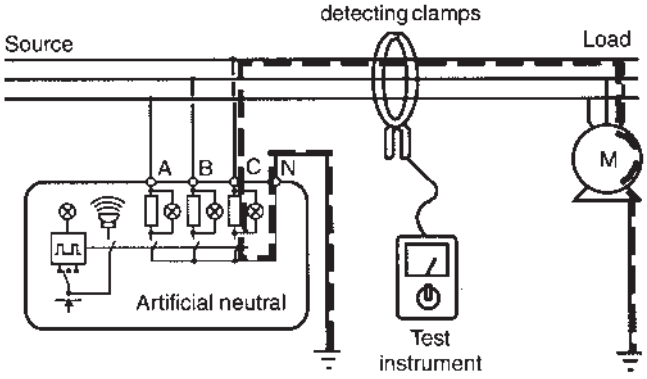
MECHANICAL SPECIFICATIONS

- **Reference temperature:** 23°C ±3°C
- **Operating temperature:** 0°C to ±50°C, between 10 and 90% RH
- **Storage temperature:** -40 to°C to +70°C, between 10 and 90% RH
- **Self-extinguishing ability:** UL94 V0
- **Colour:** yellow
- **Dimensions:** 220x136x150 mm

AC leakage current measurement

	B102
Reference	**P01.1200.83**
Range	500 microA AC - 4A AC / 0,5 to 400 A AC
Output / Connections	4 V AC / 0.4V AC - Lead + safety plugs D= 4mm
Transformation ratio	1 mA / 1mV - 1A / 1 mV
Protection	Output protected against overvoltages
Bandwith	10 Hz to 1kHz
Typical accuracy	less than or equal to 0.5% / less than or equal to 0.35%

Current leakage detecting clamps



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Earth and resistivity testers



	C.A 6460	C.A 6462	C.A 6470
	3-in-1: earth, resistivity, coupling	*3-in-1: earth, resistivity, coupling*	*3-in-1: earth, resistivity, coupling*
Reference	**P01.1265.01**	**P01.1265.02**	**P01.1265.03**
Measurement	earth / resistivity / coupling		earth / resistivity / coupling / continuity
Range	0.01 to 2,000 Ω (3 automatic ranges)		0.001 Ω to 100 kΩ (automatic ranges)
Methods	4 rods / 3 rods (terminal bar between E&ES)		4P / 3P / 2P
Frequency	128 Hz		41 Hz to 512 Hz
Voltage circuit (ES-S)	LED if noise ≥ 13 V peak		R_S, R_E Measurement
Current circuit (E-H)	LED if R ≥ 50 kΩ		R_H, R_E Measurement
Voltage circuit resistance (ES-S)	LED if R ≥ 50 kΩ		Uparasite Measurement
Power supply	8 x 1.5 V batteries	rechargeable NiMH battery	
Electrical safety	EN 61010 and IEC 61557	EN 61326-1 / EN 61010-1 and IEC 61557-1-4-5	
Display	LCD digital 2,000 counts		LCD with 3 digital display
Backlighting	yes		
Dimensions	270 x 250 x 110 mm		260 x 240 x 120 mm
Weight	2.8 kg	3.3 kg	2.7 kg
State of delivery	with batteries, 1 instruction manual in 5 languages	with power supply lead, 1 instruction manual in 5 languages	with external charger, recharging cable with mains plug, data transfer software, 1 optical communication cable, 1 instruction manual in 5 languages, 5 plastic covered, simplified instruction manuals

Earth and resistivity testers and adapter for pylon earth measurement

ELECTRICAL SPECIFICATIONS

	3P method	4P / 4P selective method	Earth measurement with 2 clamps	Resistivity	Earth potential measurement	DC resistance measurement	Measurements with C.A 6474
Range	0.01 Ω to 99.9 kΩ	0.001 Ω to 99.99 Ω	0.01 Ω to 500 Ω	0.01 kΩ to 99.9 kΩ	0.01 mV to 65.00 V	0.001 Ω to 99.9 kΩ	0.001 Ω to 99.99 kΩ
Resolution	0.01 to 100 Ω	0.001 to 10 Ω	0.01 to 1 Ω	0.01 to 100 Ω	0.01 mV to 10 mV	2 wires: 0.01 Ω to 100 Ω/ 4 wires: 0.001 Ω to 10 Ω	0.001 to 10 Ω
Accuracy	± (2% + 1 count)	± (2% + 1 count)	± (10% + 1 count)	± (2% + 1 count)	± (5% + 1 count)	± (2% + 2 counts)	± (5% + 1 count)
No-load voltage	16 or 32Vrms	16 or 32 Vrms	16 or 32 Vrms	16 or 32Vrms	16 or 32 Vrms	±16 VDC	16 or 32 Vrms
Measurement frequency	41 to 5,078 Hz	41 to 5,078 Hz	Auto: 1,367 Hz Manual: 1,367 Hz, 1,611 Hz, 1,758 Hz	41 to 128 Hz	41 to 128 Hz	DC	41 to 5,078 Hz
Coupling measurement	yes		–	–	–	–	–
Auxiliary rod resistance measurement	0.1 Ω to 100 kΩ	0.01 Ω to 100 kΩ	–	–	–	–	0.01 Ω to 100 kΩ
Uinterference	maximum 60 Vpeak					–	maximum 60 Vpeak
Test method	–	–	–	Wenner and Schlumberger with automatic calculation	–	–	–
Type of measurement	3 wires	4 wires	–	4 wires	3 wires	2 wires or 4 wires	–
Measurement current	–	–	–	–	–	> 200 mA DC	–

STATE OF DELIVERY

C.A 6472 earth and resistivity tester

Ref.: P01.1265.04

Delivered with: mains adapter + 2-pole mains cable for recharging the battery from the mains supply, one operating manual in 5 languages on CD-ROM, 5 simplified operating manuals and 5 specific labels, each in a different language.
Data export software + USB/optical communication cable and two C182 clamps

C.A 6474 adapter for pylon earth measurement (PYLON BOX)

Ref.: P01.1265.10

Delivered with a carrying bag for accessories containing: One C.A 6472 – C.A 6474 connection lead, 6 BNC / BNC cables 15 m long, 4 AmpFLEX flexible current sensors 5 m long, 1 set of 12 AmpFLEX identification rings, 2 cables (5 m green, 5 m black) with safety connectors on winder, 5 spade lug/banana plug converters Ø 4 mm, 3 clamps, 1 calibration loop, 5 operating manuals and 5 specific labels, each in a different language.

Earth clamps and loop testers

	C.A 6412	C.A 6415
	Leakage current	*Quick testing of earth loops, configurable alarm function leakage current result storage*
Reference	**P01.1220.12**	**P01.1220.13**
Clamping diameter	32 mm	
Loop resistance	0.10 to 1200 Ω (7 automatic ranges)	
Frequency	2400 Hz	
Current / Leakage current	1 mA to 30.00 A (3 automatic ranges)	
Indication of interference current and clamp closed incorrectly	by symbol	
Alarm		configurable
Memory		99 measurements
Power supply	1 x 9 V battery	
Electrical safety	EN 61010 cat. III 150 V	
Display	LCD 3,000 counts	
Dimensions	55 x 100 x 240 mm	
Weight	1,000 g	
State of delivery	in hard case	

Accessories

Standard 3P-method earth kit
50 m kit
Ref.: P01.1020.21
Carrying case containing: 2 “T”-shaped rods, 2 coils of cable (50 m red, 50 m blue), 1 green 10 m cable coiler, 1 mallet, 5 Ø 4 mm lug/banana plug adapters

100 m kit
Ref.: P01.1020.22
Carrying case containing: 2 “T”-shaped rods, 2 coils of cable (100 m red, 100 m blue), 1 green 10 m cable coiler, 1 mallet, 5 Ø 4 mm lug/banana plug adapters

Earth and resistivity kit
Ref.: P01.1020.24
Compartment bag with space for tester containing:
4 "T"-shaped rods, 4 coils of cable (100 m red, 100 m blue, 100m green, 30 m black), 1 green 10 m cable coiler, 1 mallet, 5 Ø 4 mm lug/banana plug adapters

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Micro-ohmmeters

	C.A 6240	C.A 6250
	Measurement of weak resistances	
Reference	**P01.1432.00**	**P01.1432.01**
Measurement Method	4-wire method	
Resistance	5,000 µohm to 400.0 ohm	1µohm to 2,500 ohm
Resolution	1 µohm	0.1 µohm
Accuracy	0.25%	0.05%
Current	10 mA to 10 A	1 mA to 10 A
Reversal current direction	yes	No but automatic compensation of eddy currents
Measurement mode	Inductive, non-inductive, non-inductive mode with automatic trigerring	
Temperature compensation	no	Manual or with Pt 100 probe
Power supply	Rechargeable NiMH battery	
Electrical safety	IEC 61010-1 / Cat III 50V	
Dimensions	270 x 250 x 180 mm	
Weight	4.5 kg	4 kg
State of delivery	mains lead / leads with Kelvin clamps /software / optical /USB communication cable/ bag	

Single-phase ratiometer

	DTR 8500
	Single-phase ratiometer *Voltage, power, current transformer testing*
Reference	**P01.1577.01**
Type of transformers	VT / PT / CT
Transformation ratio	0.8000 to 1500.0:1
Test current measurement	0 to 1000 mA + polarity indication
Pre-tests	connections and H/X reversal
Continuity, cuts and short-circuit	shown
Power supply	battery NiCd
Electrical safety	IEC 61010-1 cat. III 300 V
Dimensions	330 x 305 x 152 mm
Weight	6.4 kg
State of delivery	accessory case containing: 2 measurement leads (H and X) with crocodile clip, 1 power supply lead

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Symptoms of disturbances on an electricity network

Qualimetry is a major focus for many companies, not least because of its financial benefits. Before raising the issue of a diagnosis of their electrical system, it is worth knowing the different symptoms, listed in the table below, which indicate faults in an installation.

SYMPTOMS \ POSSIBLE ORIGINS	Flicker	Brown-outs	Under-voltage	Over-voltage	Atmospheric surges	Harmonics	Inter-harmonics	Homo-polar harmonics	Micro-outages	Short power cuts	Long and very long outages	HF spikes	Power surges	Continuous component	Three phase imbalance	Frequency variations	Excess reactive power	EMC
Processes operate erratically		●				●			●									
Random stoppages of process equipment		●	●		●													
Process stoppages					●	●					●	●						
Damage to equipment					●	●	●					●		●	●			
Overheating and noise from equipment			●	●		●	●	●							●		●	
Malfunctions on motors			●			●									●	●		
Abnormal vibration and noise on motors			●			●	●								●			
Stoppages of motors									●	●				●				
Malfunction of the electronic						●			●					●				●
Malfunction of power electronics									●			●	●		●			●
Erratic operation of protection systems				●				●					●		●		●	
Unaccountable tripping of protection systems														●				
Non-operation of protection systems																		
Triggering of arcs					●			●			●	●						●
Problems with monitors	●																	●
Problems with radio-communications					●							●						●
Computer and telecom interference				●	●	●			●	●		●						●
Destruction of electronic cards				●					●			●						●
Destruction of computer hardware				●		●			●			●	●					
Flickering of lighting	●									●								
Electrocution					●			●										
Fire of electrical origin					●			●						●				

The standards

EN 50160

Defines the measurements required to qualify the voltage delivered by the electrical grid: rms voltage, outages, voltage dips, swells, flicker, frequency, harmonics (up to the 40th order) and three-phase system unbalance.

IEC 61000-4-30

Defines the methods and accuracies for the power quality measurements listed in the EN 50160 standard (rms voltage, outage, voltage dips and swells, harmonics).

IEC 61000-4-7

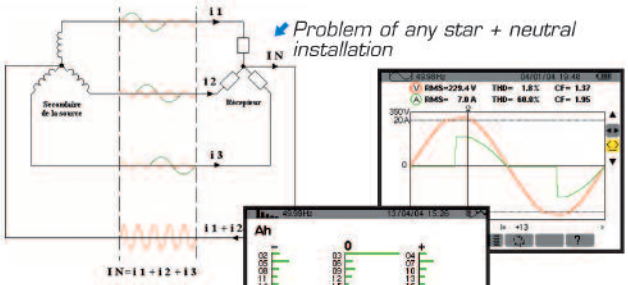
Defines the method for measuring harmonics and interharmonics

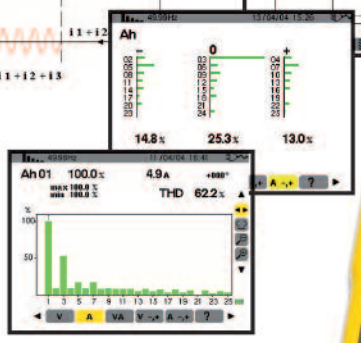
IEC 61000-4-15

Defines the flicker measurement method including:

- ***Pst short-term flicker indicator:*** Quantitative evaluation of the flicker over a 10-minute period.
- ***Plt long-term flicker indicator:*** Quantitative evaluation of the flicker over a 2-hour period, using 12 successive short-term flicker (Pst) values.

Test the quality of your electrical installation





H3 harmonics

Causes: Loads such as a switching power supply, compact fluorescent lamps, etc., connected to a star + neutral installation generate harmonics of order 3 and multiples of 3.

Risks: Fire, untimely tripping of safety systems, etc.

Measurements: THD, THD per harmonic order.

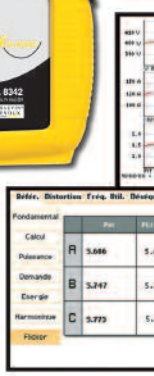
Recommended instruments: C.A 8220, C.A 8230, C.A 8332B/34B, C.A 8335, C.A 8340/42, C.A 8352

Flicker

Cause: Loads drawing high currents, leading to flickering, frequency variations, etc.

Risks: Medical (malaise, fatigue, headache, etc.)

Recommended instruments: C.A 8230, C.A 8332B/34B, C.A 8335, C.A 8340/42, C.A 8352

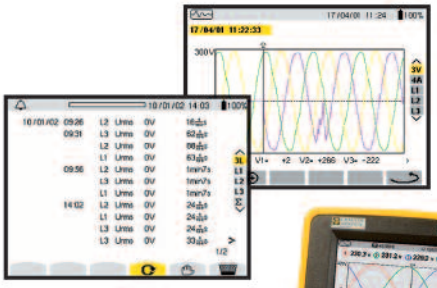


Power and cos

Purpose: Qualifyi an electric curren

Risks: Damage to equipment connect to the electrical gr

Recommended instruments: C.A 8220, C.A 8230, C.A 8332B/34B, C.A 8 C.A 8340/42, C.A 835



Alarms/Events

Purpose: Detecting and providing notification of a specific event and testing the quality of the electricity supplied.

Risks: Equipment containing digital electronic components is sensitive to micro-cuts, overvoltage, harmonics, disturbance, etc.

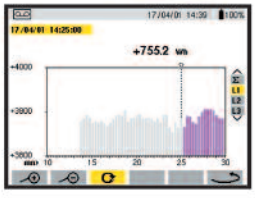
Recommended instruments: C.A 8230, C.A 8332B/34B, C.A 8335, C.A 8340/42, C.A 8352

Reactive power (VAR)

Applications: Non-linear current loads (variable speed drive, switching power supply, etc.).

Risks: Fire, untimely tripping of electrical protection devices, fire, over-billing, etc.

Recommended instruments: C.A 8220, C.A 8230, C.A 8232B/34B, C.A 8335, C.A 8340/42, C.A 8352



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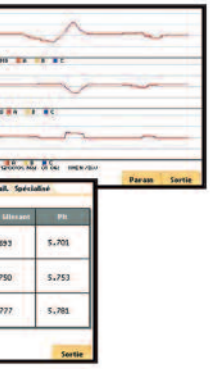
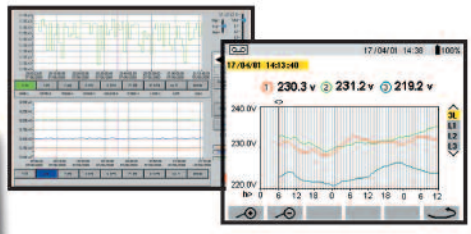
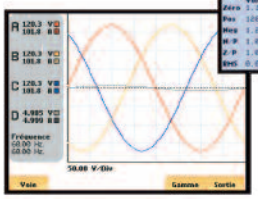
Recording/ Monitoring

Scope: The whole electrical installation.

Recommended instruments:
C.A 8230, C.A 8332B/34B,
C.A 8335, C.A 8340/42, C.A 8352







Power consumption

Purpose: Assessment of power consumption (single-phase and three-phase).

Recommended instruments:
C.A 8220, C.A 8230, C.A 8352,
C.A 8332B/34B, C.A 8335,
C.A. 8340/42

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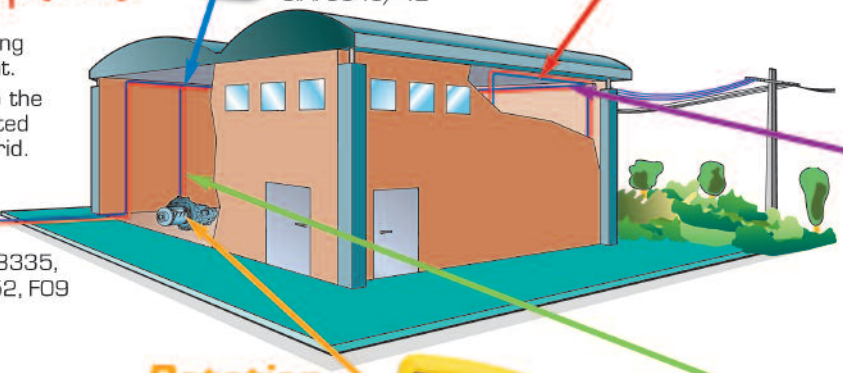


8335,
52, F09

Three-phase grid unbalance

Scope: Electrical distribution.

Causes: Modification of the electrical installation (changes to lighting, heating, etc.).

Risks: Voltage difference between the phases leading to malfunction or ageing of the loads connected.

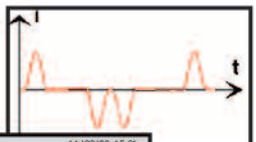
Recommended instruments:
C.A 8340/42, C.A 8352,
C.A 8332B/34B, C.A 8335

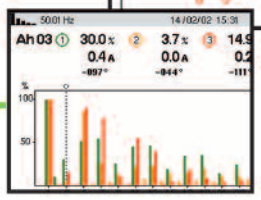
Rotation speed/RPM

lications: Motor maintenance.

rpose: Verification of operation
ifference between the machine
d and the synchronism speed).

Recommended instrument:
C.A 8220





Harmonics

Causes: Non-linear current loads, arc furnaces.

Risks: Untimely tripping of electrical protection devices, fire, etc.

Measurements: THD, % per order.

Recommended instruments: C.A 8220, C.A 8230, C.A 8332B/34B, C.A 8335, C.A 8340/42, C.A 8352

Energy analysers for three-phase electrical networks

	C.A 8220	C.A 8230
	Specially designed for engine maintenance Access to all measurements simultaneously Measurement of low resistances and high currents	*Large colour screen Intuitive operation Excellent price-quality ratio Recording Alarms*
Reference	**P01.1606.20**	**P01.1606.30**
Voltage	6 VRMS to 600 VRMS AC+DC	
Accuracy	± (0.5 % + 2 cts)	
AC current	100 mA to 6,500 A	
Accuracy	± (0.5 % + 1 ct)	
DC current	1 A to 1,700 A	
Accuracy	± (1% + 1 A)	
Values	Min, max, avg. Peak (+ and -), CF	
Fundamental frequency	40 Hz to 70 Hz	
Display	173-segment backlit LCD	VGA colour LCD
Single phase	yes	
Power measurements	W, VA, var, PF, DF, THD, cos φ	
Energy	Varh, VAh, Wh	
Harmonics	Up to rank 50	
Recordings		up to several days
Alarms		4,096
Flicker PST		yes
Functions		
Phase rotation	yes, with display of phase order for three-phase	
Viewing of engine start-up		yes
Engine rotation speed	6 RPM to 120 kRPM ± (0.5 %)	
Temperature (Pt 100)	-200 °C to +850 °C ± (1 % + 10 cts)	
Resistance (winding)	0 Ω to 2000 Ω ± (0.5 % + 2 Ω)	
Measurement memories	yes	
Use		
Ambient temperature	23 °C ± 3 K	
Relative humidity	75 %	45 %
Protection rating	IP54	
RS232 / USB port	yes	
Safety	IEC 61010-1, 600 V- cat. III	
Power supply	Batteries (6 x AA)	batteries, battery life up to 40 hours
Weight	840 g (with batteries)	880 g (with rechargeable batteries)
Dimensions	211 x 108 x 60 mm	
State of delivery	supplied with 6 fitted AA batteries, 1 red banana lead (straight-straight), 1 black banana lead (straight-straight), 2 x 4 mm test probes (1 red, 1 black), 2 crocodile clips (1 red, 1 black), 1 RS 232/USB optical cable	supplied with 1 shoulder bag, 6 fitted 1.2 V rechargeable batteries, 1 red banana lead (straight-straight), 1 black banana lead (straight-straight), 2 x 4 mm test probes (1 red, 1 black), 2 crocodile clips (1 red, 1 black), 1 mains adapter, 1 RS 232/USB optical cable and DataViewer software

Accessories

Red and black 4 mm test probes	> **P01.1018.55**
Red and black crocodile clips	> **P01.1018.48**
Red and black 4 mm banana/banana leads	> **P01.2950.91**
MN93A BK clamp	> **P01.1204.34B**
MN93 BK clamp	> **P01.1204.25B**
Amp*FLEX*™ A 193 450 mm BK	> **P01.1205.26B**
Amp*FLEX*™ A 193 800 mm BK	> **P01.1205.31B**
PAC93 BK clamp	> **P01.1200.79B**
C193 BK clamp	> **P01.1203.23B**
Mains adapter	> **P01.1606.40**
Temperature probes and RPM probes	**contact us**

CHAUVIN® ARNOUX
CHAUVIN ARNOUX GROUP

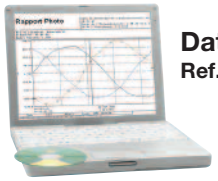
Energy analysers for three-phase electrical networks



	C.A 8332 B	C.A 8334 B	C.A 8335
	Compact and portable *Upgradable products, please ask for details. When ordering, please specify: - MN, C or PAC clamp sensor, AmpFLEX™, adapter 5 A*		
Sampling	256 samples/period		
Voltage (RMS AC+DC)	6 V to 960 V (phase-phase) 6 V to 480 V (phase-neutral)		10 V to 1,000 V
Current (RMS AC+DC)	100 mA to 6,500 A		
Frequency	40 Hz to 69 Hz		
Other measurements	kW, kVAR, kVA, PF, DPF, kWh, kVARh, kVAh, flicker, unbalance, K-Factor		
Harmonics	THD, orders 0 to 50		
Power supply	Rechargeable 9.6 V NiMh or 90 – 260 V mains power pack		
Battery life	≥ 8 hours, ≥ 35 hours in standby mode		≥ 10 hours, ≥ 30 hours in standby mode
Screens and curves	8	12	50
Per-second recording	from 21 min. to several weeks	from 42 min. to several weeks	from 29 days to several months
Alarms	4,000 of 10 different types		10,000 of 40 different types
Transients		50	210
Inrush			≥ 1 min. on all 3 phases
Languages	11	11	> 20
Communication	Optical RS232		USB
Display	1/4 VGA colour screen, diagonal 148 mm		
Dimensions (HxWxTh)	24 x 18 x 5.5 cm		
Weight	2.1 kg		1.9 kg
Safety	IEC 61010, 600 V Cat. IV, 1000 V Cat. III		

Guaranteed 3 years

NEW FEATURE OF THE C.A 8335 MENUS AVAILABLE IN 21 LANGUAGES !



Dataview®
Ref.: P01.1020.58

The PC processing software for Qualistar C.A 8332B, C.A 8334B and C.A 8335

Users have direct access to :

- the data recorded in the instrument
- its configuration
- the various real-time measurements
- printing of reports
- database management

State at delivery

C.A 8332B delivered with 1 carrying bag No. 22, an optical RS232 lead, a mains power cable, 4 x 3 m voltage leads with 4 mm banana connectors, 4 crocodile clips, 1 safety plug, 1 operating manual, PC software for data recovery. Plus the set of current sensors chosen.
C.A 8334B delivered with 1 carrying bag No. 22, an optical RS232 lead, a mains power cable, 4 x 3 m voltage leads with 4 mm banana connectors, 4 crocodile clips, 1 safety plug, 1 operating manual, PC software for data recovery. Plus the set of current sensors chosen.
C.A 8335 delivered with 1 carrying bag No. 22, 1 USB lead, 1 power supply charger, 1 mains power cable, 5 x 3 m voltage leads with 4 mm banana connectors, 5 crocodile clips, 1 x 12-colour identification set for leads and inputs, 1 protective film for screen, 1 safety plug,1 multilingual operating manual, PC software for data recovery.

References for ordering

C.A 8335 alone	> **P01160577**
C.A 8332B-F MN93A clamp	> **P01160522**
C.A 8334B-F MN93A clamp	> **P01160652**
C.A 8332B-F AmpFLEXTM 450mm	> **P01160523**
C.A 8334B-F AmpFLEXTM 450mm	> **P01160653**
C.A 8332B-INT MN93A clamp	> **P01160525**
C.A 8334B-INT MN93A clamp	> **P01160555**
C.A 8332B-INT AmpFLEXTM 450mm	> **P01160526**
C.A 8334B-INT AmpFLEXTM 450mm	> **P01160656**

Accessories

MN clamp	> **P01120425B**
MN93A clamp	> **P01120434B**
C clamp	> **P01120323B**
PAC clamp	> **P01120079B**
AMP450 clamp	> **P01120526B**
AMP800 clamp	> **P01120531B**
5 A box	> **P01101959**
DataView	> **P01102058**
C.A8335 mains power pack	> **P01102057**
USB-A/USB-B lead	> **P01295291**
Qualistar screen film	> **P01102059**
Set of id. rings/inserts	> **P01102060**
Carrying bag no. 21	> **P01298055**
Carrying bag no. 22	> **P01298056**
RS232 optical lead	> **P01295190A**

New ! with de C.A 8335 ! Colored-coded rings can be fitted at each end of the measurement leads, making it easier to identify your connections.

CHAUVIN® ARNOUX
CHAUVIN ARNOUX GROUP

Power and energy analyser

	C.A 8352
	Complete three-phase analysis reports
Reference	**contact us**
P-N voltage	500 Vrms
Accuracy	± 0.5 %
Current	4 current input channels up to 3,000 A
IEC 61000-4-30	Class B
Sampling frequency	9.6 kHz
Frequency	47-63 Hz
Power measurements	V, A, Min, Max, W, Var, VA, FP, cos φ, frequency, global and phase/phase
Energy	generated and consumed: active, reactive, capacitive and inductive
Harmonics (IEC61000-4-7)	50th order in U, I and VA, direction of the harmonics
Disturbances	triggers on alarms monitoring as per EN50160
Flicker (IEC61000-4-15)	Pst; Plt as per standard
Unbalance	phase shift, global unbalance, positive, zero and negative sequence current
Remote control signalling	yes
Impedance	source and load impedance
Transients	recording: 10 s
Inputs/outputs	optional 10-channel analogue acquisition card, 2 binary inputs
Memory	10 Gbytes
Communication	USB port
Type of display	colour LCD, touch screen
Power supply	mains
Software	Post Processing
Interface	modem, Ethernet network
Electrical safety	500 V cat. III
Dimensions	360 x 300 x 150 mm
Weight	4 kg
State of delivery	instrument includes harmonic analysis, oscilloscope mode, vector scope, delivered as standard with carrying bag, 4 current leads (5 A max.), 8 voltage leads, 8 crocodile clips, the data processing software CD ROM, USB cable, plus any selected options (ask for details)

Accessories

- 8 voltage leads (4 blue, 4 black) > **P01.2951.83**
- 4 Amp*FLEX*™ A195 800 mm (3,000 A) > **P01.1205.20**
- 4 Amp*FLEX*™ A195 450 mm (3,000) > **P01.1205.19**
- 4 MN95 clamps (5 A) > **P01.1204.29**
- 1 USB connection cable > **P01.2951.85**
- Bag > **P01.2980.34**

CHAUVIN® ARNOUX
CHAUVIN ARNOUX GROUP

Power and energy analysers

IEC 61000-4-30
Class A
All values

	C.A 8342	C.A 8340
	Compact, multifunctional *High-speed sampling 1 MHz*	*Compact, multifunctional*
Reference	**P01.1606.70**	**P01.1606.60**
P-N voltage	600 Vrms	
Accuracy	± 0.1 %	
IEC 61000-4-30	Class A all measurements	
Current	4 current input channels up to 2,000 A	
Sampling frequency	1,000 kHz	256 kHz
Frequency	15-70 Hz	
Power measurements	V, A, Min, Max, W, Var, VA, PF, cos φ, frequency, global and phase /phase, Fc	
Energies	generated and consumed active, reactive, capacitive and inductive energies	
Harmonics (IEC61000-4-7)	order 63 in U, I and VA, direction of harmonics; THD; adjacent harmonics	
Interharmonics	yes	
Interference	triggers on parameterizable alarms, surveillance in compliance with standard EN50160	
Flicker (IEC61000-4-15)	Pst, Plt, sliding Plt	
Unbalance	phase shift, global unbalance - positive, zero and negative sequence current	
Remote control signal	yes	
Impedance	no	
Transients	up to 2 periods before and up to 3 periods after the transient	
Inputs/outputs	8-channel data acquisition (4 differential inputs for AC/DC voltages, 4 inputs for AC/DC currents)	
Memory	128 MB	
Communication	Ethernet, USB, series port via adapter	
Display	colour LCD, touch-sensitive screen	
Power supply	Mains and/or batteries	
Battery	Battery life 2 hours	
Software	DRAN-VIEW® software	
Electrical safety	600 V cat. III	
Dimensions	300 x 64 x 203 mm	
Weight	1.9 kg	
State of delivery	in these kit versions, the instrument comes with harmonic analysis, oscilloscope mode, vectorscope mode, event capture and recorder, delivered in standard version with a bag and a memory card, 8 voltage leads, 8 crocodile clamps, the CD-Rom of the data processing software and a set of 4 clamps (please ask us for details of these models)	

Accessories

The kits

The kits comprise a C.A 8340 or C.A 8342, a set of 4 clamps and the DRAN-VIEW® software

- **C.A 8340** kit with set of MN93B clamps > **P01.1606.61**
- **C.A 8340** kit with set of C193B clamps > **P01.1606.62**
- **C.A 8340** kit with set of Ampflex™ 450 mm clamps > **P01.1606.63**
- **C.A 8340** kit with set of Ampflex™ 800 mm clamps > **P01.1606.64**
- **C.A 8342** kit with set of MN93B clamps > **P01.1606.71**
- **C.A 8342** kit with set of C193B clamps > **P01.1606.72**
- **C.A 8342** kit with set of Ampflex™ 450 mm clamps > **P01.1606.73**
- **C.A 8342** kit with set of Ampflex™ 800 mm clamps > **P01.1606.74**

CHAUVIN® ARNOUX
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Essential for the C.A 8342 & C.A 8340, the DRAN-VIEW® software allows viewing and analysis of complex events, fault location, identification of harmful trends, data capture on memory card, viewing and creation of customized reports.

- 128 MB memory card > **P01.1020.39**
- Batteries pack > **P01.2960.38**
- Shoulder bag > **P01.2980.70**
- Battery charger mains adapter > **P01.2960.39**
- DRAN-VIEW® software > **P01.1606.80**
- C.A 834X Ethernet adapter > **P01.1020.41**
- C.A 834X RS232 adapter > **P01.1020.42**
- C.A 834X USB adapter > **P01.1020.43**

DRAN-VIEW® software

Clamps

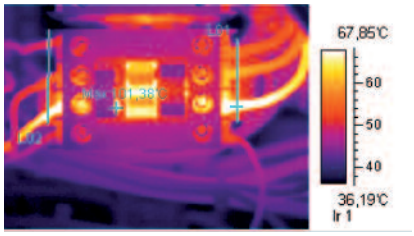
- MN93B clamp > **P01.1204.50**
- C193B clamp > **P01.1203.31**
- Ampflex™ 450 mm clamp > **P01.1205.40**
- Ampflex™ 800 mm clamp > **P01.1205.43**
- PAC93B clamp > **P01.1200.90**
- Set of 4 MN93B clamps > **P01.1204.51**
- Set of 4 C193B clamps > **P01.1203.32**
- Set of 4 Ampflex™ 450 mm clamps > **P01.1205.41**
- Set of Ampflex™ 800 mm clamps > **P01.1205.44**
- Set of 4 PAC93B clamps > **P01.1200.91**

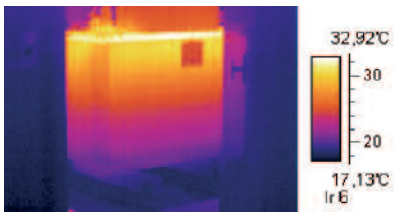
Thermographic camera

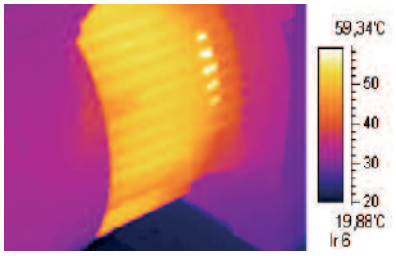
Simplify your maintenance:
RayCam "foresees" faults

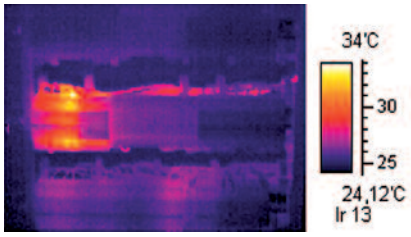
Designed for industrial use,
RayCam is rugged, compact and ergonomic

> *Recording capacity of 1,000 radiometric images*
> *Automatic recognition of hot or cold spots*
> *Protected, multi-directional screen*









Reference

- C.A 1884 > **P01.6512.28**

Delivered in a case with the RayCAm Report software, 1 battery, 1 charger, 1 USB cable, 1 video cable

Thermographic camera

	C.A 1884
	Rugged, lightweight, ergonomic and leakproof
Detector	
Type	UFPA Microbolometer / 7.5 ~14 micron
Resolution / Spectral band	160 x 120 / 50 Hz
Performance	
NETD at 30°	0.1 °C
Field of view/focusing	20° x 15°, IFOV: 2.2 mRad
Min focusing distance	0.1m
Image	
Video output	Pal / NTSC
Screen	TFT 2.5" colour LCD, multi-palettes
Image function	"Live" or frozen, opening and deletion of 1,000 thermogram / 250 folders
Measurements / Analysis	
Temperature range	-20°C to 250°C
High-temperature option	Please contact us
Accuracy	±2°C or ±2%
Cursor	3 positionable + 1 automatic detection
Temperature search	Automatic search for the hottest or coldest temperature in the whole image
Isotherm	Single-colour display of a parameterizable temperature interval
Adjustment	The level and scale can be adjusted automatically or manually
Correction	Emissivity, distance, ambient temperature, relative humidity
Software	
RayCAm report	Generation and printing of reports
Laser	
Wavelength	1 mW / 635 nm (red) Class II
Systems	
Configurations	Time, date, units, language
Power supply	7.2 V Lithium battery, 8 ~ 11V DC
Battery life	2 hrs 30 minutes minimum
Specifications	
Operating temp. / Storage temp.	-25 °C ~ 50 °C / -40 °C ~ 70 °C
Relative humidity	20 ~ 90% (IP54)
Interfaces	USB, Video output
Weight	< 700g
Resistance to shocks	25 G according to IEC 68-2-29
Resistance to vibration	2 G according to IEC 68-2-6

Accessories and spares

- **Sun-shade** > **P01.6515.25**
- **Photo tripod adapter** > **P01.6515.26**
- **Lens cover** > **P01.6515.22**
- **USB cable** > **P01.2952.74**
- **Battery** > **P01.2960.41**
- **RayCAm Report** > **P01.6515.24**
- **Mains power supply** > **P01.6515.27**

A wide range of accessories for optimum measuring conditions.

CHAUVIN® ARNOUX
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Contact thermometers

	TK 2000	TK 2002
	Compact and economical	
Reference	**P01.6531.00**	**P01.6531.10**
Sensor used	K thermocouple	
Number of inputs	1	2
Measurement range	-50 °C to 1,000 °C	
Resolution	0.1 or 1 °C	
Accuracy	-50 to 0 °C: ±1°C / 0 to 1,000 °C: ±1.5 % ± 0.5 °C	
Hold	yes	
Choice of measurement unit	°C	
Display	2,000 counts	
Backlighting	yes	
Dimensions	63 x 163 x 37.5 mm	
Weight	200 g	
State of delivery	with 1 flexible K thermocouple sensor for measurements from -40 °C to +200 °C	with 2 flexible K thermocouple sensors for measurements from -40 °C to +200 °C

Non-contact thermometers

	C.A 871	C.A 879	C.A 881	C.A 882
	Ideal for both industry and self-employed electricians	*Ideal for self-employed users as well as industrial use*	*Accurate laser sight*	*Measurements up to 900°C*
Reference	**P01.6513.02Z**	**P01.6518.05Z**	**P01.6518.03**	**P01.6518.04**
D/S Targeting range	8/1	12/1	30/1	50/1
Emissivity	0.95		0.2 to 1	
Measurement range	-40 to +310°C	-50 to +550 °C	-32 to +600 °C	-32 to +900 °C
Resolution	0.1 °C up to 100 °C 1°C beyond that	1 °C	0.1 °C	
Accuracy	± 2.5 % ± 2 °C	± 1.5 % ± 2 °C	2 % + 1 ct	1 %
Functions Laser sighting	yes			
Continuous measurement		yes		
Max. value			yes	
Min value			yes	
Average			yes	
Auto-hold	yes			
Choice of measurement unit	°C or °F			
Display	2000 counts			
Backlighting	yes			
Dimensions	160 x 82 x 41.5 mm	230 x 100 x 56 mm	250 x 100 x 45 mm	
Weight	180 g	290 g	320 g	
State of delivery	Delivered with one 9V battery, carrying case	Delivered with one 9 V battery, carrying case and instructions	Delivered with one 9 V battery, with wrist strap and carrying case	

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Multi-function process calibrators

	C.A 1641
	Calibrator function
Reference	**P01.6544.01**
mA simulation Range	0 - 25 mA
Accuracy	+/- 0.03% +/- 5 digits
mA source Range	0 - 25 mA
Accuracy	+/- 0.03% +/- 5 digits
Max. output voltage	approx. 24 V
Voltage loop Range	DC - 30 mA
Accuracy	+/- 0.03% +/- 5 digits
Overload protection	100 mA

	C.A 1643
	Calibrator function
Reference	**P01.6545.01**
Voltage Range	0 - 25 mA
Accuracy	+/- 0.03% +/- 5 digits
Input voltage protection	
Current Range	0 - 25 mA
Accuracy	+/- 0.03% +/- 5 digits
Input voltlage protection	approx. 24 V

	C.A 1643
	Pulse generator function
Frequency range	0.5 to 4,800 Hz
Accuracy	0 - 25 mA
Max. input voltage protection	30 VDC

	C.A 1641	C.A 1643
Multimeter function		
DC voltage Range	7 calibres: 50 mV…1,000 V	5 calibres: 50 mV…250 V
Accuracy	+/- 0.03% +/- 5 digits	+/- 0.05% +/- 50 digits
Input impedance	> 1,000 MW (for mV); 10 MW (for V)	1 GW (for mV); 10 MW (for V)
AC voltage Range	7 calibres: 50 mV…1,000 V calibres: 50 mV…1,000 V	5 calibres: 50 mV…250 V
Accuracy	+/- 0.7% +/- 15 digits7 calibres: 50 mV…1,000 V	+/- 0.7% +/- 40 digits
Input impedance	> 1,000 MW (for mV); 1.1 MW (for V)	1 GW (for mV); 1.1 MW (for V)
DC current Range	3 calibres: 50 mA…1,000 A	2 calibres: 50 mA / 500 mA
Accuracy	+/- 0.03% +/- 5 digits	+/- 0.03% +/- 5 digits
AC current Range	3 calibres: 50 mA…1,000 A	2 calibres: 50 mA / 500 mA
Accuracy	+/- 0.5% +/- 30 digits	+/- 0.6% +/- 20 digits
Resistance Range	6 calibres: 500 W…50 MW	
Diode test	Yes	
Temperature Range	-40°C … 1,372°C	
Frequency Range	5 calibres: 100 Hz…1,000 kHz	5 calibres: 100 Hz…200 kHz

	C.A 1641	C.A 1643
General specifications		
Display	50,000 counts (backlit LCD)	
	current (mA) and % scale	input/output current (mA) and % scale
Operating temperature	0°C to 40 °C	
Protection rating	600 V CAT IV / 1,000 V CAT III	250 V CAT II
Power supply	Rechargeable 9 V battery	8 x 1.2 V rechargeable batteries
Dimensions	192 x 90 x 37 mm	192 x 90 x 54 mm
Weight	650 g	710 g
State of delivery	Flexible carrying case, Set of leads with test probes Set of leads with crocodile clips, Adapter / charger	Flexible carrying case, Set of leads with test probes 3 leads with crocodile clips, Adapter / charger

Lightmeters

	C.A 811	C.A 813
	Measures up to 20,000 lux	*Measures up to 200,000 lux*
Reference	**P01.1722.01Z**	**P01.1724.01Z**
Measurement range	4 ranges: 0 to 20.000 lux	5 ranges: 0 to 200.000 lux
Accuracy	± 3 % + 10 cts	
C.I.E spectral correction	yes	
Incidence correction	yes	
Max. value	yes	
Peak value		yes
Choice of measurement unit	lux or Fc	
Display	2,000 counts	
Dimensions	173 x 60.5 x 38 mm	
Weight	214 g	223 g
State of delivery	with protective shockproof sheath	

Sound level meters

	C.A 832	C.A 834
	Check sound levels according to regulations	*Noise level survey*
Reference	**P01.1855.01Z**	**P01.1855.02**
Measurement range	35 to 130 dB	30 to 130 dB
Number of ranges	3	4 with 1 automatic
Resolution	0.1 dB	
Accuracy	± 2 dB	± 1.5 dB
Dynamics in frequency	31.5 Hz to 8 kHz	
Memory		32,000 values acquisition increments: 1 s to 1 h
Functions		
Frequency weighting curves: A and C	yes	
Fast and slow time weighting	yes	
Max. value	yes	
Min. value		yes
Hold		yes
Analogue output	10 mV / dB or 1 Veff	
RS 232 output		yes
Tripod positioning	yes	
Display	2000 counts	+ 50 segment bargraph
Backlighting	yes	
Dimensions	237 x 60.5 x 38 mm	275 x 64 x 30 mm
Weight	230 g	285 g
State of delivery	with shockproof sheath, receptacle for analogue output, and universal adapter for mounting on tripod	in hard case with data processing software, RS 232 cable and receptacle for analogue output

Hygrometers

	C.A 846	C.A 848
	2 in 1: hygrometry and ambient temperature measurement	*Simultaneous display of 2 parameters*
Reference	**P01.1563.01Z**	**P01.1563.03**
Humidity	Thermo-hygrometers	
Measurement range	0 to 100% RH	5 to 95% RH
Resolution	0.1% RH	
Accuracy	± 2.5% RH between 10 and 90% RH - 5% beyond that	2% R + 1.8% RH
Temperature		
Measurement range	-20 to +60 °C	-20 to +80 °C
Resolution	0.1 °C	
Accuracy	± 0.5% from 0 to +60 °C 1 °C beyond that	2% R + 0.3 °C
Functions		Dewpoint
Max. value	yes	
Low battery indicator	2 scales of 20 diodes	
Replaceable electrodes		
Dimensions	173 x 60.5 x 38 mm	
Weight	185 g	190 g
State of delivery	with shockproof sheath	with shockproof sheath cover and remote probe
	For hygrometer verification, salt cartridges at 33 % RH P01.1564.02 75 % RH P01.1564.01	

CHAUVIN® ARNOUX
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Thermo-anemometers



	C.A 822	C.A 824	C.A 826
	Ergonomic and rugged casing (shockproof sheath)	*High flow measurement*	*Accurate flow measurement*
Reference	**P01.1731.02**	**P01.1731.03Z**	**P01.12731.04Z**
Air speed			
Measurement range	0.4 to 30 m/s	0.20 m/s to 3 m/s 3.1 m/s to 35 m/s	0.01 m/s to 3 m/s 3.1 m/s to 30 m/s
Resolution	0.01 m/s	0.01 m/s - 0.1 m/s	
Accuracy	± 3 % full scale	3 % L + 0,1 m/s 3 % L + 0.2 m/s	3 % L + 0.05 m/s 3 % L + 0.2 m/s
Temperature			
Measurement range	-20 °C to +60 °C	-20 °C to +80 °C	
Resolution	0.1 °C		
Accuracy	0.5 °C between 0 and 45 °C 1 °C beyond that	2 % L + 0.2 °C	
Flow rate		0 to 65 000 m³/h	0 to 2 000 m³/h
Functions			
Air speed averaging	every 2 seconds for 2 measurements	yes	
Avg., min., max. values	yes		
Max.- min difference	yes	no	
Hold	yes		
Choice of measurement unit	°C and m/s or km/h or knots °F and ft/min or mph or knots	m/s, fpm °C, °F, K, m³/h, m³/s, l/s, cfm	
Double display	speed: 5,000 counts, temperature: 1,000 counts	yes	
Backlighting	yes		
Dimensions			
Instrument	173 x 60.5 x 38 mm	145 x 75 x 34 mm	
Sensor	365 x 75 x 45 mm	365 x 100 mm	38 x 300 mm
Total weight	330 g	190 g	
State of delivery	with shockproof sheath and rotating vane sensor (D = 70 mm)	with remote probe and magnetic shockproof cover	

Accessories

Air flow measurement cones

With C.A 824
C.A 825 **> P01.1731.05**

With C.A 826
C.A 828 **> P01.1731.07**

Manometers

	C.A 852
	For professionals in environmental engineering
Reference	**P01.1841.02**
Measurement range	-138 to +138 mbar
Max. pressure	1.38 bar
Resolution	0.1 mbar
Accuracy	0.3 % full scale
Units	psi, bar, mbar, mmH₂O, inH₂O
Functions	
Differential measurement	yes
Min. max. values	yes
Hold	yes
Display	2,000 counts
Backlighting	yes
Dimensions	182 x 72 x 30 mm
Weight	220 g
State of delivery	in hard case with 2 connecting hoses

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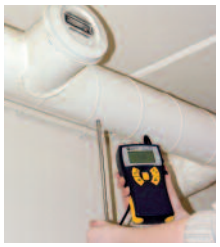
Multifunctional instrument



> Hot-wire Thermo-Anemometer

> Thermo-Anemometer with rotating vane

> Thermo-Hygrometer

> Pressure

	C.A 1051		
	The C.A 1051 allows complete analysis of your air-conditioning, heating and ventilation installations		
Reference		**P01.1750.10**	
HOT-WIRE THERMO-ANEMOMETER	Hot-wire speed	Ambient temperature	Flow
Measurement units	m/s, fpm	°C, °F, K	m^3/h, cfm, l/s, m^3/s
Measurement ranges	0 to m/s, 3.1 to 30 m/s	-20 °C to +80 °C	0 to 65,000 m^3/h
Accuracy	± 3 % of reading ± 0.03 m/s ± 3 % of reading ± 0.1 m/s	± 2 % of reading ± 0.1°C	± 3 % of reading ± 10 m^3/h
Resolution	0.01 m/s, 0.1 m/s	0.1°C	1 m^3/h
THERMO-ANEMOMETER WITH ROTATING VANE	Ø100 mm rotating vane speed	Ambient temperature	Flow
Measurement units	m/s, fpm	°C, °F, K	m^3/h, cfm, l/s, m^3/s
Measurement ranges	0.20 to 3 m/s, 3.1 to 35 m/s	-20 °C to +80 °C	0 to 65000 m^3/h
Accuracy	± 2 % of reading ± 0.06 m/s ± 2 % of reading ± 0.2 m/s	± 2 % of reading ± 0.1°C	± 3 % of reading ± 10 m^3/h
Resolution	0.01 m/s 0.1 m/s	0.1°C	1 m^3/h
THERMO-HYGROMETER	Relative humidity	Dew point	Ambient temperature
Measurement units	%RH	°C, °F, K	°C, °F, K
Measurement ranges	3 to 98 %RH	-20 °C to +80 °C	-20 °C to +80 °C
Accuracy	± 1 % of reading ± 1.5 %RH	Calculated	± 2 % of reading ± 0.1°C
Resolution	0.1 %RH	0.1°C	0.1°C
PRESSURE			
Measurement units	MmH_2O, mbar, Kpa, Pa, In Wg, mmHG		
Measurement ranges	0 to ± 1,000 mmH_2O		
Accuracy	± 5 % of reading ± 1 mmH_2O		
Resolution	0.1 mm H_2O		
TEMPERATURE 2 INPUTS K THERMOCOUPLE			
Measurement units	°C, °F, K		
Measurement ranges	-200 °C to +40 °C, -39 °C to +999 °C, +1,000 °C to +1,300 °C		
Accuracy	± 1% of reading ± 1.2 °C, ± 0.5 % of reading ± 0.8 °C, ± 1% of reading ± 1.2 °C		
Resolution	0.1 mm H_2O		

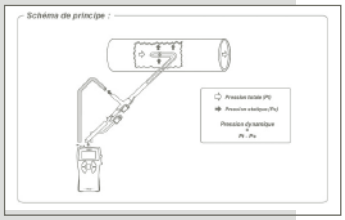
References and accessories

- Straight extension piece > **P01.1020.10**
- Elbow extension piece > **P01.1020.11**
- Telescopic extension piece > **P01.1020.12**
- Rotating vane flow cone > **P01.1731.05**
- Small hot-wire flow cone > **P01.1731.06**
- Large hot-wire flow cone > **P01.1731.07**
- Pitot tube > **P01.1020.48**

Pitot tube
> P01.1020.48

Small cone
> P01.1731.06

Large cone
> P01.1731.07



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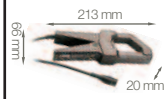
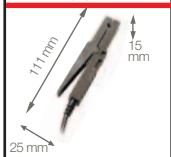
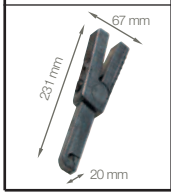
AC and AC/DC current measurement

Series	Model	Input: Very low current	Input: Low current	Input: Medium current	Input: High current	Input: ~ AC	Input: ⎓ DC	Output / Connections: Current	Output / Connections: Voltage	Output / Connections: Leads + safety plug ø 4 mm	Output / Connections: Female sockets ø 4 mm	Output / Connections: BNC connector (oscilloscopes)	Specific features: Transformation ratio (input/output)	Specific features: Output protected against overvoltage	Specific features: Automatic DC zero	Specific features: Power measurement (low phase shift)	Specific features: Bandwidth (frequency in Hz)	Specific features: Typical accuracy	To order
	MN08		0.5 to 240 A			●		0.2 A AC			●		1,000/1				40 Hz... 10 kHz	≤ 1%	P01.1204.01
	MN09		0.5 to 240 A			●		0.2 A AC		●			1,000/1				40 Hz... 10 kHz	≤ 1%	P01.1204.02
	MN011		0.5 to 240 A			●		0.2 A AC		●			1,000/1	●			40 Hz... 10 kHz	≤ 2%	P01.1204.04
	MN012		0.5 to 240 A			●			2 V AC		●		1A/10mV				40 Hz... 10 kHz	≤ 1%	P01.1204.05
	MN013		0.5 to 240 A			●			2 V AC	●			1A/10mV				40 Hz... 10 kHz	≤ 1%	P01.1204.06
	MN014		0.5 to 240 A			●			0.2 V AC		●		1A/1mV				40 Hz... 10 kHz	≤ 1%	P01.1204.16
	MN039		0.1 to 24 A 0.5 to 240 A			●			2 V AC 2 V AC	●			1A/100mV 1A/10mV				40 Hz... 10 kHz	≤ 1%	P01.1204.08
	MN073		10 mA to 2.4 A 100 mA to 240 A			●			2 V AC 2 V AC	●			1mA/1mV 1A/10mV				40 Hz... 10 kHz	≤ 1% ≤ 2%	P01.1204.21
	MN089		0.5 to 240 A			●			20 V DC(2)	●			1A/100mV				40 Hz... 10 kHz	≤ 2%	P01.1204.15
	Y1N		4 A to 600 A			●		0.5 A AC		●			1,000/1	●			48 Hz... 1 kHz	≤ 3%	P01.1200.01A
	C100		0.1 A to 1,200 A			●		1 A AC			●		1,000/1				30 Hz... 10 kHz	≤ 0.5%	P01.1203.01
	C103		0.1 A to 1,200 A			●		1 A AC		●			1,000/1	●			30 Hz... 10 kHz	≤ 0.5%	P01.1203.03
	C122		1 A to 1,200 A			●		5 A AC			●		1,000/5	●			30 Hz... 10 kHz	≤ 1%	P01.1203.06
	C148		1 to 300 A 1 to 600 A 1 to 1,200 A			●		5 A AC			●		250/5 500/5 1,000/5	●			48 Hz... 1 kHz	≤ 2% ≤ 1% ≤ 1%	P01.1203.07
	C173		1 mA to 1.2 A 0.01 to 12 A 0.1 to 120 A 1 to 1,200 A			●			1 V AC	●			1A/1V 10A/1V 100A/1V 1,000A/1V				10 Hz... 3 kHz	≤ 0.7% ≤ 0.5% ≤ 0.3% ≤ 0.2%	P01.1203.09
	D30CN			1 to 3,600 A		●		1 A AC		●			3,000/1	●		●	30 Hz... 5 kHz	≤ 0.5%	P01.1200.64
	D36N			1 to 3,600 A		●		3 A AC			●		3,000/3	●		●	30 Hz... 5 kHz	≤ 0.5%	P01.1200.55A
	K1		1 mA to 4.5 A DC 1 mA to 3 A RMS 1 mA to 4.5 A peak			●	●		4.5 V DC 3 V RMS 4.5 V peak	●			1mA/1mV				DC... 2 kHz	≤ 1%	P01.1200.67
	K2		100 µA to 450 mA DC 100 µA to 300 mA RMS 100 µA to 450 A peak			●	●		4.5 V DC 3 V RMS 4.5 V peak	●			1mA/10mV				DC... 1.5 kHz	≤ 1%	P01.1200.74
	E1N		0.05 to 2 A DC 0.05 to 1.5 A AC 0.5 to 150 A AC/DC			●	●		2 V DC 1.5 V AC 150 mV AC/DC	●			1A/1V 1A/1mV				DC... 2 kHz DC... 8 kHz	≤ 2% ≤ 1.5%	P01.1200.30A
	E6N		5 mA to 2 A DC 5 mA to 1.5 A AC 20 mA to 80 A AC/DC			●	●		2 V AC 1.5 V AC 0.8 V AC/DC	●			1A/1V 1A/10mV				DC... 2 kHz DC... 8 kHz	≤ 2% ≤ 4%	P01.1200.40A

(1) The higher value corresponds to 120% of the max. nominal value (2) Reshaping of AC signal by diodes.

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AC/DC current measurement

Series	Model	Input: Very low current	Input: Low current	Input: Medium current	Input: High current	Input: ~ AC	Input: ⎓ DC	Output / Connections: Current	Output / Connections: Voltage	Output / Connections: Leads + safety plug ø 4 mm	Output / Connections: Female sockets ø 4 mm	Output / Connections: BNC connector (oscilloscopes)	Specific features: Transformation ratio (input/output)	Specific features: Output protected against overvoltage	Specific features: Automatic DC zero	Specific features: Bandwidth (frequency in Hz)	Specific features: Typical accuracy	To order
	PAC10		0.5 to 400 A AC 0.5 to 600 A DC			●	●		600 mV AC/DC	●			1A/1mV			DC... 5 kHz	≤ 2%	P01.1200.70
	PAC11		0.2 to 40 A AC 0.4 to 60 A AC 0.5 to 400 A AC 0.5 to 600 A DC			●	●		600 mV AC/ DC	●			1A/10mV 1A/1mV		●	DC... 10 kHz	≤ 1.5% ≤ 2%	P01.1200.68
	PAC20		0.5 to 1,000 A AC 0.5 to 1,400 A DC			●	●		1.4 V AC/DC	●			1A/1mV			DC... 5 kHz	≤ 2%	P01.1200.71
	PAC21		0.2 to 100 A AC 0.4 to 150 A DC 0.5 to 1,000 A AC 0.5 to 1,400 A DC			●	●		1.4 V AC/DC	●			1A/10mV 1A/1mV		●	DC... 10 kHz	≤ 1.5% ≤ 2.5%	P01.1200.69

(1) The higher value corresponds to 120% of the max. nominal value (2) Lead + electronic housing with Ø 4 mm safety plugs, centre distance 19 mm, for K series.

Flexible current sensors

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Amp*FLEX*™

9 standard models dedicated to measuring alternating currents from 0.5 to 10 kA at industrial frequencies.
Each flexible coil is connected by a screened cable to a small box containing the processing electronics and a standard 9 V battery. The spacing of the sockets (19 mm) facilitates direct connection to any type of multimeter, tester or recorder equipped with an AC voltage input (impedance Z > 1MΩ). The quick, simple system for opening and closing the coil makes it easy to handle even when wearing safety gloves.
Other advantages: very lightweight (no magnetic circuit), no saturation effect, highly accurate and very low phase shift (for wattmeter measurements).

Adapter for Amp*FLEX*™ **P01.1019.68**
For unlimited use of your Amp*FLEX*™ sensors, replace the battery with the mains adapter plug.

9 standard models	20-200 A	2 kA		0.2 - 2 ka		0.3 - 3 kA			1 - 10 kA
Sensor length	45 cm	45 cm	80 cm	45 cm	80 cm	45 cm	80 cm	1.2 m	1.2 m
Reference	P01.1205.03	P01.1205.01	P01.1205.02	P01.1205.04	P01.1205.05	P01.1205.06	P01.1205.07	P01.1205.08	P01.1205.09
One or two calibres	20 A 200 A	2000 A		200 A/2,000 A AC		300 A/ 3,000 A AC			1,000 A 10,000 AAC
Output/input ratio (in mV~/A~)	100 mV/A 10 mV/A	1 mV/A		10 mV/A 1 mV/A		10 mV/A 1 mV/A			1 mV/A 0.1 mV/A
Measurement range	0.5 A to 200 A AC	0.5 A to 2 kA AC		0.5 A to 2 kA AC		0.5 A to 3 kA AC			0.5 A to 10 kA AC
Typical Accuracy	1%								
Crest factor	2.25								
Bandwidth	10 Hz to 20 kHZ								
Typical phase shift° at 50 Hz	≤ 1.3°	≤ 0.7°							≤ 0.5°
Dimensions / Weight	Casing: 140 x 64 x 28 mm - 200 g - Built-in cable: 2 m								
Weight of flexible sensor	< 120 g		< 240 g	< 120 g	< 240 g	< 120 g	< 240 g	< 240 g	< 360 g
Electrical safety	IEC 61010-2-032 1,000 V Cat. III								
Accessories	Socket adapter Ø 4 mm / BNC: P01.1018.46								

Test and measurement accessories

Accessories kit

IEC 61010-2-031 1,000 V Cat. III	IEC 61010 Electricity Kit	IEC 61010 Electronics Kit
Reference	P01.1018.95	P01.1018.94
Description	**Electricity applications** • 2 crocodile clips, • 2 "crocodile" wire grips • 2 probes Ø 4 mm • 2 elbowed leads 1.2 m long with test probe	**Electronics applications** • 2 crocodile clips, • 2 "hook" wire grips • 2 needle probes • 2 straight/elbowed leads 1.5 m long

Test probes – Crocodile clips

	Needle test probes	Test probes Ø 2 mm Test probes Ø 4 mm	Crocodile clips Ø 4 mm
Reference	P01.1018.56	P01.1020.50Z P01.1020.51Z	P01.1020.52Z
Description	• Grip guard • IEC 61010-2-031 • 1,000 V Cat. III • Intensity 20 A • Length 140 mm	• Grip guard • IEC 61010-2-031 • 600 V Cat. IV • Intensity 36 A • Length 115 mm	• Grip guard • IEC 61010-2-031 • 600 V Cat. IV • Intensity 32 A • Length 92 mm

Safety wire grips

	Flexible "clamp" wire grips	Flexible "hook" wire grips	Flexible "crocodile" wire grips	Insulation-piercing wire grip
Reference	P01.102054Z	P01.1018.52	P01.102053Z	P01.102055Z
Description	• IEC 61010-2-031 • 1,000 V Cat. III • Intensity 12 A • Length 159 mm	• IEC 61010-2-031 • 1,000 V Cat. III • Intensity 12 A • Length 158 mm	• IEC 61010-2-031 • 1,000 V Cat. III • Intensity 12 A • Length 172 mm	• Max. voltage 30 V AC / 60 V DC • Max. intensity 6 A • Test on wire Ø 1.2 to 3.5 mm • Length 150 mm

For VATs/DDTs

For multimeters

IP2X measurement accessories

Leads	Termination 1		Termination 2	
Reference	Ø 2 mm	Ø 4 mm	Straight	Elbowed
P01.2951.54	●		●	
P01.2951.56		●	●	
P01.2951.55	●			●
P01.2951.57		●		●
P01.2952.37Z		●		●

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Safety leads

Leads				Terminations			Specifications			
Reference	Ø 2 mm	Ø 4 mm	Straight	Elbowed	Intensity	Length	Material	Quantity and colour*
P01295280Z*		●	●		15 A	1.5 m	S / PVC	1 B 1 R
P01295281Z*		●		●	15 A	1.5 m	S / PVC	1 B 1 R
P01295282Z*		●	●		20 A	1.5 m	S/Silicone	1 B 1 R
P01295283Z*		●		●	15 A	1.5 m	S/Silicone	1 B 1 R
P01295286Z*	●		●		15 A	1.5 m	PVC	1 B 1 R
P01295287Z*	●			●	15 A	1.5 m	PVC	1 B 1 R
P01295288Z*		●	●		15 A	1.5 m	PVC	1 B 1 R
P01295289Z*		●		●	15 A	1.5 m	PVC	1 B 1 R
P01295290Z		●	●		20 A	2 m	PVC	1 B 1 R

** 600 V, CAT IV.*

Protection and transport accessories

For	Reference	Description
C.A 6114/6115N	P01298031	Carrying bag
	P01298032	Case
C.A 6511/6513	P01298016	Sheath
C.A 6523/6525	P01298049	Case
C.A 704/730/735/745/760	P01298065Z	Case
F01/03/05/07	P01298532	Case
	P01298048	Case
F15	P01298043	Case
MTX 3281/3282/3283	HX0052	Case
MX 20HD / 44HD / 57 Ex / 58HD / 59HD	MC0160B	Sheath
	MC0159B	Handle
	AE0193	Case
	AE0227	Carrying case
MX 21/22/23/24B/26	AE0237	Sheath
	AE0190	Case
MX 24B	HX0009	Carrying case
K clamp	P01298039	Carrying case
As standard		
	P01298071	Carrying case 270 x 195 x 65 mm
	P01298004	Carrying case 320 x 255 x 75 mm
	P01298072	Carrying case 440 x 310 x 135 mm
	P01298068	Site-proof case 272 x 248 x 130 mm
	P01298069	Site-proof case 272 x 248 x 182 mm

CASE

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Notes

Notes

CHAUVIN ARNOUX TEST AND MEASUREMENT
A local service for a better service

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