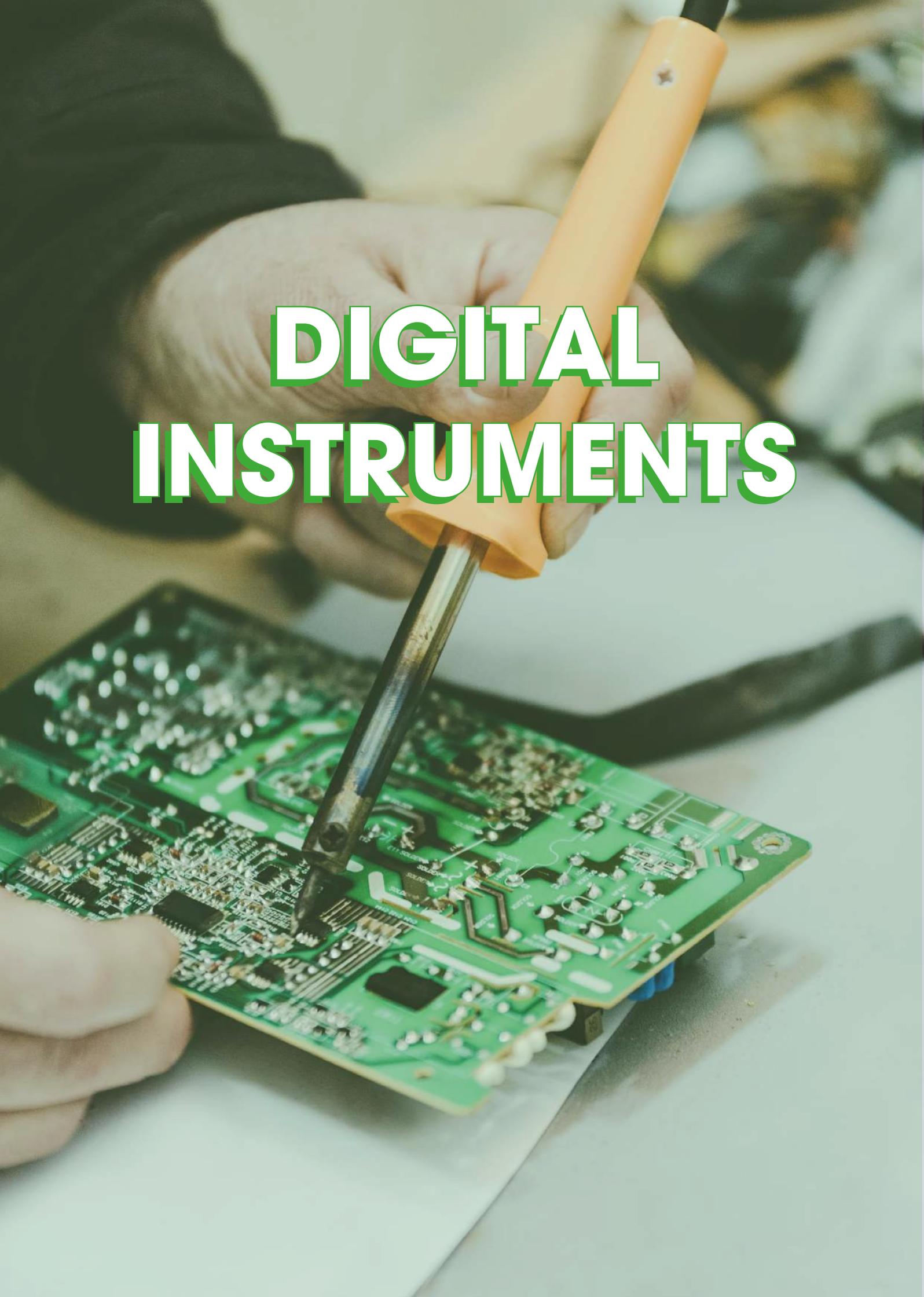


DIGITAL INSTRUMENTS

A close-up photograph of a person's hands working on a green printed circuit board (PCB). The person is using a soldering iron with an orange handle to work on a component on the board. The PCB is densely packed with various electronic components, including integrated circuits, resistors, and capacitors. The background is blurred, showing a workshop or laboratory setting.

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General features

Digital instruments

General features

- 3 - 3 1/2 - 4 - 4 1/2 digits
- Direct current
- Alternating current

General technical specifications

• Test voltage	2 kV, 50 Hz, 1 min
• Electrical impulse test	5 kV, 1,2/50 μ s
• Measuring range	0 - 140 % (4 digits) 0 - 120 % (3, 3 1/2 y 4 1/2 digits)
• Reference temperature	23 °C \pm 1 °C
• Operating temperature	- 10 °C / + 55 °C
• Storage temperature	- 30 °C / + 70 °C
• Protection degree	Front IP50, Rear IP20
• Permissible overloads Current input	General 1,2 In permanent 2 In, 10s Motor starting 2 In permanent 5 In, 10s
Voltage input	1,2 Vn permanent 2 Vn, 10s

Auxiliary voltage

AC Auxiliary power	110 - 230 - 400 V
DC Auxiliary power	12 - 24 - 48 - 110 - 220 V
Universal AC/DC auxiliary power supply	45 - 275 V

Standards

- EN 60051 Direct measuring equipment
- EN 60068 Environmental and vibration testing
- EN 61010 Safety requirements for electrical equipment
- EN 60529 Enclosure protection degree (IP codes)
- EN 61000 Electromagnetic compatibility
- UL 94 Flammability test
- IEC 664 Insulation requirements
- IEC 255 Insulation testing

Digital frequency meter (DIN rail)

Alternating current



General features

Digital frequency meter for alternating current in DIN rail format. It features a high-brightness red LED display with three digits and a display range of 30 to 500 Hz.

- **Auxiliary voltage:** 45-275 V AC/DC
- **Operating voltage:** 100 and 600 V
- **Overrange indication:** EEE
- **Max reading:** 999
- **No. of digits:** 3

General features	Range	Model
Frequency meter	30-500 Hz	DB5RF

Digital voltmeter or ammeter (DIN rail)

AC or DC



General features

This equipment is configurable as either a voltmeter or an ammeter for alternating or direct current, and is available in a DIN rail format. It features a high-brightness red LED display with three digits, offering a display range of amps or volts depending on the connection type.

The primary current is programmable.

- **Auxiliary voltage:** 45-275 V AC/DC
Optional 24-48 V DC
- **Overrange indication:** EEE
- **DIN rail**
- **No. of digits:** 3
- **Max reading:** 999

Alternating current		
General features	Range	Model
Voltmeter	100 and 600 V	DB5RE
Ammeter x/5 A	5 - 10 - 15 - 20 - 25 - 30 - 40 - 50 - 60 - 75 - 100 - 125 - 150 - 200 - 300 - 400 - 500 - 600 - 750 - 1000 - 1250 - 1500 - 1600 - 2000 - 2500 - 3000 - 4000 - 5000 - 6000 - 8000 A	DB5RE

Direct current		
General features	Range	Model
Voltmeter	100 and 600 V	DB5RC
Ammeter x/60 mV	5 - 10 - 15 - 20 - 25 - 30 - 40 - 50 - 60 - 75 - 100 - 125 - 150 - 200 - 300 - 400 - 500 - 600 - 750 - 1000 - 1250 - 1500 - 1600 - 2000 - 2500 - 3000 - 4000 - 5000 - 6000 - 8000 A	DB5RC



AC device



DC device

Voltmeter - ammeter

AC and DC current



General features

Voltmeter-ammeters available in AC or DC with dual-reading display and micro-processor controlled digital display.

Capable of simultaneously measuring current and voltage.

- **Auxiliary voltage:** Self-powered
Universal 45-275 V AC/DC
- **Max. reading:** 999
- **Overrange indication:** HHH
- **No. of digits:** 3
- **Dimensions:** 2 modules, 35x96mm
- **DIN rail**

Direct measurement

	AC current	Model
V	63,5 - 110 - 230 V	DB5RE2D
A	80 A	
	DC current	Model
V	12, 24, 48, 110, 125, 220 V	DB5RC2D
A	80A	

Indirect measurement

	AC current	Model
V	63,5 - 110 - 230 V	DB5RE2
A .. /100mA ⁽¹⁾	5 - 10 - 15 - 20 - 25 - 30 - 40 - 50 - 60 - 75 - 100 - 125 - 150 - 200 - 300 - 400 - 500 - 600 - 750 - 1000 - 1250- 1500 - 1600- 2000 - 2500 - 3000 - 4000 - 5000 - 6000 - 8000 A	
	DC current	Model
V	12, 24, 48, 110, 125, 220 V	DB5RC2
A .. /60 mV ⁽²⁾	5 - 10 - 15 - 20 - 25 - 30 - 40 - 50 - 60 - 75 - 100 - 125 - 150 - 200 - 300 - 400 - 500 - 600 - 750 - 1000 - 1250- 1500 - 1600- 2000 - 2500 - 3000 - 4000 - 5000 - 6000 - 8000 A	

(1) Connection to transformers (2) Connection to shunt

Programmable multirange instruments

4 digits. AC and DC current



General features

Voltmeter or ammeter for alternating or direct current. Please specify whether you require a voltmeter or an ammeter, as they are two different devices. The primary value of the current-voltage ratio is programmable.

- **No. digits:** 4
- **Max reading:** 9999
- **Selectable display**
- **Overrange indication:** HHHH
- **DIN rail and panel**

Range		
	Alternating current	Direct current
Ammeter	x/ 5 A y x/1 A ⁽¹⁾	x/ 60mV ó x/150 mV ⁽¹⁾
Voltmeter	x/ 100 V ó x/ 110 V ⁽¹⁾ 0 - 200 V ó 0 - 500 V	0 - 200 V ó 0 - 500 V

Aux. V.: universal (45-275V) AC/DC - Aux. V.: 380 or 400V ± 10% AC - Aux. V.: 12, 24 or 48V ± 20% DC

AC current						
Model	DH5EM	DH4EM	DH3EM	DH4EM-A ⁽²⁾	DP46EM	DP35EM
Dimensions (mm)	48 x 48	72 x 72	96 x 96	72 x 72	72 x 36	96 x 48

⁽¹⁾ For transformer connection
⁽²⁾ Equipment with minimum and maximum contact for programming alarms. Universal auxiliary voltage only

Aux. V.: universal (45-275V) AC/DC - Aux. V.: 380 or 400V ± 10% AC - Aux. V.: 12, 24 or 48V ± 20% DC

DC current					
Model	DH5CM	DH4CM	DH3CM	DP46CM	DP35CM
Dimensions (mm)	48 x 48	72 x 72	96 x 96	72 x 36	96 x 48

⁽¹⁾ For shunt connection



AC voltmeter



AC ammeter



DC voltmeter



DC ammeter

Double and triple display instruments

4 digits. AC and DC current



General features

Double or triple 4-digit instruments where ammeters, voltmeters and frequency meters can be combined.

The primary current is programmable in steps.

- **Auxiliary voltage:** Universal 45-275V AC/DC
380 or 400V $\pm 10\%$ AC ⁽¹⁾
12, 24 or 48V $\pm 20\%$ DC ⁽¹⁾
- **No. of digits:** 4
- **Max. reading:** 9999
- **Overrange indication:** HHHH
- **Panel mounting**
- **Programmable step**

Model	AC current					DC current
	DH4EM2	DH3EM3	DH3EM3	DH3EM3	DH3EM3	DH3C2M
Dimensions (mm)	72 x 72	96 x 96	96 x 96	96 x 96	96 x 96	96 x 96
Display 1	Voltmeter 0 - 500 V	Voltmeter 0 - 500 V (phase-phase)	Voltmeter 0 - 300 V (phase-neutral)	Ammeter ../1A or ../5A ⁽¹⁾	Voltmeter 0 - 500 V	Ammeter x/60mV ⁽²⁾
Display 2	Ammeter x/1A or x/5A ⁽¹⁾	Voltmeter 0 - 500 V (phase-phase)	Voltmeter 0 - 300 V (phase-neutral)	Ammeter ../1A or ../5A ⁽¹⁾	Ammeter ../1A or ../5A ⁽¹⁾	Voltmeter 0 - 500V
Display 3	–	Voltmeter 0 - 500 V (phase-phase)	Voltmeter 0 - 300 V (phase-neutral)	Ammeter ../1A or ../5A ⁽¹⁾	Frequency meter 0 - 999 Hz	–
Range	V - A	V ₁₂ - V ₁₃ - V ₂₃	V ₁ - V ₂ - V ₃	A ₁ - A ₂ - A ₃	V - A - Hz	V - A

(1) For connection to transformers (2) For connection to shunt



AC instruments



DC instruments

Double and triple display instruments

3½ digits. Alternating current



General features

Double or triple 3 ½ digit instruments where ammeters and voltmeters can be combined.

- **Auxiliary voltage:** 110, 230 or 400V ±10% AC
12, 24 or 48, 110 or 220V ±20% AC
- **Accuracy:** 0,5% of the reading ±1 digit AC
0,2% of the reading ±1 digit DC
- **No. of digits:** 3½
- **Max. reading:** 1999
- **Overrange ind.:** 1---
- **Panel mounting**

Range	
Ammeter	199,9 µA
	1,999 - 19,99 - 199,9 mA
	1,999A
Voltmeter	x/60mV or x/150 mV ⁽³⁾
	1,9999 - 19,99 - 199,9 or 600 V
	199,99 mV

Model	DH5C2 ⁽¹⁾	DH4C2 ⁽²⁾	DH3C2	DH3C3
Dimensions (mm)	48 x 48	72 x 72	96 x 96	96 x 96
No. of displays	2	2	2	3
Measurement range	A, V or transducer output (mA)			

(1) Auxiliary voltage: 12, 24 or 48 DC. (2) Auxiliary voltage: 12, 24 or 48 DC or 110, 230 or 400V AC. (3) For shunt connection.

Programmable multirange instruments

4 digits. Alternating current



General features

The voltage and current can be displayed on its LED screen using a front button. The primary current value can be programmed.

- **No. of digits:** 4
- **Max. reading:** 9999
- **Selectable display**
- **Overrange indication:** HHHH
- **Panel and DIN rail**

Range	
Ammeter	x/ 5 A and x/1 A programmable ⁽¹⁾
Voltmeter	500V

Aux. V.: universal (45-275V) AC/DC

Model	DH4B	DH3B	DP46B	DP35B
Dimensions (mm)	72 x 72	96 x 96	72 x 36	96x 48

(1) For transformer connection

Programmable digital instruments

3½ and 4 digits. DC current



General features

The equipment can be requested in an milliammeter or voltmeter version, depending on the type of input signal provided by the converter, adapting the display scale to the magnitude to be displayed.

3 ½ digits

- Keypad programmable display scale (offset, end of scale and decimal point).
- Optional keypad programmable alarm.

4 digits

- Keypad programmable display scale (offset, end of scale and decimal point).
- Indication of the measured variable, its integrated value and recording of the integrating maximum.
- Double alarm programmable by keypad, with maximum and minimum threshold.

- **Auxiliary voltage:** 110, 230 or 400 V ± 20% AC
12, 24, 48 or 110 ± 20% DC
- **Accuracy:** 0,2% of range ± 1 digit
- **Overrange indication:** OFL
- **Alarm circuit:** 1 potential-free contact (250V, 3A, 200VA).
Optional max or min value.

Range	
Ammeters	0 - 1; 0 - 5; 0 - 10; 0 - 20 or 4 - 20 mA (*)
Voltmeters	0-1; 0-5; 0-10; 1-0-1; 5-0- 5; 10-0-10; 1-5 or 2-10 V (*)

Units
mA - A - kA - mV - V - kV - rpm - % -m- Kg - bar - mm - kN - Hz - W - kW - mW - VA - var - mvar - kVA - °C - °F

Model	DP35CP	DP46CPM
No. of digits	3½	4
Dimensions (mm)	96x48	72x36
Max. reading	±1999	9999; -999 (divided negative)

(*) For converters connection

Non programmable instruments

3 ½ and 4 ½ digits. AC and DC current



General features

Voltmeters and ammeters for alternating or direct current are available in square or rectangular formats for panel installation.

As these devices are non-programmable, it is necessary to specify whether a voltmeter or an ammeter is required, as well as the model and the measurement ratio between the primary and secondary.

- **Max. reading:** 19999
- **DIN rail and panel mounting**

Range		
	AC current	DC current
Ammeters	199,9 or 1999 mA	199,9 µA
	1,999 A	1,999 - 19,99 or 199,9 mA
	x/ 1 or x/ 5 A ⁽¹⁾	1,999 A
Voltmeters		x/60 or x/150 mV ⁽²⁾
	1,9999 - 19,99 - 199,9 or 600 V	199,9mV
	x/ 100 or 110 V ⁽¹⁾	1,999 - 19,99 - 199,9 or 600 V

Aux. V.: 110 - 230 or 400 V AC

Model	AC current				DC current			
	DQ4E	DQ3E	DQ46E	DQ35E	DQ4C	DQ3C	DQ46C	DQ35C
Dimensions (mm)	72 x 72	96 x 96	72 x 36	96 x 48	72 x 72	96 x 96	72 x 36	96 x 48
No. of digits	4 ½ digits (RMS)							
Overrange indication	0000 (flashing)							

Aux. V.: 12, 24 or 48 V DC

Model	AC current			DC current		
	DP57E	DP47E	DP37E	DP57C	DP47C	DP37C
Dimensions (mm)	48 x 24	72 X 24	96 X 24	48 x 24	72 X 24	96 X 24
No. of digits	3 ½ digits					
Overrange indication	1 - - -					

(1) For transformer connection. (2) For shunt connection



AC voltmeter



AC ammeter



DC voltmeter



DC ammeter

Programmable maximum demand ammeters



4 digits. AC and DC current



General features

- Instantaneous, average and maximum current value.
- Average current value (adjustable time interval 8, 15, 20 and 30 min).
- True value RMS.
- Keypad programmable alarm.

- **Auxiliary voltage:** 110, 230V \pm 20% AC
12, 24, 48 or 110 \pm 20% DC
- **Accuracy:** 0,5% of range \pm 1 digit
- **Alarm circuit:** 1 potential free contact (250V, 3A, 200VA)
- **No. of digits:** 4
- **Max. reading:** 9999
- **Overrange ind.:** F.ESC
- **Panel mounting**

Model	AC Current			DC current
	DP46M	DP46M-IR	DP46M-II	DP46MC
Dimensions (mm)	72 X 36			72 X 36
Measurement range	x/1 or x/5A ⁽¹⁾			x/60 mV ⁽²⁾
Alarm	Integrated	Instantaneous	Inverted instantaneous	Integrated

(1) For transformers connection. (2) For shunt connection

Alarm programming			
Current type on alarm	Integrated	Instantaneous	Inverted instantaneous
Contacts	NC	NC	NO
Delay	NO	0..99,9 s	NO
Hysteresis	NO	5%	5%

NO: Normally open. NC: Normally closed.

Digital frequency meters



4 digits. Alternating current



General features

Accurate frequency measurement in alternating current systems. Equipped with a high-visibility 4-digit display, they allow for clear and quick reading.

- **Auxiliary voltage:** 110, 230 or 400 V \pm 20% AC
- **Operating voltage:** 10 - 500V
- **Accuracy:** 0,05% of reading \pm 1 digit
- **No. of digits:** 4
- **Max reading:** 9999
- **Panel mounting**

Model	DH4F	DH3F	DP46F	DP35F
Dimensions (mm)	72 x 72	96 x 96	72 x 36	96 x 48
Display	0 - 999,9 Hz			

400V for size 72x72mm or 72x36mm consult us.

DMP3 - Programmable digital multimeter

4 digits. AC current



General features

It has five displays that can show three currents, one selectable voltage and the frequency simultaneously.

- 3 intensity
- 3-phase (phase-phase)
- 3-phase (phase-neutral)
- Frequency
- Current and voltage isolated
- **Auxiliary voltage:** 230 V AC
- **Max. voltage:** 300 V phase-neutral
520 V phase-phase
- **Accuracy:** 0,5% FE + 2 digits
- **Measurement refreshment:** 3 times per sec (aprox.)
- **Dimensions:** 96x96 mm

General features	Range	Model
Current	5 to 9000/5A (programmable)	DMP3
Frequency	30 - 100 Hz	

DMP3B - Programmable digital multimeter

4 digits. AC current



General features

It has five displays that can show three currents, one selectable voltage and the frequency simultaneously.

- 3 intensity
- 3-phase (phase-phase)
- 3-phase (phase-neutral)
- Frequency
- Current and voltage isolated
- **Auxiliary voltage:** 230 V AC
- **Max. voltage:** 300 V phase-neutral
520 V phase-phase
- **Accuracy:** 0,5% FE + 2 digits
- **Measurement refreshment:** 3 times per sec (aprox.)
- **Dimensions:** 96x96 mm

General features	Range	Model
Current	Up to 5000 times the input current	DMP3B
Frequency	30 - 70 Hz	

Programmable wattmeters and varmeters

4 digits. AC current



General features

- Keypad-programmable current and voltage transformer ratios.
- Alarm (optional) programmable by keypad.

- **Voltage input:** 100, 110, 230 or 400V AC
- **Current input:** x/1 or x/5 A (*)
- **Auxiliary voltage:** Self-powered
- **Alarm circuit:** 1 potential-free contact (250V, 3A, 200VA)
- **No. of digits:** 4
- **Max. reading:** -1999 / 9999
- **Overrange indication:** OFL
- **Accuracy:** 0.5% of full scale value ± 1 digit



Wattmeters



Varmeters

Model	Wattmeters		Varmeters	
	DP35W	DP35WI	DP35Wr	DP35WIr
Dimensions (mm)	96x48	96x48	96x48	96x48
Type	Single-phase	Three-phase balanced	Single-phase	Three-phase balanced

(*) Connecting to transformers

Phase angle meters

3 ½ digits. AC current



General features

They are designed for accurate power factor measurement in alternating current networks. They monitor the phase shift between voltage and current.

- **Voltage input:** 100, 110, 230 or 400V AC
- **Current input:** x/1 or x/5 A (*)
- **Auxiliary voltage:** self-powered
- **Measurement range:** CAP 0-1-0 IND
- **No. of digits:** 3½
- **Max. reading:** 1000
- **Overrange indication:** ---
- **Accuracy:** 0.5% (90° electrical)

Model	Single-phase				Three-phase balanced			
	DH4S	DP46S	DH3S	DP35S	DH4SI	DP46SI	DH3SI	DP35SI
Dimensions (mm)	72 x 72	72 x 36	96 x 96	96 x 48	72 x 72	72 x 36	96 x 96	96 x 48

(*) Connection to transformers

Instruments for transducer output

3½, 4, and 4 ½ digits. DC current



General features

The range of digital indicators is designed as a complementary instrument for displaying direct current signals from physical or electrical quantity converters.

- **Auxiliary voltage:** 110, 230 or 400V AC \pm 20%
- **Accuracy:** 0.5% of reading \pm 1 digit AC
0.2% of reading \pm 1 digit DC
- **Max. reading:** 19999

Units
mA - A - kA - mV - V - kV - rpm - % - m - Kg - bar - mm - kN - Hz - W - kW - mW - VA - var - kvar - mvar - kVA - °C - °F

Aux. V.: 12, 24 or 48 V DC - Aux. V.: 380 or 400 V AC - Aux. V.: universal (45-275V) AC/DC

Model	DH5C	DH4C	DH3C	DP46C	DP35C
Dimensions (mm)	48x48	72 x 72	96 x 96	72 x 36	96 x 48
No. of digits	4 digits				
Overrange indication	0000 (blinking)				
Transducers output	V		0-1; 0-5 or 0-10; 1-5 or 2-10 V		
	mA		0-1; 0-5; 0-10; 0-20; 4-20 mA		

Aux. V.: 110 - 230 or 400 V AC

Model	DQ4C	DQ3C	DQ46C	DQ35C
Dimensions (mm)	72 x 72	96 x 96	72 x 36	96 x 48
No. of digits	4 ½ digits			
Overrange indication	0000 (blinking)			
Transducers output	V		0-1; 0-5 or 0-10 \pm 1 \pm 5 \pm 10 1-5 or 2-10 V	
	mA		0-1; 0-5; 0-10; 0-20 \pm 1 \pm 5 \pm 20 4-20 mA	

Aux. V.: 12, 24 or 48 V DC

Model	DP57C	DP47C	DP37C
Dimensions (mm)	48 x 24	72 X 24	96 X 24
No. of digits	3 ½ digits		
Overrange indication	1 ---		
Transducers output	V		0-1; 0-5 or 0-10 V
	mA		0-1; 0-5; 0-10; 0-20; 4-20 mA