ASRAS CO.,LTD.

CHAUVIN ARNOUX

F200 - F400 - F600 Series

AC, DC and AC+DC TRMS Clamp Multimeters



True InRush

- Currents: 2,000 AAC / 3,000 ADC
- Voltages: 1,200 VAC / 1,700 VDC
- Clamping diameter: 60 mm
- Large 10,000-count display
- Automatic AC / DC detection

- Min, Max, Peak
- RELative and Differential measurements
- Power values
- THD & Harmonics

CAT IV 1 000 V | CAT III 1 500 V | IP 54 | Eco conception | 3-year warranty

Measure up

For professional use

- For an electrician, a clamp multimeter is the ideal tool for any work in the field.

It is simple to use and groups all the necessary functions in a single, compact solution.

- The F200 Series meets the requirements of self-employed electricians and SMIs/SMEs in the electrical sector.

- For medium and high power values, the F400 and F600 Series provides maximum protection and safety whatever the measuring conditions and the type of installation.

- With its large clamping diameter and current measurements up to 3,000 A, the F600 Series is ideal for distribution and transmission of low-voltage electrical energy.

Safe and rugged

1,000 V CAT IV / 1,500 V CAT III, an unprecedented level of safety for clamp multimeters!
For users, that means the assurance of working in total safety and in compliance with the applicable standards.
The IP54 ingress protection protects the instrument against dust, in particular, thus guaranteeing its safety level over time.
The mechanical design of these clamps means they can pass the standard test for falls from a height of 2 metres.

Performance

All the clamps in the F200, F400 and F600 Series benefit from a fast 12-bit TRMS digital acquisition system offering high measurement accuracy.
Thanks to their large bandwidth and high crest factor, these clamps provide accurate measurements whatever the signal type.

Ergonomics

The entire range is designed for one-handed use, even when wearing safety gloves.
For maximum efficiency, each measurement corresponds to a specific switch position.
The "1 key, 1 function" concept makes it even easier to use.
In addition, all the clamps are equipped with automatic detection of the type of signal (AC or DC) on currents, voltages and power values.



Various clamping diameters up to 60 mm are available for more comfortable measurements.

The rotary switch is fitted with moulding for excellent handling even when wearing safety gloves.

Equipped with a shockproof protective band, the casing of these clamp multimeters also offers excellent resistance to falls.

Very comfortable to read thanks to the backlit LCD display offering contrasts and a viewing angle unprecedented in this range of instruments (up to 10,000 counts).

All the clamp multimeters are equipped with automatic AC/DC detection.

Single function per key, whatever the mode.

Category IV up to 1,000 V for greater safety.

Choose your clamp multimeter

A clamp multimeter offering to meet all the needs of professionals.

1/ MEASUREMENT RANGE

3 families for 3 measurement ranges

- The F200 Series for currents up to 600 AAC / 900 ADC
- The F400 Series for medium currents up to 1,000 AAC / 1,500 ADC
- The F600 Series for high currents up to 2,000 AAC / 3,000 ADC

2/ TYPE OF CURRENT & FUNCTIONS

Each Series comprises 3 or 4 models.
The last digit of each clamp's name corresponds to different applications and levels of expertise.

F200	F400	F600
600 AAC / 900 ADC	1,000 AAC / 1,500 ADC	2,000 AAC / 3,000 ADC
Voltage up to 1,000 V	Voltage up to 1,200 VAC/ 1,700 VDC [1]	

Resistance + audible continuity + True*InRush*

F200 / F402

"Alternating Current" applications

Essential for installations and equipment powered by the mains.



F203 / F404 / F604

"Alternating or Direct "Current" applications

- DC current
- Temperature
- Adapter function
- ΔREL

Adapter function

This helps to boost the instrument's possibilities by using measuring sensors (light meter, I/R temperature, tachometer, etc.) with voltage output (AC or DC). A clever system allows users to read the quantity measured directly.

F205 / F406 / F606

"Mixed AC+DC" + inspection and maintenance applications

- Power values
- Phase rotation
- THD [2]
- ΔREL
- Min/Max/Peak

Phase rotation

To determine the phase order, the use of a 2-wire measuring system with a microprocessor frees users from the constraints and faults encountered with instruments based on resistive or capacitive technology, when using protective accessories (gloves, mat, etc.) or an isolating transformer.

F407 / F607

"Mixed AC+DC" + Analysis and expertise

- Power values
- Harmonics
- Ripple
- Recording
- PC software

Ripple

The Ripple is a parameter which can be used to quantify the quality of the smoothing in the case of currents which are rectified and then smoothed. The lower the ripple, the more effective the smoothing. In the case of a switching power supply, the voltage supplied includes residual ripple, particularly at high frequency. This ripple is harmful for electronic equipment and should be kept to a minimum.

[1] Except for F407 / F607 models: 1,000 VAC/DC

[2] Except for F205

The quality of a TRMS measurement, whatever the nature of the signal

A range equipped with unprecedented functions for analysis and troubleshooting.



TRMS versions of Min and Max!

The Min and Max measurements are TRMS values calculated over a duration of up to 100 ms. These values are particularly useful for sizing an installation, the diameter of a supply cable, thermal protection, etc.



Peak+ and Peak-

Calculated over a duration of 1 ms, the Peak+ and Peak- values can be used to characterize the distortions affecting the signal measured. For example, they may reveal variations or even dysfunction in the installation's behaviour.



THD and Harmonics

When troubleshooting the causes of dysfunction, knowledge of the signal's distortion, globally (THDr or THDf) or frequentially (harmonic analysis), helps to precisely target the corrective solution required: filtering solution, oversizing, etc.
Harmonic analysis also contributes to the prevention of fire risks.



ΔREL, for a quick assessment

Comparison with a reference quantity is a quick method for assessment and analysis. The variations of a signal can be measured as a differential value or a relative value. Expressed in the unit of the quantity measured, the differential value gives the difference between the stored reference value and the measured value, while the relative value gives a proportion, expressed in %, between this difference and the value of reference. The ΔREL function can be applied to any type of measurement and can be used jointly with the Min, Max and Peak functions.

TrueInRush

CHAUVIN ARNOUX INNOVATION

The TrueInRush function offers a response to the following issues:

- undersizing of the electrical conductors leading to heating, premature ageing of the insulants, potentially causing short-circuits or fires of electrical origin.

- untimely tripping of the thermal protective systems causing malfunctions, faults or lost productivity

Because the TrueInRush function is more than just a means of measuring the inrush current when a motor starts up, as it also allows analysis of the overcurrents at any point in an electrical installation in operation.

Present on all the models in the F200, F400 and F600 Series, the TrueInRush function adapts its algorithm to suit the nature and level of the current present in the installation to enable the capture of the expected overcurrent.

The TrueInRush function can be used to check that electrical installations are correctly sized in terms of both the conductors used and the protective systems implemented to reduce the risks.

The TrueInRush function contributes to safety, maintenance and optimization of the operating costs of electrical installations.

F200 SERIES

F200 Series	
Ø Clamping diameter	34 mm
Currents	600 $A_{AC\ or\ AC+DC}$ 900 A_{DC}
Operating range	600 V CAT IV 1,000 V CAT III

The F200 clamps are ideal for Low Voltage applications involving low or medium power values: maintenance of tertiary or industrial installations and machine fleets, troubleshooting and/or sizing of the electricity supply, commissioning of air-conditioning & heating systems, work on electrical vehicles, etc.



		F201	F203	F205
Display resolution		**6,000 cts**	**6,000 cts**	**6,000 cts**
Measurements displayed		**x 1**	**x 1**	**x 1**
Display backlighting			●	●
Acquisition method		**TRMS**	**TRMS**	**TRMS**
Automatic AC/DC detection		●	●	●
A	AC	●	●	●
	DC		●	●
	AC+DC			●
V	AC	●	●	●
	DC	●	●	●
	AC+DC			●
Hz		●	●	●
Resistance/audible continuity		●	●	●
T° (°C/°F)		●	●	
Adapter function			●	
2-wire phase rotation				●
W, var, VA, PF				●
THDf / THDr				
Min / Max		●	●	●
Peak+ / Peak-				●
True InRush		●	●	●
ΔREL			●	●



Complete display
F200 Series models







F400 SERIES

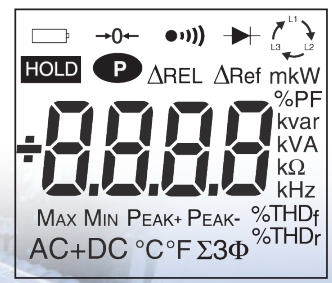
F400 Series	
Ø Clamping diameter	48 mm
Currents	1,000 $A_{AC\ or\ AC+DC}$ 1,500 A_{DC}

The Low-Voltage, medium-power F400 Series is used in the LV electricity generation and distribution sectors, industry, railways, etc. It is also suitable for lift/elevator technicians and other lifting or transport equipment specialists.

Maintenance, inspection, monitoring, troubleshooting and connection are the main applications of the clamps in this Series.



		1,200 VAC / 1,500 VDC	
		F402	**F404/F604**
Display resolution		**10,000 cts**	**10,000 cts**
Measurements displayed		**x 1**	**x 1**
Display backlighting		●	●
Acquisition method		**TRMS**	**TRMS**
Automatic AC/DC detection		●	●
A	AC	●	●
	DC		●
	AC+DC		
V	AC	●	●
	DC	●	●
	AC+DC		
Hz		●	●
Resistance/audible continuity		●	●
T° (°C / °F)		●	●
Adapter function			●
2-wire phase rotation			
W, var, VA, PF			
DPF			
THD_f / THD_r			
Harm0... Harm25			
Min / Max		●	●
Peak+ / Peak-			
True InRush		●	●
ΔREL			●
Recording			
PC software (included) / Bluetooth			



Complete display for the F402, F404, F406, F604 and F606







F600 SERIES

	F600 Series
Ø Clamping diameter	60 mm
Currents	2000 $A_{AC\ or\ AC+DC}$ 3000 A_{DC}

The F600 Series is dedicated to the high-power LV markets, such as the distribution of electrical energy, the chemical and petrochemical industries, metallurgy, transport, etc.

Applications: maintenance, inspection, monitoring, troubleshooting, sizing, connection, etc.

	1,000 VAC / 1,000 VDC	
	F406/F606	F407/F607
	10,000 cts	10,000 cts
	x 1	x 3
	•	•
	TRMS	TRMS
	•	•
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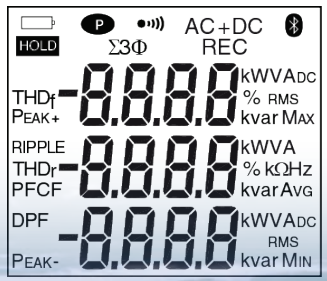
F407/F607

IP 54 | CAT IV 1 000 V

F402/F404/F604 F604/F606

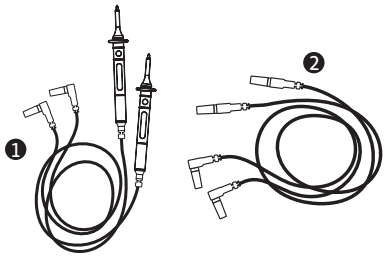
IP 54 | CAT IV 1 000 V | CAT III 1 500 V

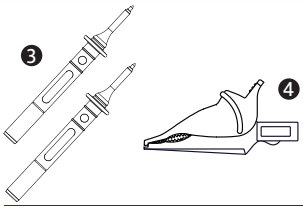




Complete display for F407 and F607

	F200 SERIES			F400 SERIES				F600 SERIES		
Model	**F201**	**F203**	**F205**	**F402**	**F404**	**F406**	**F407**	**F604**	**F606**	**F607**
Ø Clamping diameter	34 mm			48 mm				60 mm		
Display	LCD	Backlit LCD		Backlit LCD				Backlit LCD		
Resolution	6,000 counts			10,000 counts				10,000 counts		
Number of values displayed	1			1			3	1		3
Type of acquisition	TRMS [AC]	TRMS [AC]/DC	TRMS [AC, AC+DC]/DC	TRMS [AC]	TRMS [AC]/DC	TRMS [AC, AC+DC]/DC		TRMS [AC]/DC	TRMS [AC, AC+DC]/DC	
Autorange	Yes			Yes				Yes		
Automatic AC / DC detection	-	Yes		-	Yes			Yes		
A AC	0.25 to 600 A (900 A peak)			0.25 A to 1,000 A (1,500 A peak)				0.25 A to 2,000 A (3,000 A peak)		
A DC	-	0.25 A to 900 A		-	0.25 A to 1,500 A			0.25 A to 3,000 A		
A AC+DC	-		0.25 A to 600 A (900 A peak)	-		0.25 A to 1,000 A (1,500 A peak)		-	0.25 A to 2000 A (3,000 A peak)	
Best accuracy	1% of reading + 3 counts			1% of reading + 3 counts				1% of reading + 3 counts		
V AC	0.15 V to 1,000 V (1,400 V peak)			0.15 V to 1,200 V (1,700 V peak)			0.15 V to 1,000 V (1,400 V peak)	0.15 V to 1,200 V (1,700 V peak)		0.15 V to 1,000 V (1,400 V peak)
V DC	0.15 V to 1,000 V			0.15 V to 1,700 V			0.15 V to 1,000 V	0.15 V to 1,700 V		0.15 V to 1,000 V
V AC+DC	-		0.15 V to 1,000 V (1,400 V peak)	-		0.15 V to 1,200 V (1,700 V peak)	0.15 V to 1,000 V (1,400 V peak)	-	0.15 V to 1,200 V (1,700 V peak)	0.15 V to 1,000 V (1,400 V peak)
Accuracy	1% of reading + 3 counts			1% of reading + 3 counts				1% of reading + 3 counts		
Hz	Current: 5.0 Hz to 3,000 Hz Voltage: 5.0 Hz to 20.00 kHz			Current: 5.0 Hz to 2,000 Hz Voltage: 5.0 Hz to 20.00 kHz				Current: 5.0 Hz to 1,000 Hz Voltage: 5.0 Hz to 20.00 kHz		
Ohm	0.1 Ω to 59.99 kΩ			0.1 Ω to 99.99 kΩ				0.1 Ω to 99.99 kΩ		
Open-circuit voltage	≤ 3.6 V			≤ 3.6 V				≤ 3.6 V		
Measurement current	≤ 550 µA			≤ 550 µA				≤ 550 µA		
Audible continuity	Yes			Yes				Yes		
Continuity threshold	Adjustable from 1 to 599 Ω			Adjustable from 1 to 999 Ω			40 Ω	Adjustable from 1 to 999 Ω		40 Ω
Diode test (semiconductor function)	Yes			Yes			-	Yes		-
Temperature (K type)	°C: -60.0 to +1,000.0°C °F: -76.0 to +1,832 °F		-	°C: -60.0 to +1,000.0°C °F: -76.0 to +1,832 °F		-		°C: -60.0 to +1,000.0°C °F: -76.0 to +1,832 °F		-
Single-phase and total three-phase power values	-		Yes	-		Yes		-		Yes
Active power values	-		1 W to 600 kW	-		1 W to 1,200 kW	1 W to 1,000 kW	-	1 W to 2,400 kW	1 W to 2,000 kW
Reactive power values	-		1 var to 600 kvar	-		1 var to 1,200 kvar	1 var to 1,000 kvar	-	1 var to 2,400 kvar	1 var to 2,000 kvar
Apparent power values	-		1 VA to 600 kVA			1 VA to 1200 kVA		-	1 VA to 2,400 kVA	1 VA to 2 000 kVA
PF / DPF	-		Yes / No	-		Yes / No	Yes / Yes	-	Yes / No	Yes / Yes
Harmonic analyses	-		Yes	-		Yes	Yes	-	Yes	Yes
THD_f / THD_r	-		- / -	-		Yes / Yes	Yes / Yes	-	Yes / Yes	Yes / Yes
Frequential analysis	-		-	-		-	25th order	-	-	25th order
Phase rotation (2-wire method)	-		Yes	-		Yes	-	-	Yes	-
Function										
True InRush (measurement of overcurrents)	Yes			Yes				Yes		
Motor startup	Yes			Yes				Yes		
Load evolution	Yes			Yes				Yes		
Hold	Yes			Yes				Yes		
Min / Max	Yes			Yes				Yes		
Peak+ / Peak-	-		Yes	-		Yes		-	Yes	
RELativ ΔX / ΔX/X (%)	-	Yes / Yes		-	Yes / Yes		-	Yes / Yes		-
Automatic Power Off	Yes			Yes				Yes		
Data recording	-			-			Yes	-		Yes
Communication interface	-			-			Bluetooth	-		Bluetooth
Ingress protection	IP40			IP54				IP54		
Electrical safety as per IEC 61010	600V CAT IV			1000V CAT IV / 1500V CAT III			1000V CAT IV	1000V CAT IV / 1500V CAT III		1000V CAT IV
Power supply	1 x 9 V LF22 battery			4 x 1.5 V AA batteries				4 x 1.5 V AA batteries		
Dimensions & weight	78 x 222 x 42 mm / 340 g			92 x 272 x 41 mm / 600 g				111 x 296 x 41 mm / 640 g		

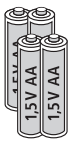








9 V for the F200 Series



1.5 V for the F400 / F600 Series



TO ORDER

F201 ..... P01120921
F203 ..... P01120923
F205 ..... P01120925
F402 ..... P01120942
F404 ..... P01120944
F406 ..... P01120946
F407 ..... P01120947
F604 ..... P01120964
F606 ..... P01120966
F607 ..... P01120967

STATE AT DELIVERY

	F201 F203	F402 F404 F604	F205 F406 F606	F407 F607
❶	x 1			
❷		x 1	x 1	x 1
❸		x 1	x 1	x 1
❹			x 1	x 2
❺	x 1	x 1		
❻	x 1	x 1	x 1	x 1
❼	x 1	x 1	x 1	x 1

+ Quick Start Guide and User's Manual on CD Rom (5 languages)

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